COURTROOM, CITY HALL
1 MUNICIPAL PLAZA
BEACON, NY 12508
THE PLANNING BOARD WILL MEET IN THE MUNICIPAL CENTER COURTROOM AT 7:00 P.M. A WORK SESSION WILL TAKE PLACE AT 7:00 P.M. FOR A TRAINING WORKSHOP, DISCUSSION OF AGENDA ITEMS AND/OR TOPICS OF INTEREST TO THE PLANNING BOARD. THE REGULAR MEETING WILL BEGIN IMMEDIATELY THEREAFTER, BUT NO LATER THAN 7:30 P.M.

Len Warner
Karen Quiana
Kevin Byrne
Jill Reynolds
J. Randall Williams
J.C. Calderon
Chair John Gunn

April 12, 2022
7:00 PM
Planning Board Agenda

Regular Meeting

1. Continue public hearing for SEQRA environmental review on applications for Subdivision and Site Plan Approval "Beacon Views Townhouses" 40 units, Conklin Street, submitted by Beacon Views, LLC (postponed at the request of the applicant)
2. Continue review of application for Special Use Permit and Site Plan Approval, hotel and event space, 1113 Wolcott Avenue, submitted by Prophecy Theater, LLC (postponed at the request of the applicant)
3. Continue public hearing on applications for Subdivision (lot merger) Approval and Site Plan Approval, three-story mixed-use residential and commercial development, 364 Main Street, submitted by O'Donnell Construction Corp.
4. Continue review of applications for Site Plan Approval (revised since 2019) and Subdivision Approval, "Two Cross Street" 4 Cross Street/172 Main Street, three-story mixed-use Building, Submitted by Hudson Todd, LLC
5. Continue Review of application for Site Plan Approval, Multi-Family Residential (62 units), 16 West Main Street, Submitted by Farrell Building Company
6. Continue Review of application for Special Use Permit and Site Plan Approval, Mirbeau Inn & Spa @ Howland Estate, 7 Craig House Lane, submitted by The Mirbeau Companies
7. Review application for Special Use Permit and Site Plan Approval, accessory apartment, 18 North Walnut Street, submitted by Brian Donnelly and Scott Ramsey
8. Review application for Subdivision Approval, 2-lot residential, 146 Verplanck Avenue,

submitted by James Petty

9. Review application for Special Use Permit and Site Plan Approval, indoor and outdoor event space, 4 Hanna Lane, submitted by Jason Hughes

Miscellaneous Business

1. Zoning Board of Appeals - April meeting
2. Consider request for one 90-day extension of Subdivision Approval, 14 Green Street, submitted by Thomas Rigney
3. Consider request for one 90-day extension of Subdivision Approval, 52 Dennings Avenue, submitted by Angel Ingham

Architectural Review

1. Single Family House - Shea Lane
2. Certificate of Appropriateness - 473 Main Street; signage
3. 416-420 Main Street; Sign for Central Green Space

City of Beacon Planning Board Agenda
04/12/2022

Title:

Continue public hearing for SEQRA environmental review on applications for Subdivision and Site Plan Approval "Beacon Views Townhouses" 40 units, Conklin Street, submitted by Beacon Views, LLC
(postponed at the request of the applicant)

ATTACHMENTS

City of Beacon Planning Board Agenda
04/12/2022

Title:

Continue review of application for Special Use Permit and Site Plan Approval, hotel and event space, 1113 Wolcott Avenue, submitted by Prophecy Theater, LLC ***(postponed at the request of the applicant)***

ATTACHMENTS

1113 Wolcott Avenue - Request for Adjournment.pdf

CUDDY +FEDER LLP

445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
T 914 761 1300
F 914 761 5372
cuddyfeder.com

Taylor M. Palmer, Esq.
tpalmer@cuddyfeder.com

March 29, 2022

VIA E-MAIL

Hon. John Gunn
And Members of the Planning Board
City of Beacon
1 Municipal Plaza
Beacon, New York 12508

Re: Application for Site Plan and Special Permit Approval
Request for Adjournment to the Planning Board's May 10, 2022 Meeting Agenda
Premises: 1113 Wolcott Avenue, Beacon, New York 12508

Dear Chairman Gunn and Members of the Planning Board:

On behalf of Prophecy Theater LLC (the "Applicant"), the owner of the above-referenced Premises, this letter is submitted in connection with the Applicant's pending Application for Site Plan and Special Permit Approval to adaptively re-use the Premises for a hotel and accessory conference/event space and café (the "Project"). We respectfully request that the Planning Board adjourn the above captioned matter currently scheduled for review at this Board's April 12, 2022 meeting Agenda and place it on the Planning Board's May 10, 2022 meeting Agenda for continued review.

As you're aware, this Board, serving as Lead Agency in the Coordinated State Environmental Quality Review Act ("SEQRA") environmental review of the Project, referred the Project to the Zoning Board of Appeals ("ZBA")—an Involved Agency—for discussion regarding the SEQRA review and the off-street parking proposal and parking management plans for consideration at the ZBA's March 15, 2022 meeting Agenda. The Applicant is requesting this adjournment in order to continue its SEQRA review with the ZBA at the ZBA's April meeting Agenda.

The Applicant looks forward to appearing at this Board's May 10, 2022 meeting Agenda for continued review of the Project. In the meantime, please do not hesitate to contact us with any questions regarding the Application. Thank you for your consideration.

Very truly yours,

Taylor M. Palmer

cc: Prophecy Theater LLC
Allison Fausner, Esq., Cuddy & Feder, LLP

City of Beacon Planning Board Agenda
04/12/2022

Title:

Continue public hearing on applications for Subdivision (lot merger) Approval and Site Plan Approval, three-story mixed-use residential and commercial development, 364 Main Street, submitted by O'Donnell Construction Corp.

ATTACHMENTS

364 Main Street Updated Full EAF.pdf

364 Main Architect Cover Letter.pdf

364 Main Street Cover Letter.pdf

364 Main Central Hudson.pdf

364 Main Sheet 1 Site Plan.pdf

364 Main Sheet 2 Existing Conditions & Demo Plan.pdf

364 Main Sheet 3 Landscape Plan.pdf

364 Main Sheet 4 Building Plan.pdf

364 Main Sheet 5 Building Elevations & Renderings.pdf

364 Main Sheet 6 Utility Plan.pdf

364 Main Sheet 7 Lighting Plan.pdf

364 Main Sheet 8 Refuse Truck Movement Plan.pdf

364 Main Sheet 9 30' Truck Movement Plan.pdf

364 Main Sheet 10 Construction Details.pdf

364 Main Sheet 11 Construction Details.pdf

364 Main Sheet 12 Construction Details.pdf

364 Main Sheet 13 Erosion & Sediment Plan.pdf

364 Main Sheet 14 Erosion & Sediment Details.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

364 Main Street ARB Comments.pdf

364 Main Street Subdivision Site Plan Draft Resolution.docx

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: 364 MAIN STREET - APPLICATION FOR SITE PLAN AND SUBDIVISION APPROVAL		
Project Location (describe, and attach a general location map): 364 MAIN STREET, BEACON, NEW YORK 12508		
Brief Description of Proposed Action (include purpose or need): Application for Site Plan and Subdivision Approval proposing to add two (2) stories to an existing one (1)-story commercial building and to construct a three (3)-story addition to the rear and a three (3)-story addition to the west of the same building for a commercial and multi-family residential mixed-use building fronting on Main Street. The first story will consist of 8,892 s.f. of commercial space and 1,607 s.f. of residential common area space. The second and third floors will include a total of 25,120 s.f. of multi-family residential space, consisting of twenty (20) apartments with thirty-one (31) total bedrooms. The property is presently comprised of two (2) lots, and the site will provide off-street parking facilities with driveway connections to Main Street and Eliza Street.		
Name of Applicant/Sponsor: O'DONNELL CONSTRUCTION CORP.	Telephone: 845-590-0622 E-Mail: SEANEO64@GMAIL.COM	
Address: P.O. BOX 526		
City/PO: FISHKILL	State: NEW YORK	Zip Code: 12524
Project Contact (if not same as sponsor; give name and title/role): TAYLOR M. PALMER, ESQ., - CUDDY & FEDER LLP - ATTORNEY FOR APPLICANT	Telephone: 914-761-1300 E-Mail: TPALMER@CUDDYFEDER.COM	
Address: 300 WESTAGE BUSINESS CENTER, SUITE 300		
City/PO: FISHKILL	State: NEW YORK	Zip Code: 12524
Property Owner (if not same as sponsor): SAME	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	PB- SITE PLAN PB - SUBDIVISION	05/25/2021 AMENDED 2/18/2022 8/31/2021
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	BUILDING DEPARTMENT- BUILDING PERMIT	05/1/2022
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☐Yes ☑No		
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes ☐No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
CMS - CENTRAL MAIN STREET DISTRICT & T - TRANSITIONAL DISTRICT.

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? BEACON CITY SCHOOL DISTRICT

b. What police or other public protection forces serve the project site?
CITY OF BEACON POLICE

c. Which fire protection and emergency medical services serve the project site?
CITY OF BEACON FIRE DEPARTMENT

d. What parks serve the project site?
MOUNT BEACON, GREEN STREET PARK, MEMORIAL PARK.

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? COMMERCIAL, RESIDENTIAL MIXED USES.

b. a. Total acreage of the site of the proposed action? 0.85 acres
b. Total acreage to be physically disturbed? 0.54 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.85 acres

c. Is the proposed action an expansion of an existing project or use? ☑ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % 26-increased 1,861 sq ft. Units: non-residential sq. ft.

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
COMMERCIAL, RESIDENTIAL
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? 1
iv. Minimum and maximum proposed lot sizes? Minimum 0.85 AC Maximum 0.85 AC

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 12 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☑ Yes ☐ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				20
At completion of all phases				20

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 38' height; 89' width; and 156' length

iii. Approximate extent of building space to be heated or cooled: 35,619 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☐ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☑Yes ☐No

If Yes:

i. Total anticipated water usage/demand per day: 4,300 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑Yes ☐No

If Yes:

- Name of district or service area: CITY OF BEACON
- Does the existing public water supply have capacity to serve the proposal? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No
- Do existing lines serve the project site? ☑Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☑No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑Yes ☐No

If Yes:

i. Total anticipated liquid waste generation per day: 4,300 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): SANITARY WASTEWATER

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: CITY OF BEACON WASTEWATER TREATMENT PLANT
- Name of district: CITY OF BEACON
- Does the existing wastewater treatment plant have capacity to serve the project? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No

- Do existing sewer lines serve the project site? ☑ Yes ☐ No
- Will a line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐ Yes ☑ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☐ No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☐ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐ Yes ☑ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☐ No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend

☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

TBD

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

CENTRAL HUDSON GAS AND ELECTRIC CO.

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7 AM - 5 PM
- Saturday: 9 AM - 5 PM
- Sunday: 9 AM - 5 PM
- Holidays: N/A

ii. During Operations:

- Monday - Friday: TBD
- Saturday: TBD
- Sunday: TBD
- Holidays: TBD

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Ambient noise levels will increase slightly during construction only.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures: See Lighting Plan

There will be building mounted lighting over entry/exit doors on the building, as well as light poles in the parking area. The closest light pole to the nearest occupied structure is approximately 50'. The light fixtures will be shieled LED, which will comply with the City's requirements for light spill.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 1.0 tons per MONTH (unit of time)
- Operation : 0.3 tons per MONTH (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: RECYCLING
- Operation: RECYCLING

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: APPROVED CONTRACTOR TO AN APROVED SITE
- Operation: APPROVED CONTRACTOR TO AN APPROVED SITE

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☑ Urban ☐ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): RESIDENTIAL - MULTIFAMILY

ii. If mix of uses, generally describe:

MIXED USES CONSISTENT WITH MAIN STREET AND THE SURROUNDING CMS AND TRANSITIONAL DISTRICTS.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0.85	0.82	-0.03
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: LANDSCAPING	0	0.03	+0.03

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

CITY OF BEACON HIGH SCHOOL ATHLETIC FIELDS.

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☑ No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): B00130, C314118

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

C314118 IS LOCATED AT 1 EAST MAIN STREET ACCORDING TO THE DATABASE, AND IS A CLASS N SITE. B00130 IS LOCATED AT 33 NORTH CEDAR STREET, AND IS A CLASS C SITE. THIS SITE HAS BEEN REMEDIATED.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? GREATER THAN 7.0 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

KuB-KNICKERBOCKER-URBAN	12.6 %
Ur-URBAN LAND	87.4 %
	%

d. What is the average depth to the water table on the project site? Average: >5' feet

e. Drainage status of project site soils:
☐ Well Drained: _____% of site
☐ Moderately Well Drained: _____% of site
☑ Poorly Drained 100 % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☑ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:
BIRDS SQUIRRELS
SMALL MAMMALS
RACCOON

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:
i. Species and listing (endangered or threatened):
Indiana Bat

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing:

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site? _____
ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☑ Historic Building or District

ii. Name: Eligible property:EMPIRE NAT. BANK, Eligible property:ROOSA COMMERCIAL, Eligible property:STAVROS COMMERCIAL, Eligibl...

iii. Brief description of attributes on which listing is based:

AUTO-FILLED BY THE EAF MAPPER. PROPERTY IS NOT LOCATED IN THE CITY'S HISTORIC DISTRICT AND LANDMARK OVERLAY DISTRICT.

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: MOUNT BEACON, HUDSON RIVER, LONG DOCK PARK.

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): STATE OR LOCAL PARK

iii. Distance between project and resource: 1.5 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name O'DONNELL CONSTRUCTION CORP. Date 3/28/2022

Signature Sean O'Donnell BY: SEAN O'DONNELL Title MANAGING MEMBER



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	Yes
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	B00130, C314118
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	No
E.2.h.iii [Surface Water Features]	No
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes

E.2.o. [Endangered or Threatened Species - Name]	Indiana Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:EMPIRE NAT. BANK, Eligible property:ROOSA COMMERCIAL, Eligible property:STAVROS COMMERCIAL, Eligible property:ANGELO COMMERCIAL, Eligible property:DUMKE COMMERCIAL, Eligible property:Memorial Building, Brett, Madam Catharyna, Homestead, US Post Office--Beacon
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

ARYEH SIEGEL
ARCHITECT

John Gunn - Planning Board Chairman
City of Beacon
One Municipal Plaza
Beacon, NY 12508

Re: 364 Main Street, Beacon, New York
Site Plan Application – Responses to Comments

March 29, 2022

Dear Chairman Gunn and Members of the Planning Board,

Below please find our responses to the comments included in John Clarke Planning and Design's Memorandum, dated February 3, 2022.

John Clarke Planning and Design Comment Responses:

1. **Sheet 1 – Site Plan**
   a Details for the gate and east side railing are provided on Sheet 1

   b A note has been added to Sheet 1 regarding compliance with the Affordable Workforce Housing requirement.

2. **Sheet 3 – Landscape Plan**
   a Details for the raised planters are shown on the Sheet.

   b The trees in the Eliza Street parking lot have been revised.

   c The Planting Schedule has been revised to show 3" caliper trees

3. Comment acknowledged. New renderings have been included on the Elevation Sheet, along with revised elevations.

4. Additional solar panel locations have been located on the roof.

Lanc & Tully Comment Response

General Comments

1. Comment acknowledged. The EAF has been updated.

84 Mason Circle | ajs@ajsarch.com | *Tel* 845 838 2490
Beacon, New York 12508 | www.ajsarch.com | *Fax* 845 838 2657

Lot Line Change Plan

1. Comment acknowledged. This is under review.

Site Plan Sheet 1 of 14

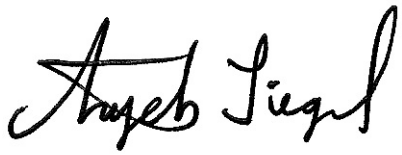
1. Accessible parking signs have been relocated and are now mounted on the building.
2. Signage has been modified for legibility.
3. Utility poles are shown on the site plan

Landscape Plan Sheet 3 of 14

1. The landscape plan has been updated to eliminate conflicts with light poles.

Thank you. Please let me know if you have any questions.

Sincerely,



Aryeh Siegel
Aryeh Siegel, Architect

CUDDY +FEDER LLP

445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
T 914 761 1300
F 914 761 5372
cuddyfeder.com

Taylor M. Palmer, Esq.
tpalmer@cuddyfeder.com

March 29, 2022

VIA E-MAIL
AND HAND DELIVERY
Hon. John Gunn
And Members of the Planning Board
City of Beacon
1 Municipal Plaza
Beacon, New York 12508

Re: Supplemental Submission – Application for Site Plan and Subdivision Approval
Commercial and Multi-Family Residential Mixed-Use Development
Premises: 364 Main Street & Eliza Street, Beacon, New York
Tax Parcel IDs: (6054-29-006819 & 6054-29-004836)

Dear Chairman Gunn and Members of the Planning Board:

On behalf of O'Donnell Construction Corp. (the "Applicant"), the owner of the above-referenced Premises, we respectfully submit this letter and the referenced enclosures in furtherance of the Applicant's pending Applications for Site Plan and Lot Merger Approval (collectively, the "Applications").

Since last appearing before the Planning Board on March 8, 2022, the Applicant has further updated the site plans in response to the comments raised by the Board at that meeting and the comments contained in the memoranda prepared by the City's Engineering Consultant, Lanc & Tully, dated February 28, 2022 (the "Engineering Comments Memorandum") and the City's Planning Consultant, John Clarke Planning and Design, dated March 3, 2022 (the "Planning Comments Memorandum").

SITE PLAN UPDATES & RESPONSES TO COMMENTS:

Based on this Board's comments at the March 8th meeting, the Applicant has updated the Site Plan set to incorporate the remaining minor updates. As is detailed more fully within the enclosed Site Plan set, the rooftop amenity space has been updated to incorporate additional green space in the form of planters, together with additional solar panel locations to provide the ability for access to solar. In addition, the trees and lighting pole located in the easterly island in the parking lot off of Eliza Street have been adjusted so as to not be in conflict with each other, which change maintains the quantity of trees proposed. It is also worth noting that, as with the prior submissions, the Project's landscape design strives to balance the functional needs of the site and

the surrounding area and meets the City's requirements for a ten percent (10%) landscaped area.[1] It is respectfully submitted that the refined proposal satisfies the landscaping requirement in the Central Main Street ("CMS") Zoning District.

To further assist this Board in its continued review of the refined proposal, the Applicant respectfully submits the enclosed Response to Comments Memorandum prepared by Aryeh J. Siegel Architect dated March 29, 2022 (the "Architect Response to Comments Memorandum") providing annotated responses to the comments noted in the Engineering Comments Memorandum and the Planning Comments Memorandum. *See* **Exhibit B** – Architect Response to Comments Memorandum.[2]

Additionally, in response to the Engineering Comments Memorandum, the Applicant respectfully submits the updated Full Environmental Assessment Form ("Full EAF") inclusive of the minor changes requested. *See* **Exhibit A** – Full EAF.[3]

PROPOSED LOT LINE REMOVAL TO MERGE LOTS & REFERRAL TO ARB SUBCOMMITTEE:

In connection with the lot line removal (subdivision) component of the Application, enclosed please find an updated copy of the Subdivision Plat, which details the proposed lot merger that will remove the existing lot lines between the Eliza Street Lot and Main Street Lot, thereby merging the existing two (2) lots into one (1) resultant lot. *See* enclosed Subdivision Plat. In accordance with the Engineer Comments Memorandum, the Subdivision Plat has been revised to include the existing utility easement with Central Hudson Gas & Electric Corp. on the southeasterly corner of the parking lot off of Eliza Street.

In addition, the Project was referred to the Architectural Review Board ("ARB") Subcommittee at the December 14th meeting. The Applicant has since appeared before the ARB Subcommittee on

---

[1] Note: The landscaped area is approximately eleven percent (11%). The overall measured landscaped area is 4,043 square feet. The overall site area is 36,954 square feet. 4,043/36,954 = 0.1094. The measured landscaped area includes all planted areas on the site shaded in green. Note that the requirement for landscaping can be reduced to five percent (5%) if the landscaped area is accessible to the public. Since a large portion of the landscaped area is accessible to the public, the Applicant contends that the landscaping requirement is met by both the eleven percent (11%) total landscape coverage, and the reduced five percent (5%) requirement.

[2] Note: We understand that the City's Traffic Consultant, Creighton Manning, has provided no further comments on the Project.

[3] Note: The Beacon High School Athletic Fields facility is located within 1,500 feet of the Premises. Additionally, as the Board is aware, the SEQRA process is complete – however, as the City Engineer requested for this information to be updated, it is included herein for the Board's records.

January 19, 2022, February 11, 2022, and March 18, 2022. At its last meeting, the ARB determined that the Project was ready to bring back to the full Planning Bord for discussion. In further response to the ARB's comments, the Applicant revised the elevations to incorporate various changes most-recently requested by the ARB and prepared several photorealistic streetscape renderings, which widened the lens of view to demonstrate the building's relation to the surrounding area. *See* enclosed Updated Site Plan Set and Updated Renderings.

LICENSE AGREEMENT ACCESS WITH BEACON NATURAL FOODS MARKET:

We have also been advised that the Applicant's discussions with Beacon Natural Foods Market have led to a general meeting of the minds regarding proposed terms for a license agreement regarding access for loading and unloading (no parking). Accordingly, the Applicant has drafted a private license agreement, and the parties are in active discussions to finalize the private agreement.

Additionally, as noted at the March 8th meeting, Sheet 1 of the enclosed Site Plan set shows a potential future license agreement access area running from the rear of the Beacon Natural Foods Market, through a portion of the Applicant's parking lot out to Eliza Street. This would result in the loss of two (2) parking spaces on the Premises leaving a total of 40 parking spaces to accommodate the Project's parking requirements, which still satisfies the minimum parking requirement by the Zoning Code.[4]

CONCLUSION

The Applicant respectfully requests that this Board grant its Applications for Site Plan and Lot Merger Approval. Since the Applicant's original design of the Project was first reviewed by the Planning Board and City Staff in May 2021, the Applicant has worked diligently to respond to the comments from the Board and its Staff in order to create a site plan that reduced the building from four (4) stories to three (3), closed off an existing access driveway connecting to Main Street, significantly adjusted and improved the proposed façade and windows, and enhanced landscaping and greenspace, thereby activating the Main Street frontage.

[4] Note: The layout on the updated plan shows the potential future license access area for loading and unloading only (no parking) for the existing Beacon Natural Foods Market in the event an agreement is executed. The access area impacts two (2) spaces as noted above. Although the site plan makes reference to a potential license access area, the Applicant is still processing a license agreement with the adjoining property owner that has not yet been executed.

INDEX OF ENCLOSURES:

In support of this supplemental submission, please find enclosed five (5) sets of the instant letter with the following materials:

Exhibit A: Updated Full Environmental Assessment Form ("EAF"); and

Exhibit B: Response to Comments Memorandum prepared by Aryeh J. Siegel Architect dated March 29, 2022, providing responses to the Planning Comments Memorandum and Engineering Comments Memorandum.

In further support of this supplemental submission, we respectfully submit the revised site plans and renderings entitled "364 Main Street", prepared by Day & Stokosa Engineering P.C. and Aryeh Siegal, Architect, dated April 2, 2021, last revised March 29, 2022, unless otherwise noted, numbered and titled as follows:

- Sheet 1 of 14 — Site Plan;[5]
- Sheet 2 of 14 — Existing Conditions & Demolition Plan;
- Sheet 3 of 12 — Landscape Plan & Planting Schedule;[6]
- Sheet 4 of 14 — Building Plans;
- Sheet 5 of 12 — Building Elevations & Renderings;[7]
- Sheet 6 of 14 — UP.1 - Utility Plan;
- Sheet 7 of 14 — LP.1 - Lighting Plan;[8]
- Sheet 8 of 14 — VM.1 - Refuse Truck Movement Plan;
- Sheet 9 of 14 — VM.2 - 30' Truck Movement Plan;
- Sheet 10 of 14 — CD.1 - Construction Details;

---

[5] Note: The Site Plan reflects the relocation of the accessible parking signs and no parking sign to the side of the building, as well as the location of the utility poles along the south side of the parking lot off of Eliza Street. Additionally, this Sheet incorporates a note that the Project will be in compliance the 10% below-market rate requirements in Article IVB, Affordable Workforce Housing.

[6] Note: The Landscape Plan was prepared in collaboration with Debra Adamsons of Landscape Restorations. As requested, Planting Schedule has been revised in accordance with Code Section 223-26.C(3)'s requirements that trees in parking area must be a minimum 3-inch caliper.

[7] Note: The Applicant has revised Sheet 5: Building Elevations & Renderings in response to the ARB Subcommittee's comments at the February 11 and March 18 meetings. Of note, this Sheet now includes four (4) streetscape renderings that depict the building in the context of the surrounding structures.

[8] Note: The Lighting Plan has been revised to reflect the adjusted location of the lighting pole located in the easterly island in the parking lot off of Eliza Street, which change has been coordinated with the Landscape Plan.

- Sheet 11 of 14 CD.2 - Construction Details;
- Sheet 12 of 14 CD.3 - Construction Details;
- Sheet 13 of 14 ESC.1 - Erosion & Sediment Control Plan; and
- Sheet 14 of 14 ESC.2 - Erosion & Sediment Control Details.

Also enclosed, please the revised Subdivision Plat entitled "Lot Line Change for the Lands of O'Donnell Construction Corp.", prepared by Robert V. Oswald, dated February 20, 2017, last revised February 21, 2022.

We look forward to appearing at the Planning Board's April 12th regular meeting Agenda for further review of the Project, at which time the Applicant respectfully requests that the Planning Board close the Site Plan and Subdivision Public Hearings and consider approving the instant Applications.

In the meantime, should the Planning Board or City Staff have any questions or comments with regard to the foregoing, please do not hesitate to contact me.

Very truly yours,

Taylor M. Palmer

Enclosures

cc: Jennifer L. Gray, Esq.
John Clarke Planning and Design
Lanc & Tully, P.C.
Aryeh J. Siegel Architect
Mark A. Day, P.E. – Day Stokosa Engineering, P.C.
Richard D'Andrea, P.E., PTOE – Colliers Engineering & Design CT, P.C.
Allison Fausner, Esq.

PROPERTY DESCRIPTION:

DESCRIPTION OF A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF BEACON, COUNTY OF DUTCHESS AND THE STATE OF NEW YORK.

BEGINNING AT A POINT ALONG THE EASTERLY LINE OF ELIZA STREET AND SAID POINT BEING THE SOUTHWESTERLY CORNER OF THE HEREIN DESCRIBED PARCEL WITH THE NORTHWESTERLY CORNER OF THE LANDS OF NOW OR FORMERLY O'DONNELL CONSTRUCTION CORP. DOCUMENT NO. 22014-601 THENCE IN A NORTHERLY DIRECTION THE EASTERLY LINE OF ELIZA STREET, NORTH 19-29-39 WEST 89.40 FEET TO NORTHWESTERLY CORNER OF THE HEREIN DESCRIBED PARCEL WITH THE SOUTHWESTERLY CORNER OF THE LANDS OF NOW OR FORMERLY THOM, DOCUMENT NO. 22002-3765, THENCE IN A EASTERLY DIRECTION ALONG THE SOUTHERLY LINE OF THOM, NORTH 69-41-46 EAST 239.30 FEET TO THE NORTHEASTERLY CORNER OF THE HEREIN DESCRIBED PARCEL AND THE WESTERLY LINE OF THE LANDS OF NOW OR FORMERLY GARCIA, DOCUMENT NO. 22001-1810, THENCE ON A SOUTHERLY DIRECTION ALONG THE WESTERLY LINE OF GARCIA AND THE WESTERLY LINE OF THE LANDS OF NOW OR THE SALVATION ARMY LIBER 1813 PAGE 311, SOUTH 36-17-35 EAST 66.50 FEET TO SOUTHEASTERLY CORNER OF THE HEREIN DESCRIBED PARCEL WITH THE NORTHERLY LINE OF THE LANDS OF NOW OR FORMERLY CRE JV FIVE BRANCH HOLDINGS, LLC. DOCUMENT NO. 22002-6748, THENCE IN A WESTERLY DIRECTION ALONG THE NORTHERLY LINE OF CRE JV FIVE BRANCH HOLDING, LLC AND THE LANDS OF NOW OR FORMERLY MASLID-UR-RASHID INC. DOCUMENT NO. 22002-3827, AND THE LANDS OF NOW OR FORMERLY BEACON 248 CORP., DOCUMENT 22001-391 AND THE AFOREMAID LANDS OF O'DONNELL CONSTRUCTION CORP, SOUTH 66-47-22 WEST 290.00 FEET TO THE POINT OF BEGINNING. CONTAINING 0.16 ACRES OF LAND MORE OR LESS

CERTIFICATION:
TO O'DONNELL CONSTRUCTION CORP. , TEG FEDERAL CREDIT UNION,
AND FIRST AMERICAN TITLE INSURANCE COMPANY
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY
ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016
MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE
SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS.
INCLUDES ITEMS 2,3,4,6,13,14,16,18, AND 19 OF TABLE A THEROF.
THE FIELDWORK WAS COMPLETED ON FEBRUARY 20, 2017

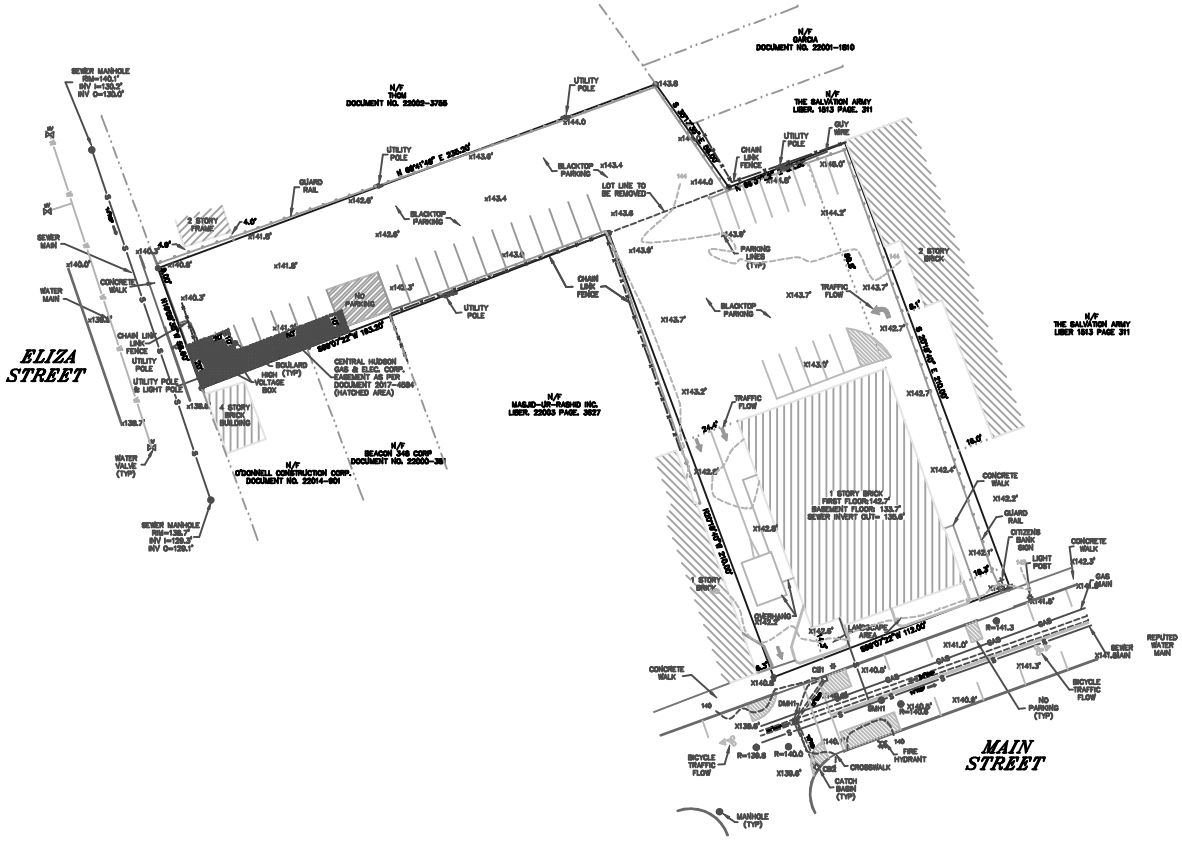
PROPERTY INFO:
ELIZA STREET, BEACON NEW YORK, 12508

ENCROACHMENTS:
AT THE TIME OF THE SURVEY THERE ARE NO VISIBLE
ENCROACHMENTS ONTO THE SUBJECT PROPERTY

GENERAL NOTES:
1. THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK
BUILDING CONSTRUCTION, OR BUILDING ADDITIONS
OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK
2. THERE ARE NO WETLANDS ON THIS PARCEL OF LAND
3. THERE IS DIRECT ACCESS TO THE SUBJECT PROPERTY
VIA ELIZA STREET, A PUBLIC RIGHT OF WAY

PARKING:
17 REGULAR PARKING SPACES
NO HANDICAP PARKING SPACES

SURVEYORS LEGAL:
1. THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK
BUILDING CONSTRUCTION, OR BUILDING ADDITIONS
OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK



AREA= 0.84 ACRES (+/-)



VICINITY MAP
NOT TO SCALE

PROPERTY DESCRIPTION:

DESCRIPTION OF A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF BEACON, COUNTY OF DUTCHESS AND THE STATE OF NEW YORK.

BEGINNING AT A POINT ALONG THE NORTHERLY LINE OF MAIN STREET AND SAID POINT BEING THE SOUTHEASTERLY CORNER OF THE HEREIN DESCRIBED PARCEL WITH THE SOUTHWESTERLY CORNER OF THE LANDS OF NOW OR FORMERLY THE SALVATION ARMY LIBER 1813 PAGE 311, THENCE IN A WESTERLY DIRECTION ALONG THE NORTHERLY LINE OF MAIN STREET, SOUTH 66-47-22 WEST 115.00 FEET TO THE SOUTHWESTERLY CORNER OF THE HEREIN DESCRIBED PARCEL WITH THE LANDS OF NOW OR FORMERLY MASLID-UR-RASHID, INC. LIBER 22003 PAGE 3827, THENCE IN A NORTHERLY DIRECTION ALONG THE EASTERLY LINE OF MASLID-UR-RASHID INC., NORTH 23-12-38 WEST 210.60 FEET THE NORTHEASTERLY CORNER OF THE HEREIN DESCRIBED PARCEL WITH THE SOUTHERLY LINE OF THE LANDS OF NOW OF FORMERLY CRE JV FIVE BRANCH HOLDINGS LLC DOCUMENT NO. 22002-6748, THENCE IN A EASTERLY DIRECTION ALONG THE SOUTHERLY LINE OF CRE JV FIVE BRANCH HOLDINGS, LLC AND THE AFOREMAID LANDS OF THE SALVATION ARMY, NORTH 66-57-22 EAST 115.00 FEET TO THE NORTHEASTERLY CORNER OF THE HEREIN DESCRIBED PARCEL AND THE AFOREMAID LANDS OF THE SALVATION ARMY, THENCE IN SOUTHERLY DIRECTION ALONG THE WESTERLY LINE OF THE LANDS OF THE SALVATION ARMY, SOUTH 36-18-35 EAST 210.60 FEET TO THE POINT OF BEGINNING. CONTAINING 0.54 ACRES OF LAND MORE OR LESS.

CERTIFICATION:
TO O'DONNELL CONSTRUCTION CORP. , TEG FEDERAL CREDIT UNION,
AND FIRST AMERICAN TITLE INSURANCE COMPANY
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY
ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016
MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE
SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS.
INCLUDES ITEMS 2,3,4,6,13,14,16,18, AND 19 OF TABLE A THEROF.
THE FIELDWORK WAS COMPLETED ON FEBRUARY 20, 2017

PROPERTY INFO:
394 MAIN STREET, BEACON NEW YORK, 12508

ENCROACHMENTS:
AT THE TIME OF THE SURVEY THERE ARE NO VISIBLE
ENCROACHMENTS ONTO THE SUBJECT PROPERTY

GENERAL NOTES:
1. THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK
BUILDING CONSTRUCTION, OR BUILDING ADDITIONS
OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK
2. THERE ARE NO WETLANDS ON THIS PARCEL OF LAND
3. THERE IS DIRECT ACCESS TO THE SUBJECT PROPERTY
VIA MAIN STREET, A PUBLIC RIGHT OF WAY

PARKING:
13 REGULAR PARKING SPACES
NO HANDICAP PARKING SPACES

SURVEYORS LEGAL:
1. THERE IS NO EVIDENCE OF RECENT EARTH MOVING WORK
BUILDING CONSTRUCTION, OR BUILDING ADDITIONS
OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK

SURVEY KEY:

SMH1	DMH1	CSH
RIM=140.3'	RIM=140.1'	RIM=140.1'
INV In=123.3' (14"RCP)	INV In=137.0' (12"HDPE)	INV In=138.8' (12"HDPE)
INV O=123.1'(14"RCP)	INV In=137.2' (12"RCP)	
	INV In=136.9' (30"RCP)	CB2
	INV O=136.8' (24"RCP)	RIM=139.7'
		INV In=137.1' (18"RCP)

CERTIFIED TO:
1. O'DONNELL CONSTRUCTION CORP.
2. TEG FEDERAL CREDIT UNION
3. FIRST AMERICAN TITLE INSURANCE COMPANY
4.

1.
2.
3.
4.
5.
6.
7.
8.

FILE NO. 2017025

LOTLINE CHANGE
FOR
THE LANDS OF
O'DONNELL CONSTRUCTION CORP.
CITY OF BEACON DUTCHESS COUNTY
SCALE: 1" = 20' FEBRUARY 20, 2017
UPDATE UTILITIES JUNE 18, 2021
UPDATE SPOT ELEVATIONS DECEMBER 13, 2021
ENGINEER'S COMMENTS DECEMBER 17, 2021
UTILITY AND LIGHT POLE JANUARY 04, 2022
UPDATE FEBRUARY 21, 2022
CHGE EASE. MARCH 28, 2022

ROBERT V. OSWALD
LAND SURVEYING
170 MAIN ROAD, LAGRANGEVILLE NEW YORK, 12540
(845)-250-8435 FAX (845) 255-1255
NEW YORK STATE
LICENSE NO. 50002

Bulk Zoning Regulations Table - Parking Lot

	Required Setbacks			Proposed Setbacks			Lot Depth Required	Lot Depth Existing	Allowable Building Height	Proposed Building Height	Lot Area	Proposed Floor Area
	Front	Side	Rear	Front	Side	Rear						
Zoning District												
T*	10'	10'	20'	NA	NA	NA	100'	242.6'	2.5 | 35'	NA	0.85	NA

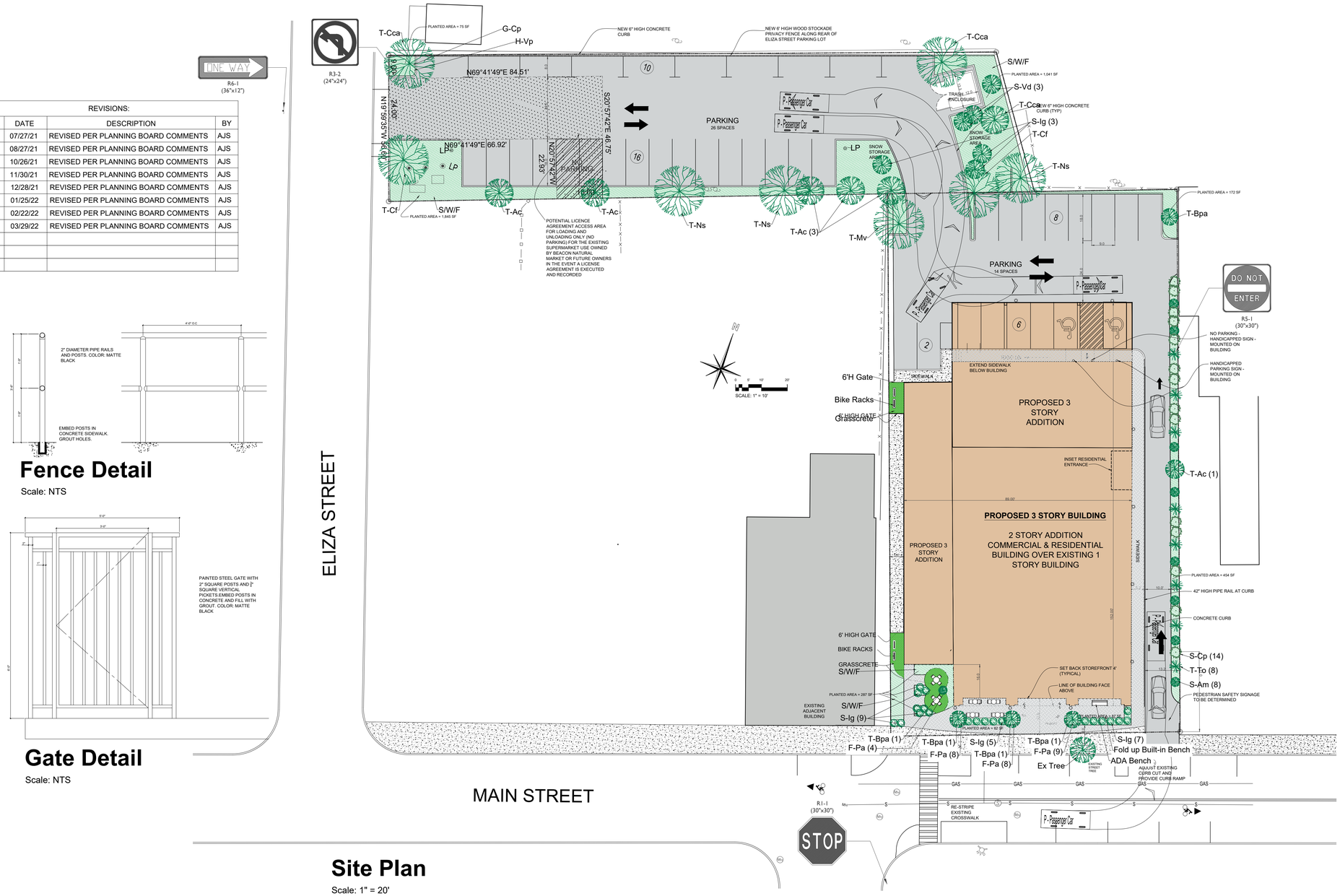
Bulk Zoning Regulations Table

	Required Setbacks			Proposed Setbacks			Main Street Frontage Required	Main Street Frontage Required	Minimum Lot Depth	Proposed Lot Depth	Allowable Building Height	Proposed Building Height	Minimum Landscaped Area	Proposed Landscaped Area	Lot Area	Proposed Floor Area
	Front	Side	Rear	Front	Side	Rear										
Zoning District																
CMS*	0'-10'	0'	20'	14.78'	18' exist 5'	44'	80%	89%	75'	264.37'	3 | 38' & 4th Story w/ Special Permit	3 Stories 38'	10% 5% if open to public	11%	0.85 acres	35,000 SF



Location Plan

Not to Scale



Site Plan

Scale: 1" = 20'

Fence Detail

Scale: NTS

Gate Detail

Scale: NTS

Zoning Summary

Zoning District:	CMS (Central Main Street) & T (Transition Zone)
Tax Map No.:	6054-29-006819 (364 Main Street) & 6054-29-0004836 (Eliza Street)
Lot Area:	0.54 Acres & 0.31 Acres
Building Footprint:	12,632 SF
Historical Overlay District:	No
Parking Overlay District:	Partial, not the portion of the lot in the T District.
Existing Use:	Vacant (364 Main Street) & Parking Lot
Proposed Use:	Mixed-Use: Retail / Residential

Parking & Loading

Use & Parking Requirements	Proposed Area	Current Parking Requirement
Residential		
(1) space per unit (CMS)	(20) Apartments	20 parking spaces
Commercial		
(2) spaces per 1,000 SF for Retail	8,892 sf	18 parking spaces
Total Required		**38 parking spaces**
Total Provided		**42 parking spaces**

Notes:

1. Commercial hours are 7am – 12am, Monday through Sunday, inclusive.
2. No signage is proposed as part of this application. Retail tenants will apply separately to the Planning Board for their own signage
3. The landscaped area is approximately 11%. The overall measured landscaped area is 4,043 square feet. The overall site area is 36,954 square feet. 4,043/36,954 = 0.1094. The measured landscaped area includes all planted areas on the site shaded in green. Note that the requirement for landscaping can be reduced to 5% if the landscaped area is accessible to the public. Since a large portion of the landscaped area is accessible to the public, the Applicant contends that the landscaping requirement is met by both the 11% total landscape coverage, and the reduced 5% requirement.
4. The project will comply with the 10% below-market-rate requirements in Article IVB, Affordable-Workforce Housing.

REVISIONS:			
NO.	DATE	DESCRIPTION	BY
1	07/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
2	08/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
3	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
4	11/30/21	REVISED PER PLANNING BOARD COMMENTS	AJS
5	12/28/21	REVISED PER PLANNING BOARD COMMENTS	AJS
6	01/25/22	REVISED PER PLANNING BOARD COMMENTS	AJS
7	02/22/22	REVISED PER PLANNING BOARD COMMENTS	AJS
8	03/29/22	REVISED PER PLANNING BOARD COMMENTS	AJS

Index of Drawings

Subdivision Plat

Sheet 1 of 14	Site Plan
Sheet 2 of 14	Existing Conditions & Demolition Plan
Sheet 3 of 14	Landscape Plan
Sheet 4 of 14	Building Plans
Sheet 5 of 14	Building Elevations & Renderings
Sheet 6 of 14 - UP.1	Utility Plan
Sheet 7 of 14 - LP.1	Lighting Plan
Sheet 8 of 14 - VM.1	Refuse Truck Movement Plan
Sheet 9 of 14 - VM.2	30' Truck Movement Plan
Sheet 10 of 14 - CD.1	Construction Details
Sheet 11 of 14 - CD.2	Construction Details
Sheet 12 of 14 - CD.3	Construction Details
Sheet 13 of 14 - ESC.1	Erosion & Sediment Control Plan
Sheet 14 of 14 - ESC.2	Erosion & Sediment Control Details

Site Plan Application

Sheet 1 of 14 - Site Plan

Owner:
O'Donnell & Son
P.O. Box 526
Fishkill, NY 12524

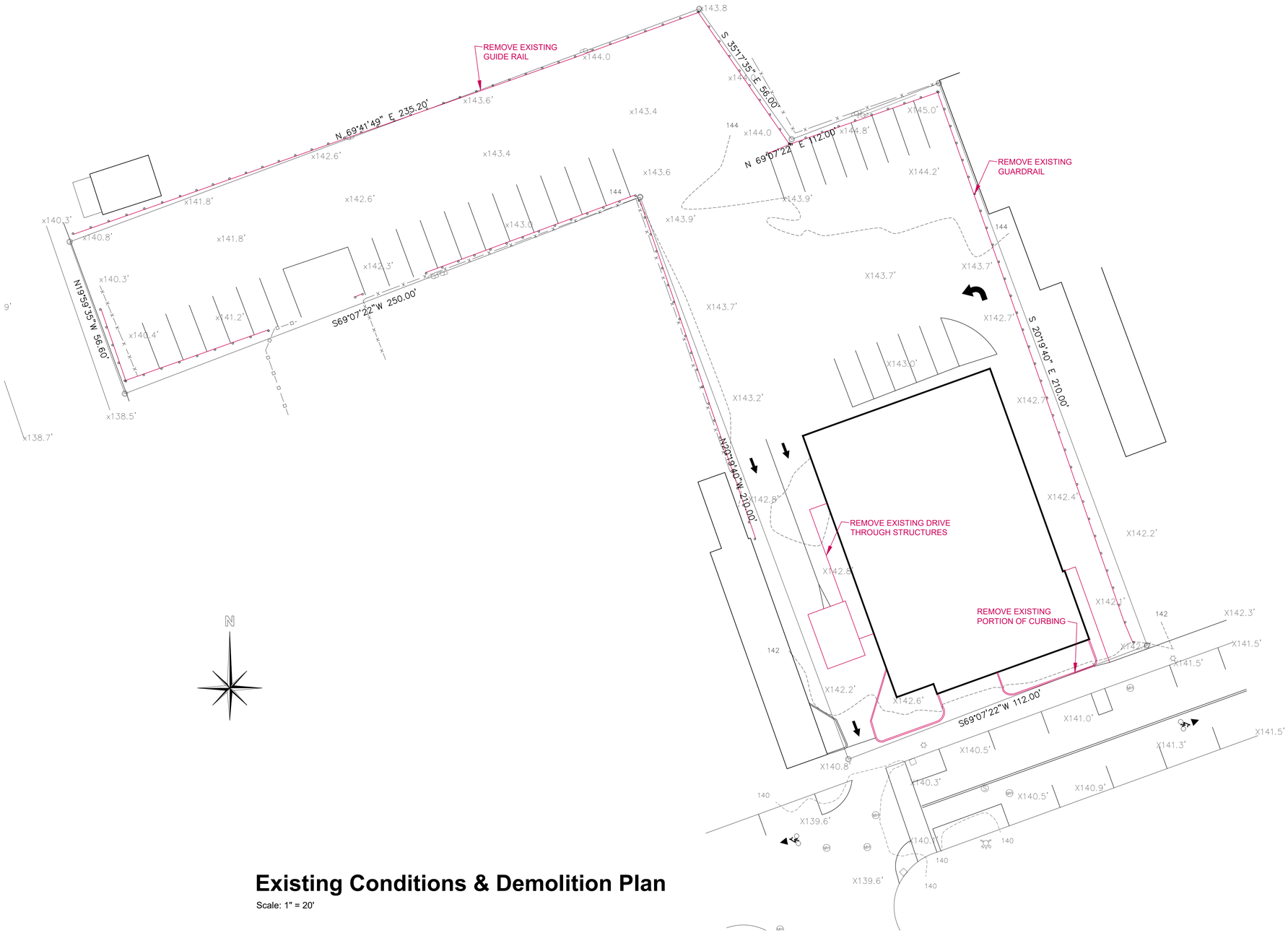
Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

Site / Civil Engineer:
Day & Stokosa Engineering P.C
3 Van Wyck Lane
Wappingers Falls, New York 12590

Landscape Designer:
Landscape Restorations
7 Creek Drive
Beacon, New York 12508

364 Main Street
Beacon, New York
Scale: 1" = 20'
October 4, 2021

REVISIONS:			
NO.	DATE	DESCRIPTION	BY
1	07/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
2	08/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
3	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
4	11/30/21	REVISED PER PLANNING BOARD COMMENTS	AJS
5	12/28/21	REVISED PER PLANNING BOARD COMMENTS	AJS
6	01/25/22	REVISED PER PLANNING BOARD COMMENTS	AJS
7	02/22/22	NO CHANGE	AJS
8	03/29/22	NO CHANGE	AJS



Existing Conditions & Demolition Plan

Scale: 1" = 20'

Site Plan Application

Sheet 2 of 14 - Existing Conditions & Demolition Plan

Owner:
O'Donnell & Son
P.O. Box 526
Fishkill, NY 12524

Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

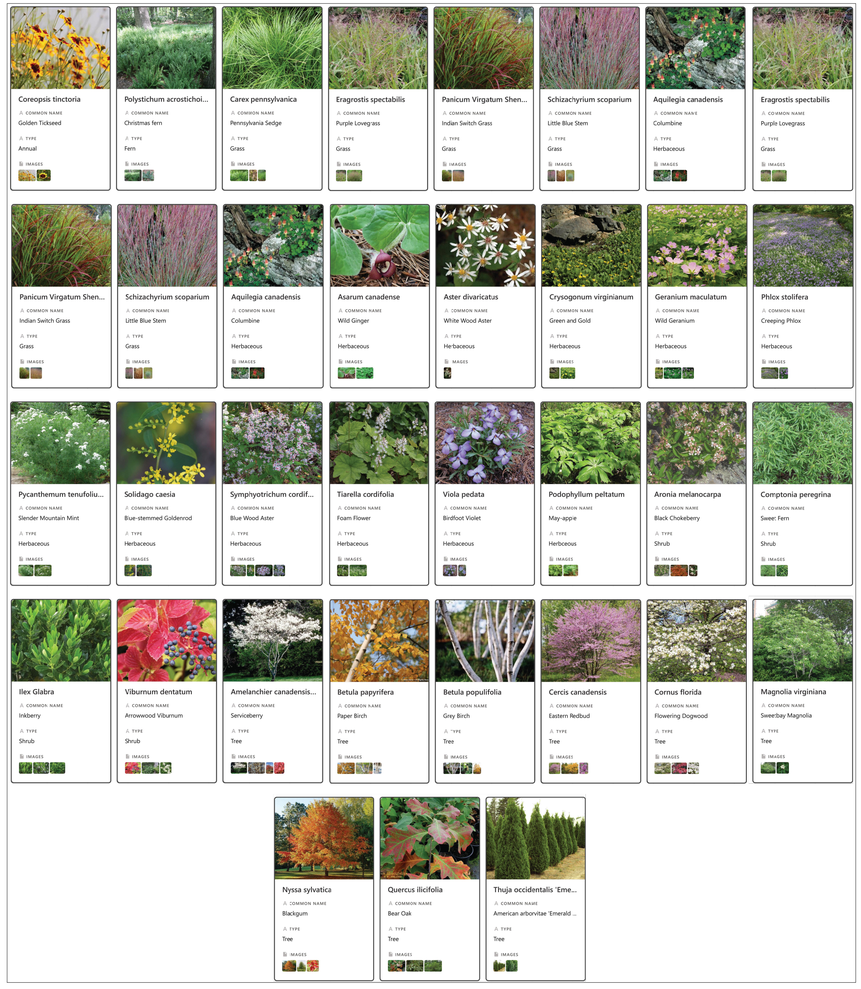
Site / Civil Engineer:
Day & Stokosa Engineering P.C
3 Van Wyck Lane
Wappingers Falls, New York 12590

Landscape Designer:
Landscape Restorations
7 Creek Drive
Beacon, New York 12508

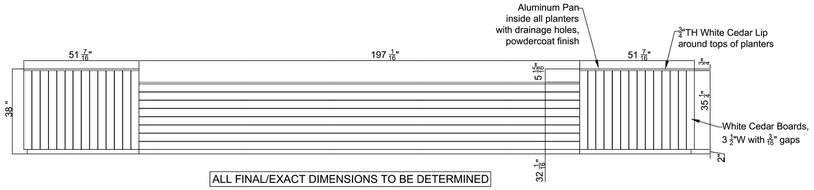
364 Main Street
Beacon, New York
Scale: 1" = 20'
October 4, 2021

REVISIONS:			
NO.	DATE	DESCRIPTION	BY
1	07/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
2	08/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
3	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
4	11/30/21	REVISED PER PLANNING BOARD COMMENTS	AJS
5	12/28/21	REVISED PER PLANNING BOARD COMMENTS	AJS
6	01/25/22	REVISED PER PLANNING BOARD COMMENTS	AJS
7	02/22/22	REVISED PER PLANNING BOARD COMMENTS	AJS
8	03/29/22	REVISED PER PLANNING BOARD COMMENTS	AJS

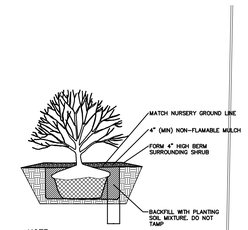
Illustrated Plant List



PLANTER DETAIL - ELEVATION

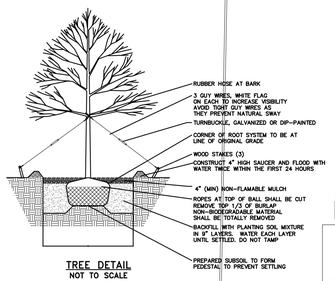


ALL FINAL/EXACT DIMENSIONS TO BE DETERMINED



NOTE
1. WATER PER NURSERY SPECIFICATIONS IMMEDIATELY FOLLOWING PLANTING.
2. DETAIL IS FOR BOTH BALL & BURLAPPED OR CONTAINERED SHRUBS.

SHRUB PLANTING DETAIL
NOT TO SCALE

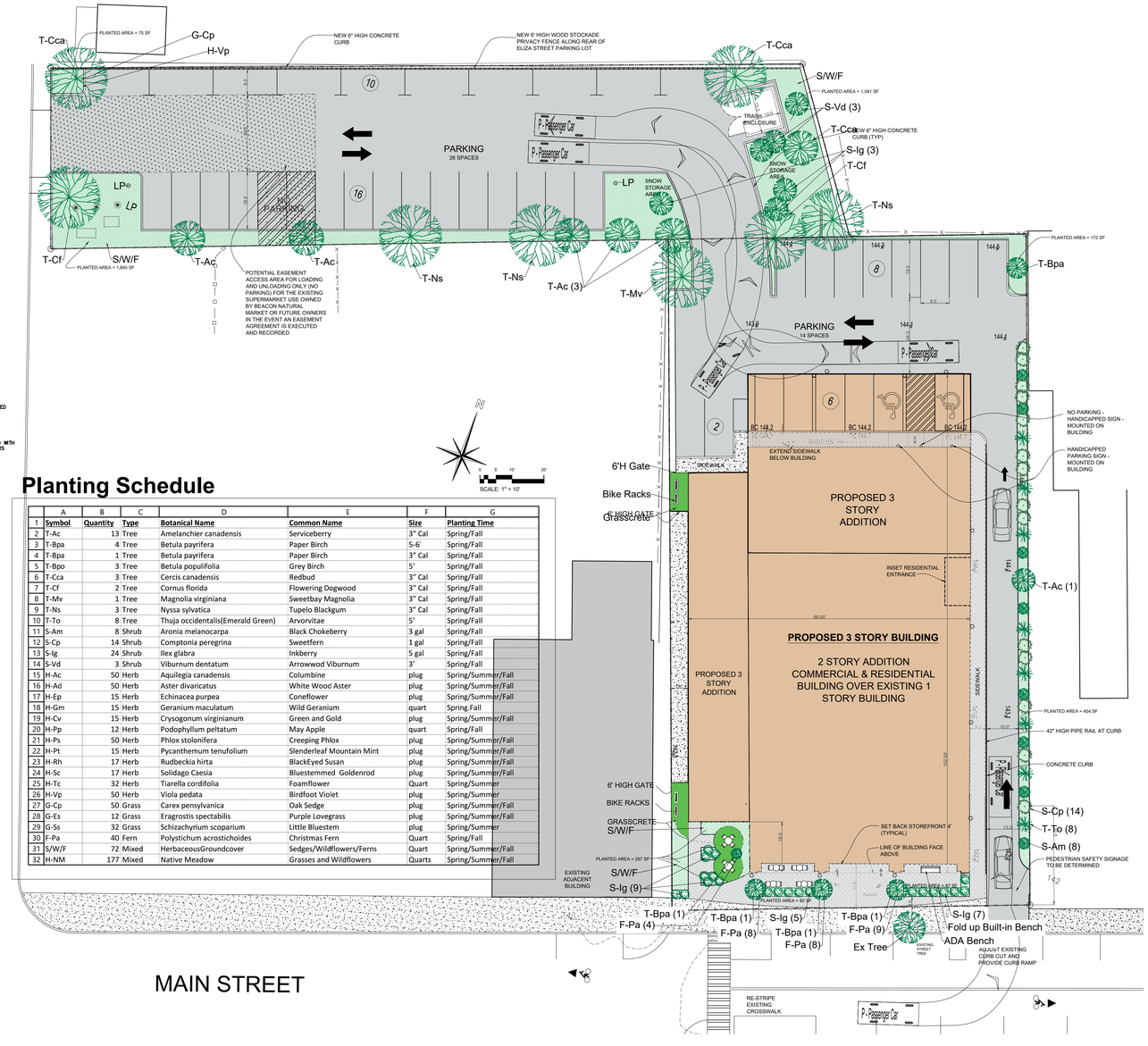


TREE DETAIL
NOT TO SCALE

ELIZA STREET

Planting Schedule

	A	B	C	D	E	F	G
1	**Symbol**	**Quantity**	**Type**	**Botanical Name**	**Common Name**	**Size**	**Planting Time**
2	T-Ac	13	Tree	Amelanchier canadensis	Serviceberry	3" Cal	Spring/Fall
3	T-Bpa	4	Tree	Betula payrifera	Paper Birch	5-6'	Spring/Fall
4	T-Bpa	1	Tree	Betula payrifera	Paper Birch	3" Cal	Spring/Fall
5	T-Bpo	3	Tree	Betula populifolia	Grey Birch	5'	Spring/Fall
6	T-Cca	3	Tree	Cercis canadensis	Redbud	3" Cal	Spring/Fall
7	T-Cf	2	Tree	Cornus florida	Flowering Dogwood	3" Cal	Spring/Fall
8	T-Mv	1	Tree	Magnolia virginiana	Sweetbay Magnolia	3" Cal	Spring/Fall
9	T-Ns	3	Tree	Nyssa sylvatica	Tupelo Blackgum	3" Cal	Spring/Fall
10	T-To	8	Tree	Thuja occidentalis(Emerald Green)	Arvorvitae	5'	Spring/Fall
11	S-Am	8	Shrub	Aronia melanocarpa	Black Chokeberry	3 gal	Spring/Fall
12	S-Cp	14	Shrub	Comptonia peregrina	Sweetfern	1 gal	Spring/Fall
13	S-Ig	24	Shrub	Ilex glabra	Inkberry	5 gal	Spring/Fall
14	S-Vd	3	Shrub	Viburnum dentatum	Arrowwod Viburnum	3'	Spring/Fall
15	H-Ac	50	Herb	Aquilegia canadensis	Columbine	plug	Spring/Summer/Fall
16	H-Ad	50	Herb	Aster divaricatus	White Wood Aster	plug	Spring/Summer/Fall
17	H-Ep	15	Herb	Echinacea purpea	Coneflower	plug	Spring/Summer/Fall
18	H-Gm	15	Herb	Geranium maculatum	Wild Geranium	quart	Spring Fall
19	H-Cv	15	Herb	Crysogonum virginianum	Green and Gold	plug	Spring/Summer/Fall
20	H-Pp	12	Herb	Podophyllum peltatum	May Apple	quart	Spring/Fall
21	H-Ps	50	Herb	Phlox stolonifera	Creeping Phlox	plug	Spring/Summer/Fall
22	H-Pt	15	Herb	Pycanthemum tenufolium	Slenderleaf Mountain Mint	plug	Spring/Summer/Fall
23	H-Rh	17	Herb	Rudbeckia hirta	BlackEyed Susan	plug	Spring/Summer/Fall
24	H-Sc	17	Herb	Solidago Caesia	Bluestemmed Goldenrod	plug	Spring/Summer/Fall
25	H-Tc	32	Herb	Tiarella cordifolia	Foamflower	Quart	Spring/Summer
26	H-Vp	50	Herb	Viola pedata	Birdfoot Violet	plug	Spring/Summer
27	G-Cp	50	Grass	Carex pensylvanica	Oak Sedge	plug	Spring/Summer/Fall
28	G-Es	12	Grass	Eragrostis spectabilis	Purple Lovegrass	plug	Spring/Summer/Fall
29	G-Ss	32	Grass	Schizachyrium scoparium	Little Bluestem	plug	Spring/Summer
30	F-Pa	40	Fern	Polystichum acrostichoides	Christmas Fern	Quart	Spring/Fall
31	S/W/F	72	Mixed	HerbaceousGroundcover	Sedges/Wildflowers/Ferns	Quart	Spring/Summer/Fall
32	H-NM	177	Mixed	Native Meadow	Grasses and Wildflowers	Quarts	Spring/Summer/Fall



Landscape Plan

Scale: 1" = 20'

Site Plan Application

Sheet 3 of 14 - Landscape Plan

Planting Notes

1. CONTRACTORS SHALL ENTER AND EXIT SITE THROUGH PRE-APPROVED ROUTES ONLY.
2. NO NON-NATIVE PLANT SPECIES SHALL BE INTRODUCED ONTO THE SITE. ALL SPECIES SHALL BE INDIGENOUS TO THE NORTHEAST REGION OF NORTH AMERICA.
3. IF A STRAIGHT SPECIE IS SPECIFIED, NO CULTIVARS WILL BE ACCEPTED WITHOUT PRIOR APPROVAL OF DESIGNER.
4. NO PLANTS WILL BE ACCEPTED THAT DISPLAY MECHANICAL INJURY, DISEASE OR SPECIE IRREGULARITIES.
5. SOIL SHALL BE PREPPED BY REMOVING ALL CONSTRUCTION DEBRIS, LOOSE ROOTS AND STONES LARGER THAN 3".
6. ALL PLANTS MUST BE LABELED WHEN DELIVERED TO SITE.
7. AREAS TO BE PLANTED SHALL BE MARKED AND LABELED BY DESIGNER.
8. ALL PLANT LOCATIONS AND ORIENTATIONS IN THE FIELD REQUIRE APPROVAL FROM DESIGNER AND OWNER PRIOR TO INSTALLATION.
9. TEST TREE-PIT FOR DRAINAGE BEFORE PLANTING. DO NOT PLANT TREE IN PIT IF WATER IS STILL EVIDENT AFTER ONE HOUR. CONTACT SITE ENGINEER OR LANDSCAPE DESIGNER IF THIS CONDITION IS ENCOUNTERED.
10. ALL TREE-PLANTING TO BE COORDINATED WITH AS-BUILT UTILITIES. TREES TO BE LOCATED MINIMUM OF 5' FROM ACTIVE LINES.
11. ALL TREES SHALL BE BALL AND BURLAP UNLESS OTHERWISE SPECIFIED ON PLANT LIST.
12. EACH NEW TREE HOLE TREE SHALL BE TWICE THE WIDTH OF THE ROOTBALL.
13. BURLAP, WIRE, CORDS, TIES AND ANY WRAPPING MATERIALS MUST BE REMOVED FROM ALL ROOTBALLS BEFORE BACKFILLING.
14. PLANT ALL PLANTS SO TOP OF ROOTBALL IS SLIGHTLY ABOVE SURROUNDING SOIL(SMALL AND LARGE PLANTS)
15. NO PLANTING SHALL BE DONE IN MUDDY, RAINY OR FROZEN CONDITIONS.
16. ALL PLANTS CALLING FOR 'OVERFLOWING" IN THE NOTES SHALL NOT BE ACCEPTED BY DESIGNER IF PLANTS ARE THIN.
17. IF PLANTING IS DELAYED FOR MORE THAN 3 HOURS AFTER DELIVERY, SET PLANTS IN SHADE. PROTECT FROM WEATHER AND MECHANICAL DAMAGE. KEEP ROOTS MOIST AND COVER WITH MULCH.
18. CONTRACTORS SHALL LEAVE SITE NEAT AND ORDERLY DURING COURSE OF PROJECT, AND STORE MATERIALS AND EQUIPMENT IN OWNER-APPROVED LOCATIONS AWAY FROM ALL TREES AND PLANTS. STORE ALL UNPLANTED PLANT MATERIAL AWAY FROM DAMAGING SUN.
19. IF SITE CONDITIONS CONFLICT WITH INTENDED DESIGN, CONTRACTOR SHALL ALERT OWNER AND DESIGNER.
20. NO SUBSTITUTIONS ARE TO BE MADE WITHOUT THE WRITTEN OR VERBAL CONSENT OF LANDSCAPE DESIGNER AND OWNER
21. CREATE A SIZE-SPECIFIC WATER-WELL AROUND EACH PLANT, 3' FROM CENTER OF TREE, AND MULCH FROM THE OUTSIDE. DO NOT MULCH CROWN.
22. WATER THOROUGHLY AFTER PLANTING EACH PLANT. WATER SCHEDULE TO BE DETERMINED.
23. SPRAY FOR DEER IF PLANTED IN FALL. SOMETIMES BUCKS MARK THEIR TERRITORY WITH THEIR ANTLERS.
24. KEEP PLANTING AREAS WEED-FREE UNTIL PLANT IS ESTABLISHED.
25. ECO LAWN SEEDING SHALL BE IMPLEMENTED BY CONTRACTOR FAMILIAR WITH THIS SPECIE MIX AND WITH THE PROCESS, AND APPROVED BY DESIGNER. THIS IS NOT THE SAME AS CASTING CONTRACTOR GRASS SEED.
26. PERVIOUS/PERMEABLE PAVERS AND ASSOCIATED GRASS SEEDING SHALL BE INSTALLED BY CONTRACTOR WITH EXPERIENCE IN THIS PROCESS. THIS PROCESS REQUIRES ESTABLISHMENT MAINTENANCE, IN ORDER TO SUCCEED.
27. BERMED AREAS SHALL BE BUILT WITH DESIGNER DIRECTING CONSTRUCTION
28. STREET TREE AND SURROUNDING TREE-PIT SHALL BE INSTALLED BY CONTRACTOR EXPERIENCED WITH THESE MATERIALS AND APPROVED BY DESIGNER
29. ALL PLANTS REQUIRE REGULAR WATERING FOR THE FIRST TWO SEASONS IN ORDER TO SUCCEED

Owner:
O'Donnell Construction Corp.
P.O. Box 526
Fishkill, NY 12524

Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

Site / Civil Engineer:
Day & Stokosa Engineering P.C
3 Van Wyck Lane
Wappingers Falls, New York 12590

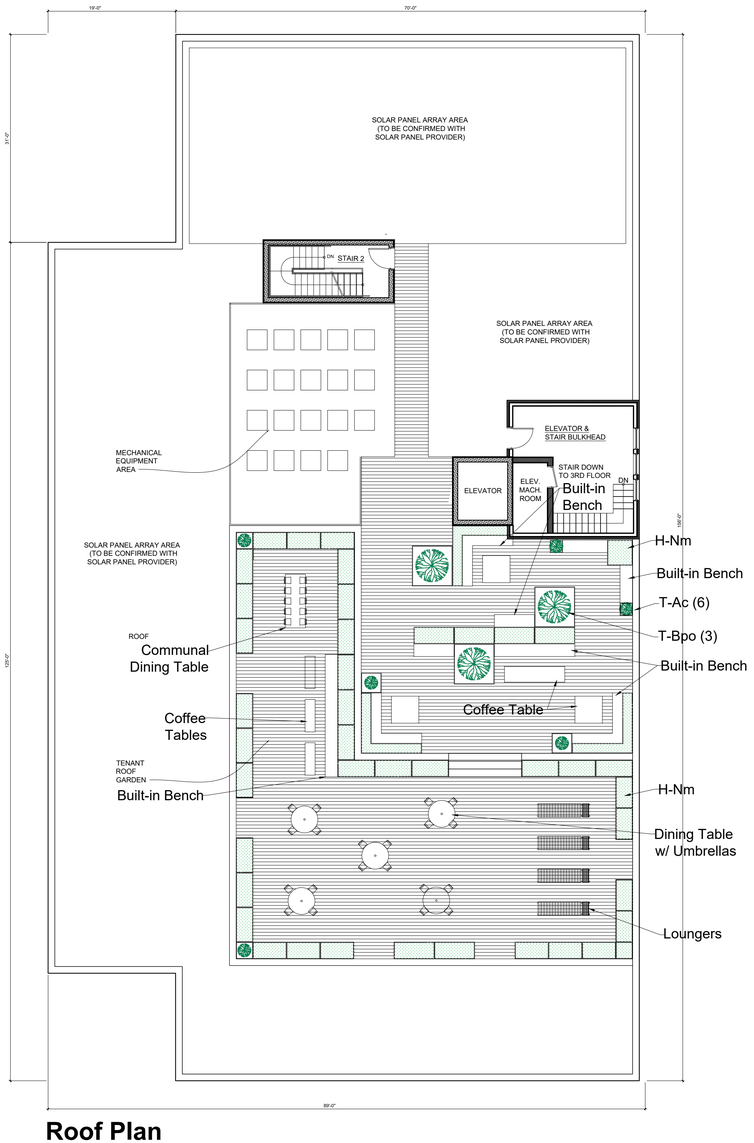
Landscape Designer:
Landscape Restorations
7 Creek Drive
Beacon, New York 12508

364 Main Street
Beacon, New York
Scale: 1/8" = 1'-0"
May 25, 2021

Area Summary Table

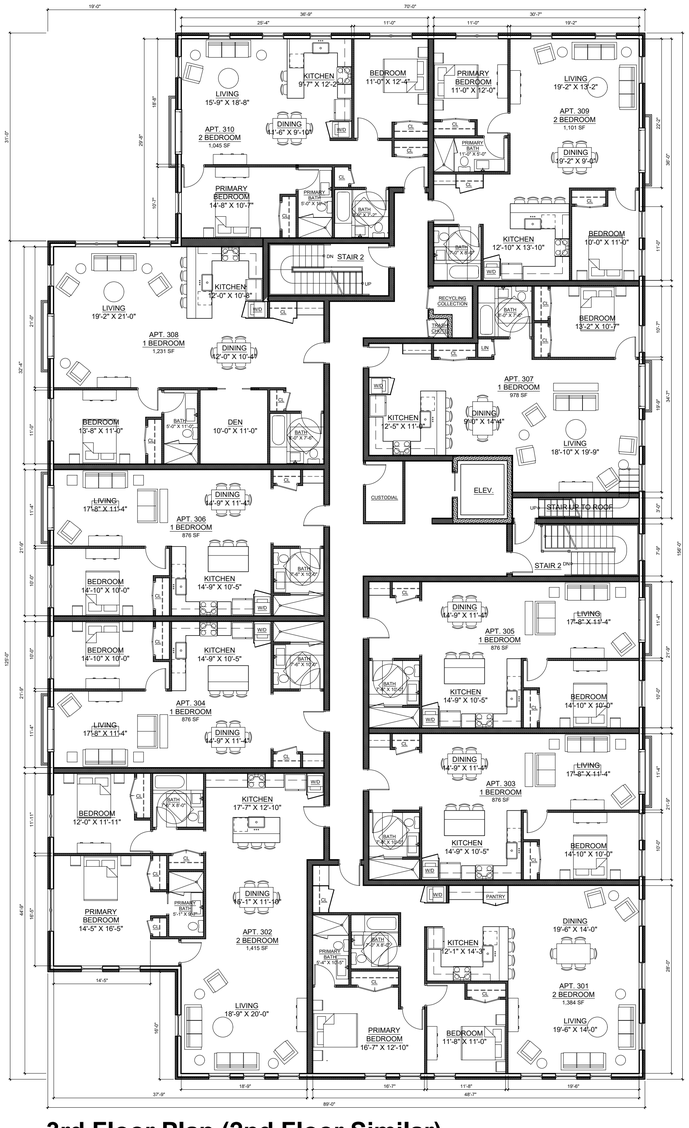
Floor	Space	Area (Net Square Feet)
1	Commercial 1	5,711
	Commercial 2	1,489
	Commercial 3	1,525
	All Commercial	**8,892**
	Note that all commercial space includes demising walls. It is not the total of the individual commercial spaces	
	1st Floor Residential	1,607
2	Residential	12,560
3	Residential	12,560
		35,619

REVISIONS:			
NO.	DATE	DESCRIPTION	BY
1	07/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
2	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
3	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
4	11/30/21	REVISED PER PLANNING BOARD COMMENTS	AJS
5	12/28/21	REVISED PER PLANNING BOARD COMMENTS	AJS
6	01/25/22	REVISED PER PLANNING BOARD COMMENTS	AJS
7	02/22/22	REVISED PER PLANNING BOARD COMMENTS	AJS
8	03/29/22	REVISED PER PLANNING BOARD COMMENTS	AJS



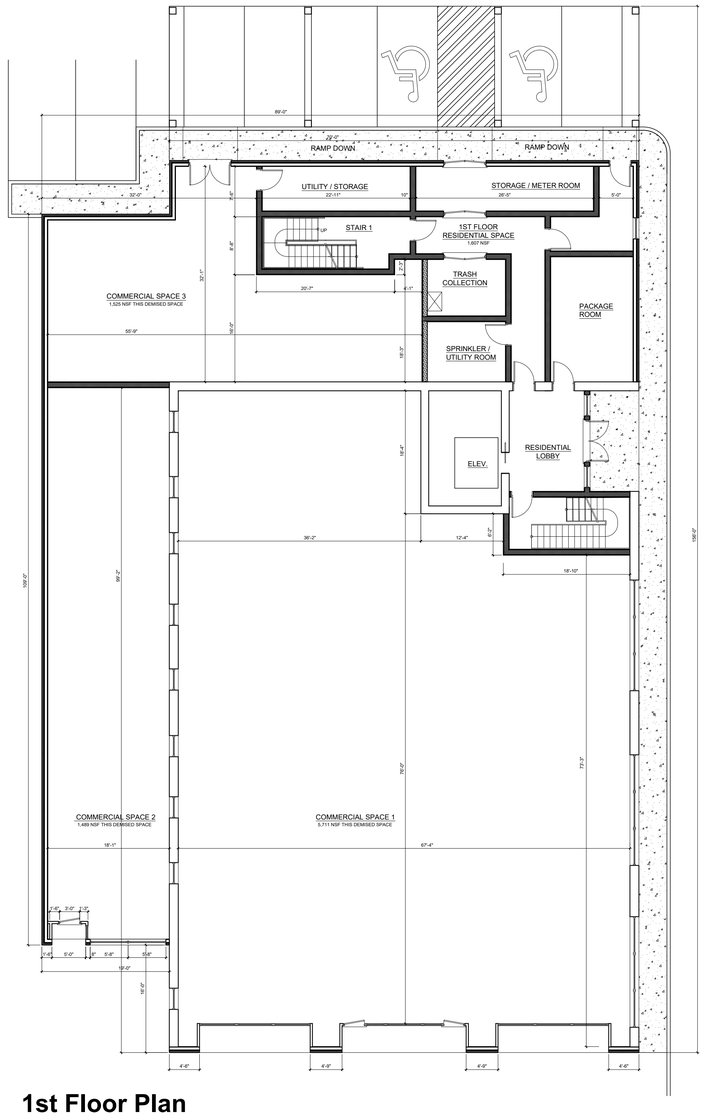
Roof Plan

Scale: $\frac{3}{32}$" = 1'-0"



3rd Floor Plan (2nd Floor Similar)

Scale: $\frac{3}{32}$" = 1'-0"



1st Floor Plan

Scale: $\frac{3}{32}$" = 1'-0"

Site Plan Application

Sheet 4 of 14 - Building Plans

Owner:
O'Donnell Construction Corp.
P.O. Box 526
Fishkill, NY 12524

Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

Site / Civil Engineer:
Day & Stokosa Engineering P.C
3 Van Wyck Lane
Wappingers Falls, New York 12590

Landscape Designer:
Landscape Restorations
7 Creek Drive
Beacon, New York 12508

364 Main Street

Beacon, New York
Scale: $\frac{3}{32}$" = 1'-0"
May 25, 2021

REVISIONS:			
NO.	DATE	DESCRIPTION	BY
1	07/27/21	REVISED PER PLANNING BOARD COMMENTS	AJS
2	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
3	10/26/21	REVISED PER PLANNING BOARD COMMENTS	AJS
4	11/30/21	REVISED PER PLANNING BOARD COMMENTS	AJS
5	12/28/21	REVISED PER PLANNING BOARD COMMENTS	AJS
6	01/25/22	REVISED PER PLANNING BOARD COMMENTS	AJS
7	02/22/22	REVISED PER PLANNING BOARD COMMENTS	AJS
8	03/29/22	REVISED PER PLANNING BOARD COMMENTS	AJS



Elevation: South

Scale: $\frac{1}{8}$" = 1'-0"



View: From Main Street

Not to Scale



View: From Main Street

Not to Scale



View: From Main Street

Not to Scale



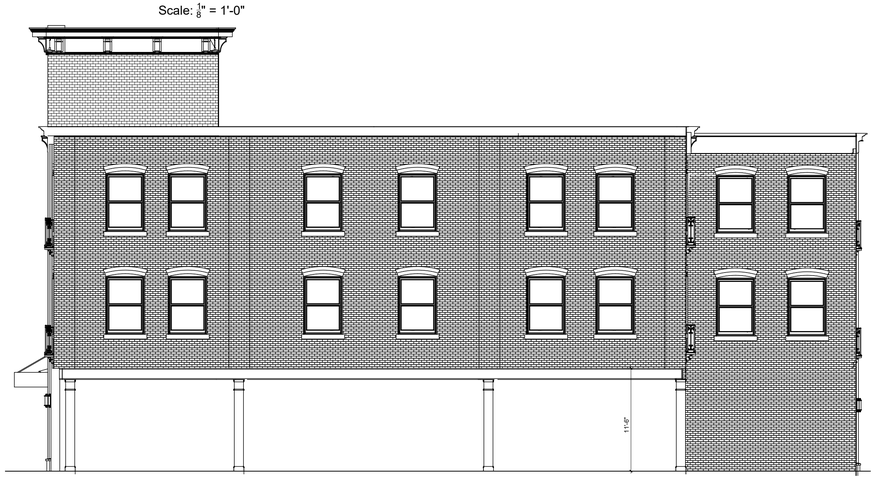
Elevation: East

Scale: $\frac{1}{8}$" = 1'-0"



View: Main Street

Not to Scale



Elevation: North

Scale: $\frac{1}{8}$" = 1'-0"



Elevation: West

Scale: $\frac{1}{8}$" = 1'-0"

Site Plan Application

Sheet 5 of 14 - Building Elevations

Owner:
O'Donnell Construction Corp.
P.O. Box 526
Fishkill, NY 12524

Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

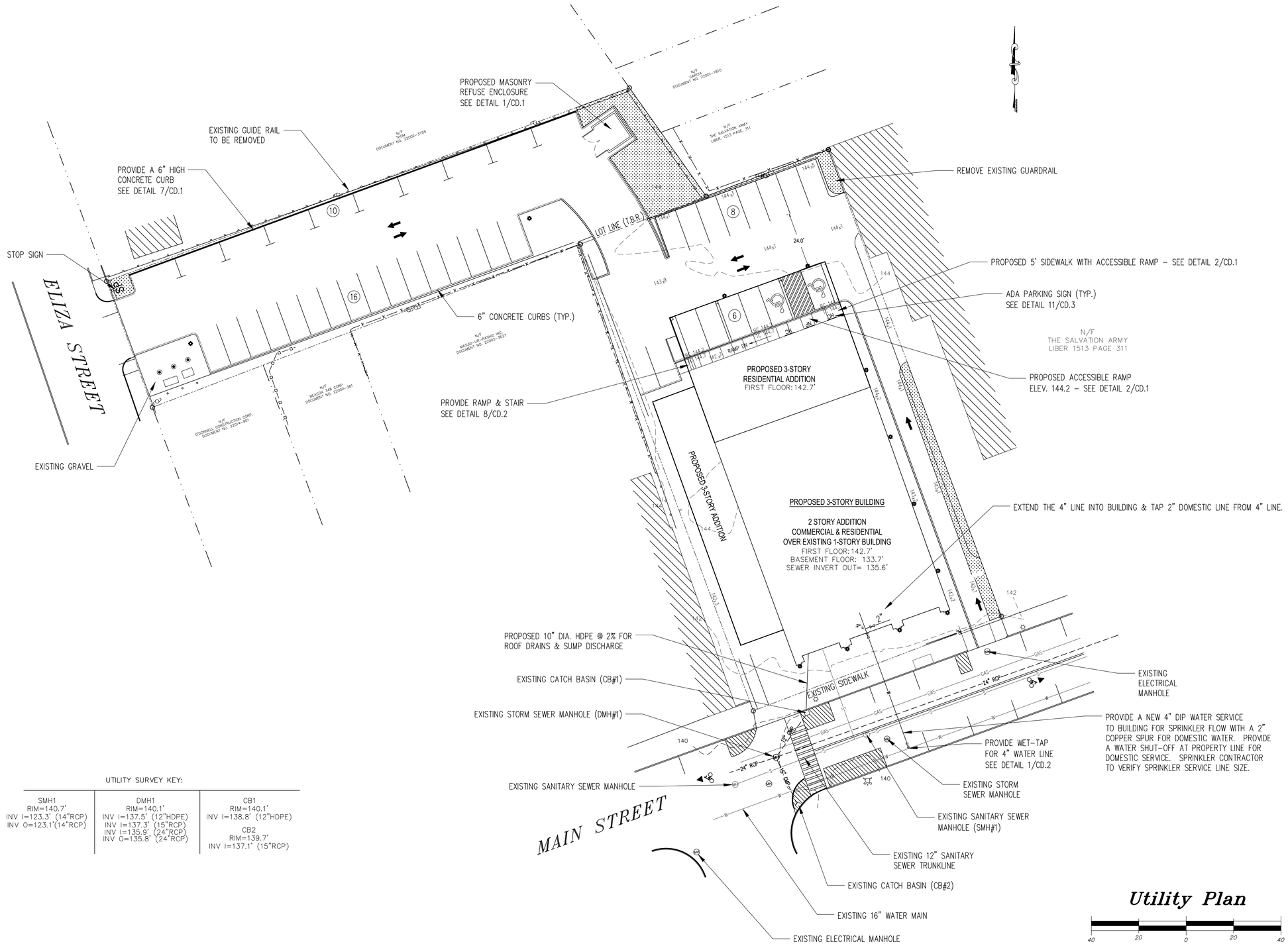
Site / Civil Engineer:
Day & Stokosa Engineering P.C
3 Van Wyck Lane
Wappingers Falls, New York 12590

Landscape Designer:
Landscape Restorations
7 Creek Drive
Beacon, New York 12508

364 Main Street
Beacon, New York
Scale: $\frac{1}{8}$" = 1'-0"
May 25, 2021

PARKING AND ACCESS EASEMENTS:

THERE SHALL BE A BLANKET ACCESS AND PARKING EASEMENT OVER BOTH LOTS ALLOWING BOTH ACCESS AND PARKING FOR EACH LOT OVER THE OTHER LOT.



UTILITY SURVEY KEY:

SMH1 RIM=140.7' INV I=123.3' (14"RCP) INV O=123.1'(14"RCP)	DMH1 RIM=140.1' INV I=137.5' (12"HDPE) INV I=137.3' (15"RCP) INV I=135.9' (24"RCP) INV O=135.8' (24"RCP)	CB1 RIM=140.1' INV I=138.8' (12"HDPE) CB2 RIM=139.7' INV I=137.1' (15"RCP)

Utility Plan

40 20 0 20 40

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
Revisions 07-20-21	
Project No. 2020.475	License No. 069646

STATE OF NEW YORK · MARK A. DAY · LICENSED PROFESSIONAL ENGINEER · No. 069646

DAY | STOKOSA
ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

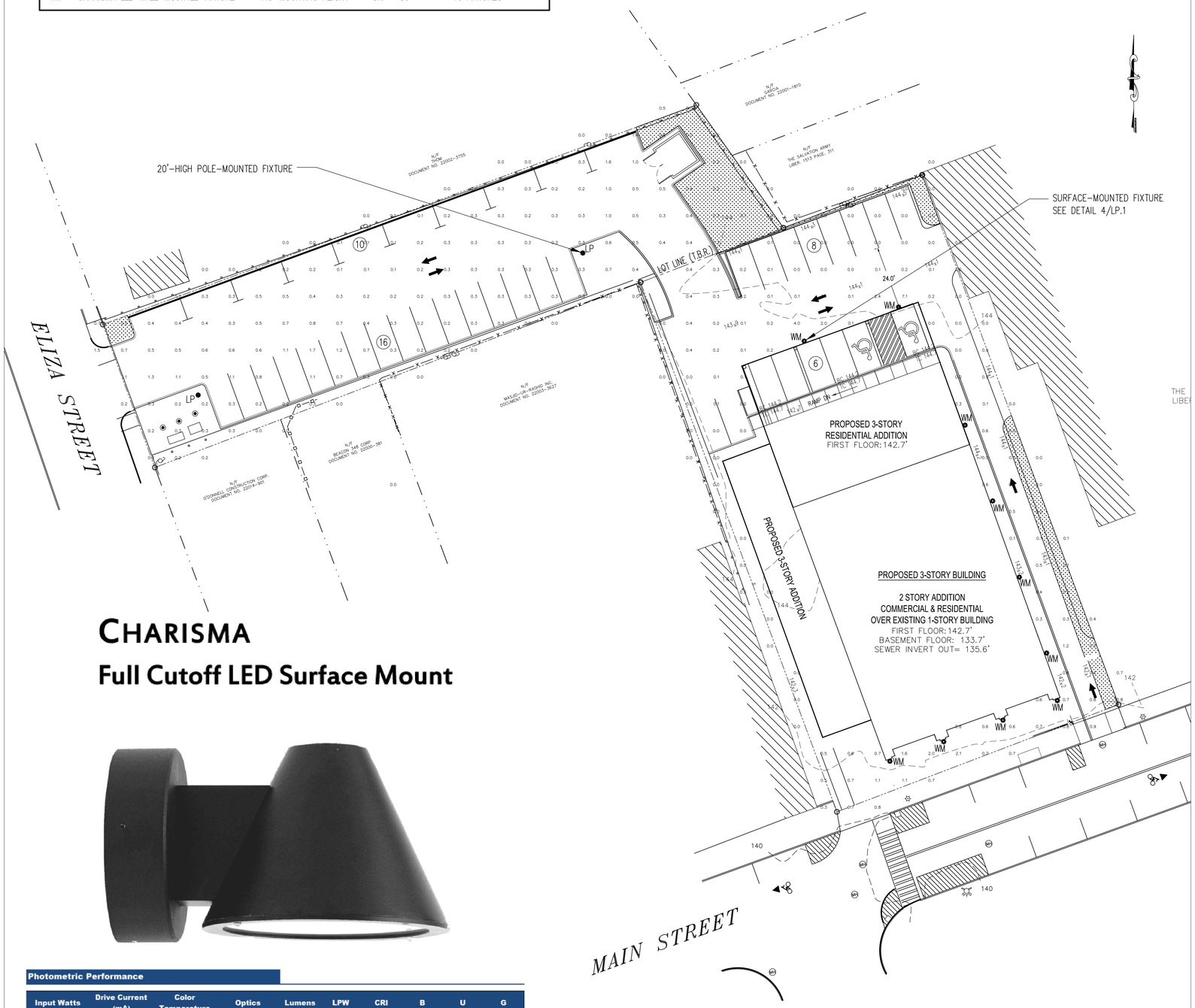
PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Utility Plan

SCALE	DRAWN BY	DRAWING No.
1" = 20'	MAD	UP.1
DATE 04-02-21	CHECKED BY MAD	6 of 14

LIGHTING FIXTURE SCHEDULE

LP	ANP LED POLE-MOUNTED FIXTURE	20' POLE	CRI > 90	2 FIXTURES
WM	CHARISMA LED WALL-MOUNTED FIXTURE	7.5' MOUNTING HEIGHT	CRI = 80	10 FIXTURES



CHARISMA

Full Cutoff LED Surface Mount

Photometric Performance

Input Watts	Drive Current (mA)	Color Temperature	Optics	Lumens	LPW	CRI	B	U	G
20.0w	1050mA	3000K	Lens	1,459	76	80	2	0	0
		[redacted]		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

4 20-WATT WALL-MOUNTED LIGHT FIXTURE DETAIL
NOT TO SCALE

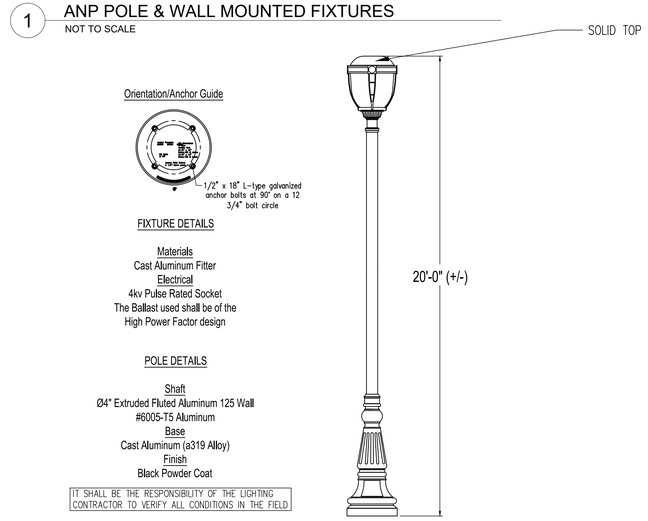
LIGHTING PLAN

40 20 0 20 40



ANP POLE MOUNTED LED FIXTURE
LA792-1-P046LD4-D-T3-35K-PC-PA5151-41
WM5161 WALL MOUNT BRACKET
COLOR TEMPERATURE - 3500K
FULL CUTOFF/DOWNLIGHT
POLE COLOR - BLACK

1 ANP POLE & WALL MOUNTED FIXTURES
NOT TO SCALE



FIXTURE DETAILS

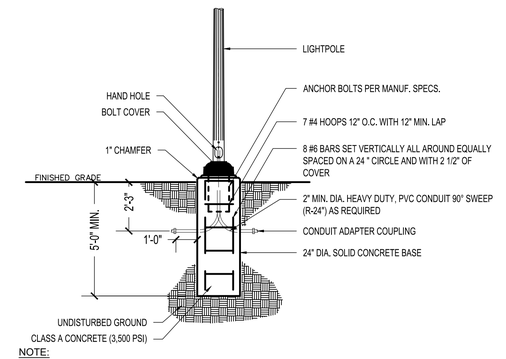
Materials
Cast Aluminum Fitter
Electrical
4kv Pulse Rated Socket
The Ballast used shall be of the High Power Factor design

POLE DETAILS

Shaft
Ø4" Extruded Fluted Aluminum 125 Wall #6005-T5 Aluminum
Base
Cast Aluminum (a319 Alloy)
Finish
Black Powder Coat

IT SHALL BE THE RESPONSIBILITY OF THE LIGHTING CONTRACTOR TO VERIFY ALL CONDITIONS IN THE FIELD

2 LIGHT POLE DETAIL
NOT TO SCALE



NOTE:

1. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WITH AIR-ENTRAINMENT OF 5-7%
2. CHAMFER EXPOSED EDGES OF ALL FOUNDATIONS.
3. COLOR OF FIXTURE SHALL MATCH COLOR OF POLE

IT SHALL BE THE RESPONSIBILITY OF THE LIGHTING CONTRACTOR TO VERIFY ALL CONDITIONS IN THE FIELD

3 LIGHTPOLE DETAIL
NOT TO SCALE

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

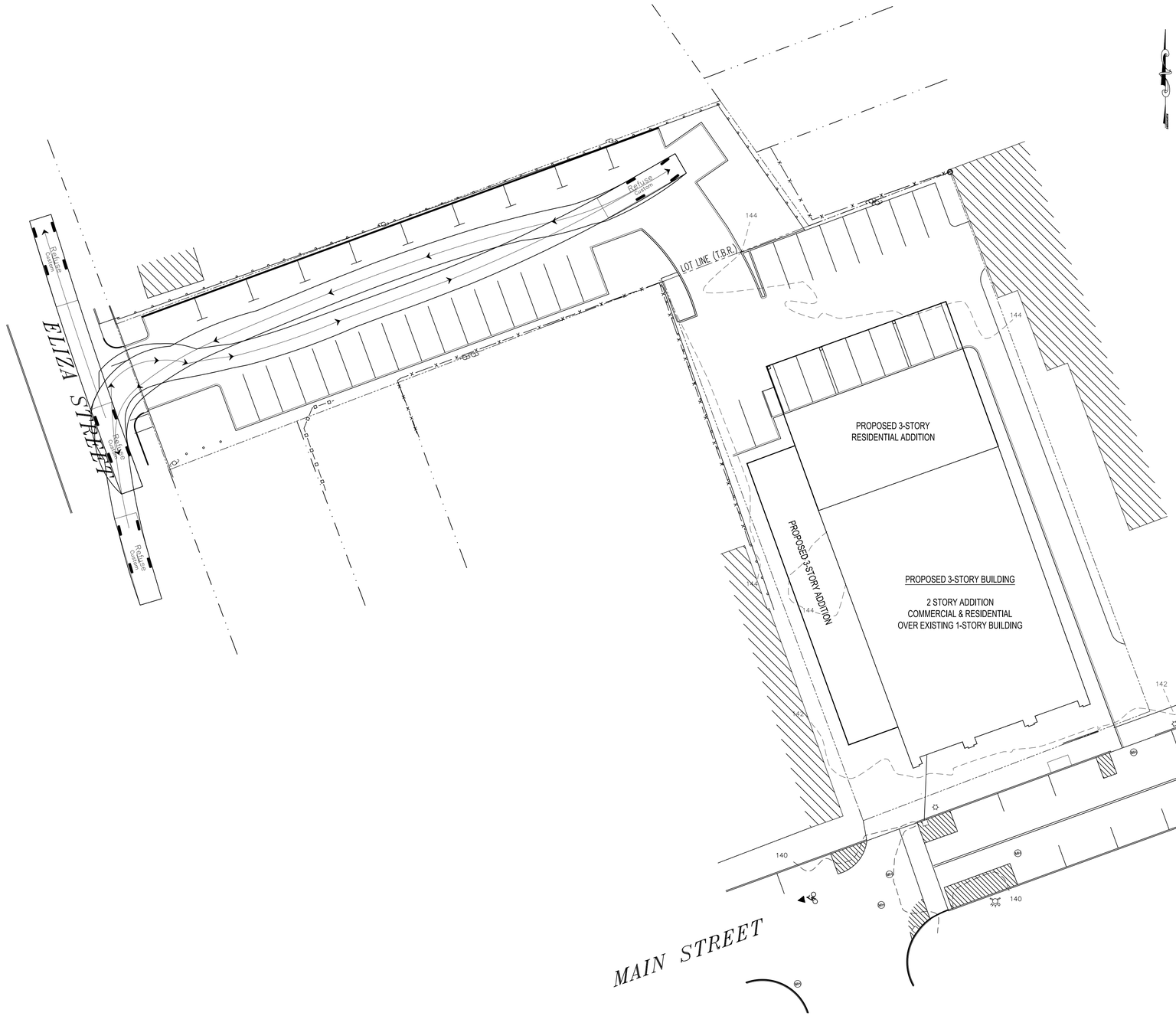
Revisions	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA
ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Lighting Plan

SCALE	DRAWN BY	DRAWING No.
1" = 20'	MAD	LP.1
DATE 04-02-21	CHECKED BY MAD	7 of 14



PARKING AND ACCESS EASEMENTS:

THERE SHALL BE A BLANKET ACCESS AND PARKING EASEMENT OVER BOTH LOTS ALLOWING BOTH ACCESS AND PARKING FOR EACH LOT OVER THE OTHER LOT.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

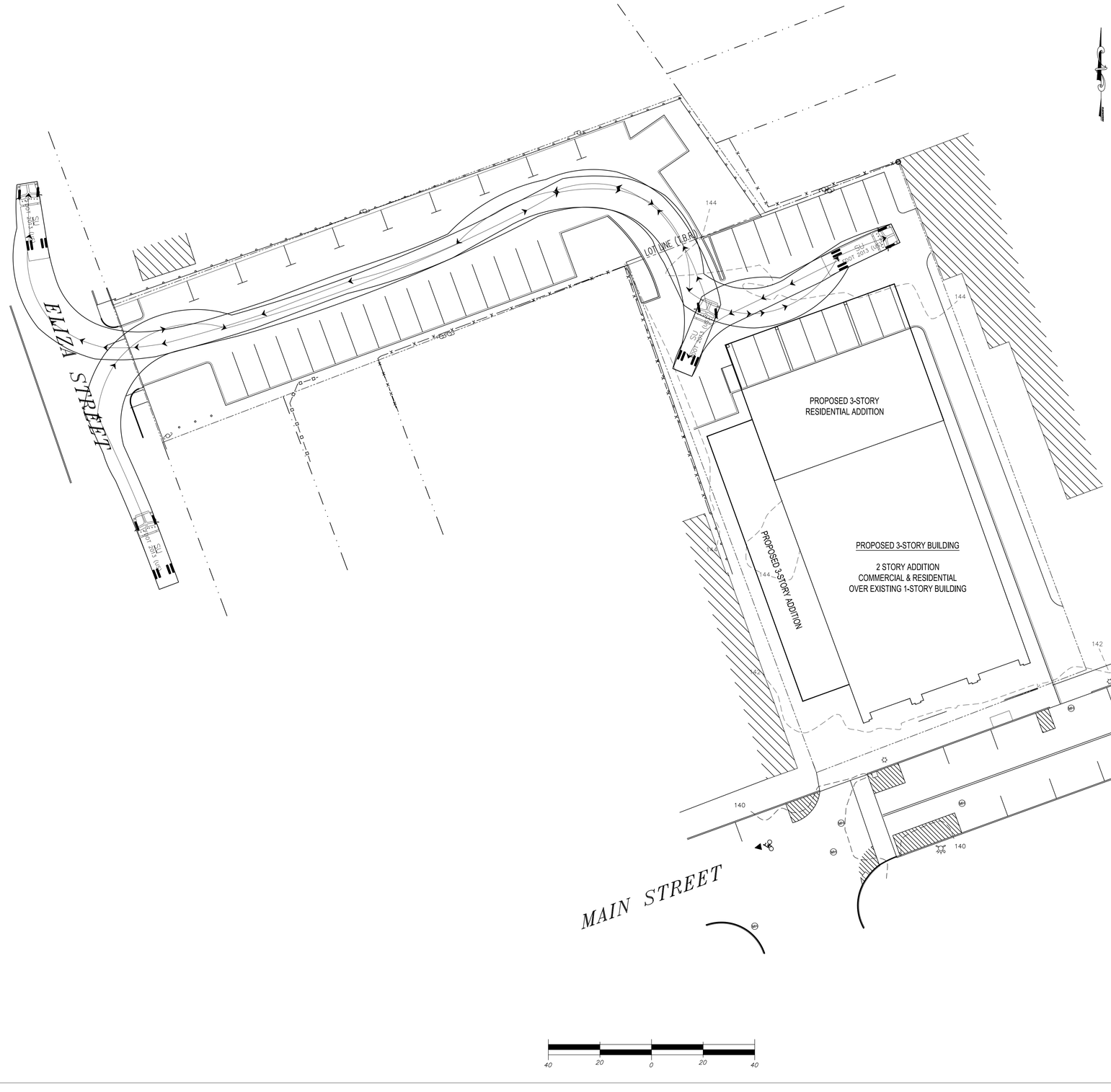
	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
Revisions 07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA
ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Refuse Truck Movement Plan

SCALE	DRAWN BY	DRAWING No.
1" = 20'	MAD	VM.1
DATE	CHECKED BY	8 of 14
04-02-21	MAD	



PARKING AND ACCESS EASEMENTS:

THERE SHALL BE A BLANKET ACCESS AND PARKING EASEMENT OVER BOTH LOTS ALLOWING BOTH ACCESS AND PARKING FOR EACH LOT OVER THE OTHER LOT.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

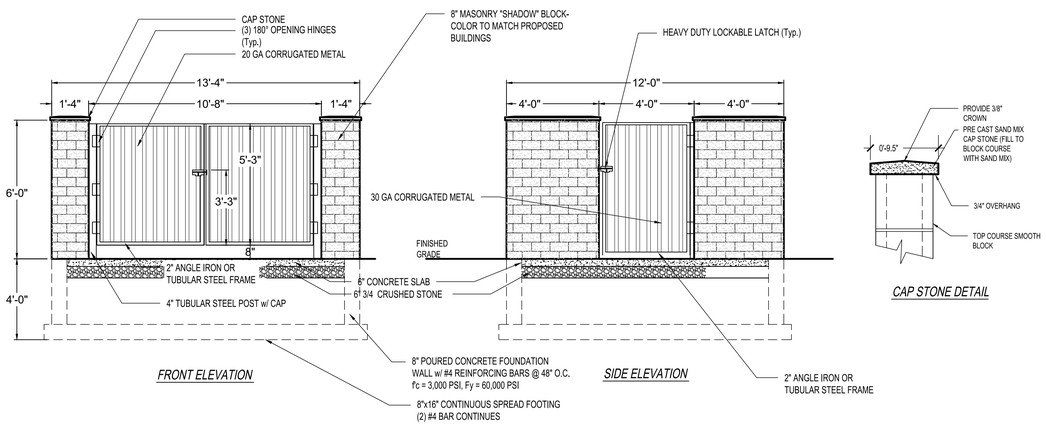
	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
Revisions 07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA
ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

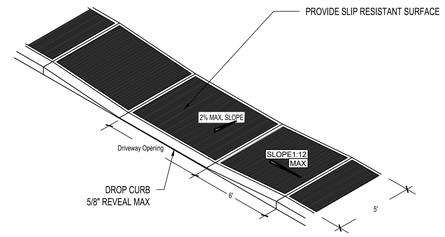
PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
30' Truck Movement Plan

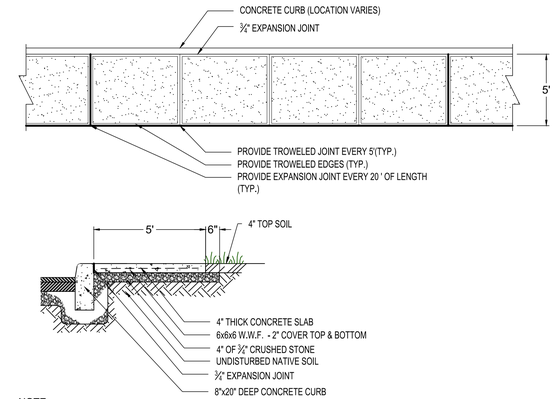
SCALE	DRAWN BY	DRAWING No.
1" = 20'	MAD	VM.2
DATE	CHECKED BY	9 of 14
04-02-21	MAD	



1 REFUSE ENCLOSURE DETAIL
NOT TO SCALE

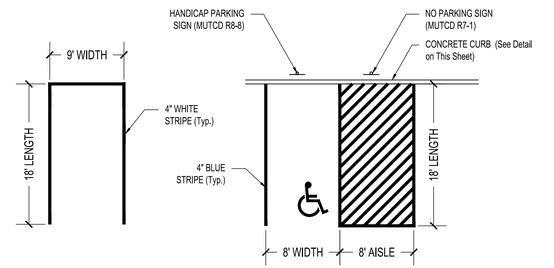


2 ADA RAMP & SIDEWALK DETAIL
NOT TO SCALE

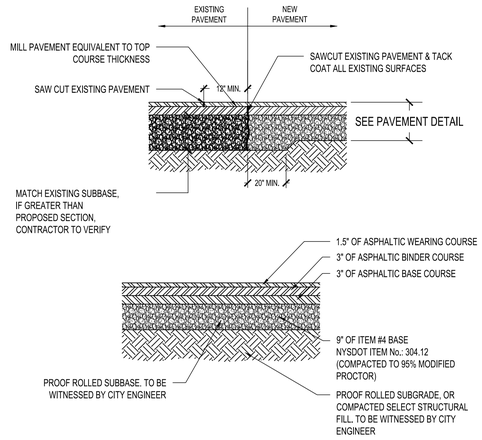


NOTE:
1. ALL CONCRETE SHALL HAVE A 28 COMPRESSIVE STRENGTH OF 4,000 PSI
2. ALL EXPOSED SURFACES SHALL HAVE A BROOM TEXTURED FINISH
3. ALL SIDEWALK SHALL BE 6" THICK AT DRIVEWAY CROSSINGS
4. EXPANSION JOINTS SHALL BE LOCATED AS MAXIMUM OF 20'-0" ON CENTER, OR AS INDICATED ON PLANS.

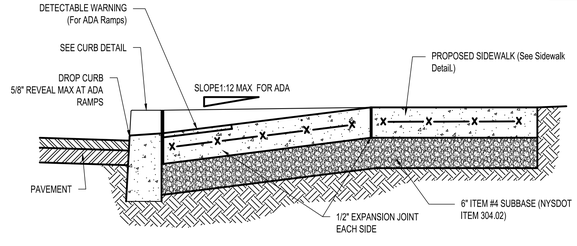
3 SIDEWALK & CURB DETAILS
NOT TO SCALE



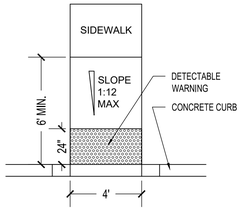
4 PARKING STALL DETAIL
NOT TO SCALE



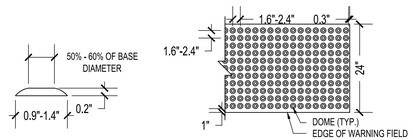
5 PARKING LOT PAVEMENT SECTION
NOT TO SCALE

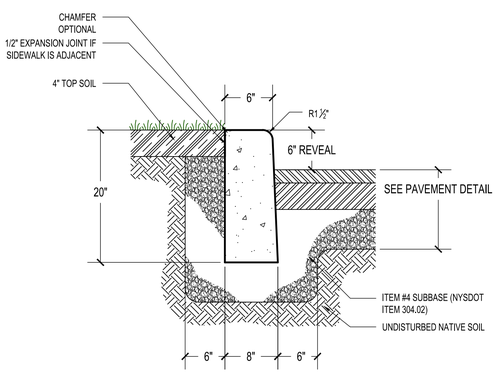


6 ADA RAMP DETAIL
NOT TO SCALE



NOTES:
1. THE SIZE OF THE DETECTABLE WARNING FIELD SHALL BE 24" IN THE DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE, EXCLUSIVE OF SIDE FLARES.
2. THE ROWS OF DOMES SHALL BE ALIGNED TO BE PERPENDICULAR OR RADIAL TO THE GRADE BREAK BETWEEN THE RAMP LANDING OR CURB RAMP AND THE STREET.
3. WHERE DOMES ARE ARRAYED RADIALLY THEY MAY DIFFER IN DOME DIAMETER AND CENTER-TO-CENTER SPACING WITHIN THE RANGES SPECIFIED ON THIS SHEET.
4. DETECTABLE WARNING SHALL BE LOCATED SO THAT THE EDGE OR CORNER OF THE WARNING FIELD NEAREST TO THE ROADWAY IS 5" TO 9" FROM THE CURB TO THE ROADWAY EDGE.





NOTE:
1. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI
2. EXPANSION JOINTS OF 1/2" CELLULOSE OR SIMILAR MATERIAL SHALL NE INSTALLED WHERE REQUIRED (AT CURB BOXES, CATCH BASINS, BRIDGES, ETC.). CONSTRUCTION (CONTROL) JOINTS SHALL BE INSTALLED AT 20' INTERVALS

7 CAST-IN-PLACE CONCRETE CURB DETAIL
NOT TO SCALE

SIGN SCHEDULE

SYMBOL	MUTCD NUMBER	PANEL	SIZE (WxH)	QUANTITY
HC	NY R7-8	RESERVED PARKING	12 x 18	8
		PERMIT REQUIRED TOWNWIDE ZONE	12 x 6	8
NP	R7-1	NO PARKING ANY TIME	12 x 18	3
SP	R1-1	STOP	36x36	3

SYMBOL	MUTCD NUMBER	PANEL	SIZE (WxH)	QUANTITY
OW	R6-2L	ONE WAY	12" x 18"	1
DNE	R3-15C	DO NOT ENTER	30"x 30"	1

8 PROPOSED SIGNAGE
NOT TO SCALE

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

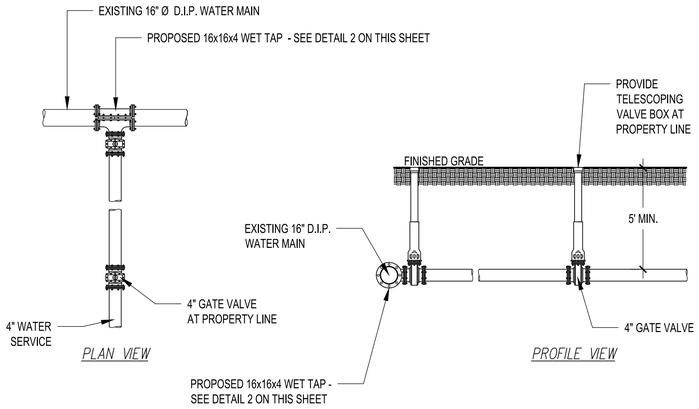
	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
Revisions 07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Construction Details

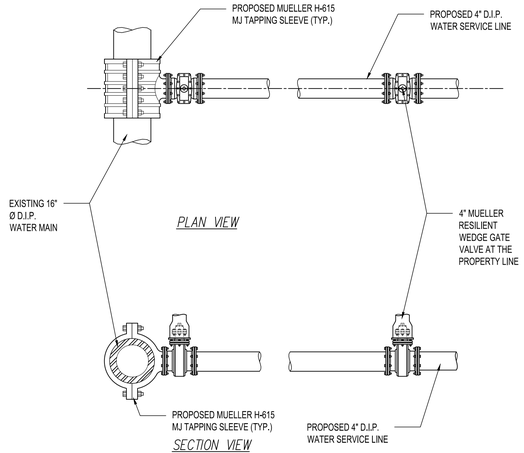
SCALE	DRAWN BY	DRAWING No.
As Noted	MAD	CD.1
DATE 04-02-21	CHECKED BY MAD	10 of 14



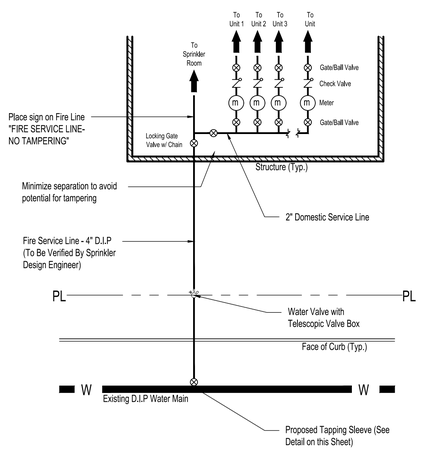
NOTES:

1. PRESSURE AND LEAKAGE TESTING SHALL BE DONE IN ACCORDANCE WITH THE LATEST AWWA SPECIFICATIONS.
2. ALL MECHANICAL JOINT FITTINGS SHALL BE SUPPLIED WITH RETAINER GLANDS. ALL FITTINGS SHALL BE COMPACT DUCTILE IRON TYPE MANUFACTURED IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS. FOREIGN-MADE FITTINGS SHALL NOT BE ALLOWED.
3. THE CONTRACTOR SHALL NOTIFY THE LOCAL WATER DEPARTMENT PRIOR TO CONSTRUCTION.
4. ALL WATER LINE INSTALLED SHALL BE DISINFECTED IN ACCORDANCE WITH CURRENT AWWA SPECIFICATIONS FOR DISINFECTION OF WATER LINES (WITH THE EXCEPTION OF THE TABLET METHOD). DISINFECTED WATER SHALL REMAIN IN THE NEWLY INSTALLED PIPING FOR A MINIMUM OF 24 HOURS. THE LINES SHALL BE FLUSHED AND BACTERIOLOGICAL TEST TAKEN. THIS PROCEDURE SHALL BE REPEATED UNTIL AN ACCEPTABLE BACTERIOLOGICAL TESTS ARE TAKEN.
5. ALL NEW WATER LINE INSTALLED SHALL BE FILLED WITH WATER FOR A MINIMUM PERIOD OF 48 HOURS PRIOR TO A MINIMUM 2 HOUR HYDROSTATIC PRESSURE TEST OF 1.5 TIMES THE NORMAL WORKING PRESSURE AT THE LOWEST ELEVATION OF THE NEWLY INSTALLED PIPE.

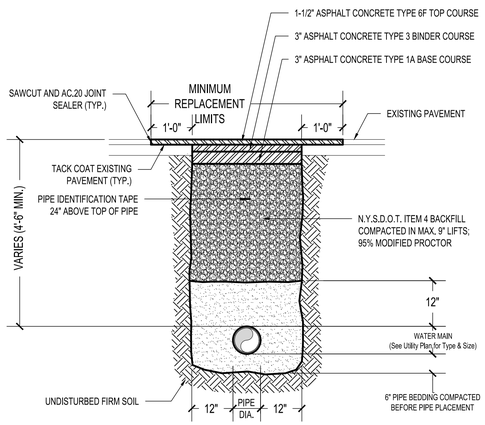
1 WET TAP AND VALVE INSTALLATION DETAIL
NOT TO SCALE



2 TAPPING SLEEVE AND VALVE INSTALLATION DETAIL
NOT TO SCALE

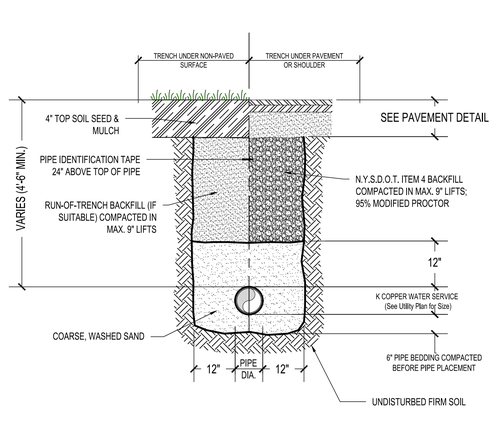


3 WATER SERVICE DETAIL
NOT TO SCALE



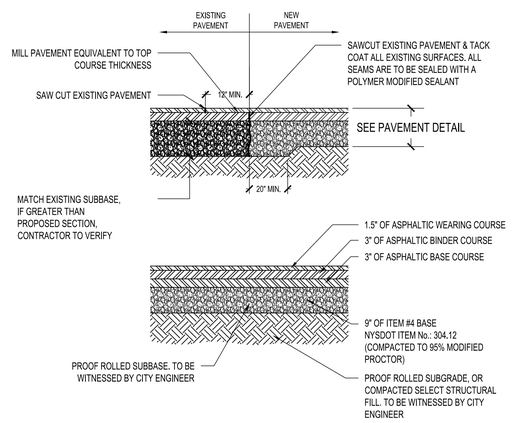
PORTIONS OF MAIN STREET HAVE CONCRETE UNDER THE ASPHALT. PAVEMENT THICKNESS SHALL BE INCREASED TO THE THICKNESS OF THE CONCRETE PLUS ASPHALT.

4 UTILITY TRENCH DETAIL (Below Existing Pavement)
NOT TO SCALE



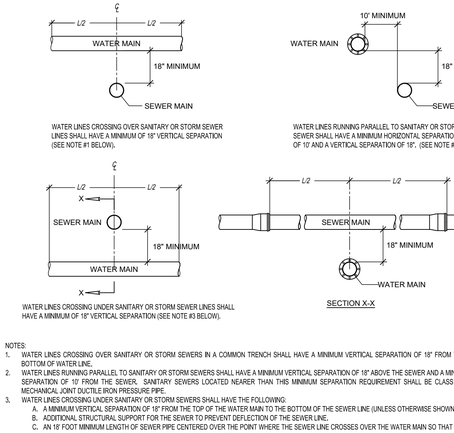
PORTIONS OF MAIN STREET HAVE CONCRETE UNDER THE ASPHALT. PAVEMENT THICKNESS SHALL BE INCREASED TO THE THICKNESS OF THE CONCRETE PLUS ASPHALT.

5 TYPICAL WATER SERVICE (BELOW 2" DIA.) DETAIL
NOT TO SCALE



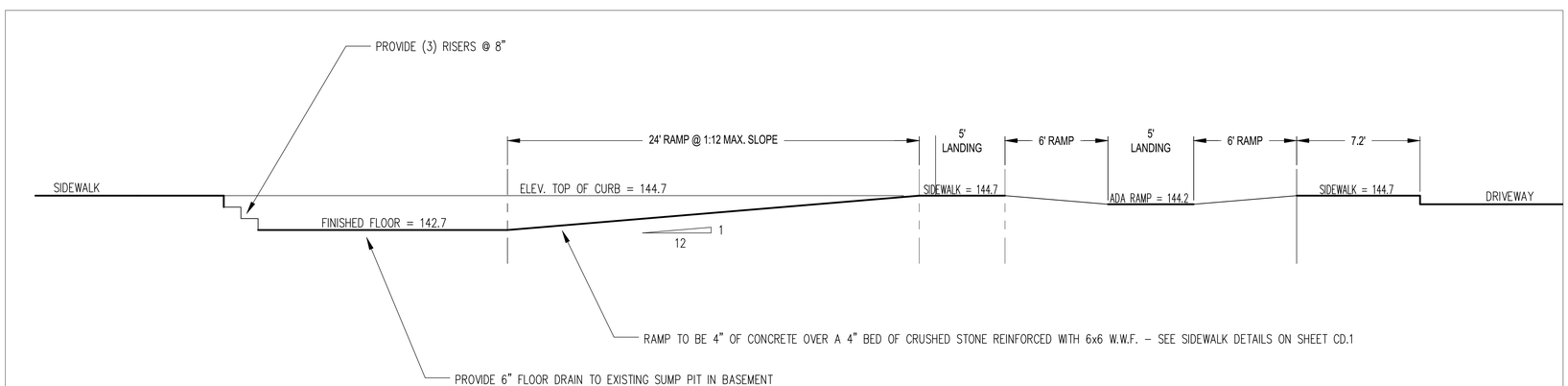
PORTIONS OF MAIN STREET HAVE CONCRETE UNDER THE ASPHALT. PAVEMENT THICKNESS SHALL BE INCREASED TO THE THICKNESS OF THE CONCRETE PLUS ASPHALT.

6 PAVEMENT SECTION
NOT TO SCALE



NOTES:
1. WATER LINES CROSSING OVER SANITARY OR STORM SEWERS IN A COMMON TRENCH SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 18" FROM TOP OF SEWER TO BOTTOM OF WATER LINE.
2. WATER LINES RUNNING PARALLEL TO SANITARY OR STORM SEWERS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 18" ABOVE THE SEWER AND A MINIMUM HORIZONTAL SEPARATION OF 10' FROM THE SEWER. SANITARY SEWERS LOCATED NEARER THAN THIS MINIMUM SEPARATION REQUIREMENT SHALL BE CLASS 52 CEMENT LINED MECHANICAL JOINT DUCTILE IRON PRESSURE PIPE.
3. WATER LINES CROSSING UNDER SANITARY OR STORM SEWERS SHALL HAVE THE FOLLOWING:
   A. A MINIMUM VERTICAL SEPARATION OF 18" FROM THE TOP OF THE WATER MAIN TO THE BOTTOM OF THE SEWER LINE (UNLESS OTHERWISE SHOWN).
   B. ADDITIONAL STRUCTURAL SUPPORT FOR THE SEWER TO PREVENT DEFLECTION OF THE SEWER LINE.
   C. AN 18' FOOT MINIMUM LENGTH OF SEWER PIPE CENTERED OVER THE POINT WHERE THE SEWER LINE CROSSES OVER THE WATER MAIN SO THAT THE JOINTS OF THE SEWER MAIN ARE EQUIDISTANT FROM THE CENTERLINE OF THE WATER MAIN.

7 WATER & SEWER SEPARATION
NOT TO SCALE



8 RAMP PROFILE AT REAR OF BUILDING
NOT TO SCALE

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

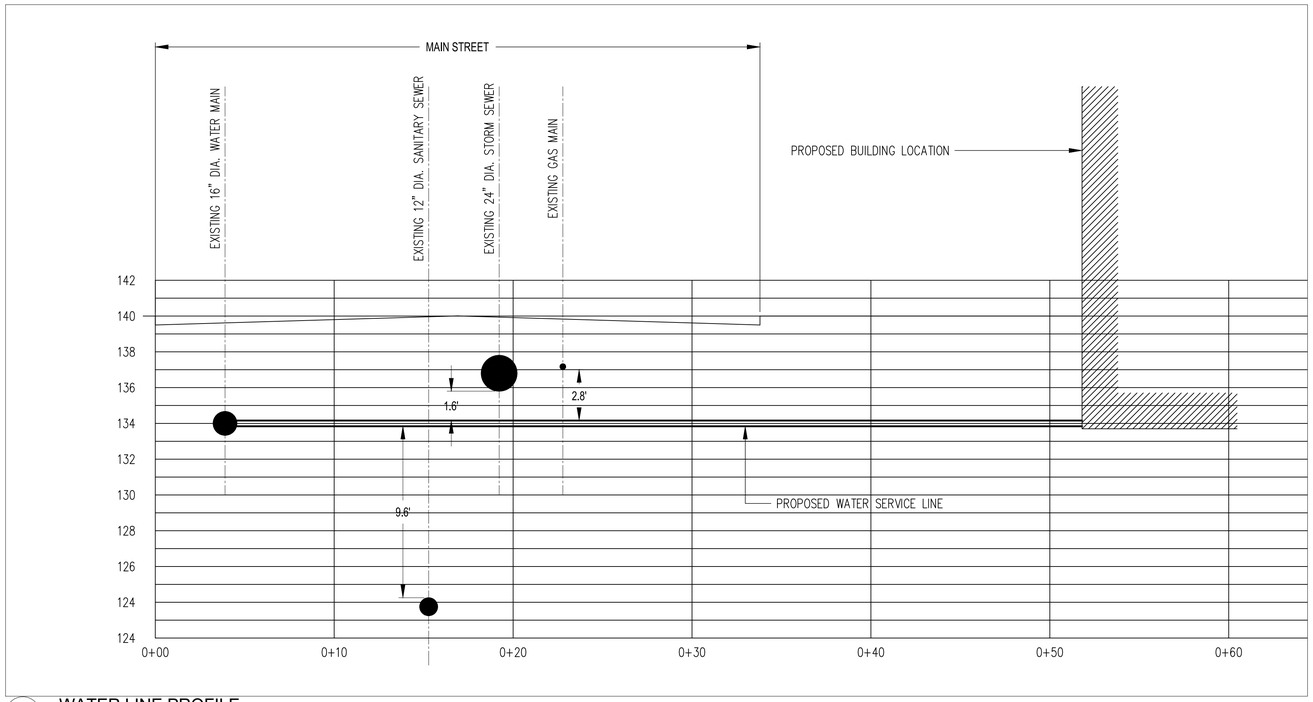
Revisions	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

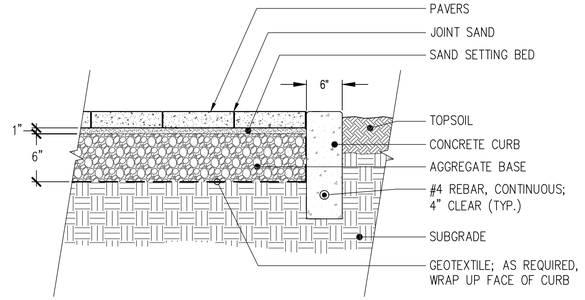
PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Construction Details

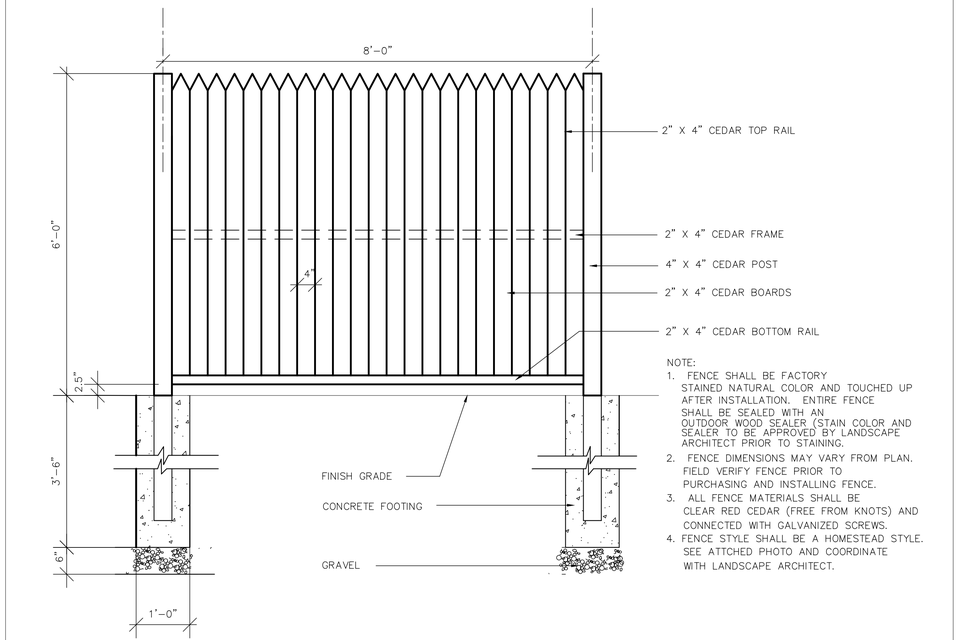
SCALE	DRAWN BY	DRAWING No.
As Noted	MAD	CD.2
DATE 04-02-21	CHECKED BY MAD	11 of 14



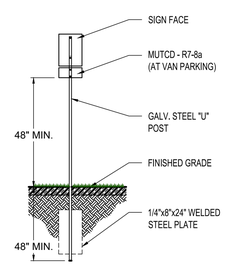
8 WATER LINE PROFILE
1" = 4' (HORIZONTAL & VERTICAL)

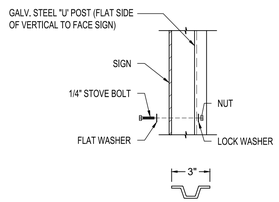


9 BRICK PAVER DETAIL
NOT TO SCALE



10 WOOD STOCKADE FENCE DETAIL
N.T.S.







MUTCD NY R7-8
HC



MUTCD R7-1
NP



MUTCD R7-8a

11 ADA PARKING SIGN & POST DETAIL
N.T.S.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

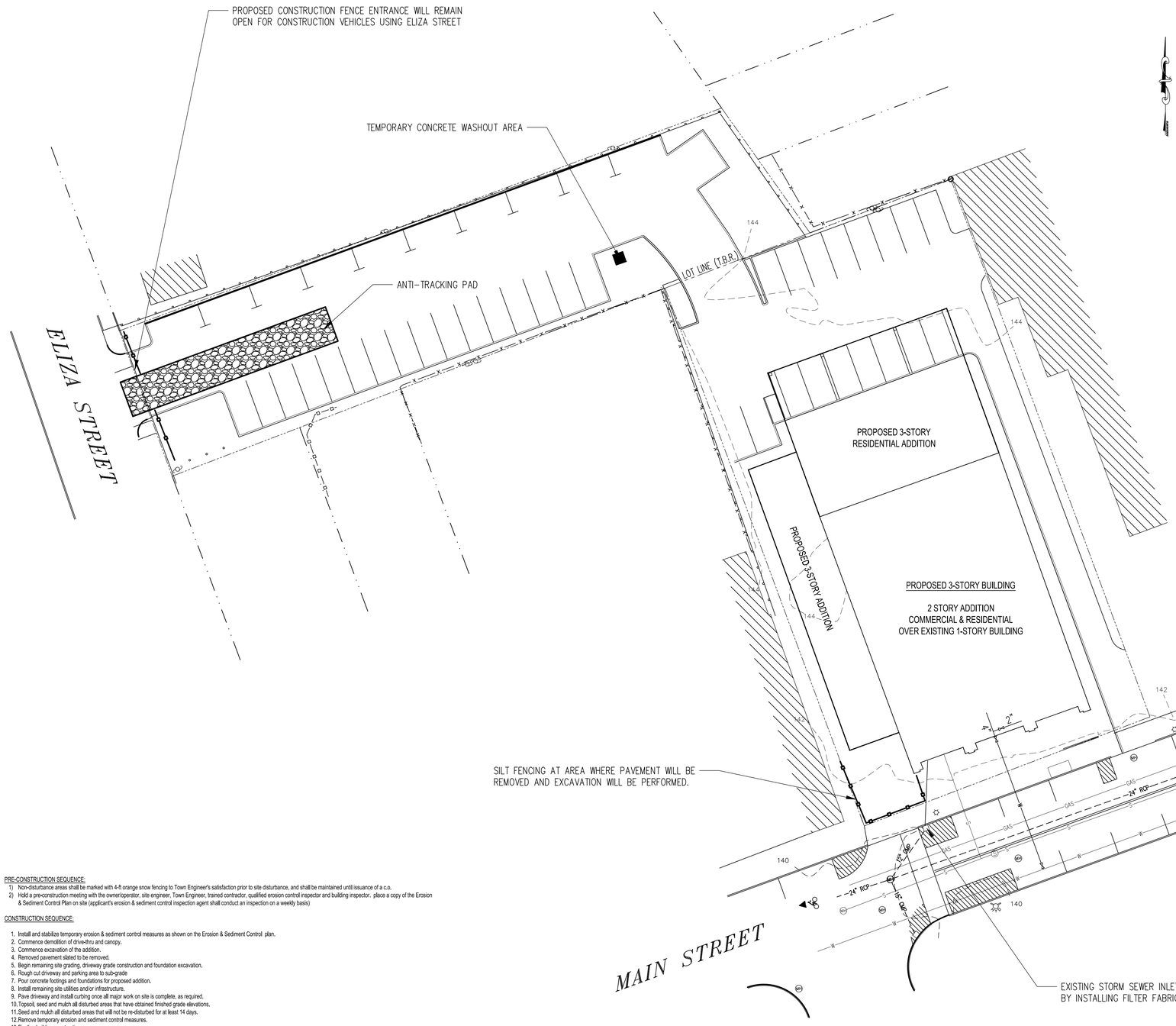
	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
Revisions 07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA
ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Construction Details

SCALE	DRAWN BY	DRAWING No.
As Noted	MAD	CD.3
DATE 04-02-21	CHECKED BY MAD	12 of 14



PRE-CONSTRUCTION SEQUENCE:

1) Non-disturbance areas shall be marked with 4-ft orange snow fencing to Town Engineer's satisfaction prior to site disturbance, and shall be maintained until issuance of a c.o.
2) Hold a pre-construction meeting with the owner/operator, site engineer, Town Engineer, trained contractor, qualified erosion control inspector and building inspector. place a copy of the Erosion & Sediment Control Plan on site (applicant's erosion & sediment control inspection agent shall conduct an inspection on a weekly basis)

CONSTRUCTION SEQUENCE:

1. Install and stabilize temporary erosion & sediment control measures as shown on the Erosion & Sediment Control plan.
2. Commence demolition of drive-thru and canopy.
3. Commence excavation of the addition.
4. Removed pavement slated to be removed.
5. Begin remaining site grading, driveway grade construction and foundation excavation.
6. Rough cut driveway and parking area to sub-grade
7. Pour concrete footings and foundations for proposed addition.
8. Install remaining site utilities and/or infrastructure.
9. Pave driveway and install curbing once all major work on site is complete, as required.
10. Topsoil, seed and mulch all disturbed areas that have obtained finished grade elevations,
11. Seed and mulch all disturbed areas that will not be re-disturbed for at least 14 days.
12. Remove temporary erosion and sediment control measures.
13. Finalize building construction.
14. Pave parking area and drives with final top-coat of asphalt.
15. Strip parking spaces, as required by the Site Plan,
16. Main Street and Eliza Street shall be swept daily during construction if and when site-generated debris is deposited on the streets.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

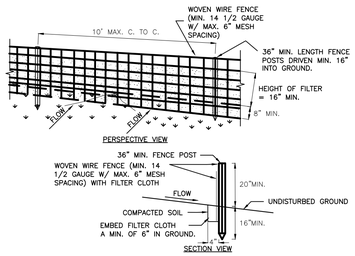
Revisions	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
07-20-21	
Project No: 2020.475	License No. 069646

DAY | STOKOSA ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Erosion & Sediment Control Plan

SCALE	DRAWN BY	DRAWING No.
1" = 20'	MAD	ESC.1
DATE: 04-02-21	CHECKED BY: MAD	13 of 14

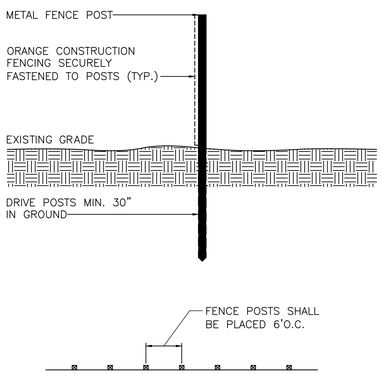


CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER–LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

1 SILT FENCE DETAIL

NOT TO SCALE



3 TYPICAL ORANGE CONSTRUCTION FENCE DETAIL

NOT TO SCALE

EROSION AND SEDIMENT CONTROL MEASURES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE IN STRICT COMPLIANCE WITH "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL", AUGUST 2005.
2. DAMAGE TO SURFACE WATERS RESULTING FROM EROSION AND SEDIMENTATION SHALL BE MINIMIZED BY STABILIZING DISTURBED AREAS AND BY REMOVING SEDIMENT FROM CONSTRUCTION SITE DISCHARGES.
3. SITE PREPARATION ACTIVITIES SHALL BE PLANNED TO MINIMIZE THE SCOPE AND DURATION OF SOIL DISRUPTION.
4. PERMANENT TRAFFIC CORRIDORS SHALL BE ESTABLISHED AND "ROUTES OF CONVENIENCE" SHALL BE AVOIDED. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL POINTS OF ENTRY ONTO THE PROJECT SITE.
6. SEEDED AREAS TO BE MULCHED WITH STRAW OR HAY MULCH IN ACCORDANCE WITH VEGETATIVE COVER SPECIFICATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE COURSE OF CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST BY SPRINKLING EXPOSED SOIL AREAS PERIODICALLY WITH WATER AS REQUIRED. THE CONTRACTOR IS TO SUPPLY ALL EQUIPMENT AND WATER.
9. WHEN ALL DISTURBED AREAS ARE STABLE, ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED.

MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES:

A. PERMANENT AND TEMPORARY VEGETATION:
INSPECT ALL AREAS THAT HAVE RECEIVED VEGETATION EVERY SEVEN DAYS. ALL AREAS DAMAGED BY EROSION OR WHERE SEED HAS NOT ESTABLISHED SHALL BE REPAIRED AND RESTABILIZED IMMEDIATELY.

B. STABILIZED CONSTRUCTION ENTRANCE:
INSPECT THE ENTRANCE PAD EVERY SEVEN DAYS. CHECK FOR MUD, SEDIMENT BUILD-UP AND PAD INTEGRITY. MAKE DAILY INSPECTIONS DURING WET WEATHER. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. WASH AND REPLACE STONE AS NEEDED. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF-SITE BY VEHICLES. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. REMOVE TEMPORARY CONSTRUCTION ENTRANCE AS SOON AS THEY ARE NO LONGER NEEDED TO PROVIDE ACCESS TO THE SITE.

C. SILT FENCE:
INSPECT FOR DAMAGE EVERY SEVEN DAYS. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE FENCE BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO 1/3 THE HEIGHT OF THE FENCE. IF FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF FENCE IMMEDIATELY.

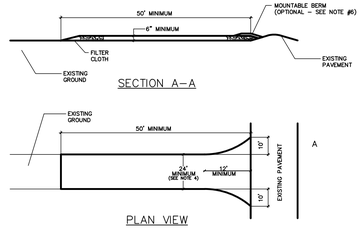
D. INLET PROTECTION:
INSPECT INLET PROTECTION FOR DAMAGE EVERY SEVEN DAYS. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT AS NECESSARY TO PROVIDE FOR ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.

E. DUST CONTROL:
SCHEDULE CONSTRUCTION OPERATIONS TO MINIMIZE THE AMOUNT OF DISTURBED AREAS AT ANY ONE TIME DURING THE COURSE OF WORK. APPLY TEMPORARY SOIL STABILIZATION

PRACTICES SUCH AS MULCHING, SEEDING, AND SPRAYING (WATER), STRUCTURAL MEASURES (MULCH, SEEDING) SHALL BE INSTALLED IN DISTURBED AREAS BEFORE SIGNIFICANT BLOWING PROBLEMS DEVELOP. WATER SHALL BE SPRAYED AS NEEDED, REPEAT AS NEEDED, BUT AVOID EXCESSIVE SPRAYING, WHICH COULD CREATE RUNOFF AND EROSION PROBLEMS.

5 EROSION & SEDIMENT CONTROL NOTES

NOT TO SCALE



NOTES:

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DRIPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

2 ANTI-TRACKING PAD DETAIL

NOT TO SCALE

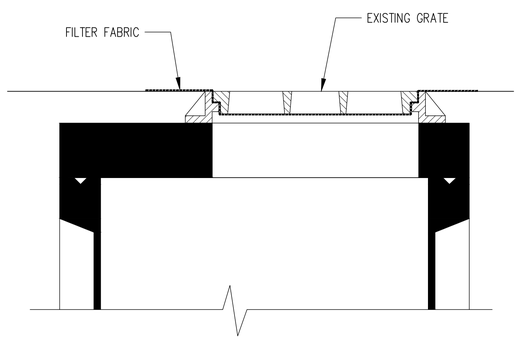
1. ALL SEDIMENT & EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS & DETAILS. CHANGES, OMISSIONS AND/OR OTHER ALTERATIONS CAN NOT BE MADE TO THESE PLANS WITHOUT THE CONSENT OF THE DESIGN ENGINEER.
2. SILT FENCE SHALL BE INSTALLED AS SHOWN ON THIS DRAWING PRIOR TO BEGINNING ANY CLEARING, GRUBBING AND EARTHWORK.
3. EXPOSED SLOPES AND ALL GRADED AREAS SHALL BE SEEDED WITH THE FOLLOWING GRASS SEED MIX IMMEDIATELY UPON COMPLETION OF ITS CONSTRUCTION, OR IF PLANNED TO BE LEFT UNDISTURBED FOR MORE THAN 21 DAYS. GRASS SEED MIX TO BE APPLIED AT A RATE OF 50 POUNDS PER ACRE IN THE FOLLOWING PROPORTIONS:

KENTUCKY BLUEGRASS	40%	CREEPING RED FESCUE	40%
RYE GRASS	20%		

4. GRASS SEED MIX MAY BE APPLIED BY EITHER MECHANICAL OR HYDROSEEDING METHODS. HYDROSEEDING SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF THE NYSDOT STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, SECTION 610-3.02, METHOD No. 1.
5. SEEDED AREAS SHALL BE MULCHED WITH STRAW AT A RATE OF 2 TONS PER ACRE, OR 90 LBS. PER 1,000 SQUARE FEET, SUCH THAT IT FORMS A CONTINUOUS BLANKET.
6. SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS BY THE OWNER's FIELD REPRESENTATIVE.
7. DUST SHALL BE CONTROLLED BY SPRINKLING OF WATER OR OTHER APPROVED METHODS AS NECESSARY AS DIRECTED BY THE OWNER's FIELD REPRESENTATIVE.
8. CUTS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTY, NOR DIVERT SURFACE WATER ONTO ADJOINING PROPERTIES.
9. ALL FILLS SHALL BE COMPACTED TO PROVIDE STABILITY OF MATERIALS AND TO PREVENT SETTLEMENT.
10. EXCAVATIONS AND FILLS TO BE ROLLED, SEALED AND STABILIZED AT COMPLETION OF EACH DAY's WORK.
11. THE OWNER's FIELD REPRESENTATIVE SHALL INSPECT THE DOWNSTREAM CONDITIONS FOR EVIDENCE OF SEDIMENTATION ON A WEEKLY BASIS AND AFTER RAINSTORMS.
12. AS WARRANTED BY FIELD CONDITIONS, SPECIAL ADDITIONAL SEDIMENTATION AND EROSION CONTROL MEASURES MAY BE ADDED TO THIS PLAN BY THE SITE ENGINEER, TOWN ENGINEER AND HIGHWAY SUPERINTENDENT. ANY REVISIONS TO THIS PLAN MUST BE SUBMITTED TO THE SITE ENGINEER. ANY CHANGES DEEMED NECESSARY TO THIS PLAN SHALL BE DICTATED BY THE SITE ENGINEER AS NECESSARY TO CARRY-OUT THE INTENT OF THIS PLAN.

4 SEEDING & MULCHING NOTES

NOT TO SCALE



1. THE FILTER FABRIC SHALL HAVE AN EOS OF 40–85.
2. THE FILTER SHALL BE PLACED UNDER THE EXISTING GRATE AND HELD FIRMLY AT THE FRAME BY THE WEIGHT OF THE GRATE.
3. THE FILTER SHALL BE A CONTINUOUS PIECE WITH NO JOINTS OR SEAMS.

6 FILTER FABRIC DROP INLET PROTECTION DETAIL

NOT TO SCALE

Construction Waste Management Plan

Construction waste management practices are designed to maintain a clean and orderly work environment. This will reduce the potential for significant materials to come into contact with stormwater. A maintenance schedule shall be developed for these areas. The general contractor shall implement the following practices:

1. Material resulting from the clearing and grubbing operation will be stockpiled up slope from adequate sedimentation controls.
2. Equipment cleaning, maintenance, and repair areas shall be designated and protected by a temporary perimeter berm.
3. The use of detergents for large scale washing is prohibited (i.e., vehicles, buildings, pavement surfaces, etc.).
4. Spill Prevention and Response
   A Spill Prevention and Response Plan shall be developed for the site by the general contractor. The plan shall detail the steps needed to be followed in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

   The plan shall include Material Safety Data Sheets (MSDS) for all materials to be stored on-site. All workers on-site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction. Regular tailgate safety meetings shall be held and all workers that are expected on the site during the week shall be required to attend.
5. Material Storage
   Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that minimizes the impacts of the construction materials effecting stormwater quality.

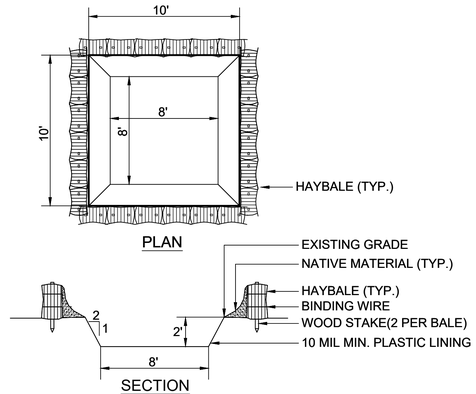
   Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated and disposed at an approved solid waste or chemical disposal facility.
6. Temporary Concrete Washout Facility
   Temporary concrete washout facilities should be located a minimum of 50 ft from storm drain inlets, open drainage facilities, and watercourses. Each facility should be located away from construction traffic or access areas to prevent disturbance or tracking. A sign should be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

   When temporary concrete washout facilities are no longer required for the work, the hardened concrete shall be removed and disposed of. Materials used to construct the temporary concrete washout facilities shall be removed from the site and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled and/or repaired and seeded and mulched for final stabilization.
7. Solid Waste Disposal
   No solid materials, including building materials, are allowed to be discharged from the site with stormwater. All solid waste, including disposable materials incidental to the major construction activities, must be collected and placed in containers. The containers will be emptied periodically by a contract trash disposal service and hauled away from the site.

   Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.
8. Water Source
   Non-stormwater components of site discharge must be clean water. Water used for construction, which discharges from the site, must originate from a public water supply or private well approved by the Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the site. It can be retained in the ponds until it infiltrates and evaporates.

7 CONSTRUCTION WASTE MANAGEMENT PLAN

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1) THE LINER SHALL BE PLASTIC SHEETING WITH A MINIMUM THICKNESS OF 10 MILS WITH NO HOLES OR TEARS, AND ANCHORED BEYOND THE TOP OF THE PIT WITH AN EARTHEN BERM, SAND BAGS, STONE, OR OTHER STRUCTURAL APPURTENANCE EXCEPT AT THE ACCESS POINT.

2) LOCATE THE FACILITY A MINIMUM OF 100 FEET FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATERS. PREVENT SURFACE WATER FROM ENTERING THE STRUCTURE EXCEPT FOR THE ACCESS ROAD. PROVIDE APPROPRIATE ACCESS WITH A GRAVEL ACCESS ROAD SLOPED DOWN TO THE STRUCTURE. SIGNS SHALL BE PLACED TO DIRECT DRIVERS TO THE FACILITY AFTER THEIR LOAD IS DISCHARGED. .

3) ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING FACILITIES SHALL BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY. EXCESS RAINWATER THAT HAS ACCUMULATED OVER HARDENED CONCRETE SHOULD BE PUMPED TO A STABILIZED AREA, SUCH AS A GRASS FILTER STRIP.

4) ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF SITE.

5) DISPOSE OF THE HARDENED MATERIAL OFF-SITE IN A CONSTRUCTION/DEMOLITION LANDFILL. ON-SITE DISPOSAL MAY BE ALLOWED IF THIS HAS BEEN APPROVED AND ACCEPTED AS PART OF THE PROJECTS SWPPP. IN THAT CASE, THE MATERIAL SHOULD BE RECYCLED AS SPECIFIED, OR BURIED AND COVERED WITH A MINIMUM OF 2 FEET OF CLEAN COMPACTED EARTHFILL THAT IS PERMANENTLY STABILIZED TO PREVENT EROSION.

6) THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

7) INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.

8 TEMPORARY CONCRETE WASHOUT BASIN DETAIL

NOT TO SCALE

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSONS TO ALTER THESE PLANS, SPECIFICATIONS, OR REPORTS IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR.

Revisions	Mark A. Day, PE
03-22-22	
02-17-22	
01-07-22	
12-21-21	
11-27-21	
08-27-21	
07-20-21	
Project No. 2020.475	License No. 069646

DAY | STOKOSA ENGINEERING P.C.
3 Van Wyck
Lane Suite 2
Wappingers Falls, New York
(845)-223-3202

PROJECT
364 Main Street
City of Beacon Dutchess County, New York

DRAWING
Erosion & Sediment Control Details

SCALE	DRAWN BY	DRAWING No.
As Noted	MAD	ESC.2
DATE 04-02-21	CHECKED BY MAD	14 of 14

John Clarke Planning and Design jclarkeplandesign@gmail.com
845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **364 Main Street Site Plan and Lot Merger Subdivision**

I have reviewed the March 29, 2022 cover letter from Cuddy+Feder, March 29, 2022 response letter from Aryeh Siegel, Revised March 28, 2022 Long EAF Part 1, March 28, 2022 Lot Line Change sheet, and a 14-sheet Site Plan set, with sheets 1-5 dated March 29, 2022 and 6-14 dated March 22, 2022.

Proposal
The applicant is proposing to construct a 3-story, mixed-use building on a 0.54-acre parcel in the Central Main Street (CMS) district, including 8,892 square feet of first floor commercial space and 20 apartments. An adjoining 0.31-acre parcel in the Transitional (T) district will be used for parking and merged into one combined lot by subdivision approval.

Comments and Recommendations
1. For the Sheet 4 Building Plans:
    a. The Roof Plan should consider including green plantings on the unused areas.
    b. The Sheet 4 ADA parking locations do not match the other sheets.
2. The project architect met three times with the Architectural Review Subcommittee, which at its last meeting decided to refer the final design back to the full Board. Several changes were made to the drawings in response to the last meeting, but some suggestions remain unresolved:
    a. The renderings do not entirely match the elevations and other drawings, including the arched window lintels, west side cornice brackets, front planters, and lighting fixtures.
    b. The Subcommittee asked that the wall sconces shown on Sheet 7 be compatible with the more traditional forms of the proposed building.
    c. The Subcommittee also requested that the church frontage be more accurately shown on the Site Plan to better understand the relationship between the front tower and greenspace with the proposed building and its side entrance.

If you have any questions or need additional information, please feel free to contact me.

John Clarke, Beacon Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Taylor Palmer, Esq., Project Attorney
Aryeh Siegel, Project Architect

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal
Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal
John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 6, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: 364 Main Street
Tax No. 6054-29-006819
Subdivision & Site Plan
City of Beacon

Dear Mr. Gunn:

My office has received the following in regard to the above application:

- Correspondence dated March 29, 2022, from Taylor Palmer, Esq. of Cuddy & Feder, LLP.
- Response correspondence dated March 29, 2022, from Aryeh Siegel, Architect.
- A Full Environmental Assessment Form (EAF) dated March 28, 2022.
- Plan titled "Lot Line Change for The Lands of O'Donnell Construction Corp.", with the latest revision date of March 28, 2022, as prepared by Robert Oswald Land Surveying.
- Plans titled "364 Main Street", consisting of Sheets 1 through 5 of 14, with the latest revision date of March 29, 2022, as prepared by Aryeh Siegel, Architect, and Sheets 6 through 14 of 14 with the latest revision date of March 22, 2022, as prepared by Day & Stokosa Engineering.

The proposed project is comprised of two parcels, totaling 0.85± acres, with the main parcel being located on Main Street and the 2nd parcel be located on Eliza Street. The applicant is seeking to merge the 2 parcels into a single parcel at this time, and to develop a mixed-use commercial and multi-family residential development.

Based on our review of the above documents and plans, all previous engineering comments have been addressed. If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,
LANC & TULLY, P.C.

John Russo, P.E.

cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

City of Beacon
Planning Board Subcommittee on Architectural Review
Recommendation and Report

Description: Proposed 3-story mixed-use building in CMS district with ground floor commercial storefronts and 20 apartments on upper floors.

Project Name: _____

Project Address: 364 Main Street

Date of Meeting(s) of ARB Subcommittee: March 18, 2022 10:00 – 11:15 am

Attendees: Jill Reynolds, Kevin Byrne, Len Warner, Dave Buckley, John Clarke

Aryeh Siegel, Project Architect

On the above-referenced dates, the Architectural Review Subcommittee reviewed the above-referenced project at which meeting the applicant and its representatives were provided an opportunity to be heard. The sole focus of the Committee was to review the architecture of the proposed building(s). The Committee reviewed the following plans and materials:

Updated color renderings showing building from east, west, and south and including streetscape view of the new building with the church and 378-382 Main, as well as a view of the west side in context from near the Veterans Place/Post Office corner.

Elevations of all four sides and floor plans, dated Feb. 22, 2022

The Architectural Review Committee offers the following specific comments, as applicable as indicted:

1) Doors and windows: Although shown as horizontal lintels on the renderings, they should be arched brick, similar to 378-382 Main, as represented on the elevations. The brick lintels and cast sills will project beyond the surface. The windows will not have tinted glass.
   The storefront doors for the main façade will be located in the center bay, although that may be modified for future tenants.
2) Roof: Not discussed, but will be reviewed by the full Board.

3) Projections, such as rooftop elevators, stairwells, balconies, beams, etc.: Try to reduce the height of the rooftop bulkhead on the east side by a couple feet, so it does not appear to compete with the church tower or look like a full 4th story element. Also, the rendering looks like it is missing a bracket.
4) North elevation: Elevation shown very plain, needs at least a cornice element and façade break every 35 feet, like other elevations.

Jill suggested that the storefront cornice might be extended or

5) South elevation: articulated over the middle bay to stress the store entrances. All agreed that something larger or more architecturally detailed element in the middle bay would give the facade a stronger central emphasis. The cornice will be raised by a foot or so to expose more horizontal brick courses framing the front bays.

6) West elevation: The rendering still looks flat, although the elevations show regular pilasters at least every 35 feet or so. The architect will break up the cornice configuration on the long wall and consider changing the façade cornice on the western addition to help diminish the mass of the building.

7) East elevation: The bracketed cornice on the front section should extend at least through the second pilaster and be raised a foot or so to further distinguish it from the plainer cornice and level of the parapet behind.

8) ~~Signs~~: Lighting: The sconces shown on the renderings do not match the plans and should be compatible with the more traditional forms of the proposed building.

9) Color and material type: The brick will be full dimensional with varied brick colors. The architect will bring samples to the next Planning Board meeting.

In addition to the above specific comments, the Architectural Review Subcommittee offers the following general comments/recommendations:

The church should be shown on the Site Plan to better understand the relationship between the 45-foot-high church tower and greenspace with the eastside entrance and 4th-level stair bulkhead.

The planters in front will be raised, probably built out of cedar, with details shown on the plans.

It was suggested that a cornerstone or other indication of the construction date be added to the building.

This Report was reviewed and adopted by the Architectural Review Subcommittee by vote of _____ to _____ at its meeting on The Subcommittee decided that the architectural review should be continued by the full Architectural Review Board at the next Planning Board meeting.

****NOTE: Adoption of this Report does not constitute architectural review approval for the Project. Architectural review approval must be obtained from the Planning Board. It is recommended that any approval resolution by the Planning Board reference the final elevations and any other relevant plans relied upon in the architectural review of the Project.**

RESOLUTION

PLANNING BOARD
BEACON, NEW YORK

PRELIMINARY & FINAL SUBDIVISION PLAT
AND SITE PLAN APPROVALS FOR
364 MAIN STREET

PARCEL ID NOS: 6054-29-006819 & 6054-29-004836

WHEREAS, the Beacon Planning Board received an application for approval of a Preliminary and Final Subdivision Plat and Site Plan from O'Donnell Construction Corp. (the "Applicant") to construct a three-story, mixed use building consisting of 8,892 square feet of first floor commercial space, a first floor residential common area of 1,607 square feet and 20 apartments (31 total bedrooms) on the second and third floors for a total of 25,120 square feet, as well as associated site improvements (the "Proposed Action") on parcels located at 364 Main Street in the Central Main Street (CMS) District consisting of approximately 0.54 acres and on Eliza Street in the Transition (T) District consisting of approximately 0.31 acres, said premises being known and designated on the tax map of the City of Beacon as 6054-29-006819 and 6054-29-004836, respectively (together referred to herein as the "Property"); and

WHEREAS, the applicant seeks to consolidate the parcels to create one 0.85 acre parcel as shown on the Subdivision Plat referenced below; and

WHEREAS, as originally submitted the Project included a Special Use Permit seeking to construct a fourth story, however, during the Planning Board's review of the application the Project was modified to eliminate the proposed fourth story and accordingly a Special Use Permit is no longer required; and

WHEREAS, the Planning Board is the approval authority for the Subdivision (lot merger) and Site Plan pursuant to City of Beacon Code §§ 195-2 and 223-25; and

WHEREAS, the application consists of application forms, correspondence, and the Full Environmental Assessment Form ("EAF"); and

WHEREAS, the Subdivision is shown on the drawing, entitled "Lot Line Change for the Lands of O'Donnell Construction Corp.," prepared by Robert V. Oswald, Land Surveying, LaGrangeville, New York, last revised March 28, 2022; and

WHEREAS, the Site Plan is shown the following drawings, generally entitled "Site Plan Application-364 Main Street," prepared by Aryeh Siegal Architect, Day & Stokosa Engineering, P.C. and Landscape Restorations, dated October 4, 2021, last revised March 29, 2022:

Sheet	Title
1 of 14	*Site Plan*
2 of 14	*Existing Conditions & Demolition Plan*
3 of 14	*Landscape Plan & Planting Schedule*
4 of 14	*Building Plans*
5 of 14	*Building Elevations & Renderings*
6 of 14	*UP.1 – Utility Plan*
7 of 14	*LP.1 – Lighting Plan*
8 of 14	*VM.1 – Refuse Truck Movement Plan*
9 of 14	*VM.2 – 30' Truck Movement Plan*
10 of 14	*CD.1 – Construction Details*
11 of 14	*CD.2 – Construction Details*
12 of 14	*CD.3 – Construction Details*
13 of 14	*ESC.1 – Erosion & Sediment Control Plan*
14 of 14	*ESC.2 – Erosion & Sediment Control Details*; and

WHEREAS, the Proposed Action is an Unlisted Action, pursuant to the New York State Environmental Quality Review Act (SEQRA); and

WHEREAS, in August 2021, the Planning Board circulated to all known Involved and Interested Agencies notice of its intent to declare itself Lead Agency for the environmental review of the Proposed Action pursuant to SEQRA and no objections were received; and

WHEREAS, on November 9, 2021, the Planning Board, as Lead Agency, opened a public hearing to consider comments regarding any environmental impacts associated with the Proposed Action and continued the hearing to December 14, 2021, and January 11, 2022, at which time the public hearing was closed; and

WHEREAS, on December 14, 2021 the Planning Board referred the application to the Architectural Review Subcommittee for its advisory review and report;

WHEREAS, the Architectural Subcommittee met with the Applicant on January 19, 2022, February 11, 2022 and March 18, 2022 and submitted a Report to the Planning Board dated March 18, 2022; and

WHEREAS, after taking a "hard look" at each of the relevant areas of environmental concern through review of the Environmental Assessment Form and all associated materials prepared in connection with the Proposed Action, the Planning Board determined that the Proposed Action will not result in any significant adverse environmental impacts and adopted a Negative Declaration on January 11, 2022; and

WHEREAS, on January 11, 2022 the Planning Board opened a duly noticed public hearing on the application for Subdivision and Site Plan approvals concerning the Proposed

Action and continued the public hearing to February 8, 2022, March 8, 2022 and April 12, 2022, at which time all those interested were given an opportunity to be heard and the public hearing was closed on April 12, 2022; and

WHEREAS, the Planning Board is fully familiar with the Proposed Action and has reviewed the Proposed Action relative to all applicable provisions of the City Code.

NOW, THEREFORE, BE IT RESOLVED, that the Planning Board hereby grants Preliminary Subdivision Plat Approval (lot merger) for the Proposed Action, as shown on the plan entitled "Lot Line Change for the Lands of O'Donnell Construction Corp.," prepared by Robert V. Oswald, Land Surveying, LaGrangeville, New York, last revised March 28, 2022.

BE IT FURTHER RESOLVED, that the Planning Board hereby finds the Final Subdivision Plat will not be substantively changed from the Preliminary Subdivision Plat and hereby determines that a public hearing on the Final Plat is not required.

BE IT FURTHER RESOLVED, that the Planning Board hereby grants Final Subdivision Plat Approval (lot merger), as shown on the plan entitled "Lot Line Change for the Lands of O'Donnell Construction Corp.," prepared by Robert V. Oswald, Land Surveying, LaGrangeville, New York, last revised March 28, 2022, subject to the conditions and modifications set forth herein.

BE IT FURTHER RESOLVED, that the Planning Board hereby grants Site Plan Approval as set forth and detailed on the plans prepared by prepared by Aryeh Siegal Architect, Day & Stokosa Engineering, P.C. and Landscape Restorations, last revised March 29, 2022, subject to the following conditions set forth below and any other requirements which must be met by law:

A. The following conditions shall be fulfilled prior to the signing of the Final Subdivision Plat by the Chairman of the Planning Board:

1. All application review fees shall be paid in full.
2. The Subdivision Plat shall be revised to include all information and endorsements required by Section 195-29.B of the City Code.
3. The Applicant shall seek and obtain all required permits and/or approvals from the appropriate agencies for the Project, including but not necessarily limited to approval from the Dutchess County Department of Health, and shall meet all conditions contained in such approvals, as required therein.
4. The comments contained in the City Engineer's letter to the Planning Board dated April 6, 2022, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Engineer.

5. The comments contained in the City Planner's letter to the Planning Board dated April 7, 2022, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Planner.

6. The comments contained in the City Traffic Engineer's letter to the Planning Board dated February 7, 2022 and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Traffic Engineer.

7. All existing and proposed easements and offers of dedication, as applicable, shall be shown on the Final Subdivision Plat to the satisfaction of the City Engineer and City Attorney. Proposed easement agreements, declarations of restrictive covenants, offers of dedication, or other appropriate documents corresponding with the easements and notes shown on the Final Subdivision Plat shall be prepared, as applicable, and submitted to the City Attorney for review as to form and shall be recorded in the Dutchess County Clerk's Office simultaneously with the Subdivision Plat, with a copy of the recorded documents submitted to the City Clerk for filing.

When the conditions above have been satisfied, six (6) sets of the above referenced plans revised as per the conditions above shall be submitted for endorsement by the Planning Board Chairman. One set of the endorsed plans will be returned to the Applicant, one set will be retained by the City Clerk, one set will be provided to the Planning Board, and one set each will be forwarded to the Building Inspector, City Engineer and City Planner.

B. The following conditions shall be fulfilled prior to the signing of the Site Plan by the Chairman of the Planning Board.

1. All application review fees shall be paid in full.

2. The Applicant shall seek and obtain all required permits and/or approvals from the appropriate agencies for the Project, including but not necessarily limited to approval from the Dutchess County Department of Health, and shall meet all conditions contained in such approvals, as required therein.

3. The comments contained in the City Engineer's letter to the Planning Board dated April 6, 2022, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Engineer.

4. The comments contained in the City Planner's letter to the Planning Board dated April 7, 2022, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Planner.

5. The comments contained in the City Traffic Engineer's letter to the Planning Board dated February 7, 2022, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Traffic Engineer.

6. A note shall be added to the plans to state:

    i. Refuse pick-up shall be limited to off-peak hours.

ii. Delivery vehicles shall be limited to a maximum size of a Single Unit 30' box truck. To the maximum extent practicable, trucks for deliveries and moving purposes shall be coordinated to avoid conflicts with on-site parking operations.

7. A note shall be added to the plans to state:

All landscaping shown on the Site Plan shall be maintained in a vigorous growing condition for the duration of the use and shall be trimmed so as to not interfere with pedestrian use of the sidewalk. All plants not so maintained shall be replaced with new plants of comparable size and quality at the beginning of the next immediately following growing season in compliance with the Site Plan, at the sole cost and expense of the property owner.

When the conditions above have been satisfied, six (6) sets of the above referenced plans revised as per the conditions above shall be submitted for endorsement by the Planning Board Chairman. One set of the endorsed plans will be returned to the Applicant, one set will be retained by the City Clerk, one set will be provided to the Planning Board, and one set each will be forwarded to the Building Inspector, City Engineer and City Planner.

C. Prior to the issuance of a Building Permit, the following conditions shall be fulfilled:

1. Prior to commencement of any site work for the Project, the Applicant shall fund an escrow account with the City of Beacon for the construction observation and monthly stormwater inspections of the proposed utilities and site improvements in an amount as determined by the City Engineer. The Applicant's engineer shall prepare a cost estimate for review by the City Engineer for determining value of escrow to be established.

2. Pursuant to the City of Beacon Code § 223-41.10.A, the Applicant shall submit floor plans which provide a mix of unit types in the same proportion as all other units in the development, subject to approval by the Planning Board. The floor plans should indicate the location of each BMR unit to be provided.

D. The following are general conditions which shall be fulfilled:

1. Based on the current and anticipated future need for park and recreational opportunities in the City of Beacon, as set forth in the analysis provided by BFJ Planning, and the demands of the future population of the Project, the Planning Board hereby finds that additional recreation/parkland should be created as a condition of approval. However, the Planning Board hereby determines that recreation/parkland of adequate size and location cannot be provided on the Project Site. Therefore, that Applicant shall pay a Recreation Fee as prescribed under Sections 223-25.H(4) and 223-61.A(7) of the Zoning Law. The Planning

Board hereby requires that, prior to the issuance of a Certificate of Occupancy, the Applicant shall pay a Recreation Fee for each of the 20 new dwellings in accordance with Sections 223-25.H(4) and 223-61.A(7) of the Zoning Law, as per the City's Fee Schedule in effect at the time of payment.

2. The Project shall comply in all respects with Article IVB, Affordable-Workforce Housing, of the City of Beacon Zoning Law. The Applicant shall be responsible for the payment of any and all fees established by the City Council now or in the future or as otherwise required for the ongoing implementation of the provisions of Article IVB, Affordable-Workforce Housing, of the City of Beacon Zoning Law as said Article applies to the Project.

3. Prior to the issuance of a Certificate of Occupancy, the Applicant shall seek and obtain all necessary permits and approvals from the City of Beacon for the installation of the proposed off-site traffic signage, including the "Stop" sign on the Veterans Road approach and a "One-Way" sign across from the Eliza Street driveway exit. The "No Left Turn" sign at the driveway exit approach to Eliza Street is proposed to be located on-site, so no further permits or approvals are required for such installation.

4. Due to the necessity for a refuse truck to back-out onto Eliza Street from the Property, refuse pick-up shall be limited to off-peak hours. Also, delivery vehicles shall be limited to a maximum size of a Single Unit 30' box truck. To the maximum extent practicable, trucks for deliveries and moving purposes shall be coordinated to avoid conflicts with on-site parking operations.

5. The Applicant may utilize assigned parking for residential tenants in the future should the need or preference for such assignments become evident. Conversion to an assigned parking system for residential tenants shall not require an amended site plan approval from the Planning Board.

6. The Applicant will use best efforts to negotiate an easement or license agreement for the benefit of the owner of Parcel ID No. 5954-36-991830 to provide access for rear ingress and egress, should such access become necessary.

7. The Building Inspector and the City Engineer shall have the right to direct the Applicant to cause the placement, cleaning and/or repair of sedimentation and erosion control devices wherever and whenever deemed necessary during construction.

8. The Applicant shall be responsible for the payment of all application review costs incurred by the City in its review and approval of this project. Such fees shall be paid by the Applicant within thirty (30) days of each notification by the City that such fees are due. If such fees are not paid within said thirty (30) day period, and an extension therefore has not been granted by the City, this resolution shall be rendered null and void.

9. As used herein, the term "Applicant" shall include its heirs, successors and assigns, and where applicable its contractors and employees.

10. If any of the conditions enumerated in this resolution upon which this approval is granted are found to be invalid or unenforceable, then the integrity of this resolution and the remaining conditions shall remain valid and intact.

11. The approvals granted by this resolution do not supersede the authority of any other entity.

12. This approval is conditioned upon compliance with all of the mitigation measures specified in the Applicant's Environmental Assessment Form and the Negative Declaration granted pursuant thereto. The Applicant shall be responsible for the funding and/or implementation of all such identified mitigation measures. Where the terms of this Resolution may be inconsistent with the EAF, the terms of this Resolution shall be controlling.

13. Conditional approval of the Final Subdivision Plat shall expire one hundred eighty (180) days from the date of the adoption of this resolution unless all items in Condition A above have been certified as completed and the Final Plat has been submitted for endorsement by the Planning Board Chairman, or unless a written request for an extension of Final Subdivision Plat Approval is granted. The Planning Board may grant ninety (90) day extensions to said time period.

14. Once the Final Subdivision Plat has been endorsed by the Planning Board Chairman, said plat must be filed in the Dutchess County Clerk's Office within sixty-two (62) days. After said filing, two (2) copies of the Final Plat certified by Dutchess County shall be submitted to the Planning Board Secretary. One (1) certified copy of the Final Plat shall be retained by the Planning Board and the other certified copy shall be transmitted to the City Clerk along with a signed copy of this resolution and proof of recording of the easement documents described above.

15. Pursuant to the City of Beacon Code § 223-25.J, the Site Plan Approval granted herein shall expire in the event the Applicant does not submit a bona fide building permit application to the Building Department within one year of the adoption date of this Resolution, provided however, that the Planning Board may extend such time period from time to time for good cause shown upon written request from the Applicant.

16. Any proposed revision to the approved Subdivision or Site Plan Drawings, except revisions determined by the Building Inspector and City Engineer to be field changes, shall be submitted to the Planning Board. The Planning Board, in its discretion, shall determine the appropriate procedures for consideration of the proposed revision, and whether such revision is material enough to require further environmental analysis and/or further project review, as the Board may deem appropriate.

Resolution Adopted: April 12, 2022
Beacon, New York

_____ _____

John Gunn Chairman Date
City of Beacon Planning Board

Motion by _____, seconded by _____:

Kevin Byrne	Voting: ____	Leonard Warner	Voting: ____
J.C. Calderon	Voting: ____	J. Randall Williams	Voting: ____
Karen Quiana	Voting: ____	John Gunn, Chairman	Voting: ____
Jill Reynolds	Voting: ____		

City of Beacon Planning Board Agenda
04/12/2022

Title:

Continue review of applications for Site Plan Approval (revised since 2019) and Subdivision Approval, "Two Cross Street" 4 Cross Street/172 Main Street, three-story mixed-use Building, Submitted by Hudson Todd, LLC

ATTACHMENTS

2 Cross Street Response to Planner Comments.pdf

2 Cross Street Cover Letter.pdf

2 Cross Street Letter from Hudson River Housing.pdf

2 Cross Street Response to Engineer Comments.pdf

2 Cross Street Site Plan.pdf

SITE PLAN 2 CROSS STREET-DETAILS 2.pdf

2 Cross Street Construction Details.pdf

2 Cross Street Construction Details 2.pdf

2 Cross Street Construction Details 3.pdf

2 Cross Street Erosion & Sediment Control.pdf

2 Cross Street Existing Conditions.pdf

2 Cross Street Grading & Utility.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

To: John Clarke, Beacon Planning Consultant,
Hon. John Gunn, Chair
Members of the City of Beacon Planning Board

Date: March 28, 2022

Re: **2 Cross Street (HudsonTodd)** Response to Comments from John Clarke

This letter is submitted to respond to the comments submitted to the Planning Board on March 3, 2022 from John Clarke, City of Beacon Planning Consultant.

General Comments:

1. **Comment:** Future submissions will need a full landscaping plan, lighting plan with fixture specifications consistent with Section 223-14B, trash disposal methods, and elevations with materials and colors noted. The plans should also be submitted at full size that can be measured with a scale.
   Response: Comment acknowledged. Preliminary landscaping and lighting plans provided in this submission.
   Trash disposal will be handled with a refrigerated, ventilated interior service room.
   Elevations with materials and colors are provided. Five copies of full size plans (with scale indicated on each) are submitted.

2. For Sheet A3:
   a. **Comment:** In the Bulk Compliance Table, the top narrative should state that some of the parking is in the Transitional (T) district. The proposed rear setback should also be shown as 24.1 feet.
   Response: Comment acknowledged. Table corrected reflecting the (T) district setback.

   b. **Comment:** The required parking total should be listed as 27 spaces. The Board will need to consider the requested parking modifications based on the conditions in 223-41.18G(3). The applicant should submit a more specific parking count justification for the nine senior affordable apartments.
   Response: Comment acknowledged. Table corrected to reflect new tabulation of 25 spaces. Letter from Hudson River Housing attached to address specific program/parking requirements of 9 affordable senior apartments on the second floor. Plan updated to provide all required parking spaces.

3. **Comment:** For the Sheet A6 Roof Plan, the applicant should consider a green roof and/or solar panels.
   Response: Comment acknowledged. Green roof and garden roof provided in roof design.

4. **Comment:** Modifications for the historically significant 172 Main Street should be more explicit, including any changes to the facade, the dimension for the 3rd-floor step back, and if the existing floor heights in 172 Main Street will match the new building. Any exterior alterations and additions need to be consistent with the design criteria in the Historic Preservation chapter, Section 134-7.
   Response: Comment acknowledged. As described on Sheet A8 and additional notes, the facade of 172 Main will be preserved and restored. The pediment will be researched and restored. Floor heights in the new building will be set at elevation to match floor elevation in 172 Main. Exterior alterations: door threshold height will be adjusted for accessibility.
5. **Comment:** When appropriate, the Board should refer the building design to the Architectural Review Subcommittee. This HDLO property requires an additional certificate of appropriateness approval.
   Response: Comment acknowledged. We will apply for Certificate of Appropriateness to the ARB subcommittee as soon as the Planning Board agrees is appropriate.

6. **Comment:** The Sheet XC-1 Location Map and Project Information table include parcels that do not appear to be part of the currently proposed project.

   Response: Comment acknowledged. Sheet XC-1 Location Map and Project Information table corrected.

7. For Sheet GU-1:
   a. **Comment:** The rear driveway behind the proposed building could be reduced to at most 20 feet wide, so that a planting strip with trees and privacy fence could be included along the property line of the adjacent house.

      Response: Comment acknowledged. GU-1 adjusted to include planting strips with privacy fences as recommended.

   b. **Comment:** The main parking lot for 152 Main Street should remain connected to the rear West Church Street driveway, so that all the existing parking does not have to exit onto Main Street. The plans should show the size and species of any existing trees that are proposed to be removed.

      Response: Comment acknowledged. GU-1 is revised so that 152 Main St parking remains connected to the West Church driveway. Trees at the boundary of 152 and the Cross St municipal parking lot will likely need to be removed due to removal of concrete pad. The preliminary site plan drawing in this submittal does not show existing trees at this location. We will hire an arborist to advise on new trees to be planted here and future site plan submittals will include the size and species of any existing trees that are proposed to be removed.

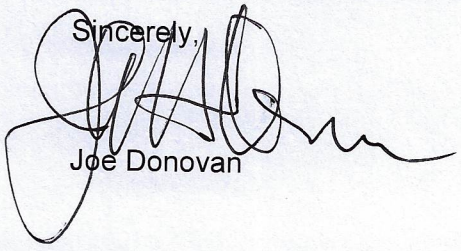
   c. **Comment:** The 10 Cross Street building is listed in Parcel Access as apartments. Please include the number of existing units to be factored into the parking calculations and show the size and species of any existing trees that are proposed to be removed. The Board could also consider new fencing for this parcel.

      Response: Comment acknowledged. 10 Cross St has four units. 5 parking spaces have been allocated for those apartments. A total of 13 spaces are provided on this site and 8 spaces are allocated for Two Cross St. The preliminary site plan drawing in this submittal does not show existing trees, however we plan to retain existing trees at 10 Cross and will hire an arborist to advise on maintenance and protection. Future site plan submittal will include the size and species of any existing trees proposed to be removed.

   d. **Comment:** The EAF should include the EAF Mapper Summary Report.
      Response: Comment acknowledged. Mapper Summary Report completed and included for review.

Thank you for your review. We look forward to working with you and responding to all concerns and comments on the April submission.

Sincerely,



Joe Donovan

cc: David Buckley, Building Inspector
John Clarke, Planner
Jennifer Gray, Esq.

March 28, 2022

Chairman John Gunn
and Members of the Planning Board
City of Beacon Planning Board
1 Municipal Place
Beacon, NY 12508

Re: Hudson Todd—Two Cross Street Project—submission for April 2022 meeting

Dear Chairman Gunn and Members of the Planning Board,

The proposal continues as a three-story mixed-use building with retail on the first floor and equal numbers of affordable senior apartments and market-rate apartments (9 each) on the second and third floors. Since last month's review of the project by the Planning Board, the project has incorporated the comments from members of the Planning Board, City Planner and Engineer into the building and site plan. We submit this letter and attached documents as our response to further the review of the Application for Site Plan Approval.

Please note these updated plans provide all required parking. In addition, a letter is attached from Hudson River Housing, the agency operating the affordable senior apartments, stating operational needs for parking spaces are fewer than the required numbers. Off-Street Parking analysis on Sheet A-3 outlines these changes. Preliminary landscape and lighting plans are provided in this submission.

We appreciate the Board's consideration of the submitted materials and look forward to discussion at the April meeting.

With thanks,

Joseph Donovan
Hudson Todd, LLC

Hudson River Housing, Inc.

313 Mill Street
Poughkeepsie, NY
(845) 454-5176 (P)
(845) 485-1641 (F)
www.hudsonriverhousing.org

NeighborWorks®
CHARTERED MEMBER

Board of Directors

President
Susan Fortunato

Vice-President
Emily Dozier

Treasurer
Roderick MacLeod

Secretary
G. Nicholas Garin

William Carroll
Ariel Cordova
Janet Kljyan
Jeff Kosmacher
Tim McQueen
Taneisha Means
Charles Nicols
Tom Pape
Diane Ruffin
Carol Stevens
Lorna Thompson
Norma Vizcarondo
Thomas Zurhellen

Executive Director
Christa Hines

March 22, 2022

John Gunn, Chairman
City of Beacon Planning Board
1 Municipal Plaza
Beacon, NY 12508

RE: Two Cross Street

Dear Mr. Gunn,

Hudson River Housing, Inc. (HRH) will be managing nine (9) affordable senior apartments at Two Cross Street through the New York State Supportive Housing Initiative (ESSHI).

Three (3) parking spaces in total are projected to be needed to meet the operational needs for these units. The traditional demand for parking spaces will be diminished for these units because HRH will be providing transportation to these residents to medical appointments, shopping, leisure, etc.

HRH will enter into a long-term Memorandum of Understanding with Hudson Todd, LLC to ensure these services are in place for these residents well into the future. If you have any questions, please don't hesitate to call me at (845) 454-5176 ext. 114. Thank you.

Sincerely,

Mary F. Linge
Director of Real Estate Development

To: John Russo, Lanc & Tully, City Engineer
Hon. John Gunn, Chair
Members of the City of Beacon Planning Board
Date: March 28, 2022

Re: **2 Cross Street (HudsonTodd)** Response to Comments from John Russo

This letter is submitted to respond to the comments submitted to the Planning Board on March 3, 2022 from John Russo, City of Beacon Engineering Consultant.

Comment: The applicant's consultant has conducted an Inflow & Infiltration study of the existing site and buildings. Based upon the study it was found that the roof leader drains to the sanitary sewer along with a sump pump in the basement. Elimination of these interconnections will remove 2,076 gallons of stormwater from the sanitary system during a 1-year storm event, up to 6,963 gallons of stormwater during a 100-year storm event. We would recommend that these interconnections be removed sooner than later. ***Notes have been included onSheet 2 of 6 of the engineering drawings as to how the previously discovered inflow and infiltration (I&I) will be remediated.***
Response: Comment acknowledged.

Comment: As the off-site parking is proposed to occur on properties owned by others, it is recommended that documentation be provided to the Planning Board to show that you have the ability to construct these parking areas on the other parcels. As the off-site parking is proposed to occur on parcels owned by others, the Planning Board Attorney should weigh in as to whether the owners of these other parcels would also be included as applicants for the project.
Response: Comment acknowledged. All property discussed is under common ownership.

Comment: The narrative provided in the "Brief Description" on Page 1 of the SEQRA document should be expanded upon to note the total number of bedrooms beingproposed.
Response: Comment acknowledged. EAF #1 to be revised to add: (Note: Existing on-site: 4 apts with 4 bedrooms. Proposed: 9 affordable senior apts with 9 bedrooms, 9 market rate apts with 15 apts = 24 bedrooms proposed).
The response to question D.2.iii. of the SEQRA document notes that the applicant will seek out a nearby site that needs to fill material to allow for disposal of excavated material from the project site. The applicant should be aware that if excavated material from the site is to be used a fill material on a site in the city, a Filling and Grading permit may be required from the building department for the site where material is be dumped.
Response: Comment acknowledged and noted. A breakdown for determination of the water usage listed in D.2.c.i. of the SEQRA document shall be provided.

Comment: 24 bedrooms at 110 gallons per day per bedroom = 2,640 gallons per day plus retail, assume three retail units with 2 shifts of 2 employees each = 12 employees at 12 gallons per day per employee = 144 gallons per day. Total anticipated site wastewater generation = 2,784 gallons per day.

Comment: The plan sheets should be number in sequential order such a 1 of X, with "X" representing the number of plans in the set, similar to what is shown on the Hudson Land Design plans found within the plan set.
Response: Comment acknowledged. Plan set revised as described.

The Location Map on Sheet A1 should also call out the off-site parking lot areasto be constructed as part of the project.
Response: Comment acknowledged. Location map on Sheet A1 revised to show all off-site parking as part of project.
Comment: A formal site plan, at full sheet size, should be provided for the project site, alongwith each

of the off-site parking locations.

Comment: Sheet A2 include a title for "Partial Zoning Map", but the mapping is not shown.The Sheet shall be updated to show this partial map, or the title removed from the sheet.
Response: Comment acknowledged. Partial Zoning Map updated to show this map.

Comment: The Off-Street Parking Tabulation table shall be updated to reflect the total required spaces required as 27, not 13 as currently presented.
Response: Comment acknowledged. Off Street Parking Tabulation table corrected to show new tabulation of 26 required spaces.

Comment: Per §223-41.18 G(3), information shall be submitted by the applicant to demonstrate the requested reduction in parking required. Although the parkingtable notes that there is available parking in the Cross Street parking lot, basedupon a recent parking study conducted for the 1113 Wolcott Avenue project, parking at this location was shown not to be viable as the parking lot is always full. The Planning Board may wish to consider having the applicant prepare a parking study for the proposed project.
Response: Comment acknowledged. All required parking spaces are provided.

Comment: Although accessible parking is being provided at the rear of the proposed building, based upon Sheet A5, there does not appear to be a means of accessfrom the accessible parking area to the commercial area. Consideration should be given as to how those parked in the accessible parking stalls would gain access to the commercial area.
Response: Comment acknowledged. Plans updated to show the accessible entrance from accessible parking to commercial area.

The "Offsite Parking Plan" on Sheet 2 of 6 from Hudson Land Design should berevised to include the following:
Sight distance for all entrances/exits from the proposed parking areas.
How drainage will be handled at each of the three (3) parking locations.
Any proposed grading to be conducted on the site and at each parking location.
Any cross-easements that exist and/or are proposed.
Response: We are in the process of getting updated survey and negotiation with the City regarding tie-in to the municipal lot. Once the layout has been generally accepted, the requested information will be provided.

With regards to the parking on the north-east side of Cross Street on the "On the Square Apts. Inc." parcel and on the 10 Cross Street parcel, what legal instruments will be used to ensure that these parcels cannot be sold in the future, thereby Impacting the proposed parking for this site?
Response: Comment acknowledged. Easements will be used to provide permanent use/access.
The previous plans showed that a walkway would be constructed from the proposed parking area to be located on the "On the Square Apts." parcel out toMain Street. The current plans do not show this walkway. How are those that park in this parking lot expected to walk to the project site? It is roughly 675± feet to walk from this parking area to the site if people must walk out the accessdrive to West Church, whereas it is only 175± feet if a walkway out to Main Street is constructed.
Response: Comment acknowledged. Walkway shown on combined parking plan sheet A-3
With regards to the "Grading and Utility" plan on Sheet 2 of 6 prepared by Hudson Land Design we offer the following:
Are the existing utilities (water, sewer, etc.) that serve the existing buildings to remain or be removed?
The roof leader drain line proposed to run across Cross Street from the west side of the building be re-directed to the basins on the same side ofthe street as the building.
The plan notes that no curbing is to be provided at the end of the on-site parking lot to allow for access to 174-178 Main Street. The applicant should explain this further. Do easement(s) exist, or will they be created,to allow for vehicles to cross the project parcel to access the parking areas behind 174-178?
The two parking spaces located on the neighboring parcel at the end of the parking lot should be clearly shown on the plan.
Response: Comment acknowledged.
a. We are anticipating providing new services for the building to Cross Street. This will be subject to MEP sizing and finalizing the uses.
b. For now, a potential location is shown across Cross Street. As noted, this is subject to the architectural drawings, and the roof drainage plans which are not advanced to that point as of yet.
c. Easements exist to allow for vehicles to cross the project parcel to access the parking areas behind 174-178
d. The two parking spaces located on the neighboring parcel at the end of the parking lot are not included in this submission.
As previously noted, we would recommend that a pre and post drainage analysis be prepared for the project to show if more or less stormwater runoff isproposed to be generated by the proposed project, based upon various storm events. Given the amount of impervious area being created, the applicant should give consideration to handling some of the stormwater directly on each of the areas to be developed.
Response: Once the layout has advanced to a point of mutual acceptance, we will prepare the drainage report, which would include analysis of all development locations.
A site lighting plans shall be provided for the project. *The applicant notes that a lighting plan will be provided in a future submission.*
Response: Comment acknowledged. Lighting plan shown on sheet A-2

Thank you for your review. We look forward to working with you and responding to all comments on the April submission.

Sincerely,

Joe Donovan







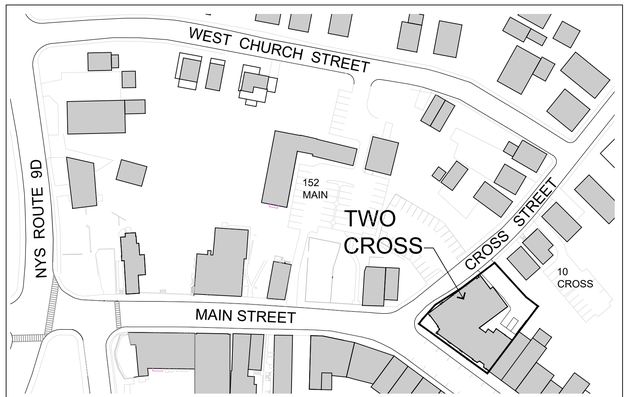
List of Exhibits

Architectural Drawings:

A1	Project Title Sheet
A2	Site Lighting and Landscaping Plan
A3	Zoning and Parking Summary
A4	Zoning: Area and Unit Counts
A5	Floor Plans: Ground Floor & Second Floor
A6	Floor Plans: Third Floor & Roof Plan
A7	Floor Plans: Cellar Floor Plan
A8	Elevations
A9	Rendering: Looking East
A10	Rendering: Main Street
A11	Rendering: Looking West
A12	Rendering: Cross Street

Civil Engineering Drawings:

XC-1	Existing Conditions and Removals Plan
GU-1	Grading & Utility Plan
EC-1	Erosion & Sediment Control Plan, ESC-1
CD-1	Construction Details 1
CD-2	Construction Details 2
CD-3	Construction Details 3



Location Map

Not to Scale

Owner

Hudson Todd, LLC

4 Cross Street
Beacon, NY 12508

Design Team

Architect of Record
Joseph E. Torhan Architect

19 Wildwood Drive
Poughkeepsie, NY 12603

Design Consultant
Austin Harris Architect

27 Harvard Court
White Plains, NY 10605

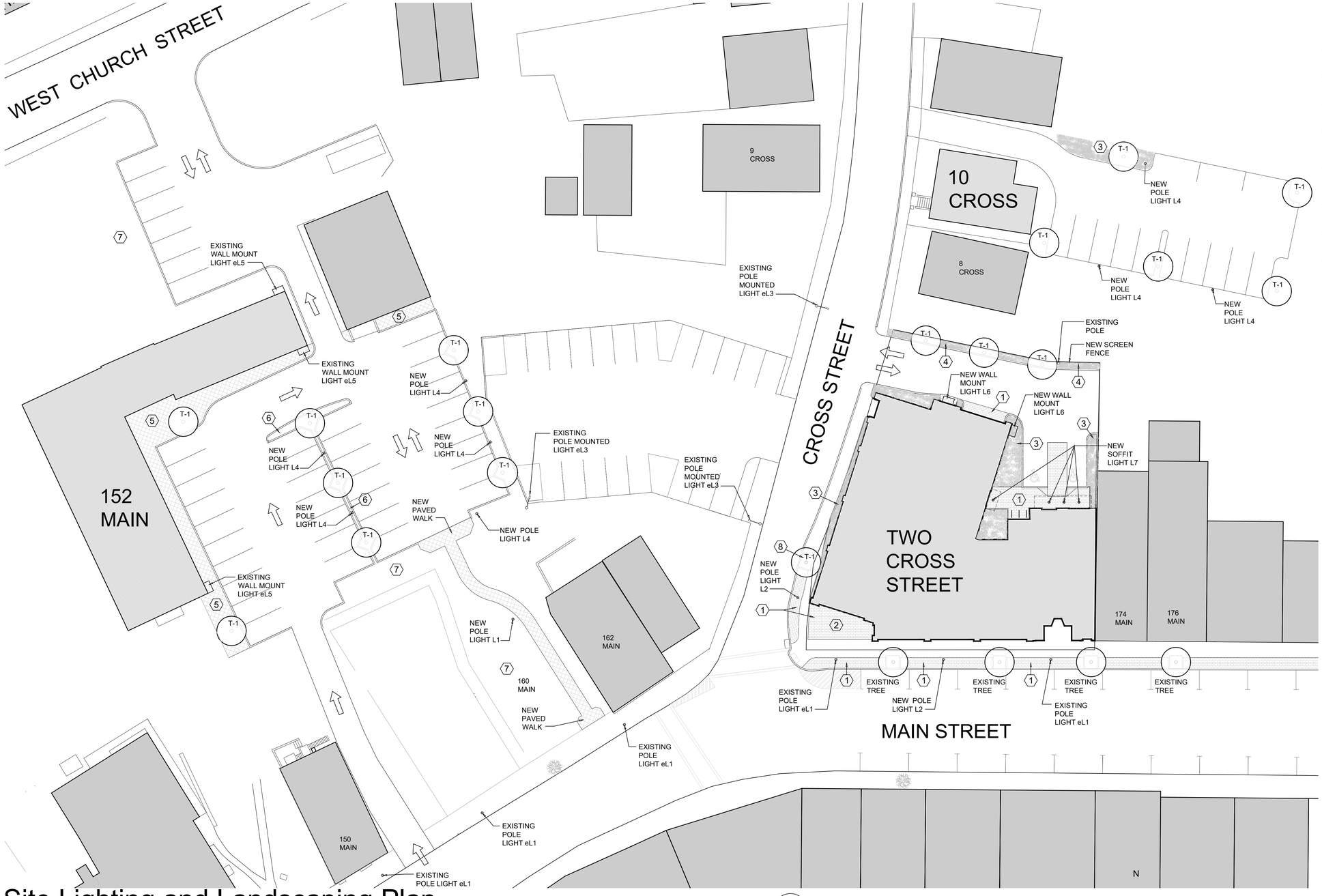
Civil Engineer
Hudson Land Design
Professional Engineering, P.C.

174 Main Street
Beacon, NY 12503

Two Cross Street - Hudson Todd LLC

March 29, 2022
1 of 12

A1



Site Lighting and Landscaping Plan

Scale: 1" = 20.0'

Landscaping Notes

1. NEW BRICK WALK INFILL, SPECIFICATION TO MATCH EXISTING ADJACENT BRICK PAVING.
2. CONTAINER PLANTS AND FURNITURE, SPECIFICATIONS TO BE DETERMINED.
3. PERENNIAL PLANTING BED, SPECIES AND SPECIFICATIONS TO BE DETERMINED.
4. BUFFER PLANTER BED,PERENNIAL AND SHRUBS, SPECIES AND SPECIFICATIONS TO BE DETERMINED.
5. PAVED WALKS WITH CONTAINER GARDEN, SPECIES AND SPECIFICATIONS TO BE DETERMINED.
6. PERMEABLE GRAVEL BEDS, SPECIFICATIONS TO BE DETERMINED.
7. LAWN, SEED MIX AND SPECIFICATIONS TO BE DETERMINED.
8. NEW TREE PIT TO MATCH EXISTING ADJACENT TREE PITS.

T-1 NEW 3-INCH CALIPER DECIDUOUS TREE, SPECIES TO BE DETERMINED.

Exterior Lighting

eL1	EXISTING DECORATIVE POLE LIGHT
L2	NEW DECORATIVE POLE LIGHT TO MATCH EXISTING ADJACENT eL1.
eL3	EXISTING STREET/PARKING LOT LIGHT, WOOD POLE MOUNTED.
L4	NEW POST MOUNTED PARKING LOT LIGHT, GLT GPT 87W-UV-40K-BZ.
eL5	EXISTING WALL MOUNTED PARKING LOT LIGHT.
L6	NEW WALL MOUNTED PARKING LOT LIGHT, WDS D 24L 40 4K7 WDT UNV DBT SCP-20F BY KIM LIGHTING
L7	NEW SOFFIT MOUNTED LIGHT.

L4

L6

Bulk Compliance Table

The site of the project is now a single parcel, resulting from the consolidation of the three lots previously known as 4 Cross Street, Main Street, and 172 Main Street. The Applicant has named the proposed project "Two Cross Street". The project is located in the CMS District. Some of the parking is located in the R1-5 District.

Zoning District	Minimum Lot Size, see footnote (1)								Minimum Yard								Minimum Frontage		Max. Building Height				Min. Landscape Area		Pedestrian Clearway	
	Area (sf)		Lot Area/ Dwelling Unit (sf)		Width (feet)		Depth (feet)		Front (feet)		Side (feet)		Total of 2 Sides (feet)		Rear (feet)				Feet above grade		Stories					
	Req'd.	Prop.	Req'd.	Prop.	Req'd.	Prop.	Req'd.	Prop.	Req'd.	Proposed	Req'd.	Prop.	Req'd.	Prop.	Req'd.	Prop.	Required	Proposed	Perm.	Prop.	Perm.	Prop.	Required	Proposed	Req'd.	Prop.
CMS - Central Main Street					None	NA	75	117.6	0' Min. 10' Max	.85' min.(at Cross St.) pre-existing 31' max.(at Main St.) See footnote (1)	0 Min.	0			20' Min.	55	100% (Main Street)	100% (Main Street)	38	38	3	3	5% (If landscaped area is accessible to public)	10.3%	8'	11.95' See footnote (8)

Abbreviations: (Perm.) Permitted (Prop.) Proposed (Req'd.) Required (exist.) Existing

Bulk Compliance Table Footnotes:

1. Plaza: This project provides a plaza at the central public corner, with seating and landscaping open to the public. As per § 223-41.18 E (1):
   Front setback: minimum zero, maximum 10 feet, except that the larger maximum may be allowed if the area in front of the building has no parking spaces and is landscaped and used in a manner that enhances street life by such a means as pocket parks or plazas, fountains, outdoor dining and public art.

Partial Zoning Map

N

Not to Scale

Zoning Summary

CMS

Historic District and Landmark Overlay
172 Main St. and Main St. corner.

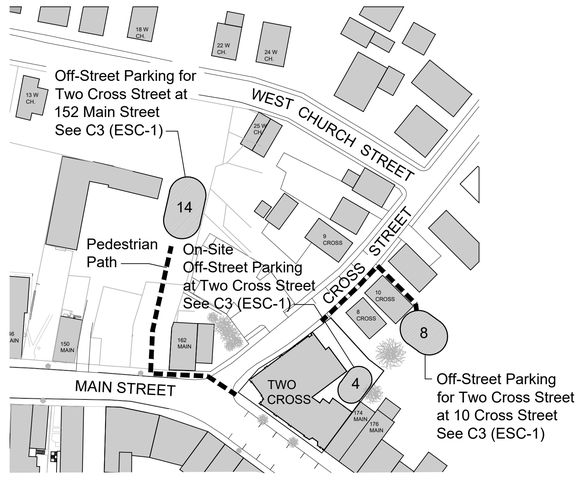
Parking Overlay
Entire lot.

Square Footage

Street Level	7,945 GSF
Second Floor	8,332 GSF
Third Floor	8,175 GSF
Total	24,452 GSF

Refer to Sheet A4 for area calculations by use.

Off-Street Parking



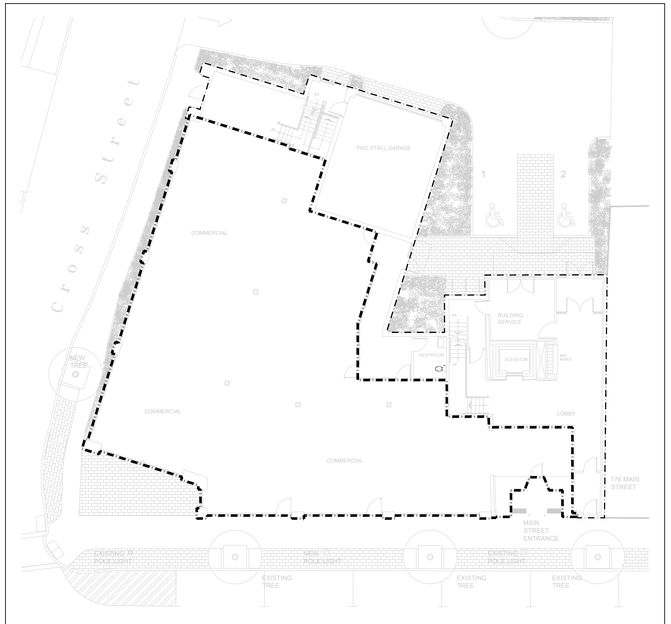
Parking Key Plan

Not to Scale

Off-Street Parking Tabulation

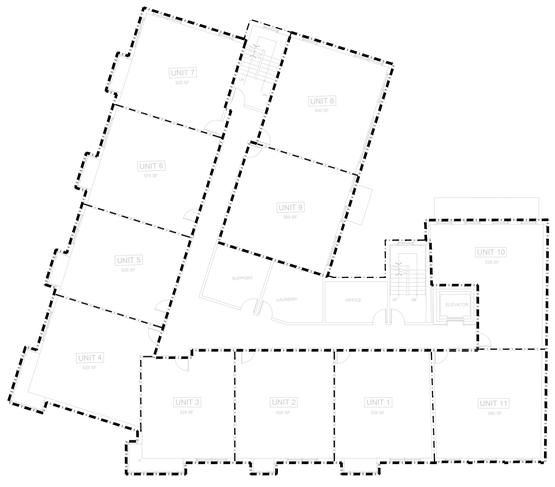
Use	Code Reference	Size	Required Spaces	Proposed Spaces
Senior Citizen	2 spaces for each 3 dwelling units. Per Article III General Regulations § 223-26 F.	9 Dwelling Units	2 / 3 x 9 = 6	6*
Residential	1 space per unit. Per Article IVD (CMS) § 223-41.18 G (2) (a).	9 Units	1 x 9 = 9	9
Retail	2 spaces per 1000 square feet of floor area. Per Article IVD (CMS) § 223-41.18 G (2) (c).	4,980 SF	2 x 4.9 = 10	10
Additional Project Parking				1
Total Off-Street Parking			25	26

* Per § 223-41.18 G (3) (a), 6 Spaces are provided in this application as per § 223-26 F. The contracted manager for these senior apartments (Hudson River Housing), has provided a supporting letter, included with the Site Plan Application showing a parking need for3 spaces.



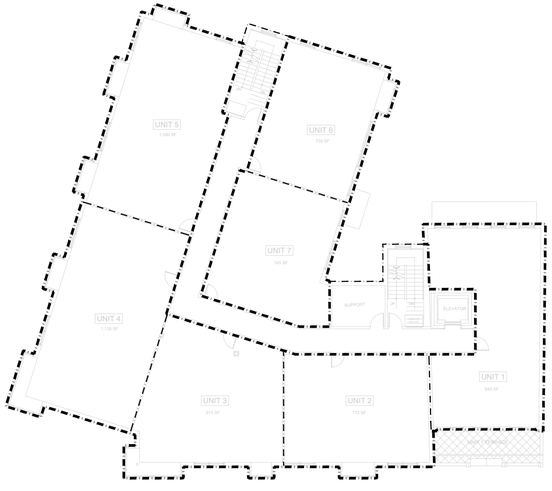
Ground Level Plan

7,945 Gross Square Feet
4,980 Square Feet of Floor Area



Second Floor Plan

8,332 Gross Square Feet
9 Senior Citizen Units

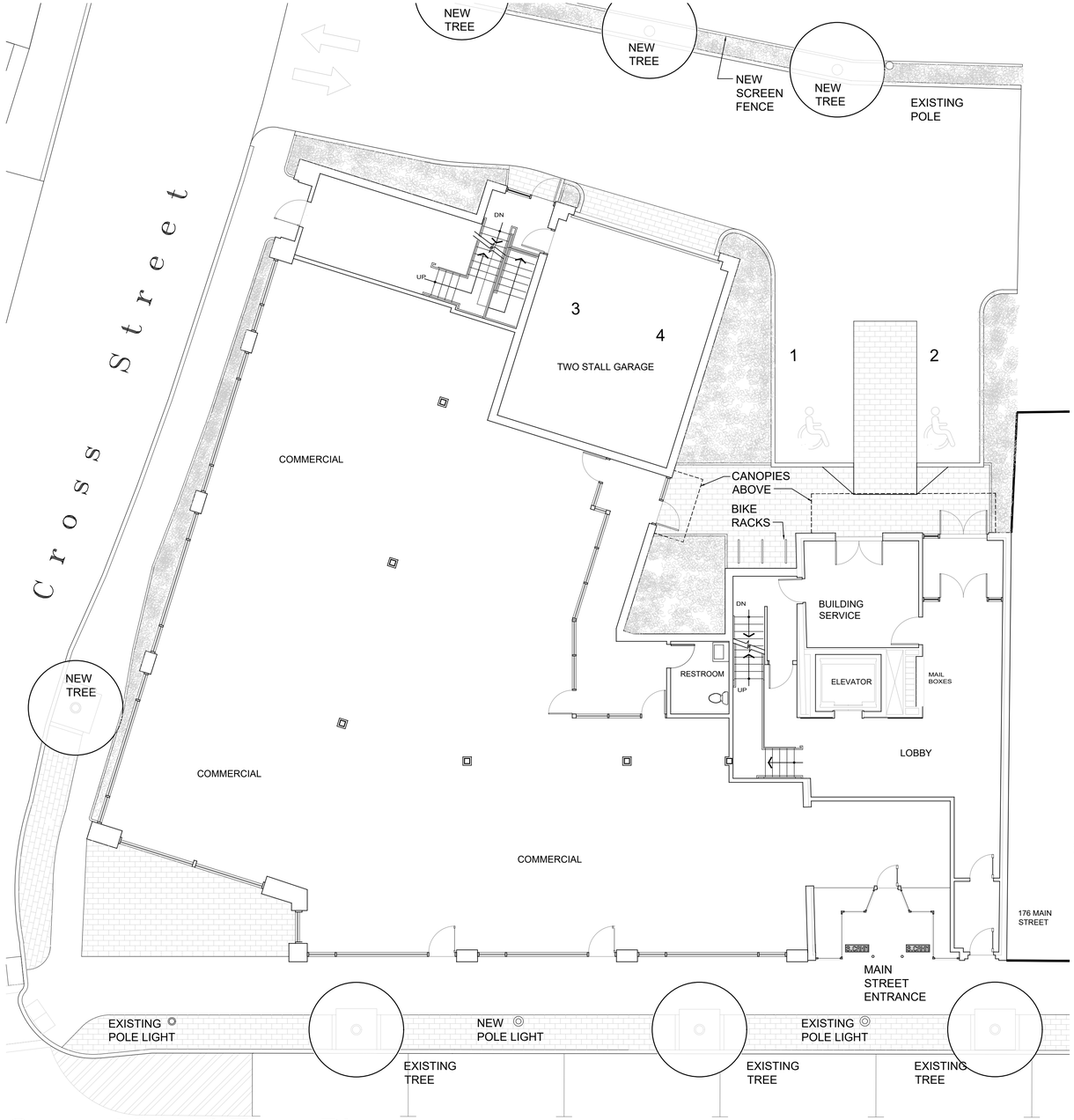


Third Floor Plan

8,175 Gross Square Feet
9 Residential Units

0' 10' 20' 30' 50' N

Scale: $\frac{1}{16}$" = 1'-0"



Ground Level Floor Plan

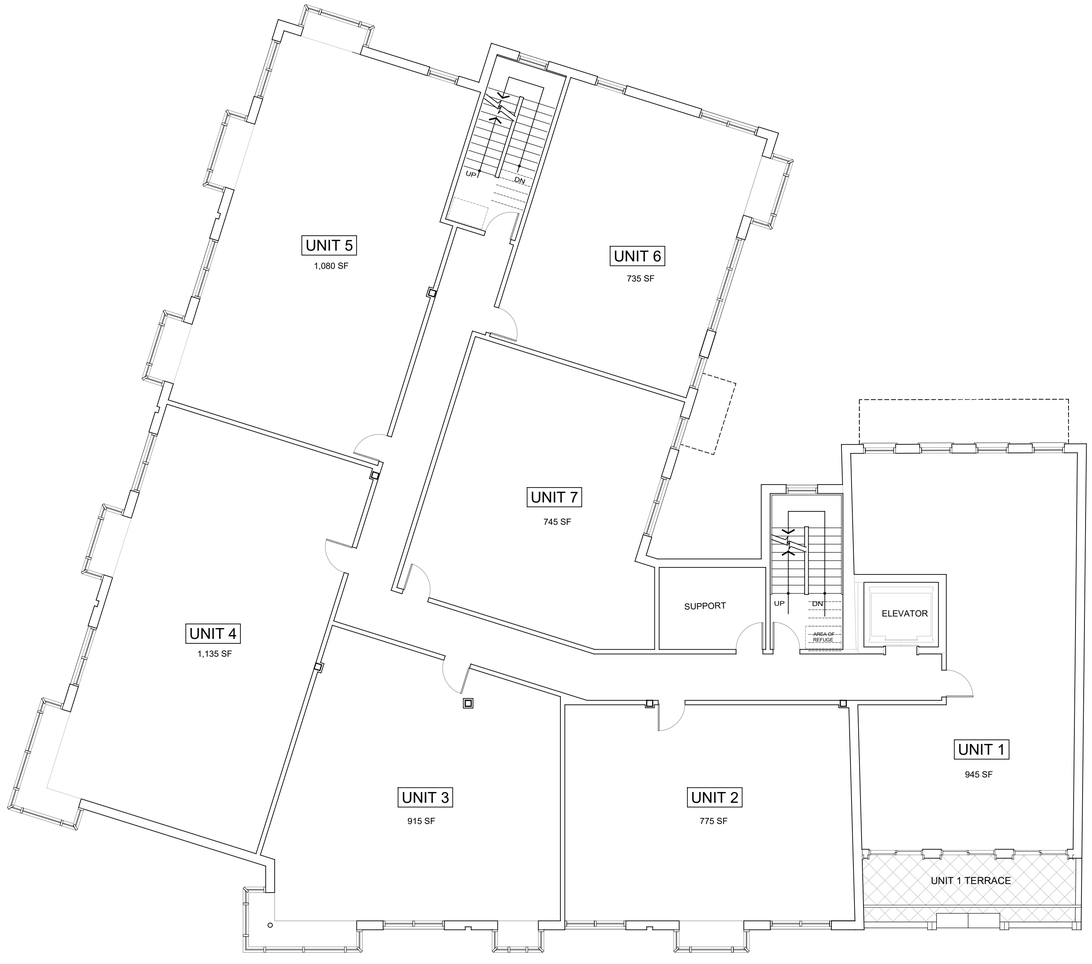


Second Floor Plan

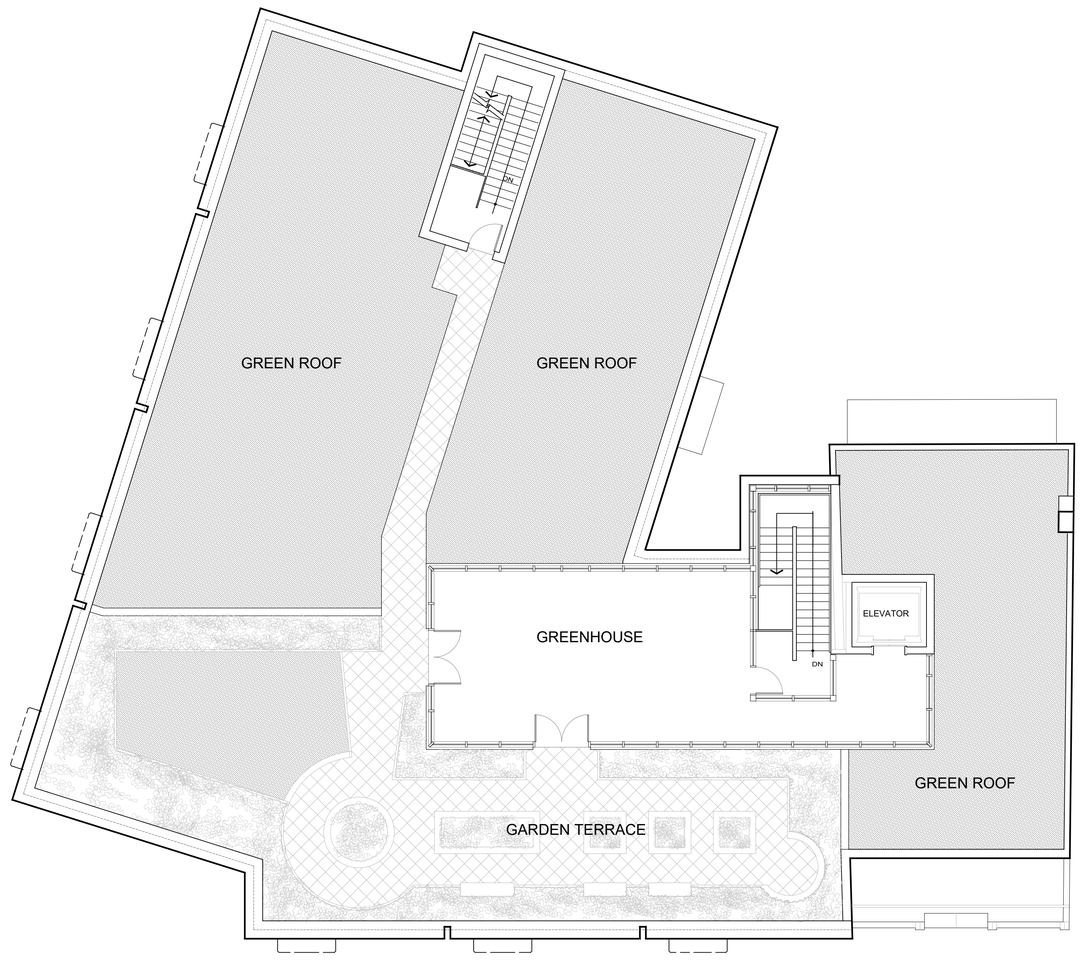
Scale: $\frac{1}{8}$" = 1'-0"

0' 10' 20' 25' 40'

N



Third Floor Plan

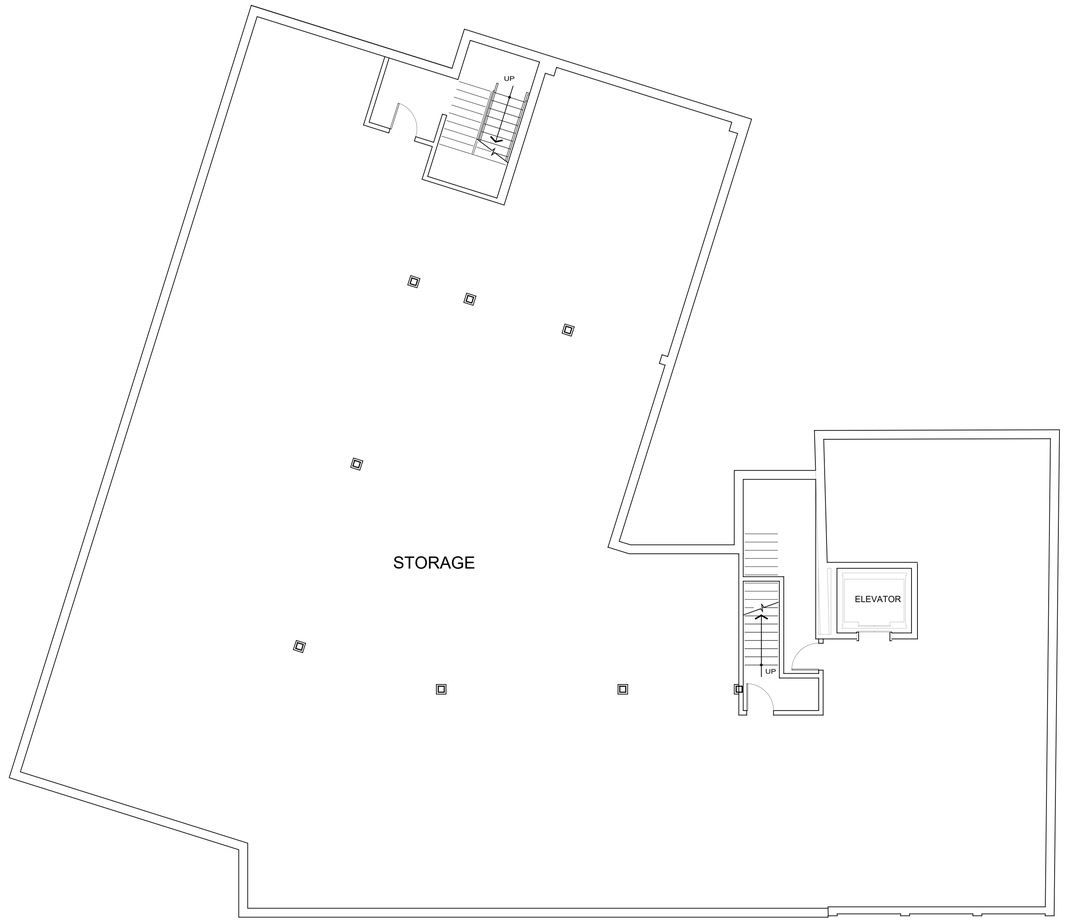


Roof Plan

Scale: $\frac{1}{8}$" = 1'-0"

0' 10' 20' 25' 40'

N



Cellar Floor Plan

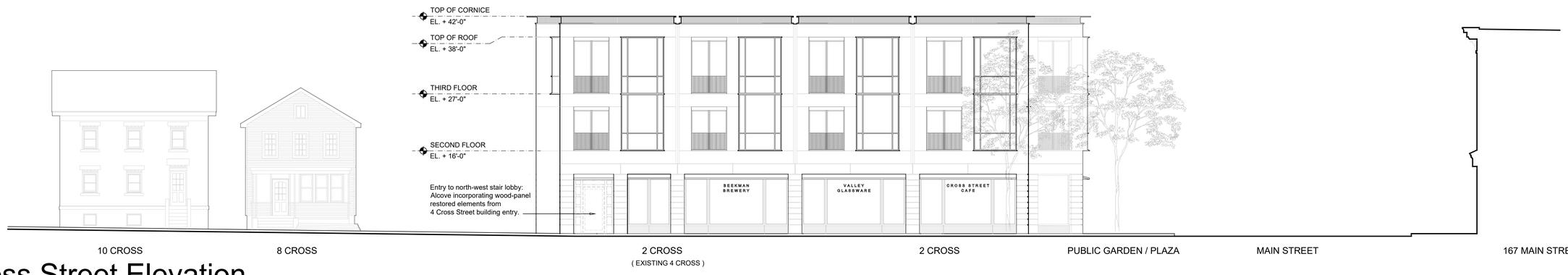
Scale: $\frac{1}{8}$" = 1'-0"

0' 10' 20' 25' 40'

N



Elevation Looking South



Cross Street Elevation



Main Street Elevation

Scale:1" = 10.0'

0' 10' 20' 25' 40'

Two Cross Street - Hudson Todd LLC

March 29, 2022
8 of 12

A8



View Looking East



Main Street View

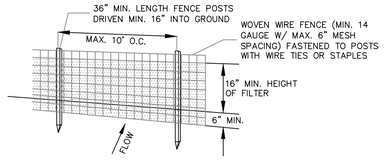


View Looking West

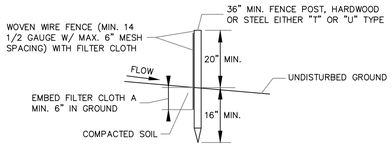


Cross Street View

EROSION AND SEDIMENT CONTROL DETAILS



PERSPECTIVE VIEW

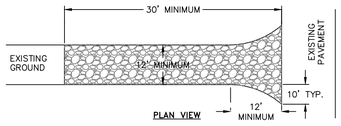


SECTION VIEW

NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUAL.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL
NOT TO SCALE



NOTES:

1) STONE SIZE – USE 1–4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2) LENGTH – NOT LESS THAN 30 FEET FOR A SINGLE RESIDENCE LOT.

3) THICKNESS – NOT LESS THAN SIX (6) INCHES.

4) WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.

5) GEOTEXTILE – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

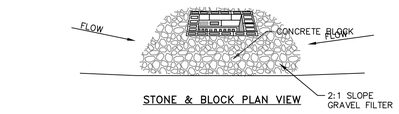
6) SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7) MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

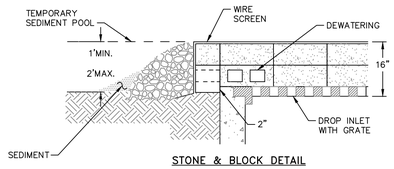
8) WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9) PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

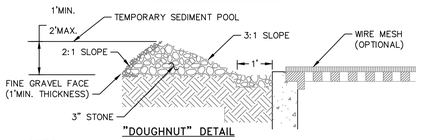
STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



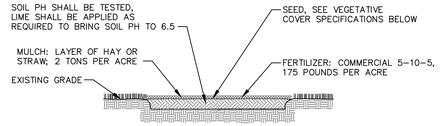
"DOUGHNUT" DETAIL

NOTES:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2–3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

CATCH BASIN INLET PROTECTION DETAIL
NOT TO SCALE



NOTES:

1. TOPSOIL, SEED, MULCH, AND FERTILIZE DISTURBED SOIL AREAS THAT WILL BE LEFT EXPOSED FOR 14 DAYS OR MORE.
2. SEED MIXTURE FOR USE ON LAWNS IN SUNNY AREAS:

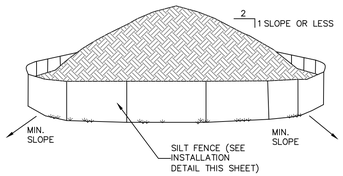
65% KENTUCKY BLUE GRASS BLEND	114 POUNDS PER ACRE
20% PERENNIAL RYEGRASS	35 POUNDS PER ACRE
15% FINE FESCUE	26 POUNDS PER ACRE
	175 POUNDS PER ACRE

3. SEED MIXTURE FOR USE IN SHADY AREAS:

80% BLEND OF SHADE TOLERANT KENTUCKY BLUEGRASS	138 POUNDS PER ACRE
20% FINE FESCUE	37 POUNDS PER ACRE
	175 POUNDS PER ACRE

4. SEED BETWEEN APRIL 1ST AND MAY 15TH OR AUGUST 15TH AND OCTOBER 15TH. SEEDING MAY OCCUR BETWEEN MAY 15TH AND AUGUST 15TH IF ADEQUATE IRRIGATION IS PROVIDED.
5. TOPSOIL SHALL HAVE AT LEAST 6% BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL, AND NO GREATER THAN 20% TOPSOIL SHALL HAVE NOT LESS THAN 20% FINE TEXTURED MATERIAL (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15% CLAY.

TOPSOIL, SEED AND MULCH DETAIL
NOT TO SCALE

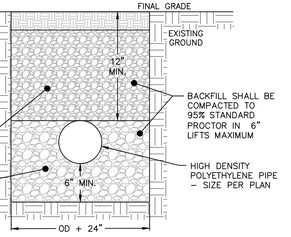


NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.

TEMPORARY SOIL STOCKPILE DETAIL
NOT TO SCALE

STORMWATER DETAILS

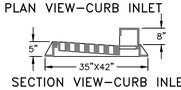


NOTES:

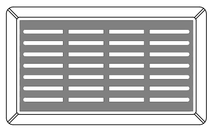
1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.

STORM LINE TRENCH DETAIL
NOT TO SCALE

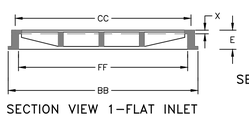
PLAN VIEW–CURB INLET



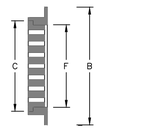
SECTION VIEW–CURB INLET



PLAN VIEW–FLAT INLET



SECTION VIEW 1–FLAT INLET



SECTION VIEW 2–FLAT INLET

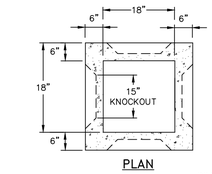
DIMENSION TABLE:

B	C	E	F	X	BB	CC	FF
39"	24"	4"	22"	1"	41"	36"	34"

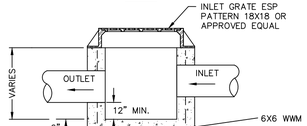
NOTES:

1. HEAVY DUTY RECTANGULAR STORMWATER FLAT INLET GRATE TO BE CAMPBELL FOUNDRY MODEL 3433, OR APPROVED EQUAL.
2. HEAVY DUTY RECTANGULAR STORMWATER CURB INLET GRATE TO BE CAMPBELL FOUNDRY MODEL 2541, OR APPROVED EQUAL.

CAST IRON STORMWATER FLAT AND CURB INLET GRATE DETAIL
NOT TO SCALE



PLAN

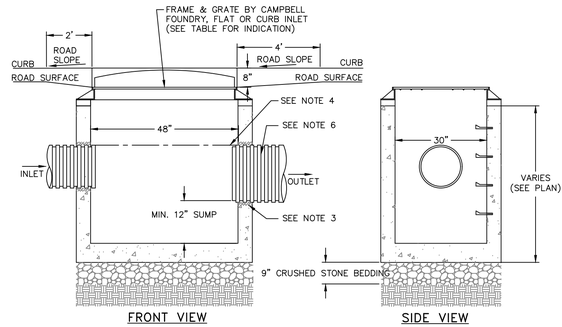


SECTION

NOTES:

1. YARD INLET BASINS SHALL BE PRE CAST REINFORCED CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI AND SHALL BE IN CONFORMANCE WITH ASTM 478-68. WALLS AND BASE SHALL BE ONE PIECE CONSTRUCTION. YARD INLET BASIN SHOWN BY EXPANDED SUPPLY PRODUCTS (ESP), 3330 ROUTE 9, COLD SPRING, NY (845) 265-3771.
2. BACKFILL USING SELECT MATERIAL, COMPACTED IN 6" LIFTS.
3. SUMP SHALL BE 12".
4. FRAMES AND GRATES SHALL BE SET IN A FULL BED OF MORTAR.

PRE-CAST CONCRETE YARD INLET DETAIL
NOT TO SCALE



FRONT VIEW SIDE VIEW

NOTES:

1. PRECAST CONCRETE CATCH BASIN WITH CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE ENDS OF ALL PIPES SHALL BE CUT OFF FLUSH WITH THE INSIDE SURFACE OF THE CATCH BASIN AND PARGED AROUND.
3. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE. CONNECTIONS MADE WITHIN 10 FEET OF A WATER MAIN (OR SERVICE LINE) OR A SEWER MAIN (OR SERVICE LATERAL) SHALL BE MADE WATERTIGHT.
4. PROVIDE A MINIMUM 0.1' DROP BETWEEN INLET AND OUTLET INVERTS (MATCH CROWNS FOR PIPES WITH DIFFERENT SIZE) UNLESS OTHERWISE NOTED ON THE PLAN.
5. CATCH BASINS WITH AN INTERIOR DEPTH OF 4' AND GREATER SHALL BE FURNISHED WITH STEEL REINFORCED POLYPROPYLENE PLASTIC STEPS AT 12" INTERVALS.
6. HDPE PIPE SHALL BE PROVIDED WITH WATERTIGHT CONNECTIONS. ADS MODEL N12 WT IB OR APPROVED EQUAL.

CATCH BASIN DETAIL
NOT TO SCALE

Dig Safely. New York Call 811 before you dig

Dig Safely. New York
800-962-7962
www.digsafelynewyork.org

- ☐ Call Before You Dig
- ☐ Wait The Required Time
- ☐ Confirm Utility Response
- ☐ Respect the Marks
- ☐ Dig With Care

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
1	2/21/22	REVISED BUILDING & LAYOUT	DGK				
2	3/29/22	PER PLANNING BOARD COMMENTS	CMB				

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

CONSTRUCTION DETAILS 2

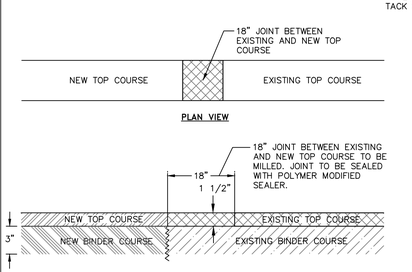
TWO CROSS STREET

172 MAIN STREET; 2 & 4 CROSS STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 5954-27-799966, 774986, 777974, 774997, 784996 & 808975

JOB #: 2019:036
DATE: 10/29/19
SCALE: AS SHOWN
TITLE: CD-2
SHEET: 5 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

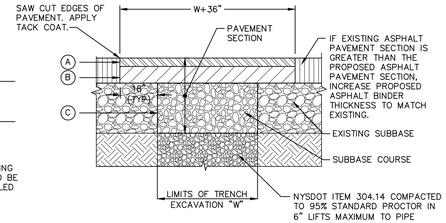
SITE DETAILS



NOTES:

1. 3" BINDER COURSE AND 1½" TOP COURSE TO BE USED FOR RESTORATION OF PAVEMENT WITHIN CITY ROADS.
2. EXCAVATIONS ARE TO BE SAW CUT SMOOTH, ALL EDGES TACK COATED, AND ALL SEAMS SEALED WITH A HOT POLYMER MODIFIED CRACK SEALANT.
3. IF EXISTING ASPHALT PAVEMENT DEPTH IS GREATER THAN THE PROPOSED ASPHALT PAVEMENT SECTION, INCREASE PROPOSED ASPHALT BINDER THICKNESS TO MATCH EXISTING.

MILLED KEYWAY DETAIL
NOT TO SCALE



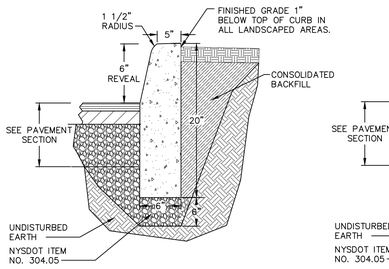
LEGEND

- (A) 1–1/2" ASPHALT CONCRETE TOP COURSE– NYSDOT TYPE 6F
- (B) 2 1/2" ASPHALT CONCRETE BINDER COURSE– NYSDOT TYPE 3
- (C) 6" GRANULAR SUBBASE COURSE– NYSDOT ITEM 304.14

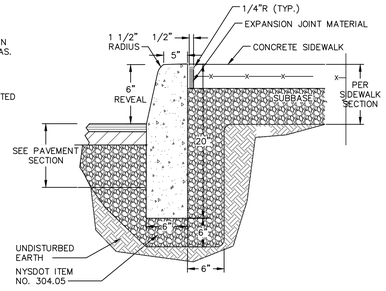
NOTES:

1. SAW CUT MIN. 18" BEYOND EXCAVATION WITH SMOOTH EDGES. 18" JOINT BETWEEN EXISTING AND NEW TOP COURSE TO BE MILLED. JOINT TO BE SEALED WITH POLYMER MODIFIED SEALER.
2. FURNISH, PLACE, AND COMPACT SUBBASE.
3. TACK COAT IN ACCORDANCE WITH NYSDOT STANDARD SPEC.
4. FURNISH AND PLACE ASPHALT CONCRETE PAVEMENT AS SPECIFIED.

PAVEMENT RESTORATION DETAIL
NOT TO SCALE



ABUTTING GRASS OR LANDSCAPE

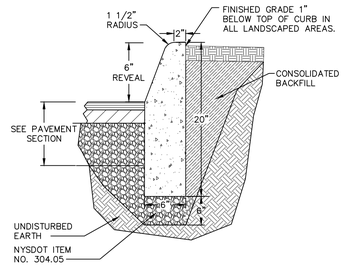


ABUTTING SIDEWALK

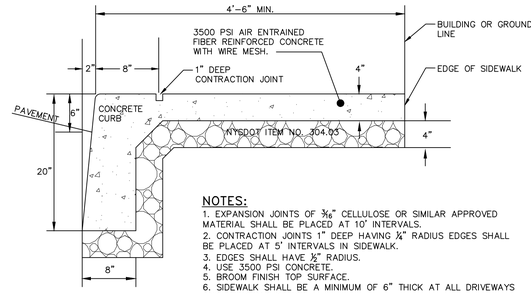
NOTES:

1. CONCRETE CURB SHALL BE 4,000 PSI CAST–IN–PLACE, AND IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION SECTION 609.
2. EXPANSION JOINTS OF 1/2" CELLULOSE OR SIMILAR MATERIAL SHALL BE PLACED AT 10 FOOT INTERVALS.
3. FOR MOUNTABLE CURBS ABUTTING SIDEWALK OR OTHER HARDSCAPE, REFER TO "ABUTTING SIDEWALK" DETAIL.

CAST–IN–PLACE CONCRETE CURB DETAIL
NOT TO SCALE



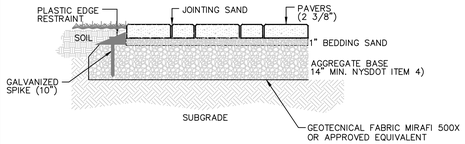
MOUNTABLE CURB
ABUTTING GRASS OR LANDSCAPE



NOTES:

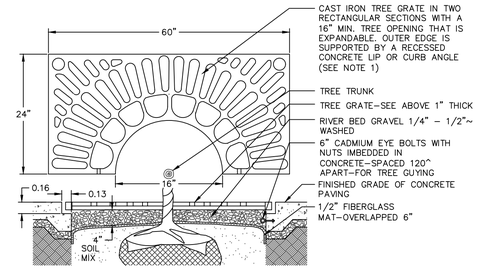
1. EXPANSION JOINTS OF 3/16" CELLULOSE OR SIMILAR APPROVED MATERIAL SHALL BE PLACED AT 10' INTERVALS.
2. CONTRACTION JOINTS 1" DEEP HAVING ¼" RADIUS EDGES SHALL BE PLACED AT 5' INTERVALS IN SIDEWALK.
3. EDGES SHALL HAVE ½" RADIUS.
4. USE 3500 PSI CONCRETE.
5. BROOM FINISH TOP SURFACE.
6. SIDEWALK SHALL BE A MINIMUM OF 6" THICK AT ALL DRIVEWAYS AND HANDICAP RAMPS.
7. MAXIMUM SLOPE OF 1 ON 12 TO BE USED WHERE SIDEWALK TERMINATES AT HANDICAP RAMPS.

MONOLITHIC CURB AND SIDEWALK DETAIL
FOR SIDEWALKS ALONG CITY STREET
NOT TO SCALE



NOTE:
THE CONCRETE PAVER DRIVE SHALL SUPPORT A MINIMUM OF 75,000 POUNDS PER APPENDIX "D" OF THE 2015 INTERNATIONAL BUILDING CODE

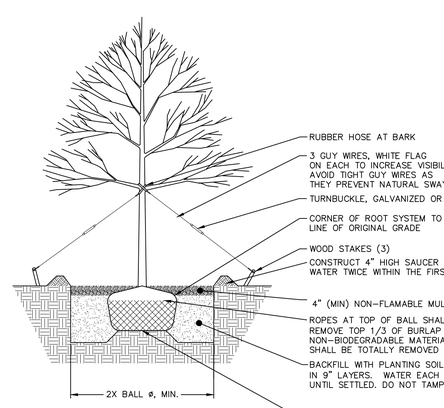
CONCRETE PAVER DETAIL
NOT TO SCALE



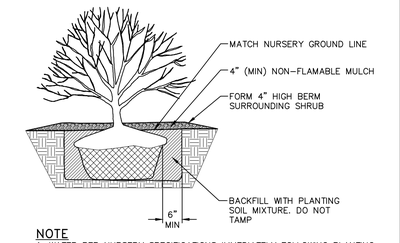
NOTES:

1. TREE GRATE SHAPE AND PATTERN SHALL BE COORDINATED WITH THE CITY OF BEACON BUILDING DEPARTMENT PRIOR TO ORDERING.
2. TREE WELL DIMENSIONS SHALL BE A MINIMUM OF 48" X 60".

TREE GRATE PLANTING DETAIL
NOT TO SCALE

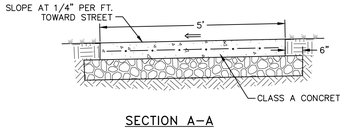


TREE DETAIL
NOT TO SCALE

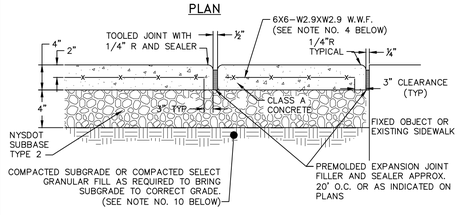


NOTE
1. WATER PER NURSERY SPECIFICATIONS IMMEDIATELY FOLLOWING PLANTING.
2. DETAIL IS FOR BOTH BALL & BURLAPPED OR CONTAINERED SHRUBS.

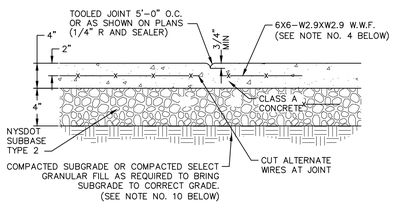
SHRUB PLANTING DETAIL
NOT TO SCALE



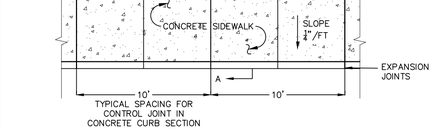
SECTION A–A



EXPANSION JOINT



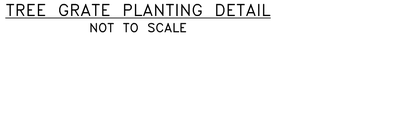
CONTROL JOINT



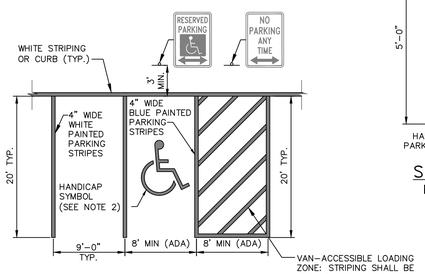
NOTES:

1. 10' SPACING OF CONTROL JOINTS SHALL BE USED FOR CAST IN PLACE CONCRETE CURBS.
2. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST REVISION.
3. ALL CONCRETE SHALL BE 3,500 PSI CLASS A CONCRETE. CONCRETE MATERIALS, PLACEMENT, AND CONSTRUCTION SHALL CONFORM WITH SECTION 500 OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
4. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND AS SPECIFICALLY CALLED OUT IN THE DRAWINGS.
5. ALL EXPOSED SURFACED SHALL HAVE A BROOM TEXTURED FINISH.
6. EXPANSION JOINTS SHALL BE LOCATED A MAXIMUM OF 20' ON CENTER, OR AS INDICATED ON PLANS.
7. JOINTS SHALL NOT BE SAW CUT.
8. EXPOSED CONCRETE SURFACES SHALL BE TREATED WITH "SUREBOND"/"SAFEBOND"SB–7000 INTENSIFIER BRIGHT PROTECTOR AND SIDEWALK SEALER, OR EQUAL. RATE AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. SUBBASE MATERIAL SHALL CONFORM WITH SECTION 304 OF THE ABOVE REFERENCED NYSDOT STANDARD.
10. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSE OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMATION WITH SECTION 203–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
11. ALL WORK SHALL CONFORM WITH SECTION 608–SIDEWALK, DRIVEWAYS, AND BICYCLE PATHS OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.

CONCRETE SIDEWALK DETAIL
NOT TO SCALE



SIGN DETAILS
NOT TO SCALE



TYPICAL PARKING STRIPING

HANDICAP PARKING STRIPING

NOTES:

1. ALL DIMENSIONS SUBJECT TO CURRENT MUNICIPALITY ZONING AND SITE REGULATIONS.
2. PAINTED HANDICAP SYMBOL TO BE IN ACCORDANCE WITH NYSDOT AND ADA STANDARDS.
3. IF PARKING ABUTS A SIDEWALK, THEN THE REGULATORY SIGNS SHALL BE PLACED BEHIND THE SIDEWALK.

PARKING AND STRIPING DETAIL
NOT TO SCALE

LANDSCAPING DETAILS

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York Call 811 before you dig

Dig Safely. New York 800-962-7962 www.digsafelynewyork.org

- ☐ Call Before You Dig
- ☐ Wait The Required Time
- ☐ Confirm Utility Response
- ☐ Respect the Marks
- ☐ Dig With Care

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
1	2/21/22	REVISED BUILDING & LAYOUT	DGK				
2	3/29/22	PER PLANNING BOARD COMMENTS	CMB				

STATE OF NEW YORK — DANIEL G. ROGERS — 082716 — LICENSED PROFESSIONAL ENGINEER

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845–440–6926
F: 845–440–6637

CONSTRUCTION DETAILS 1

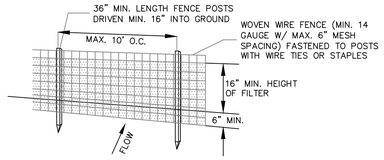
TWO CROSS STREET

172 MAIN STREET; 2 & 4 CROSS STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 5954–27–799966, 774986, 777974, 774997, 784996 & 808975

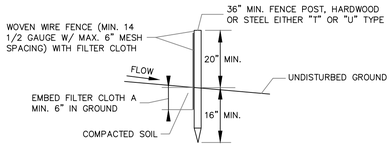
JOB #:	2019:036
DATE:	10/29/19
SCALE:	AS SHOWN
TITLE:	CD–1
SHEET:	4 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

EROSION AND SEDIMENT CONTROL DETAILS



PERSPECTIVE VIEW

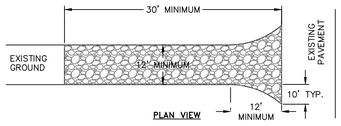


SECTION VIEW

NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUAL.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL
NOT TO SCALE



NOTES:

1) STONE SIZE – USE 1–4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2) LENGTH – NOT LESS THAN 30 FEET FOR A SINGLE RESIDENCE LOT.

3) THICKNESS – NOT LESS THAN SIX (6) INCHES.

4) WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.

5) GEOTEXTILE – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

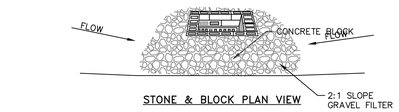
6) SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7) MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

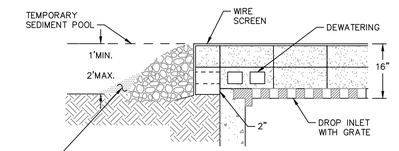
8) WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9) PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

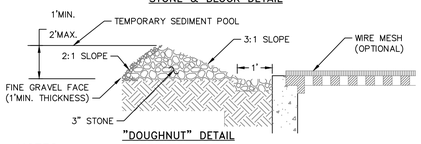
STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE



STONE & BLOCK PLAN VIEW



STONE & BLOCK DETAIL



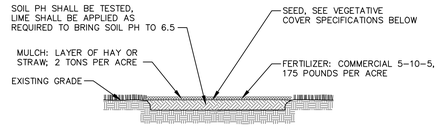
"DOUGHNUT" DETAIL

NOTES:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2–3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

CATCH BASIN INLET PROTECTION DETAIL
NOT TO SCALE



NOTES:

1. TOPSOIL, SEED, MULCH, AND FERTILIZE DISTURBED SOIL AREAS THAT WILL BE LEFT EXPOSED FOR 14 DAYS OR MORE.
2. SEED MIXTURE FOR USE ON LAWNS IN SUNNY AREAS:

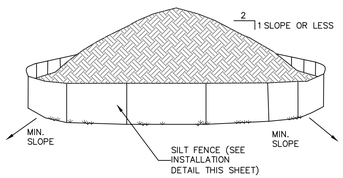
65% KENTUCKY BLUE GRASS BLEND	114 POUNDS PER ACRE
20% PERENNIAL RYEGRASS	35 POUNDS PER ACRE
15% FINE FESCUE	26 POUNDS PER ACRE
	175 POUNDS PER ACRE

3. SEED MIXTURE FOR USE IN SHADY AREAS:

80% BLEND OF SHADE TOLERANT KENTUCKY BLUEGRASS	138 POUNDS PER ACRE
20% FINE FESCUE	37 POUNDS PER ACRE
	175 POUNDS PER ACRE

4. SEED BETWEEN APRIL 1ST AND MAY 15TH OR AUGUST 15TH AND OCTOBER 15TH. SEEDING MAY OCCUR BETWEEN MAY 15TH AND AUGUST 15TH IF ADEQUATE IRRIGATION IS PROVIDED.
5. TOPSOIL SHALL HAVE AT LEAST 6% BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL, AND NO GREATER THAN 20% TOPSOIL SHALL HAVE NOT LESS THAN 20% FINE TEXTURED MATERIAL (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15% CLAY.

TOPSOIL, SEED AND MULCH DETAIL
NOT TO SCALE

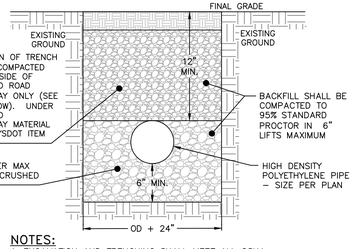


NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.

TEMPORARY SOIL STOCKPILE DETAIL
NOT TO SCALE

STORMWATER DETAILS

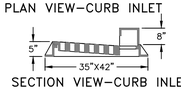


NOTES:

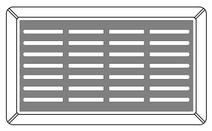
1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.

STORM LINE TRENCH DETAIL
NOT TO SCALE

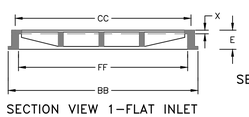
PLAN VIEW–CURB INLET



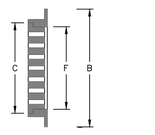
SECTION VIEW–CURB INLET



PLAN VIEW–FLAT INLET



SECTION VIEW 1–FLAT INLET



SECTION VIEW 2–FLAT INLET

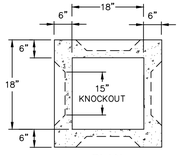
DIMENSION TABLE:

B	C	E	F	X	BB	CC	FF
39"	24"	4"	22"	1"	41"	36"	34"

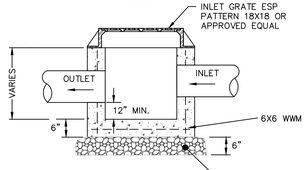
NOTES:

1. HEAVY DUTY RECTANGULAR STORMWATER FLAT INLET GRATE TO BE CAMPBELL FOUNDRY MODEL 3433, OR APPROVED EQUAL.
2. HEAVY DUTY RECTANGULAR STORMWATER CURB INLET GRATE TO BE CAMPBELL FOUNDRY MODEL 2541, OR APPROVED EQUAL.

CAST IRON STORMWATER FLAT AND CURB INLET GRATE DETAIL
NOT TO SCALE



PLAN

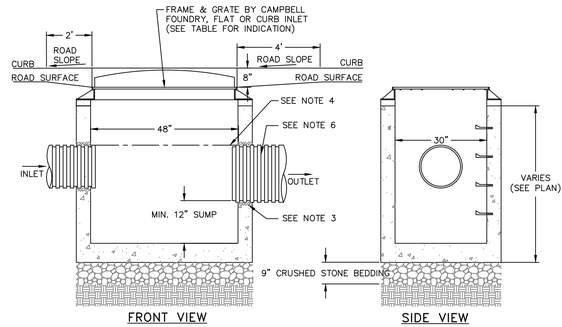


SECTION

NOTES:

1. YARD INLET BASINS SHALL BE PRE CAST REINFORCED CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI AND SHALL BE IN CONFORMANCE WITH ASTM 478-68. WALLS AND BASE SHALL BE ONE PIECE CONSTRUCTION. YARD INLET BASIN SHOWN BY EXPANDED SUPPLY PRODUCTS (ESP), 3330 ROUTE 9, COLD SPRING, NY (845) 265-3771.
2. BACKFILL USING SELECT MATERIAL, COMPACTED IN 6" LIFTS.
3. SUMP SHALL BE 12".
4. FRAMES AND GRATES SHALL BE SET IN A FULL BED OF MORTAR.

PRE-CAST CONCRETE YARD INLET DETAIL
NOT TO SCALE



FRONT VIEW SIDE VIEW

NOTES:

1. PRECAST CONCRETE CATCH BASIN WITH CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE ENDS OF ALL PIPES SHALL BE CUT OFF FLUSH WITH THE INSIDE SURFACE OF THE CATCH BASIN AND PARGED AROUND.
3. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE. CONNECTIONS MADE WITHIN 10 FEET OF A WATER MAIN (OR SERVICE LINE) OR A SEWER MAIN (OR SERVICE LATERAL) SHALL BE MADE WATERTIGHT.
4. PROVIDE A MINIMUM 0.1' DROP BETWEEN INLET AND OUTLET INVERTS (MATCH CROWNS FOR PIPES WITH DIFFERENT SIZE) UNLESS OTHERWISE NOTED ON THE PLAN.
5. CATCH BASINS WITH AN INTERIOR DEPTH OF 4' AND GREATER SHALL BE FURNISHED WITH STEEL REINFORCED POLYPROPYLENE PLASTIC STEPS AT 12" INTERVALS.
6. HDPE PIPE SHALL BE PROVIDED WITH WATERTIGHT CONNECTIONS. ADS MODEL N12 WT IB OR APPROVED EQUAL.

CATCH BASIN DETAIL
NOT TO SCALE

Dig Safely. New York Call 811 before you dig

Dig Safely. New York
800-962-7962
www.digsafelynewyork.org

- ☐ Call Before You Dig
- ☐ Wait The Required Time
- ☐ Confirm Utility Response
- ☐ Respect the Marks
- ☐ Dig With Care

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
1	2/21/22	REVISED BUILDING & LAYOUT	DGK				
2	3/29/22	PER PLANNING BOARD COMMENTS	CMB				

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

CONSTRUCTION DETAILS 2

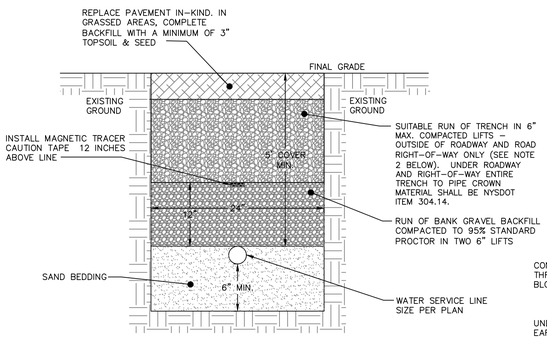
TWO CROSS STREET

172 MAIN STREET; 2 & 4 CROSS STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 5954-27-799966, 774986, 777974, 774997, 784996 & 808975

JOB #: 2019:036
DATE: 10/29/19
SCALE: AS SHOWN
TITLE: CD-2
SHEET: 5 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

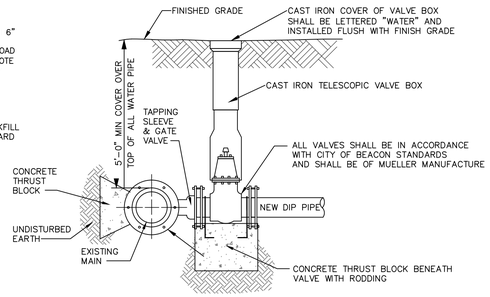
WATER & SEWER DETAILS



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, ENLOGATED PARTICLES, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. IN AREAS WHERE 5' COVER REQUIREMENT CANNOT BE MET, THE CONTRACTOR SHALL PROVIDE PIPE INSULATION TO PREVENT FREEZING.

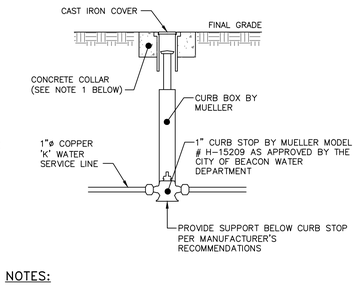
WATER SERVICE LINE TRENCH DETAIL
NOT TO SCALE



NOTES:

1. ALL VALVES SHALL OPEN BY TURNING LEFT (COUNTERCLOCKWISE) AND HAVE A 2-INCH SQUARE-OPERATING NUT PAINTED RED.
2. ALL VALVES SHALL BE M.J. RESILIENT WEDGE TYPE WITH "O" RING PACKING, DESIGNED FOR A WORKING PRESSURE OF 150 PSI AND BE IN FULL CONFORMANCE WITH AWWA C500.
3. TAPPING SLEEVE AND GATE VALVE SHOWN ARE MUELLER H-615, AND T-2631 RESPECTIVELY.

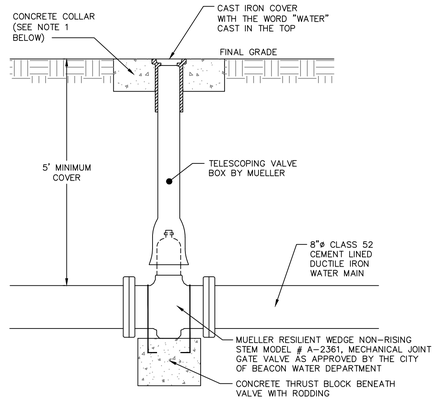
TAPPING SLEEVE DETAIL
NOT TO SCALE



NOTES:

1. CONCRETE COLLAR TO BE PROVIDED IN AREAS THAT ARE NOT PAVED. THE COLLAR SHALL BE 6" FROM THE COVER AND SHALL EXTEND 6" BELOW FINAL GRADE.
2. CURB STOP TO BE COMPRESSION TYPE BY MUELLER.
3. AREA AROUND CURB BOX TO BE BACKFILLED WITH GRAVELLY MATERIAL.

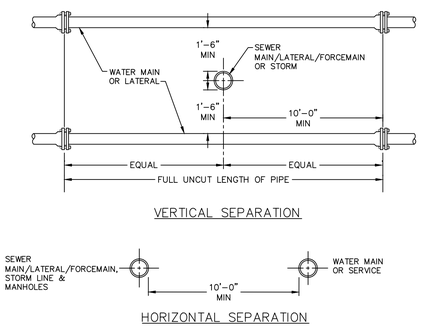
WATER SHUT-OFF VALVE DETAIL
NOT TO SCALE



NOTES:

1. CONCRETE COLLAR TO BE PROVIDED IN AREAS THAT ARE NOT PAVED. THE COLLAR SHALL BE 6" FROM THE COVER AND SHALL EXTEND 6" BELOW FINAL GRADE.

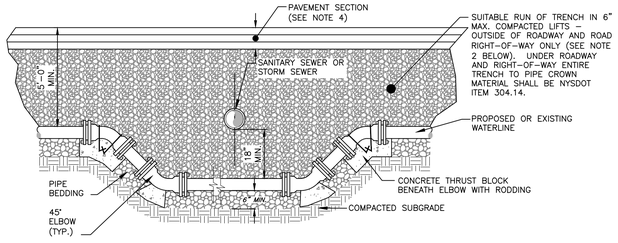
GATE VALVE DETAIL
NOT TO SCALE



NOTE:

1. NO DEVIATION IN THE SEPARATION REQUIREMENTS WILL BE PERMITTED WITHOUT THE EXPRESS APPROVAL OF THE DUTCHESS COUNTY DEPARTMENT OF HEALTH AND THE CITY OF BEACON. CONCRETE ENCASEMENT OF WATERLINE OR OFFSETTING OF WATERLINE SHALL BE REQUIRED WHERE SEPARATION DISTANCES CANNOT BE MAINTAINED.

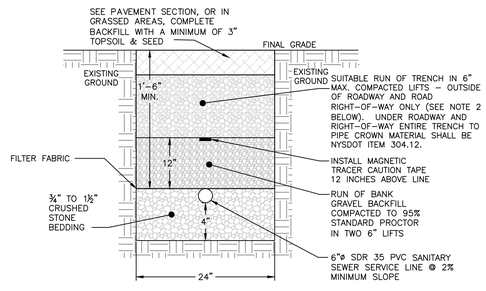
WATER LINE SEPARATION DETAIL
NOT TO SCALE



NOTES:

1. WHEN THE ELEVATION OF THE SANITARY OR STORM SEWER CAN NOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER SERVICE LINE OR MAIN SHALL BE RELOCATED TO PROVIDE THIS REQUIRED SEPARATION OR RECONSTRUCTED WITH MECHANICAL JOINT PIPE FOR A DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATERMAIN SHALL BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR AWAY FROM THE SEWER AS POSSIBLE.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, ENLOGATED PARTICLES, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. THE RELOCATED WATER MAIN/SERVICE LINE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA, NYSDOH AND DCDOH STANDARDS.
4. PAVEMENT RESTORATION SHALL BE IN ACCORDANCE WITH THE PAVEMENT RESTORATION DETAIL.
5. ALL REPLACED WATERMAIN SHALL MATCH THE EXISTING DIAMETER OF THE EXISTING MAIN, AND SHALL BE CLASS 52 DUCTILE IRON.

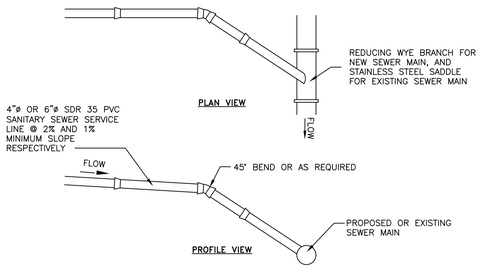
WATER LINE OFFSET DETAIL
NOT TO SCALE



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.

SANITARY SEWER SERVICE LINE TRENCH DETAIL
NOT TO SCALE



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.

SANITARY SEWER SERVICE CONNECTION DETAIL
NOT TO SCALE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York
800-962-7962
www.digsafelynewyork.org
- Call Before You Dig
- Wait The Required Time
- Confirm Utility Response
- Respect the Marks
- Dig With Care

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
1	2/21/22	REVISED BUILDING & LAYOUT	DGK				
2	3/29/22	PER PLANNING BOARD COMMENTS	CMB				

STATE OF NEW YORK — DANIEL G. ROGERS — 082716 — LICENSED PROFESSIONAL ENGINEER

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

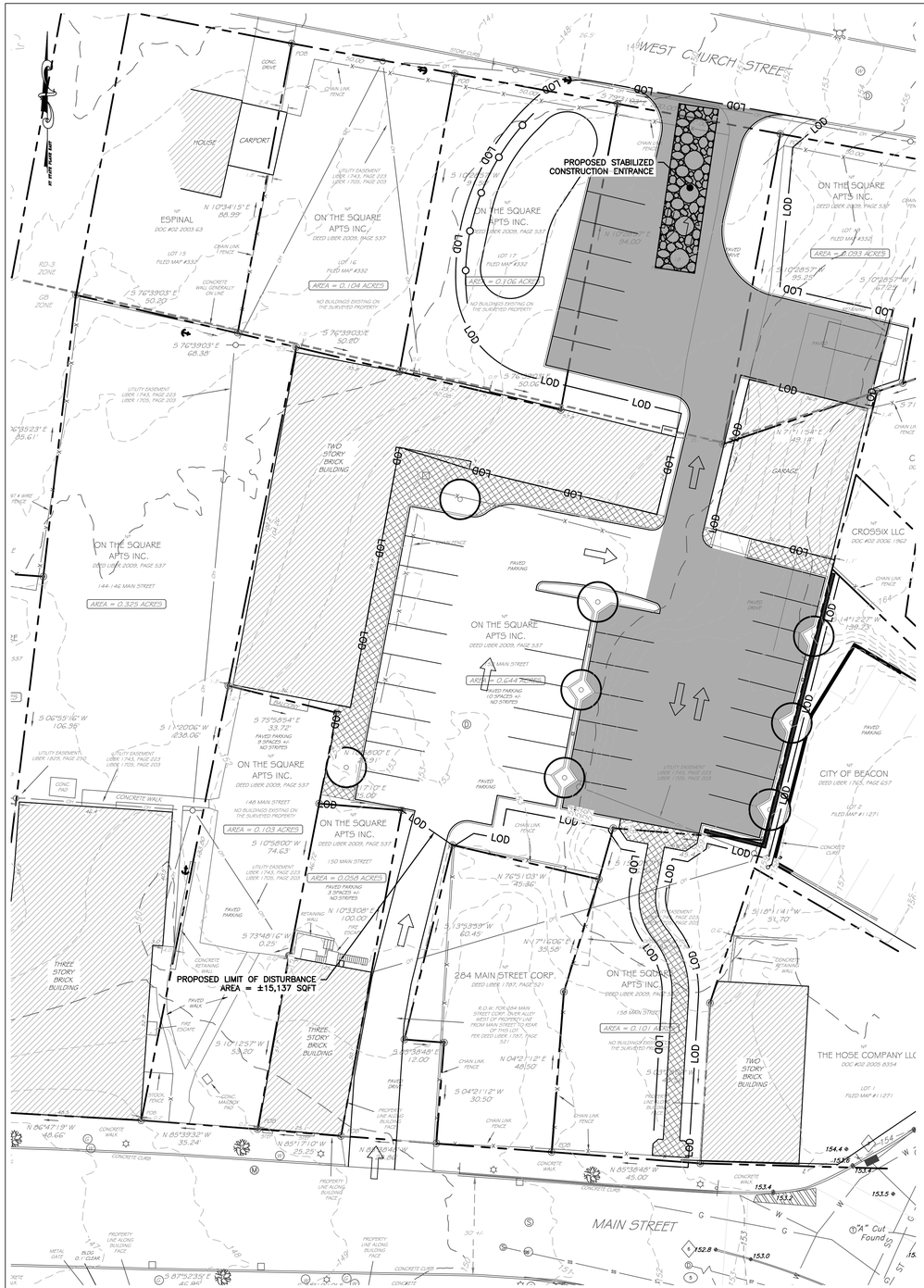
CONSTRUCTION DETAILS 3

TWO CROSS STREET

172 MAIN STREET; 2 & 4 CROSS STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 5954-27-799966, 774986, 777974, 774997, 784996 & 808975

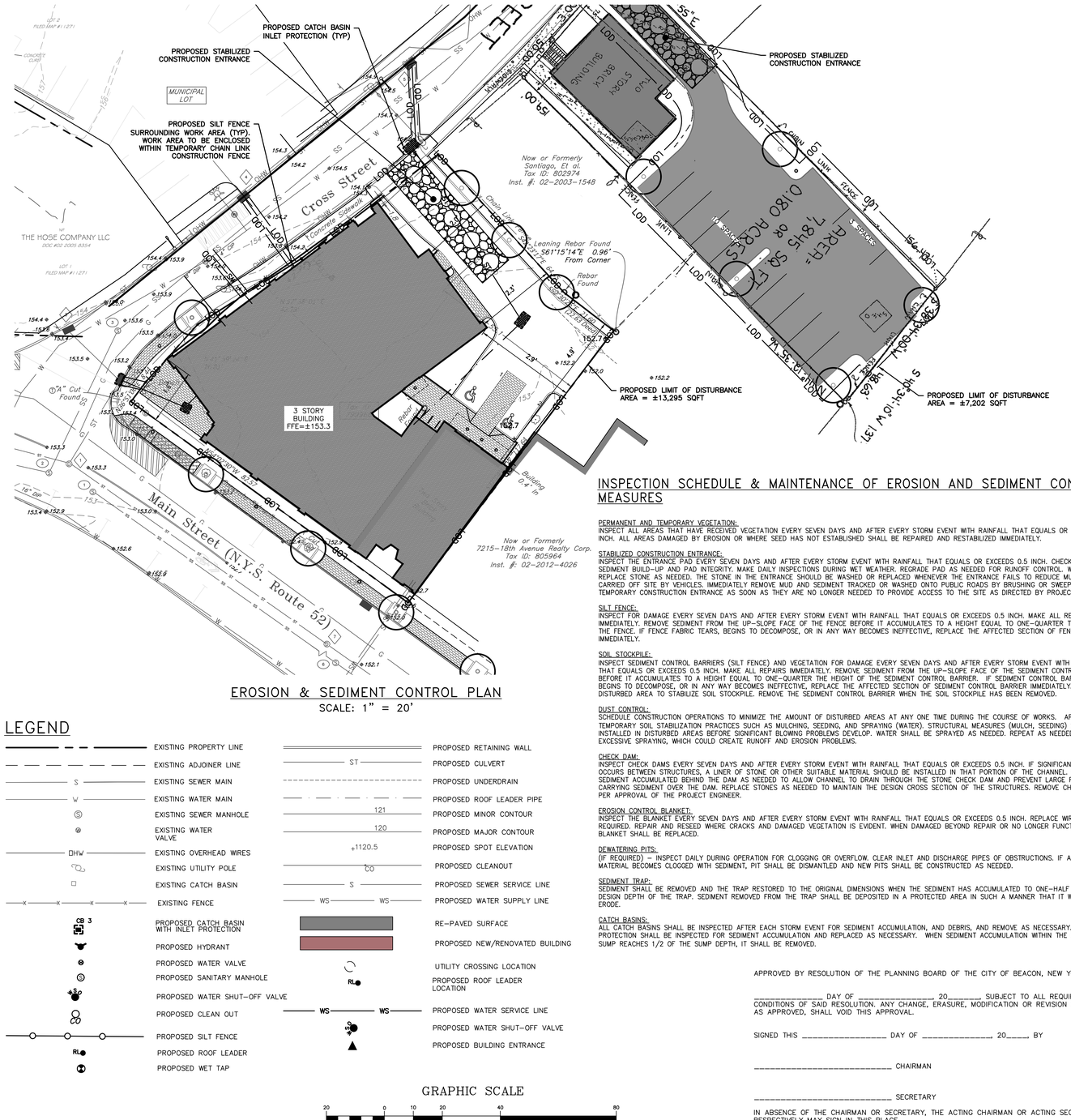
JOB #: 2019:036
DATE: 10/29/19
SCALE: AS SHOWN
TITLE: CD-3
SHEET: 6 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



OFFSITE PARKING EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'



EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJOINER LINE
- EXISTING SEWER MAIN
- EXISTING WATER MAIN
- EXISTING SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING OVERHEAD WIRES
- EXISTING UTILITY POLE
- EXISTING CATCH BASIN
- EXISTING FENCE
- PROPOSED CATCH BASIN WITH INLET PROTECTION
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED SANITARY MANHOLE
- PROPOSED WATER SHUT-OFF VALVE
- PROPOSED CLEAN OUT
- PROPOSED SILT FENCE
- PROPOSED ROOF LEADER
- PROPOSED WET TAP
- PROPOSED RETAINING WALL
- PROPOSED CULVERT
- PROPOSED UNDERDRAIN
- PROPOSED ROOF LEADER PIPE
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED CLEANOUT
- PROPOSED SEWER SERVICE LINE
- PROPOSED WATER SUPPLY LINE
- RE-PAVED SURFACE
- PROPOSED NEW/RENOVATED BUILDING
- UTILITY CROSSING LOCATION
- PROPOSED ROOF LEADER LOCATION
- PROPOSED WATER SERVICE LINE
- PROPOSED WATER SHUT-OFF VALVE
- PROPOSED BUILDING ENTRANCE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

INSPECTION SCHEDULE & MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES

PERMANENT AND TEMPORARY VEGETATION:
INSPECT ALL AREAS THAT HAVE RECEIVED VEGETATION EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. ALL AREAS DAMAGED BY EROSION OR WHERE SEED HAS NOT ESTABLISHED SHALL BE REPAIRED AND RESTABILIZED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE:
INSPECT THE ENTRANCE PAD EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. CHECK FOR MUD, SEDIMENT BUILD-UP AND PAD INTEGRITY. MAKE DAILY INSPECTIONS DURING WET WEATHER. REGRADE PAD AS NEEDED FOR RUNOFF CONTROL. WASH AND REPLACE STONE AS NEEDED. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF SITE BY VEHICLES. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. REMOVE TEMPORARY CONSTRUCTION ENTRANCE AS SOON AS THEY ARE NO LONGER NEEDED TO PROVIDE ACCESS TO THE SITE AS DIRECTED BY PROJECT ENGINEER.

SILT FENCE:
INSPECT FOR DAMAGE EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE FENCE BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO ONE-QUARTER THE HEIGHT OF THE FENCE. IF FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF FENCE IMMEDIATELY.

SOIL STOCKPILE:
INSPECT SEDIMENT CONTROL BARRIERS (SILT FENCE) AND VEGETATION FOR DAMAGE EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE SEDIMENT CONTROL BARRIER BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO ONE-QUARTER THE HEIGHT OF THE SEDIMENT CONTROL BARRIER. IF SEDIMENT CONTROL BARRIER TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF SEDIMENT CONTROL BARRIER IMMEDIATELY. REVEGETATE DISTURBED AREA TO STABILIZE SOIL STOCKPILE. REMOVE THE SEDIMENT CONTROL BARRIER WHEN THE SOIL STOCKPILE HAS BEEN REMOVED.

DUST CONTROL:
SCHEDULE CONSTRUCTION OPERATIONS TO MINIMIZE THE AMOUNT OF DISTURBED AREAS AT ANY ONE TIME DURING THE COURSE OF WORKS. APPLY TEMPORARY SOIL STABILIZATION PRACTICES SUCH AS MULCHING, SEEDING, AND SPRAYING (WATER). STRUCTURAL MEASURES (MULCH, SEEDING) SHALL BE INSTALLED IN DISTURBED AREAS BEFORE SIGNIFICANT BLOWING PROBLEMS DEVELOP. WATER SHALL BE SPRAYED AS NEEDED. REPEAT AS NEEDED, BUT AVOID EXCESSIVE SPRAYING, WHICH COULD CREATE RUNOFF AND EROSION PROBLEMS.

CHECK DAM:
INSPECT CHECK DAMS EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. IF SIGNIFICANT EROSION OCCURS BETWEEN STRUCTURES, A LINER OF STONE OR OTHER SUITABLE MATERIAL SHOULD BE INSTALLED IN THAT PORTION OF THE CHANNEL. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAM AS NEEDED TO ALLOW CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. REPLACE STONES AS NEEDED TO MAINTAIN THE DESIGN CROSS SECTION OF THE STRUCTURES. REMOVE CHECK DAMS AS PER APPROVAL OF THE PROJECT ENGINEER.

EROSION CONTROL BLANKET:
INSPECT THE BLANKET EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. REPLACE WIRE STAPLES AS REQUIRED. REPAIR AND RESEED WHERE CRACKS AND DAMAGED VEGETATION IS EVIDENT. WHEN DAMAGED BEYOND REPAIR OR NO LONGER FUNCTIONING, THE BLANKET SHALL BE REPLACED.

DEWATERING PITS:
(IF REQUIRED) - INSPECT DAILY DURING OPERATION FOR CLOGGING OR OVERFLOW. CLEAR INLET AND DISCHARGE PIPES OF OBSTRUCTIONS. IF A FILTER MATERIAL BECOMES CLOGGED WITH SEDIMENT, PIT SHALL BE DISMANTLED AND NEW PITS SHALL BE CONSTRUCTED AS NEEDED.

SEDIMENT TRAP:
SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO THE ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF OF THE DESIGN DEPTH OF THE TRAP. SEDIMENT REMOVED FROM THE TRAP SHALL BE DEPOSITED IN A PROTECTED AREA IN SUCH A MANNER THAT IT WILL NOT ERODE.

CATCH BASINS:
ALL CATCH BASINS SHALL BE INSPECTED AFTER EACH STORM EVENT FOR SEDIMENT ACCUMULATION, AND DEBRIS, AND REMOVE AS NECESSARY. THE INLET PROTECTION SHALL BE INSPECTED FOR SEDIMENT ACCUMULATION AND REPLACED AS NECESSARY. WHEN SEDIMENT ACCUMULATION WITHIN THE CATCH BASIN SUMP REACHES 1/2 OF THE SUMP DEPTH, IT SHALL BE REMOVED.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
1	2/21/22	REVISED BUILDING & LAYOUT	DGK				
2	3/29/22	PER PLANNING BOARD COMMENTS	CMB				

Dig Safely. New York Call 811 before you dig
Dig Safely. New York 800-962-7962 www.digsafelynewyork.org
- Call Before You Dig
- Wait The Required Time
- Confirm Utility Response
- Respect the Marks
- Dig With Care

STATE OF NEW YORK DANIEL G. KOENIG 082718 LICENSED PROFESSIONAL ENGINEER

SEAL

HUDSON LAND DESIGN
HUDSON LAND DESIGN PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

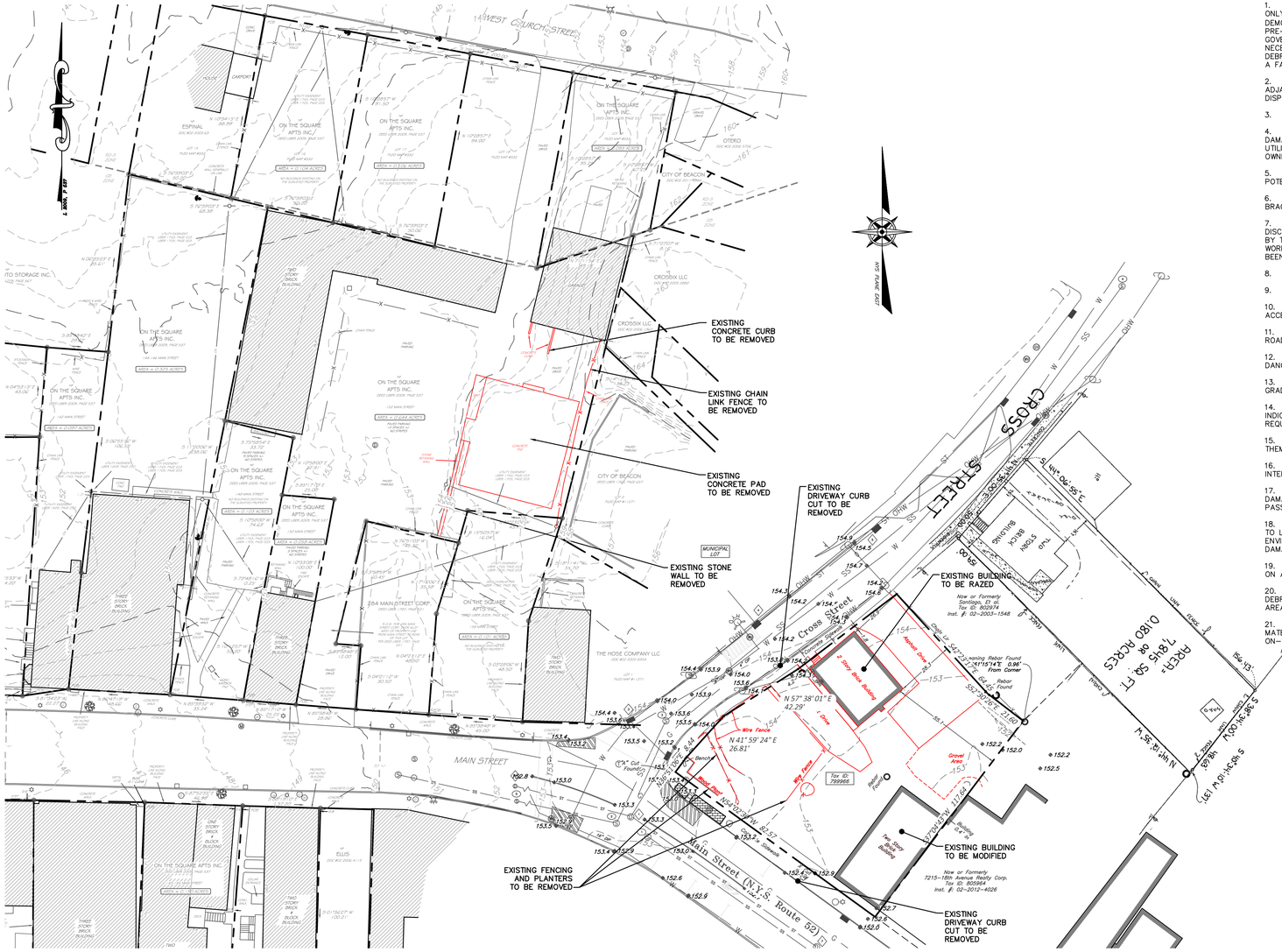
EROSION & SEDIMENT CONTROL PLAN

TWO CROSS STREET

172 MAIN STREET; 2 & 4 CROSS STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 5954-27-799966, 774986, 777974, 774997, 784996 & 808975

JOB #:	2019:036
DATE:	10/29/19
SCALE:	1"=20'
TITLE:	EC-1
SHEET:	3 OF 6

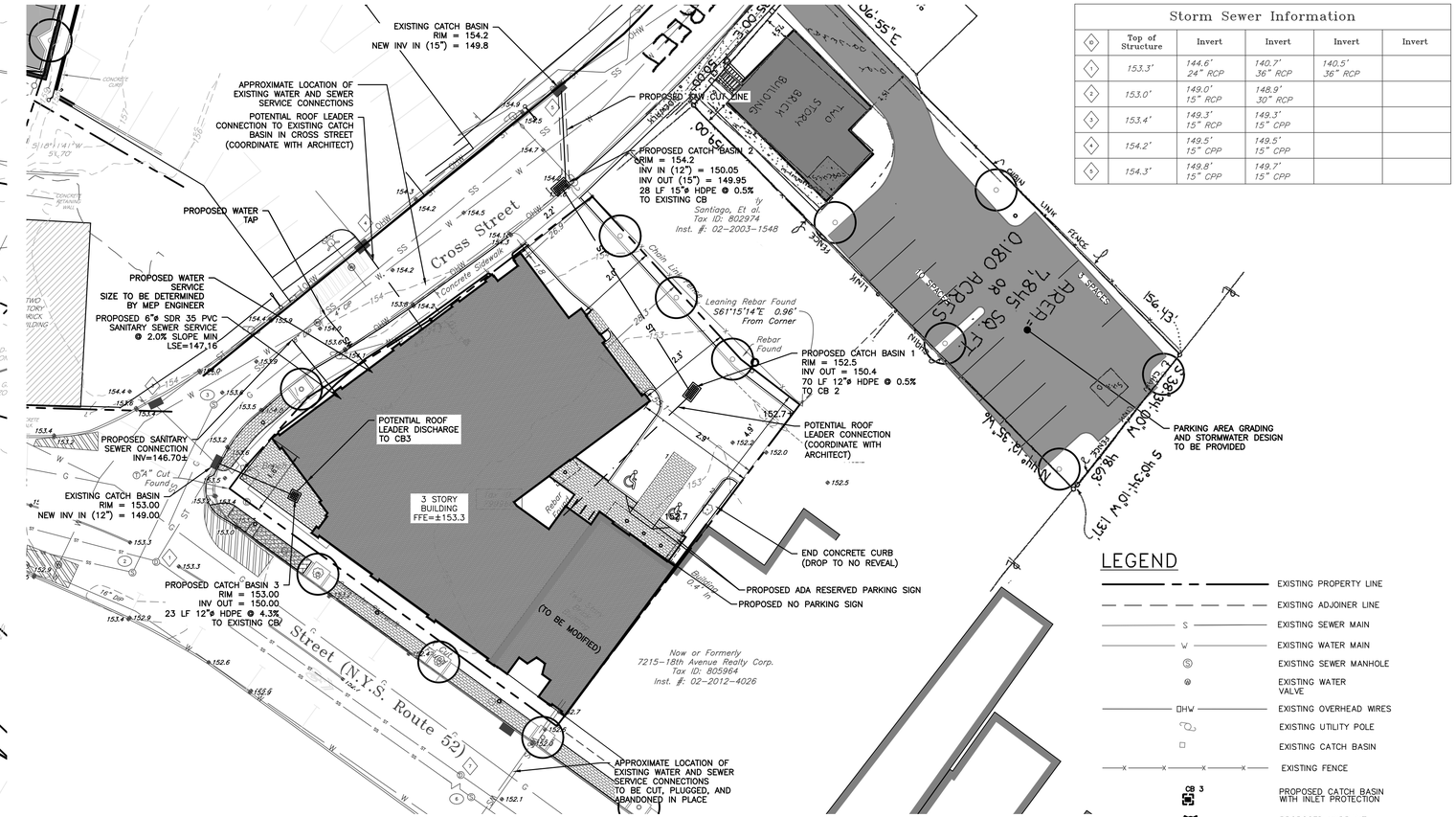
UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW


WEST CHURCH STREET
MAIN STREET
CROSS STREET
EXISTING CONCRETE CURB TO BE REMOVED
EXISTING CHAIN LINK FENCE TO BE REMOVED
EXISTING CONCRETE PAD TO BE REMOVED
EXISTING STONE WALL TO BE REMOVED
EXISTING DRIVEWAY CURB CUT TO BE REMOVED
EXISTING BUILDING TO BE RAZED
EXISTING BUILDING TO BE MODIFIED
EXISTING FENCING AND PLANTERS TO BE REMOVED
EXISTING DRIVEWAY CURB CUT TO BE REMOVED
Now or Formerly Santiago, Et al Tax ID: 802975 Inst. # 02-2003-1548
Now or Formerly 7215-18th Avenue Realty Corp. Tax ID: 805994 Inst. # 02-2012-4026
Tax ID: 799966
Main Street (N.Y.S. Route 52)
364 MAIN STREET CORP.
THE HOSE COMPANY LLC
CITY OF BEACON
CROSSIX LLC
ON THE SQUARE APTS INC.
ESPINAL
OTERO
ITO STORAGE INC.
AREA = 0.11± ACRES
AREA = 0.13± ACRES
AREA = 0.19± ACRES
AREA = 0.15± ACRES
AREA = 0.13± ACRES
AREA = 0.15± ACRES
AREA = 0.13± ACRES
AREA = 0.15± ACRES
AREA = 0.13



OFFSITE PARKING PLAN AT 152 MAIN & WEST CHURCH STREET

SCALE: 1" = 20'



GRADING AND UTILITY PLAN

W/ OFF-SITE PARKING AT 10 CROSS STREET

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

Storm Sewer Information					
◇	Top of Structure	Invert	Invert	Invert	Invert
◇1	153.3'	144.6' 24" RCP	140.7' 36" RCP	140.5' 36" RCP	
◇2	153.0'	149.0' 15" RCP	148.9' 30" RCP		
◇3	153.4'	149.3' 15" RCP	149.3' 15" CPP		
◇4	154.2'	149.5' 15" CPP	149.5' 15" CPP		
◇5	154.3'	149.8' 15" CPP	149.7' 15" CPP		

INFILTRATION AND INFLOW MITIGATION NOTES:

1. THE ROOF LEADERS WITHIN 172 MAIN STREET ARE TIED INTO BUILDING SEWER. IN ADDITION, THERE IS A SUMP PUMP WITHIN THE BASEMENT OF THE BUILDING WHICH IS ALSO TIED INTO THE SEWER SERVICE PIPE. NO ILLICIT CONNECTIONS WERE FOUND AT 4 CROSS STREET.
2. THE ROOF LEADER AND SUMP PUMP WITHIN 172 MAIN ST. SHALL BE DISCONNECTED FROM THE SANITARY SEWER LINE. NEW ROOFTOP DRAINAGE SHALL BE PER THIS PLAN. ANY NEW SUMP PUMP SHALL BE IN ACCORDANCE WITH SITE SPECIFIC NOTE 9 ON THIS PLAN.

SITE SPECIFIC NOTES:

1. THE CONTRACTOR SHALL PERFORM A UTILITIES CALL-OUT PRIOR TO CONSTRUCTION TO VERIFY ALL UNDERGROUND UTILITY LOCATIONS BY CONTACTING UFPO @ 1-800-962-7962. SPECIFIC ATTENTION SHALL BE PAID TO THE LOCATIONS OF THE GAS, WATER AND SEWER MAINS WITH RESPECT TO THE PROPOSED LOCATIONS FOR THE SERVICE AND DRAINAGE LINES.
2. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND INVERTS OF ALL DRAINAGE, SANITARY SEWER, WATER AND GAS LINES AND STRUCTURES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOT ASSUME THAT ALL LOCATIONS AS SHOWN ON THE PLAN ARE CORRECT.
3. THE PROPOSED BUILDING AND ADDITION SHALL BE SERVED BY THE CITY OF BEACON MUNICIPAL WATER AND SEWER SERVICES. AS SUCH, THE CONTRACTOR SHALL CONTACT THE CITY OF BEACON WATER AND SEWER DEPARTMENTS TO SCHEDULE A PRE-CONSTRUCTION MEETING TO ENSURE THAT THE ARRANGEMENTS FOR WATER SUPPLY AND SEWAGE DISPOSAL ARE COMMENCED IN ACCORDANCE WITH THE APPROVED PLANS AND AMENDMENTS THERETO AND GENERALLY ACCEPTED STANDARDS.
4. THE WATER SERVICE LINE AND METER FOR EACH UNIT SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BEACON WATER DEPARTMENT REQUIREMENTS.
5. THE NEW WATER SERVICE LINE TO THE NEW BUILDING SHALL BE 4"ø DIP, SUBJECT TO THE MEP ENGINEER'S CALCULATIONS AND VERIFICATION.
6. THE SEWER SERVICE LINE SHALL BE 6"ø SDR-35 PVC PIPE WITH PITCH AS SHOWN ON THE PLAN (MINIMUM OF ¼" PER FOOT SHALL BE MAINTAINED).
7. STREET CLOSURE FOR WATER, SEWER AND GAS SERVICE CONNECTIONS AND DRIVEWAY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF BEACON REQUIREMENTS. A PLAN SHALL BE IN PLACE FOR MAINTENANCE AND PROTECTION OF TRAFFIC.
8. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. MAIN STREET AND CROSS STREET SHALL BE KEPT CLEAN AND SWEPT DURING CONSTRUCTION.
9. SUMP PUMPS TO BE PROVIDED FOR FOOTING DRAINS, AS REQUIRED. THE TYPES OF PUMPS AND METHODS USED TO ENSURE PROPER DRAINAGE SHALL BE ACCEPTABLE TO THE CITY OF BEACON BUILDING DEPARTMENT. ALL SUMP PUMPS SHALL DISCHARGE TO DAYLIGHT, OR TO THE CITY OF BEACON DRAINAGE SYSTEM. SUMP PUMPS ARE NOT PERMITTED TO DISCHARGE TO THE CITY OF BEACON SANITARY SEWER SYSTEM.
10. THE BUILDING DEPARTMENT SHALL HAVE THE RIGHT TO INSPECT THE EXISTING BUILDING TO CONFIRM THAT THERE ARE NOT EXISTING STORMWATER CONNECTIONS TO THE CITY'S SANITARY SEWER SYSTEM PRIOR TO THE MAP BEING SIGNED. AN INFLOW & INFILTRATION (I&I) STUDY HAS BEEN CONDUCTED ON 172 MAIN STREET, AND 4 CROSS STREET. REFER TO I&I NOTES FOR MITIGATION PROCEDURES.

Sanitary Sewer Information					
◇	Top of Structure	Invert	Invert	Invert	Invert
◇1	153.0'	144.1' 8" CIP			
◇2	153.1'	140.3' 12" ACP*	140.1' 12" ACP*		
◇3	153.6'	146.4' 12" ACP*	146.3' 12" VIP		
◇4	155.8'	148.7' 12" VIP	148.6' 12" VIP		
			*Pipe material from City of Beacon Sewer mapping.		

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJOINER LINE
- S — EXISTING SEWER MAIN
- W — EXISTING WATER MAIN
- EXISTING SEWER MANHOLE
- EXISTING WATER VALVE
- OHW — EXISTING OVERHEAD WIRES
- EXISTING UTILITY POLE
- EXISTING CATCH BASIN
- x — x — x — x — EXISTING FENCE
- CB 3 — PROPOSED CATCH BASIN WITH INLET PROTECTION
- PROPOSED HYDRANT
- PROPOSED WATER VALVE
- PROPOSED SANITARY MANHOLE
- PROPOSED WATER SHUT-OFF VALVE
- CO — PROPOSED CLEAN OUT
- PROPOSED SILT FENCE
- RL — PROPOSED ROOF LEADER
- PROPOSED WET TAP
- PROPOSED RETAINING WALL
- ST — PROPOSED CULVERT
- PROPOSED UNDERDRAIN
- PROPOSED ROOF LEADER PIPE
- 121 — PROPOSED MINOR CONTOUR
- 120 — PROPOSED MAJOR CONTOUR
- +1120.5 — PROPOSED SPOT ELEVATION
- CO — PROPOSED CLEANOUT
- S — PROPOSED SEWER SERVICE LINE
- WS — WS — PROPOSED WATER SUPPLY LINE
- RE-PAVED SURFACE
- PROPOSED NEW/RENOVATED BUILDING
- UTILITY CROSSING LOCATION
- RL — PROPOSED ROOF LEADER LOCATION
- WS — WS — PROPOSED WATER SERVICE LINE
- PROPOSED WATER SHUT-OFF VALVE
- PROPOSED BUILDING ENTRANCE

INSPECTION SCHEDULE & LONG TERM MAINTENANCE OF STORMWATER STRUCTURES

CATCH BASINS AND PIPING:

ALL CATCH BASINS SHALL BE INSPECTED AFTER EACH STORM EVENT FOR SEDIMENT ACCUMULATION, AND DEBRIS, AND REMOVE AS NECESSARY. WHEN SEDIMENT ACCUMULATION WITHIN THE CATCH BASIN SUMP REACHES 1/2 OF THE SUMP DEPTH, IT SHALL BE REMOVED. ASSOCIATED PIPING SHALL BE INSPECTED ANNUALLY AND ACCUMULATED SEDIMENT SHALL BE REMOVED AS NEEDED.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY
1	2/21/22	REVISED BUILDING & LAYOUT	DGK				
2	3/29/22	PER PLANNING BOARD COMMENTS	CMB				

Dig Safely. New York. Call 811 before you dig

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

GRADING & UTILITY PLAN

TWO CROSS STREET

172 MAIN STREET; 2 & 4 CROSS STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 5954-27-799966, 774986, 777974, 774997, 784996 & 808975

JOB #: 2019:036
DATE: 10/29/19
SCALE: 1"=20'
TITLE: GU-1
SHEET: 2 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

John Clarke Planning and Design jclarkeplandesign@gmail.com
25 Beech Street, Rhinebeck NY 12572 845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **2 Cross Street, Site Plan**

I have reviewed a March 28, 2022 cover letter and two response letters from Hudson Todd LLC, March 22, 2022 letter from Hudson River Housing regarding parking requirements for the senior apartments, a 12-sheet set of Architectural Drawings and a 6-sheet set of Civil Engineering Drawings, all dated March 29, 2022

Proposal
The applicant is proposing to construct a 3-story mixed-use building with 5,980 square feet of ground-floor commercial and 18 apartments, incorporating an existing historic building into the design. The parcel is in the Central Main Street (CMS) district. The Main Street frontage is also in the Historic District and Landmark Overlay (HDLO) zone, but not the brick building on Cross Street, which is proposed to be demolished.

Comments and Recommendations

1. For Sheet A2:

    a. The Lighting Plan should show proposed fixtures, poles, and attached specifications consistent with Section 223-14B, including full cutoff fixtures, heights, footcandles ranges, color temperatures, and Color Rendering Index noted.

    b. The Landscaping Plan will need a planting schedule with species, number, and size included, as well as a landscaping and seating detail for the corner plaza.

2. For Sheet A3:

    a. In the Bulk Compliance Table, the top narrative should state that some of the parking is in the Transitional (T) district, not the R1-5 district. The proposed rear setback should be shown as 24.1 feet, not 55 feet.

    b. The Partial Zoning Map is labeled, but not shown.

3. For the Sheet A6 Roof Plan, general planting details should be provided for the green roof.

4. For the Sheet A8 Elevations:

    a. This HDLO property requires an additional certificate of appropriateness approval, consistent with the design criteria in the Historic Preservation chapter, Section 134-7. The Board should refer the building design to the Architectural Review Subcommittee, when appropriate.

    b. The elevations should label building materials and colors and show the greenhouse and access bulkhead.

5. For Sheet GU-1:

    a. The off-site parking at 152 Main Street is labeled as 16 spaces, while Sheet A3 lists 14 spaces.

    b. The plans should show the size and species of any existing six-inch+ diameter trees that are proposed to be removed.

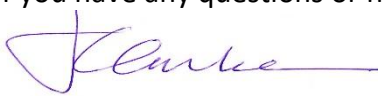
    c. The parking allocation for the existing apartments at 10 Cross Street should be labeled on the plans.

    d. The proposed parking at 10 Cross Street encroaches over the property lines.

    e. The Board could also consider new fencing for this parcel. Any proposed fencing at 2 or 10 Cross Street should be shown in a detail on the plans.

6. The EAF should include the EAF Mapper Summary Report.

If you have any questions or need additional information, please feel free to contact me.



John Clarke, Beacon Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Joseph Torhan, Project Architect
Joseph Donovan, Hudson Todd LLC

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal
Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal
John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 6, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: Two Cross Street – Hudson Todd
City of Beacon
Special Use & Site Plan Application

Dear Mr. Gunn:

My office has received the following in regard to the Two Cross Street – Hudson Todd LLC project:

- Correspondence from Hudson Todd, LLC., dated March 28, 2022, describing proposed project.
- Response correspondence to John Clarke's comments from Joseph Donovan, dated March 28, 2022.
- Response correspondence to John Russo's comments from Joseph Donovan, dated March 28, 2022.
- Correspondence from Hudson River Housing, Inc. dated March 22, 2022.
- Architectural Drawings, Sheets A1 through A12, dated March 29, 2022, as prepared by Joseph Torhan, Architect.
- Plans titled "Two Cross Street – Hudson Todd LLC", with the latest revision date of March 29, 2022, and consisting of Sheets 1 through 6 of 6, as prepared by Hudson Land Design.

Based on our review of the above materials, we would like to offer the following comments:

General Comments:

1. As previously noted, the narrative provided in the "Brief Description" on Page 1 of the SEQRA document should be expanded upon to note the total number of bedrooms being proposed. The SEQRA document shall be revised and resubmitted.
2. As previously noted, the Location Map on Sheet A1 should also call out the off-site parking lot areas to be constructed as part of the project.

3. A formal site plan, at full sheet size, should be provided for the project site, along with each of the off-site parking locations.
4. Sheet A2, Site Lighting & Landscaping, shall be updated to reflect the following:
    a. The plan shall be updated to show illumination intensities across the site where lighting is proposed.
    b. The plan shall include the mounting heights for each of the luminaries proposed.
    c. All proposed luminaries shall be shown on the plan, such as done for Exterior Light L4.
    d. The plan shall note that all lights shall be shielded to protect against night-sky pollution.
    e. Construction details shall be added for the light poles, which would include base size and depth, bury depth, pole type and diameter, etc.
    f. The landscaping schedule shall identify the type of trees, shrubs, etc., that are to be planted at the site, along with the size and number of each.
5. Sheet A3 includes a title for "Partial Zoning Map", but the mapping is not shown. The Sheet shall be updated to show this partial map, or the title removed from the sheet.
6. As proposed parking for the project is to be located at three (3) different locations, and two of these locations already have existing uses, the Off-Street Parking Table on Sheet A3 shall be updated to reflect the total number of parking spaces required for each use on the individual lots, as well as the parking to be provided to the proposed project. The parking for each of the existing uses shall be in accordance with zoning.
7. The applicant has submitted a correspondence from Hudson River Housing, Inc. with regards to what they believe the required parking will be for the proposed senior portion of the project, but do not provided any analysis or study from other operations similar to this to justify a reduction in the parking per §223-41.18 G(3) of the City Code. Additional information shall be submitted to justify that only 3 spaces are required for the senior portion of the project.
8. The "Offsite Parking Plan" on Sheet 2 of 6 from Hudson Land Design should be revised to include the following: ***(Applicant notes this information will be provided in the future.)***
    a. Sight distance for all entrances/exits from the proposed parking areas.
    b. How drainage will be handled at each of the three (3) parking locations.
    c. Any proposed grading to be conducted on the site and at each parking location.
    d. Any cross-easements that exist and/or are proposed. Descriptions of proposed easements shall be submitted to the Planning Board Attorney for review.

9. With regards to the parking on the north-east side of Cross Street on the "On the Square Apts. Inc." parcel and on the 10 Cross Street parcel, what legal instruments will be used to ensure that these parcels cannot be sold in the future, thereby impacting the proposed parking for this site? ***Applicant notes a permanent easement will be provided over the parking.*** This document shall be submitted to the Planning Board Attorney for review.
10. With regards to the "Grading and Utility" plan on Sheet 2 of 6 prepared by Hudson Land Design we offer the following:
    a. The utilities that service 172 Main Street are noted to be abandoned. This shall be coordinated with the City's Water & Sewer Department as to how each of the utilities will be abandoned and added to the plans.
    b. The roof leader drain line proposed to run across Cross Street from the west side of the building shall be re-directed to the basins on the same side of the street as the building. As an alternative, the developer could install a catch basin on the east side of Cross Street and run a new storm line over to the existing catch basin on the wets side of the street.
    c. The plan notes that no curbing is to be provided at the end of the on-site parking lot to allow for access to 174-178 Main Street. The applicant should explain this further. Do easement(s) exist, or will they be created, to allow for vehicles to cross the project parcel to access the parking areas behind 174-178? ***The Applicant notes that an easement already exists.*** The easements shall be shown/called out on the plans.
    d. The parking access and parking lot shown for 10 Cross Street encroach onto adjacent properties at several points. The project should not encroach onto other parcels unless they are part of the project or have provided easements for the work shown.
11. As previously noted, we would recommend that a pre and post drainage analysis be prepared for the project to show if more or less stormwater runoff is proposed to be generated by the proposed project, based upon various storm events. Given the amount of impervious area being created, the applicant should give consideration to handling some of the stormwater directly on each of the areas to be developed. ***Applicant states this will be submitted in the future.***
12. The plan shall show all proposed traffic signage proposed in the parking lots (STOP, One-Way, etc.), include signage for the ADA parking.
13. As the project progresses, the applicant's Engineer shall prepare a cost estimate for all proposed public improvements, to allow for bonding of the improvements within the public right-of-way.

This completes our review at this time. Further comments may be forth coming based upon future submissions. A written response letter addressing each of the above comments should be provided with the next submission. If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,

LANC & TULLY, P.C.

John Russo, P.E.

cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

City of Beacon Planning Board Agenda
04/12/2022

Title:

Continue Review of application for Site Plan Approval, Multi-Family Residential (62 units), 16 West Main Street, Submitted by Farrell Building Company

ATTACHMENTS

16 West Main Street Traffic Study.pdf

16 West Main Street Sheet Cover Letter.pdf

16 West Main Street Sheet - Lighting Catalog.pdf

16 West Main Street Subsurface Report.pdf

16 West Main Street Sheet - SWPPP Report.pdf

16 West Main Street Sheet 1 - Cover Sheet.pdf

16 West Main Street Sheet 2 -Existing Conditions Plan.pdf

16 West Main Street Sheet 3 - Demolition Plan.pdf

16 West Main Street Sheet 4 - Site Plan.pdf

16 West Main Street Sheet 5 - Grading Plan.pdf

16 West Main Street Sheet 6 - Utilities Plan.pdf

16 West Main Street Sheet 7 - Storm Profile.pdf

16 West Main Street Sheet 8 - Sediment and Erosion Control Plan.pdf

16 West Main Street Sheet 9 - Lighting Plan.pdf

16 West Main Street Sheet 10 - Garbage Truck Turning Plan (Front Loading).pdf

16 West Main Street Sheet 11 - Garbage Truck Turning Plan (Rear Loading).pdf

16 West Main Street Sheet 12 - Fire Truck Turning Plan (Scenario 1).pdf

16 West Main Street Sheet 13 - Fire Truck Turning Plan (Scenario 2).pdf

16 West Main Street Sheet 14 - Fire Truck Turning Plan (Scenario 3).pdf

16 West Main Street Sheet 15 - Aerial Site Plan.pdf

16 West Main Street Sheet 16 - Sight Distance Plan.pdf

16 West Main Street Sheet 17 - Construction Details.pdf

16 West Main Street Sheet 18 - Construction Details.pdf

16 West Main Street Sheet 19 - Construction Details.pdf

16 West Main Street Sheet 20 - Construction Details.pdf

16 West Main Street Sheet 21 - Construction Details.pdf

16 West Main Street Sheet 22 - Construction Details.pdf

16 West Main Street Sheet 23 - Construction Details.pdf

16 West Main Street Sheet 24 - Construction Details.pdf

16 West Main Street Sheet 25 - Construction Details.pdf

16 West Main Street Sheet 26 - Landscaping Plan.pdf

16 West Main Street Sheet A 100 - Building Plans.pdf

16 West Main Street Sheet A 101 - Building Plans.pdf

16 West Main Street Sheet A 200 - Elevations.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

16 West Main Street ARB Comments.pdf

TRAFFIC STUDY

BEACON COMMONS

16 WEST MAIN STREET
CITY OF BEACON, NEW YORK

Prepared for: **Farrell Building Company**
2317 Montauk Highway
Bridgehampton, NY 11932

Prepared by:

JMC Project **18119**

Date: March 31, 2020
Revised: March 8, 2022

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
I.	INTRODUCTION	1
II.	EXISTING CONDITIONS	2
	A. Existing Roadway Network	2
	B. Existing Volumes	4
	C. Intersection Analysis Methodology	4
	D. Existing Operations	8
III.	PROJECTED CONDITIONS	8
	A. No-Build Volumes	8
	B. Build Volumes	10
IV.	FINDINGS & CONCLUSION	11

LIST OF APPENDICES

APPENDIX	DESCRIPTION
A.	TABLES

TABLE	TITLE
1	Proposed Development Volumes
2	Intersection Operations-Peak Weekday AM Hour
3	Intersection Operations-Peak Weekday PM Hour

B. FIGURES

FIGURE	TITLE
1	2020 Existing Volumes-Peak Weekday AM Hour
2	2020 Existing Volumes-Peak Weekday PM Hour
3	2022 General Growth Volumes-Peak Weekday AM Hour
4	2022 General Growth Volumes-Peak Weekday PM Hour
5	Other Development Volumes-555 South Avenue Development

6 Other Development Volumes-Edgewater Development
7 Other Development Volumes-River Ridge Residential Development
8 Other Development Volumes-The View Development
9 Other Development Volumes-West End Lofts Development
10 2022 No Build Volumes-Peak Weekday AM Hour
11 2022 No Build Volumes-Peak Weekday PM Hour
12 Primary Trip Distributions
13 Primary Volumes-Peak Weekday AM Hour
14 Primary Volumes-Peak Weekday PM Hour
15 2022 Build Volumes-Peak Weekday AM Hour
16 2022 Build Volumes-Peak Weekday PM Hour

C. TURNING MOVEMENT COUNTS

D. CAPACITY ANALYSES

P:\2018\18119\ADMIN\TRAFFIC\TS 2022-03-08.docx

I. INTRODUCTION

This Traffic Study has been prepared to assess existing conditions as well as future traffic operations in association with the proposed Beacon Commons development located at 16 West Main Street in the City of Beacon, NY. The location of the site is illustrated on the figures included in Appendix B.

The 1.5 acre property currently contains an 8,875 square foot retail store and materials supply distributor building with associated off-street parking. The applicant proposes to raze the existing building and construct a four story apartment building containing 62 residential units with associated off-street parking.

Access to the site is currently provided via one full movement driveway on West Main Street and two full movement driveways on Bank Street. Under proposed conditions, access to the site would be consolidated to provide one full movement driveway on West Main Street and an entrance only driveway from Bank Street.

There is an existing sidewalk along the north side of West Main Street from Beekman Street to the Beacon train station. There are existing crosswalks within the Beacon train station where the pedestrians walk across the parking lot drive aisle to access the train station. There is currently no marked crosswalk to cross Bank Street. As part of the proposed development, the Applicant proposes to replace the existing sidewalk along the subject property's entire frontage along Bank Street and West Main Street. The new sidewalk along the property's frontage is proposed to be concrete having a 5 foot width along Bank Street and an 8 foot width along West Main Street. In addition, the Applicant proposes to construct an accessible ramp on the northeast corner of West Main Street and Bank Street as well as a painted crosswalk to guide pedestrians to the existing sidewalk on the other side of Bank Street.

II. EXISTING CONDITIONS

A. Existing Roadway Network

JMC performed field reconnaissance at the site and adjoining roadway network in order to gather existing conditions data. The field work included a determination of lane widths, striping, horizontal and vertical alignments, signs, traffic signal phasing and timings, speed limits, pedestrian activities, traffic flows, sidewalks, curbing, etc.

NY 9D is under the jurisdiction of the New York State Department of Transportation (NYSDOT). NY 9D in the study area is also known as North Avenue. It is generally a north-south roadway which connects to US 202 in Cortlandt and US 9 in Wappinger Falls. It generally provides one travel lane in each direction; however, it does widen to provide additional lanes at several locations. Within the study area, NY 9D has a posted speed limit of 30 mph and on-street parking is prohibited.

Beekman Street is generally a north/south roadway which changes to an east/west roadway at its south terminus. This roadway is under the jurisdiction of the City of Beacon. The roadway connects to Route 9D at each of its termini. Beekman Street provides one travel lane in each direction and widens at a few intersections to provide additional lanes. It has a posted speed limit of 30 mph and on-street parking is permitted along certain locations of the roadway.

West Main Street is an east/west roadway connecting to Beekman Street in the east and the Beacon train station in the west. This roadway is under the jurisdiction of the City of Beacon. It provides one travel lane in each direction. The roadway has a posted speed limit of 25 mph and parking is permitted on both sides of the street.

In order to evaluate the changes in traffic associated with the proposed development, the following intersections have been analyzed:

1. West Main Street & Site Driveway
2. West Main Street & Beekman Street
3. NY 9D & Beekman Street with West Church Street
4. NY 9D & Tompkins Avenue with Ralph Street

The proposed site driveway intersects West Main Street at a T-type unsignalized intersection. West Main Street provides a single travel lane in both directions for shared thru and turning movements. The site driveway provides one egress lane with shared turning movements.

Beekman Street intersects West Main Street at an unsignalized 'T' intersection. The Beekman Street approaches provide a single thru lane with shared turning movements in both directions. West Main Street provides one approach lane with shared turning movements. West Main Street is controlled by a stop sign. The site driveway for The View development proposes to serve as the fourth leg to this intersection opposite the West Main Street approach. The View driveway is proposed to operate as a stop condition.

Beekman Street and West Church Street intersect NY 9D at a signalized four-legged intersection. The northbound and southbound approaches of NY 9D provide one lane for shared thru/right movements and a separate left turn lane. The eastbound approach of Beekman Street provides a separate right turn lane and a shared left/thru lane. The westbound approach of West Church Street provides a single shared lane for all turning movements.

NY 9D intersects Tompkins Avenue and Ralph Street at an unsignalized four-legged intersection. The Tompkins Avenue and Ralph Street approaches to the intersection provide a single approach lane for all turning movements. The NY 9D northbound and southbound approaches provide one lane for shared thru and right turn movements and a separate left turn lane. Tompkins Avenue and Ralph Street are under stop sign control.

B. Existing Volumes

Traffic counts were performed at the studied intersections in order to quantify and analyze existing peak hour volumes as well as to establish base conditions for projecting future operations. The counts included pedestrian activities and truck traffic.

Traffic counts were conducted from 7:00 – 9:00 AM and 4:00 – 7:00 PM on Tuesday, February 25, 2020 for all the studied intersections except for the site driveway intersection. Traffic volumes at the site driveway have been projected based on the counts conducted at the intersection of West Main Street and Beekman Street. The peak hour volumes occurred between 7:00 – 8:00 AM during the weekday morning and 4:45-5:45 PM during the weekday afternoon. The intersection traffic count data is included in Appendix C. The peak hour volumes are shown on Figures 1 and 2 "2020 Existing Volumes". All figures are included in Appendix B.

C. Intersection Analysis Methodology

The intersections have been analyzed based on the methodologies of the Highway Capacity Manual 6th Edition. Information derived from the manual relative to the level of service criteria is provided below.

1. Level-of-Service Criteria for Signalized Intersections

Levels of Service (LOS) for signalized intersections are defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road. Only the portion of total delay attributed to the control facility is quantified. This delay is

called control delay. Control delay includes the delays of initial deceleration, move-up time in the queue, stops, and reacceleration. In this chapter, control delay may also be referred to as signal delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a peak 15-minute analysis period. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the volume/capacity (*v/c)* ratio for the lane group in question.

LOS A describes operations with very low control delay, up to 10 seconds per vehicle. This level of services occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

LOS B describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both.

LOS C describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from fair progression, longer cycle lengths, or both.

LOS D describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.

LOS E describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

LOS F describes operations with control delay in excess of 80 seconds per vehicle and/or the arrival flow rates exceed the capacity of the intersection. It will also occur at high *v/c* ratios below 1.0 with many individual cycle failures. If the volume-to-capacity (v/c) is greater than 1.0, the LOS is considered an F, even if the delays are lower than 80 seconds.

The LOS criteria for signalized intersections are presented below.

Signalized Level of Service Criteria		
Control Delay (Seconds/Vehicle)	**LOS by Volume-to-Capacity Ratio**	
	v/c ≤ 1.0	**v/c > 1.0**
≤10	A	F
>10 and ≤20	B	F
>20 and ≤35	C	F
>35 and ≤55	D	F
>55 and ≤80	E	F
>80	F	F

For approach-based and intersectionwide assessments, LOS is defined solely by control delay.

2. Level of Service for Unsignalized Intersections

The Levels of Service (LOS) for Two Way Stop Control (TWSC) and All Way Stop Control (AWSC) intersections and Roundabouts are determined by the computed or measured control delay and are defined for each minor movement. LOS is not defined for the intersection as a whole for TWSC intersections. LOS criteria are presented below.

Unsignalized Level of Service Criteria		
Control Delay (Seconds/Vehicle)	**LOS by Volume-to-Capacity Ratio**	
	v/c ≤ 1.0	**v/c > 1.0**
≤10	A	F
>10 and ≤15	B	F
>15 and ≤25	C	F
>25 and ≤35	D	F
>35 and ≤50	E	F
>50	F	F

For TWSC intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or the intersection as a whole at TWSC intersections. For approach-based and intersectionwide assessments at AWSC intersections and roundabouts, LOS is defined solely by control delay.

Average control delay less than 10 seconds/vehicle are defined as LOS A. Follow-up times of less than 5 seconds/vehicle have been measured when there is no conflicting traffic, so control delays of less than 10 seconds/vehicle are appropriate for low flow conditions. If the volume-to-capacity (v/c) is greater than 1.0, the LOS is considered an F, even if the delays are lower than 50 seconds.

The LOS criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. A number of driver behavior considerations combine to make delays at signalized intersections less onerous than delays at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, whereas drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at an

unsignalized intersections versus that at signalized intersections. For these reasons, it is considered that the control delay threshold for any given LOS would be less for an unsignalized intersection than it would be for a signalized intersection.

D. Existing Operations

The intersection capacity analyses based on existing volumes and conditions are shown on Tables 2 and 3. The specific volume/capacity ratios, delay for average vehicle in seconds and the associated levels of service are summarized for each lane group, the approach as well as the overall intersection as applicable on Tables 2 to 3. All tables are included in Appendix A.

During the peak weekday AM hour, the Beekman Street approach and left/thru lane at its intersection with NY 9D operates at a level of service C. The Tompkins Avenue and Ralph Street approaches to NY 9D operate at a level of service C. All other movements at the studied intersections operate at a level of service B or better during the peak weekday AM hour.

During the peak weekday PM hour, the Beekman Street approach and lanes as well as the West Church Street approach to NY 9D operates at a level of service C. The Tompkins Avenue approach to NY 9D operate at a level of service D while the Ralph Street approach to NY 9D operates at a level of service C. All other movements at the studied intersections operate at a level of service B or better during the peak weekday PM hour.

III. PROJECTED CONDITIONS

A. No-Build Volumes

In order to project future traffic increases to the year 2022, the existing volumes were increased by a general growth rate of 2% per year compounded annually. Based on discussions with the City of Beacon staff and the City's consultants, we have incorporated

the traffic volumes associated with other developments. These developments include the River Ridge Residential Development, Edgewater Development, The View, West End Lofts, and the 555 South Avenue project. The resulting 2021 no-build volumes represent traffic operation in 2022 without the development of the site. The general growth volumes, other development volumes, and no-build volumes have been shown in the figures in Appendix B.

The NYSDOT has implemented improvements along NY 9D in March 2020 which has been considered in the no-build conditions. These improvements consist of converting the existing traffic signals along NY 9D at the Interstate 84 ramps, Verplanck Avenue, and Beekman Street intersections to adaptive traffic signals. Adaptive traffic signals are able to adjust splits and cycle lengths in real time based on real time collection of traffic volume data to allocate green time more efficiently to assist in the progression of vehicles.

During the peak weekday AM hour, the West Main Street approach to its intersection with Beekman Street is projected to increase in delay from a level of service B under existing conditions to a level of service C under no-build conditions. At the intersection of NY 9D and Beekman Street, the Beekman Street approach and left/thru lane are projected to improve in delay from a level of service C under existing conditions to a level of service B under no-build conditions. The NY 9D southbound approach and thru/right lane at its intersection with Beekman Street is project to increase in delay to operate at a level of service C. The Tompkins Avenue approach to NY 9D is projected to increase in delay to operate at a level of service F under no-build conditions while the Ralph Street approach to NY 9D is projected to operate at a level of service D. All other movements at the studied intersections under no-build conditions are projected to operate at the same levels of service as experienced under existing conditions during the peak weekday AM hour.

During the peak weekday PM hour, the West Main Street approach to its intersection with Beekman Street is projected to increase in delay from a level of service B under existing conditions to a level of service C under no-build conditions. The overall intersection of NY 9D and Beekman Street is projected to increase in delay to operate at a level of service C. At the intersection of NY 9D and Beekman Street, the Beekman Street right turn lane and

West Church Street approach are projected to improve in delay from a level of service C under existing conditions to a level of service B under no-build conditions. The NY 9D southbound left turn lane at its intersection with Beekman Street is project to increase in delay to operate at a level of service B while the NY 9D southbound approach and thru/right lane are projected to operate at a level of service C. The Tompkins Avenue approach to NY 9D is projected to increase in delay to operate at a level of service F under no-build conditions while the Ralph Street approach to NY 9D is projected to operate at a level of service C. All other movements at the studied intersections under no-build conditions are projected to operate at the same levels of service as experienced under existing conditions during the peak weekday PM hour.

B. Build Volumes

The projected traffic associated with the proposed development is based on information published by the Institute of Transportation Engineers (ITE) in its publication "Trip Generation Manual, 10th Edition." Table 1 shows the traffic volumes associated with the proposed development. The development will result in approximately 22 and 28 primary trips during the peak weekday AM and Weekday PM hours, respectively. The development's trips represent 1 trip every 2-3 minutes during the peak weekday AM and PM hours. This study provides a conservative analysis since a credit of the traffic volumes related to existing uses to be removed on the property as part of the proposed development have not been considered. The traffic volumes associated with the proposed development have been shown in the figures in Appendix B.

The primary volumes were routed through the studied intersections based on traffic volume data and consideration of the area roadways. Adding the development related traffic results in 2022 Build Volumes which reflect projected volumes after the completion and occupancy of the development.

IV. FINDINGS & CONCLUSION

Intersection capacity analysis computed based on the Build Volumes indicate that the intersections will operate at the same levels of service as projected for the No-Build Volumes during both studied peak hours except for one turning movement during the peak weekday PM hour. Projected operations with the proposed development are shown on Tables 2 and 3. During the peak weekday PM hour, NY 9D southbound left turn lane at its intersection with Beekman Street is projected to improve in delay to operate at a level of service A under build conditions. The proposed site driveway along West Main Street is projected to operate at a level of service A during both studied peak hours.

Based on the above, it is the professional opinion of JMC that the development of the site to a four story apartment building containing 62 residential units will not have a significant impact on traffic operations in the study area.

Respectfully submitted,
JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC



Marc Petroro, PE, PTOE
Senior Project Manager



Kevin Masciovecchio, EIT
Senior Designer III

APPENDIX A

TABLES

TABLE 1

PROPOSED DEVELOPMENT VOLUMES[1]

DESCRIPTION	PEAK WEEKDAY AM HOUR			PEAK WEEKDAY PM HOUR		
	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
a. Proposed 62 Unit Multifamily Housing Primary Volumes (ITE Code 221)[2]	6	16	22	17	11	28

Notes:

(1) Trip generation is based on Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

(2) Multifamily Housing (Mid-Rise) (ITE Code 221) is defined by ITE as multifamily housing including apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors).

TABLE 2

INTERSECTION OPERATIONS-PEAK WEEKDAY AM HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2022 NO BUILD			2022 BUILD		
			V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)
1. West Main Street & Site Driveway (Unsignalized)	EASTBOUND (W Main St)	LEFT / THRU							-	0.0	A
	WESTBOUND (W Main St)	THRU / RIGHT		N/A			N/A		-	-	-
	SOUTHBOUND (Site Dwy)	LEFT / RIGHT							0.02	9.8	A
2. West Main Street & Beekman Street (Unsignalized)	EASTBOUND (Beekman St)	THRU / RIGHT	0.01	8.3	A						
	WESTBOUND (Beekman St)	LEFT / THRU	-	-	-		N/A			N/A	
	SOUTHBOUND (W Main St)	LEFT / RIGHT	0.06	13.6	B						
2a. West Main Street / The View Driveway & Beekman Street (Unsignalized with Improvements from Others)	EASTBOUND (Beekman St)	LEFT/THRU/RIGHT				0.02	8.5	A	0.03	8.5	A
	WESTBOUND (Beekman St)	LEFT/THRU/RIGHT		N/A		0.01	7.6	A	0.01	7.6	A
	NORTHBOUND (The View Dwy)	LEFT/THRU/RIGHT				0.04	9.8	A	0.04	9.9	A
	SOUTHBOUND (W Main St)	LEFT/THRU/RIGHT				0.12	17.3	C	0.17	18.2	C
3. NY 9D & Beekman Street / West Church Street (Signalized)	EASTBOUND (Beekman St)	LEFT / THRU	0.45	21.6	C	0.40	17.4	B	0.45	18.0	B
		RIGHT	0.05	18.8	B	0.16	16.1	B	0.18	16.3	B
		COMPOSITE	-	21.4	C	-	17.1	B	-	17.7	B
	WESTBOUND (W Church St)	LEFT/THRU/RIGHT	0.06	18.8	B	0.06	15.7	B	0.06	15.9	B
	NORTHBOUND (NY 9D)	LEFT	0.05	7.7	A	0.14	9.7	A	0.15	9.7	A
		THRU / RIGHT	0.35	9.4	A	0.54	10.0	A	0.53	9.9	A
		COMPOSITE	-	9.3	A	-	10.0	A	-	9.9	A
	SOUTHBOUND (NY 9D)	LEFT	0.01	5.4	A	0.01	6.1	A	0.01	6.0	A
		THRU / RIGHT	0.68	12.8	B	0.92	21.4	C	0.92	21.4	C
		COMPOSITE	-	12.7	B	-	21.4	C	-	21.3	C
	INTERSECTION	COMPOSITE	-	12.9	B	-	16.9	B	-	16.9	B
4. NY 9D & Tompkins Avenue / Ralph Street (Signalized)	EASTBOUND (Tompkins Ave)	LEFT/THRU/RIGHT	0.18	22.7	C	0.69	62.1	F	0.70	64.5	F
	WESTBOUND (Ralph St)	LEFT/THRU/RIGHT	0.06	22.8	C	0.08	31.7	D	0.09	32.3	D
	NORTHBOUND (NY 9D)	LEFT	0.00	9.0	A	0.01	9.5	A	0.01	9.5	A
		THRU / RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND (NY 9D)	LEFT	-	0.0	A	-	0.0	A	-	0.0	A
		THRU / RIGHT	-	-	-	-	-	-	-	-	-

Notes:

(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

(3) LOS represents level of service

TABLE 3

INTERSECTION OPERATIONS-PEAK WEEKDAY PM HOUR

INTERSECTION	APPROACH	LANE GROUP	2020 EXISTING			2022 NO BUILD			2022 BUILD		
			V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)	V/C(1)	DELAY(2)	LOS(3)
1. West Main Street & Site Driveway (Unsignalized)	EASTBOUND (W Main St)	LEFT / THRU							-	0.0	A
	WESTBOUND (W Main St)	THRU / RIGHT		N/A			N/A		-	-	-
	SOUTHBOUND (Site Dwy)	LEFT / RIGHT							0.01	9.4	A
2. West Main Street & Beekman Street (Unsignalized)	EASTBOUND (Beekman St)	THRU / RIGHT	0.00	7.5	A						
	WESTBOUND (Beekman St)	LEFT / THRU	-	-	-		N/A			N/A	
	SOUTHBOUND (W Main St)	LEFT / RIGHT	0.05	12.0	B						
2a. West Main Street / The View Driveway & Beekman Street (Unsignalized with Improvements from Others)	EASTBOUND (Beekman St)	LEFT/THRU/RIGHT				0.04	7.7	A	0.05	7.7	A
	WESTBOUND (Beekman St)	LEFT/THRU/RIGHT		N/A		0.02	8.1	A	0.02	8.1	A
	NORTHBOUND (The View Dwy)	LEFT/THRU/RIGHT				0.02	11.3	B	0.02	11.4	B
	SOUTHBOUND (W Main St)	LEFT/THRU/RIGHT				0.11	17.2	C	0.15	18.5	C
3. NY 9D & Beekman Street / West Church Street (Signalized)	EASTBOUND (Beekman St)	LEFT / THRU	0.70	27.9	C	0.66	21.9	C	0.67	21.6	C
		RIGHT	0.05	20.3	C	0.11	15.9	B	0.11	16.2	B
		COMPOSITE	-	27.5	C	-	21.2	C	-	20.9	C
	WESTBOUND (W Church St)	LEFT/THRU/RIGHT	0.02	20.1	C	0.02	15.5	B	0.02	15.8	B
	NORTHBOUND (NY 9D)	LEFT	0.08	10.6	B	0.25	13.9	B	0.27	14.1	B
		THRU / RIGHT	0.43	13.8	B	0.65	15.1	B	0.64	14.9	B
		COMPOSITE	-	13.6	B	-	15.0	B	-	14.8	B
	SOUTHBOUND (NY 9D)	LEFT	0.01	8.6	A	0.01	10.1	B	0.01	10.0	A
		THRU / RIGHT	0.62	15.9	B	0.92	25.3	C	0.93	26.1	C
		COMPOSITE	-	15.8	B	-	25.2	C	-	26.0	C
	INTERSECTION	COMPOSITE	-	17.9	B	-	20.7	C	-	21.0	C
4. NY 9D & Tompkins Avenue / Ralph Street (Signalized)	EASTBOUND (Tompkins Ave)	LEFT/THRU/RIGHT	0.22	28.8	D	0.74	93.9	F	-	97.4	F
	WESTBOUND (Ralph St)	LEFT/THRU/RIGHT	0.04	17.3	C	0.05	22.2	C	0.05	22.4	C
	NORTHBOUND (NY 9D)	LEFT	0.02	9.0	A	0.05	9.8	A	0.05	9.9	A
		THRU / RIGHT	-	-	-	-	-	-	-	-	-
	SOUTHBOUND (NY 9D)	LEFT	0.01	9.1	A	0.01	9.5	A	0.01	9.6	A
		THRU / RIGHT	-	-	-	-	-	-	-	-	-

Notes:

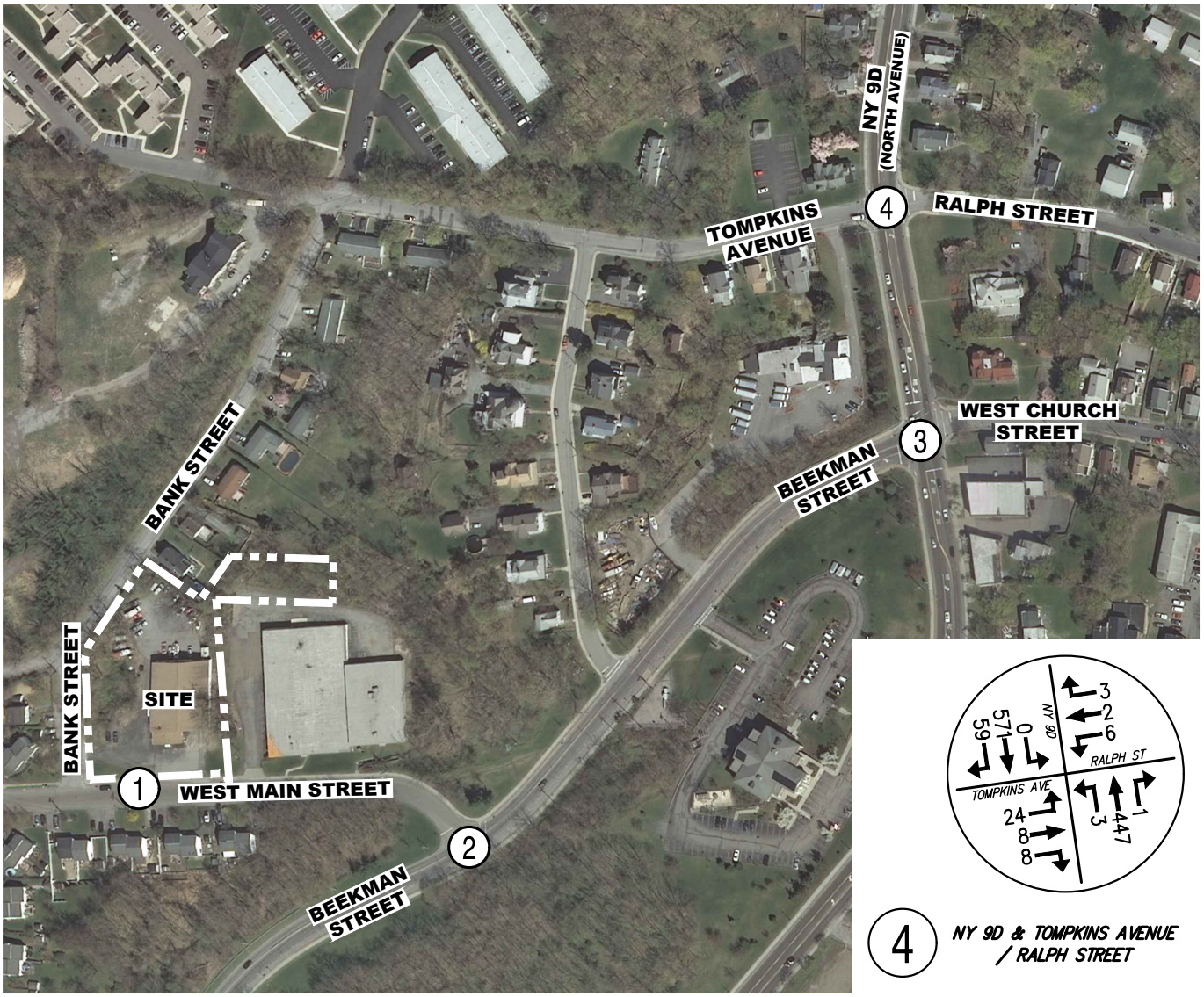
(1) V/C represents volume/capacity ratio

(2) Delay is average seconds delay per vehicle

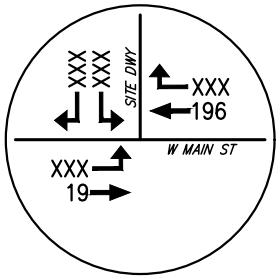
(3) LOS represents level of service

APPENDIX B

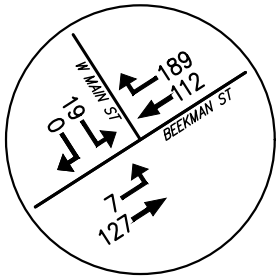
FIGURES



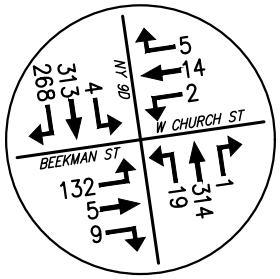
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2020 EXISTING VOLUMES

PEAK WEEKDAY AM HOUR (7:00 - 8:00)

DATE: 03/31/2020 JMC PROJECT: 18119

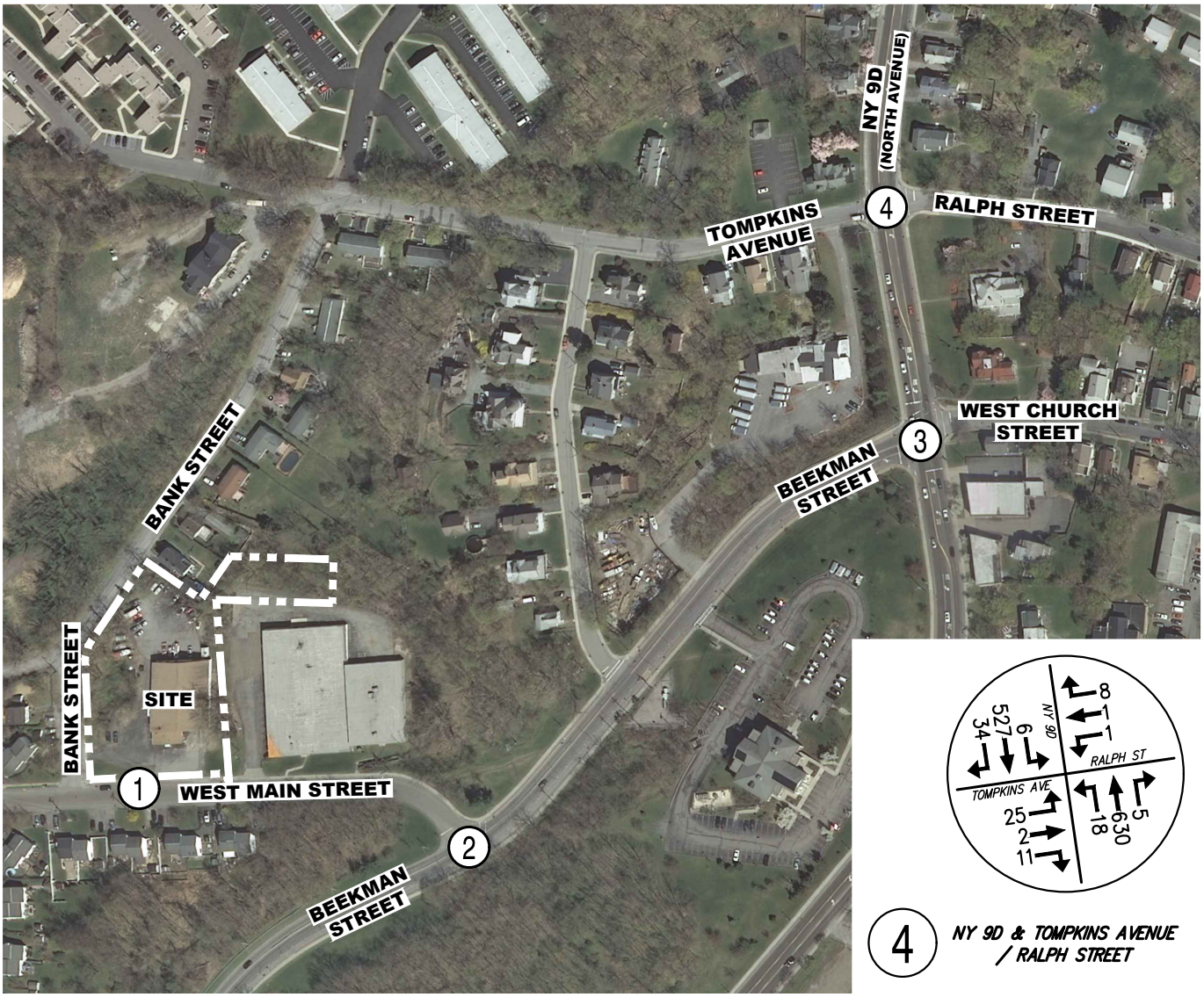
FIGURE: 01 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

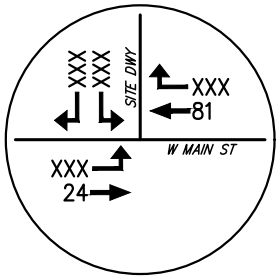
(914) 273-5225
fax 273-2102

JMCPLLC.COM

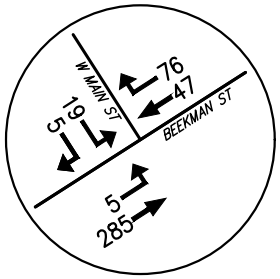
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



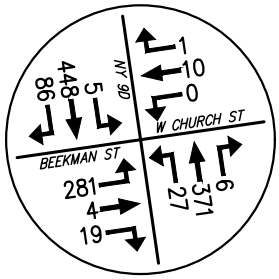
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2020 EXISTING VOLUMES

PEAK WEEKDAY PM HOUR (4:45 - 5:45)

DATE: 03/31/2020 JMC PROJECT: 18119

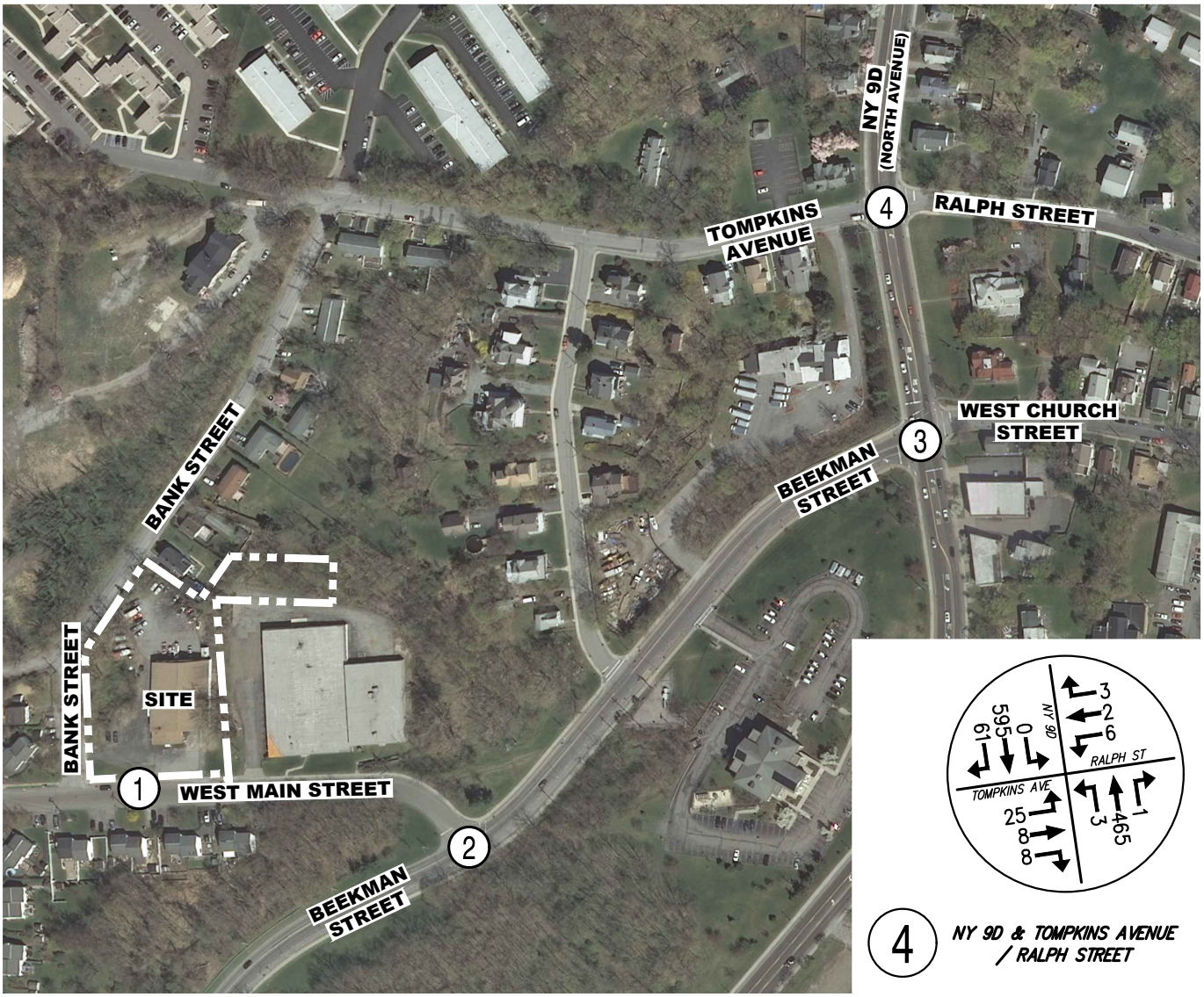
FIGURE: 02 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

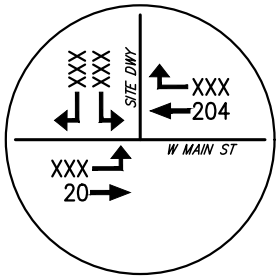
(914) 273-5225
fax 273-2102

JMCPLLC.COM

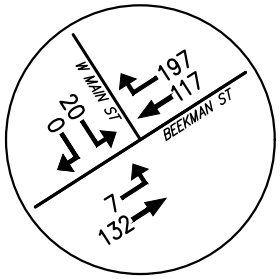
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



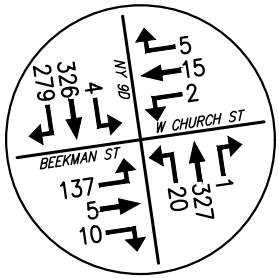
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2022 GENERAL GROWTH VOLUMES

PEAK WEEKDAY AM HOUR

DATE: 03/31/2020 JMC PROJECT: 18119

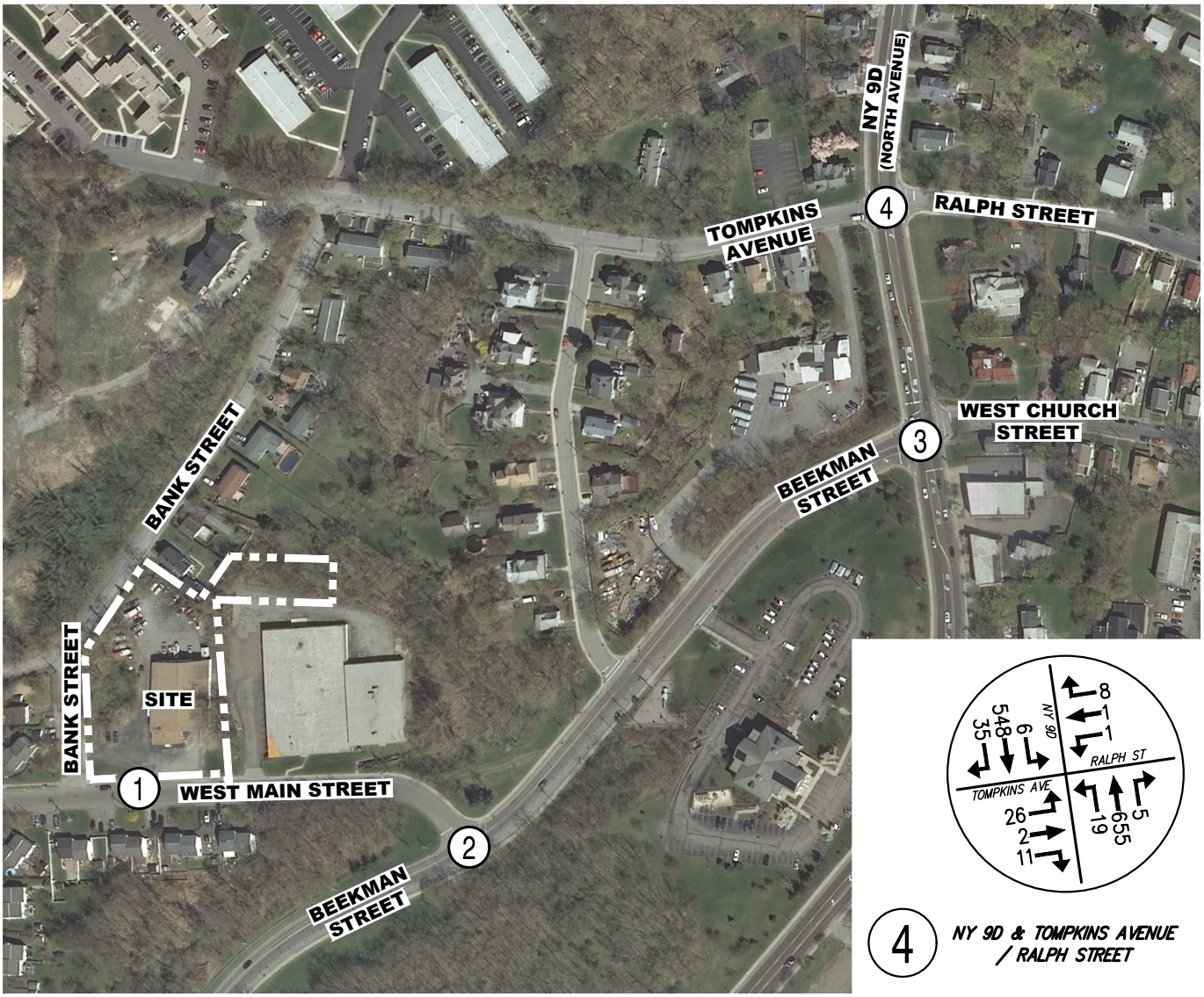
FIGURE: 03 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

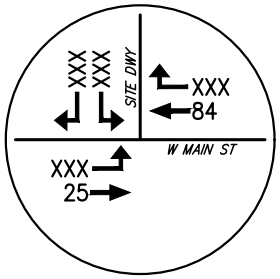
(914) 273-5225
fax 273-2102

JMCPLLC.COM

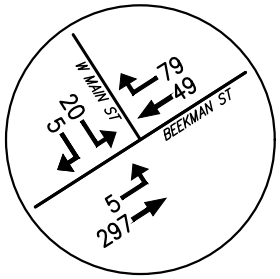
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



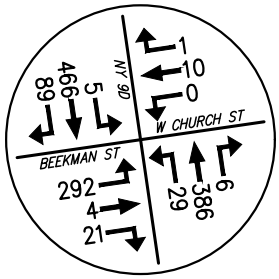
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2022 GENERAL GROWTH VOLUMES

PEAK WEEKDAY PM HOUR

DATE: 03/31/2020 JMC PROJECT: 18119

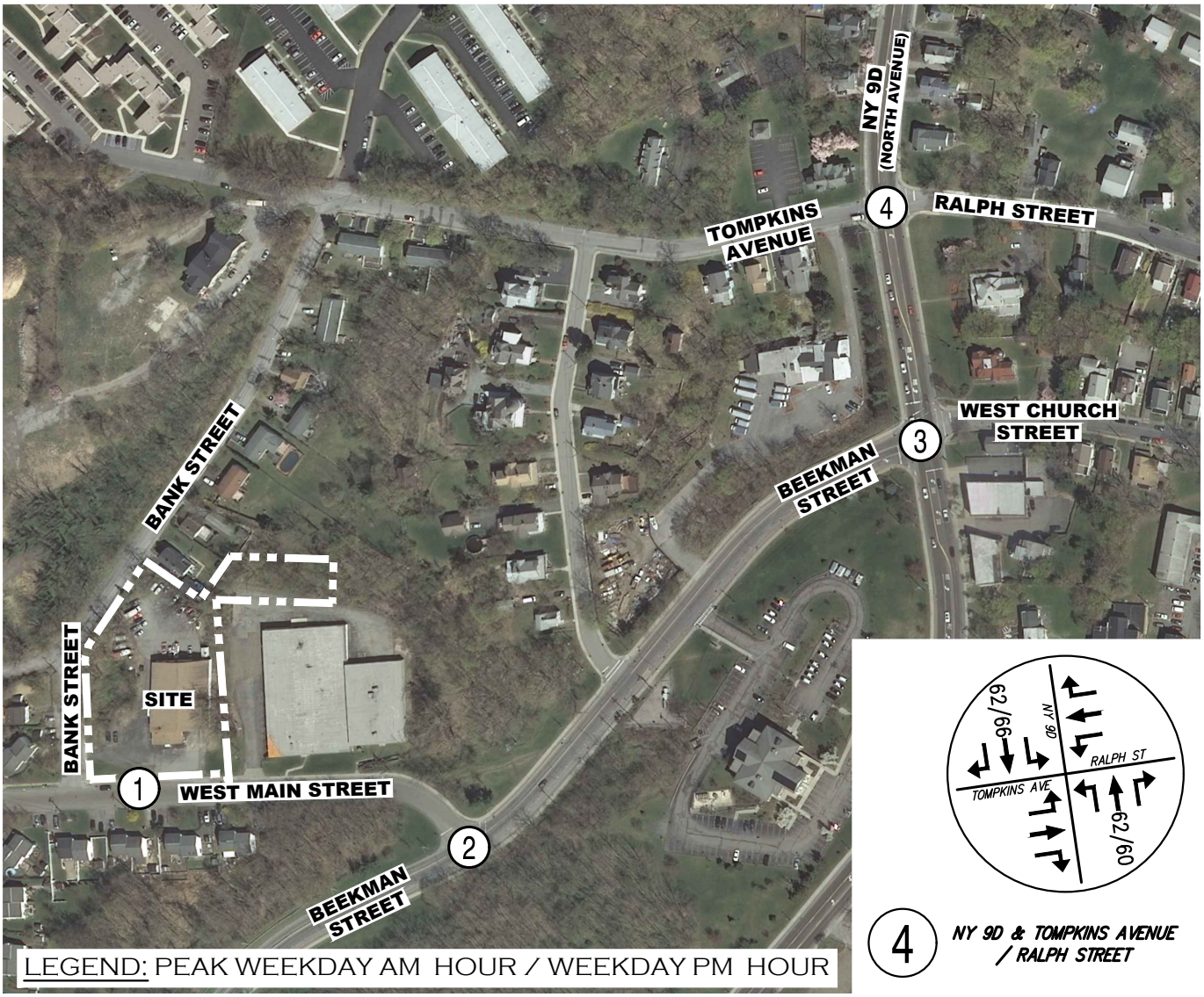
FIGURE: 04 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

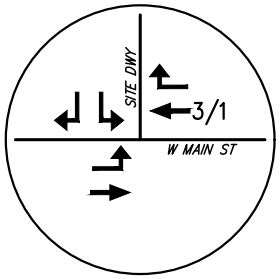
(914) 273-5225
fax 273-2102

JMCPLLC.COM

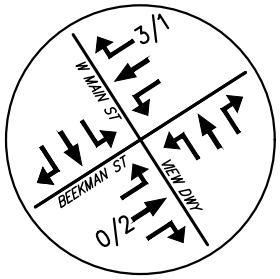
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



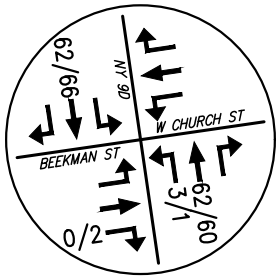
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

OTHER DEVELOPMENT VOLUMES

555 SOUTH AVENUE DEVELOPMENT

DATE: 03/31/2020 JMC PROJECT: 18119

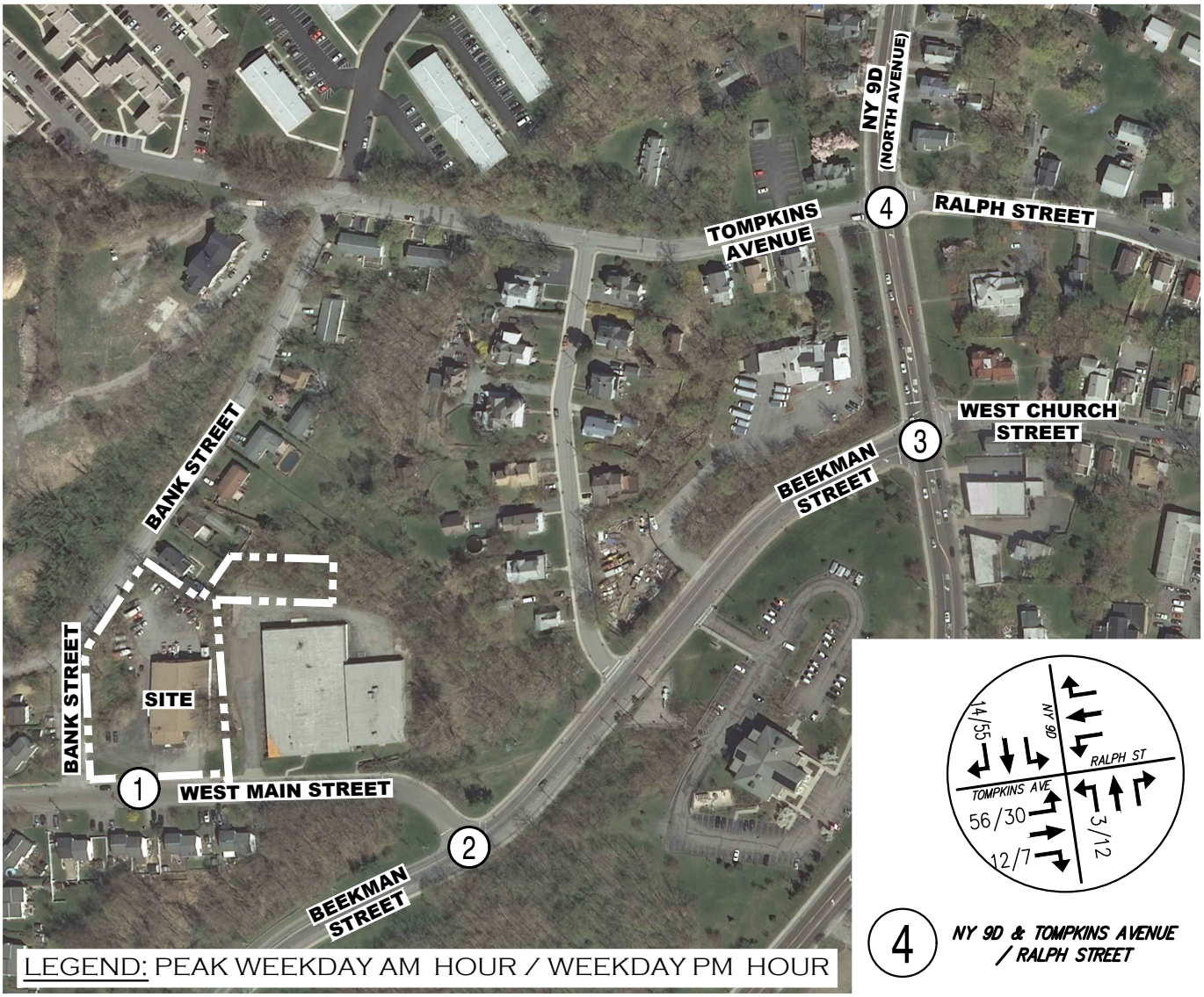
FIGURE: 05 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

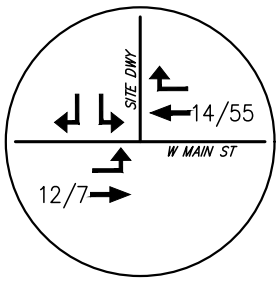
(914) 273-5225
fax 273-2102

JMCPLLC.COM

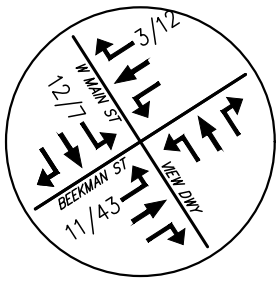
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



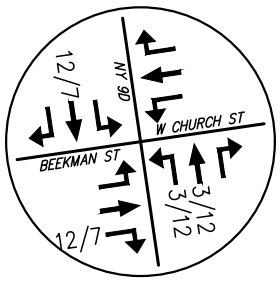
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS
16 WEST MAIN STREET BEACON, NY 12508

OTHER DEVELOPMENT VOLUMES
EDGEWATER DEVELOPMENT
DATE: 03/31/2020 JMC PROJECT: 18119

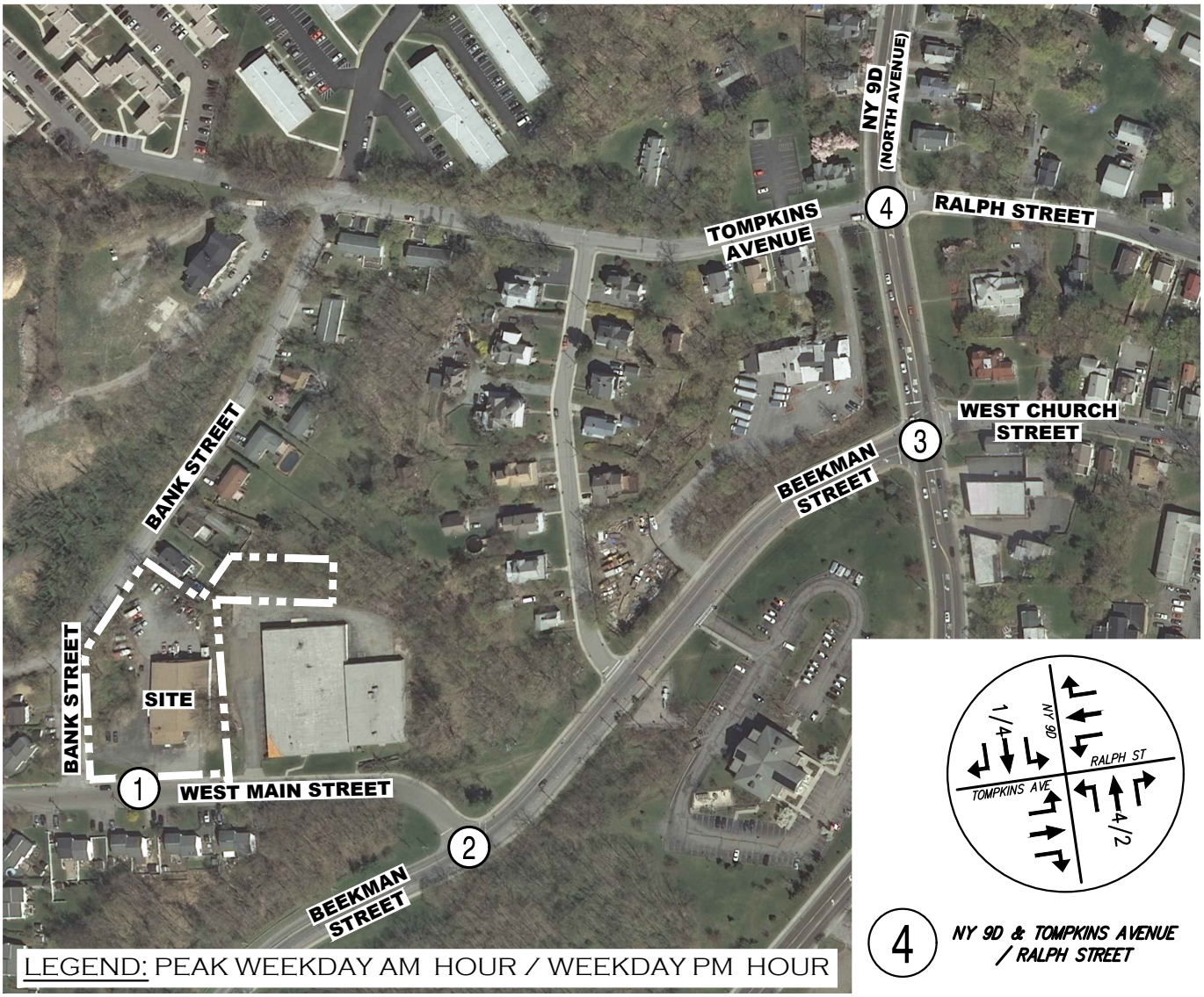
FIGURE: 06 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

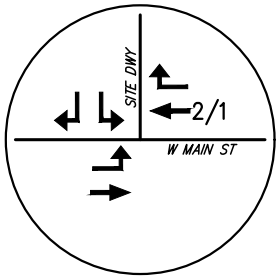
(914) 273-5225
fax 273-2102

JMCPLLC.COM

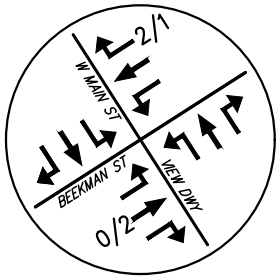
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



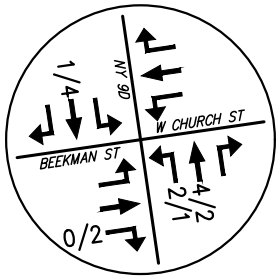
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

OTHER DEVELOPMENT VOLUMES

RIVER RIDGE RESIDENTIAL DEVELOPMENT

DATE: 03/31/2020 JMC PROJECT: 18119

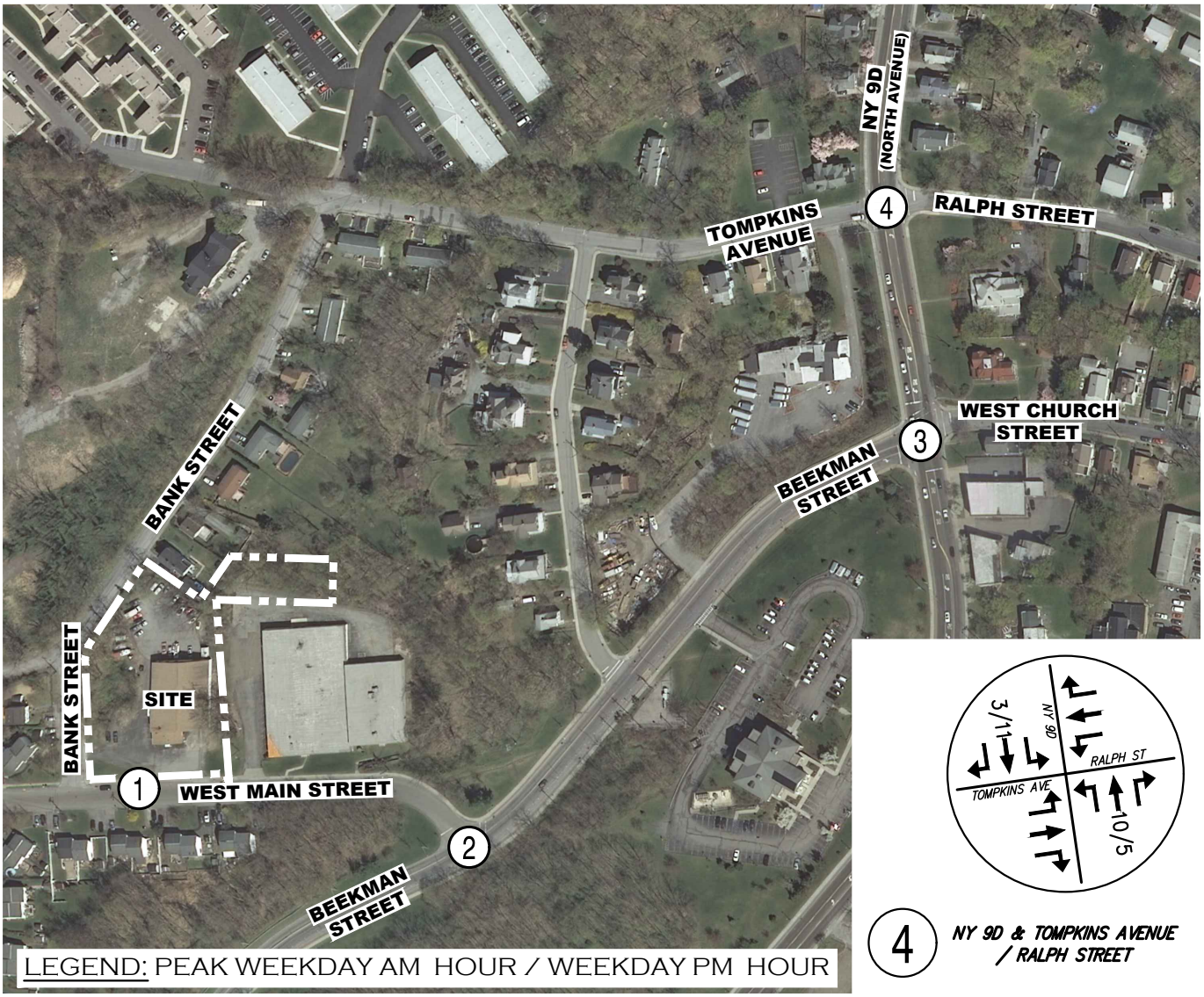
FIGURE: 07 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

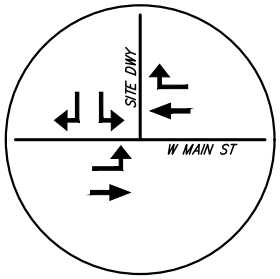
(914) 273-5225
fax 273-2102

JMCPLLC.COM

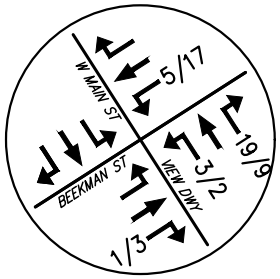
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



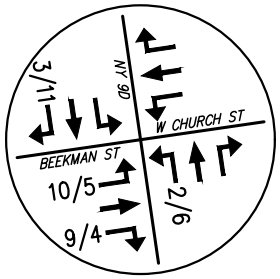
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS
16 WEST MAIN STREET BEACON, NY 12508

OTHER DEVELOPMENT VOLUMES
THE VIEW DEVELOPMENT
DATE: 03/31/2020 JMC PROJECT: 18119

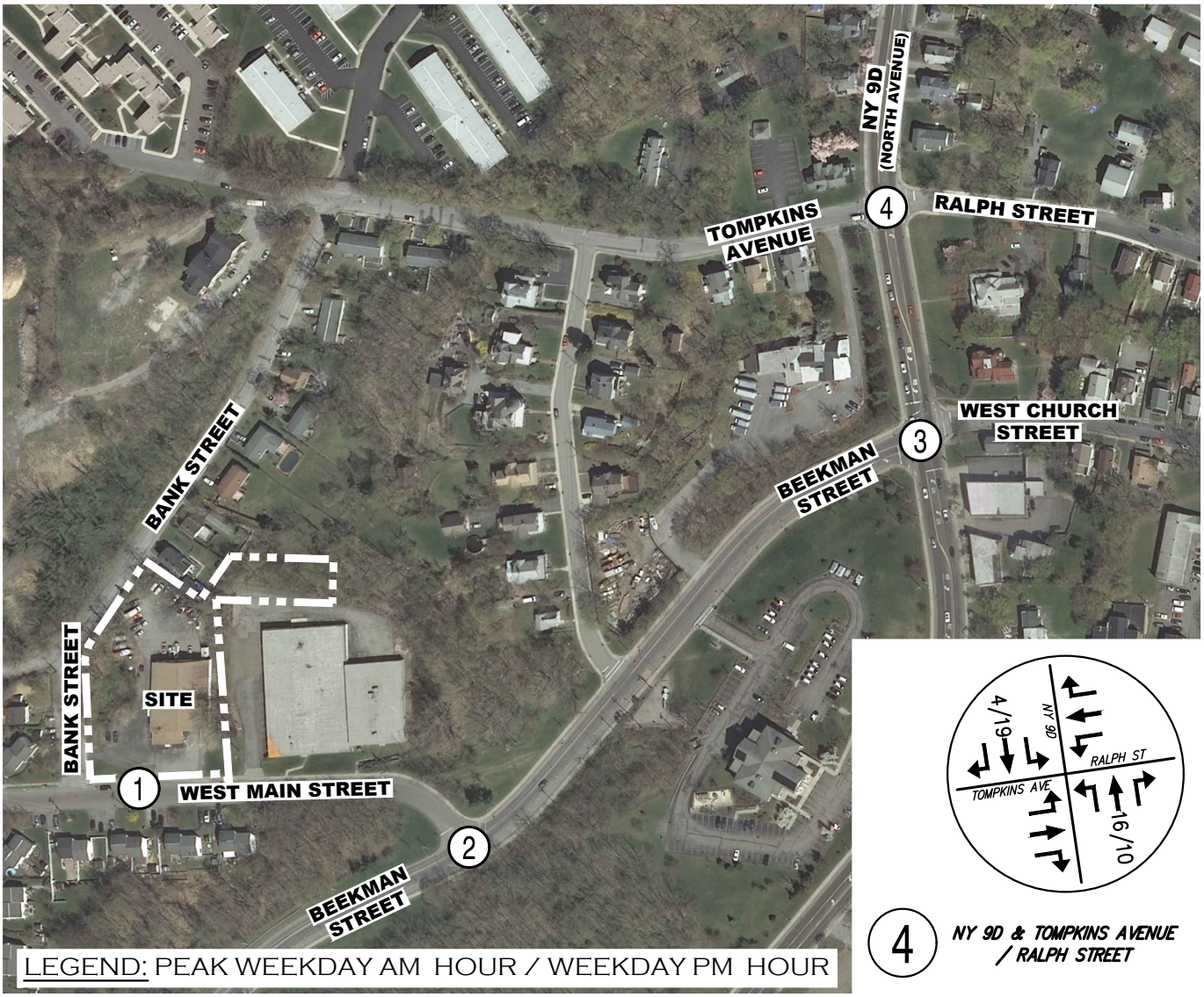
FIGURE: 08 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

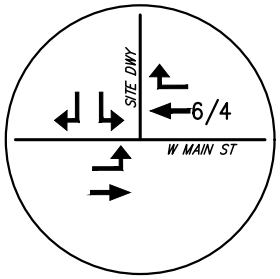
(914) 273-5225
fax 273-2102

JMCPLLC.COM

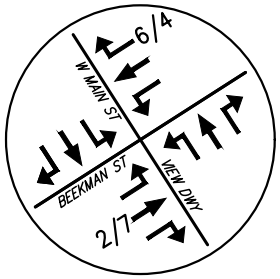
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



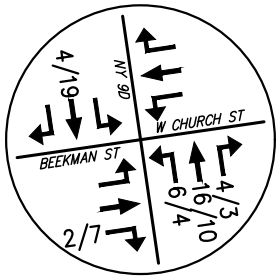
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

OTHER DEVELOPMENT VOLUMES

WEST END LOFTS DEVELOPMENT

DATE: 03/31/2020 JMC PROJECT: 18119

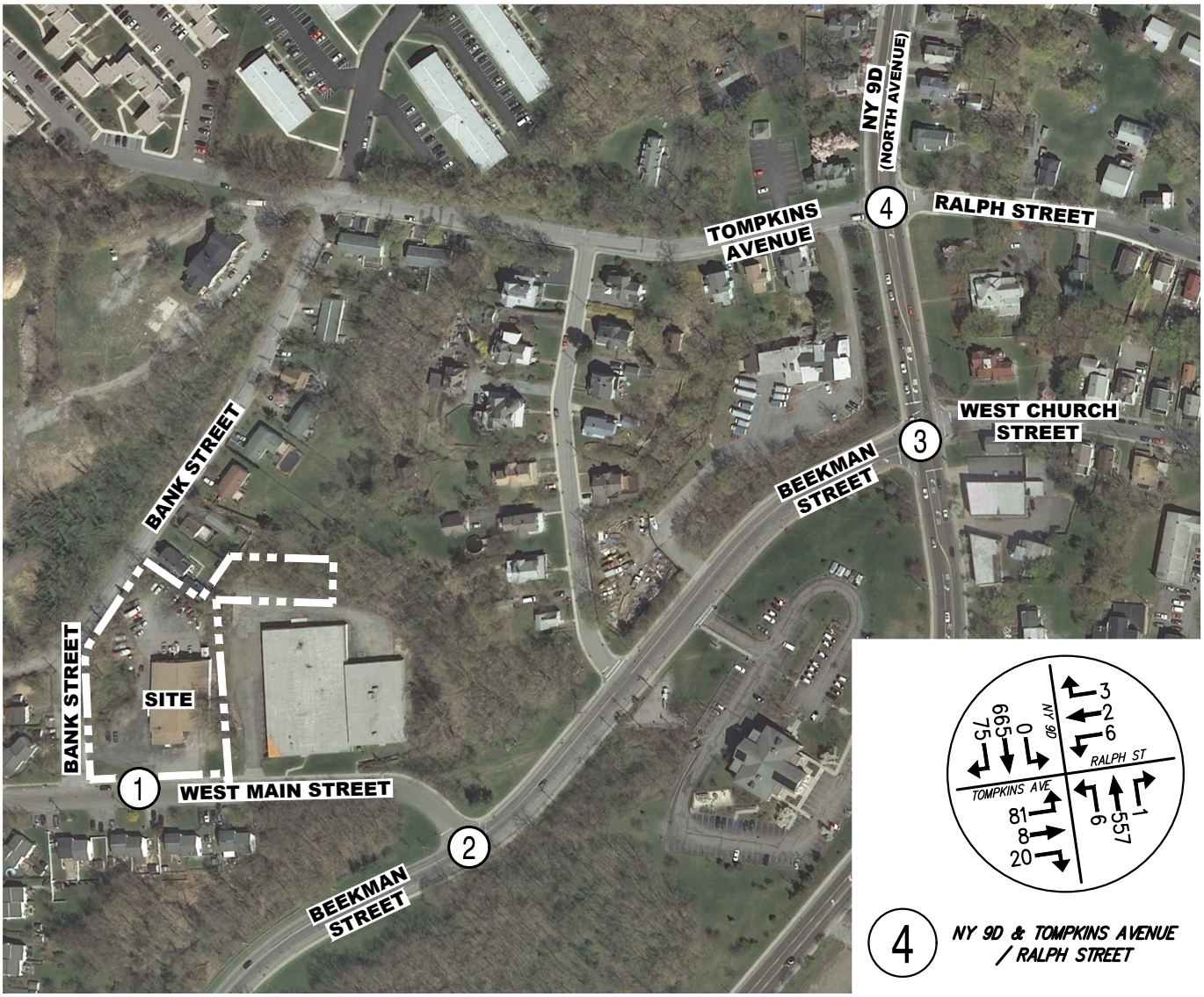
FIGURE: 09 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

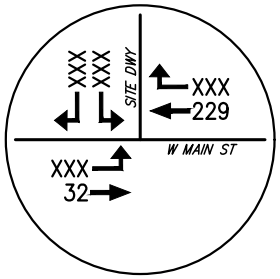
(914) 273-5225
fax 273-2102

JMCPLLC.COM

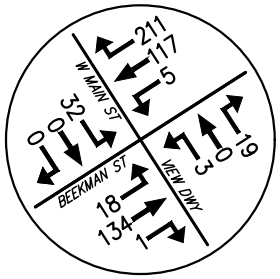
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



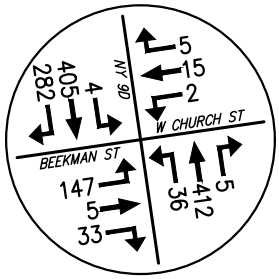
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2022 NO BUILD VOLUMES

PEAK WEEKDAY AM HOUR (7:00 - 8:00)

DATE: 03/31/2020 JMC PROJECT: 18119

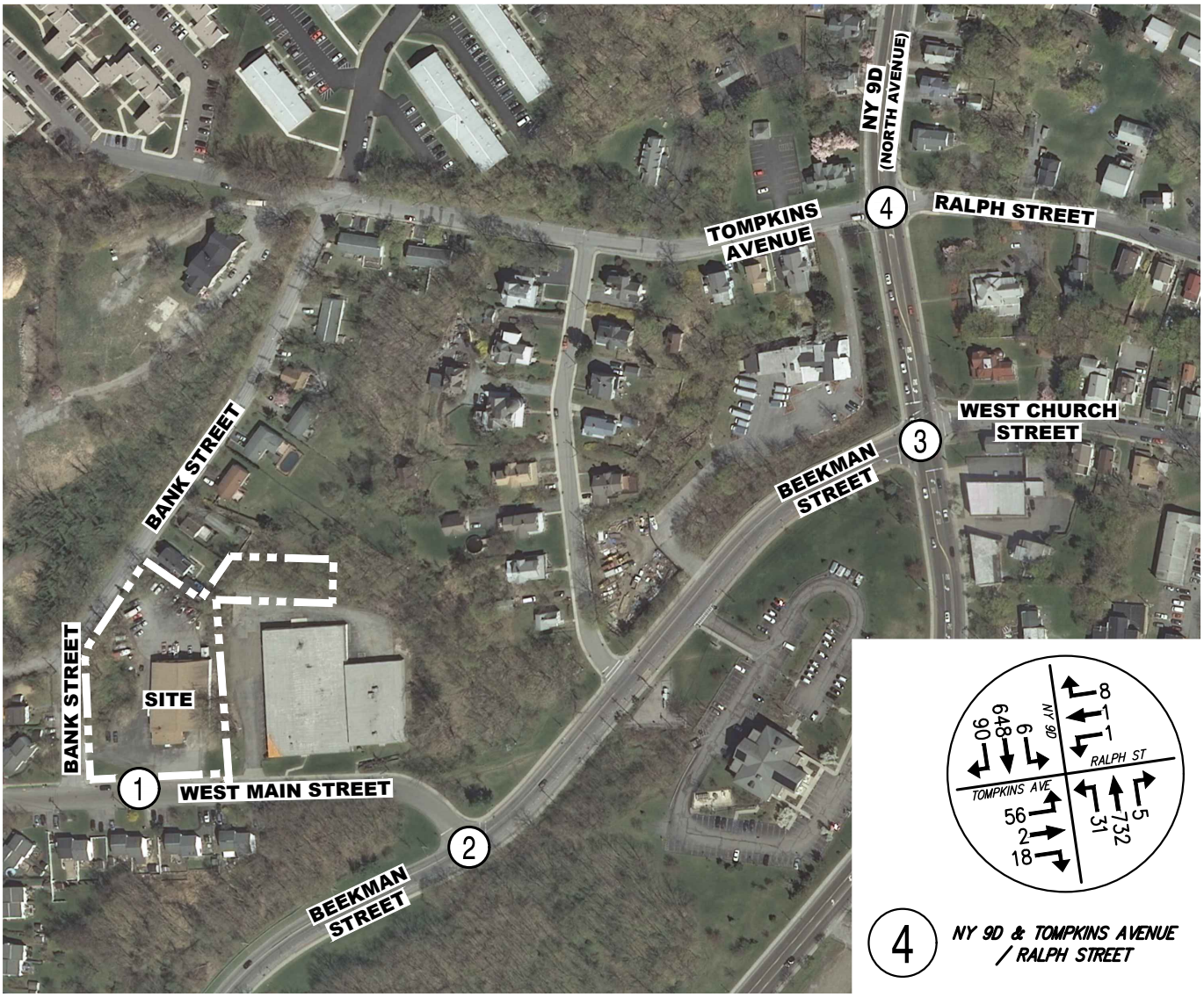
FIGURE: 10 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

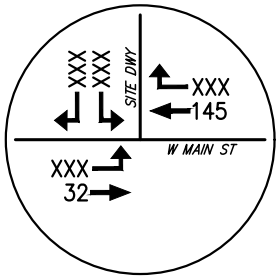
(914) 273-5225
fax 273-2102

JMCPLLC.COM

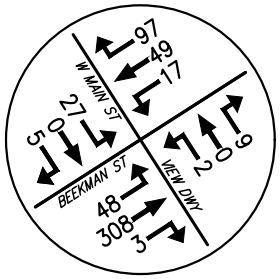
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



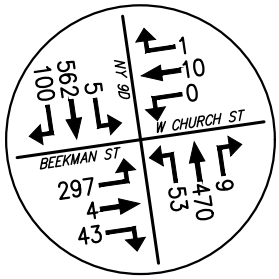
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2022 NO BUILD VOLUMES

PEAK WEEKDAY PM HOUR (4:45 - 5:45)

DATE: 03/31/2020 JMC PROJECT: 18119

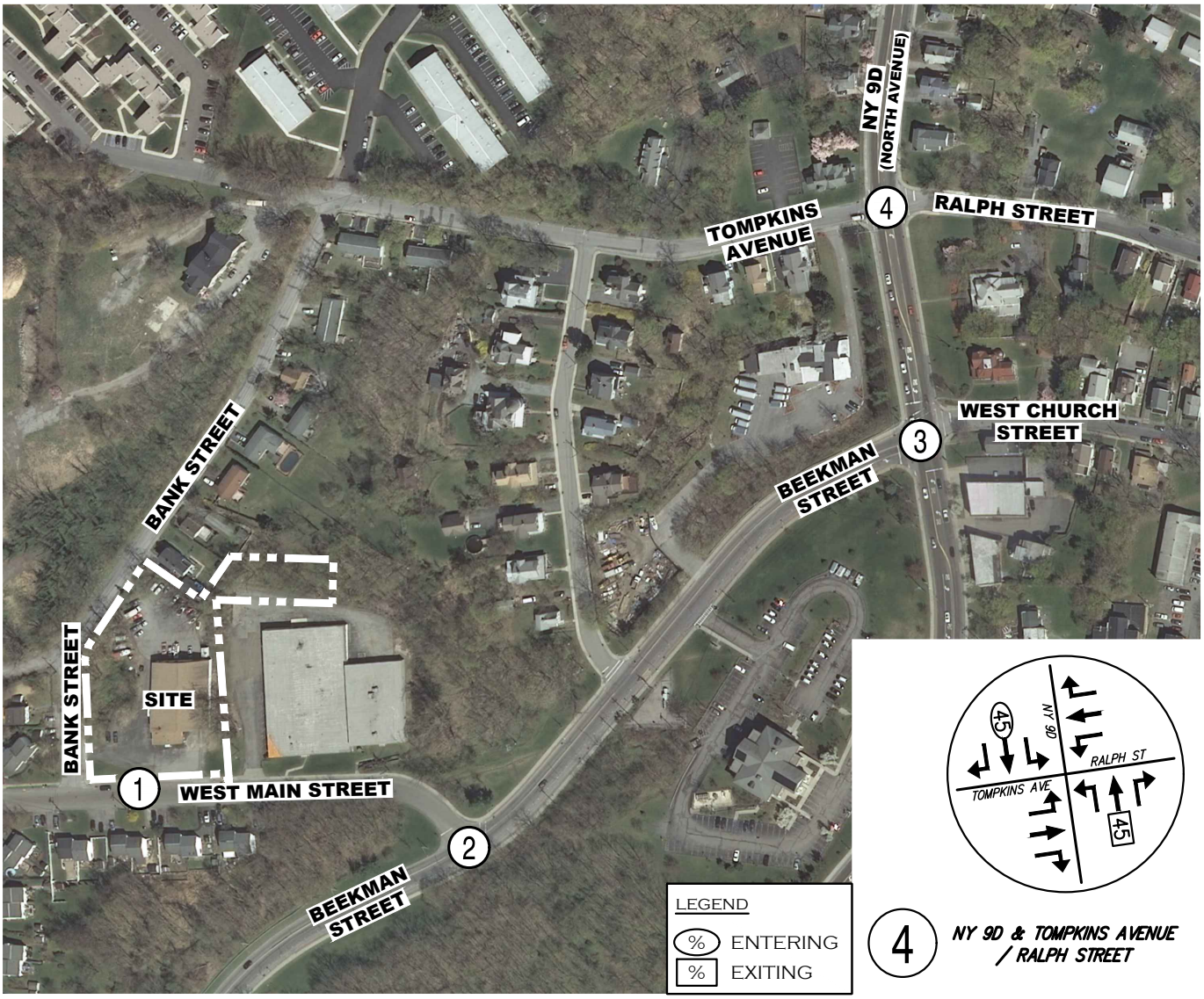
FIGURE: 11 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

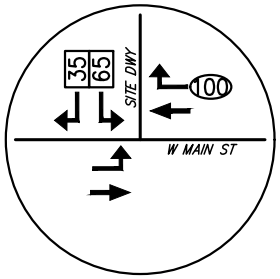
(914) 273-5225
fax 273-2102

JMCPLLC.COM

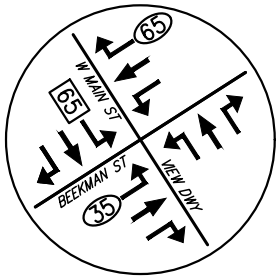
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



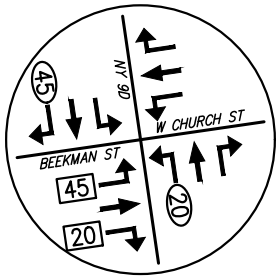
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

PRIMARY TRIP DISTRIBUTIONS

DATE: 03/31/2020 JMC PROJECT: 18119

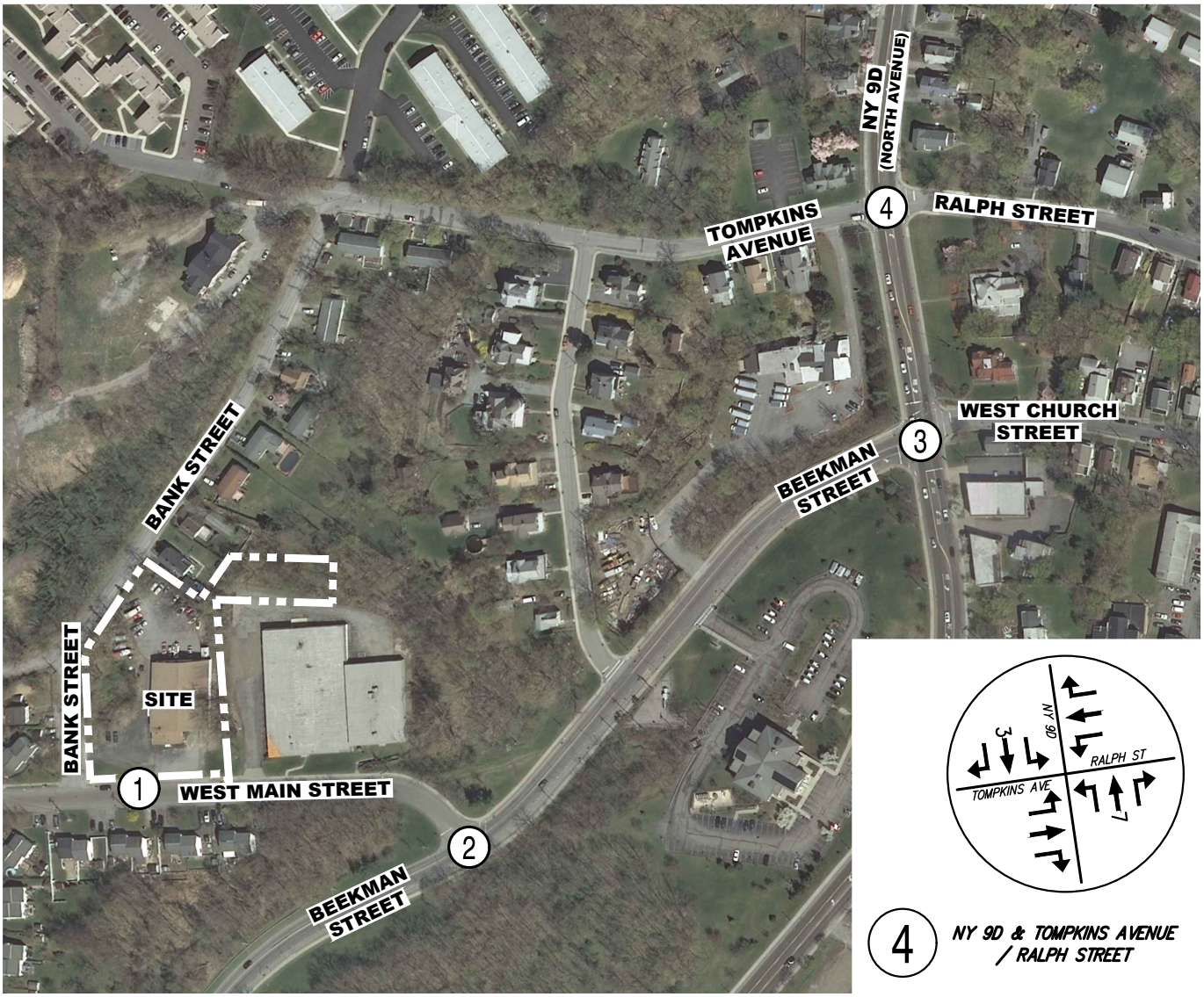
FIGURE: 12 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

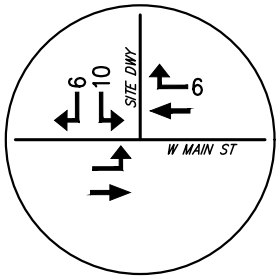
(914) 273-5225
fax 273-2102

JMCPLLC.COM

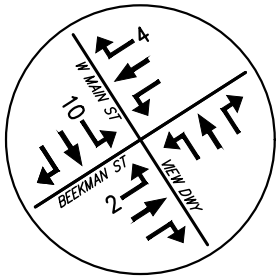
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



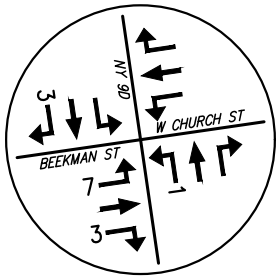
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

PRIMARY VOLUMES

PEAK WEEKDAY AM HOUR

DATE: 03/31/2020 JMC PROJECT: 18119

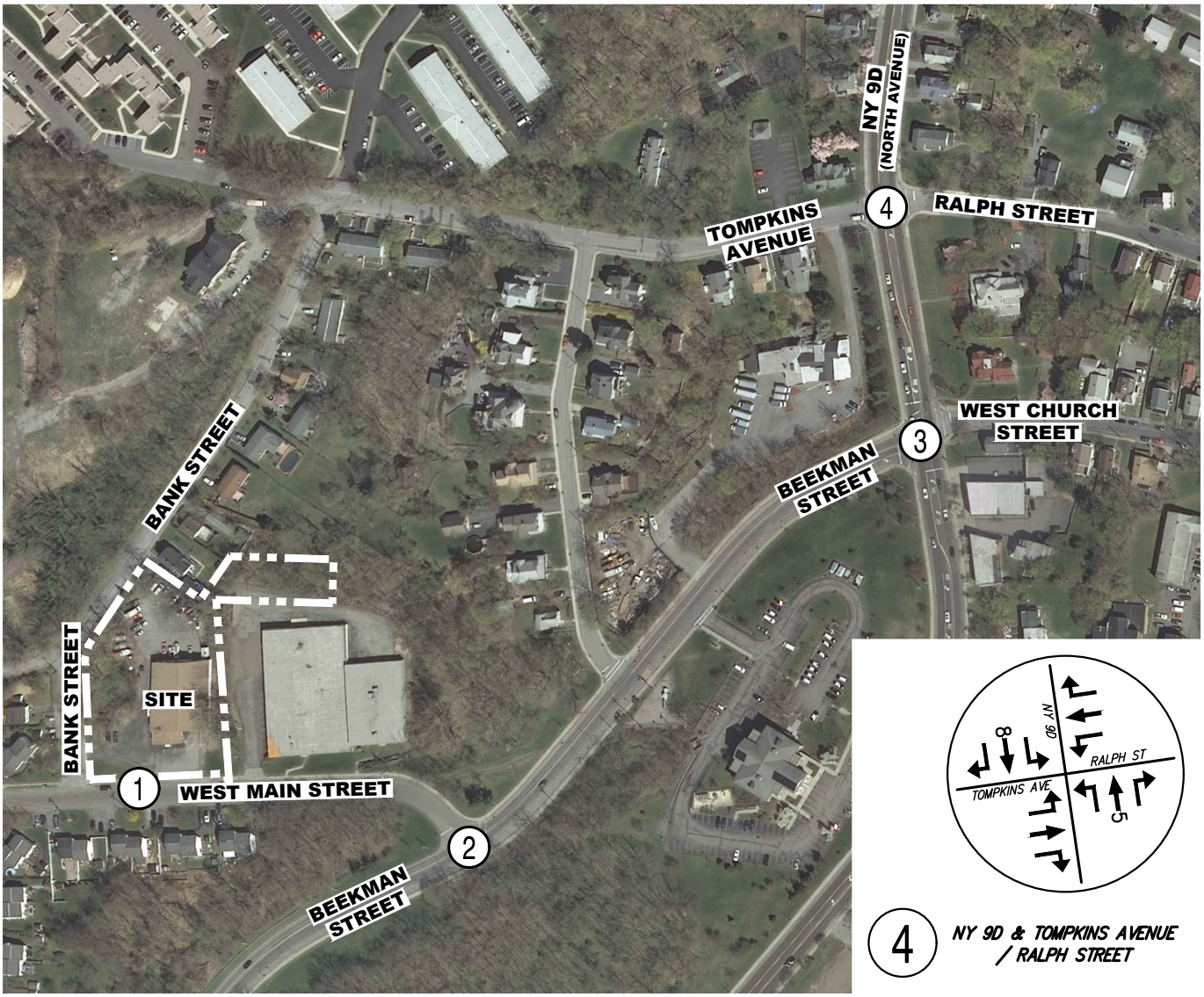
FIGURE: 13 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

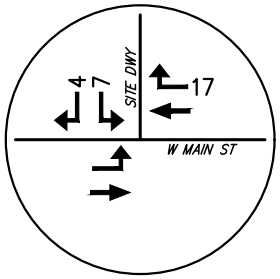
(914) 273-5225
fax 273-2102

JMCPLLC.COM

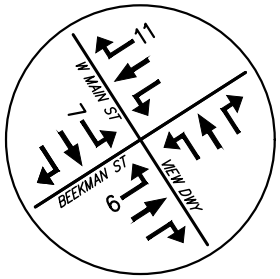
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



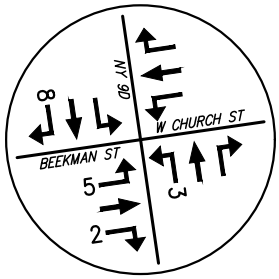
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

PRIMARY VOLUMES

PEAK WEEKDAY PM HOUR

DATE: 03/31/2020 JMC PROJECT: 18119

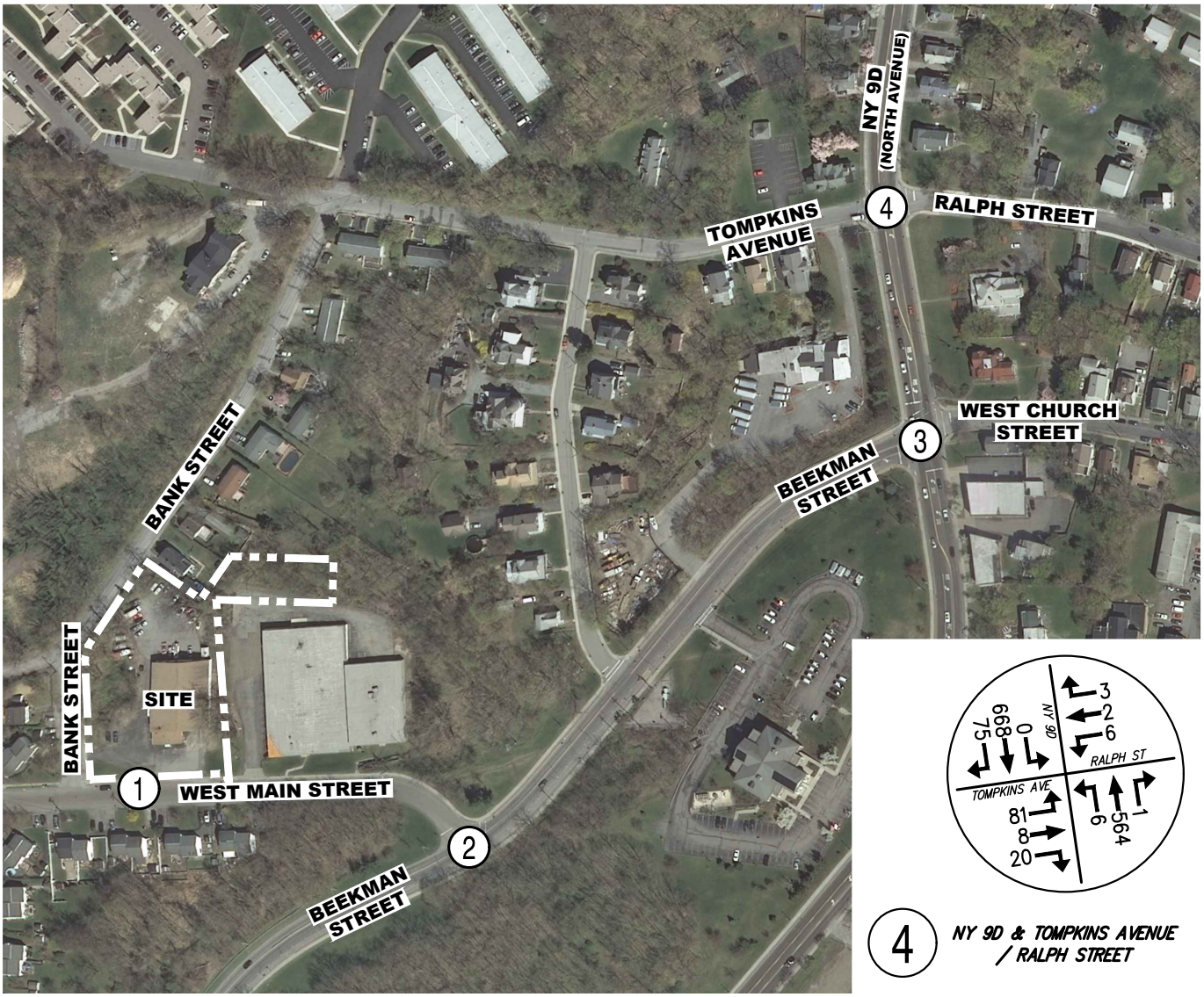
FIGURE: 14 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

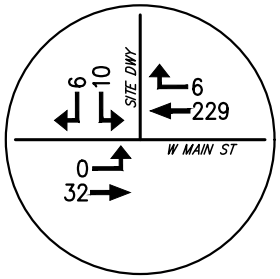
(914) 273-5225
fax 273-2102

JMCPLLC.COM

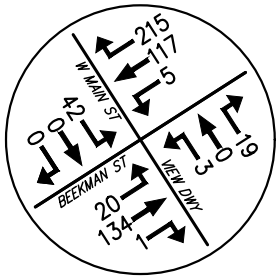
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



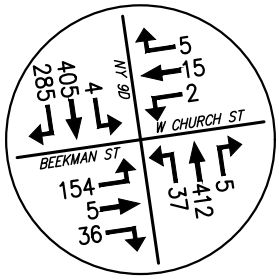
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2022 BUILD VOLUMES

PEAK WEEKDAY AM HOUR (7:00 - 8:00)

DATE: 03/31/2020 JMC PROJECT: 18119

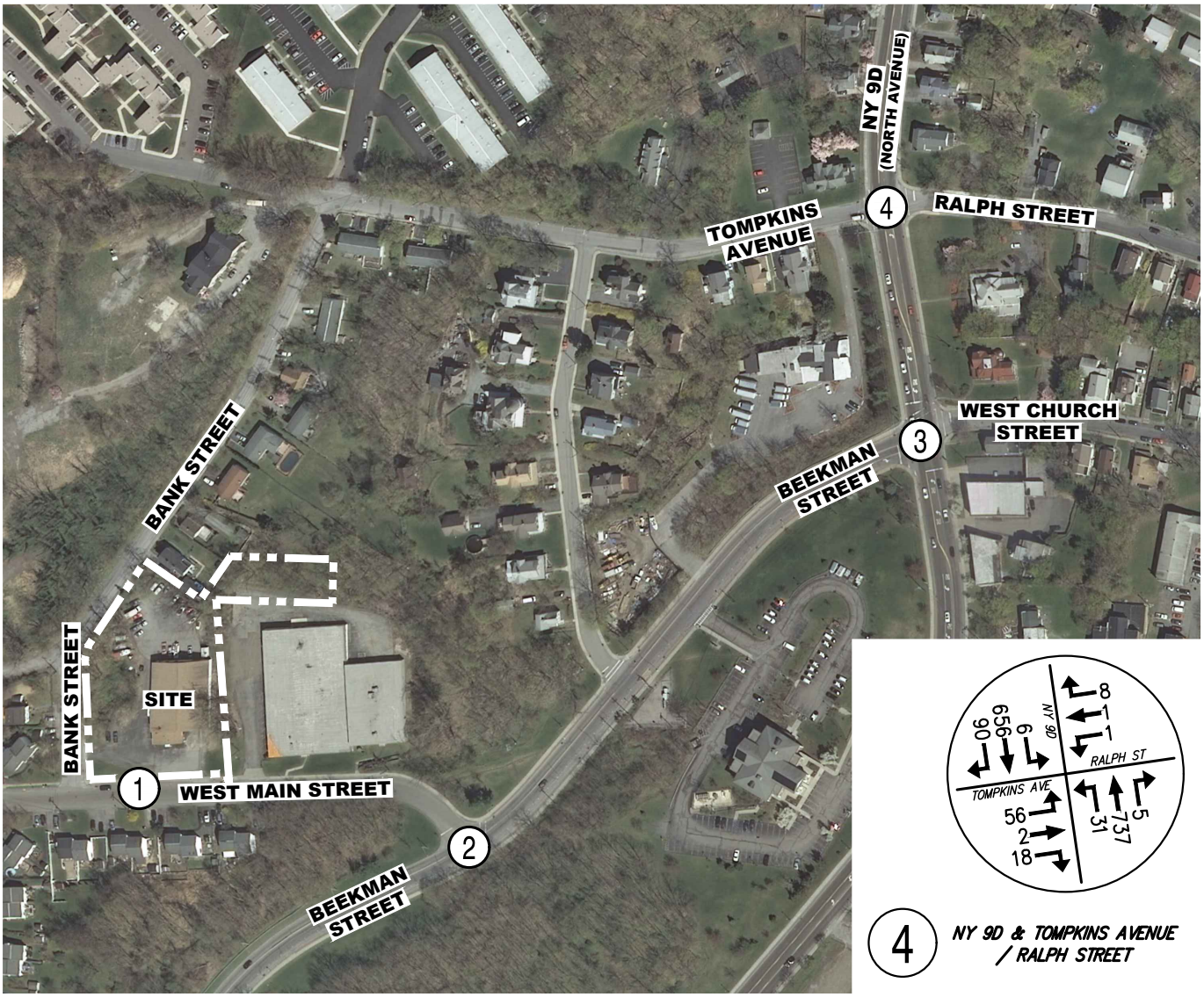
FIGURE: 15 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

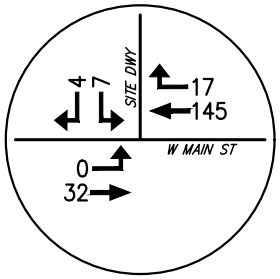
(914) 273-5225
fax 273-2102

JMCPLLC.COM

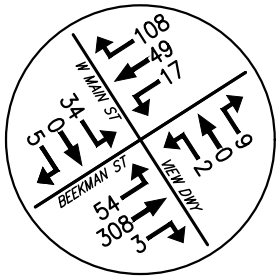
COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.



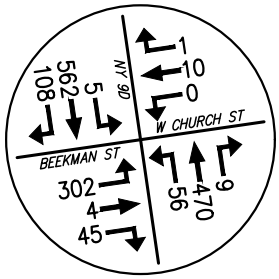
4 NY 9D & TOMPKINS AVENUE / RALPH STREET



1 WEST MAIN STREET & SITE DRIVEWAY



2 WEST MAIN STREET / THE VIEW DRIVEWAY & BEEKMAN STREET



3 NY 9D & BEEKMAN STREET / WEST CHURCH STREET

BEACON COMMONS

16 WEST MAIN STREET BEACON, NY 12508

2022 BUILD VOLUMES

PEAK WEEKDAY PM HOUR (4:45 - 5:45)

DATE: 03/31/2020 JMC PROJECT: 18119

FIGURE: 16 SCALE: 1" = 250'

120 BEDFORD RD
ARMONK
NY 10504

(914) 273-5225
fax 273-2102

JMCPLLC.COM

COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.

APPENDIX C

TURNING MOVEMENT COUNTS

DATE:	2/25/2020	CALCULATIONS - DO NOT EDIT THIS SHEET	JOB NO:	18119
PERIOD:	7:00 - 9:00 AM & 4:00 - 7:00 PM		NAME:	Traffic Databank
LOCATION:	West Main Street & Beekman Street		INT #:	2

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 7:15 AM	TOTAL	0	30	34	77	6	0							147		1			1	
	TRUCK		1		1	1														
7:15 - 7:30 AM	TOTAL	1	47	33	56	4	0							141		1			1	
	TRUCK				2	4														
7:30 - 7:45 AM	TOTAL	3	26	19	36	3	0							87	1	2			3	
	TRUCK	1	2		2															
7:45 - 8:00 AM	TOTAL	3	22	26	20	6	0							77						
	TRUCK					1														
8:00 - 8:15 AM	TOTAL	3	10	28	45	5	0							91		3			3	
	TRUCK	1			1															
8:15 - 8:30 AM	TOTAL	2	36	13	20	6	0							77						
	TRUCK		1	3																
8:30 - 8:45 AM	TOTAL	2	16	14	26	5	0							63						
	TRUCK																			
8:45 - 9:00 AM	TOTAL	7	16	21	27	2	1							74	2	1			3	
	TRUCK			1	2															
4:00 - 4:15 PM	TOTAL	3	18	14	13	8	2							58						
	TRUCK				1															
4:15 - 4:30 PM	TOTAL	0	79	4	10	8	0							101	1	3			4	
	TRUCK		1		1	1														
4:30 - 4:45 PM	TOTAL	0	23	9	15	7	1							55						
	TRUCK				1	1														
4:45 - 5:00 PM	TOTAL	3	93	8	20	5	1							130	2	3			5	
	TRUCK		1		3															
5:00 - 5:15 PM	TOTAL	0	20	15	14	6	2							57						
	TRUCK				1															
5:15 - 5:30 PM	TOTAL	2	92	10	18	5	2							129						
	TRUCK		1																	
5:30 - 5:45 PM	TOTAL	0	80	14	24	3	0							121						
	TRUCK				2															
5:45 - 6:00 PM	TOTAL	0	35	10	19	6	0							70		1			1	
	TRUCK		1		1															

6:00 - 6:15 PM	TOTAL	0	74	18	22	6	1							121		2			2	
	TRUCK		1		2															
6:15 - 6:30 PM	TOTAL	3	147	7	15	9	1							182						
	TRUCK		1																	
6:30 - 6:45 PM	TOTAL	1	33	21	26	2	0							83						
	TRUCK				1															
6:45 - 7:00 PM	TOTAL	2	127	5	17	4	2							157	1	2			3	
	TRUCK				1															

1: Beekman Street EB - Left
2: Beekman Street EB - Thru
3: Beekman Street WB - Thru
4: Beekman Street WB - Right
5: W Main Street SB - Left
6: W Main Street SB - Right
7:
8:
9:
10:
11:
12:

A: Cross Beekman Street east of INT
B: Cross W Main Street south of INT
C:
D:

DATE:	2/25/2020		JOB NO:	18119
PERIOD:	7:00 - 9:00 AM & 4:00 - 7:00 PM		NAME:	Traffic Databank
LOCATION:	West Main Street & Beekman Street		INT #:	2

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 8:00 AM	TOTAL	7	125	112	189	19								452	1	4			5	
	TRUCK	14%	2%	0%	3%	32%														0.77
7:15 - 8:15 AM	TOTAL	10	105	106	157	18								396	1	6			7	
	TRUCK	20%	2%	0%	3%	28%														0.70
7:30 - 8:30 AM	TOTAL	11	94	86	121	20								332	1	5			6	
	TRUCK	18%	3%	3%	2%	5%														0.91
7:45 - 8:45 AM	TOTAL	10	84	81	111	22								308		3			3	
	TRUCK	10%	1%	4%	1%	5%														0.85
8:00 - 9:00 AM	TOTAL	14	78	76	118	18	1							305	2	4			6	
	TRUCK	7%	1%	5%	3%	0%	0%													0.84
4:00 - 5:00 PM	TOTAL	6	213	35	58	28	4							344	3	6			9	
	TRUCK	0%	1%	0%	10%	7%	0%													0.66
4:15 - 5:15 PM	TOTAL	3	215	36	59	26	4							343	3	6			9	
	TRUCK	0%	1%	0%	10%	8%	0%													0.66
4:30 - 5:30 PM	TOTAL	5	228	42	67	23	6							371	2	3			5	
	TRUCK	0%	1%	0%	7%	4%	0%													0.71
4:45 - 5:45 PM	TOTAL	5	285	47	76	19	5							437	2	3			5	
	TRUCK	0%	1%	0%	8%	0%	0%													0.84
5:00 - 6:00 PM	TOTAL	2	227	49	75	20	4							377		1			1	
	TRUCK	0%	1%	0%	5%	0%	0%													0.73
5:15 - 6:15 PM	TOTAL	2	281	52	83	20	3							441		3			3	
	TRUCK	0%	1%	0%	6%	0%	0%													0.85
5:30 - 6:30 PM	TOTAL	3	336	49	80	24	2							494		3			3	
	TRUCK	0%	1%	0%	6%	0%	0%													0.68
5:45 - 6:45 PM	TOTAL	4	289	56	82	23	2							456		3			3	
	TRUCK	0%	1%	0%	5%	0%	0%													0.63
6:00 - 7:00 PM	TOTAL	6	381	51	80	21	4							543	1	4			5	
	TRUCK	0%	1%	0%	5%	0%	0%													0.75

1: Beekman Street EB - Left
2: Beekman Street EB - Thru
3: Beekman Street WB - Thru
7:
8:
9:

A: Cross Beekman Street east of INT
B: Cross W Main Street south of INT
C:

4:	**Beekman Street WB - Right**	**10:**		**D:**	
5:	**W Main Street SB - Left**	**11:**			
6:	**W Main Street SB - Right**	**12:**			

DATE:	2/25/2020		JOB NO:	18119
PERIOD:	7:00 - 9:00 AM & 4:00 - 7:00 PM		NAME:	Traffic Databank
LOCATION:	NY 9D & Beekman Street / W Church Street		INT #:	3

CALCULATIONS - DO NOT EDIT THIS SHEET

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 7:15 AM	TOTAL	37	1	1	0	2	1	3	58	1	2	69	112	287	2			2	4	
	TRUCK	2						1	2	1		6	1							
7:15 - 7:30 AM	TOTAL	44	1	3	1	4	2	6	75	0	1	55	64	256	2	3		4	9	
	TRUCK	3		1					3			6	1							
7:30 - 7:45 AM	TOTAL	21	3	2	1	5	1	5	89	0	1	62	43	233		1		1	2	
	TRUCK	1						1	5			7	1							
7:45 - 8:00 AM	TOTAL	28	0	3	0	3	1	4	88	0	0	114	37	278		1		1	2	
	TRUCK	2							5											
8:00 - 8:15 AM	TOTAL	10	3	1	1	4	0	5	97	0	0	97	62	280		1	1		2	
	TRUCK							1	3			8								
8:15 - 8:30 AM	TOTAL	35	1	1	2	1	0	2	75	0	0	119	27	263	4			1	5	
	TRUCK	1							2			9	4							
8:30 - 8:45 AM	TOTAL	16	1	2	3	1	0	7	121	0	0	110	32	293	1	4		4	9	
	TRUCK								7			4								
8:45 - 9:00 AM	TOTAL	16	2	2	0	1	1	7	78	0	0	112	35	254	2				2	
	TRUCK								9			5	2							
4:00 - 4:15 PM	TOTAL	26	1	5	0	1	0	6	109	1	1	102	16	268		2		2	4	
	TRUCK								2			1	1							
4:15 - 4:30 PM	TOTAL	83	2	1	1	0	2	2	91	1	0	111	9	303		3		3	6	
	TRUCK	2							4			6								
4:30 - 4:45 PM	TOTAL	21	1	1	2	2	2	4	134	1	4	130	18	320		2		1	3	
	TRUCK	1						1	3			4								
4:45 - 5:00 PM	TOTAL	96	0	1	0	2	0	6	116	3	0	105	17	346				1	1	
	TRUCK	1							8				2							
5:00 - 5:15 PM	TOTAL	14	1	2	0	2	1	7	94	0	2	97	17	237		1	1		2	
	TRUCK							1	3											
5:15 - 5:30 PM	TOTAL	93	1	10	0	2	0	8	73	2	2	135	13	339				2	2	
	TRUCK	1							1			1								
5:30 - 5:45 PM	TOTAL	61	2	5	0	3	0	3	88	1	1	111	30	305	1	3		2	6	
	TRUCK							1	2			2	1							
5:45 - 6:00 PM	TOTAL	45	1	3	3	0	0	2	97	0	0	118	27	296		1	1		2	
	TRUCK	1							2			3								

6:00 - 6:15 PM	TOTAL	59	2	3	2	1	0	9	59	0	1	86	24	246	1				1	
	TRUCK							1				1	1							
6:15 - 6:30 PM	TOTAL	147	0	3	2	0	0	2	80	0	2	88	19	343	1	1	1		3	
	TRUCK											1								
6:30 - 6:45 PM	TOTAL	43	2	4	1	5	2	4	58	0	4	91	35	249		1		2	3	
	TRUCK	1							2			1	1							
6:45 - 7:00 PM	TOTAL	119	4	6	1	0	1	3	61	0	1	77	15	288		3		3	6	
	TRUCK							1	1				1							

1: Beekman Street EB - Left
2: Beekman Street EB - Thru
3: Beekman Street EB - Right
4: W Church Street WB - Left
5: W Church Street WB - Thru
6: W Church Street WB - Right
7: NY 9D NB - Left
8: NY 9D NB - Thru
9: NY 9D NB - Right
10: NY 9D SB - Left
11: NY 9D SB - Thru
12: NY 9D SB - Right

A: Cross Beekman Street west of INT
B: Cross W Church Street east of INT
C: Cross 9D south of INT
D: Cross 9D north of INT

DATE:	2/25/2020		JOB NO:	18119
PERIOD:	7:00 - 9:00 AM & 4:00 - 7:00 PM		NAME:	Traffic Databank
LOCATION:	NY 9D & Beekman Street / W Church Street		INT #:	3

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 8:00 AM	TOTAL	130	5	9	2	14	5	18	310	1	4	300	256	1,054	4	5		8	17	
	TRUCK	6%	0%	11%	0%	0%	0%	11%	5%	100%	0%	6%	1%							0.92
7:15 - 8:15 AM	TOTAL	103	7	9	3	16	4	20	349		2	328	206	1,047	2	6	1	6	15	
	TRUCK	6%	0%	11%	0%	0%	0%	10%	5%		0%	6%	1%							0.93
7:30 - 8:30 AM	TOTAL	94	7	7	4	13	2	16	349		1	392	169	1,054	4	3	1	3	11	
	TRUCK	4%	0%	0%	0%	0%	0%	13%	4%		0%	6%	3%							0.94
7:45 - 8:45 AM	TOTAL	89	5	7	6	9	1	18	381			440	158	1,114	5	6	1	6	18	
	TRUCK	3%	0%	0%	0%	0%	0%	6%	4%			5%	3%							0.95
8:00 - 9:00 AM	TOTAL	77	7	6	6	7	1	21	371			438	156	1,090	7	5	1	5	18	
	TRUCK	1%	0%	0%	0%	0%	0%	5%	6%			6%	4%							0.93
4:00 - 5:00 PM	TOTAL	226	4	8	3	5	4	18	450	6	5	448	60	1,237		7		7	14	
	TRUCK	2%	0%	0%	0%	0%	0%	6%	4%	0%	0%	2%	5%							0.89
4:15 - 5:15 PM	TOTAL	214	4	5	3	6	5	19	435	5	6	443	61	1,206		6	1	5	12	
	TRUCK	2%	0%	0%	0%	0%	0%	11%	4%	0%	0%	2%	3%							0.87
4:30 - 5:30 PM	TOTAL	224	3	14	2	8	3	25	417	6	8	467	65	1,242		3	1	4	8	
	TRUCK	1%	0%	0%	0%	0%	0%	8%	4%	0%	0%	1%	3%							0.90
4:45 - 5:45 PM	TOTAL	264	4	18		9	1	24	371	6	5	448	77	1,227	1	4	1	5	11	
	TRUCK	1%	0%	0%		0%	0%	8%	4%	0%	0%	1%	4%							0.89
5:00 - 6:00 PM	TOTAL	213	5	20	3	7	1	20	352	3	5	461	87	1,177	1	5	2	4	12	
	TRUCK	1%	0%	0%	0%	0%	0%	10%	2%	0%	0%	1%	1%							0.87
5:15 - 6:15 PM	TOTAL	258	6	21	5	6		22	317	3	4	450	94	1,186	2	4	1	4	11	
	TRUCK	1%	0%	0%	0%	0%		9%	2%	0%	0%	2%	2%							0.87
5:30 - 6:30 PM	TOTAL	312	5	14	7	4		16	324	1	4	403	100	1,190	3	5	2	2	12	
	TRUCK	0%	0%	0%	0%	0%		13%	1%	0%	0%	2%	2%							0.87
5:45 - 6:45 PM	TOTAL	294	5	13	8	6	2	17	294		7	383	105	1,134	2	3	2	2	9	
	TRUCK	1%	0%	0%	0%	0%	0%	6%	1%		0%	2%	2%							0.83
6:00 - 7:00 PM	TOTAL	368	8	16	6	6	3	18	258		8	342	93	1,126	2	5	1	5	13	
	TRUCK	0%	0%	0%	0%	0%	0%	11%	1%		0%	1%	3%							0.82

1: Beekman Street EB - Left
2: Beekman Street EB - Thru
3: Beekman Street EB - Right
7: NY 9D NB - Left
8: NY 9D NB - Thru
9: NY 9D NB - Right

A: Cross Beekman Street west of INT
B: Cross W Church Street east of INT
C: Cross 9D south of INT

4: W Church Street WB - Left
5: W Church Street WB - Thru
6: W Church Street WB - Right

10: NY 9D SB - Left
11: NY 9D SB - Thru
12: NY 9D SB - Right

D: Cross 9D north of INT

DATE:	2/25/2020		JOB NO:	18119
PERIOD:	7:00 - 9:00 AM & 4:00 - 7:00 PM		NAME:	Traffic Databank
LOCATION:	NY 9D & Tompkins Avenue / Ralph Street		INT #:	4

CALCULATIONS - DO NOT EDIT THIS SHEET

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 7:15 AM	TOTAL	5	1	2	1	0	0	0	97	0	0	189	18	313	2		3		5	
	TRUCK								4			6								
7:15 - 7:30 AM	TOTAL	8	1	1	0	1	1	2	119	0	0	124	21	278						
	TRUCK						1		6			7	2							
7:30 - 7:45 AM	TOTAL	7	0	2	2	0	1	1	111	1	0	113	11	249	1	1			2	
	TRUCK			1	1				6			7								
7:45 - 8:00 AM	TOTAL	4	6	3	3	1	1	0	120	0	0	145	9	292	1	1	2		4	
	TRUCK								6											
8:00 - 8:15 AM	TOTAL	4	0	3	1	0	4	7	100	1	2	159	9	290			2		2	
	TRUCK			1					3		1	7	1							
8:15 - 8:30 AM	TOTAL	2	2	6	3	0	2	4	106	0	4	142	8	279	3		1		4	
	TRUCK				1				3			10	1							
8:30 - 8:45 AM	TOTAL	3	1	6	2	1	3	2	133	1	0	132	4	288	5		2		7	
	TRUCK	1							8			4								
8:45 - 9:00 AM	TOTAL	6	0	3	1	0	2	4	95	0	0	151	9	271		1			1	
	TRUCK								9			8								
4:00 - 4:15 PM	TOTAL	5	0	3	1	1	0	6	130	2	1	116	9	274	1				1	
	TRUCK	1							2			2	1							
4:15 - 4:30 PM	TOTAL	10	0	2	0	1	3	3	172	0	1	115	5	312	1	1			2	
	TRUCK							1	5			6								
4:30 - 4:45 PM	TOTAL	6	1	6	0	0	2	8	147	1	2	154	6	333	1	1			2	
	TRUCK			1				1	3			3								
4:45 - 5:00 PM	TOTAL	8	1	1	0	1	1	5	204	1	3	120	9	354						
	TRUCK							1	8			2								
5:00 - 5:15 PM	TOTAL	7	0	3	0	0	2	4	104	2	1	112	8	243		2		1	3	
	TRUCK	1							4											
5:15 - 5:30 PM	TOTAL	2	1	6	0	0	4	5	165	1	1	152	6	343						
	TRUCK						1		2			1			1				1	
5:30 - 5:45 PM	TOTAL	8	0	1	1	0	1	4	142	1	1	142	11	312		1			1	
	TRUCK								2			3								
5:45 - 6:00 PM	TOTAL	8	0	3	0	0	2	7	135	1	1	139	5	301	1		4		5	
	TRUCK								3			3								

6:00 - 6:15 PM	TOTAL	2	0	0	0	1	1	0	122	0	1	125	7	259						
	TRUCK											2								
6:15 - 6:30 PM	TOTAL	3	1	4	0	1	0	2	217	2	2	105	8	345			1		1	
	TRUCK											1								
6:30 - 6:45 PM	TOTAL	10	2	5	1	1	2	7	99	3	3	126	6	265	1				1	
	TRUCK								3			1								
6:45 - 7:00 PM	TOTAL	5	0	3	1	0	0	0	182	0	0	96	4	291	1				1	
	TRUCK								1											

1: Tompkins Ave EB - Left
2: Tompkins Ave EB - Thru
3: Tompkins Ave EB - Right
4: Ralph Street WB - Left
5: Ralph Street WB - Thru
6: Ralph Street WB - Right
7: NY 9D NB - Left
8: NY 9D NB - Thru
9: NY 9D NB - Right
10: NY 9D SB - Left
11: NY 9D SB - Thru
12: NY 9D SB - Right

A: Cross Tompkins Ave west of INT
B: Cross Ralph Street east of INT
C: Cross NY 9D south of INT
D: Cross NY 9D north of INT

DATE:	2/25/2020	JOB NO:	18119
PERIOD:	7:00 - 9:00 AM & 4:00 - 7:00 PM	NAME:	Traffic Databank
LOCATION:	NY 9D & Tompkins Avenue / Ralph Street	INT #:	4

PEAK HOUR MOVEMENTS & % HEAVY VEHICLES - DO NOT EDIT THIS SHEET

TIME	CLASS	VEHICLE MOVEMENT												TOTAL VEHICLES	PED/BIKE MOVEMENT				TOTAL PEDS /BIKE	INT. PHF
		1	2	3	4	5	6	7	8	9	10	11	12		A	B	C	D		
7:00 - 8:00 AM	TOTAL	24	8	8	6	2	3	3	447	1		571	59	1,132	4	2	5		11	
	TRUCK	0%	0%	13%	17%	0%	33%	0%	5%	0%		4%	3%							0.90
7:15 - 8:15 AM	TOTAL	23	7	9	6	2	7	10	450	2	2	541	50	1,109	2	2	4		8	
	TRUCK	0%	0%	22%	17%	0%	14%	0%	5%	0%	50%	4%	6%							0.95
7:30 - 8:30 AM	TOTAL	17	8	14	9	1	8	12	437	2	6	559	37	1,110	5	2	5		12	
	TRUCK	0%	0%	14%	22%	0%	0%	0%	4%	0%	17%	4%	5%							0.95
7:45 - 8:45 AM	TOTAL	13	9	18	9	2	10	13	459	2	6	578	30	1,149	9	1	7		17	
	TRUCK	8%	0%	6%	11%	0%	0%	0%	4%	0%	17%	4%	7%							0.98
8:00 - 9:00 AM	TOTAL	15	3	18	7	1	11	17	434	2	6	584	30	1,128	8	1	5		14	
	TRUCK	7%	0%	6%	14%	0%	0%	0%	5%	0%	17%	5%	7%							0.97
4:00 - 5:00 PM	TOTAL	29	2	12	1	3	6	22	653	4	7	505	29	1,273	3	2			5	
	TRUCK	3%	0%	8%	0%	0%	0%	14%	3%	0%	0%	3%	3%							0.90
4:15 - 5:15 PM	TOTAL	31	2	12		2	8	20	627	4	7	501	28	1,242	2	4		1	7	
	TRUCK	3%	0%	8%		0%	0%	15%	3%	0%	0%	2%	0%							0.88
4:30 - 5:30 PM	TOTAL	23	3	16		1	9	22	620	5	7	538	29	1,273	1	3		1	5	
	TRUCK	4%	0%	6%		0%	11%	9%	3%	0%	0%	1%	0%		1				1	0.90
4:45 - 5:45 PM	TOTAL	25	2	11	1	1	8	18	615	5	6	526	34	1,252		3		1	4	
	TRUCK	4%	0%	0%	0%	0%	13%	6%	3%	0%	0%	1%	0%		1				1	0.88
5:00 - 6:00 PM	TOTAL	25	1	13	1		9	20	546	5	4	545	30	1,199	1	3	4	1	9	
	TRUCK	4%	0%	0%	0%		11%	0%	2%	0%	0%	1%	0%		1				1	0.87
5:15 - 6:15 PM	TOTAL	20	1	10	1	1	8	16	564	3	4	558	29	1,215	1	1	4		6	
	TRUCK	0%	0%	0%	0%	0%	13%	0%	1%	0%	0%	2%	0%		1				1	0.89
5:30 - 6:30 PM	TOTAL	21	1	8	1	2	4	13	616	4	5	511	31	1,217	1	1	5		7	
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%							0.88
5:45 - 6:45 PM	TOTAL	23	3	12	1	3	5	16	573	6	7	495	26	1,170	2		5		7	
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%							0.85
6:00 - 7:00 PM	TOTAL	20	3	12	2	3	3	9	620	5	6	452	25	1,160	2		1		3	
	TRUCK	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%							0.84

1: Tompkins Ave EB - Left
2: Tompkins Ave EB - Thru
3: Tompkins Ave EB - Right
7: NY 9D NB - Left
8: NY 9D NB - Thru
9: NY 9D NB - Right

A: Cross Tompkins Ave west of INT
B: Cross Ralph Street east of INT
C: Cross NY 9D south of INT

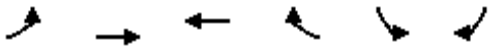
4: Ralph Street WB - Left
5: Ralph Street WB - Thru
6: Ralph Street WB - Right

10: NY 9D SB - Left
11: NY 9D SB - Thru
12: NY 9D SB - Right

D: Cross NY 9D north of INT

APPENDIX D

CAPACITY ANALYSES



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	19	196	0	0	0
Future Volume (vph)	0	19	196	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	10	10
Grade (%)		5%	-8%		-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	2058	2196	0	1765	0
Flt Permitted						
Satd. Flow (perm)	0	2058	2196	0	1765	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		427	513		132	
Travel Time (s)		11.6	14.0		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	21	213	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	213	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.80	0.80	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

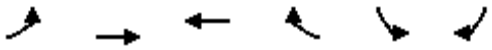
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	196	0	0	0
Future Vol, veh/h	0	19	196	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	5	-8	-	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	213	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	213	0	-	0	234	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.12	-	-	-	5.82	5.92
Critical Hdwy Stg 1	-	-	-	-	4.82	-
Critical Hdwy Stg 2	-	-	-	-	4.82	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1357	-	-	-	784	842
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1357	-	-	-	784	842
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	1005	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1357	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	127	112	189	19	0
Future Volume (vph)	7	127	112	189	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	16	16
Grade (%)		1%	-1%		5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.915			
Flt Protected		0.997			0.950	
Satd. Flow (prot)	0	1821	1715	0	1511	0
Flt Permitted		0.997			0.950	
Satd. Flow (perm)	0	1821	1715	0	1511	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		591	933		513	
Travel Time (s)		13.4	21.2		14.0	
Confl. Peds. (#/hr)	4			4	1	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	14%	2%	0%	3%	32%	0%
Parking (#/hr)	5	5				
Adj. Flow (vph)	9	165	145	245	25	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	174	390	0	25	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		16	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.85	1.02	0.99	0.99	0.88	0.88
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

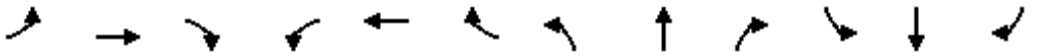
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	127	112	189	19	0
Future Vol, veh/h	7	127	112	189	19	0
Conflicting Peds, #/hr	4	0	0	4	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	-1	-	5	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	14	2	0	3	32	0
Mvmt Flow	9	165	145	245	25	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	394	0	-	0	456	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	4.24	-	-	-	7.72	6.7
Critical Hdwy Stg 1	-	-	-	-	6.72	-
Critical Hdwy Stg 2	-	-	-	-	6.72	-
Follow-up Hdwy	2.326	-	-	-	3.788	3.3
Pot Cap-1 Maneuver	1102	-	-	-	450	743
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1096	-	-	-	441	739
Mov Cap-2 Maneuver	-	-	-	-	441	-
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	737	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1096	-	-	-	441
HCM Lane V/C Ratio	0.008	-	-	-	0.056
HCM Control Delay (s)	8.3	0	-	-	13.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



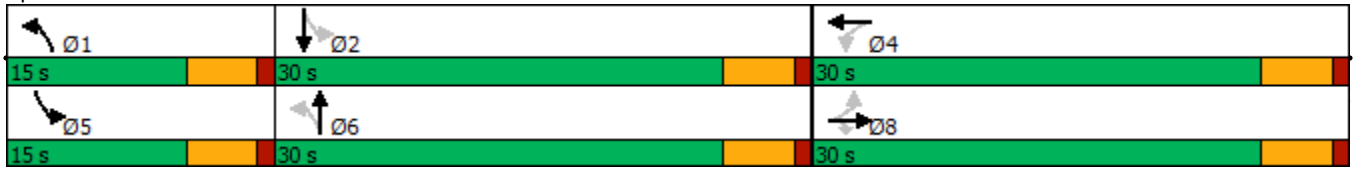
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	5	9	2	14	5	19	314	1	4	313	268
Future Volume (vph)	132	5	9	2	14	5	19	314	1	4	313	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	13	12	13	13	12	14	14
Grade (%)		2%			-10%			-4%			1%	
Storage Length (ft)	0		95	0		0	95		0	85		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			55			65		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		1.00	1.00		1.00	0.99	
Frt			0.850		0.969						0.931	
Flt Protected		0.954			0.995		0.950			0.950		
Satd. Flow (prot)	0	1640	1392	0	1744	0	1659	1902	0	1796	1789	0
Flt Permitted		0.717			0.967		0.296			0.542		
Satd. Flow (perm)	0	1211	1392	0	1695	0	516	1902	0	1022	1789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		5						62	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		933			505			383			349	
Travel Time (s)		21.2			11.5			8.7			7.9	
Confl. Peds. (#/hr)	8					8	4		5	5		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	11%	0%	0%	0%	11%	5%	100%	0%	6%	1%
Parking (#/hr)				3	3	3						
Adj. Flow (vph)	143	5	10	2	15	5	21	341	1	4	340	291
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	148	10	0	22	0	21	342	0	4	631	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	0.90	1.05	0.90	0.97	0.93	0.93	1.01	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		2	0		2	0	
Detector Template	Left			Left								
Leading Detector (ft)	20	78	78	20	78		78	0		78	0	
Trailing Detector (ft)	0	-10	-10	0	-10		-10	0		-10	0	
Detector 1 Position(ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	20	40	40	20	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	2.0	0.0	2.0		1.0	3.0		1.0	3.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	3.0	5.0	0.0	3.0		3.0	0.0		3.0	0.0	
Detector 2 Position(ft)		38	38		38		38			38		
Detector 2 Size(ft)		40	40		40		40			40		

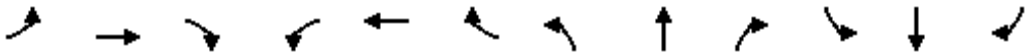
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		3.0	3.0		3.0		3.0			3.0		
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	16.0		4.0	16.0	
Minimum Split (s)	9.0	9.0	9.0	21.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		15.0	30.0		15.0	30.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		10.0	25.0		10.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)				5.0	5.0							
Flash Dont Walk (s)				11.0	11.0							
Pedestrian Calls (#/hr)				4	4							
v/c Ratio		0.55	0.03		0.06		0.05	0.29		0.01	0.57	
Control Delay		25.4	0.1		13.7		6.2	8.8		6.0	12.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		25.4	0.1		13.7		6.2	8.8		6.0	12.6	
Queue Length 50th (ft)		34	0		3		2	40		1	81	
Queue Length 95th (ft)		94	0		19		11	150		4	#369	
Internal Link Dist (ft)		853			425			303			269	
Turn Bay Length (ft)			95				95			85		
Base Capacity (vph)		631	774		886		558	1166		795	1116	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.23	0.01		0.02		0.04	0.29		0.01	0.57	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 48.8	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: NY 9D & Beekman Street/West Church Street

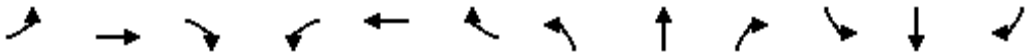




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	132	5	9	2	14	5	19	314	1	4	313	268
Future Volume (veh/h)	132	5	9	2	14	5	19	314	1	4	313	268
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1876	1713	2385	2385	2385	1892	2062	2062	1894	1877	1877
Adj Flow Rate, veh/h	143	5	10	2	15	5	21	341	1	4	340	291
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	11	0	0	0	11	5	5	0	6	6
Cap, veh/h	324	7	219	83	215	65	394	987	3	673	500	428
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.02	0.48	0.48	0.08	0.54	0.54
Sat Flow, veh/h	1213	42	1415	47	1386	421	1802	2054	6	1804	932	798
Grp Volume(v), veh/h	148	0	10	22	0	0	21	0	342	4	0	631
Grp Sat Flow(s),veh/h/ln	1256	0	1415	1854	0	0	1802	0	2060	1804	0	1729
Q Serve(g_s), s	0.4	0.0	0.3	0.0	0.0	0.0	0.3	0.0	5.4	0.1	0.0	13.8
Cycle Q Clear(g_c), s	6.1	0.0	0.3	5.9	0.0	0.0	0.3	0.0	5.4	0.1	0.0	13.8
Prop In Lane	0.97		1.00	0.09		0.23	1.00		0.00	1.00		0.46
Lane Grp Cap(c), veh/h	330	0	219	363	0	0	394	0	989	673	0	929
V/C Ratio(X)	0.45	0.00	0.05	0.06	0.00	0.00	0.05	0.00	0.35	0.01	0.00	0.68
Avail Cap(c_a), veh/h	781	0	679	998	0	0	705	0	989	881	0	929
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	0.0	18.7	18.8	0.0	0.0	7.7	0.0	8.4	5.4	0.0	8.8
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.1	0.2	0.0	0.0	0.1	0.0	2.2	0.0	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	18.8	18.8	0.0	0.0	7.7	0.0	9.4	5.4	0.0	12.8
LnGrp LOS	C	A	B	B	A	A	A	A	A	A	A	B
Approach Vol, veh/h		158			22			363			635	
Approach Delay, s/veh		21.4			18.8			9.3			12.7	
Approach LOS		C			B			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	33.0		13.2	9.0	30.0		13.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0		25.0	10.0	25.0		25.0				
Max Q Clear Time (g_c+I1), s	2.3	0.0		7.9	2.1	0.0		8.1				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			12.9									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	8	8	6	2	3	3	447	1	0	571	59
Future Volume (vph)	24	8	8	6	2	3	3	447	1	0	571	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	14	12	13	13	12	14	14
Grade (%)		-4%			-2%			-2%			-6%	
Storage Length (ft)	0		0	0		0	55		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.973			0.966						0.986	
Flt Protected		0.971			0.972		0.950					
Satd. Flow (prot)	0	1685	0	0	1439	0	1823	1889	0	1957	1981	0
Flt Permitted		0.971			0.972		0.950					
Satd. Flow (perm)	0	1685	0	0	1439	0	1823	1889	0	1957	1981	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		391			425			349			506	
Travel Time (s)		8.9			9.7			7.9			11.5	
Confl. Peds. (#/hr)			5	5			4		2	2		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	13%	17%	0%	33%	0%	5%	0%	0%	4%	3%
Parking (#/hr)	3	3	3	3	3	3						
Adj. Flow (vph)	27	9	9	7	2	3	3	497	1	0	634	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	12	0	3	498	0	0	700	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	0.89	1.05	0.89	0.91	1.06	0.91	0.99	0.95	0.95	0.96	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

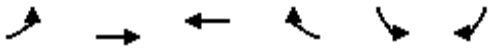
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	8	8	6	2	3	3	447	1	0	571	59
Future Vol, veh/h	24	8	8	6	2	3	3	447	1	0	571	59
Conflicting Peds, #/hr	0	0	5	5	0	0	4	0	2	2	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	-2	-	-	-2	-	-	-6	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	13	17	0	33	0	5	0	0	4	3
Mvmt Flow	27	9	9	7	2	3	3	497	1	0	634	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1177	1177	676	1187	1210	500	704	0	0	500	0	0
Stage 1	671	671	-	506	506	-	-	-	-	-	-	-
Stage 2	506	506	-	681	704	-	-	-	-	-	-	-
Critical Hdwy	6.3	5.7	5.93	6.87	6.1	6.33	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.3	4.7	-	5.87	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	5.87	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.417	3.653	4	3.597	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	220	250	469	176	211	528	903	-	-	1075	-	-
Stage 1	521	532	-	552	575	-	-	-	-	-	-	-
Stage 2	618	608	-	450	479	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	215	248	465	166	209	527	899	-	-	1073	-	-
Mov Cap-2 Maneuver	215	248	-	166	209	-	-	-	-	-	-	-
Stage 1	517	530	-	549	572	-	-	-	-	-	-	-
Stage 2	610	605	-	432	477	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.7	22.8	0.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	899	-	-	248	214	1073	-	-
HCM Lane V/C Ratio	0.004	-	-	0.179	0.057	-	-	-
HCM Control Delay (s)	9	-	-	22.7	22.8	0	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	24	81	0	0	0
Future Volume (vph)	0	24	81	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	10	10
Grade (%)		5%	-8%		-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	2058	2196	0	1765	0
Flt Permitted						
Satd. Flow (perm)	0	2058	2196	0	1765	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		427	513		132	
Travel Time (s)		11.6	14.0		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	26	88	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	26	88	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.80	0.80	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

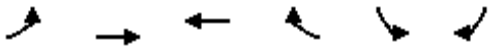
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	81	0	0	0
Future Vol, veh/h	0	24	81	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	5	-8	-	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	88	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	88	0	-	0	114	88
Stage 1	-	-	-	-	88	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.12	-	-	-	5.82	5.92
Critical Hdwy Stg 1	-	-	-	-	4.82	-
Critical Hdwy Stg 2	-	-	-	-	4.82	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1508	-	-	-	899	977
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1508	-	-	-	899	977
Mov Cap-2 Maneuver	-	-	-	-	899	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1508	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	285	47	76	19	5
Future Volume (vph)	5	285	47	76	19	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	16	16
Grade (%)		1%	-1%		5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.917		0.972	
Flt Protected		0.999			0.962	
Satd. Flow (prot)	0	1855	1669	0	1963	0
Flt Permitted		0.999			0.962	
Satd. Flow (perm)	0	1855	1669	0	1963	0
Link Speed (mph)		30	30		25	
Link Distance (ft)		591	933		513	
Travel Time (s)		13.4	21.2		14.0	
Confl. Peds. (#/hr)	3			3	2	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	0%	8%	0%	0%
Parking (#/hr)	5	5				
Adj. Flow (vph)	6	339	56	90	23	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	345	146	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		16	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.85	1.02	0.99	0.99	0.88	0.88
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

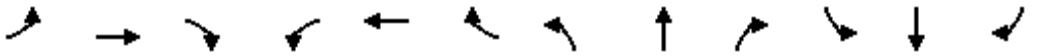
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	285	47	76	19	5
Future Vol, veh/h	5	285	47	76	19	5
Conflicting Peds, #/hr	3	0	0	3	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	1	-1	-	5	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	1	0	8	0	0
Mvmt Flow	6	339	56	90	23	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	149	0	-	0	457	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	4.1	-	-	-	7.4	6.7
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1445	-	-	-	498	942
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1439	-	-	-	492	938
Mov Cap-2 Maneuver	-	-	-	-	492	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	646	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1439	-	-	-	546
HCM Lane V/C Ratio	0.004	-	-	-	0.052
HCM Control Delay (s)	7.5	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	4	19	0	10	1	27	371	6	5	448	86
Future Volume (vph)	281	4	19	0	10	1	27	371	6	5	448	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	13	12	13	13	12	14	14
Grade (%)		2%			-10%			-4%			1%	
Storage Length (ft)	0		95	0		0	95		0	85		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			55			65		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.98		1.00		1.00	1.00		1.00	1.00	
Frt			0.850		0.989			0.998			0.976	
Flt Protected		0.953					0.950			0.950		
Satd. Flow (prot)	0	1716	1546	0	1799	0	1705	1922	0	1796	1933	0
Flt Permitted		0.720					0.254			0.435		
Satd. Flow (perm)	0	1279	1512	0	1799	0	456	1922	0	821	1933	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85		1			1			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		933			505			383			349	
Travel Time (s)		21.2			11.5			8.7			7.9	
Confl. Peds. (#/hr)	5		1	1		5	1		4	4		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	8%	4%	0%	0%	1%	4%
Parking (#/hr)				3	3	3						
Adj. Flow (vph)	316	4	21	0	11	1	30	417	7	6	503	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	320	21	0	12	0	30	424	0	6	600	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	0.90	1.05	0.90	0.97	0.93	0.93	1.01	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		2	0		2	0	
Detector Template	Left			Left								
Leading Detector (ft)	20	78	78	20	78		78	0		78	0	
Trailing Detector (ft)	0	-10	-10	0	-10		-10	0		-10	0	
Detector 1 Position(ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	20	40	40	20	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	2.0	0.0	2.0		1.0	3.0		1.0	3.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	3.0	5.0	0.0	3.0		3.0	0.0		3.0	0.0	
Detector 2 Position(ft)		38	38		38		38			38		
Detector 2 Size(ft)		40	40		40		40			40		

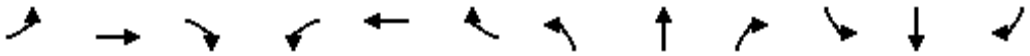
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)		3.0	3.0		3.0		3.0			3.0		
Turn Type	Perm	NA	Perm		NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	16.0		4.0	16.0	
Minimum Split (s)	9.0	9.0	9.0	21.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None	None	None	None		None	Max		None	Max	
Walk Time (s)				5.0	5.0							
Flash Dont Walk (s)				11.0	11.0							
Pedestrian Calls (#/hr)				3	3							
v/c Ratio		0.80	0.04		0.02		0.09	0.42		0.01	0.62	
Control Delay		40.5	0.2		17.9		8.7	13.2		8.0	18.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		40.5	0.2		17.9		8.7	13.2		8.0	18.2	
Queue Length 50th (ft)		116	0		3		6	108		1	169	
Queue Length 95th (ft)		#276	0		15		17	220		6	344	
Internal Link Dist (ft)		853			425			303			269	
Turn Bay Length (ft)			95				95			85		
Base Capacity (vph)		452	589		637		513	1004		654	964	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.71	0.04		0.02		0.06	0.42		0.01	0.62	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 71.4	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: NY 9D & Beekman Street/West Church Street

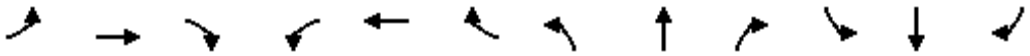




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	4	19	0	10	1	27	371	6	5	448	86
Future Volume (veh/h)	281	4	19	0	10	1	27	371	6	5	448	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1876	1876	2385	2385	2385	1937	2077	2077	1894	1954	1954
Adj Flow Rate, veh/h	316	4	21	0	11	1	30	417	7	6	503	97
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	8	4	4	0	1	1
Cap, veh/h	452	4	410	0	496	45	383	976	16	533	810	156
Arrive On Green	0.26	0.26	0.26	0.00	0.26	0.26	0.02	0.48	0.48	0.05	0.51	0.51
Sat Flow, veh/h	1358	17	1575	0	1904	173	1845	2037	34	1804	1591	307
Grp Volume(v), veh/h	320	0	21	0	0	12	30	0	424	6	0	600
Grp Sat Flow(s),veh/h/ln	1375	0	1575	0	0	2078	1845	0	2071	1804	0	1898
Q Serve(g_s), s	16.1	0.0	0.7	0.0	0.0	0.3	0.6	0.0	9.8	0.1	0.0	16.6
Cycle Q Clear(g_c), s	16.4	0.0	0.7	0.0	0.0	0.3	0.6	0.0	9.8	0.1	0.0	16.6
Prop In Lane	0.99		1.00	0.00		0.08	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	456	0	410	0	0	541	383	0	992	533	0	966
V/C Ratio(X)	0.70	0.00	0.05	0.00	0.00	0.02	0.08	0.00	0.43	0.01	0.00	0.62
Avail Cap(c_a), veh/h	571	0	539	0	0	711	716	0	992	805	0	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.2	0.0	20.2	0.0	0.0	20.1	10.6	0.0	12.5	8.6	0.0	12.9
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	0.3	0.0	0.0	0.1	0.2	0.0	4.5	0.0	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.9	0.0	20.3	0.0	0.0	20.1	10.6	0.0	13.8	8.6	0.0	15.9
LnGrp LOS	C	A	C	A	A	C	B	A	B	A	A	B
Approach Vol, veh/h		341			12			454			606	
Approach Delay, s/veh		27.5			20.1			13.6			15.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	42.2		24.0	9.0	40.0		24.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	2.6	0.0		2.3	2.1	0.0		18.4				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		17.9	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2	11	1	1	8	18	630	5	6	527	34
Future Volume (vph)	25	2	11	1	1	8	18	630	5	6	527	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	14	12	13	13	12	14	14
Grade (%)		-4%			-2%			-2%			-6%	
Storage Length (ft)	0		0	0		0	55		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.959			0.890			0.999			0.991	
Flt Protected		0.968			0.995		0.950			0.950		
Satd. Flow (prot)	0	1655	0	0	1450	0	1720	1924	0	1859	2049	0
Flt Permitted		0.968			0.995		0.950			0.950		
Satd. Flow (perm)	0	1655	0	0	1450	0	1720	1924	0	1859	2049	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		391			425			349			506	
Travel Time (s)		8.9			9.7			7.9			11.5	
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	0%	0%	0%	0%	13%	6%	3%	0%	0%	1%	0%
Parking (#/hr)	3	3	3	3	3	3						
Adj. Flow (vph)	28	2	13	1	1	9	20	716	6	7	599	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	11	0	20	722	0	7	638	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	0.89	1.05	0.89	0.91	1.06	0.91	0.99	0.95	0.95	0.96	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

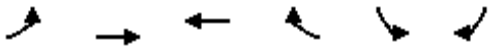
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	25	2	11	1	1	8	18	630	5	6	527	34
Future Vol, veh/h	25	2	11	1	1	8	18	630	5	6	527	34
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	-2	-	-	-2	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	0	0	0	0	13	6	3	0	0	1	0
Mvmt Flow	28	2	13	1	1	9	20	716	6	7	599	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1398	619	1402	1414	723	638	0	0	725	0	0
Stage 1	633	633	-	762	762	-	-	-	-	-	-	-
Stage 2	765	765	-	640	652	-	-	-	-	-	-	-
Critical Hdwy	6.34	5.7	5.8	6.7	6.1	6.13	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	5.34	4.7	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.34	4.7	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4	3.3	3.5	4	3.417	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	160	194	527	139	163	425	927	-	-	887	-	-
Stage 1	535	548	-	436	453	-	-	-	-	-	-	-
Stage 2	466	492	-	502	502	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	152	188	527	131	158	423	927	-	-	884	-	-
Mov Cap-2 Maneuver	152	188	-	131	158	-	-	-	-	-	-	-
Stage 1	523	544	-	425	442	-	-	-	-	-	-	-
Stage 2	445	480	-	484	498	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.8	17.3	0.2	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	927	-	-	194	304	884	-	-
HCM Lane V/C Ratio	0.022	-	-	0.223	0.037	0.008	-	-
HCM Control Delay (s)	9	-	-	28.8	17.3	9.1	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.1	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	32	229	0	0	0
Future Volume (vph)	0	32	229	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	10	10
Grade (%)		5%	-8%		-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	2058	2196	0	1765	0
Flt Permitted						
Satd. Flow (perm)	0	2058	2196	0	1765	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		427	513		132	
Travel Time (s)		11.6	14.0		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	35	249	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	35	249	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.80	0.80	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

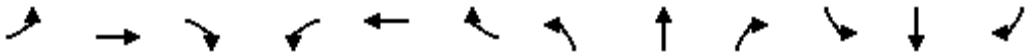
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	32	229	0	0	0
Future Vol, veh/h	0	32	229	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	5	-8	-	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	249	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	249	0	-	0	284	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	4.12	-	-	-	5.82	5.92
Critical Hdwy Stg 1	-	-	-	-	4.82	-
Critical Hdwy Stg 2	-	-	-	-	4.82	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1317	-	-	-	740	806
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1317	-	-	-	740	806
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	993	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1317	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	134	1	5	117	211	3	0	19	32	0	0
Future Volume (vph)	18	134	1	5	117	211	3	0	19	32	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.914			0.884				
Flt Protected		0.994			0.999			0.993			0.950	
Satd. Flow (prot)	0	1801	0	0	1711	0	0	1635	0	0	1333	0
Flt Permitted		0.994			0.999			0.993			0.950	
Satd. Flow (perm)	0	1801	0	0	1711	0	0	1635	0	0	1333	0
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		591			933			186			513	
Travel Time (s)		13.4			21.2			4.2			14.0	
Confl. Peds. (#/hr)	4					4				1		
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	14%	2%	2%	2%	0%	3%	2%	2%	2%	32%	2%	0%
Parking (#/hr)	5	5	5									
Adj. Flow (vph)	23	174	1	6	152	274	4	0	25	42	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	198	0	0	432	0	0	29	0	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	1.02	1.01	0.99	0.99	0.99	1.00	1.00	1.00	0.88	1.03	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

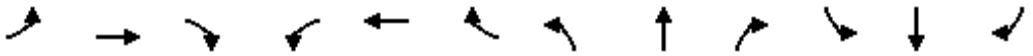
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	134	1	5	117	211	3	0	19	32	0	0
Future Vol, veh/h	18	134	1	5	117	211	3	0	19	32	0	0
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	5	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	14	2	2	2	0	3	2	2	2	32	2	0
Mvmt Flow	23	174	1	6	152	274	4	0	25	42	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	175	0	0	522	663	176	539	526	293
Stage 1	-	-	-	-	-	-	221	221	-	305	305	-
Stage 2	-	-	-	-	-	-	301	442	-	234	221	-
Critical Hdwy	4.24	-	-	4.12	-	-	7.12	6.52	6.22	8.42	7.52	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	7.42	6.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	7.42	6.52	-
Follow-up Hdwy	2.326	-	-	2.218	-	-	3.518	4.018	3.318	3.788	4.018	3.3
Pot Cap-1 Maneuver	1068	-	-	1401	-	-	465	382	867	353	395	721
Stage 1	-	-	-	-	-	-	781	720	-	593	608	-
Stage 2	-	-	-	-	-	-	708	576	-	662	678	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1064	-	-	1401	-	-	454	369	866	334	382	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	454	369	-	334	382	-
Stage 1	-	-	-	-	-	-	762	703	-	576	602	-
Stage 2	-	-	-	-	-	-	704	570	-	627	662	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	9.8	17.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	771	1064	-	-	1401	-	-	334
HCM Lane V/C Ratio	0.037	0.022	-	-	0.005	-	-	0.124
HCM Control Delay (s)	9.8	8.5	0	-	7.6	0	-	17.3
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.4



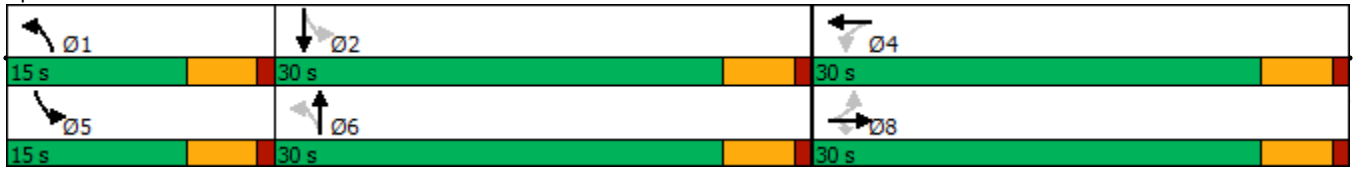
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	5	33	2	15	5	36	412	5	4	405	282
Future Volume (vph)	147	5	33	2	15	5	36	412	5	4	405	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	13	12	13	13	12	14	14
Grade (%)		2%			-10%			-4%			1%	
Storage Length (ft)	0		95	0		0	95		0	85		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			55			65		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		1.00	1.00		1.00	0.99	
Frt			0.850		0.971			0.998			0.938	
Flt Protected		0.954			0.996		0.950			0.950		
Satd. Flow (prot)	0	1639	1392	0	1750	0	1659	1884	0	1796	1800	0
Flt Permitted		0.716			0.973		0.172			0.445		
Satd. Flow (perm)	0	1209	1392	0	1709	0	300	1884	0	839	1800	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		5			1			50	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		933			505			383			349	
Travel Time (s)		21.2			11.5			8.7			7.9	
Confl. Peds. (#/hr)	8					8	4		5	5		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	11%	0%	0%	0%	11%	5%	100%	0%	6%	1%
Parking (#/hr)				3	3	3						
Adj. Flow (vph)	160	5	36	2	16	5	39	448	5	4	440	307
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	165	36	0	23	0	39	453	0	4	747	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	0.90	1.05	0.90	0.97	0.93	0.93	1.01	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		2	2		2	2	
Detector Template	Left			Left								
Leading Detector (ft)	20	78	78	20	78		78	78		78	78	
Trailing Detector (ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	20	40	40	20	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	2.0	0.0	2.0		1.0	1.0		1.0	1.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	3.0	5.0	0.0	3.0		3.0	0.0		3.0	0.0	
Detector 2 Position(ft)		38	38		38		38	38		38	38	
Detector 2 Size(ft)		40	40		40		40	40		40	40	

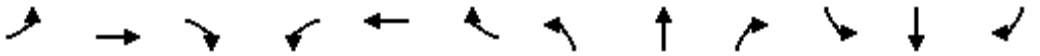
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	16.0		4.0	16.0	
Minimum Split (s)	9.0	9.0	9.0	21.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		15.0	30.0		15.0	30.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		10.0	25.0		10.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Walk Time (s)				5.0	5.0							
Flash Dont Walk (s)				11.0	11.0							
Pedestrian Calls (#/hr)				4	4							
v/c Ratio		0.61	0.09		0.06		0.14	0.43		0.01	0.77	
Control Delay		28.8	0.5		14.8		7.1	10.5		6.2	21.8	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		28.8	0.5		14.8		7.1	10.5		6.2	21.8	
Queue Length 50th (ft)		39	0		4		5	66		1	130	
Queue Length 95th (ft)		105	0		20		18	217		4	#508	
Internal Link Dist (ft)		853			425			303			269	
Turn Bay Length (ft)			95				95			85		
Base Capacity (vph)		567	707		805		431	1054		671	964	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.29	0.05		0.03		0.09	0.43		0.01	0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 54.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: NY 9D & Beekman Street/West Church Street

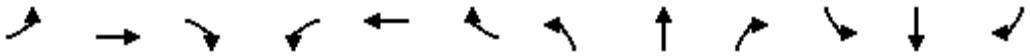




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	5	33	2	15	5	36	412	5	4	405	282
Future Volume (veh/h)	147	5	33	2	15	5	36	412	5	4	405	282
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1876	1713	2385	2385	2385	1892	2062	2062	1894	1877	1877
Adj Flow Rate, veh/h	160	5	36	2	16	5	39	448	5	4	440	307
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	11	0	0	0	11	5	5	0	6	6
Cap, veh/h	402	7	220	99	229	66	277	830	9	561	478	334
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.03	0.41	0.41	0.09	0.47	0.47
Sat Flow, veh/h	1535	48	1415	60	1468	424	1802	2035	23	1804	1027	717
Grp Volume(v), veh/h	165	0	36	23	0	0	39	0	453	4	0	747
Grp Sat Flow(s),veh/h/ln	1583	0	1415	1952	0	0	1802	0	2057	1804	0	1744
Q Serve(g_s), s	0.2	0.0	1.0	0.0	0.0	0.0	0.5	0.0	7.3	0.0	0.0	17.5
Cycle Q Clear(g_c), s	3.9	0.0	1.0	4.4	0.0	0.0	0.5	0.0	7.3	0.0	0.0	17.5
Prop In Lane	0.97		1.00	0.09		0.22	1.00		0.01	1.00		0.41
Lane Grp Cap(c), veh/h	409	0	220	394	0	0	277	0	840	561	0	812
V/C Ratio(X)	0.40	0.00	0.16	0.06	0.00	0.00	0.14	0.00	0.54	0.01	0.00	0.92
Avail Cap(c_a), veh/h	986	0	812	1211	0	0	628	0	1181	809	0	1001
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	15.9	15.7	0.0	0.0	9.6	0.0	9.8	6.1	0.0	10.9
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.3	0.2	0.0	0.0	0.2	0.0	2.5	0.0	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	16.1	15.7	0.0	0.0	9.7	0.0	10.0	6.1	0.0	21.4
LnGrp LOS	B	A	B	B	A	A	A	A	A	A	A	C
Approach Vol, veh/h		201			23			492			751	
Approach Delay, s/veh		17.1			15.7			10.0			21.4	
Approach LOS		B			B			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	25.3		11.9	9.0	22.8		11.9				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0		25.0	10.0	25.0		25.0				
Max Q Clear Time (g_c+I1), s	2.5	19.5		6.4	2.0	9.3		5.9				
Green Ext Time (p_c), s	0.0	1.0		0.0	0.0	0.7		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	8	20	6	2	3	6	557	1	0	665	75
Future Volume (vph)	81	8	20	6	2	3	6	557	1	0	665	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	14	12	13	13	12	14	14
Grade (%)		-4%			-2%			-2%			-6%	
Storage Length (ft)	0		0	0		0	55		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.966						0.985	
Flt Protected		0.964			0.972		0.950					
Satd. Flow (prot)	0	1680	0	0	1439	0	1823	1889	0	1957	1979	0
Flt Permitted		0.964			0.972		0.950					
Satd. Flow (perm)	0	1680	0	0	1439	0	1823	1889	0	1957	1979	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		391			425			349			506	
Travel Time (s)		8.9			9.7			7.9			11.5	
Confl. Peds. (#/hr)			5	5			4		2	2		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	13%	17%	0%	33%	0%	5%	0%	0%	4%	3%
Parking (#/hr)	3	3	3	3	3	3						
Adj. Flow (vph)	90	9	22	7	2	3	7	619	1	0	739	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	12	0	7	620	0	0	822	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	0.89	1.05	0.89	0.91	1.06	0.91	0.99	0.95	0.95	0.96	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

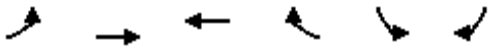
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	8	20	6	2	3	6	557	1	0	665	75
Future Vol, veh/h	81	8	20	6	2	3	6	557	1	0	665	75
Conflicting Peds, #/hr	0	0	5	5	0	0	4	0	2	2	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	-2	-	-	-2	-	-	-6	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	13	17	0	33	0	5	0	0	4	3
Mvmt Flow	90	9	22	7	2	3	7	619	1	0	739	83

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1421	1421	790	1437	1462	622	826	0	0	622	0	0
Stage 1	785	785	-	636	636	-	-	-	-	-	-	-
Stage 2	636	636	-	801	826	-	-	-	-	-	-	-
Critical Hdwy	6.3	5.7	5.93	6.87	6.1	6.33	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.3	4.7	-	5.87	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	5.87	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.417	3.653	4	3.597	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	158	189	408	121	153	450	813	-	-	969	-	-
Stage 1	463	484	-	474	510	-	-	-	-	-	-	-
Stage 2	541	547	-	390	427	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	153	186	404	109	151	449	809	-	-	967	-	-
Mov Cap-2 Maneuver	153	186	-	109	151	-	-	-	-	-	-	-
Stage 1	457	482	-	469	504	-	-	-	-	-	-	-
Stage 2	530	541	-	360	425	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	62.1	31.7	0.1	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	809	-	-	175	147	967	-	-
HCM Lane V/C Ratio	0.008	-	-	0.692	0.083	-	-	-
HCM Control Delay (s)	9.5	-	-	62.1	31.7	0	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	4.2	0.3	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	32	145	0	0	0
Future Volume (vph)	0	32	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	10	10
Grade (%)		5%	-8%		-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	2058	2196	0	1765	0
Flt Permitted						
Satd. Flow (perm)	0	2058	2196	0	1765	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		427	513		132	
Travel Time (s)		11.6	14.0		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	35	158	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	35	158	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.80	0.80	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

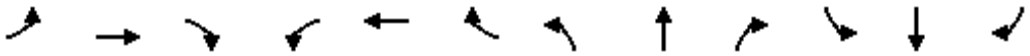
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	32	145	0	0	0
Future Vol, veh/h	0	32	145	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	5	-8	-	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	158	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	158	0	-	0	193	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	4.12	-	-	-	5.82	5.92
Critical Hdwy Stg 1	-	-	-	-	4.82	-
Critical Hdwy Stg 2	-	-	-	-	4.82	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1422	-	-	-	822	899
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1422	-	-	-	822	899
Mov Cap-2 Maneuver	-	-	-	-	822	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	993	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1422	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	308	3	17	49	97	2	0	9	27	0	5
Future Volume (vph)	48	308	3	17	49	97	2	0	9	27	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	12	12	12	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.920			0.886			0.979	
Flt Protected		0.993			0.995			0.992			0.960	
Satd. Flow (prot)	0	1844	0	0	1665	0	0	1637	0	0	1741	0
Flt Permitted		0.993			0.995			0.992			0.960	
Satd. Flow (perm)	0	1844	0	0	1665	0	0	1637	0	0	1741	0
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		591			933			185			513	
Travel Time (s)		13.4			21.2			4.2			14.0	
Confl. Peds. (#/hr)	3					3				2		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	2%	2%	0%	8%	2%	2%	2%	0%	2%	0%
Parking (#/hr)	5	5	0									
Adj. Flow (vph)	57	367	4	20	58	115	2	0	11	32	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	0	0	193	0	0	13	0	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	1.02	0.85	0.99	0.99	0.99	1.00	1.00	1.00	0.88	1.03	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	48	308	3	17	49	97	2	0	9	27	0	5
Future Vol, veh/h	48	308	3	17	49	97	2	0	9	27	0	5
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	5	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	1	2	2	0	8	2	2	2	0	2	0
Mvmt Flow	57	367	4	20	58	115	2	0	11	32	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	176	0	0	371	0	0	642	699	371	650	644	119
Stage 1	-	-	-	-	-	-	483	483	-	159	159	-
Stage 2	-	-	-	-	-	-	159	216	-	491	485	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	8.1	7.52	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	7.1	6.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	7.1	6.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1412	-	-	1188	-	-	387	364	675	321	327	923
Stage 1	-	-	-	-	-	-	565	553	-	811	733	-
Stage 2	-	-	-	-	-	-	843	724	-	491	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1408	-	-	1188	-	-	364	338	674	298	303	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	338	-	298	303	-
Stage 1	-	-	-	-	-	-	536	525	-	767	717	-
Stage 2	-	-	-	-	-	-	822	708	-	458	457	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.8	11.3	17.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	584	1408	-	-	1188	-	-	333
HCM Lane V/C Ratio	0.022	0.041	-	-	0.017	-	-	0.114
HCM Control Delay (s)	11.3	7.7	0	-	8.1	0	-	17.2
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	4	43	0	10	1	53	470	9	5	562	100
Future Volume (vph)	297	4	43	0	10	1	53	470	9	5	562	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	13	12	13	13	12	14	14
Grade (%)		2%			-10%			-4%			1%	
Storage Length (ft)	0		95	0		0	95		0	85		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			55			65		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.98		1.00		1.00	1.00		1.00	1.00	
Frt			0.850		0.989			0.997			0.977	
Flt Protected		0.953					0.950			0.950		
Satd. Flow (prot)	0	1716	1546	0	1799	0	1705	1920	0	1796	1936	0
Flt Permitted		0.720					0.105			0.350		
Satd. Flow (perm)	0	1279	1512	0	1799	0	188	1920	0	661	1936	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85		1			1			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		933			505			383			349	
Travel Time (s)		21.2			11.5			8.7			7.9	
Confl. Peds. (#/hr)	5		1	1		5	1		4	4		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	8%	4%	0%	0%	1%	4%
Parking (#/hr)				3	3	3						
Adj. Flow (vph)	334	4	48	0	11	1	60	528	10	6	631	112
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	338	48	0	12	0	60	538	0	6	743	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	0.90	1.05	0.90	0.97	0.93	0.93	1.01	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		2	2		2	2	
Detector Template	Left			Left								
Leading Detector (ft)	20	78	78	20	78		78	78		78	78	
Trailing Detector (ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	20	40	40	20	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	2.0	0.0	2.0		1.0	1.0		1.0	1.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	3.0	5.0	0.0	3.0		3.0	0.0		3.0	0.0	
Detector 2 Position(ft)		38	38		38		38	38		38	38	
Detector 2 Size(ft)		40	40		40		40	40		40	40	

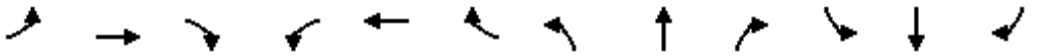
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Turn Type	Perm	NA	Perm		NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	16.0		4.0	16.0	
Minimum Split (s)	9.0	9.0	9.0	21.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	2.0	2.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Walk Time (s)				5.0	5.0							
Flash Dont Walk (s)				11.0	11.0							
Pedestrian Calls (#/hr)				3	3							
v/c Ratio		0.82	0.09		0.02		0.30	0.54		0.02	0.86	
Control Delay		44.6	2.1		19.0		11.8	15.0		8.0	32.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		44.6	2.1		19.0		11.8	15.0		8.0	32.2	
Queue Length 50th (ft)		156	0		4		13	150		1	320	
Queue Length 95th (ft)		#305	9		16		28	296		6	#543	
Internal Link Dist (ft)		853			425			303			269	
Turn Bay Length (ft)			95				95			85		
Base Capacity (vph)		430	565		606		408	1059		589	919	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.79	0.08		0.02		0.15	0.51		0.01	0.81	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 75.6	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: NY 9D & Beekman Street/West Church Street

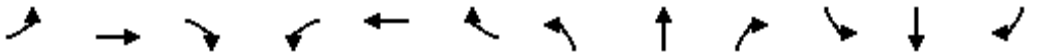




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	297	4	43	0	10	1	53	470	9	5	562	100
Future Volume (veh/h)	297	4	43	0	10	1	53	470	9	5	562	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1876	1876	2385	2385	2385	1937	2077	2077	1894	1954	1954
Adj Flow Rate, veh/h	334	4	48	0	11	1	60	528	10	6	631	112
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	8	4	4	0	1	1
Cap, veh/h	510	5	453	0	547	50	235	810	15	403	683	121
Arrive On Green	0.29	0.29	0.29	0.00	0.29	0.29	0.04	0.40	0.40	0.07	0.42	0.42
Sat Flow, veh/h	1363	16	1576	0	1905	173	1845	2032	38	1804	1615	287
Grp Volume(v), veh/h	338	0	48	0	0	12	60	0	538	6	0	743
Grp Sat Flow(s),veh/h/ln	1379	0	1576	0	0	2078	1845	0	2070	1804	0	1901
Q Serve(g_s), s	13.8	0.0	1.4	0.0	0.0	0.3	1.1	0.0	12.8	0.1	0.0	22.4
Cycle Q Clear(g_c), s	14.1	0.0	1.4	0.0	0.0	0.3	1.1	0.0	12.8	0.1	0.0	22.4
Prop In Lane	0.99		1.00	0.00		0.08	1.00		0.02	1.00		0.15
Lane Grp Cap(c), veh/h	514	0	453	0	0	597	235	0	825	403	0	804
V/C Ratio(X)	0.66	0.00	0.11	0.00	0.00	0.02	0.25	0.00	0.65	0.01	0.00	0.92
Avail Cap(c_a), veh/h	691	0	651	0	0	859	615	0	1198	731	0	1100
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	15.8	0.0	0.0	15.5	13.7	0.0	14.8	10.1	0.0	16.5
Incr Delay (d2), s/veh	1.4	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.5	0.0	0.0	0.1	0.4	0.0	5.3	0.0	0.0	10.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.0	15.9	0.0	0.0	15.5	13.9	0.0	15.1	10.1	0.0	25.3
LnGrp LOS	C	A	B	A	A	B	B	A	B	B	A	C
Approach Vol, veh/h		386			12			598			749	
Approach Delay, s/veh		21.2			15.5			15.0			25.2	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	30.6		22.4	9.0	29.1		22.4				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	3.1	24.4		2.3	2.1	14.8		16.1				
Green Ext Time (p_c), s	0.0	1.2		0.0	0.0	0.8		1.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.7	
HCM 6th LOS		C	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	2	18	1	1	8	31	732	5	6	648	90
Future Volume (vph)	56	2	18	1	1	8	31	732	5	6	648	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	14	12	13	13	12	14	14
Grade (%)		-4%			-2%			-2%			-6%	
Storage Length (ft)	0		0	0		0	55		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.890			0.999			0.982	
Flt Protected		0.964			0.995		0.950			0.950		
Satd. Flow (prot)	0	1660	0	0	1450	0	1720	1924	0	1859	2032	0
Flt Permitted		0.964			0.995		0.950			0.950		
Satd. Flow (perm)	0	1660	0	0	1450	0	1720	1924	0	1859	2032	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		391			425			349			506	
Travel Time (s)		8.9			9.7			7.9			11.5	
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	0%	0%	0%	0%	13%	6%	3%	0%	0%	1%	0%
Parking (#/hr)	3	3	3	3	3	3						
Adj. Flow (vph)	64	2	20	1	1	9	35	832	6	7	736	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	86	0	0	11	0	35	838	0	7	838	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	0.89	1.05	0.89	0.91	1.06	0.91	0.99	0.95	0.95	0.96	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

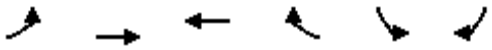
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	2	18	1	1	8	31	732	5	6	648	90
Future Vol, veh/h	56	2	18	1	1	8	31	732	5	6	648	90
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	-2	-	-	-2	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	0	0	0	0	13	6	3	0	0	1	0
Mvmt Flow	64	2	20	1	1	9	35	832	6	7	736	102

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1712	1712	787	1720	1760	839	838	0	0	841	0	0
Stage 1	801	801	-	908	908	-	-	-	-	-	-	-
Stage 2	911	911	-	812	852	-	-	-	-	-	-	-
Critical Hdwy	6.34	5.7	5.8	6.7	6.1	6.13	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	5.34	4.7	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.34	4.7	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4	3.3	3.5	4	3.417	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	103	134	431	86	104	366	779	-	-	803	-	-
Stage 1	448	478	-	368	395	-	-	-	-	-	-	-
Stage 2	399	436	-	411	416	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	95	126	431	77	98	364	779	-	-	800	-	-
Mov Cap-2 Maneuver	95	126	-	77	98	-	-	-	-	-	-	-
Stage 1	428	474	-	350	376	-	-	-	-	-	-	-
Stage 2	370	415	-	386	412	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	93.9	22.2	0.4	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	779	-	-	117	221	800	-	-
HCM Lane V/C Ratio	0.045	-	-	0.738	0.051	0.009	-	-
HCM Control Delay (s)	9.8	-	-	93.9	22.2	9.5	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.1	0.2	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	32	229	6	10	6
Future Volume (vph)	0	32	229	6	10	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	10	10
Grade (%)		5%	-8%		-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.996		0.947	
Flt Protected					0.970	
Satd. Flow (prot)	0	2058	2187	0	1621	0
Flt Permitted					0.970	
Satd. Flow (perm)	0	2058	2187	0	1621	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		427	513		132	
Travel Time (s)		11.6	14.0		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	35	249	7	11	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	35	256	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.80	0.80	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

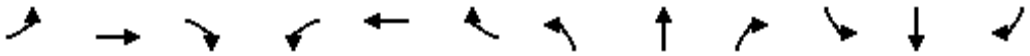
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	32	229	6	10	6
Future Vol, veh/h	0	32	229	6	10	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	5	-8	-	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	249	7	11	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	256	0	-	0	288	253
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	4.12	-	-	-	5.82	5.92
Critical Hdwy Stg 1	-	-	-	-	4.82	-
Critical Hdwy Stg 2	-	-	-	-	4.82	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1309	-	-	-	737	802
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1309	-	-	-	737	802
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	993	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1309	-	-	-	760
HCM Lane V/C Ratio	-	-	-	-	0.023
HCM Control Delay (s)	0	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	134	1	5	117	215	3	0	19	42	0	0
Future Volume (vph)	20	134	1	5	117	215	3	0	19	42	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.914			0.884				
Flt Protected		0.994			0.999			0.993			0.950	
Satd. Flow (prot)	0	1798	0	0	1710	0	0	1635	0	0	1333	0
Flt Permitted		0.994			0.999			0.993			0.950	
Satd. Flow (perm)	0	1798	0	0	1710	0	0	1635	0	0	1333	0
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		591			933			186			513	
Travel Time (s)		13.4			21.2			4.2			14.0	
Confl. Peds. (#/hr)	4					4				1		
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	14%	2%	2%	2%	0%	3%	2%	2%	2%	32%	2%	0%
Parking (#/hr)	5	5	5									
Adj. Flow (vph)	26	174	1	6	152	279	4	0	25	55	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	0	0	437	0	0	29	0	0	55	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	1.02	1.01	0.99	0.99	0.99	1.00	1.00	1.00	0.88	1.03	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

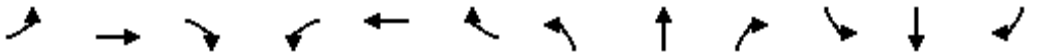
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	20	134	1	5	117	215	3	0	19	42	0	0
Future Vol, veh/h	20	134	1	5	117	215	3	0	19	42	0	0
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	5	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	14	2	2	2	0	3	2	2	2	32	2	0
Mvmt Flow	26	174	1	6	152	279	4	0	25	55	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	175	0	0	531	674	176	548	535	296
Stage 1	-	-	-	-	-	-	227	227	-	308	308	-
Stage 2	-	-	-	-	-	-	304	447	-	240	227	-
Critical Hdwy	4.24	-	-	4.12	-	-	7.12	6.52	6.22	8.42	7.52	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	7.42	6.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	7.42	6.52	-
Follow-up Hdwy	2.326	-	-	2.218	-	-	3.518	4.018	3.318	3.788	4.018	3.3
Pot Cap-1 Maneuver	1064	-	-	1401	-	-	459	376	867	347	389	718
Stage 1	-	-	-	-	-	-	776	716	-	590	606	-
Stage 2	-	-	-	-	-	-	705	573	-	656	672	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1060	-	-	1401	-	-	448	362	866	327	375	715
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	362	-	327	375	-
Stage 1	-	-	-	-	-	-	755	697	-	572	600	-
Stage 2	-	-	-	-	-	-	701	567	-	620	654	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.1	9.9	18.2
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	768	1060	-	-	1401	-	-	327
HCM Lane V/C Ratio	0.037	0.025	-	-	0.005	-	-	0.167
HCM Control Delay (s)	9.9	8.5	0	-	7.6	0	-	18.2
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.6



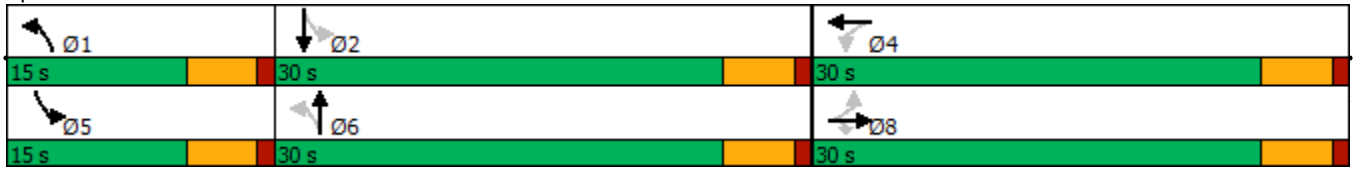
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	5	36	2	15	5	37	412	5	4	405	285
Future Volume (vph)	154	5	36	2	15	5	37	412	5	4	405	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	13	12	13	13	12	14	14
Grade (%)		2%			-10%			-4%			1%	
Storage Length (ft)	0		95	0		0	95		0	85		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			55			65		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99		1.00	1.00		1.00	0.99	
Frt			0.850		0.971			0.998			0.938	
Flt Protected		0.954			0.996		0.950			0.950		
Satd. Flow (prot)	0	1639	1392	0	1750	0	1659	1884	0	1796	1800	0
Flt Permitted		0.716			0.974		0.167			0.443		
Satd. Flow (perm)	0	1209	1392	0	1711	0	291	1884	0	836	1800	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		5			1			51	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		933			505			383			349	
Travel Time (s)		21.2			11.5			8.7			7.9	
Confl. Peds. (#/hr)	8					8	4		5	5		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	11%	0%	0%	0%	11%	5%	100%	0%	6%	1%
Parking (#/hr)				3	3	3						
Adj. Flow (vph)	167	5	39	2	16	5	40	448	5	4	440	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	39	0	23	0	40	453	0	4	750	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	0.90	1.05	0.90	0.97	0.93	0.93	1.01	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		2	2		2	2	
Detector Template	Left			Left								
Leading Detector (ft)	20	78	78	20	78		78	78		78	78	
Trailing Detector (ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	20	40	40	20	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	2.0	0.0	2.0		1.0	1.0		1.0	1.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	3.0	5.0	0.0	3.0		3.0	0.0		3.0	0.0	
Detector 2 Position(ft)		38	38		38		38	38		38	38	
Detector 2 Size(ft)		40	40		40		40	40		40	40	

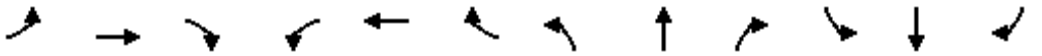
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	16.0		4.0	16.0	
Minimum Split (s)	9.0	9.0	9.0	21.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		15.0	30.0		15.0	30.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		20.0%	40.0%		20.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		10.0	25.0		10.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Walk Time (s)				5.0	5.0							
Flash Dont Walk (s)				11.0	11.0							
Pedestrian Calls (#/hr)				4	4							
v/c Ratio		0.62	0.10		0.06		0.14	0.43		0.01	0.78	
Control Delay		29.1	0.5		14.6		7.4	10.7		6.5	22.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		29.1	0.5		14.6		7.4	10.7		6.5	22.4	
Queue Length 50th (ft)		40	0		4		5	68		1	133	
Queue Length 95th (ft)		109	1		20		19	222		4	#519	
Internal Link Dist (ft)		853			425			303			269	
Turn Bay Length (ft)			95				95			85		
Base Capacity (vph)		564	704		801		425	1048		665	959	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.30	0.06		0.03		0.09	0.43		0.01	0.78	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 54.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: NY 9D & Beekman Street/West Church Street

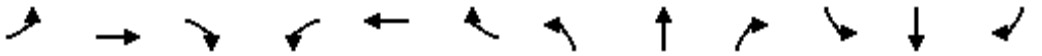




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	5	36	2	15	5	37	412	5	4	405	285
Future Volume (veh/h)	154	5	36	2	15	5	37	412	5	4	405	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1876	1713	2385	2385	2385	1892	2062	2062	1894	1877	1877
Adj Flow Rate, veh/h	167	5	39	2	16	5	40	448	5	4	440	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	11	0	0	0	11	5	5	0	6	6
Cap, veh/h	379	7	219	98	227	66	275	842	9	562	480	338
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.41	0.41	0.09	0.47	0.47
Sat Flow, veh/h	1404	42	1415	59	1464	423	1802	2035	23	1804	1023	721
Grp Volume(v), veh/h	172	0	39	23	0	0	40	0	453	4	0	750
Grp Sat Flow(s),veh/h/ln	1446	0	1415	1946	0	0	1802	0	2057	1804	0	1743
Q Serve(g_s), s	3.7	0.0	1.1	0.0	0.0	0.0	0.6	0.0	7.3	0.0	0.0	17.7
Cycle Q Clear(g_c), s	4.9	0.0	1.1	4.5	0.0	0.0	0.6	0.0	7.3	0.0	0.0	17.7
Prop In Lane	0.97		1.00	0.09		0.22	1.00		0.01	1.00		0.41
Lane Grp Cap(c), veh/h	385	0	219	390	0	0	275	0	852	562	0	818
V/C Ratio(X)	0.45	0.00	0.18	0.06	0.00	0.00	0.15	0.00	0.53	0.01	0.00	0.92
Avail Cap(c_a), veh/h	952	0	802	1195	0	0	621	0	1167	808	0	989
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	16.2	15.9	0.0	0.0	9.6	0.0	9.7	6.0	0.0	10.9
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.3	0.2	0.0	0.0	0.2	0.0	2.5	0.0	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	0.0	16.3	15.9	0.0	0.0	9.7	0.0	9.9	6.0	0.0	21.4
LnGrp LOS	B	A	B	B	A	A	A	A	A	A	A	C
Approach Vol, veh/h		211			23			493			754	
Approach Delay, s/veh		17.7			15.9			9.9			21.3	
Approach LOS		B			B			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	25.6		12.0	9.0	23.2		12.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0		25.0	10.0	25.0		25.0				
Max Q Clear Time (g_c+I1), s	2.6	19.7		6.5	2.0	9.3		6.9				
Green Ext Time (p_c), s	0.0	0.9		0.0	0.0	0.7		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	8	20	6	2	3	6	564	1	0	668	75
Future Volume (vph)	81	8	20	6	2	3	6	564	1	0	668	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	14	12	13	13	12	14	14
Grade (%)		-4%			-2%			-2%			-6%	
Storage Length (ft)	0		0	0		0	55		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.966						0.985	
Flt Protected		0.964			0.972		0.950					
Satd. Flow (prot)	0	1680	0	0	1439	0	1823	1889	0	1957	1979	0
Flt Permitted		0.964			0.972		0.950					
Satd. Flow (perm)	0	1680	0	0	1439	0	1823	1889	0	1957	1979	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		391			425			349			506	
Travel Time (s)		8.9			9.7			7.9			11.5	
Confl. Peds. (#/hr)			5	5			4		2	2		4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	13%	17%	0%	33%	0%	5%	0%	0%	4%	3%
Parking (#/hr)	3	3	3	3	3	3						
Adj. Flow (vph)	90	9	22	7	2	3	7	627	1	0	742	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	12	0	7	628	0	0	825	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	0.89	1.05	0.89	0.91	1.06	0.91	0.99	0.95	0.95	0.96	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

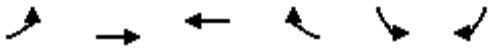
Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	81	8	20	6	2	3	6	564	1	0	668	75
Future Vol, veh/h	81	8	20	6	2	3	6	564	1	0	668	75
Conflicting Peds, #/hr	0	0	5	5	0	0	4	0	2	2	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	-2	-	-	-2	-	-	-6	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	13	17	0	33	0	5	0	0	4	3
Mvmt Flow	90	9	22	7	2	3	7	627	1	0	742	83

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1432	1432	793	1448	1473	630	829	0	0	630	0	0
Stage 1	788	788	-	644	644	-	-	-	-	-	-	-
Stage 2	644	644	-	804	829	-	-	-	-	-	-	-
Critical Hdwy	6.3	5.7	5.93	6.87	6.1	6.33	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	5.3	4.7	-	5.87	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.3	4.7	-	5.87	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.417	3.653	4	3.597	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	155	186	406	119	151	445	811	-	-	962	-	-
Stage 1	462	483	-	470	506	-	-	-	-	-	-	-
Stage 2	536	544	-	389	426	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	150	183	402	107	149	444	807	-	-	960	-	-
Mov Cap-2 Maneuver	150	183	-	107	149	-	-	-	-	-	-	-
Stage 1	456	481	-	465	500	-	-	-	-	-	-	-
Stage 2	525	538	-	359	424	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	64.5	32.3	0.1	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	172	144	960	-	-
HCM Lane V/C Ratio	0.008	-	-	0.704	0.085	-	-	-
HCM Control Delay (s)	9.5	-	-	64.5	32.3	0	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	4.3	0.3	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	32	145	17	7	4
Future Volume (vph)	0	32	145	17	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	16	10	10
Grade (%)		5%	-8%		-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986		0.955	
Flt Protected					0.968	
Satd. Flow (prot)	0	2058	2165	0	1631	0
Flt Permitted					0.968	
Satd. Flow (perm)	0	2058	2165	0	1631	0
Link Speed (mph)		25	25		30	
Link Distance (ft)		427	513		132	
Travel Time (s)		11.6	14.0		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	35	158	18	8	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	35	176	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		10	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	0.88	0.88	0.80	0.80	1.07	1.07
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

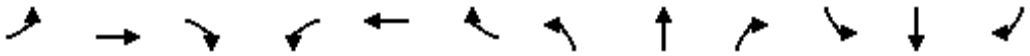
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	32	145	17	7	4
Future Vol, veh/h	0	32	145	17	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	5	-8	-	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	158	18	8	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	176	0	-	0	202	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	4.12	-	-	-	5.82	5.92
Critical Hdwy Stg 1	-	-	-	-	4.82	-
Critical Hdwy Stg 2	-	-	-	-	4.82	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1400	-	-	-	813	890
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1400	-	-	-	813	890
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	993	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1400	-	-	-	839
HCM Lane V/C Ratio	-	-	-	-	0.014
HCM Control Delay (s)	0	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	308	3	17	49	108	2	0	9	34	0	5
Future Volume (vph)	54	308	3	17	49	108	2	0	9	34	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	12	12	12	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.916			0.886			0.982	
Flt Protected		0.993			0.995			0.992			0.958	
Satd. Flow (prot)	0	1844	0	0	1655	0	0	1637	0	0	1743	0
Flt Permitted		0.993			0.995			0.992			0.958	
Satd. Flow (perm)	0	1844	0	0	1655	0	0	1637	0	0	1743	0
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		591			933			185			513	
Travel Time (s)		13.4			21.2			4.2			14.0	
Confl. Peds. (#/hr)	3					3				2		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	0%	1%	2%	2%	0%	8%	2%	2%	2%	0%	2%	0%
Parking (#/hr)	5	5	0									
Adj. Flow (vph)	64	367	4	20	58	129	2	0	11	40	0	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	435	0	0	207	0	0	13	0	0	46	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	1.02	0.85	0.99	0.99	0.99	1.00	1.00	1.00	0.88	1.03	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

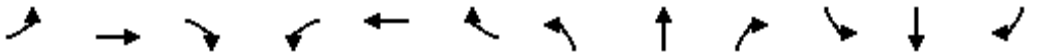
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	54	308	3	17	49	108	2	0	9	34	0	5
Future Vol, veh/h	54	308	3	17	49	108	2	0	9	34	0	5
Conflicting Peds, #/hr	3	0	0	0	0	3	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	5	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	1	2	2	0	8	2	2	2	0	2	0
Mvmt Flow	64	367	4	20	58	129	2	0	11	40	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	371	0	0	663	727	371	671	665	126
Stage 1	-	-	-	-	-	-	497	497	-	166	166	-
Stage 2	-	-	-	-	-	-	166	230	-	505	499	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	8.1	7.52	6.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	7.1	6.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	7.1	6.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1396	-	-	1188	-	-	375	351	675	309	316	914
Stage 1	-	-	-	-	-	-	555	545	-	803	727	-
Stage 2	-	-	-	-	-	-	836	714	-	481	473	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1188	-	-	351	323	674	285	291	911
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	323	-	285	291	-
Stage 1	-	-	-	-	-	-	523	513	-	754	711	-
Stage 2	-	-	-	-	-	-	815	698	-	445	446	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0.8	11.4	18.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	577	1392	-	-	1188	-	-	313
HCM Lane V/C Ratio	0.023	0.046	-	-	0.017	-	-	0.148
HCM Control Delay (s)	11.4	7.7	0	-	8.1	0	-	18.5
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	4	45	0	10	1	56	470	9	5	562	108
Future Volume (vph)	302	4	45	0	10	1	56	470	9	5	562	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	13	12	13	13	12	14	14
Grade (%)		2%			-10%			-4%			1%	
Storage Length (ft)	0		95	0		0	95		0	85		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			55			65		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99	0.98		1.00		1.00	1.00		1.00	1.00	
Frt			0.850		0.989			0.997			0.976	
Flt Protected		0.953					0.950			0.950		
Satd. Flow (prot)	0	1716	1546	0	1799	0	1705	1920	0	1796	1933	0
Flt Permitted		0.720					0.102			0.353		
Satd. Flow (perm)	0	1279	1512	0	1799	0	183	1920	0	666	1933	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			85		1			1			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		933			505			383			349	
Travel Time (s)		21.2			11.5			8.7			7.9	
Confl. Peds. (#/hr)	5		1	1		5	1		4	4		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	8%	4%	0%	0%	1%	4%
Parking (#/hr)				3	3	3						
Adj. Flow (vph)	339	4	51	0	11	1	63	528	10	6	631	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	343	51	0	12	0	63	538	0	6	752	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	0.90	1.05	0.90	0.97	0.93	0.93	1.01	0.92	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	2	1	2		2	2		2	2	
Detector Template	Left			Left								
Leading Detector (ft)	20	78	78	20	78		78	78		78	78	
Trailing Detector (ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Position(ft)	0	-10	-10	0	-10		-10	-10		-10	-10	
Detector 1 Size(ft)	20	40	40	20	40		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	2.0	2.0	0.0	2.0		1.0	1.0		1.0	1.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	3.0	5.0	0.0	3.0		3.0	0.0		3.0	0.0	
Detector 2 Position(ft)		38	38		38		38	38		38	38	
Detector 2 Size(ft)		40	40		40		40	40		40	40	

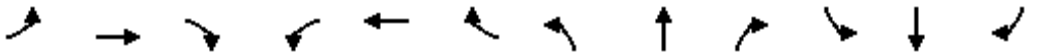
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Turn Type	Perm	NA	Perm		NA		pm+pt	NA		pm+pt	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4			6			2		
Detector Phase	8	8	8	4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	16.0		4.0	16.0	
Minimum Split (s)	9.0	9.0	9.0	21.0	21.0		9.0	21.0		9.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		20.0	40.0		20.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%		22.2%	44.4%		22.2%	44.4%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0		15.0	35.0		15.0	35.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Walk Time (s)				5.0	5.0							
Flash Dont Walk (s)				11.0	11.0							
Pedestrian Calls (#/hr)				3	3							
v/c Ratio		0.84	0.09		0.02		0.32	0.53		0.02	0.87	
Control Delay		46.6	2.4		19.0		12.2	15.0		8.0	32.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		46.6	2.4		19.0		12.2	15.0		8.0	32.6	
Queue Length 50th (ft)		160	0		4		13	150		1	327	
Queue Length 95th (ft)		#311	11		16		29	296		6	#556	
Internal Link Dist (ft)		853			425			303			269	
Turn Bay Length (ft)			95				95			85		
Base Capacity (vph)		422	556		594		401	1043		589	900	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.81	0.09		0.02		0.16	0.52		0.01	0.84	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 76.6	
Natural Cycle: 75	
Control Type: Actuated-Uncoordinated	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: NY 9D & Beekman Street/West Church Street

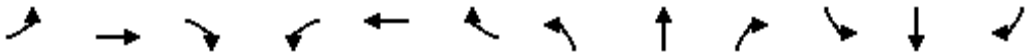




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	302	4	45	0	10	1	56	470	9	5	562	108
Future Volume (veh/h)	302	4	45	0	10	1	56	470	9	5	562	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1876	1876	1876	2385	2385	2385	1937	2077	2077	1894	1954	1954
Adj Flow Rate, veh/h	339	4	51	0	11	1	63	528	10	6	631	121
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	0	0	0	8	4	4	0	1	1
Cap, veh/h	504	5	448	0	542	49	235	823	16	408	681	131
Arrive On Green	0.28	0.28	0.28	0.00	0.28	0.28	0.04	0.41	0.41	0.07	0.43	0.43
Sat Flow, veh/h	1362	16	1576	0	1905	173	1845	2032	38	1804	1592	305
Grp Volume(v), veh/h	343	0	51	0	0	12	63	0	538	6	0	752
Grp Sat Flow(s),veh/h/ln	1379	0	1576	0	0	2078	1845	0	2070	1804	0	1898
Q Serve(g_s), s	14.3	0.0	1.5	0.0	0.0	0.3	1.2	0.0	12.8	0.1	0.0	23.0
Cycle Q Clear(g_c), s	14.6	0.0	1.5	0.0	0.0	0.3	1.2	0.0	12.8	0.1	0.0	23.0
Prop In Lane	0.99		1.00	0.00		0.08	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	509	0	448	0	0	591	235	0	839	408	0	811
V/C Ratio(X)	0.67	0.00	0.11	0.00	0.00	0.02	0.27	0.00	0.64	0.01	0.00	0.93
Avail Cap(c_a), veh/h	682	0	644	0	0	848	608	0	1183	732	0	1085
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	16.2	0.0	0.0	15.8	13.8	0.0	14.6	10.0	0.0	16.6
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	9.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.5	0.0	0.0	0.1	0.4	0.0	5.3	0.0	0.0	10.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	16.2	0.0	0.0	15.8	14.1	0.0	14.9	10.0	0.0	26.1
LnGrp LOS	C	A	B	A	A	B	B	A	B	A	A	C
Approach Vol, veh/h		394			12			601			758	
Approach Delay, s/veh		20.9			15.8			14.8			26.0	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	31.2		22.4	9.0	29.8		22.4				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	15.0	35.0		25.0	15.0	35.0		25.0				
Max Q Clear Time (g_c+I1), s	3.2	25.0		2.3	2.1	14.8		16.6				
Green Ext Time (p_c), s	0.0	1.2		0.0	0.0	0.8		0.9				

Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	2	18	1	1	8	31	737	5	6	656	90
Future Volume (vph)	56	2	18	1	1	8	31	737	5	6	656	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	14	14	14	14	12	13	13	12	14	14
Grade (%)		-4%			-2%			-2%			-6%	
Storage Length (ft)	0		0	0		0	55		0	50		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			30			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.969			0.890			0.999			0.982	
Flt Protected		0.964			0.995		0.950			0.950		
Satd. Flow (prot)	0	1660	0	0	1450	0	1720	1924	0	1859	2032	0
Flt Permitted		0.964			0.995		0.950			0.950		
Satd. Flow (perm)	0	1660	0	0	1450	0	1720	1924	0	1859	2032	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		391			425			349			506	
Travel Time (s)		8.9			9.7			7.9			11.5	
Confl. Peds. (#/hr)	1					1			3	3		
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	4%	0%	0%	0%	0%	13%	6%	3%	0%	0%	1%	0%
Parking (#/hr)	3	3	3	3	3	3						
Adj. Flow (vph)	64	2	20	1	1	9	35	838	6	7	745	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	86	0	0	11	0	35	844	0	7	847	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	0.89	1.05	0.89	0.91	1.06	0.91	0.99	0.95	0.95	0.96	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	56	2	18	1	1	8	31	737	5	6	656	90
Future Vol, veh/h	56	2	18	1	1	8	31	737	5	6	656	90
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	55	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-4	-	-	-2	-	-	-2	-	-	-6	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	4	0	0	0	0	13	6	3	0	0	1	0
Mvmt Flow	64	2	20	1	1	9	35	838	6	7	745	102

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1727	1727	796	1735	1775	845	847	0	0	847	0	0
Stage 1	810	810	-	914	914	-	-	-	-	-	-	-
Stage 2	917	917	-	821	861	-	-	-	-	-	-	-
Critical Hdwy	6.34	5.7	5.8	6.7	6.1	6.13	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	5.34	4.7	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.34	4.7	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4	3.3	3.5	4	3.417	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	101	131	426	84	102	363	773	-	-	799	-	-
Stage 1	444	474	-	365	393	-	-	-	-	-	-	-
Stage 2	396	433	-	407	413	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	93	124	426	75	96	361	773	-	-	796	-	-
Mov Cap-2 Maneuver	93	124	-	75	96	-	-	-	-	-	-	-
Stage 1	424	470	-	347	374	-	-	-	-	-	-	-
Stage 2	367	412	-	382	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	97.4	22.4	0.4	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	773	-	-	115	218	796	-	-
HCM Lane V/C Ratio	0.046	-	-	0.751	0.052	0.009	-	-
HCM Control Delay (s)	9.9	-	-	97.4	22.4	9.6	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	4.2	0.2	0	-	-

Site Planning
Civil Engineering
Landscape Architecture
Land Surveying
Transportation Engineering
Environmental Studies
Entitlements
Construction Services
3D Visualization
Laser Scanning

March 25, 2022

Honorable Chairman John Gunn
City of Beacon Planning Board
One Municipal Plaza
Beacon, NY 12508

Re: JMC Project 18119
Beacon Commons
16 West Main Street
City of Beacon, NY 12508

Site Plan Approval

Dear Chairman Gunn and Members of the Planning Board:

On behalf of Farrell Building Company, we are pleased to provide five (5) sets of the following revised documents in support of Site Plan Approval for the above captioned project:

1. **JMC Site Plans**

Dwg	Title	Last Revised Date
C-000	Cover Sheet	03/25/2022
C-010	Existing Conditions Plan	03/25/2022
C-020	Demolition Plan	03/25/2022
C-100	Site Plan	03/25/2022
C-200	Grading Plan	03/25/2022
C-300	Utilities Plan	03/25/2022
C-310	Storm Profiles	03/25/2022
C-400	Sediment and Erosion Control Plan	03/25/2022
C-600	Lighting Plan	03/25/2022
C-700	Garbage Truck Turning Plan (Front-Loading)	03/25/2022
C-701	Garbage Truck Turning Plan (Rear-Loading)	03/25/2022
C-702	Fire Truck Turning Plan (Scenario 1)	03/25/2022
C-703	Fire Truck Turning Plan (Scenario 2)	03/25/2022
C-704	Fire Truck Turning Plan (Scenario 3)	03/25/2022
C-800	Aerial Site Plan	03/25/2022

C-801	Sight Distance Plan	03/25/2022
C-900	Construction Details	03/25/2022
C-901	Construction Details	03/25/2022
C-902	Construction Details	03/25/2022
C-903	Construction Details	03/25/2022
C-904	Construction Details	03/25/2022
C-905	Construction Details	03/25/2022
C-906	Construction Details	03/25/2022
C-907	Construction Details	03/25/2022
C-908	Construction Details	03/25/2022
L-100	Landscaping Plan	03/25/2022

2. **Aryeh Siegel Architect Drawing List:**

Dwg	Title	Last Revised Date
A-100	Building Plans	03/25/2022
A-101	Building Plans	03/25/2022
A-200	Elevations	03/25/2022

3. **Stormwater Pollution Prevention Plan, revised 03/25/2022.**

4. **Traffic Study, revised 03/08/2022**

5. **Carlin-Simpson Associates Report on Subsurface Soil and Foundation Investigation, revised 03/02/2022**

6. **LSI Lighting Catalog, prepared by Synergy Electrical Sales, Inc., dated 02/22/2022.**

Below please find our responses to the comments within the John Clarke Planning and Design Memorandum, dated August 5, 2021.

Comment No. 1

The Traffic Study and SEQRA review should consider walkability to the Train Station as part of its cumulative analysis of traffic impacts.

Response No. 1

The traffic report has been updated to include additional discussion of walkability to the train station.

Comment No. 2

Parking in the adjacent residential district will need a Special Permit from the City Council. The Planning Board should issue a recommendation to the Council.

Response No. 2

So noted

Comment No. 3

For the Sheet 9 Lighting Plan, the fixture specifications should be shown to confirm that the full cut-off requirement, temperatures, and Color Rendering Index comply with Section 223-14 B.

Response No. 3

The JMC Lighting Plan has been revised to comply with Section 223-14 B. Provided with this submission we have included a lighting catalog packet which provide specifications for the full cut-off shield, temperature, and color rendering index.

Comment No. 4

For the Sheet 26 Landscaping Plan:

a. *The trees in the parking areas must have a minimum caliper of three inches, according to Section 223-26 C(3).*
b. *The latest plan omits the four trees previously shown along the West Main Street frontage. Street trees on average 30-40 feet apart should be provided along both frontages.*

Response No. 4

a. The trees have been revised to have a minimum 3" caliper.
b. The JMC Landscaping Plan has been revised to include additional trees along the property frontage, including the four previously proposed.

Comment No. 5

For the Sheets A-100 and A-200 Building Plans:

a. On June 15, 2020, the City Council adopted changes to the Section 223-41.21 Linkage district that affect the building program for this project. Like the Central Main Street district standards, an apartment or multifamily dwelling unit shall only be located on the upper stories or at least 50 feet behind the facade in the rear portion of the ground floor on facades facing the north side of West Main Street. The 1st floor plans still show apartments along the West Main Street frontage.
b. The revised renderings are not fully consistent with the recommendations from the Architectural Review Subcommittee meeting on March 13, 2020, but the project architect has stated that he is working to address these items for further review.
c. Tinted glass windows are not permitted.
d. Scaled elevations should be provided with building heights and floor-to-floor heights noted.

e. The rooftop accessory structures may be limited under Section 223-41.21 D(5), including the need for a 15-foot setback from the front edge of the roof.

Response No. 5

a. ***Comment acknowledged. Dwelling units are only located on upper stories and at least 50 feet behind the facade in the rear portions of the ground floor. There are commercial Artist Live/Work units on the ground floor facing West Main Street, as shown on the plans.***
b. ***The renderings have been revised to respond to Architectural Review Board Subcommittee comments, and provided with this submission.***
c. ***Comment acknowledged. Tinted glass is not being used in any location on this project.***
d. ***Scaled elevations with building heights and floor-to-floor heights will be provided once the updated renderings are accepted by the ARB Subcommittee.***
e. ***Comment acknowledged. Rooftop accessory structures, if included, will comply with Section 223-41.21 D(5).***

Below please find our responses to the comments within the Lanc & Tully Engineering and Surveying, P.C. comment letter.

General Comments

Comment No. 1

A Performance Bond will need to be posted for all public improvements proposed as part of the project. As the project progresses, the applicant's engineer should prepare an itemized cost estimate for all public improvements and submit to the City Engineer's office for review.

Response No. 1

So noted.

Geotechnical Report:

Comment No. 1

The report notes several times that "New fill to raise site grades must be placed early in the project schedule to induce any settlements of the underlying soft sandy clays and silts." How far in advance of construction must this material be placed? Will the consolidation of the soft soils be monitored once the fill has been placed? The applicants notes that fill material is to be placed 2 to 3 months before construction of the building, and that the installation of the soils will be monitored by Carlin Simpson & Associates. Notes shall be added to the plan set with regards to this and shall also reference the geotechnical report that was prepared for this project.

Response No. 1

A note has been added to the Grading plan directing advance fill material placement to be coordinated with latest geotechnical report and monitored by Carlin Simpson & Associates.

Comment No. 2

The report recommends driving piles to support the new buildings. How many piles are to be driven at the site, how long will the process take to install all piles, what are the noise impacts on the neighboring residents during the pile driving process and what will be the vibration impacts on the neighbors from the driving process? Have other methods, such as auger piles, been looked at to reduce the noise impacts from the site during the driving of the piles? The applicant notes that the process for driving the piles will take 3 to 6 weeks, with 30 to 40 piles driven per day. The applicant further notes that driven piles are the best method because it is quick, easy and can measure capacity from hammer. Although the applicant is stating that they will drive the piles, this does not address the concerns of impacts on the surrounding neighbors with regards to noise and vibration from the pile driving operations. How does the applicant propose to address these concerns?

Response No. 2

To address the city concerns regarding the noise and vibration impacts, the applicant is proposing all pile operations to be drilled versus pile driving. It is anticipated that a total of 97 piles are required consisting of 8" diameter pile with an anticipated depth of 15' to 25' below the existing surface.

Comment No. 3

The report discusses the possibility of needing to install sumps with pumps to control groundwater at the site. Where will this ground water be discharged to and how will it be treated, if necessary, to ensure that turbid waters are not leaving the site? Although the applicant notes that this work will be done in conjunction with erosion and sediment control measures proposed for the site, it is recommended that the contractor provide additional measures, such as silt socks, to help in reducing the chances of sediment runoff from the site during these operations.

Response No. 3

The JMC drawing C-400 note #13 has been revised to include the silt sock requirement for the settling tank discharge pipe.

Site Plan (Sheet 4 of 26):

Comment No. 1

Given the amount of parking area that will require clearing during snowstorm events, it does not appear that sufficient area has been provided for snow storage. Snow should not be stored within parking stalls.

How does the applicant plan on handling snow storage and removal from the site? This information shall also be provided on the plan.

Response No. 1

Drawing C-100 Site Plan has been revised to include note #2 which states "Snow removal shall be stored in the designated areas on this plan. Any excess snow shall be disposed off-site."

Comment No. 2

The plan notes in several locations that the proposed retaining walls and fencing atop of these walls is to be designed by others. Construction details should be added to the plan at this time to show the specific type of retaining wall to be used, along with the proposed safety fence atop of the wall. Although construction easements are called out on Sheet 6 of 26 to allow for the construction of these walls, without knowing the type of wall to be used and the requirements for the construction of that wall, it is unclear as to whether the proposed easements are large enough. Applicant notes that the wall design will be based upon the site constraints and available easement areas. Although the wall design is being prepared by others, the type of wall to be used, should be noted on the plans, along with the wall color and visual facing. This allow for a more comprehensive review as to what is proposed visually for the site. This information could be added to retaining wall detail on Sheet 24 of 26.

Response No. 2

The JMC site plans have been revised to include reference information for the three types of retaining walls to be proposed with this development. The retaining wall along Bank Street is proposed as a "Soldier Pile Retaining Wall," the patio wall is proposed to be a "MSE retaining wall" and the remaining site walls are proposed to be "Gravity Retaining Wall". Sheet C-908 includes reference detail and example images for both wall types.

Utilities Plan (Sheet 6 of 26):

Comment No. 1

The sewer lateral running out from the lower building to the City sewer collection system will be in conflict with the existing storm drainage structure located in this area. Additional room shall be provided between the storm drainage structure and sewer lateral to allow for proper maintenance/replacement of either utility without impact the other utility.

Response No. 1

The Utilities Plan has been revised to provide additional space between the proposed sanitary service line and existing storm drainage structure.

Comment No. 2

It is unclear as to how the proposed storm line will connect to the back of the existing catch basin on West Main Street, as it will conflict with the existing storm line that runs to the catch basin on Bank Street. This is also the same issue for the storm pipe proposed to enter the rear of the catch basin on Bank Street.

Response No. 2

The proposed storm line is proposed to connect to the back of the existing catch basin, on West Main Street, above the existing pipe. This proposed invert has been adjusted to provide additional space between the pipes. The pipe connection proposed on Bank Street is to be connected at the same invert as the existing pipe to be removed.

Comment No. 3

The pipe invert information provided for drainage structure DMH-A4 should be clarified as to what invert is associated with what pipe. This would also apply to other drainage structures, such as DI-A9, DI-A 11, DMH-A3, By-Pass A-7, DMH-A-5, etc.

Response No. 3

The proposed storm infrastructure has been generally revised. Additional invert labels have been added in all locations that may not be clear from our standard structure and pipe labels.

Comment No. 4

Provide enlarged view of area at intersection of Bank Street and West Main Street to clearly show and call out utilities and their connections.

Response No. 4

The Utilities Plan has been revised to include an enlarged view (1"=10') of the utilities located near the intersection of West Main Street and Bank Street.

Comment No. 5

Construction details shall be added to the plans to show how the new water service line and sewer service line will be connected to the City's water and sewer mains. Although the plans note that connection per City requirements, construction details for these connections shall be provided on the plans. The applicant's consultant shall discuss with each of the City Departments how connections shall be made and with what materials.

Response No. 5

The Comment is so noted. JMC has reached out to the City Water department and will coordinate with this office for the standard detail to be used.

Comment No. 6

The applicant should verify the pressures within the water mains along Bank Street and West Main Street, along with the available fire flows form the hydrants. This information will be required for the design of the sprinkler system that will be required in the building. The applicant has noted that the MEP Engineer will coordinate with the City to obtain fire flow data and pressures needed for the design of the fire suppression system.

Response No. 6

So noted.

Storm Profile (Sheet 7 of 26):

Comment No. 1

The profile shows the proposed storm drainage pipe to be installed on West Main Street will be directly atop of the · existing water main. This does not comply with NYSDOH requirements for separation, which requires a minimum of 18" of separation between the two. Furthermore, at least 12" should be provided between utilities to allow for proper maintenance repair of them. The plan shall be revised to show proper separation distances in accordance with NYSDOH standards.

Response No. 1

The storm drainage pipe crossing has been revised to a proposed elliptical pipe to provide additional separation. The existing crossing utilities will need to be field verified prior to any work being performed.

Comment No. 2

The storm drainage is shown to have approximately 6 to 7 inches of cover from the road surface. This is insufficient coverage over the pipe, as the pipe will flex at the joints and continue to deteriorate the pavement in this area, which will be a continual maintenance issue for the highway department. Additional coverage shall be provided over the pipe.

Response No. 2

The storm pipe layout and depth has been revised, where sufficient coverage over the pipe is now being provided.

Comment No. 3

The pipe runs between structures DMH-A4, DI-A4-1 and DI-A4-2 show less than 12 inches of cover over the storm lines. The manufacturer requires a minimum of 12" of coverage over the pipe to achieve H-25 loading for traffic areas. The pavement shall not be considered as part of the 12 inches of coverage, as per the manufacturers "Technical Note - TN 2.02", which outlines the minimum and maximum coverage for HOPE pipe.

Response No. 3

The stormwater infrastructure proposed has been revised to provide sufficient cover over the pipes.

Construction Details (Sheet 19 of 26):

Comment No. 1

The manhole details shall note that all manhole for sanitary sewer use shall have a minimum of two coatings of bitumastic on the exterior of the structure and shall be touched up on site as needed or as directed by City Engineer.

Response No. 1

The manhole details note that 2 coats of bituminous material shall be applied for sanitary sewer and an additional note has been added that states "coating shall be touched up on site as needed or as directed by city engineer." Additionally, there are no sanitary manholes proposed at this time.

Comment No. 2

Although the detail for the proposed storm water facility notes to see the SWPPP for maintenance requirements, the short-term and long-term maintenance requirements shall also be added to the plans.

Response No. 2

The details discuss the maintenance requirements within the notes of the detail.

Comment No. 3

All trench and utility details shall note the use of NYSDOT Item No. 304.12 for backfill material within the City's road right-of-ways.

Response No. 3

A note has been added to the trench details that calls for NYSDOT item No. 304.12 (item No. 4, type 2) in city right-of-way.

Construction Details (Sheet 21 of 26):

Comment No. 4

The "Pavement over Trench Detail" shall be revised to note that the backfill within trenches shall be NYSDOT Item No. 304.12 (Item No. 4, Type 2).

Response No. 4

A note has been added to the trench details that calls for NYSDOT item No. 304.12 (item No. 4, type 2) in city right-of-way.

Stormwater Pollution Prevention Plan (SWPPP):

Comment No. 1

SWPPP report states that infiltration practices are proposed but it also states that on-site testing indicated that a subsurface infiltration practice is not an ideal practice. Please clarify if subsurface infiltration is proposed.

Response No. 1

The references to a subsurface infiltration have been corrected to indicate subsurface detention.

Comment No. 2

Post development time of concentrations should be added to show that they do not exceed the minimum Tc value.

Response No. 2

The previous response to this comment indicated "Post development time of concentration is calculated for PDA-1D and PDA-1A. Area PDA-1A resulted in using minimum time of concentration. The calculations are provided in the hydraulic calculations appendix of the SWPPP."
When additional post development time of concentrations were checked and resulted in the minimum Tc value being used, shorter runs were not analyzed with the assumption that they will result in the minimum Tc value. Using the minimum Tc value in post development conditions is also a conservative approach to the analysis and therefore was not determined to be important to include in our analysis.

Comment No. 3

Since the offsite catchment is not large in size, it should be broken down to Woods, Lawn, and Impervious (like EDA-1A & EDA-1B) to obtain a more accurate CN value. This can be accomplished using available aerial mapping.

Response No. 3

The previous response to this comment indicated "The offsite areas within the residential district have not been surveyed and therefore a break down of that area would not provide accurate results. The offsite residential district area is being analyzed as Residential Districts of 1/3 acre lots and B type soils resulting in a curve number of 72."
Where practical, the curve numbers are broken down into soil quality and woods, lawn, etc. In the offsite area there is a large area analyzed as "Residential Districts – 1/3 acre – Soil B." This area is measured as 4.34 acres in both pre and post conditions. The curve number used is fairly accurate and will not impact the calculation results since it is the same in pre and post conditions.

Comment No. 4

A Construction Schedule should be provided within the SWPPP report. The first item of the Construction Schedule should be a pre-construction meeting with the site contractor, City of Beacon personnel, and the site engineer to discuss general construction procedures and sequencing. The schedule shall reflect all aspects of the work on site, including, pre-construction meeting, installation of erosion control, demolition, installation of utilities, installation of retaining walls, installation of buildings, installation of storm water facility, and all other operations at the site.

Response No. 4
The sequence of construction notes on the SWPPP and drawing C-400 have been revised to provide additional construction schedule, procedure, and sequencing.

Comment No. 5

A note in regard to the tree clearing restrictions stated on Page 2 of the SWPPP shall be added to the plan set.

Response No. 5

This note was added to drawing C-400 Sediment and Erosion Control Plan as note #14.

Comment No. 6

Since the "Cascade Separator" and "Jellyfish" treatment systems are designed to be an online practice, a calculation should be provided showing that they can pass the 100- year design storm.

Response No. 6

The JMC SWPPP has been revised to include 100 year bypass capacity calculations for the proposed water quality structures within Appendix E.

Comment No. 7

Documentation should be provided showing that the "Cascade Separator" is an approved NYSDEC system, the provided brochure did not have this information.

Response No. 7

The plans have been revised to use a CDS structure and the NJDEP certification (which is issued based on the verification from NJCAT) for CDS units is provided in Appendix E. Chapter 9, section 9.4.1 "Evaluation of Alternative Practices" of the Stormwater Management Design Manual discusses the evaluation of proprietary systems, where TARP (primarily New Jersey Corporation for Advanced Technology) is one of the accepted evaluation systems. The DEC website states the following: "DEC currently does not have a research unit that evaluates the monitoring results and pollutant removal efficiencies of proprietary practices (i.e. manufactured stormwater management practices) being used for post-construction stormwater management. Instead, DEC relies on established, third-party stormwater management practice evaluation and verification systems such as: the State of Washington Technology Assessment Protocol - Ecology (TAPE), the Technology Acceptance Reciprocity Partnership Protocol (TARP) (primarily New Jersey Corporation for Advanced Technology), and the State of Maryland Department of the Environment."

Comment No. 8

Boring test results indicate that ground water was located at elevation 34.50' in boring hole #7, which is located in the area of the proposed subsurface storage system. This would surcharge the proposed storage system. If the system is surcharged from ground water, the system will not operate properly during storm events.

Response No. 8

The proposed analysis was modified to include a starting water elevation of 34.50 in the detention system. The results of our analysis are showing a reduction in stormwater runoff.

Comment No. 9

The online Notice of Intent (NOI) shall be filled out and provided within the SWPPP.

Response No. 9

The stormwater report has been revised to include the online version of the NOI.

Comment No. 10

Roof planters are shown but not included in the calculations, are they proposed to be used?

Response No. 10

The roof top planters are not proposed to be used for stormwater practices.

Comment No. 11

DI-A5-1 which collects a portion of the offsite drainage is routed to DMH-A5. DMH-A5 has the invert in from (OCS-A6) and the invert out at the same elevation. This could surcharge the underground storage system. The inverts should be adjusted accordingly.

Response No. 11

The proposed stormwater system layout and elevations has been revised. With the proposed configuration, DMH A5 inverts have been lowered to provide additional separation to starting water storage elevation of the underground storage system.

Comment No. 12

Retaining wall underdrains shall be called out on the plans.

Response No. 12

The Utilities Plan includes callouts to where underdrain systems are to drain. This will be coordinated with the wall design.

Comment No. 13

Time of concentration shall have a maximum sheet flow length of 100 feet.

Response No. 13

Drainage area PDA-1D uses a sheet flow of 150 feet (equal to the sheet flow used in existing conditions) since the majority of the time of concentration path (including the beginning few hundred feet) remains unchanged from existing conditions.

Comment No. 14

Pre time of concentration for EDA-1 B is longer than the total 195' used in the pond pack model.

Response No. 14

The additional length of paved section and pipe, not analyzed, was added to the pondpack model.

Comment No. 15

Post time of concentration paths are not shown on the Post Development maps for PDA-1 A and PDA-1B.

Response No. 15

The JMC post development maps have been revised to show the time of concentration paths.

Comment No. 16

PDA-1B, PDA-1C, and PDA-1E use a user defined TC, while it is understood that the calculated time of concentration is less than 5 minutes the calculations should be added to the pond pack model to show that they do not exceed 5 minutes.

Response No. 16

As previously indicated: "Post development time of concentration is calculated for PDA-1D and PDA-1A. Area PDA-1A resulted in using minimum time of concentration. The calculations are provided in the hydraulic calculations appendix of the SWPPP."
When additional post development time of concentrations were checked and resulted in the minimum Tc value being used, shorter runs were not analyzed with the assumption that they will result in the minimum Tc value. Using the minimum Tc value in post development conditions is also a conservative approach to the analysis and therefore was not determined to be important to include in our analysis.

Comment No. 17

On the water quality volume worksheet for the site, the impervious area exceeds the site area used. This should be checked and corrected accordingly.

Response No. 17

The water quality volume worksheet for site area was corrected to reflect the total site area.

Comment No. 18

The water quality volume worksheet for the site, uses a site area of 0.85 Acres while total site area is approximately 1.4 +/- acres, please explain.

Response No. 18

Same response as No. 17.

Comment No. 19
The water quality volume required for each individual stormwater planter shall be provided.

Response No. 19

The water quality volume required for each stormwater planter was previously provided and is included in Appendix B.

Comment No. 20

The drainage areas for the stormwater planter worksheets shall be correctly labeled.

Response No. 20

The drainage areas have been updated to reflect the correct drainage area of PDA-1C.

Comment No. 21

The proposed "Cascade separator" is shown to provide 3,997 CF of WQv, the catchment 1 B has a required WQv of 429 CF. It is unclear whether or not the 3,997 CF is being taken for credit. While additional treatment volume exceeding the required volume can be taken credit for, this should be limited to a justifiable volume.

Response No. 21

The Cascade Separator can provide up to 3,997 CF and up to 1.02 cfs but the additional water quality was not taken credit for.

Comment No. 22

Each proposed planter shall be modeled individually to ensure that stormwater is contained within the planters, over topping onto the city sidewalks is not permissible during any storm event.

Response No. 22

The JMC SWPPP has been revised to model the stormwater planters individually.

We trust that the enclosed documents and above responses are sufficient for the Planning Board's review and we look forward to discussing the project at the next meeting. In the interim, if you have questions or require additional information, please do not hesitate to contact our office at (914) 273-5225.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC

Stephen Spina, PE
Senior Project Manager

cc: Mr. Steve Zagoren
Mr. Aryeh Siegel

p:\2018\18119\admin\trcomment response 03-25-2022.docx

Synergy Electrical Sales Inc.
227 W 29th Street
New York NY 10001
Phone: (914) 699-1996
Fax:

Date: Feb 24, 2022

Job Name
Beacon Commons
PYRAMID22-12667
Beacon NY

Bid Date
Feb 21, 2022

Submittal Date
Feb 22, 2022

Landscape Architect:
JMC John Meyer Consulting
120 Bedford Rd
Armonk NY 10504

Transmittal

Synergy Electrical Sales Inc.
227 W 29th Street
New York NY 10001
Phone: (914) 699-1996
From: Shane Flanagan

Project **Beacon Commons**
Quote# PYRAMID22-12667
Location Beacon NY
Contact:

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- ☐ Drawings
- ☐ Prints
- ☐ Plans
- ☐ Specifications
- ☐ Information
- ☒ Submittals

Other:

THESE ARE TRANSMITTED FOR:

- ☐ Prior Approval
- ☐ Approval
- ☐ Approval as Submitted
- ☐ Approval as Noted
- ☐ Resubmittal for Approval
- ☐ Corrections
- ☐ Your Use
- ☐ Review and Comment
- ☐ Record

Bids due on:
Other:

Type	MFG	Part
	LSI-Industries	MRS-LED-06L-SIL-FT-UNV-DIM-40-STDCLR-IH
	LSI-Industries	MRS-LED-09L-SIL-FT-UNV-DIM-40-STDCLR-IH
	LSI-Industries	CPG-LED-3L-CA-W-UNV-DIM- 40
	LSI-Industries	OPS-PD-06L-4F-UNV-40K8-STDCLR-770846CLR
	LSI-Industries	OPS-PD-06L-AD-UNV-40K8-STDCLR-770846CLR
	LSI-Industries	4RP-T-S11G-14-N-STDCLR-
	LSI-Industries	OPS-PT-05L-3W-UNV-40K8
	LSI-Industries	4RP-B3-S11G-14-S-STDCLR

Feb 24, 2022

RE: Beacon Commons
Beacon NY

Type	MFG	Part
	LSI-Industries	MRS-LED-06L-SIL-FT-UNV-DIM-40-STDCLR-IH
	LSI-Industries	MRS-LED-09L-SIL-FT-UNV-DIM-40-STDCLR-IH
	LSI-Industries	CPG-LED-3L-CA-W-UNV-DIM- 40
	LSI-Industries	OPS-PD-06L-4F-UNV-40K8-STDCLR-770846CLR
	LSI-Industries	OPS-PD-06L-AD-UNV-40K8-STDCLR-770846CLR
	LSI-Industries	4RP-T-S11G-14-N-STDCLR-
	LSI-Industries	OPS-PT-05L-3W-UNV-40K8
	LSI-Industries	4RP-B3-S11G-14-S-STDCLR

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08



OVERVIEW	
Lumen Package	6,000 - 24,000
Wattage Range	41 - 196
Efficacy Range (LPW)	112 - 156
Fixture Weight lbs (kg)	20 (9.1)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 5W, and FT.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and house-side shield (IH) options available for improved backlight control without sacrificing street side performance. See page 3 for more details.

Electrical

- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 mechanical impact code
- DesignLights Consortium® Listings in progress.

Specifications and dimensions subject to change without notice.

Type: _____

Mirada Small Area Light (MRS)

Back to Quick Links

ORDERING GUIDE

TYPICAL ORDER EXAMPLE: **MRS LED 18L SIL FT UNV DIM 40 70CRI ALBCS1 BLK IH**

Luminaire Prefix	Light Source	Lumen Package	Lens	Distribution	Orientation[2]	Voltage	Driver
MRS - Mirada Small Area Light	**LED**	**6L** - 6,000 lms **9L** - 9,000 lms **12L** - 12,000 lms **15L** - 15,000 lms **18L** - 18,000 lms **21L** - 21,000 lms **24L** - 24,000 lms Custom Lumen Packages[1]	**SIL** - Silicone	**2** - Type 2 **3** - Type 3 **5W** - Type 5 Wide **FT** - Forward Throw	**(blank)** - standard **L**- Optics rotated left 90° **R** - Optics rotated right 90°	**UNV** - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**DIM** - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT **40** - 4,000 CCT **30** - 3,000 CCT	**70CRI** - 70 CRI	**(Blank)** - None **Wireless Controls System** **ALSC** - AirLink Synapse Control System **ALSCS2** - AirLink Synapse Control System with 12-20' MH Motion Sensor **ALSCS4** - AirLink Synapse Control System with 20-40' MH Motion Sensor **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH) **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH) **Stand-Alone Controls** **EXT** - 0-10v Dimming leads extended to housing exterior **CR7P** - 7 Pin Control Receptacle ANSI C136.41 [3] **IMSBT1** - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[4] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[4]	**BLK** - Black **BRZ** - Dark Bronze **GMG** - Gun Metal Gray **GPT** - Graphite **MSV** - Metallic Silver **PLP** - Platinum Plus **SVG** - Satin Verde Green **WHT** - White	**(Blank)** - None **IH** - Integral Houseside Shield[2] **IL** - Integral Louver (Sharp Spill Light Cutoff)[2]

Accessory Ordering Information[5]

Controls Accessories

Description	Order Number
Twist Lock Photocell (120V) for use with CR7P	122514
Twist Lock Photocell (208-277) for use with CR7P	122515
Twist Lock Photocell (347V) for use with CR7P	122516
Twist Lock Photocell (480V) for use with CR7P	1225180
AirLink 5 Pin Twist Lock Controller	661409
AirLink 5 Pin Twist Lock Controller	661410
Pole-Mounted Occupancy Sensor (24V)	663284CLR[6]
Shorting Cap for use with CR7P	149328

Mounting Accessories

Description	Order Number[6]
Universal Mounting Bracket	684616CLR
Adjustable Slip Fitter (2" - 2 3/8" Tenon)	688138CLR
Horizontal Slip Fitter (2" - 2 3/8" Tenon)	652761CLR
Quick Mount Pole Bracket (Square Pole)	687073CLR
Quick Mount Pole Bracket (4-5" Round Pole)	689903CLR
15 Tilt Quick Mount Pole Bracket (Square Pole)	688003CLR
15 Tilt Quick Mount Pole Bracket (4-5" Round Pole)	689905CLR
Wall Mount Bracket	382132CLR

Fusing Options[7]

Description	Order Number
Single Fusing (120V)	See Fusing Accessory Guide
Single Fusing (277V)	
Double Fusing (208V, 240V)	
Double Fusing (480V)	
Double Fusing (347V)	

Shielding Options

Mirada Small	See Shielding Guide
Mirada Medium	
Mirada Large	
Zone Medium	
Zone Large	
Slice Medium	

Shielding & Miscellaneous Accessories

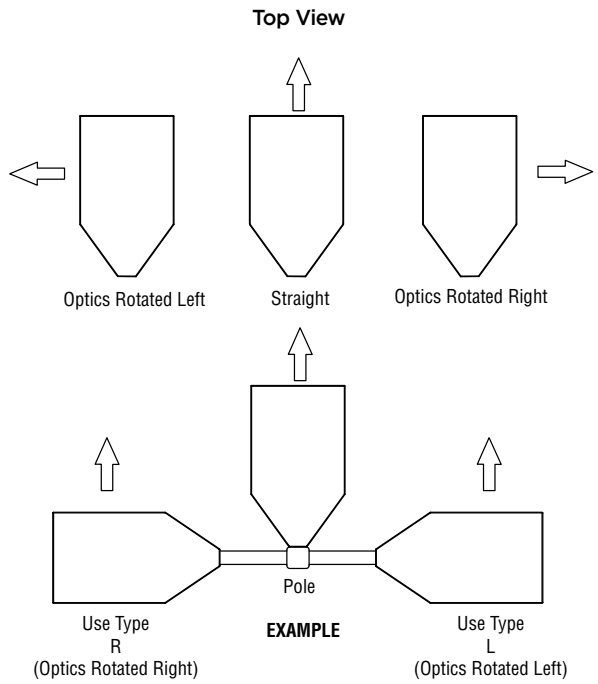
Description	Order Number
Integral Louver/Shield	763445
Internal Houseside Shield	763446
10' Linear Bird Spike Kit (2' Recommended per Luminaire)	751632

FOOTNOTES:
1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Not available on "Type 5W" distribution.
3. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
4. IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
5. Accessories are shipped separately and field installed.
6. "CLR" denotes finish. See Finish options.
7. Fusing must be located in hand hole of pole. See Fusing Accessory Guide for compatability.

Type: _____

Mirada Small Area Light (MRS)

OPTICS ROTATION



ACCESSORIES/OPTIONS

Integral Louver (IL) and House-Side Shield (IH)

Accessory louver and shield available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (L) and Integral House-Side Shield (IH) options deliver backlight control that significantly reduces spill light behind the poles for applications with pole locations close to adjacent properties. The design maximizes forward reflected light while reducing glare, maintaining the optical distribution selected, and most importantly eliminating light trespass. Both options rotate with the optical distribution.

Luminaire Shown with Integral Louver (IL)



Luminaire Shown with IMSBT Option



7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

Luminaire Shown with CR7P



Type: _____

Mirada Small Area Light (MRS)

Back to Quick Links

PERFORMANCE

Delivered Lumens*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
6L	2	70	6045	148	B2-U0-G1	6268	154	B2-U0-G1	6253	153	B2-U0-G1	41
	3		6145	151	B1-U0-G2	6372	156	B1-U0-G2	6357	156	B1-U0-G2	
	5W		5812	142	B3-U0-G1	6,026	148	B3-U0-G1	6012	147	B3-U0-G1	
	FT		5947	146	B1-U0-G1	6166	151	B1-U0-G1	6152	151	B1-U0-G1	
9L	2	70	9091	145	B2-U0-G2	9484	152	B2-U0-G2	9462	151	B2-U0-G2	63
	3		9241	148	B2-U0-G2	9641	154	B2-U0-G2	9619	154	B2-U0-G2	
	5W		8740	140	B3-U0-G2	9,118	146	B3-U0-G2	9097	144	B3-U0-G2	
	FT		8943	143	B2-U0-G2	9330	149	B2-U0-G2	9308	149	B2-U0-G2	
12L	2	70	12132	141	B3-U0-G2	12685	148	B3-U0-G2	12514	146	B3-U0-G2	86
	3		12333	143	B2-U0-G2	12894	150	B2-U0-G2	12721	148	B2-U0-G2	
	5W		11664	136	B4-U0-G2	12195	142	B4-U0-G2	12031	140	B4-U0-G2	
	FT		11935	139	B2-U0-G2	12479	145	B2-U0-G2	12311	143	B2-U0-G2	
15L	2	70	14220	128	B3-U0-G2	15167	137	B3-U0-G2	14488	131	B3-U0-G2	111
	3		14938	135	B2-U0-G2	15933	144	B2-U0-G2	15219	137	B2-U0-G2	
	5W		14304	129	B4-U0-G2	15257	137	B4-U0-G2	14574	131	B4-U0-G2	
	FT		14342	129	B2-U0-G2	15297	138	B2-U0-G2	14612	132	B2-U0-G2	
18L	2	70	16438	122	B3-U0-G3	17532	130	B3-U0-G3	16747	124	B3-U0-G3	135
	3		17267	128	B3-U0-G3	18417	137	B3-U0-G3	17592	131	B3-U0-G3	
	5W		16535	123	B4-U0-G2	17636	133	B5-U0-G3	16846	125	B4-U0-G2	
	FT		16578	123	B3-U0-G3	17682	131	B3-U0-G3	16890	125	B3-U0-G3	
21L	2	70	19488	118	B3-U0-G3	20786	126	B3-U0-G3	19885	120	B3-U0-G3	165
	3		20472	124	B3-U0-G3	21835	132	B3-U0-G3	20857	126	B3-U0-G3	
	5W		19604	119	B5-U0-G3	20,909	126	B5-U0-G3	19973	121	B5-U0-G3	
	FT		19655	119	B3-U0-G4	20964	127	B3-U0-G4	20025	121	B3-U0-G4	
24L	2	70	21976	112	B3-U0-G3	23439	120	B3-U0-G3	22390	114	B3-U0-G3	196
	3		23085	118	B3-U0-G3	24622	126	B3-U0-G3	23519	120	B3-U0-G3	
	5W		22105	113	B5-U0-G3	23578	120	B5-U0-G3	22522	115	B5-U0-G3	
	FT		22164	113	B3-U0-G3	23640	121	B3-U0-G3	22581	115	B3-U0-G3	

*LEDs are frequently updated therefore values are nominal.

ELECTRICAL DATA (AMPS)*

Lumens	120V	208V	240V	277V	347V	480V
6L	0.34	0.20	0.17	0.15	0.12	0.09
9L	0.52	0.30	0.26	0.23	0.18	0.13
12L	0.72	0.41	0.36	0.31	0.25	0.18
15L	0.93	0.53	0.46	0.40	0.32	0.23
18L	1.12	0.65	0.56	0.49	0.39	0.28
21L	1.38	0.80	0.69	0.60	0.48	0.34
24L	1.63	0.94	0.82	0.71	0.56	0.41

*Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

RECOMMENDED LUMEN MAINTENANCE[1]

Ambient Temp	Lumen Multiplier				
C	0 hrs.[2]	25K hrs.[2]	50K hrs.[2]	75K hrs.[3]	100K hrs.[3]
0 C - 25 C	100%	95%	89%	84%	79%
40 C	100%	94%	87%	80%	74%

FOOTNOTES:
1. Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

Type: _____

Mirada Small Area Light (MRS)

PHOTOMETRICS

Back to Quick Links

Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. As specified by IESNA LM-79-08 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

See http://www.lsi-industries.com/products/led-lighting-solutions.aspx for detailed photometric data.

MRS-LED-18L-SIL-2-40-70CRI

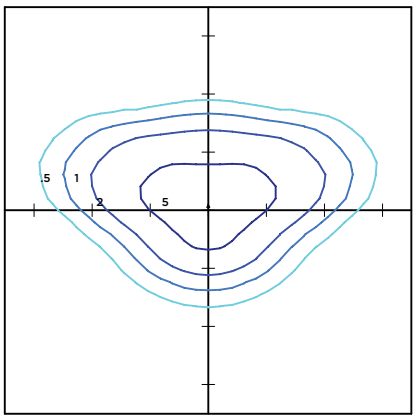
LUMINAIRE DATA

Type 2 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,532
Watts	135
Efficacy	130
IES Type	Type II - Short
BUG Rating	B3-U0-G3

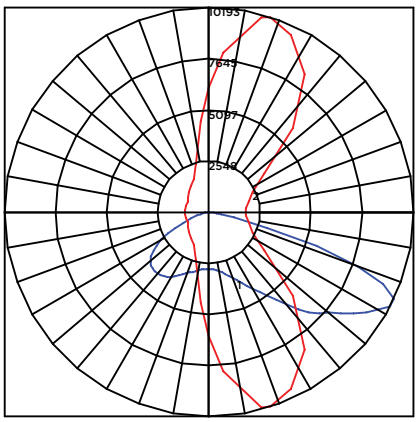
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2831	16%
Medium (30-60)°	10310	59%
High (60-80)°	4208	24%
Very High (80-90)°	184	1%
Uplight (90-180)°	0	0%
Total Flux	17532	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

MRS-LED-18L-SIL-3-40-70CRI

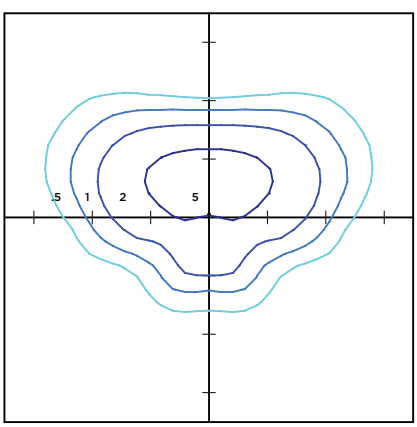
LUMINAIRE DATA

Type 3 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,417
Watts	135
Efficacy	137
IES Type	Type III - Short
BUG Rating	B3-U0-G3

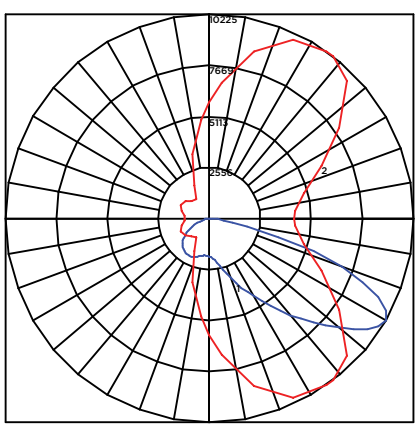
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2329	13%
Medium (30-60)°	10634	61%
High (60-80)°	5246	30%
Very High (80-90)°	208	1%
Uplight (90-180)°	0	0%
Total Flux	18417	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Type: _____

Mirada Small Area Light (MRS)

PHOTOMETRICS (CONT)

MRS-LED-18L-SIL-FT-40-70CRI

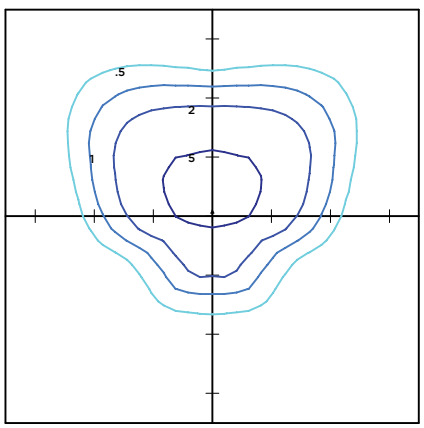
LUMINAIRE DATA

Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,682
Watts	135
Efficacy	131
IES Type	Type III - Short
BUG Rating	B3-U0-G2

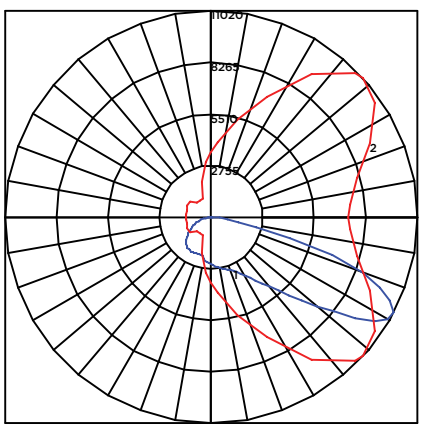
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2255	13%
Medium (30-60)°	9463	54%
High (60-80)°	5696	32%
Very High (80-90)°	268	2%
Uplight (90-180)°	0	0%
Total Flux	17682	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

MRM-LED-30L-SIL-5W-40-70CRI

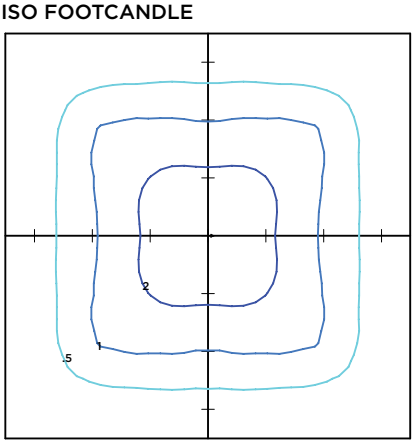
LUMINAIRE DATA

Type 5W Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,636
Watts	135
Efficacy	131
IES Type	Type VS - Short
BUG Rating	B4-U0-G2

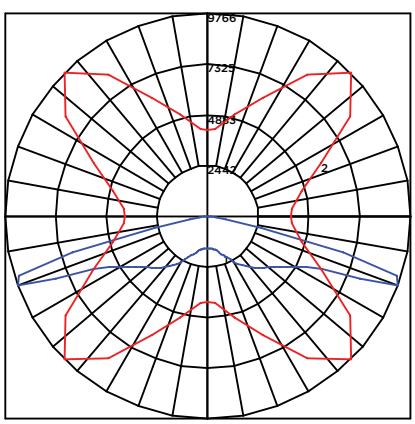
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	1646	9%
Medium (30-60)°	7453	43%
High (60-80)°	8405	48%
Very High (80-90)°	132	1%
Uplight (90-180)°	0	0%
Total Flux	17636	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

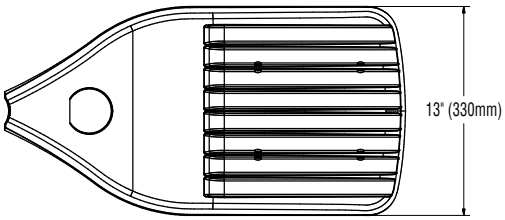
5 FC 2 FC 1 FC 0.5 FC

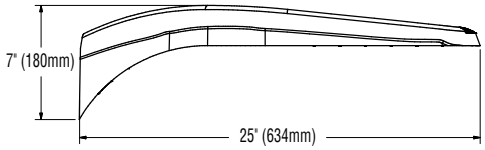
Type: _____

Mirada Small Area Light (MRS)

Back to Quick Links

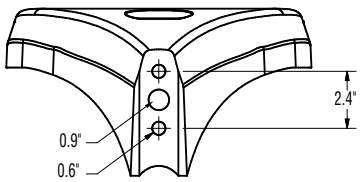
PRODUCT DIMENSIONS





LUMINAIRE EPA CHART - MRS

Tilt Degree		0°	30°	45°	Tilt Degree		0°	30°	45°
	Single	0.5	1.3	1.8		T90°	1.4	2.3	2.6
	D180°	0.9	1.3	1.8		TN120°	1.4	1.9	2.3
	D90°	0.9	1.8	2.2		Q90°	1.4	2.3	2.6



B3 Drill Pattern

CONTROLS

AirLink Wireless Lighting Controller

The AirLink integrated controller is a California Title 24 compliant lighting controller that provides real-time light monitoring and control with utility-grade power monitoring. It includes a 24V sensor input and power supply to connect a sensor into the outdoor AirLink wireless lighting system. The wireless integrated controller is compatible with this fixture.

Click here to learn more about AirLink.

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more about IMSBT.

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more about AirLink Blue.

Type: _____

Mirada Small Area Light (MRS)

POLES & BRACKETS

LSI offers a full line of poles and mounting accessories to complete your lighting assembly. Aluminum and steel in both square and round shafts. In addition, LSI offers round tapered, fluted and hinge based poles. Designed and engineered for durability and protected with our oven baked DuraGrip Protection System. Also available with our DuraGrip+ Protection system for unmatched corrosion resistance and an extended warranty. American made in our Ohio facility with industry leading lead times.

Click here to learn more details about poles & brackets.



BKA UMB CLR

The 3G rated UMB allows for seamless integration of LSI luminaires onto existing/ retrofit or new construction poles. The UMB was designed for square or round (tapered or straight) poles with two mounting hole spacings between 3.5" – 5".



BKA ASF CLR

The adjustable Slip Fitter is a 3G rated rugged die cast aluminum adapter to mount LSI luminaires onto a onto a 2" iron pipe , 2 3/8 OD tenon. The Adjustable Slip Fitter can be rotated 180° allowing for tilting LSI luminaires up to 45° and 90° when using a vertical tenon.



BKS PQM15 CLR

The Pole Quick Mount Bracket allows for preset 15° uptilt of LSI luminaires for greater throw of light and increased vertical illumination as well as fast installation onto poles with LSI's 3" or 5" bolt pattern.



BKS PQMH CLR

The Pole Quick Mount Bracket allows for lightning fast installation of LSI luminaires onto existing and new construction poles with LSI's B3 or B5 standard pole bolt patterns.



Square Pole
14'-39'



Round Pole
10'-30'



Tapered Pole
20'-39'

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08



OVERVIEW	
Lumen Package	6,000 - 24,000
Wattage Range	41 - 196
Efficacy Range (LPW)	112 - 156
Fixture Weight lbs (kg)	20 (9.1)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 5W, and FT.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and house-side shield (IH) options available for improved backlight control without sacrificing street side performance. See page 3 for more details.

Electrical

- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 mechanical impact code
- DesignLights Consortium® Listings in progress.

Specifications and dimensions subject to change without notice.

Type: _____

Mirada Small Area Light (MRS)

Back to Quick Links

ORDERING GUIDE

TYPICAL ORDER EXAMPLE: **MRS LED 18L SIL FT UNV DIM 40 70CRI ALBCS1 BLK IH**

Luminaire Prefix	Light Source	Lumen Package	Lens	Distribution	Orientation[2]	Voltage	Driver
MRS - Mirada Small Area Light	**LED**	**6L** - 6,000 lms **9L** - 9,000 lms **12L** - 12,000 lms **15L** - 15,000 lms **18L** - 18,000 lms **21L** - 21,000 lms **24L** - 24,000 lms Custom Lumen Packages[1]	**SIL** - Silicone	**2** - Type 2 **3** - Type 3 **5W** - Type 5 Wide **FT** - Forward Throw	**(blank)** - standard **L**- Optics rotated left 90° **R** - Optics rotated right 90°	**UNV** - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**DIM** - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT **40** - 4,000 CCT **30** - 3,000 CCT	**70CRI** - 70 CRI	**(Blank)** - None **Wireless Controls System** **ALSC** - AirLink Synapse Control System **ALSCS2** - AirLink Synapse Control System with 12-20' MH Motion Sensor **ALSCS4** - AirLink Synapse Control System with 20-40' MH Motion Sensor **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH) **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH) **Stand-Alone Controls** **EXT** - 0-10v Dimming leads extended to housing exterior **CR7P** - 7 Pin Control Receptacle ANSI C136.41 [3] **IMSBT1** - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[4] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[4]	**BLK** - Black **BRZ** - Dark Bronze **GMG** - Gun Metal Gray **GPT** - Graphite **MSV** - Metallic Silver **PLP** - Platinum Plus **SVG** - Satin Verde Green **WHT** - White	**(Blank)** - None **IH** - Integral Houseside Shield[2] **IL** - Integral Louver (Sharp Spill Light Cutoff)[2]

Accessory Ordering Information[5]

Controls Accessories

Description	Order Number
Twist Lock Photocell (120V) for use with CR7P	122514
Twist Lock Photocell (208-277) for use with CR7P	122515
Twist Lock Photocell (347V) for use with CR7P	122516
Twist Lock Photocell (480V) for use with CR7P	1225180
AirLink 5 Pin Twist Lock Controller	661409
AirLink 5 Pin Twist Lock Controller	661410
Pole-Mounted Occupancy Sensor (24V)	663284CLR[6]
Shorting Cap for use with CR7P	149328

Mounting Accessories

Description	Order Number[6]
Universal Mounting Bracket	684616CLR
Adjustable Slip Fitter (2" - 2 3/8" Tenon)	688138CLR
Horizontal Slip Fitter (2" - 2 3/8" Tenon)	652761CLR
Quick Mount Pole Bracket (Square Pole)	687073CLR
Quick Mount Pole Bracket (4-5" Round Pole)	689903CLR
15 Tilt Quick Mount Pole Bracket (Square Pole)	688003CLR
15 Tilt Quick Mount Pole Bracket (4-5" Round Pole)	689905CLR
Wall Mount Bracket	382132CLR

Fusing Options[7]

Description	Order Number
Single Fusing (120V)	See Fusing Accessory Guide
Single Fusing (277V)	
Double Fusing (208V, 240V)	
Double Fusing (480V)	
Double Fusing (347V)	

Shielding Options

Mirada Small	See Shielding Guide
Mirada Medium	
Mirada Large	
Zone Medium	
Zone Large	
Slice Medium	

Shielding & Miscellaneous Accessories

Description	Order Number
Integral Louver/Shield	763445
Internal Houseside Shield	763446
10' Linear Bird Spike Kit (2' Recommended per Luminaire)	751632

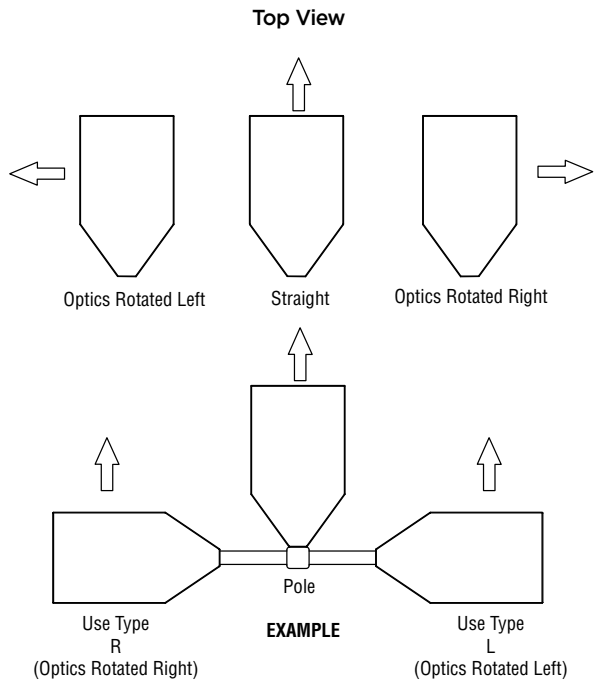
FOOTNOTES:
1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Not available on "Type 5W" distribution.
3. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
4. IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
5. Accessories are shipped separately and field installed.
6. "CLR" denotes finish. See Finish options.
7. Fusing must be located in hand hole of pole. See Fusing Accessory Guide for compatability.

©2020 LSI Industries Inc. All Rights Reserved. Specifications subject to change without notice.

Type: _____

Mirada Small Area Light (MRS)

OPTICS ROTATION



ACCESSORIES/OPTIONS

Integral Louver (IL) and House-Side Shield (IH)

Accessory louver and shield available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (L) and Integral House-Side Shield (IH) options deliver backlight control that significantly reduces spill light behind the poles for applications with pole locations close to adjacent properties. The design maximizes forward reflected light while reducing glare, maintaining the optical distribution selected, and most importantly eliminating light trespass. Both options rotate with the optical distribution.

Luminaire Shown with Integral Louver (IL)



Luminaire Shown with IMSBT Option



7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

Luminaire Shown with CR7P



Type: _____

Mirada Small Area Light (MRS)

Back to Quick Links

PERFORMANCE

Delivered Lumens*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
6L	2	70	6045	148	B2-U0-G1	6268	154	B2-U0-G1	6253	153	B2-U0-G1	41
	3		6145	151	B1-U0-G2	6372	156	B1-U0-G2	6357	156	B1-U0-G2	
	5W		5812	142	B3-U0-G1	6,026	148	B3-U0-G1	6012	147	B3-U0-G1	
	FT		5947	146	B1-U0-G1	6166	151	B1-U0-G1	6152	151	B1-U0-G1	
9L	2	70	9091	145	B2-U0-G2	9484	152	B2-U0-G2	9462	151	B2-U0-G2	63
	3		9241	148	B2-U0-G2	9641	154	B2-U0-G2	9619	154	B2-U0-G2	
	5W		8740	140	B3-U0-G2	9,118	146	B3-U0-G2	9097	144	B3-U0-G2	
	FT		8943	143	B2-U0-G2	9330	149	B2-U0-G2	9308	149	B2-U0-G2	
12L	2	70	12132	141	B3-U0-G2	12685	148	B3-U0-G2	12514	146	B3-U0-G2	86
	3		12333	143	B2-U0-G2	12894	150	B2-U0-G2	12721	148	B2-U0-G2	
	5W		11664	136	B4-U0-G2	12195	142	B4-U0-G2	12031	140	B4-U0-G2	
	FT		11935	139	B2-U0-G2	12479	145	B2-U0-G2	12311	143	B2-U0-G2	
15L	2	70	14220	128	B3-U0-G2	15167	137	B3-U0-G2	14488	131	B3-U0-G2	111
	3		14938	135	B2-U0-G2	15933	144	B2-U0-G2	15219	137	B2-U0-G2	
	5W		14304	129	B4-U0-G2	15257	137	B4-U0-G2	14574	131	B4-U0-G2	
	FT		14342	129	B2-U0-G2	15297	138	B2-U0-G2	14612	132	B2-U0-G2	
18L	2	70	16438	122	B3-U0-G3	17532	130	B3-U0-G3	16747	124	B3-U0-G3	135
	3		17267	128	B3-U0-G3	18417	137	B3-U0-G3	17592	131	B3-U0-G3	
	5W		16535	123	B4-U0-G2	17636	133	B5-U0-G3	16846	125	B4-U0-G2	
	FT		16578	123	B3-U0-G3	17682	131	B3-U0-G3	16890	125	B3-U0-G3	
21L	2	70	19488	118	B3-U0-G3	20786	126	B3-U0-G3	19885	120	B3-U0-G3	165
	3		20472	124	B3-U0-G3	21835	132	B3-U0-G3	20857	126	B3-U0-G3	
	5W		19604	119	B5-U0-G3	20,909	126	B5-U0-G3	19973	121	B5-U0-G3	
	FT		19655	119	B3-U0-G4	20964	127	B3-U0-G4	20025	121	B3-U0-G4	
24L	2	70	21976	112	B3-U0-G3	23439	120	B3-U0-G3	22390	114	B3-U0-G3	196
	3		23085	118	B3-U0-G3	24622	126	B3-U0-G3	23519	120	B3-U0-G3	
	5W		22105	113	B5-U0-G3	23578	120	B5-U0-G3	22522	115	B5-U0-G3	
	FT		22164	113	B3-U0-G3	23640	121	B3-U0-G3	22581	115	B3-U0-G3	

*LEDs are frequently updated therefore values are nominal.

ELECTRICAL DATA (AMPS)*

Lumens	120V	208V	240V	277V	347V	480V
6L	0.34	0.20	0.17	0.15	0.12	0.09
9L	0.52	0.30	0.26	0.23	0.18	0.13
12L	0.72	0.41	0.36	0.31	0.25	0.18
15L	0.93	0.53	0.46	0.40	0.32	0.23
18L	1.12	0.65	0.56	0.49	0.39	0.28
21L	1.38	0.80	0.69	0.60	0.48	0.34
24L	1.63	0.94	0.82	0.71	0.56	0.41

*Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

RECOMMENDED LUMEN MAINTENANCE[1]

Ambient Temp	Lumen Multiplier				
C	0 hrs.[2]	25K hrs.[2]	50K hrs.[2]	75K hrs.[3]	100K hrs.[3]
0 C - 25 C	100%	95%	89%	84%	79%
40 C	100%	94%	87%	80%	74%

FOOTNOTES:
1. Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

Type: _____

Mirada Small Area Light (MRS)

PHOTOMETRICS

Back to Quick Links

Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. As specified by IESNA LM-79-08 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

See http://www.lsi-industries.com/products/led-lighting-solutions.aspx for detailed photometric data.

MRS-LED-18L-SIL-2-40-70CRI

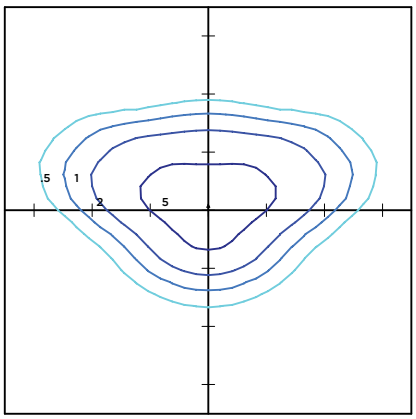
LUMINAIRE DATA

Type 2 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,532
Watts	135
Efficacy	130
IES Type	Type II - Short
BUG Rating	B3-U0-G3

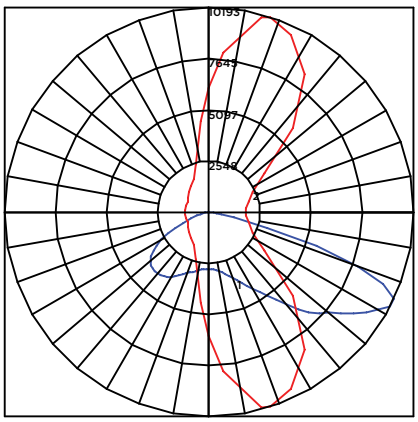
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2831	16%
Medium (30-60)°	10310	59%
High (60-80)°	4208	24%
Very High (80-90)°	184	1%
Uplight (90-180)°	0	0%
Total Flux	17532	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

MRS-LED-18L-SIL-3-40-70CRI

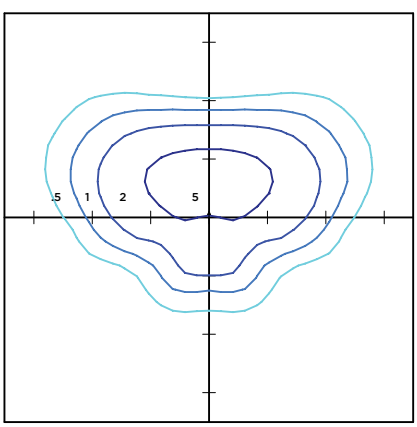
LUMINAIRE DATA

Type 3 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,417
Watts	135
Efficacy	137
IES Type	Type III - Short
BUG Rating	B3-U0-G3

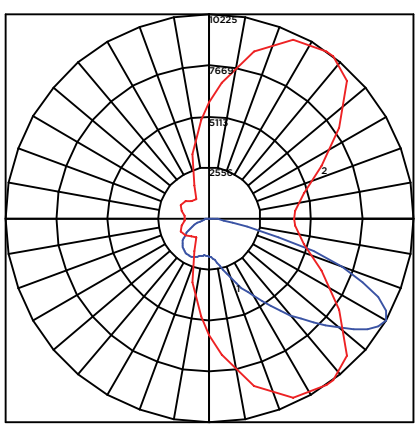
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2329	13%
Medium (30-60)°	10634	61%
High (60-80)°	5246	30%
Very High (80-90)°	208	1%
Uplight (90-180)°	0	0%
Total Flux	18417	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Type: _____

Mirada Small Area Light (MRS)

PHOTOMETRICS (CONT)

MRS-LED-18L-SIL-FT-40-70CRI

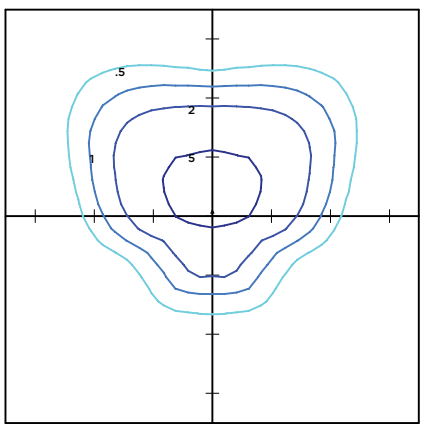
LUMINAIRE DATA

Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,682
Watts	135
Efficacy	131
IES Type	Type III - Short
BUG Rating	B3-U0-G2

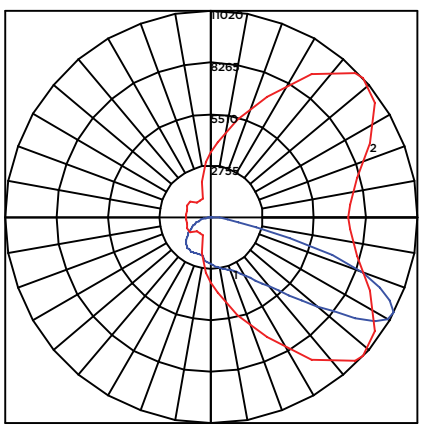
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	2255	13%
Medium (30-60)°	9463	54%
High (60-80)°	5696	32%
Very High (80-90)°	268	2%
Uplight (90-180)°	0	0%
Total Flux	17682	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

MRM-LED-30L-SIL-5W-40-70CRI

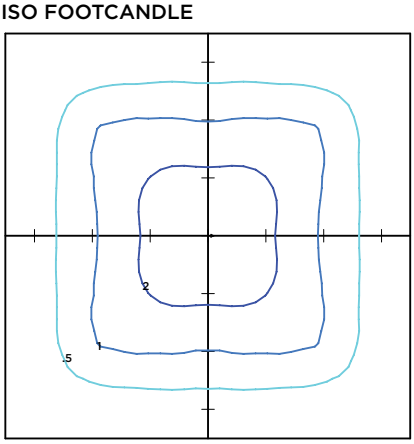
LUMINAIRE DATA

Type 5W Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,636
Watts	135
Efficacy	131
IES Type	Type VS - Short
BUG Rating	B4-U0-G2

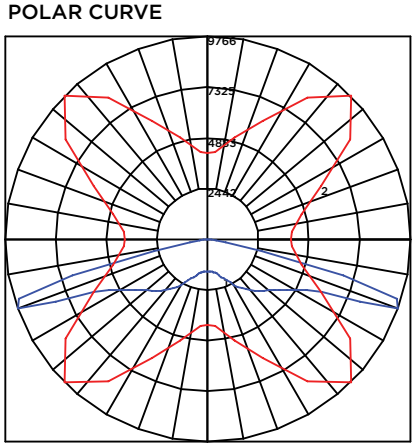
Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30)°	1646	9%
Medium (30-60)°	7453	43%
High (60-80)°	8405	48%
Very High (80-90)°	132	1%
Uplight (90-180)°	0	0%
Total Flux	17636	100%

ISO FOOTCANDLE



POLAR CURVE



20' Mounting Height/20' Grid Spacing

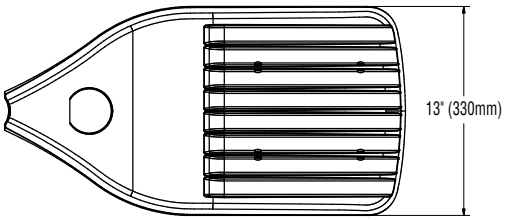
5 FC 2 FC 1 FC 0.5 FC

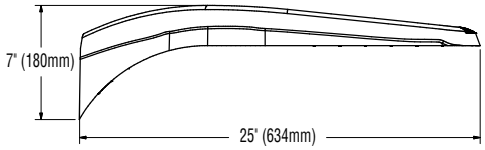
Type: _____

Mirada Small Area Light (MRS)

Back to Quick Links

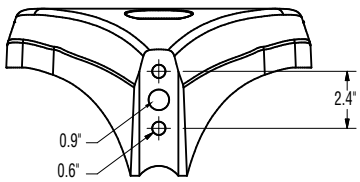
PRODUCT DIMENSIONS





LUMINAIRE EPA CHART - MRS

Tilt Degree		0°	30°	45°	Tilt Degree		0°	30°	45°
	Single	0.5	1.3	1.8		T90°	1.4	2.3	2.6
	D180°	0.9	1.3	1.8		TN120°	1.4	1.9	2.3
	D90°	0.9	1.8	2.2		Q90°	1.4	2.3	2.6



B3 Drill Pattern

CONTROLS

AirLink Wireless Lighting Controller

The AirLink integrated controller is a California Title 24 compliant lighting controller that provides real-time light monitoring and control with utility-grade power monitoring. It includes a 24V sensor input and power supply to connect a sensor into the outdoor AirLink wireless lighting system. The wireless integrated controller is compatible with this fixture.

Click here to learn more about AirLink.

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more about IMSBT.

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more about AirLink Blue.

Type: _____

Mirada Small Area Light (MRS)

POLES & BRACKETS

LSI offers a full line of poles and mounting accessories to complete your lighting assembly. Aluminum and steel in both square and round shafts. In addition, LSI offers round tapered, fluted and hinge based poles. Designed and engineered for durability and protected with our oven baked DuraGrip Protection System. Also available with our DuraGrip+ Protection system for unmatched corrosion resistance and an extended warranty. American made in our Ohio facility with industry leading lead times.

Click here to learn more details about poles & brackets.



BKA UMB CLR

The 3G rated UMB allows for seamless integration of LSI luminaires onto existing/ retrofit or new construction poles. The UMB was designed for square or round (tapered or straight) poles with two mounting hole spacings between 3.5" – 5".



BKA ASF CLR

The adjustable Slip Fitter is a 3G rated rugged die cast aluminum adapter to mount LSI luminaires onto a onto a 2" iron pipe , 2 3/8 OD tenon. The Adjustable Slip Fitter can be rotated 180° allowing for tilting LSI luminaires up to 45° and 90° when using a vertical tenon.



BKS PQM15 CLR

The Pole Quick Mount Bracket allows for preset 15° uptilt of LSI luminaires for greater throw of light and increased vertical illumination as well as fast installation onto poles with LSI's 3" or 5" bolt pattern.



BKS PQMH CLR

The Pole Quick Mount Bracket allows for lightning fast installation of LSI luminaires onto existing and new construction poles with LSI's B3 or B5 standard pole bolt patterns.



Square Pole
14'-39'



Round Pole
10'-30'



Tapered Pole
20'-39'

Catalog # :	Project :
Prepared By :	Date :

CPG Series
LED Compact Parking Garage



The LSI CPG LED Compact Parking Garage Series is designed to optimize LED life and light output. Housing is hinged for quick and easy mounting and entrance. Using high brightness, high LED count technology, more usable light output is produced while eliminating glare.

Features & Specifications

Optical System

- The optics have been engineered specifically for parking garage applications. The distribution pattern has been created to optimize fixture spacing and reduce fixture counts while delivering improved visual comfort and eliminating glare.
- Lens assembly is designed to provide high efficiency and to target the light where needed to satisfy parking garage requirements.
- Positioning of the LEDs result in the light being directed to desired locations eliminating glare.
- 3000K | 4000K | 5000K color temperatures.
- Minimum CRI of 80.
- L70 Calculated Life: >200k Hours

Electrical

- High-performance driver features over-voltage, under voltage, short-circuit and over temperature protection.
- 0-10 volt dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz
- Total harmonic distortion: <20%
- Power factor: >.85
- Driver Off-State Power is 0 watts.
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.
- Minimum 4kV surge rating

Controls

Wireless Controls System

To make Airlink ready, order one of the following options:

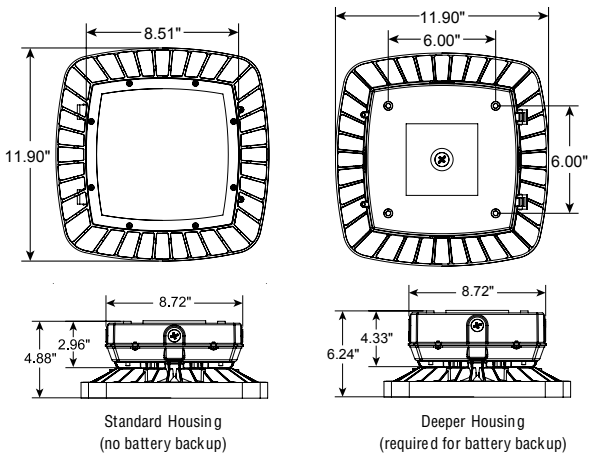
a. The integrated Wireless Lighting Controller: ALSC (see ordering guide) as the controls option, or

b. Integrated Wireless Controller option (above) with integrated motion sensor: ALSCS (ordering guide for mounting heights)

For more information on our AirLink products, visit our website:
www.lsi airlink.com/airlink-synapse/

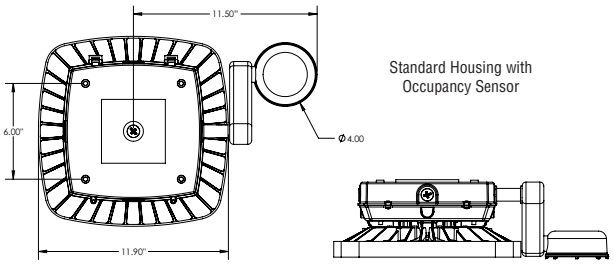
c UL us LISTED

Dimensions



Standard Housing
(no battery backup)

Deeper Housing
(required for battery backup)



Standard Housing with Occupancy Sensor

CPG Series
LED Compact Parking Garage

Features & Specifications (Cont.)

Stand Alone Controls

- The passive infrared motion sensor activates switching of luminaire light levels.

Construction

- Rugged aluminum die cast housing provides proven environmental protection for LED modules.
- Designed for commercial and industrial applications.
- Patent pending thermal stacking technology features a unique internal design that allows for lower operating temperatures which results in a brighter, whiter light, more stable color and longer LED and driver life.
- LSI LEDs provide higher lumen output, greater energy efficiency and more reliable fixture performance.
- LEDs manufactured for the CPG series utilize Epoxy Guard conformal coating which reduces the chance of board corrosion.
- Weight: 10.0 lbs in carton.

Warranty

- LSI LED Fixtures carry a 5-year warranty.

Listings

- CSA listed to UL 1598 and UL 8750.
- Luminaire is certified to UL/cUL Standards for Damp Locations.
- IDA Listed (3000K or warmer CCT)
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product DLC qualified. Check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Installation:

- Apertures for continuous wiring.
- Housing is hinged for quick and easy mounting and entrance.
- Can be pendant mounted using 1/2" threaded conduit fitting (by other).

Performance

Lumens	3000K		4000K		5000K		Wattage
	Delivered Lumens	Efficacy	Delivered Lumens	Efficacy	Delivered Lumens	Efficacy	
3L	3387	138.16	3387	138.16	3524	143.57	25
5L	5528	134.18	5528	134.18	5717	137.61	40
7L	7693	129.69	7693	129.69	7898	131.28	60
10L	9830	123.54	9830	123.54	10030	123.63	80

Energy Savings

LED		HID			
Wattage	Annual Cost	Source Wattage	Total Wattage Used	Annual Cost	Annual Savings
25	$11	50	72	$52	$41
		70	90	$59	$48
		100	129	$77	$66
40	$18	100	129	$77	$59
		150	185	$100	$82
		175	210	$112	$94
60	$26	200	232	$128	$102
		250	285	$150	$124
		400	458	$226	$200
80	$35	200	232	$128	$93
		250	285	$150	$115
		400	458	$226	$191

Luminaire Ordering Guide

TYPICAL ORDER EXAMPLE: **CPG LED 7L CA W UNV DIM 40 BZA**

Family Prefix	Lumen Package	Lens Type	Distribution	Voltage	Dimming	Color Temp	Color Rendering	Options / Controls	Finishes
CPG LED - Compact Parking Garage Series	3L = 3,000 Lumens	CA = Clear Acrylic	W = Wide	UNV = Universal (120V-277V)	DIM = Dim to 10% (0 to 10V)	30 = 3000K	Blank = 80 Color Rendering Index	ALSC - Airlink Synapse Wireless Digital Controller[1]	BZA = Bronze
	5L = 5,000 Lumens					40 = 4000K		ALSCS1 - Airlink Synapse Wireless Digital Controller with Sensor (mounting 8 to 12 feet)[1]	WHT = White
	7L = 7,000 Lumens			HV = High Voltage (347v-480V)		50 = 5000K		ALSCS2 - Airlink Synapse Wireless Digital Controller with Sensor (mounting 12 to 20 feet)[1]	
	10L = 10,000 Lumens							OCSUE - Occupancy Sensor, white housing 120-277V[2]	
								OCSHV - Occupancy Sensor, white housing 480V[2]	
								Ext - 0-10V Dimming leads extended to housing exterior[2]	
								CWBB - Cold Weather Battery Backup -20°C to 50°C (-4°F to 122°F (requires deeping housing)	
								SP = Surge Protection	

Footnotes:
1 - Consult factory for HV with AirLink Synapse Wireless Digital Controller
2 - Not compatible with AirLink Synapse Wireless Controls.

 ©LSI Industries Inc. All Rights Reserved.

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

Opulence Small Pendant & Surface Mount (OPS)

Outdoor Pendant & Surface Mount Luminaire

IP66



OVERVIEW	
Lumen Output Range	3,000 -14,000
Wattage	22 - 103
Efficacy Range (LPW)	95 - 168
Fixture Weight lbs (kg)	16 (7.3)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing.
- Architecturally pleasing with no visible electronics, hardware, or seams from ground level.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Optional spun aluminum shroud provides a streamlined transition from stem to luminaire while also deterring nesting (3/4" stem/pendant only).

Optical System

- High density LED optical system delivers industry leading optical performance and visual comfort.
- 7 distribution types 3W, 4F, 5Q, 5C, 5R, 5D & AD
- Diffused lens version provides maximum visual comfort with reduced brightness and LED pixelization.
- Zero uplight.
- Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANSI C78.377.
- Minimum CRI of 80

Electrical

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection (6kV surge standard).
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +40°C (-40°F to +104°F).
- Power factor: >.90
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Integral passive infrared Bluetooth™ motion and photocell sensor options. Fixtures operate independently and can be commissioned via an iOS or Android configuration app.
- LSI's AirLink™ Blue lighting control system is a simple feature rich wireless Bluetooth mesh network. The integrated fixture sensor module provides wireless control of grouped fixtures based on motion sensors, daylight or a fully customizable schedule. Updates and modifications to the control strategy are easily implemented via an intuitive iOS app.

Installation

- Pendant mounting via rigid 3/4" stem (order stem seperately), 6' wire leads provided.
- Direct/surface mounts to a 4" (102mm) square or octagon box (box by others).
- Hinged 16ga galvanized mounting bracket provided for ease of installation and maintenance.
- Optional stainless steel crown for mounting to 2" tenon (order tenon seperately). Wire leads pass through compression seal fitting to prevent water entry. Once-piece silicone gasket provides water and dust tight seal.
- For wall mount arm please reference OPS wall mount spec sheet.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K and warmer color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Specifications and dimensions subject to change without notice.

Type: _____

Opulence Small Pendant & Surface Mount

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **OPS PD 8L 5Q UNV 40K8 BLK ALBCS1**

Prefix	Mounting	Lumen Package	Distribution	Uplight
OPS - Opulance Small	**PD** - Pendant **SD** - Surface/Direct[2]	**3L** - 3,000 Lumens **5L** - 5,000 Lumens **6L** - 6,000 Lumens **8L** - 8,000 Lumens **10L** - 10,000 Lumens **12L** - 12,000 Lumens **14L** - 14,000 Lumens	**5Q** - Type 5 Square **5C** - Type 5 Concentrated **5R** - Type 5 Rectangular **3W** - Type 3 (Wide Throw) **4F** - Type 4 (Forward Throw) **5D** - Type 5 Diffused **AD** - Asymmetric Diffused	(Blank) - None **U** - Uplight Module (5% Uplight) **U1** - Uplight Module (10% Uplight)

Voltage	Color Temp	Finish	Controls	Options
UNV - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**50K8** - 5,000K CCT - 80 CRI **40K8** - 4,000K CCT - 80 CRI **35K8** - 3,500K CCT - 80 CRI **30K8** - 3,000K CCT - 80 CRI **27K8** - 2,700K CCT - 80 CRI	**BRZ** - Dark Bronze **BLK** - Black **GPT** - Graphite **GMG** - Gun Metal Gray **MSV** - Metallic Silver **PLP** - Platinum Plus **WHT** - White	**(Blank)** - None **Wireless Controls System** **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH) **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH) **Stand-Alone Controls** **EXT** - 0-10v Dimming leads extended to housing exterior **IMSBT1** - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[3] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[3]	**(Blank)** - None **BB** - Battery Back-up (0°C)[1] **CWBB** - Cold Weather Battery Back-up (-20°C)[1] **TNA** - 2" Tenon Adapter (PD Only)[2] **SP1** - 10kV Surge Protection Device

Accessory Ordering Information

MOUNTING ACCESSORIES[4]	
Description	**Order Number**
Single Classic Hook (3/4" Stem)	BK SH S 34 CLR
2@180° Classic Hook (3/4" Stem)	BK CH D180 34 CLR
2' Gooseneck Wall Bracket, A Style (3/4" Stem)	GB-A-34 CLR
2' Gooseneck Wall Bracket, H Style (3/4" Stem)	GB-H-34 CLR
1' Gooseneck Wall Bracket, K Style (3/4" Stem)	GB-K-34 CLR
Contemorary Wall Bracket 1 (3/4" Stem)	CWBM 1 CLR
Contemorary Wall Bracket 2 (3/4" Stem)	CWBM 2 CLR
Single Classic Hook (2" Tenon) [1]	XDLS/XDLM BK CH S CLR
2@180° Classic Hook (2" Tenon) [1]	XDLS/XDLN BK CH D180 CLR
Spun Aluminium Decorative Shroud & Bird Guard (3/4" Stem) [1]	770846CLR
Translucent Decorative Shroud & Bird Guard (For Uplight Versions)	770847
3/4"(19mm) Top Decorative Box Cover Aligner	BC600 3 CLR
3/4"(19mm) Top Round Box Cover Aligner	BC585 CLR
3/4"(19mm) Top Square Box Cover Aligner	BC585SQ CLR
3/4" Rigid Stem (specify stem length: 6, 12, 18, 24, 36, 48 inches)	ST _ 3 CLR

FOOTNOTES:
1 - Consult Factory for 347-480V.
2 - Not available with uplight
3 - IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
4 - "CLR" denotes finish. See Finish options.

Type: _____

Opulence Small Pendant & Surface Mount

PERFORMANCE

Back to Quick Links

DELIVERED LUMENS (OPS)*

Lumen Package	Distribution	CRI	2700K CCT			3000K CCT			3500K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
3L	5Q	80	3151	144	B2-U0-G1	3297	151	B2-U0-G1	3444	157	B2-U0-G1	3590	164	B2-U0-G1	3590	164	B2-U0-G1	22
	5C		3230	148	B2-U0-G0	3380	154	B2-U0-G0	3530	161	B2-U0-G0	3680	168	B2-U0-G0	3680	168	B2-U0-G0	
	5R		3088	141	B2-U0-G2	3231	148	B2-U0-G2	3375	154	B2-U0-G2	3518	161	B2-U0-G2	3518	161	B2-U0-G2	
	4F		2993	137	B1-U0-G1	3132	143	B1-U0-G1	3271	149	B1-U0-G1	3411	156	B1-U0-G1	3411	156	B1-U0-G1	
	3W		3119	143	B1-U0-G1	3264	149	B1-U0-G1	3409	156	B1-U0-G1	3554	162	B1-U0-G1	3554	162	B1-U0-G1	
	5D		2426	111	B1-U0-G1	2539	116	B1-U0-G1	2652	121	B1-U0-G1	2764	126	B1-U0-G1	2764	126	B1-U0-G1	
5L	5Q	80	4359	144	B3-U0-G1	4561	151	B3-U0-G1	4764	157	B3-U0-G1	4966	164	B3-U0-G1	4966	164	B3-U0-G1	30
	5C		4468	148	B2-U0-G0	4675	154	B2-U0-G0	4883	161	B2-U0-G0	5090	168	B2-U0-G0	5090	168	B2-U0-G0	
	5R		4272	141	B2-U0-G2	4470	148	B2-U0-G2	4668	154	B2-U0-G2	4867	161	B2-U0-G2	4867	161	B2-U0-G2	
	4F		4141	137	B1-U0-G1	4333	143	B1-U0-G1	4525	149	B1-U0-G1	4718	156	B1-U0-G1	4718	156	B1-U0-G1	
	3W		4315	143	B1-U0-G1	4516	149	B1-U0-G1	4716	156	B1-U0-G1	4916	162	B1-U0-G1	4916	162	B1-U0-G1	
	5D		3356	111	B1-U0-G1	3512	116	B1-U0-G1	3668	121	B1-U0-G1	3824	126	B1-U0-G1	3824	126	B1-U0-G1	
6L	5Q	80	5356	140	B3-U0-G1	5605	146	B3-U0-G1	5853	153	B3-U0-G1	6102	159	B3-U0-G1	6102	159	B3-U0-G1	38
	5C		5490	143	B2-U0-G0	5745	150	B2-U0-G0	6000	156	B2-U0-G0	6255	163	B2-U0-G0	6255	163	B2-U0-G0	
	5R		5249	137	B3-U0-G3	5492	143	B3-U0-G3	5736	149	B3-U0-G3	5980	156	B3-U0-G3	5980	156	B3-U0-G3	
	4F		5088	133	B1-U0-G1	5324	139	B1-U0-G1	5561	145	B1-U0-G1	5797	151	B1-U0-G1	5797	151	B1-U0-G1	
	3W		5302	138	B1-U0-G1	5549	145	B1-U0-G1	5795	151	B1-U0-G1	6041	157	B1-U0-G1	6041	157	B1-U0-G1	
	5D		4124	107	B2-U0-G1	4316	112	B2-U0-G1	4507	117	B2-U0-G1	4699	122	B2-U0-G1	4699	122	B2-U0-G1	
8L	5Q	80	7228	140	B3-U0-G1	7564	146	B3-U0-G1	7899	153	B3-U0-G2	8235	159	B3-U0-G2	8235	159	B3-U0-G2	52
	5C		7409	143	B2-U0-G0	7753	150	B3-U0-G0	8097	156	B3-U0-G0	8441	163	B3-U0-G0	8441	163	B3-U0-G0	
	5R		7083	137	B3-U0-G3	7412	143	B3-U0-G3	7741	149	B3-U0-G3	8070	156	B3-U0-G3	8070	156	B3-U0-G3	
	4F		6867	133	B1-U0-G2	7185	139	B1-U0-G2	7504	145	B1-U0-G2	7823	151	B1-U0-G2	7823	151	B1-U0-G2	
	3W		7156	138	B1-U0-G1	7488	145	B1-U0-G1	7820	151	B2-U0-G2	8153	157	B2-U0-G2	8153	157	B2-U0-G2	
	5D		5566	107	B2-U0-G1	5824	112	B2-U0-G1	6082	117	B2-U0-G1	6341	122	B2-U0-G1	6341	122	B2-U0-G1	
10L	5Q	80	8832	133	B3-U0-G2	9242	140	B3-U0-G2	9652	146	B3-U0-G2	10062	152	B3-U0-G2	10062	152	B3-U0-G2	66
	5C		9052	137	B3-U0-G0	9473	143	B3-U0-G0	9893	149	B3-U0-G0	10314	156	B3-U0-G0	10314	156	B3-U0-G0	
	5R		8655	131	B3-U0-G3	9057	137	B3-U0-G3	9459	143	B3-U0-G3	9861	149	B3-U0-G3	9861	149	B3-U0-G3	
	4F		8390	127	B1-U0-G2	8780	133	B1-U0-G2	9169	139	B1-U0-G2	9559	144	B1-U0-G2	9559	144	B1-U0-G2	
	3W		8743	132	B2-U0-G2	9149	138	B2-U0-G2	9555	144	B2-U0-G2	9961	150	B2-U0-G2	9961	150	B2-U0-G2	
	5D		6800	103	B2-U0-G1	7116	107	B2-U0-G1	7432	112	B2-U0-G1	7748	117	B2-U0-G1	7748	117	B2-U0-G1	
12L	5Q	80	10498	133	B4-U0-G2	10985	139	B4-U0-G2	11473	145	B4-U0-G2	11960	151	B4-U0-G2	11960	151	B4-U0-G2	79
	5C		10760	136	B3-U0-G0	11260	142	B3-U0-G0	11759	148	B3-U0-G0	12259	155	B3-U0-G0	12259	155	B3-U0-G0	
	5R		10288	130	B3-U0-G3	10765	136	B3-U0-G3	11243	142	B3-U0-G3	11721	148	B3-U0-G3	11721	148	B3-U0-G3	
	4F		9973	126	B2-U0-G2	10436	132	B2-U0-G2	10899	138	B2-U0-G2	11362	143	B2-U0-G2	11362	143	B2-U0-G2	
	3W		10393	131	B2-U0-G2	10875	137	B2-U0-G2	11358	143	B2-U0-G2	11840	149	B2-U0-G2	11840	149	B2-U0-G2	
	5D		8083	102	B3-U0-G1	8458	107	B3-U0-G1	8834	112	B3-U0-G2	9209	116	B3-U0-G2	9209	116	B3-U0-G2	
14L	5Q	80	12190	118	B4-U0-G2	12756	123	B4-U0-G2	13322	129	B4-U0-G2	13888	134	B4-U0-G2	13888	134	B4-U0-G2	103
	5C		12494	121	B3-U0-G0	13075	126	B3-U0-G0	13655	132	B3-U0-G0	14235	137	B3-U0-G1	14235	137	B3-U0-G1	
	5R		11946	115	B3-U0-G3	12501	121	B3-U0-G3	13055	126	B4-U0-G4	13610	131	B4-U0-G4	13610	131	B4-U0-G4	
	4F		11580	112	B2-U0-G2	12118	117	B2-U0-G2	12656	122	B2-U0-G2	13194	127	B2-U0-G2	13194	127	B2-U0-G2	
	3W		12068	116	B2-U0-G2	12628	122	B2-U0-G2	13189	127	B2-U0-G2	13749	133	B2-U0-G2	13749	133	B2-U0-G2	
	5D		9386	91	B3-U0-G2	9822	95	B3-U0-G2	10258	99	B3-U0-G2	10694	103	B3-U0-G2	10694	103	B3-U0-G2	

Type: _____

Opulence Small Pendant & Surface Mount

PERFORMANCE

Back to Quick Links

ELECTRICAL DATA*						
Lumens	**120V**	**208V**	**240V**	**277V**	**347**	**480V**
3L	0.18	0.11	0.09	0.08	0.06	0.05
5L	0.25	0.14	0.13	0.11	0.09	0.06
6L	0.32	0.18	0.16	0.14	0.11	0.08
8L	0.43	0.25	0.22	0.19	0.15	0.11
10L	0.55	0.32	0.28	0.24	0.19	0.14
12L	0.66	0.38	0.33	0.29	0.23	0.16
14L	0.86	0.50	0.43	0.37	0.30	0.21

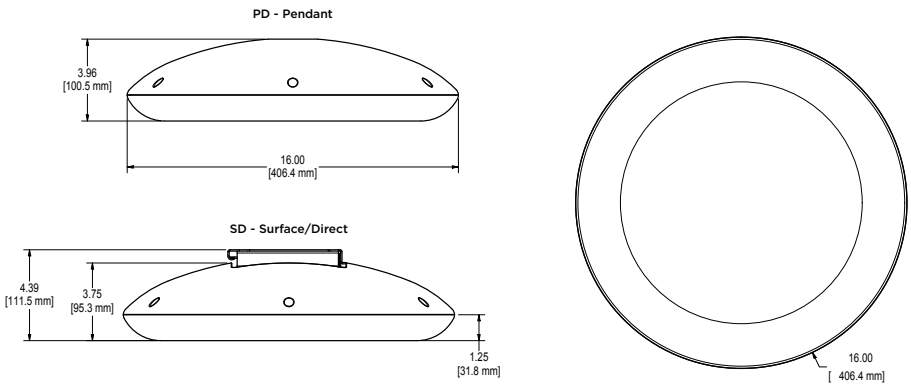
*Electrical data at 25C (77F). Actual wattage may differ by +/-10%.

RECOMMENDED LUMEN MAINTENANCE (1)					
Ambient Temp	**Lumen Multiplier**				
C	0 hrs. (2)	25K hrs. (2)	50K hrs. (2)	75K hrs. (3)	100K hrs. (3)
0 C - 40 C	100%	99%	96%	93%	90%

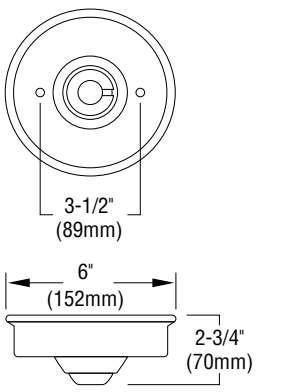
1. Lumen maintenance values are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

PRODUCT DIMENSIONS

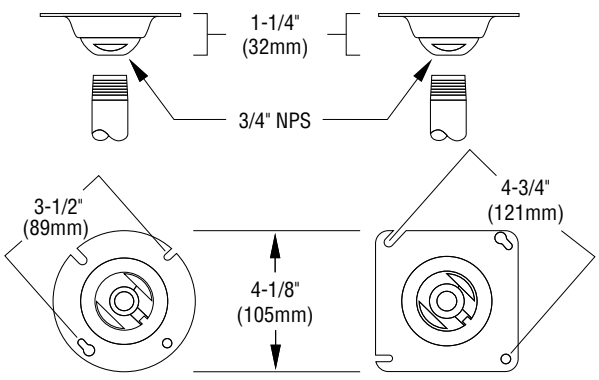
Back to Quick Links



Pendant/Stem Accessories

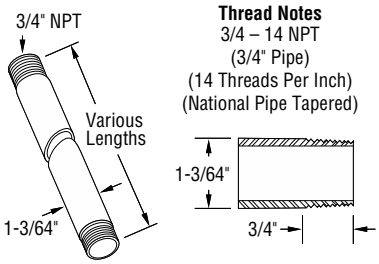


BC600 3 GWT Decorative Aligner



BC585 Round Aligner

BC585SQ Square Aligner



Aluminum Stem

Type: _____

Opulence Small Pendant & Surface Mount

MOUNTING OPTIONS

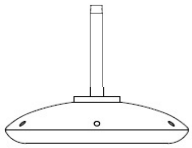
Pendant (3/4" Stem)



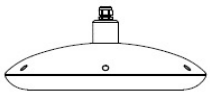
Decorative Shroud & Bird Guard (3/4" Stem)



Uplight Module (3/4" Stem)



2" Tenon Adapter



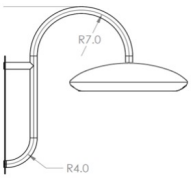
Surface/Direct



Contemporary Wall Brackets (3/4" Stem)

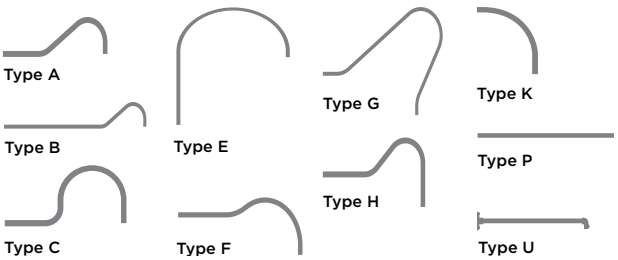


Type 1



Type 2

Gooseneck Brackets (3/4" Stem)



Single and Dual Classic Hook Pole Top Brackets (3/4" Stem)



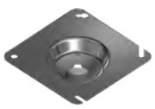
Top Decorative Box Cover Aligner



Top Round Box Cover Aligner



Top Square Box Cover Aligner



3/4" Rigid Aluminum Stem



Wall Mount



See OPS Wall Mount Spec Sheet for Details

CONTROLS

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more about IMSBT.

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more about AirLink Blue.

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

Opulence Small Pendant & Surface Mount (OPS)

Outdoor Pendant & Surface Mount Luminaire

IP66



OVERVIEW	
Lumen Output Range	3,000 -14,000
Wattage	22 - 103
Efficacy Range (LPW)	95 - 168
Fixture Weight lbs (kg)	16 (7.3)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing.
- Architecturally pleasing with no visible electronics, hardware, or seams from ground level.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Optional spun aluminum shroud provides a streamlined transition from stem to luminaire while also deterring nesting (3/4" stem/pendant only).

Optical System

- High density LED optical system delivers industry leading optical performance and visual comfort.
- 7 distribution types 3W, 4F, 5Q, 5C, 5R, 5D & AD
- Diffused lens version provides maximum visual comfort with reduced brightness and LED pixelization.
- Zero uplight.
- Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANSI C78.377.
- Minimum CRI of 80

Electrical

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection (6kV surge standard).
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +40°C (-40°F to +104°F).
- Power factor: >.90
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Integral passive infrared Bluetooth™ motion and photocell sensor options. Fixtures operate independently and can be commissioned via an iOS or Android configuration app.
- LSI's AirLink™ Blue lighting control system is a simple feature rich wireless Bluetooth mesh network. The integrated fixture sensor module provides wireless control of grouped fixtures based on motion sensors, daylight or a fully customizable schedule. Updates and modifications to the control strategy are easily implemented via an intuitive iOS app.

Installation

- Pendant mounting via rigid 3/4" stem (order stem seperately), 6' wire leads provided.
- Direct/surface mounts to a 4" (102mm) square or octagon box (box by others).
- Hinged 16ga galvanized mounting bracket provided for ease of installation and maintenance.
- Optional stainless steel crown for mounting to 2" tenon (order tenon seperately). Wire leads pass through compression seal fitting to prevent water entry. Once-piece silicone gasket provides water and dust tight seal.
- For wall mount arm please reference OPS wall mount spec sheet.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K and warmer color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Specifications and dimensions subject to change without notice.

Type: _____

Opulence Small Pendant & Surface Mount

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **OPS PD 8L 5Q UNV 40K8 BLK ALBCS1**

Prefix	Mounting	Lumen Package	Distribution	Uplight
OPS - Opulance Small	**PD** - Pendant **SD** - Surface/Direct[2]	**3L** - 3,000 Lumens **5L** - 5,000 Lumens **6L** - 6,000 Lumens **8L** - 8,000 Lumens **10L** - 10,000 Lumens **12L** - 12,000 Lumens **14L** - 14,000 Lumens	**5Q** - Type 5 Square **5C** - Type 5 Concentrated **5R** - Type 5 Rectangular **3W** - Type 3 (Wide Throw) **4F** - Type 4 (Forward Throw) **5D** - Type 5 Diffused **AD** - Asymmetric Diffused	(Blank) - None **U** - Uplight Module (5% Uplight) **U1** - Uplight Module (10% Uplight)

Voltage	Color Temp	Finish	Controls	Options
UNV - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**50K8** - 5,000K CCT - 80 CRI **40K8** - 4,000K CCT - 80 CRI **35K8** - 3,500K CCT - 80 CRI **30K8** - 3,000K CCT - 80 CRI **27K8** - 2,700K CCT - 80 CRI	**BRZ** - Dark Bronze **BLK** - Black **GPT** - Graphite **GMG** - Gun Metal Gray **MSV** - Metallic Silver **PLP** - Platinum Plus **WHT** - White	**(Blank)** - None **Wireless Controls System** **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH) **ALBCS2** - AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH) **Stand-Alone Controls** **EXT** - 0-10v Dimming leads extended to housing exterior **IMSBT1** - Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[3] **IMSBT2** - Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[3]	**(Blank)** - None **BB** - Battery Back-up (0°C)[1] **CWBB** - Cold Weather Battery Back-up (-20°C)[1] **TNA** - 2" Tenon Adapter (PD Only)[2] **SP1** - 10kV Surge Protection Device

Accessory Ordering Information

MOUNTING ACCESSORIES[4]	
Description	**Order Number**
Single Classic Hook (3/4" Stem)	BK SH S 34 CLR
2@180° Classic Hook (3/4" Stem)	BK CH D180 34 CLR
2' Gooseneck Wall Bracket, A Style (3/4" Stem)	GB-A-34 CLR
2' Gooseneck Wall Bracket, H Style (3/4" Stem)	GB-H-34 CLR
1' Gooseneck Wall Bracket, K Style (3/4" Stem)	GB-K-34 CLR
Contemorary Wall Bracket 1 (3/4" Stem)	CWBM 1 CLR
Contemorary Wall Bracket 2 (3/4" Stem)	CWBM 2 CLR
Single Classic Hook (2" Tenon) [1]	XDLS/XDLM BK CH S CLR
2@180° Classic Hook (2" Tenon) [1]	XDLS/XDLN BK CH D180 CLR
Spun Aluminium Decorative Shroud & Bird Guard (3/4" Stem) [1]	770846CLR
Translucent Decorative Shroud & Bird Guard (For Uplight Versions)	770847
3/4"(19mm) Top Decorative Box Cover Aligner	BC600 3 CLR
3/4"(19mm) Top Round Box Cover Aligner	BC585 CLR
3/4"(19mm) Top Square Box Cover Aligner	BC585SQ CLR
3/4" Rigid Stem (specify stem length: 6, 12, 18, 24, 36, 48 inches)	ST _ 3 CLR

FOOTNOTES:
1 - Consult Factory for 347-480V.
2 - Not available with uplight
3 - IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
4 - "CLR" denotes finish. See Finish options.

©2021 LSI Industries Inc. All Rights Reserved. Specifications subject to change without notice.

Type: _____

Opulence Small Pendant & Surface Mount

PERFORMANCE

Back to Quick Links

DELIVERED LUMENS (OPS)*

Lumen Package	Distribution	CRI	2700K CCT			3000K CCT			3500K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
3L	5Q	80	3151	144	B2-U0-G1	3297	151	B2-U0-G1	3444	157	B2-U0-G1	3590	164	B2-U0-G1	3590	164	B2-U0-G1	22
	5C		3230	148	B2-U0-G0	3380	154	B2-U0-G0	3530	161	B2-U0-G0	3680	168	B2-U0-G0	3680	168	B2-U0-G0	
	5R		3088	141	B2-U0-G2	3231	148	B2-U0-G2	3375	154	B2-U0-G2	3518	161	B2-U0-G2	3518	161	B2-U0-G2	
	4F		2993	137	B1-U0-G1	3132	143	B1-U0-G1	3271	149	B1-U0-G1	3411	156	B1-U0-G1	3411	156	B1-U0-G1	
	3W		3119	143	B1-U0-G1	3264	149	B1-U0-G1	3409	156	B1-U0-G1	3554	162	B1-U0-G1	3554	162	B1-U0-G1	
	5D		2426	111	B1-U0-G1	2539	116	B1-U0-G1	2652	121	B1-U0-G1	2764	126	B1-U0-G1	2764	126	B1-U0-G1	
5L	5Q	80	4359	144	B3-U0-G1	4561	151	B3-U0-G1	4764	157	B3-U0-G1	4966	164	B3-U0-G1	4966	164	B3-U0-G1	30
	5C		4468	148	B2-U0-G0	4675	154	B2-U0-G0	4883	161	B2-U0-G0	5090	168	B2-U0-G0	5090	168	B2-U0-G0	
	5R		4272	141	B2-U0-G2	4470	148	B2-U0-G2	4668	154	B2-U0-G2	4867	161	B2-U0-G2	4867	161	B2-U0-G2	
	4F		4141	137	B1-U0-G1	4333	143	B1-U0-G1	4525	149	B1-U0-G1	4718	156	B1-U0-G1	4718	156	B1-U0-G1	
	3W		4315	143	B1-U0-G1	4516	149	B1-U0-G1	4716	156	B1-U0-G1	4916	162	B1-U0-G1	4916	162	B1-U0-G1	
	5D		3356	111	B1-U0-G1	3512	116	B1-U0-G1	3668	121	B1-U0-G1	3824	126	B1-U0-G1	3824	126	B1-U0-G1	
6L	5Q	80	5356	140	B3-U0-G1	5605	146	B3-U0-G1	5853	153	B3-U0-G1	6102	159	B3-U0-G1	6102	159	B3-U0-G1	38
	5C		5490	143	B2-U0-G0	5745	150	B2-U0-G0	6000	156	B2-U0-G0	6255	163	B2-U0-G0	6255	163	B2-U0-G0	
	5R		5249	137	B3-U0-G3	5492	143	B3-U0-G3	5736	149	B3-U0-G3	5980	156	B3-U0-G3	5980	156	B3-U0-G3	
	4F		5088	133	B1-U0-G1	5324	139	B1-U0-G1	5561	145	B1-U0-G1	5797	151	B1-U0-G1	5797	151	B1-U0-G1	
	3W		5302	138	B1-U0-G1	5549	145	B1-U0-G1	5795	151	B1-U0-G1	6041	157	B1-U0-G1	6041	157	B1-U0-G1	
	5D		4124	107	B2-U0-G1	4316	112	B2-U0-G1	4507	117	B2-U0-G1	4699	122	B2-U0-G1	4699	122	B2-U0-G1	
8L	5Q	80	7228	140	B3-U0-G1	7564	146	B3-U0-G1	7899	153	B3-U0-G2	8235	159	B3-U0-G2	8235	159	B3-U0-G2	52
	5C		7409	143	B2-U0-G0	7753	150	B3-U0-G0	8097	156	B3-U0-G0	8441	163	B3-U0-G0	8441	163	B3-U0-G0	
	5R		7083	137	B3-U0-G3	7412	143	B3-U0-G3	7741	149	B3-U0-G3	8070	156	B3-U0-G3	8070	156	B3-U0-G3	
	4F		6867	133	B1-U0-G2	7185	139	B1-U0-G2	7504	145	B1-U0-G2	7823	151	B1-U0-G2	7823	151	B1-U0-G2	
	3W		7156	138	B1-U0-G1	7488	145	B1-U0-G1	7820	151	B2-U0-G2	8153	157	B2-U0-G2	8153	157	B2-U0-G2	
	5D		5566	107	B2-U0-G1	5824	112	B2-U0-G1	6082	117	B2-U0-G1	6341	122	B2-U0-G1	6341	122	B2-U0-G1	
10L	5Q	80	8832	133	B3-U0-G2	9242	140	B3-U0-G2	9652	146	B3-U0-G2	10062	152	B3-U0-G2	10062	152	B3-U0-G2	66
	5C		9052	137	B3-U0-G0	9473	143	B3-U0-G0	9893	149	B3-U0-G0	10314	156	B3-U0-G0	10314	156	B3-U0-G0	
	5R		8655	131	B3-U0-G3	9057	137	B3-U0-G3	9459	143	B3-U0-G3	9861	149	B3-U0-G3	9861	149	B3-U0-G3	
	4F		8390	127	B1-U0-G2	8780	133	B1-U0-G2	9169	139	B1-U0-G2	9559	144	B1-U0-G2	9559	144	B1-U0-G2	
	3W		8743	132	B2-U0-G2	9149	138	B2-U0-G2	9555	144	B2-U0-G2	9961	150	B2-U0-G2	9961	150	B2-U0-G2	
	5D		6800	103	B2-U0-G1	7116	107	B2-U0-G1	7432	112	B2-U0-G1	7748	117	B2-U0-G1	7748	117	B2-U0-G1	
12L	5Q	80	10498	133	B4-U0-G2	10985	139	B4-U0-G2	11473	145	B4-U0-G2	11960	151	B4-U0-G2	11960	151	B4-U0-G2	79
	5C		10760	136	B3-U0-G0	11260	142	B3-U0-G0	11759	148	B3-U0-G0	12259	155	B3-U0-G0	12259	155	B3-U0-G0	
	5R		10288	130	B3-U0-G3	10765	136	B3-U0-G3	11243	142	B3-U0-G3	11721	148	B3-U0-G3	11721	148	B3-U0-G3	
	4F		9973	126	B2-U0-G2	10436	132	B2-U0-G2	10899	138	B2-U0-G2	11362	143	B2-U0-G2	11362	143	B2-U0-G2	
	3W		10393	131	B2-U0-G2	10875	137	B2-U0-G2	11358	143	B2-U0-G2	11840	149	B2-U0-G2	11840	149	B2-U0-G2	
	5D		8083	102	B3-U0-G1	8458	107	B3-U0-G1	8834	112	B3-U0-G2	9209	116	B3-U0-G2	9209	116	B3-U0-G2	
14L	5Q	80	12190	118	B4-U0-G2	12756	123	B4-U0-G2	13322	129	B4-U0-G2	13888	134	B4-U0-G2	13888	134	B4-U0-G2	103
	5C		12494	121	B3-U0-G0	13075	126	B3-U0-G0	13655	132	B3-U0-G0	14235	137	B3-U0-G1	14235	137	B3-U0-G1	
	5R		11946	115	B3-U0-G3	12501	121	B3-U0-G3	13055	126	B4-U0-G4	13610	131	B4-U0-G4	13610	131	B4-U0-G4	
	4F		11580	112	B2-U0-G2	12118	117	B2-U0-G2	12656	122	B2-U0-G2	13194	127	B2-U0-G2	13194	127	B2-U0-G2	
	3W		12068	116	B2-U0-G2	12628	122	B2-U0-G2	13189	127	B2-U0-G2	13749	133	B2-U0-G2	13749	133	B2-U0-G2	
	5D		9386	91	B3-U0-G2	9822	95	B3-U0-G2	10258	99	B3-U0-G2	10694	103	B3-U0-G2	10694	103	B3-U0-G2	

Type: _____

Opulence Small Pendant & Surface Mount

PERFORMANCE

Back to Quick Links

ELECTRICAL DATA*						
Lumens	**120V**	**208V**	**240V**	**277V**	**347**	**480V**
3L	0.18	0.11	0.09	0.08	0.06	0.05
5L	0.25	0.14	0.13	0.11	0.09	0.06
6L	0.32	0.18	0.16	0.14	0.11	0.08
8L	0.43	0.25	0.22	0.19	0.15	0.11
10L	0.55	0.32	0.28	0.24	0.19	0.14
12L	0.66	0.38	0.33	0.29	0.23	0.16
14L	0.86	0.50	0.43	0.37	0.30	0.21

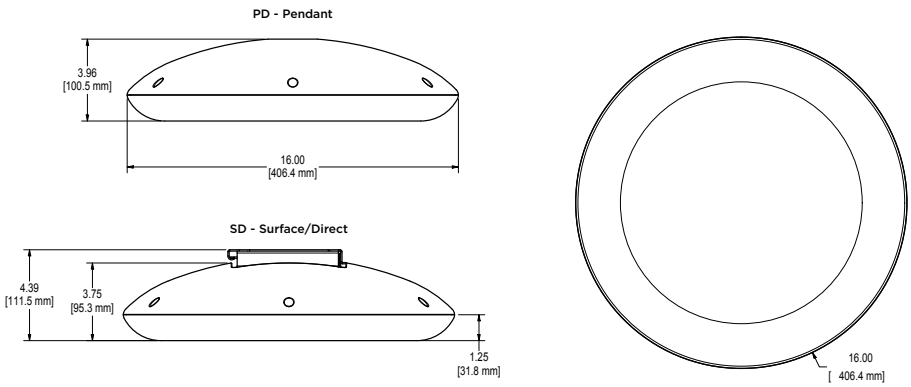
*Electrical data at 25C (77F). Actual wattage may differ by +/-10%.

RECOMMENDED LUMEN MAINTENANCE (1)					
Ambient Temp	**Lumen Multiplier**				
C	0 hrs. (2)	25K hrs. (2)	50K hrs. (2)	75K hrs. (3)	100K hrs. (3)
0 C - 40 C	100%	99%	96%	93%	90%

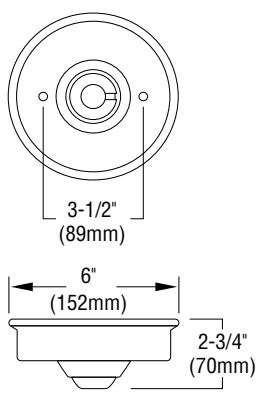
1. Lumen maintenance values are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

PRODUCT DIMENSIONS

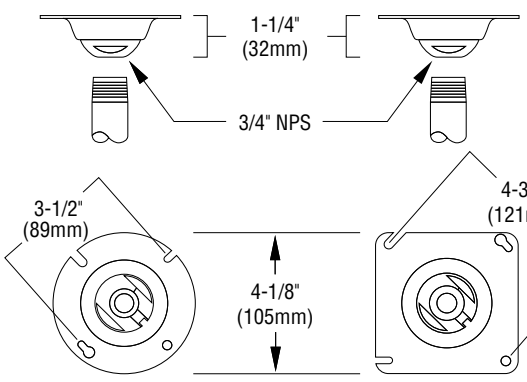
Back to Quick Links



Pendant/Stem Accessories

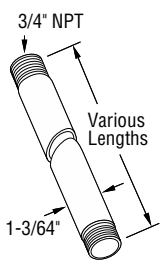


BC600 3 GWT Decorative Aligner

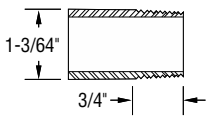


BC585 Round Aligner

BC585SQ Square Aligner



Thread Notes
3/4 – 14 NPT
(3/4" Pipe)
(14 Threads Per Inch)
(National Pipe Tapered)



Aluminum Stem

Type: _____

Opulence Small Pendant & Surface Mount

MOUNTING OPTIONS

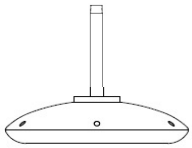
Pendant (3/4" Stem)



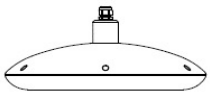
Decorative Shroud & Bird Guard (3/4" Stem)



Uplight Module (3/4" Stem)



2" Tenon Adapter



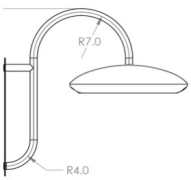
Surface/Direct



Contemporary Wall Brackets (3/4" Stem)

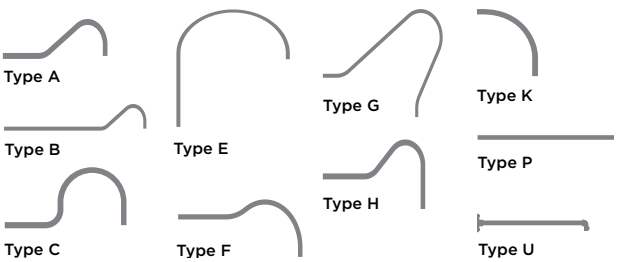


Type 1



Type 2

Gooseneck Brackets (3/4" Stem)



Single and Dual Classic Hook Pole Top Brackets (3/4" Stem)



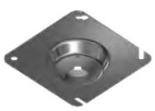
Top Decorative Box Cover Aligner



Top Round Box Cover Aligner



Top Square Box Cover Aligner



3/4" Rigid Aluminum Stem



Wall Mount



See OPS Wall Mount Spec Sheet for Details

CONTROLS

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more about IMSBT.

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more about AirLink Blue.

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Steel Poles

Round Straight



QUICK LINKS

Ordering Guide | Configurations | Dimensions | EPA

FEATURES & SPECIFICATIONS

Pole Shaft

- Steel round poles are 4" or 5" in diameter.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 46,000 psi.
- On Tenon Mount steel poles, tenon is high-strength pipe. Tenon N option is 2-3/8" O.D. x 4-3/4" tall. Tenon 4N option is 4" O.D. x 4-7/8" tall.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 18' and above have a 3" x 6" reinforced hand-hole. Shorter poles have 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional. Decorative base cover is also available.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 psi.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip® Protection System and a 5-year limited warranty:
- When the top-of-the line DuraGrip® Plus Protection System is selected, in addition to the DuraGrip® Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior, sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select pole height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant

Steel Poles - Round Straight

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **5RP B3 S07G 24 S PLP DGP**

Pole Series	Mounting Method	Material	Height [4]	Mounting Configuration	Pole Finish	Options
4RP- 4" Diameter Round Straight Pole **5RP -** 5" Diameter Round Straight Pole	**Bolt-On Mount**[1] - See pole selection guide for patterns and fixture matches. **B5 -** 5" Traditional Drilling Pattern **B3 -** 3" Reduced Drilling Pattern **B2 -** 2" Reduced Drilling Pattern **T -** Tenon Mount - See pole selection guide for tenon and fixture/bracket matches. **I -** No Mounting Holes[1] - Use with: • Greenlee Lifestyle CC, SC & CH mounting styles • Enterprise & Lexington PT Single mounting styles[2] • Lifestyle UCLS • Lifestyle UCLD180	S11G – 11 Ga. Steel (5RP only) S10G – 10 Ga. Steel (4RP only) S07G – 07 Ga. Steel (5RP only)	8' 10' 12' 14' 15' 16' 17' 17' 6" 18' 20' 22' 22' 6" 24' 25' 26' 27' 28' 30' Height Restriction, Consult Pole Selection Chart on opposite page	S – Single/Parallel D180 – Double D90 – Double DN90 – Double T90 – Triple TN120 – Triple Q90 – Quad QN90 – Quad N – Tenon Mount 4N – Tenon Mount (5RPT only. For 4" poles, use 4RPI[5] 4N-6 – Tenon Mount (5RPT only. For 4" poles use 4RPI)	BRZ – Bronze BLK – Black PLP – Platinum Plus WHT – White SVG – Satin Verde Green GPT – Graphite MSV – Metallic Silver BZA – Alternate Bronze	GA – Galvanized Anchor Bolts SF – Single Flood[6] DF – Double Flood[6] DGP – DuraGrip® Plus LAB – Less Anchor Bolts Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

Accessory Ordering Information

Description	Order Number
4" SRBC Square Base Cover	158450CLR
5" SRBC Square Base Cover	158451CLR
4" /5" GBC Decorative Base Cover	483859CLR
ER2 – Weatherproof Duplex Receptacle (Poles below 18')	122557CLR
ER2 – Weatherproof Duplex Receptacle for Reinforced Hand-hole (Poles 18' and above)	122566CLR
GFI – Ground Fault Circuit Interrupter (Poles below 18')	122558CLR
GFI – Ground Fault Circuit Interrupter for Reinforced Hand-hole (Poles 18' and above)	22567CLR
MH5 - Mounting Hole Plugs for use with 5" traditional drill pattern (3 set of 3 plugs)	132336

Description	Order Number
MH3 - Mounting Hole Plugs for use with 3" reduced drill pattern (3 sets of 3 plugs)	681126
MH2 - Mounting Hole Plugs for use with 2" reduced drill pattern (3 sets of 3 plugs)	725841
BB - Banner Brackets	Consult Factory for EPA calculations

FOOTNOTES:
1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional DrIll Pattern spec sheets.
2 - For Enterprise and Lexington PT mounting configuration styles, see Tenon Mount (4N) and Greenlee Slipfit Pole Series (4RPI).
3 - Standard flat black pole cap provided. Domed Greenlee pole cap will ship with SA4 and SA5 Enterprise and Lexington fixtures, SA Lifestyle fixtures, BK SPT BO, BK MPT BO and UCL brackets.
4 - Pole heights will have a +/- 1/2" tolerance. Max height for 4RP S10G is 24'. Max height of the 5RP S11G is 26'.
5 - For Enterprise and Lexington D180 or other mounting configuration styles using BK SPT BO and BK MPT BO accessories, see chart on Bolt-on Mount 4RPB3 / 5RPB3 DRILLING PATTERN section on pole selection chart.
6 - See Flood Lighting Brackets section for choice of FBO brackets.

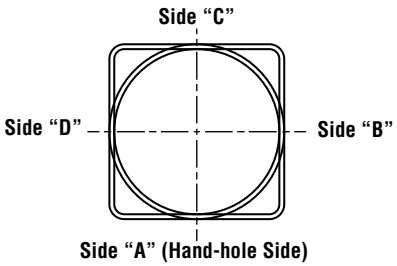
©2021 LSI Industries Inc. All Rights Reserved. Specifications subject to change without notice.

Steel Poles - Round Straight

DRILLING LOCATIONS

Back to Quick Links

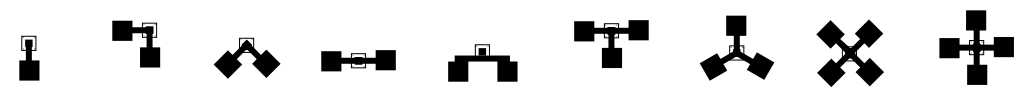
Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180		X		X
D90	X			X
DN90[1]				
T90	X	X		X
TN120[2]				
Q90	X	X	X	X
QN90[3]				
Single FBO	X			
Double FBO		X		X



NOTES:
1 - Two locations will be 45° to the left and right of Side A.
2 - Other two locations will be 120° to the left and right of Side A.
3 - Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20’ poles. Maximum height for SF and DF pole preparations on 20’ poles is 13’ from the base.

FIXTURE CONFIGURATIONS



BOLT CIRCLE

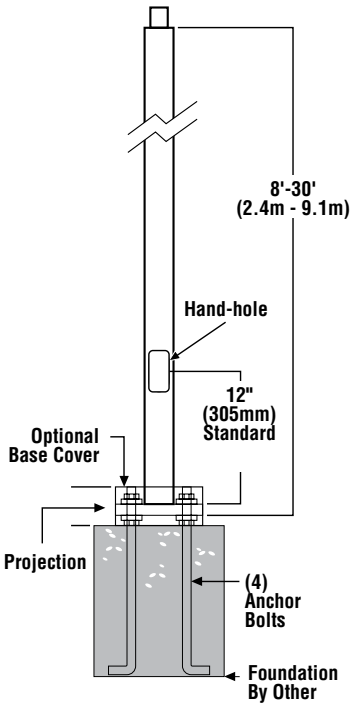
	4" (102mm) Round 10-1/8" (257mm) sq. 11" (279mm) Dia. Bolt Circle	5" (127mm) Round 10-1/8" (257mm) sq. 11" (279mm) Dia. Bolt Circle	5" (127mm) Round 10-1/8" (257mm) sq. 11" (279mm) Dia. Bolt Circle
Bolt Circle Designator	L	L	M
Bolt Circle	Slotted 11" (279mm)	Slotted 11" (279mm)	Slotted 11" (279mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)
Pole Gauge	10	11	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

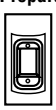
Steel Poles - Round Straight

PRODUCT DIMENSIONS

RPT –
N = 2-3/8"(60mm) O.D. x 4-3/4"(121mm) Tenon
4N = 4"(102mm) O.D. x 4-7/8"(124mm) Tenon
4N6 = 4"(102mm) O.D. x 6-3/8"(162mm) Tenon

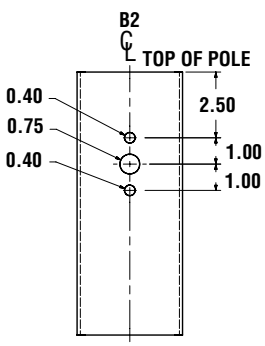


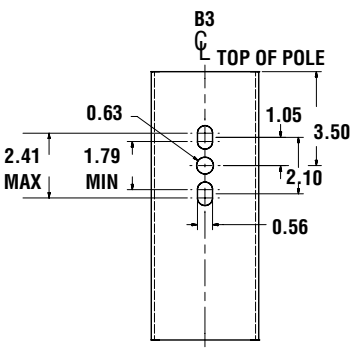
SF –
Single Flood
Pole Preparation

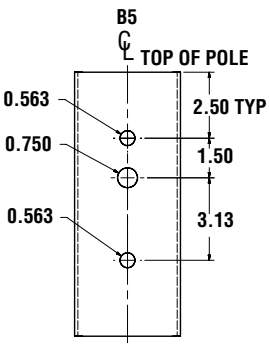


SHIPPING WEIGHTS	
4"(102mm) Dia. 10 Ga. is approximately	6.0 lbs./ft.
5"(127mm) Dia. 11 Ga. is approximately	7.0 lbs./ft.
5"(127mm) Dia. 07 Ga. is approximately	10.0 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs.(7kg)/set
Anchor Bolts (1" x 36")(125mm x 914mm)	30 lbs.(14kg)/set

Bolt-On Mount 2-Bolt Pattern







Steel Poles - Round Straight

WIND SPEED

EPA Information
All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
4" x 10-ga x 14'	14	10	L	11	0.75	6.0	5.2	4.7	3.9	3.2	2.7	2.3	2.0	1.7
4" x 10-ga x 16'	16	10	L	11	0.75	4.3	3.7	3.2	2.6	2.1	1.8	1.4	1.2	1.0
4" x 10-ga x 18'	18	10	L	11	0.75	7.7	6.8	6.0	5.0	4.2	3.5	3.0	2.5	2.2
4" x 10-ga x 20'	20	10	L	11	0.75	6.0	5.2	4.6	3.7	3.1	2.5	2.1	1.8	1.5
4" x 10-ga x 22'	22	10	L	11	0.75	4.6	3.9	3.3	2.6	2.1	1.7	1.4	1.1	0.9
4" x 10-ga x 24'	24	10	L	11	0.75	3.4	2.7	2.2	1.7	1.3	1.0	0.7	0.5	n/a
5" x 11-ga x 16'	16	11	L	11	0.75	8.7	7.9	7.2	6.0	5.0	4.3	3.7	3.2	2.8
5" x 11-ga x 18'	18	11	L	11	0.75	12.2	11.1	10.1	8.5	7.2	6.1	5.3	4.6	4.0
5" x 11-ga x 20'	20	11	L	11	0.75	10.0	9.1	8.2	6.8	5.7	4.9	4.2	3.6	3.1
5" x 11-ga x 22'	22	11	L	11	0.75	8.1	7.3	6.6	5.5	4.5	3.8	3.2	2.8	2.4
5" x 11-ga x 24'	24	11	L	11	0.75	6.5	5.9	5.3	4.3	3.5	2.9	2.4	2.0	1.7
5" x 11-ga x 26'	26	11	L	11	0.75	5.2	4.6	4.1	3.2	2.6	2.1	1.7	1.4	1.1
5" x 7-ga x 18'	18	7	M	11	1.00	19.7	17.9	16.4	13.8	11.7	10.1	8.8	7.7	6.8
5" x 7-ga x 20'	20	7	M	11	1.00	16.5	15.0	13.7	11.5	9.8	8.4	7.3	6.3	5.6
5" x 7-ga x 22'	22	7	M	11	1.00	14.0	12.7	11.5	9.6	8.1	7.0	6.0	5.2	4.6
5" x 7-ga x 24'	24	7	M	11	1.00	11.8	10.6	9.6	8.0	6.8	5.7	4.9	4.2	3.7
5" x 7-ga x 26'	26	7	M	11	1.00	9.9	8.9	8.0	6.7	5.6	4.7	4.0	3.4	2.9
5" x 7-ga x 28'	28	7	M	11	1.00	8.3	7.4	6.7	5.4	4.5	3.7	3.1	2.7	2.3
5" x 7-ga x 30'	30	7	M	11	1.00	6.8	6.1	5.4	4.4	3.6	2.9	2.4	2.0	1.7

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:
1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.

Catalog #: _____ Project: _____

Prepared By: _____ Date: _____ Type: _____

Opulence Small Post Top (OPS)

Outdoor Decorative Post Top

IP66



OVERVIEW	
Lumen Output Range	3,000 - 14,000
Wattage	20 - 100
Efficacy Range (LPW)	114 - 148
Fixture Weight lbs (kg)	25.0 (11.3)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.

Optical System

- High density LED optical system delivers industry leading optical performance and visual comfort.
- 7 distribution types 3W, 4F, 5Q, 5C, 5R, 5D & AD
- Diffused lens version provides maximum visual comfort with reduced brightness and LED pixelization
- Available in 5000K, 4000K, 3500K, 3000K and 2700K color temperatures per ANSI C78.377.
- Minimum CRI of 80

Electrical

- High-performance driver features overvoltage, under-voltage, short-circuit and over temperature protection (6kV surge standard).
- 0-10V dimming driver (optional extended leads).
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +40°C (-40°F to +104°F).
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Integral passive infrared Bluetooth™ motion and photocell sensor options. Fixtures operate independently and can be commissioned via an iOS or Android configuration app.
- LSI's AirLink™ Blue lighting control system is a simple feature rich wireless Bluetooth mesh network. The integrated fixture sensor module provides wireless control of grouped fixtures based on motion sensors, daylight or a fully customizable schedule. Updates and modifications to the control strategy are easily implemented via an intuitive iOS app.

Installation

- Designed to mount directly to a 2 3/8" - 3" outer diameter tenon (4" tall).
- Optional flush mount accesory slips inside the top of a 4" round pole for a virtually seamless transition from pole to luminaire.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K and warmer color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Specifications and dimensions subject to change without notice.

Type: _____

Opulence Small Post Top

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **OPS PT 8L 5Q UNV 40K8 BLK ALBCS1**

Prefix	Mounting	Lumen Package*	Distribution
OPS - Opulance Small	**PT -** Post Top (2 3/8" 3" Tennon)	**3L** - 3,000 Lumens **5L** - 5,000 Lumens **6L** - 6,000 Lumens **8L** - 8,000 Lumens **10L** - 10,000 Lumens **12L** - 12,000 Lumens **14L** - 14,000 Lumens	**5Q -** Type 5 Square **5C -** Type 5 Concentrated **5R -** Type 5 Rectangular **3W -** Type 3 (Wide Throw) **4F -** Type 4 (Forward Throw) **5D -** Type 5 Diffused **AD -** Asymmetric Diffused

Voltage	Color Temp	Finish	Controls
UNV - Universal Voltage (120-277V) **HV -** High Voltage (347-480V)	**50K8 -** 5,000K CCT - 80 CRI **40K8 -** 4,000K CCT - 80 CRI **35K8 -** 3,500K CCT - 80 CRI **30K8 -** 3,000K CCT - 80 CRI **27K8 -** 2,700K CCT - 80 CRI	**BRZ -** Dark Bronze **BLK -** Black **GMG -** Gun Metal Gray **GPT -** Graphite **MSV -** Metallic Silver **PLP -** Platinum Plus **WHT -** White	**(Blank) -** None **Wireless Controls System** **ALBCS1 -** AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH)[1] **ALBCS2 -** AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH)[1] **Stand-Alone Controls** **CR7P -** 7 Pin Control Receptacle ANSI C136.41 [2] **IMSBT1 -** Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH) [1,3] **IMSBT2 -** Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH) [1,3] **EXT -** 0-10v Dimming leads extended to housing exterior

Accessory Ordering Information

CONTROLS ACCESSORIES	
Description	**Order Number**
Twist Lock Photocell (120V) for use with CR7P	122514
Twist Lock Photocell (208-277) for use with CR7P	122515
Twist Lock Photocell (347V) for use with CR7P	122516
Twist Lock Photocell (480V) for use with CR7P	1225180
AirLink 5 Pin Twist Lock Controller	661409
AirLink 7 Pin Twist Lock Controller	661410
Shorting Cap for use with CR7P	149328

FUSING ACCESSORIES[5]	
Description	**Order Number**
Single Fusing (120V)	FK120
Single Fusing (277V)	FK277
Double Fusing (480V)	DFK480
Double Fusing (347V)	DFK347

MOUNTING ACCESSORIES[6]	
Description	**Order Number**
Internal Flush Mount Adapter for 4" OD Round Pole	764420CLR
Post Top Wall Mount Bracket	761587CLR
D180 Post Top Arm Bracket	761588CLR
Internal Tenon Adapter for 4" Square Pole	694638CLR
Internal Tenon Adapter for 5" Square Pole	694641CLR
Internal Tenon Adapter for 6" Square Pole	694642CLR
Decorative Base Cover (4 / 5" Round Poles)	483859CLR
10' Linear Bird Spike Kit (4' Recommended per Luminaire)	751632

FOOTNOTES:
1 - Consult Facotry for 347-480V.
2 - Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
3 - IMSBT is field configurable via the LSI app that can be downloaded from your smartphone's native app store.
4 - Accessories are shipped separately and field installed.
5 - Fusing must be located in hand hole of pole.
6 - "CLR" denotes finish. See Finish options.

Type: _____

Opulence Small Post Top

PERFORMANCE

Back to Quick Links

DELIVERED LUMENS (OPS)*

Lumen Package	Distribution	CRI	2700K CCT			3000K CCT			3500K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
3L	5Q	80	2739	135	B1-U2-G1	2828	139	B1-U2-G1	2781	137	B1-U2-G1	2895	143	B1-U2-G1	2933	145	B1-U2-G1	20
	5C		2812	139	B1-U3-G1	2903	143	B1-U3-G1	2855	141	B1-U3-G1	2972	146	B1-U3-G1	3011	148	B1-U3-G1	
	5R		2708	132	B1-U2-G1	2796	138	B1-U2-G1	2750	134	B1-U2-G1	2862	141	B2-U2-G2	2900	143	B2-U2-G2	
	4F		2714	134	B1-U2-G1	2802	138	B1-U2-G1	2756	136	B1-U2-G1	2869	141	B1-U2-G1	2907	143	B1-U2-G1	
	3W		2705	133	B1-U2-G1	2793	138	B1-U2-G1	2747	135	B1-U2-G1	2859	141	B1-U2-G1	2897	143	B1-U2-G1	
	5D		2522	124	B1-U2-G1	2604	128	B1-U2-G1	2561	126	B1-U2-G1	2665	131	B1-U2-G1	2701	133	B1-U2-G1	
	AD		2529	125	B1-U2-G1	2611	129	B1-U2-G1	2568	127	B1-U2-G1	2672	132	B1-U2-G1	2708	133	B1-U2-G1	
5L	5Q	80	4525	131	B2-U3-G1	4672	135	B2-U3-G1	4595	133	B2-U3-G1	4782	139	B2-U3-G1	4845	140	B2-U3-G1	34
	5C		4645	135	B2-U3-G1	4796	139	B2-U3-G1	4717	137	B2-U3-G1	4909	142	B2-U3-G1	4974	144	B2-U3-G1	
	5R		4474	130	B2-U3-G2	4619	134	B2-U3-G2	4543	132	B2-U3-G2	4728	137	B2-U3-G2	4791	139	B2-U3-G2	
	4F		4484	130	B1-U3-G1	4630	134	B1-U3-G1	4553	132	B1-U3-G1	4739	137	B1-U3-G1	4802	139	B1-U3-G1	
	3W		4468	129	B1-U3-G1	4614	134	B1-U3-G1	4538	131	B1-U3-G1	4723	137	B1-U3-G1	4785	139	B1-U3-G1	
	5D		4166	121	B2-U3-G1	4301	125	B2-U3-G1	4231	123	B2-U3-G1	4403	128	B2-U3-G1	4461	129	B2-U3-G1	
	AD		4177	121	B1-U3-G1	4313	125	B1-U3-G1	4242	123	B1-U3-G1	4415	128	B1-U3-G1	4474	130	B1-U3-G1	
6L	5Q	80	5362	132	B2-U3-G1	5536	136	B2-U3-G1	5445	134	B2-U3-G1	5667	140	B2-U3-G1	5742	141	B2-U3-G1	41
	5C		5505	136	B2-U3-G1	5684	140	B2-U3-G1	5590	138	B2-U3-G1	5818	143	B2-U3-G1	5895	145	B2-U3-G1	
	5R		5302	131	B2-U3-G2	5474	135	B2-U3-G2	5384	133	B2-U3-G2	5603	138	B2-U3-G2	5677	140	B2-U3-G2	
	4F		5314	131	B1-U3-G1	5486	135	B1-U3-G1	5396	133	B1-U3-G1	5616	138	B1-U3-G1	5690	140	B1-U3-G1	
	3W		5295	130	B2-U3-G1	5467	135	B2-U3-G1	5378	132	B2-U3-G1	5597	138	B2-U3-G1	5671	140	B2-U3-G1	
	5D		4937	122	B2-U3-G1	5097	126	B2-U3-G1	5014	123	B2-U3-G1	5218	129	B2-U3-G1	5287	130	B2-U3-G1	
	AD		4950	122	B2-U3-G1	5111	126	B2-U3-G1	5027	124	B2-U3-G1	5232	129	B2-U3-G1	5301	131	B2-U3-G1	
8L	5Q	80	7185	130	B3-U3-G1	7419	134	B3-U3-G1	7297	132	B3-U3-G1	7594	138	B3-U3-G1	7695	139	B3-U3-G1	55
	5C		7376	134	B2-U3-G1	7616	138	B2-U3-G1	7491	136	B2-U3-G1	7796	141	B2-U3-G1	7899	143	B2-U3-G1	
	5R		7104	129	B3-U3-G3	7335	133	B3-U3-G3	7214	131	B3-U3-G3	7508	136	B3-U3-G3	7608	138	B3-U3-G3	
	4F		7120	129	B2-U3-G1	7352	133	B2-U3-G1	7231	131	B2-U3-G1	7525	136	B2-U3-G1	7625	138	B2-U3-G1	
	3W		7096	129	B2-U3-G2	7326	133	B2-U3-G2	7206	131	B2-U3-G2	7499	136	B2-U3-G2	7599	138	B2-U3-G2	
	5D		6616	120	B2-U3-G1	6831	124	B2-U3-G1	6718	122	B2-U3-G1	6992	127	B2-U3-G1	7085	128	B2-U3-G1	
	AD		6634	120	B2-U3-G2	6849	124	B2-U3-G2	6736	122	B2-U3-G2	7011	127	B2-U3-G2	7104	129	B2-U3-G2	
10L	5Q	80	9061	128	B3-U3-G1	9355	132	B3-U3-G1	9201	130	B3-U3-G1	9576	136	B3-U3-G1	9703	137	B3-U3-G1	70
	5C		9302	132	B3-U3-G1	9604	136	B3-U3-G1	9446	134	B3-U3-G1	9831	139	B3-U3-G1	9961	141	B3-U3-G1	
	5R		8959	127	B3-U3-G3	9250	131	B3-U3-G3	9097	129	B3-U3-G3	9468	134	B3-U3-G3	9594	136	B3-U3-G3	
	4F		8979	127	B2-U3-G2	9271	131	B2-U3-G2	9118	129	B2-U3-G2	9490	134	B2-U3-G2	9616	136	B2-U3-G2	
	3W		8948	127	B2-U3-G2	9239	131	B2-U3-G2	9087	129	B2-U3-G2	9457	134	B2-U3-G2	9583	136	B2-U3-G2	
	5D		8343	118	B3-U3-G1	8614	122	B3-U3-G1	8472	120	B3-U3-G1	8817	125	B3-U3-G1	8934	126	B3-U3-G1	
	AD		8365	118	B2-U3-G2	8637	122	B2-U3-G2	8495	120	B2-U3-G2	8841	125	B2-U3-G2	8958	127	B2-U3-G2	
12L	5Q	80	10801	126	B3-U3-G1	11152	130	B3-U3-G1	10968	128	B3-U3-G1	11415	134	B3-U3-G1	11566	135	B3-U3-G1	85
	5C		11088	130	B3-U3-G1	11448	134	B3-U3-G1	11260	132	B3-U3-G1	11718	137	B3-U3-G1	11874	139	B3-U3-G1	
	5R		10679	125	B3-U3-G3	11026	129	B3-U3-G3	10844	127	B3-U3-G3	11286	132	B3-U3-G3	11436	134	B3-U3-G3	
	4F		10703	125	B2-U3-G2	11051	129	B2-U3-G2	10869	127	B2-U3-G2	11312	132	B2-U3-G2	11462	134	B2-U3-G2	
	3W		10666	125	B2-U3-G2	11013	129	B2-U3-G2	10832	127	B2-U3-G2	11273	132	B2-U3-G2	11423	134	B2-U3-G2	
	5D		9945	116	B3-U3-G2	10268	120	B3-U3-G2	10099	118	B3-U3-G2	10510	123	B3-U3-G2	10650	125	B3-U3-G2	
	AD		9972	117	B2-U3-G2	10296	120	B2-U3-G2	10126	118	B2-U3-G2	10539	123	B2-U3-G2	10679	125	B2-U3-G2	
14L	5Q	80	12487	124	B3-U3-G2	12893	128	B3-U3-G2	12681	126	B3-U3-G2	13197	131	B3-U3-G2	13372	133	B3-U3-G2	100
	5C		12819	128	B3-U3-G1	13236	132	B3-U3-G1	13018	130	B3-U3-G1	13548	135	B3-U3-G1	13728	137	B3-U3-G1	
	5R		12346	123	B3-U3-G3	12747	127	B3-U3-G3	12537	125	B3-U3-G3	13048	130	B3-U3-G3	13221	132	B3-U3-G3	
	4F		12374	123	B2-U3-G2	12776	127	B2-U3-G2	12566	125	B2-U3-G2	13078	130	B2-U3-G2	13252	132	B2-U3-G2	
	3W		12332	123	B2-U3-G2	12732	127	B2-U3-G3	12523	125	B2-U3-G3	13033	130	B2-U3-G3	13206	132	B2-U3-G3	
	5D		11497	114	B3-U3-G2	11871	118	B3-U3-G2	11675	116	B3-U3-G2	12151	121	B3-U3-G2	12312	123	B3-U3-G2	
	AD		11528	114	B2-U3-G2	11903	118	B2-U3-G2	11707	116	B2-U3-G2	12184	121	B2-U3-G2	12346	123	B2-U3-G2	

Type: _____

Opulence Small Post Top

PERFORMANCE

Back to Quick Links

ELECTRICAL DATA*							
Lumens	**Wattage**	**120V**	**208V**	**240V**	**277V**	**347V**	**480V**
3L	20.30	0.17	0.10	0.08	0.07	0.06	0.04
5L	34.20	0.29	0.16	0.14	0.12	0.10	0.07
6L	41.40	0.35	0.20	0.17	0.15	0.12	0.09
8L	54.90	0.46	0.26	0.23	0.20	0.16	0.11
10L	70.30	0.59	0.34	0.29	0.25	0.20	0.15
12L	85.40	0.84	0.48	0.42	0.36	0.29	0.21
14L	100.40	0.84	0.48	0.42	0.36	0.29	0.21

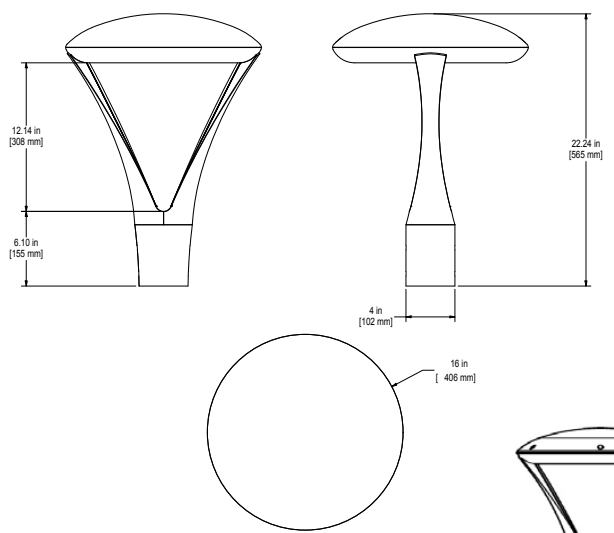
*Electrical data at 25C (77F). Actual wattage may differ by +/-10%.

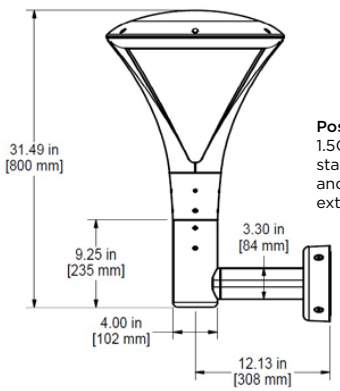
RECOMMENDED LUMEN MAINTENANCE (1)					
Ambient Temp	**Lumen Multiplier**				
C	0 hrs. (2)	25K hrs. (2)	50K hrs. (2)	75K hrs. (3)	100K hrs. (3)
0 C - 40 C	100%	99%	96%	93%	90%

1. Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

PRODUCT DIMENSIONS

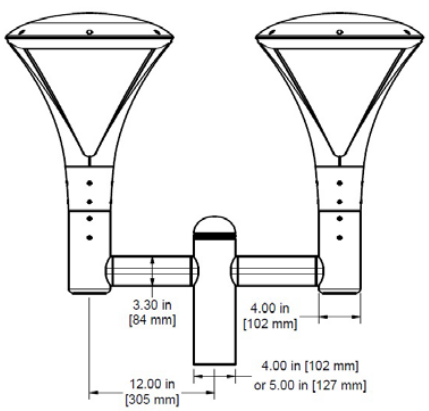
Back to Quick Links





Post Top Wall Mount Bracket
1.5G rated Wall Mount Arm mounts to standard 4" steel J-Box (Supplied by others) and is provided with masonary anchors for extra support.

LUMINAIRE EPA CHART - OPS PT		
	Mounting	**EPA**
■ PT Single	PT	0.75
■-■ PTO D180°	PT	1.75



D180 Post Top Arm Bracket
Optional D180 1.5G rated Arm Assembly Mounts to 4" or 5" Dia. D180 Bolt-on Pole Consult factory for alternate configurations.

Type: _____

Opulence Small Post Top

CONTROLS

Integral Bluetooth™ Motion and Photocell Sensor (IMSBT)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is rated for cold and wet locations (-30° C to 70° C). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more about IMSBT.

AirLink Blue

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more about AirLink Blue.

POLES & BRACKETS

LSI offers a full line of poles and mounting accessories to complete your lighting assembly. Aluminum and steel in both square and round shafts. In addition, LSI offers round tapered, fluted and hinge based poles. Designed and engineered for durability and protected with our oven baked DuraGrip Protection System. Also available with our DuraGrip+ Protection system for unmatched corrosion resistance and an extended warranty. American made in our Ohio facility with industry leading lead times.

Click here to learn more details about poles & brackets.



INTERNAL FLUSH MOUNT ADAPTOR (4" ROUND STRAIGHT)

Optional flush mount accesory slips inside the top of a 4" round pole for a virtually seamless transition from pole to luminaire. Painted with LSI - Duragrip paint for unmatched corrosion resistance.



SQUARE INTERNAL TENON ADAPTOR

The Square Pole Tenon 4", 5", & 6" adaptors allow for the Opulence Post Top to be mounted on a square open top steel pole. Tenon adaptors slice into pole and bold through the securing the tenon to the pole. These tenons are made hearty steel tubing, are double-welded and are painted wiht LSI Duragrip paint. Shipped with mounting hardware assembled.



ROUND EXTERNAL TENON ADAPTOR

The Round Pole Top Tenon adaptors provide the right size tenon to ensure proper mounting of the Opulence Post Top on the Round tapered or straight poles. These tenons are made from heard steel tubing, are double-welded, and are painted with LSI Duragrip paint. Shipped with mounting hardware assembled.



SPUN ALUMINUM COLLAR Round Straight

Optional one-piece spun aluminum collar for 4" or 5" diameter straight round poles. Features durable, high quality construction with aesthetically pleasing design that slips over the pole for increased theft deterrent.



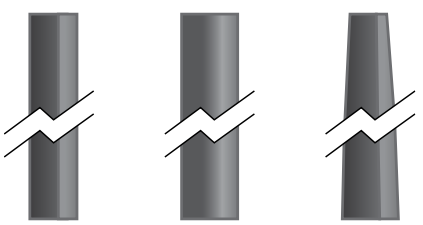
CONTEMPORARY BASE COVER & TAPERED POLE

Optional contemporary base cover is cast from 356 alloy aluminum and provided with an access door. Available with 10 - 18' round taper pole shafts. The complete assembly is heat-treated to a T6 temper.



DECORATIVE BASE COVER Round Straight

Optional decorative base cover has a two-piece die cast construction with stainless steel fasteners. Base cover is polyester powder coated to match pole. GBC base cover fits 4" and 5" diameter straight round poles. Includes 4" round pole adaptor molded from black silicone rubber.



Square Pole 14'-30'

Round Pole 10'-30'

Tapered Pole 10'-30'

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Steel Poles

Round Straight



QUICK LINKS

Ordering Guide | Configurations | Dimensions | EPA

FEATURES & SPECIFICATIONS

Pole Shaft

- Steel round poles are 4" or 5" in diameter.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 46,000 psi.
- On Tenon Mount steel poles, tenon is high-strength pipe. Tenon N option is 2-3/8" O.D. x 4-3/4" tall. Tenon 4N option is 4" O.D. x 4-7/8" tall.

Hand-Hole

- Standard hand-hole location is 12" above pole base.
- Poles 18' and above have a 3" x 6" reinforced hand-hole. Shorter poles have 2" x 4" non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional. Decorative base cover is also available.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 psi.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip® Protection System and a 5-year limited warranty:
- When the top-of-the line DuraGrip® Plus Protection System is selected, in addition to the DuraGrip® Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior, sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select pole height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant

Steel Poles - Round Straight

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **5RP B3 S07G 24 S PLP DGP**

Pole Series	Mounting Method	Material	Height [4]	Mounting Configuration	Pole Finish	Options
4RP- 4" Diameter Round Straight Pole **5RP -** 5" Diameter Round Straight Pole	**Bolt-On Mount**[1] - See pole selection guide for patterns and fixture matches. **B5 -** 5" Traditional Drilling Pattern **B3 -** 3" Reduced Drilling Pattern **B2 -** 2" Reduced Drilling Pattern **T -** Tenon Mount - See pole selection guide for tenon and fixture/bracket matches. **I -** No Mounting Holes[1] - Use with: • Greenlee Lifestyle CC, SC & CH mounting styles • Enterprise & Lexington PT Single mounting styles[2] • Lifestyle UCLS • Lifestyle UCLD180	S11G – 11 Ga. Steel (5RP only) S10G – 10 Ga. Steel (4RP only) S07G – 07 Ga. Steel (5RP only)	8' 10' 12' 14' 15' 16' 17' 17' 6" 18' 20' 22' 22' 6" 24' 25' 26' 27' 28' 30' Height Restriction, Consult Pole Selection Chart on opposite page	S – Single/Parallel D180 – Double D90 – Double DN90 – Double T90 – Triple TN120 – Triple Q90 – Quad QN90 – Quad N – Tenon Mount 4N – Tenon Mount (5RPT only. For 4" poles, use 4RPI[5] 4N-6 – Tenon Mount (5RPT only. For 4" poles use 4RPI)	BRZ – Bronze BLK – Black PLP – Platinum Plus WHT – White SVG – Satin Verde Green GPT – Graphite MSV – Metallic Silver BZA – Alternate Bronze	GA – Galvanized Anchor Bolts SF – Single Flood[6] DF – Double Flood[6] DGP – DuraGrip® Plus LAB – Less Anchor Bolts Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

Accessory Ordering Information

Description	Order Number
4" SRBC Square Base Cover	158450CLR
5" SRBC Square Base Cover	158451CLR
4" /5" GBC Decorative Base Cover	483859CLR
ER2 – Weatherproof Duplex Receptacle (Poles below 18')	122557CLR
ER2 – Weatherproof Duplex Receptacle for Reinforced Hand-hole (Poles 18' and above)	122566CLR
GFI – Ground Fault Circuit Interrupter (Poles below 18')	122558CLR
GFI – Ground Fault Circuit Interrupter for Reinforced Hand-hole (Poles 18' and above)	22567CLR
MH5 - Mounting Hole Plugs for use with 5" traditional drill pattern (3 set of 3 plugs)	132336

Description	Order Number
MH3 - Mounting Hole Plugs for use with 3" reduced drill pattern (3 sets of 3 plugs)	681126
MH2 - Mounting Hole Plugs for use with 2" reduced drill pattern (3 sets of 3 plugs)	725841
BB - Banner Brackets	Consult Factory for EPA calculations

FOOTNOTES:

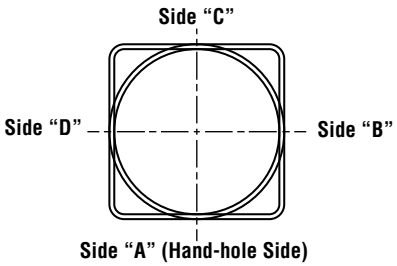
1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional DrIll Pattern spec sheets.
2 - For Enterprise and Lexington PT mounting configuration styles, see Tenon Mount (4N) and Greenlee Slipfit Pole Series (4RPI).
3 - Standard flat black pole cap provided. Domed Greenlee pole cap will ship with SA4 and SA5 Enterprise and Lexington fixtures, SA Lifestyle fixtures, BK SPT BO, BK MPT BO and UCL brackets.
4 - Pole heights will have a +/- 1/2" tolerance. Max height for 4RP S10G is 24'. Max height of the 5RP S11G is 26'.
5 - For Enterprise and Lexington D180 or other mounting configuration styles using BK SPT BO and BK MPT BO accessories, see chart on Bolt-on Mount 4RPB3 / 5RPB3 DRILLING PATTERN section on pole selection chart.
6 - See Flood Lighting Brackets section for choice of FBO brackets.

Steel Poles - Round Straight

DRILLING LOCATIONS

Back to Quick Links

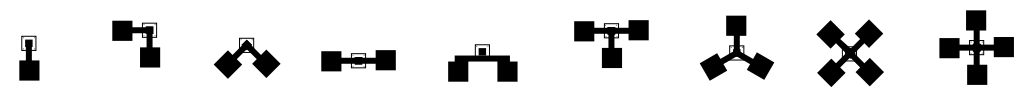
Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180		X		X
D90	X			X
DN90[1]				
T90	X	X		X
TN120[2]				
Q90	X	X	X	X
QN90[3]				
Single FBO	X			
Double FBO		X		X



NOTES:
1 - Two locations will be 45° to the left and right of Side A.
2 - Other two locations will be 120° to the left and right of Side A.
3 - Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20' poles. Maximum height for SF and DF pole preparations on 20' poles is 13' from the base.

FIXTURE CONFIGURATIONS



BOLT CIRCLE

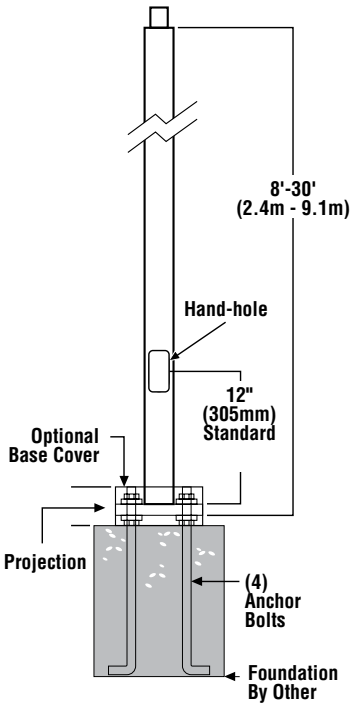
	4" (102mm) Round 10-1/8" (257mm) sq. 11" (279mm) Dia. Bolt Circle	5" (127mm) Round 10-1/8" (257mm) sq. 11" (279mm) Dia. Bolt Circle	5" (127mm) Round 10-1/8" (257mm) sq. 11" (279mm) Dia. Bolt Circle
Bolt Circle Designator	L	L	M
Bolt Circle	Slotted 11" (279mm)	Slotted 11" (279mm)	Slotted 11" (279mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)
Pole Gauge	10	11	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

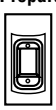
Steel Poles - Round Straight

PRODUCT DIMENSIONS

RPT –
N = 2-3/8"(60mm) O.D. x 4-3/4"(121mm) Tenon
4N = 4"(102mm) O.D. x 4-7/8"(124mm) Tenon
4N6 = 4"(102mm) O.D. x 6-3/8"(162mm) Tenon

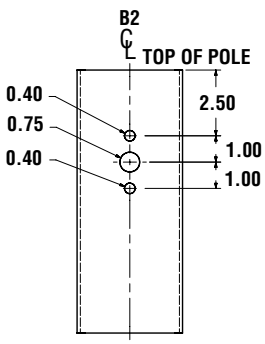


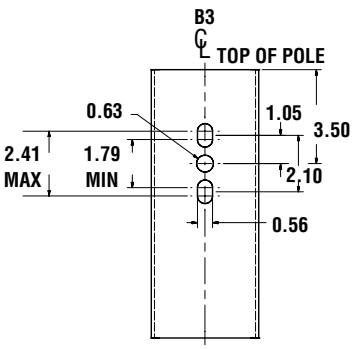
SF –
Single Flood
Pole Preparation

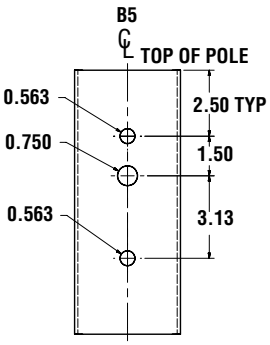


SHIPPING WEIGHTS	
4"(102mm) Dia. 10 Ga. is approximately	6.0 lbs./ft.
5"(127mm) Dia. 11 Ga. is approximately	7.0 lbs./ft.
5"(127mm) Dia. 07 Ga. is approximately	10.0 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs.(7kg)/set
Anchor Bolts (1" x 36")(125mm x 914mm)	30 lbs.(14kg)/set

Bolt-On Mount 2-Bolt Pattern







Steel Poles - Round Straight

WIND SPEED

EPA Information
All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
4" x 10-ga x 14'	14	10	L	11	0.75	6.0	5.2	4.7	3.9	3.2	2.7	2.3	2.0	1.7
4" x 10-ga x 16'	16	10	L	11	0.75	4.3	3.7	3.2	2.6	2.1	1.8	1.4	1.2	1.0
4" x 10-ga x 18'	18	10	L	11	0.75	7.7	6.8	6.0	5.0	4.2	3.5	3.0	2.5	2.2
4" x 10-ga x 20'	20	10	L	11	0.75	6.0	5.2	4.6	3.7	3.1	2.5	2.1	1.8	1.5
4" x 10-ga x 22'	22	10	L	11	0.75	4.6	3.9	3.3	2.6	2.1	1.7	1.4	1.1	0.9
4" x 10-ga x 24'	24	10	L	11	0.75	3.4	2.7	2.2	1.7	1.3	1.0	0.7	0.5	n/a
5" x 11-ga x 16'	16	11	L	11	0.75	8.7	7.9	7.2	6.0	5.0	4.3	3.7	3.2	2.8
5" x 11-ga x 18'	18	11	L	11	0.75	12.2	11.1	10.1	8.5	7.2	6.1	5.3	4.6	4.0
5" x 11-ga x 20'	20	11	L	11	0.75	10.0	9.1	8.2	6.8	5.7	4.9	4.2	3.6	3.1
5" x 11-ga x 22'	22	11	L	11	0.75	8.1	7.3	6.6	5.5	4.5	3.8	3.2	2.8	2.4
5" x 11-ga x 24'	24	11	L	11	0.75	6.5	5.9	5.3	4.3	3.5	2.9	2.4	2.0	1.7
5" x 11-ga x 26'	26	11	L	11	0.75	5.2	4.6	4.1	3.2	2.6	2.1	1.7	1.4	1.1
5" x 7-ga x 18'	18	7	M	11	1.00	19.7	17.9	16.4	13.8	11.7	10.1	8.8	7.7	6.8
5" x 7-ga x 20'	20	7	M	11	1.00	16.5	15.0	13.7	11.5	9.8	8.4	7.3	6.3	5.6
5" x 7-ga x 22'	22	7	M	11	1.00	14.0	12.7	11.5	9.6	8.1	7.0	6.0	5.2	4.6
5" x 7-ga x 24'	24	7	M	11	1.00	11.8	10.6	9.6	8.0	6.8	5.7	4.9	4.2	3.7
5" x 7-ga x 26'	26	7	M	11	1.00	9.9	8.9	8.0	6.7	5.6	4.7	4.0	3.4	2.9
5" x 7-ga x 28'	28	7	M	11	1.00	8.3	7.4	6.7	5.4	4.5	3.7	3.1	2.7	2.3
5" x 7-ga x 30'	30	7	M	11	1.00	6.8	6.1	5.4	4.4	3.6	2.9	2.4	2.0	1.7

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:
1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.

CARLIN • SIMPSON & ASSOCIATES, LLC

Consulting Geotechnical and Environmental Engineers

61 Main Street, Sayreville, New Jersey 08872
Tel. (732) 432-5757
Fax. (732) 432-5717

Principal:
Robert B. Simpson, P.E.

Associates:
Meredith R. Anke, P.E.
Stephen Rossi, P.E.
Kurt W. Anke
Eric J. Shaw
Catherine Simpson, E.I.T.
Michal Wroblewski, E.I.T.

28 September 2020
Revised 2 March 2022

Farrell Building Company
2317 Montauk Highway
Bridgehampton, NY 11932

Attn: Mr. Stephen H. Zagoren

Re: Report on Subsurface Soil and Foundation Investigation
Proposed Apartment Building
16 West Main Street
Beacon, NY (CSA Job #20-07)

Dear Mr. Zagoren:

In accordance with our proposal dated 14 January 2020 and your subsequent authorization, we have completed a Subsurface Soil and Foundation Investigation for the referenced site. The purpose of this study was to determine the nature and engineering properties of the subsurface soil and groundwater conditions for the new construction, to recommend a practical foundation scheme, to determine the allowable bearing capacity of the site soils, and to determine the soil permeability in the new stormwater management area.

We understand that the planned construction will consist of two 4-story apartment buildings and a 3-story bridge that will connect the two buildings. The proposed construction will also include a new stormwater management system and new site retaining walls. To guide us in our study, JMC has provided us with site plans that indicate the location of the proposed construction.

Our scope of work for this project included the following:

1. Reviewed the proposed layout, the existing site conditions, the expected soil conditions, and planned this study.

2. Retained General Borings Inc. to advance sixteen (16) soil borings at the subject site.

3. Laid out the boring locations in the field, provided full time inspection of the explorations, obtained soil samples, and prepared detailed logs and a Boring Location Plan.

4. Performed soil identification tests on selected soil samples in our laboratory.

5. Analyzed the field data and prepared this report containing the results of this study.

1.0 SITE DESCRIPTION

The project site is located at 16 West Main Street in Beacon, New York. The site is currently occupied by a single-story mechanic shop building. The remainder of the site is occupied by asphalt parking lots and grass landscape areas. Site grades generally slope down from west to east. Elevations range from approximately +45.0 to +32.0.

2.0 PROPOSED CONSTRUCTION

We understand that the planned construction will consist of two new 4-story apartment buildings. A 3-story bridge will connect the East and West Buildings. Both proposed buildings have a finished first floor elevation of +37.75. A lower-level utility room is planned in the southwestern corner of the West Building. The lower-level utility room has a finished floor elevation of +30.50. Based on the provided grading plan, cuts ranging up to 13 feet and fills ranging up to 5 feet will be required to achieve the planned finished floor elevations.

In order to achieve the planned site grades, five retaining walls will be required. The new retaining walls will range up to approximately thirteen (13) feet in height. Site development will also include a stormwater management system, new utilities, and new driveways and parking areas.

As of the date of this report, the column loads for the new buildings were not known. Once the planned construction drawings have been further developed, a copy of the plans should be forwarded to our office so that we can review them along with the recommendations in this report. At that time, any changes or additional recommendations can be provided, if required.

3.0 SUBSURFACE CONDITIONS

To determine the subsurface soil and groundwater conditions at the site, sixteen (16) soil borings were advanced by General Borings, Inc. at the locations shown on the enclosed Boring Location Plan. The borings were performed using hollow stem augers and split spoon sampling. Detailed boring logs have been prepared and are included in this report. The borings were completed in July 2020 and November 2021 under the full-time inspection of Carlin-Simpson & Associates. Our field engineer visually identified all of the soil samples obtained during the boring operations and select samples were tested in our laboratory.

3.1 Soils

The soil descriptions shown on the boring logs are based on the Burmister Classification System. In this system, the soil is divided into three components: Sand (S), Silt ($) and Gravel

(G). The major component is indicated in all capital letters, the lesser in lower case letters. The following modifiers indicate the quantity of each lesser component:

Modifier	Quantity
trace (t)	0 -10%
little (l)	10% - 20%
some (s)	20% - 35%
and (a)	35% - 50%

When the site soils are plastic, the following indicators are used:

Plasticity	Plasticity Index	Indicator
None	0 - 1	SILT
Slight	1 - 5	Clayey SILT
Low	5 - 10	SILT & CLAY
Medium	10 - 20	CLAY & SILT
High	20 - 40	Silty CLAY
Very High	40+	CLAY

The subsurface soil conditions encountered in the test borings can be summarized as follows:

Stratum 1A Topsoil — At the surface in portions of the site is topsoil that ranges from approximately 1 to 6 inches in thickness.

Stratum 1B Asphalt — At the surface in the remaining borings is asphalt pavement that ranges from approximately 1 to 12 inches in thickness.

Stratum 2 Existing Fill — Below the surface layer in the majority of the site is existing fill that generally consists of brown, gray, black coarse to fine SAND, little (to and) Silt, little (to and) coarse to fine Gravel. Debris including asphalt, brick, concrete, wood, and other possible obstructions was encountered within the existing fill. The existing fill generally extends to depths ranging from 2’0” to 14’0” below the existing ground surface throughout the site.

Stratum 3 Sandy Clay and Silt — Below the existing fill in borings PB-1, B-3, B-5, B-6, and B-9 is brown, gray soft to very stiff Clayey Silt or SILT and CLAY little (to and), coarse to fine Sand. Where encountered, this stratum extends to depths ranging from 6’3” to 19’0” below the existing ground surface.

Stratum 4 Silty Sand with Gravel (Glacial Till) — Below Stratum 2 and Stratum 3 is medium dense to very dense brown coarse to fine Sand, trace (to and) Silt, little (to and) coarse to fine Gravel. This stratum extends to depths ranging from 13’0” to 25’3” below the existing ground surface.

Stratum 5 Weathered Shale Bedrock — Underlying the upper Strata in portions of the site completely weathered Shale bedrock. This layer is soil like in state, however, there could be denser pockets that cannot be conventionally excavated. This stratum was encountered in borings B-10, B-11, B-12, PB-3, PB-4 and PB-5 at depths ranging from 9'0" to 19'0" below the existing ground surface.

Stratum 6 Shale Bedrock — Auger refusal on probable Shale bedrock was encountered in 11 of the 16 borings at depths ranging from 13'0" to 30'6" below the existing ground surface.

The upper 5-feet of the bedrock was cored at boring location PB-1, PB-3, and PB-5. The rock core recovery ranged from 50% to 78% with a rock quality designation (RQD) ranging from 0% to 78%. Based on the RQD and visual inspection, the upper 5-feet of the bedrock surface is highly weathered to slightly weathered and ranges from a very poor to good condition.

3.2 Groundwater

Observations for groundwater were made during sampling and upon completion of the drilling operations at each boring location. During the subsurface investigation, groundwater was encountered in most of the test borings at depths ranging from 9'0" to 19'0" below the existing ground surface (elevations +36.0 to +21.5). We expect that groundwater may be encountered in portions of the site during construction. In the event that groundwater is encountered during construction, proper dewatering methods will be required.

Groundwater on the subject site will be controlled by the topography and the underlying bedrock surface. As surface water infiltrates the ground, the water will travel along the soil/rock interface and through fractures in the bedrock. Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at the time of this exploration.

3.3 Bedrock

Based on our experience and the boring observations, the in-situ bedrock at the site will range from completely weathered rock in a soil-like state, to massive, moderately jointed in a good condition. The rock generally transitions into harder bedrock with increasing depth. The completely weathered rock was encountered at depths ranging from 1'5" to 9'6" below the ground surface (elevations +37.0 to +21.5). Auger refusal on harder bedrock was encountered at depths ranging from 13'0" to 30'6" below the existing ground surface (elevation +31.0 to +6.5). The bedrock observations are summarized in Table 1 below.

Based on the provided grading plan, the completely weathered bedrock and harder bedrock may be encountered during construction. Especially in the northwest portion of the West Building. Penetration into the bedrock and completely weathered rock with excavation equipment will depend on the degree of weathering and fracturing in the rock. The upper few feet of rock may be "rippable" by using large construction equipment, but we anticipate that the

"rippability" of the bedrock will be variable and limited. It should not be assumed that the completely weathered rock (very dense material in a soil-like state) can be excavated with conventional equipment. The use of hydraulic hammers may be required to excavate the harder bedrock.

3.4 Summary of Boring Observations

A summary of the boring observations is provided in Table 1 below.

Table 1 – Summary of Boring Observations

Boring No.	Approximate Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bottom of Soft Soils (Elevation)	Depth to Bedrock (Elevation)
East Building Borings					
B-1	+42.0	15'0" (+27.0)	3'0" (+39.0)	NE	NE to 22'0"
B-2	+42.0	17'0" (+25.0)	NE	NE	NE to 21'10"
B-3	+36.5	15'0" (+21.5)	5'0" (+31.5)	NE	AR @ 25'3" (+11.3)
PB-1	+37.0	14'3" (+22.8)	7'0" (+30.0)	NE	C @ 30'6" (+6.5)
West Building Borings					
B-4	+32.5	6'0" (+26.5)	6'0" (+26.5)	NE	AR @ 13'0" (+19.5)
B-5	+34.0	10'0" (+24.0)	10'0" (+24.0)	19'0" (+15.0)	NE to 22'0"
B-6	+35.0	13'6" (+21.5)	9'0" (+26.0)	18'6" (+16.5)	AR @ 23'0" (+12.0)
B-9	+37.5	5'9" (+31.8)	9'6" (+28.0)	20'6" (+17.0)	AR @ 23'0" (+14.5)
B-11	+46.0	NE to 22'0"	14'0" (+32.0)	NE	CWR @ 17'0" (+29.0) AR @ 22'0" (+20.0)
B-12	+40.5	7'6" (+33.0)	9'6" (+31.0)	NE	CWR @ 19'0" (+21.5) AR @ 20'3" (+20.25)
PB-3	+48.0	NE to 17'0"	3'0" (+45.0)	NE	CWR @ 9'0" (+39.0) C @ 17'0" (+31.0)
Site Borings					
B-10	+53.0	21'0" (+32.0)	2'0" (+51.0)	NE	CWR @ 14'0" (+39.0) AR @ 22'0" (+31.0)
B-7	+39.5	5'0" (+34.5)	8'0" (+31.5)	> 17'0"	NE to 17'0"
B-8	+38.0	4'10" (+33.2)	10'0" (+27.0)	> 14'0"	NE to 14'0"
PB-4	+51.0	15'0" (+36.0)	6'6" (+44.5)	NE	CWR @ 14'0" (+37.0) AR @ 20'0" (+31.0)
PB-5	+46.0	14'5" (+31.4)	NE	NE	CWR @ 18'0" (+28.0) C @ 19'6" (+26.5)

AR – Auger Refusal on Probable Bedrock
CWR – Completely Weathered Rock
NE – Not Encountered

4.0 SUMMARY OF DESIGN RECOMMENDATIONS

During this subsurface investigation, soft clays and silts were present in the borings performed in the West Building footprint. However, soft clays and silts were not encountered in the borings completed in the East Building area Therefore, the foundation recommendations are different for the West Building and the East Building. The probable extent of the soft clays and silts are shown in FIG-1, which is attached to this report.

Below is a summary of the major design and construction considerations for this project. Additional recommendations are provided in the following sections of this report.

- *Subsurface Conditions (Section 3.0)*
  - Existing Fill is present at the site to depths of 2'0" to 14'0" below the existing ground surface (elevations +51.0 to +24.0).
  - Soft silt and clay soils were encountered in borings B-5, B-6, and B-9 extending to depths ranging from 18'6" to 20'6" (elevations +17.0 to +15.0) below the existing ground surface.
  - Groundwater is present at depths ranging from 4'10" to 21'0" below the existing ground surface (elevations +36.0 to +21.5).
  - Shale bedrock or auger refusal on probable bedrock was encountered throughout the site at depths ranging from 13'0" to 30'6" below the existing ground surface (elevations +31.0 to +6.5).
  - A summary of the subsurface observations is provided in Table 1 above.

- *West Building Recommendations (Section 5.0)*
  - New fill required to achieve the desired grades must be placed early in the construction schedule to consolidate the potential soft compressible soils and reduce future settlements.
  - The existing fill and soft clays and silts present in the West Building area create the possibility of intolerable differential settlements under the new building loads. In order to avoid damaging settlement, the new building loads must be transferred to the underlying dense virgin soils/bedrock using a deep foundation system.
  - The depth of the existing fill, soft soils, and bedrock within the West Building footprint vary greatly, pile lengths will also vary accordingly.
  - 8-inch diameter drilled micropile capable of supporting allowable axial compressive loads of 40 tons can be considered for the proposed West Building.
  - The piles should be cased through the existing fill (Stratum 2) and soft sandy clay and silt (Stratum 3) and develop a bond zone entirely in the silty sand with gravel (glacial till), weathered rock or bedrock (Stratum 4, 5, or 6).
  - We anticipate the following bond zone length:
    - 45-ton drilled micropile: minimum bond zone 20 to 25-feet
    - Downdrag load – 5 tons
    - Pile Working Capacity – 40 tons
    - Load test is required for this alternative to confirm capacity and design.
  - The new floor slab for the West building should also be supported by the pile foundation system.

- *East Building Recommendations (Section 6.0)*
  - Soft soils were not present in the borings completed for the East Building. For this building, traditional shallow spread footing bearing on virgin soil or new compacted fill can be used.

  - *Subgrade Preparation (Section 6.1)*
    - Existing structures must be demolished, existing utilities must be removed, and surface materials must be stripped from proposed construction area.
    - The existing fill is not a suitable bearing material for the new East Building. Where it is encountered at the subgrade elevation, it must be completely removed and replaced with new compacted fill.
    - New backfill shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557).

  - *Foundation Design Recommendations (Section 6.2)*
    - The new foundations may be designed as spread footing type foundations bearing on virgin soil or engineer-approved compacted fill.
    - Net design bearing pressure is 4,000 psf.
    - Minimum depth for frost protection is 42 inches.
    - Seismic Site Class is D or Stiff Soil Profile.

  - *Building Floor Slab Recommendations (Section 6.3)*
    - The floor slab may be designed as slab on grade.
    - The floor slab may bear on densified virgin soil or engineered-approved compacted fill.
    - Modulus of subgrade reaction is 200 pci.

5.0 WEST BUILDING RECOMMENDATIONS

We understand that the planned construction will consist of two new 4-story apartment buildings with a 3-story bridge connecting the two buildings. The new buildings will have a finished floor elevation of +37.75. A partial basement is planned in the in the southwestern corner of the West Building with a finished floor elevation of +30.50. A summary of the boring observations performed in the proposed building area is provided in Table 1 above.

Existing site grades in the proposed West Building range from approximately elevation +50.0 to +29.0. Cuts of up to 13 feet are anticipated in the northern portion of the West Building. Fills of up to 5 feet are anticipated in the southern portion of the West Building. ***New fill to raise site grades will produce settlements of the underlying soft Sandy Clays and Silts on the order of 1 to 2 inches. New fill should be placed early in the project schedule to mitigate long term settlement.***

Existing fill (Stratum 2) is present throughout the site. Existing fill was encountered to depths ranging from 3’0” to 14’0” below the existing ground surface (elevations +51.0 to +24.0) in the West Building. The depth of the existing fill is variable and may be deeper in unexplored areas of the site. In addition, soft sandy clays and silts soils were encountered in borings B-5, B-

6, and B-9 in the eastern portion of the West Building. The soft soils were encountered to depths ranging from 18'6" to 20'6" below the existing ground surface. Both existing fill and soft Sandy Clays and Silts are not acceptable bearing materials for the West Building foundations or floor slab. The consistency and density of the existing fill is not predictable. Certain areas may contain clean dense soils while other areas may contain loose material, void spaces, and/or debris. In addition, the soft clays and silts are susceptible to long term consolidation settlement. The existing fill material and soft clays and silts create the possibility of intolerable differential settlements under loading.

To eliminate the potential for damaging differential settlements, a pile foundation system shall be used to transfer the new loads below the existing fill layer and soft clays and silts to the underlying silty sand with gravel (glacial till), weathered rock, or bedrock (Stratum 4, 5, or 6). As of the date of this report, the foundation for the bridge portion of the planned construction was not yet known. In the event that column footings are required to support the bridge, they shall also be supported by a pile foundation system. Pile foundation recommendations are discussed in more detail below.

5.1 West Building – Pile Foundations

The existing fill and soft soils are not suitable for support of the new West Building foundations and floor slab. The West Building foundations and structural floor slab must be pile supported. We anticipate that a drilled micropile can be considered for support of the West Building.

The depth of the existing fill, soft soils, and bedrock vary significantly across the West building footprint. We expect the total pile lengths will vary from 15 to 40 feet in length.

We also recommend that the new floor slab be designed as structural floor slab supported by piles. Pile recommendations are discussed below.

5.1.1 Drilled-in Micropiles

A micropile system that capable of supporting an allowable axial compressive load of 45 tons is plausible for this site. For this project, steel pipe casing should have a minimum nominal diameter of eight (8) inches and a wall thickness of at least 0.375 inches. The micropiles shall be filled with cement grout having a minimum 28-day compressive strength of at least 5,000 psi. The grout mix shall be designed and proportioned so as to produce a pumpable mixture. Center to center spacing shall be at least three times the outside diameter of the steel casing but not less than 30 inches.

The project structural engineer shall determine the number of piles required and their locations. The micropiles shall be designed by a micropile contractor to meet the specified loading conditions as shown on the structural drawings. The piles must also be designed and installed in accordance with the New York State Building Code (refer to Section BC 1810 – Deep Foundations and Section BC 1810.3.10 – Micropiles).

The piles must extend through the existing fill and develop their load carrying capacity with a pressure grouted bond zone formed entirely in the underlying silty sand with gravel (glacial till), weathered rock or bedrock (Stratum 4, 5, or 6). Estimated bond lengths for a 45-ton allowable capacity micropiles can be found in Table 2 below. In addition, the piles must be cased or have an unbonded zone that extends to a sufficient depth below the existing fill and soft slit and clays or approximately 10 to 20 feet below the existing ground surface. The minimum unbonded or cased length of the pile shall be 10-feet.

Based on the provided grading plan, we understand that fills ranging up to approximately 5-feet will be required in the southern portion of the site. The placement of fill in and around the proposed building area can trigger the settlement of the existing fill and soft clay and silt soils. The soil movement around the piles will cause a negative skin friction (downdrag) on the piles, thereby reducing the net allowable pile capacity of the piles. For this project, we estimate that the downdrag force will be on the order of about five (5) ton per pile. Therefore, the allowable (working) pile capacity shall be 40 tons for the steel pipe piles.

Table 2 – Summary of Pile Capacities and Bond Lengths

Description	Value
Pile Design Capacity	45 tons
Downdrag Load	5 ton
Pile Working Capacity	40 tons
Estimated Length of Casing*	10 to 20 feet
Estimated Bond Length	20 to 25 feet

(*) – Depth below existing site grades

Reinforcing steel extending to the bond zone shall be placed in the casing to the bottom of the bond zone prior to placing grout. The full length of the micropile shall contain either a steel pipe and/or steel reinforcement. Reinforcement steel shall be in accordance with ASTM A 615 Grade 60 or 75 or ASTM A 722 Grade 150. Preliminarily, we anticipate that the core reinforcement steel will consist of a single No. 8 steel threaded bar, ASTM A615 Grade 75 (75 ksi yield strength), extending the full length of the pile. As required for structural design, steel reinforcement bars shall extend from the micropile and up into the pile cap, grade beam, and/or floor slab. The structural engineer will determine the pile to pile cap, grade beam, or slab connection.

Pile Submittals

For this project, the micropile contractor will design the individual pile elements and select the pile construction process and equipment. The micropile contractor shall submit shop drawings and design calculations to Carlin-Simpson & Associates and the project structural engineer for review and approval.

At a minimum, the contractor's submittal should include the following: pile design calculations and shop drawings for all structural steel and pile components prepared and stamped by a New York State registered Professional Engineer; a detailed description of the construction

procedure proposed, including type of equipment to be used for installing the piles; a pile location plan; the proposed grout mix design(s) including supporting laboratory test results; the procedure for placing the grout; and detailed plans and procedures for the pile load test(s), including load test apparatus set-up for the pile load testing and current calibration report for the hydraulic jack and gauges.

Micropile Load Tests and Inspection

A compressional load test will be required per the New York State Building Code (refer to Section 1810.3.3.1.2 – Load Tests) to confirm the micropile contractor's pile design. The test may be performed on either a production pile or a sacrificial pile but production piles shall not be used as reaction piles. The pile load test(s) must be performed under the full-time inspection of a Carlin-Simpson & Associates representative. Piles used for the pile load test should be installed at least one week prior to testing to allow time for the grout to obtain adequate strength for testing.

The piles shall be installed under the full-time inspection of a representative from Carlin-Simpson & Associates. At the completion of the pile installation, Carlin-Simpson & Associates will provide a letter of compliance stating that the piles have been installed in accordance with our recommendations and the project specifications, and that they are capable of supporting the design loads.

5.2 Structural Slab

The new West Building floor slab shall be designed as structural floor slab supported by pile foundation system. We understand that there is a lower-level utility room planned for the West Building. Where the building has a level that extends below grade, a minimum of 12-inches of crushed stone is required for floor slab drainage. In addition, sump pits and pumps are required for all below grade levels.

5.3 Building Foundation Walls

Foundation walls will be constructed along the west side of the West Building, the soil adjacent to the foundation walls will exert a horizontal pressure against the wall. This pressure is based on the soil density and Coefficient of Earth Pressure at Rest (k_o), which is applicable to non-yielding building walls. Foundation wall design parameters are listed in Table 3 below.

Table 3 – Foundation Wall Design Parameters

Soil Type	Value
Moist Unit Weight (γ)	130 pcf
Coefficient of Earth Pressure at Rest (k_o)	0.5
Equivalent Fluid Pressure	65 psf/ft

Where foundation walls are required, we recommend that a footing drain be placed around the exterior of the new structure to prevent water from accumulating against the

foundation wall. This drain may consist of a minimum four (4) inch diameter, rigid wall perforated PVC pipe surrounded by at least 12 inches of 3/4-inch clean crushed stone. The stone shall be wrapped in a geotextile fabric, such as Mirafi 140N or equivalent. The foundation drainpipe should be extended to daylight or to the stormwater collection system. The outside face of the foundation wall, where it extends below grade, must be waterproofed.

Outside the structure, the backfill placed adjacent to the foundation walls and above the footing drain shall consist of either clean crushed stone or an imported sand and gravel mixture containing less than 10% by weight passing a No. 200 sieve and placed in layers not exceeding one (1) foot in thickness. This clean sand and gravel or crushed stone backfill shall extend a minimum of one (1) foot horizontally from the back face of the foundation walls, and shall extend vertically up the wall face to two (2) feet below the finished ground surface elevation. Where retained soils are not covered by concrete or pavement and are exposed to weather, the top two (2) feet of backfill should consist of low permeable soil. This will help to minimize water infiltration behind the wall. Surface grades should be sloped away from the building to prevent water from accumulating adjacent to the wall.

Beyond this point, the foundation walls should be backfilled with suitable soil placed in layers up to one (1) foot in thickness. The suitability of the on-site soil for reuse as compacted fill is discussed in a separate section below. The new fill should be compacted with a vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600) to at least 92% of its Maximum Modified Dry Density (ASTM D-1557). Heavy equipment should not be operated near the building walls as damage to the walls could occur.

6.0 EAST BUILDING RECOMMENDATIONS

The existing site grades in proposed East Building range from approximately elevation +44.0 to +36.0. With a proposed finished floor elevation of +37.75, cuts of up to 6 feet are anticipated in the East Building footprint. Minor fills of up to 1.5 feet are anticipated in the western portion of the East Building footprint.

Existing fill was encountered in three of the four borings performed for the East Building extending to depths ranging from 3'0" to 7'0" below the existing ground surface (approximate elevations +39.0 to +30.0). The depth of the existing fill is variable and may be deeper in unexplored areas of the site. The existing fill is not an acceptable bearing material for the new building foundations or floor slab. The consistency and density of the fill are not predictable. Certain areas may contain clean dense soils while other areas may contain loose material, void spaces, and/or debris, as shown by the boring data. The existing fill material creates the possibility of intolerable differential settlements under loading.

We anticipate that some of the existing fill will be removed from the East Building footprint during excavation to the planned subgrade elevation. Where existing fill is still present at the East Building subgrade elevation, it must be completely removed from the East Building area and replaced with new engineer approved compacted fill as described below in Section 6.1.

Provided the building subgrade is prepared as outlined in this report, the foundations for the East Building may be designed as shallow spread footings bearing on virgin soil or new engineer approved compacted fill. Recommendations for preparation of the East building area is provided in Section 6.1. Foundation recommendations for the new East Building are provided in Section 6.2 below. In addition, the proposed East Building floor slab may be designed as slab on grade bearing on new engineer-approved compacted, virgin soils, or bedrock. Floor slab recommendations can be found in Section 6.3 below.

6.1 East Building Area Preparation

In order to prepare the site for construction, all surface materials such as vegetation and topsoil shall be removed from the planned building area, extending at least ten (10) feet beyond the new construction limits, where practical.

As part of the site development, the existing structures, on the site will be demolished. All debris resulting from the demolition of these structures must be completely removed from the new construction areas, extending at least ten (10) feet beyond the new building limits, where practical. This shall include the complete removal of all foundations, walls, floor slabs, utilities, pavement, and miscellaneous debris. Where the removal of existing structures or associated materials extends below the planned structures, the resulting excavations shall be backfilled with new compacted fill as described below.

Existing utilities, where they are encountered within the planned building area, should be either abandoned or rerouted around the new structure. Once the utility has been rerouted or abandoned, the section of pipe and any associated structure within the building area should be completely removed. The removal of the pipe and structure must also include any loose fill around the pipe or structure. After the pipe, associated structure, and associated loose backfill have been removed, the resulting excavation shall be backfilled with new controlled fill as described below, “Installation of New Structural Fill”.

Removal of Existing Fill

Existing fill was encountered in three of the four borings performed for the East Building extending to depths ranging from 3’0” to 7’0” below the existing ground surface (approximate elevations +39.0 to +30.0). We anticipate that some of the existing fill will be removed from the East Building footprint during excavation to the planned subgrade elevation. As discussed above, the existing fill is not a suitable bearing material. Where existing fill is still present at the building subgrade elevation, it shall be completely removed from the building area and replaced with new engineered approved compacted fill as described below.

The excavation shall extend through the existing fill, down to the virgin soil. At the bottom of the excavation, the removal of the unsuitable material shall extend horizontally beyond the building limits a minimum distance of 1’0” plus a distance equal to the depth of the excavation below the planned foundation bearing elevation. For example, if the removal of the existing fill extends vertically 3’0” below the planned foundation bearing elevation, the

excavation must extend horizontally a minimum of 4'0" (1'0" plus 3'0") beyond the new building limits at that location.

The removal of the existing fill from the proposed building area shall be performed under the full time inspection of Carlin-Simpson & Associates. The on-site representative from Carlin-Simpson & Associates shall direct the contractor during this operation to ensure that all of the unsuitable material has been removed from the proposed building areas.

During the removal of the unsuitable material, the contractor should segregate the potentially re-usable existing soil/fill material from the non-reusable fill (i.e. debris and topsoil). The on-site representative from Carlin-Simpson & Associates shall evaluate the suitability of the excavated materials for use as compacted fill during the excavation and prior to its re-use. Potentially usable fill should be stockpiled and covered with tarps or plastic sheeting for protection from excess moisture. Any fill material that is or becomes wet must be dried prior to its re-use.

Densification of Subgrade Soils (Proofrolling)

After the demolition of the existing structures, removal of existing fill (where required), and the surface materials are removed as outlined above, the exposed subgrade shall be proofrolled with at least five (5) passes of a large vibratory drum roller (i.e. Dynapac CA 250 or equivalent). The proofrolling is necessary to densify the underlying soils. The proofrolling must be performed prior to the excavation for new foundations and the placement of new fill in the building areas. In areas where the existing subgrade is to be cut, the proofrolling of the subgrade in those areas should be performed once the proposed subgrade is achieved.

A representative from Carlin-Simpson & Associates shall observe the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft soil shall be removed and replaced with new compacted fill. The Carlin-Simpson & Associates representative shall be responsible for determining what material, if any, is to be removed and will direct the Contractor during this operation.

Handling Water and Wet Subgrades in the Site Excavations

Groundwater was encountered at the site at depths ranging from 4'10" to 21'0" beneath the existing ground surface. These depths correlate to groundwater levels ranging from approximately elevation +36.0 to +21.5. Based on the boring observations and the site conditions, groundwater may be encountered in the site excavations. Proper groundwater control measures (i.e. sumps and pumps) will be required in the event that water is encountered in the site excavations.

If required, temporary groundwater control measures shall consist of one (1) or more sumps and pumps. The sumps shall consist of a perforated pipe at least eight (8) inches in diameter, surrounded by crushed stone and filter fabric. The sump pits must be installed just outside the planned excavation area and at least two (2) feet below the lowest anticipated subgrade elevation. The sumps and pumps must be set and in operation prior to excavating below

the water table. The pumps shall be used to temporarily lower the surrounding groundwater level and keep the building excavation relatively dry.

In the event that the exposed building subgrade at the bottom of the excavation is wet, stabilizing the subgrade surface with geotextile fabric and crushed stone may be required prior to the placement of new compacted fill. Carlin-Simpson & Associates will determine this during construction as the conditions are exposed. Where needed, the subgrade should be stabilized with geotextile fabric, such as Mirafi 500X or equivalent, and 3/4-inch clean crushed stone.

To prepare the subgrade surface for the geotextile fabric and crushed stone, all surface water, loose soil, mud, topsoil and organic material must be removed from the area. After the subgrade is prepared, a layer of geotextile fabric (Mirafi 500X or equivalent) shall be laid out on the subgrade surface. Adjacent layers of geotextile fabric should be overlapped a minimum of six (6) inches. The excavation shall then be filled with 12 to 18 inches of 3/4-inch clean crushed stone. The crushed stone shall be placed in maximum 12-inch layers and compacted by several passes of a small vibratory drum roller. The crushed stone can then be used to support the proposed building foundations and floor slab. The area may also be brought to planned subgrade elevation with compacted backfill. If this is the case, the stone should be covered with a layer of geotextile fabric (Mirafi 500X or equivalent). The area may then be backfilled with new fill compacted to 95% of its Maximum Modified Dry Density (ASTM D1557) as described above.

Installation of New Structural Fill

New fill required to achieve final grades shall consist of either engineer-approved on-site soil or imported sand and gravel. The new fill shall be placed in layers not exceeding one (1) foot in thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved the Carlin-Simpson & Associates field representative prior to placing subsequent layers. The suitability of the excavated soil for reuse as compacted structural fill is discussed in Section 7.7 below. If imported structural fill will be required during construction, the imported structural fill shall meet the following specified gradation:

US Standard Sieve Size	Percent Finer By Weight
3 inch	100
No. 4	30-80
No. 40	10-50
No. 200	0-20

6.2 Eastern Building - Foundation Recommendations

Once the planned building area has been prepared as described in Section 6.1 above, the new foundations may be constructed on the virgin site soils or new compacted fill. The new building foundations may be designed as shallow spread footings using net design bearing pressures as listed in the Table 4 below. All of the exterior footings shall bear at the minimum depth listed below for protection from frost. Interior column footings may bear on the virgin soil

or new structural fill just below the floor slab provided the structure is heated during winter. The footings shall have minimum dimensions as listed below.

Table 4 – Building Foundation Design Parameters

Description	Value
Foundation Bearing Material	Virgin Soil or New Compacted Fill
Net Design Bearing Pressure	4,000 psf
Minimum Frost Depth	42 inches
Minimum Column Dimension	30 inches
Minimum Wall Dimension	18 inches

The excavations for the new foundations shall be performed under the full-time inspection of Carlin-Simpson & Associates. The on-site representative shall confirm that the foundation bearing material is capable of supporting the design bearing pressure.

Prior to the placement of formwork, reinforcement steel, and concrete, the bearing subgrade soil shall be cleaned of all loose soil and where soil is encountered at the subgrade elevation, it shall be compacted with several passes of a small vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600). This must be performed under the observation of Carlin-Simpson & Associates. If instability is observed during the compaction of the bearing subgrade, the soft soil shall be removed and replaced with new compacted fill.

6.3 East Building – Floor Slab on Grade

The floor slab may be designed as a slab on grade bearing on densified virgin soil or on new engineer-approved structural fill. Floor slab design parameters are provided in Table 5 below. A minimum of 6 inches of 3/4-inch clean crushed stone is recommended beneath the concrete slab for additional support and drainage. In the event that the new East Building has a level that extends below grade, a minimum of 12-inches of crushed stone is required for floor slab support and drainage. In addition, sump pits and pumps are required for all below grade levels.

Table 5 – East Building Floor Slab Design Parameters

Description	Value
Slab Subgrade Material	Densified Virgin Soil or New Structural Fill
Modulus of Subgrade Reaction (k)	200 pci
Crushed Stone Cushion Thickness	6 inches

New fill for the floor slab shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% material by weight passing a No. 200 sieve. The new fill shall be placed in layers not exceeding one (1) foot in loose thickness and

each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Fill layers shall be compacted, tested, and approved before placing subsequent layers.

6.4 East Building Settlement

The East Building loads were obtained from a drawing prepared by Aryeh Siegel, Architect and A Degree Of Freedom, titled "Foundation Plan – Live Work Alternative", drawing number SSK-1, dated 4 February 2022. The drawing indicated that the proposed column loads vary from 14 kips to 105 kips and all column footings are 5-foot by 5-foot. It was also indicated that the spread footing wall loads vary from 4.4 kips per foot to 6.5 kips per foot, and that all spread footings are 2-feet in width.

The planned 5-foot by 5-foot, 105-kip load column footing located in the northeast corner of the building exceeds the recommended 4,000 psf bearing load. Therefore, a 6-foot by 6-foot footing was used for the settlement calculation, the remainder of the footings were computed using the indicated 5-foot by 5-foot footing size.

The settlement calculations indicate that the settlement of an individual footing placed on natural soils or new compacted fill approved by Carlin-Simpson & Associates and constructed in accordance with the recommendations outlined in this report, will not exceed a total settlement of 1-inch. Maximum differential settlement of the East Building between adjacent columns or load bearing walls is expected to be ½-inch or less.

The computed East Building column footing settlement vary from 0.5-inch to 1-inch. The 1-inch settlement occurs at the heavier loaded column footings. We anticipate that the settlement of the pile supported West Building will be virtually zero. ***It should be noted by the structural engineer that differential settlement between the pile supported West Building and the shallow spread footing East Building will be greater than 0.5-inches but less than 1-inch.***

The above settlement values are based on our engineering experience with similar soil conditions and the anticipated structural loading. It is critical that Carlin-Simpson & Associates be retained to observe the foundation bearing surfaces and to confirm the recommended bearing pressures during construction.

7.0 SITE EVALUATION

Our recommendations for the proposed site development including site seismic design considerations, new stormwater management system, new retaining walls, new underground utilities, new pavement, temporary construction excavations, and the suitability of the existing site soils for reuse as structural fill are provided below. A summary of the subsurface conditions encountered throughout the site are provided in Table 1 above.

New fill to raise site grades will produce settlements of the underlying soft Sandy Clays and Silts on the order of 1 to 2 inches. New fill should be placed early in the project schedule to mitigate long term settlement.

7.1 Seismic Design Considerations

From site-specific test boring data, the Site Class was determined from New York State Building Code Section 1613.2.2. The site-specific data used to determine the Site Class typically includes soil test borings to determine Standard Penetration resistances (N-values). Based on estimated average N-values in the upper 100 feet of soil profile, the site can be classified as Site Class D – Stiff Soil Profile.

New structures should be designed to resist stress produced by lateral forces computed in accordance with Section 1613 of the International Building Code – New York State Edition. The values in Table 6 shall be used for this project.

Table 6 – Seismic Design Values

Description	Value
Mapped Spectral Response Acceleration for Short Periods, [Fig 1613.2.1 (1)]	S_S=0.233g
Mapped Spectral Response Acceleration at 1-Second Period, [Fig 1613.2.1 (2)]	S_1=0.057g
Site Coefficient [Table 1613.2.3 (1)]	F_a= 1.60
Site Coefficient [Table 1613.2.3 (2)]	F_v= 2.40
Max Considered Earthquake Spectral Response for Short Periods [Eq 16-36]	S_{MS}=0.373g
Max Considered Earthquake Spectral Response at 1-Second Period [Eq 16-37]	S_{M1}=0.137g
Design Spectral Response Acceleration for Short Periods [Eq 16-38]	S_{DS}=0.249g
Design Spectral Response Acceleration for 1-Second Period [Eq 16-39]	S_{D1}=0.091g

Since the proposed buildings are multifamily buildings, we expect that the structure has a Risk Category of III. Based on this assumption, the Seismic Design Category (SDC) is B. The Risk Category and SDC should be verified by the project structural engineer. In the event that the structure has a different Risk Category, the SDC should be updated in accordance with Section 1613 of the New York State Building Code.

Liquefaction Potential

Liquefaction is a phenomenon in which saturated or partially saturated soils lose strength and stiffness when subjected to earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact and collapse of the soil skeleton which causes stresses in the soil to be completely transferred to the pore water fluid. Liquefaction is most often observed in saturated, loose sandy soils at depths shallower than 50 feet below the ground surface. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

The liquefaction potential was evaluated with the available data, including the SPT blow counts, soil classification, total unit weight, soil fines content, depth to groundwater, and depth to bedrock. We have determined the potential for liquefaction is very low for the site and is unlikely to occur during a seismic event.

7.2 Stormwater Management System

It is our understanding that a new stormwater management system is planned as part of the proposed site developments. Infiltration testing was planned as a part of this study but could not be performed due to the presence of existing fill and shallow groundwater in the area of the proposed system. Additional testing must be performed to verify the infiltration characteristics of the site soils once the existing building in the area of the proposed system is demolished. A summary of the groundwater conditions encountered at the site can be found in Table 1 above.

Should stormwater management areas be planned in other portions of the property, they should be evaluated on a case-by-case basis. The stormwater management systems must be designed in accordance with the applicable New York State Department of Environmental Conservation (NYSDEC) regulations and the New York State Stormwater Management Design Manual (January 2015). The testing requirements are outlined in Appendix D of the manual.

7.3 Site Retaining Walls

We understand that the proposed construction will include new retaining walls. There are five walls in total. Each wall location is highlighted on the attached Boring Location Plan (FIG-1).

One wall (Wall #1) is located north of the proposed West Building extending approximately 110 feet along the western property line. This wall turns east for approximately 80 feet to accommodate a driveway to the north. This wall is a cut wall where site grades are being lowered. The wall will range in height from 1 foot on the east to 13 feet near the building.

The second proposed retaining wall (Wall #2) is located approximately 10-feet north of the West Building. This wall is approximately 60-feet in length and is perpendicular the western property retaining wall. This wall will be approximately 6-feet in height and will also be a cut wall.

The third proposed retaining wall (Wall #3) begins in the northwestern corner of the property and continues easterly along the northern property line for approximately 100-feet. The wall then turns northerly for an additional 80-feet. This wall ranges from about 5 to 7 feet in height. This wall will also be a cut wall.

The fourth retaining wall (Wall #4) begins approximately 10-feet north of the northeast corner of the East Building and continues northerly for approximately 185-feet running parallel to the eastern property line. Wall #4 ranges in height from about 4 to 8 feet. This planned retaining wall is also a cut wall where site grades are being lowered.

The fifth retaining wall (Wall #5) is located on the northern and eastern property lines near the north parking area in the northeast portion of the site. This wall is approximately 145-feet in length and ranges from 5 to 8 feet in height. This wall is also a cut wall where site grades are being lowered.

Wall #1 is in close proximity to the property line. A soldier pile with concrete lagging wall is a suitable for Wall #1, which is a "cut wall" condition. The soldier pile with concrete lagging wall system is a top-down construction wall and would not require a support of excavation (SOE) system to construct. Soldier pile with concrete lagging wall recommendations are discussed below.

Wall #3, Wall #4, and Wall #5 are also in close proximity to the property lines. While a soldier pile with concrete lagging wall is a suitable alternative for Wall #3, Wall #4, and Wall #5, a gravity segmental block wall (i.e., redirock or equivalent) is also a suitable option for these walls. We understand that Wall #3 and Wall #4 have temporary construction easements. A temporary construction easement may also be required for the construction Wall #5, in order to properly slope back the excavation for the retaining wall.

Wall #2 is not in close proximity to the property line, therefore a mechanically stabilized earth (MSE) wall is a suitable alternative for this wall. The MSE wall consists of segmental concrete block units with geogrid reinforcement. In this case, the MSE wall will require additional excavation beyond the wall area in order to install the geogrid reinforcement. MSE wall system is discussed below. A gravity segmental block wall (i.e., redirock or equivalent) or a soldier pile with concrete lagging would also be suitable alternatives for Wall #2.

The following retaining wall recommendations are preliminary and meant to give guidance during the design process. Once the types of walls have been determined, additional recommendations can be provided.

Soldier Pile with Concrete Lagging Retaining Wall

Drilled soldier pile with concrete lagging walls could be used for this project. For this type of wall, the soldier piles would consist of either "H" beams or micropiles spaced about 5 to 8 feet apart. This type of wall is constructed using a top-down construction sequence, where the ground is excavated in stages (or lifts) of limited height. As the ground is excavated, precast concrete panels would then be installed between the H-piles or between "T" sections welded to the mircopiles.

It may be feasible to cantilever the wall up to about 10 to 12-feet in height. The plans indicate that the proposed wall in the northwest portion of the site has a planned height up to 13-feet

The pile type, pile spacing, and required pile lengths for the wall system will be determined by the Wall Design Engineer. Embedment depth will be determined based on internal wall stability and global slope stability. Where applicable, additional surcharge loads, such as existing structures, vehicle loads, snow loads, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design. Once the wall type has been decided further recommendation can be provided. Carlin-Simpson & Associates can prepare a wall design as an additional service upon request.

The pile type, pile spacing, and required pile lengths for the wall system will be determined by the Wall Design Engineer. Embedment depth will be determined based on internal wall stability and global slope stability. The recommended design parameters for the different soil and rock layers are summarized in Table 7 below. Where applicable, additional surcharge loads, such as existing structures, vehicle loads, snow loads, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design.

Table 7 – Soldier Pile Design Parameters

Stratum	Description	Moist Unit Wt (pcf)	Friction Angle (ϕ) (deg)	Cohesion (c) (psf)
2	Existing Fill	130	28-31	0
3	Sandy Clay and Silt	125	25-28	250
4	Silty Sand with Gravel	134	30-33	0
5	Completely Weathered Shale	140	36-38	0
6	Highly Weathered Shale	145	38-40	0

A drain will be required behind the new wall to prevent water from accumulating against the wall. The drain should consist of a 4-inch diameter perforated PVC pipe, surrounded with 3/4-inch clean crushed stone and wrapped in a geotextile fabric, Mirafi 140N or equivalent. Geocomposite drain strips could also be considered as discussed below for the shotcrete wall. The drain should be installed to collect the water from behind the wall and be either connected into the site stormwater system or extended to daylight beyond the wall area. Drainage aggregate shall extend horizontally a minimum of 12 inches from the back of the wall and shall extend vertically to at least 3 feet below final grade behind the wall.

In the event that backfill is required, the retaining walls shall be backfilled with suitable soil placed in layers up to 12 inches in thickness. The new fill shall be compacted with small hand guided vibratory compactors to a minimum density of 92% of its Maximum Modified Dry Density (ASTM D1557). Heavy equipment should not be operated near the walls as damage to the walls could occur.

Segmental Gravity Block and MSE Retaining Walls

In order to prepare the retaining wall areas for construction, all surface materials including asphalt, concrete, topsoil, and surface vegetation must be completely removed from the new retaining wall areas. The removal of the surface materials shall extend at least 5 feet beyond the proposed construction limits, where practical.

Partial Removal Of Existing Fill

The existing fill is not suitable for support of the proposed retaining wall in its current state. Existing fill was encountered throughout the site, where existing fill is encountered at the retaining wall base subgrade elevation it shall be improved as described below.

In order to provide a stable subgrade for support of the new retaining wall, the retaining wall footprint shall be excavated vertically to a depth of 2 feet below the retaining wall footings/base subgrade elevation. The excavation shall also extend horizontally beyond the foundation/base limits a minimum distance of one (1) foot plus a distance equal to the depth of the excavation below the planned foundation bearing elevation. For example, the removal of the existing fill will extend vertically two (2) feet below the planned foundation bearing elevation, the excavation must therefore extend horizontally a minimum of three (3) feet (1 foot plus 2 feet) beyond the new foundation/base limit. If geogrid is being utilized for the new wall, the foundation/ base area shall also include the geogrid reinforcement zone behind the wall. Thus, the horizontal excavation for a MSE wall with geogrid will extend a minimum of 3-feet beyond the extend of the geogrid reinforcement. The excavations for the new retaining wall subgrade shall be performed under the full time inspection of Carlin-Simpson & Associates. Temporary construction easements may be needed to accommodate the extent of the horizontal excavation.

After the existing fill has been partially removed and prior to the placement of new structural fill, the exposed subgrade must be graded level and proofrolled by several passes of a vibratory drum trench compactor (i.e. Wacker Model RT560) or a vibratory drum roller (i.e. Wacker Model RD-25 Roller). The proofrolling operation is necessary to densify the underlying soils. Carlin-Simpson & Associates shall observe the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft soil shall be removed and replaced with new compacted fill. Carlin-Simpson & Associates shall be responsible for determining what material, if any, is to be removed and will direct the contractor during this operation. The proofrolling may be eliminated, if in the opinion of the geotechnical engineer, the proofrolling will cause pumping or otherwise disturb the stability of the subgrade.

Once the subgrade has been approved by a Carlin-Simpson & Associates representative, it shall be backfilled with engineer-approved structural fill to the planned subgrade elevation. The new fill shall be placed in layers not exceeding one (1) foot in thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved by the Carlin-Simpson & Associates field representative prior to placing subsequent layers.

Retaining Wall Subgrade Densification

In areas where existing fill is not encountered and once the surface materials have been removed. The exposed subgrade at the bottom of the excavation shall then be compacted by several passes with a vibratory drum trench compactor (i.e. Wacker Model RT560) or a vibratory drum roller (i.e. Wacker Model RD-25 Roller). The densification of the subgrade shall be inspected by a representative from Carlin-Simpson & Associates. In the event that soft or unsuitable soil is identified during the densification, the unsuitable material shall be removed, as directed by the Carlin-Simpson & Associates representative, and replaced with new compacted fill.

Once the subgrade has been approved by Carlin-Simpson & Associates, the excavation can be backfilled to the planned subgrade elevation with new structural fill. New compacted fill shall consist of either suitable on-site soil or imported sand and gravel. Imported fill shall contain

less than 20% by weight passing the No. 200 sieve. The fill shall be placed in 12 inch thick loose layers and compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved before placing subsequent layers. The footings or base of the walls can be designed using a net design bearing pressure as outlined in Table 9 below.

Retaining Wall Drainage

Drains must be provided behind the retaining wall to prevent the buildup of hydrostatic pressure against the wall. The wall drain should consist of a 4-inch perforated pipe surrounded by 12 inches of clean 3/4-inch crushed stone immediately behind the wall block units. The pipe and crushed stone shall be wrapped in a geotextile filter fabric (Mirafi 140N or equivalent). The drain pipe for the MSE wall should be installed behind the base or foundation of the retaining wall to collect the water behind the wall and be connected into the site stormwater collection system or extended to daylight beyond the wall area.

Behind the wall, the backfill placed adjacent to the wall and above the drain shall consist of freely draining aggregate meeting the requirements of AASHTO No. 57 or 67 Aggregate. This drainage fill shall extend a horizontally a minimum of 12 inches from the back of the wall and shall extend vertically to at least 2 feet below final grade behind the wall. The crushed stone shall be separated from the surrounding soil using a geotextile filter fabric (Mirafi 140N or equivalent).

Retaining Wall Backfill

Fill material used as backfill beyond the drainage zone shall consist of suitable on-site soil approved by Carlin-Simpson & Associates or an imported sand and gravel mixture containing less than 20% material by weight passing a No. 200 sieve. Backfill placed behind the retaining wall shall be placed in 12-inch loose layers. Each layer shall be compacted using a hand guided mechanical tamper to 92% of its Maximum Modified Dry Density (ASTM D1557). Excessive compaction adjacent to the retaining wall must be avoided. Layers shall be tested and approved before placing subsequent layers. Large compaction equipment must not be used within 10 feet of the new wall to prevent potential damage to the wall.

For a MSE Retaining wall, the fill material used to construct the reinforced soil zone shall consist of one of the following soil types according to their USCS designations (GP, GW, SW, SP, SM). The fill material must also meet the gradation in Table 8 below. The material passing the No. 200 sieve must be either non-plastic or of low plasticity. The maximum particle size shall be limited to 1.5 inches. Materials outside of these criteria, including on-site soils, require approval of the Wall Design Engineer and Carlin-Simpson & Associates.

Table 8 – Gradation Requirements for MSE Wall Reinforcement Zone

Sieve Size	Percent Passing
1.5 inch	100
3/4 inch	75-100
No. 4	20-90
No. 40	0-60
No. 200	0-30

The contractor shall be responsible for providing soil samples and completing all necessary laboratory testing, as required by Carlin-Simpson & Associates, to determine soil design parameters for any imported fill used in the construction of the walls. The wall design engineer must approve the fill to be utilized in the reinforced zone.

Wall Design Considerations

Once the retaining wall subgrade has been prepared as described in Section 4.1, the retaining wall base shall bear on the improved subgrade or virgin soil.

The wall base must be adequately embedded for internal and global stability. In addition, the soil adjacent to the site retaining wall will exert a horizontal pressure against the wall. This pressure is based on the soil density and the Coefficient of Active Earth Pressure (k_a). The values listed in Table 9 below shall be used for design of the new retaining wall.

Table 9 – MSE & Segmental Gravity Block Retaining Wall Design Parameters

Description	Value
Foundation Bearing Material	Improved Subgrade or Virgin Soil
Net Design Bearing Pressure	3,000 psf
Backfill Moist Unit Weight	130 pcf
Backfill Friction Angle	30 degrees
Cohesion	0 psf
Active Earth Pressure Coefficient (k_a) *Level Backslope Behind Wall* *2.5H:1V Backslope Behind Wall*	 0.33 0.43
Equivalent Fluid Pressure (EFP) *Level Backslope Behind Wall* *2.5H:1V Backslope Behind Wall*	 42.9 pcf 55.9 pcf
Friction Coefficient	0.45
Frost Depth	42 inches

Where applicable, additional surcharge loads, such as driveways, parking areas, structures, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design. In Table 9 above, the active earth pressure coefficient (k_a) has been provided for both a level back slope and a 2.5H:1V Backslope behind the wall. If the back slope is a different slope the k_a must be recalculated accordingly.

The Wall Design Engineer shall prepare a complete wall design (i.e. drawings, specifications, and calculations), which shall be designed and sealed by a Professional Engineer registered in the State of New York and submitted to Carlin-Simpson & Associates for review. MSE retaining walls shall be designed in accordance with the recommendations of the NCMA Design Manual for Segmental Retaining Walls (Current Edition) and in accordance with AASHTO standards. Carlin-Simpson & Associates can prepare an MSE wall design as an additional service upon request.

The design shall consider the internal stability of the reinforced soil mass and shall be in completed accordance with acceptable engineering practice. In addition, external stability, including sliding, overturning, and bearing, as well as global stability shall be evaluated in accordance with acceptable engineering practice.

The wall design engineer shall be responsible for determining the required geogrid reinforcement lengths and elevations based on his stability analysis (including global stability) and the properties of the geogrid reinforcement used in the design.

7.4 Utilities

New utilities may bear in the densified existing fill and virgin site soils or new compacted fill. The bottom of all trenches should be excavated clean and shaped so a hard bottom is provided for the pipe support. If any soft or unsuitable soil conditions are encountered during construction, the unsuitable materials must be removed and replaced with new compacted fill.

For areas where existing fill is encountered within the utility excavations, the subgrade at bottom of the utility excavation shall be compacted in place with a vibratory drum trench compactor or “jumping jack” style tamper. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. If instability is observed, portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

Where the building is supported by a deep foundation system, utilities that connect to pile supported building should be designed with flexible connections. Since post construction settlement may continue for several years, the surrounding ground surface will continue to settle while the new pile supported building virtually will not. The flexible connections are recommended so that the pipes will not become damaged due to differential settlement. In addition, utilities beneath the floor slab must be attached to the structural floor slab with hangers.

In the event that the trench bottom becomes soft due to the inflow of surface or trapped water, the soft soil shall be removed and the excavation filled with a minimum of six (6) inches of 3/4-inch clean crushed stone to provide a firm base for support of the pipe. Sump pits and pumps should be adequate to keep the excavations dry.

Trench hammering or blasting may be required to install the new utilities in portions of the site where weathered rock is encountered above the planned utility invert elevation. Where rock is encountered in the utility excavations, it must be removed to at least six (6) inches below

planned pipe invert. The over-excavated six (6) inches shall then be filled with new sandy fill and compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557) to act as a cushion on the rock.

After the utility is installed, the trench must be backfilled with compacted fill. The fill shall consist of suitable on-site soil or imported sand and gravel. Imported fill shall contain less than 20% by weight passing a No. 200 sieve. Controlled compacted fill shall be placed in one (1) foot loose layers and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557). The backfill must be free of topsoil, debris, and large boulders or rock fragments.

7.5 Pavement

We understand that the proposed construction will also include new asphalt paved parking areas and driveways. We expect that varying cuts and fills will be required to achieve the planned subgrade elevations in the new pavement areas. Densified existing fill or virgin site soils, and new compacted fill may be used to support the pavement.

To prepare the new pavement areas, the existing surface materials (i.e. topsoil, vegetation, etc.) must be removed from the planned pavement areas. In the proposed pavement areas, the existing structures and debris resulting from the demolition of these structures must be completely removed from the new pavement area, extending at least five (5) feet beyond the new paving limits, where practical. The excavations resulting from the removal of existing structures shall be backfilled using controlled compacted fill. New fill shall consist of either suitable on-site soil or imported sand and gravel placed in one (1) foot loose layers and compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557).

Existing fill was present throughout the site to depths ranging from 2’0” to 14’0” below the existing ground surface. Areas where existing fill is encountered shall be compacted in place. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. Portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

After all surface materials have been removed, the area can be excavated to the planned subgrade elevation. Where soil is encountered at the subgrade elevation, the subgrade shall be proofrolled with a large vibratory drum roller (i.e. Dynapac 250 or equivalent) to densify the underlying soils. The on-site representative from Carlin-Simpson & Associates shall witness the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft or unsuitable soil shall be removed and replaced with new compacted fill.

Where new fill is required to achieve final grades, it shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% by weight passing a No. 200 sieve. New fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557). After the planned subgrade has been proofrolled and new compacted

fill has been placed as required, the new pavement subbase may be placed on the existing site soils, bedrock, and new compacted fill.

Asphalt Pavement Section

The new pavement subbase may be placed on engineer-approved densified existing fill, virgin soil, or new compacted fill. Dense graded aggregate (DGA) is recommended for the subbase layer for drainage and additional pavement support. We recommend that the following pavement section be used for the parking lots and driveways. This pavement section is subject to local government approval.

Light Duty Areas – Parking Lots

1 ½"	Asphalt Top Course	NYSDOT, Type 6F
2 ½"	Asphalt Base Course	NYSDOT, Type 3
8"	Stone Subbase (DGA)	NYSDOT, Type 1
	Approved Compacted Subgrade (Minimum CBR = 10)	

Medium Duty Areas – Driveways

2"	Asphalt Top Course	NYSDOT, Type 6F
3"	Asphalt Base Course	NYSDOT, Type 3
8"	Stone Subbase (DGA)	NYSDOT, Type 1
	Approved Compacted Subgrade (Minimum CBR = 10)	

Rigid (Concrete) Pavement

We understand that concrete pavement will be used in portions of the site. Typically, a five (5) inch thick, 4,000-psi concrete section supported on six (6) inches of dense graded aggregate (DGA) base and an approved compacted subgrade is adequate for passenger vehicle traffic and occasional truck traffic.

5.5"	Concrete Section	4,000 psi
6"	Gravel Subbase Course	NYSDOT, Type 4
	Approved Compacted Subgrade (Minimum CBR = 10)	

The rigid concrete pavement should be reinforced with welded wire fabric or reinforcing steel bars for crack control. Contraction joints should also be provided with a maximum spacing of 10 feet. The project structural engineer or the site engineer shall determine the type, size, and spacing of the reinforcement based on the anticipated loading.

Based on the boring data and the laboratory test results, we anticipate that the densified site soils and new compacted fill will provide a CBR value that is equal to or greater than 10, which can adequately support the above pavement sections.

7.6 Temporary Construction Excavations and Excavation Protection

Temporary construction excavations shall be conducted in accordance with the most recent OSHA guidelines or applicable federal, state or local codes. A qualified person should evaluate the excavations at the time of construction to determine the appropriate soil or rock type and the allowable slope configuration. Based on the boring data, we believe the site soil and bedrock would have the following classifications as defined by the OSHA guidelines.

Soil/ Rock Type	Possible Classification	Maximum Slope or Bench
Existing Fill	"C"	1½H:1V
Virgin Soil	"B" or "C"	1H:1V or 1½H:1V
Completely Weathered Rock	"B"	1H:1V

Temporary support (i.e. trench boxes, sheeting and shoring, etc.) should be used for any excavation that cannot be sloped or benched in accordance with the applicable regulations, where necessary to protect adjacent utilities and structures, or where saturated soils or water seepage is encountered within the excavation.

A New York State licensed professional engineer must design all temporary and permanent support systems. The contractor will select the shoring type and submit design calculations for the proposed shoring method to Carlin-Simpson & Associates for review. The soil adjacent to the temporary support system will exert a horizontal pressure against the system. This pressure is based on the soil unit weight, coefficient of active earth pressure, and depth of the excavation. Support of Excavation design parameters are listed in Table 10 below.

Table 10 – Temporary Sheeting and Shoring Design Parameters

Description	Existing Fill	Sandy Clay & Silt	Silty Sand with Gravel
Moist Unit Weight (pcf)	130	125	134
Friction Angle (ϕ, deg)	30	26	32
Cohesion (c, psf)	0	250	0
Active Earth Pressure Coefficient (k_a)	0.33	0.39	0.31
Equivalent Fluid Pressure (pcf)	42.9	48.8	41.5
Passive Earth Pressure Coefficient (k_p)	3.0	2.6	3.3

7.7 Suitability of the In-Situ Soils for Use as Compacted Fill

The suitability of each soil stratum for use as compacted fill is discussed below.

Stratum 2 Existing Fill — The existing fill generally consists of brown, black coarse to fine SAND, little (to some) Silt, little (to and) coarse to fine Gravel. Debris including asphalt, brick, concrete, and other possible obstructions was encountered within the existing fill. The existing fill must remain relatively dry for optimum compaction and all the debris (asphalt, brick and concrete) is removed prior to reuse as compacted fill.

Stratum 3 Sandy Clay and Silt — Stratum 3 generally consists of Clayey Silt or SILT and CLAY little (to and), coarse to fine Sand. This stratum is generally unsuitable for reuse as compacted fill due to its high fines content and moisture sensitivity.

The boring observations indicate that the on-site soils contain a varying percentage of silt (10 to greater than 50%). The moderate to higher silt content soils will be moisture sensitive. If the soil becomes too wet, it will be difficult to achieve adequate compaction. In addition, the site soils that extend below the groundwater table are completely saturated and therefore, unsuitable for reuse.

Proper moisture conditioning of the soil will be required. New compacted fill should be within 2% (+/-) of its optimum moisture content at the time of placement. In the event that the on-site material is too wet at the time of placement and cannot be adequately compacted, the soil should be aerated and allowed to dry or the material removed and a drier cleaner fill material used. In the event that the on-site material is too dry at the time of placement and cannot be adequately compacted, water may be needed to increase the soil moisture content for proper compaction.

The in-situ soils which exist throughout the site may become soft and weave if exposed to excessive moisture and construction traffic. The instability will occur quickly when exposed to these elements and it will be difficult to stabilize the subgrade. We recommend that adequate site drainage be implemented early in the construction schedule and if the subgrade becomes wet, the contractor should limit construction activity until the soil has dried.

The minimum compaction requirements for the various areas of the site are summarized in Table 11 below.

Table 11 – Minimum Compaction Requirements

Area	Maximum Modified Dry Density (ASTM D-1557)
Below Foundation	95%
Below Floor Slab	92%
Behind Retaining Walls	92%
Adjacent to Foundation Walls	92%
Pavement Areas	95%
Exterior Slabs and Sidewalks	92%
Utility Trenches	95%
Landscape Areas	90%

7.8 Related Environmental Concerns of On-Site Soils and Groundwater

During our subsurface exploration, a fuel/ petroleum odor was noted in borings B-7 and B-9 indicating possible contamination of the site soils. During construction, special handling, testing, and/or disposal of potentially contaminated soil and groundwater may be required. An environmental engineering firm must address the suitability of the on-site soils for use on the

project site with respect to any environmental concerns. Proper disposal of all contaminated soil and water must be performed in accordance with applicable federal and state regulations. An environmental engineering firm should be retained by the owner to address these potential issues. Carlin-Simpson & Associates can provide environmental consulting services upon request.

8.0 GENERAL

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our past experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for Carlin-Simpson & Associates to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings and test pits will differ from those encountered at specific boring or test pit locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, Carlin-Simpson & Associates should be retained by the Owner to observe all earthwork and foundation construction, to document that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations Carlin-Simpson & Associates is not responsible or liable for the conclusions and recommendations presented in this report if Carlin-Simpson & Associates does not perform the observation and testing services.

Therefore, in order to preserve continuity in this project, the Owner must retain the services of Carlin-Simpson & Associates to provide full time geotechnical related monitoring and testing during construction. At a minimum, this shall include the observation and testing of the following: 1) the removal of existing fill and unsuitable soil, where required; 2) installation and testing of pile foundations; 3) the proofrolling of the subgrade soil prior to the placement of new compacted fill; 4) the placement and compaction of controlled fill; 5) the excavation for the structure foundations; 6) the preparation of the subgrade for the floor slab and pavement areas; and 7) the construction of site retaining walls.

This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty is expressed or implied. The evaluations and recommendations presented in this report are based on the available project information, as well

as on the results of the exploration. Carlin-Simpson & Associates should be given the opportunity to review the final drawings and site plans for this project to determine if changes to the recommendations outlined in this report are needed. Should the nature of the project change, these recommendations should be re-evaluated.

This report is provided for the exclusive use of Farrell Building Company and the project specific design team and may not be used or relied upon in connection with other projects or by other third parties. Carlin-Simpson & Associates disclaims liability for any such third-party use or reliance without express written permission. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. Carlin-Simpson & Associates is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

If the conditions encountered during construction vary significantly from those stated in this report, this office should be notified immediately so that additional recommendations can be made.

Thank you for allowing us to assist you with this project. Should you have any questions or comments, please contact this office.

Very truly yours,

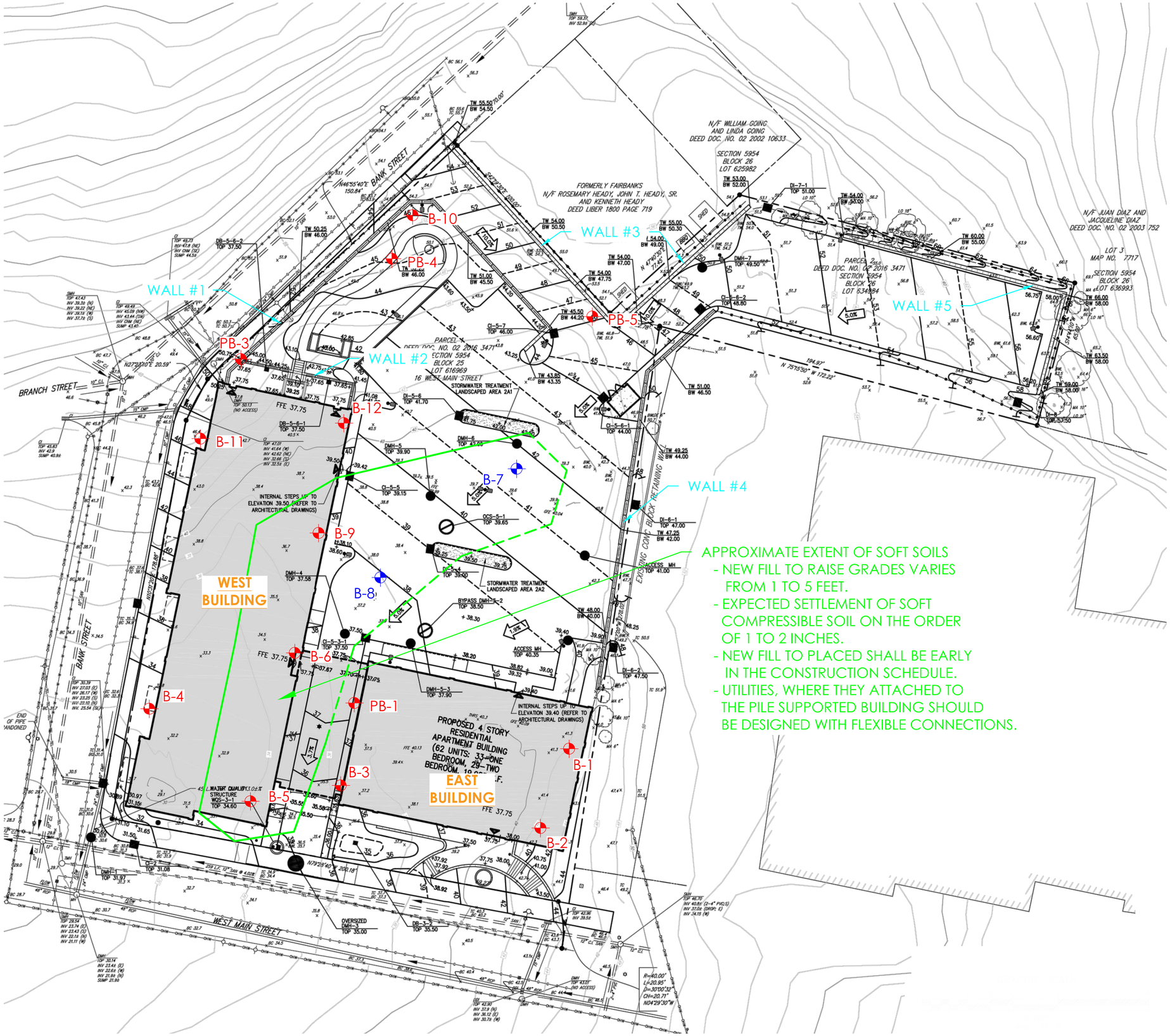
CARLIN-SIMPSON & ASSOCIATES, LLC

CATHERINE K. SIMPSON, E.I.T.
Project Manager

ROBERT B. SIMPSON, P.E.



File No. 20-07



GENERAL NOTES:

1. GENERAL LAYOUT WAS OBTAINED FROM A DRAWING PREPARED BY JMC, PLLC, ENTITLED "UTILITIES PLAN", DATED 29 OCTOBER 2019.
2. BORING LOCATIONS WERE LAID OUT IN THE FIELD BY CARLIN-SIMPSON & ASSOCIATES (CSA).
3. BORINGS WERE PERFORMED BY GENERAL BORINGS INC. IN JULY 2020 AND NOVEMEBER 2021. UNDER THE FULL TIME INSPECTION OF CSA.
4. LOCATIONS ARE APPROXIMATE.

LEGEND:

- BORING LOCATION
- APPROXIMATE EXTENT OF SOFT SILT AND CLAY

APPROXIMATE EXTENT OF SOFT SOILS
- NEW FILL TO RAISE GRADES VARIES FROM 1 TO 5 FEET.
- EXPECTED SETTLEMENT OF SOFT COMPRESSIBLE SOIL ON THE ORDER OF 1 TO 2 INCHES.
- NEW FILL TO PLACED SHALL BE EARLY IN THE CONSTRUCTION SCHEDULE.
- UTILITIES, WHERE THEY ATTACHED TO THE PILE SUPPORTED BUILDING SHOULD BE DESIGNED WITH FLEXIBLE CONNECTIONS.

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

LICENSE NO. _____ SIGNATURE _____ DATE _____

BORING LOCATION PLAN

PROPOSED APARTMENT BUILDINGS
16 WEST MAIN STREET
BEACON, NEW YORK

DRAWN: CKS	SCALE: 1" = 20'
CHECKED: RBS	DATE: 28-SEP-20
PROJECT NO.: 20-07	DWG NO.: FIG -1
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES
61 Main Street
Sayreville, NJ 08872
Consulting Geotechnical and Environmental Engineers

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER PB-1
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		SHEET NO.: 1 of 2
Client: Farrell Building Company		JOB NUMBER: 20-27
Drilling Contractor: General Borings Inc		ELEVATION: +37.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 30/Nov/21
		14'3"		DIA.	3 1/4"	1 3/4"			FINISH DATE: 1/Dec/21
				WGHT		140#			DRILLER: T McGovern
				FALL		30"			INSPECTOR: CKS

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	SYM	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			8			
2		S-1	11		FILL (Gr br cf S, l (+) $, s cf G)	Rec = 10"
			16			moist
3			20			
		S-2	50/4"		FILL (same)	Rec = 0"
4					**FILL (Gray, brown coarse to fine SAND, little (+) Silt, some coarse to fine Gravel)**	moist
5						
			10			
6		S-3	7		FILL (same, s $, a mf G)	Rec = 10"
			4			moist
7			8		7'0"	
			10			
8		S-4	16		Lt br Cy $ l (-), cf S, t (-) f G	Rec = 18"
			21			moist, mottled
9			20			
10						
			4			
11		S-5	14		same, vvd	Rec = 18"
			18		**Light brown Clayey SILT little (-), coarse**	moist, mottled
12			26		**to fine Sand, trace (-) fine Gravel**	
13						
14						
15						
			2			
16		S-6	4		same, C&$	Rec = 16"
			4			wet
17			6		17'0"	change in tip of spoon
18						
19					**Gray, brown coarse to fine SAND,**	
					some Silt, some coarse to fine Gravel	
20						
			19			
21		S-7	27		Gr br cf S, s $, s cf G	Rec = 12"
			46			wet
22			29			

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ					TEST BORING LOG	BORING NUMBER PB-1
Project:	**Proposed Multi Family Building, 16 West Main St, Beacon NY**					**SHEET NO.:** 2 of 2
Client:	**Farrell Building Company**					**JOB NUMBER:** 20-27
Depth (ft.)	**Casing Blows pre Foot**	**Sample Number**	**Blows on Sample Spoon per 6"**	**Sym**	**IDENTIFICATION**	**REMARKS**
23					23'0"	
24						
25						
			49			
26		**S-8**	50/1"		Shale, completely weathered	Rec = 3"
27						wet
28						very dense drilling 25'-30'
29						
30						
		S-9	50/0"		same 30'6"	Rec = 0
31						wet
32						Auger refusal @ 30'6"
33		**Run #1**			**Shale, crushed, highly weathered**	Run #1 30'6"-35'6"
34						Run = 60"
35						Rec = 24" RQD = 0%
					35'6"	
36					**End of Boring @ 35'6"**	
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER PB-3
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Company		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +48.0

GROUNDWATER									
					CASING	SAMPLE	CORE	TUBE	**DATUM:** Topo
DATE	**TIME**	**DEPTH**	**CASING**	**TYPE**	**HSA**	**SS**			**START DATE:** 01 Dec 21
				DIA.	**3 1/4"**	**1 3/8"**			**FINISH DATE:** 01 Dec 21
				WGHT		**140#**			**DRILLER:** T McGovern
				FALL		**30"**			**INSPECTOR:** CKS

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sy r	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'4"	
1		**S-1**	3		FILL (Br cf S, a (-) $, l cf G, w/bricks, wood)	Rec = 10"
			4		**FILL (Brown coarse to fine SAND,**	moist
2			5		**and (-) Silt, little coarse to fine Gravel,**	
			6		**with bricks, wood)**	
3			8		FILL (same) 3'0"	
			10		Lt br Cy $ l (-), cf S, t (-) f G	
4		**S-2**	12			Rec = 15"
					Light brown Clayey SILT little, coarse to	moist
5					**fine Sand, trace (-) fine Gravel**	
			8		same	
6			18		6'0"	
			38		Gr, br cf S, l (+) $, a cf G	
7			58			
		S-3			**Gray, brown coarse to fine SAND,**	Rec = 19"
8					**little (+) Silt, and coarse to fine Gravel**	moist
						with pocket of perced water
9					9'0"	
						Dense drilling 5'-10'
10						
			37			
11		**S-4**	50/2"		Shale, completely weathered	Rec = 4"
						moist
12						
						Dense drilling 10-15'
13						
14						
15						
			22			
16		**S-5**	54		same	Rec = 5"
			50/1"			moist
17					17'0"	Auger refusal 17'0"
18		**Run #1**			**Shale, crushed, highly weathered**	Run #1 17'0"-19'0"
19					19'0"	Run = 24"
					End of Boring @ 19'0"	Rec = 12"
20						RQD = 0%
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER PB-4
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Company		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +51.0

GROUNDWATER									
DATE	TIME	DEPTH	CASING	TYPE	CASING HSA	SAMPLE SS	CORE	TUBE	**DATUM:** Topo
				DIA.	3 1/4"	1 3/8"			**START DATE:** 30/Nov/21
				WGHT		140#			**FINISH DATE:** 30/Nov/21
				FALL		30"			**DRILLER:** T McGovern
									INSPECTOR: CKS

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			5			
1			6		**Topsoil with woodchips** 0'10"	
		S-1	8		FILL (Br Cy $ a (+), cf S, l (+) cf G)	Rec = 15"
2			6			moist
			16			
3		**S-2**	6		FILL (same, w/wood)	Rec = 10"
			9		**FILL (Brown Clayey SILT and (+), coarse**	moist
4			10		**to fine Sand, little (+) coarse to fine**	
					Gravel)	
5						
			28			
6		**S-3**	34		FILL (same, w/wood)	Rec = 7"
			27		6'6"	moist
7			17		Lt br Cy $ l (-), cf S, t (-) f G	
			16			
8		**S-4**	25		same, vvd	Rec = 19"
			34		**Light brown Clayey SILT little (-), coarse**	moist
9			36		**to fine Sand, trace (-) fine Gravel**	with pockets of perched
						water, vvd
10					10'0"	
			20			
11		**S-5**	30		Gr, br cf S, s (-) $, s (+) cf G	Rec = 19"
			39			moist
12			43		**Gray, brown coarse to fine SAND,**	with pockets of water and
					some (-) Silt, trace (-) fine Gravel	layers of weathered rock
13						
14					14'0"	
15						
		S-6	50/5"		Shale, completely weathered	Rec = 3"
16						wet
17						
					Shale, completely weathered	
18						
19						
20						
		S-7	50/0"		same, highly weathered	Rec = 0
21					**End of Boring @ 20'0"**	wet
						Auger refusal 20'0" attempted
22						coring barrel kept clogging

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.				TEST BORING LOG					BORING NUMBER PB-5
Project:	Proposed Multi Family Building, 16 West Main St, Beacon NY								SHEET NO.: 1 of 2
Client:	Farrell Building Company								JOB NUMBER: 20-07
Drilling Contractor:	General Borings Inc								ELEVATION: +46.0
GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 30/Nov/21
30/Nov/21	0945	14'5"	HSA	DIA.	3 1/4"	1 3/4"			FINISH DATE: 30/Nov/21
				WGHT		140#			DRILLER: T McGovern
				FALL		30"			INSPECTOR: CKS

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	S Y M	IDENTIFICATION	REMARKS
1			2 3		**Topsoil** 1'0"	
2		S-1	9 15		Lt br Cy $ l, cf S, t (-) f G	Rec = 15" moist
3		S-2	6 13		same	Rec = 16"
4			17 21			moist
5						
6		S-3	7 13		same, t (-) cf S	Rec = 16"
7			17 25		**Light brown Clayey SILT little, coarse to fine Sand, trace (-) fine Gravel**	moist vvd
8		S-4	19 28		same	Rec = 17"
9			28 36			moist to wet vvd and slightly mottled
10						saturated able to dilate at 8'0"
11		S-5	7 15		same, vvd, $&C	possible perched Rec = 18"
12			21 21			moist with pocket of net
13						
14						
15					15'0"	
16		S-6	18 22		Br, gr cf S, s $, s (+) cf G	Rec = 20"
17			28 20		**Brown, gray coarse to fine SAND, some Silt, some (+) coarse to fine Gravel**	wet
18					18'0"	
19					**Shale, completely weathered**	Auger refusal @ 19'6"
20		Run #1			**Gray Shale, blocky and seamy, slightly weathered**	Run #1 19'6"-23'0"
21						Run = 42" Rec = 78%
22						RQD = 78%

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER PB-5
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		**SHEET NO.:** 2 of 2
Client: Farrell Building Company		**JOB NUMBER:** 20-07

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
23		Run #1			**Gray Shale, blocky and seamy, slightly weathered** 23'0" **End of Boring @ 23'0"**	Run #1 19'6"-23'0" Run = 42" Rec = 78% RQD = 78%
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-1
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +42.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 21-Jul-20
21-Jul-20	1330	15'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 21-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			6		**Topsoil** 0'4"	
1		**S-1**	13		FILL (Br cf S, s $, l (-) cf G, w/brick)	Rec = 6"
			50/2"			moist
2					**FILL (Brown coarse to fine SAND, some**	
					Silt, little (-) coarse to fine Gravel,	
3					**with brick)** 3'0"	
			10			
4		**S-2**	11		Br, gr $ s, cf S, t (+) cf G	Rec = 18"
			14		**Brown, gray SILT some, coarse to fine**	moist
5			16		**SAND, trace (+) coarse to fine Gravel**	
			9			
6		**S-3**	12		same, no cf G	Rec = 10"
			50/3"		6'3"	moist
7						Dense drilling
8						
9						
10						
			18			
11		**S-4**	18		Br cf S, l (+) $, l (+) cf G	Rec = 7"
			24			wet
12			21			Dense drilling
13					**Brown coarse to fine SAND,**	
					little (+) Silt, little (+) coarse to	
14					**fine Gravel**	
15						
			24			
16		**S-5**	27		same	Rec = 18"
			31			wet
17			36			Dense drilling
18						
19						
20						
			11			
21		**S-6**	13		same, gr, s $, l cf G	Rec = 20"
			23			wet
22			27		**End of Boring @ 22'0"** 22'0"	

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-2
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +42.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 21-Jul-20
21-Jul-20	1530	17'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 21-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			4		**Topsoil** 0'6"	
1		**S-1**	10		Br, gr Cy $ s, cf S, t cf G	Rec = 16"
			9			moist
2			9			
			8			
3		**S-2**	11		same, l (+) mf S, no G	Rec = 20"
			13			moist
4			17			
5						
					Brown, gray Clayey SILT some, coarse	
			8		**to fine Sand, trace coarse to fine Gravel**	
6		**S-3**	8		same	Rec = 22"
			12			moist
7			14			
			14			
8		**S-4**	15		same	rec = 24"
			16			moist
9			23			
10					10'0"	
			7			
11		**S-5**	11		Br cf S, l (+) $, l cf G	Rec = 6"
			18			moist
12			19			
13						
14						
					Brown coarse to fine SAND,	
15					**little (+) Silt, little coarse to fine Gravel**	
			40			
16		**S-6**	50/4"		same, gr a cf G	Rec = 2"
						moist
17						
18						
19						
20						
			21			
21		**S-7**	34		same, gr s (-) cf G	Rec = 12"
			42			wet
22			50/4"		**End of Boring @ 21'10"** 21'10"	

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.				TEST BORING LOG					BORING NUMBER B-3
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY									SHEET NO.: 1 of 2
Client: Farrell Building Co									JOB NUMBER: 20-07
Drilling Contractor: General Borings Inc									ELEVATION: +36.5
GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 21-Jul-20
21-Jul-20	1015	15'0"	HSA	DIA.		1 3/8"			FINISH DATE: 21-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'2"	
1						
			7			
2		S-1	50/3"		FILL (Br cf S, t (+) $, a cf G, w/birck, concrete)	Rec = 4"
					FILL (Brown coarse to fine SAND,	moist
3					**trace (+) Silt, and coarse to fine Gravel,**	Auger refusal on concrete 2.5'
			26		**with brick, concrete, debris)**	moved 5' W
4		S-2	20		FILL (same, l $, s cf G)	Rec = 10"
			15			moist
5			9		5'0"	
			2			*mottling, possible perched
6		S-3	3		Br, gr, or mttld C & $ s, cf S, t cf G	Rec = 15"
			11			moist
7			5			
			7			
8		S-4	11		same, lt gr, br, no G	Rec = 19"
			15			moist
9			15			
					Brown, gray, orange mottled Clay and	
10					**SILT some, coarse to fine Sand, trace**	
			6		**coarse to fine Gravel**	
11		S-5	6		same, l mf S	Rec = 21"
			9			wet
12			12			
13						
14						
15						
			1			
16		S-6	3		same, gr S & C	Rec = 24"
			2			wet
17			6			
18					18'0"	
19					**Gray coarse to fine SAND, little Silt,**	
					and coarse to fine Gravel, with cobbles	
20						
			17			
21		S-7	26		Gr cf S, l $, a cf G	Rec = 0"
			22			wet
22			27			

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.					TEST BORING LOG		BORING NUMBER B-3
Project:	Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY						SHEET NO.: 2 of 2
Client:	Farrell Building Co						JOB NUMBER: 20-07
Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
23					**Gray coarse to fine SAND, little Silt, and coarse to fine Gravel**		Dense drilling
24							
25							
		S-8	50/3"		Gr cf S, l $, a cf G	25'3"	Rec = 4"
26					**End of Boring @ 25'3"**		wet
27							Likely bedrock
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-4
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +32.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 22-Jul-20
22-Jul-20	14:30	6'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 22-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'2"	
1						
			8			
2		S-1	9		FILL (Br cf S, l $, s (+) cf G, w/brick, concrete)	Rec = 7"
			12		**FILL (Brown coarse to fine SAND, little**	moist
3			27		**Silt, some (+) coarse to fine Gravel, with**	
			12		**brick, concrete)** 3'6"	
4		S-2	6		FILL (Br, gr Cy $ s, cf S)	Rec = 10"
			5		**FILL (Brown, gray Clayey SITL some,**	moist
5			4		**coarse to fine Sand)** 5'0"	
			3		FILL (Br, bk cf S, s (-) $, a cf G, w/fibers)	
6		S-3	2		**FILL (Brown, black coarse to fine SAND,**	Rec = 6"
			3		**some (-) Silt, and coarse to fine Gravel,**	wet
7			2		**with fibers)** 7'0"	
			1			
8		S-4	1		FILL (Gr $ & C l, cf S	Rec = 12"
			3			wet
9			3		**FILL (Gray SILT and Clay little, coarse**	
					to fine Sand	
10					10'0"	
			7			
11		S-5	7		Br cf S, t (+) $, a cf G	Rec = 7"
			6			wet
12			50/3"		**Brown coarse to fine SAND, trace (+) Silt,**	
					and coarse to fine Gravel	
13					13'0"	Auger refusal @ 13'0"
					End of Boring @ 13'0"	
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-5
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +34.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 22-Jul-20
22-Jul-20	1043	10'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 22-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			12		**Topsoil** 0'1"	
1		**S-1**	17		FILL (Br cf S, t (+) $, a cf G)	Rec = 10"
			10			moist
2			17			
		S-2	50/2"		FILL (same)	Rec = 0
3						Boulder
					FILL (Brown coarse to fine SAND, trace (+) Silt, and coarse to fine Gravel)	
4						
5					5'0"	
			7			
6		**S-3**	3		FILL (Gr C & $ l, cf S, w/roots, sticks)	Rec = 14"
			3			wet
7			2		**FILL (Gray Clay and SILT little, coarse to fine Sand, with roots, sticks, glass)**	slightly mottled
			3			wet
8		**S-4**	3		FILL (same, dk gr, l (-) cf G, w/glass)	Rec = 24"
			5			wet
9			5			
10					10'0"	
			4			
11		**S-5**	4		Br, gr $y C l (-), mf S	Rec = 24"
			4			wet
12			5			
13						
14					**Brown, gray SILTY Clay little (-), medium to fine Sand**	
15						
			WOH/12			
16		**S-6**			same, gr	Rec = 24"
			1			wet
17			2			
18						
19					19'0"	
20					**Brown coarse to fine SAND, little Silt, some coarse to fine Gravel**	
			10			
21		**S-7**	8		Br cf S, l $, s cf G	Rec = 7"
			12			wet
22			22		**End of Boring @ 22'0"** 22'0"	

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.				TEST BORING LOG					BORING NUMBER B-6
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY									SHEET NO.: 1 of 2
Client: Farrell Building Co									JOB NUMBER: 20-07
Drilling Contractor: General Borings Inc									ELEVATION: +35.0
GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 23-Jul-20
23-Jul-20	930	13'6"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 23-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			7			
2		**S-1**	19		FILL (Br cf S, l (-) $, s cf G, w/brick)	Rec = 7"
			50/2"			moist
3						Brick cutting coming up
4					**FILL (Brown coarse to fine SAND, little (-) Silt, some coarse to fine Gravel, with brick)**	
5						
			27			
6		**S-2**	43		FILL (same, a cf G, w/brick)	Rec = 7"
			50/1"			moist
7						Boulder (possible old floor slab)
8						
9					9'0"	
10						
			4			
11		**S-3**	6		Br, gr Cy $ l, mf S	Rec = 24"
			7			moist
12			8			mottled
13					**Brown, gray Clayey SILT little, medium to fine Sand**	
14						
15						
			1/12"			
16		**S-4**			same, gr $ & C	Rec = 24"
			1			wet
17			1			
18						
					18'6"	
19						
					Brown coarse to fine GRAVEL some, coarse to fine Sand, trace Silt	
20						
			9			
21		**S-5**	6		Br cf G s, cf S, t $	Rec = 5"
			14			wet
22			30			

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER B-6
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		SHEET NO.: 2 of 2
Client: Farrell Building Co		JOB NUMBER: 20-07

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
23					**Brown coarse to fine GRAVEL some, coarse to fine Sand, trace Silt**	Auger refusal 23'0"
					End of Boring @ 23'0"	Likely Bedrock
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-7
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +39.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 23-Jul-20
23-Jul-20	1230	5'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 23-Jul-20
23-Jul-20	1330	5'0"	HSA	WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'1"	
1						
			3			
2		**S-1**	4		FILL (Br, gr cf S, l $, s cf G, w/brick, asphalt)	Rec = 14"
			15			moist
3			8			
			6			
4		**S-2**	5		FILL (same, brick, asphalt)	Rec = 6"
			3		**FILL (Brown, gray coarse to fine SAND,**	moist
5			4		**little Silt, some coarse to fine Gravel,**	
			1		**with brick, asphalt, wood)**	
6		**S-3**	1/12"		FILL (same, bk t $, w/wood)	Rec = 4"
						wet
7			50/0"			Petrolum Odor
						Boulder
8					8'0"	
			1			
9		**S-4**	2		Gr cf G s, cf S, s $	Rec = 6"
			5			wet
10			10			
			2		**Gray coarse to fine GRAVEL some, coarse**	
11		**S-5**	8		same **to fine Sand, some Silt**	Rec = 3"
			3			wet
12			3			
13					13'0"	
14						
					Brown Clay and SILT little, coarse to	
15					**fine Sand, trace coarse to fine Gravel**	
			2			
16		**S-6**	3		Br C&$ l, cf S, t cf G	Rec = 20"
			5			wet
17			8		17'0"	
					End of Boring @ 17'0"	
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-8
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +38.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 23-Jul-20
23-Jul-20	1115	5'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 23-Jul-20
23-Jul-20	1230	4'10"	Open	WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			7			
2		S-1	6		FILL (Br, gr cf S, l $, s cf G, w/brick)	Rec = 10"
			9			moist
3			8			
			8			
4		S-2	8		FILL (same)	Rec = 12"
			27		**FILL (Brown, gray coarse to fine SAND,**	moist
5			50/2"		**little Silt, some coarse to fine Gravel,**	
			6		**with brick, wood)**	
6		S-3	6		FILL (same, w/wood)	Rec = 6"
			50/1"			wet
7						wood
8						
			3			
9		S-4	7		FILL (same, gr a cf G, w/wood)	Rec = 6"
			8			wet
10			12		10'0"	
			4			
11		S-5	5		Br, gr $&C l, cf S	Rec = 20"
			6			wet
12			9		**Brown, gray SILT and Clay little, coarse**	
			2		**to fine Sand**	
13		S-6	2		same, br t cf G	Rec = 18"
			4			wet
14			4		14'0"	
					End of Boring @ 14'0"	
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.					TEST BORING LOG					BORING NUMBER B-9	
Project:	Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY									SHEET NO.:	1 of 2
Client:	Farrell Building Co									JOB NUMBER:	20-07
Drilling Contractor:	General Borings Inc									ELEVATION:	+37.5
GROUNDWATER						CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING		TYPE	HSA	SS			START DATE:	24-Jul-20
24-Jul-20	1015	5'9"	HSA		DIA.	3 1/4"	1 3/8"			FINISH DATE:	24-Jul-20
					WGHT		140#			DRILLER:	J Casson
					FALL		30"			INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			4			
2		S-1	6		FILL (Gr Cy $ s, cf S, t (-) f G, w/t roots, asphalt)	Rec = 10"
			10			moist
3			6			
			4			
4		S-2	15		FILL (same, w/brick)	Rec = 10"
			10		**FILL (Gray Clayey SILT some, coarse to**	moist
5			8		**fine Sand, trace (-) fine Gravel, with**	
			3		**trace roots, asphalt, cinders, bricks)**	
6		S-3	3		FILL (Dk gr cinders w/brick)	Rec = 11"
			2			wet
7			2			
			2			
8		S-4	2		FILL (same)	Rec = 9"
			3			wet
9			3			fuel odor
					9'6"	
10						
			3			
11		S-5	2		Gr Cy $ t (+), mf S, w/ t O	Rec = 9"
			4			wet
12			9			
						Oil Scheen on cuttings
13						
14						
					Gray Clayey SILT trace (+), medium to	
15					**fine Sand**	
			1			
16		S-6	1		Gr Cy $ t, f S	Rec = 6"
			1			wet
17			1			
18						
19						
20						
			7		20'6"	
21		S-7	48		Gr cf S, a $, l cf G (till)	Rec = 8"
			50/1"		**Gray coarse to fine SAND, and Silt,**	wet
22					**little coarse to fine Gravel**	

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.					TEST BORING LOG		BORING NUMBER B-9
Project:			**Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY**				**SHEET NO.:** 2 of 2
Client:			**Farrell Building Co**				**JOB NUMBER:** 20-07
Depth (ft.)	**Casing Blows per Foot**	**Sample Number**	**Blows on Sample Spoon per 6"**	**Sym**	**IDENTIFICATION**		**REMARKS**
23					**Gray coarse to fine SAND, and Silt, little coarse to fine Gravel**	23'0"	Auger refusal 23'0"
24					**End of Boring @ 23'0"**		Likely Bedrock
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-10
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		SHEET NO.: 1 of 1
Client: Farrell Building Co		JOB NUMBER: 20-07
Drilling Contractor: General Borings Inc		ELEVATION: +53.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 24-Jul-20
24-Jul-20	1515	21'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 24-Jul-20
				WGHT		140#			DRILLER: J Casson
				FALL		30"			INSPECTOR: KWA

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1					**FILL (Brown, gray coarse to fine SAND, little (-) Silt, some coarse to fine Gravel)**	
			20			
2		S-1	16		2'0"	Rec = 7"
			7		Br cf S, s $	moist
3			5			
4						
5						
			7			
6		S-2	11		same, s (+) $	Rec = 15"
			13		**Brown coarse to fine SAND, some Silt**	moist
7			15			
8						
9						
10						
			7			
11		S-3	8		Mttld br, gr, or br Cy $ l (+), cf S 11'0"	Rec = 22"
			15		Br, gr Cy $ l (+), cf S, t cf G	moist
12			18			
13					**Brown, gray Clayey SILT little (+), coarse to fine Sand, trace coarse to fine Gravel**	
14					14'0"	
15						
			62			
16		S-4	20/1"		Shale, highly to completely weathered	Rec = 2"
17						moist
18						
19					**Shale, highly to completely weathered**	
20						
			36			
21		S-5	50/3"		same	Rec = 3"
22					**End of Boring @ 22'0"** 22'0"	moist to wet Refusal on auger 22'0"

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-11
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +46.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 22-Jul-20
No Groundwater Encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE: 22-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			13		**Topsoil** 0'1"	
1		S-1	12		FILL (Br cf S, t (+) $, a cf G, w/brick)	Rec = 6"
			7			moist
2			6			
			4			
3		S-2	6		FILL (same)	Rec = 4"
			16		**FILL (Brown coarse to fine SAND,**	moist
4			10		**trace (+) Silt, and coarse to fine Gravel,**	
					with brick)	
5					5'0"	
			3		**FILL (Gray SILT & CLAY little,**	
6		S-3	6		**coarse to fine Sand** 6'0"	Rec = 10"
			17		FILL (Br cf S, s (-) $, l cf G, w/brick, roots)	wet
7			9			
		S-4	50/2"		FILL (same, a cf G, w/brick)	Rec = 3"
8						moist
9					**FILL (Brown coarse to fine SAND,**	
					some (-) Silt, little coarse to fine Gravel,	
10					**with brick, roots)**	
			3			
11		S-5	3		FILL (same)	Rec = 4"
			50/3"			moist
12						
13						
14					14'0"	
15					**Brown, gray coarse to fine SAND,**	
			26		**little (-) Silt, and coarse to fine Gravel**	
16		S-6	31		Br, gr cf S, l (-) $, a cf G	Rec = 20"
			37			moist
17			43		17'0"	very dense
18						
19					**Shale, highly to completely weathered**	
20						
			45			
21		S-7	50/4"		Shale, highly to completely weathered	Rec = 15"
						moist
22					22'0"	

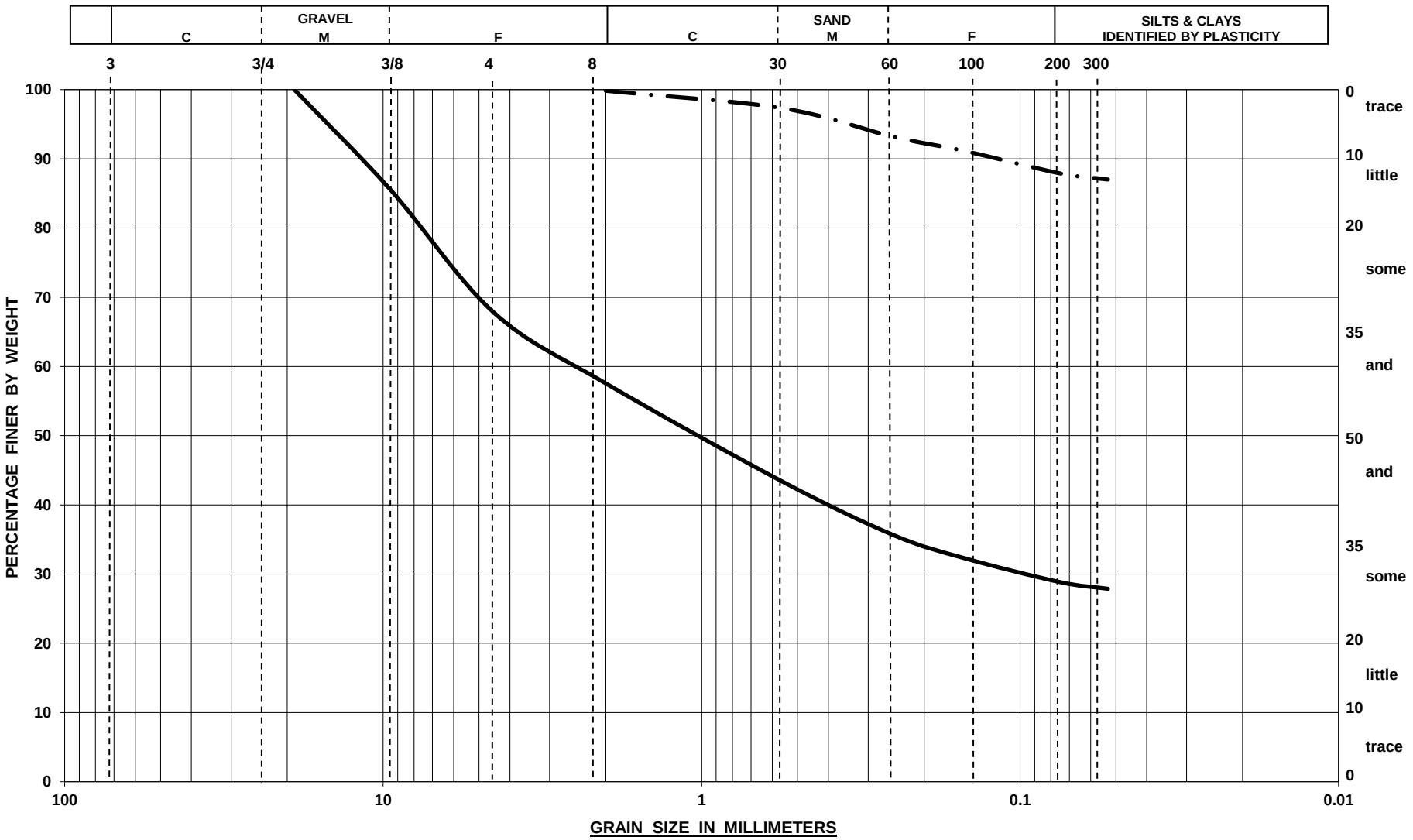
CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-12
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +40.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	**DATUM:** Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			**START DATE:** 24-Jul-20
24-Jul-20	1300	7'6"	HSA	DIA.	3 1/4"	1 3/8"			**FINISH DATE:** 24-Jul-20
				WGHT		140#			**DRILLER:** J Casson
				FALL		30"			**INSPECTOR:** KWA

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'2"	
1						
			11			
2		S-1	11		**FILL (Gray, brown Clayey SITL little, coarse to fine Sand, trace fine Gravel, with brick, cinders, wood)**	Rec = 0
			13			
3			13			
			11			
4		S-2	8		FILL (Gr br Cy $ l, cf S, t f G, w/brick, cinders, wood)	Rec = 10"
			6			moist
5			7		5'0"	fuel odor on cuttings
		S-3	50/1"		FILL (cobbles, boulders)	
6						
					FILL (cobbles, boulders)	
7						
8					8'0"	
			2		FILL (Gr br Cy $ l, cf S)	Rec = 20"
9		S-4	4		**FILL (Gray brown Clayey SILT, little**	wet
			4		**coarse to fine Sand** 9'6"	
10			6			
			6			
11		S-5	6		Br Cy $ l (-), mf S	Rec = 10"
			7			wet
12			10			
					Brown Clayey SILT little (-), medium to fine Sand	
13						
14					14'0"	
15						
			27			
16		S-6	14		Dk br cf G s (-), cf S, s $	Rec = 11"
			14			wet
17			14		**Dark Brown coarse to fine GRAVEL some (-), coarse to fine Sand, some Silt**	
18						
19					9'0"	
20					**Shale, highly to completely weathered**	
		S-7	50/3"		Shale, highly to completely weathered 20'3"	Rec = 2"
21					**End of Boring @ 20'3"**	wet
22						

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

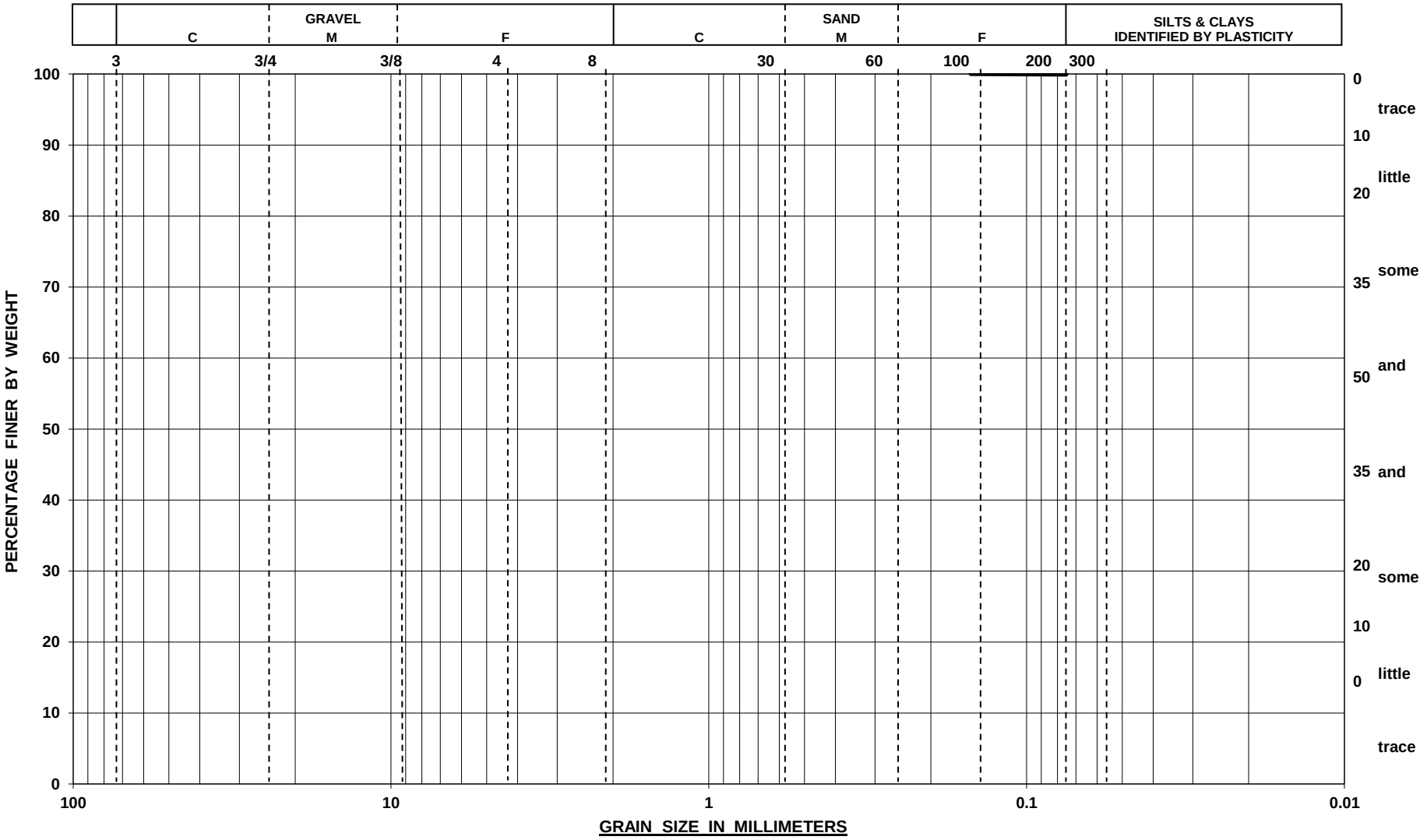


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	PB-1	S-3	5'0" - 7'0"	FILL(Gray brown coarse to fine Sand, some Silt, and medium to fine Gravel	11.2%
— · —	PB-3	S-2	2'0"-4'0"	Light Brown Clayey SILT little (-), coarse to fine Sand, trace (-) fine Gravel	20.3%

PROJECT New Multifamily Buildings, 16 West Main Street Beacon, NY **BY** MJG **DATE** 4-Feb-21 **JOB NO** 20-07

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
▬	PB-5	S-3	5'0" - 7'0"	Light Brown Clayey SILT trace (-), fine Sand	23.2%

PROJECT New Multifamily Building, 16 West Main Street, Beacon, NY **BY** MJW **DATE** 4-Feb-22 **JOB NO** 20-07

STORMWATER POLLUTION PREVENTION PLAN

Beacon Commons

16 West Main Street
City of Beacon, NY

Applicant/Operator/ Owner: Farrell Building Company
2317 Montauk Highway
Bridgehampton, NY 11932
Mr. Stephen Zagoren
(631) 766-0023

Prepared by:

120 Bedford Road
Armonk, NY 10504
JMC Project **18119**

Dated: 10/29/2019
Revised: 12/30/2019
09/29/2020
07/27/2021
03/25/2022

TABLE OF CONTENTS

SECTION	TITLE	PAGE
I.	INTRODUCTION	1
II.	STORMWATER MANAGEMENT PLANNING	1
III.	STUDY METHODOLOGY	8
IV.	EXISTING CONDITIONS	11
V.	PROPOSED CONDITIONS	13
VI.	SOIL EROSION & SEDIMENT CONTROL	18
VII.	CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE	35
VIII.	CONCLUSION	37

APPENDICES

FIGURES	DESCRIPTION
1.	Site Location Map

APPENDIX	**DESCRIPTION**
A.	Existing/Proposed Hydrologic Calculations
B.	NYSDEC Stormwater Sizing Calculations
C.	Geotechnical Report
D.	Web Soil Survey Report
E.	Temporary Erosion and Sediment Control Inspection and Maintenance Checklist Permanent Stormwater Practice Operation, Maintenance and Management Inspection Checklist Water Quality Unit Certification and Peak Flow Calculations
F.	Contractor's Certification
G.	SPDES General Permit No. GP-0-20-001 & MS4 Acceptance Form
H.	Hydraulic Pipe Calculations
I.	Drawings and Roof Drainage Figure: DA-1 "Existing Drainage Area Map" DA-2 "Proposed Drainage Area Map" Roof Drainage Figure

REFERENCED DRAWINGS FOR SWPPP DESIGN AND DETAILS

JMC SITE PLANS

Dwg. No.	Title
C-000	Cover Sheet
C-010	Existing Conditions Plan
C-020	Demolition Plan
C-100	Site Plan
C-200	Grading Plan
C-300	Utilities Plan
C-310	Storm Profiles
C-400	Sediment and Erosion Control Plan
C-600	Lighting Plan
C-700	Garbage Truck Turning Plan (Front-Loading)
C-701	Garbage Truck Turning Plan (Rear-Loading)
C-702	Fire Truck Turning Plan (Scenario 1)
C-703	Fire Truck Turning Plan (Scenario 2)
C-704	Fire Truck Turning Plan (Scenario 3)
C-800	Aerial Site Plan
C-801	Sight Distance Plan
C-900	Construction Details
C-901	Construction Details
C-902	Construction Details
C-903	Construction Details
C-904	Construction Details
C-905	Construction Details
C-906	Construction Details
C-907	Construction Details
C-908	Construction Details
L-100	Landscaping Plan

I. INTRODUCTION

This Stormwater Pollution Prevention Plan has been prepared for the 1.51-acre Beacon Commons site, located in the City of Beacon, Dutchess County, New York (hereinafter referred to as the "Site"). The site is bordered by residential properties to the north, West Main Street to the south, 2-Way Brewing Company to the east, and Bank Street to the west. The development has been designed in accordance with the following:

- Requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001, effective January 2020.
- Chapter 190 "Stormwater Management and Erosion and Sediment Control" of the City of Beacon Zoning Code
- New York State Stormwater Management Design Manual

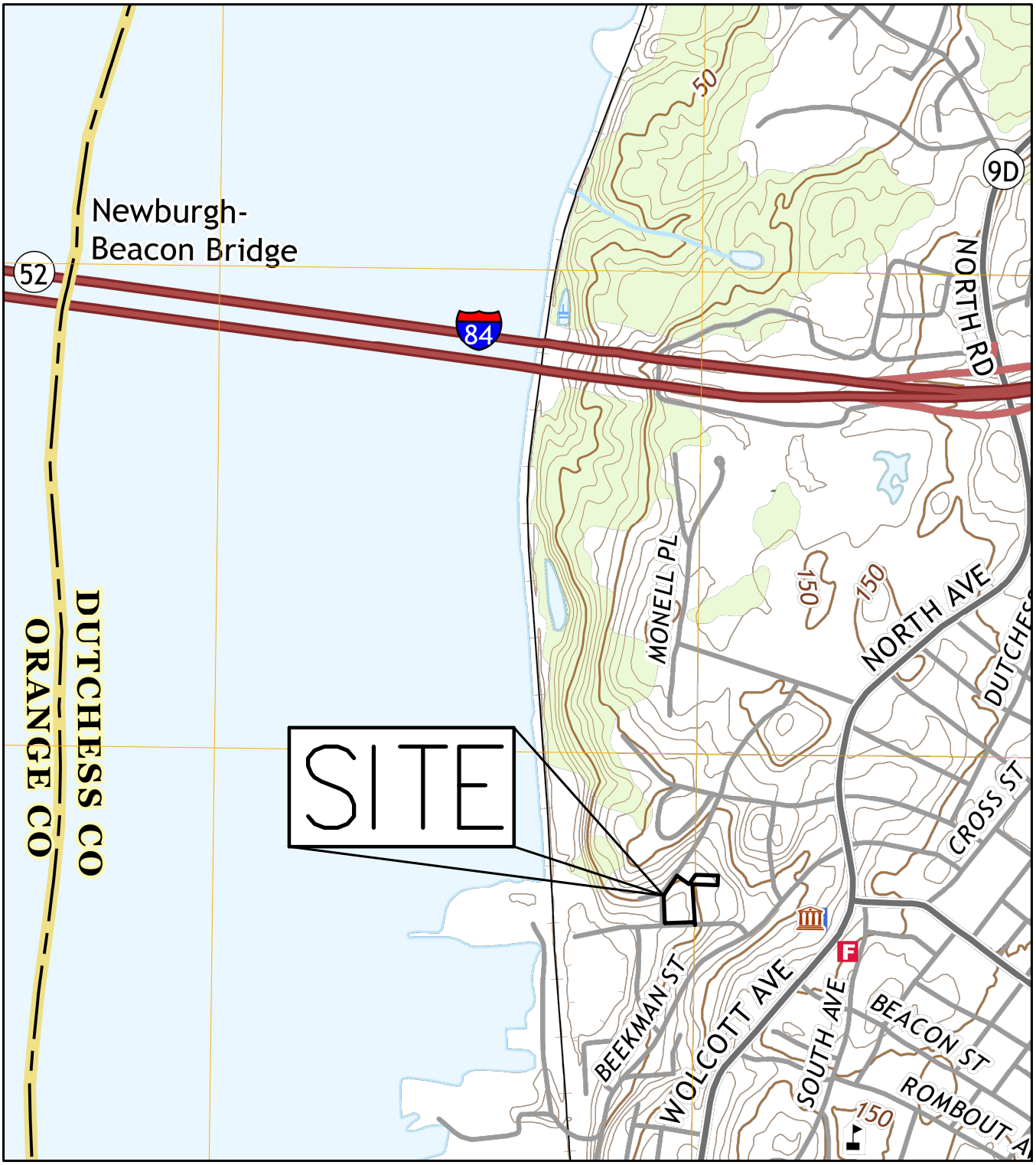
The existing site consists of a tall one-story brick building and a parking lot area. The site is proposed to be redeveloped with a 62-unit 4-story apartment building comprised of 34 one-bedroom, 20 two-bedroom units, 1 studio and 7 live/work apartments.

II. STORMWATER MANAGEMENT PLANNING

In order to be eligible for coverage under the NYSDEC SPDES General Permit No. GP-0-20-001 for Stormwater Discharges from Construction Activities, the Stormwater Pollution Prevention Plan (SWPPP) includes stormwater management practices (SMP's) from the publication "New York State Stormwater Management Design Manual," last revised January 2015.

A Stormwater Pollution Prevention Plan has been prepared for this project because it is a construction activity that involves:

- Soil disturbances of one (1) or more acres of land.



BEACON COMMONS
16 WEST MAIN STREET BEACON, NY 12508

SITE LOCATION MAP

DATE: 10/29/2019 JMC PROJECT: 18119

FIGURE: 01 SCALE: 1" = 1,000'

120 BEDFORD RD
ARMONK
NY 10504

(914) 273-5225
fax 273-2102

JMCPLLC.COM

COPYRIGHT © 2019 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.

18119–SLM.dwg; SLM.tab

The proposed stormwater facilities have been designed such that the quantity and quality of stormwater runoff during and after construction are not adversely altered or are enhanced when compared to pre-development conditions.

Based on the GIS information provided by the website of the New York State Office of Parks, Recreation and Historic Places, the site does not contain, nor is it immediately adjacent to any properties listed on the State or National Register of Historic Places.

According to the NYSDEC Environmental Mapper, the site may contain endangered or threatened species of wild life. According to the database, Atlantic Sturgeon, Shortnose Sturgeon and Indiana Bat are listed. The project site does not contain any streams or waterbodies that would be inhabited by Atlantic Sturgeon or Shortnose Sturgeon. However, the existing trees to be removed could be inhabited by Indiana Bats. According to the U.S. Fish and Wildlife Service (USFWS), tree removal should be conducted during the winter time frame of November 1st to March 31st to avoid adverse impacts to the bats. If tree removal is planned outside of this time frame, a site assessment by a bat biologist or a qualified bat surveyor should be performed. Such a survey will identify potential concerns and allow for implementation of site activity protections.

The Six Step Process for Stormwater Site Planning and Practice Selection

Stormwater management using green infrastructure is summarized in the six step process described below. The six step process was adhered to when developing this SWPPP. Information is provided in this SWPPP which documents compliance with the required process as follows:

Step 1: Site Planning

Implement planning practices that protect natural resources and utilize the hydrology of the site. Strong consideration must be given to reducing impervious cover to aid in the preservation of

natural resources including protecting natural areas, avoiding sensitive areas and minimizing grading and soil disturbance.

Step 2: Determine Water Quality Treatment Volume (WQv)

Determine the required WQv for the site based on the site layout, impervious areas and sub-catchments. This initial calculation of WQv will have to be revised after green infrastructure techniques are applied. The following method has been used to calculate the WQv.

- **90% Rule -** According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined from the 90% rule. The method is based on 90% of the average annual stormwater runoff volume which must be provided due to impervious surfaces. The Water Quality Volume (denoted as the WQv) is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volume. The WQv is directly related to the amount of impervious cover created at a site. The average rainfall storm depth for 90% of storms in New York State in one year is used to calculate a volume of runoff. The rainfall depth depends on the location of the site within the state. From this depth of rainfall, the required water quality volume is calculated.

The project is a redevelopment and therefore will comply with the strategies outlined within Chapter 9: Redevelopment Projects of the Design Manual. There are different options to control water quality depending on the redevelopment.

The NYSDEC Redevelopment Standards include specific criteria for the implementation of surface water quality improvements. A combination of standard and non-standard practices is proposed and all facilities will treat the required water quality volume from the entire contributing area. Therefore, Water Quality Treatment Options II & III will be utilized. According to Option III of the Redevelopment Standards, alternative or non-standard practices such as manufactured treatment devices are acceptable if they treat 75% of the water quality volume from the disturbed areas as well as any additional runoff directed to the practice. According to Option II, standard practices such as subsurface infiltration systems can be sized to

treat the water quality volume generated from 25% of the existing impervious area plus 100% of the new impervious area. Green practices such as green roofs and porous pavement can be used towards credit in meeting the water quality volume requirements.

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

RRv is required for this project since it is a combination of both new development and redevelopment.

Green infrastructure techniques or standard SMP's with RRv capacity can potentially reduce the required WQv by incorporating combinations of green infrastructure techniques and standard SMP's within each drainage area on the site.

Green infrastructure techniques are grouped into two categories:

- Practices resulting in a reduction of contributing area such as preservation/restoration of conservation areas, vegetated channels, etc.
- Practices resulting in a reduction of contributing volume such as green roofs, stormwater planters, and rain gardens.

Apply a combination of green infrastructure techniques and standard SMPs with RRv capacity to provide 100% of the WQv calculated in Step 2. If the RRv calculated in this step is greater than or equal to the WQv in Step 2, the RRv requirement has been met and Step 4 can be skipped. If the RRv provided cannot meet or exceed 100% of the WQv, the project must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the site. The percent reduction is based on the Hydrologic Soil Group(s) (HSG) of the site and is defined as Specific Reduction Factor (S).

The following green infrastructure techniques and practices are provided in the Design Manual:

- **Conservation of Natural Areas**
  - The majority of the site is developed and has been for decades. The project involves an increase in the developed portion of the site. Therefore, there is no area to be subtracted from the contributing area for the WQv calculation.

- **Sheet flow to Riparian Buffers or Filter Strips**
  - There are no well vegetated areas on-site downstream of the developed area that lend an opportunity as a buffer and still meet the minimum contributing length of flow. This practice is not practical for this project since these items are typically used in a residential application.

- **Vegetated Swales**
  - The use of sheet flow into vegetated swales cannot be implemented as there is not any location with adequate width and length.

- **Tree Planting / Tree Pits**
  - The project includes tree planting around its perimeter as part of the proposed landscaping plan. There are two small depressed landscaped islands that contain tree plantings to treat stormwater. However, to be conservative, the new trees are not credited towards area reduction for the water quality volume.

- **Disconnection of Rooftop Runoff**
  - This practice is not practical for this project since these items are typically used in a residential application for small rooftop areas.

- **Stream Daylighting**
  - This practice is not possible for this project since there are no existing streams.

- **Rain Gardens**
  - This practice is not practical for this project since a contributing drainage area is limited to 1,000 square feet of rooftop. This practice is typically used in a residential application.

- **Green Roofs**
  - Green roofs were not considered for this project due to RRv requirements being met via subsurface detention and stormwater planters.

- **Stormwater Planters**
  - Flow-through Stormwater planters will be constructed along the frontage of the building, along Bank Street and West Main Street between the building and property line to provide RRv.

- **Rain Barrels and Cisterns**
  - Underground storage tanks could be installed to collect stormwater runoff to be used for irrigation purposes. At this time the project will not have an irrigation system for the landscaped areas. There are other green practices proposed to meet the RRv requirements.

- **Porous Paving**
  - Porous pavements were not considered for this project because they are better suited for paved areas with low traffic activity. As such the RRv requirements are being met via stormwater planters.

- **Standard Practices with RRv Capacity**
  - **Biofilters and Bioretention Basins –** These surface practices cannot be proposed due to the limited landscaped area.
  - **Infiltration Practices –** A subsurface infiltration system is not ideal due to testing revealing high ground water and poor infiltration rates.

The Minimum RRv capacity required must be provided by green infrastructure techniques to verify that the RRv requirement has been met. The RRv that is provided by the green infrastructure techniques can then be subtracted from the Total Required WQv that must be provided by the SMP's.

Step 4: Determine the minimum RRv Required

The minimum RRv is calculated similar to the WQV. However, it is determined using only the new impervious cover and accounts for the hydrologic soil group present. In no case shall the runoff reduction achieved from the newly constructed impervious area be less than the minimum runoff reduction volume (RRv_{min}).

Step 5: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Apply the standard SMP's to meet additional water quality volume requirements that cannot be addressed by applying the green infrastructure techniques. The standard SMP's with RRv capacity must be implemented to verify that the RRv requirement has been met.

Step 6: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

The Channel Protection Volume (CPv), Overbank Flood Control (Qp) and Extreme Flood Control (Qf) must be met for the plan to be completed. This is accomplished by using practices such as infiltration basins, dry detention basins, etc. to meet water quantity requirements. The following standards must be met:

1. Stream Channel Protection (CPv)

Stream Channel Protection Volume Requirements (CPv) are designed to protect stream channels from erosion. In New York State this goal is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event, remained from runoff reduction. Reduction of runoff for meeting stream channel protection objectives, where site conditions allow, is encouraged and the volume reduction achieved through green infrastructure can be deducted from CPv. Trout waters may be exempted from the 24-hour ED requirement, with only 12 hours of extended detention required to meet this

criterion. Detention time may be calculated using either a center of mass method or plug flow calculation method.

- CPv for a redevelopment project is not required if there is no increase in impervious area or changes to hydrology that increase the discharge rate. This criterion, as defined in Chapter 4 of New York State Stormwater Design Manual, is not based on a pre versus post-development comparison. However, for a redevelopment project this requirement is relaxed. If the hydrology and hydraulic study shows that the post-construction 1-year 24 hour discharge rate and velocity are less than or equal to the pre-construction discharge rate, providing 24 hour detention of the 1-year storm to meet the channel protection criteria is not required.

2. Overbank Flood (Qp) which is the 10 year storm.

Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates.

3. Extreme Storm (Qf) which is the 100 year storm.

100 Year Control requires storage to attenuate the post development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates.

Based on the foregoing, this project is eligible for coverage under NYSDEC SPDES General Permit No. GP-0-20-001.

III. STUDY METHODOLOGY

Runoff rates were calculated based upon the standards set forth by the United States Department of Agriculture Natural Resources Conservation Service Technical Release 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986. The methodology set forth in TR-55

considers a multitude of characteristics for watershed areas including soil types, soil permeability, vegetative cover, time of concentration, topography, rainfall intensity, ponding areas, etc.

The 1, 10, 25, 100-year storm recurrence intervals were reviewed in the design of the stormwater management facilities (see Appendix A Existing/Proposed Hydrologic Calculations).

Anticipated drainage conditions were analyzed taking into account the rate of runoff which will result from the construction of buildings, parking areas and other impervious surfaces associated with the site development.

Base Data and Design Criteria

For the stormwater management analysis, the following base information and methodology were used:

1. The site drainage patterns and outfall facilities were reviewed by JMC personnel for the purpose of gathering background data and confirming existing mapping of the watershed areas.

2. An Existing Drainage Area Map was developed from the topographical survey, available County GIS data, and site observations. The drainage area map reflects the existing conditions within and around the project area.

3. A Proposed Drainage Area Map was developed from the proposed grading design superimposed over the existing conditions. The drainage area map reflects the proposed conditions within the project area and the existing conditions to remain in the surrounding area.

4. The United States Department of Agriculture (USDA) Web Soil Survey of the site available on its website at http://websoilsurvey.nrcd.usda.gov.

5. Soil Survey of Putnam and Westchester Counties, 1994.

6. The United States Department of Agriculture Natural Resources Conservation Service National Engineering Handbook, Section 4 - Hydrology", dated March 1985.

7. The United States Department of Agriculture Natural Resources Conservation Service Technical Report No. 55, Urban Hydrology for Small Watersheds (TR-55), dated June 1986.

8. The time of concentration was calculated using the methods described in Chapter 3 of TR-55, Second Edition, June 1986. Manning's kinematics wave equation was used to determine the travel time of sheet flow. The 2-year 24-hour precipitation amount of 3.16 inches was used in the equation for all storm events. The travel time for shallow concentrated flow was computed using Figure 3-1 and Table 3-1 of TR-55. Manning's Equation was used to determine the travel time for channel reaches.

9. All hydrologic calculations were performed with the Bentley PondPack software package version 10.0.

10. The New York State Stormwater Management Design Manual, revised January 2015.

11. New York Standards and Specifications for Erosion and Sediment Control, November 2016.

12. The storm flows for the 1, 10, 25, & 100-year recurrence interval storms were analyzed for the total watershed areas. The Type III distribution design storm for a 24 hour duration was used and the mass rainfall for each design storm was taken from the Extreme Precipitation in New York & New England developed by the Natural Resource Conservation Service (NRCS) and the Northeast Regional Climate Center (NRCC) as follows:

24 Hour Rainfall Amounts

Design Storm Recurrence Interval	Inches of Rainfall
1 Year	2.61
10 Year	4.70
25 Year	5.89
100 Year	8.33

IV. EXISTING CONDITIONS

The existing conditions of the project site consists of a tall one story brick building and associated parking lot. Some of the stormwater is collected by a storm sewer conveyance system on site while the rest of the stormwater flows into an undersized rain garden before entering the municipal storm system along West Main Street. After stormwater runoff exits the project site, it all flows to the storm sewer manhole located at the intersection of Bank Street and West Main Street which is designated as Design Point 1.

The following natural features and drainage patterns of the project site and off-site have been identified and utilized to develop Drawing DA-1 "Existing Drainage Area Map" which is included in Appendix I:

- Forest, vegetative cover
- Topography (contour lines, existing flow paths, steep slopes, etc.)
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Based on the USDA Web soil survey, all on-site soils are well drained and belong to hydrological group B.

One Design Point (DP-1) was identified for comparing peak rates of runoff in existing and proposed conditions. Three separate drainage areas were identified in existing conditions based on the existing drainage divides at the site and surrounding properties.

The following is a description of each of the drainage areas analyzed in the existing conditions analysis:

Existing Drainage Area 1A (EDA-1A) is 5.58 acres in size and is located on the northern portion of the site along Bank Street, the Parcel 2 area and offsite areas located to the north and east of the site. This area consists of the rear parking area and a portion of the existing building and nearby residential and business properties uphill from the project site. This drainage area is collected by an on-site storm sewer within an easement and drains to the municipal storm system in Bank Street, then towards the manhole at the intersection of Bank Street and West Main Street which is designated as Design Point 1.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 74.8 and 20 minutes, respectively. Refer to Drawing DA-1 in Appendix I.

Existing Drainage Area 1B (EDA-1B) is 0.92 acres in size and is located on the southern portion of the site along West Main Street and Bank Street. This area consists of the front and side parking areas and a portion of the existing building. This drainage area is collected by an existing undersized rain garden area and drains towards the manhole at the intersection of Bank Street and West Main Street, designated as Design Point 1.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 80.1 and 6.7 minutes, respectively. Refer to Drawing DA-1 in Appendix I.

The peak rates of runoff to the design point from the drainage areas for each storm are shown in the table below:

Table 1
Summary of Peak Rates of Runoff in Existing Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1
1 year	3.39
10 year	11.16
25 year	16.20
100 year	26.86

V. PROPOSED CONDITIONS

The proposed improvements consist of the replacing the existing building and parking areas with a four-story residential apartment building totaling 62 units. The associated parking lot will be redeveloped as well and additional parking will be added on Parcel 2.

The proposed drainage improvements include a variety of stormwater practices, such as tree plantings in depressed curb islands, flow-through stormwater planters, subsurface detention system, a hydrodynamic separator water quality structure and a Jellyfish Filter structure. After treatment for water quality from the Jellyfish filter, stormwater will enter the subsurface detention facility and slowly be released using an outlet control structure to control peak flows. Stormwater planters are used to treat rooftop areas and some sidewalk area. Portions of driveway will be treated with a CDS2015-4-C water quality structure and connect to existing stormwater infrastructure in West Main Street.

This section describes the design and analysis of the proposed conditions used to demonstrate that the SWPPP meets the requirements of the NYSDEC SPDES General Permit.

The Six Step Process For Stormwater Site Planning and Practice Selection

Step 1: Site Planning

The following practices and site features were incorporated in the site design:

- Preserving hydrology - Maintaining drainage divides
- Floodplain considerations - The site does not lie within the 100 year flood zone according to the National Flood Insurance Program Flood Insurance Rate Map (FIRM) No. 36027C0463E, effective date 05/02/2012.
- Topography (contour lines, existing flow paths, steep slopes, etc.) has been maintained or disturbed to the minimum extent practicable.
- Soil (hydrologic soil groups, highly erodible soils, etc.)

Step 2: Determine Water Quality Treatment Volume (WQv)

90% Rule - According to the New York State Stormwater Design Manual, Section 4.1, the water quality volume is determined from the 90% rule.
Water quality volume required = 3,374 CF

Step 3: Runoff Reduction Volumes (RRv) by Applying Green Infrastructure Techniques and Standard SMP's

- Stormwater Planters

Step 4: Determine the minimum RRv Required

RRv_{min} calculations can be found in Appendix 'B'. RRv_{min} was met through

- Stormwater Planters

Step 5: Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

Non Standard/Alternative SMP's to Address Remaining Water Quality Volume (for Redevelopment Projects)

- **Hydrodynamic Separator**

Step 6: Apply Volume and Peak Rate Control Practices to Meet Water Quantity Requirements

- **Detention Systems**

  Subsurface Detention Basin

  Description

  A detention practice that is capable of storing the water quality volume in underground units and detaining up to the 100-year storm volume which is slowly released to the design point.

All practices exceed the required elements of SMP criteria as outlined in Chapter 6 of the NYS Stormwater Management Design Manual. A summary of each category is provided below.

1. Feasibility – Stormwater practices are designed based upon unique physical environmental considerations noted in the NYS Stormwater Management Design Manual (NYSSMDM).

2. Conveyance – The design conveys runoff to the designed stormwater practice in a manner that is safe, minimizes erosion and disruption to natural drainage channel and promotes filtering and infiltration.

3. Pretreatment – All stormwater practices provide pretreatment as required in accordance with NYSSMDM design guidelines.

4. Treatment Geometry – The plan provides water quality treatment in accordance with NYSSMDM guidelines.

5. Environmental/Landscaping –Extensive landscaping has been provided for each proposed stormwater practice to enhance pollutant removal and provide aesthetic enhancement to the property.

6. Maintenance – Maintenance for the environment practices has been provided and is detain the

SWPPP Report as required. Maintenance access is provided in the design plans.

In order to determine the post-development rates of runoff generated on-site, the following drainage areas were analyzed in the post-development conditions. These areas are graphically depicted on Drawing DA-2 "Proposed Drainage Area Map" located in Appendix I.

Similarly, one Design Point (DP-1) was identified for comparing peak rates of runoff in existing and proposed conditions. However, five separate drainage areas were identified in proposed conditions based on the proposed drainage divides at the site.

The following is a description of each of the drainage areas analyzed in the proposed conditions analysis:

Proposed Drainage Area 1A (PDA-1A) is 0.73 acres in size and is the northern portion of the site which consists of the parking areas and adjacent landscaping. This drainage area is treated by a Jellyfish system, before being directed to a proposed subsurface detention system and slowly released to the storm sewer system leading to design point 1. The proposed detention system will be 12 rows of Stormtech SC-740 Chambers (71 units) with the bottom of the system at elevation 34.10. The system is modelled using a starting water elevation of 34.50 since groundwater was encountered at that elevation. Outlet control structure OCS-A6 will control its flow release with a 4" orifice at invert elevation 34.10, a 4" wide weir set at elevation 35.15, weir overflow set at elevation 37.60 and a 15" culvert pipe with final discharge to design point 1.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 92 and 5 minutes, respectively. Refer to Drawing DA-2 in Appendix I.

Proposed Drainage Area 1B (PDA-1B) is 0.09 acres in size and consists of the entrance driveway leading from West Main Street and a small portion of the parking area. This drainage area is collected and treated by a CDS2015-4-C water quality structure located at the intersection of the driveway with West Main Street. Sizing calculations are provided in Appendix "B". The stormwater is then released to the existing storm sewer system.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 98 and 5 minutes, respectively. Refer to Drawing DA-2 in Appendix "I".

Proposed Drainage Area 1C (PDA-1C) is 0.56 acres in size and consists of the proposed building, 10 stormwater planters and some sidewalk area. This drainage area is directed into multiple stormwater planters along the sides of the building (Refer to Drawing DA-2 and Roof Drainage Figure in Appendix I). After being treated by the planters, the stormwater is then released to the city storm sewer system. Raised drains are placed in the planters to allow stormwater from the larger storm events to bypass directly into the storm sewer system.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 94 and 5 minutes, respectively. Refer to Drawing DA-2 in Appendix I.

Proposed Drainage Area 1D (PDA-1D) is 5.09 acres in size and is located to the north and east of the site. This offsite area consists of the nearby residential and business properties uphill from the project site. Under proposed conditions, this drainage area is the same as existing conditions. However, instead of flowing onto the site, the off-site runoff is collected by proposed drain inlets and conveyed to a proposed on-site storm sewer system which bypasses the on-site SMPs and is directed towards the manhole at the intersection of the site driveway and West Main Street. .

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 75 and 19.2 minutes, respectively. Refer to Drawing DA-1 in Appendix "I".

Proposed Drainage Area 1E (PDA-1E) is 0.03 acres in size and consists of the remaining areas along the West Main Street and Bank Street frontage. This drainage area is proposed to run off the site onto the adjacent sidewalks and roadways where it is captured by the existing storm sewer system like existing conditions.

The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 73 and 5 minutes, respectively. Refer to Drawing DA-2 in Appendix "I"

The peak rates of runoff to the design point for each storm are shown on the table below:

Table 2
Summary of Proposed Peak Rates of Runoff in Proposed Conditions
(Cubic Feet per Second)

Storm Recurrence Interval	DP-1
1 year	3.03
10 year	10.85
25 year	15.79
100 year	26.57

The reductions in peak rates of runoff from proposed to existing conditions are shown on the table below:

Table 3
Percent Reductions in Peak Rates of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Design Point	Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs)	Proposed Peak Runoff Rate (cfs)	Percent Reduction (%)
1	1 year	3.39	3.03	10.6
	10 year	11.16	10.85	2.8
	25 year	16.20	15.79	2.5
	100 year	26.86	26.57	1.1

As demonstrated in Table 3, the proposed stormwater improvements will result in reductions of peak rates of runoff for all storms.

VI. SOIL EROSION & SEDIMENT CONTROL

A potential impact of the proposed development on any soils or slopes will be that of erosion and transport of sediment during construction. An Erosion and Sediment Control Management Program will be established for the proposed development, beginning at the start of construction and continuing throughout its course, as outlined in the "New York State Standards and Specifications for Erosion and Sediment Control," November 2016. A continuing maintenance

program will be implemented for the control of sediment transport and erosion control after construction and throughout the useful life of the project.

The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify that the appropriate erosion and sediment controls, as shown on the Sediment & Erosion Control Plans, have been adequately installed to ensure overall preparedness of the site for the commencement of construction. In addition, the Operator shall have a qualified professional conduct one site inspection at least every seven calendar days.

Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.

The owner or operator shall have each of the contractors and subcontractors identified above sign a copy of the certification statement provided in Appendix F before they commence any construction activity.

Soil Description

As provided by the United States Department of Agriculture, Soil Conservation Service "Web Soil Survey," soil classifications which exist on the subject site are described below.

Soils are placed into four hydrologic groups: A, B, C, and D. In the definitions of the classes, infiltration rate is the rate at which water enters the soil at the surface and is controlled by the

surface conditions. Transmission rate is the rate at which water moves in the soil and is controlled by soil properties. Definitions of the classes are as follows:

A. (Low runoff potential). The soils have a high infiltration rate even when thoroughly wetted. They chiefly consist of deep, well drained to excessively drained sands or gravels. They have a high rate of water transmission.

B. The soils have a moderate infiltration rate when thoroughly wetted. They chiefly are moderately deep to deep, moderately well drained to well drained soils that have moderately fine to moderately coarse textures. They have a moderate rate of water transmission.

C. The soils have a slow infiltration rate when thoroughly wetted. They chiefly have a layer that impedes downward movement of water or have moderately fine to fine texture. They have a slow rate of water transmission.

D. (High runoff potential). The soils have a very slow infiltration rate when thoroughly wetted. They chiefly consist of clay soils that have a high swelling potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. They have a very slow rate of water transmission.

A soil's tendency to erode is also described in the USDA web soil survey. The ratings in this interpretation indicate the hazard of soil loss from unsurfaced areas. The ratings are based on soil erosion factor K, slope, and content of rock fragments. The hazard is described as "slight," "moderate," or "SEVERE." A rating of "slight" indicates that little or no erosion is likely; "moderate" indicates that some erosion is likely, that the temporarily unsurfaced / unstabilized during construction may require occasional maintenance, and that simple erosion-control measures are needed; and "SEVERE" indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that erosion-control measures are needed.

Per the Soil Survey, the following soils listed below are present at the site. Following this list is a detailed description of each soil type found on the property:

SYM.	HYDRO. SOIL GROUP	DESCRIPTION
DwB	B	Dutchess-Cardigan complex, undulating, rocky

DwB, Dutchess-Cardigan complex, undulating, rocky

This soil consists of very deep, well drained Dutchess soils and moderately deep, well drained Cardigan soils that formed in glacial till deposits. It is on hilltops and undulating till plains that are underlain by folded shale bedrock. Dutchess soils are commonly on lower concave slopes and Cardigan soils are commonly on upper slopes, hilltops, and near areas of rock outcrop. This unit consists of about 40 percent Dutchess oils, 30 percent Cardigan soils, and 30 percent other soils and rock outcrop. Depth to the top of a seasonal high water table is more than 6 feet. Available water capacity is low.

Hydrologic group: **B**
Erosion Hazard Rating: **SLIGHT**

Sequence of Construction

Construction shall be sequenced in such a manner that any area which is disturbed shall first be protected with sediment erosion controls as indicated on this plan. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased.

Specific requirements are given as follows:

1. Installation of sediment and erosion control measures as indicated on this plan.
2. Pre-construction meeting with site contractor, city of beacon personnel, and site engineer.

3. Demolition of existing building as required.
4. Clear undeveloped portion of property which is to be developed.
5. Strip and stockpile topsoil.
6. Install proposed offsite stormwater system prior to demolition of existing system.
7. Begin rough grading, retaining walls construction, building construction and parking lot construction.
8. Install storm drain system complete (immediately install inlet protection on all inlets).
9. Install public utilities (gas, electric and telephone) as required.
10. Install concrete and asphalt concrete pavement complete.
11. Finish grading, redistribute topsoil and establish vegetation and/or landscaping.
12. Clean pavements and storm drain system of all accumulated sediment in conjunction with the removal of all temporary sediment and erosion control devices.
13. Complete site and building construction.

On-Site Pollution Prevention

There are temporary pollution prevention measures used to control litter and construction debris on site, such as:

- Silt Fence
- Silt Sack
- Excavated Drop Inlet Protection

There will be inlet protection provided for all storm drains and inlets with the use of curb gutter inlet protection structures and stone & block drop inlet protection, which keep silt, sediment and construction litter and debris out of the on-site stormwater drainage system.

Temporary Control Measures

Temporary control measures and facilities will include silt fences, construction ditches, stabilized construction access, temporary seeding, mulching and sediment traps with temporary riser and anti-vortex devices.

Throughout the construction of the proposed redevelopment, temporary control facilities will be implemented to control on-site erosion and sediment transfer. Construction ditches, if required, will be used to direct stormwater runoff to excavated drop inlet protections for settlement.

Descriptions of the temporary sediment & erosion controls that will be used during the development of the site including silt fence, stabilized construction access, seeding, mulching, inlet protection, and haybales are as follows:

1. Silt Fence is constructed using a geotextile fabric. The fence will be either 18 inches or 30 inches high. The height of the fence can be increased in the event of placing these devices on uncompacted fills or extremely loose undisturbed soils. The fences will not be placed in areas which receive concentrated flows such as ditches, swales and channels nor will the filter fabric material be placed across the entrance to pipes, culverts, spillway structures, sediment traps or basins.

2. Stabilized Construction Access consists of AASHTO No. 1 rock. The rock entrance will be a minimum of 50 feet in length by 24 feet in width by 8 inches in depth.

3. Seeding will be used to create a vegetative surface to stabilize disturbed earth until at least 80% of the disturbed area has a perennial vegetative cover. This amount is required to adequately function as a sediment and erosion control facility. Grass lining will also be used to line temporary channels and the surrounding disturbed areas.

4. Mulching is used as an anchor for seeding and disturbed areas to reduce soil loss due to storm events. These areas will be mulched with straw at a rate of 3 tons per acre such that the mulch forms a continuous blanket. Mulch must be placed after seeding or within 48 hours after seeding is completed.

5. Inlet Protection will be provided for all stormwater basins and inlets with the use of curb & gutter inlet protection and stone & block inlet protection structures, which will keep silt, sediment and construction debris out of the storm system. Existing structures within existing paved areas will be protected using "Silt Sacks" inside the structures.

The contractor shall be responsible for maintaining the temporary sediment and erosion control measures throughout construction. This maintenance will include, but not be limited to, the following tasks:

1. For dust control purposes, moisten all exposed graded areas with water at least twice a day in those areas where soil is exposed and cannot be planted with a temporary cover due to construction operations or the season (December through March).

2. Inspection of erosion and sediment control measures shall be performed at the end of each construction day and immediately following each rainfall event. All required repairs shall be immediately executed by the contractor.

3. Sediment deposits shall be removed when they reach approximately ⅓ the height of the silt fence. All such sediment shall be properly disposed of in fill areas on the site, as directed by the Owner's Field Representative. Fill shall be protected following disposal with mulch, temporary and/or permanent vegetation and be completely circumscribed on the downhill side by silt fence.

4. Rake all exposed areas parallel to the slope during earthwork operations.

5. Following final grading, the disturbed area shall be stabilized with a permanent surface treatment (i.e. turf grass, pavement or sidewalk). During rough grading, areas which are not to be disturbed for fourteen or more days shall be stabilized with the temporary seed mixture, as defined on the plans. Seed all piles of dirt in exposed soil areas that will not receive a permanent surface treatment.

Concrete Material and Equipment Management

Concrete washouts shall be used to contain concrete and liquids when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery. The washout facilities consolidate solid for easier disposal and prevent runoff of liquids. The wash water is alkaline and contains high levels of chromium, which can leach into the ground and contaminate groundwater. It can also migrate to a storm drain, which can increase the pH of area waters and harm aquatic life. Solids that are improperly disposed of can clog storm drain pipes and cause flooding. Installing concrete washout facilities not only prevents pollution but also is a matter of good housekeeping at your construction site.

Prefabricated concrete washout containers can be delivered to the site to provide maintenance and disposal of materials. Regular pick-ups of solid and liquid waste materials will be necessary. To prevent leaks on the job site, ensure that prefabricated washout containers are watertight. A self installed concrete washout facility can be utilized although they are much less reliable than prefabricated containers and are prone to leaks. There are many design options for the washout, but they are preferably built below-grade to prevent breaches and reduce the likelihood of runoff. Above-grade structures can also be used if they are sized and constructed correctly and are diligently maintained. One of the most common problems with self-installed concrete washout facilities is that they can leak or be breached as a result of constant use, therefore the contractor shall be sure to use quality materials and inspect the facilities on a daily basis.

Washouts must be sized to handle solids, wash water, and rainfall to prevent overflow. Concrete Washout Systems, Inc. estimates that 7 gallons of wash water are used to wash one truck chute and 50 gallons are used to wash out the hopper of a concrete pump truck.

For larger sites, a below-grade washout should be at least 10 feet wide and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 12-inches of freeboard must be provided. The pit must be lined with plastic sheeting of at least 10-

mil thickness without holes or tears to prevent leaching of liquids into the ground. Concrete wash water should never be placed in a pit that is connected to the storm drain system or that drains to nearby waterways.

An above-grade washout can be constructed at least 10 feet wide by 10 feet long and sized to contain all liquid and solid waste expected to be generated in between cleanout periods. A minimum of 4-inches of freeboard must be provided. The washout structures can be constructed with staked straw bales or sandbags double-or triple lined with plastic sheeting of at least 10-mil thickness without holes or tears.

Concrete washout facilities shall not be located within 50 feet of storm drains, open ditches, or water bodies and should be placed in locations that allow for convenient access for concrete trucks. The contractor shall check all concrete washout facilities daily to determine if they have been filled to 75 percent capacity, which is when materials need to be removed. Both above-and below-ground self-installed washouts should be inspected daily to ensure that plastic linings are intact, and sidewalls have not been damaged by construction activities. Prefabricated washout containers should be inspected daily as well as to ensure the container is not leaking or nearing 75 percent capacity. Inspectors should also note whether the facilities are being used regularly. Additional signage for washouts may be needed in more convenient locations if concrete truck operators are not utilizing them.

The washout structures must be drained or covered prior to predicted rainstorms to prevent overflows. Hardened solids either whole or broken must be removed and then they may be reused onsite or hauled away for recycling.

Once materials are removed from the concrete washout, a new structure must be built or excavated, or if the previous structure is still intact, inspect it for signs of weakening or damage and make any necessary repairs. Line the structure with new plastic that is free of holes or tears and replace signage if necessary. It is very important that new plastic be used after every cleaning because pumps and concrete removal equipment can damage the existing liner.

Construction Site Chemical Control

The purpose of this management measure is to prevent the generation of nonpoint source pollution from construction sites due to improper handling and usage of nutrients and toxic substances, and to prevent the movement of toxic substances from the construction site.

Many potential pollutants other than sediment are associated with construction activities. These pollutants include pesticides; fertilizers used for vegetative stabilization; petrochemicals; construction chemicals such as concrete products, sealers, and paints; wash water associated with these products; paper; wood; garbage; and sanitary waste.

Disposal of excess pesticides and pesticide-related wastes should conform to registered label directions for the disposal and storage of pesticides and pesticide containers set forth in applicable Federal, State and local regulations that govern their usage, handling, storage, and disposal.

Pesticides should be disposed of through either a licensed waste management firm or a treatment, storage and disposal (TSD) facility. Containers should be triple-rinsed before disposal, and rinse waters should be reused as product.
Other practices include setting aside a locked storage area, tightly closing lids, storing in a cool, dry place, checking containers periodically for leaks or deterioration, maintaining a list of products in storage, using plastic sheeting to line the storage areas, and notifying neighboring property owners prior to spraying.

When storing petroleum products, follow these guidelines:

- Create a shelter around the area with cover and wind protection;
- Line the storage area with a double layer of plastic sheeting or similar material;
- Create an impervious berm around the perimeter with a capacity of 110 percent greater than that of the largest container;
- Clearly label all products;

- Keep tanks off the ground; and
- Keep lids securely fastened.

Post spill procedure information and have persons trained in spill handling on site or on call at all times. Materials for cleaning up spills should be kept on site and easily available. Spills should be cleaned up immediately and the contaminated material properly disposed of. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff.

Thinners or solvents should not be discharged into sanitary or storm systems when cleaning machinery. Use alternative methods for cleaning larger equipment parts, such as high-pressure, high-temperature water washes, or steam cleaning. Equipment-washing detergents can be used, and wash water may be discharged into sanitary sewers if solids are removed from the solution first. (This practice should be verified with the local sewer authority.) Small parts can be cleaned with degreasing solvents, which can then be reused or recycled.

Solid Waste Management and Portable Sanitary Management

The purpose of this management measure is to prevent the potential for solid waste such as construction debris, trash, etc. from construction sites due to improper handling and storage. Debris and litter should be removed periodically from the BMP's and surrounding areas to prevent clogging of pipes and structures. All construction material shall be stored in designated staging areas. Roll-off containers shall be placed on site and all empty containers, construction debris and litter shall be placed in the containers.

Portable sanitary units may be utilized on-site or bathrooms will be provided within construction trailers. A sanitation removal company will be hired to pump/remove any sanitary waste. In the event that portable sanitary units are used and then cleaned after being emptied, the rinse water may not be disposed of to the storm drain system. It shall be contained for later disposal if it can't be disposed of on-site. Remove paper and trash before cleaning the portable sanitary units. The portable sanitary units shall be located away from the storm drain system if possible. Provide over head cover for wash areas if possible. Maintain spill response material and equipment on site

to eliminate the potential for contaminants and wash water from entering the storm drain system.

Permanent Control Measures and Facilities for Long Term Protection

Towards the completion of construction, permanent sediment and erosion control measures will be developed for long term erosion protection. The following permanent control measures and facilities have been proposed to be implemented for the project.

1. Stormwater Planters are proposed at various locations around the proposed building to collect and filter runoff from portions of the building rooftops. Small drainage areas, less than 15,000 square feet will be collected by gutters and roof drain leaders and discharged into stormwater planters that will infiltrate the smaller storms and then discharge the higher storms through risers/standpipes directly into the underground storm pipes to the proposed stormwater management basins. Stormwater Planters act as small basins that treat stormwater as it flows through plant material and a soil matrix and is discharged to the storm drain system. These practices are elevated above the existing grade, surrounded by a concrete wall and consist of a reservoir with a depth of 12 inches, grass/landscaping with a layer of mulch, 12 inches of sandy loam topsoil and a sand/gravel layer a minimum of 24 inches wide that extends down to the native soil. Filtration through these layers will enable removal of pollutants and sediment generated by the rooftop and other small impervious areas. Refer to Appendix 'B' for the Runoff Reduction and Water Quality Volume Sizing Calculations.

2. CDS Water Quality Structure is proposed to provide pretreatment of the water quality flow rate for separating sediment, debris, floatables, etc. from the runoff prior to discharge to the SMP's. The CDS Water Quality Structure has been designed to treat up to the required water quality volume and appropriately handle all storm frequencies without the resuspension of solids. The system will provide 50% TSS removal rate for particles having a mean particle size of 125 microns for stormwater runoff. Refer to Appendix "E" for the water quality unit peak flow calculation and NJDEP certification.

3. Jellyfish Stormwater Treatment is proposed to provided treatment of the water quality using a membrane filtration compact stand-alone system. Jellyfish removes floatables, trash, oil, debris, TSS, fine silt-sized particles, and a high percentage of particulate-bound pollutants; including phosphorus, nitrogen, metals, and hydrocarbons.

4. Subsurface Detention System (I-2) which is a standard SMP that will be used to provide runoff volume reduction. The smaller storms will be retained, and the higher storms will be released gradually. Refer to the Proposed Hydrologic Calculations and Runoff Reduction and Water Quality Volume Sizing Calculations, in Appendices A and B.

   The StormTech SC-740 Recharge Chambers are domed shaped fully opened bottom corrugated chambers with perforated side walls. Chambers allow stormwater to be stored within the dome void and slowly released through an outlet control structure. They are able to be used for residential, commercial or industrial applications and provide an easy way to treat and dispose of stormwater runoff underground. Water is infiltrated into the ground through the chambers and surrounding crushed stone and will replenish the groundwater as a natural condition.

   The Isolator Row is a row of StormTech chambers that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as stormwater rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls allow stormwater to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage access of the adjacent stone and chambers from sediment accumulation.

   The Isolator Row is designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but includes a high flow weir such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other standard chambers. By treating stormwater prior to entry into the

chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured.

5. Seeding of at least 70% perennial vegetative cover will be used to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with straw at a rate of 2 tons per acre such that the mulch forms a continuous blanket.

Specifications for Soil Restoration

Prior to the final stabilization of the disturbed areas, soil restoration will be required for all vegetated areas to recover the original properties and porosity of the soil. Soil Restoration Requirements are provided on Table 4 below:

Table 4

Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only – no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities
	apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	Clearing and grubbing
	Aerate and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially) in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area.
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.

** Per "Deep Ripping and De-compaction, DEC 2008."

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following full soil restoration steps applied:

1. Apply 3 inches of compost over subsoil.

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.

3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.

Specifications for Final Stabilization of Graded Areas

Final stabilization of graded areas consists of the placement of topsoil and installation of landscaping (unless the area is to be paved, or a building is to be constructed in the location). Topsoil is to be spread as soon as grading operations are completed. Topsoil is to be placed to a minimum depth of six inches on all embankments, planting areas and seeding/sod areas. The subgrade is to be scarified to a depth of two inches to provide a bond of the topsoil with the subsoil. Topsoil is to be raked to an even surface and cleared of all debris, roots, stones and other unsatisfactory material.

Planting operations shall be conducted under favorable weather conditions as follows:

- Permanent Lawns - April 15 (provided soil is frost-free and not excessively moist) to May 15; August 15 to October 15.
- Temporary Lawn Seeding - if outside of the time periods noted above, the areas shall be seeded immediately on completion of topsoil operations with annual ryegrass (Italian rye) at a rate of six pounds per 1,000 square feet. Temporary lawn installation is permitted provided the soil is frost-free and not excessively moist. The permanent lawn is to be installed the next planting season.

On slopes with a grade of 3 horizontal to 1 vertical or greater, and in swales, a geotextile netting or mat shall be installed for stabilization purposes as shown on the Plans. Seeded areas are to be

mulched with straw or hay at an application rate of 70-90 pounds per 1,000 s.f. Straw or hay mulch must be spread uniformly and anchored immediately after spreading to prevent wind blowing. Mulches must be inspected periodically and in particular after rainstorms to check for erosion. If erosion is observed, additional mulch must be applied. Netting shall be inspected after rainstorms for dislocation or failure; any damage shall be repaired immediately.

All denuded surfaces which will be exposed for a period of over two months or more shall be temporarily hydroseeded with (a) perennial ryegrass at a rate of 40 lbs per acre (1.0 lb per 1000 square feet); (b) Certified "Aroostook" winter rye (cereal rye) @ 100 lb per acre (2.5 lb/1000 s.f.) to be used in the months of October and November.

Permanent turfgrass cover is to consist of a seed mixture as follows:

(a) Sunny sites

Kentucky Bluegrass	2.0-2.6 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	0.4-0.6 pounds/1000 square feet

(b) Shady sites

Kentucky Bluegrass	0.8-1.0 pounds/1000 square feet
Perennial Ryegrass	0.6-0.7 pounds/1000 square feet
Fine Fescue	2.6-3.3 pounds/1000 square feet

All plant materials shall comply with the standards of the American Association Of Nurserymen with respect to height and caliper as described in its publication American Standard for Nursery Stock, latest edition.

VII. CONSTRUCTION PHASE AND POST-CONSTRUCTION MAINTENANCE

During the construction phase and following construction of the project, a number of maintenance measures will be taken with respect to the site maintenance. Measures to be taken included the following:

1. During Construction

A comprehensive sediment and erosion control plan will be in place during the construction period. Maintenance measures for sediment and erosion controls will include:

A qualified professional acceptable to the municipality will be hired by the owner or operator to monitor the installation and maintenance of the sediment and erosion control plans. The qualified professional shall report directly to the Engineering Consultant and shall be responsible for ensuring compliance with the design of the sediment and erosion control plans.

The qualified professional so hired will inspect all sediment and erosion control measures at least every seven calendar days. In the event that there has been a variance with the design of the sediment and erosion control measures so that the ability of the measures to adequately perform the intended function is lessened or compromised and/or the facilities are not adequately maintained, the qualified professional shall be required to report such variance to the Engineering Consultant within 48 hours and shall be empowered to order immediate repairs to the sediment and erosion control measures.

The qualified professional will also be responsible for observing the adequacy of the vegetation growth (trees, shrubs, groundcovers and turfgrasses) in newly graded areas and for ordering additional plantings in the event that the established plant materials do not adequately protect the ground surface from erosion.

2. Following Construction

Site maintenance activities on the property will include:

- Grounds maintenance, including mowing of lawns;
- Planting of trees, shrubs and groundcovers; pruning of trees and shrubs;
- Application of fertilizer and herbicides;
- Maintenance of stormwater management practices;

Grounds maintenance on the site will be performed by landscaping contractor.

Fertilizer is typically applied twice in the year - once in the spring and once in the fall. The application of fertilizer is usually necessary to maintain healthy lawn growth due to competition for nutrients with trees and shrubs and since the clippings are often removed. It is not recommended that fertilizer be applied during the summer. It is at this time that lawns are typically dormant.

Fertilizers come in three basic types: (1) Organic; (2) Soluble synthetic and (3) Slow release.

Organic fertilizers are derived from plant or animal waste. Since they are heavier and bulkier than other fertilizers, it is necessary to apply a much greater amount at one time. Soluble synthetic fertilizers are predictable with determining the exact impact on a lawn. However, more applications are necessary since their effect is often short term. Slow release fertilizers have a high percentage of nitrogen so quantities that need be handled at one time are smaller. Slow release fertilizers will be utilized by the project.

A complete fertilizer contains all three of the primary nutrients - nitrogen (N), phosphorus (P) and potassium in the form of potash (K). Typically, a 3-1-2 ratio of nutrients (N-P-K) is used for lawn applications.

Fertilizer shall be applied by the landscape contractor in accordance with the manufacturer's instructions. The application of fertilizer does require some skill on the part of the operator. Should there be a spill of fertilizer, the landscape contractor shall be required to scrape or vacuum it up. The area will then be watered in accordance with the manufacturer's instructions to ensure that the fertilizer becomes soluble and available to plants and does not run off.

Farrell Building Company will be responsible for the long-term operation and maintenance of the permanent stormwater management practices. The permanent stormwater management practices shall be maintained in accordance with the Maintenance Inspection Checklists provided in Appendix E.

VIII. CONCLUSION

This Stormwater Pollution Prevention Plan has been prepared to describe the project's pre and post-development stormwater management improvements and its sediment and erosion control improvements to be utilized during construction. The proposed permanent improvements and the interim improvements to be utilized during construction have been designed in accordance with the requirements of the:

- New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001, effective January 29, 2015, last modified November 23, 2016.
- Chapter 190 "Stormwater Management and Erosion and Sediment Control" of the City of Beacon Zoning Code.
- New York State Stormwater Management Design Manual.

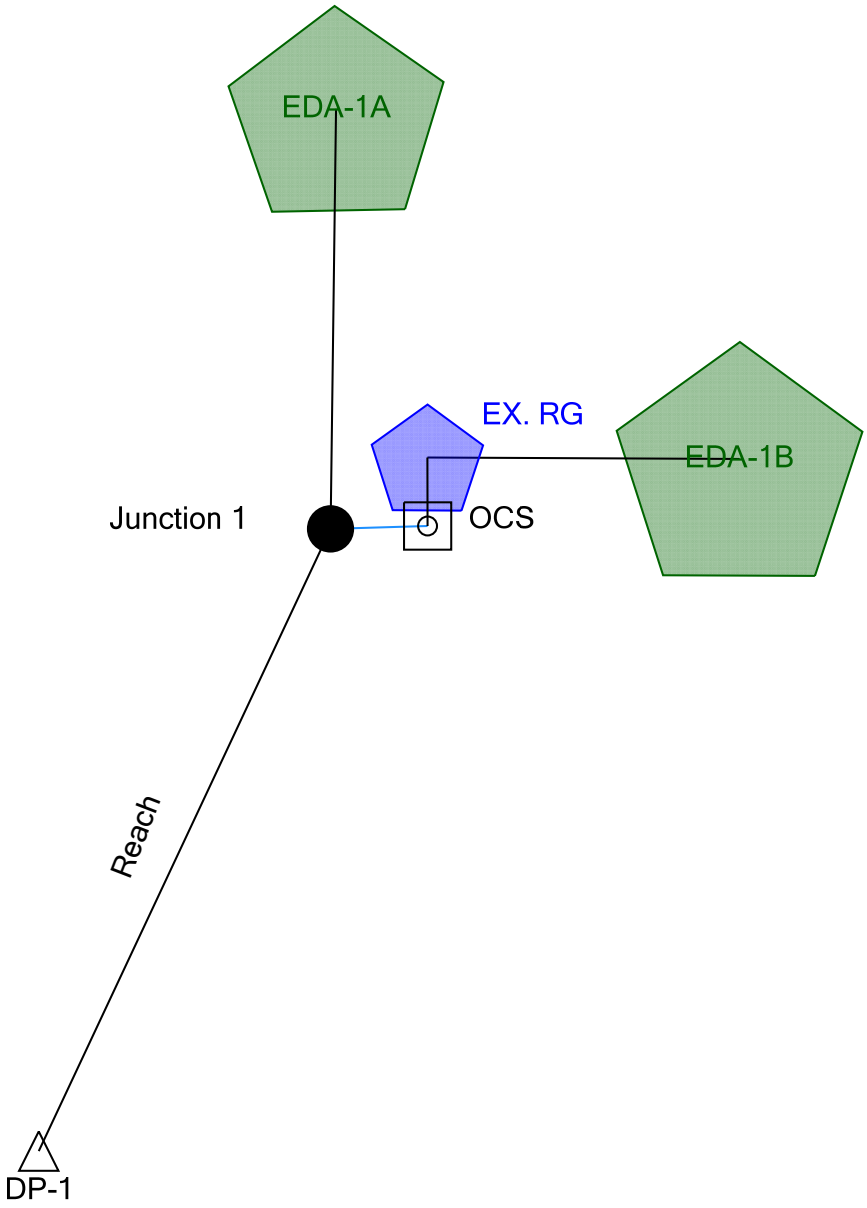
The project employs a variety of practices to enhance stormwater quality and reduce peak rates of runoff associated with the proposed improvements. These measures include a subsurface detention system, stormwater planters, a Jellyfish Filter and a CDS water quality structure.

Based on the foregoing, it is our professional opinion that the proposed improvements will

provide water quality enhancements which exceed the above mentioned requirements and are not anticipated to have any adverse impacts to the site or any surrounding areas.

APPENDIX A

EXISTING/PROPOSED HYDROLOGIC CALCULATIONS


EDA-1A
EX. RG
EDA-1B
Junction 1
OCS
Reach
DP-1

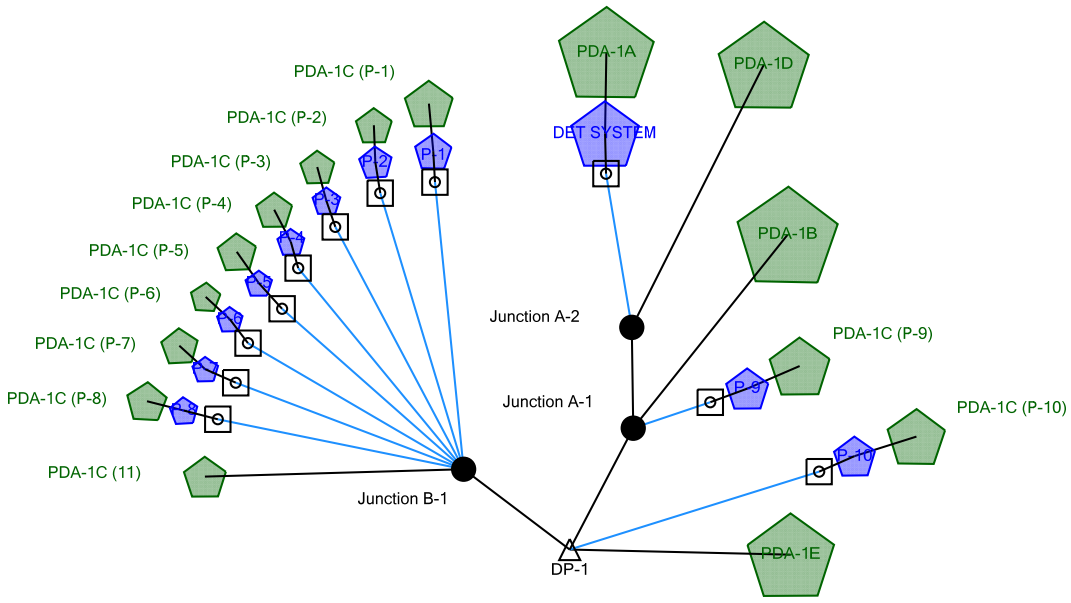

PDA-1A
PDA-1D
PDA-1C (P-1)
PDA-1C (P-2)
DET SYSTEM
P-2
P-1
PDA-1C (P-3)
PDA-1C (P-4)
PDA-1B
PDA-1C (P-5)
PDA-1C (P-6)
Junction A-2
PDA-1C (P-9)
PDA-1C (P-7)
P-9
Junction A-1
PDA-1C (P-8)
PDA-1C (P-10)
P-10
PDA-1C (11)
Junction B-1
PDA-1E
DP-1

Table of Contents

	Master Network Summary	1
Time-Depth - 1		
	Time-Depth Curve, 1 years (Post-Development 1 year)	5
	Time-Depth Curve, 1 years (Pre-Development 1 year)	6
	Time-Depth Curve, 10 years (Post-Development 10 year)	8
	Time-Depth Curve, 10 years (Pre-Development 10 year)	10
	Time-Depth Curve, 100 years (Post-Development 100 year)	11
	Time-Depth Curve, 100 years (Pre-Development 100 year)	13
	Time-Depth Curve, 25 years (Post-Development 25 year)	14
	Time-Depth Curve, 25 years (Pre-Development 25 year)	16
EDA-1A		
	Time of Concentration Calculations, 1 years (Pre-Development 1 year)	17
EDA-1B		
	Time of Concentration Calculations, 1 years (Pre-Development 1 year)	19
PDA-1A		
	Time of Concentration Calculations, 1 years (Post-Development 1 year)	20
PDA-1B		
	Time of Concentration Calculations, 1 years (Post-Development 1 year)	22
PDA-1C		
	Time of Concentration Calculations, 1 years (Post-Development 1 year)	22
PDA-1D		
	Time of Concentration Calculations, 1 years (Post-Development 1 year)	23
PDA-1E		
	Time of Concentration Calculations, 1 years (Post-Development 1 year)	24
EDA-1A		
	Runoff CN-Area, 1 years (Pre-Development 1 year)	25
EDA-1B		
	Runoff CN-Area, 1 years (Pre-Development 1 year)	25
PDA-1A		
	Runoff CN-Area, 1 years (Post-Development 1 year)	25
PDA-1B		
	Runoff CN-Area, 1 years (Post-Development 1 year)	26
PDA-1C		

Table of Contents

	Runoff CN-Area, 1 years (Post-Development 1 year)	26
PDA-1D		
	Runoff CN-Area, 1 years (Post-Development 1 year)	26
PDA-1E		
	Runoff CN-Area, 1 years (Post-Development 1 year)	27
EDA-1A		
	Unit Hydrograph Summary, 1 years (Pre-Development 1 year)	27
EDA-1B		
	Unit Hydrograph Summary, 1 years (Pre-Development 1 year)	29
PDA-1A		
	Unit Hydrograph Summary, 1 years (Post-Development 1 year)	31
PDA-1B		
	Unit Hydrograph Summary, 1 years (Post-Development 1 year)	33
PDA-1C		
	Unit Hydrograph Summary, 1 years (Post-Development 1 year)	35
PDA-1D		
	Unit Hydrograph Summary, 1 years (Post-Development 1 year)	37
PDA-1E		
	Unit Hydrograph Summary, 1 years (Post-Development 1 year)	39
A4 to A3		
	Channel Routing Summary, 1 years (Post-Development 1 year)	41
	Channel Routing Summary, 10 years (Post-Development 10 year)	41
	Channel Routing Summary, 25 years (Post-Development 25 year)	42
	Channel Routing Summary, 100 years (Post-Development 100 year)	42
Reach		
	Channel Routing Summary, 1 years (Post-Development 1 year)	43
	Channel Routing Summary, 1 years (Pre-Development 1 year)	43
	Channel Routing Summary, 10 years (Post-Development 10 year)	44
	Channel Routing Summary, 10 years (Pre-Development 10 year)	45
	Channel Routing Summary, 25 years (Post-Development 25 year)	45
	Channel Routing Summary, 25 years (Pre-Development 25 year)	46
	Channel Routing Summary, 100 years (Post-Development 100 year)	46
	Channel Routing Summary, 100 years (Pre-Development 100 year)	47

Table of Contents

DMH-A3

Addition Summary, 1 years (Post-Development 1 year)	48
Addition Summary, 10 years (Post-Development 10 year)	48
Addition Summary, 25 years (Post-Development 25 year)	49
Addition Summary, 100 years (Post-Development 100 year)	49

DMH-A4

Addition Summary, 1 years (Post-Development 1 year)	50
Addition Summary, 10 years (Post-Development 10 year)	50
Addition Summary, 25 years (Post-Development 25 year)	50
Addition Summary, 100 years (Post-Development 100 year)	51

DP-1

Addition Summary, 1 years (Post-Development 1 year)	51
Addition Summary, 1 years (Pre-Development 1 year)	52
Addition Summary, 10 years (Post-Development 10 year)	52
Addition Summary, 10 years (Pre-Development 10 year)	52
Addition Summary, 25 years (Post-Development 25 year)	52
Addition Summary, 25 years (Pre-Development 25 year)	53
Addition Summary, 100 years (Post-Development 100 year)	53
Addition Summary, 100 years (Pre-Development 100 year)	53

Junction 1

Addition Summary, 1 years (Pre-Development 1 year)	54
Addition Summary, 10 years (Pre-Development 10 year)	54
Addition Summary, 25 years (Pre-Development 25 year)	55
Addition Summary, 100 years (Pre-Development 100 year)	55

DET SYSTEM (OUT)

Time vs. Elevation, 1 years (Post-Development 1 year)	55
Time vs. Elevation, 10 years (Post-Development 10 year)	59
Time vs. Elevation, 25 years (Post-Development 25 year)	63
Time vs. Elevation, 100 years (Post-Development 100 year)	67

EX. RG (OUT)

Time vs. Elevation, 1 years (Pre-Development 1 year)	71
Time vs. Elevation, 10 years (Pre-Development 10 year)	74
Time vs. Elevation, 25 years (Pre-Development 25 year)	78
Time vs. Elevation, 100 years (Pre-Development 100 year)	82

Table of Contents

SP (OUT)

Time vs. Elevation, 1 years (Post-Development 1 year) 86

Time vs. Elevation, 10 years (Post-Development 10 year) 89

Time vs. Elevation, 25 years (Post-Development 25 year) 93

Time vs. Elevation, 100 years (Post-Development 100 year) 97

DET SYSTEM

Time vs. Volume, 1 years (Post-Development 1 year) 101

Time vs. Volume, 10 years (Post-Development 10 year) 105

Time vs. Volume, 25 years (Post-Development 25 year) 108

Time vs. Volume, 100 years (Post-Development 100 year) 112

EX. RG

Time vs. Volume, 1 years (Pre-Development 1 year) 116

Time vs. Volume, 10 years (Pre-Development 10 year) 120

Time vs. Volume, 25 years (Pre-Development 25 year) 124

Time vs. Volume, 100 years (Pre-Development 100 year) 127

SP

Time vs. Volume, 1 years (Post-Development 1 year) 131

Time vs. Volume, 10 years (Post-Development 10 year) 135

Time vs. Volume, 25 years (Post-Development 25 year) 139

Time vs. Volume, 100 years (Post-Development 100 year) 143

DET SYSTEM

Elevation vs. Volume Curve, 1 years (Post-Development 1 year) 146

Elevation vs. Volume Curve, 10 years (Post-Development 10 year) 147

Elevation vs. Volume Curve, 25 years (Post-Development 25 year) 148

Elevation vs. Volume Curve, 100 years (Post-Development 100 year) 148

EX. RG

Elevation-Area Volume Curve, 1 years (Pre-Development 1 year) 149

Elevation-Area Volume Curve, 10 years (Pre-Development 10 year) 149

Elevation-Area Volume Curve, 25 years (Pre-Development 25 year) 149

Elevation-Area Volume Curve, 100 years (Pre-Development 100 year) 150

SP

Elevation-Area Volume Curve, 1 years (Post-Development 1 year) 150

Table of Contents

Elevation-Area Volume Curve, 10 years (Post-Development 10 year) 150
Elevation-Area Volume Curve, 25 years (Post-Development 25 year) 150
Elevation-Area Volume Curve, 100 years (Post-Development 100 year) 151

OCS-DET-SYS

Outlet Input Data, 1 years (Post-Development 1 year) 151
Composite Rating Curve, 1 years (Post-Development 1 year) 153

OCS-EX-RG

Outlet Input Data, 1 years (Pre-Development 1 year) 154
Composite Rating Curve, 1 years (Pre-Development 1 year) 158

OCS-SP

Outlet Input Data, 1 years (Post-Development 1 year) 159
Composite Rating Curve, 1 years (Post-Development 1 year) 164

DET SYSTEM

Elevation-Volume-Flow Table (Pond), 1 years (Post-Development 1 year) 164
Elevation-Volume-Flow Table (Pond), 10 years (Post-Development 10 year) 165
Elevation-Volume-Flow Table (Pond), 25 years (Post-Development 25 year) 166
Elevation-Volume-Flow Table (Pond), 100 years (Post-Development 100 year) 167

DET SYSTEM (IN)

Detention Time, 1 years (Post-Development 1 year) 167
Level Pool Pond Routing Summary, 1 years (Post-Development 1 year) 168
Detention Time, 10 years (Post-Development 10 year) 169
Level Pool Pond Routing Summary, 10 years (Post-Development 10 year) 170
Detention Time, 25 years (Post-Development 25 year) 171
Level Pool Pond Routing Summary, 25 years (Post-Development 25 year) 171
Detention Time, 100 years (Post-Development 100 year) 172
Level Pool Pond Routing Summary, 100 years (Post-Development 100 year) 173

DET SYSTEM (OUT)

Pond Routing Calculations (Total Out), 1 years (Post-Development 1 year) 174
Pond Routing Calculations (Total Out), 10 years (Post-Development 10 year) 191
Pond Routing Calculations (Total Out), 25 years (Post-Development 25 year) 208
Pond Routing Calculations (Total Out), 100 years (Post-Development 100 year) 226

Table of Contents

DET SYSTEM (IN)

Pond Inflow Summary, 1 years (Post-Development 1 year) 243

Pond Inflow Summary, 10 years (Post-Development 10 year) 243

Pond Inflow Summary, 25 years (Post-Development 25 year) 244

Pond Inflow Summary, 100 years (Post-Development 100 year) 244

EX. RG

Elevation-Volume-Flow Table (Pond), 1 years (Pre-Development 1 year) 244

Elevation-Volume-Flow Table (Pond), 10 years (Pre-Development 10 year) 245

Elevation-Volume-Flow Table (Pond), 25 years (Pre-Development 25 year) 246

Elevation-Volume-Flow Table (Pond), 100 years (Pre-Development 100 year) 246

EX. RG (IN)

Level Pool Pond Routing Summary, 1 years (Pre-Development 1 year) 247

Level Pool Pond Routing Summary, 10 years (Pre-Development 10 year) 248

Level Pool Pond Routing Summary, 25 years (Pre-Development 25 year) 249

Level Pool Pond Routing Summary, 100 years (Pre-Development 100 year) 250

EX. RG (OUT)

Pond Routing Calculations (Total Out), 1 years (Pre-Development 1 year) 251

Pond Routing Calculations (Total Out), 10 years (Pre-Development 10 year) 268

Pond Routing Calculations (Total Out), 25 years (Pre-Development 25 year) 285

Pond Routing Calculations (Total Out), 100 years (Pre-Development 100 year) 303

EX. RG (IN)

Pond Inflow Summary, 1 years (Pre-Development 1 year) 320

Pond Inflow Summary, 10 years (Pre-Development 10 year) 320

Pond Inflow Summary, 25 years (Pre-Development 25 year) 321

Pond Inflow Summary, 100 years (Pre-Development 100 year) 321

SP

Elevation-Volume-Flow Table (Pond), 1 years (Post-Development 1 year) 321

Elevation-Volume-Flow Table (Pond), 10 years (Post-Development 10 year) 322

Elevation-Volume-Flow Table (Pond), 25 years (Post-Development 25 year) 322

Elevation-Volume-Flow Table (Pond), 100 years (Post-Development 100 year) 323

SP (IN)

Table of Contents

	Level Pool Pond Routing Summary, 1 years (Post-Development 1 year)	324
	Level Pool Pond Routing Summary, 10 years (Post-Development 10 year)	324
	Level Pool Pond Routing Summary, 25 years (Post-Development 25 year)	325
	Level Pool Pond Routing Summary, 100 years (Post-Development 100 year)	326
SP (OUT)		
	Pond Routing Calculations (Total Out), 1 years (Post-Development 1 year)	327
	Pond Routing Calculations (Total Out), 10 years (Post-Development 10 year)	344
	Pond Routing Calculations (Total Out), 25 years (Post-Development 25 year)	362
	Pond Routing Calculations (Total Out), 100 years (Post-Development 100 year)	379
SP (IN)		
	Pond Inflow Summary, 1 years (Post-Development 1 year)	396
	Pond Inflow Summary, 10 years (Post-Development 10 year)	397
	Pond Inflow Summary, 25 years (Post-Development 25 year)	397
	Pond Inflow Summary, 100 years (Post-Development 100 year)	397

Hydrologic Calculations

Project Summary	
Title	Beacon Commons
Engineer	Stephen Spina, PE
Company	JMC, PLLC
Date	7/27/2021

Notes

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EDA-1A	Pre-Development 1 year	1	14,498	12.300	2.78
EDA-1A	Pre-Development 10 year	10	44,732	12.250	9.41
EDA-1A	Pre-Development 25 year	25	64,761	12.250	13.70
EDA-1A	Pre-Development 100 year	100	108,363	12.250	22.78
EDA-1B	Pre-Development 1 year	1	3,234	12.100	0.88
EDA-1B	Pre-Development 10 year	10	8,818	12.100	2.46
EDA-1B	Pre-Development 25 year	25	12,363	12.100	3.42
EDA-1B	Pre-Development 100 year	100	19,910	12.100	5.40
PDA-1A	Post-Development 1 year	1	4,757	12.100	1.32
PDA-1A	Post-Development 10 year	10	10,061	12.100	2.68
PDA-1A	Post-Development 25 year	25	13,173	12.100	3.45
PDA-1A	Post-Development 100 year	100	19,557	12.100	4.99
PDA-1B	Post-Development 1 year	1	778	12.100	0.19
PDA-1B	Post-Development 10 year	10	1,458	12.100	0.35
PDA-1B	Post-Development 25 year	25	1,850	12.100	0.45
PDA-1B	Post-Development 100 year	100	2,646	12.100	0.63
PDA-1D	Post-Development 1 year	1	13,218	12.250	2.59

Hydrologic Calculations

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1D	Post-Development 10 year	10	40,786	12.250	8.71
PDA-1D	Post-Development 25 year	25	59,047	12.250	12.65
PDA-1D	Post-Development 100 year	100	98,803	12.200	21.05
PDA-1C	Post-Development 1 year	1	4,014	12.100	1.09
PDA-1C	Post-Development 10 year	10	8,156	12.100	2.12
PDA-1C	Post-Development 25 year	25	10,566	12.100	2.70
PDA-1C	Post-Development 100 year	100	15,491	12.100	3.88
PDA-1E	Post-Development 1 year	1	68	12.100	0.02
PDA-1E	Post-Development 10 year	10	223	12.100	0.06
PDA-1E	Post-Development 25 year	25	327	12.100	0.09
PDA-1E	Post-Development 100 year	100	557	12.100	0.16

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DP-1	Pre-Development 1 year	1	17,710	12.300	3.38
DP-1	Post-Development 1 year	1	22,845	12.350	3.07
DP-1	Pre-Development 10 year	10	53,528	12.250	11.13
DP-1	Post-Development 10 year	10	60,693	12.300	11.05
DP-1	Pre-Development 25 year	25	77,101	12.250	16.15
DP-1	Post-Development 25 year	25	84,973	12.350	14.98
DP-1	Pre-Development 100 year	100	128,250	12.250	26.79
DP-1	Post-Development 100 year	100	137,063	12.300	26.64
Junction 1	Pre-Development 1 year	1	17,710	12.250	3.38

Hydrologic Calculations

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
Junction 1	Pre-Development 10 year	10	53,528	12.200	11.13
Junction 1	Pre-Development 25 year	25	77,101	12.200	16.15
Junction 1	Pre-Development 100 year	100	128,250	12.200	26.79
DMH-A4	Post-Development 1 year	1	17,975	12.250	2.87
DMH-A4	Post-Development 10 year	10	50,846	12.250	9.17
DMH-A4	Post-Development 25 year	25	72,220	12.250	13.42
DMH-A4	Post-Development 100 year	100	118,360	12.200	24.29
DMH-A3	Post-Development 1 year	1	22,840	12.300	3.07
DMH-A3	Post-Development 10 year	10	60,689	12.250	11.05
DMH-A3	Post-Development 25 year	25	84,968	12.300	14.98
DMH-A3	Post-Development 100 year	100	137,058	12.250	26.64

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
EX. RG (IN)	Pre-Development 1 year	1	3,234	12.100	0.88	(N/A)	(N/A)
EX. RG (OUT)	Pre-Development 1 year	1	3,212	12.150	0.85	30.63	117
EX. RG (IN)	Pre-Development 10 year	10	8,818	12.100	2.46	(N/A)	(N/A)
EX. RG (OUT)	Pre-Development 10 year	10	8,796	12.100	2.37	30.86	161
EX. RG (IN)	Pre-Development 25 year	25	12,363	12.100	3.42	(N/A)	(N/A)

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
EX. RG (OUT)	Pre-Development 25 year	25	12,340	12.100	3.31	30.90	170
EX. RG (IN)	Pre-Development 100 year	100	19,910	12.100	5.40	(N/A)	(N/A)
EX. RG (OUT)	Pre-Development 100 year	100	19,887	12.100	5.26	30.99	189
DET SYSTEM (IN)	Post-Development 1 year	1	4,757	12.100	1.32	(N/A)	(N/A)
DET SYSTEM (OUT)	Post-Development 1 year	1	4,757	12.500	0.30	34.59	1,816
DET SYSTEM (IN)	Post-Development 10 year	10	10,061	12.100	2.68	(N/A)	(N/A)
DET SYSTEM (OUT)	Post-Development 10 year	10	10,061	12.550	0.50	36.21	4,078
DET SYSTEM (IN)	Post-Development 25 year	25	13,173	12.100	3.45	(N/A)	(N/A)
DET SYSTEM (OUT)	Post-Development 25 year	25	13,173	12.400	1.06	37.11	5,076
DET SYSTEM (IN)	Post-Development 100 year	100	19,557	12.100	4.99	(N/A)	(N/A)
DET SYSTEM (OUT)	Post-Development 100 year	100	19,557	12.200	3.24	38.40	6,034
SP (IN)	Post-Development 1 year	1	4,014	12.100	1.09	(N/A)	(N/A)
SP (OUT)	Post-Development 1 year	1	4,019	11.400	0.10	31.56	1,549
SP (IN)	Post-Development 10 year	10	8,156	12.100	2.12	(N/A)	(N/A)
SP (OUT)	Post-Development 10 year	10	8,161	12.250	1.81	32.01	2,776

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
SP (IN)	Post-Development 25 year	25	10,566	12.100	2.70	(N/A)	(N/A)
SP (OUT)	Post-Development 25 year	25	10,571	12.100	3.35	32.02	2,801
SP (IN)	Post-Development 100 year	100	15,491	12.100	3.88	(N/A)	(N/A)
SP (OUT)	Post-Development 100 year	100	15,496	12.050	4.00	32.02	2,811

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time-Depth Curve: 1 year	
Label	1 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.01
0.500	0.01	0.02	0.02	0.02	0.02
1.000	0.03	0.03	0.03	0.03	0.04
1.500	0.04	0.04	0.04	0.05	0.05
2.000	0.05	0.05	0.06	0.06	0.06
2.500	0.07	0.07	0.07	0.07	0.08
3.000	0.08	0.08	0.09	0.09	0.09
3.500	0.10	0.10	0.10	0.11	0.11
4.000	0.11	0.12	0.12	0.12	0.13
4.500	0.13	0.13	0.14	0.14	0.14
5.000	0.15	0.15	0.16	0.16	0.16
5.500	0.17	0.17	0.18	0.18	0.18

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
6.000	0.19	0.19	0.20	0.20	0.21
6.500	0.21	0.22	0.22	0.23	0.23
7.000	0.24	0.24	0.25	0.25	0.26
7.500	0.27	0.27	0.28	0.28	0.29
8.000	0.30	0.30	0.31	0.32	0.33
8.500	0.34	0.34	0.35	0.36	0.37
9.000	0.38	0.39	0.40	0.41	0.42
9.500	0.43	0.44	0.46	0.47	0.48
10.000	0.49	0.51	0.52	0.53	0.55
10.500	0.57	0.58	0.60	0.62	0.63
11.000	0.65	0.67	0.70	0.72	0.75
11.500	0.78	0.82	0.89	0.97	1.09
12.000	1.30	1.52	1.64	1.72	1.79
12.500	1.83	1.86	1.89	1.91	1.94
13.000	1.96	1.98	1.99	2.01	2.03
13.500	2.04	2.06	2.08	2.09	2.10
14.000	2.12	2.13	2.14	2.15	2.17
14.500	2.18	2.19	2.20	2.21	2.22
15.000	2.23	2.24	2.25	2.26	2.27
15.500	2.27	2.28	2.29	2.30	2.31
16.000	2.31	2.32	2.33	2.33	2.34
16.500	2.34	2.35	2.36	2.36	2.37
17.000	2.37	2.38	2.38	2.39	2.39
17.500	2.40	2.40	2.41	2.41	2.42
18.000	2.42	2.43	2.43	2.43	2.44
18.500	2.44	2.45	2.45	2.45	2.46
19.000	2.46	2.47	2.47	2.47	2.48
19.500	2.48	2.48	2.49	2.49	2.49
20.000	2.50	2.50	2.50	2.51	2.51
20.500	2.51	2.52	2.52	2.52	2.53
21.000	2.53	2.53	2.54	2.54	2.54
21.500	2.55	2.55	2.55	2.55	2.56
22.000	2.56	2.56	2.57	2.57	2.57
22.500	2.57	2.58	2.58	2.58	2.58
23.000	2.59	2.59	2.59	2.59	2.60
23.500	2.60	2.60	2.60	2.61	2.61
24.000	2.61	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time-Depth Curve: 1 year	
Label	1 year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.01
0.500	0.01	0.02	0.02	0.02	0.02
1.000	0.03	0.03	0.03	0.03	0.04
1.500	0.04	0.04	0.04	0.05	0.05
2.000	0.05	0.05	0.06	0.06	0.06
2.500	0.07	0.07	0.07	0.07	0.08
3.000	0.08	0.08	0.09	0.09	0.09
3.500	0.10	0.10	0.10	0.11	0.11
4.000	0.11	0.12	0.12	0.12	0.13
4.500	0.13	0.13	0.14	0.14	0.14
5.000	0.15	0.15	0.16	0.16	0.16
5.500	0.17	0.17	0.18	0.18	0.18
6.000	0.19	0.19	0.20	0.20	0.21
6.500	0.21	0.22	0.22	0.23	0.23
7.000	0.24	0.24	0.25	0.25	0.26
7.500	0.27	0.27	0.28	0.28	0.29
8.000	0.30	0.30	0.31	0.32	0.33
8.500	0.34	0.34	0.35	0.36	0.37
9.000	0.38	0.39	0.40	0.41	0.42
9.500	0.43	0.44	0.46	0.47	0.48
10.000	0.49	0.51	0.52	0.53	0.55
10.500	0.57	0.58	0.60	0.62	0.63
11.000	0.65	0.67	0.70	0.72	0.75
11.500	0.78	0.82	0.89	0.97	1.09
12.000	1.30	1.52	1.64	1.72	1.79
12.500	1.83	1.86	1.89	1.91	1.94
13.000	1.96	1.98	1.99	2.01	2.03
13.500	2.04	2.06	2.08	2.09	2.10
14.000	2.12	2.13	2.14	2.15	2.17
14.500	2.18	2.19	2.20	2.21	2.22
15.000	2.23	2.24	2.25	2.26	2.27
15.500	2.27	2.28	2.29	2.30	2.31
16.000	2.31	2.32	2.33	2.33	2.34
16.500	2.34	2.35	2.36	2.36	2.37

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	2.37	2.38	2.38	2.39	2.39
17.500	2.40	2.40	2.41	2.41	2.42
18.000	2.42	2.43	2.43	2.43	2.44
18.500	2.44	2.45	2.45	2.45	2.46
19.000	2.46	2.47	2.47	2.47	2.48
19.500	2.48	2.48	2.49	2.49	2.49
20.000	2.50	2.50	2.50	2.51	2.51
20.500	2.51	2.52	2.52	2.52	2.53
21.000	2.53	2.53	2.54	2.54	2.54
21.500	2.55	2.55	2.55	2.55	2.56
22.000	2.56	2.56	2.57	2.57	2.57
22.500	2.57	2.58	2.58	2.58	2.58
23.000	2.59	2.59	2.59	2.59	2.60
23.500	2.60	2.60	2.60	2.61	2.61
24.000	2.61	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time-Depth Curve: 10 years	
Label	10 years
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.02
0.500	0.02	0.03	0.03	0.04	0.04
1.000	0.05	0.05	0.06	0.06	0.07
1.500	0.07	0.08	0.08	0.08	0.09
2.000	0.09	0.10	0.10	0.11	0.11
2.500	0.12	0.12	0.13	0.13	0.14
3.000	0.14	0.15	0.16	0.16	0.17
3.500	0.17	0.18	0.18	0.19	0.20
4.000	0.20	0.21	0.21	0.22	0.23

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
4.500	0.23	0.24	0.25	0.25	0.26
5.000	0.27	0.27	0.28	0.29	0.29
5.500	0.30	0.31	0.32	0.32	0.33
6.000	0.34	0.35	0.35	0.36	0.37
6.500	0.38	0.39	0.40	0.41	0.42
7.000	0.43	0.44	0.45	0.46	0.47
7.500	0.48	0.49	0.50	0.51	0.52
8.000	0.54	0.55	0.56	0.57	0.59
8.500	0.60	0.62	0.63	0.65	0.67
9.000	0.69	0.70	0.72	0.74	0.76
9.500	0.78	0.80	0.82	0.84	0.87
10.000	0.89	0.91	0.94	0.96	0.99
10.500	1.02	1.05	1.08	1.11	1.14
11.000	1.17	1.21	1.25	1.30	1.35
11.500	1.40	1.48	1.60	1.75	1.96
12.000	2.35	2.74	2.95	3.10	3.22
12.500	3.30	3.35	3.40	3.45	3.49
13.000	3.52	3.56	3.59	3.62	3.65
13.500	3.68	3.71	3.74	3.76	3.79
14.000	3.81	3.83	3.86	3.88	3.90
14.500	3.92	3.94	3.96	3.98	4.00
15.000	4.01	4.03	4.05	4.07	4.08
15.500	4.10	4.11	4.13	4.14	4.15
16.000	4.16	4.18	4.19	4.20	4.21
16.500	4.22	4.23	4.24	4.25	4.26
17.000	4.27	4.28	4.29	4.30	4.31
17.500	4.32	4.33	4.34	4.35	4.35
18.000	4.36	4.37	4.38	4.38	4.39
18.500	4.40	4.41	4.41	4.42	4.43
19.000	4.43	4.44	4.45	4.45	4.46
19.500	4.47	4.47	4.48	4.49	4.49
20.000	4.50	4.50	4.51	4.52	4.52
20.500	4.53	4.53	4.54	4.55	4.55
21.000	4.56	4.56	4.57	4.57	4.58
21.500	4.58	4.59	4.59	4.60	4.60
22.000	4.61	4.61	4.62	4.62	4.63
22.500	4.63	4.64	4.64	4.65	4.65
23.000	4.66	4.66	4.67	4.67	4.68
23.500	4.68	4.68	4.69	4.69	4.70
24.000	4.70	(N/A)	(N/A)	(N/A)	(N/A)

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time-Depth Curve: 10 years	
Label	10 years
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.00	0.01	0.01	0.02
0.500	0.02	0.03	0.03	0.04	0.04
1.000	0.05	0.05	0.06	0.06	0.07
1.500	0.07	0.08	0.08	0.08	0.09
2.000	0.09	0.10	0.10	0.11	0.11
2.500	0.12	0.12	0.13	0.13	0.14
3.000	0.14	0.15	0.16	0.16	0.17
3.500	0.17	0.18	0.18	0.19	0.20
4.000	0.20	0.21	0.21	0.22	0.23
4.500	0.23	0.24	0.25	0.25	0.26
5.000	0.27	0.27	0.28	0.29	0.29
5.500	0.30	0.31	0.32	0.32	0.33
6.000	0.34	0.35	0.35	0.36	0.37
6.500	0.38	0.39	0.40	0.41	0.42
7.000	0.43	0.44	0.45	0.46	0.47
7.500	0.48	0.49	0.50	0.51	0.52
8.000	0.54	0.55	0.56	0.57	0.59
8.500	0.60	0.62	0.63	0.65	0.67
9.000	0.69	0.70	0.72	0.74	0.76
9.500	0.78	0.80	0.82	0.84	0.87
10.000	0.89	0.91	0.94	0.96	0.99
10.500	1.02	1.05	1.08	1.11	1.14
11.000	1.17	1.21	1.25	1.30	1.35
11.500	1.40	1.48	1.60	1.75	1.96
12.000	2.35	2.74	2.95	3.10	3.22
12.500	3.30	3.35	3.40	3.45	3.49
13.000	3.52	3.56	3.59	3.62	3.65
13.500	3.68	3.71	3.74	3.76	3.79
14.000	3.81	3.83	3.86	3.88	3.90
14.500	3.92	3.94	3.96	3.98	4.00
15.000	4.01	4.03	4.05	4.07	4.08
15.500	4.10	4.11	4.13	4.14	4.15
16.000	4.16	4.18	4.19	4.20	4.21
16.500	4.22	4.23	4.24	4.25	4.26

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	4.27	4.28	4.29	4.30	4.31
17.500	4.32	4.33	4.34	4.35	4.35
18.000	4.36	4.37	4.38	4.38	4.39
18.500	4.40	4.41	4.41	4.42	4.43
19.000	4.43	4.44	4.45	4.45	4.46
19.500	4.47	4.47	4.48	4.49	4.49
20.000	4.50	4.50	4.51	4.52	4.52
20.500	4.53	4.53	4.54	4.55	4.55
21.000	4.56	4.56	4.57	4.57	4.58
21.500	4.58	4.59	4.59	4.60	4.60
22.000	4.61	4.61	4.62	4.62	4.63
22.500	4.63	4.64	4.64	4.65	4.65
23.000	4.66	4.66	4.67	4.67	4.68
23.500	4.68	4.68	4.69	4.69	4.70
24.000	4.70	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time-Depth Curve: 100 years	
Label	100 years
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.02	0.03	0.03
0.500	0.04	0.05	0.06	0.07	0.08
1.000	0.08	0.09	0.10	0.11	0.12
1.500	0.13	0.13	0.14	0.15	0.16
2.000	0.17	0.18	0.18	0.19	0.20
2.500	0.21	0.22	0.23	0.24	0.25
3.000	0.26	0.27	0.28	0.29	0.30
3.500	0.31	0.32	0.33	0.34	0.35
4.000	0.36	0.37	0.38	0.39	0.40

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
4.500	0.41	0.43	0.44	0.45	0.46
5.000	0.47	0.49	0.50	0.51	0.52
5.500	0.54	0.55	0.56	0.57	0.59
6.000	0.60	0.61	0.63	0.64	0.66
6.500	0.67	0.69	0.70	0.72	0.74
7.000	0.75	0.77	0.79	0.81	0.83
7.500	0.85	0.87	0.89	0.91	0.93
8.000	0.95	0.97	1.00	1.02	1.05
8.500	1.07	1.10	1.13	1.15	1.18
9.000	1.22	1.25	1.28	1.31	1.35
9.500	1.38	1.42	1.46	1.50	1.54
10.000	1.58	1.62	1.66	1.71	1.76
10.500	1.81	1.86	1.91	1.97	2.03
11.000	2.08	2.15	2.22	2.30	2.39
11.500	2.49	2.62	2.83	3.11	3.47
12.000	4.17	4.87	5.23	5.51	5.72
12.500	5.85	5.95	6.04	6.12	6.19
13.000	6.25	6.31	6.37	6.43	6.48
13.500	6.53	6.58	6.63	6.68	6.72
14.000	6.76	6.80	6.84	6.88	6.92
14.500	6.96	6.99	7.03	7.06	7.09
15.000	7.12	7.16	7.19	7.21	7.24
15.500	7.27	7.29	7.32	7.34	7.37
16.000	7.39	7.41	7.43	7.45	7.47
16.500	7.49	7.51	7.53	7.55	7.57
17.000	7.59	7.60	7.62	7.64	7.65
17.500	7.67	7.68	7.70	7.71	7.73
18.000	7.74	7.75	7.77	7.78	7.79
18.500	7.80	7.82	7.83	7.84	7.85
19.000	7.87	7.88	7.89	7.90	7.91
19.500	7.93	7.94	7.95	7.96	7.97
20.000	7.98	7.99	8.00	8.01	8.02
20.500	8.03	8.04	8.05	8.07	8.08
21.000	8.09	8.09	8.10	8.11	8.12
21.500	8.13	8.14	8.15	8.16	8.17
22.000	8.18	8.19	8.20	8.21	8.21
22.500	8.22	8.23	8.24	8.25	8.26
23.000	8.26	8.27	8.28	8.29	8.30
23.500	8.30	8.31	8.32	8.33	8.33
24.000	8.34	(N/A)	(N/A)	(N/A)	(N/A)

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time-Depth Curve: 100 years	
Label	100 years
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.02	0.03	0.03
0.500	0.04	0.05	0.06	0.07	0.08
1.000	0.08	0.09	0.10	0.11	0.12
1.500	0.13	0.13	0.14	0.15	0.16
2.000	0.17	0.18	0.18	0.19	0.20
2.500	0.21	0.22	0.23	0.24	0.25
3.000	0.26	0.27	0.28	0.29	0.30
3.500	0.31	0.32	0.33	0.34	0.35
4.000	0.36	0.37	0.38	0.39	0.40
4.500	0.41	0.43	0.44	0.45	0.46
5.000	0.47	0.49	0.50	0.51	0.52
5.500	0.54	0.55	0.56	0.57	0.59
6.000	0.60	0.61	0.63	0.64	0.66
6.500	0.67	0.69	0.70	0.72	0.74
7.000	0.75	0.77	0.79	0.81	0.83
7.500	0.85	0.87	0.89	0.91	0.93
8.000	0.95	0.97	1.00	1.02	1.05
8.500	1.07	1.10	1.13	1.15	1.18
9.000	1.22	1.25	1.28	1.31	1.35
9.500	1.38	1.42	1.46	1.50	1.54
10.000	1.58	1.62	1.66	1.71	1.76
10.500	1.81	1.86	1.91	1.97	2.03
11.000	2.08	2.15	2.22	2.30	2.39
11.500	2.49	2.62	2.83	3.11	3.47
12.000	4.17	4.87	5.23	5.51	5.72
12.500	5.85	5.95	6.04	6.12	6.19
13.000	6.25	6.31	6.37	6.43	6.48
13.500	6.53	6.58	6.63	6.68	6.72
14.000	6.76	6.80	6.84	6.88	6.92
14.500	6.96	6.99	7.03	7.06	7.09
15.000	7.12	7.16	7.19	7.21	7.24
15.500	7.27	7.29	7.32	7.34	7.37
16.000	7.39	7.41	7.43	7.45	7.47
16.500	7.49	7.51	7.53	7.55	7.57

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	7.59	7.60	7.62	7.64	7.65
17.500	7.67	7.68	7.70	7.71	7.73
18.000	7.74	7.75	7.77	7.78	7.79
18.500	7.80	7.82	7.83	7.84	7.85
19.000	7.87	7.88	7.89	7.90	7.91
19.500	7.93	7.94	7.95	7.96	7.97
20.000	7.98	7.99	8.00	8.01	8.02
20.500	8.03	8.04	8.05	8.07	8.08
21.000	8.09	8.09	8.10	8.11	8.12
21.500	8.13	8.14	8.15	8.16	8.17
22.000	8.18	8.19	8.20	8.21	8.21
22.500	8.22	8.23	8.24	8.25	8.26
23.000	8.26	8.27	8.28	8.29	8.30
23.500	8.30	8.31	8.32	8.33	8.33
24.000	8.34	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time-Depth Curve: 25 years	
Label	25 years
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.01	0.02	0.02
0.500	0.03	0.04	0.04	0.05	0.05
1.000	0.06	0.06	0.07	0.08	0.08
1.500	0.09	0.09	0.10	0.11	0.11
2.000	0.12	0.12	0.13	0.14	0.14
2.500	0.15	0.15	0.16	0.17	0.17
3.000	0.18	0.19	0.20	0.20	0.21
3.500	0.22	0.22	0.23	0.24	0.25
4.000	0.25	0.26	0.27	0.28	0.29

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
4.500	0.29	0.30	0.31	0.32	0.33
5.000	0.33	0.34	0.35	0.36	0.37
5.500	0.38	0.39	0.40	0.41	0.42
6.000	0.42	0.43	0.44	0.45	0.46
6.500	0.48	0.49	0.50	0.51	0.52
7.000	0.53	0.55	0.56	0.57	0.59
7.500	0.60	0.61	0.63	0.64	0.66
8.000	0.67	0.69	0.70	0.72	0.74
8.500	0.76	0.78	0.80	0.82	0.84
9.000	0.86	0.88	0.91	0.93	0.95
9.500	0.98	1.00	1.03	1.06	1.09
10.000	1.12	1.14	1.18	1.21	1.24
10.500	1.28	1.31	1.35	1.39	1.43
11.000	1.47	1.52	1.57	1.63	1.69
11.500	1.76	1.85	2.00	2.20	2.45
12.000	2.95	3.45	3.70	3.90	4.05
12.500	4.14	4.21	4.27	4.33	4.38
13.000	4.42	4.47	4.51	4.55	4.59
13.500	4.62	4.66	4.69	4.72	4.76
14.000	4.78	4.81	4.84	4.87	4.90
14.500	4.92	4.95	4.97	4.99	5.02
15.000	5.04	5.06	5.08	5.10	5.12
15.500	5.14	5.16	5.18	5.20	5.21
16.000	5.23	5.24	5.26	5.27	5.29
16.500	5.30	5.31	5.33	5.34	5.35
17.000	5.37	5.38	5.39	5.40	5.41
17.500	5.42	5.44	5.45	5.46	5.47
18.000	5.48	5.48	5.49	5.50	5.51
18.500	5.52	5.53	5.54	5.55	5.56
19.000	5.57	5.57	5.58	5.59	5.60
19.500	5.61	5.61	5.62	5.63	5.64
20.000	5.65	5.65	5.66	5.67	5.68
20.500	5.68	5.69	5.70	5.71	5.71
21.000	5.72	5.73	5.73	5.74	5.75
21.500	5.75	5.76	5.77	5.77	5.78
22.000	5.79	5.79	5.80	5.81	5.81
22.500	5.82	5.82	5.83	5.84	5.84
23.000	5.85	5.85	5.86	5.86	5.87
23.500	5.87	5.88	5.88	5.89	5.89
24.000	5.90	(N/A)	(N/A)	(N/A)	(N/A)

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time-Depth Curve: 25 years	
Label	25 years
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.00	0.01	0.01	0.02	0.02
0.500	0.03	0.04	0.04	0.05	0.05
1.000	0.06	0.06	0.07	0.08	0.08
1.500	0.09	0.09	0.10	0.11	0.11
2.000	0.12	0.12	0.13	0.14	0.14
2.500	0.15	0.15	0.16	0.17	0.17
3.000	0.18	0.19	0.20	0.20	0.21
3.500	0.22	0.22	0.23	0.24	0.25
4.000	0.25	0.26	0.27	0.28	0.29
4.500	0.29	0.30	0.31	0.32	0.33
5.000	0.33	0.34	0.35	0.36	0.37
5.500	0.38	0.39	0.40	0.41	0.42
6.000	0.42	0.43	0.44	0.45	0.46
6.500	0.48	0.49	0.50	0.51	0.52
7.000	0.53	0.55	0.56	0.57	0.59
7.500	0.60	0.61	0.63	0.64	0.66
8.000	0.67	0.69	0.70	0.72	0.74
8.500	0.76	0.78	0.80	0.82	0.84
9.000	0.86	0.88	0.91	0.93	0.95
9.500	0.98	1.00	1.03	1.06	1.09
10.000	1.12	1.14	1.18	1.21	1.24
10.500	1.28	1.31	1.35	1.39	1.43
11.000	1.47	1.52	1.57	1.63	1.69
11.500	1.76	1.85	2.00	2.20	2.45
12.000	2.95	3.45	3.70	3.90	4.05
12.500	4.14	4.21	4.27	4.33	4.38
13.000	4.42	4.47	4.51	4.55	4.59
13.500	4.62	4.66	4.69	4.72	4.76
14.000	4.78	4.81	4.84	4.87	4.90
14.500	4.92	4.95	4.97	4.99	5.02
15.000	5.04	5.06	5.08	5.10	5.12
15.500	5.14	5.16	5.18	5.20	5.21
16.000	5.23	5.24	5.26	5.27	5.29
16.500	5.30	5.31	5.33	5.34	5.35

Hydrologic Calculations

Subsection: Time-Depth Curve
Label: Time-Depth - 1
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

CUMULATIVE RAINFALL (in)
Output Time Increment = 0.100 hours
Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.37	5.38	5.39	5.40	5.41
17.500	5.42	5.44	5.45	5.46	5.47
18.000	5.48	5.48	5.49	5.50	5.51
18.500	5.52	5.53	5.54	5.55	5.56
19.000	5.57	5.57	5.58	5.59	5.60
19.500	5.61	5.61	5.62	5.63	5.64
20.000	5.65	5.65	5.66	5.67	5.68
20.500	5.68	5.69	5.70	5.71	5.71
21.000	5.72	5.73	5.73	5.74	5.75
21.500	5.75	5.76	5.77	5.77	5.78
22.000	5.79	5.79	5.80	5.81	5.81
22.500	5.82	5.82	5.83	5.84	5.84
23.000	5.85	5.85	5.86	5.86	5.87
23.500	5.87	5.88	5.88	5.89	5.89
24.000	5.90	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time of Concentration Calculations
Label: EDA-1A
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	150.00 ft
Manning's n	0.400
Slope	0.070 ft/ft
2 Year 24 Hour Depth	3.16 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.302 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	519.00 ft
Is Paved?	False
Slope	0.180 ft/ft
Average Velocity	6.85 ft/s
Segment Time of Concentration	0.021 hours

Segment #3: TR-55 Channel Flow

Hydrologic Calculations

Subsection: Time of Concentration Calculations
Label: EDA-1A
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Segment #3: TR-55 Channel Flow	
Flow Area	4.9 ft²
Hydraulic Length	397.00 ft
Manning's n	0.022
Slope	0.045 ft/ft
Wetted Perimeter	7.90 ft
Average Velocity	10.45 ft/s
Segment Time of Concentration	0.011 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.333 hours

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Subsection: Time of Concentration Calculations
Label: EDA-1A
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

==== SCS TR-55 Sheet Flow

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: EDA-1B
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.070 ft/ft
2 Year 24 Hour Depth	3.16 in
Average Velocity	0.28 ft/s
Segment Time of Concentration	0.100 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	95.00 ft
Is Paved?	False
Slope	0.060 ft/ft
Average Velocity	3.95 ft/s
Segment Time of Concentration	0.007 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.106 hours

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

==== SCS Channel Flow

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Subsection: Time of Concentration Calculations
Label: PDA-1A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.025
Slope	0.060 ft/ft
2 Year 24 Hour Depth	3.20 in
Average Velocity	1.11 ft/s
Segment Time of Concentration	0.025 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	118.00 ft
Is Paved?	True
Slope	0.070 ft/ft
Average Velocity	5.38 ft/s
Segment Time of Concentration	0.006 hours

Segment #3: TR-55 Channel Flow

Flow Area	1.2 ft²
Hydraulic Length	251.00 ft
Manning's n	0.012
Slope	0.020 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	8.00 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.083 hours

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Subsection: Time of Concentration Calculations
Label: PDA-1A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

==== SCS TR-55 Sheet Flow

Where:	Tc= Time of concentration, hours
	n= Manning's n
	Lf= Flow length, feet
	P= 2yr, 24hr Rain depth, inches
	Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: PDA-1B
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Time of Concentration Calculations
Label: PDA-1C
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Hydrologic Calculations

Subsection: Time of Concentration Calculations
Label: PDA-1D
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	150.00 ft
Manning's n	0.400
Slope	0.070 ft/ft
2 Year 24 Hour Depth	3.20 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.300 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	405.00 ft
Is Paved?	False
Slope	0.200 ft/ft
Average Velocity	7.22 ft/s
Segment Time of Concentration	0.016 hours

Segment #3: TR-55 Channel Flow	
Flow Area	3.1 ft²
Hydraulic Length	247.00 ft
Manning's n	0.012
Slope	0.047 ft/ft
Wetted Perimeter	6.30 ft
Average Velocity	16.78 ft/s
Segment Time of Concentration	0.004 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.320 hours

==== SCS Channel Flow

Tc =

R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

==== SCS Channel Flow

Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec Sf= Slope, ft/ft n= Manning's n Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =	Unpaved surface: V = 16.1345 * (Sf**0.5) Paved Surface: V = 20.3282 * (Sf**0.5) (Lf / V) / 3600
Where:	V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	(0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 2yr, 24hr Rain depth, inches Sf= Slope, %

Subsection: Time of Concentration Calculations
Label: PDA-1E
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time of Concentration Results

Segment #1: User Defined Tc	
Time of Concentration	0.083 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

==== User Defined

Subsection: Time of Concentration Calculations
Return Event: 1 years
Label: PDA-1E
Storm Event: 1 year
Scenario: Post-Development 1 year

==== User Defined

Tc =	Value entered by user
Where:	Tc= Time of concentration, hours

Subsection: Runoff CN-Area
Return Event: 1 years
Label: EDA-1A
Storm Event: 1 year
Scenario: Pre-Development 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.85	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.02	0.0	0.0	61.000
Woods - good - Soil B	55.000	0.37	0.0	0.0	55.000
Residential Districts - 1/3 acre - Soil B	72.000	4.34	0.0	0.0	72.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5.58	(N/A)	(N/A)	74.764

Subsection: Runoff CN-Area
Return Event: 1 years
Label: EDA-1B
Storm Event: 1 year
Scenario: Pre-Development 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.52	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.16	0.0	0.0	61.000
Woods - good - Soil B	55.000	0.25	0.0	0.0	55.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.92	(N/A)	(N/A)	80.055

Subsection: Runoff CN-Area
Return Event: 1 years
Label: PDA-1A
Storm Event: 1 year
Scenario: Post-Development 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.61	0.0	0.0	98.000

Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.12	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.73	(N/A)	(N/A)	91.918

Subsection: Runoff CN-Area
Label: PDA-1B
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.09	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.09	(N/A)	(N/A)	98.000

Subsection: Runoff CN-Area
Label: PDA-1C
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.50	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.06	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.56	(N/A)	(N/A)	93.843

Subsection: Runoff CN-Area
Label: PDA-1D
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.59	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.15	0.0	0.0	61.000

Hydrologic Calculations

Subsection: Runoff CN-Area
Label: PDA-1D
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Residential Districts - 1/3 acre - Soil B	72.000	4.34	0.0	0.0	72.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5.09	(N/A)	(N/A)	74.704

Subsection: Runoff CN-Area
Label: PDA-1E
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil B	98.000	0.01	0.0	0.0	98.000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.02	0.0	0.0	61.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.03	(N/A)	(N/A)	73.333

Subsection: Unit Hydrograph Summary
Label: EDA-1A
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.333 hours
Area (User Defined)	5.58 acres

Computational Time Increment	0.044 hours
Time to Peak (Computed)	12.270 hours
Flow (Peak, Computed)	2.81 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	2.78 ft³/s

Drainage Area	
SCS CN (Composite)	75.000

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: EDA-1A
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Drainage Area	
Area (User Defined)	5.58 acres
Maximum Retention (Pervious)	3.33 in
Maximum Retention (Pervious, 20 percent)	0.67 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.72 in
Runoff Volume (Pervious)	14,503 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	14,498 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.333 hours
Computational Time Increment	0.044 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	18.97 ft³/s
Unit peak time, Tp	0.222 hours
Unit receding limb, Tr	0.889 hours
Total unit time, Tb	1.111 hours

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: EDA-1B
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.106 hours
Area (User Defined)	0.92 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	12.125 hours
Flow (Peak, Computed)	0.90 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.88 ft³/s

Drainage Area	
SCS CN (Composite)	80.000
Area (User Defined)	0.92 acres
Maximum Retention (Pervious)	2.50 in
Maximum Retention (Pervious, 20 percent)	0.50 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.97 in
Runoff Volume (Pervious)	3,234 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,234 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.106 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: EDA-1B
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.84 ft³/s
Unit peak time, Tp	0.071 hours
Unit receding limb, Tr	0.283 hours
Total unit time, Tb	0.354 hours

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: PDA-1A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.73 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	1.32 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.32 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.73 acres
Maximum Retention (Pervious)	0.87 in
Maximum Retention (Pervious, 20 percent)	0.17 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.80 in
Runoff Volume (Pervious)	4,757 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,757 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: PDA-1A
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.93 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.09 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	0.19 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.19 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.09 acres
Maximum Retention (Pervious)	0.20 in
Maximum Retention (Pervious, 20 percent)	0.04 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.38 in
Runoff Volume (Pervious)	778 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	778 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: PDA-1B
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.22 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.56 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	1.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.09 ft³/s

Drainage Area	
SCS CN (Composite)	94.000
Area (User Defined)	0.56 acres
Maximum Retention (Pervious)	0.64 in
Maximum Retention (Pervious, 20 percent)	0.13 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.97 in
Runoff Volume (Pervious)	4,014 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,014 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Hydrologic Calculations

Subsection: Unit Hydrograph Summary
Label: PDA-1C
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.61 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.320 hours
Area (User Defined)	5.09 acres

Computational Time Increment	0.043 hours
Time to Peak (Computed)	12.273 hours
Flow (Peak, Computed)	2.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.59 ft³/s

Drainage Area	
SCS CN (Composite)	75.000
Area (User Defined)	5.09 acres
Maximum Retention (Pervious)	3.33 in
Maximum Retention (Pervious, 20 percent)	0.67 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.72 in
Runoff Volume (Pervious)	13,219 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,218 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.320 hours
Computational Time Increment	0.043 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary
Label: PDA-1D
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.04 ft³/s
Unit peak time, Tp	0.213 hours
Unit receding limb, Tr	0.852 hours
Total unit time, Tb	1.065 hours

Storm Event	1 year
Return Event	1 years
Duration	36.000 hours
Depth	2.61 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.03 acres

Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.02 ft³/s

Drainage Area	
SCS CN (Composite)	73.000
Area (User Defined)	0.03 acres
Maximum Retention (Pervious)	3.70 in
Maximum Retention (Pervious, 20 percent)	0.74 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.63 in
Runoff Volume (Pervious)	68 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	68 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Subsection: Unit Hydrograph Summary
Label: PDA-1E
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.41 ft³/s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Subsection: Channel Routing Summary
Label: A4 to A3
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.011 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.250	12.300
Peak Flow (ft³/s)...	2.87	2.87

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	17,975 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	17,975 ft³

Subsection: Channel Routing Summary
Label: A4 to A3
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.011 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.250	12.300
Peak Flow (ft³/s)...	9.17	9.17

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	50,846 ft³
Volume (Routing, Unrouted)	0 ft³

Subsection: Channel Routing Summary
Label: A4 to A3
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Inflow/Outflow Volumes	
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	50,846 ft³

Subsection: Channel Routing Summary
Label: A4 to A3
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.011 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.250	12.300
Peak Flow (ft³/s)...	13.42	13.42

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	72,220 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	72,220 ft³

Subsection: Channel Routing Summary
Label: A4 to A3
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.011 hours

Subsection: Channel Routing Summary
Label: A4 to A3
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.200	12.250
Peak Flow (ft³/s)...	24.29	24.29

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	118,360 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	118,360 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.003 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.300	12.350
Peak Flow (ft³/s)...	3.07	3.07

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	22,840 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	22,840 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration

Subsection: Channel Routing Summary
Label: Reach
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.004 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.250	12.300
Peak Flow (ft³/s)...	3.38	3.38

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	17,710 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	17,710 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.003 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.250	12.300
Peak Flow (ft³/s)...	11.05	11.05

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	60,689 ft³
Volume (Routing, Unrouted)	0 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Inflow/Outflow Volumes	
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	60,689 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.004 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.200	12.250
Peak Flow (ft³/s)...	11.13	11.13

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	53,528 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	53,528 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.003 hours

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.300	12.350
Peak Flow (ft³/s)...	14.98	14.98

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	84,968 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	84,968 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.004 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.200	12.250
Peak Flow (ft³/s)...	16.15	16.15

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	77,101 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	77,101 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration

Subsection: Channel Routing Summary
Label: Reach
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.003 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.250	12.300
Peak Flow (ft³/s)...	26.64	26.64

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	137,058 ft³
Volume (Routing, Unrouted)	0 ft³
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	137,058 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method	No Infiltration

Translation Routing Summary	
Flow (Base)	0.00 ft³/s
Translate	0.004 hours

	Inflow Hydrograph	Outflow Hydrograph
Time Start (hours)...	0.000	0.050
Time Step (hours)...	0.050	0.050
Time End (hours)...	36.000	36.050
Peak Time (hours)...	12.200	12.250
Peak Flow (ft³/s)...	26.79	26.79

Inflow/Outflow Volumes	
Volume (Routing, Inflow)	128,250 ft³
Volume (Routing, Unrouted)	0 ft³

Subsection: Channel Routing Summary
Label: Reach
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Inflow/Outflow Volumes	
Volume (Routing, Base Flow)	0 ft³
Volume (Routing, Infiltration)	0 ft³
Volume (Routing, Outflow)	128,250 ft³

Subsection: Addition Summary
Label: DMH-A3
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DMH-A3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1B
A4 to A3	DMH-A4
<Catchment to Outflow Node>	PDA-1E
Outlet-1C	SP

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1B	778	12.100	0.19
Flow (From)	A4 to A3	17,975	12.300	2.87
Flow (From)	PDA-1E	68	12.100	0.02
Flow (From)	Outlet-1C	4,019	11.400	0.10
Flow (In)	DMH-A3	22,840	12.300	3.07

Subsection: Addition Summary
Label: DMH-A3
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Summary for Hydrograph Addition at 'DMH-A3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1B
A4 to A3	DMH-A4
<Catchment to Outflow Node>	PDA-1E
Outlet-1C	SP

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1B	1,458	12.100	0.35
Flow (From)	A4 to A3	50,846	12.300	9.17
Flow (From)	PDA-1E	223	12.100	0.06
Flow (From)	Outlet-1C	8,161	12.250	1.81

Subsection: Addition Summary
Label: DMH-A3
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (In)	DMH-A3	60,689	12.250	11.05

Subsection: Addition Summary
Label: DMH-A3
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'DMH-A3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1B
A4 to A3	DMH-A4
<Catchment to Outflow Node>	PDA-1E
Outlet-1C	SP

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1B	1,850	12.100	0.45
Flow (From)	A4 to A3	72,220	12.300	13.42
Flow (From)	PDA-1E	327	12.100	0.09
Flow (From)	Outlet-1C	10,571	12.100	3.35
Flow (In)	DMH-A3	84,968	12.300	14.98

Subsection: Addition Summary
Label: DMH-A3
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'DMH-A3'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1B
A4 to A3	DMH-A4
<Catchment to Outflow Node>	PDA-1E
Outlet-1C	SP

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1B	2,646	12.100	0.63
Flow (From)	A4 to A3	118,360	12.250	24.29
Flow (From)	PDA-1E	557	12.100	0.16
Flow (From)	Outlet-1C	15,496	12.050	4.00

Subsection: Addition Summary
Label: DMH-A3
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (In)	DMH-A3	137,058	12.250	26.64

Subsection: Addition Summary
Label: DMH-A4
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DMH-A4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D
Outlet-1A	DET SYSTEM

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1D	13,218	12.250	2.59
Flow (From)	Outlet-1A	4,757	12.500	0.30
Flow (In)	DMH-A4	17,975	12.250	2.87

Subsection: Addition Summary
Label: DMH-A4
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Summary for Hydrograph Addition at 'DMH-A4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D
Outlet-1A	DET SYSTEM

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1D	40,786	12.250	8.71
Flow (From)	Outlet-1A	10,061	12.550	0.50
Flow (In)	DMH-A4	50,846	12.250	9.17

Subsection: Addition Summary
Label: DMH-A4
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'DMH-A4'

Subsection: Addition Summary
Label: DMH-A4
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'DMH-A4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D
Outlet-1A	DET SYSTEM

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1D	59,047	12.250	12.65
Flow (From)	Outlet-1A	13,173	12.400	1.06
Flow (In)	DMH-A4	72,220	12.250	13.42

Subsection: Addition Summary
Label: DMH-A4
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'DMH-A4'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1D
Outlet-1A	DET SYSTEM

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1D	98,803	12.200	21.05
Flow (From)	Outlet-1A	19,557	12.200	3.24
Flow (In)	DMH-A4	118,360	12.200	24.29

Subsection: Addition Summary
Label: DP-1
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	DMH-A3

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	22,840	12.350	3.07
Flow (In)	DP-1	22,845	12.350	3.07

Subsection: Addition Summary
Label: DP-1
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	Junction 1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	17,710	12.300	3.38
Flow (In)	DP-1	17,710	12.300	3.38

Subsection: Addition Summary
Label: DP-1
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	DMH-A3

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	60,689	12.300	11.05
Flow (In)	DP-1	60,693	12.300	11.05

Subsection: Addition Summary
Label: DP-1
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	Junction 1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	53,528	12.250	11.13
Flow (In)	DP-1	53,528	12.250	11.13

Subsection: Addition Summary
Label: DP-1
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Subsection: Addition Summary
Label: DP-1
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	DMH-A3

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	84,968	12.350	14.98
Flow (In)	DP-1	84,973	12.350	14.98

Subsection: Addition Summary
Label: DP-1
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	Junction 1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	77,101	12.250	16.15
Flow (In)	DP-1	77,101	12.250	16.15

Subsection: Addition Summary
Label: DP-1
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	DMH-A3

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	137,058	12.300	26.64
Flow (In)	DP-1	137,063	12.300	26.64

Subsection: Addition Summary
Label: DP-1
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Subsection: Addition Summary
Label: DP-1
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'DP-1'

Upstream Link	Upstream Node
Reach	Junction 1

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Reach	128,250	12.250	26.79
Flow (In)	DP-1	128,250	12.250	26.79

Subsection: Addition Summary
Label: Junction 1
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Summary for Hydrograph Addition at 'Junction 1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
	EX. RG

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1A	14,498	12.300	2.78
Flow (From)		3,212	12.150	0.85
Flow (In)	Junction 1	17,710	12.250	3.38

Subsection: Addition Summary
Label: Junction 1
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Summary for Hydrograph Addition at 'Junction 1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
	EX. RG

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1A	44,732	12.250	9.41
Flow (From)		8,796	12.100	2.37
Flow (In)	Junction 1	53,528	12.200	11.13

Subsection: Addition Summary
Label: Junction 1
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'Junction 1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
	EX. RG

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1A	64,761	12.250	13.70
Flow (From)		12,340	12.100	3.31
Flow (In)	Junction 1	77,101	12.200	16.15

Subsection: Addition Summary
Label: Junction 1
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'Junction 1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1A
	EX. RG

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1A	108,363	12.250	22.78
Flow (From)		19,887	12.100	5.26
Flow (In)	Junction 1	128,250	12.200	26.79

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	33.40	33.40	33.40	33.40	33.40
0.250	33.40	33.40	33.40	33.40	33.40
0.500	33.40	33.40	33.40	33.40	33.40
0.750	33.40	33.40	33.40	33.40	33.40
1.000	33.40	33.40	33.40	33.40	33.40

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1.250	33.40	33.40	33.40	33.40	33.40
1.500	33.40	33.40	33.40	33.40	33.40
1.750	33.40	33.40	33.40	33.40	33.40
2.000	33.40	33.40	33.40	33.40	33.40
2.250	33.40	33.40	33.40	33.40	33.40
2.500	33.40	33.40	33.40	33.40	33.40
2.750	33.40	33.40	33.40	33.40	33.40
3.000	33.40	33.40	33.40	33.40	33.40
3.250	33.40	33.40	33.40	33.40	33.40
3.500	33.40	33.40	33.40	33.40	33.40
3.750	33.40	33.40	33.40	33.40	33.40
4.000	33.40	33.40	33.40	33.40	33.40
4.250	33.40	33.40	33.40	33.40	33.40
4.500	33.40	33.40	33.40	33.40	33.40
4.750	33.40	33.40	33.40	33.40	33.40
5.000	33.40	33.40	33.40	33.40	33.40
5.250	33.40	33.40	33.40	33.40	33.40
5.500	33.40	33.40	33.40	33.40	33.40
5.750	33.40	33.40	33.40	33.40	33.40
6.000	33.40	33.40	33.40	33.40	33.40
6.250	33.40	33.40	33.40	33.40	33.40
6.500	33.40	33.40	33.40	33.40	33.40
6.750	33.40	33.40	33.40	33.40	33.40
7.000	33.40	33.41	33.41	33.41	33.41
7.250	33.41	33.41	33.41	33.41	33.41
7.500	33.41	33.41	33.41	33.41	33.41
7.750	33.41	33.41	33.41	33.41	33.41
8.000	33.42	33.42	33.42	33.42	33.42
8.250	33.42	33.42	33.42	33.42	33.42
8.500	33.42	33.43	33.43	33.43	33.43
8.750	33.43	33.43	33.43	33.43	33.43
9.000	33.44	33.44	33.44	33.44	33.44
9.250	33.44	33.44	33.45	33.45	33.45
9.500	33.45	33.45	33.46	33.46	33.46
9.750	33.46	33.46	33.47	33.47	33.47
10.000	33.47	33.47	33.48	33.48	33.48
10.250	33.48	33.49	33.49	33.49	33.49
10.500	33.50	33.50	33.50	33.51	33.51
10.750	33.51	33.52	33.52	33.52	33.53
11.000	33.53	33.54	33.54	33.55	33.55
11.250	33.56	33.56	33.57	33.58	33.59

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
11.500	33.59	33.60	33.62	33.63	33.66
11.750	33.69	33.72	33.77	33.81	33.88
12.000	33.98	34.10	34.23	34.34	34.42
12.250	34.48	34.52	34.55	34.57	34.58
12.500	34.59	34.59	34.58	34.56	34.55
12.750	34.54	34.52	34.51	34.49	34.48
13.000	34.46	34.44	34.42	34.40	34.39
13.250	34.37	34.35	34.34	34.32	34.30
13.500	34.29	34.27	34.25	34.24	34.22
13.750	34.21	34.19	34.17	34.16	34.14
14.000	34.13	34.11	34.10	34.08	34.07
14.250	34.06	34.04	34.03	34.01	34.00
14.500	33.99	33.98	33.96	33.95	33.94
14.750	33.93	33.91	33.90	33.89	33.88
15.000	33.87	33.86	33.85	33.84	33.83
15.250	33.82	33.81	33.80	33.79	33.78
15.500	33.77	33.77	33.76	33.75	33.74
15.750	33.74	33.73	33.72	33.72	33.71
16.000	33.70	33.70	33.69	33.68	33.68
16.250	33.67	33.67	33.66	33.66	33.65
16.500	33.65	33.64	33.64	33.63	33.63
16.750	33.62	33.62	33.62	33.61	33.61
17.000	33.60	33.60	33.60	33.59	33.59
17.250	33.59	33.58	33.58	33.58	33.57
17.500	33.57	33.57	33.57	33.56	33.56
17.750	33.56	33.56	33.55	33.55	33.55
18.000	33.55	33.54	33.54	33.54	33.54
18.250	33.53	33.53	33.53	33.53	33.53
18.500	33.52	33.52	33.52	33.52	33.52
18.750	33.52	33.52	33.51	33.51	33.51
19.000	33.51	33.51	33.51	33.51	33.50
19.250	33.50	33.50	33.50	33.50	33.50
19.500	33.50	33.50	33.50	33.50	33.49
19.750	33.49	33.49	33.49	33.49	33.49
20.000	33.49	33.49	33.49	33.49	33.49
20.250	33.49	33.48	33.48	33.48	33.48
20.500	33.48	33.48	33.48	33.48	33.48
20.750	33.48	33.48	33.48	33.48	33.48
21.000	33.48	33.48	33.48	33.47	33.47
21.250	33.47	33.47	33.47	33.47	33.47
21.500	33.47	33.47	33.47	33.47	33.47

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
21.750	33.47	33.47	33.47	33.47	33.47
22.000	33.47	33.47	33.47	33.47	33.47
22.250	33.47	33.46	33.46	33.46	33.46
22.500	33.46	33.46	33.46	33.46	33.46
22.750	33.46	33.46	33.46	33.46	33.46
23.000	33.46	33.46	33.46	33.46	33.46
23.250	33.46	33.46	33.46	33.46	33.46
23.500	33.46	33.46	33.46	33.46	33.46
23.750	33.45	33.45	33.45	33.45	33.45
24.000	33.45	33.45	33.45	33.45	33.45
24.250	33.45	33.44	33.44	33.44	33.44
24.500	33.44	33.44	33.43	33.43	33.43
24.750	33.43	33.43	33.43	33.43	33.43
25.000	33.43	33.42	33.42	33.42	33.42
25.250	33.42	33.42	33.42	33.42	33.42
25.500	33.42	33.42	33.42	33.42	33.41
25.750	33.41	33.41	33.41	33.41	33.41
26.000	33.41	33.41	33.41	33.41	33.41
26.250	33.41	33.41	33.41	33.41	33.41
26.500	33.41	33.41	33.41	33.41	33.41
26.750	33.41	33.41	33.41	33.41	33.41
27.000	33.41	33.40	33.40	33.40	33.40
27.250	33.40	33.40	33.40	33.40	33.40
27.500	33.40	33.40	33.40	33.40	33.40
27.750	33.40	33.40	33.40	33.40	33.40
28.000	33.40	33.40	33.40	33.40	33.40
28.250	33.40	33.40	33.40	33.40	33.40
28.500	33.40	33.40	33.40	33.40	33.40
28.750	33.40	33.40	33.40	33.40	33.40
29.000	33.40	33.40	33.40	33.40	33.40
29.250	33.40	33.40	33.40	33.40	33.40
29.500	33.40	33.40	33.40	33.40	33.40
29.750	33.40	33.40	33.40	33.40	33.40
30.000	33.40	33.40	33.40	33.40	33.40
30.250	33.40	33.40	33.40	33.40	33.40
30.500	33.40	33.40	33.40	33.40	33.40
30.750	33.40	33.40	33.40	33.40	33.40
31.000	33.40	33.40	33.40	33.40	33.40
31.250	33.40	33.40	33.40	33.40	33.40
31.500	33.40	33.40	33.40	33.40	33.40
31.750	33.40	33.40	33.40	33.40	33.40

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
32.000	33.40	33.40	33.40	33.40	33.40
32.250	33.40	33.40	33.40	33.40	33.40
32.500	33.40	33.40	33.40	33.40	33.40
32.750	33.40	33.40	33.40	33.40	33.40
33.000	33.40	33.40	33.40	33.40	33.40
33.250	33.40	33.40	33.40	33.40	33.40
33.500	33.40	33.40	33.40	33.40	33.40
33.750	33.40	33.40	33.40	33.40	33.40
34.000	33.40	33.40	33.40	33.40	33.40
34.250	33.40	33.40	33.40	33.40	33.40
34.500	33.40	33.40	33.40	33.40	33.40
34.750	33.40	33.40	33.40	33.40	33.40
35.000	33.40	33.40	33.40	33.40	33.40
35.250	33.40	33.40	33.40	33.40	33.40
35.500	33.40	33.40	33.40	33.40	33.40
35.750	33.40	33.40	33.40	33.40	33.40
36.000	33.40	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	33.40	33.40	33.40	33.40	33.40
0.250	33.40	33.40	33.40	33.40	33.40
0.500	33.40	33.40	33.40	33.40	33.40
0.750	33.40	33.40	33.40	33.40	33.40
1.000	33.40	33.40	33.40	33.40	33.40
1.250	33.40	33.40	33.40	33.40	33.40
1.500	33.40	33.40	33.40	33.40	33.40
1.750	33.40	33.40	33.40	33.40	33.40
2.000	33.40	33.40	33.40	33.40	33.40
2.250	33.40	33.40	33.40	33.40	33.40
2.500	33.40	33.40	33.40	33.40	33.40
2.750	33.40	33.40	33.40	33.40	33.40

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
3.000	33.40	33.40	33.40	33.40	33.40
3.250	33.40	33.40	33.40	33.40	33.40
3.500	33.40	33.40	33.40	33.40	33.40
3.750	33.40	33.40	33.40	33.40	33.40
4.000	33.40	33.40	33.40	33.40	33.40
4.250	33.40	33.40	33.40	33.40	33.40
4.500	33.40	33.41	33.41	33.41	33.41
4.750	33.41	33.41	33.41	33.41	33.41
5.000	33.41	33.41	33.41	33.41	33.41
5.250	33.41	33.41	33.41	33.42	33.42
5.500	33.42	33.42	33.42	33.42	33.42
5.750	33.42	33.42	33.42	33.42	33.42
6.000	33.43	33.43	33.43	33.43	33.43
6.250	33.43	33.43	33.43	33.43	33.43
6.500	33.43	33.44	33.44	33.44	33.44
6.750	33.44	33.44	33.44	33.44	33.45
7.000	33.45	33.45	33.45	33.45	33.45
7.250	33.45	33.46	33.46	33.46	33.46
7.500	33.46	33.46	33.47	33.47	33.47
7.750	33.47	33.47	33.48	33.48	33.48
8.000	33.48	33.48	33.48	33.49	33.49
8.250	33.49	33.49	33.50	33.50	33.50
8.500	33.50	33.51	33.51	33.51	33.52
8.750	33.52	33.52	33.53	33.53	33.53
9.000	33.54	33.54	33.54	33.55	33.55
9.250	33.55	33.56	33.56	33.57	33.57
9.500	33.57	33.58	33.58	33.59	33.59
9.750	33.60	33.60	33.61	33.61	33.62
10.000	33.62	33.62	33.63	33.64	33.64
10.250	33.65	33.65	33.66	33.66	33.67
10.500	33.68	33.68	33.69	33.70	33.71
10.750	33.71	33.72	33.73	33.74	33.75
11.000	33.75	33.76	33.77	33.78	33.79
11.250	33.81	33.82	33.83	33.85	33.87
11.500	33.89	33.91	33.94	33.97	34.03
11.750	34.09	34.17	34.27	34.38	34.53
12.000	34.74	35.01	35.29	35.55	35.75
12.250	35.88	35.99	36.07	36.14	36.18
12.500	36.20	36.21	36.20	36.18	36.16
12.750	36.14	36.12	36.10	36.07	36.04
13.000	36.01	35.98	35.95	35.91	35.88

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
13.250	35.85	35.82	35.79	35.76	35.73
13.500	35.70	35.66	35.63	35.60	35.57
13.750	35.54	35.51	35.47	35.44	35.41
14.000	35.38	35.35	35.32	35.29	35.26
14.250	35.23	35.20	35.17	35.14	35.12
14.500	35.09	35.06	35.03	35.00	34.98
14.750	34.95	34.92	34.90	34.87	34.84
15.000	34.82	34.79	34.77	34.74	34.72
15.250	34.70	34.67	34.65	34.63	34.60
15.500	34.58	34.56	34.53	34.51	34.49
15.750	34.47	34.44	34.42	34.40	34.38
16.000	34.36	34.34	34.32	34.30	34.28
16.250	34.26	34.24	34.23	34.21	34.19
16.500	34.17	34.16	34.14	34.12	34.11
16.750	34.09	34.08	34.06	34.05	34.03
17.000	34.02	34.00	33.99	33.98	33.96
17.250	33.95	33.94	33.92	33.91	33.90
17.500	33.89	33.87	33.86	33.85	33.84
17.750	33.83	33.82	33.81	33.80	33.79
18.000	33.78	33.77	33.77	33.76	33.75
18.250	33.74	33.74	33.73	33.72	33.72
18.500	33.71	33.70	33.70	33.69	33.69
18.750	33.68	33.68	33.67	33.67	33.66
19.000	33.66	33.65	33.65	33.64	33.64
19.250	33.64	33.63	33.63	33.63	33.62
19.500	33.62	33.62	33.61	33.61	33.61
19.750	33.60	33.60	33.60	33.60	33.59
20.000	33.59	33.59	33.59	33.58	33.58
20.250	33.58	33.58	33.58	33.57	33.57
20.500	33.57	33.57	33.57	33.56	33.56
20.750	33.56	33.56	33.56	33.56	33.56
21.000	33.55	33.55	33.55	33.55	33.55
21.250	33.55	33.55	33.55	33.54	33.54
21.500	33.54	33.54	33.54	33.54	33.54
21.750	33.54	33.54	33.53	33.53	33.53
22.000	33.53	33.53	33.53	33.53	33.53
22.250	33.53	33.53	33.53	33.52	33.52
22.500	33.52	33.52	33.52	33.52	33.52
22.750	33.52	33.52	33.52	33.52	33.52
23.000	33.52	33.51	33.51	33.51	33.51
23.250	33.51	33.51	33.51	33.51	33.51

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
23.500	33.51	33.51	33.51	33.51	33.51
23.750	33.50	33.50	33.50	33.50	33.50
24.000	33.50	33.50	33.50	33.49	33.49
24.250	33.49	33.48	33.48	33.48	33.47
24.500	33.47	33.47	33.47	33.46	33.46
24.750	33.46	33.46	33.45	33.45	33.45
25.000	33.45	33.45	33.44	33.44	33.44
25.250	33.44	33.44	33.44	33.43	33.43
25.500	33.43	33.43	33.43	33.43	33.43
25.750	33.43	33.43	33.42	33.42	33.42
26.000	33.42	33.42	33.42	33.42	33.42
26.250	33.42	33.42	33.42	33.42	33.42
26.500	33.41	33.41	33.41	33.41	33.41
26.750	33.41	33.41	33.41	33.41	33.41
27.000	33.41	33.41	33.41	33.41	33.41
27.250	33.41	33.41	33.41	33.41	33.41
27.500	33.41	33.41	33.41	33.41	33.41
27.750	33.41	33.41	33.40	33.40	33.40
28.000	33.40	33.40	33.40	33.40	33.40
28.250	33.40	33.40	33.40	33.40	33.40
28.500	33.40	33.40	33.40	33.40	33.40
28.750	33.40	33.40	33.40	33.40	33.40
29.000	33.40	33.40	33.40	33.40	33.40
29.250	33.40	33.40	33.40	33.40	33.40
29.500	33.40	33.40	33.40	33.40	33.40
29.750	33.40	33.40	33.40	33.40	33.40
30.000	33.40	33.40	33.40	33.40	33.40
30.250	33.40	33.40	33.40	33.40	33.40
30.500	33.40	33.40	33.40	33.40	33.40
30.750	33.40	33.40	33.40	33.40	33.40
31.000	33.40	33.40	33.40	33.40	33.40
31.250	33.40	33.40	33.40	33.40	33.40
31.500	33.40	33.40	33.40	33.40	33.40
31.750	33.40	33.40	33.40	33.40	33.40
32.000	33.40	33.40	33.40	33.40	33.40
32.250	33.40	33.40	33.40	33.40	33.40
32.500	33.40	33.40	33.40	33.40	33.40
32.750	33.40	33.40	33.40	33.40	33.40
33.000	33.40	33.40	33.40	33.40	33.40
33.250	33.40	33.40	33.40	33.40	33.40
33.500	33.40	33.40	33.40	33.40	33.40

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
33.750	33.40	33.40	33.40	33.40	33.40
34.000	33.40	33.40	33.40	33.40	33.40
34.250	33.40	33.40	33.40	33.40	33.40
34.500	33.40	33.40	33.40	33.40	33.40
34.750	33.40	33.40	33.40	33.40	33.40
35.000	33.40	33.40	33.40	33.40	33.40
35.250	33.40	33.40	33.40	33.40	33.40
35.500	33.40	33.40	33.40	33.40	33.40
35.750	33.40	33.40	33.40	33.40	33.40
36.000	33.40	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	33.40	33.40	33.40	33.40	33.40
0.250	33.40	33.40	33.40	33.40	33.40
0.500	33.40	33.40	33.40	33.40	33.40
0.750	33.40	33.40	33.40	33.40	33.40
1.000	33.40	33.40	33.40	33.40	33.40
1.250	33.40	33.40	33.40	33.40	33.40
1.500	33.40	33.40	33.40	33.40	33.40
1.750	33.40	33.40	33.40	33.40	33.40
2.000	33.40	33.40	33.40	33.40	33.40
2.250	33.40	33.40	33.40	33.40	33.40
2.500	33.40	33.40	33.40	33.40	33.40
2.750	33.40	33.40	33.40	33.40	33.40
3.000	33.40	33.40	33.40	33.40	33.40
3.250	33.40	33.40	33.40	33.40	33.40
3.500	33.40	33.40	33.40	33.40	33.40
3.750	33.40	33.41	33.41	33.41	33.41
4.000	33.41	33.41	33.41	33.41	33.41
4.250	33.41	33.41	33.41	33.41	33.41
4.500	33.42	33.42	33.42	33.42	33.42

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
4.750	33.42	33.42	33.42	33.42	33.42
5.000	33.43	33.43	33.43	33.43	33.43
5.250	33.43	33.43	33.43	33.43	33.44
5.500	33.44	33.44	33.44	33.44	33.44
5.750	33.44	33.44	33.44	33.45	33.45
6.000	33.45	33.45	33.45	33.45	33.45
6.250	33.46	33.46	33.46	33.46	33.46
6.500	33.46	33.46	33.47	33.47	33.47
6.750	33.47	33.47	33.47	33.48	33.48
7.000	33.48	33.48	33.48	33.49	33.49
7.250	33.49	33.49	33.50	33.50	33.50
7.500	33.50	33.50	33.51	33.51	33.51
7.750	33.51	33.52	33.52	33.52	33.52
8.000	33.53	33.53	33.53	33.54	33.54
8.250	33.54	33.55	33.55	33.55	33.56
8.500	33.56	33.56	33.57	33.57	33.57
8.750	33.58	33.58	33.59	33.59	33.60
9.000	33.60	33.61	33.61	33.62	33.62
9.250	33.63	33.63	33.64	33.64	33.65
9.500	33.65	33.66	33.67	33.67	33.68
9.750	33.68	33.69	33.70	33.70	33.71
10.000	33.71	33.72	33.73	33.73	33.74
10.250	33.75	33.76	33.76	33.77	33.78
10.500	33.79	33.80	33.81	33.82	33.83
10.750	33.84	33.85	33.86	33.87	33.88
11.000	33.89	33.90	33.91	33.93	33.94
11.250	33.96	33.98	34.00	34.02	34.04
11.500	34.07	34.10	34.14	34.19	34.26
11.750	34.35	34.46	34.59	34.74	34.94
12.000	35.23	35.60	35.99	36.37	36.66
12.250	36.85	36.99	37.07	37.11	37.10
12.500	37.06	37.00	36.93	36.87	36.82
12.750	36.77	36.73	36.68	36.64	36.60
13.000	36.56	36.52	36.49	36.46	36.42
13.250	36.39	36.36	36.32	36.29	36.26
13.500	36.22	36.19	36.16	36.12	36.09
13.750	36.05	36.02	35.98	35.95	35.91
14.000	35.88	35.85	35.81	35.78	35.75
14.250	35.71	35.68	35.65	35.62	35.58
14.500	35.55	35.52	35.49	35.46	35.43
14.750	35.39	35.36	35.34	35.31	35.28

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
15.000	35.25	35.22	35.19	35.16	35.13
15.250	35.11	35.08	35.05	35.02	34.99
15.500	34.97	34.94	34.91	34.89	34.86
15.750	34.83	34.81	34.78	34.76	34.73
16.000	34.71	34.68	34.66	34.63	34.61
16.250	34.59	34.56	34.54	34.52	34.50
16.500	34.47	34.45	34.43	34.41	34.39
16.750	34.37	34.35	34.33	34.31	34.29
17.000	34.27	34.26	34.24	34.22	34.20
17.250	34.19	34.17	34.15	34.14	34.12
17.500	34.11	34.09	34.08	34.06	34.05
17.750	34.03	34.02	34.00	33.99	33.98
18.000	33.96	33.95	33.94	33.93	33.91
18.250	33.90	33.89	33.88	33.87	33.86
18.500	33.85	33.84	33.83	33.82	33.81
18.750	33.80	33.79	33.78	33.78	33.77
19.000	33.76	33.75	33.75	33.74	33.74
19.250	33.73	33.72	33.72	33.71	33.71
19.500	33.70	33.70	33.69	33.69	33.68
19.750	33.68	33.67	33.67	33.67	33.66
20.000	33.66	33.65	33.65	33.65	33.64
20.250	33.64	33.64	33.64	33.63	33.63
20.500	33.63	33.62	33.62	33.62	33.62
20.750	33.61	33.61	33.61	33.61	33.60
21.000	33.60	33.60	33.60	33.60	33.59
21.250	33.59	33.59	33.59	33.59	33.59
21.500	33.58	33.58	33.58	33.58	33.58
21.750	33.58	33.58	33.57	33.57	33.57
22.000	33.57	33.57	33.57	33.57	33.56
22.250	33.56	33.56	33.56	33.56	33.56
22.500	33.56	33.56	33.56	33.55	33.55
22.750	33.55	33.55	33.55	33.55	33.55
23.000	33.55	33.55	33.55	33.54	33.54
23.250	33.54	33.54	33.54	33.54	33.54
23.500	33.54	33.54	33.54	33.54	33.53
23.750	33.53	33.53	33.53	33.53	33.53
24.000	33.53	33.53	33.52	33.52	33.52
24.250	33.51	33.51	33.50	33.50	33.49
24.500	33.49	33.49	33.48	33.48	33.48
24.750	33.47	33.47	33.47	33.47	33.46
25.000	33.46	33.46	33.46	33.45	33.45

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
25.250	33.45	33.45	33.45	33.44	33.44
25.500	33.44	33.44	33.44	33.44	33.44
25.750	33.43	33.43	33.43	33.43	33.43
26.000	33.43	33.43	33.43	33.42	33.42
26.250	33.42	33.42	33.42	33.42	33.42
26.500	33.42	33.42	33.42	33.42	33.42
26.750	33.42	33.41	33.41	33.41	33.41
27.000	33.41	33.41	33.41	33.41	33.41
27.250	33.41	33.41	33.41	33.41	33.41
27.500	33.41	33.41	33.41	33.41	33.41
27.750	33.41	33.41	33.41	33.41	33.41
28.000	33.41	33.41	33.41	33.41	33.40
28.250	33.40	33.40	33.40	33.40	33.40
28.500	33.40	33.40	33.40	33.40	33.40
28.750	33.40	33.40	33.40	33.40	33.40
29.000	33.40	33.40	33.40	33.40	33.40
29.250	33.40	33.40	33.40	33.40	33.40
29.500	33.40	33.40	33.40	33.40	33.40
29.750	33.40	33.40	33.40	33.40	33.40
30.000	33.40	33.40	33.40	33.40	33.40
30.250	33.40	33.40	33.40	33.40	33.40
30.500	33.40	33.40	33.40	33.40	33.40
30.750	33.40	33.40	33.40	33.40	33.40
31.000	33.40	33.40	33.40	33.40	33.40
31.250	33.40	33.40	33.40	33.40	33.40
31.500	33.40	33.40	33.40	33.40	33.40
31.750	33.40	33.40	33.40	33.40	33.40
32.000	33.40	33.40	33.40	33.40	33.40
32.250	33.40	33.40	33.40	33.40	33.40
32.500	33.40	33.40	33.40	33.40	33.40
32.750	33.40	33.40	33.40	33.40	33.40
33.000	33.40	33.40	33.40	33.40	33.40
33.250	33.40	33.40	33.40	33.40	33.40
33.500	33.40	33.40	33.40	33.40	33.40
33.750	33.40	33.40	33.40	33.40	33.40
34.000	33.40	33.40	33.40	33.40	33.40
34.250	33.40	33.40	33.40	33.40	33.40
34.500	33.40	33.40	33.40	33.40	33.40
34.750	33.40	33.40	33.40	33.40	33.40
35.000	33.40	33.40	33.40	33.40	33.40
35.250	33.40	33.40	33.40	33.40	33.40

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
35.500	33.40	33.40	33.40	33.40	33.40
35.750	33.40	33.40	33.40	33.40	33.40
36.000	33.40	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	33.40	33.40	33.40	33.40	33.40
0.250	33.40	33.40	33.40	33.40	33.40
0.500	33.40	33.40	33.40	33.40	33.40
0.750	33.40	33.40	33.40	33.40	33.40
1.000	33.40	33.40	33.40	33.40	33.40
1.250	33.40	33.40	33.40	33.40	33.40
1.500	33.40	33.40	33.40	33.40	33.40
1.750	33.40	33.40	33.40	33.40	33.40
2.000	33.40	33.40	33.40	33.40	33.40
2.250	33.40	33.40	33.40	33.40	33.40
2.500	33.40	33.40	33.40	33.40	33.40
2.750	33.40	33.41	33.41	33.41	33.41
3.000	33.41	33.41	33.41	33.41	33.41
3.250	33.41	33.41	33.42	33.42	33.42
3.500	33.42	33.42	33.42	33.42	33.43
3.750	33.43	33.43	33.43	33.43	33.43
4.000	33.43	33.44	33.44	33.44	33.44
4.250	33.44	33.44	33.45	33.45	33.45
4.500	33.45	33.45	33.45	33.46	33.46
4.750	33.46	33.46	33.46	33.46	33.47
5.000	33.47	33.47	33.47	33.47	33.48
5.250	33.48	33.48	33.48	33.48	33.49
5.500	33.49	33.49	33.49	33.49	33.49
5.750	33.50	33.50	33.50	33.50	33.50
6.000	33.51	33.51	33.51	33.51	33.52
6.250	33.52	33.52	33.52	33.52	33.53

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
6.500	33.53	33.53	33.53	33.54	33.54
6.750	33.54	33.55	33.55	33.55	33.56
7.000	33.56	33.56	33.56	33.57	33.57
7.250	33.57	33.58	33.58	33.59	33.59
7.500	33.59	33.60	33.60	33.60	33.61
7.750	33.61	33.62	33.62	33.62	33.63
8.000	33.63	33.64	33.64	33.64	33.65
8.250	33.65	33.66	33.66	33.67	33.67
8.500	33.68	33.69	33.69	33.70	33.70
8.750	33.71	33.72	33.72	33.73	33.74
9.000	33.74	33.75	33.76	33.77	33.77
9.250	33.78	33.79	33.80	33.81	33.81
9.500	33.82	33.83	33.84	33.85	33.86
9.750	33.87	33.87	33.88	33.89	33.90
10.000	33.91	33.92	33.93	33.94	33.95
10.250	33.96	33.98	33.99	34.00	34.02
10.500	34.03	34.04	34.06	34.08	34.09
10.750	34.11	34.13	34.14	34.16	34.18
11.000	34.20	34.22	34.24	34.26	34.29
11.250	34.32	34.35	34.38	34.42	34.46
11.500	34.50	34.55	34.61	34.69	34.80
11.750	34.94	35.11	35.32	35.56	35.88
12.000	36.38	37.04	37.82	38.31	38.40
12.250	38.29	38.15	38.00	37.85	37.70
12.500	37.55	37.41	37.29	37.18	37.09
12.750	37.02	36.95	36.90	36.86	36.82
13.000	36.78	36.74	36.70	36.67	36.63
13.250	36.60	36.57	36.54	36.52	36.50
13.500	36.47	36.45	36.43	36.41	36.38
13.750	36.36	36.33	36.31	36.28	36.26
14.000	36.23	36.20	36.17	36.14	36.11
14.250	36.09	36.06	36.03	36.00	35.97
14.500	35.94	35.91	35.88	35.86	35.83
14.750	35.80	35.77	35.75	35.72	35.69
15.000	35.66	35.64	35.61	35.58	35.55
15.250	35.53	35.50	35.47	35.44	35.41
15.500	35.39	35.36	35.33	35.31	35.28
15.750	35.25	35.23	35.20	35.17	35.15
16.000	35.12	35.09	35.07	35.04	35.01
16.250	34.99	34.96	34.94	34.91	34.88
16.500	34.86	34.84	34.81	34.79	34.77

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
16.750	34.74	34.72	34.70	34.68	34.66
17.000	34.63	34.61	34.59	34.57	34.55
17.250	34.53	34.51	34.49	34.47	34.45
17.500	34.43	34.41	34.39	34.37	34.36
17.750	34.34	34.32	34.30	34.28	34.27
18.000	34.25	34.23	34.22	34.20	34.19
18.250	34.17	34.16	34.14	34.13	34.11
18.500	34.10	34.09	34.07	34.06	34.05
18.750	34.03	34.02	34.01	34.00	33.99
19.000	33.98	33.96	33.95	33.94	33.93
19.250	33.92	33.91	33.90	33.89	33.88
19.500	33.87	33.86	33.86	33.85	33.84
19.750	33.83	33.82	33.82	33.81	33.80
20.000	33.80	33.79	33.78	33.78	33.77
20.250	33.77	33.76	33.76	33.75	33.75
20.500	33.74	33.74	33.73	33.73	33.72
20.750	33.72	33.72	33.71	33.71	33.71
21.000	33.70	33.70	33.70	33.69	33.69
21.250	33.69	33.68	33.68	33.68	33.67
21.500	33.67	33.67	33.67	33.66	33.66
21.750	33.66	33.66	33.65	33.65	33.65
22.000	33.65	33.65	33.64	33.64	33.64
22.250	33.64	33.64	33.63	33.63	33.63
22.500	33.63	33.63	33.63	33.62	33.62
22.750	33.62	33.62	33.62	33.62	33.61
23.000	33.61	33.61	33.61	33.61	33.61
23.250	33.61	33.60	33.60	33.60	33.60
23.500	33.60	33.60	33.60	33.59	33.59
23.750	33.59	33.59	33.59	33.59	33.59
24.000	33.59	33.58	33.58	33.57	33.57
24.250	33.56	33.55	33.55	33.54	33.54
24.500	33.53	33.53	33.52	33.52	33.51
24.750	33.51	33.50	33.50	33.49	33.49
25.000	33.49	33.48	33.48	33.48	33.47
25.250	33.47	33.47	33.47	33.46	33.46
25.500	33.46	33.46	33.45	33.45	33.45
25.750	33.45	33.45	33.44	33.44	33.44
26.000	33.44	33.44	33.44	33.44	33.43
26.250	33.43	33.43	33.43	33.43	33.43
26.500	33.43	33.43	33.42	33.42	33.42
26.750	33.42	33.42	33.42	33.42	33.42

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: DET SYSTEM (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
27.000	33.42	33.42	33.42	33.42	33.42
27.250	33.41	33.41	33.41	33.41	33.41
27.500	33.41	33.41	33.41	33.41	33.41
27.750	33.41	33.41	33.41	33.41	33.41
28.000	33.41	33.41	33.41	33.41	33.41
28.250	33.41	33.41	33.41	33.41	33.41
28.500	33.41	33.41	33.41	33.40	33.40
28.750	33.40	33.40	33.40	33.40	33.40
29.000	33.40	33.40	33.40	33.40	33.40
29.250	33.40	33.40	33.40	33.40	33.40
29.500	33.40	33.40	33.40	33.40	33.40
29.750	33.40	33.40	33.40	33.40	33.40
30.000	33.40	33.40	33.40	33.40	33.40
30.250	33.40	33.40	33.40	33.40	33.40
30.500	33.40	33.40	33.40	33.40	33.40
30.750	33.40	33.40	33.40	33.40	33.40
31.000	33.40	33.40	33.40	33.40	33.40
31.250	33.40	33.40	33.40	33.40	33.40
31.500	33.40	33.40	33.40	33.40	33.40
31.750	33.40	33.40	33.40	33.40	33.40
32.000	33.40	33.40	33.40	33.40	33.40
32.250	33.40	33.40	33.40	33.40	33.40
32.500	33.40	33.40	33.40	33.40	33.40
32.750	33.40	33.40	33.40	33.40	33.40
33.000	33.40	33.40	33.40	33.40	33.40
33.250	33.40	33.40	33.40	33.40	33.40
33.500	33.40	33.40	33.40	33.40	33.40
33.750	33.40	33.40	33.40	33.40	33.40
34.000	33.40	33.40	33.40	33.40	33.40
34.250	33.40	33.40	33.40	33.40	33.40
34.500	33.40	33.40	33.40	33.40	33.40
34.750	33.40	33.40	33.40	33.40	33.40
35.000	33.40	33.40	33.40	33.40	33.40
35.250	33.40	33.40	33.40	33.40	33.40
35.500	33.40	33.40	33.40	33.40	33.40
35.750	33.40	33.40	33.40	33.40	33.40
36.000	33.40	(N/A)	(N/A)	(N/A)	(N/A)

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	29.10	29.10	29.10	29.10	29.10
0.250	29.10	29.10	29.10	29.10	29.10
0.500	29.10	29.10	29.10	29.10	29.10
0.750	29.10	29.10	29.10	29.10	29.10
1.000	29.10	29.10	29.10	29.10	29.10
1.250	29.10	29.10	29.10	29.10	29.10
1.500	29.10	29.10	29.10	29.10	29.10
1.750	29.10	29.10	29.10	29.10	29.10
2.000	29.10	29.10	29.10	29.10	29.10
2.250	29.10	29.10	29.10	29.10	29.10
2.500	29.10	29.10	29.10	29.10	29.10
2.750	29.10	29.10	29.10	29.10	29.10
3.000	29.10	29.10	29.10	29.10	29.10
3.250	29.10	29.10	29.10	29.10	29.10
3.500	29.10	29.10	29.10	29.10	29.10
3.750	29.10	29.10	29.10	29.10	29.10
4.000	29.10	29.10	29.10	29.10	29.10
4.250	29.10	29.10	29.10	29.10	29.10
4.500	29.10	29.10	29.10	29.10	29.10
4.750	29.10	29.10	29.10	29.10	29.10
5.000	29.10	29.10	29.10	29.10	29.10
5.250	29.10	29.10	29.10	29.10	29.10
5.500	29.10	29.10	29.10	29.10	29.10
5.750	29.10	29.10	29.10	29.10	29.10
6.000	29.10	29.10	29.10	29.10	29.10
6.250	29.10	29.10	29.10	29.10	29.10
6.500	29.10	29.10	29.10	29.10	29.10
6.750	29.10	29.10	29.10	29.10	29.10
7.000	29.10	29.10	29.10	29.10	29.10
7.250	29.10	29.10	29.10	29.10	29.10
7.500	29.10	29.10	29.10	29.10	29.10
7.750	29.10	29.10	29.10	29.10	29.10
8.000	29.10	29.10	29.10	29.10	29.10
8.250	29.10	29.10	29.10	29.10	29.10
8.500	29.10	29.10	29.10	29.10	29.10
8.750	29.10	29.10	29.10	29.10	29.10
9.000	29.10	29.10	29.10	29.10	29.10
9.250	29.10	29.10	29.10	29.10	29.10
9.500	29.10	29.10	29.10	29.10	29.10
9.750	29.10	29.10	29.10	29.10	29.10

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	29.10	29.10	29.10	29.10	29.11
10.250	29.14	29.17	29.22	29.28	29.35
10.500	29.44	29.55	29.62	29.65	29.68
10.750	29.72	29.75	29.79	29.83	29.88
11.000	29.92	29.93	29.94	29.95	29.95
11.250	29.96	29.96	29.97	29.97	29.98
11.500	29.99	30.00	30.01	30.04	30.08
11.750	30.12	30.15	30.18	30.21	30.27
12.000	30.39	30.52	30.61	30.63	30.56
12.250	30.45	30.39	30.35	30.31	30.27
12.500	30.23	30.20	30.17	30.15	30.14
12.750	30.13	30.13	30.12	30.12	30.11
13.000	30.11	30.11	30.10	30.10	30.10
13.250	30.10	30.09	30.09	30.09	30.08
13.500	30.08	30.08	30.08	30.07	30.07
13.750	30.07	30.06	30.06	30.06	30.06
14.000	30.05	30.05	30.05	30.04	30.04
14.250	30.04	30.04	30.04	30.04	30.04
14.500	30.03	30.03	30.03	30.03	30.03
14.750	30.03	30.03	30.02	30.02	30.02
15.000	30.02	30.02	30.02	30.02	30.01
15.250	30.01	30.01	30.01	30.01	30.01
15.500	30.00	30.00	30.00	30.00	30.00
15.750	30.00	30.00	29.99	29.99	29.99
16.000	29.99	29.99	29.99	29.99	29.98
16.250	29.98	29.98	29.98	29.98	29.98
16.500	29.98	29.98	29.98	29.98	29.98
16.750	29.98	29.98	29.98	29.97	29.97
17.000	29.97	29.97	29.97	29.97	29.97
17.250	29.97	29.97	29.97	29.97	29.97
17.500	29.97	29.97	29.96	29.96	29.96
17.750	29.96	29.96	29.96	29.96	29.96
18.000	29.96	29.96	29.96	29.96	29.96
18.250	29.96	29.96	29.96	29.96	29.96
18.500	29.96	29.96	29.96	29.96	29.96
18.750	29.95	29.95	29.95	29.95	29.95
19.000	29.95	29.95	29.95	29.95	29.95
19.250	29.95	29.95	29.95	29.95	29.95
19.500	29.95	29.95	29.95	29.95	29.95
19.750	29.95	29.95	29.95	29.95	29.95
20.000	29.95	29.95	29.95	29.95	29.95

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	29.95	29.95	29.95	29.95	29.95
20.500	29.95	29.95	29.95	29.95	29.95
20.750	29.95	29.95	29.95	29.95	29.95
21.000	29.95	29.95	29.95	29.95	29.95
21.250	29.95	29.95	29.95	29.95	29.94
21.500	29.94	29.94	29.94	29.94	29.94
21.750	29.94	29.94	29.94	29.94	29.94
22.000	29.94	29.94	29.94	29.94	29.94
22.250	29.94	29.94	29.94	29.94	29.94
22.500	29.94	29.94	29.94	29.94	29.94
22.750	29.94	29.94	29.94	29.94	29.94
23.000	29.94	29.94	29.94	29.94	29.94
23.250	29.94	29.94	29.94	29.94	29.94
23.500	29.94	29.94	29.94	29.94	29.94
23.750	29.94	29.94	29.94	29.94	29.94
24.000	29.94	29.93	29.93	29.92	29.91
24.250	29.91	29.91	29.91	29.91	29.91
24.500	29.91	29.91	29.91	29.91	29.91
24.750	29.91	29.91	29.91	29.91	29.91
25.000	29.91	29.91	29.91	29.91	29.91
25.250	29.91	29.91	29.91	29.91	29.91
25.500	29.91	29.91	29.91	29.91	29.91
25.750	29.91	29.91	29.91	29.91	29.91
26.000	29.91	29.91	29.91	29.91	29.91
26.250	29.91	29.91	29.91	29.91	29.91
26.500	29.91	29.91	29.91	29.91	29.91
26.750	29.91	29.91	29.91	29.91	29.91
27.000	29.91	29.91	29.91	29.91	29.91
27.250	29.91	29.91	29.91	29.91	29.91
27.500	29.91	29.91	29.91	29.91	29.91
27.750	29.91	29.91	29.91	29.91	29.91
28.000	29.91	29.91	29.91	29.91	29.91
28.250	29.91	29.91	29.91	29.91	29.91
28.500	29.91	29.91	29.91	29.91	29.91
28.750	29.91	29.91	29.91	29.91	29.91
29.000	29.91	29.91	29.91	29.91	29.91
29.250	29.91	29.91	29.91	29.91	29.91
29.500	29.91	29.91	29.91	29.91	29.91
29.750	29.91	29.91	29.91	29.91	29.91
30.000	29.91	29.91	29.91	29.91	29.91
30.250	29.91	29.91	29.91	29.91	29.91

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
30.500	29.91	29.91	29.91	29.91	29.91
30.750	29.91	29.91	29.91	29.91	29.91
31.000	29.91	29.91	29.91	29.91	29.91
31.250	29.91	29.91	29.91	29.91	29.91
31.500	29.91	29.91	29.91	29.91	29.91
31.750	29.91	29.91	29.91	29.91	29.91
32.000	29.91	29.91	29.91	29.91	29.91
32.250	29.91	29.91	29.91	29.91	29.91
32.500	29.91	29.91	29.91	29.91	29.91
32.750	29.91	29.91	29.91	29.91	29.91
33.000	29.91	29.91	29.91	29.91	29.91
33.250	29.91	29.91	29.91	29.91	29.91
33.500	29.91	29.91	29.91	29.91	29.91
33.750	29.91	29.91	29.91	29.91	29.91
34.000	29.91	29.91	29.91	29.91	29.91
34.250	29.91	29.91	29.91	29.91	29.91
34.500	29.91	29.91	29.91	29.91	29.91
34.750	29.91	29.91	29.91	29.91	29.91
35.000	29.91	29.91	29.91	29.91	29.91
35.250	29.91	29.91	29.91	29.91	29.91
35.500	29.91	29.91	29.91	29.91	29.91
35.750	29.91	29.91	29.91	29.91	29.91
36.000	29.91	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	29.10	29.10	29.10	29.10	29.10
0.250	29.10	29.10	29.10	29.10	29.10
0.500	29.10	29.10	29.10	29.10	29.10
0.750	29.10	29.10	29.10	29.10	29.10
1.000	29.10	29.10	29.10	29.10	29.10
1.250	29.10	29.10	29.10	29.10	29.10

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1.500	29.10	29.10	29.10	29.10	29.10
1.750	29.10	29.10	29.10	29.10	29.10
2.000	29.10	29.10	29.10	29.10	29.10
2.250	29.10	29.10	29.10	29.10	29.10
2.500	29.10	29.10	29.10	29.10	29.10
2.750	29.10	29.10	29.10	29.10	29.10
3.000	29.10	29.10	29.10	29.10	29.10
3.250	29.10	29.10	29.10	29.10	29.10
3.500	29.10	29.10	29.10	29.10	29.10
3.750	29.10	29.10	29.10	29.10	29.10
4.000	29.10	29.10	29.10	29.10	29.10
4.250	29.10	29.10	29.10	29.10	29.10
4.500	29.10	29.10	29.10	29.10	29.10
4.750	29.10	29.10	29.10	29.10	29.10
5.000	29.10	29.10	29.10	29.10	29.10
5.250	29.10	29.10	29.10	29.10	29.10
5.500	29.10	29.10	29.10	29.10	29.10
5.750	29.10	29.10	29.10	29.10	29.10
6.000	29.10	29.10	29.10	29.10	29.10
6.250	29.10	29.10	29.10	29.10	29.10
6.500	29.10	29.10	29.10	29.10	29.10
6.750	29.10	29.10	29.10	29.10	29.10
7.000	29.10	29.10	29.10	29.10	29.10
7.250	29.10	29.10	29.10	29.10	29.10
7.500	29.10	29.10	29.10	29.10	29.10
7.750	29.10	29.10	29.11	29.13	29.15
8.000	29.19	29.23	29.28	29.35	29.42
8.250	29.51	29.60	29.63	29.66	29.68
8.500	29.71	29.74	29.77	29.81	29.85
8.750	29.89	29.92	29.93	29.94	29.94
9.000	29.94	29.95	29.95	29.95	29.95
9.250	29.95	29.96	29.96	29.96	29.96
9.500	29.97	29.97	29.97	29.98	29.98
9.750	29.98	29.98	29.99	29.99	29.99
10.000	30.00	30.00	30.00	30.01	30.01
10.250	30.02	30.02	30.03	30.03	30.04
10.500	30.04	30.05	30.06	30.06	30.07
10.750	30.07	30.08	30.09	30.09	30.10
11.000	30.10	30.11	30.11	30.12	30.12
11.250	30.13	30.14	30.15	30.15	30.16
11.500	30.17	30.19	30.22	30.26	30.32

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
11.750	30.40	30.48	30.56	30.65	30.80
12.000	30.84	30.85	30.86	30.86	30.84
12.250	30.82	30.81	30.80	30.76	30.67
12.500	30.55	30.45	30.38	30.32	30.30
12.750	30.28	30.27	30.26	30.25	30.24
13.000	30.23	30.22	30.21	30.20	30.20
13.250	30.20	30.19	30.19	30.19	30.19
13.500	30.18	30.18	30.18	30.17	30.17
13.750	30.17	30.17	30.16	30.16	30.16
14.000	30.15	30.15	30.15	30.15	30.15
14.250	30.14	30.14	30.14	30.14	30.14
14.500	30.14	30.14	30.13	30.13	30.13
14.750	30.13	30.13	30.13	30.13	30.13
15.000	30.12	30.12	30.12	30.12	30.12
15.250	30.12	30.12	30.11	30.11	30.11
15.500	30.11	30.11	30.11	30.11	30.10
15.750	30.10	30.10	30.10	30.10	30.09
16.000	30.09	30.09	30.08	30.08	30.08
16.250	30.08	30.07	30.07	30.07	30.07
16.500	30.07	30.07	30.07	30.06	30.06
16.750	30.06	30.06	30.06	30.06	30.05
17.000	30.05	30.05	30.05	30.05	30.05
17.250	30.04	30.04	30.04	30.04	30.04
17.500	30.04	30.04	30.03	30.03	30.03
17.750	30.03	30.03	30.03	30.02	30.02
18.000	30.02	30.02	30.02	30.02	30.02
18.250	30.01	30.01	30.01	30.01	30.01
18.500	30.01	30.01	30.01	30.01	30.01
18.750	30.01	30.01	30.01	30.01	30.01
19.000	30.01	30.01	30.01	30.01	30.01
19.250	30.01	30.00	30.00	30.00	30.00
19.500	30.00	30.00	30.00	30.00	30.00
19.750	30.00	30.00	30.00	30.00	30.00
20.000	30.00	30.00	30.00	30.00	30.00
20.250	30.00	30.00	30.00	29.99	29.99
20.500	29.99	29.99	29.99	29.99	29.99
20.750	29.99	29.99	29.99	29.99	29.99
21.000	29.99	29.99	29.99	29.99	29.99
21.250	29.99	29.99	29.99	29.99	29.99
21.500	29.99	29.99	29.99	29.99	29.99
21.750	29.98	29.98	29.98	29.98	29.98

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
22.000	29.98	29.98	29.98	29.98	29.98
22.250	29.98	29.98	29.98	29.98	29.98
22.500	29.98	29.98	29.98	29.98	29.98
22.750	29.98	29.98	29.98	29.98	29.98
23.000	29.98	29.98	29.97	29.97	29.97
23.250	29.97	29.97	29.97	29.97	29.97
23.500	29.97	29.97	29.97	29.97	29.97
23.750	29.97	29.97	29.97	29.97	29.97
24.000	29.97	29.96	29.95	29.93	29.92
24.250	29.91	29.91	29.91	29.91	29.91
24.500	29.91	29.91	29.91	29.91	29.91
24.750	29.91	29.91	29.91	29.91	29.91
25.000	29.91	29.91	29.91	29.91	29.91
25.250	29.91	29.91	29.91	29.91	29.91
25.500	29.91	29.91	29.91	29.91	29.91
25.750	29.91	29.91	29.91	29.91	29.91
26.000	29.91	29.91	29.91	29.91	29.91
26.250	29.91	29.91	29.91	29.91	29.91
26.500	29.91	29.91	29.91	29.91	29.91
26.750	29.91	29.91	29.91	29.91	29.91
27.000	29.91	29.91	29.91	29.91	29.91
27.250	29.91	29.91	29.91	29.91	29.91
27.500	29.91	29.91	29.91	29.91	29.91
27.750	29.91	29.91	29.91	29.91	29.91
28.000	29.91	29.91	29.91	29.91	29.91
28.250	29.91	29.91	29.91	29.91	29.91
28.500	29.91	29.91	29.91	29.91	29.91
28.750	29.91	29.91	29.91	29.91	29.91
29.000	29.91	29.91	29.91	29.91	29.91
29.250	29.91	29.91	29.91	29.91	29.91
29.500	29.91	29.91	29.91	29.91	29.91
29.750	29.91	29.91	29.91	29.91	29.91
30.000	29.91	29.91	29.91	29.91	29.91
30.250	29.91	29.91	29.91	29.91	29.91
30.500	29.91	29.91	29.91	29.91	29.91
30.750	29.91	29.91	29.91	29.91	29.91
31.000	29.91	29.91	29.91	29.91	29.91
31.250	29.91	29.91	29.91	29.91	29.91
31.500	29.91	29.91	29.91	29.91	29.91
31.750	29.91	29.91	29.91	29.91	29.91
32.000	29.91	29.91	29.91	29.91	29.91

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
32.250	29.91	29.91	29.91	29.91	29.91
32.500	29.91	29.91	29.91	29.91	29.91
32.750	29.91	29.91	29.91	29.91	29.91
33.000	29.91	29.91	29.91	29.91	29.91
33.250	29.91	29.91	29.91	29.91	29.91
33.500	29.91	29.91	29.91	29.91	29.91
33.750	29.91	29.91	29.91	29.91	29.91
34.000	29.91	29.91	29.91	29.91	29.91
34.250	29.91	29.91	29.91	29.91	29.91
34.500	29.91	29.91	29.91	29.91	29.91
34.750	29.91	29.91	29.91	29.91	29.91
35.000	29.91	29.91	29.91	29.91	29.91
35.250	29.91	29.91	29.91	29.91	29.91
35.500	29.91	29.91	29.91	29.91	29.91
35.750	29.91	29.91	29.91	29.91	29.91
36.000	29.91	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	29.10	29.10	29.10	29.10	29.10
0.250	29.10	29.10	29.10	29.10	29.10
0.500	29.10	29.10	29.10	29.10	29.10
0.750	29.10	29.10	29.10	29.10	29.10
1.000	29.10	29.10	29.10	29.10	29.10
1.250	29.10	29.10	29.10	29.10	29.10
1.500	29.10	29.10	29.10	29.10	29.10
1.750	29.10	29.10	29.10	29.10	29.10
2.000	29.10	29.10	29.10	29.10	29.10
2.250	29.10	29.10	29.10	29.10	29.10
2.500	29.10	29.10	29.10	29.10	29.10
2.750	29.10	29.10	29.10	29.10	29.10
3.000	29.10	29.10	29.10	29.10	29.10

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
3.250	29.10	29.10	29.10	29.10	29.10
3.500	29.10	29.10	29.10	29.10	29.10
3.750	29.10	29.10	29.10	29.10	29.10
4.000	29.10	29.10	29.10	29.10	29.10
4.250	29.10	29.10	29.10	29.10	29.10
4.500	29.10	29.10	29.10	29.10	29.10
4.750	29.10	29.10	29.10	29.10	29.10
5.000	29.10	29.10	29.10	29.10	29.10
5.250	29.10	29.10	29.10	29.10	29.10
5.500	29.10	29.10	29.10	29.10	29.10
5.750	29.10	29.10	29.10	29.10	29.10
6.000	29.10	29.10	29.10	29.10	29.10
6.250	29.10	29.10	29.10	29.10	29.10
6.500	29.10	29.10	29.10	29.10	29.10
6.750	29.10	29.10	29.11	29.12	29.14
7.000	29.18	29.22	29.27	29.33	29.40
7.250	29.48	29.57	29.62	29.65	29.67
7.500	29.70	29.73	29.75	29.79	29.82
7.750	29.86	29.90	29.92	29.93	29.93
8.000	29.94	29.94	29.94	29.94	29.94
8.250	29.95	29.95	29.95	29.95	29.96
8.500	29.96	29.96	29.96	29.97	29.97
8.750	29.97	29.98	29.98	29.98	29.98
9.000	29.99	29.99	29.99	30.00	30.00
9.250	30.01	30.01	30.01	30.02	30.02
9.500	30.02	30.03	30.03	30.04	30.04
9.750	30.05	30.05	30.05	30.06	30.06
10.000	30.07	30.07	30.08	30.08	30.09
10.250	30.10	30.10	30.11	30.11	30.11
10.500	30.12	30.12	30.12	30.13	30.13
10.750	30.13	30.14	30.14	30.14	30.15
11.000	30.15	30.16	30.16	30.17	30.18
11.250	30.19	30.20	30.21	30.23	30.24
11.500	30.25	30.27	30.32	30.38	30.47
11.750	30.58	30.69	30.80	30.82	30.83
12.000	30.86	30.89	30.90	30.90	30.87
12.250	30.85	30.83	30.82	30.81	30.80
12.500	30.75	30.62	30.50	30.43	30.39
12.750	30.37	30.35	30.34	30.33	30.31
13.000	30.30	30.28	30.27	30.26	30.26
13.250	30.25	30.25	30.25	30.24	30.24

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
13.500	30.23	30.23	30.23	30.22	30.22
13.750	30.22	30.21	30.21	30.20	30.20
14.000	30.20	30.19	30.19	30.19	30.19
14.250	30.18	30.18	30.18	30.18	30.18
14.500	30.17	30.17	30.17	30.17	30.17
14.750	30.16	30.16	30.16	30.16	30.16
15.000	30.16	30.15	30.15	30.15	30.15
15.250	30.15	30.14	30.14	30.14	30.14
15.500	30.14	30.14	30.13	30.13	30.13
15.750	30.13	30.13	30.12	30.12	30.12
16.000	30.12	30.12	30.11	30.11	30.11
16.250	30.11	30.11	30.11	30.11	30.11
16.500	30.11	30.11	30.11	30.10	30.10
16.750	30.10	30.10	30.10	30.10	30.10
17.000	30.10	30.10	30.09	30.09	30.09
17.250	30.09	30.09	30.08	30.08	30.08
17.500	30.08	30.07	30.07	30.07	30.07
17.750	30.07	30.06	30.06	30.06	30.06
18.000	30.06	30.05	30.05	30.05	30.05
18.250	30.05	30.05	30.05	30.05	30.05
18.500	30.05	30.04	30.04	30.04	30.04
18.750	30.04	30.04	30.04	30.04	30.04
19.000	30.04	30.04	30.04	30.04	30.04
19.250	30.04	30.03	30.03	30.03	30.03
19.500	30.03	30.03	30.03	30.03	30.03
19.750	30.03	30.03	30.03	30.03	30.03
20.000	30.03	30.03	30.02	30.02	30.02
20.250	30.02	30.02	30.02	30.02	30.02
20.500	30.02	30.02	30.02	30.02	30.02
20.750	30.02	30.02	30.02	30.02	30.02
21.000	30.02	30.02	30.02	30.01	30.01
21.250	30.01	30.01	30.01	30.01	30.01
21.500	30.01	30.01	30.01	30.01	30.01
21.750	30.01	30.01	30.01	30.01	30.01
22.000	30.01	30.01	30.01	30.00	30.00
22.250	30.00	30.00	30.00	30.00	30.00
22.500	30.00	30.00	30.00	30.00	30.00
22.750	30.00	30.00	30.00	30.00	30.00
23.000	30.00	30.00	30.00	29.99	29.99
23.250	29.99	29.99	29.99	29.99	29.99
23.500	29.99	29.99	29.99	29.99	29.99

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
23.750	29.99	29.99	29.99	29.99	29.99
24.000	29.99	29.98	29.96	29.94	29.92
24.250	29.91	29.91	29.91	29.91	29.91
24.500	29.91	29.91	29.91	29.91	29.91
24.750	29.91	29.91	29.91	29.91	29.91
25.000	29.91	29.91	29.91	29.91	29.91
25.250	29.91	29.91	29.91	29.91	29.91
25.500	29.91	29.91	29.91	29.91	29.91
25.750	29.91	29.91	29.91	29.91	29.91
26.000	29.91	29.91	29.91	29.91	29.91
26.250	29.91	29.91	29.91	29.91	29.91
26.500	29.91	29.91	29.91	29.91	29.91
26.750	29.91	29.91	29.91	29.91	29.91
27.000	29.91	29.91	29.91	29.91	29.91
27.250	29.91	29.91	29.91	29.91	29.91
27.500	29.91	29.91	29.91	29.91	29.91
27.750	29.91	29.91	29.91	29.91	29.91
28.000	29.91	29.91	29.91	29.91	29.91
28.250	29.91	29.91	29.91	29.91	29.91
28.500	29.91	29.91	29.91	29.91	29.91
28.750	29.91	29.91	29.91	29.91	29.91
29.000	29.91	29.91	29.91	29.91	29.91
29.250	29.91	29.91	29.91	29.91	29.91
29.500	29.91	29.91	29.91	29.91	29.91
29.750	29.91	29.91	29.91	29.91	29.91
30.000	29.91	29.91	29.91	29.91	29.91
30.250	29.91	29.91	29.91	29.91	29.91
30.500	29.91	29.91	29.91	29.91	29.91
30.750	29.91	29.91	29.91	29.91	29.91
31.000	29.91	29.91	29.91	29.91	29.91
31.250	29.91	29.91	29.91	29.91	29.91
31.500	29.91	29.91	29.91	29.91	29.91
31.750	29.91	29.91	29.91	29.91	29.91
32.000	29.91	29.91	29.91	29.91	29.91
32.250	29.91	29.91	29.91	29.91	29.91
32.500	29.91	29.91	29.91	29.91	29.91
32.750	29.91	29.91	29.91	29.91	29.91
33.000	29.91	29.91	29.91	29.91	29.91
33.250	29.91	29.91	29.91	29.91	29.91
33.500	29.91	29.91	29.91	29.91	29.91
33.750	29.91	29.91	29.91	29.91	29.91

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
34.000	29.91	29.91	29.91	29.91	29.91
34.250	29.91	29.91	29.91	29.91	29.91
34.500	29.91	29.91	29.91	29.91	29.91
34.750	29.91	29.91	29.91	29.91	29.91
35.000	29.91	29.91	29.91	29.91	29.91
35.250	29.91	29.91	29.91	29.91	29.91
35.500	29.91	29.91	29.91	29.91	29.91
35.750	29.91	29.91	29.91	29.91	29.91
36.000	29.91	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	29.10	29.10	29.10	29.10	29.10
0.250	29.10	29.10	29.10	29.10	29.10
0.500	29.10	29.10	29.10	29.10	29.10
0.750	29.10	29.10	29.10	29.10	29.10
1.000	29.10	29.10	29.10	29.10	29.10
1.250	29.10	29.10	29.10	29.10	29.10
1.500	29.10	29.10	29.10	29.10	29.10
1.750	29.10	29.10	29.10	29.10	29.10
2.000	29.10	29.10	29.10	29.10	29.10
2.250	29.10	29.10	29.10	29.10	29.10
2.500	29.10	29.10	29.10	29.10	29.10
2.750	29.10	29.10	29.10	29.10	29.10
3.000	29.10	29.10	29.10	29.10	29.10
3.250	29.10	29.10	29.10	29.10	29.10
3.500	29.10	29.10	29.10	29.10	29.10
3.750	29.10	29.10	29.10	29.10	29.10
4.000	29.10	29.10	29.10	29.10	29.10
4.250	29.10	29.10	29.10	29.10	29.10
4.500	29.10	29.10	29.10	29.10	29.10
4.750	29.10	29.10	29.10	29.10	29.10

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
5.000	29.10	29.10	29.10	29.10	29.10
5.250	29.10	29.10	29.11	29.12	29.15
5.500	29.18	29.23	29.28	29.34	29.42
5.750	29.50	29.60	29.63	29.66	29.68
6.000	29.70	29.73	29.76	29.79	29.82
6.250	29.86	29.90	29.92	29.93	29.93
6.500	29.94	29.94	29.94	29.94	29.94
6.750	29.95	29.95	29.95	29.95	29.95
7.000	29.96	29.96	29.96	29.96	29.96
7.250	29.97	29.97	29.97	29.97	29.98
7.500	29.98	29.98	29.98	29.99	29.99
7.750	29.99	29.99	30.00	30.00	30.00
8.000	30.00	30.01	30.01	30.01	30.02
8.250	30.02	30.03	30.03	30.04	30.04
8.500	30.05	30.05	30.06	30.06	30.07
8.750	30.07	30.08	30.08	30.09	30.09
9.000	30.10	30.10	30.11	30.11	30.11
9.250	30.11	30.12	30.12	30.12	30.12
9.500	30.13	30.13	30.13	30.13	30.14
9.750	30.14	30.14	30.15	30.15	30.15
10.000	30.15	30.16	30.16	30.17	30.17
10.250	30.18	30.18	30.19	30.19	30.20
10.500	30.20	30.21	30.21	30.22	30.22
10.750	30.23	30.24	30.24	30.25	30.25
11.000	30.26	30.27	30.28	30.29	30.31
11.250	30.32	30.34	30.36	30.38	30.40
11.500	30.42	30.46	30.53	30.64	30.79
11.750	30.82	30.83	30.84	30.85	30.88
12.000	30.92	30.97	30.99	30.98	30.94
12.250	30.90	30.88	30.86	30.85	30.83
12.500	30.81	30.80	30.74	30.66	30.60
12.750	30.55	30.52	30.50	30.48	30.46
13.000	30.44	30.41	30.40	30.39	30.38
13.250	30.37	30.36	30.36	30.35	30.35
13.500	30.34	30.34	30.33	30.32	30.32
13.750	30.31	30.31	30.30	30.29	30.29
14.000	30.28	30.28	30.27	30.27	30.27
14.250	30.26	30.26	30.26	30.25	30.25
14.500	30.25	30.25	30.24	30.24	30.24
14.750	30.23	30.23	30.23	30.23	30.22
15.000	30.22	30.22	30.21	30.21	30.21

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
15.250	30.21	30.20	30.20	30.20	30.19
15.500	30.19	30.19	30.19	30.18	30.18
15.750	30.18	30.17	30.17	30.17	30.17
16.000	30.16	30.16	30.16	30.16	30.15
16.250	30.15	30.15	30.15	30.15	30.15
16.500	30.15	30.15	30.14	30.14	30.14
16.750	30.14	30.14	30.14	30.14	30.14
17.000	30.13	30.13	30.13	30.13	30.13
17.250	30.13	30.13	30.13	30.12	30.12
17.500	30.12	30.12	30.12	30.12	30.12
17.750	30.12	30.11	30.11	30.11	30.11
18.000	30.11	30.11	30.11	30.11	30.11
18.250	30.11	30.11	30.11	30.10	30.10
18.500	30.10	30.10	30.10	30.10	30.10
18.750	30.10	30.10	30.10	30.10	30.10
19.000	30.10	30.10	30.10	30.10	30.10
19.250	30.10	30.10	30.09	30.09	30.09
19.500	30.09	30.09	30.09	30.09	30.09
19.750	30.09	30.09	30.08	30.08	30.08
20.000	30.08	30.08	30.08	30.08	30.08
20.250	30.08	30.08	30.08	30.08	30.07
20.500	30.07	30.07	30.07	30.07	30.07
20.750	30.07	30.07	30.07	30.07	30.07
21.000	30.07	30.07	30.07	30.06	30.06
21.250	30.06	30.06	30.06	30.06	30.06
21.500	30.06	30.06	30.06	30.06	30.06
21.750	30.06	30.06	30.05	30.05	30.05
22.000	30.05	30.05	30.05	30.05	30.05
22.250	30.05	30.05	30.05	30.05	30.05
22.500	30.05	30.04	30.04	30.04	30.04
22.750	30.04	30.04	30.04	30.04	30.04
23.000	30.04	30.04	30.04	30.04	30.03
23.250	30.03	30.03	30.03	30.03	30.03
23.500	30.03	30.03	30.03	30.03	30.03
23.750	30.03	30.03	30.03	30.02	30.02
24.000	30.02	30.01	29.98	29.95	29.93
24.250	29.92	29.91	29.91	29.91	29.91
24.500	29.91	29.91	29.91	29.91	29.91
24.750	29.91	29.91	29.91	29.91	29.91
25.000	29.91	29.91	29.91	29.91	29.91
25.250	29.91	29.91	29.91	29.91	29.91

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
25.500	29.91	29.91	29.91	29.91	29.91
25.750	29.91	29.91	29.91	29.91	29.91
26.000	29.91	29.91	29.91	29.91	29.91
26.250	29.91	29.91	29.91	29.91	29.91
26.500	29.91	29.91	29.91	29.91	29.91
26.750	29.91	29.91	29.91	29.91	29.91
27.000	29.91	29.91	29.91	29.91	29.91
27.250	29.91	29.91	29.91	29.91	29.91
27.500	29.91	29.91	29.91	29.91	29.91
27.750	29.91	29.91	29.91	29.91	29.91
28.000	29.91	29.91	29.91	29.91	29.91
28.250	29.91	29.91	29.91	29.91	29.91
28.500	29.91	29.91	29.91	29.91	29.91
28.750	29.91	29.91	29.91	29.91	29.91
29.000	29.91	29.91	29.91	29.91	29.91
29.250	29.91	29.91	29.91	29.91	29.91
29.500	29.91	29.91	29.91	29.91	29.91
29.750	29.91	29.91	29.91	29.91	29.91
30.000	29.91	29.91	29.91	29.91	29.91
30.250	29.91	29.91	29.91	29.91	29.91
30.500	29.91	29.91	29.91	29.91	29.91
30.750	29.91	29.91	29.91	29.91	29.91
31.000	29.91	29.91	29.91	29.91	29.91
31.250	29.91	29.91	29.91	29.91	29.91
31.500	29.91	29.91	29.91	29.91	29.91
31.750	29.91	29.91	29.91	29.91	29.91
32.000	29.91	29.91	29.91	29.91	29.91
32.250	29.91	29.91	29.91	29.91	29.91
32.500	29.91	29.91	29.91	29.91	29.91
32.750	29.91	29.91	29.91	29.91	29.91
33.000	29.91	29.91	29.91	29.91	29.91
33.250	29.91	29.91	29.91	29.91	29.91
33.500	29.91	29.91	29.91	29.91	29.91
33.750	29.91	29.91	29.91	29.91	29.91
34.000	29.91	29.91	29.91	29.91	29.91
34.250	29.91	29.91	29.91	29.91	29.91
34.500	29.91	29.91	29.91	29.91	29.91
34.750	29.91	29.91	29.91	29.91	29.91
35.000	29.91	29.91	29.91	29.91	29.91
35.250	29.91	29.91	29.91	29.91	29.91
35.500	29.91	29.91	29.91	29.91	29.91

Subsection: Time vs. Elevation
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
35.750	29.91	29.91	29.91	29.91	29.91
36.000	29.91	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	31.00	31.00	31.00	31.00	31.00
0.250	31.00	31.00	31.00	31.00	31.00
0.500	31.00	31.00	31.00	31.00	31.00
0.750	31.00	31.00	31.00	31.00	31.00
1.000	31.00	31.00	31.00	31.00	31.00
1.250	31.00	31.00	31.00	31.00	31.00
1.500	31.00	31.00	31.00	31.00	31.00
1.750	31.00	31.00	31.00	31.00	31.00
2.000	31.00	31.00	31.00	31.00	31.00
2.250	31.00	31.00	31.00	31.00	31.00
2.500	31.00	31.00	31.00	31.00	31.00
2.750	31.00	31.00	31.00	31.00	31.00
3.000	31.00	31.00	31.00	31.00	31.00
3.250	31.00	31.00	31.00	31.00	31.00
3.500	31.00	31.00	31.00	31.00	31.00
3.750	31.00	31.00	31.00	31.00	31.00
4.000	31.00	31.00	31.00	31.00	31.00
4.250	31.00	31.00	31.00	31.00	31.00
4.500	31.00	31.00	31.00	31.00	31.00
4.750	31.00	31.00	31.00	31.00	31.00
5.000	31.00	31.00	31.00	31.00	31.00
5.250	31.00	31.00	31.00	31.00	31.00
5.500	31.00	31.00	31.00	31.00	31.00
5.750	31.00	31.00	31.00	31.00	31.00
6.000	31.00	31.00	31.00	31.00	31.00
6.250	31.00	31.00	31.00	31.00	31.00
6.500	31.00	31.00	31.00	31.00	31.00

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
6.750	31.00	31.00	31.00	31.00	31.00
7.000	31.00	31.00	31.00	31.00	31.00
7.250	31.00	31.00	31.00	31.00	31.00
7.500	31.00	31.00	31.00	31.00	31.00
7.750	31.00	31.00	31.00	31.00	31.00
8.000	31.00	31.00	31.00	31.00	31.00
8.250	31.00	31.00	31.00	31.00	31.00
8.500	31.00	31.00	31.00	31.00	31.00
8.750	31.00	31.00	31.00	31.00	31.00
9.000	31.00	31.00	31.00	31.00	31.00
9.250	31.00	31.00	31.00	31.00	31.00
9.500	31.00	31.00	31.00	31.00	31.00
9.750	31.00	31.00	31.00	31.00	31.00
10.000	31.00	31.00	31.00	31.00	31.00
10.250	31.00	31.00	31.00	31.00	31.00
10.500	31.00	31.00	31.00	31.00	31.00
10.750	31.00	31.00	31.00	31.00	31.00
11.000	31.00	31.00	31.00	31.00	31.00
11.250	31.00	31.00	31.00	31.00	31.00
11.500	31.01	31.01	31.01	31.02	31.03
11.750	31.04	31.06	31.08	31.10	31.13
12.000	31.18	31.24	31.31	31.36	31.41
12.250	31.44	31.47	31.49	31.51	31.52
12.500	31.53	31.54	31.55	31.55	31.55
12.750	31.56	31.56	31.56	31.56	31.56
13.000	31.56	31.56	31.56	31.56	31.56
13.250	31.56	31.56	31.56	31.56	31.56
13.500	31.56	31.56	31.56	31.55	31.55
13.750	31.55	31.55	31.55	31.55	31.54
14.000	31.54	31.54	31.54	31.53	31.53
14.250	31.53	31.53	31.52	31.52	31.52
14.500	31.52	31.51	31.51	31.51	31.50
14.750	31.50	31.50	31.49	31.49	31.49
15.000	31.49	31.48	31.48	31.47	31.47
15.250	31.47	31.46	31.46	31.46	31.45
15.500	31.45	31.45	31.44	31.44	31.43
15.750	31.43	31.43	31.42	31.42	31.41
16.000	31.41	31.40	31.40	31.40	31.39
16.250	31.39	31.38	31.38	31.37	31.37
16.500	31.36	31.36	31.35	31.35	31.34
16.750	31.34	31.34	31.33	31.33	31.32

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
17.000	31.32	31.31	31.31	31.30	31.30
17.250	31.29	31.29	31.28	31.28	31.27
17.500	31.27	31.26	31.26	31.25	31.25
17.750	31.24	31.24	31.23	31.22	31.22
18.000	31.21	31.21	31.20	31.20	31.19
18.250	31.19	31.18	31.18	31.17	31.17
18.500	31.16	31.16	31.15	31.14	31.14
18.750	31.13	31.13	31.12	31.12	31.11
19.000	31.11	31.10	31.10	31.09	31.08
19.250	31.08	31.07	31.07	31.06	31.06
19.500	31.05	31.05	31.04	31.03	31.03
19.750	31.02	31.02	31.01	31.01	31.00
20.000	31.00	31.00	31.00	31.00	31.00
20.250	31.00	31.00	31.00	31.00	31.00
20.500	31.00	31.00	31.00	31.00	31.00
20.750	31.00	31.00	31.00	31.00	31.00
21.000	31.00	31.00	31.00	31.00	31.00
21.250	31.00	31.00	31.00	31.00	31.00
21.500	31.00	31.00	31.00	31.00	31.00
21.750	31.00	31.00	31.00	31.00	31.00
22.000	31.00	31.00	31.00	31.00	31.00
22.250	31.00	31.00	31.00	31.00	31.00
22.500	31.00	31.00	31.00	31.00	31.00
22.750	31.00	31.00	31.00	31.00	31.00
23.000	31.00	31.00	31.00	31.00	31.00
23.250	31.00	31.00	31.00	31.00	31.00
23.500	31.00	31.00	31.00	31.00	31.00
23.750	31.00	31.00	31.00	31.00	31.00
24.000	31.00	31.00	31.00	31.00	31.00
24.250	31.00	31.00	31.00	31.00	31.00
24.500	31.00	31.00	31.00	31.00	31.00
24.750	31.00	31.00	31.00	31.00	31.00
25.000	31.00	31.00	31.00	31.00	31.00
25.250	31.00	31.00	31.00	31.00	31.00
25.500	31.00	31.00	31.00	31.00	31.00
25.750	31.00	31.00	31.00	31.00	31.00
26.000	31.00	31.00	31.00	31.00	31.00
26.250	31.00	31.00	31.00	31.00	31.00
26.500	31.00	31.00	31.00	31.00	31.00
26.750	31.00	31.00	31.00	31.00	31.00
27.000	31.00	31.00	31.00	31.00	31.00

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
27.250	31.00	31.00	31.00	31.00	31.00
27.500	31.00	31.00	31.00	31.00	31.00
27.750	31.00	31.00	31.00	31.00	31.00
28.000	31.00	31.00	31.00	31.00	31.00
28.250	31.00	31.00	31.00	31.00	31.00
28.500	31.00	31.00	31.00	31.00	31.00
28.750	31.00	31.00	31.00	31.00	31.00
29.000	31.00	31.00	31.00	31.00	31.00
29.250	31.00	31.00	31.00	31.00	31.00
29.500	31.00	31.00	31.00	31.00	31.00
29.750	31.00	31.00	31.00	31.00	31.00
30.000	31.00	31.00	31.00	31.00	31.00
30.250	31.00	31.00	31.00	31.00	31.00
30.500	31.00	31.00	31.00	31.00	31.00
30.750	31.00	31.00	31.00	31.00	31.00
31.000	31.00	31.00	31.00	31.00	31.00
31.250	31.00	31.00	31.00	31.00	31.00
31.500	31.00	31.00	31.00	31.00	31.00
31.750	31.00	31.00	31.00	31.00	31.00
32.000	31.00	31.00	31.00	31.00	31.00
32.250	31.00	31.00	31.00	31.00	31.00
32.500	31.00	31.00	31.00	31.00	31.00
32.750	31.00	31.00	31.00	31.00	31.00
33.000	31.00	31.00	31.00	31.00	31.00
33.250	31.00	31.00	31.00	31.00	31.00
33.500	31.00	31.00	31.00	31.00	31.00
33.750	31.00	31.00	31.00	31.00	31.00
34.000	31.00	31.00	31.00	31.00	31.00
34.250	31.00	31.00	31.00	31.00	31.00
34.500	31.00	31.00	31.00	31.00	31.00
34.750	31.00	31.00	31.00	31.00	31.00
35.000	31.00	31.00	31.00	31.00	31.00
35.250	31.00	31.00	31.00	31.00	31.00
35.500	31.00	31.00	31.00	31.00	31.00
35.750	31.00	31.00	31.00	31.00	31.00
36.000	31.00	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	31.00	31.00	31.00	31.00	31.00
0.250	31.00	31.00	31.00	31.00	31.00
0.500	31.00	31.00	31.00	31.00	31.00
0.750	31.00	31.00	31.00	31.00	31.00
1.000	31.00	31.00	31.00	31.00	31.00
1.250	31.00	31.00	31.00	31.00	31.00
1.500	31.00	31.00	31.00	31.00	31.00
1.750	31.00	31.00	31.00	31.00	31.00
2.000	31.00	31.00	31.00	31.00	31.00
2.250	31.00	31.00	31.00	31.00	31.00
2.500	31.00	31.00	31.00	31.00	31.00
2.750	31.00	31.00	31.00	31.00	31.00
3.000	31.00	31.00	31.00	31.00	31.00
3.250	31.00	31.00	31.00	31.00	31.00
3.500	31.00	31.00	31.00	31.00	31.00
3.750	31.00	31.00	31.00	31.00	31.00
4.000	31.00	31.00	31.00	31.00	31.00
4.250	31.00	31.00	31.00	31.00	31.00
4.500	31.00	31.00	31.00	31.00	31.00
4.750	31.00	31.00	31.00	31.00	31.00
5.000	31.00	31.00	31.00	31.00	31.00
5.250	31.00	31.00	31.00	31.00	31.00
5.500	31.00	31.00	31.00	31.00	31.00
5.750	31.00	31.00	31.00	31.00	31.00
6.000	31.00	31.00	31.00	31.00	31.00
6.250	31.00	31.00	31.00	31.00	31.00
6.500	31.00	31.00	31.00	31.00	31.00
6.750	31.00	31.00	31.00	31.00	31.00
7.000	31.00	31.00	31.00	31.00	31.00
7.250	31.00	31.00	31.00	31.00	31.00
7.500	31.00	31.00	31.00	31.00	31.00
7.750	31.00	31.00	31.00	31.00	31.00
8.000	31.00	31.00	31.00	31.00	31.00
8.250	31.00	31.00	31.00	31.00	31.00
8.500	31.00	31.00	31.00	31.00	31.00
8.750	31.00	31.00	31.00	31.00	31.00
9.000	31.00	31.00	31.00	31.00	31.00
9.250	31.00	31.00	31.00	31.00	31.00
9.500	31.00	31.00	31.00	31.00	31.00
9.750	31.00	31.00	31.00	31.00	31.00

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	31.00	31.00	31.00	31.00	31.00
10.250	31.00	31.01	31.01	31.01	31.01
10.500	31.01	31.01	31.01	31.02	31.02
10.750	31.02	31.02	31.03	31.03	31.03
11.000	31.04	31.04	31.05	31.05	31.06
11.250	31.06	31.07	31.08	31.09	31.10
11.500	31.11	31.12	31.13	31.15	31.18
11.750	31.21	31.26	31.30	31.36	31.43
12.000	31.54	31.66	31.79	31.91	32.00
12.250	32.01	32.00	32.01	32.00	32.00
12.500	32.00	32.00	32.00	32.00	32.00
12.750	32.00	32.00	32.00	32.00	32.00
13.000	32.00	32.00	32.00	32.00	32.00
13.250	32.00	32.00	32.00	32.00	32.00
13.500	32.00	32.00	32.00	32.00	32.00
13.750	32.00	32.00	32.00	32.00	32.00
14.000	32.00	32.00	32.00	32.00	32.00
14.250	32.00	32.00	32.00	32.00	32.00
14.500	32.00	32.00	32.00	32.00	32.00
14.750	32.00	32.00	32.00	32.00	32.00
15.000	32.00	32.00	32.00	32.00	32.00
15.250	32.00	32.00	32.00	31.99	31.99
15.500	31.99	31.99	31.99	31.99	31.99
15.750	31.98	31.98	31.98	31.98	31.98
16.000	31.97	31.97	31.97	31.97	31.96
16.250	31.96	31.96	31.96	31.95	31.95
16.500	31.95	31.95	31.94	31.94	31.94
16.750	31.93	31.93	31.93	31.93	31.92
17.000	31.92	31.92	31.91	31.91	31.91
17.250	31.90	31.90	31.90	31.89	31.89
17.500	31.89	31.88	31.88	31.87	31.87
17.750	31.87	31.86	31.86	31.86	31.85
18.000	31.85	31.84	31.84	31.84	31.83
18.250	31.83	31.82	31.82	31.81	31.81
18.500	31.81	31.80	31.80	31.79	31.79
18.750	31.79	31.78	31.78	31.77	31.77
19.000	31.76	31.76	31.76	31.75	31.75
19.250	31.74	31.74	31.73	31.73	31.72
19.500	31.72	31.72	31.71	31.71	31.70
19.750	31.70	31.69	31.69	31.68	31.68
20.000	31.67	31.67	31.67	31.66	31.66

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	31.65	31.65	31.64	31.64	31.63
20.500	31.63	31.62	31.62	31.61	31.61
20.750	31.61	31.60	31.60	31.59	31.59
21.000	31.58	31.58	31.57	31.57	31.56
21.250	31.56	31.55	31.55	31.54	31.54
21.500	31.53	31.53	31.52	31.52	31.51
21.750	31.51	31.50	31.50	31.49	31.49
22.000	31.48	31.48	31.47	31.47	31.46
22.250	31.46	31.45	31.45	31.44	31.44
22.500	31.43	31.43	31.42	31.42	31.41
22.750	31.41	31.40	31.40	31.39	31.39
23.000	31.38	31.38	31.37	31.37	31.36
23.250	31.36	31.35	31.35	31.34	31.34
23.500	31.33	31.33	31.32	31.32	31.31
23.750	31.30	31.30	31.29	31.29	31.28
24.000	31.28	31.27	31.27	31.26	31.25
24.250	31.25	31.24	31.23	31.23	31.22
24.500	31.21	31.21	31.20	31.19	31.18
24.750	31.18	31.17	31.16	31.16	31.15
25.000	31.14	31.14	31.13	31.12	31.12
25.250	31.11	31.10	31.10	31.09	31.08
25.500	31.08	31.07	31.06	31.06	31.05
25.750	31.04	31.03	31.03	31.02	31.01
26.000	31.01	31.00	31.00	31.00	31.00
26.250	31.00	31.00	31.00	31.00	31.00
26.500	31.00	31.00	31.00	31.00	31.00
26.750	31.00	31.00	31.00	31.00	31.00
27.000	31.00	31.00	31.00	31.00	31.00
27.250	31.00	31.00	31.00	31.00	31.00
27.500	31.00	31.00	31.00	31.00	31.00
27.750	31.00	31.00	31.00	31.00	31.00
28.000	31.00	31.00	31.00	31.00	31.00
28.250	31.00	31.00	31.00	31.00	31.00
28.500	31.00	31.00	31.00	31.00	31.00
28.750	31.00	31.00	31.00	31.00	31.00
29.000	31.00	31.00	31.00	31.00	31.00
29.250	31.00	31.00	31.00	31.00	31.00
29.500	31.00	31.00	31.00	31.00	31.00
29.750	31.00	31.00	31.00	31.00	31.00
30.000	31.00	31.00	31.00	31.00	31.00
30.250	31.00	31.00	31.00	31.00	31.00

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
30.500	31.00	31.00	31.00	31.00	31.00
30.750	31.00	31.00	31.00	31.00	31.00
31.000	31.00	31.00	31.00	31.00	31.00
31.250	31.00	31.00	31.00	31.00	31.00
31.500	31.00	31.00	31.00	31.00	31.00
31.750	31.00	31.00	31.00	31.00	31.00
32.000	31.00	31.00	31.00	31.00	31.00
32.250	31.00	31.00	31.00	31.00	31.00
32.500	31.00	31.00	31.00	31.00	31.00
32.750	31.00	31.00	31.00	31.00	31.00
33.000	31.00	31.00	31.00	31.00	31.00
33.250	31.00	31.00	31.00	31.00	31.00
33.500	31.00	31.00	31.00	31.00	31.00
33.750	31.00	31.00	31.00	31.00	31.00
34.000	31.00	31.00	31.00	31.00	31.00
34.250	31.00	31.00	31.00	31.00	31.00
34.500	31.00	31.00	31.00	31.00	31.00
34.750	31.00	31.00	31.00	31.00	31.00
35.000	31.00	31.00	31.00	31.00	31.00
35.250	31.00	31.00	31.00	31.00	31.00
35.500	31.00	31.00	31.00	31.00	31.00
35.750	31.00	31.00	31.00	31.00	31.00
36.000	31.00	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	31.00	31.00	31.00	31.00	31.00
0.250	31.00	31.00	31.00	31.00	31.00
0.500	31.00	31.00	31.00	31.00	31.00
0.750	31.00	31.00	31.00	31.00	31.00
1.000	31.00	31.00	31.00	31.00	31.00
1.250	31.00	31.00	31.00	31.00	31.00

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1.500	31.00	31.00	31.00	31.00	31.00
1.750	31.00	31.00	31.00	31.00	31.00
2.000	31.00	31.00	31.00	31.00	31.00
2.250	31.00	31.00	31.00	31.00	31.00
2.500	31.00	31.00	31.00	31.00	31.00
2.750	31.00	31.00	31.00	31.00	31.00
3.000	31.00	31.00	31.00	31.00	31.00
3.250	31.00	31.00	31.00	31.00	31.00
3.500	31.00	31.00	31.00	31.00	31.00
3.750	31.00	31.00	31.00	31.00	31.00
4.000	31.00	31.00	31.00	31.00	31.00
4.250	31.00	31.00	31.00	31.00	31.00
4.500	31.00	31.00	31.00	31.00	31.00
4.750	31.00	31.00	31.00	31.00	31.00
5.000	31.00	31.00	31.00	31.00	31.00
5.250	31.00	31.00	31.00	31.00	31.00
5.500	31.00	31.00	31.00	31.00	31.00
5.750	31.00	31.00	31.00	31.00	31.00
6.000	31.00	31.00	31.00	31.00	31.00
6.250	31.00	31.00	31.00	31.00	31.00
6.500	31.00	31.00	31.00	31.00	31.00
6.750	31.00	31.00	31.00	31.00	31.00
7.000	31.00	31.00	31.00	31.00	31.00
7.250	31.00	31.00	31.00	31.00	31.00
7.500	31.00	31.00	31.00	31.00	31.00
7.750	31.00	31.00	31.00	31.00	31.00
8.000	31.00	31.00	31.00	31.00	31.00
8.250	31.00	31.00	31.00	31.00	31.00
8.500	31.00	31.00	31.00	31.00	31.00
8.750	31.00	31.00	31.00	31.00	31.00
9.000	31.00	31.00	31.00	31.00	31.00
9.250	31.00	31.00	31.00	31.00	31.00
9.500	31.01	31.01	31.01	31.01	31.01
9.750	31.01	31.01	31.01	31.02	31.02
10.000	31.02	31.02	31.02	31.03	31.03
10.250	31.03	31.04	31.04	31.04	31.05
10.500	31.05	31.06	31.06	31.07	31.07
10.750	31.08	31.08	31.09	31.10	31.10
11.000	31.11	31.12	31.12	31.13	31.14
11.250	31.15	31.16	31.18	31.19	31.20
11.500	31.22	31.24	31.26	31.29	31.33

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
11.750	31.37	31.43	31.49	31.56	31.66
12.000	31.80	31.96	32.02	32.01	32.01
12.250	32.01	32.01	32.00	32.01	32.00
12.500	32.00	32.00	32.00	32.00	32.00
12.750	32.00	32.00	32.00	32.00	32.00
13.000	32.00	32.00	32.00	32.00	32.00
13.250	32.00	32.00	32.00	32.00	32.00
13.500	32.00	32.00	32.00	32.00	32.00
13.750	32.00	32.00	32.00	32.00	32.00
14.000	32.00	32.00	32.00	32.00	32.00
14.250	32.00	32.00	32.00	32.00	32.00
14.500	32.00	32.00	32.00	32.00	32.00
14.750	32.00	32.00	32.00	32.00	32.00
15.000	32.00	32.00	32.00	32.00	32.00
15.250	32.00	32.00	32.00	32.00	32.00
15.500	32.00	32.00	32.00	32.00	32.00
15.750	32.00	32.00	32.00	32.00	32.00
16.000	32.00	31.99	31.99	31.99	31.99
16.250	31.99	31.99	31.99	31.98	31.98
16.500	31.98	31.98	31.98	31.98	31.97
16.750	31.97	31.97	31.97	31.97	31.96
17.000	31.96	31.96	31.96	31.96	31.95
17.250	31.95	31.95	31.95	31.94	31.94
17.500	31.94	31.93	31.93	31.93	31.93
17.750	31.92	31.92	31.92	31.91	31.91
18.000	31.91	31.90	31.90	31.90	31.89
18.250	31.89	31.89	31.88	31.88	31.88
18.500	31.87	31.87	31.87	31.86	31.86
18.750	31.86	31.85	31.85	31.84	31.84
19.000	31.84	31.83	31.83	31.83	31.82
19.250	31.82	31.81	31.81	31.81	31.80
19.500	31.80	31.80	31.79	31.79	31.78
19.750	31.78	31.78	31.77	31.77	31.76
20.000	31.76	31.76	31.75	31.75	31.74
20.250	31.74	31.74	31.73	31.73	31.72
20.500	31.72	31.72	31.71	31.71	31.70
20.750	31.70	31.70	31.69	31.69	31.68
21.000	31.68	31.67	31.67	31.67	31.66
21.250	31.66	31.65	31.65	31.64	31.64
21.500	31.64	31.63	31.63	31.62	31.62
21.750	31.61	31.61	31.60	31.60	31.60

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
22.000	31.59	31.59	31.58	31.58	31.57
22.250	31.57	31.56	31.56	31.56	31.55
22.500	31.55	31.54	31.54	31.53	31.53
22.750	31.52	31.52	31.51	31.51	31.50
23.000	31.50	31.49	31.49	31.49	31.48
23.250	31.48	31.47	31.47	31.46	31.46
23.500	31.45	31.45	31.44	31.44	31.43
23.750	31.43	31.42	31.42	31.41	31.41
24.000	31.40	31.40	31.39	31.38	31.38
24.250	31.37	31.36	31.36	31.35	31.34
24.500	31.34	31.33	31.32	31.32	31.31
24.750	31.30	31.30	31.29	31.28	31.28
25.000	31.27	31.26	31.26	31.25	31.24
25.250	31.23	31.23	31.22	31.21	31.21
25.500	31.20	31.19	31.19	31.18	31.17
25.750	31.17	31.16	31.15	31.15	31.14
26.000	31.13	31.13	31.12	31.11	31.11
26.250	31.10	31.09	31.09	31.08	31.07
26.500	31.06	31.06	31.05	31.04	31.04
26.750	31.03	31.02	31.02	31.01	31.00
27.000	31.00	31.00	31.00	31.00	31.00
27.250	31.00	31.00	31.00	31.00	31.00
27.500	31.00	31.00	31.00	31.00	31.00
27.750	31.00	31.00	31.00	31.00	31.00
28.000	31.00	31.00	31.00	31.00	31.00
28.250	31.00	31.00	31.00	31.00	31.00
28.500	31.00	31.00	31.00	31.00	31.00
28.750	31.00	31.00	31.00	31.00	31.00
29.000	31.00	31.00	31.00	31.00	31.00
29.250	31.00	31.00	31.00	31.00	31.00
29.500	31.00	31.00	31.00	31.00	31.00
29.750	31.00	31.00	31.00	31.00	31.00
30.000	31.00	31.00	31.00	31.00	31.00
30.250	31.00	31.00	31.00	31.00	31.00
30.500	31.00	31.00	31.00	31.00	31.00
30.750	31.00	31.00	31.00	31.00	31.00
31.000	31.00	31.00	31.00	31.00	31.00
31.250	31.00	31.00	31.00	31.00	31.00
31.500	31.00	31.00	31.00	31.00	31.00
31.750	31.00	31.00	31.00	31.00	31.00
32.000	31.00	31.00	31.00	31.00	31.00

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
32.250	31.00	31.00	31.00	31.00	31.00
32.500	31.00	31.00	31.00	31.00	31.00
32.750	31.00	31.00	31.00	31.00	31.00
33.000	31.00	31.00	31.00	31.00	31.00
33.250	31.00	31.00	31.00	31.00	31.00
33.500	31.00	31.00	31.00	31.00	31.00
33.750	31.00	31.00	31.00	31.00	31.00
34.000	31.00	31.00	31.00	31.00	31.00
34.250	31.00	31.00	31.00	31.00	31.00
34.500	31.00	31.00	31.00	31.00	31.00
34.750	31.00	31.00	31.00	31.00	31.00
35.000	31.00	31.00	31.00	31.00	31.00
35.250	31.00	31.00	31.00	31.00	31.00
35.500	31.00	31.00	31.00	31.00	31.00
35.750	31.00	31.00	31.00	31.00	31.00
36.000	31.00	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	31.00	31.00	31.00	31.00	31.00
0.250	31.00	31.00	31.00	31.00	31.00
0.500	31.00	31.00	31.00	31.00	31.00
0.750	31.00	31.00	31.00	31.00	31.00
1.000	31.00	31.00	31.00	31.00	31.00
1.250	31.00	31.00	31.00	31.00	31.00
1.500	31.00	31.00	31.00	31.00	31.00
1.750	31.00	31.00	31.00	31.00	31.00
2.000	31.00	31.00	31.00	31.00	31.00
2.250	31.00	31.00	31.00	31.00	31.00
2.500	31.00	31.00	31.00	31.00	31.00
2.750	31.00	31.00	31.00	31.00	31.00
3.000	31.00	31.00	31.00	31.00	31.00

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
3.250	31.00	31.00	31.00	31.00	31.00
3.500	31.00	31.00	31.00	31.00	31.00
3.750	31.00	31.00	31.00	31.00	31.00
4.000	31.00	31.00	31.00	31.00	31.00
4.250	31.00	31.00	31.00	31.00	31.00
4.500	31.00	31.00	31.00	31.00	31.00
4.750	31.00	31.00	31.00	31.00	31.00
5.000	31.00	31.00	31.00	31.00	31.00
5.250	31.00	31.00	31.00	31.00	31.00
5.500	31.00	31.00	31.00	31.00	31.00
5.750	31.00	31.00	31.00	31.00	31.00
6.000	31.00	31.00	31.00	31.00	31.00
6.250	31.00	31.00	31.00	31.00	31.00
6.500	31.00	31.00	31.00	31.00	31.00
6.750	31.00	31.00	31.00	31.00	31.00
7.000	31.00	31.00	31.00	31.00	31.00
7.250	31.00	31.00	31.00	31.00	31.00
7.500	31.00	31.00	31.00	31.00	31.00
7.750	31.00	31.00	31.00	31.00	31.00
8.000	31.00	31.00	31.00	31.00	31.00
8.250	31.00	31.00	31.00	31.01	31.01
8.500	31.01	31.01	31.01	31.01	31.01
8.750	31.02	31.02	31.02	31.02	31.02
9.000	31.03	31.03	31.03	31.04	31.04
9.250	31.04	31.05	31.05	31.06	31.06
9.500	31.07	31.07	31.08	31.08	31.09
9.750	31.09	31.10	31.10	31.11	31.12
10.000	31.12	31.13	31.14	31.14	31.15
10.250	31.16	31.17	31.18	31.19	31.20
10.500	31.21	31.22	31.23	31.24	31.25
10.750	31.26	31.27	31.29	31.30	31.31
11.000	31.33	31.34	31.35	31.37	31.39
11.250	31.41	31.43	31.45	31.47	31.50
11.500	31.52	31.55	31.59	31.63	31.69
11.750	31.76	31.84	31.94	32.01	32.02
12.000	32.02	32.02	32.02	32.02	32.01
12.250	32.01	32.01	32.01	32.01	32.01
12.500	32.00	32.00	32.00	32.00	32.00
12.750	32.00	32.00	32.00	32.00	32.00
13.000	32.00	32.00	32.00	32.00	32.00
13.250	32.00	32.00	32.00	32.00	32.00

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
13.500	32.00	32.00	32.00	32.00	32.00
13.750	32.00	32.00	32.00	32.00	32.00
14.000	32.00	32.00	32.00	32.00	32.00
14.250	32.00	32.00	32.00	32.00	32.00
14.500	32.00	32.00	32.00	32.00	32.00
14.750	32.00	32.00	32.00	32.00	32.00
15.000	32.00	32.00	32.00	32.00	32.00
15.250	32.00	32.00	32.00	32.00	32.00
15.500	32.00	32.00	32.00	32.00	32.00
15.750	32.00	32.00	32.00	32.00	32.00
16.000	32.00	32.00	32.00	32.00	32.00
16.250	32.00	32.00	32.00	32.00	32.00
16.500	32.00	32.00	32.00	32.00	32.00
16.750	32.00	32.00	32.00	32.00	32.00
17.000	32.00	32.00	32.00	32.00	32.00
17.250	32.00	32.00	32.00	31.99	31.99
17.500	31.99	31.99	31.99	31.99	31.99
17.750	31.99	31.99	31.98	31.98	31.98
18.000	31.98	31.98	31.97	31.97	31.97
18.250	31.97	31.97	31.97	31.96	31.96
18.500	31.96	31.96	31.95	31.95	31.95
18.750	31.95	31.95	31.94	31.94	31.94
19.000	31.94	31.93	31.93	31.93	31.93
19.250	31.92	31.92	31.92	31.92	31.91
19.500	31.91	31.91	31.91	31.90	31.90
19.750	31.90	31.90	31.89	31.89	31.89
20.000	31.89	31.88	31.88	31.88	31.87
20.250	31.87	31.87	31.87	31.86	31.86
20.500	31.86	31.85	31.85	31.85	31.84
20.750	31.84	31.84	31.84	31.83	31.83
21.000	31.83	31.82	31.82	31.82	31.81
21.250	31.81	31.81	31.80	31.80	31.80
21.500	31.79	31.79	31.79	31.78	31.78
21.750	31.78	31.77	31.77	31.77	31.76
22.000	31.76	31.76	31.75	31.75	31.75
22.250	31.74	31.74	31.73	31.73	31.73
22.500	31.72	31.72	31.72	31.71	31.71
22.750	31.71	31.70	31.70	31.69	31.69
23.000	31.69	31.68	31.68	31.67	31.67
23.250	31.67	31.66	31.66	31.66	31.65
23.500	31.65	31.64	31.64	31.63	31.63

Hydrologic Calculations

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
23.750	31.63	31.62	31.62	31.61	31.61
24.000	31.61	31.60	31.60	31.59	31.58
24.250	31.58	31.57	31.56	31.56	31.55
24.500	31.54	31.53	31.53	31.52	31.51
24.750	31.51	31.50	31.49	31.49	31.48
25.000	31.47	31.47	31.46	31.45	31.45
25.250	31.44	31.43	31.43	31.42	31.41
25.500	31.41	31.40	31.39	31.38	31.38
25.750	31.37	31.36	31.36	31.35	31.34
26.000	31.34	31.33	31.32	31.32	31.31
26.250	31.30	31.30	31.29	31.28	31.28
26.500	31.27	31.26	31.26	31.25	31.24
26.750	31.23	31.23	31.22	31.21	31.21
27.000	31.20	31.19	31.19	31.18	31.17
27.250	31.17	31.16	31.15	31.15	31.14
27.500	31.13	31.13	31.12	31.11	31.11
27.750	31.10	31.09	31.09	31.08	31.07
28.000	31.06	31.06	31.05	31.04	31.04
28.250	31.03	31.02	31.02	31.01	31.00
28.500	31.00	31.00	31.00	31.00	31.00
28.750	31.00	31.00	31.00	31.00	31.00
29.000	31.00	31.00	31.00	31.00	31.00
29.250	31.00	31.00	31.00	31.00	31.00
29.500	31.00	31.00	31.00	31.00	31.00
29.750	31.00	31.00	31.00	31.00	31.00
30.000	31.00	31.00	31.00	31.00	31.00
30.250	31.00	31.00	31.00	31.00	31.00
30.500	31.00	31.00	31.00	31.00	31.00
30.750	31.00	31.00	31.00	31.00	31.00
31.000	31.00	31.00	31.00	31.00	31.00
31.250	31.00	31.00	31.00	31.00	31.00
31.500	31.00	31.00	31.00	31.00	31.00
31.750	31.00	31.00	31.00	31.00	31.00
32.000	31.00	31.00	31.00	31.00	31.00
32.250	31.00	31.00	31.00	31.00	31.00
32.500	31.00	31.00	31.00	31.00	31.00
32.750	31.00	31.00	31.00	31.00	31.00
33.000	31.00	31.00	31.00	31.00	31.00
33.250	31.00	31.00	31.00	31.00	31.00
33.500	31.00	31.00	31.00	31.00	31.00
33.750	31.00	31.00	31.00	31.00	31.00

Subsection: Time vs. Elevation
Label: SP (OUT)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
34.000	31.00	31.00	31.00	31.00	31.00
34.250	31.00	31.00	31.00	31.00	31.00
34.500	31.00	31.00	31.00	31.00	31.00
34.750	31.00	31.00	31.00	31.00	31.00
35.000	31.00	31.00	31.00	31.00	31.00
35.250	31.00	31.00	31.00	31.00	31.00
35.500	31.00	31.00	31.00	31.00	31.00
35.750	31.00	31.00	31.00	31.00	31.00
36.000	31.00	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	1	1	1
6.250	1	1	2	2	2
6.500	3	3	3	4	4
6.750	5	5	6	6	7
7.000	7	8	9	9	10
7.250	11	11	12	13	14
7.500	14	15	16	17	18
7.750	19	20	21	22	23
8.000	24	25	26	27	28
8.250	30	31	32	34	35
8.500	37	38	40	41	43
8.750	45	47	49	51	53
9.000	55	57	59	61	64
9.250	66	69	71	74	76
9.500	79	82	84	87	90
9.750	93	96	99	102	106
10.000	109	112	116	119	123
10.250	127	131	135	139	144
10.500	148	153	158	163	168
10.750	173	179	185	190	196
11.000	202	209	215	223	231
11.250	240	249	260	271	283
11.500	296	311	331	357	393
11.750	438	493	558	634	737
12.000	889	1,074	1,269	1,441	1,564
12.250	1,647	1,710	1,757	1,790	1,810
12.500	1,816	1,812	1,799	1,781	1,761
12.750	1,741	1,719	1,696	1,672	1,647
13.000	1,621	1,594	1,567	1,539	1,513
13.250	1,486	1,460	1,434	1,409	1,384
13.500	1,359	1,334	1,309	1,285	1,260
13.750	1,236	1,212	1,189	1,165	1,142
14.000	1,119	1,096	1,073	1,051	1,029
14.250	1,007	986	965	944	924
14.500	903	883	864	844	825
14.750	807	788	770	752	735
15.000	718	701	685	670	655

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
15.250	640	626	612	598	585
15.500	572	560	548	536	524
15.750	513	502	492	481	471
16.000	461	451	442	433	424
16.250	415	407	398	390	383
16.500	375	368	361	354	347
16.750	341	335	329	323	317
17.000	311	306	300	295	290
17.250	285	280	275	270	266
17.500	261	257	253	249	245
17.750	241	237	233	229	225
18.000	222	218	215	211	208
18.250	205	202	199	196	193
18.500	190	188	185	183	180
18.750	178	176	173	171	169
19.000	167	165	163	161	160
19.250	158	156	154	153	151
19.500	150	148	147	145	144
19.750	142	141	140	138	137
20.000	136	135	134	132	131
20.250	130	129	128	127	126
20.500	125	124	123	122	121
20.750	120	120	119	118	117
21.000	116	115	115	114	113
21.250	112	112	111	110	110
21.500	109	108	107	107	106
21.750	106	105	104	104	103
22.000	102	102	101	101	100
22.250	99	99	98	98	97
22.500	97	96	96	95	94
22.750	94	93	93	92	92
23.000	91	91	90	90	89
23.250	89	88	88	87	87
23.500	86	86	85	85	84
23.750	84	83	83	82	82
24.000	81	80	78	75	73
24.250	70	67	64	62	60
24.500	57	55	53	51	49
24.750	47	45	43	42	40
25.000	38	37	36	34	33
25.250	32	30	29	28	27

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
25.500	26	25	24	23	22
25.750	21	20	20	19	18
26.000	17	17	16	15	15
26.250	14	14	13	13	12
26.500	12	11	11	10	10
26.750	10	9	9	9	8
27.000	8	8	7	7	7
27.250	6	6	6	6	6
27.500	5	5	5	5	5
27.750	4	4	4	4	4
28.000	4	3	3	3	3
28.250	3	3	3	3	2
28.500	2	2	2	2	2
28.750	2	2	2	2	2
29.000	2	2	1	1	1
29.250	1	1	1	1	1
29.500	1	1	1	1	1
29.750	1	1	1	1	1
30.000	1	1	1	1	1
30.250	1	1	1	1	1
30.500	0	0	0	0	0
30.750	0	0	0	0	0
31.000	0	0	0	0	0
31.250	0	0	0	0	0
31.500	0	0	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	1	1	1
4.000	2	2	2	3	3
4.250	4	4	5	6	6
4.500	7	8	8	9	10
4.750	11	12	13	14	14
5.000	15	16	17	18	19
5.250	20	22	23	24	25
5.500	26	27	28	30	31
5.750	32	33	34	36	37
6.000	38	40	41	42	44
6.250	45	47	48	50	51
6.500	53	55	57	58	60

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
6.750	62	64	66	68	70
7.000	72	75	77	79	81
7.250	84	86	88	91	93
7.500	96	99	101	104	107
7.750	109	112	115	118	121
8.000	124	127	130	133	136
8.250	140	143	147	151	155
8.500	159	163	167	172	177
8.750	181	186	191	196	201
9.000	207	212	218	223	229
9.250	235	241	247	253	260
9.500	266	273	279	286	293
9.750	300	307	314	321	328
10.000	336	343	351	359	367
10.250	375	384	394	403	413
10.500	423	434	445	456	467
10.750	479	490	503	515	528
11.000	541	554	569	585	602
11.250	622	643	666	690	716
11.500	744	777	821	881	960
11.750	1,061	1,185	1,330	1,496	1,722
12.000	2,047	2,439	2,847	3,213	3,477
12.250	3,652	3,795	3,906	3,988	4,043
12.500	4,071	4,078	4,068	4,048	4,024
12.750	3,997	3,967	3,936	3,902	3,866
13.000	3,828	3,786	3,743	3,699	3,657
13.250	3,616	3,575	3,533	3,492	3,450
13.500	3,407	3,364	3,321	3,278	3,234
13.750	3,191	3,148	3,103	3,059	3,014
14.000	2,971	2,928	2,886	2,844	2,802
14.250	2,760	2,718	2,676	2,635	2,593
14.500	2,552	2,512	2,471	2,431	2,391
14.750	2,351	2,311	2,272	2,234	2,196
15.000	2,159	2,122	2,086	2,050	2,013
15.250	1,977	1,941	1,906	1,871	1,836
15.500	1,802	1,768	1,734	1,700	1,667
15.750	1,633	1,600	1,567	1,534	1,503
16.000	1,472	1,441	1,411	1,381	1,352
16.250	1,324	1,295	1,268	1,240	1,213
16.500	1,187	1,161	1,136	1,111	1,086
16.750	1,062	1,038	1,015	992	970

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
17.000	948	926	904	883	862
17.250	842	822	802	782	763
17.500	745	726	709	692	675
17.750	659	644	629	614	600
18.000	586	573	560	547	535
18.250	523	512	502	491	481
18.500	472	462	453	445	436
18.750	428	420	413	405	398
19.000	391	385	378	372	366
19.250	360	355	349	344	339
19.500	334	329	324	320	315
19.750	311	307	303	299	295
20.000	291	288	284	281	277
20.250	274	271	268	265	262
20.500	259	257	254	251	249
20.750	246	244	242	239	237
21.000	235	233	231	229	227
21.250	225	223	221	220	218
21.500	216	214	213	211	209
21.750	208	206	205	203	202
22.000	200	199	198	196	195
22.250	194	192	191	190	188
22.500	187	186	185	184	182
22.750	181	180	179	178	177
23.000	175	174	173	172	171
23.250	170	169	168	167	166
23.500	165	164	163	162	161
23.750	160	159	158	157	156
24.000	155	153	149	144	138
24.250	133	128	123	118	113
24.500	109	105	101	97	93
24.750	89	86	82	79	76
25.000	73	70	68	65	62
25.250	60	58	55	53	51
25.500	49	47	45	44	42
25.750	40	39	37	36	34
26.000	33	32	31	29	28
26.250	27	26	25	24	23
26.500	22	21	21	20	19
26.750	18	18	17	16	16
27.000	15	14	14	13	13

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
27.250	12	12	11	11	10
27.500	10	10	9	9	9
27.750	8	8	8	7	7
28.000	7	7	6	6	6
28.250	6	5	5	5	5
28.500	5	4	4	4	4
28.750	4	4	3	3	3
29.000	3	3	3	3	3
29.250	3	2	2	2	2
29.500	2	2	2	2	2
29.750	2	2	2	1	1
30.000	1	1	1	1	1
30.250	1	1	1	1	1
30.500	1	1	1	1	1
30.750	1	1	1	1	1
31.000	1	1	1	1	1
31.250	1	0	0	0	0
31.500	0	0	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	1	1
3.250	1	2	2	2	3
3.500	4	4	5	6	7
3.750	7	8	9	10	11
4.000	12	13	14	15	17
4.250	18	19	20	22	23
4.500	24	26	27	28	30
4.750	31	33	34	36	37
5.000	39	41	42	44	46
5.250	47	49	51	52	54
5.500	56	58	59	61	63
5.750	65	67	69	70	72
6.000	74	76	78	80	82
6.250	84	86	89	91	93
6.500	96	98	101	103	106
6.750	109	111	114	117	120
7.000	123	126	129	133	136
7.250	139	142	146	149	153
7.500	156	160	164	167	171
7.750	175	179	183	187	191
8.000	195	199	203	207	212
8.250	217	221	227	232	237
8.500	243	249	255	261	267
8.750	273	280	287	294	301
9.000	308	315	323	330	338
9.250	346	354	362	370	379
9.500	387	396	405	414	423
9.750	432	441	450	460	469

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	479	489	499	509	520
10.250	531	543	555	568	581
10.500	595	608	623	637	652
10.750	668	683	699	716	732
11.000	749	767	786	807	831
11.250	857	886	917	951	988
11.500	1,027	1,073	1,133	1,214	1,321
11.750	1,455	1,620	1,814	2,037	2,331
12.000	2,760	3,273	3,805	4,277	4,615
12.250	4,822	4,969	5,047	5,076	5,069
12.500	5,034	4,982	4,913	4,850	4,798
12.750	4,747	4,697	4,647	4,598	4,552
13.000	4,507	4,464	4,423	4,383	4,343
13.250	4,302	4,263	4,223	4,183	4,142
13.500	4,100	4,057	4,014	3,970	3,927
13.750	3,882	3,838	3,793	3,746	3,699
14.000	3,653	3,609	3,565	3,521	3,477
14.250	3,432	3,387	3,343	3,298	3,254
14.500	3,210	3,166	3,122	3,078	3,033
14.750	2,990	2,948	2,907	2,866	2,825
15.000	2,784	2,742	2,701	2,660	2,619
15.250	2,578	2,538	2,498	2,458	2,418
15.500	2,377	2,337	2,297	2,258	2,220
15.750	2,182	2,144	2,107	2,070	2,032
16.000	1,995	1,958	1,922	1,886	1,850
16.250	1,815	1,780	1,746	1,712	1,679
16.500	1,646	1,613	1,580	1,548	1,517
16.750	1,486	1,456	1,427	1,398	1,370
17.000	1,342	1,315	1,288	1,261	1,235
17.250	1,209	1,183	1,158	1,134	1,109
17.500	1,086	1,062	1,039	1,016	994
17.750	972	950	929	908	887
18.000	866	846	826	806	787
18.250	768	750	732	715	699
18.500	683	667	653	639	625
18.750	612	599	586	575	563
19.000	552	541	531	521	511
19.250	502	493	485	476	468
19.500	460	453	445	438	431
19.750	425	418	412	406	400
20.000	394	389	383	378	373

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	368	363	359	354	350
20.500	346	342	338	334	330
20.750	326	323	319	316	313
21.000	309	306	303	300	297
21.250	295	292	289	287	284
21.500	281	279	277	274	272
21.750	270	268	265	263	261
22.000	259	257	255	253	251
22.250	250	248	246	244	242
22.500	241	239	237	236	234
22.750	232	231	229	228	226
23.000	225	223	222	220	219
23.250	217	216	214	213	212
23.500	210	209	208	206	205
23.750	204	202	201	200	198
24.000	197	195	190	183	176
24.250	169	162	156	150	144
24.500	139	133	128	123	118
24.750	114	109	105	101	97
25.000	93	90	86	83	80
25.250	76	73	71	68	65
25.500	63	60	58	56	53
25.750	51	49	47	46	44
26.000	42	40	39	37	36
26.250	35	33	32	31	29
26.500	28	27	26	25	24
26.750	23	22	21	21	20
27.000	19	18	18	17	16
27.250	16	15	14	14	13
27.500	13	12	12	11	11
27.750	11	10	10	9	9
28.000	9	8	8	8	7
28.250	7	7	7	6	6
28.500	6	6	5	5	5
28.750	5	5	4	4	4
29.000	4	4	4	3	3
29.250	3	3	3	3	3
29.500	3	3	2	2	2
29.750	2	2	2	2	2
30.000	2	2	2	2	2
30.250	1	1	1	1	1

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
30.500	1	1	1	1	1
30.750	1	1	1	1	1
31.000	1	1	1	1	1
31.250	1	1	1	1	1
31.500	1	1	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	1	1	1	2
2.500	2	3	4	5	6
2.750	7	8	9	10	12
3.000	13	15	16	18	19
3.250	21	23	25	26	28
3.500	30	32	34	36	38
3.750	41	43	45	47	49
4.000	52	54	57	59	61
4.250	64	66	69	72	74
4.500	77	79	82	85	87
4.750	90	93	96	98	101
5.000	104	107	110	113	115
5.250	118	121	124	127	130
5.500	133	136	139	142	145
5.750	148	151	154	157	160
6.000	163	166	169	172	176
6.250	179	183	186	190	194
6.500	198	202	206	210	214
6.750	218	223	227	232	237
7.000	242	247	251	257	262
7.250	267	272	277	283	288
7.500	294	300	305	311	317
7.750	323	329	335	341	347
8.000	353	359	366	372	379
8.250	387	394	402	410	418
8.500	427	436	445	454	464
8.750	474	484	494	504	515
9.000	526	537	548	560	572
9.250	584	596	609	621	634
9.500	647	660	673	686	700
9.750	714	727	741	755	770
10.000	784	799	814	831	848
10.250	866	885	904	925	946
10.500	968	990	1,014	1,038	1,063
10.750	1,089	1,115	1,143	1,170	1,199
11.000	1,228	1,259	1,291	1,327	1,365
11.250	1,407	1,454	1,503	1,557	1,616
11.500	1,679	1,752	1,846	1,970	2,133

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
11.750	2,339	2,591	2,882	3,219	3,657
12.000	4,288	5,022	5,616	5,968	6,034
12.250	5,955	5,850	5,744	5,640	5,536
12.500	5,428	5,320	5,233	5,144	5,065
12.750	4,998	4,934	4,877	4,835	4,794
13.000	4,752	4,710	4,667	4,626	4,587
13.250	4,552	4,519	4,488	4,460	4,433
13.500	4,407	4,380	4,352	4,323	4,294
13.750	4,265	4,235	4,204	4,172	4,140
14.000	4,105	4,070	4,033	3,997	3,960
14.250	3,924	3,887	3,850	3,813	3,774
14.500	3,736	3,697	3,659	3,623	3,587
14.750	3,551	3,514	3,478	3,440	3,402
15.000	3,364	3,326	3,288	3,250	3,212
15.250	3,174	3,135	3,096	3,056	3,017
15.500	2,978	2,941	2,903	2,866	2,828
15.750	2,790	2,752	2,713	2,675	2,636
16.000	2,597	2,559	2,520	2,482	2,444
16.250	2,406	2,368	2,330	2,293	2,257
16.500	2,221	2,186	2,152	2,118	2,084
16.750	2,050	2,017	1,983	1,950	1,918
17.000	1,885	1,853	1,822	1,790	1,759
17.250	1,729	1,698	1,668	1,638	1,608
17.500	1,578	1,549	1,520	1,492	1,464
17.750	1,437	1,410	1,384	1,358	1,332
18.000	1,307	1,281	1,256	1,232	1,208
18.250	1,185	1,161	1,139	1,117	1,095
18.500	1,074	1,053	1,033	1,013	993
18.750	974	955	937	919	901
19.000	883	866	849	832	816
19.250	800	784	769	754	739
19.500	725	712	699	686	674
19.750	662	650	639	628	618
20.000	608	598	588	579	570
20.250	562	553	545	537	530
20.500	523	516	509	502	496
20.750	490	484	478	472	466
21.000	461	456	451	446	441
21.250	436	432	427	423	419
21.500	415	411	407	403	399
21.750	396	392	389	385	382

Hydrologic Calculations

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
22.000	379	375	372	369	366
22.250	363	360	357	355	352
22.500	349	346	344	341	339
22.750	336	334	331	329	327
23.000	324	322	320	318	315
23.250	313	311	309	307	305
23.500	303	301	299	297	295
23.750	293	291	289	287	285
24.000	283	279	272	262	252
24.250	243	233	224	215	207
24.500	199	191	184	177	170
24.750	163	157	151	145	139
25.000	134	129	124	119	114
25.250	110	105	101	97	94
25.500	90	86	83	80	77
25.750	74	71	68	65	63
26.000	60	58	56	54	52
26.250	50	48	46	44	42
26.500	41	39	38	36	35
26.750	33	32	31	30	28
27.000	27	26	25	24	23
27.250	22	22	21	20	19
27.500	18	18	17	16	16
27.750	15	14	14	13	13
28.000	12	12	11	11	11
28.250	10	10	9	9	9
28.500	8	8	8	7	7
28.750	7	7	6	6	6
29.000	6	5	5	5	5
29.250	5	4	4	4	4
29.500	4	4	3	3	3
29.750	3	3	3	3	3
30.000	3	2	2	2	2
30.250	2	2	2	2	2
30.500	2	2	2	2	1
30.750	1	1	1	1	1
31.000	1	1	1	1	1
31.250	1	1	1	1	1
31.500	1	1	1	1	1
31.750	1	1	1	1	1
32.000	1	0	0	0	0

Subsection: Time vs. Volume
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	0	0	0	0
8.500	0	0	0	0	0
8.750	0	0	0	0	0
9.000	0	0	0	0	0
9.250	0	0	0	0	0
9.500	0	0	0	0	0
9.750	0	0	0	0	0
10.000	0	0	0	0	0
10.250	0	0	0	0	1
10.500	2	4	6	7	8
10.750	10	12	14	17	20
11.000	23	25	25	26	26
11.250	27	27	28	28	29
11.500	30	31	32	35	40
11.750	44	47	51	55	63
12.000	79	99	113	117	105
12.250	88	79	73	68	63
12.500	58	53	50	47	46
12.750	45	45	44	44	43
13.000	43	42	42	42	41
13.250	41	41	41	40	40

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
13.500	40	39	39	39	38
13.750	38	38	37	37	37
14.000	36	36	36	36	35
14.250	35	35	35	35	35
14.500	35	34	34	34	34
14.750	34	34	33	33	33
15.000	33	33	33	33	32
15.250	32	32	32	32	32
15.500	31	31	31	31	31
15.750	31	30	30	30	30
16.000	30	30	30	29	29
16.250	29	29	29	29	29
16.500	29	29	29	29	29
16.750	29	29	28	28	28
17.000	28	28	28	28	28
17.250	28	28	28	28	28
17.500	28	27	27	27	27
17.750	27	27	27	27	27
18.000	27	27	27	27	27
18.250	27	27	27	27	27
18.500	27	27	27	27	26
18.750	26	26	26	26	26
19.000	26	26	26	26	26
19.250	26	26	26	26	26
19.500	26	26	26	26	26
19.750	26	26	26	26	26
20.000	26	26	26	26	26
20.250	26	26	26	26	26
20.500	26	26	26	26	26
20.750	26	26	26	26	26
21.000	26	26	26	26	26
21.250	26	26	26	26	26
21.500	26	26	26	26	25
21.750	25	25	25	25	25
22.000	25	25	25	25	25
22.250	25	25	25	25	25
22.500	25	25	25	25	25
22.750	25	25	25	25	25
23.000	25	25	25	25	25
23.250	25	25	25	25	25
23.500	25	25	25	25	25

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
23.750	25	25	25	25	25
24.000	25	25	24	23	23
24.250	23	23	23	23	23
24.500	23	23	23	23	23
24.750	23	23	23	23	23
25.000	23	23	23	23	23
25.250	23	23	23	23	23
25.500	23	23	23	23	23
25.750	23	23	23	23	23
26.000	23	23	23	23	23
26.250	23	23	23	23	23
26.500	23	23	23	23	23
26.750	23	23	23	23	23
27.000	23	23	23	23	23
27.250	23	23	23	23	23
27.500	23	23	23	23	23
27.750	23	23	23	23	23
28.000	23	23	23	23	23
28.250	23	23	23	23	23
28.500	23	23	23	23	23
28.750	23	23	23	23	23
29.000	23	23	23	23	23
29.250	23	23	23	23	23
29.500	23	23	23	23	23
29.750	23	23	23	23	23
30.000	23	23	23	23	23
30.250	23	23	23	23	23
30.500	23	23	23	23	23
30.750	23	23	23	23	23
31.000	23	23	23	23	23
31.250	23	23	23	23	23
31.500	23	23	23	23	23
31.750	23	23	23	23	23
32.000	23	23	23	23	23
32.250	23	23	23	23	23
32.500	23	23	23	23	23
32.750	23	23	23	23	23
33.000	23	23	23	23	23
33.250	23	23	23	23	23
33.500	23	23	23	23	23
33.750	23	23	23	23	23

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
34.000	23	23	23	23	23
34.250	23	23	23	23	23
34.500	23	23	23	23	23
34.750	23	23	23	23	23
35.000	23	23	23	23	23
35.250	23	23	23	23	23
35.500	23	23	23	23	23
35.750	23	23	23	23	23
36.000	23	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	1	1
8.250	3	5	6	7	8
8.500	10	11	13	15	18
8.750	21	23	24	25	25
9.000	25	26	26	26	26
9.250	26	27	27	27	27
9.500	28	28	28	28	29
9.750	29	29	30	30	30
10.000	31	31	31	32	32
10.250	33	33	34	34	35
10.500	36	36	37	37	38
10.750	39	40	40	41	42
11.000	42	43	43	44	44
11.250	45	46	47	48	49
11.500	50	52	56	61	70
11.750	80	92	106	122	150
12.000	157	159	161	161	158
12.250	153	151	150	141	124
12.500	104	88	77	70	66
12.750	64	63	61	60	58
13.000	57	56	55	54	53
13.250	53	53	52	52	52
13.500	51	51	51	50	50
13.750	50	49	49	49	48
14.000	48	48	47	47	47
14.250	47	47	46	46	46
14.500	46	46	46	46	45
14.750	45	45	45	45	45
15.000	44	44	44	44	44

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
15.250	44	43	43	43	43
15.500	43	43	42	42	42
15.750	42	42	42	41	41
16.000	41	40	40	40	39
16.250	39	39	39	39	38
16.500	38	38	38	38	38
16.750	37	37	37	37	37
17.000	36	36	36	36	36
17.250	36	35	35	35	35
17.500	35	35	34	34	34
17.750	34	34	34	33	33
18.000	33	33	33	33	33
18.250	32	32	32	32	32
18.500	32	32	32	32	32
18.750	32	32	32	32	32
19.000	32	32	32	32	31
19.250	31	31	31	31	31
19.500	31	31	31	31	31
19.750	31	31	31	31	31
20.000	31	31	31	31	31
20.250	30	30	30	30	30
20.500	30	30	30	30	30
20.750	30	30	30	30	30
21.000	30	30	30	30	30
21.250	30	30	30	30	30
21.500	30	30	29	29	29
21.750	29	29	29	29	29
22.000	29	29	29	29	29
22.250	29	29	29	29	29
22.500	29	29	29	29	29
22.750	29	29	29	29	29
23.000	28	28	28	28	28
23.250	28	28	28	28	28
23.500	28	28	28	28	28
23.750	28	28	28	28	28
24.000	28	27	26	24	23
24.250	23	23	23	23	23
24.500	23	23	23	23	23
24.750	23	23	23	23	23
25.000	23	23	23	23	23
25.250	23	23	23	23	23

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
25.500	23	23	23	23	23
25.750	23	23	23	23	23
26.000	23	23	23	23	23
26.250	23	23	23	23	23
26.500	23	23	23	23	23
26.750	23	23	23	23	23
27.000	23	23	23	23	23
27.250	23	23	23	23	23
27.500	23	23	23	23	23
27.750	23	23	23	23	23
28.000	23	23	23	23	23
28.250	23	23	23	23	23
28.500	23	23	23	23	23
28.750	23	23	23	23	23
29.000	23	23	23	23	23
29.250	23	23	23	23	23
29.500	23	23	23	23	23
29.750	23	23	23	23	23
30.000	23	23	23	23	23
30.250	23	23	23	23	23
30.500	23	23	23	23	23
30.750	23	23	23	23	23
31.000	23	23	23	23	23
31.250	23	23	23	23	23
31.500	23	23	23	23	23
31.750	23	23	23	23	23
32.000	23	23	23	23	23
32.250	23	23	23	23	23
32.500	23	23	23	23	23
32.750	23	23	23	23	23
33.000	23	23	23	23	23
33.250	23	23	23	23	23
33.500	23	23	23	23	23
33.750	23	23	23	23	23
34.000	23	23	23	23	23
34.250	23	23	23	23	23
34.500	23	23	23	23	23
34.750	23	23	23	23	23
35.000	23	23	23	23	23
35.250	23	23	23	23	23
35.500	23	23	23	23	23

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
35.750	23	23	23	23	23
36.000	23	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
6.750	0	0	0	0	0
7.000	0	0	0	0	1
7.250	2	4	6	7	8
7.500	9	10	12	14	16
7.750	18	21	23	24	25
8.000	25	25	25	25	26
8.250	26	26	26	26	27
8.500	27	27	27	28	28
8.750	28	28	29	29	29
9.000	30	30	30	31	31
9.250	31	32	32	33	33
9.500	33	34	34	35	35
9.750	36	36	37	37	38
10.000	38	39	39	40	41
10.250	42	42	42	43	43
10.500	44	44	44	45	45
10.750	46	46	46	47	47
11.000	48	48	49	50	51
11.250	52	54	55	57	58
11.500	60	63	69	78	91
11.750	109	128	150	153	156
12.000	161	167	170	170	165
12.250	159	156	153	151	149
12.500	139	117	96	85	79
12.750	76	74	72	70	68
13.000	66	64	63	62	61
13.250	60	60	59	59	58
13.500	58	57	57	57	56
13.750	56	55	55	54	54
14.000	53	53	52	52	52
14.250	52	51	51	51	51
14.500	50	50	50	50	50
14.750	49	49	49	49	48
15.000	48	48	48	48	47
15.250	47	47	47	46	46
15.500	46	46	46	45	45
15.750	45	45	44	44	44
16.000	44	44	43	43	43
16.250	43	43	43	43	43
16.500	43	42	42	42	42
16.750	42	42	42	42	42

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
17.000	41	41	41	41	41
17.250	40	40	40	40	39
17.500	39	39	39	38	38
17.750	38	38	37	37	37
18.000	37	37	36	36	36
18.250	36	36	36	36	36
18.500	36	36	36	35	35
18.750	35	35	35	35	35
19.000	35	35	35	35	35
19.250	35	35	34	34	34
19.500	34	34	34	34	34
19.750	34	34	34	34	34
20.000	34	34	33	33	33
20.250	33	33	33	33	33
20.500	33	33	33	33	33
20.750	33	33	33	33	33
21.000	33	33	32	32	32
21.250	32	32	32	32	32
21.500	32	32	32	32	32
21.750	32	32	32	32	32
22.000	32	31	31	31	31
22.250	31	31	31	31	31
22.500	31	31	31	31	31
22.750	31	31	31	31	31
23.000	31	30	30	30	30
23.250	30	30	30	30	30
23.500	30	30	30	30	30
23.750	30	30	30	30	30
24.000	30	29	27	25	24
24.250	23	23	23	23	23
24.500	23	23	23	23	23
24.750	23	23	23	23	23
25.000	23	23	23	23	23
25.250	23	23	23	23	23
25.500	23	23	23	23	23
25.750	23	23	23	23	23
26.000	23	23	23	23	23
26.250	23	23	23	23	23
26.500	23	23	23	23	23
26.750	23	23	23	23	23
27.000	23	23	23	23	23

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
27.250	23	23	23	23	23
27.500	23	23	23	23	23
27.750	23	23	23	23	23
28.000	23	23	23	23	23
28.250	23	23	23	23	23
28.500	23	23	23	23	23
28.750	23	23	23	23	23
29.000	23	23	23	23	23
29.250	23	23	23	23	23
29.500	23	23	23	23	23
29.750	23	23	23	23	23
30.000	23	23	23	23	23
30.250	23	23	23	23	23
30.500	23	23	23	23	23
30.750	23	23	23	23	23
31.000	23	23	23	23	23
31.250	23	23	23	23	23
31.500	23	23	23	23	23
31.750	23	23	23	23	23
32.000	23	23	23	23	23
32.250	23	23	23	23	23
32.500	23	23	23	23	23
32.750	23	23	23	23	23
33.000	23	23	23	23	23
33.250	23	23	23	23	23
33.500	23	23	23	23	23
33.750	23	23	23	23	23
34.000	23	23	23	23	23
34.250	23	23	23	23	23
34.500	23	23	23	23	23
34.750	23	23	23	23	23
35.000	23	23	23	23	23
35.250	23	23	23	23	23
35.500	23	23	23	23	23
35.750	23	23	23	23	23
36.000	23	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	1	1
5.750	3	5	6	7	8
6.000	9	11	12	14	16
6.250	18	21	23	24	25
6.500	25	25	25	25	26
6.750	26	26	26	26	26
7.000	27	27	27	27	27
7.250	28	28	28	28	28
7.500	29	29	29	29	30
7.750	30	30	30	31	31
8.000	31	32	32	32	33
8.250	33	34	34	35	35
8.500	36	36	37	37	38
8.750	39	39	40	40	41
9.000	42	42	42	43	43
9.250	43	43	44	44	44
9.500	45	45	45	46	46
9.750	46	47	47	47	48

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.000	48	48	49	49	50
10.250	51	51	52	52	53
10.500	54	54	55	56	57
10.750	57	58	59	60	60
11.000	61	62	63	65	67
11.250	70	72	75	78	81
11.500	84	90	101	119	147
11.750	154	155	157	160	165
12.000	175	184	189	188	179
12.250	170	165	162	159	156
12.500	151	150	138	124	112
12.750	104	100	96	93	89
13.000	86	83	80	78	77
13.250	76	75	75	74	73
13.500	72	71	71	70	69
13.750	68	67	67	66	65
14.000	64	64	63	62	62
14.250	62	61	61	60	60
14.500	60	59	59	59	58
14.750	58	58	57	57	56
15.000	56	56	55	55	55
15.250	54	54	54	53	53
15.500	53	52	52	52	51
15.750	51	50	50	50	49
16.000	49	49	49	48	48
16.250	48	48	48	47	47
16.500	47	47	47	47	47
16.750	46	46	46	46	46
17.000	46	46	45	45	45
17.250	45	45	45	45	44
17.500	44	44	44	44	44
17.750	44	43	43	43	43
18.000	43	43	43	42	42
18.250	42	42	42	42	42
18.500	42	42	42	42	42
18.750	42	42	42	42	42
19.000	42	42	42	41	41
19.250	41	41	41	41	41
19.500	41	41	41	40	40
19.750	40	40	40	40	40
20.000	40	40	39	39	39

Hydrologic Calculations

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.250	39	39	39	39	39
20.500	39	39	39	39	38
20.750	38	38	38	38	38
21.000	38	38	38	38	38
21.250	38	38	37	37	37
21.500	37	37	37	37	37
21.750	37	37	37	37	37
22.000	36	36	36	36	36
22.250	36	36	36	36	36
22.500	36	36	35	35	35
22.750	35	35	35	35	35
23.000	35	35	35	35	35
23.250	34	34	34	34	34
23.500	34	34	34	34	34
23.750	34	34	34	33	33
24.000	33	32	29	26	24
24.250	23	23	23	23	23
24.500	23	23	23	23	23
24.750	23	23	23	23	23
25.000	23	23	23	23	23
25.250	23	23	23	23	23
25.500	23	23	23	23	23
25.750	23	23	23	23	23
26.000	23	23	23	23	23
26.250	23	23	23	23	23
26.500	23	23	23	23	23
26.750	23	23	23	23	23
27.000	23	23	23	23	23
27.250	23	23	23	23	23
27.500	23	23	23	23	23
27.750	23	23	23	23	23
28.000	23	23	23	23	23
28.250	23	23	23	23	23
28.500	23	23	23	23	23
28.750	23	23	23	23	23
29.000	23	23	23	23	23
29.250	23	23	23	23	23
29.500	23	23	23	23	23
29.750	23	23	23	23	23
30.000	23	23	23	23	23
30.250	23	23	23	23	23

Subsection: Time vs. Volume
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
30.500	23	23	23	23	23
30.750	23	23	23	23	23
31.000	23	23	23	23	23
31.250	23	23	23	23	23
31.500	23	23	23	23	23
31.750	23	23	23	23	23
32.000	23	23	23	23	23
32.250	23	23	23	23	23
32.500	23	23	23	23	23
32.750	23	23	23	23	23
33.000	23	23	23	23	23
33.250	23	23	23	23	23
33.500	23	23	23	23	23
33.750	23	23	23	23	23
34.000	23	23	23	23	23
34.250	23	23	23	23	23
34.500	23	23	23	23	23
34.750	23	23	23	23	23
35.000	23	23	23	23	23
35.250	23	23	23	23	23
35.500	23	23	23	23	23
35.750	23	23	23	23	23
36.000	23	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	0	0	0	0
8.500	0	0	0	0	0
8.750	0	0	0	0	0
9.000	0	0	0	0	0
9.250	0	0	0	0	0
9.500	0	0	0	0	0
9.750	0	0	0	0	0
10.000	0	0	0	0	0
10.250	0	0	0	0	0
10.500	0	0	0	0	0
10.750	0	0	0	0	0
11.000	0	0	0	0	0
11.250	0	0	0	10	12
11.500	16	21	31	48	74

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
11.750	109	154	210	276	367
12.000	501	666	841	1,002	1,123
12.250	1,212	1,286	1,348	1,399	1,440
12.500	1,470	1,491	1,505	1,515	1,524
12.750	1,531	1,537	1,541	1,545	1,548
13.000	1,549	1,549	1,549	1,548	1,547
13.250	1,545	1,543	1,541	1,539	1,536
13.500	1,533	1,530	1,526	1,522	1,518
13.750	1,514	1,509	1,504	1,499	1,493
14.000	1,487	1,481	1,474	1,468	1,461
14.250	1,454	1,447	1,440	1,432	1,425
14.500	1,417	1,409	1,401	1,393	1,385
14.750	1,377	1,368	1,360	1,351	1,342
15.000	1,333	1,324	1,314	1,305	1,295
15.250	1,286	1,276	1,266	1,255	1,245
15.500	1,235	1,224	1,213	1,202	1,191
15.750	1,180	1,169	1,157	1,146	1,134
16.000	1,122	1,110	1,098	1,086	1,073
16.250	1,061	1,048	1,036	1,023	1,011
16.500	998	985	972	960	947
16.750	934	921	907	894	881
17.000	868	854	841	827	814
17.250	800	787	773	759	745
17.500	731	717	703	689	675
17.750	661	646	632	618	603
18.000	588	574	559	544	530
18.250	515	500	485	471	456
18.500	441	426	411	396	382
18.750	367	352	337	322	307
19.000	292	277	262	247	231
19.250	216	201	186	171	156
19.500	141	125	110	95	80
19.750	64	49	34	18	0
20.000	0	0	0	0	0
20.250	0	0	0	0	0
20.500	0	0	0	0	0
20.750	0	0	0	0	0
21.000	0	0	0	0	0
21.250	0	0	0	0	0
21.500	0	0	0	0	0
21.750	0	0	0	0	0

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
22.000	0	0	0	0	0
22.250	0	0	0	0	0
22.500	0	0	0	0	0
22.750	0	0	0	0	0
23.000	0	0	0	0	0
23.250	0	0	0	0	0
23.500	0	0	0	0	0
23.750	0	0	0	0	0
24.000	0	0	0	0	0
24.250	0	0	0	0	0
24.500	0	0	0	0	0
24.750	0	0	0	0	0
25.000	0	0	0	0	0
25.250	0	0	0	0	0
25.500	0	0	0	0	0
25.750	0	0	0	0	0
26.000	0	0	0	0	0
26.250	0	0	0	0	0
26.500	0	0	0	0	0
26.750	0	0	0	0	0
27.000	0	0	0	0	0
27.250	0	0	0	0	0
27.500	0	0	0	0	0
27.750	0	0	0	0	0
28.000	0	0	0	0	0
28.250	0	0	0	0	0
28.500	0	0	0	0	0
28.750	0	0	0	0	0
29.000	0	0	0	0	0
29.250	0	0	0	0	0
29.500	0	0	0	0	0
29.750	0	0	0	0	0
30.000	0	0	0	0	0
30.250	0	0	0	0	0
30.500	0	0	0	0	0
30.750	0	0	0	0	0
31.000	0	0	0	0	0
31.250	0	0	0	0	0
31.500	0	0	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	0	0	0	0
8.500	0	0	0	0	0
8.750	0	0	0	0	0
9.000	0	0	0	0	0
9.250	0	0	0	0	0
9.500	0	0	0	0	0
9.750	0	0	0	0	0
10.000	0	0	9	10	11
10.250	12	14	17	20	24
10.500	28	33	39	45	51
10.750	58	66	74	83	93
11.000	103	114	126	140	155
11.250	173	192	214	238	264
11.500	292	325	367	423	497
11.750	591	704	837	990	1,192
12.000	1,477	1,820	2,179	2,508	2,750
12.250	2,776	2,753	2,765	2,753	2,759
12.500	2,752	2,754	2,751	2,752	2,750
12.750	2,751	2,750	2,750	2,750	2,750
13.000	2,750	2,750	2,749	2,749	2,749
13.250	2,749	2,749	2,749	2,749	2,749

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
13.500	2,749	2,749	2,749	2,749	2,749
13.750	2,749	2,749	2,749	2,749	2,748
14.000	2,748	2,748	2,748	2,748	2,748
14.250	2,748	2,748	2,748	2,748	2,748
14.500	2,748	2,748	2,748	2,748	2,748
14.750	2,748	2,748	2,748	2,748	2,747
15.000	2,747	2,746	2,745	2,743	2,741
15.250	2,739	2,737	2,735	2,732	2,729
15.500	2,725	2,722	2,718	2,714	2,709
15.750	2,704	2,700	2,694	2,689	2,683
16.000	2,677	2,671	2,664	2,658	2,651
16.250	2,644	2,637	2,630	2,622	2,615
16.500	2,608	2,600	2,592	2,584	2,577
16.750	2,568	2,560	2,552	2,544	2,535
17.000	2,526	2,518	2,509	2,500	2,491
17.250	2,481	2,472	2,463	2,453	2,443
17.500	2,433	2,423	2,413	2,403	2,393
17.750	2,383	2,372	2,361	2,351	2,340
18.000	2,329	2,318	2,306	2,295	2,284
18.250	2,273	2,261	2,250	2,238	2,227
18.500	2,215	2,204	2,192	2,181	2,169
18.750	2,157	2,146	2,134	2,122	2,110
19.000	2,099	2,087	2,075	2,063	2,051
19.250	2,039	2,027	2,015	2,003	1,990
19.500	1,978	1,966	1,954	1,941	1,929
19.750	1,917	1,904	1,892	1,879	1,867
20.000	1,854	1,842	1,829	1,816	1,804
20.250	1,791	1,778	1,766	1,753	1,740
20.500	1,727	1,714	1,702	1,689	1,676
20.750	1,663	1,650	1,637	1,624	1,611
21.000	1,598	1,584	1,571	1,558	1,545
21.250	1,532	1,518	1,505	1,492	1,479
21.500	1,465	1,452	1,438	1,425	1,412
21.750	1,398	1,385	1,371	1,357	1,344
22.000	1,330	1,317	1,303	1,289	1,276
22.250	1,262	1,248	1,234	1,220	1,207
22.500	1,193	1,179	1,165	1,151	1,137
22.750	1,123	1,109	1,095	1,081	1,067
23.000	1,052	1,038	1,024	1,010	996
23.250	981	967	953	938	924
23.500	910	895	881	866	852

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
23.750	837	823	808	793	779
24.000	764	749	731	713	694
24.250	676	657	638	620	601
24.500	582	563	545	526	507
24.750	488	470	451	432	414
25.000	395	376	357	339	320
25.250	301	283	264	245	226
25.500	208	189	170	152	133
25.750	114	95	77	58	39
26.000	20	0	0	0	0
26.250	0	0	0	0	0
26.500	0	0	0	0	0
26.750	0	0	0	0	0
27.000	0	0	0	0	0
27.250	0	0	0	0	0
27.500	0	0	0	0	0
27.750	0	0	0	0	0
28.000	0	0	0	0	0
28.250	0	0	0	0	0
28.500	0	0	0	0	0
28.750	0	0	0	0	0
29.000	0	0	0	0	0
29.250	0	0	0	0	0
29.500	0	0	0	0	0
29.750	0	0	0	0	0
30.000	0	0	0	0	0
30.250	0	0	0	0	0
30.500	0	0	0	0	0
30.750	0	0	0	0	0
31.000	0	0	0	0	0
31.250	0	0	0	0	0
31.500	0	0	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	0
8.250	0	0	0	0	0
8.500	0	0	0	0	0
8.750	0	0	0	0	0
9.000	0	0	0	0	0
9.250	9	10	10	12	13
9.500	15	17	19	22	26
9.750	29	33	38	42	47
10.000	53	59	65	72	80
10.250	88	97	107	117	129
10.500	140	153	166	180	195
10.750	211	227	244	262	280
11.000	299	320	341	365	391
11.250	420	452	486	522	562
11.500	604	653	714	792	893
11.750	1,020	1,171	1,349	1,552	1,816
12.000	2,186	2,630	2,801	2,776	2,778
12.250	2,764	2,768	2,761	2,762	2,757
12.500	2,756	2,754	2,753	2,752	2,752
12.750	2,752	2,752	2,751	2,751	2,751
13.000	2,751	2,750	2,750	2,750	2,750
13.250	2,750	2,750	2,750	2,750	2,750
13.500	2,750	2,750	2,750	2,749	2,749
13.750	2,749	2,749	2,749	2,749	2,749
14.000	2,749	2,749	2,749	2,749	2,749
14.250	2,749	2,749	2,749	2,749	2,749
14.500	2,749	2,749	2,749	2,749	2,749
14.750	2,749	2,748	2,748	2,748	2,748
15.000	2,748	2,748	2,748	2,748	2,748

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
15.250	2,748	2,748	2,748	2,748	2,748
15.500	2,748	2,748	2,748	2,748	2,747
15.750	2,746	2,745	2,743	2,741	2,739
16.000	2,736	2,733	2,730	2,726	2,722
16.250	2,719	2,715	2,711	2,706	2,702
16.500	2,698	2,693	2,688	2,683	2,678
16.750	2,673	2,667	2,662	2,656	2,650
17.000	2,644	2,638	2,632	2,625	2,619
17.250	2,612	2,605	2,598	2,591	2,583
17.500	2,576	2,568	2,561	2,553	2,545
17.750	2,536	2,528	2,519	2,511	2,502
18.000	2,493	2,484	2,475	2,465	2,456
18.250	2,447	2,437	2,428	2,418	2,409
18.500	2,399	2,389	2,380	2,370	2,360
18.750	2,350	2,341	2,331	2,321	2,311
19.000	2,301	2,291	2,280	2,270	2,260
19.250	2,250	2,240	2,229	2,219	2,208
19.500	2,198	2,187	2,177	2,166	2,155
19.750	2,145	2,134	2,123	2,112	2,102
20.000	2,091	2,080	2,069	2,058	2,046
20.250	2,035	2,024	2,013	2,002	1,991
20.500	1,979	1,968	1,957	1,945	1,934
20.750	1,922	1,911	1,899	1,888	1,876
21.000	1,865	1,853	1,841	1,830	1,818
21.250	1,806	1,794	1,782	1,771	1,759
21.500	1,747	1,735	1,723	1,711	1,699
21.750	1,686	1,674	1,662	1,650	1,638
22.000	1,625	1,613	1,601	1,588	1,576
22.250	1,564	1,551	1,539	1,526	1,513
22.500	1,501	1,488	1,475	1,463	1,450
22.750	1,437	1,424	1,412	1,399	1,386
23.000	1,373	1,360	1,347	1,334	1,321
23.250	1,308	1,294	1,281	1,268	1,255
23.500	1,242	1,228	1,215	1,202	1,188
23.750	1,175	1,161	1,148	1,134	1,121
24.000	1,107	1,092	1,076	1,057	1,039
24.250	1,020	1,001	983	964	945
24.500	926	908	889	870	852
24.750	833	814	795	777	758
25.000	739	721	702	683	664
25.250	646	627	608	590	571

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
25.500	552	533	515	496	477
25.750	458	440	421	402	384
26.000	365	346	327	309	290
26.250	271	253	234	215	196
26.500	178	159	140	122	103
26.750	84	65	47	28	0
27.000	0	0	0	0	0
27.250	0	0	0	0	0
27.500	0	0	0	0	0
27.750	0	0	0	0	0
28.000	0	0	0	0	0
28.250	0	0	0	0	0
28.500	0	0	0	0	0
28.750	0	0	0	0	0
29.000	0	0	0	0	0
29.250	0	0	0	0	0
29.500	0	0	0	0	0
29.750	0	0	0	0	0
30.000	0	0	0	0	0
30.250	0	0	0	0	0
30.500	0	0	0	0	0
30.750	0	0	0	0	0
31.000	0	0	0	0	0
31.250	0	0	0	0	0
31.500	0	0	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0	0	0	0	0
0.250	0	0	0	0	0
0.500	0	0	0	0	0
0.750	0	0	0	0	0
1.000	0	0	0	0	0
1.250	0	0	0	0	0
1.500	0	0	0	0	0
1.750	0	0	0	0	0
2.000	0	0	0	0	0
2.250	0	0	0	0	0
2.500	0	0	0	0	0
2.750	0	0	0	0	0
3.000	0	0	0	0	0
3.250	0	0	0	0	0
3.500	0	0	0	0	0
3.750	0	0	0	0	0
4.000	0	0	0	0	0
4.250	0	0	0	0	0
4.500	0	0	0	0	0
4.750	0	0	0	0	0
5.000	0	0	0	0	0
5.250	0	0	0	0	0
5.500	0	0	0	0	0
5.750	0	0	0	0	0
6.000	0	0	0	0	0
6.250	0	0	0	0	0
6.500	0	0	0	0	0

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
6.750	0	0	0	0	0
7.000	0	0	0	0	0
7.250	0	0	0	0	0
7.500	0	0	0	0	0
7.750	0	0	0	0	0
8.000	0	0	0	0	9
8.250	10	11	13	15	17
8.500	20	23	27	32	37
8.750	42	48	54	61	68
9.000	76	84	93	103	112
9.250	123	134	145	157	169
9.500	182	195	209	224	238
9.750	254	270	286	303	321
10.000	339	357	377	397	418
10.250	440	463	487	512	539
10.500	566	594	623	654	685
10.750	717	751	785	820	857
11.000	894	934	975	1,019	1,067
11.250	1,118	1,173	1,232	1,295	1,362
11.500	1,432	1,513	1,611	1,734	1,891
11.750	2,083	2,312	2,578	2,768	2,793
12.000	2,799	2,811	2,807	2,801	2,783
12.250	2,778	2,773	2,770	2,766	2,763
12.500	2,760	2,758	2,756	2,755	2,754
12.750	2,754	2,754	2,753	2,753	2,753
13.000	2,752	2,752	2,752	2,752	2,752
13.250	2,752	2,751	2,751	2,751	2,751
13.500	2,751	2,751	2,751	2,751	2,751
13.750	2,751	2,751	2,750	2,750	2,750
14.000	2,750	2,750	2,750	2,750	2,750
14.250	2,750	2,750	2,750	2,750	2,750
14.500	2,750	2,750	2,750	2,750	2,749
14.750	2,749	2,749	2,749	2,749	2,749
15.000	2,749	2,749	2,749	2,749	2,749
15.250	2,749	2,749	2,749	2,749	2,749
15.500	2,749	2,749	2,749	2,749	2,749
15.750	2,749	2,749	2,748	2,748	2,748
16.000	2,748	2,748	2,748	2,748	2,748
16.250	2,748	2,748	2,748	2,748	2,748
16.500	2,748	2,748	2,748	2,748	2,748
16.750	2,748	2,748	2,748	2,748	2,747

Hydrologic Calculations

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
17.000	2,747	2,746	2,745	2,743	2,742
17.250	2,740	2,738	2,736	2,734	2,731
17.500	2,729	2,726	2,722	2,719	2,716
17.750	2,712	2,708	2,703	2,699	2,694
18.000	2,690	2,684	2,679	2,674	2,669
18.250	2,663	2,658	2,652	2,646	2,641
18.500	2,635	2,629	2,623	2,617	2,611
18.750	2,605	2,599	2,593	2,587	2,580
19.000	2,574	2,568	2,561	2,554	2,548
19.250	2,541	2,534	2,528	2,521	2,514
19.500	2,507	2,500	2,492	2,485	2,478
19.750	2,471	2,463	2,456	2,448	2,441
20.000	2,433	2,425	2,418	2,410	2,402
20.250	2,394	2,386	2,378	2,370	2,362
20.500	2,354	2,346	2,337	2,329	2,321
20.750	2,312	2,304	2,295	2,287	2,278
21.000	2,270	2,261	2,252	2,244	2,235
21.250	2,226	2,217	2,208	2,199	2,190
21.500	2,181	2,172	2,162	2,153	2,144
21.750	2,135	2,125	2,116	2,106	2,097
22.000	2,087	2,078	2,068	2,058	2,049
22.250	2,039	2,029	2,019	2,009	1,999
22.500	1,989	1,979	1,969	1,959	1,948
22.750	1,938	1,928	1,917	1,907	1,896
23.000	1,886	1,875	1,865	1,854	1,843
23.250	1,833	1,822	1,811	1,800	1,789
23.500	1,778	1,767	1,756	1,745	1,734
23.750	1,722	1,711	1,700	1,688	1,677
24.000	1,666	1,653	1,637	1,619	1,600
24.250	1,582	1,563	1,544	1,525	1,507
24.500	1,488	1,469	1,450	1,432	1,413
24.750	1,394	1,376	1,357	1,338	1,319
25.000	1,301	1,282	1,263	1,245	1,226
25.250	1,207	1,188	1,170	1,151	1,132
25.500	1,114	1,095	1,076	1,057	1,039
25.750	1,020	1,001	982	964	945
26.000	926	908	889	870	851
26.250	833	814	795	777	758
26.500	739	720	702	683	664
26.750	646	627	608	589	571
27.000	552	533	514	496	477

Subsection: Time vs. Volume
Label: SP
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
27.250	458	440	421	402	383
27.500	365	346	327	309	290
27.750	271	252	234	215	196
28.000	178	159	140	121	103
28.250	84	65	46	28	0
28.500	0	0	0	0	0
28.750	0	0	0	0	0
29.000	0	0	0	0	0
29.250	0	0	0	0	0
29.500	0	0	0	0	0
29.750	0	0	0	0	0
30.000	0	0	0	0	0
30.250	0	0	0	0	0
30.500	0	0	0	0	0
30.750	0	0	0	0	0
31.000	0	0	0	0	0
31.250	0	0	0	0	0
31.500	0	0	0	0	0
31.750	0	0	0	0	0
32.000	0	0	0	0	0
32.250	0	0	0	0	0
32.500	0	0	0	0	0
32.750	0	0	0	0	0
33.000	0	0	0	0	0
33.250	0	0	0	0	0
33.500	0	0	0	0	0
33.750	0	0	0	0	0
34.000	0	0	0	0	0
34.250	0	0	0	0	0
34.500	0	0	0	0	0
34.750	0	0	0	0	0
35.000	0	0	0	0	0
35.250	0	0	0	0	0
35.500	0	0	0	0	0
35.750	0	0	0	0	0
36.000	0	(N/A)	(N/A)	(N/A)	(N/A)

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
33.40	0
33.75	534
34.00	922
34.25	1,305
34.50	1,684
34.75	2,058
35.00	2,426
35.25	2,787
35.50	3,139
35.75	3,482
36.00	3,814
36.25	4,133
36.50	4,437
36.75	4,722
37.00	4,983
37.25	5,202
37.50	5,390
38.50	6,102

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
33.40	0
33.75	534
34.00	922
34.25	1,305
34.50	1,684
34.75	2,058
35.00	2,426
35.25	2,787
35.50	3,139
35.75	3,482
36.00	3,814
36.25	4,133
36.50	4,437
36.75	4,722
37.00	4,983
37.25	5,202

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
37.50	5,390
38.50	6,102

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
33.40	0
33.75	534
34.00	922
34.25	1,305
34.50	1,684
34.75	2,058
35.00	2,426
35.25	2,787
35.50	3,139
35.75	3,482
36.00	3,814
36.25	4,133
36.50	4,437
36.75	4,722
37.00	4,983
37.25	5,202
37.50	5,390
38.50	6,102

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
33.40	0
33.75	534
34.00	922
34.25	1,305
34.50	1,684
34.75	2,058

Subsection: Elevation vs. Volume Curve
Label: DET SYSTEM
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Elevation-Volume

Pond Elevation (ft)	Pond Volume (ft³)
35.00	2,426
35.25	2,787
35.50	3,139
35.75	3,482
36.00	3,814
36.25	4,133
36.50	4,437
36.75	4,722
37.00	4,983
37.25	5,202
37.50	5,390
38.50	6,102

Subsection: Elevation-Area Volume Curve
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
29.10	0.0	0.00	0.00	0	0
30.00	0.0	0.00	0.00	31	31
31.50	0.0	0.01	0.01	294	325
32.00	0.0	0.02	0.04	257	581

Subsection: Elevation-Area Volume Curve
Label: EX. RG
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
29.10	0.0	0.00	0.00	0	0
30.00	0.0	0.00	0.00	31	31
31.50	0.0	0.01	0.01	294	325
32.00	0.0	0.02	0.04	257	581

Subsection: Elevation-Area Volume Curve
Label: EX. RG
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)

Subsection: Elevation-Area Volume Curve
Label: EX. RG
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
29.10	0.0	0.00	0.00	0	0
30.00	0.0	0.00	0.00	31	31
31.50	0.0	0.01	0.01	294	325
32.00	0.0	0.02	0.04	257	581

Subsection: Elevation-Area Volume Curve
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
29.10	0.0	0.00	0.00	0	0
30.00	0.0	0.00	0.00	31	31
31.50	0.0	0.01	0.01	294	325
32.00	0.0	0.02	0.04	257	581

Subsection: Elevation-Area Volume Curve
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
31.00	0.0	0.06	0.00	0	0
32.00	0.0	0.06	0.19	2,748	2,748
33.00	0.0	0.06	0.19	2,748	5,496

Subsection: Elevation-Area Volume Curve
Label: SP
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
31.00	0.0	0.06	0.00	0	0
32.00	0.0	0.06	0.19	2,748	2,748
33.00	0.0	0.06	0.19	2,748	5,496

Subsection: Elevation-Area Volume Curve
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Hydrologic Calculations

Subsection: Elevation-Area Volume Curve
Label: SP
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
31.00	0.0	0.06	0.00	0	0
32.00	0.0	0.06	0.19	2,748	2,748
33.00	0.0	0.06	0.19	2,748	5,496

Subsection: Elevation-Area Volume Curve
Label: SP
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
31.00	0.0	0.06	0.00	0	0
32.00	0.0	0.06	0.19	2,748	2,748
33.00	0.0	0.06	0.19	2,748	5,496

Subsection: Outlet Input Data
Label: OCS-DET-SYS
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	33.40 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	38.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	33.40	38.50
Rectangular Weir	Weir - 1	Forward	Culvert - 1	36.50	38.50
Culvert-Circular	Culvert - 1	Forward	TW	33.40	38.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1 Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	15.0 in
Length	94.00 ft
Length (Computed Barrel)	94.00 ft
Slope (Computed)	0.008 ft/ft

Outlet Control Data

Subsection: Outlet Input Data
Label: OCS-DET-SYS
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data	
Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	1.077
T2 ratio (HW/D)	1.215
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	34.75 ft	T1 Flow	4.80 ft³/s
T2 Elevation	34.92 ft	T2 Flow	5.49 ft³/s

Subsection: Outlet Input Data — Return Event: 1 years
Label: OCS-DET-SYS — Storm Event: 1 year
Scenario: Post-Development 1 year

Structure ID: Orifice - 1 Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	33.40 ft
Orifice Diameter	3.5 in
Orifice Coefficient	0.600

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	36.50 ft
Weir Length	0.33 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Composite Rating Curve — Return Event: 1 years
Label: OCS-DET-SYS — Storm Event: 1 year
Scenario: Post-Development 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
33.40	0.00	(N/A)	0.00
33.90	0.17	(N/A)	0.00
34.40	0.27	(N/A)	0.00
34.90	0.35	(N/A)	0.00
35.40	0.41	(N/A)	0.00

Subsection: Composite Rating Curve
Label: OCS-DET-SYS
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
35.90	0.47	(N/A)	0.00
36.40	0.52	(N/A)	0.00
36.50	0.53	(N/A)	0.00
36.90	0.81	(N/A)	0.00
37.40	1.43	(N/A)	0.00
37.90	2.25	(N/A)	0.00
38.40	3.23	(N/A)	0.00
38.50	3.44	(N/A)	0.00

Contributing Structures
(no Q: Orifice - 1,Weir - 1,Culvert - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Weir - 1)
Orifice - 1,Weir - 1,Culvert - 1
Orifice - 1,Weir - 1,Culvert - 1
Orifice - 1,Weir - 1,Culvert - 1
Orifice - 1,Weir - 1,Culvert - 1
Orifice - 1,Weir - 1,Culvert - 1

Subsection: Outlet Input Data
Label: OCS-EX-RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	29.10 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	32.00 ft

Requested Pond Water Surface Elevations

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 1	Forward	Culvert - 1	31.76	32.00
Orifice-Area	Orifice - 1	Forward	Culvert - 1	29.64	32.00
Culvert-Circular	Culvert - 1	Forward	TW	29.91	32.00
Irregular Weir	Weir - 1	Forward	TW	30.80	32.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	15.0 in
Length	18.50 ft
Length (Computed Barrel)	18.72 ft
Slope (Computed)	0.156 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.023
Kr	0.200
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0018
M	2.5000
C	0.0243
Y	0.8300
T1 ratio (HW/D)	0.000
T2 ratio (HW/D)	1.141
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

T1 Elevation	29.91 ft	T1 Flow	4.80 ft³/s
T2 Elevation	31.34 ft	T2 Flow	5.49 ft³/s

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	31.76 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: Orifice - 1 Structure Type: Orifice-Area	
Number of Openings	1
Elevation	29.64 ft
Orifice Area	0.4 ft²
Top Elevation	30.14 ft
Datum Elevation	29.64 ft
Orifice Coefficient	0.600

Structure ID: Weir - 1
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	32.00
18.40	31.40
31.50	30.85
44.30	31.00
51.15	30.80
60.50	31.30
67.70	31.45
77.80	32.00

Lowest Elevation	30.80 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Subsection: Outlet Input Data — Return Event: 1 years
Label: OCS-EX-RG — Storm Event: 1 year
Scenario: Pre-Development 1 year

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Composite Rating Curve — Return Event: 1 years
Label: OCS-EX-RG — Storm Event: 1 year
Scenario: Pre-Development 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
29.10	0.00	(N/A)	0.00
29.60	0.00	(N/A)	0.00
29.64	0.00	(N/A)	0.00
29.91	0.00	(N/A)	0.00
30.10	0.11	(N/A)	0.00
30.60	0.82	(N/A)	0.00
30.80	1.07	(N/A)	0.00
31.10	7.80	(N/A)	0.00
31.60	62.53	(N/A)	0.00
31.76	93.05	(N/A)	0.00
32.00	153.27	(N/A)	0.00

Contributing Structures
(no Q: Riser - 1,Orifice - 1,Culvert - 1,Weir - 1)
(no Q: Riser - 1,Orifice - 1,Culvert - 1,Weir - 1)
(no Q: Riser - 1,Orifice - 1,Culvert - 1,Weir - 1)
(no Q: Riser - 1,Orifice - 1,Culvert - 1,Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Weir - 1)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Weir - 1)

Subsection: Composite Rating Curve
Label: OCS-EX-RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Contributing Structures
Orifice - 1,Culvert - 1,Weir - 1 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Weir - 1 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Weir - 1 (no Q: Riser - 1)
Riser - 1,Orifice - 1,Culvert - 1,Weir - 1

Subsection: Outlet Input Data
Label: OCS-SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Requested Pond Water Surface Elevations	
Minimum (Headwater)	31.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	33.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Inlet Box	Riser - 10	Forward	TW	32.00	33.00
Inlet Box	Riser - 5	Forward	TW	32.00	33.00
Inlet Box	Riser - 8	Forward	TW	32.00	33.00
Inlet Box	Riser - 4	Forward	TW	32.00	33.00
User Defined Table	User Defined Rating Table - 1	Forward	TW	0.00	33.00
Inlet Box	Riser - 3	Forward	TW	32.00	33.00
Inlet Box	Riser - 7	Forward	TW	32.00	33.00
Inlet Box	Riser - 2	Forward	TW	32.00	33.00
Inlet Box	Riser - 9	Forward	TW	32.00	33.00
Inlet Box	Riser - 1	Forward	TW	32.00	33.00
Inlet Box	Riser - 6	Forward	TW	32.00	33.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: User Defined Rating Table - 1
Structure Type: User Defined Table

Elevation (ft)	Flow (ft^3/s)

Elevation (ft)	Flow (ft³/s)
31.00	0.10
32.00	0.10
33.00	0.10

Structure ID: Riser - 1 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 2 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 3 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s

Structure ID: Riser - 3 Structure Type: Inlet Box	
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 4 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 5 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 6 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600

Structure ID: Riser - 6 Structure Type: Inlet Box	
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 7 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 8 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 9 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft

Structure ID: Riser - 9 Structure Type: Inlet Box	
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: Riser - 10 Structure Type: Inlet Box	
Number of Openings	1
Elevation	32.00 ft
Orifice Area	4.0 ft²
Orifice Coefficient	0.600
Weir Length	8.00 ft
Weir Coefficient	3.00 (ft^0.5)/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Subsection: Composite Rating Curve
Label: OCS-SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
31.00	0.10	(N/A)	0.00
31.50	0.10	(N/A)	0.00
32.00	0.10	(N/A)	0.00
32.50	84.96	(N/A)	0.00
33.00	192.63	(N/A)	0.00

Contributing Structures
User Defined Rating Table - 1
User Defined Rating Table - 1
Riser - 10 + Riser - 5 + Riser - 8 + Riser - 4 + User Defined Rating Table - 1 + Riser - 3 + Riser - 7 + Riser - 2 + Riser - 9 + Riser - 1 + Riser - 6
Riser - 10 + Riser - 5 + Riser - 8 + Riser - 4 + User Defined Rating Table - 1 + Riser - 3 + Riser - 7 + Riser - 2 + Riser - 9 + Riser - 1 + Riser - 6
Riser - 10 + Riser - 5 + Riser - 8 + Riser - 4 + User Defined Rating Table - 1 + Riser - 3 + Riser - 7 + Riser - 2 + Riser - 9 + Riser - 1 + Riser - 6

Subsection: Elevation-Volume-Flow Table (Pond)
Label: DET SYSTEM
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 1 years
Label: DET SYSTEM | Storm Event: 1 year
Scenario: Post-Development 1 year

Initial Conditions	
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
33.40	0.00	0	0.00	0.00	0.00	0.00
33.90	0.17	767	0.00	0.00	0.17	8.69
34.40	0.27	1,532	0.00	0.00	0.27	17.30
34.90	0.35	2,279	0.00	0.00	0.35	25.67
35.40	0.41	2,998	0.00	0.00	0.41	33.73
35.90	0.47	3,681	0.00	0.00	0.47	41.37
36.40	0.52	4,315	0.00	0.00	0.52	48.47
36.50	0.53	4,437	0.00	0.00	0.53	49.83
36.90	0.81	4,879	0.00	0.00	0.81	55.01
37.40	1.43	5,315	0.00	0.00	1.43	60.48
37.90	2.25	5,675	0.00	0.00	2.25	65.31
38.40	3.23	6,031	0.00	0.00	3.23	70.24
38.50	3.44	6,102	0.00	0.00	3.44	71.24

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 10 years
Label: DET SYSTEM | Storm Event: 10 years
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
33.40	0.00	0	0.00	0.00	0.00	0.00
33.90	0.17	767	0.00	0.00	0.17	8.69
34.40	0.27	1,532	0.00	0.00	0.27	17.30
34.90	0.35	2,279	0.00	0.00	0.35	25.67

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 10 years
Label: DET SYSTEM — Storm Event: 10 years
Scenario: Post-Development 10 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
35.40	0.41	2,998	0.00	0.00	0.41	33.73
35.90	0.47	3,681	0.00	0.00	0.47	41.37
36.40	0.52	4,315	0.00	0.00	0.52	48.47
36.50	0.53	4,437	0.00	0.00	0.53	49.83
36.90	0.81	4,879	0.00	0.00	0.81	55.01
37.40	1.43	5,315	0.00	0.00	1.43	60.48
37.90	2.25	5,675	0.00	0.00	2.25	65.31
38.40	3.23	6,031	0.00	0.00	3.23	70.24
38.50	3.44	6,102	0.00	0.00	3.44	71.24

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 25 years
Label: DET SYSTEM — Storm Event: 25 years
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
33.40	0.00	0	0.00	0.00	0.00	0.00
33.90	0.17	767	0.00	0.00	0.17	8.69
34.40	0.27	1,532	0.00	0.00	0.27	17.30
34.90	0.35	2,279	0.00	0.00	0.35	25.67
35.40	0.41	2,998	0.00	0.00	0.41	33.73
35.90	0.47	3,681	0.00	0.00	0.47	41.37
36.40	0.52	4,315	0.00	0.00	0.52	48.47
36.50	0.53	4,437	0.00	0.00	0.53	49.83
36.90	0.81	4,879	0.00	0.00	0.81	55.01
37.40	1.43	5,315	0.00	0.00	1.43	60.48
37.90	2.25	5,675	0.00	0.00	2.25	65.31

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 25 years
Label: DET SYSTEM — Storm Event: 25 years
Scenario: Post-Development 25 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
38.40	3.23	6,031	0.00	0.00	3.23	70.24
38.50	3.44	6,102	0.00	0.00	3.44	71.24

Subsection: Elevation-Volume-Flow Table (Pond) — Return Event: 100 years
Label: DET SYSTEM — Storm Event: 100 years
Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
33.40	0.00	0	0.00	0.00	0.00	0.00
33.90	0.17	767	0.00	0.00	0.17	8.69
34.40	0.27	1,532	0.00	0.00	0.27	17.30
34.90	0.35	2,279	0.00	0.00	0.35	25.67
35.40	0.41	2,998	0.00	0.00	0.41	33.73
35.90	0.47	3,681	0.00	0.00	0.47	41.37
36.40	0.52	4,315	0.00	0.00	0.52	48.47
36.50	0.53	4,437	0.00	0.00	0.53	49.83
36.90	0.81	4,879	0.00	0.00	0.81	55.01
37.40	1.43	5,315	0.00	0.00	1.43	60.48
37.90	2.25	5,675	0.00	0.00	2.25	65.31
38.40	3.23	6,031	0.00	0.00	3.23	70.24
38.50	3.44	6,102	0.00	0.00	3.44	71.24

Subsection: Detention Time — Return Event: 1 years
Label: DET SYSTEM (IN) — Storm Event: 1 year
Scenario: Post-Development 1 year

Subsection: Detention Time
Label: DET SYSTEM (IN)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration

Infiltration Method (Computed)	No Infiltration

Approximate Detention Times

Time to Peak (Outflow + Infiltration, Peak to Peak Detention Time)	12.500 hours
Time to Peak (Inflow, Peak to Peak Detention Time)	12.100 hours
Detention Time (Peak to Peak)	0.400 hours
Time to Centroid (Outflow)	14.793 hours
Time to Centroid (Inflow)	13.395 hours
Detention Time (Centroid to Centroid)	1.398 hours
Weighted Average Plug Time	1.424 hours
Maximum Plug Volume Plug Time	1.243 hours
Maximum Inflow Plug Volume	234 ft³
Time (Maximum Plug Volume, Start)	12.050 hours
Time (Maximum Plug Volume, End)	12.100 hours

Subsection: Level Pool Pond Routing Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration

Infiltration Method (Computed)	No Infiltration

Initial Conditions

Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Subsection: Level Pool Pond Routing Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.32 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.30 ft³/s	Time to Peak (Flow, Outlet)	12.500 hours

Elevation (Water Surface, Peak)	34.59 ft
Volume (Peak)	1,816 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	4,757 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	4,757 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Detention Time
Label: DET SYSTEM (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Approximate Detention Times	
Time to Peak (Outflow + Infiltration, Peak to Peak Detention Time)	12.550 hours
Time to Peak (Inflow, Peak to Peak Detention Time)	12.100 hours
Detention Time (Peak to Peak)	0.450 hours
Time to Centroid (Outflow)	14.762 hours
Time to Centroid (Inflow)	13.051 hours
Detention Time (Centroid to Centroid)	1.710 hours
Weighted Average Plug Time	1.743 hours
Maximum Plug Volume Plug Time	1.688 hours
Maximum Inflow Plug Volume	476 ft³

Subsection: Detention Time
Label: DET SYSTEM (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Approximate Detention Times	
Time (Maximum Plug Volume, Start)	12.050 hours
Time (Maximum Plug Volume, End)	12.100 hours

Subsection: Level Pool Pond Routing Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.68 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.50 ft³/s	Time to Peak (Flow, Outlet)	12.550 hours

Elevation (Water Surface, Peak)	36.21 ft
Volume (Peak)	4,078 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	10,061 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	10,061 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Detention Time
Label: DET SYSTEM (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Approximate Detention Times	
Time to Peak (Outflow + Infiltration, Peak to Peak Detention Time)	12.400 hours
Time to Peak (Inflow, Peak to Peak Detention Time)	12.100 hours
Detention Time (Peak to Peak)	0.300 hours
Time to Centroid (Outflow)	14.630 hours
Time to Centroid (Inflow)	12.934 hours
Detention Time (Centroid to Centroid)	1.696 hours
Weighted Average Plug Time	1.730 hours
Maximum Plug Volume Plug Time	1.581 hours
Maximum Inflow Plug Volume	614 ft³
Time (Maximum Plug Volume, Start)	12.050 hours
Time (Maximum Plug Volume, End)	12.100 hours

Subsection: Level Pool Pond Routing Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Subsection: Level Pool Pond Routing Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.45 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	1.06 ft³/s	Time to Peak (Flow, Outlet)	12.400 hours

Elevation (Water Surface, Peak)	37.11 ft
Volume (Peak)	5,076 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	13,173 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	13,173 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Detention Time
Label: DET SYSTEM (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Approximate Detention Times	
Time to Peak (Outflow + Infiltration, Peak to Peak Detention Time)	12.200 hours
Time to Peak (Inflow, Peak to Peak Detention Time)	12.100 hours
Detention Time (Peak to Peak)	0.100 hours
Time to Centroid (Outflow)	14.247 hours
Time to Centroid (Inflow)	12.773 hours
Detention Time (Centroid to Centroid)	1.474 hours
Weighted Average Plug Time	1.504 hours
Maximum Plug Volume Plug Time	0.928 hours
Maximum Inflow Plug Volume	890 ft³

Subsection: Detention Time
Label: DET SYSTEM (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Approximate Detention Times	
Time (Maximum Plug Volume, Start)	12.050 hours
Time (Maximum Plug Volume, End)	12.100 hours

Subsection: Level Pool Pond Routing Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	33.40 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	4.99 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	3.24 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	38.40 ft
Volume (Peak)	6,034 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	19,557 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	19,557 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	33.40
0.050	0.00	0.00	0.00	0.00	0.00	0	33.40
0.100	0.00	0.00	0.00	0.00	0.00	0	33.40
0.150	0.00	0.00	0.00	0.00	0.00	0	33.40
0.200	0.00	0.00	0.00	0.00	0.00	0	33.40
0.250	0.00	0.00	0.00	0.00	0.00	0	33.40
0.300	0.00	0.00	0.00	0.00	0.00	0	33.40
0.350	0.00	0.00	0.00	0.00	0.00	0	33.40
0.400	0.00	0.00	0.00	0.00	0.00	0	33.40
0.450	0.00	0.00	0.00	0.00	0.00	0	33.40
0.500	0.00	0.00	0.00	0.00	0.00	0	33.40
0.550	0.00	0.00	0.00	0.00	0.00	0	33.40
0.600	0.00	0.00	0.00	0.00	0.00	0	33.40
0.650	0.00	0.00	0.00	0.00	0.00	0	33.40
0.700	0.00	0.00	0.00	0.00	0.00	0	33.40
0.750	0.00	0.00	0.00	0.00	0.00	0	33.40
0.800	0.00	0.00	0.00	0.00	0.00	0	33.40
0.850	0.00	0.00	0.00	0.00	0.00	0	33.40
0.900	0.00	0.00	0.00	0.00	0.00	0	33.40
0.950	0.00	0.00	0.00	0.00	0.00	0	33.40
1.000	0.00	0.00	0.00	0.00	0.00	0	33.40
1.050	0.00	0.00	0.00	0.00	0.00	0	33.40
1.100	0.00	0.00	0.00	0.00	0.00	0	33.40
1.150	0.00	0.00	0.00	0.00	0.00	0	33.40
1.200	0.00	0.00	0.00	0.00	0.00	0	33.40
1.250	0.00	0.00	0.00	0.00	0.00	0	33.40
1.300	0.00	0.00	0.00	0.00	0.00	0	33.40
1.350	0.00	0.00	0.00	0.00	0.00	0	33.40
1.400	0.00	0.00	0.00	0.00	0.00	0	33.40
1.450	0.00	0.00	0.00	0.00	0.00	0	33.40
1.500	0.00	0.00	0.00	0.00	0.00	0	33.40
1.550	0.00	0.00	0.00	0.00	0.00	0	33.40
1.600	0.00	0.00	0.00	0.00	0.00	0	33.40
1.650	0.00	0.00	0.00	0.00	0.00	0	33.40
1.700	0.00	0.00	0.00	0.00	0.00	0	33.40
1.750	0.00	0.00	0.00	0.00	0.00	0	33.40
1.800	0.00	0.00	0.00	0.00	0.00	0	33.40
1.850	0.00	0.00	0.00	0.00	0.00	0	33.40
1.900	0.00	0.00	0.00	0.00	0.00	0	33.40
1.950	0.00	0.00	0.00	0.00	0.00	0	33.40
2.000	0.00	0.00	0.00	0.00	0.00	0	33.40
2.050	0.00	0.00	0.00	0.00	0.00	0	33.40

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	33.40
2.150	0.00	0.00	0.00	0.00	0.00	0	33.40
2.200	0.00	0.00	0.00	0.00	0.00	0	33.40
2.250	0.00	0.00	0.00	0.00	0.00	0	33.40
2.300	0.00	0.00	0.00	0.00	0.00	0	33.40
2.350	0.00	0.00	0.00	0.00	0.00	0	33.40
2.400	0.00	0.00	0.00	0.00	0.00	0	33.40
2.450	0.00	0.00	0.00	0.00	0.00	0	33.40
2.500	0.00	0.00	0.00	0.00	0.00	0	33.40
2.550	0.00	0.00	0.00	0.00	0.00	0	33.40
2.600	0.00	0.00	0.00	0.00	0.00	0	33.40
2.650	0.00	0.00	0.00	0.00	0.00	0	33.40
2.700	0.00	0.00	0.00	0.00	0.00	0	33.40
2.750	0.00	0.00	0.00	0.00	0.00	0	33.40
2.800	0.00	0.00	0.00	0.00	0.00	0	33.40
2.850	0.00	0.00	0.00	0.00	0.00	0	33.40
2.900	0.00	0.00	0.00	0.00	0.00	0	33.40
2.950	0.00	0.00	0.00	0.00	0.00	0	33.40
3.000	0.00	0.00	0.00	0.00	0.00	0	33.40
3.050	0.00	0.00	0.00	0.00	0.00	0	33.40
3.100	0.00	0.00	0.00	0.00	0.00	0	33.40
3.150	0.00	0.00	0.00	0.00	0.00	0	33.40
3.200	0.00	0.00	0.00	0.00	0.00	0	33.40
3.250	0.00	0.00	0.00	0.00	0.00	0	33.40
3.300	0.00	0.00	0.00	0.00	0.00	0	33.40
3.350	0.00	0.00	0.00	0.00	0.00	0	33.40
3.400	0.00	0.00	0.00	0.00	0.00	0	33.40
3.450	0.00	0.00	0.00	0.00	0.00	0	33.40
3.500	0.00	0.00	0.00	0.00	0.00	0	33.40
3.550	0.00	0.00	0.00	0.00	0.00	0	33.40
3.600	0.00	0.00	0.00	0.00	0.00	0	33.40
3.650	0.00	0.00	0.00	0.00	0.00	0	33.40
3.700	0.00	0.00	0.00	0.00	0.00	0	33.40
3.750	0.00	0.00	0.00	0.00	0.00	0	33.40
3.800	0.00	0.00	0.00	0.00	0.00	0	33.40
3.850	0.00	0.00	0.00	0.00	0.00	0	33.40
3.900	0.00	0.00	0.00	0.00	0.00	0	33.40
3.950	0.00	0.00	0.00	0.00	0.00	0	33.40
4.000	0.00	0.00	0.00	0.00	0.00	0	33.40
4.050	0.00	0.00	0.00	0.00	0.00	0	33.40
4.100	0.00	0.00	0.00	0.00	0.00	0	33.40
4.150	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	33.40
4.250	0.00	0.00	0.00	0.00	0.00	0	33.40
4.300	0.00	0.00	0.00	0.00	0.00	0	33.40
4.350	0.00	0.00	0.00	0.00	0.00	0	33.40
4.400	0.00	0.00	0.00	0.00	0.00	0	33.40
4.450	0.00	0.00	0.00	0.00	0.00	0	33.40
4.500	0.00	0.00	0.00	0.00	0.00	0	33.40
4.550	0.00	0.00	0.00	0.00	0.00	0	33.40
4.600	0.00	0.00	0.00	0.00	0.00	0	33.40
4.650	0.00	0.00	0.00	0.00	0.00	0	33.40
4.700	0.00	0.00	0.00	0.00	0.00	0	33.40
4.750	0.00	0.00	0.00	0.00	0.00	0	33.40
4.800	0.00	0.00	0.00	0.00	0.00	0	33.40
4.850	0.00	0.00	0.00	0.00	0.00	0	33.40
4.900	0.00	0.00	0.00	0.00	0.00	0	33.40
4.950	0.00	0.00	0.00	0.00	0.00	0	33.40
5.000	0.00	0.00	0.00	0.00	0.00	0	33.40
5.050	0.00	0.00	0.00	0.00	0.00	0	33.40
5.100	0.00	0.00	0.00	0.00	0.00	0	33.40
5.150	0.00	0.00	0.00	0.00	0.00	0	33.40
5.200	0.00	0.00	0.00	0.00	0.00	0	33.40
5.250	0.00	0.00	0.00	0.00	0.00	0	33.40
5.300	0.00	0.00	0.00	0.00	0.00	0	33.40
5.350	0.00	0.00	0.00	0.00	0.00	0	33.40
5.400	0.00	0.00	0.00	0.00	0.00	0	33.40
5.450	0.00	0.00	0.00	0.00	0.00	0	33.40
5.500	0.00	0.00	0.00	0.00	0.00	0	33.40
5.550	0.00	0.00	0.00	0.00	0.00	0	33.40
5.600	0.00	0.00	0.00	0.00	0.00	0	33.40
5.650	0.00	0.00	0.00	0.00	0.00	0	33.40
5.700	0.00	0.00	0.00	0.00	0.00	0	33.40
5.750	0.00	0.00	0.00	0.00	0.00	0	33.40
5.800	0.00	0.00	0.00	0.00	0.00	0	33.40
5.850	0.00	0.00	0.00	0.00	0.00	0	33.40
5.900	0.00	0.00	0.00	0.00	0.00	0	33.40
5.950	0.00	0.00	0.00	0.00	0.00	0	33.40
6.000	0.00	0.00	0.00	0.00	0.00	0	33.40
6.050	0.00	0.01	0.01	0.00	0.00	0	33.40
6.100	0.00	0.01	0.01	0.00	0.00	1	33.40
6.150	0.00	0.01	0.01	0.00	0.00	1	33.40
6.200	0.00	0.01	0.01	0.00	0.00	1	33.40
6.250	0.00	0.01	0.01	0.00	0.00	1	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.02	0.02	0.00	0.00	1	33.40
6.350	0.00	0.02	0.02	0.00	0.00	2	33.40
6.400	0.00	0.02	0.02	0.00	0.00	2	33.40
6.450	0.00	0.03	0.03	0.00	0.00	2	33.40
6.500	0.00	0.03	0.03	0.00	0.00	3	33.40
6.550	0.00	0.03	0.03	0.00	0.00	3	33.40
6.600	0.00	0.04	0.04	0.00	0.00	3	33.40
6.650	0.00	0.04	0.04	0.00	0.00	4	33.40
6.700	0.00	0.05	0.05	0.00	0.00	4	33.40
6.750	0.00	0.05	0.05	0.00	0.00	5	33.40
6.800	0.00	0.06	0.06	0.00	0.00	5	33.40
6.850	0.00	0.06	0.06	0.00	0.00	6	33.40
6.900	0.00	0.07	0.07	0.00	0.00	6	33.40
6.950	0.00	0.07	0.08	0.00	0.00	7	33.40
7.000	0.00	0.08	0.08	0.00	0.00	7	33.40
7.050	0.01	0.09	0.09	0.00	0.00	8	33.41
7.100	0.01	0.09	0.10	0.00	0.00	9	33.41
7.150	0.01	0.10	0.10	0.00	0.00	9	33.41
7.200	0.01	0.11	0.11	0.00	0.00	10	33.41
7.250	0.01	0.12	0.12	0.00	0.00	11	33.41
7.300	0.01	0.12	0.13	0.00	0.00	11	33.41
7.350	0.01	0.13	0.14	0.00	0.00	12	33.41
7.400	0.01	0.14	0.15	0.00	0.00	13	33.41
7.450	0.01	0.15	0.15	0.00	0.00	14	33.41
7.500	0.01	0.16	0.16	0.00	0.00	14	33.41
7.550	0.01	0.17	0.17	0.00	0.00	15	33.41
7.600	0.01	0.18	0.18	0.00	0.00	16	33.41
7.650	0.01	0.18	0.19	0.00	0.00	17	33.41
7.700	0.01	0.19	0.20	0.00	0.00	18	33.41
7.750	0.01	0.21	0.21	0.00	0.00	19	33.41
7.800	0.01	0.22	0.22	0.00	0.00	20	33.41
7.850	0.01	0.23	0.24	0.00	0.00	21	33.41
7.900	0.01	0.24	0.25	0.00	0.00	22	33.41
7.950	0.01	0.25	0.26	0.00	0.01	23	33.41
8.000	0.01	0.26	0.27	0.00	0.01	24	33.42
8.050	0.01	0.27	0.28	0.00	0.01	25	33.42
8.100	0.01	0.28	0.30	0.00	0.01	26	33.42
8.150	0.01	0.30	0.31	0.00	0.01	27	33.42
8.200	0.01	0.31	0.32	0.00	0.01	28	33.42
8.250	0.01	0.32	0.34	0.00	0.01	30	33.42
8.300	0.01	0.34	0.35	0.00	0.01	31	33.42
8.350	0.01	0.35	0.37	0.00	0.01	32	33.42

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.02	0.37	0.38	0.00	0.01	34	33.42
8.450	0.02	0.38	0.40	0.00	0.01	35	33.42
8.500	0.02	0.40	0.42	0.00	0.01	37	33.42
8.550	0.02	0.42	0.43	0.00	0.01	38	33.43
8.600	0.02	0.44	0.45	0.00	0.01	40	33.43
8.650	0.02	0.45	0.47	0.00	0.01	41	33.43
8.700	0.02	0.47	0.49	0.00	0.01	43	33.43
8.750	0.02	0.49	0.51	0.00	0.01	45	33.43
8.800	0.02	0.51	0.53	0.00	0.01	47	33.43
8.850	0.02	0.53	0.56	0.00	0.01	49	33.43
8.900	0.02	0.56	0.58	0.00	0.01	51	33.43
8.950	0.02	0.58	0.60	0.00	0.01	53	33.43
9.000	0.02	0.60	0.62	0.00	0.01	55	33.44
9.050	0.02	0.62	0.65	0.00	0.01	57	33.44
9.100	0.03	0.65	0.67	0.00	0.01	59	33.44
9.150	0.03	0.67	0.70	0.00	0.01	61	33.44
9.200	0.03	0.70	0.73	0.00	0.01	64	33.44
9.250	0.03	0.72	0.75	0.00	0.01	66	33.44
9.300	0.03	0.75	0.78	0.00	0.02	69	33.44
9.350	0.03	0.78	0.81	0.00	0.02	71	33.45
9.400	0.03	0.81	0.84	0.00	0.02	74	33.45
9.450	0.03	0.83	0.87	0.00	0.02	76	33.45
9.500	0.03	0.86	0.90	0.00	0.02	79	33.45
9.550	0.03	0.89	0.93	0.00	0.02	82	33.45
9.600	0.03	0.92	0.96	0.00	0.02	84	33.46
9.650	0.04	0.95	0.99	0.00	0.02	87	33.46
9.700	0.04	0.99	1.03	0.00	0.02	90	33.46
9.750	0.04	1.02	1.06	0.00	0.02	93	33.46
9.800	0.04	1.05	1.09	0.00	0.02	96	33.46
9.850	0.04	1.09	1.13	0.00	0.02	99	33.47
9.900	0.04	1.12	1.17	0.00	0.02	102	33.47
9.950	0.04	1.16	1.20	0.00	0.02	106	33.47
10.000	0.04	1.19	1.24	0.00	0.02	109	33.47
10.050	0.04	1.23	1.28	0.00	0.02	112	33.47
10.100	0.04	1.26	1.32	0.00	0.03	116	33.48
10.150	0.05	1.30	1.36	0.00	0.03	119	33.48
10.200	0.05	1.34	1.40	0.00	0.03	123	33.48
10.250	0.05	1.39	1.44	0.00	0.03	127	33.48
10.300	0.05	1.43	1.49	0.00	0.03	131	33.49
10.350	0.05	1.47	1.53	0.00	0.03	135	33.49
10.400	0.06	1.52	1.58	0.00	0.03	139	33.49
10.450	0.06	1.57	1.63	0.00	0.03	144	33.49

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.06	1.62	1.69	0.00	0.03	148	33.50
10.550	0.06	1.67	1.74	0.00	0.03	153	33.50
10.600	0.06	1.73	1.80	0.00	0.03	158	33.50
10.650	0.06	1.78	1.85	0.00	0.04	163	33.51
10.700	0.07	1.84	1.91	0.00	0.04	168	33.51
10.750	0.07	1.90	1.97	0.00	0.04	173	33.51
10.800	0.07	1.96	2.04	0.00	0.04	179	33.52
10.850	0.07	2.02	2.10	0.00	0.04	185	33.52
10.900	0.07	2.08	2.17	0.00	0.04	190	33.52
10.950	0.08	2.15	2.23	0.00	0.04	196	33.53
11.000	0.08	2.21	2.30	0.00	0.04	202	33.53
11.050	0.08	2.28	2.38	0.00	0.05	209	33.54
11.100	0.09	2.36	2.45	0.00	0.05	215	33.54
11.150	0.09	2.44	2.54	0.00	0.05	223	33.55
11.200	0.10	2.53	2.63	0.00	0.05	231	33.55
11.250	0.10	2.62	2.73	0.00	0.05	240	33.56
11.300	0.11	2.73	2.84	0.00	0.06	249	33.56
11.350	0.12	2.84	2.96	0.00	0.06	260	33.57
11.400	0.13	2.97	3.09	0.00	0.06	271	33.58
11.450	0.13	3.10	3.22	0.00	0.06	283	33.59
11.500	0.14	3.24	3.37	0.00	0.07	296	33.59
11.550	0.17	3.41	3.54	0.00	0.07	311	33.60
11.600	0.20	3.62	3.77	0.00	0.07	331	33.62
11.650	0.25	3.91	4.07	0.00	0.08	357	33.63
11.700	0.31	4.30	4.47	0.00	0.09	393	33.66
11.750	0.38	4.79	4.98	0.00	0.10	438	33.69
11.800	0.44	5.39	5.61	0.00	0.11	493	33.72
11.850	0.51	6.10	6.35	0.00	0.12	558	33.77
11.900	0.59	6.92	7.20	0.00	0.14	634	33.81
11.950	0.85	8.03	8.36	0.00	0.16	737	33.88
12.000	1.17	9.68	10.05	0.00	0.19	889	33.98
12.050	1.28	11.70	12.12	0.00	0.21	1,074	34.10
12.100	1.32	13.83	14.31	0.00	0.24	1,269	34.23
12.150	1.10	15.74	16.26	0.00	0.26	1,441	34.34
12.200	0.80	17.10	17.64	0.00	0.27	1,564	34.42
12.250	0.67	18.00	18.57	0.00	0.28	1,647	34.48
12.300	0.59	18.68	19.26	0.00	0.29	1,710	34.52
12.350	0.52	19.20	19.79	0.00	0.29	1,757	34.55
12.400	0.44	19.56	20.16	0.00	0.30	1,790	34.57
12.450	0.37	19.78	20.38	0.00	0.30	1,810	34.58
12.500	0.30	19.85	20.45	0.00	0.30	1,816	34.59
12.550	0.25	19.80	20.40	0.00	0.30	1,812	34.59

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.21	19.66	20.26	0.00	0.30	1,799	34.58
12.650	0.19	19.47	20.06	0.00	0.30	1,781	34.56
12.700	0.18	19.25	19.84	0.00	0.29	1,761	34.55
12.750	0.17	19.02	19.60	0.00	0.29	1,741	34.54
12.800	0.17	18.78	19.36	0.00	0.29	1,719	34.52
12.850	0.16	18.53	19.10	0.00	0.29	1,696	34.51
12.900	0.15	18.27	18.84	0.00	0.29	1,672	34.49
12.950	0.14	17.99	18.56	0.00	0.28	1,647	34.48
13.000	0.14	17.71	18.27	0.00	0.28	1,621	34.46
13.050	0.13	17.42	17.98	0.00	0.28	1,594	34.44
13.100	0.12	17.13	17.68	0.00	0.27	1,567	34.42
13.150	0.12	16.83	17.38	0.00	0.27	1,539	34.40
13.200	0.12	16.54	17.07	0.00	0.27	1,513	34.39
13.250	0.12	16.24	16.77	0.00	0.26	1,486	34.37
13.300	0.12	15.96	16.48	0.00	0.26	1,460	34.35
13.350	0.11	15.67	16.19	0.00	0.26	1,434	34.34
13.400	0.11	15.39	15.90	0.00	0.25	1,409	34.32
13.450	0.11	15.11	15.61	0.00	0.25	1,384	34.30
13.500	0.11	14.83	15.32	0.00	0.25	1,359	34.29
13.550	0.11	14.55	15.04	0.00	0.24	1,334	34.27
13.600	0.10	14.28	14.76	0.00	0.24	1,309	34.25
13.650	0.10	14.01	14.49	0.00	0.24	1,285	34.24
13.700	0.10	13.74	14.21	0.00	0.23	1,260	34.22
13.750	0.10	13.48	13.94	0.00	0.23	1,236	34.21
13.800	0.10	13.22	13.67	0.00	0.23	1,212	34.19
13.850	0.09	12.96	13.41	0.00	0.23	1,189	34.17
13.900	0.09	12.70	13.14	0.00	0.22	1,165	34.16
13.950	0.09	12.44	12.88	0.00	0.22	1,142	34.14
14.000	0.09	12.19	12.62	0.00	0.22	1,119	34.13
14.050	0.09	11.94	12.36	0.00	0.21	1,096	34.11
14.100	0.08	11.69	12.11	0.00	0.21	1,073	34.10
14.150	0.08	11.44	11.86	0.00	0.21	1,051	34.08
14.200	0.08	11.20	11.61	0.00	0.20	1,029	34.07
14.250	0.08	10.97	11.37	0.00	0.20	1,007	34.06
14.300	0.08	10.73	11.13	0.00	0.20	986	34.04
14.350	0.08	10.50	10.89	0.00	0.20	965	34.03
14.400	0.08	10.28	10.66	0.00	0.19	944	34.01
14.450	0.08	10.05	10.43	0.00	0.19	924	34.00
14.500	0.08	9.83	10.21	0.00	0.19	903	33.99
14.550	0.08	9.62	9.99	0.00	0.18	883	33.98
14.600	0.07	9.40	9.77	0.00	0.18	864	33.96
14.650	0.07	9.19	9.55	0.00	0.18	844	33.95

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.07	8.99	9.34	0.00	0.18	825	33.94
14.750	0.07	8.78	9.13	0.00	0.17	807	33.93
14.800	0.07	8.58	8.93	0.00	0.17	788	33.91
14.850	0.07	8.38	8.72	0.00	0.17	770	33.90
14.900	0.07	8.19	8.52	0.00	0.17	752	33.89
14.950	0.07	8.00	8.33	0.00	0.16	735	33.88
15.000	0.07	7.82	8.14	0.00	0.16	718	33.87
15.050	0.07	7.65	7.95	0.00	0.15	701	33.86
15.100	0.06	7.47	7.78	0.00	0.15	685	33.85
15.150	0.06	7.31	7.60	0.00	0.15	670	33.84
15.200	0.06	7.14	7.43	0.00	0.14	655	33.83
15.250	0.06	6.99	7.27	0.00	0.14	640	33.82
15.300	0.06	6.83	7.11	0.00	0.14	626	33.81
15.350	0.06	6.68	6.95	0.00	0.14	612	33.80
15.400	0.06	6.54	6.80	0.00	0.13	598	33.79
15.450	0.06	6.40	6.65	0.00	0.13	585	33.78
15.500	0.06	6.26	6.51	0.00	0.13	572	33.77
15.550	0.06	6.12	6.37	0.00	0.12	560	33.77
15.600	0.06	5.99	6.23	0.00	0.12	548	33.76
15.650	0.05	5.86	6.10	0.00	0.12	536	33.75
15.700	0.05	5.74	5.97	0.00	0.12	524	33.74
15.750	0.05	5.62	5.84	0.00	0.11	513	33.74
15.800	0.05	5.50	5.72	0.00	0.11	502	33.73
15.850	0.05	5.38	5.60	0.00	0.11	492	33.72
15.900	0.05	5.27	5.48	0.00	0.11	481	33.72
15.950	0.05	5.15	5.36	0.00	0.10	471	33.71
16.000	0.05	5.05	5.25	0.00	0.10	461	33.70
16.050	0.05	4.94	5.14	0.00	0.10	451	33.70
16.100	0.05	4.83	5.03	0.00	0.10	442	33.69
16.150	0.05	4.73	4.93	0.00	0.10	433	33.68
16.200	0.04	4.64	4.82	0.00	0.09	424	33.68
16.250	0.04	4.54	4.72	0.00	0.09	415	33.67
16.300	0.04	4.45	4.63	0.00	0.09	407	33.67
16.350	0.04	4.36	4.54	0.00	0.09	398	33.66
16.400	0.04	4.27	4.45	0.00	0.09	390	33.66
16.450	0.04	4.19	4.36	0.00	0.08	383	33.65
16.500	0.04	4.11	4.27	0.00	0.08	375	33.65
16.550	0.04	4.03	4.19	0.00	0.08	368	33.64
16.600	0.04	3.95	4.11	0.00	0.08	361	33.64
16.650	0.04	3.87	4.03	0.00	0.08	354	33.63
16.700	0.04	3.80	3.96	0.00	0.08	347	33.63
16.750	0.04	3.73	3.88	0.00	0.08	341	33.62

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.04	3.66	3.81	0.00	0.07	335	33.62
16.850	0.04	3.59	3.74	0.00	0.07	329	33.62
16.900	0.04	3.53	3.67	0.00	0.07	323	33.61
16.950	0.04	3.47	3.61	0.00	0.07	317	33.61
17.000	0.04	3.40	3.54	0.00	0.07	311	33.60
17.050	0.04	3.34	3.48	0.00	0.07	306	33.60
17.100	0.04	3.28	3.42	0.00	0.07	300	33.60
17.150	0.04	3.23	3.36	0.00	0.07	295	33.59
17.200	0.04	3.17	3.30	0.00	0.06	290	33.59
17.250	0.04	3.12	3.24	0.00	0.06	285	33.59
17.300	0.04	3.06	3.19	0.00	0.06	280	33.58
17.350	0.03	3.01	3.13	0.00	0.06	275	33.58
17.400	0.03	2.96	3.08	0.00	0.06	270	33.58
17.450	0.03	2.91	3.03	0.00	0.06	266	33.57
17.500	0.03	2.86	2.98	0.00	0.06	261	33.57
17.550	0.03	2.81	2.93	0.00	0.06	257	33.57
17.600	0.03	2.77	2.88	0.00	0.06	253	33.57
17.650	0.03	2.72	2.83	0.00	0.06	249	33.56
17.700	0.03	2.68	2.78	0.00	0.05	245	33.56
17.750	0.03	2.63	2.74	0.00	0.05	241	33.56
17.800	0.03	2.59	2.69	0.00	0.05	237	33.56
17.850	0.03	2.55	2.65	0.00	0.05	233	33.55
17.900	0.03	2.51	2.61	0.00	0.05	229	33.55
17.950	0.03	2.46	2.56	0.00	0.05	225	33.55
18.000	0.03	2.42	2.52	0.00	0.05	222	33.55
18.050	0.03	2.39	2.48	0.00	0.05	218	33.54
18.100	0.03	2.35	2.44	0.00	0.05	215	33.54
18.150	0.03	2.31	2.40	0.00	0.05	211	33.54
18.200	0.03	2.27	2.37	0.00	0.05	208	33.54
18.250	0.03	2.24	2.33	0.00	0.05	205	33.53
18.300	0.03	2.21	2.29	0.00	0.04	202	33.53
18.350	0.03	2.17	2.26	0.00	0.04	199	33.53
18.400	0.03	2.14	2.23	0.00	0.04	196	33.53
18.450	0.03	2.11	2.20	0.00	0.04	193	33.53
18.500	0.03	2.08	2.17	0.00	0.04	190	33.52
18.550	0.03	2.05	2.14	0.00	0.04	188	33.52
18.600	0.03	2.02	2.11	0.00	0.04	185	33.52
18.650	0.03	2.00	2.08	0.00	0.04	183	33.52
18.700	0.03	1.97	2.05	0.00	0.04	180	33.52
18.750	0.03	1.95	2.02	0.00	0.04	178	33.52
18.800	0.03	1.92	2.00	0.00	0.04	176	33.52
18.850	0.03	1.90	1.97	0.00	0.04	173	33.51

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.03	1.87	1.95	0.00	0.04	171	33.51
18.950	0.03	1.85	1.93	0.00	0.04	169	33.51
19.000	0.03	1.83	1.90	0.00	0.04	167	33.51
19.050	0.03	1.81	1.88	0.00	0.04	165	33.51
19.100	0.03	1.79	1.86	0.00	0.04	163	33.51
19.150	0.03	1.77	1.84	0.00	0.04	161	33.51
19.200	0.03	1.75	1.82	0.00	0.04	160	33.50
19.250	0.03	1.73	1.80	0.00	0.03	158	33.50
19.300	0.03	1.71	1.78	0.00	0.03	156	33.50
19.350	0.02	1.69	1.76	0.00	0.03	154	33.50
19.400	0.02	1.67	1.74	0.00	0.03	153	33.50
19.450	0.02	1.65	1.72	0.00	0.03	151	33.50
19.500	0.02	1.64	1.70	0.00	0.03	150	33.50
19.550	0.02	1.62	1.69	0.00	0.03	148	33.50
19.600	0.02	1.60	1.67	0.00	0.03	147	33.50
19.650	0.02	1.59	1.65	0.00	0.03	145	33.50
19.700	0.02	1.57	1.64	0.00	0.03	144	33.49
19.750	0.02	1.56	1.62	0.00	0.03	142	33.49
19.800	0.02	1.54	1.61	0.00	0.03	141	33.49
19.850	0.02	1.53	1.59	0.00	0.03	140	33.49
19.900	0.02	1.52	1.58	0.00	0.03	138	33.49
19.950	0.02	1.50	1.56	0.00	0.03	137	33.49
20.000	0.02	1.49	1.55	0.00	0.03	136	33.49
20.050	0.02	1.47	1.53	0.00	0.03	135	33.49
20.100	0.02	1.46	1.52	0.00	0.03	134	33.49
20.150	0.02	1.45	1.51	0.00	0.03	132	33.49
20.200	0.02	1.44	1.49	0.00	0.03	131	33.49
20.250	0.02	1.42	1.48	0.00	0.03	130	33.49
20.300	0.02	1.41	1.47	0.00	0.03	129	33.48
20.350	0.02	1.40	1.46	0.00	0.03	128	33.48
20.400	0.02	1.39	1.45	0.00	0.03	127	33.48
20.450	0.02	1.38	1.44	0.00	0.03	126	33.48
20.500	0.02	1.37	1.42	0.00	0.03	125	33.48
20.550	0.02	1.36	1.41	0.00	0.03	124	33.48
20.600	0.02	1.35	1.40	0.00	0.03	123	33.48
20.650	0.02	1.34	1.39	0.00	0.03	122	33.48
20.700	0.02	1.33	1.38	0.00	0.03	121	33.48
20.750	0.02	1.32	1.37	0.00	0.03	120	33.48
20.800	0.02	1.31	1.36	0.00	0.03	120	33.48
20.850	0.02	1.30	1.35	0.00	0.03	119	33.48
20.900	0.02	1.29	1.34	0.00	0.03	118	33.48
20.950	0.02	1.28	1.33	0.00	0.03	117	33.48

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.02	1.27	1.32	0.00	0.03	116	33.48
21.050	0.02	1.26	1.31	0.00	0.03	115	33.48
21.100	0.02	1.25	1.31	0.00	0.03	115	33.48
21.150	0.02	1.25	1.30	0.00	0.03	114	33.47
21.200	0.02	1.24	1.29	0.00	0.03	113	33.47
21.250	0.02	1.23	1.28	0.00	0.02	112	33.47
21.300	0.02	1.22	1.27	0.00	0.02	112	33.47
21.350	0.02	1.21	1.26	0.00	0.02	111	33.47
21.400	0.02	1.21	1.26	0.00	0.02	110	33.47
21.450	0.02	1.20	1.25	0.00	0.02	110	33.47
21.500	0.02	1.19	1.24	0.00	0.02	109	33.47
21.550	0.02	1.18	1.23	0.00	0.02	108	33.47
21.600	0.02	1.18	1.22	0.00	0.02	107	33.47
21.650	0.02	1.17	1.22	0.00	0.02	107	33.47
21.700	0.02	1.16	1.21	0.00	0.02	106	33.47
21.750	0.02	1.15	1.20	0.00	0.02	106	33.47
21.800	0.02	1.15	1.19	0.00	0.02	105	33.47
21.850	0.02	1.14	1.19	0.00	0.02	104	33.47
21.900	0.02	1.13	1.18	0.00	0.02	104	33.47
21.950	0.02	1.13	1.17	0.00	0.02	103	33.47
22.000	0.02	1.12	1.17	0.00	0.02	102	33.47
22.050	0.02	1.11	1.16	0.00	0.02	102	33.47
22.100	0.02	1.11	1.15	0.00	0.02	101	33.47
22.150	0.02	1.10	1.15	0.00	0.02	101	33.47
22.200	0.02	1.09	1.14	0.00	0.02	100	33.47
22.250	0.02	1.09	1.13	0.00	0.02	99	33.47
22.300	0.02	1.08	1.13	0.00	0.02	99	33.46
22.350	0.02	1.08	1.12	0.00	0.02	98	33.46
22.400	0.02	1.07	1.11	0.00	0.02	98	33.46
22.450	0.02	1.06	1.11	0.00	0.02	97	33.46
22.500	0.02	1.06	1.10	0.00	0.02	97	33.46
22.550	0.02	1.05	1.09	0.00	0.02	96	33.46
22.600	0.02	1.05	1.09	0.00	0.02	96	33.46
22.650	0.02	1.04	1.08	0.00	0.02	95	33.46
22.700	0.02	1.03	1.08	0.00	0.02	94	33.46
22.750	0.02	1.03	1.07	0.00	0.02	94	33.46
22.800	0.02	1.02	1.06	0.00	0.02	93	33.46
22.850	0.02	1.02	1.06	0.00	0.02	93	33.46
22.900	0.02	1.01	1.05	0.00	0.02	92	33.46
22.950	0.02	1.00	1.05	0.00	0.02	92	33.46
23.000	0.02	1.00	1.04	0.00	0.02	91	33.46
23.050	0.02	0.99	1.03	0.00	0.02	91	33.46

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.02	0.99	1.03	0.00	0.02	90	33.46
23.150	0.02	0.98	1.02	0.00	0.02	90	33.46
23.200	0.02	0.98	1.02	0.00	0.02	89	33.46
23.250	0.02	0.97	1.01	0.00	0.02	89	33.46
23.300	0.02	0.97	1.00	0.00	0.02	88	33.46
23.350	0.02	0.96	1.00	0.00	0.02	88	33.46
23.400	0.02	0.95	0.99	0.00	0.02	87	33.46
23.450	0.02	0.95	0.99	0.00	0.02	87	33.46
23.500	0.02	0.94	0.98	0.00	0.02	86	33.46
23.550	0.02	0.94	0.98	0.00	0.02	86	33.46
23.600	0.02	0.93	0.97	0.00	0.02	85	33.46
23.650	0.02	0.93	0.96	0.00	0.02	85	33.46
23.700	0.02	0.92	0.96	0.00	0.02	84	33.46
23.750	0.02	0.92	0.95	0.00	0.02	84	33.45
23.800	0.02	0.91	0.95	0.00	0.02	83	33.45
23.850	0.02	0.91	0.94	0.00	0.02	83	33.45
23.900	0.02	0.90	0.94	0.00	0.02	82	33.45
23.950	0.02	0.90	0.93	0.00	0.02	82	33.45
24.000	0.02	0.89	0.93	0.00	0.02	81	33.45
24.050	0.01	0.88	0.91	0.00	0.02	80	33.45
24.100	0.00	0.86	0.89	0.00	0.02	78	33.45
24.150	0.00	0.83	0.86	0.00	0.02	75	33.45
24.200	0.00	0.79	0.83	0.00	0.02	73	33.45
24.250	0.00	0.76	0.79	0.00	0.02	70	33.45
24.300	0.00	0.73	0.76	0.00	0.01	67	33.44
24.350	0.00	0.71	0.73	0.00	0.01	64	33.44
24.400	0.00	0.68	0.71	0.00	0.01	62	33.44
24.450	0.00	0.65	0.68	0.00	0.01	60	33.44
24.500	0.00	0.63	0.65	0.00	0.01	57	33.44
24.550	0.00	0.60	0.63	0.00	0.01	55	33.44
24.600	0.00	0.58	0.60	0.00	0.01	53	33.43
24.650	0.00	0.56	0.58	0.00	0.01	51	33.43
24.700	0.00	0.53	0.56	0.00	0.01	49	33.43
24.750	0.00	0.51	0.53	0.00	0.01	47	33.43
24.800	0.00	0.49	0.51	0.00	0.01	45	33.43
24.850	0.00	0.47	0.49	0.00	0.01	43	33.43
24.900	0.00	0.46	0.47	0.00	0.01	42	33.43
24.950	0.00	0.44	0.46	0.00	0.01	40	33.43
25.000	0.00	0.42	0.44	0.00	0.01	38	33.43
25.050	0.00	0.40	0.42	0.00	0.01	37	33.42
25.100	0.00	0.39	0.40	0.00	0.01	36	33.42
25.150	0.00	0.37	0.39	0.00	0.01	34	33.42

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.200	0.00	0.36	0.37	0.00	0.01	33	33.42
25.250	0.00	0.35	0.36	0.00	0.01	32	33.42
25.300	0.00	0.33	0.35	0.00	0.01	30	33.42
25.350	0.00	0.32	0.33	0.00	0.01	29	33.42
25.400	0.00	0.31	0.32	0.00	0.01	28	33.42
25.450	0.00	0.29	0.31	0.00	0.01	27	33.42
25.500	0.00	0.28	0.29	0.00	0.01	26	33.42
25.550	0.00	0.27	0.28	0.00	0.01	25	33.42
25.600	0.00	0.26	0.27	0.00	0.01	24	33.42
25.650	0.00	0.25	0.26	0.00	0.01	23	33.42
25.700	0.00	0.24	0.25	0.00	0.00	22	33.41
25.750	0.00	0.23	0.24	0.00	0.00	21	33.41
25.800	0.00	0.22	0.23	0.00	0.00	20	33.41
25.850	0.00	0.21	0.22	0.00	0.00	20	33.41
25.900	0.00	0.21	0.21	0.00	0.00	19	33.41
25.950	0.00	0.20	0.21	0.00	0.00	18	33.41
26.000	0.00	0.19	0.20	0.00	0.00	17	33.41
26.050	0.00	0.18	0.19	0.00	0.00	17	33.41
26.100	0.00	0.18	0.18	0.00	0.00	16	33.41
26.150	0.00	0.17	0.18	0.00	0.00	15	33.41
26.200	0.00	0.16	0.17	0.00	0.00	15	33.41
26.250	0.00	0.16	0.16	0.00	0.00	14	33.41
26.300	0.00	0.15	0.16	0.00	0.00	14	33.41
26.350	0.00	0.14	0.15	0.00	0.00	13	33.41
26.400	0.00	0.14	0.14	0.00	0.00	13	33.41
26.450	0.00	0.13	0.14	0.00	0.00	12	33.41
26.500	0.00	0.13	0.13	0.00	0.00	12	33.41
26.550	0.00	0.12	0.13	0.00	0.00	11	33.41
26.600	0.00	0.12	0.12	0.00	0.00	11	33.41
26.650	0.00	0.11	0.12	0.00	0.00	10	33.41
26.700	0.00	0.11	0.11	0.00	0.00	10	33.41
26.750	0.00	0.10	0.11	0.00	0.00	10	33.41
26.800	0.00	0.10	0.10	0.00	0.00	9	33.41
26.850	0.00	0.10	0.10	0.00	0.00	9	33.41
26.900	0.00	0.09	0.10	0.00	0.00	9	33.41
26.950	0.00	0.09	0.09	0.00	0.00	8	33.41
27.000	0.00	0.09	0.09	0.00	0.00	8	33.41
27.050	0.00	0.08	0.09	0.00	0.00	8	33.40
27.100	0.00	0.08	0.08	0.00	0.00	7	33.40
27.150	0.00	0.08	0.08	0.00	0.00	7	33.40
27.200	0.00	0.07	0.08	0.00	0.00	7	33.40
27.250	0.00	0.07	0.07	0.00	0.00	6	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.300	0.00	0.07	0.07	0.00	0.00	6	33.40
27.350	0.00	0.07	0.07	0.00	0.00	6	33.40
27.400	0.00	0.06	0.07	0.00	0.00	6	33.40
27.450	0.00	0.06	0.06	0.00	0.00	6	33.40
27.500	0.00	0.06	0.06	0.00	0.00	5	33.40
27.550	0.00	0.06	0.06	0.00	0.00	5	33.40
27.600	0.00	0.05	0.06	0.00	0.00	5	33.40
27.650	0.00	0.05	0.05	0.00	0.00	5	33.40
27.700	0.00	0.05	0.05	0.00	0.00	5	33.40
27.750	0.00	0.05	0.05	0.00	0.00	4	33.40
27.800	0.00	0.05	0.05	0.00	0.00	4	33.40
27.850	0.00	0.04	0.05	0.00	0.00	4	33.40
27.900	0.00	0.04	0.04	0.00	0.00	4	33.40
27.950	0.00	0.04	0.04	0.00	0.00	4	33.40
28.000	0.00	0.04	0.04	0.00	0.00	4	33.40
28.050	0.00	0.04	0.04	0.00	0.00	3	33.40
28.100	0.00	0.04	0.04	0.00	0.00	3	33.40
28.150	0.00	0.03	0.04	0.00	0.00	3	33.40
28.200	0.00	0.03	0.03	0.00	0.00	3	33.40
28.250	0.00	0.03	0.03	0.00	0.00	3	33.40
28.300	0.00	0.03	0.03	0.00	0.00	3	33.40
28.350	0.00	0.03	0.03	0.00	0.00	3	33.40
28.400	0.00	0.03	0.03	0.00	0.00	3	33.40
28.450	0.00	0.03	0.03	0.00	0.00	2	33.40
28.500	0.00	0.03	0.03	0.00	0.00	2	33.40
28.550	0.00	0.03	0.03	0.00	0.00	2	33.40
28.600	0.00	0.02	0.03	0.00	0.00	2	33.40
28.650	0.00	0.02	0.02	0.00	0.00	2	33.40
28.700	0.00	0.02	0.02	0.00	0.00	2	33.40
28.750	0.00	0.02	0.02	0.00	0.00	2	33.40
28.800	0.00	0.02	0.02	0.00	0.00	2	33.40
28.850	0.00	0.02	0.02	0.00	0.00	2	33.40
28.900	0.00	0.02	0.02	0.00	0.00	2	33.40
28.950	0.00	0.02	0.02	0.00	0.00	2	33.40
29.000	0.00	0.02	0.02	0.00	0.00	2	33.40
29.050	0.00	0.02	0.02	0.00	0.00	2	33.40
29.100	0.00	0.02	0.02	0.00	0.00	1	33.40
29.150	0.00	0.02	0.02	0.00	0.00	1	33.40
29.200	0.00	0.02	0.02	0.00	0.00	1	33.40
29.250	0.00	0.01	0.02	0.00	0.00	1	33.40
29.300	0.00	0.01	0.01	0.00	0.00	1	33.40
29.350	0.00	0.01	0.01	0.00	0.00	1	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.400	0.00	0.01	0.01	0.00	0.00	1	33.40
29.450	0.00	0.01	0.01	0.00	0.00	1	33.40
29.500	0.00	0.01	0.01	0.00	0.00	1	33.40
29.550	0.00	0.01	0.01	0.00	0.00	1	33.40
29.600	0.00	0.01	0.01	0.00	0.00	1	33.40
29.650	0.00	0.01	0.01	0.00	0.00	1	33.40
29.700	0.00	0.01	0.01	0.00	0.00	1	33.40
29.750	0.00	0.01	0.01	0.00	0.00	1	33.40
29.800	0.00	0.01	0.01	0.00	0.00	1	33.40
29.850	0.00	0.01	0.01	0.00	0.00	1	33.40
29.900	0.00	0.01	0.01	0.00	0.00	1	33.40
29.950	0.00	0.01	0.01	0.00	0.00	1	33.40
30.000	0.00	0.01	0.01	0.00	0.00	1	33.40
30.050	0.00	0.01	0.01	0.00	0.00	1	33.40
30.100	0.00	0.01	0.01	0.00	0.00	1	33.40
30.150	0.00	0.01	0.01	0.00	0.00	1	33.40
30.200	0.00	0.01	0.01	0.00	0.00	1	33.40
30.250	0.00	0.01	0.01	0.00	0.00	1	33.40
30.300	0.00	0.01	0.01	0.00	0.00	1	33.40
30.350	0.00	0.01	0.01	0.00	0.00	1	33.40
30.400	0.00	0.01	0.01	0.00	0.00	1	33.40
30.450	0.00	0.01	0.01	0.00	0.00	1	33.40
30.500	0.00	0.01	0.01	0.00	0.00	0	33.40
30.550	0.00	0.01	0.01	0.00	0.00	0	33.40
30.600	0.00	0.00	0.01	0.00	0.00	0	33.40
30.650	0.00	0.00	0.00	0.00	0.00	0	33.40
30.700	0.00	0.00	0.00	0.00	0.00	0	33.40
30.750	0.00	0.00	0.00	0.00	0.00	0	33.40
30.800	0.00	0.00	0.00	0.00	0.00	0	33.40
30.850	0.00	0.00	0.00	0.00	0.00	0	33.40
30.900	0.00	0.00	0.00	0.00	0.00	0	33.40
30.950	0.00	0.00	0.00	0.00	0.00	0	33.40
31.000	0.00	0.00	0.00	0.00	0.00	0	33.40
31.050	0.00	0.00	0.00	0.00	0.00	0	33.40
31.100	0.00	0.00	0.00	0.00	0.00	0	33.40
31.150	0.00	0.00	0.00	0.00	0.00	0	33.40
31.200	0.00	0.00	0.00	0.00	0.00	0	33.40
31.250	0.00	0.00	0.00	0.00	0.00	0	33.40
31.300	0.00	0.00	0.00	0.00	0.00	0	33.40
31.350	0.00	0.00	0.00	0.00	0.00	0	33.40
31.400	0.00	0.00	0.00	0.00	0.00	0	33.40
31.450	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
31.500	0.00	0.00	0.00	0.00	0.00	0	33.40
31.550	0.00	0.00	0.00	0.00	0.00	0	33.40
31.600	0.00	0.00	0.00	0.00	0.00	0	33.40
31.650	0.00	0.00	0.00	0.00	0.00	0	33.40
31.700	0.00	0.00	0.00	0.00	0.00	0	33.40
31.750	0.00	0.00	0.00	0.00	0.00	0	33.40
31.800	0.00	0.00	0.00	0.00	0.00	0	33.40
31.850	0.00	0.00	0.00	0.00	0.00	0	33.40
31.900	0.00	0.00	0.00	0.00	0.00	0	33.40
31.950	0.00	0.00	0.00	0.00	0.00	0	33.40
32.000	0.00	0.00	0.00	0.00	0.00	0	33.40
32.050	0.00	0.00	0.00	0.00	0.00	0	33.40
32.100	0.00	0.00	0.00	0.00	0.00	0	33.40
32.150	0.00	0.00	0.00	0.00	0.00	0	33.40
32.200	0.00	0.00	0.00	0.00	0.00	0	33.40
32.250	0.00	0.00	0.00	0.00	0.00	0	33.40
32.300	0.00	0.00	0.00	0.00	0.00	0	33.40
32.350	0.00	0.00	0.00	0.00	0.00	0	33.40
32.400	0.00	0.00	0.00	0.00	0.00	0	33.40
32.450	0.00	0.00	0.00	0.00	0.00	0	33.40
32.500	0.00	0.00	0.00	0.00	0.00	0	33.40
32.550	0.00	0.00	0.00	0.00	0.00	0	33.40
32.600	0.00	0.00	0.00	0.00	0.00	0	33.40
32.650	0.00	0.00	0.00	0.00	0.00	0	33.40
32.700	0.00	0.00	0.00	0.00	0.00	0	33.40
32.750	0.00	0.00	0.00	0.00	0.00	0	33.40
32.800	0.00	0.00	0.00	0.00	0.00	0	33.40
32.850	0.00	0.00	0.00	0.00	0.00	0	33.40
32.900	0.00	0.00	0.00	0.00	0.00	0	33.40
32.950	0.00	0.00	0.00	0.00	0.00	0	33.40
33.000	0.00	0.00	0.00	0.00	0.00	0	33.40
33.050	0.00	0.00	0.00	0.00	0.00	0	33.40
33.100	0.00	0.00	0.00	0.00	0.00	0	33.40
33.150	0.00	0.00	0.00	0.00	0.00	0	33.40
33.200	0.00	0.00	0.00	0.00	0.00	0	33.40
33.250	0.00	0.00	0.00	0.00	0.00	0	33.40
33.300	0.00	0.00	0.00	0.00	0.00	0	33.40
33.350	0.00	0.00	0.00	0.00	0.00	0	33.40
33.400	0.00	0.00	0.00	0.00	0.00	0	33.40
33.450	0.00	0.00	0.00	0.00	0.00	0	33.40
33.500	0.00	0.00	0.00	0.00	0.00	0	33.40
33.550	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
33.600	0.00	0.00	0.00	0.00	0.00	0	33.40
33.650	0.00	0.00	0.00	0.00	0.00	0	33.40
33.700	0.00	0.00	0.00	0.00	0.00	0	33.40
33.750	0.00	0.00	0.00	0.00	0.00	0	33.40
33.800	0.00	0.00	0.00	0.00	0.00	0	33.40
33.850	0.00	0.00	0.00	0.00	0.00	0	33.40
33.900	0.00	0.00	0.00	0.00	0.00	0	33.40
33.950	0.00	0.00	0.00	0.00	0.00	0	33.40
34.000	0.00	0.00	0.00	0.00	0.00	0	33.40
34.050	0.00	0.00	0.00	0.00	0.00	0	33.40
34.100	0.00	0.00	0.00	0.00	0.00	0	33.40
34.150	0.00	0.00	0.00	0.00	0.00	0	33.40
34.200	0.00	0.00	0.00	0.00	0.00	0	33.40
34.250	0.00	0.00	0.00	0.00	0.00	0	33.40
34.300	0.00	0.00	0.00	0.00	0.00	0	33.40
34.350	0.00	0.00	0.00	0.00	0.00	0	33.40
34.400	0.00	0.00	0.00	0.00	0.00	0	33.40
34.450	0.00	0.00	0.00	0.00	0.00	0	33.40
34.500	0.00	0.00	0.00	0.00	0.00	0	33.40
34.550	0.00	0.00	0.00	0.00	0.00	0	33.40
34.600	0.00	0.00	0.00	0.00	0.00	0	33.40
34.650	0.00	0.00	0.00	0.00	0.00	0	33.40
34.700	0.00	0.00	0.00	0.00	0.00	0	33.40
34.750	0.00	0.00	0.00	0.00	0.00	0	33.40
34.800	0.00	0.00	0.00	0.00	0.00	0	33.40
34.850	0.00	0.00	0.00	0.00	0.00	0	33.40
34.900	0.00	0.00	0.00	0.00	0.00	0	33.40
34.950	0.00	0.00	0.00	0.00	0.00	0	33.40
35.000	0.00	0.00	0.00	0.00	0.00	0	33.40
35.050	0.00	0.00	0.00	0.00	0.00	0	33.40
35.100	0.00	0.00	0.00	0.00	0.00	0	33.40
35.150	0.00	0.00	0.00	0.00	0.00	0	33.40
35.200	0.00	0.00	0.00	0.00	0.00	0	33.40
35.250	0.00	0.00	0.00	0.00	0.00	0	33.40
35.300	0.00	0.00	0.00	0.00	0.00	0	33.40
35.350	0.00	0.00	0.00	0.00	0.00	0	33.40
35.400	0.00	0.00	0.00	0.00	0.00	0	33.40
35.450	0.00	0.00	0.00	0.00	0.00	0	33.40
35.500	0.00	0.00	0.00	0.00	0.00	0	33.40
35.550	0.00	0.00	0.00	0.00	0.00	0	33.40
35.600	0.00	0.00	0.00	0.00	0.00	0	33.40
35.650	0.00	0.00	0.00	0.00	0.00	0	33.40

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: DET SYSTEM (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
35.700	0.00	0.00	0.00	0.00	0.00	0	33.40
35.750	0.00	0.00	0.00	0.00	0.00	0	33.40
35.800	0.00	0.00	0.00	0.00	0.00	0	33.40
35.850	0.00	0.00	0.00	0.00	0.00	0	33.40
35.900	0.00	0.00	0.00	0.00	0.00	0	33.40
35.950	0.00	0.00	0.00	0.00	0.00	0	33.40
36.000	0.00	0.00	0.00	0.00	0.00	0	33.40

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	33.40
0.050	0.00	0.00	0.00	0.00	0.00	0	33.40
0.100	0.00	0.00	0.00	0.00	0.00	0	33.40
0.150	0.00	0.00	0.00	0.00	0.00	0	33.40
0.200	0.00	0.00	0.00	0.00	0.00	0	33.40
0.250	0.00	0.00	0.00	0.00	0.00	0	33.40
0.300	0.00	0.00	0.00	0.00	0.00	0	33.40
0.350	0.00	0.00	0.00	0.00	0.00	0	33.40
0.400	0.00	0.00	0.00	0.00	0.00	0	33.40
0.450	0.00	0.00	0.00	0.00	0.00	0	33.40
0.500	0.00	0.00	0.00	0.00	0.00	0	33.40
0.550	0.00	0.00	0.00	0.00	0.00	0	33.40
0.600	0.00	0.00	0.00	0.00	0.00	0	33.40
0.650	0.00	0.00	0.00	0.00	0.00	0	33.40
0.700	0.00	0.00	0.00	0.00	0.00	0	33.40
0.750	0.00	0.00	0.00	0.00	0.00	0	33.40
0.800	0.00	0.00	0.00	0.00	0.00	0	33.40
0.850	0.00	0.00	0.00	0.00	0.00	0	33.40
0.900	0.00	0.00	0.00	0.00	0.00	0	33.40
0.950	0.00	0.00	0.00	0.00	0.00	0	33.40
1.000	0.00	0.00	0.00	0.00	0.00	0	33.40
1.050	0.00	0.00	0.00	0.00	0.00	0	33.40
1.100	0.00	0.00	0.00	0.00	0.00	0	33.40
1.150	0.00	0.00	0.00	0.00	0.00	0	33.40
1.200	0.00	0.00	0.00	0.00	0.00	0	33.40
1.250	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
1.300	0.00	0.00	0.00	0.00	0.00	0	33.40
1.350	0.00	0.00	0.00	0.00	0.00	0	33.40
1.400	0.00	0.00	0.00	0.00	0.00	0	33.40
1.450	0.00	0.00	0.00	0.00	0.00	0	33.40
1.500	0.00	0.00	0.00	0.00	0.00	0	33.40
1.550	0.00	0.00	0.00	0.00	0.00	0	33.40
1.600	0.00	0.00	0.00	0.00	0.00	0	33.40
1.650	0.00	0.00	0.00	0.00	0.00	0	33.40
1.700	0.00	0.00	0.00	0.00	0.00	0	33.40
1.750	0.00	0.00	0.00	0.00	0.00	0	33.40
1.800	0.00	0.00	0.00	0.00	0.00	0	33.40
1.850	0.00	0.00	0.00	0.00	0.00	0	33.40
1.900	0.00	0.00	0.00	0.00	0.00	0	33.40
1.950	0.00	0.00	0.00	0.00	0.00	0	33.40
2.000	0.00	0.00	0.00	0.00	0.00	0	33.40
2.050	0.00	0.00	0.00	0.00	0.00	0	33.40
2.100	0.00	0.00	0.00	0.00	0.00	0	33.40
2.150	0.00	0.00	0.00	0.00	0.00	0	33.40
2.200	0.00	0.00	0.00	0.00	0.00	0	33.40
2.250	0.00	0.00	0.00	0.00	0.00	0	33.40
2.300	0.00	0.00	0.00	0.00	0.00	0	33.40
2.350	0.00	0.00	0.00	0.00	0.00	0	33.40
2.400	0.00	0.00	0.00	0.00	0.00	0	33.40
2.450	0.00	0.00	0.00	0.00	0.00	0	33.40
2.500	0.00	0.00	0.00	0.00	0.00	0	33.40
2.550	0.00	0.00	0.00	0.00	0.00	0	33.40
2.600	0.00	0.00	0.00	0.00	0.00	0	33.40
2.650	0.00	0.00	0.00	0.00	0.00	0	33.40
2.700	0.00	0.00	0.00	0.00	0.00	0	33.40
2.750	0.00	0.00	0.00	0.00	0.00	0	33.40
2.800	0.00	0.00	0.00	0.00	0.00	0	33.40
2.850	0.00	0.00	0.00	0.00	0.00	0	33.40
2.900	0.00	0.00	0.00	0.00	0.00	0	33.40
2.950	0.00	0.00	0.00	0.00	0.00	0	33.40
3.000	0.00	0.00	0.00	0.00	0.00	0	33.40
3.050	0.00	0.00	0.00	0.00	0.00	0	33.40
3.100	0.00	0.00	0.00	0.00	0.00	0	33.40
3.150	0.00	0.00	0.00	0.00	0.00	0	33.40
3.200	0.00	0.00	0.00	0.00	0.00	0	33.40
3.250	0.00	0.00	0.00	0.00	0.00	0	33.40
3.300	0.00	0.00	0.00	0.00	0.00	0	33.40
3.350	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
3.400	0.00	0.00	0.00	0.00	0.00	0	33.40
3.450	0.00	0.00	0.00	0.00	0.00	0	33.40
3.500	0.00	0.00	0.00	0.00	0.00	0	33.40
3.550	0.00	0.00	0.00	0.00	0.00	0	33.40
3.600	0.00	0.00	0.00	0.00	0.00	0	33.40
3.650	0.00	0.00	0.00	0.00	0.00	0	33.40
3.700	0.00	0.00	0.00	0.00	0.00	0	33.40
3.750	0.00	0.00	0.00	0.00	0.00	0	33.40
3.800	0.00	0.00	0.00	0.00	0.00	0	33.40
3.850	0.00	0.01	0.01	0.00	0.00	1	33.40
3.900	0.00	0.01	0.01	0.00	0.00	1	33.40
3.950	0.00	0.01	0.01	0.00	0.00	1	33.40
4.000	0.00	0.02	0.02	0.00	0.00	2	33.40
4.050	0.00	0.02	0.02	0.00	0.00	2	33.40
4.100	0.00	0.03	0.03	0.00	0.00	2	33.40
4.150	0.00	0.03	0.03	0.00	0.00	3	33.40
4.200	0.00	0.04	0.04	0.00	0.00	3	33.40
4.250	0.00	0.04	0.04	0.00	0.00	4	33.40
4.300	0.00	0.05	0.05	0.00	0.00	4	33.40
4.350	0.00	0.05	0.06	0.00	0.00	5	33.40
4.400	0.00	0.06	0.06	0.00	0.00	6	33.40
4.450	0.01	0.07	0.07	0.00	0.00	6	33.40
4.500	0.01	0.08	0.08	0.00	0.00	7	33.40
4.550	0.01	0.08	0.09	0.00	0.00	8	33.41
4.600	0.01	0.09	0.10	0.00	0.00	8	33.41
4.650	0.01	0.10	0.11	0.00	0.00	9	33.41
4.700	0.01	0.11	0.11	0.00	0.00	10	33.41
4.750	0.01	0.12	0.12	0.00	0.00	11	33.41
4.800	0.01	0.13	0.13	0.00	0.00	12	33.41
4.850	0.01	0.14	0.14	0.00	0.00	13	33.41
4.900	0.01	0.15	0.15	0.00	0.00	14	33.41
4.950	0.01	0.16	0.16	0.00	0.00	14	33.41
5.000	0.01	0.17	0.18	0.00	0.00	15	33.41
5.050	0.01	0.18	0.19	0.00	0.00	16	33.41
5.100	0.01	0.19	0.20	0.00	0.00	17	33.41
5.150	0.01	0.20	0.21	0.00	0.00	18	33.41
5.200	0.01	0.21	0.22	0.00	0.00	19	33.41
5.250	0.01	0.22	0.23	0.00	0.00	20	33.41
5.300	0.01	0.24	0.24	0.00	0.00	22	33.41
5.350	0.01	0.25	0.26	0.00	0.01	23	33.41
5.400	0.01	0.26	0.27	0.00	0.01	24	33.42
5.450	0.01	0.27	0.28	0.00	0.01	25	33.42

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
5.500	0.01	0.28	0.30	0.00	0.01	26	33.42
5.550	0.01	0.30	0.31	0.00	0.01	27	33.42
5.600	0.01	0.31	0.32	0.00	0.01	28	33.42
5.650	0.01	0.32	0.34	0.00	0.01	30	33.42
5.700	0.01	0.34	0.35	0.00	0.01	31	33.42
5.750	0.01	0.35	0.36	0.00	0.01	32	33.42
5.800	0.01	0.36	0.38	0.00	0.01	33	33.42
5.850	0.01	0.38	0.39	0.00	0.01	34	33.42
5.900	0.02	0.39	0.41	0.00	0.01	36	33.42
5.950	0.02	0.40	0.42	0.00	0.01	37	33.42
6.000	0.02	0.42	0.44	0.00	0.01	38	33.43
6.050	0.02	0.43	0.45	0.00	0.01	40	33.43
6.100	0.02	0.45	0.47	0.00	0.01	41	33.43
6.150	0.02	0.46	0.48	0.00	0.01	42	33.43
6.200	0.02	0.48	0.50	0.00	0.01	44	33.43
6.250	0.02	0.49	0.51	0.00	0.01	45	33.43
6.300	0.02	0.51	0.53	0.00	0.01	47	33.43
6.350	0.02	0.53	0.55	0.00	0.01	48	33.43
6.400	0.02	0.55	0.57	0.00	0.01	50	33.43
6.450	0.02	0.56	0.59	0.00	0.01	51	33.43
6.500	0.02	0.58	0.60	0.00	0.01	53	33.43
6.550	0.02	0.60	0.62	0.00	0.01	55	33.44
6.600	0.02	0.62	0.64	0.00	0.01	57	33.44
6.650	0.02	0.64	0.67	0.00	0.01	58	33.44
6.700	0.02	0.66	0.69	0.00	0.01	60	33.44
6.750	0.02	0.68	0.71	0.00	0.01	62	33.44
6.800	0.03	0.70	0.73	0.00	0.01	64	33.44
6.850	0.03	0.72	0.75	0.00	0.01	66	33.44
6.900	0.03	0.75	0.78	0.00	0.02	68	33.44
6.950	0.03	0.77	0.80	0.00	0.02	70	33.45
7.000	0.03	0.79	0.82	0.00	0.02	72	33.45
7.050	0.03	0.82	0.85	0.00	0.02	75	33.45
7.100	0.03	0.84	0.87	0.00	0.02	77	33.45
7.150	0.03	0.86	0.90	0.00	0.02	79	33.45
7.200	0.03	0.89	0.93	0.00	0.02	81	33.45
7.250	0.03	0.91	0.95	0.00	0.02	84	33.45
7.300	0.03	0.94	0.98	0.00	0.02	86	33.46
7.350	0.03	0.97	1.01	0.00	0.02	88	33.46
7.400	0.03	0.99	1.03	0.00	0.02	91	33.46
7.450	0.03	1.02	1.06	0.00	0.02	93	33.46
7.500	0.04	1.05	1.09	0.00	0.02	96	33.46
7.550	0.04	1.08	1.12	0.00	0.02	99	33.46

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
7.600	0.04	1.11	1.15	0.00	0.02	101	33.47
7.650	0.04	1.14	1.18	0.00	0.02	104	33.47
7.700	0.04	1.17	1.21	0.00	0.02	107	33.47
7.750	0.04	1.20	1.24	0.00	0.02	109	33.47
7.800	0.04	1.23	1.28	0.00	0.02	112	33.47
7.850	0.04	1.26	1.31	0.00	0.03	115	33.48
7.900	0.04	1.29	1.34	0.00	0.03	118	33.48
7.950	0.04	1.32	1.37	0.00	0.03	121	33.48
8.000	0.04	1.35	1.41	0.00	0.03	124	33.48
8.050	0.05	1.39	1.44	0.00	0.03	127	33.48
8.100	0.05	1.42	1.48	0.00	0.03	130	33.48
8.150	0.05	1.45	1.51	0.00	0.03	133	33.49
8.200	0.05	1.49	1.55	0.00	0.03	136	33.49
8.250	0.05	1.53	1.59	0.00	0.03	140	33.49
8.300	0.05	1.57	1.63	0.00	0.03	143	33.49
8.350	0.05	1.61	1.67	0.00	0.03	147	33.50
8.400	0.06	1.65	1.72	0.00	0.03	151	33.50
8.450	0.06	1.69	1.76	0.00	0.03	155	33.50
8.500	0.06	1.74	1.81	0.00	0.04	159	33.50
8.550	0.06	1.78	1.86	0.00	0.04	163	33.51
8.600	0.06	1.83	1.91	0.00	0.04	167	33.51
8.650	0.06	1.88	1.96	0.00	0.04	172	33.51
8.700	0.07	1.93	2.01	0.00	0.04	177	33.52
8.750	0.07	1.98	2.06	0.00	0.04	181	33.52
8.800	0.07	2.04	2.12	0.00	0.04	186	33.52
8.850	0.07	2.09	2.18	0.00	0.04	191	33.53
8.900	0.07	2.15	2.23	0.00	0.04	196	33.53
8.950	0.07	2.20	2.29	0.00	0.04	201	33.53
9.000	0.08	2.26	2.35	0.00	0.05	207	33.54
9.050	0.08	2.32	2.42	0.00	0.05	212	33.54
9.100	0.08	2.38	2.48	0.00	0.05	218	33.54
9.150	0.08	2.44	2.54	0.00	0.05	223	33.55
9.200	0.08	2.51	2.61	0.00	0.05	229	33.55
9.250	0.09	2.57	2.68	0.00	0.05	235	33.55
9.300	0.09	2.64	2.74	0.00	0.05	241	33.56
9.350	0.09	2.70	2.81	0.00	0.05	247	33.56
9.400	0.09	2.77	2.88	0.00	0.06	253	33.57
9.450	0.09	2.84	2.96	0.00	0.06	260	33.57
9.500	0.10	2.91	3.03	0.00	0.06	266	33.57
9.550	0.10	2.98	3.10	0.00	0.06	273	33.58
9.600	0.10	3.06	3.18	0.00	0.06	279	33.58
9.650	0.10	3.13	3.26	0.00	0.06	286	33.59

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
9.700	0.10	3.20	3.33	0.00	0.06	293	33.59
9.750	0.11	3.28	3.41	0.00	0.07	300	33.60
9.800	0.11	3.36	3.49	0.00	0.07	307	33.60
9.850	0.11	3.43	3.57	0.00	0.07	314	33.61
9.900	0.11	3.51	3.65	0.00	0.07	321	33.61
9.950	0.11	3.59	3.74	0.00	0.07	328	33.62
10.000	0.12	3.67	3.82	0.00	0.07	336	33.62
10.050	0.12	3.75	3.91	0.00	0.08	343	33.62
10.100	0.12	3.84	3.99	0.00	0.08	351	33.63
10.150	0.12	3.92	4.08	0.00	0.08	359	33.64
10.200	0.13	4.01	4.18	0.00	0.08	367	33.64
10.250	0.13	4.11	4.28	0.00	0.08	375	33.65
10.300	0.14	4.21	4.38	0.00	0.09	384	33.65
10.350	0.14	4.31	4.48	0.00	0.09	394	33.66
10.400	0.14	4.41	4.59	0.00	0.09	403	33.66
10.450	0.15	4.52	4.70	0.00	0.09	413	33.67
10.500	0.15	4.63	4.82	0.00	0.09	423	33.68
10.550	0.16	4.75	4.94	0.00	0.10	434	33.68
10.600	0.16	4.86	5.06	0.00	0.10	445	33.69
10.650	0.16	4.99	5.19	0.00	0.10	456	33.70
10.700	0.17	5.11	5.32	0.00	0.10	467	33.71
10.750	0.17	5.24	5.45	0.00	0.11	479	33.71
10.800	0.18	5.37	5.58	0.00	0.11	490	33.72
10.850	0.18	5.50	5.72	0.00	0.11	503	33.73
10.900	0.18	5.63	5.86	0.00	0.11	515	33.74
10.950	0.19	5.77	6.01	0.00	0.12	528	33.75
11.000	0.19	5.91	6.15	0.00	0.12	541	33.75
11.050	0.20	6.06	6.31	0.00	0.12	554	33.76
11.100	0.21	6.22	6.47	0.00	0.13	569	33.77
11.150	0.22	6.39	6.65	0.00	0.13	585	33.78
11.200	0.23	6.58	6.85	0.00	0.13	602	33.79
11.250	0.25	6.79	7.06	0.00	0.14	622	33.81
11.300	0.26	7.02	7.30	0.00	0.14	643	33.82
11.350	0.28	7.26	7.56	0.00	0.15	666	33.83
11.400	0.29	7.53	7.83	0.00	0.15	690	33.85
11.450	0.31	7.81	8.12	0.00	0.16	716	33.87
11.500	0.32	8.11	8.44	0.00	0.16	744	33.89
11.550	0.38	8.47	8.81	0.00	0.17	777	33.91
11.600	0.45	8.94	9.29	0.00	0.18	821	33.94
11.650	0.56	9.58	9.95	0.00	0.18	881	33.97
11.700	0.69	10.45	10.84	0.00	0.19	960	34.03
11.750	0.83	11.56	11.98	0.00	0.21	1,061	34.09

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.800	0.97	12.92	13.36	0.00	0.22	1,185	34.17
11.850	1.11	14.51	15.00	0.00	0.24	1,330	34.27
11.900	1.26	16.35	16.88	0.00	0.27	1,496	34.38
11.950	1.79	18.82	19.40	0.00	0.29	1,722	34.53
12.000	2.43	22.38	23.03	0.00	0.32	2,047	34.74
12.050	2.61	26.70	27.43	0.00	0.36	2,439	35.01
12.100	2.68	31.20	31.99	0.00	0.40	2,847	35.29
12.150	2.21	35.22	36.08	0.00	0.43	3,213	35.55
12.200	1.59	38.12	39.02	0.00	0.45	3,477	35.75
12.250	1.33	40.10	41.03	0.00	0.47	3,652	35.88
12.300	1.16	41.64	42.59	0.00	0.48	3,795	35.99
12.350	1.01	42.84	43.81	0.00	0.49	3,906	36.07
12.400	0.87	43.74	44.72	0.00	0.49	3,988	36.14
12.450	0.73	44.34	45.33	0.00	0.50	4,043	36.18
12.500	0.58	44.65	45.65	0.00	0.50	4,071	36.20
12.550	0.49	44.72	45.72	0.00	0.50	4,078	36.21
12.600	0.40	44.62	45.61	0.00	0.50	4,068	36.20
12.650	0.37	44.40	45.39	0.00	0.50	4,048	36.18
12.700	0.35	44.13	45.12	0.00	0.49	4,024	36.16
12.750	0.34	43.84	44.82	0.00	0.49	3,997	36.14
12.800	0.32	43.52	44.50	0.00	0.49	3,967	36.12
12.850	0.31	43.17	44.15	0.00	0.49	3,936	36.10
12.900	0.29	42.80	43.77	0.00	0.49	3,902	36.07
12.950	0.28	42.40	43.37	0.00	0.48	3,866	36.04
13.000	0.26	41.98	42.94	0.00	0.48	3,828	36.01
13.050	0.25	41.54	42.49	0.00	0.48	3,786	35.98
13.100	0.24	41.09	42.03	0.00	0.47	3,743	35.95
13.150	0.24	40.62	41.56	0.00	0.47	3,699	35.91
13.200	0.23	40.16	41.09	0.00	0.47	3,657	35.88
13.250	0.23	39.69	40.62	0.00	0.46	3,616	35.85
13.300	0.22	39.23	40.14	0.00	0.46	3,575	35.82
13.350	0.22	38.76	39.67	0.00	0.46	3,533	35.79
13.400	0.22	38.29	39.19	0.00	0.45	3,492	35.76
13.450	0.21	37.82	38.72	0.00	0.45	3,450	35.73
13.500	0.21	37.35	38.24	0.00	0.45	3,407	35.70
13.550	0.20	36.87	37.76	0.00	0.44	3,364	35.66
13.600	0.20	36.40	37.28	0.00	0.44	3,321	35.63
13.650	0.20	35.93	36.80	0.00	0.43	3,278	35.60
13.700	0.19	35.45	36.32	0.00	0.43	3,234	35.57
13.750	0.19	34.98	35.84	0.00	0.43	3,191	35.54
13.800	0.18	34.50	35.35	0.00	0.42	3,148	35.51
13.850	0.18	34.03	34.87	0.00	0.42	3,103	35.47

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.900	0.18	33.55	34.38	0.00	0.42	3,059	35.44
13.950	0.17	33.07	33.90	0.00	0.41	3,014	35.41
14.000	0.17	32.59	33.41	0.00	0.41	2,971	35.38
14.050	0.17	32.12	32.93	0.00	0.41	2,928	35.35
14.100	0.16	31.64	32.44	0.00	0.40	2,886	35.32
14.150	0.16	31.16	31.96	0.00	0.40	2,844	35.29
14.200	0.16	30.69	31.48	0.00	0.39	2,802	35.26
14.250	0.16	30.23	31.01	0.00	0.39	2,760	35.23
14.300	0.15	29.76	30.54	0.00	0.39	2,718	35.20
14.350	0.15	29.30	30.07	0.00	0.38	2,676	35.17
14.400	0.15	28.85	29.61	0.00	0.38	2,635	35.14
14.450	0.15	28.39	29.15	0.00	0.38	2,593	35.12
14.500	0.15	27.95	28.69	0.00	0.37	2,552	35.09
14.550	0.14	27.50	28.24	0.00	0.37	2,512	35.06
14.600	0.14	27.06	27.79	0.00	0.37	2,471	35.03
14.650	0.14	26.62	27.34	0.00	0.36	2,431	35.00
14.700	0.14	26.18	26.90	0.00	0.36	2,391	34.98
14.750	0.14	25.75	26.46	0.00	0.35	2,351	34.95
14.800	0.14	25.32	26.02	0.00	0.35	2,311	34.92
14.850	0.13	24.89	25.59	0.00	0.35	2,272	34.90
14.900	0.13	24.47	25.16	0.00	0.34	2,234	34.87
14.950	0.13	24.05	24.73	0.00	0.34	2,196	34.84
15.000	0.13	23.63	24.31	0.00	0.34	2,159	34.82
15.050	0.13	23.22	23.89	0.00	0.33	2,122	34.79
15.100	0.12	22.82	23.47	0.00	0.33	2,086	34.77
15.150	0.12	22.41	23.06	0.00	0.32	2,050	34.74
15.200	0.12	22.01	22.66	0.00	0.32	2,013	34.72
15.250	0.12	21.62	22.25	0.00	0.32	1,977	34.70
15.300	0.12	21.23	21.85	0.00	0.31	1,941	34.67
15.350	0.11	20.84	21.46	0.00	0.31	1,906	34.65
15.400	0.11	20.45	21.07	0.00	0.31	1,871	34.63
15.450	0.11	20.07	20.68	0.00	0.30	1,836	34.60
15.500	0.11	19.69	20.29	0.00	0.30	1,802	34.58
15.550	0.11	19.32	19.91	0.00	0.30	1,768	34.56
15.600	0.10	18.95	19.53	0.00	0.29	1,734	34.53
15.650	0.10	18.58	19.15	0.00	0.29	1,700	34.51
15.700	0.10	18.21	18.78	0.00	0.28	1,667	34.49
15.750	0.10	17.85	18.41	0.00	0.28	1,633	34.47
15.800	0.10	17.49	18.05	0.00	0.28	1,600	34.44
15.850	0.10	17.13	17.68	0.00	0.27	1,567	34.42
15.900	0.09	16.78	17.32	0.00	0.27	1,534	34.40
15.950	0.09	16.43	16.96	0.00	0.27	1,503	34.38

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.000	0.09	16.08	16.61	0.00	0.26	1,472	34.36
16.050	0.09	15.74	16.26	0.00	0.26	1,441	34.34
16.100	0.09	15.41	15.92	0.00	0.25	1,411	34.32
16.150	0.09	15.08	15.58	0.00	0.25	1,381	34.30
16.200	0.08	14.76	15.25	0.00	0.25	1,352	34.28
16.250	0.08	14.44	14.93	0.00	0.24	1,324	34.26
16.300	0.08	14.13	14.61	0.00	0.24	1,295	34.24
16.350	0.08	13.82	14.29	0.00	0.24	1,268	34.23
16.400	0.08	13.52	13.99	0.00	0.23	1,240	34.21
16.450	0.08	13.23	13.68	0.00	0.23	1,213	34.19
16.500	0.08	12.94	13.39	0.00	0.22	1,187	34.17
16.550	0.08	12.65	13.10	0.00	0.22	1,161	34.16
16.600	0.08	12.38	12.81	0.00	0.22	1,136	34.14
16.650	0.08	12.10	12.53	0.00	0.21	1,111	34.12
16.700	0.08	11.83	12.26	0.00	0.21	1,086	34.11
16.750	0.08	11.57	11.99	0.00	0.21	1,062	34.09
16.800	0.07	11.31	11.72	0.00	0.21	1,038	34.08
16.850	0.07	11.05	11.46	0.00	0.20	1,015	34.06
16.900	0.07	10.80	11.20	0.00	0.20	992	34.05
16.950	0.07	10.56	10.95	0.00	0.20	970	34.03
17.000	0.07	10.32	10.70	0.00	0.19	948	34.02
17.050	0.07	10.08	10.46	0.00	0.19	926	34.00
17.100	0.07	9.84	10.22	0.00	0.19	904	33.99
17.150	0.07	9.61	9.98	0.00	0.18	883	33.98
17.200	0.07	9.39	9.75	0.00	0.18	862	33.96
17.250	0.07	9.17	9.52	0.00	0.18	842	33.95
17.300	0.07	8.95	9.30	0.00	0.18	822	33.94
17.350	0.07	8.73	9.08	0.00	0.17	802	33.92
17.400	0.06	8.52	8.86	0.00	0.17	782	33.91
17.450	0.06	8.31	8.65	0.00	0.17	763	33.90
17.500	0.06	8.11	8.44	0.00	0.16	745	33.89
17.550	0.06	7.92	8.24	0.00	0.16	726	33.87
17.600	0.06	7.73	8.04	0.00	0.16	709	33.86
17.650	0.06	7.54	7.85	0.00	0.15	692	33.85
17.700	0.06	7.37	7.66	0.00	0.15	675	33.84
17.750	0.06	7.19	7.49	0.00	0.15	659	33.83
17.800	0.06	7.03	7.31	0.00	0.14	644	33.82
17.850	0.06	6.86	7.14	0.00	0.14	629	33.81
17.900	0.06	6.71	6.98	0.00	0.14	614	33.80
17.950	0.06	6.55	6.82	0.00	0.13	600	33.79
18.000	0.05	6.40	6.66	0.00	0.13	586	33.78
18.050	0.05	6.26	6.51	0.00	0.13	573	33.77

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.100	0.05	6.12	6.37	0.00	0.12	560	33.77
18.150	0.05	5.98	6.23	0.00	0.12	547	33.76
18.200	0.05	5.85	6.09	0.00	0.12	535	33.75
18.250	0.05	5.73	5.96	0.00	0.12	523	33.74
18.300	0.05	5.61	5.83	0.00	0.11	512	33.74
18.350	0.05	5.49	5.71	0.00	0.11	502	33.73
18.400	0.05	5.37	5.59	0.00	0.11	491	33.72
18.450	0.05	5.27	5.48	0.00	0.11	481	33.72
18.500	0.05	5.16	5.37	0.00	0.10	472	33.71
18.550	0.05	5.06	5.26	0.00	0.10	462	33.70
18.600	0.05	4.96	5.16	0.00	0.10	453	33.70
18.650	0.05	4.86	5.06	0.00	0.10	445	33.69
18.700	0.05	4.77	4.97	0.00	0.10	436	33.69
18.750	0.05	4.68	4.87	0.00	0.09	428	33.68
18.800	0.05	4.60	4.78	0.00	0.09	420	33.68
18.850	0.05	4.51	4.70	0.00	0.09	413	33.67
18.900	0.05	4.43	4.61	0.00	0.09	405	33.67
18.950	0.05	4.36	4.53	0.00	0.09	398	33.66
19.000	0.05	4.28	4.46	0.00	0.09	391	33.66
19.050	0.05	4.21	4.38	0.00	0.09	385	33.65
19.100	0.05	4.14	4.31	0.00	0.08	378	33.65
19.150	0.05	4.07	4.24	0.00	0.08	372	33.64
19.200	0.05	4.01	4.17	0.00	0.08	366	33.64
19.250	0.05	3.94	4.10	0.00	0.08	360	33.64
19.300	0.05	3.88	4.04	0.00	0.08	355	33.63
19.350	0.05	3.82	3.97	0.00	0.08	349	33.63
19.400	0.05	3.76	3.91	0.00	0.08	344	33.63
19.450	0.05	3.71	3.86	0.00	0.08	339	33.62
19.500	0.05	3.65	3.80	0.00	0.07	334	33.62
19.550	0.05	3.60	3.74	0.00	0.07	329	33.62
19.600	0.05	3.55	3.69	0.00	0.07	324	33.61
19.650	0.05	3.50	3.64	0.00	0.07	320	33.61
19.700	0.05	3.45	3.59	0.00	0.07	315	33.61
19.750	0.05	3.40	3.54	0.00	0.07	311	33.60
19.800	0.05	3.36	3.49	0.00	0.07	307	33.60
19.850	0.04	3.31	3.45	0.00	0.07	303	33.60
19.900	0.04	3.27	3.40	0.00	0.07	299	33.60
19.950	0.04	3.23	3.36	0.00	0.07	295	33.59
20.000	0.04	3.19	3.32	0.00	0.06	291	33.59
20.050	0.04	3.15	3.27	0.00	0.06	288	33.59
20.100	0.04	3.11	3.23	0.00	0.06	284	33.59
20.150	0.04	3.07	3.20	0.00	0.06	281	33.58

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
20.200	0.04	3.03	3.16	0.00	0.06	277	33.58
20.250	0.04	3.00	3.12	0.00	0.06	274	33.58
20.300	0.04	2.97	3.09	0.00	0.06	271	33.58
20.350	0.04	2.93	3.05	0.00	0.06	268	33.58
20.400	0.04	2.90	3.02	0.00	0.06	265	33.57
20.450	0.04	2.87	2.98	0.00	0.06	262	33.57
20.500	0.04	2.84	2.95	0.00	0.06	259	33.57
20.550	0.04	2.81	2.92	0.00	0.06	257	33.57
20.600	0.04	2.78	2.89	0.00	0.06	254	33.57
20.650	0.04	2.75	2.86	0.00	0.06	251	33.56
20.700	0.04	2.72	2.83	0.00	0.06	249	33.56
20.750	0.04	2.70	2.81	0.00	0.05	246	33.56
20.800	0.04	2.67	2.78	0.00	0.05	244	33.56
20.850	0.04	2.65	2.75	0.00	0.05	242	33.56
20.900	0.04	2.62	2.73	0.00	0.05	239	33.56
20.950	0.04	2.60	2.70	0.00	0.05	237	33.56
21.000	0.04	2.57	2.68	0.00	0.05	235	33.55
21.050	0.04	2.55	2.65	0.00	0.05	233	33.55
21.100	0.04	2.53	2.63	0.00	0.05	231	33.55
21.150	0.04	2.51	2.61	0.00	0.05	229	33.55
21.200	0.04	2.48	2.58	0.00	0.05	227	33.55
21.250	0.04	2.46	2.56	0.00	0.05	225	33.55
21.300	0.04	2.44	2.54	0.00	0.05	223	33.55
21.350	0.04	2.42	2.52	0.00	0.05	221	33.55
21.400	0.04	2.40	2.50	0.00	0.05	220	33.54
21.450	0.04	2.38	2.48	0.00	0.05	218	33.54
21.500	0.04	2.36	2.46	0.00	0.05	216	33.54
21.550	0.04	2.35	2.44	0.00	0.05	214	33.54
21.600	0.04	2.33	2.42	0.00	0.05	213	33.54
21.650	0.04	2.31	2.40	0.00	0.05	211	33.54
21.700	0.04	2.29	2.38	0.00	0.05	209	33.54
21.750	0.04	2.27	2.37	0.00	0.05	208	33.54
21.800	0.04	2.26	2.35	0.00	0.05	206	33.54
21.850	0.04	2.24	2.33	0.00	0.05	205	33.53
21.900	0.04	2.23	2.32	0.00	0.05	203	33.53
21.950	0.04	2.21	2.30	0.00	0.04	202	33.53
22.000	0.04	2.19	2.28	0.00	0.04	200	33.53
22.050	0.04	2.18	2.27	0.00	0.04	199	33.53
22.100	0.04	2.16	2.25	0.00	0.04	198	33.53
22.150	0.04	2.15	2.23	0.00	0.04	196	33.53
22.200	0.04	2.13	2.22	0.00	0.04	195	33.53
22.250	0.04	2.12	2.20	0.00	0.04	194	33.53

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
22.300	0.04	2.10	2.19	0.00	0.04	192	33.53
22.350	0.04	2.09	2.17	0.00	0.04	191	33.53
22.400	0.04	2.08	2.16	0.00	0.04	190	33.52
22.450	0.03	2.06	2.15	0.00	0.04	188	33.52
22.500	0.03	2.05	2.13	0.00	0.04	187	33.52
22.550	0.03	2.03	2.12	0.00	0.04	186	33.52
22.600	0.03	2.02	2.10	0.00	0.04	185	33.52
22.650	0.03	2.01	2.09	0.00	0.04	184	33.52
22.700	0.03	2.00	2.08	0.00	0.04	182	33.52
22.750	0.03	1.98	2.06	0.00	0.04	181	33.52
22.800	0.03	1.97	2.05	0.00	0.04	180	33.52
22.850	0.03	1.96	2.04	0.00	0.04	179	33.52
22.900	0.03	1.94	2.02	0.00	0.04	178	33.52
22.950	0.03	1.93	2.01	0.00	0.04	177	33.52
23.000	0.03	1.92	2.00	0.00	0.04	175	33.52
23.050	0.03	1.91	1.99	0.00	0.04	174	33.51
23.100	0.03	1.90	1.97	0.00	0.04	173	33.51
23.150	0.03	1.88	1.96	0.00	0.04	172	33.51
23.200	0.03	1.87	1.95	0.00	0.04	171	33.51
23.250	0.03	1.86	1.94	0.00	0.04	170	33.51
23.300	0.03	1.85	1.92	0.00	0.04	169	33.51
23.350	0.03	1.84	1.91	0.00	0.04	168	33.51
23.400	0.03	1.83	1.90	0.00	0.04	167	33.51
23.450	0.03	1.81	1.89	0.00	0.04	166	33.51
23.500	0.03	1.80	1.88	0.00	0.04	165	33.51
23.550	0.03	1.79	1.86	0.00	0.04	164	33.51
23.600	0.03	1.78	1.85	0.00	0.04	163	33.51
23.650	0.03	1.77	1.84	0.00	0.04	162	33.51
23.700	0.03	1.76	1.83	0.00	0.04	161	33.51
23.750	0.03	1.75	1.82	0.00	0.04	160	33.50
23.800	0.03	1.74	1.81	0.00	0.04	159	33.50
23.850	0.03	1.73	1.80	0.00	0.03	158	33.50
23.900	0.03	1.72	1.79	0.00	0.03	157	33.50
23.950	0.03	1.70	1.77	0.00	0.03	156	33.50
24.000	0.03	1.69	1.76	0.00	0.03	155	33.50
24.050	0.02	1.67	1.74	0.00	0.03	153	33.50
24.100	0.00	1.63	1.70	0.00	0.03	149	33.50
24.150	0.00	1.57	1.64	0.00	0.03	144	33.49
24.200	0.00	1.51	1.57	0.00	0.03	138	33.49
24.250	0.00	1.45	1.51	0.00	0.03	133	33.49
24.300	0.00	1.40	1.45	0.00	0.03	128	33.48
24.350	0.00	1.34	1.40	0.00	0.03	123	33.48

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
24.400	0.00	1.29	1.34	0.00	0.03	118	33.48
24.450	0.00	1.24	1.29	0.00	0.03	113	33.47
24.500	0.00	1.19	1.24	0.00	0.02	109	33.47
24.550	0.00	1.15	1.19	0.00	0.02	105	33.47
24.600	0.00	1.10	1.15	0.00	0.02	101	33.47
24.650	0.00	1.06	1.10	0.00	0.02	97	33.46
24.700	0.00	1.02	1.06	0.00	0.02	93	33.46
24.750	0.00	0.98	1.02	0.00	0.02	89	33.46
24.800	0.00	0.94	0.98	0.00	0.02	86	33.46
24.850	0.00	0.90	0.94	0.00	0.02	82	33.45
24.900	0.00	0.87	0.90	0.00	0.02	79	33.45
24.950	0.00	0.83	0.87	0.00	0.02	76	33.45
25.000	0.00	0.80	0.83	0.00	0.02	73	33.45
25.050	0.00	0.77	0.80	0.00	0.02	70	33.45
25.100	0.00	0.74	0.77	0.00	0.01	68	33.44
25.150	0.00	0.71	0.74	0.00	0.01	65	33.44
25.200	0.00	0.68	0.71	0.00	0.01	62	33.44
25.250	0.00	0.66	0.68	0.00	0.01	60	33.44
25.300	0.00	0.63	0.66	0.00	0.01	58	33.44
25.350	0.00	0.61	0.63	0.00	0.01	55	33.44
25.400	0.00	0.58	0.61	0.00	0.01	53	33.43
25.450	0.00	0.56	0.58	0.00	0.01	51	33.43
25.500	0.00	0.54	0.56	0.00	0.01	49	33.43
25.550	0.00	0.52	0.54	0.00	0.01	47	33.43
25.600	0.00	0.50	0.52	0.00	0.01	45	33.43
25.650	0.00	0.48	0.50	0.00	0.01	44	33.43
25.700	0.00	0.46	0.48	0.00	0.01	42	33.43
25.750	0.00	0.44	0.46	0.00	0.01	40	33.43
25.800	0.00	0.42	0.44	0.00	0.01	39	33.43
25.850	0.00	0.41	0.42	0.00	0.01	37	33.42
25.900	0.00	0.39	0.41	0.00	0.01	36	33.42
25.950	0.00	0.38	0.39	0.00	0.01	34	33.42
26.000	0.00	0.36	0.38	0.00	0.01	33	33.42
26.050	0.00	0.35	0.36	0.00	0.01	32	33.42
26.100	0.00	0.33	0.35	0.00	0.01	31	33.42
26.150	0.00	0.32	0.33	0.00	0.01	29	33.42
26.200	0.00	0.31	0.32	0.00	0.01	28	33.42
26.250	0.00	0.30	0.31	0.00	0.01	27	33.42
26.300	0.00	0.29	0.30	0.00	0.01	26	33.42
26.350	0.00	0.27	0.29	0.00	0.01	25	33.42
26.400	0.00	0.26	0.27	0.00	0.01	24	33.42
26.450	0.00	0.25	0.26	0.00	0.01	23	33.42

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
26.500	0.00	0.24	0.25	0.00	0.00	22	33.41
26.550	0.00	0.23	0.24	0.00	0.00	21	33.41
26.600	0.00	0.22	0.23	0.00	0.00	21	33.41
26.650	0.00	0.22	0.22	0.00	0.00	20	33.41
26.700	0.00	0.21	0.22	0.00	0.00	19	33.41
26.750	0.00	0.20	0.21	0.00	0.00	18	33.41
26.800	0.00	0.19	0.20	0.00	0.00	18	33.41
26.850	0.00	0.18	0.19	0.00	0.00	17	33.41
26.900	0.00	0.18	0.18	0.00	0.00	16	33.41
26.950	0.00	0.17	0.18	0.00	0.00	16	33.41
27.000	0.00	0.16	0.17	0.00	0.00	15	33.41
27.050	0.00	0.16	0.16	0.00	0.00	14	33.41
27.100	0.00	0.15	0.16	0.00	0.00	14	33.41
27.150	0.00	0.15	0.15	0.00	0.00	13	33.41
27.200	0.00	0.14	0.15	0.00	0.00	13	33.41
27.250	0.00	0.13	0.14	0.00	0.00	12	33.41
27.300	0.00	0.13	0.13	0.00	0.00	12	33.41
27.350	0.00	0.12	0.13	0.00	0.00	11	33.41
27.400	0.00	0.12	0.12	0.00	0.00	11	33.41
27.450	0.00	0.11	0.12	0.00	0.00	10	33.41
27.500	0.00	0.11	0.11	0.00	0.00	10	33.41
27.550	0.00	0.11	0.11	0.00	0.00	10	33.41
27.600	0.00	0.10	0.11	0.00	0.00	9	33.41
27.650	0.00	0.10	0.10	0.00	0.00	9	33.41
27.700	0.00	0.09	0.10	0.00	0.00	9	33.41
27.750	0.00	0.09	0.09	0.00	0.00	8	33.41
27.800	0.00	0.09	0.09	0.00	0.00	8	33.41
27.850	0.00	0.08	0.09	0.00	0.00	8	33.40
27.900	0.00	0.08	0.08	0.00	0.00	7	33.40
27.950	0.00	0.08	0.08	0.00	0.00	7	33.40
28.000	0.00	0.07	0.08	0.00	0.00	7	33.40
28.050	0.00	0.07	0.07	0.00	0.00	7	33.40
28.100	0.00	0.07	0.07	0.00	0.00	6	33.40
28.150	0.00	0.07	0.07	0.00	0.00	6	33.40
28.200	0.00	0.06	0.07	0.00	0.00	6	33.40
28.250	0.00	0.06	0.06	0.00	0.00	6	33.40
28.300	0.00	0.06	0.06	0.00	0.00	5	33.40
28.350	0.00	0.06	0.06	0.00	0.00	5	33.40
28.400	0.00	0.05	0.06	0.00	0.00	5	33.40
28.450	0.00	0.05	0.05	0.00	0.00	5	33.40
28.500	0.00	0.05	0.05	0.00	0.00	5	33.40
28.550	0.00	0.05	0.05	0.00	0.00	4	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
28.600	0.00	0.05	0.05	0.00	0.00	4	33.40
28.650	0.00	0.04	0.05	0.00	0.00	4	33.40
28.700	0.00	0.04	0.04	0.00	0.00	4	33.40
28.750	0.00	0.04	0.04	0.00	0.00	4	33.40
28.800	0.00	0.04	0.04	0.00	0.00	4	33.40
28.850	0.00	0.04	0.04	0.00	0.00	3	33.40
28.900	0.00	0.04	0.04	0.00	0.00	3	33.40
28.950	0.00	0.03	0.04	0.00	0.00	3	33.40
29.000	0.00	0.03	0.03	0.00	0.00	3	33.40
29.050	0.00	0.03	0.03	0.00	0.00	3	33.40
29.100	0.00	0.03	0.03	0.00	0.00	3	33.40
29.150	0.00	0.03	0.03	0.00	0.00	3	33.40
29.200	0.00	0.03	0.03	0.00	0.00	3	33.40
29.250	0.00	0.03	0.03	0.00	0.00	3	33.40
29.300	0.00	0.03	0.03	0.00	0.00	2	33.40
29.350	0.00	0.03	0.03	0.00	0.00	2	33.40
29.400	0.00	0.02	0.03	0.00	0.00	2	33.40
29.450	0.00	0.02	0.02	0.00	0.00	2	33.40
29.500	0.00	0.02	0.02	0.00	0.00	2	33.40
29.550	0.00	0.02	0.02	0.00	0.00	2	33.40
29.600	0.00	0.02	0.02	0.00	0.00	2	33.40
29.650	0.00	0.02	0.02	0.00	0.00	2	33.40
29.700	0.00	0.02	0.02	0.00	0.00	2	33.40
29.750	0.00	0.02	0.02	0.00	0.00	2	33.40
29.800	0.00	0.02	0.02	0.00	0.00	2	33.40
29.850	0.00	0.02	0.02	0.00	0.00	2	33.40
29.900	0.00	0.02	0.02	0.00	0.00	1	33.40
29.950	0.00	0.02	0.02	0.00	0.00	1	33.40
30.000	0.00	0.02	0.02	0.00	0.00	1	33.40
30.050	0.00	0.01	0.02	0.00	0.00	1	33.40
30.100	0.00	0.01	0.01	0.00	0.00	1	33.40
30.150	0.00	0.01	0.01	0.00	0.00	1	33.40
30.200	0.00	0.01	0.01	0.00	0.00	1	33.40
30.250	0.00	0.01	0.01	0.00	0.00	1	33.40
30.300	0.00	0.01	0.01	0.00	0.00	1	33.40
30.350	0.00	0.01	0.01	0.00	0.00	1	33.40
30.400	0.00	0.01	0.01	0.00	0.00	1	33.40
30.450	0.00	0.01	0.01	0.00	0.00	1	33.40
30.500	0.00	0.01	0.01	0.00	0.00	1	33.40
30.550	0.00	0.01	0.01	0.00	0.00	1	33.40
30.600	0.00	0.01	0.01	0.00	0.00	1	33.40
30.650	0.00	0.01	0.01	0.00	0.00	1	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
30.700	0.00	0.01	0.01	0.00	0.00	1	33.40
30.750	0.00	0.01	0.01	0.00	0.00	1	33.40
30.800	0.00	0.01	0.01	0.00	0.00	1	33.40
30.850	0.00	0.01	0.01	0.00	0.00	1	33.40
30.900	0.00	0.01	0.01	0.00	0.00	1	33.40
30.950	0.00	0.01	0.01	0.00	0.00	1	33.40
31.000	0.00	0.01	0.01	0.00	0.00	1	33.40
31.050	0.00	0.01	0.01	0.00	0.00	1	33.40
31.100	0.00	0.01	0.01	0.00	0.00	1	33.40
31.150	0.00	0.01	0.01	0.00	0.00	1	33.40
31.200	0.00	0.01	0.01	0.00	0.00	1	33.40
31.250	0.00	0.01	0.01	0.00	0.00	1	33.40
31.300	0.00	0.01	0.01	0.00	0.00	0	33.40
31.350	0.00	0.01	0.01	0.00	0.00	0	33.40
31.400	0.00	0.00	0.01	0.00	0.00	0	33.40
31.450	0.00	0.00	0.00	0.00	0.00	0	33.40
31.500	0.00	0.00	0.00	0.00	0.00	0	33.40
31.550	0.00	0.00	0.00	0.00	0.00	0	33.40
31.600	0.00	0.00	0.00	0.00	0.00	0	33.40
31.650	0.00	0.00	0.00	0.00	0.00	0	33.40
31.700	0.00	0.00	0.00	0.00	0.00	0	33.40
31.750	0.00	0.00	0.00	0.00	0.00	0	33.40
31.800	0.00	0.00	0.00	0.00	0.00	0	33.40
31.850	0.00	0.00	0.00	0.00	0.00	0	33.40
31.900	0.00	0.00	0.00	0.00	0.00	0	33.40
31.950	0.00	0.00	0.00	0.00	0.00	0	33.40
32.000	0.00	0.00	0.00	0.00	0.00	0	33.40
32.050	0.00	0.00	0.00	0.00	0.00	0	33.40
32.100	0.00	0.00	0.00	0.00	0.00	0	33.40
32.150	0.00	0.00	0.00	0.00	0.00	0	33.40
32.200	0.00	0.00	0.00	0.00	0.00	0	33.40
32.250	0.00	0.00	0.00	0.00	0.00	0	33.40
32.300	0.00	0.00	0.00	0.00	0.00	0	33.40
32.350	0.00	0.00	0.00	0.00	0.00	0	33.40
32.400	0.00	0.00	0.00	0.00	0.00	0	33.40
32.450	0.00	0.00	0.00	0.00	0.00	0	33.40
32.500	0.00	0.00	0.00	0.00	0.00	0	33.40
32.550	0.00	0.00	0.00	0.00	0.00	0	33.40
32.600	0.00	0.00	0.00	0.00	0.00	0	33.40
32.650	0.00	0.00	0.00	0.00	0.00	0	33.40
32.700	0.00	0.00	0.00	0.00	0.00	0	33.40
32.750	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.800	0.00	0.00	0.00	0.00	0.00	0	33.40
32.850	0.00	0.00	0.00	0.00	0.00	0	33.40
32.900	0.00	0.00	0.00	0.00	0.00	0	33.40
32.950	0.00	0.00	0.00	0.00	0.00	0	33.40
33.000	0.00	0.00	0.00	0.00	0.00	0	33.40
33.050	0.00	0.00	0.00	0.00	0.00	0	33.40
33.100	0.00	0.00	0.00	0.00	0.00	0	33.40
33.150	0.00	0.00	0.00	0.00	0.00	0	33.40
33.200	0.00	0.00	0.00	0.00	0.00	0	33.40
33.250	0.00	0.00	0.00	0.00	0.00	0	33.40
33.300	0.00	0.00	0.00	0.00	0.00	0	33.40
33.350	0.00	0.00	0.00	0.00	0.00	0	33.40
33.400	0.00	0.00	0.00	0.00	0.00	0	33.40
33.450	0.00	0.00	0.00	0.00	0.00	0	33.40
33.500	0.00	0.00	0.00	0.00	0.00	0	33.40
33.550	0.00	0.00	0.00	0.00	0.00	0	33.40
33.600	0.00	0.00	0.00	0.00	0.00	0	33.40
33.650	0.00	0.00	0.00	0.00	0.00	0	33.40
33.700	0.00	0.00	0.00	0.00	0.00	0	33.40
33.750	0.00	0.00	0.00	0.00	0.00	0	33.40
33.800	0.00	0.00	0.00	0.00	0.00	0	33.40
33.850	0.00	0.00	0.00	0.00	0.00	0	33.40
33.900	0.00	0.00	0.00	0.00	0.00	0	33.40
33.950	0.00	0.00	0.00	0.00	0.00	0	33.40
34.000	0.00	0.00	0.00	0.00	0.00	0	33.40
34.050	0.00	0.00	0.00	0.00	0.00	0	33.40
34.100	0.00	0.00	0.00	0.00	0.00	0	33.40
34.150	0.00	0.00	0.00	0.00	0.00	0	33.40
34.200	0.00	0.00	0.00	0.00	0.00	0	33.40
34.250	0.00	0.00	0.00	0.00	0.00	0	33.40
34.300	0.00	0.00	0.00	0.00	0.00	0	33.40
34.350	0.00	0.00	0.00	0.00	0.00	0	33.40
34.400	0.00	0.00	0.00	0.00	0.00	0	33.40
34.450	0.00	0.00	0.00	0.00	0.00	0	33.40
34.500	0.00	0.00	0.00	0.00	0.00	0	33.40
34.550	0.00	0.00	0.00	0.00	0.00	0	33.40
34.600	0.00	0.00	0.00	0.00	0.00	0	33.40
34.650	0.00	0.00	0.00	0.00	0.00	0	33.40
34.700	0.00	0.00	0.00	0.00	0.00	0	33.40
34.750	0.00	0.00	0.00	0.00	0.00	0	33.40
34.800	0.00	0.00	0.00	0.00	0.00	0	33.40
34.850	0.00	0.00	0.00	0.00	0.00	0	33.40

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: DET SYSTEM (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.900	0.00	0.00	0.00	0.00	0.00	0	33.40
34.950	0.00	0.00	0.00	0.00	0.00	0	33.40
35.000	0.00	0.00	0.00	0.00	0.00	0	33.40
35.050	0.00	0.00	0.00	0.00	0.00	0	33.40
35.100	0.00	0.00	0.00	0.00	0.00	0	33.40
35.150	0.00	0.00	0.00	0.00	0.00	0	33.40
35.200	0.00	0.00	0.00	0.00	0.00	0	33.40
35.250	0.00	0.00	0.00	0.00	0.00	0	33.40
35.300	0.00	0.00	0.00	0.00	0.00	0	33.40
35.350	0.00	0.00	0.00	0.00	0.00	0	33.40
35.400	0.00	0.00	0.00	0.00	0.00	0	33.40
35.450	0.00	0.00	0.00	0.00	0.00	0	33.40
35.500	0.00	0.00	0.00	0.00	0.00	0	33.40
35.550	0.00	0.00	0.00	0.00	0.00	0	33.40
35.600	0.00	0.00	0.00	0.00	0.00	0	33.40
35.650	0.00	0.00	0.00	0.00	0.00	0	33.40
35.700	0.00	0.00	0.00	0.00	0.00	0	33.40
35.750	0.00	0.00	0.00	0.00	0.00	0	33.40
35.800	0.00	0.00	0.00	0.00	0.00	0	33.40
35.850	0.00	0.00	0.00	0.00	0.00	0	33.40
35.900	0.00	0.00	0.00	0.00	0.00	0	33.40
35.950	0.00	0.00	0.00	0.00	0.00	0	33.40
36.000	0.00	0.00	0.00	0.00	0.00	0	33.40

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	33.40
0.050	0.00	0.00	0.00	0.00	0.00	0	33.40
0.100	0.00	0.00	0.00	0.00	0.00	0	33.40
0.150	0.00	0.00	0.00	0.00	0.00	0	33.40
0.200	0.00	0.00	0.00	0.00	0.00	0	33.40
0.250	0.00	0.00	0.00	0.00	0.00	0	33.40
0.300	0.00	0.00	0.00	0.00	0.00	0	33.40
0.350	0.00	0.00	0.00	0.00	0.00	0	33.40
0.400	0.00	0.00	0.00	0.00	0.00	0	33.40
0.450	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
0.500	0.00	0.00	0.00	0.00	0.00	0	33.40
0.550	0.00	0.00	0.00	0.00	0.00	0	33.40
0.600	0.00	0.00	0.00	0.00	0.00	0	33.40
0.650	0.00	0.00	0.00	0.00	0.00	0	33.40
0.700	0.00	0.00	0.00	0.00	0.00	0	33.40
0.750	0.00	0.00	0.00	0.00	0.00	0	33.40
0.800	0.00	0.00	0.00	0.00	0.00	0	33.40
0.850	0.00	0.00	0.00	0.00	0.00	0	33.40
0.900	0.00	0.00	0.00	0.00	0.00	0	33.40
0.950	0.00	0.00	0.00	0.00	0.00	0	33.40
1.000	0.00	0.00	0.00	0.00	0.00	0	33.40
1.050	0.00	0.00	0.00	0.00	0.00	0	33.40
1.100	0.00	0.00	0.00	0.00	0.00	0	33.40
1.150	0.00	0.00	0.00	0.00	0.00	0	33.40
1.200	0.00	0.00	0.00	0.00	0.00	0	33.40
1.250	0.00	0.00	0.00	0.00	0.00	0	33.40
1.300	0.00	0.00	0.00	0.00	0.00	0	33.40
1.350	0.00	0.00	0.00	0.00	0.00	0	33.40
1.400	0.00	0.00	0.00	0.00	0.00	0	33.40
1.450	0.00	0.00	0.00	0.00	0.00	0	33.40
1.500	0.00	0.00	0.00	0.00	0.00	0	33.40
1.550	0.00	0.00	0.00	0.00	0.00	0	33.40
1.600	0.00	0.00	0.00	0.00	0.00	0	33.40
1.650	0.00	0.00	0.00	0.00	0.00	0	33.40
1.700	0.00	0.00	0.00	0.00	0.00	0	33.40
1.750	0.00	0.00	0.00	0.00	0.00	0	33.40
1.800	0.00	0.00	0.00	0.00	0.00	0	33.40
1.850	0.00	0.00	0.00	0.00	0.00	0	33.40
1.900	0.00	0.00	0.00	0.00	0.00	0	33.40
1.950	0.00	0.00	0.00	0.00	0.00	0	33.40
2.000	0.00	0.00	0.00	0.00	0.00	0	33.40
2.050	0.00	0.00	0.00	0.00	0.00	0	33.40
2.100	0.00	0.00	0.00	0.00	0.00	0	33.40
2.150	0.00	0.00	0.00	0.00	0.00	0	33.40
2.200	0.00	0.00	0.00	0.00	0.00	0	33.40
2.250	0.00	0.00	0.00	0.00	0.00	0	33.40
2.300	0.00	0.00	0.00	0.00	0.00	0	33.40
2.350	0.00	0.00	0.00	0.00	0.00	0	33.40
2.400	0.00	0.00	0.00	0.00	0.00	0	33.40
2.450	0.00	0.00	0.00	0.00	0.00	0	33.40
2.500	0.00	0.00	0.00	0.00	0.00	0	33.40
2.550	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.600	0.00	0.00	0.00	0.00	0.00	0	33.40
2.650	0.00	0.00	0.00	0.00	0.00	0	33.40
2.700	0.00	0.00	0.00	0.00	0.00	0	33.40
2.750	0.00	0.00	0.00	0.00	0.00	0	33.40
2.800	0.00	0.00	0.00	0.00	0.00	0	33.40
2.850	0.00	0.00	0.00	0.00	0.00	0	33.40
2.900	0.00	0.00	0.00	0.00	0.00	0	33.40
2.950	0.00	0.00	0.00	0.00	0.00	0	33.40
3.000	0.00	0.00	0.00	0.00	0.00	0	33.40
3.050	0.00	0.00	0.00	0.00	0.00	0	33.40
3.100	0.00	0.00	0.00	0.00	0.00	0	33.40
3.150	0.00	0.01	0.01	0.00	0.00	1	33.40
3.200	0.00	0.01	0.01	0.00	0.00	1	33.40
3.250	0.00	0.01	0.01	0.00	0.00	1	33.40
3.300	0.00	0.02	0.02	0.00	0.00	2	33.40
3.350	0.00	0.02	0.02	0.00	0.00	2	33.40
3.400	0.00	0.03	0.03	0.00	0.00	2	33.40
3.450	0.00	0.03	0.03	0.00	0.00	3	33.40
3.500	0.00	0.04	0.04	0.00	0.00	4	33.40
3.550	0.00	0.05	0.05	0.00	0.00	4	33.40
3.600	0.01	0.05	0.06	0.00	0.00	5	33.40
3.650	0.01	0.06	0.07	0.00	0.00	6	33.40
3.700	0.01	0.07	0.07	0.00	0.00	7	33.40
3.750	0.01	0.08	0.08	0.00	0.00	7	33.40
3.800	0.01	0.09	0.09	0.00	0.00	8	33.41
3.850	0.01	0.10	0.10	0.00	0.00	9	33.41
3.900	0.01	0.11	0.11	0.00	0.00	10	33.41
3.950	0.01	0.12	0.13	0.00	0.00	11	33.41
4.000	0.01	0.13	0.14	0.00	0.00	12	33.41
4.050	0.01	0.14	0.15	0.00	0.00	13	33.41
4.100	0.01	0.16	0.16	0.00	0.00	14	33.41
4.150	0.01	0.17	0.18	0.00	0.00	15	33.41
4.200	0.01	0.18	0.19	0.00	0.00	17	33.41
4.250	0.01	0.19	0.20	0.00	0.00	18	33.41
4.300	0.01	0.21	0.22	0.00	0.00	19	33.41
4.350	0.01	0.22	0.23	0.00	0.00	20	33.41
4.400	0.01	0.24	0.25	0.00	0.00	22	33.41
4.450	0.01	0.25	0.26	0.00	0.01	23	33.41
4.500	0.01	0.26	0.28	0.00	0.01	24	33.42
4.550	0.01	0.28	0.29	0.00	0.01	26	33.42
4.600	0.01	0.30	0.31	0.00	0.01	27	33.42
4.650	0.01	0.31	0.32	0.00	0.01	28	33.42

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
4.700	0.01	0.33	0.34	0.00	0.01	30	33.42
4.750	0.02	0.34	0.36	0.00	0.01	31	33.42
4.800	0.02	0.36	0.37	0.00	0.01	33	33.42
4.850	0.02	0.38	0.39	0.00	0.01	34	33.42
4.900	0.02	0.39	0.41	0.00	0.01	36	33.42
4.950	0.02	0.41	0.43	0.00	0.01	37	33.42
5.000	0.02	0.43	0.44	0.00	0.01	39	33.43
5.050	0.02	0.44	0.46	0.00	0.01	41	33.43
5.100	0.02	0.46	0.48	0.00	0.01	42	33.43
5.150	0.02	0.48	0.50	0.00	0.01	44	33.43
5.200	0.02	0.50	0.52	0.00	0.01	46	33.43
5.250	0.02	0.52	0.54	0.00	0.01	47	33.43
5.300	0.02	0.53	0.56	0.00	0.01	49	33.43
5.350	0.02	0.55	0.58	0.00	0.01	51	33.43
5.400	0.02	0.57	0.60	0.00	0.01	52	33.43
5.450	0.02	0.59	0.62	0.00	0.01	54	33.44
5.500	0.02	0.61	0.64	0.00	0.01	56	33.44
5.550	0.02	0.63	0.66	0.00	0.01	58	33.44
5.600	0.02	0.65	0.68	0.00	0.01	59	33.44
5.650	0.02	0.67	0.70	0.00	0.01	61	33.44
5.700	0.02	0.69	0.72	0.00	0.01	63	33.44
5.750	0.02	0.71	0.74	0.00	0.01	65	33.44
5.800	0.03	0.73	0.76	0.00	0.01	67	33.44
5.850	0.03	0.75	0.78	0.00	0.02	69	33.44
5.900	0.03	0.77	0.80	0.00	0.02	70	33.45
5.950	0.03	0.79	0.82	0.00	0.02	72	33.45
6.000	0.03	0.81	0.84	0.00	0.02	74	33.45
6.050	0.03	0.83	0.87	0.00	0.02	76	33.45
6.100	0.03	0.85	0.89	0.00	0.02	78	33.45
6.150	0.03	0.88	0.91	0.00	0.02	80	33.45
6.200	0.03	0.90	0.93	0.00	0.02	82	33.45
6.250	0.03	0.92	0.96	0.00	0.02	84	33.46
6.300	0.03	0.94	0.98	0.00	0.02	86	33.46
6.350	0.03	0.97	1.01	0.00	0.02	89	33.46
6.400	0.03	0.99	1.03	0.00	0.02	91	33.46
6.450	0.03	1.02	1.06	0.00	0.02	93	33.46
6.500	0.03	1.05	1.09	0.00	0.02	96	33.46
6.550	0.04	1.07	1.12	0.00	0.02	98	33.46
6.600	0.04	1.10	1.15	0.00	0.02	101	33.47
6.650	0.04	1.13	1.18	0.00	0.02	103	33.47
6.700	0.04	1.16	1.21	0.00	0.02	106	33.47
6.750	0.04	1.19	1.24	0.00	0.02	109	33.47

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
6.800	0.04	1.22	1.27	0.00	0.02	111	33.47
6.850	0.04	1.25	1.30	0.00	0.03	114	33.47
6.900	0.04	1.28	1.33	0.00	0.03	117	33.48
6.950	0.04	1.31	1.37	0.00	0.03	120	33.48
7.000	0.04	1.35	1.40	0.00	0.03	123	33.48
7.050	0.05	1.38	1.44	0.00	0.03	126	33.48
7.100	0.05	1.42	1.47	0.00	0.03	129	33.48
7.150	0.05	1.45	1.51	0.00	0.03	133	33.49
7.200	0.05	1.49	1.55	0.00	0.03	136	33.49
7.250	0.05	1.52	1.58	0.00	0.03	139	33.49
7.300	0.05	1.56	1.62	0.00	0.03	142	33.49
7.350	0.05	1.60	1.66	0.00	0.03	146	33.50
7.400	0.05	1.63	1.70	0.00	0.03	149	33.50
7.450	0.05	1.67	1.74	0.00	0.03	153	33.50
7.500	0.05	1.71	1.78	0.00	0.03	156	33.50
7.550	0.06	1.75	1.82	0.00	0.04	160	33.50
7.600	0.06	1.79	1.86	0.00	0.04	164	33.51
7.650	0.06	1.83	1.90	0.00	0.04	167	33.51
7.700	0.06	1.87	1.95	0.00	0.04	171	33.51
7.750	0.06	1.91	1.99	0.00	0.04	175	33.51
7.800	0.06	1.96	2.04	0.00	0.04	179	33.52
7.850	0.06	2.00	2.08	0.00	0.04	183	33.52
7.900	0.06	2.04	2.12	0.00	0.04	187	33.52
7.950	0.06	2.09	2.17	0.00	0.04	191	33.52
8.000	0.07	2.13	2.22	0.00	0.04	195	33.53
8.050	0.07	2.17	2.26	0.00	0.04	199	33.53
8.100	0.07	2.22	2.31	0.00	0.04	203	33.53
8.150	0.07	2.27	2.36	0.00	0.05	207	33.54
8.200	0.07	2.32	2.41	0.00	0.05	212	33.54
8.250	0.07	2.37	2.47	0.00	0.05	217	33.54
8.300	0.08	2.42	2.52	0.00	0.05	221	33.55
8.350	0.08	2.48	2.58	0.00	0.05	227	33.55
8.400	0.08	2.54	2.64	0.00	0.05	232	33.55
8.450	0.08	2.60	2.70	0.00	0.05	237	33.56
8.500	0.09	2.66	2.77	0.00	0.05	243	33.56
8.550	0.09	2.72	2.83	0.00	0.06	249	33.56
8.600	0.09	2.79	2.90	0.00	0.06	255	33.57
8.650	0.09	2.85	2.97	0.00	0.06	261	33.57
8.700	0.09	2.92	3.04	0.00	0.06	267	33.57
8.750	0.10	2.99	3.11	0.00	0.06	273	33.58
8.800	0.10	3.06	3.19	0.00	0.06	280	33.58
8.850	0.10	3.14	3.26	0.00	0.06	287	33.59

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.900	0.10	3.21	3.34	0.00	0.07	294	33.59
8.950	0.11	3.29	3.42	0.00	0.07	301	33.60
9.000	0.11	3.37	3.51	0.00	0.07	308	33.60
9.050	0.11	3.45	3.59	0.00	0.07	315	33.61
9.100	0.11	3.53	3.67	0.00	0.07	323	33.61
9.150	0.12	3.61	3.76	0.00	0.07	330	33.62
9.200	0.12	3.70	3.85	0.00	0.07	338	33.62
9.250	0.12	3.79	3.94	0.00	0.08	346	33.63
9.300	0.12	3.87	4.03	0.00	0.08	354	33.63
9.350	0.13	3.96	4.12	0.00	0.08	362	33.64
9.400	0.13	4.05	4.22	0.00	0.08	370	33.64
9.450	0.13	4.15	4.31	0.00	0.08	379	33.65
9.500	0.13	4.24	4.41	0.00	0.09	387	33.65
9.550	0.14	4.33	4.51	0.00	0.09	396	33.66
9.600	0.14	4.43	4.61	0.00	0.09	405	33.67
9.650	0.14	4.53	4.71	0.00	0.09	414	33.67
9.700	0.14	4.63	4.81	0.00	0.09	423	33.68
9.750	0.15	4.72	4.92	0.00	0.10	432	33.68
9.800	0.15	4.83	5.02	0.00	0.10	441	33.69
9.850	0.15	4.93	5.13	0.00	0.10	450	33.70
9.900	0.15	5.03	5.23	0.00	0.10	460	33.70
9.950	0.16	5.14	5.34	0.00	0.10	469	33.71
10.000	0.16	5.24	5.45	0.00	0.11	479	33.71
10.050	0.16	5.35	5.56	0.00	0.11	489	33.72
10.100	0.17	5.46	5.68	0.00	0.11	499	33.73
10.150	0.17	5.57	5.80	0.00	0.11	509	33.73
10.200	0.18	5.69	5.92	0.00	0.12	520	33.74
10.250	0.18	5.81	6.05	0.00	0.12	531	33.75
10.300	0.19	5.94	6.18	0.00	0.12	543	33.76
10.350	0.19	6.07	6.32	0.00	0.12	555	33.76
10.400	0.20	6.21	6.46	0.00	0.13	568	33.77
10.450	0.20	6.35	6.61	0.00	0.13	581	33.78
10.500	0.21	6.50	6.76	0.00	0.13	595	33.79
10.550	0.21	6.65	6.91	0.00	0.13	608	33.80
10.600	0.22	6.80	7.07	0.00	0.14	623	33.81
10.650	0.22	6.96	7.24	0.00	0.14	637	33.82
10.700	0.23	7.12	7.41	0.00	0.14	652	33.83
10.750	0.23	7.28	7.58	0.00	0.15	668	33.84
10.800	0.24	7.45	7.75	0.00	0.15	683	33.85
10.850	0.24	7.62	7.93	0.00	0.15	699	33.86
10.900	0.25	7.80	8.11	0.00	0.16	716	33.87
10.950	0.25	7.98	8.30	0.00	0.16	732	33.88

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.000	0.26	8.16	8.49	0.00	0.17	749	33.89
11.050	0.27	8.35	8.69	0.00	0.17	767	33.90
11.100	0.28	8.56	8.90	0.00	0.17	786	33.91
11.150	0.30	8.79	9.13	0.00	0.17	807	33.93
11.200	0.31	9.04	9.40	0.00	0.18	831	33.94
11.250	0.33	9.33	9.69	0.00	0.18	857	33.96
11.300	0.35	9.64	10.01	0.00	0.18	886	33.98
11.350	0.37	9.99	10.36	0.00	0.19	917	34.00
11.400	0.39	10.36	10.74	0.00	0.19	951	34.02
11.450	0.41	10.76	11.15	0.00	0.20	988	34.04
11.500	0.43	11.18	11.59	0.00	0.20	1,027	34.07
11.550	0.50	11.69	12.11	0.00	0.21	1,073	34.10
11.600	0.59	12.35	12.79	0.00	0.22	1,133	34.14
11.650	0.75	13.23	13.69	0.00	0.23	1,214	34.19
11.700	0.92	14.41	14.90	0.00	0.24	1,321	34.26
11.750	1.09	15.90	16.42	0.00	0.26	1,455	34.35
11.800	1.27	17.70	18.26	0.00	0.28	1,620	34.46
11.850	1.46	19.83	20.43	0.00	0.30	1,814	34.59
11.900	1.64	22.28	22.93	0.00	0.32	2,037	34.74
11.950	2.32	25.54	26.24	0.00	0.35	2,331	34.94
12.000	3.15	30.22	31.01	0.00	0.39	2,760	35.23
12.050	3.37	35.87	36.74	0.00	0.43	3,273	35.60
12.100	3.45	41.74	42.69	0.00	0.48	3,805	35.99
12.150	2.83	46.99	48.02	0.00	0.52	4,277	36.37
12.200	2.03	50.58	51.85	0.00	0.64	4,615	36.66
12.250	1.70	52.78	54.31	0.00	0.77	4,822	36.85
12.300	1.48	54.13	55.96	0.00	0.91	4,969	36.99
12.350	1.29	54.86	56.91	0.00	1.02	5,047	37.07
12.400	1.11	55.14	57.27	0.00	1.06	5,076	37.11
12.450	0.93	55.07	57.18	0.00	1.05	5,069	37.10
12.500	0.74	54.73	56.74	0.00	1.00	5,034	37.06
12.550	0.62	54.24	56.10	0.00	0.93	4,982	37.00
12.600	0.51	53.68	55.37	0.00	0.85	4,913	36.93
12.650	0.47	53.09	54.66	0.00	0.79	4,850	36.87
12.700	0.45	52.51	54.01	0.00	0.75	4,798	36.82
12.750	0.43	51.95	53.38	0.00	0.72	4,747	36.77
12.800	0.41	51.41	52.79	0.00	0.69	4,697	36.73
12.850	0.39	50.90	52.21	0.00	0.66	4,647	36.68
12.900	0.37	50.41	51.66	0.00	0.63	4,598	36.64
12.950	0.35	49.94	51.13	0.00	0.60	4,552	36.60
13.000	0.33	49.48	50.62	0.00	0.57	4,507	36.56
13.050	0.32	49.05	50.13	0.00	0.54	4,464	36.52

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.100	0.31	48.62	49.67	0.00	0.53	4,423	36.49
13.150	0.30	48.18	49.22	0.00	0.52	4,383	36.46
13.200	0.29	47.73	48.77	0.00	0.52	4,343	36.42
13.250	0.29	47.28	48.31	0.00	0.52	4,302	36.39
13.300	0.28	46.82	47.85	0.00	0.51	4,263	36.36
13.350	0.28	46.37	47.39	0.00	0.51	4,223	36.32
13.400	0.27	45.90	46.92	0.00	0.51	4,183	36.29
13.450	0.27	45.44	46.45	0.00	0.50	4,142	36.26
13.500	0.26	44.97	45.97	0.00	0.50	4,100	36.22
13.550	0.26	44.50	45.50	0.00	0.50	4,057	36.19
13.600	0.25	44.03	45.01	0.00	0.49	4,014	36.16
13.650	0.25	43.55	44.53	0.00	0.49	3,970	36.12
13.700	0.24	43.07	44.04	0.00	0.49	3,927	36.09
13.750	0.24	42.58	43.55	0.00	0.48	3,882	36.05
13.800	0.23	42.10	43.06	0.00	0.48	3,838	36.02
13.850	0.23	41.61	42.56	0.00	0.48	3,793	35.98
13.900	0.22	41.11	42.06	0.00	0.47	3,746	35.95
13.950	0.22	40.62	41.56	0.00	0.47	3,699	35.91
14.000	0.21	40.12	41.05	0.00	0.47	3,653	35.88
14.050	0.21	39.62	40.54	0.00	0.46	3,609	35.85
14.100	0.21	39.12	40.04	0.00	0.46	3,565	35.81
14.150	0.20	38.62	39.53	0.00	0.45	3,521	35.78
14.200	0.20	38.12	39.02	0.00	0.45	3,477	35.75
14.250	0.20	37.63	38.52	0.00	0.45	3,432	35.71
14.300	0.20	37.13	38.02	0.00	0.44	3,387	35.68
14.350	0.19	36.64	37.52	0.00	0.44	3,343	35.65
14.400	0.19	36.16	37.03	0.00	0.44	3,298	35.62
14.450	0.19	35.67	36.54	0.00	0.43	3,254	35.58
14.500	0.19	35.19	36.05	0.00	0.43	3,210	35.55
14.550	0.18	34.71	35.56	0.00	0.43	3,166	35.52
14.600	0.18	34.23	35.07	0.00	0.42	3,122	35.49
14.650	0.18	33.75	34.59	0.00	0.42	3,078	35.46
14.700	0.18	33.28	34.11	0.00	0.41	3,033	35.43
14.750	0.17	32.81	33.63	0.00	0.41	2,990	35.39
14.800	0.17	32.34	33.15	0.00	0.41	2,948	35.36
14.850	0.17	31.87	32.68	0.00	0.40	2,907	35.34
14.900	0.17	31.41	32.21	0.00	0.40	2,866	35.31
14.950	0.16	30.95	31.74	0.00	0.40	2,825	35.28
15.000	0.16	30.49	31.27	0.00	0.39	2,784	35.25
15.050	0.16	30.03	30.81	0.00	0.39	2,742	35.22
15.100	0.16	29.58	30.35	0.00	0.39	2,701	35.19
15.150	0.16	29.13	29.89	0.00	0.38	2,660	35.16

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
15.200	0.15	28.68	29.43	0.00	0.38	2,619	35.13
15.250	0.15	28.23	28.98	0.00	0.37	2,578	35.11
15.300	0.15	27.79	28.53	0.00	0.37	2,538	35.08
15.350	0.15	27.34	28.08	0.00	0.37	2,498	35.05
15.400	0.14	26.90	27.63	0.00	0.36	2,458	35.02
15.450	0.14	26.47	27.19	0.00	0.36	2,418	34.99
15.500	0.14	26.03	26.74	0.00	0.36	2,377	34.97
15.550	0.14	25.60	26.30	0.00	0.35	2,337	34.94
15.600	0.13	25.17	25.87	0.00	0.35	2,297	34.91
15.650	0.13	24.74	25.43	0.00	0.35	2,258	34.89
15.700	0.13	24.31	25.00	0.00	0.34	2,220	34.86
15.750	0.13	23.89	24.56	0.00	0.34	2,182	34.83
15.800	0.12	23.47	24.14	0.00	0.33	2,144	34.81
15.850	0.12	23.05	23.71	0.00	0.33	2,107	34.78
15.900	0.12	22.64	23.29	0.00	0.33	2,070	34.76
15.950	0.12	22.23	22.87	0.00	0.32	2,032	34.73
16.000	0.11	21.82	22.46	0.00	0.32	1,995	34.71
16.050	0.11	21.41	22.04	0.00	0.32	1,958	34.68
16.100	0.11	21.01	21.64	0.00	0.31	1,922	34.66
16.150	0.11	20.62	21.23	0.00	0.31	1,886	34.63
16.200	0.11	20.23	20.83	0.00	0.30	1,850	34.61
16.250	0.11	19.84	20.44	0.00	0.30	1,815	34.59
16.300	0.11	19.46	20.05	0.00	0.30	1,780	34.56
16.350	0.10	19.08	19.67	0.00	0.29	1,746	34.54
16.400	0.10	18.71	19.29	0.00	0.29	1,712	34.52
16.450	0.10	18.34	18.92	0.00	0.29	1,679	34.50
16.500	0.10	17.98	18.55	0.00	0.28	1,646	34.47
16.550	0.10	17.62	18.18	0.00	0.28	1,613	34.45
16.600	0.10	17.27	17.82	0.00	0.28	1,580	34.43
16.650	0.10	16.92	17.47	0.00	0.27	1,548	34.41
16.700	0.10	16.58	17.12	0.00	0.27	1,517	34.39
16.750	0.10	16.24	16.77	0.00	0.26	1,486	34.37
16.800	0.09	15.91	16.43	0.00	0.26	1,456	34.35
16.850	0.09	15.59	16.10	0.00	0.26	1,427	34.33
16.900	0.09	15.27	15.77	0.00	0.25	1,398	34.31
16.950	0.09	14.95	15.45	0.00	0.25	1,370	34.29
17.000	0.09	14.65	15.14	0.00	0.25	1,342	34.27
17.050	0.09	14.34	14.83	0.00	0.24	1,315	34.26
17.100	0.09	14.04	14.52	0.00	0.24	1,288	34.24
17.150	0.09	13.75	14.22	0.00	0.23	1,261	34.22
17.200	0.09	13.46	13.92	0.00	0.23	1,235	34.20
17.250	0.09	13.18	13.63	0.00	0.23	1,209	34.19

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 25 years
Label: DET SYSTEM (OUT) | Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
17.300	0.08	12.90	13.35	0.00	0.22	1,183	34.17
17.350	0.08	12.63	13.07	0.00	0.22	1,158	34.15
17.400	0.08	12.36	12.79	0.00	0.22	1,134	34.14
17.450	0.08	12.09	12.52	0.00	0.21	1,109	34.12
17.500	0.08	11.83	12.25	0.00	0.21	1,086	34.11
17.550	0.08	11.57	11.99	0.00	0.21	1,062	34.09
17.600	0.08	11.32	11.73	0.00	0.21	1,039	34.08
17.650	0.08	11.07	11.47	0.00	0.20	1,016	34.06
17.700	0.08	10.82	11.22	0.00	0.20	994	34.05
17.750	0.07	10.58	10.97	0.00	0.20	972	34.03
17.800	0.07	10.34	10.73	0.00	0.19	950	34.02
17.850	0.07	10.11	10.49	0.00	0.19	929	34.00
17.900	0.07	9.88	10.25	0.00	0.19	908	33.99
17.950	0.07	9.65	10.02	0.00	0.18	887	33.98
18.000	0.07	9.43	9.79	0.00	0.18	866	33.96
18.050	0.07	9.21	9.56	0.00	0.18	846	33.95
18.100	0.07	8.99	9.34	0.00	0.18	826	33.94
18.150	0.07	8.78	9.12	0.00	0.17	806	33.93
18.200	0.07	8.57	8.91	0.00	0.17	787	33.91
18.250	0.07	8.36	8.70	0.00	0.17	768	33.90
18.300	0.07	8.17	8.50	0.00	0.17	750	33.89
18.350	0.07	7.98	8.30	0.00	0.16	732	33.88
18.400	0.07	7.79	8.11	0.00	0.16	715	33.87
18.450	0.07	7.62	7.92	0.00	0.15	699	33.86
18.500	0.07	7.45	7.75	0.00	0.15	683	33.85
18.550	0.07	7.28	7.58	0.00	0.15	667	33.84
18.600	0.06	7.12	7.41	0.00	0.14	653	33.83
18.650	0.06	6.97	7.25	0.00	0.14	639	33.82
18.700	0.06	6.82	7.10	0.00	0.14	625	33.81
18.750	0.06	6.68	6.95	0.00	0.14	612	33.80
18.800	0.06	6.54	6.81	0.00	0.13	599	33.79
18.850	0.06	6.41	6.67	0.00	0.13	586	33.78
18.900	0.06	6.28	6.53	0.00	0.13	575	33.78
18.950	0.06	6.16	6.41	0.00	0.12	563	33.77
19.000	0.06	6.04	6.28	0.00	0.12	552	33.76
19.050	0.06	5.92	6.16	0.00	0.12	541	33.75
19.100	0.06	5.81	6.04	0.00	0.12	531	33.75
19.150	0.06	5.70	5.93	0.00	0.12	521	33.74
19.200	0.06	5.60	5.82	0.00	0.11	511	33.74
19.250	0.06	5.50	5.72	0.00	0.11	502	33.73
19.300	0.06	5.40	5.62	0.00	0.11	493	33.72
19.350	0.06	5.30	5.52	0.00	0.11	485	33.72

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
19.400	0.06	5.21	5.42	0.00	0.11	476	33.71
19.450	0.06	5.12	5.33	0.00	0.10	468	33.71
19.500	0.06	5.04	5.24	0.00	0.10	460	33.70
19.550	0.06	4.95	5.15	0.00	0.10	453	33.70
19.600	0.06	4.87	5.07	0.00	0.10	445	33.69
19.650	0.06	4.80	4.99	0.00	0.10	438	33.69
19.700	0.06	4.72	4.91	0.00	0.10	431	33.68
19.750	0.06	4.65	4.84	0.00	0.09	425	33.68
19.800	0.06	4.58	4.76	0.00	0.09	418	33.67
19.850	0.06	4.51	4.69	0.00	0.09	412	33.67
19.900	0.06	4.44	4.62	0.00	0.09	406	33.67
19.950	0.06	4.38	4.55	0.00	0.09	400	33.66
20.000	0.06	4.31	4.49	0.00	0.09	394	33.66
20.050	0.06	4.25	4.43	0.00	0.09	389	33.65
20.100	0.06	4.19	4.36	0.00	0.08	383	33.65
20.150	0.06	4.14	4.30	0.00	0.08	378	33.65
20.200	0.05	4.08	4.25	0.00	0.08	373	33.64
20.250	0.05	4.03	4.19	0.00	0.08	368	33.64
20.300	0.05	3.98	4.14	0.00	0.08	363	33.64
20.350	0.05	3.93	4.08	0.00	0.08	359	33.64
20.400	0.05	3.88	4.03	0.00	0.08	354	33.63
20.450	0.05	3.83	3.98	0.00	0.08	350	33.63
20.500	0.05	3.78	3.94	0.00	0.08	346	33.63
20.550	0.05	3.74	3.89	0.00	0.08	342	33.62
20.600	0.05	3.69	3.84	0.00	0.07	338	33.62
20.650	0.05	3.65	3.80	0.00	0.07	334	33.62
20.700	0.05	3.61	3.76	0.00	0.07	330	33.62
20.750	0.05	3.57	3.71	0.00	0.07	326	33.61
20.800	0.05	3.53	3.67	0.00	0.07	323	33.61
20.850	0.05	3.49	3.63	0.00	0.07	319	33.61
20.900	0.05	3.46	3.60	0.00	0.07	316	33.61
20.950	0.05	3.42	3.56	0.00	0.07	313	33.60
21.000	0.05	3.38	3.52	0.00	0.07	309	33.60
21.050	0.05	3.35	3.49	0.00	0.07	306	33.60
21.100	0.05	3.32	3.45	0.00	0.07	303	33.60
21.150	0.05	3.29	3.42	0.00	0.07	300	33.60
21.200	0.05	3.25	3.39	0.00	0.07	297	33.59
21.250	0.05	3.22	3.35	0.00	0.07	295	33.59
21.300	0.05	3.19	3.32	0.00	0.06	292	33.59
21.350	0.05	3.16	3.29	0.00	0.06	289	33.59
21.400	0.05	3.14	3.26	0.00	0.06	287	33.59
21.450	0.05	3.11	3.23	0.00	0.06	284	33.59

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.500	0.05	3.08	3.20	0.00	0.06	281	33.58
21.550	0.05	3.05	3.18	0.00	0.06	279	33.58
21.600	0.05	3.03	3.15	0.00	0.06	277	33.58
21.650	0.05	3.00	3.12	0.00	0.06	274	33.58
21.700	0.05	2.98	3.10	0.00	0.06	272	33.58
21.750	0.05	2.95	3.07	0.00	0.06	270	33.58
21.800	0.05	2.93	3.05	0.00	0.06	268	33.58
21.850	0.05	2.90	3.02	0.00	0.06	265	33.57
21.900	0.05	2.88	3.00	0.00	0.06	263	33.57
21.950	0.05	2.86	2.97	0.00	0.06	261	33.57
22.000	0.05	2.84	2.95	0.00	0.06	259	33.57
22.050	0.05	2.81	2.93	0.00	0.06	257	33.57
22.100	0.05	2.79	2.91	0.00	0.06	255	33.57
22.150	0.05	2.77	2.88	0.00	0.06	253	33.57
22.200	0.05	2.75	2.86	0.00	0.06	251	33.56
22.250	0.04	2.73	2.84	0.00	0.06	250	33.56
22.300	0.04	2.71	2.82	0.00	0.05	248	33.56
22.350	0.04	2.69	2.80	0.00	0.05	246	33.56
22.400	0.04	2.67	2.78	0.00	0.05	244	33.56
22.450	0.04	2.65	2.76	0.00	0.05	242	33.56
22.500	0.04	2.63	2.74	0.00	0.05	241	33.56
22.550	0.04	2.61	2.72	0.00	0.05	239	33.56
22.600	0.04	2.60	2.70	0.00	0.05	237	33.56
22.650	0.04	2.58	2.68	0.00	0.05	236	33.55
22.700	0.04	2.56	2.66	0.00	0.05	234	33.55
22.750	0.04	2.54	2.65	0.00	0.05	232	33.55
22.800	0.04	2.53	2.63	0.00	0.05	231	33.55
22.850	0.04	2.51	2.61	0.00	0.05	229	33.55
22.900	0.04	2.49	2.59	0.00	0.05	228	33.55
22.950	0.04	2.47	2.57	0.00	0.05	226	33.55
23.000	0.04	2.46	2.56	0.00	0.05	225	33.55
23.050	0.04	2.44	2.54	0.00	0.05	223	33.55
23.100	0.04	2.43	2.52	0.00	0.05	222	33.55
23.150	0.04	2.41	2.51	0.00	0.05	220	33.54
23.200	0.04	2.39	2.49	0.00	0.05	219	33.54
23.250	0.04	2.38	2.47	0.00	0.05	217	33.54
23.300	0.04	2.36	2.46	0.00	0.05	216	33.54
23.350	0.04	2.35	2.44	0.00	0.05	214	33.54
23.400	0.04	2.33	2.43	0.00	0.05	213	33.54
23.450	0.04	2.32	2.41	0.00	0.05	212	33.54
23.500	0.04	2.30	2.40	0.00	0.05	210	33.54
23.550	0.04	2.29	2.38	0.00	0.05	209	33.54

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.600	0.04	2.27	2.36	0.00	0.05	208	33.54
23.650	0.04	2.26	2.35	0.00	0.05	206	33.54
23.700	0.04	2.24	2.33	0.00	0.05	205	33.53
23.750	0.04	2.23	2.32	0.00	0.05	204	33.53
23.800	0.04	2.21	2.30	0.00	0.04	202	33.53
23.850	0.04	2.20	2.29	0.00	0.04	201	33.53
23.900	0.04	2.19	2.27	0.00	0.04	200	33.53
23.950	0.04	2.17	2.26	0.00	0.04	198	33.53
24.000	0.04	2.16	2.24	0.00	0.04	197	33.53
24.050	0.02	2.13	2.22	0.00	0.04	195	33.53
24.100	0.01	2.08	2.16	0.00	0.04	190	33.52
24.150	0.00	2.00	2.08	0.00	0.04	183	33.52
24.200	0.00	1.92	2.00	0.00	0.04	176	33.52
24.250	0.00	1.85	1.92	0.00	0.04	169	33.51
24.300	0.00	1.78	1.85	0.00	0.04	162	33.51
24.350	0.00	1.71	1.78	0.00	0.03	156	33.50
24.400	0.00	1.64	1.71	0.00	0.03	150	33.50
24.450	0.00	1.58	1.64	0.00	0.03	144	33.49
24.500	0.00	1.52	1.58	0.00	0.03	139	33.49
24.550	0.00	1.46	1.52	0.00	0.03	133	33.49
24.600	0.00	1.40	1.46	0.00	0.03	128	33.48
24.650	0.00	1.35	1.40	0.00	0.03	123	33.48
24.700	0.00	1.29	1.35	0.00	0.03	118	33.48
24.750	0.00	1.24	1.29	0.00	0.03	114	33.47
24.800	0.00	1.20	1.24	0.00	0.02	109	33.47
24.850	0.00	1.15	1.20	0.00	0.02	105	33.47
24.900	0.00	1.10	1.15	0.00	0.02	101	33.47
24.950	0.00	1.06	1.10	0.00	0.02	97	33.46
25.000	0.00	1.02	1.06	0.00	0.02	93	33.46
25.050	0.00	0.98	1.02	0.00	0.02	90	33.46
25.100	0.00	0.94	0.98	0.00	0.02	86	33.46
25.150	0.00	0.91	0.94	0.00	0.02	83	33.45
25.200	0.00	0.87	0.91	0.00	0.02	80	33.45
25.250	0.00	0.84	0.87	0.00	0.02	76	33.45
25.300	0.00	0.80	0.84	0.00	0.02	73	33.45
25.350	0.00	0.77	0.80	0.00	0.02	71	33.45
25.400	0.00	0.74	0.77	0.00	0.02	68	33.44
25.450	0.00	0.71	0.74	0.00	0.01	65	33.44
25.500	0.00	0.69	0.71	0.00	0.01	63	33.44
25.550	0.00	0.66	0.69	0.00	0.01	60	33.44
25.600	0.00	0.63	0.66	0.00	0.01	58	33.44
25.650	0.00	0.61	0.63	0.00	0.01	56	33.44

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.700	0.00	0.59	0.61	0.00	0.01	53	33.44
25.750	0.00	0.56	0.59	0.00	0.01	51	33.43
25.800	0.00	0.54	0.56	0.00	0.01	49	33.43
25.850	0.00	0.52	0.54	0.00	0.01	47	33.43
25.900	0.00	0.50	0.52	0.00	0.01	46	33.43
25.950	0.00	0.48	0.50	0.00	0.01	44	33.43
26.000	0.00	0.46	0.48	0.00	0.01	42	33.43
26.050	0.00	0.44	0.46	0.00	0.01	40	33.43
26.100	0.00	0.43	0.44	0.00	0.01	39	33.43
26.150	0.00	0.41	0.43	0.00	0.01	37	33.42
26.200	0.00	0.39	0.41	0.00	0.01	36	33.42
26.250	0.00	0.38	0.39	0.00	0.01	35	33.42
26.300	0.00	0.36	0.38	0.00	0.01	33	33.42
26.350	0.00	0.35	0.36	0.00	0.01	32	33.42
26.400	0.00	0.34	0.35	0.00	0.01	31	33.42
26.450	0.00	0.32	0.34	0.00	0.01	29	33.42
26.500	0.00	0.31	0.32	0.00	0.01	28	33.42
26.550	0.00	0.30	0.31	0.00	0.01	27	33.42
26.600	0.00	0.29	0.30	0.00	0.01	26	33.42
26.650	0.00	0.28	0.29	0.00	0.01	25	33.42
26.700	0.00	0.26	0.28	0.00	0.01	24	33.42
26.750	0.00	0.25	0.26	0.00	0.01	23	33.42
26.800	0.00	0.24	0.25	0.00	0.00	22	33.41
26.850	0.00	0.23	0.24	0.00	0.00	21	33.41
26.900	0.00	0.23	0.23	0.00	0.00	21	33.41
26.950	0.00	0.22	0.23	0.00	0.00	20	33.41
27.000	0.00	0.21	0.22	0.00	0.00	19	33.41
27.050	0.00	0.20	0.21	0.00	0.00	18	33.41
27.100	0.00	0.19	0.20	0.00	0.00	18	33.41
27.150	0.00	0.19	0.19	0.00	0.00	17	33.41
27.200	0.00	0.18	0.19	0.00	0.00	16	33.41
27.250	0.00	0.17	0.18	0.00	0.00	16	33.41
27.300	0.00	0.16	0.17	0.00	0.00	15	33.41
27.350	0.00	0.16	0.16	0.00	0.00	14	33.41
27.400	0.00	0.15	0.16	0.00	0.00	14	33.41
27.450	0.00	0.15	0.15	0.00	0.00	13	33.41
27.500	0.00	0.14	0.15	0.00	0.00	13	33.41
27.550	0.00	0.13	0.14	0.00	0.00	12	33.41
27.600	0.00	0.13	0.13	0.00	0.00	12	33.41
27.650	0.00	0.12	0.13	0.00	0.00	11	33.41
27.700	0.00	0.12	0.12	0.00	0.00	11	33.41
27.750	0.00	0.11	0.12	0.00	0.00	11	33.41

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.800	0.00	0.11	0.11	0.00	0.00	10	33.41
27.850	0.00	0.11	0.11	0.00	0.00	10	33.41
27.900	0.00	0.10	0.11	0.00	0.00	9	33.41
27.950	0.00	0.10	0.10	0.00	0.00	9	33.41
28.000	0.00	0.09	0.10	0.00	0.00	9	33.41
28.050	0.00	0.09	0.09	0.00	0.00	8	33.41
28.100	0.00	0.09	0.09	0.00	0.00	8	33.41
28.150	0.00	0.08	0.09	0.00	0.00	8	33.41
28.200	0.00	0.08	0.08	0.00	0.00	7	33.40
28.250	0.00	0.08	0.08	0.00	0.00	7	33.40
28.300	0.00	0.07	0.08	0.00	0.00	7	33.40
28.350	0.00	0.07	0.07	0.00	0.00	7	33.40
28.400	0.00	0.07	0.07	0.00	0.00	6	33.40
28.450	0.00	0.07	0.07	0.00	0.00	6	33.40
28.500	0.00	0.06	0.07	0.00	0.00	6	33.40
28.550	0.00	0.06	0.06	0.00	0.00	6	33.40
28.600	0.00	0.06	0.06	0.00	0.00	5	33.40
28.650	0.00	0.06	0.06	0.00	0.00	5	33.40
28.700	0.00	0.05	0.06	0.00	0.00	5	33.40
28.750	0.00	0.05	0.05	0.00	0.00	5	33.40
28.800	0.00	0.05	0.05	0.00	0.00	5	33.40
28.850	0.00	0.05	0.05	0.00	0.00	4	33.40
28.900	0.00	0.05	0.05	0.00	0.00	4	33.40
28.950	0.00	0.04	0.05	0.00	0.00	4	33.40
29.000	0.00	0.04	0.04	0.00	0.00	4	33.40
29.050	0.00	0.04	0.04	0.00	0.00	4	33.40
29.100	0.00	0.04	0.04	0.00	0.00	4	33.40
29.150	0.00	0.04	0.04	0.00	0.00	3	33.40
29.200	0.00	0.04	0.04	0.00	0.00	3	33.40
29.250	0.00	0.03	0.04	0.00	0.00	3	33.40
29.300	0.00	0.03	0.03	0.00	0.00	3	33.40
29.350	0.00	0.03	0.03	0.00	0.00	3	33.40
29.400	0.00	0.03	0.03	0.00	0.00	3	33.40
29.450	0.00	0.03	0.03	0.00	0.00	3	33.40
29.500	0.00	0.03	0.03	0.00	0.00	3	33.40
29.550	0.00	0.03	0.03	0.00	0.00	3	33.40
29.600	0.00	0.03	0.03	0.00	0.00	2	33.40
29.650	0.00	0.03	0.03	0.00	0.00	2	33.40
29.700	0.00	0.02	0.03	0.00	0.00	2	33.40
29.750	0.00	0.02	0.02	0.00	0.00	2	33.40
29.800	0.00	0.02	0.02	0.00	0.00	2	33.40
29.850	0.00	0.02	0.02	0.00	0.00	2	33.40

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.900	0.00	0.02	0.02	0.00	0.00	2	33.40
29.950	0.00	0.02	0.02	0.00	0.00	2	33.40
30.000	0.00	0.02	0.02	0.00	0.00	2	33.40
30.050	0.00	0.02	0.02	0.00	0.00	2	33.40
30.100	0.00	0.02	0.02	0.00	0.00	2	33.40
30.150	0.00	0.02	0.02	0.00	0.00	2	33.40
30.200	0.00	0.02	0.02	0.00	0.00	2	33.40
30.250	0.00	0.02	0.02	0.00	0.00	1	33.40
30.300	0.00	0.02	0.02	0.00	0.00	1	33.40
30.350	0.00	0.01	0.02	0.00	0.00	1	33.40
30.400	0.00	0.01	0.01	0.00	0.00	1	33.40
30.450	0.00	0.01	0.01	0.00	0.00	1	33.40
30.500	0.00	0.01	0.01	0.00	0.00	1	33.40
30.550	0.00	0.01	0.01	0.00	0.00	1	33.40
30.600	0.00	0.01	0.01	0.00	0.00	1	33.40
30.650	0.00	0.01	0.01	0.00	0.00	1	33.40
30.700	0.00	0.01	0.01	0.00	0.00	1	33.40
30.750	0.00	0.01	0.01	0.00	0.00	1	33.40
30.800	0.00	0.01	0.01	0.00	0.00	1	33.40
30.850	0.00	0.01	0.01	0.00	0.00	1	33.40
30.900	0.00	0.01	0.01	0.00	0.00	1	33.40
30.950	0.00	0.01	0.01	0.00	0.00	1	33.40
31.000	0.00	0.01	0.01	0.00	0.00	1	33.40
31.050	0.00	0.01	0.01	0.00	0.00	1	33.40
31.100	0.00	0.01	0.01	0.00	0.00	1	33.40
31.150	0.00	0.01	0.01	0.00	0.00	1	33.40
31.200	0.00	0.01	0.01	0.00	0.00	1	33.40
31.250	0.00	0.01	0.01	0.00	0.00	1	33.40
31.300	0.00	0.01	0.01	0.00	0.00	1	33.40
31.350	0.00	0.01	0.01	0.00	0.00	1	33.40
31.400	0.00	0.01	0.01	0.00	0.00	1	33.40
31.450	0.00	0.01	0.01	0.00	0.00	1	33.40
31.500	0.00	0.01	0.01	0.00	0.00	1	33.40
31.550	0.00	0.01	0.01	0.00	0.00	1	33.40
31.600	0.00	0.01	0.01	0.00	0.00	0	33.40
31.650	0.00	0.01	0.01	0.00	0.00	0	33.40
31.700	0.00	0.00	0.01	0.00	0.00	0	33.40
31.750	0.00	0.00	0.00	0.00	0.00	0	33.40
31.800	0.00	0.00	0.00	0.00	0.00	0	33.40
31.850	0.00	0.00	0.00	0.00	0.00	0	33.40
31.900	0.00	0.00	0.00	0.00	0.00	0	33.40
31.950	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.000	0.00	0.00	0.00	0.00	0.00	0	33.40
32.050	0.00	0.00	0.00	0.00	0.00	0	33.40
32.100	0.00	0.00	0.00	0.00	0.00	0	33.40
32.150	0.00	0.00	0.00	0.00	0.00	0	33.40
32.200	0.00	0.00	0.00	0.00	0.00	0	33.40
32.250	0.00	0.00	0.00	0.00	0.00	0	33.40
32.300	0.00	0.00	0.00	0.00	0.00	0	33.40
32.350	0.00	0.00	0.00	0.00	0.00	0	33.40
32.400	0.00	0.00	0.00	0.00	0.00	0	33.40
32.450	0.00	0.00	0.00	0.00	0.00	0	33.40
32.500	0.00	0.00	0.00	0.00	0.00	0	33.40
32.550	0.00	0.00	0.00	0.00	0.00	0	33.40
32.600	0.00	0.00	0.00	0.00	0.00	0	33.40
32.650	0.00	0.00	0.00	0.00	0.00	0	33.40
32.700	0.00	0.00	0.00	0.00	0.00	0	33.40
32.750	0.00	0.00	0.00	0.00	0.00	0	33.40
32.800	0.00	0.00	0.00	0.00	0.00	0	33.40
32.850	0.00	0.00	0.00	0.00	0.00	0	33.40
32.900	0.00	0.00	0.00	0.00	0.00	0	33.40
32.950	0.00	0.00	0.00	0.00	0.00	0	33.40
33.000	0.00	0.00	0.00	0.00	0.00	0	33.40
33.050	0.00	0.00	0.00	0.00	0.00	0	33.40
33.100	0.00	0.00	0.00	0.00	0.00	0	33.40
33.150	0.00	0.00	0.00	0.00	0.00	0	33.40
33.200	0.00	0.00	0.00	0.00	0.00	0	33.40
33.250	0.00	0.00	0.00	0.00	0.00	0	33.40
33.300	0.00	0.00	0.00	0.00	0.00	0	33.40
33.350	0.00	0.00	0.00	0.00	0.00	0	33.40
33.400	0.00	0.00	0.00	0.00	0.00	0	33.40
33.450	0.00	0.00	0.00	0.00	0.00	0	33.40
33.500	0.00	0.00	0.00	0.00	0.00	0	33.40
33.550	0.00	0.00	0.00	0.00	0.00	0	33.40
33.600	0.00	0.00	0.00	0.00	0.00	0	33.40
33.650	0.00	0.00	0.00	0.00	0.00	0	33.40
33.700	0.00	0.00	0.00	0.00	0.00	0	33.40
33.750	0.00	0.00	0.00	0.00	0.00	0	33.40
33.800	0.00	0.00	0.00	0.00	0.00	0	33.40
33.850	0.00	0.00	0.00	0.00	0.00	0	33.40
33.900	0.00	0.00	0.00	0.00	0.00	0	33.40
33.950	0.00	0.00	0.00	0.00	0.00	0	33.40
34.000	0.00	0.00	0.00	0.00	0.00	0	33.40
34.050	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: DET SYSTEM (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.100	0.00	0.00	0.00	0.00	0.00	0	33.40
34.150	0.00	0.00	0.00	0.00	0.00	0	33.40
34.200	0.00	0.00	0.00	0.00	0.00	0	33.40
34.250	0.00	0.00	0.00	0.00	0.00	0	33.40
34.300	0.00	0.00	0.00	0.00	0.00	0	33.40
34.350	0.00	0.00	0.00	0.00	0.00	0	33.40
34.400	0.00	0.00	0.00	0.00	0.00	0	33.40
34.450	0.00	0.00	0.00	0.00	0.00	0	33.40
34.500	0.00	0.00	0.00	0.00	0.00	0	33.40
34.550	0.00	0.00	0.00	0.00	0.00	0	33.40
34.600	0.00	0.00	0.00	0.00	0.00	0	33.40
34.650	0.00	0.00	0.00	0.00	0.00	0	33.40
34.700	0.00	0.00	0.00	0.00	0.00	0	33.40
34.750	0.00	0.00	0.00	0.00	0.00	0	33.40
34.800	0.00	0.00	0.00	0.00	0.00	0	33.40
34.850	0.00	0.00	0.00	0.00	0.00	0	33.40
34.900	0.00	0.00	0.00	0.00	0.00	0	33.40
34.950	0.00	0.00	0.00	0.00	0.00	0	33.40
35.000	0.00	0.00	0.00	0.00	0.00	0	33.40
35.050	0.00	0.00	0.00	0.00	0.00	0	33.40
35.100	0.00	0.00	0.00	0.00	0.00	0	33.40
35.150	0.00	0.00	0.00	0.00	0.00	0	33.40
35.200	0.00	0.00	0.00	0.00	0.00	0	33.40
35.250	0.00	0.00	0.00	0.00	0.00	0	33.40
35.300	0.00	0.00	0.00	0.00	0.00	0	33.40
35.350	0.00	0.00	0.00	0.00	0.00	0	33.40
35.400	0.00	0.00	0.00	0.00	0.00	0	33.40
35.450	0.00	0.00	0.00	0.00	0.00	0	33.40
35.500	0.00	0.00	0.00	0.00	0.00	0	33.40
35.550	0.00	0.00	0.00	0.00	0.00	0	33.40
35.600	0.00	0.00	0.00	0.00	0.00	0	33.40
35.650	0.00	0.00	0.00	0.00	0.00	0	33.40
35.700	0.00	0.00	0.00	0.00	0.00	0	33.40
35.750	0.00	0.00	0.00	0.00	0.00	0	33.40
35.800	0.00	0.00	0.00	0.00	0.00	0	33.40
35.850	0.00	0.00	0.00	0.00	0.00	0	33.40
35.900	0.00	0.00	0.00	0.00	0.00	0	33.40
35.950	0.00	0.00	0.00	0.00	0.00	0	33.40
36.000	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	33.40
0.050	0.00	0.00	0.00	0.00	0.00	0	33.40
0.100	0.00	0.00	0.00	0.00	0.00	0	33.40
0.150	0.00	0.00	0.00	0.00	0.00	0	33.40
0.200	0.00	0.00	0.00	0.00	0.00	0	33.40
0.250	0.00	0.00	0.00	0.00	0.00	0	33.40
0.300	0.00	0.00	0.00	0.00	0.00	0	33.40
0.350	0.00	0.00	0.00	0.00	0.00	0	33.40
0.400	0.00	0.00	0.00	0.00	0.00	0	33.40
0.450	0.00	0.00	0.00	0.00	0.00	0	33.40
0.500	0.00	0.00	0.00	0.00	0.00	0	33.40
0.550	0.00	0.00	0.00	0.00	0.00	0	33.40
0.600	0.00	0.00	0.00	0.00	0.00	0	33.40
0.650	0.00	0.00	0.00	0.00	0.00	0	33.40
0.700	0.00	0.00	0.00	0.00	0.00	0	33.40
0.750	0.00	0.00	0.00	0.00	0.00	0	33.40
0.800	0.00	0.00	0.00	0.00	0.00	0	33.40
0.850	0.00	0.00	0.00	0.00	0.00	0	33.40
0.900	0.00	0.00	0.00	0.00	0.00	0	33.40
0.950	0.00	0.00	0.00	0.00	0.00	0	33.40
1.000	0.00	0.00	0.00	0.00	0.00	0	33.40
1.050	0.00	0.00	0.00	0.00	0.00	0	33.40
1.100	0.00	0.00	0.00	0.00	0.00	0	33.40
1.150	0.00	0.00	0.00	0.00	0.00	0	33.40
1.200	0.00	0.00	0.00	0.00	0.00	0	33.40
1.250	0.00	0.00	0.00	0.00	0.00	0	33.40
1.300	0.00	0.00	0.00	0.00	0.00	0	33.40
1.350	0.00	0.00	0.00	0.00	0.00	0	33.40
1.400	0.00	0.00	0.00	0.00	0.00	0	33.40
1.450	0.00	0.00	0.00	0.00	0.00	0	33.40
1.500	0.00	0.00	0.00	0.00	0.00	0	33.40
1.550	0.00	0.00	0.00	0.00	0.00	0	33.40
1.600	0.00	0.00	0.00	0.00	0.00	0	33.40
1.650	0.00	0.00	0.00	0.00	0.00	0	33.40
1.700	0.00	0.00	0.00	0.00	0.00	0	33.40
1.750	0.00	0.00	0.00	0.00	0.00	0	33.40
1.800	0.00	0.00	0.00	0.00	0.00	0	33.40
1.850	0.00	0.00	0.00	0.00	0.00	0	33.40
1.900	0.00	0.00	0.00	0.00	0.00	0	33.40
1.950	0.00	0.00	0.00	0.00	0.00	0	33.40
2.000	0.00	0.00	0.00	0.00	0.00	0	33.40
2.050	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	33.40
2.150	0.00	0.00	0.00	0.00	0.00	0	33.40
2.200	0.00	0.00	0.00	0.00	0.00	0	33.40
2.250	0.00	0.00	0.00	0.00	0.00	0	33.40
2.300	0.00	0.01	0.01	0.00	0.00	1	33.40
2.350	0.00	0.01	0.01	0.00	0.00	1	33.40
2.400	0.00	0.01	0.01	0.00	0.00	1	33.40
2.450	0.00	0.02	0.02	0.00	0.00	2	33.40
2.500	0.00	0.03	0.03	0.00	0.00	2	33.40
2.550	0.00	0.04	0.04	0.00	0.00	3	33.40
2.600	0.01	0.04	0.05	0.00	0.00	4	33.40
2.650	0.01	0.05	0.06	0.00	0.00	5	33.40
2.700	0.01	0.06	0.07	0.00	0.00	6	33.40
2.750	0.01	0.08	0.08	0.00	0.00	7	33.40
2.800	0.01	0.09	0.09	0.00	0.00	8	33.41
2.850	0.01	0.10	0.10	0.00	0.00	9	33.41
2.900	0.01	0.11	0.12	0.00	0.00	10	33.41
2.950	0.01	0.13	0.13	0.00	0.00	12	33.41
3.000	0.01	0.14	0.15	0.00	0.00	13	33.41
3.050	0.01	0.16	0.17	0.00	0.00	15	33.41
3.100	0.01	0.18	0.18	0.00	0.00	16	33.41
3.150	0.01	0.19	0.20	0.00	0.00	18	33.41
3.200	0.01	0.21	0.22	0.00	0.00	19	33.41
3.250	0.01	0.23	0.24	0.00	0.00	21	33.41
3.300	0.01	0.25	0.26	0.00	0.01	23	33.41
3.350	0.02	0.27	0.28	0.00	0.01	25	33.42
3.400	0.02	0.29	0.30	0.00	0.01	26	33.42
3.450	0.02	0.31	0.32	0.00	0.01	28	33.42
3.500	0.02	0.33	0.34	0.00	0.01	30	33.42
3.550	0.02	0.35	0.37	0.00	0.01	32	33.42
3.600	0.02	0.37	0.39	0.00	0.01	34	33.42
3.650	0.02	0.40	0.41	0.00	0.01	36	33.42
3.700	0.02	0.42	0.44	0.00	0.01	38	33.43
3.750	0.02	0.44	0.46	0.00	0.01	41	33.43
3.800	0.02	0.47	0.49	0.00	0.01	43	33.43
3.850	0.02	0.49	0.51	0.00	0.01	45	33.43
3.900	0.02	0.52	0.54	0.00	0.01	47	33.43
3.950	0.02	0.54	0.56	0.00	0.01	49	33.43
4.000	0.02	0.57	0.59	0.00	0.01	52	33.43
4.050	0.03	0.59	0.62	0.00	0.01	54	33.44
4.100	0.03	0.62	0.64	0.00	0.01	57	33.44
4.150	0.03	0.65	0.67	0.00	0.01	59	33.44

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.03	0.67	0.70	0.00	0.01	61	33.44
4.250	0.03	0.70	0.73	0.00	0.01	64	33.44
4.300	0.03	0.73	0.76	0.00	0.01	66	33.44
4.350	0.03	0.75	0.79	0.00	0.02	69	33.45
4.400	0.03	0.78	0.81	0.00	0.02	72	33.45
4.450	0.03	0.81	0.84	0.00	0.02	74	33.45
4.500	0.03	0.84	0.87	0.00	0.02	77	33.45
4.550	0.03	0.87	0.90	0.00	0.02	79	33.45
4.600	0.03	0.90	0.93	0.00	0.02	82	33.45
4.650	0.03	0.93	0.96	0.00	0.02	85	33.46
4.700	0.03	0.96	1.00	0.00	0.02	87	33.46
4.750	0.04	0.99	1.03	0.00	0.02	90	33.46
4.800	0.04	1.02	1.06	0.00	0.02	93	33.46
4.850	0.04	1.05	1.09	0.00	0.02	96	33.46
4.900	0.04	1.08	1.12	0.00	0.02	98	33.46
4.950	0.04	1.11	1.15	0.00	0.02	101	33.47
5.000	0.04	1.14	1.18	0.00	0.02	104	33.47
5.050	0.04	1.17	1.22	0.00	0.02	107	33.47
5.100	0.04	1.20	1.25	0.00	0.02	110	33.47
5.150	0.04	1.23	1.28	0.00	0.02	113	33.47
5.200	0.04	1.26	1.31	0.00	0.03	115	33.48
5.250	0.04	1.30	1.35	0.00	0.03	118	33.48
5.300	0.04	1.33	1.38	0.00	0.03	121	33.48
5.350	0.04	1.36	1.41	0.00	0.03	124	33.48
5.400	0.04	1.39	1.45	0.00	0.03	127	33.48
5.450	0.05	1.42	1.48	0.00	0.03	130	33.49
5.500	0.05	1.46	1.51	0.00	0.03	133	33.49
5.550	0.05	1.49	1.55	0.00	0.03	136	33.49
5.600	0.05	1.52	1.58	0.00	0.03	139	33.49
5.650	0.05	1.55	1.62	0.00	0.03	142	33.49
5.700	0.05	1.59	1.65	0.00	0.03	145	33.49
5.750	0.05	1.62	1.68	0.00	0.03	148	33.50
5.800	0.05	1.65	1.72	0.00	0.03	151	33.50
5.850	0.05	1.68	1.75	0.00	0.03	154	33.50
5.900	0.05	1.72	1.79	0.00	0.03	157	33.50
5.950	0.05	1.75	1.82	0.00	0.04	160	33.50
6.000	0.05	1.78	1.86	0.00	0.04	163	33.51
6.050	0.05	1.82	1.89	0.00	0.04	166	33.51
6.100	0.06	1.85	1.93	0.00	0.04	169	33.51
6.150	0.06	1.89	1.96	0.00	0.04	172	33.51
6.200	0.06	1.92	2.00	0.00	0.04	176	33.52
6.250	0.06	1.96	2.04	0.00	0.04	179	33.52

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.06	2.00	2.08	0.00	0.04	183	33.52
6.350	0.06	2.04	2.12	0.00	0.04	186	33.52
6.400	0.06	2.08	2.16	0.00	0.04	190	33.52
6.450	0.06	2.12	2.20	0.00	0.04	194	33.53
6.500	0.07	2.16	2.25	0.00	0.04	198	33.53
6.550	0.07	2.21	2.29	0.00	0.04	202	33.53
6.600	0.07	2.25	2.34	0.00	0.05	206	33.53
6.650	0.07	2.30	2.39	0.00	0.05	210	33.54
6.700	0.07	2.34	2.44	0.00	0.05	214	33.54
6.750	0.07	2.39	2.49	0.00	0.05	218	33.54
6.800	0.07	2.44	2.54	0.00	0.05	223	33.55
6.850	0.08	2.49	2.59	0.00	0.05	227	33.55
6.900	0.08	2.54	2.64	0.00	0.05	232	33.55
6.950	0.08	2.59	2.70	0.00	0.05	237	33.56
7.000	0.08	2.64	2.75	0.00	0.05	242	33.56
7.050	0.08	2.70	2.81	0.00	0.05	247	33.56
7.100	0.08	2.75	2.86	0.00	0.06	251	33.56
7.150	0.09	2.81	2.92	0.00	0.06	257	33.57
7.200	0.09	2.86	2.98	0.00	0.06	262	33.57
7.250	0.09	2.92	3.04	0.00	0.06	267	33.57
7.300	0.09	2.98	3.10	0.00	0.06	272	33.58
7.350	0.09	3.04	3.16	0.00	0.06	277	33.58
7.400	0.09	3.10	3.22	0.00	0.06	283	33.59
7.450	0.09	3.16	3.28	0.00	0.06	288	33.59
7.500	0.10	3.22	3.35	0.00	0.07	294	33.59
7.550	0.10	3.28	3.41	0.00	0.07	300	33.60
7.600	0.10	3.34	3.48	0.00	0.07	305	33.60
7.650	0.10	3.40	3.54	0.00	0.07	311	33.60
7.700	0.10	3.47	3.61	0.00	0.07	317	33.61
7.750	0.10	3.53	3.67	0.00	0.07	323	33.61
7.800	0.11	3.60	3.74	0.00	0.07	329	33.62
7.850	0.11	3.66	3.81	0.00	0.07	335	33.62
7.900	0.11	3.73	3.88	0.00	0.08	341	33.62
7.950	0.11	3.80	3.95	0.00	0.08	347	33.63
8.000	0.11	3.86	4.02	0.00	0.08	353	33.63
8.050	0.12	3.93	4.09	0.00	0.08	359	33.64
8.100	0.12	4.00	4.16	0.00	0.08	366	33.64
8.150	0.12	4.07	4.24	0.00	0.08	372	33.64
8.200	0.12	4.15	4.32	0.00	0.08	379	33.65
8.250	0.13	4.23	4.40	0.00	0.09	387	33.65
8.300	0.13	4.31	4.49	0.00	0.09	394	33.66
8.350	0.13	4.40	4.58	0.00	0.09	402	33.66

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.14	4.49	4.67	0.00	0.09	410	33.67
8.450	0.14	4.58	4.76	0.00	0.09	418	33.67
8.500	0.14	4.67	4.86	0.00	0.09	427	33.68
8.550	0.15	4.77	4.96	0.00	0.10	436	33.69
8.600	0.15	4.87	5.06	0.00	0.10	445	33.69
8.650	0.15	4.97	5.17	0.00	0.10	454	33.70
8.700	0.16	5.07	5.28	0.00	0.10	464	33.70
8.750	0.16	5.18	5.39	0.00	0.10	474	33.71
8.800	0.16	5.29	5.51	0.00	0.11	484	33.72
8.850	0.17	5.40	5.62	0.00	0.11	494	33.72
8.900	0.17	5.52	5.74	0.00	0.11	504	33.73
8.950	0.17	5.64	5.86	0.00	0.11	515	33.74
9.000	0.18	5.75	5.99	0.00	0.12	526	33.74
9.050	0.18	5.88	6.11	0.00	0.12	537	33.75
9.100	0.19	6.00	6.24	0.00	0.12	548	33.76
9.150	0.19	6.12	6.37	0.00	0.12	560	33.77
9.200	0.19	6.25	6.51	0.00	0.13	572	33.77
9.250	0.20	6.38	6.64	0.00	0.13	584	33.78
9.300	0.20	6.51	6.78	0.00	0.13	596	33.79
9.350	0.20	6.65	6.92	0.00	0.13	609	33.80
9.400	0.21	6.78	7.06	0.00	0.14	621	33.81
9.450	0.21	6.92	7.20	0.00	0.14	634	33.81
9.500	0.21	7.06	7.34	0.00	0.14	647	33.82
9.550	0.22	7.20	7.49	0.00	0.15	660	33.83
9.600	0.22	7.34	7.64	0.00	0.15	673	33.84
9.650	0.23	7.49	7.79	0.00	0.15	686	33.85
9.700	0.23	7.63	7.94	0.00	0.15	700	33.86
9.750	0.23	7.78	8.09	0.00	0.16	714	33.87
9.800	0.24	7.93	8.25	0.00	0.16	727	33.87
9.850	0.24	8.08	8.40	0.00	0.16	741	33.88
9.900	0.24	8.23	8.56	0.00	0.17	755	33.89
9.950	0.25	8.38	8.72	0.00	0.17	770	33.90
10.000	0.25	8.54	8.88	0.00	0.17	784	33.91
10.050	0.26	8.70	9.05	0.00	0.17	799	33.92
10.100	0.26	8.87	9.22	0.00	0.18	814	33.93
10.150	0.27	9.04	9.40	0.00	0.18	831	33.94
10.200	0.28	9.23	9.59	0.00	0.18	848	33.95
10.250	0.28	9.42	9.79	0.00	0.18	866	33.96
10.300	0.29	9.63	10.00	0.00	0.18	885	33.98
10.350	0.30	9.84	10.22	0.00	0.19	904	33.99
10.400	0.30	10.06	10.44	0.00	0.19	925	34.00
10.450	0.31	10.30	10.68	0.00	0.19	946	34.02

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
10.500	0.32	10.54	10.93	0.00	0.20	968	34.03
10.550	0.33	10.78	11.18	0.00	0.20	990	34.04
10.600	0.33	11.04	11.45	0.00	0.20	1,014	34.06
10.650	0.34	11.31	11.72	0.00	0.21	1,038	34.08
10.700	0.35	11.58	12.00	0.00	0.21	1,063	34.09
10.750	0.36	11.86	12.29	0.00	0.21	1,089	34.11
10.800	0.36	12.16	12.59	0.00	0.22	1,115	34.13
10.850	0.37	12.45	12.89	0.00	0.22	1,143	34.14
10.900	0.38	12.76	13.20	0.00	0.22	1,170	34.16
10.950	0.39	13.07	13.52	0.00	0.23	1,199	34.18
11.000	0.39	13.39	13.85	0.00	0.23	1,228	34.20
11.050	0.41	13.73	14.20	0.00	0.23	1,259	34.22
11.100	0.43	14.08	14.56	0.00	0.24	1,291	34.24
11.150	0.45	14.47	14.96	0.00	0.24	1,327	34.26
11.200	0.48	14.90	15.40	0.00	0.25	1,365	34.29
11.250	0.50	15.37	15.88	0.00	0.25	1,407	34.32
11.300	0.53	15.88	16.40	0.00	0.26	1,454	34.35
11.350	0.56	16.43	16.97	0.00	0.27	1,503	34.38
11.400	0.58	17.03	17.57	0.00	0.27	1,557	34.42
11.450	0.61	17.66	18.22	0.00	0.28	1,616	34.46
11.500	0.64	18.34	18.92	0.00	0.29	1,679	34.50
11.550	0.75	19.15	19.73	0.00	0.29	1,752	34.55
11.600	0.89	20.18	20.78	0.00	0.30	1,846	34.61
11.650	1.11	21.54	22.17	0.00	0.32	1,970	34.69
11.700	1.36	23.35	24.01	0.00	0.33	2,133	34.80
11.750	1.62	25.62	26.33	0.00	0.35	2,339	34.94
11.800	1.88	28.37	29.12	0.00	0.38	2,591	35.11
11.850	2.14	31.59	32.39	0.00	0.40	2,882	35.32
11.900	2.41	35.29	36.14	0.00	0.43	3,219	35.56
11.950	3.40	40.16	41.10	0.00	0.47	3,657	35.88
12.000	4.59	47.11	48.15	0.00	0.52	4,288	36.38
12.050	4.90	54.62	56.60	0.00	0.99	5,022	37.04
12.100	4.99	60.28	64.51	0.00	2.12	5,616	37.82
12.150	4.09	63.25	69.36	0.00	3.05	5,968	38.31
12.200	2.93	63.81	70.28	0.00	3.24	6,034	38.40
12.250	2.45	63.15	69.19	0.00	3.02	5,955	38.29
12.300	2.13	62.27	67.73	0.00	2.73	5,850	38.15
12.350	1.86	61.38	66.26	0.00	2.44	5,744	38.00
12.400	1.59	60.49	64.84	0.00	2.17	5,640	37.85
12.450	1.33	59.56	63.42	0.00	1.93	5,536	37.70
12.500	1.07	58.59	61.96	0.00	1.68	5,428	37.55
12.550	0.89	57.67	60.55	0.00	1.44	5,320	37.41

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.74	56.71	59.30	0.00	1.30	5,233	37.29
12.650	0.68	55.80	58.12	0.00	1.16	5,144	37.18
12.700	0.65	55.03	57.13	0.00	1.05	5,065	37.09
12.750	0.62	54.39	56.29	0.00	0.95	4,998	37.02
12.800	0.59	53.85	55.59	0.00	0.87	4,934	36.95
12.850	0.56	53.38	54.99	0.00	0.81	4,877	36.90
12.900	0.53	52.92	54.48	0.00	0.78	4,835	36.86
12.950	0.51	52.46	53.96	0.00	0.75	4,794	36.82
13.000	0.48	52.00	53.44	0.00	0.72	4,752	36.78
13.050	0.46	51.54	52.93	0.00	0.70	4,710	36.74
13.100	0.44	51.10	52.44	0.00	0.67	4,667	36.70
13.150	0.43	50.69	51.97	0.00	0.64	4,626	36.67
13.200	0.42	50.30	51.54	0.00	0.62	4,587	36.63
13.250	0.41	49.94	51.13	0.00	0.60	4,552	36.60
13.300	0.41	49.60	50.76	0.00	0.58	4,519	36.57
13.350	0.40	49.29	50.41	0.00	0.56	4,488	36.54
13.400	0.39	49.00	50.08	0.00	0.54	4,460	36.52
13.450	0.39	48.72	49.78	0.00	0.53	4,433	36.50
13.500	0.38	48.44	49.49	0.00	0.53	4,407	36.47
13.550	0.37	48.14	49.19	0.00	0.52	4,380	36.45
13.600	0.36	47.83	48.87	0.00	0.52	4,352	36.43
13.650	0.36	47.51	48.55	0.00	0.52	4,323	36.41
13.700	0.35	47.19	48.22	0.00	0.52	4,294	36.38
13.750	0.34	46.85	47.88	0.00	0.51	4,265	36.36
13.800	0.34	46.50	47.53	0.00	0.51	4,235	36.33
13.850	0.33	46.15	47.17	0.00	0.51	4,204	36.31
13.900	0.32	45.78	46.80	0.00	0.51	4,172	36.28
13.950	0.31	45.41	46.42	0.00	0.50	4,140	36.26
14.000	0.31	45.03	46.03	0.00	0.50	4,105	36.23
14.050	0.30	44.64	45.63	0.00	0.50	4,070	36.20
14.100	0.29	44.24	45.23	0.00	0.50	4,033	36.17
14.150	0.29	43.84	44.83	0.00	0.49	3,997	36.14
14.200	0.29	43.44	44.42	0.00	0.49	3,960	36.11
14.250	0.28	43.04	44.01	0.00	0.49	3,924	36.09
14.300	0.28	42.63	43.60	0.00	0.48	3,887	36.06
14.350	0.28	42.23	43.19	0.00	0.48	3,850	36.03
14.400	0.27	41.82	42.78	0.00	0.48	3,813	36.00
14.450	0.27	41.41	42.37	0.00	0.48	3,774	35.97
14.500	0.27	41.01	41.95	0.00	0.47	3,736	35.94
14.550	0.26	40.60	41.54	0.00	0.47	3,697	35.91
14.600	0.26	40.19	41.12	0.00	0.47	3,659	35.88
14.650	0.26	39.78	40.70	0.00	0.46	3,623	35.86

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.25	39.37	40.29	0.00	0.46	3,587	35.83
14.750	0.25	38.95	39.87	0.00	0.46	3,551	35.80
14.800	0.25	38.54	39.45	0.00	0.45	3,514	35.77
14.850	0.24	38.13	39.03	0.00	0.45	3,478	35.75
14.900	0.24	37.71	38.61	0.00	0.45	3,440	35.72
14.950	0.24	37.29	38.18	0.00	0.44	3,402	35.69
15.000	0.23	36.88	37.76	0.00	0.44	3,364	35.66
15.050	0.23	36.46	37.34	0.00	0.44	3,326	35.64
15.100	0.22	36.04	36.92	0.00	0.44	3,288	35.61
15.150	0.22	35.63	36.49	0.00	0.43	3,250	35.58
15.200	0.22	35.21	36.07	0.00	0.43	3,212	35.55
15.250	0.21	34.79	35.64	0.00	0.43	3,174	35.53
15.300	0.21	34.37	35.21	0.00	0.42	3,135	35.50
15.350	0.21	33.95	34.78	0.00	0.42	3,096	35.47
15.400	0.20	33.52	34.36	0.00	0.42	3,056	35.44
15.450	0.20	33.10	33.93	0.00	0.41	3,017	35.41
15.500	0.20	32.68	33.50	0.00	0.41	2,978	35.39
15.550	0.19	32.25	33.07	0.00	0.41	2,941	35.36
15.600	0.19	31.83	32.64	0.00	0.40	2,903	35.33
15.650	0.19	31.41	32.21	0.00	0.40	2,866	35.31
15.700	0.18	30.98	31.78	0.00	0.40	2,828	35.28
15.750	0.18	30.56	31.35	0.00	0.39	2,790	35.25
15.800	0.18	30.14	30.92	0.00	0.39	2,752	35.23
15.850	0.17	29.71	30.49	0.00	0.39	2,713	35.20
15.900	0.17	29.29	30.05	0.00	0.38	2,675	35.17
15.950	0.17	28.86	29.62	0.00	0.38	2,636	35.15
16.000	0.16	28.44	29.19	0.00	0.38	2,597	35.12
16.050	0.16	28.02	28.76	0.00	0.37	2,559	35.09
16.100	0.16	27.59	28.33	0.00	0.37	2,520	35.07
16.150	0.16	27.17	27.91	0.00	0.37	2,482	35.04
16.200	0.15	26.76	27.48	0.00	0.36	2,444	35.01
16.250	0.15	26.34	27.06	0.00	0.36	2,406	34.99
16.300	0.15	25.93	26.65	0.00	0.36	2,368	34.96
16.350	0.15	25.53	26.23	0.00	0.35	2,330	34.94
16.400	0.15	25.12	25.82	0.00	0.35	2,293	34.91
16.450	0.15	24.72	25.42	0.00	0.35	2,257	34.88
16.500	0.14	24.33	25.02	0.00	0.34	2,221	34.86
16.550	0.14	23.94	24.62	0.00	0.34	2,186	34.84
16.600	0.14	23.55	24.22	0.00	0.34	2,152	34.81
16.650	0.14	23.17	23.84	0.00	0.33	2,118	34.79
16.700	0.14	22.79	23.45	0.00	0.33	2,084	34.77
16.750	0.14	22.42	23.07	0.00	0.32	2,050	34.74

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.14	22.05	22.69	0.00	0.32	2,017	34.72
16.850	0.13	21.69	22.32	0.00	0.32	1,983	34.70
16.900	0.13	21.32	21.95	0.00	0.31	1,950	34.68
16.950	0.13	20.97	21.59	0.00	0.31	1,918	34.66
17.000	0.13	20.61	21.23	0.00	0.31	1,885	34.63
17.050	0.13	20.26	20.87	0.00	0.30	1,853	34.61
17.100	0.13	19.91	20.51	0.00	0.30	1,822	34.59
17.150	0.13	19.57	20.16	0.00	0.30	1,790	34.57
17.200	0.12	19.23	19.82	0.00	0.29	1,759	34.55
17.250	0.12	18.89	19.47	0.00	0.29	1,729	34.53
17.300	0.12	18.56	19.13	0.00	0.29	1,698	34.51
17.350	0.12	18.23	18.80	0.00	0.29	1,668	34.49
17.400	0.12	17.90	18.46	0.00	0.28	1,638	34.47
17.450	0.12	17.57	18.13	0.00	0.28	1,608	34.45
17.500	0.11	17.25	17.80	0.00	0.28	1,578	34.43
17.550	0.11	16.93	17.48	0.00	0.27	1,549	34.41
17.600	0.11	16.62	17.16	0.00	0.27	1,520	34.39
17.650	0.11	16.31	16.84	0.00	0.27	1,492	34.37
17.700	0.11	16.00	16.53	0.00	0.26	1,464	34.36
17.750	0.11	15.70	16.22	0.00	0.26	1,437	34.34
17.800	0.11	15.40	15.91	0.00	0.25	1,410	34.32
17.850	0.10	15.11	15.61	0.00	0.25	1,384	34.30
17.900	0.10	14.82	15.31	0.00	0.25	1,358	34.28
17.950	0.10	14.53	15.02	0.00	0.24	1,332	34.27
18.000	0.10	14.25	14.73	0.00	0.24	1,307	34.25
18.050	0.10	13.97	14.45	0.00	0.24	1,281	34.23
18.100	0.10	13.70	14.17	0.00	0.23	1,256	34.22
18.150	0.10	13.43	13.89	0.00	0.23	1,232	34.20
18.200	0.10	13.17	13.62	0.00	0.23	1,208	34.19
18.250	0.10	12.91	13.36	0.00	0.22	1,185	34.17
18.300	0.09	12.66	13.10	0.00	0.22	1,161	34.16
18.350	0.09	12.41	12.85	0.00	0.22	1,139	34.14
18.400	0.09	12.17	12.60	0.00	0.22	1,117	34.13
18.450	0.09	11.93	12.36	0.00	0.21	1,095	34.11
18.500	0.09	11.70	12.12	0.00	0.21	1,074	34.10
18.550	0.09	11.47	11.89	0.00	0.21	1,053	34.09
18.600	0.09	11.25	11.66	0.00	0.20	1,033	34.07
18.650	0.09	11.03	11.43	0.00	0.20	1,013	34.06
18.700	0.09	10.82	11.21	0.00	0.20	993	34.05
18.750	0.09	10.60	11.00	0.00	0.20	974	34.03
18.800	0.09	10.40	10.79	0.00	0.19	955	34.02
18.850	0.09	10.20	10.58	0.00	0.19	937	34.01

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.09	10.00	10.38	0.00	0.19	919	34.00
18.950	0.09	9.80	10.18	0.00	0.19	901	33.99
19.000	0.09	9.61	9.98	0.00	0.18	883	33.98
19.050	0.09	9.42	9.79	0.00	0.18	866	33.96
19.100	0.09	9.24	9.60	0.00	0.18	849	33.95
19.150	0.09	9.06	9.42	0.00	0.18	832	33.94
19.200	0.09	8.88	9.23	0.00	0.18	816	33.93
19.250	0.09	8.71	9.06	0.00	0.17	800	33.92
19.300	0.09	8.54	8.88	0.00	0.17	784	33.91
19.350	0.09	8.37	8.71	0.00	0.17	769	33.90
19.400	0.09	8.21	8.54	0.00	0.17	754	33.89
19.450	0.08	8.05	8.38	0.00	0.16	739	33.88
19.500	0.08	7.90	8.22	0.00	0.16	725	33.87
19.550	0.08	7.76	8.07	0.00	0.16	712	33.86
19.600	0.08	7.62	7.92	0.00	0.15	699	33.86
19.650	0.08	7.48	7.78	0.00	0.15	686	33.85
19.700	0.08	7.35	7.64	0.00	0.15	674	33.84
19.750	0.08	7.22	7.51	0.00	0.15	662	33.83
19.800	0.08	7.09	7.38	0.00	0.14	650	33.82
19.850	0.08	6.97	7.26	0.00	0.14	639	33.82
19.900	0.08	6.86	7.14	0.00	0.14	628	33.81
19.950	0.08	6.75	7.02	0.00	0.14	618	33.80
20.000	0.08	6.64	6.90	0.00	0.13	608	33.80
20.050	0.08	6.53	6.80	0.00	0.13	598	33.79
20.100	0.08	6.43	6.69	0.00	0.13	588	33.78
20.150	0.08	6.33	6.59	0.00	0.13	579	33.78
20.200	0.08	6.23	6.49	0.00	0.13	570	33.77
20.250	0.08	6.14	6.39	0.00	0.12	562	33.77
20.300	0.08	6.05	6.30	0.00	0.12	553	33.76
20.350	0.08	5.96	6.21	0.00	0.12	545	33.76
20.400	0.08	5.88	6.12	0.00	0.12	537	33.75
20.450	0.08	5.80	6.03	0.00	0.12	530	33.75
20.500	0.08	5.72	5.95	0.00	0.12	523	33.74
20.550	0.08	5.64	5.87	0.00	0.11	516	33.74
20.600	0.08	5.57	5.79	0.00	0.11	509	33.73
20.650	0.07	5.50	5.72	0.00	0.11	502	33.73
20.700	0.07	5.43	5.65	0.00	0.11	496	33.72
20.750	0.07	5.36	5.57	0.00	0.11	490	33.72
20.800	0.07	5.29	5.51	0.00	0.11	484	33.72
20.850	0.07	5.23	5.44	0.00	0.11	478	33.71
20.900	0.07	5.17	5.37	0.00	0.10	472	33.71
20.950	0.07	5.10	5.31	0.00	0.10	466	33.71

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.07	5.05	5.25	0.00	0.10	461	33.70
21.050	0.07	4.99	5.19	0.00	0.10	456	33.70
21.100	0.07	4.93	5.13	0.00	0.10	451	33.70
21.150	0.07	4.88	5.08	0.00	0.10	446	33.69
21.200	0.07	4.83	5.02	0.00	0.10	441	33.69
21.250	0.07	4.78	4.97	0.00	0.10	436	33.69
21.300	0.07	4.73	4.92	0.00	0.10	432	33.68
21.350	0.07	4.68	4.87	0.00	0.09	427	33.68
21.400	0.07	4.63	4.82	0.00	0.09	423	33.68
21.450	0.07	4.58	4.77	0.00	0.09	419	33.67
21.500	0.07	4.54	4.72	0.00	0.09	415	33.67
21.550	0.07	4.49	4.68	0.00	0.09	411	33.67
21.600	0.07	4.45	4.63	0.00	0.09	407	33.67
21.650	0.07	4.41	4.59	0.00	0.09	403	33.66
21.700	0.07	4.37	4.55	0.00	0.09	399	33.66
21.750	0.07	4.33	4.50	0.00	0.09	396	33.66
21.800	0.07	4.29	4.46	0.00	0.09	392	33.66
21.850	0.07	4.25	4.42	0.00	0.09	389	33.65
21.900	0.07	4.22	4.39	0.00	0.09	385	33.65
21.950	0.07	4.18	4.35	0.00	0.08	382	33.65
22.000	0.07	4.14	4.31	0.00	0.08	379	33.65
22.050	0.07	4.11	4.27	0.00	0.08	375	33.65
22.100	0.07	4.07	4.24	0.00	0.08	372	33.64
22.150	0.06	4.04	4.20	0.00	0.08	369	33.64
22.200	0.06	4.01	4.17	0.00	0.08	366	33.64
22.250	0.06	3.97	4.14	0.00	0.08	363	33.64
22.300	0.06	3.94	4.10	0.00	0.08	360	33.64
22.350	0.06	3.91	4.07	0.00	0.08	357	33.63
22.400	0.06	3.88	4.04	0.00	0.08	355	33.63
22.450	0.06	3.85	4.01	0.00	0.08	352	33.63
22.500	0.06	3.82	3.98	0.00	0.08	349	33.63
22.550	0.06	3.79	3.94	0.00	0.08	346	33.63
22.600	0.06	3.76	3.92	0.00	0.08	344	33.63
22.650	0.06	3.74	3.89	0.00	0.08	341	33.62
22.700	0.06	3.71	3.86	0.00	0.08	339	33.62
22.750	0.06	3.68	3.83	0.00	0.07	336	33.62
22.800	0.06	3.65	3.80	0.00	0.07	334	33.62
22.850	0.06	3.63	3.77	0.00	0.07	331	33.62
22.900	0.06	3.60	3.75	0.00	0.07	329	33.62
22.950	0.06	3.57	3.72	0.00	0.07	327	33.61
23.000	0.06	3.55	3.69	0.00	0.07	324	33.61
23.050	0.06	3.52	3.67	0.00	0.07	322	33.61

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.06	3.50	3.64	0.00	0.07	320	33.61
23.150	0.06	3.47	3.62	0.00	0.07	318	33.61
23.200	0.06	3.45	3.59	0.00	0.07	315	33.61
23.250	0.06	3.43	3.57	0.00	0.07	313	33.61
23.300	0.06	3.40	3.54	0.00	0.07	311	33.60
23.350	0.06	3.38	3.52	0.00	0.07	309	33.60
23.400	0.06	3.36	3.49	0.00	0.07	307	33.60
23.450	0.06	3.33	3.47	0.00	0.07	305	33.60
23.500	0.06	3.31	3.45	0.00	0.07	303	33.60
23.550	0.06	3.29	3.42	0.00	0.07	301	33.60
23.600	0.05	3.27	3.40	0.00	0.07	299	33.60
23.650	0.05	3.24	3.38	0.00	0.07	297	33.59
23.700	0.05	3.22	3.35	0.00	0.07	295	33.59
23.750	0.05	3.20	3.33	0.00	0.06	293	33.59
23.800	0.05	3.18	3.31	0.00	0.06	291	33.59
23.850	0.05	3.16	3.29	0.00	0.06	289	33.59
23.900	0.05	3.14	3.26	0.00	0.06	287	33.59
23.950	0.05	3.12	3.24	0.00	0.06	285	33.59
24.000	0.05	3.10	3.22	0.00	0.06	283	33.59
24.050	0.03	3.06	3.18	0.00	0.06	279	33.58
24.100	0.01	2.98	3.10	0.00	0.06	272	33.58
24.150	0.00	2.87	2.99	0.00	0.06	262	33.57
24.200	0.00	2.76	2.87	0.00	0.06	252	33.57
24.250	0.00	2.65	2.76	0.00	0.05	243	33.56
24.300	0.00	2.55	2.65	0.00	0.05	233	33.55
24.350	0.00	2.45	2.55	0.00	0.05	224	33.55
24.400	0.00	2.36	2.45	0.00	0.05	215	33.54
24.450	0.00	2.26	2.36	0.00	0.05	207	33.54
24.500	0.00	2.18	2.26	0.00	0.04	199	33.53
24.550	0.00	2.09	2.18	0.00	0.04	191	33.53
24.600	0.00	2.01	2.09	0.00	0.04	184	33.52
24.650	0.00	1.93	2.01	0.00	0.04	177	33.52
24.700	0.00	1.86	1.93	0.00	0.04	170	33.51
24.750	0.00	1.78	1.86	0.00	0.04	163	33.51
24.800	0.00	1.71	1.78	0.00	0.03	157	33.50
24.850	0.00	1.65	1.71	0.00	0.03	151	33.50
24.900	0.00	1.58	1.65	0.00	0.03	145	33.49
24.950	0.00	1.52	1.58	0.00	0.03	139	33.49
25.000	0.00	1.46	1.52	0.00	0.03	134	33.49
25.050	0.00	1.41	1.46	0.00	0.03	129	33.48
25.100	0.00	1.35	1.41	0.00	0.03	124	33.48
25.150	0.00	1.30	1.35	0.00	0.03	119	33.48

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.200	0.00	1.25	1.30	0.00	0.03	114	33.47
25.250	0.00	1.20	1.25	0.00	0.02	110	33.47
25.300	0.00	1.15	1.20	0.00	0.02	105	33.47
25.350	0.00	1.11	1.15	0.00	0.02	101	33.47
25.400	0.00	1.07	1.11	0.00	0.02	97	33.46
25.450	0.00	1.02	1.07	0.00	0.02	94	33.46
25.500	0.00	0.98	1.02	0.00	0.02	90	33.46
25.550	0.00	0.95	0.98	0.00	0.02	86	33.46
25.600	0.00	0.91	0.95	0.00	0.02	83	33.45
25.650	0.00	0.87	0.91	0.00	0.02	80	33.45
25.700	0.00	0.84	0.87	0.00	0.02	77	33.45
25.750	0.00	0.81	0.84	0.00	0.02	74	33.45
25.800	0.00	0.78	0.81	0.00	0.02	71	33.45
25.850	0.00	0.75	0.78	0.00	0.02	68	33.44
25.900	0.00	0.72	0.75	0.00	0.01	65	33.44
25.950	0.00	0.69	0.72	0.00	0.01	63	33.44
26.000	0.00	0.66	0.69	0.00	0.01	60	33.44
26.050	0.00	0.64	0.66	0.00	0.01	58	33.44
26.100	0.00	0.61	0.64	0.00	0.01	56	33.44
26.150	0.00	0.59	0.61	0.00	0.01	54	33.44
26.200	0.00	0.56	0.59	0.00	0.01	52	33.43
26.250	0.00	0.54	0.56	0.00	0.01	50	33.43
26.300	0.00	0.52	0.54	0.00	0.01	48	33.43
26.350	0.00	0.50	0.52	0.00	0.01	46	33.43
26.400	0.00	0.48	0.50	0.00	0.01	44	33.43
26.450	0.00	0.46	0.48	0.00	0.01	42	33.43
26.500	0.00	0.44	0.46	0.00	0.01	41	33.43
26.550	0.00	0.43	0.44	0.00	0.01	39	33.43
26.600	0.00	0.41	0.43	0.00	0.01	38	33.42
26.650	0.00	0.39	0.41	0.00	0.01	36	33.42
26.700	0.00	0.38	0.39	0.00	0.01	35	33.42
26.750	0.00	0.36	0.38	0.00	0.01	33	33.42
26.800	0.00	0.35	0.36	0.00	0.01	32	33.42
26.850	0.00	0.34	0.35	0.00	0.01	31	33.42
26.900	0.00	0.32	0.34	0.00	0.01	30	33.42
26.950	0.00	0.31	0.32	0.00	0.01	28	33.42
27.000	0.00	0.30	0.31	0.00	0.01	27	33.42
27.050	0.00	0.29	0.30	0.00	0.01	26	33.42
27.100	0.00	0.28	0.29	0.00	0.01	25	33.42
27.150	0.00	0.27	0.28	0.00	0.01	24	33.42
27.200	0.00	0.26	0.27	0.00	0.01	23	33.42
27.250	0.00	0.25	0.26	0.00	0.00	22	33.41

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.300	0.00	0.24	0.25	0.00	0.00	22	33.41
27.350	0.00	0.23	0.24	0.00	0.00	21	33.41
27.400	0.00	0.22	0.23	0.00	0.00	20	33.41
27.450	0.00	0.21	0.22	0.00	0.00	19	33.41
27.500	0.00	0.20	0.21	0.00	0.00	18	33.41
27.550	0.00	0.19	0.20	0.00	0.00	18	33.41
27.600	0.00	0.19	0.19	0.00	0.00	17	33.41
27.650	0.00	0.18	0.19	0.00	0.00	16	33.41
27.700	0.00	0.17	0.18	0.00	0.00	16	33.41
27.750	0.00	0.16	0.17	0.00	0.00	15	33.41
27.800	0.00	0.16	0.16	0.00	0.00	14	33.41
27.850	0.00	0.15	0.16	0.00	0.00	14	33.41
27.900	0.00	0.15	0.15	0.00	0.00	13	33.41
27.950	0.00	0.14	0.15	0.00	0.00	13	33.41
28.000	0.00	0.14	0.14	0.00	0.00	12	33.41
28.050	0.00	0.13	0.14	0.00	0.00	12	33.41
28.100	0.00	0.12	0.13	0.00	0.00	11	33.41
28.150	0.00	0.12	0.12	0.00	0.00	11	33.41
28.200	0.00	0.12	0.12	0.00	0.00	11	33.41
28.250	0.00	0.11	0.12	0.00	0.00	10	33.41
28.300	0.00	0.11	0.11	0.00	0.00	10	33.41
28.350	0.00	0.10	0.11	0.00	0.00	9	33.41
28.400	0.00	0.10	0.10	0.00	0.00	9	33.41
28.450	0.00	0.09	0.10	0.00	0.00	9	33.41
28.500	0.00	0.09	0.09	0.00	0.00	8	33.41
28.550	0.00	0.09	0.09	0.00	0.00	8	33.41
28.600	0.00	0.08	0.09	0.00	0.00	8	33.41
28.650	0.00	0.08	0.08	0.00	0.00	7	33.40
28.700	0.00	0.08	0.08	0.00	0.00	7	33.40
28.750	0.00	0.07	0.08	0.00	0.00	7	33.40
28.800	0.00	0.07	0.07	0.00	0.00	7	33.40
28.850	0.00	0.07	0.07	0.00	0.00	6	33.40
28.900	0.00	0.07	0.07	0.00	0.00	6	33.40
28.950	0.00	0.06	0.07	0.00	0.00	6	33.40
29.000	0.00	0.06	0.06	0.00	0.00	6	33.40
29.050	0.00	0.06	0.06	0.00	0.00	5	33.40
29.100	0.00	0.06	0.06	0.00	0.00	5	33.40
29.150	0.00	0.05	0.06	0.00	0.00	5	33.40
29.200	0.00	0.05	0.05	0.00	0.00	5	33.40
29.250	0.00	0.05	0.05	0.00	0.00	5	33.40
29.300	0.00	0.05	0.05	0.00	0.00	4	33.40
29.350	0.00	0.05	0.05	0.00	0.00	4	33.40

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.400	0.00	0.04	0.05	0.00	0.00	4	33.40
29.450	0.00	0.04	0.04	0.00	0.00	4	33.40
29.500	0.00	0.04	0.04	0.00	0.00	4	33.40
29.550	0.00	0.04	0.04	0.00	0.00	4	33.40
29.600	0.00	0.04	0.04	0.00	0.00	3	33.40
29.650	0.00	0.04	0.04	0.00	0.00	3	33.40
29.700	0.00	0.04	0.04	0.00	0.00	3	33.40
29.750	0.00	0.03	0.04	0.00	0.00	3	33.40
29.800	0.00	0.03	0.03	0.00	0.00	3	33.40
29.850	0.00	0.03	0.03	0.00	0.00	3	33.40
29.900	0.00	0.03	0.03	0.00	0.00	3	33.40
29.950	0.00	0.03	0.03	0.00	0.00	3	33.40
30.000	0.00	0.03	0.03	0.00	0.00	3	33.40
30.050	0.00	0.03	0.03	0.00	0.00	2	33.40
30.100	0.00	0.03	0.03	0.00	0.00	2	33.40
30.150	0.00	0.02	0.03	0.00	0.00	2	33.40
30.200	0.00	0.02	0.02	0.00	0.00	2	33.40
30.250	0.00	0.02	0.02	0.00	0.00	2	33.40
30.300	0.00	0.02	0.02	0.00	0.00	2	33.40
30.350	0.00	0.02	0.02	0.00	0.00	2	33.40
30.400	0.00	0.02	0.02	0.00	0.00	2	33.40
30.450	0.00	0.02	0.02	0.00	0.00	2	33.40
30.500	0.00	0.02	0.02	0.00	0.00	2	33.40
30.550	0.00	0.02	0.02	0.00	0.00	2	33.40
30.600	0.00	0.02	0.02	0.00	0.00	2	33.40
30.650	0.00	0.02	0.02	0.00	0.00	2	33.40
30.700	0.00	0.02	0.02	0.00	0.00	1	33.40
30.750	0.00	0.02	0.02	0.00	0.00	1	33.40
30.800	0.00	0.01	0.02	0.00	0.00	1	33.40
30.850	0.00	0.01	0.01	0.00	0.00	1	33.40
30.900	0.00	0.01	0.01	0.00	0.00	1	33.40
30.950	0.00	0.01	0.01	0.00	0.00	1	33.40
31.000	0.00	0.01	0.01	0.00	0.00	1	33.40
31.050	0.00	0.01	0.01	0.00	0.00	1	33.40
31.100	0.00	0.01	0.01	0.00	0.00	1	33.40
31.150	0.00	0.01	0.01	0.00	0.00	1	33.40
31.200	0.00	0.01	0.01	0.00	0.00	1	33.40
31.250	0.00	0.01	0.01	0.00	0.00	1	33.40
31.300	0.00	0.01	0.01	0.00	0.00	1	33.40
31.350	0.00	0.01	0.01	0.00	0.00	1	33.40
31.400	0.00	0.01	0.01	0.00	0.00	1	33.40
31.450	0.00	0.01	0.01	0.00	0.00	1	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
31.500	0.00	0.01	0.01	0.00	0.00	1	33.40
31.550	0.00	0.01	0.01	0.00	0.00	1	33.40
31.600	0.00	0.01	0.01	0.00	0.00	1	33.40
31.650	0.00	0.01	0.01	0.00	0.00	1	33.40
31.700	0.00	0.01	0.01	0.00	0.00	1	33.40
31.750	0.00	0.01	0.01	0.00	0.00	1	33.40
31.800	0.00	0.01	0.01	0.00	0.00	1	33.40
31.850	0.00	0.01	0.01	0.00	0.00	1	33.40
31.900	0.00	0.01	0.01	0.00	0.00	1	33.40
31.950	0.00	0.01	0.01	0.00	0.00	1	33.40
32.000	0.00	0.01	0.01	0.00	0.00	1	33.40
32.050	0.00	0.01	0.01	0.00	0.00	0	33.40
32.100	0.00	0.01	0.01	0.00	0.00	0	33.40
32.150	0.00	0.01	0.01	0.00	0.00	0	33.40
32.200	0.00	0.00	0.01	0.00	0.00	0	33.40
32.250	0.00	0.00	0.00	0.00	0.00	0	33.40
32.300	0.00	0.00	0.00	0.00	0.00	0	33.40
32.350	0.00	0.00	0.00	0.00	0.00	0	33.40
32.400	0.00	0.00	0.00	0.00	0.00	0	33.40
32.450	0.00	0.00	0.00	0.00	0.00	0	33.40
32.500	0.00	0.00	0.00	0.00	0.00	0	33.40
32.550	0.00	0.00	0.00	0.00	0.00	0	33.40
32.600	0.00	0.00	0.00	0.00	0.00	0	33.40
32.650	0.00	0.00	0.00	0.00	0.00	0	33.40
32.700	0.00	0.00	0.00	0.00	0.00	0	33.40
32.750	0.00	0.00	0.00	0.00	0.00	0	33.40
32.800	0.00	0.00	0.00	0.00	0.00	0	33.40
32.850	0.00	0.00	0.00	0.00	0.00	0	33.40
32.900	0.00	0.00	0.00	0.00	0.00	0	33.40
32.950	0.00	0.00	0.00	0.00	0.00	0	33.40
33.000	0.00	0.00	0.00	0.00	0.00	0	33.40
33.050	0.00	0.00	0.00	0.00	0.00	0	33.40
33.100	0.00	0.00	0.00	0.00	0.00	0	33.40
33.150	0.00	0.00	0.00	0.00	0.00	0	33.40
33.200	0.00	0.00	0.00	0.00	0.00	0	33.40
33.250	0.00	0.00	0.00	0.00	0.00	0	33.40
33.300	0.00	0.00	0.00	0.00	0.00	0	33.40
33.350	0.00	0.00	0.00	0.00	0.00	0	33.40
33.400	0.00	0.00	0.00	0.00	0.00	0	33.40
33.450	0.00	0.00	0.00	0.00	0.00	0	33.40
33.500	0.00	0.00	0.00	0.00	0.00	0	33.40
33.550	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
33.600	0.00	0.00	0.00	0.00	0.00	0	33.40
33.650	0.00	0.00	0.00	0.00	0.00	0	33.40
33.700	0.00	0.00	0.00	0.00	0.00	0	33.40
33.750	0.00	0.00	0.00	0.00	0.00	0	33.40
33.800	0.00	0.00	0.00	0.00	0.00	0	33.40
33.850	0.00	0.00	0.00	0.00	0.00	0	33.40
33.900	0.00	0.00	0.00	0.00	0.00	0	33.40
33.950	0.00	0.00	0.00	0.00	0.00	0	33.40
34.000	0.00	0.00	0.00	0.00	0.00	0	33.40
34.050	0.00	0.00	0.00	0.00	0.00	0	33.40
34.100	0.00	0.00	0.00	0.00	0.00	0	33.40
34.150	0.00	0.00	0.00	0.00	0.00	0	33.40
34.200	0.00	0.00	0.00	0.00	0.00	0	33.40
34.250	0.00	0.00	0.00	0.00	0.00	0	33.40
34.300	0.00	0.00	0.00	0.00	0.00	0	33.40
34.350	0.00	0.00	0.00	0.00	0.00	0	33.40
34.400	0.00	0.00	0.00	0.00	0.00	0	33.40
34.450	0.00	0.00	0.00	0.00	0.00	0	33.40
34.500	0.00	0.00	0.00	0.00	0.00	0	33.40
34.550	0.00	0.00	0.00	0.00	0.00	0	33.40
34.600	0.00	0.00	0.00	0.00	0.00	0	33.40
34.650	0.00	0.00	0.00	0.00	0.00	0	33.40
34.700	0.00	0.00	0.00	0.00	0.00	0	33.40
34.750	0.00	0.00	0.00	0.00	0.00	0	33.40
34.800	0.00	0.00	0.00	0.00	0.00	0	33.40
34.850	0.00	0.00	0.00	0.00	0.00	0	33.40
34.900	0.00	0.00	0.00	0.00	0.00	0	33.40
34.950	0.00	0.00	0.00	0.00	0.00	0	33.40
35.000	0.00	0.00	0.00	0.00	0.00	0	33.40
35.050	0.00	0.00	0.00	0.00	0.00	0	33.40
35.100	0.00	0.00	0.00	0.00	0.00	0	33.40
35.150	0.00	0.00	0.00	0.00	0.00	0	33.40
35.200	0.00	0.00	0.00	0.00	0.00	0	33.40
35.250	0.00	0.00	0.00	0.00	0.00	0	33.40
35.300	0.00	0.00	0.00	0.00	0.00	0	33.40
35.350	0.00	0.00	0.00	0.00	0.00	0	33.40
35.400	0.00	0.00	0.00	0.00	0.00	0	33.40
35.450	0.00	0.00	0.00	0.00	0.00	0	33.40
35.500	0.00	0.00	0.00	0.00	0.00	0	33.40
35.550	0.00	0.00	0.00	0.00	0.00	0	33.40
35.600	0.00	0.00	0.00	0.00	0.00	0	33.40
35.650	0.00	0.00	0.00	0.00	0.00	0	33.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: DET SYSTEM (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
35.700	0.00	0.00	0.00	0.00	0.00	0	33.40
35.750	0.00	0.00	0.00	0.00	0.00	0	33.40
35.800	0.00	0.00	0.00	0.00	0.00	0	33.40
35.850	0.00	0.00	0.00	0.00	0.00	0	33.40
35.900	0.00	0.00	0.00	0.00	0.00	0	33.40
35.950	0.00	0.00	0.00	0.00	0.00	0	33.40
36.000	0.00	0.00	0.00	0.00	0.00	0	33.40

Subsection: Pond Inflow Summary Return Event: 1 years
Label: DET SYSTEM (IN) Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'DET SYSTEM'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1A	4,757	12.100	1.32
Flow (In)	DET SYSTEM	4,757	12.100	1.32

Subsection: Pond Inflow Summary Return Event: 10 years
Label: DET SYSTEM (IN) Storm Event: 10 years
Scenario: Post-Development 10 year

Summary for Hydrograph Addition at 'DET SYSTEM'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1A	10,061	12.100	2.68
Flow (In)	DET SYSTEM	10,061	12.100	2.68

Subsection: Pond Inflow Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'DET SYSTEM'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1A	13,173	12.100	3.45
Flow (In)	DET SYSTEM	13,173	12.100	3.45

Subsection: Pond Inflow Summary
Label: DET SYSTEM (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'DET SYSTEM'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1A

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1A	19,557	12.100	4.99
Flow (In)	DET SYSTEM	19,557	12.100	4.99

Subsection: Elevation-Volume-Flow Table (Pond)
Label: EX. RG
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 1 years
Label: EX. RG | Storm Event: 1 year
Scenario: Pre-Development 1 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
29.10	0.00	0	0.00	0.00	0.00	0.00
29.60	0.00	5	0.00	0.00	0.00	0.06
29.64	0.00	7	0.00	0.00	0.00	0.07
29.91	0.00	23	0.00	0.00	0.00	0.25
30.10	0.11	42	0.00	0.00	0.11	0.57
30.60	0.82	112	0.00	0.00	0.82	2.07
30.80	1.07	149	0.00	0.00	1.07	2.72
31.10	7.80	215	0.01	0.00	7.80	10.19
31.60	62.53	359	0.01	0.00	62.53	66.52
31.76	93.05	430	0.01	0.00	93.05	97.83
32.00	153.27	581	0.02	0.00	153.27	159.73

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 10 years
Label: EX. RG | Storm Event: 10 years
Scenario: Pre-Development 10 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
29.10	0.00	0	0.00	0.00	0.00	0.00
29.60	0.00	5	0.00	0.00	0.00	0.06
29.64	0.00	7	0.00	0.00	0.00	0.07
29.91	0.00	23	0.00	0.00	0.00	0.25
30.10	0.11	42	0.00	0.00	0.11	0.57
30.60	0.82	112	0.00	0.00	0.82	2.07
30.80	1.07	149	0.00	0.00	1.07	2.72
31.10	7.80	215	0.01	0.00	7.80	10.19
31.60	62.53	359	0.01	0.00	62.53	66.52

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 10 years
Label: EX. RG Storm Event: 10 years
Scenario: Pre-Development 10 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
31.76	93.05	430	0.01	0.00	93.05	97.83
32.00	153.27	581	0.02	0.00	153.27	159.73

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 25 years
Label: EX. RG Storm Event: 25 years
Scenario: Pre-Development 25 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
29.10	0.00	0	0.00	0.00	0.00	0.00
29.60	0.00	5	0.00	0.00	0.00	0.06
29.64	0.00	7	0.00	0.00	0.00	0.07
29.91	0.00	23	0.00	0.00	0.00	0.25
30.10	0.11	42	0.00	0.00	0.11	0.57
30.60	0.82	112	0.00	0.00	0.82	2.07
30.80	1.07	149	0.00	0.00	1.07	2.72
31.10	7.80	215	0.01	0.00	7.80	10.19
31.60	62.53	359	0.01	0.00	62.53	66.52
31.76	93.05	430	0.01	0.00	93.05	97.83
32.00	153.27	581	0.02	0.00	153.27	159.73

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 100 years
Label: EX. RG Storm Event: 100 years
Scenario: Pre-Development 100 year

Infiltration

Subsection: Elevation-Volume-Flow Table (Pond)
Label: EX. RG
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
29.10	0.00	0	0.00	0.00	0.00	0.00
29.60	0.00	5	0.00	0.00	0.00	0.06
29.64	0.00	7	0.00	0.00	0.00	0.07
29.91	0.00	23	0.00	0.00	0.00	0.25
30.10	0.11	42	0.00	0.00	0.11	0.57
30.60	0.82	112	0.00	0.00	0.82	2.07
30.80	1.07	149	0.00	0.00	1.07	2.72
31.10	7.80	215	0.01	0.00	7.80	10.19
31.60	62.53	359	0.01	0.00	62.53	66.52
31.76	93.05	430	0.01	0.00	93.05	97.83
32.00	153.27	581	0.02	0.00	153.27	159.73

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Initial Conditions	
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.88 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.85 ft³/s	Time to Peak (Flow, Outlet)	12.150 hours

Elevation (Water Surface, Peak)	30.63 ft
Volume (Peak)	117 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	3,234 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	3,212 ft³
Volume (Retained)	23 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.46 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	2.37 ft³/s	Time to Peak (Flow, Outlet)	12.100 hours

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Elevation (Water Surface, Peak)	30.86 ft
Volume (Peak)	161 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	8,818 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	8,796 ft³
Volume (Retained)	23 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.42 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	3.31 ft³/s	Time to Peak (Flow, Outlet)	12.100 hours

Elevation (Water Surface, Peak)	30.90 ft
Volume (Peak)	170 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	12,363 ft³
Volume (Total Infiltration)	0 ft³

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Mass Balance (ft³)	
Volume (Total Outlet Outflow)	12,340 ft³
Volume (Retained)	23 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Subsection: Level Pool Pond Routing Summary
Label: EX. RG (IN)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	29.10 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	5.40 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	5.26 ft³/s	Time to Peak (Flow, Outlet)	12.100 hours

Elevation (Water Surface, Peak)	30.99 ft
Volume (Peak)	189 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	19,910 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	19,887 ft³
Volume (Retained)	23 ft³
Volume (Unrouted)	0 ft³
Error (Mass Balance)	0.0 %

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	29.10
0.050	0.00	0.00	0.00	0.00	0.00	0	29.10
0.100	0.00	0.00	0.00	0.00	0.00	0	29.10
0.150	0.00	0.00	0.00	0.00	0.00	0	29.10
0.200	0.00	0.00	0.00	0.00	0.00	0	29.10
0.250	0.00	0.00	0.00	0.00	0.00	0	29.10
0.300	0.00	0.00	0.00	0.00	0.00	0	29.10
0.350	0.00	0.00	0.00	0.00	0.00	0	29.10
0.400	0.00	0.00	0.00	0.00	0.00	0	29.10
0.450	0.00	0.00	0.00	0.00	0.00	0	29.10
0.500	0.00	0.00	0.00	0.00	0.00	0	29.10
0.550	0.00	0.00	0.00	0.00	0.00	0	29.10
0.600	0.00	0.00	0.00	0.00	0.00	0	29.10
0.650	0.00	0.00	0.00	0.00	0.00	0	29.10
0.700	0.00	0.00	0.00	0.00	0.00	0	29.10
0.750	0.00	0.00	0.00	0.00	0.00	0	29.10
0.800	0.00	0.00	0.00	0.00	0.00	0	29.10
0.850	0.00	0.00	0.00	0.00	0.00	0	29.10
0.900	0.00	0.00	0.00	0.00	0.00	0	29.10
0.950	0.00	0.00	0.00	0.00	0.00	0	29.10
1.000	0.00	0.00	0.00	0.00	0.00	0	29.10
1.050	0.00	0.00	0.00	0.00	0.00	0	29.10
1.100	0.00	0.00	0.00	0.00	0.00	0	29.10
1.150	0.00	0.00	0.00	0.00	0.00	0	29.10
1.200	0.00	0.00	0.00	0.00	0.00	0	29.10
1.250	0.00	0.00	0.00	0.00	0.00	0	29.10
1.300	0.00	0.00	0.00	0.00	0.00	0	29.10
1.350	0.00	0.00	0.00	0.00	0.00	0	29.10
1.400	0.00	0.00	0.00	0.00	0.00	0	29.10
1.450	0.00	0.00	0.00	0.00	0.00	0	29.10
1.500	0.00	0.00	0.00	0.00	0.00	0	29.10
1.550	0.00	0.00	0.00	0.00	0.00	0	29.10
1.600	0.00	0.00	0.00	0.00	0.00	0	29.10
1.650	0.00	0.00	0.00	0.00	0.00	0	29.10
1.700	0.00	0.00	0.00	0.00	0.00	0	29.10
1.750	0.00	0.00	0.00	0.00	0.00	0	29.10
1.800	0.00	0.00	0.00	0.00	0.00	0	29.10
1.850	0.00	0.00	0.00	0.00	0.00	0	29.10
1.900	0.00	0.00	0.00	0.00	0.00	0	29.10
1.950	0.00	0.00	0.00	0.00	0.00	0	29.10
2.000	0.00	0.00	0.00	0.00	0.00	0	29.10
2.050	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	29.10
2.150	0.00	0.00	0.00	0.00	0.00	0	29.10
2.200	0.00	0.00	0.00	0.00	0.00	0	29.10
2.250	0.00	0.00	0.00	0.00	0.00	0	29.10
2.300	0.00	0.00	0.00	0.00	0.00	0	29.10
2.350	0.00	0.00	0.00	0.00	0.00	0	29.10
2.400	0.00	0.00	0.00	0.00	0.00	0	29.10
2.450	0.00	0.00	0.00	0.00	0.00	0	29.10
2.500	0.00	0.00	0.00	0.00	0.00	0	29.10
2.550	0.00	0.00	0.00	0.00	0.00	0	29.10
2.600	0.00	0.00	0.00	0.00	0.00	0	29.10
2.650	0.00	0.00	0.00	0.00	0.00	0	29.10
2.700	0.00	0.00	0.00	0.00	0.00	0	29.10
2.750	0.00	0.00	0.00	0.00	0.00	0	29.10
2.800	0.00	0.00	0.00	0.00	0.00	0	29.10
2.850	0.00	0.00	0.00	0.00	0.00	0	29.10
2.900	0.00	0.00	0.00	0.00	0.00	0	29.10
2.950	0.00	0.00	0.00	0.00	0.00	0	29.10
3.000	0.00	0.00	0.00	0.00	0.00	0	29.10
3.050	0.00	0.00	0.00	0.00	0.00	0	29.10
3.100	0.00	0.00	0.00	0.00	0.00	0	29.10
3.150	0.00	0.00	0.00	0.00	0.00	0	29.10
3.200	0.00	0.00	0.00	0.00	0.00	0	29.10
3.250	0.00	0.00	0.00	0.00	0.00	0	29.10
3.300	0.00	0.00	0.00	0.00	0.00	0	29.10
3.350	0.00	0.00	0.00	0.00	0.00	0	29.10
3.400	0.00	0.00	0.00	0.00	0.00	0	29.10
3.450	0.00	0.00	0.00	0.00	0.00	0	29.10
3.500	0.00	0.00	0.00	0.00	0.00	0	29.10
3.550	0.00	0.00	0.00	0.00	0.00	0	29.10
3.600	0.00	0.00	0.00	0.00	0.00	0	29.10
3.650	0.00	0.00	0.00	0.00	0.00	0	29.10
3.700	0.00	0.00	0.00	0.00	0.00	0	29.10
3.750	0.00	0.00	0.00	0.00	0.00	0	29.10
3.800	0.00	0.00	0.00	0.00	0.00	0	29.10
3.850	0.00	0.00	0.00	0.00	0.00	0	29.10
3.900	0.00	0.00	0.00	0.00	0.00	0	29.10
3.950	0.00	0.00	0.00	0.00	0.00	0	29.10
4.000	0.00	0.00	0.00	0.00	0.00	0	29.10
4.050	0.00	0.00	0.00	0.00	0.00	0	29.10
4.100	0.00	0.00	0.00	0.00	0.00	0	29.10
4.150	0.00	0.00	0.00	0.00	0.00	0	29.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	29.10
4.250	0.00	0.00	0.00	0.00	0.00	0	29.10
4.300	0.00	0.00	0.00	0.00	0.00	0	29.10
4.350	0.00	0.00	0.00	0.00	0.00	0	29.10
4.400	0.00	0.00	0.00	0.00	0.00	0	29.10
4.450	0.00	0.00	0.00	0.00	0.00	0	29.10
4.500	0.00	0.00	0.00	0.00	0.00	0	29.10
4.550	0.00	0.00	0.00	0.00	0.00	0	29.10
4.600	0.00	0.00	0.00	0.00	0.00	0	29.10
4.650	0.00	0.00	0.00	0.00	0.00	0	29.10
4.700	0.00	0.00	0.00	0.00	0.00	0	29.10
4.750	0.00	0.00	0.00	0.00	0.00	0	29.10
4.800	0.00	0.00	0.00	0.00	0.00	0	29.10
4.850	0.00	0.00	0.00	0.00	0.00	0	29.10
4.900	0.00	0.00	0.00	0.00	0.00	0	29.10
4.950	0.00	0.00	0.00	0.00	0.00	0	29.10
5.000	0.00	0.00	0.00	0.00	0.00	0	29.10
5.050	0.00	0.00	0.00	0.00	0.00	0	29.10
5.100	0.00	0.00	0.00	0.00	0.00	0	29.10
5.150	0.00	0.00	0.00	0.00	0.00	0	29.10
5.200	0.00	0.00	0.00	0.00	0.00	0	29.10
5.250	0.00	0.00	0.00	0.00	0.00	0	29.10
5.300	0.00	0.00	0.00	0.00	0.00	0	29.10
5.350	0.00	0.00	0.00	0.00	0.00	0	29.10
5.400	0.00	0.00	0.00	0.00	0.00	0	29.10
5.450	0.00	0.00	0.00	0.00	0.00	0	29.10
5.500	0.00	0.00	0.00	0.00	0.00	0	29.10
5.550	0.00	0.00	0.00	0.00	0.00	0	29.10
5.600	0.00	0.00	0.00	0.00	0.00	0	29.10
5.650	0.00	0.00	0.00	0.00	0.00	0	29.10
5.700	0.00	0.00	0.00	0.00	0.00	0	29.10
5.750	0.00	0.00	0.00	0.00	0.00	0	29.10
5.800	0.00	0.00	0.00	0.00	0.00	0	29.10
5.850	0.00	0.00	0.00	0.00	0.00	0	29.10
5.900	0.00	0.00	0.00	0.00	0.00	0	29.10
5.950	0.00	0.00	0.00	0.00	0.00	0	29.10
6.000	0.00	0.00	0.00	0.00	0.00	0	29.10
6.050	0.00	0.00	0.00	0.00	0.00	0	29.10
6.100	0.00	0.00	0.00	0.00	0.00	0	29.10
6.150	0.00	0.00	0.00	0.00	0.00	0	29.10
6.200	0.00	0.00	0.00	0.00	0.00	0	29.10
6.250	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.00	0.00	0.00	0.00	0.00	0	29.10
6.350	0.00	0.00	0.00	0.00	0.00	0	29.10
6.400	0.00	0.00	0.00	0.00	0.00	0	29.10
6.450	0.00	0.00	0.00	0.00	0.00	0	29.10
6.500	0.00	0.00	0.00	0.00	0.00	0	29.10
6.550	0.00	0.00	0.00	0.00	0.00	0	29.10
6.600	0.00	0.00	0.00	0.00	0.00	0	29.10
6.650	0.00	0.00	0.00	0.00	0.00	0	29.10
6.700	0.00	0.00	0.00	0.00	0.00	0	29.10
6.750	0.00	0.00	0.00	0.00	0.00	0	29.10
6.800	0.00	0.00	0.00	0.00	0.00	0	29.10
6.850	0.00	0.00	0.00	0.00	0.00	0	29.10
6.900	0.00	0.00	0.00	0.00	0.00	0	29.10
6.950	0.00	0.00	0.00	0.00	0.00	0	29.10
7.000	0.00	0.00	0.00	0.00	0.00	0	29.10
7.050	0.00	0.00	0.00	0.00	0.00	0	29.10
7.100	0.00	0.00	0.00	0.00	0.00	0	29.10
7.150	0.00	0.00	0.00	0.00	0.00	0	29.10
7.200	0.00	0.00	0.00	0.00	0.00	0	29.10
7.250	0.00	0.00	0.00	0.00	0.00	0	29.10
7.300	0.00	0.00	0.00	0.00	0.00	0	29.10
7.350	0.00	0.00	0.00	0.00	0.00	0	29.10
7.400	0.00	0.00	0.00	0.00	0.00	0	29.10
7.450	0.00	0.00	0.00	0.00	0.00	0	29.10
7.500	0.00	0.00	0.00	0.00	0.00	0	29.10
7.550	0.00	0.00	0.00	0.00	0.00	0	29.10
7.600	0.00	0.00	0.00	0.00	0.00	0	29.10
7.650	0.00	0.00	0.00	0.00	0.00	0	29.10
7.700	0.00	0.00	0.00	0.00	0.00	0	29.10
7.750	0.00	0.00	0.00	0.00	0.00	0	29.10
7.800	0.00	0.00	0.00	0.00	0.00	0	29.10
7.850	0.00	0.00	0.00	0.00	0.00	0	29.10
7.900	0.00	0.00	0.00	0.00	0.00	0	29.10
7.950	0.00	0.00	0.00	0.00	0.00	0	29.10
8.000	0.00	0.00	0.00	0.00	0.00	0	29.10
8.050	0.00	0.00	0.00	0.00	0.00	0	29.10
8.100	0.00	0.00	0.00	0.00	0.00	0	29.10
8.150	0.00	0.00	0.00	0.00	0.00	0	29.10
8.200	0.00	0.00	0.00	0.00	0.00	0	29.10
8.250	0.00	0.00	0.00	0.00	0.00	0	29.10
8.300	0.00	0.00	0.00	0.00	0.00	0	29.10
8.350	0.00	0.00	0.00	0.00	0.00	0	29.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.00	0.00	0.00	0.00	0.00	0	29.10
8.450	0.00	0.00	0.00	0.00	0.00	0	29.10
8.500	0.00	0.00	0.00	0.00	0.00	0	29.10
8.550	0.00	0.00	0.00	0.00	0.00	0	29.10
8.600	0.00	0.00	0.00	0.00	0.00	0	29.10
8.650	0.00	0.00	0.00	0.00	0.00	0	29.10
8.700	0.00	0.00	0.00	0.00	0.00	0	29.10
8.750	0.00	0.00	0.00	0.00	0.00	0	29.10
8.800	0.00	0.00	0.00	0.00	0.00	0	29.10
8.850	0.00	0.00	0.00	0.00	0.00	0	29.10
8.900	0.00	0.00	0.00	0.00	0.00	0	29.10
8.950	0.00	0.00	0.00	0.00	0.00	0	29.10
9.000	0.00	0.00	0.00	0.00	0.00	0	29.10
9.050	0.00	0.00	0.00	0.00	0.00	0	29.10
9.100	0.00	0.00	0.00	0.00	0.00	0	29.10
9.150	0.00	0.00	0.00	0.00	0.00	0	29.10
9.200	0.00	0.00	0.00	0.00	0.00	0	29.10
9.250	0.00	0.00	0.00	0.00	0.00	0	29.10
9.300	0.00	0.00	0.00	0.00	0.00	0	29.10
9.350	0.00	0.00	0.00	0.00	0.00	0	29.10
9.400	0.00	0.00	0.00	0.00	0.00	0	29.10
9.450	0.00	0.00	0.00	0.00	0.00	0	29.10
9.500	0.00	0.00	0.00	0.00	0.00	0	29.10
9.550	0.00	0.00	0.00	0.00	0.00	0	29.10
9.600	0.00	0.00	0.00	0.00	0.00	0	29.10
9.650	0.00	0.00	0.00	0.00	0.00	0	29.10
9.700	0.00	0.00	0.00	0.00	0.00	0	29.10
9.750	0.00	0.00	0.00	0.00	0.00	0	29.10
9.800	0.00	0.00	0.00	0.00	0.00	0	29.10
9.850	0.00	0.00	0.00	0.00	0.00	0	29.10
9.900	0.00	0.00	0.00	0.00	0.00	0	29.10
9.950	0.00	0.00	0.00	0.00	0.00	0	29.10
10.000	0.00	0.00	0.00	0.00	0.00	0	29.10
10.050	0.00	0.00	0.00	0.00	0.00	0	29.10
10.100	0.00	0.00	0.00	0.00	0.00	0	29.10
10.150	0.00	0.00	0.00	0.00	0.00	0	29.10
10.200	0.00	0.00	0.00	0.00	0.00	0	29.11
10.250	0.00	0.00	0.00	0.00	0.00	0	29.14
10.300	0.00	0.01	0.01	0.00	0.00	0	29.17
10.350	0.00	0.01	0.01	0.00	0.00	0	29.22
10.400	0.00	0.02	0.02	0.00	0.00	0	29.28
10.450	0.00	0.03	0.03	0.00	0.00	1	29.35

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.01	0.04	0.04	0.00	0.00	2	29.44
10.550	0.01	0.05	0.05	0.00	0.00	4	29.55
10.600	0.01	0.07	0.07	0.00	0.00	6	29.62
10.650	0.01	0.08	0.08	0.00	0.00	7	29.65
10.700	0.01	0.10	0.10	0.00	0.00	8	29.68
10.750	0.01	0.12	0.12	0.00	0.00	10	29.72
10.800	0.01	0.15	0.15	0.00	0.00	12	29.75
10.850	0.01	0.17	0.17	0.00	0.00	14	29.79
10.900	0.01	0.20	0.20	0.00	0.00	17	29.83
10.950	0.02	0.23	0.23	0.00	0.00	20	29.88
11.000	0.02	0.26	0.27	0.00	0.00	23	29.92
11.050	0.02	0.26	0.29	0.00	0.01	25	29.93
11.100	0.02	0.27	0.30	0.00	0.02	25	29.94
11.150	0.02	0.27	0.31	0.00	0.02	26	29.95
11.200	0.03	0.27	0.32	0.00	0.02	26	29.95
11.250	0.03	0.28	0.33	0.00	0.03	27	29.96
11.300	0.03	0.28	0.34	0.00	0.03	27	29.96
11.350	0.04	0.28	0.35	0.00	0.03	28	29.97
11.400	0.04	0.29	0.36	0.00	0.04	28	29.97
11.450	0.04	0.29	0.37	0.00	0.04	29	29.98
11.500	0.05	0.29	0.38	0.00	0.04	30	29.99
11.550	0.06	0.30	0.40	0.00	0.05	31	30.00
11.600	0.07	0.31	0.43	0.00	0.06	32	30.01
11.650	0.09	0.32	0.47	0.00	0.07	35	30.04
11.700	0.12	0.35	0.54	0.00	0.10	40	30.08
11.750	0.15	0.36	0.62	0.00	0.13	44	30.12
11.800	0.20	0.36	0.71	0.00	0.17	47	30.15
11.850	0.24	0.37	0.80	0.00	0.22	51	30.18
11.900	0.30	0.37	0.90	0.00	0.27	55	30.21
11.950	0.42	0.38	1.09	0.00	0.35	63	30.27
12.000	0.64	0.40	1.44	0.00	0.52	79	30.39
12.050	0.79	0.42	1.83	0.00	0.71	99	30.52
12.100	0.88	0.43	2.09	0.00	0.83	113	30.61
12.150	0.84	0.45	2.16	0.00	0.85	117	30.63
12.200	0.65	0.42	1.94	0.00	0.76	105	30.56
12.250	0.55	0.41	1.62	0.00	0.61	88	30.45
12.300	0.48	0.40	1.44	0.00	0.52	79	30.39
12.350	0.43	0.39	1.31	0.00	0.46	73	30.35
12.400	0.37	0.39	1.20	0.00	0.41	68	30.31
12.450	0.32	0.38	1.08	0.00	0.35	63	30.27
12.500	0.26	0.38	0.97	0.00	0.30	58	30.23
12.550	0.22	0.37	0.86	0.00	0.24	53	30.20

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.18	0.37	0.78	0.00	0.20	50	30.17
12.650	0.16	0.36	0.71	0.00	0.18	47	30.15
12.700	0.15	0.36	0.68	0.00	0.16	46	30.14
12.750	0.15	0.36	0.67	0.00	0.15	45	30.13
12.800	0.14	0.36	0.65	0.00	0.14	45	30.13
12.850	0.14	0.36	0.64	0.00	0.14	44	30.12
12.900	0.13	0.36	0.63	0.00	0.13	44	30.12
12.950	0.12	0.36	0.61	0.00	0.13	43	30.11
13.000	0.12	0.36	0.60	0.00	0.12	43	30.11
13.050	0.11	0.36	0.59	0.00	0.11	42	30.11
13.100	0.11	0.36	0.58	0.00	0.11	42	30.10
13.150	0.11	0.36	0.57	0.00	0.11	42	30.10
13.200	0.10	0.36	0.57	0.00	0.10	41	30.10
13.250	0.10	0.35	0.56	0.00	0.10	41	30.10
13.300	0.10	0.35	0.56	0.00	0.10	41	30.09
13.350	0.10	0.35	0.55	0.00	0.10	41	30.09
13.400	0.10	0.35	0.55	0.00	0.10	40	30.09
13.450	0.10	0.35	0.54	0.00	0.10	40	30.08
13.500	0.09	0.35	0.54	0.00	0.10	40	30.08
13.550	0.09	0.35	0.53	0.00	0.09	39	30.08
13.600	0.09	0.34	0.53	0.00	0.09	39	30.08
13.650	0.09	0.34	0.52	0.00	0.09	39	30.07
13.700	0.09	0.34	0.52	0.00	0.09	38	30.07
13.750	0.09	0.34	0.51	0.00	0.09	38	30.07
13.800	0.08	0.34	0.51	0.00	0.09	38	30.06
13.850	0.08	0.34	0.50	0.00	0.08	37	30.06
13.900	0.08	0.33	0.50	0.00	0.08	37	30.06
13.950	0.08	0.33	0.49	0.00	0.08	37	30.06
14.000	0.08	0.33	0.49	0.00	0.08	36	30.05
14.050	0.08	0.33	0.49	0.00	0.08	36	30.05
14.100	0.08	0.33	0.48	0.00	0.08	36	30.05
14.150	0.07	0.33	0.48	0.00	0.08	36	30.04
14.200	0.07	0.33	0.47	0.00	0.07	35	30.04
14.250	0.07	0.32	0.47	0.00	0.07	35	30.04
14.300	0.07	0.32	0.47	0.00	0.07	35	30.04
14.350	0.07	0.32	0.47	0.00	0.07	35	30.04
14.400	0.07	0.32	0.46	0.00	0.07	35	30.04
14.450	0.07	0.32	0.46	0.00	0.07	35	30.04
14.500	0.07	0.32	0.46	0.00	0.07	35	30.03
14.550	0.07	0.32	0.46	0.00	0.07	34	30.03
14.600	0.07	0.32	0.45	0.00	0.07	34	30.03
14.650	0.07	0.32	0.45	0.00	0.07	34	30.03

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.07	0.32	0.45	0.00	0.07	34	30.03
14.750	0.06	0.32	0.45	0.00	0.07	34	30.03
14.800	0.06	0.32	0.45	0.00	0.06	34	30.03
14.850	0.06	0.31	0.44	0.00	0.06	33	30.02
14.900	0.06	0.31	0.44	0.00	0.06	33	30.02
14.950	0.06	0.31	0.44	0.00	0.06	33	30.02
15.000	0.06	0.31	0.44	0.00	0.06	33	30.02
15.050	0.06	0.31	0.43	0.00	0.06	33	30.02
15.100	0.06	0.31	0.43	0.00	0.06	33	30.02
15.150	0.06	0.31	0.43	0.00	0.06	33	30.02
15.200	0.06	0.31	0.43	0.00	0.06	32	30.01
15.250	0.06	0.31	0.42	0.00	0.06	32	30.01
15.300	0.06	0.31	0.42	0.00	0.06	32	30.01
15.350	0.05	0.31	0.42	0.00	0.06	32	30.01
15.400	0.05	0.31	0.42	0.00	0.05	32	30.01
15.450	0.05	0.30	0.41	0.00	0.05	32	30.01
15.500	0.05	0.30	0.41	0.00	0.05	31	30.00
15.550	0.05	0.30	0.41	0.00	0.05	31	30.00
15.600	0.05	0.30	0.40	0.00	0.05	31	30.00
15.650	0.05	0.30	0.40	0.00	0.05	31	30.00
15.700	0.05	0.30	0.40	0.00	0.05	31	30.00
15.750	0.05	0.30	0.40	0.00	0.05	31	30.00
15.800	0.05	0.30	0.39	0.00	0.05	30	30.00
15.850	0.05	0.30	0.39	0.00	0.05	30	29.99
15.900	0.05	0.30	0.39	0.00	0.05	30	29.99
15.950	0.04	0.30	0.39	0.00	0.05	30	29.99
16.000	0.04	0.29	0.38	0.00	0.04	30	29.99
16.050	0.04	0.29	0.38	0.00	0.04	30	29.99
16.100	0.04	0.29	0.38	0.00	0.04	30	29.99
16.150	0.04	0.29	0.38	0.00	0.04	29	29.99
16.200	0.04	0.29	0.38	0.00	0.04	29	29.98
16.250	0.04	0.29	0.37	0.00	0.04	29	29.98
16.300	0.04	0.29	0.37	0.00	0.04	29	29.98
16.350	0.04	0.29	0.37	0.00	0.04	29	29.98
16.400	0.04	0.29	0.37	0.00	0.04	29	29.98
16.450	0.04	0.29	0.37	0.00	0.04	29	29.98
16.500	0.04	0.29	0.37	0.00	0.04	29	29.98
16.550	0.04	0.29	0.37	0.00	0.04	29	29.98
16.600	0.04	0.29	0.37	0.00	0.04	29	29.98
16.650	0.04	0.29	0.36	0.00	0.04	29	29.98
16.700	0.04	0.29	0.36	0.00	0.04	29	29.98
16.750	0.04	0.29	0.36	0.00	0.04	29	29.98

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.04	0.29	0.36	0.00	0.04	29	29.98
16.850	0.04	0.29	0.36	0.00	0.04	28	29.98
16.900	0.04	0.29	0.36	0.00	0.04	28	29.97
16.950	0.04	0.29	0.36	0.00	0.04	28	29.97
17.000	0.03	0.29	0.36	0.00	0.04	28	29.97
17.050	0.03	0.29	0.36	0.00	0.03	28	29.97
17.100	0.03	0.29	0.35	0.00	0.03	28	29.97
17.150	0.03	0.28	0.35	0.00	0.03	28	29.97
17.200	0.03	0.28	0.35	0.00	0.03	28	29.97
17.250	0.03	0.28	0.35	0.00	0.03	28	29.97
17.300	0.03	0.28	0.35	0.00	0.03	28	29.97
17.350	0.03	0.28	0.35	0.00	0.03	28	29.97
17.400	0.03	0.28	0.35	0.00	0.03	28	29.97
17.450	0.03	0.28	0.35	0.00	0.03	28	29.97
17.500	0.03	0.28	0.34	0.00	0.03	28	29.97
17.550	0.03	0.28	0.34	0.00	0.03	27	29.97
17.600	0.03	0.28	0.34	0.00	0.03	27	29.96
17.650	0.03	0.28	0.34	0.00	0.03	27	29.96
17.700	0.03	0.28	0.34	0.00	0.03	27	29.96
17.750	0.03	0.28	0.34	0.00	0.03	27	29.96
17.800	0.03	0.28	0.34	0.00	0.03	27	29.96
17.850	0.03	0.28	0.34	0.00	0.03	27	29.96
17.900	0.03	0.28	0.34	0.00	0.03	27	29.96
17.950	0.03	0.28	0.33	0.00	0.03	27	29.96
18.000	0.03	0.28	0.33	0.00	0.03	27	29.96
18.050	0.03	0.28	0.33	0.00	0.03	27	29.96
18.100	0.03	0.28	0.33	0.00	0.03	27	29.96
18.150	0.03	0.28	0.33	0.00	0.03	27	29.96
18.200	0.03	0.28	0.33	0.00	0.03	27	29.96
18.250	0.03	0.28	0.33	0.00	0.03	27	29.96
18.300	0.03	0.28	0.33	0.00	0.03	27	29.96
18.350	0.03	0.28	0.33	0.00	0.03	27	29.96
18.400	0.03	0.28	0.33	0.00	0.03	27	29.96
18.450	0.03	0.28	0.33	0.00	0.03	27	29.96
18.500	0.03	0.28	0.33	0.00	0.03	27	29.96
18.550	0.03	0.28	0.33	0.00	0.03	27	29.96
18.600	0.03	0.28	0.33	0.00	0.03	27	29.96
18.650	0.03	0.28	0.33	0.00	0.03	27	29.96
18.700	0.03	0.28	0.33	0.00	0.03	26	29.96
18.750	0.02	0.28	0.33	0.00	0.03	26	29.95
18.800	0.02	0.28	0.33	0.00	0.02	26	29.95
18.850	0.02	0.28	0.32	0.00	0.02	26	29.95

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.02	0.28	0.32	0.00	0.02	26	29.95
18.950	0.02	0.28	0.32	0.00	0.02	26	29.95
19.000	0.02	0.27	0.32	0.00	0.02	26	29.95
19.050	0.02	0.27	0.32	0.00	0.02	26	29.95
19.100	0.02	0.27	0.32	0.00	0.02	26	29.95
19.150	0.02	0.27	0.32	0.00	0.02	26	29.95
19.200	0.02	0.27	0.32	0.00	0.02	26	29.95
19.250	0.02	0.27	0.32	0.00	0.02	26	29.95
19.300	0.02	0.27	0.32	0.00	0.02	26	29.95
19.350	0.02	0.27	0.32	0.00	0.02	26	29.95
19.400	0.02	0.27	0.32	0.00	0.02	26	29.95
19.450	0.02	0.27	0.32	0.00	0.02	26	29.95
19.500	0.02	0.27	0.32	0.00	0.02	26	29.95
19.550	0.02	0.27	0.32	0.00	0.02	26	29.95
19.600	0.02	0.27	0.32	0.00	0.02	26	29.95
19.650	0.02	0.27	0.32	0.00	0.02	26	29.95
19.700	0.02	0.27	0.32	0.00	0.02	26	29.95
19.750	0.02	0.27	0.32	0.00	0.02	26	29.95
19.800	0.02	0.27	0.32	0.00	0.02	26	29.95
19.850	0.02	0.27	0.32	0.00	0.02	26	29.95
19.900	0.02	0.27	0.32	0.00	0.02	26	29.95
19.950	0.02	0.27	0.32	0.00	0.02	26	29.95
20.000	0.02	0.27	0.32	0.00	0.02	26	29.95
20.050	0.02	0.27	0.32	0.00	0.02	26	29.95
20.100	0.02	0.27	0.32	0.00	0.02	26	29.95
20.150	0.02	0.27	0.32	0.00	0.02	26	29.95
20.200	0.02	0.27	0.32	0.00	0.02	26	29.95
20.250	0.02	0.27	0.32	0.00	0.02	26	29.95
20.300	0.02	0.27	0.32	0.00	0.02	26	29.95
20.350	0.02	0.27	0.31	0.00	0.02	26	29.95
20.400	0.02	0.27	0.31	0.00	0.02	26	29.95
20.450	0.02	0.27	0.31	0.00	0.02	26	29.95
20.500	0.02	0.27	0.31	0.00	0.02	26	29.95
20.550	0.02	0.27	0.31	0.00	0.02	26	29.95
20.600	0.02	0.27	0.31	0.00	0.02	26	29.95
20.650	0.02	0.27	0.31	0.00	0.02	26	29.95
20.700	0.02	0.27	0.31	0.00	0.02	26	29.95
20.750	0.02	0.27	0.31	0.00	0.02	26	29.95
20.800	0.02	0.27	0.31	0.00	0.02	26	29.95
20.850	0.02	0.27	0.31	0.00	0.02	26	29.95
20.900	0.02	0.27	0.31	0.00	0.02	26	29.95
20.950	0.02	0.27	0.31	0.00	0.02	26	29.95

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.02	0.27	0.31	0.00	0.02	26	29.95
21.050	0.02	0.27	0.31	0.00	0.02	26	29.95
21.100	0.02	0.27	0.31	0.00	0.02	26	29.95
21.150	0.02	0.27	0.31	0.00	0.02	26	29.95
21.200	0.02	0.27	0.31	0.00	0.02	26	29.95
21.250	0.02	0.27	0.31	0.00	0.02	26	29.95
21.300	0.02	0.27	0.31	0.00	0.02	26	29.95
21.350	0.02	0.27	0.31	0.00	0.02	26	29.95
21.400	0.02	0.27	0.31	0.00	0.02	26	29.95
21.450	0.02	0.27	0.31	0.00	0.02	26	29.94
21.500	0.02	0.27	0.31	0.00	0.02	26	29.94
21.550	0.02	0.27	0.31	0.00	0.02	26	29.94
21.600	0.02	0.27	0.31	0.00	0.02	26	29.94
21.650	0.02	0.27	0.31	0.00	0.02	26	29.94
21.700	0.02	0.27	0.31	0.00	0.02	25	29.94
21.750	0.02	0.27	0.31	0.00	0.02	25	29.94
21.800	0.02	0.27	0.31	0.00	0.02	25	29.94
21.850	0.02	0.27	0.31	0.00	0.02	25	29.94
21.900	0.02	0.27	0.31	0.00	0.02	25	29.94
21.950	0.02	0.27	0.31	0.00	0.02	25	29.94
22.000	0.02	0.27	0.31	0.00	0.02	25	29.94
22.050	0.02	0.27	0.31	0.00	0.02	25	29.94
22.100	0.02	0.27	0.31	0.00	0.02	25	29.94
22.150	0.02	0.27	0.31	0.00	0.02	25	29.94
22.200	0.02	0.27	0.30	0.00	0.02	25	29.94
22.250	0.02	0.27	0.30	0.00	0.02	25	29.94
22.300	0.02	0.27	0.30	0.00	0.02	25	29.94
22.350	0.02	0.27	0.30	0.00	0.02	25	29.94
22.400	0.02	0.27	0.30	0.00	0.02	25	29.94
22.450	0.02	0.27	0.30	0.00	0.02	25	29.94
22.500	0.02	0.27	0.30	0.00	0.02	25	29.94
22.550	0.02	0.27	0.30	0.00	0.02	25	29.94
22.600	0.02	0.27	0.30	0.00	0.02	25	29.94
22.650	0.02	0.27	0.30	0.00	0.02	25	29.94
22.700	0.02	0.27	0.30	0.00	0.02	25	29.94
22.750	0.02	0.27	0.30	0.00	0.02	25	29.94
22.800	0.02	0.27	0.30	0.00	0.02	25	29.94
22.850	0.02	0.27	0.30	0.00	0.02	25	29.94
22.900	0.02	0.27	0.30	0.00	0.02	25	29.94
22.950	0.02	0.27	0.30	0.00	0.02	25	29.94
23.000	0.02	0.27	0.30	0.00	0.02	25	29.94
23.050	0.02	0.27	0.30	0.00	0.02	25	29.94

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.02	0.27	0.30	0.00	0.02	25	29.94
23.150	0.02	0.27	0.30	0.00	0.02	25	29.94
23.200	0.02	0.27	0.30	0.00	0.02	25	29.94
23.250	0.02	0.27	0.30	0.00	0.02	25	29.94
23.300	0.02	0.27	0.30	0.00	0.02	25	29.94
23.350	0.02	0.27	0.30	0.00	0.02	25	29.94
23.400	0.02	0.27	0.30	0.00	0.02	25	29.94
23.450	0.02	0.27	0.30	0.00	0.02	25	29.94
23.500	0.02	0.27	0.30	0.00	0.02	25	29.94
23.550	0.02	0.27	0.30	0.00	0.02	25	29.94
23.600	0.02	0.27	0.30	0.00	0.02	25	29.94
23.650	0.02	0.27	0.30	0.00	0.02	25	29.94
23.700	0.02	0.27	0.30	0.00	0.02	25	29.94
23.750	0.02	0.27	0.30	0.00	0.02	25	29.94
23.800	0.02	0.27	0.30	0.00	0.02	25	29.94
23.850	0.02	0.27	0.30	0.00	0.02	25	29.94
23.900	0.01	0.27	0.30	0.00	0.01	25	29.94
23.950	0.01	0.27	0.30	0.00	0.01	25	29.94
24.000	0.01	0.27	0.29	0.00	0.01	25	29.94
24.050	0.01	0.26	0.29	0.00	0.01	25	29.93
24.100	0.00	0.26	0.28	0.00	0.01	24	29.93
24.150	0.00	0.26	0.27	0.00	0.01	23	29.92
24.200	0.00	0.25	0.26	0.00	0.00	23	29.91
24.250	0.00	0.25	0.25	0.00	0.00	23	29.91
24.300	0.00	0.25	0.25	0.00	0.00	23	29.91
24.350	0.00	0.25	0.25	0.00	0.00	23	29.91
24.400	0.00	0.25	0.25	0.00	0.00	23	29.91
24.450	0.00	0.25	0.25	0.00	0.00	23	29.91
24.500	0.00	0.25	0.25	0.00	0.00	23	29.91
24.550	0.00	0.25	0.25	0.00	0.00	23	29.91
24.600	0.00	0.25	0.25	0.00	0.00	23	29.91
24.650	0.00	0.25	0.25	0.00	0.00	23	29.91
24.700	0.00	0.25	0.25	0.00	0.00	23	29.91
24.750	0.00	0.25	0.25	0.00	0.00	23	29.91
24.800	0.00	0.25	0.25	0.00	0.00	23	29.91
24.850	0.00	0.25	0.25	0.00	0.00	23	29.91
24.900	0.00	0.25	0.25	0.00	0.00	23	29.91
24.950	0.00	0.25	0.25	0.00	0.00	23	29.91
25.000	0.00	0.25	0.25	0.00	0.00	23	29.91
25.050	0.00	0.25	0.25	0.00	0.00	23	29.91
25.100	0.00	0.25	0.25	0.00	0.00	23	29.91
25.150	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.200	0.00	0.25	0.25	0.00	0.00	23	29.91
25.250	0.00	0.25	0.25	0.00	0.00	23	29.91
25.300	0.00	0.25	0.25	0.00	0.00	23	29.91
25.350	0.00	0.25	0.25	0.00	0.00	23	29.91
25.400	0.00	0.25	0.25	0.00	0.00	23	29.91
25.450	0.00	0.25	0.25	0.00	0.00	23	29.91
25.500	0.00	0.25	0.25	0.00	0.00	23	29.91
25.550	0.00	0.25	0.25	0.00	0.00	23	29.91
25.600	0.00	0.25	0.25	0.00	0.00	23	29.91
25.650	0.00	0.25	0.25	0.00	0.00	23	29.91
25.700	0.00	0.25	0.25	0.00	0.00	23	29.91
25.750	0.00	0.25	0.25	0.00	0.00	23	29.91
25.800	0.00	0.25	0.25	0.00	0.00	23	29.91
25.850	0.00	0.25	0.25	0.00	0.00	23	29.91
25.900	0.00	0.25	0.25	0.00	0.00	23	29.91
25.950	0.00	0.25	0.25	0.00	0.00	23	29.91
26.000	0.00	0.25	0.25	0.00	0.00	23	29.91
26.050	0.00	0.25	0.25	0.00	0.00	23	29.91
26.100	0.00	0.25	0.25	0.00	0.00	23	29.91
26.150	0.00	0.25	0.25	0.00	0.00	23	29.91
26.200	0.00	0.25	0.25	0.00	0.00	23	29.91
26.250	0.00	0.25	0.25	0.00	0.00	23	29.91
26.300	0.00	0.25	0.25	0.00	0.00	23	29.91
26.350	0.00	0.25	0.25	0.00	0.00	23	29.91
26.400	0.00	0.25	0.25	0.00	0.00	23	29.91
26.450	0.00	0.25	0.25	0.00	0.00	23	29.91
26.500	0.00	0.25	0.25	0.00	0.00	23	29.91
26.550	0.00	0.25	0.25	0.00	0.00	23	29.91
26.600	0.00	0.25	0.25	0.00	0.00	23	29.91
26.650	0.00	0.25	0.25	0.00	0.00	23	29.91
26.700	0.00	0.25	0.25	0.00	0.00	23	29.91
26.750	0.00	0.25	0.25	0.00	0.00	23	29.91
26.800	0.00	0.25	0.25	0.00	0.00	23	29.91
26.850	0.00	0.25	0.25	0.00	0.00	23	29.91
26.900	0.00	0.25	0.25	0.00	0.00	23	29.91
26.950	0.00	0.25	0.25	0.00	0.00	23	29.91
27.000	0.00	0.25	0.25	0.00	0.00	23	29.91
27.050	0.00	0.25	0.25	0.00	0.00	23	29.91
27.100	0.00	0.25	0.25	0.00	0.00	23	29.91
27.150	0.00	0.25	0.25	0.00	0.00	23	29.91
27.200	0.00	0.25	0.25	0.00	0.00	23	29.91
27.250	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.300	0.00	0.25	0.25	0.00	0.00	23	29.91
27.350	0.00	0.25	0.25	0.00	0.00	23	29.91
27.400	0.00	0.25	0.25	0.00	0.00	23	29.91
27.450	0.00	0.25	0.25	0.00	0.00	23	29.91
27.500	0.00	0.25	0.25	0.00	0.00	23	29.91
27.550	0.00	0.25	0.25	0.00	0.00	23	29.91
27.600	0.00	0.25	0.25	0.00	0.00	23	29.91
27.650	0.00	0.25	0.25	0.00	0.00	23	29.91
27.700	0.00	0.25	0.25	0.00	0.00	23	29.91
27.750	0.00	0.25	0.25	0.00	0.00	23	29.91
27.800	0.00	0.25	0.25	0.00	0.00	23	29.91
27.850	0.00	0.25	0.25	0.00	0.00	23	29.91
27.900	0.00	0.25	0.25	0.00	0.00	23	29.91
27.950	0.00	0.25	0.25	0.00	0.00	23	29.91
28.000	0.00	0.25	0.25	0.00	0.00	23	29.91
28.050	0.00	0.25	0.25	0.00	0.00	23	29.91
28.100	0.00	0.25	0.25	0.00	0.00	23	29.91
28.150	0.00	0.25	0.25	0.00	0.00	23	29.91
28.200	0.00	0.25	0.25	0.00	0.00	23	29.91
28.250	0.00	0.25	0.25	0.00	0.00	23	29.91
28.300	0.00	0.25	0.25	0.00	0.00	23	29.91
28.350	0.00	0.25	0.25	0.00	0.00	23	29.91
28.400	0.00	0.25	0.25	0.00	0.00	23	29.91
28.450	0.00	0.25	0.25	0.00	0.00	23	29.91
28.500	0.00	0.25	0.25	0.00	0.00	23	29.91
28.550	0.00	0.25	0.25	0.00	0.00	23	29.91
28.600	0.00	0.25	0.25	0.00	0.00	23	29.91
28.650	0.00	0.25	0.25	0.00	0.00	23	29.91
28.700	0.00	0.25	0.25	0.00	0.00	23	29.91
28.750	0.00	0.25	0.25	0.00	0.00	23	29.91
28.800	0.00	0.25	0.25	0.00	0.00	23	29.91
28.850	0.00	0.25	0.25	0.00	0.00	23	29.91
28.900	0.00	0.25	0.25	0.00	0.00	23	29.91
28.950	0.00	0.25	0.25	0.00	0.00	23	29.91
29.000	0.00	0.25	0.25	0.00	0.00	23	29.91
29.050	0.00	0.25	0.25	0.00	0.00	23	29.91
29.100	0.00	0.25	0.25	0.00	0.00	23	29.91
29.150	0.00	0.25	0.25	0.00	0.00	23	29.91
29.200	0.00	0.25	0.25	0.00	0.00	23	29.91
29.250	0.00	0.25	0.25	0.00	0.00	23	29.91
29.300	0.00	0.25	0.25	0.00	0.00	23	29.91
29.350	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.400	0.00	0.25	0.25	0.00	0.00	23	29.91
29.450	0.00	0.25	0.25	0.00	0.00	23	29.91
29.500	0.00	0.25	0.25	0.00	0.00	23	29.91
29.550	0.00	0.25	0.25	0.00	0.00	23	29.91
29.600	0.00	0.25	0.25	0.00	0.00	23	29.91
29.650	0.00	0.25	0.25	0.00	0.00	23	29.91
29.700	0.00	0.25	0.25	0.00	0.00	23	29.91
29.750	0.00	0.25	0.25	0.00	0.00	23	29.91
29.800	0.00	0.25	0.25	0.00	0.00	23	29.91
29.850	0.00	0.25	0.25	0.00	0.00	23	29.91
29.900	0.00	0.25	0.25	0.00	0.00	23	29.91
29.950	0.00	0.25	0.25	0.00	0.00	23	29.91
30.000	0.00	0.25	0.25	0.00	0.00	23	29.91
30.050	0.00	0.25	0.25	0.00	0.00	23	29.91
30.100	0.00	0.25	0.25	0.00	0.00	23	29.91
30.150	0.00	0.25	0.25	0.00	0.00	23	29.91
30.200	0.00	0.25	0.25	0.00	0.00	23	29.91
30.250	0.00	0.25	0.25	0.00	0.00	23	29.91
30.300	0.00	0.25	0.25	0.00	0.00	23	29.91
30.350	0.00	0.25	0.25	0.00	0.00	23	29.91
30.400	0.00	0.25	0.25	0.00	0.00	23	29.91
30.450	0.00	0.25	0.25	0.00	0.00	23	29.91
30.500	0.00	0.25	0.25	0.00	0.00	23	29.91
30.550	0.00	0.25	0.25	0.00	0.00	23	29.91
30.600	0.00	0.25	0.25	0.00	0.00	23	29.91
30.650	0.00	0.25	0.25	0.00	0.00	23	29.91
30.700	0.00	0.25	0.25	0.00	0.00	23	29.91
30.750	0.00	0.25	0.25	0.00	0.00	23	29.91
30.800	0.00	0.25	0.25	0.00	0.00	23	29.91
30.850	0.00	0.25	0.25	0.00	0.00	23	29.91
30.900	0.00	0.25	0.25	0.00	0.00	23	29.91
30.950	0.00	0.25	0.25	0.00	0.00	23	29.91
31.000	0.00	0.25	0.25	0.00	0.00	23	29.91
31.050	0.00	0.25	0.25	0.00	0.00	23	29.91
31.100	0.00	0.25	0.25	0.00	0.00	23	29.91
31.150	0.00	0.25	0.25	0.00	0.00	23	29.91
31.200	0.00	0.25	0.25	0.00	0.00	23	29.91
31.250	0.00	0.25	0.25	0.00	0.00	23	29.91
31.300	0.00	0.25	0.25	0.00	0.00	23	29.91
31.350	0.00	0.25	0.25	0.00	0.00	23	29.91
31.400	0.00	0.25	0.25	0.00	0.00	23	29.91
31.450	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
31.500	0.00	0.25	0.25	0.00	0.00	23	29.91
31.550	0.00	0.25	0.25	0.00	0.00	23	29.91
31.600	0.00	0.25	0.25	0.00	0.00	23	29.91
31.650	0.00	0.25	0.25	0.00	0.00	23	29.91
31.700	0.00	0.25	0.25	0.00	0.00	23	29.91
31.750	0.00	0.25	0.25	0.00	0.00	23	29.91
31.800	0.00	0.25	0.25	0.00	0.00	23	29.91
31.850	0.00	0.25	0.25	0.00	0.00	23	29.91
31.900	0.00	0.25	0.25	0.00	0.00	23	29.91
31.950	0.00	0.25	0.25	0.00	0.00	23	29.91
32.000	0.00	0.25	0.25	0.00	0.00	23	29.91
32.050	0.00	0.25	0.25	0.00	0.00	23	29.91
32.100	0.00	0.25	0.25	0.00	0.00	23	29.91
32.150	0.00	0.25	0.25	0.00	0.00	23	29.91
32.200	0.00	0.25	0.25	0.00	0.00	23	29.91
32.250	0.00	0.25	0.25	0.00	0.00	23	29.91
32.300	0.00	0.25	0.25	0.00	0.00	23	29.91
32.350	0.00	0.25	0.25	0.00	0.00	23	29.91
32.400	0.00	0.25	0.25	0.00	0.00	23	29.91
32.450	0.00	0.25	0.25	0.00	0.00	23	29.91
32.500	0.00	0.25	0.25	0.00	0.00	23	29.91
32.550	0.00	0.25	0.25	0.00	0.00	23	29.91
32.600	0.00	0.25	0.25	0.00	0.00	23	29.91
32.650	0.00	0.25	0.25	0.00	0.00	23	29.91
32.700	0.00	0.25	0.25	0.00	0.00	23	29.91
32.750	0.00	0.25	0.25	0.00	0.00	23	29.91
32.800	0.00	0.25	0.25	0.00	0.00	23	29.91
32.850	0.00	0.25	0.25	0.00	0.00	23	29.91
32.900	0.00	0.25	0.25	0.00	0.00	23	29.91
32.950	0.00	0.25	0.25	0.00	0.00	23	29.91
33.000	0.00	0.25	0.25	0.00	0.00	23	29.91
33.050	0.00	0.25	0.25	0.00	0.00	23	29.91
33.100	0.00	0.25	0.25	0.00	0.00	23	29.91
33.150	0.00	0.25	0.25	0.00	0.00	23	29.91
33.200	0.00	0.25	0.25	0.00	0.00	23	29.91
33.250	0.00	0.25	0.25	0.00	0.00	23	29.91
33.300	0.00	0.25	0.25	0.00	0.00	23	29.91
33.350	0.00	0.25	0.25	0.00	0.00	23	29.91
33.400	0.00	0.25	0.25	0.00	0.00	23	29.91
33.450	0.00	0.25	0.25	0.00	0.00	23	29.91
33.500	0.00	0.25	0.25	0.00	0.00	23	29.91
33.550	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
33.600	0.00	0.25	0.25	0.00	0.00	23	29.91
33.650	0.00	0.25	0.25	0.00	0.00	23	29.91
33.700	0.00	0.25	0.25	0.00	0.00	23	29.91
33.750	0.00	0.25	0.25	0.00	0.00	23	29.91
33.800	0.00	0.25	0.25	0.00	0.00	23	29.91
33.850	0.00	0.25	0.25	0.00	0.00	23	29.91
33.900	0.00	0.25	0.25	0.00	0.00	23	29.91
33.950	0.00	0.25	0.25	0.00	0.00	23	29.91
34.000	0.00	0.25	0.25	0.00	0.00	23	29.91
34.050	0.00	0.25	0.25	0.00	0.00	23	29.91
34.100	0.00	0.25	0.25	0.00	0.00	23	29.91
34.150	0.00	0.25	0.25	0.00	0.00	23	29.91
34.200	0.00	0.25	0.25	0.00	0.00	23	29.91
34.250	0.00	0.25	0.25	0.00	0.00	23	29.91
34.300	0.00	0.25	0.25	0.00	0.00	23	29.91
34.350	0.00	0.25	0.25	0.00	0.00	23	29.91
34.400	0.00	0.25	0.25	0.00	0.00	23	29.91
34.450	0.00	0.25	0.25	0.00	0.00	23	29.91
34.500	0.00	0.25	0.25	0.00	0.00	23	29.91
34.550	0.00	0.25	0.25	0.00	0.00	23	29.91
34.600	0.00	0.25	0.25	0.00	0.00	23	29.91
34.650	0.00	0.25	0.25	0.00	0.00	23	29.91
34.700	0.00	0.25	0.25	0.00	0.00	23	29.91
34.750	0.00	0.25	0.25	0.00	0.00	23	29.91
34.800	0.00	0.25	0.25	0.00	0.00	23	29.91
34.850	0.00	0.25	0.25	0.00	0.00	23	29.91
34.900	0.00	0.25	0.25	0.00	0.00	23	29.91
34.950	0.00	0.25	0.25	0.00	0.00	23	29.91
35.000	0.00	0.25	0.25	0.00	0.00	23	29.91
35.050	0.00	0.25	0.25	0.00	0.00	23	29.91
35.100	0.00	0.25	0.25	0.00	0.00	23	29.91
35.150	0.00	0.25	0.25	0.00	0.00	23	29.91
35.200	0.00	0.25	0.25	0.00	0.00	23	29.91
35.250	0.00	0.25	0.25	0.00	0.00	23	29.91
35.300	0.00	0.25	0.25	0.00	0.00	23	29.91
35.350	0.00	0.25	0.25	0.00	0.00	23	29.91
35.400	0.00	0.25	0.25	0.00	0.00	23	29.91
35.450	0.00	0.25	0.25	0.00	0.00	23	29.91
35.500	0.00	0.25	0.25	0.00	0.00	23	29.91
35.550	0.00	0.25	0.25	0.00	0.00	23	29.91
35.600	0.00	0.25	0.25	0.00	0.00	23	29.91
35.650	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: EX. RG (OUT) Storm Event: 1 year
Scenario: Pre-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
35.700	0.00	0.25	0.25	0.00	0.00	23	29.91
35.750	0.00	0.25	0.25	0.00	0.00	23	29.91
35.800	0.00	0.25	0.25	0.00	0.00	23	29.91
35.850	0.00	0.25	0.25	0.00	0.00	23	29.91
35.900	0.00	0.25	0.25	0.00	0.00	23	29.91
35.950	0.00	0.25	0.25	0.00	0.00	23	29.91
36.000	0.00	0.25	0.25	0.00	0.00	23	29.91

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	29.10
0.050	0.00	0.00	0.00	0.00	0.00	0	29.10
0.100	0.00	0.00	0.00	0.00	0.00	0	29.10
0.150	0.00	0.00	0.00	0.00	0.00	0	29.10
0.200	0.00	0.00	0.00	0.00	0.00	0	29.10
0.250	0.00	0.00	0.00	0.00	0.00	0	29.10
0.300	0.00	0.00	0.00	0.00	0.00	0	29.10
0.350	0.00	0.00	0.00	0.00	0.00	0	29.10
0.400	0.00	0.00	0.00	0.00	0.00	0	29.10
0.450	0.00	0.00	0.00	0.00	0.00	0	29.10
0.500	0.00	0.00	0.00	0.00	0.00	0	29.10
0.550	0.00	0.00	0.00	0.00	0.00	0	29.10
0.600	0.00	0.00	0.00	0.00	0.00	0	29.10
0.650	0.00	0.00	0.00	0.00	0.00	0	29.10
0.700	0.00	0.00	0.00	0.00	0.00	0	29.10
0.750	0.00	0.00	0.00	0.00	0.00	0	29.10
0.800	0.00	0.00	0.00	0.00	0.00	0	29.10
0.850	0.00	0.00	0.00	0.00	0.00	0	29.10
0.900	0.00	0.00	0.00	0.00	0.00	0	29.10
0.950	0.00	0.00	0.00	0.00	0.00	0	29.10
1.000	0.00	0.00	0.00	0.00	0.00	0	29.10
1.050	0.00	0.00	0.00	0.00	0.00	0	29.10
1.100	0.00	0.00	0.00	0.00	0.00	0	29.10
1.150	0.00	0.00	0.00	0.00	0.00	0	29.10
1.200	0.00	0.00	0.00	0.00	0.00	0	29.10
1.250	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
1.300	0.00	0.00	0.00	0.00	0.00	0	29.10
1.350	0.00	0.00	0.00	0.00	0.00	0	29.10
1.400	0.00	0.00	0.00	0.00	0.00	0	29.10
1.450	0.00	0.00	0.00	0.00	0.00	0	29.10
1.500	0.00	0.00	0.00	0.00	0.00	0	29.10
1.550	0.00	0.00	0.00	0.00	0.00	0	29.10
1.600	0.00	0.00	0.00	0.00	0.00	0	29.10
1.650	0.00	0.00	0.00	0.00	0.00	0	29.10
1.700	0.00	0.00	0.00	0.00	0.00	0	29.10
1.750	0.00	0.00	0.00	0.00	0.00	0	29.10
1.800	0.00	0.00	0.00	0.00	0.00	0	29.10
1.850	0.00	0.00	0.00	0.00	0.00	0	29.10
1.900	0.00	0.00	0.00	0.00	0.00	0	29.10
1.950	0.00	0.00	0.00	0.00	0.00	0	29.10
2.000	0.00	0.00	0.00	0.00	0.00	0	29.10
2.050	0.00	0.00	0.00	0.00	0.00	0	29.10
2.100	0.00	0.00	0.00	0.00	0.00	0	29.10
2.150	0.00	0.00	0.00	0.00	0.00	0	29.10
2.200	0.00	0.00	0.00	0.00	0.00	0	29.10
2.250	0.00	0.00	0.00	0.00	0.00	0	29.10
2.300	0.00	0.00	0.00	0.00	0.00	0	29.10
2.350	0.00	0.00	0.00	0.00	0.00	0	29.10
2.400	0.00	0.00	0.00	0.00	0.00	0	29.10
2.450	0.00	0.00	0.00	0.00	0.00	0	29.10
2.500	0.00	0.00	0.00	0.00	0.00	0	29.10
2.550	0.00	0.00	0.00	0.00	0.00	0	29.10
2.600	0.00	0.00	0.00	0.00	0.00	0	29.10
2.650	0.00	0.00	0.00	0.00	0.00	0	29.10
2.700	0.00	0.00	0.00	0.00	0.00	0	29.10
2.750	0.00	0.00	0.00	0.00	0.00	0	29.10
2.800	0.00	0.00	0.00	0.00	0.00	0	29.10
2.850	0.00	0.00	0.00	0.00	0.00	0	29.10
2.900	0.00	0.00	0.00	0.00	0.00	0	29.10
2.950	0.00	0.00	0.00	0.00	0.00	0	29.10
3.000	0.00	0.00	0.00	0.00	0.00	0	29.10
3.050	0.00	0.00	0.00	0.00	0.00	0	29.10
3.100	0.00	0.00	0.00	0.00	0.00	0	29.10
3.150	0.00	0.00	0.00	0.00	0.00	0	29.10
3.200	0.00	0.00	0.00	0.00	0.00	0	29.10
3.250	0.00	0.00	0.00	0.00	0.00	0	29.10
3.300	0.00	0.00	0.00	0.00	0.00	0	29.10
3.350	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
3.400	0.00	0.00	0.00	0.00	0.00	0	29.10
3.450	0.00	0.00	0.00	0.00	0.00	0	29.10
3.500	0.00	0.00	0.00	0.00	0.00	0	29.10
3.550	0.00	0.00	0.00	0.00	0.00	0	29.10
3.600	0.00	0.00	0.00	0.00	0.00	0	29.10
3.650	0.00	0.00	0.00	0.00	0.00	0	29.10
3.700	0.00	0.00	0.00	0.00	0.00	0	29.10
3.750	0.00	0.00	0.00	0.00	0.00	0	29.10
3.800	0.00	0.00	0.00	0.00	0.00	0	29.10
3.850	0.00	0.00	0.00	0.00	0.00	0	29.10
3.900	0.00	0.00	0.00	0.00	0.00	0	29.10
3.950	0.00	0.00	0.00	0.00	0.00	0	29.10
4.000	0.00	0.00	0.00	0.00	0.00	0	29.10
4.050	0.00	0.00	0.00	0.00	0.00	0	29.10
4.100	0.00	0.00	0.00	0.00	0.00	0	29.10
4.150	0.00	0.00	0.00	0.00	0.00	0	29.10
4.200	0.00	0.00	0.00	0.00	0.00	0	29.10
4.250	0.00	0.00	0.00	0.00	0.00	0	29.10
4.300	0.00	0.00	0.00	0.00	0.00	0	29.10
4.350	0.00	0.00	0.00	0.00	0.00	0	29.10
4.400	0.00	0.00	0.00	0.00	0.00	0	29.10
4.450	0.00	0.00	0.00	0.00	0.00	0	29.10
4.500	0.00	0.00	0.00	0.00	0.00	0	29.10
4.550	0.00	0.00	0.00	0.00	0.00	0	29.10
4.600	0.00	0.00	0.00	0.00	0.00	0	29.10
4.650	0.00	0.00	0.00	0.00	0.00	0	29.10
4.700	0.00	0.00	0.00	0.00	0.00	0	29.10
4.750	0.00	0.00	0.00	0.00	0.00	0	29.10
4.800	0.00	0.00	0.00	0.00	0.00	0	29.10
4.850	0.00	0.00	0.00	0.00	0.00	0	29.10
4.900	0.00	0.00	0.00	0.00	0.00	0	29.10
4.950	0.00	0.00	0.00	0.00	0.00	0	29.10
5.000	0.00	0.00	0.00	0.00	0.00	0	29.10
5.050	0.00	0.00	0.00	0.00	0.00	0	29.10
5.100	0.00	0.00	0.00	0.00	0.00	0	29.10
5.150	0.00	0.00	0.00	0.00	0.00	0	29.10
5.200	0.00	0.00	0.00	0.00	0.00	0	29.10
5.250	0.00	0.00	0.00	0.00	0.00	0	29.10
5.300	0.00	0.00	0.00	0.00	0.00	0	29.10
5.350	0.00	0.00	0.00	0.00	0.00	0	29.10
5.400	0.00	0.00	0.00	0.00	0.00	0	29.10
5.450	0.00	0.00	0.00	0.00	0.00	0	29.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
5.500	0.00	0.00	0.00	0.00	0.00	0	29.10
5.550	0.00	0.00	0.00	0.00	0.00	0	29.10
5.600	0.00	0.00	0.00	0.00	0.00	0	29.10
5.650	0.00	0.00	0.00	0.00	0.00	0	29.10
5.700	0.00	0.00	0.00	0.00	0.00	0	29.10
5.750	0.00	0.00	0.00	0.00	0.00	0	29.10
5.800	0.00	0.00	0.00	0.00	0.00	0	29.10
5.850	0.00	0.00	0.00	0.00	0.00	0	29.10
5.900	0.00	0.00	0.00	0.00	0.00	0	29.10
5.950	0.00	0.00	0.00	0.00	0.00	0	29.10
6.000	0.00	0.00	0.00	0.00	0.00	0	29.10
6.050	0.00	0.00	0.00	0.00	0.00	0	29.10
6.100	0.00	0.00	0.00	0.00	0.00	0	29.10
6.150	0.00	0.00	0.00	0.00	0.00	0	29.10
6.200	0.00	0.00	0.00	0.00	0.00	0	29.10
6.250	0.00	0.00	0.00	0.00	0.00	0	29.10
6.300	0.00	0.00	0.00	0.00	0.00	0	29.10
6.350	0.00	0.00	0.00	0.00	0.00	0	29.10
6.400	0.00	0.00	0.00	0.00	0.00	0	29.10
6.450	0.00	0.00	0.00	0.00	0.00	0	29.10
6.500	0.00	0.00	0.00	0.00	0.00	0	29.10
6.550	0.00	0.00	0.00	0.00	0.00	0	29.10
6.600	0.00	0.00	0.00	0.00	0.00	0	29.10
6.650	0.00	0.00	0.00	0.00	0.00	0	29.10
6.700	0.00	0.00	0.00	0.00	0.00	0	29.10
6.750	0.00	0.00	0.00	0.00	0.00	0	29.10
6.800	0.00	0.00	0.00	0.00	0.00	0	29.10
6.850	0.00	0.00	0.00	0.00	0.00	0	29.10
6.900	0.00	0.00	0.00	0.00	0.00	0	29.10
6.950	0.00	0.00	0.00	0.00	0.00	0	29.10
7.000	0.00	0.00	0.00	0.00	0.00	0	29.10
7.050	0.00	0.00	0.00	0.00	0.00	0	29.10
7.100	0.00	0.00	0.00	0.00	0.00	0	29.10
7.150	0.00	0.00	0.00	0.00	0.00	0	29.10
7.200	0.00	0.00	0.00	0.00	0.00	0	29.10
7.250	0.00	0.00	0.00	0.00	0.00	0	29.10
7.300	0.00	0.00	0.00	0.00	0.00	0	29.10
7.350	0.00	0.00	0.00	0.00	0.00	0	29.10
7.400	0.00	0.00	0.00	0.00	0.00	0	29.10
7.450	0.00	0.00	0.00	0.00	0.00	0	29.10
7.500	0.00	0.00	0.00	0.00	0.00	0	29.10
7.550	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
7.600	0.00	0.00	0.00	0.00	0.00	0	29.10
7.650	0.00	0.00	0.00	0.00	0.00	0	29.10
7.700	0.00	0.00	0.00	0.00	0.00	0	29.10
7.750	0.00	0.00	0.00	0.00	0.00	0	29.10
7.800	0.00	0.00	0.00	0.00	0.00	0	29.10
7.850	0.00	0.00	0.00	0.00	0.00	0	29.11
7.900	0.00	0.00	0.00	0.00	0.00	0	29.13
7.950	0.00	0.01	0.01	0.00	0.00	0	29.15
8.000	0.00	0.01	0.01	0.00	0.00	0	29.19
8.050	0.00	0.02	0.02	0.00	0.00	0	29.23
8.100	0.00	0.02	0.02	0.00	0.00	0	29.28
8.150	0.00	0.03	0.03	0.00	0.00	1	29.35
8.200	0.00	0.04	0.04	0.00	0.00	1	29.42
8.250	0.01	0.05	0.05	0.00	0.00	3	29.51
8.300	0.01	0.06	0.06	0.00	0.00	5	29.60
8.350	0.01	0.07	0.07	0.00	0.00	6	29.63
8.400	0.01	0.09	0.09	0.00	0.00	7	29.66
8.450	0.01	0.10	0.10	0.00	0.00	8	29.68
8.500	0.01	0.12	0.12	0.00	0.00	10	29.71
8.550	0.01	0.14	0.14	0.00	0.00	11	29.74
8.600	0.01	0.16	0.16	0.00	0.00	13	29.77
8.650	0.01	0.18	0.18	0.00	0.00	15	29.81
8.700	0.01	0.21	0.21	0.00	0.00	18	29.85
8.750	0.01	0.24	0.24	0.00	0.00	21	29.89
8.800	0.02	0.26	0.27	0.00	0.01	23	29.92
8.850	0.02	0.26	0.29	0.00	0.01	24	29.93
8.900	0.02	0.27	0.30	0.00	0.02	25	29.94
8.950	0.02	0.27	0.30	0.00	0.02	25	29.94
9.000	0.02	0.27	0.31	0.00	0.02	25	29.94
9.050	0.02	0.27	0.31	0.00	0.02	26	29.95
9.100	0.02	0.27	0.31	0.00	0.02	26	29.95
9.150	0.02	0.27	0.32	0.00	0.02	26	29.95
9.200	0.02	0.27	0.32	0.00	0.02	26	29.95
9.250	0.03	0.28	0.33	0.00	0.02	26	29.95
9.300	0.03	0.28	0.33	0.00	0.03	27	29.96
9.350	0.03	0.28	0.33	0.00	0.03	27	29.96
9.400	0.03	0.28	0.34	0.00	0.03	27	29.96
9.450	0.03	0.28	0.34	0.00	0.03	27	29.96
9.500	0.03	0.28	0.35	0.00	0.03	28	29.97
9.550	0.04	0.28	0.35	0.00	0.03	28	29.97
9.600	0.04	0.29	0.36	0.00	0.04	28	29.97
9.650	0.04	0.29	0.36	0.00	0.04	28	29.98

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft^3/s)	2S/t - O (ft^3/s)	2S/t + O (ft^3/s)	Infiltration (ft^3/s)	Flow (Outlet) (ft^3/s)	Volume (ft^3)	Elevation (ft)
9.700	0.04	0.29	0.37	0.00	0.04	29	29.98
9.750	0.04	0.29	0.37	0.00	0.04	29	29.98
9.800	0.04	0.29	0.38	0.00	0.04	29	29.98
9.850	0.05	0.29	0.38	0.00	0.04	30	29.99
9.900	0.05	0.30	0.39	0.00	0.05	30	29.99
9.950	0.05	0.30	0.39	0.00	0.05	30	29.99
10.000	0.05	0.30	0.40	0.00	0.05	31	30.00
10.050	0.05	0.30	0.40	0.00	0.05	31	30.00
10.100	0.05	0.30	0.41	0.00	0.05	31	30.00
10.150	0.06	0.31	0.42	0.00	0.05	32	30.01
10.200	0.06	0.31	0.42	0.00	0.06	32	30.01
10.250	0.06	0.31	0.43	0.00	0.06	33	30.02
10.300	0.07	0.31	0.44	0.00	0.06	33	30.02
10.350	0.07	0.32	0.45	0.00	0.07	34	30.03
10.400	0.07	0.32	0.46	0.00	0.07	34	30.03
10.450	0.07	0.32	0.47	0.00	0.07	35	30.04
10.500	0.08	0.33	0.48	0.00	0.07	36	30.04
10.550	0.08	0.33	0.49	0.00	0.08	36	30.05
10.600	0.08	0.33	0.50	0.00	0.08	37	30.06
10.650	0.09	0.34	0.51	0.00	0.08	37	30.06
10.700	0.09	0.34	0.52	0.00	0.09	38	30.07
10.750	0.10	0.34	0.53	0.00	0.09	39	30.07
10.800	0.10	0.35	0.54	0.00	0.10	40	30.08
10.850	0.10	0.35	0.55	0.00	0.10	40	30.09
10.900	0.11	0.35	0.56	0.00	0.10	41	30.09
10.950	0.11	0.36	0.57	0.00	0.11	42	30.10
11.000	0.11	0.36	0.58	0.00	0.11	42	30.10
11.050	0.12	0.36	0.59	0.00	0.12	43	30.11
11.100	0.13	0.36	0.60	0.00	0.12	43	30.11
11.150	0.13	0.36	0.62	0.00	0.13	44	30.12
11.200	0.15	0.36	0.64	0.00	0.14	44	30.12
11.250	0.16	0.36	0.66	0.00	0.15	45	30.13
11.300	0.17	0.36	0.69	0.00	0.16	46	30.14
11.350	0.18	0.36	0.71	0.00	0.17	47	30.15
11.400	0.19	0.36	0.73	0.00	0.18	48	30.15
11.450	0.20	0.37	0.76	0.00	0.20	49	30.16
11.500	0.22	0.37	0.79	0.00	0.21	50	30.17
11.550	0.25	0.37	0.83	0.00	0.23	52	30.19
11.600	0.30	0.37	0.92	0.00	0.27	56	30.22
11.650	0.37	0.38	1.05	0.00	0.34	61	30.26
11.700	0.48	0.39	1.24	0.00	0.42	70	30.32
11.750	0.59	0.40	1.46	0.00	0.53	80	30.40

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.800	0.72	0.41	1.70	0.00	0.64	92	30.48
11.850	0.84	0.42	1.96	0.00	0.77	106	30.56
11.900	0.99	0.47	2.25	0.00	0.89	122	30.65
11.950	1.34	0.53	2.80	0.00	1.13	150	30.80
12.000	1.95	0.00	3.82	0.00	1.91	157	30.84
12.050	2.28	0.00	4.23	0.00	2.12	159	30.85
12.100	2.46	0.00	4.74	0.00	2.37	161	30.86
12.150	2.27	0.00	4.72	0.00	2.36	161	30.86
12.200	1.72	0.00	3.98	0.00	1.99	158	30.84
12.250	1.42	0.26	3.14	0.00	1.44	153	30.82
12.300	1.22	0.45	2.91	0.00	1.23	151	30.81
12.350	1.09	0.57	2.76	0.00	1.09	150	30.80
12.400	0.93	0.56	2.58	0.00	1.01	141	30.76
12.450	0.80	0.48	2.29	0.00	0.90	124	30.67
12.500	0.65	0.42	1.93	0.00	0.75	104	30.55
12.550	0.54	0.41	1.61	0.00	0.60	88	30.45
12.600	0.45	0.40	1.40	0.00	0.50	77	30.38
12.650	0.40	0.39	1.24	0.00	0.43	70	30.32
12.700	0.37	0.39	1.16	0.00	0.39	66	30.30
12.750	0.36	0.38	1.12	0.00	0.37	64	30.28
12.800	0.34	0.38	1.08	0.00	0.35	63	30.27
12.850	0.33	0.38	1.05	0.00	0.33	61	30.26
12.900	0.31	0.38	1.02	0.00	0.32	60	30.25
12.950	0.30	0.38	0.98	0.00	0.30	58	30.24
13.000	0.28	0.38	0.95	0.00	0.29	57	30.23
13.050	0.27	0.37	0.92	0.00	0.27	56	30.22
13.100	0.26	0.37	0.90	0.00	0.26	55	30.21
13.150	0.25	0.37	0.88	0.00	0.25	54	30.20
13.200	0.25	0.37	0.87	0.00	0.25	53	30.20
13.250	0.24	0.37	0.86	0.00	0.24	53	30.20
13.300	0.24	0.37	0.85	0.00	0.24	53	30.19
13.350	0.23	0.37	0.84	0.00	0.24	52	30.19
13.400	0.23	0.37	0.83	0.00	0.23	52	30.19
13.450	0.23	0.37	0.82	0.00	0.23	52	30.19
13.500	0.22	0.37	0.82	0.00	0.22	51	30.18
13.550	0.22	0.37	0.81	0.00	0.22	51	30.18
13.600	0.21	0.37	0.80	0.00	0.22	51	30.18
13.650	0.21	0.37	0.79	0.00	0.21	50	30.17
13.700	0.21	0.37	0.78	0.00	0.21	50	30.17
13.750	0.20	0.37	0.77	0.00	0.20	50	30.17
13.800	0.20	0.37	0.77	0.00	0.20	49	30.17
13.850	0.19	0.37	0.76	0.00	0.20	49	30.16

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.900	0.19	0.37	0.75	0.00	0.19	49	30.16
13.950	0.19	0.37	0.74	0.00	0.19	48	30.16
14.000	0.18	0.36	0.73	0.00	0.18	48	30.15
14.050	0.18	0.36	0.72	0.00	0.18	48	30.15
14.100	0.17	0.36	0.72	0.00	0.18	47	30.15
14.150	0.17	0.36	0.71	0.00	0.17	47	30.15
14.200	0.17	0.36	0.71	0.00	0.17	47	30.15
14.250	0.17	0.36	0.70	0.00	0.17	47	30.14
14.300	0.17	0.36	0.70	0.00	0.17	47	30.14
14.350	0.16	0.36	0.69	0.00	0.17	46	30.14
14.400	0.16	0.36	0.69	0.00	0.16	46	30.14
14.450	0.16	0.36	0.69	0.00	0.16	46	30.14
14.500	0.16	0.36	0.68	0.00	0.16	46	30.14
14.550	0.16	0.36	0.68	0.00	0.16	46	30.14
14.600	0.15	0.36	0.67	0.00	0.16	46	30.13
14.650	0.15	0.36	0.67	0.00	0.15	46	30.13
14.700	0.15	0.36	0.67	0.00	0.15	45	30.13
14.750	0.15	0.36	0.66	0.00	0.15	45	30.13
14.800	0.15	0.36	0.66	0.00	0.15	45	30.13
14.850	0.15	0.36	0.65	0.00	0.15	45	30.13
14.900	0.14	0.36	0.65	0.00	0.14	45	30.13
14.950	0.14	0.36	0.64	0.00	0.14	45	30.13
15.000	0.14	0.36	0.64	0.00	0.14	44	30.12
15.050	0.14	0.36	0.64	0.00	0.14	44	30.12
15.100	0.13	0.36	0.63	0.00	0.14	44	30.12
15.150	0.13	0.36	0.63	0.00	0.13	44	30.12
15.200	0.13	0.36	0.62	0.00	0.13	44	30.12
15.250	0.13	0.36	0.62	0.00	0.13	44	30.12
15.300	0.13	0.36	0.62	0.00	0.13	43	30.12
15.350	0.13	0.36	0.61	0.00	0.13	43	30.11
15.400	0.12	0.36	0.61	0.00	0.12	43	30.11
15.450	0.12	0.36	0.60	0.00	0.12	43	30.11
15.500	0.12	0.36	0.60	0.00	0.12	43	30.11
15.550	0.12	0.36	0.59	0.00	0.12	43	30.11
15.600	0.11	0.36	0.59	0.00	0.12	42	30.11
15.650	0.11	0.36	0.59	0.00	0.11	42	30.11
15.700	0.11	0.36	0.58	0.00	0.11	42	30.10
15.750	0.11	0.36	0.58	0.00	0.11	42	30.10
15.800	0.11	0.36	0.57	0.00	0.11	42	30.10
15.850	0.10	0.36	0.57	0.00	0.11	42	30.10
15.900	0.10	0.36	0.56	0.00	0.10	41	30.10
15.950	0.10	0.35	0.56	0.00	0.10	41	30.09

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.000	0.10	0.35	0.55	0.00	0.10	41	30.09
16.050	0.10	0.35	0.55	0.00	0.10	40	30.09
16.100	0.10	0.35	0.54	0.00	0.10	40	30.08
16.150	0.09	0.35	0.54	0.00	0.10	40	30.08
16.200	0.09	0.35	0.53	0.00	0.09	39	30.08
16.250	0.09	0.34	0.53	0.00	0.09	39	30.08
16.300	0.09	0.34	0.53	0.00	0.09	39	30.07
16.350	0.09	0.34	0.52	0.00	0.09	39	30.07
16.400	0.09	0.34	0.52	0.00	0.09	39	30.07
16.450	0.09	0.34	0.52	0.00	0.09	38	30.07
16.500	0.09	0.34	0.52	0.00	0.09	38	30.07
16.550	0.09	0.34	0.51	0.00	0.09	38	30.07
16.600	0.09	0.34	0.51	0.00	0.09	38	30.07
16.650	0.08	0.34	0.51	0.00	0.09	38	30.06
16.700	0.08	0.34	0.51	0.00	0.08	38	30.06
16.750	0.08	0.34	0.50	0.00	0.08	37	30.06
16.800	0.08	0.33	0.50	0.00	0.08	37	30.06
16.850	0.08	0.33	0.50	0.00	0.08	37	30.06
16.900	0.08	0.33	0.50	0.00	0.08	37	30.06
16.950	0.08	0.33	0.49	0.00	0.08	37	30.05
17.000	0.08	0.33	0.49	0.00	0.08	36	30.05
17.050	0.08	0.33	0.49	0.00	0.08	36	30.05
17.100	0.08	0.33	0.48	0.00	0.08	36	30.05
17.150	0.08	0.33	0.48	0.00	0.08	36	30.05
17.200	0.08	0.33	0.48	0.00	0.08	36	30.05
17.250	0.07	0.33	0.48	0.00	0.08	36	30.04
17.300	0.07	0.33	0.47	0.00	0.07	35	30.04
17.350	0.07	0.32	0.47	0.00	0.07	35	30.04
17.400	0.07	0.32	0.47	0.00	0.07	35	30.04
17.450	0.07	0.32	0.47	0.00	0.07	35	30.04
17.500	0.07	0.32	0.46	0.00	0.07	35	30.04
17.550	0.07	0.32	0.46	0.00	0.07	35	30.04
17.600	0.07	0.32	0.46	0.00	0.07	34	30.03
17.650	0.07	0.32	0.45	0.00	0.07	34	30.03
17.700	0.07	0.32	0.45	0.00	0.07	34	30.03
17.750	0.07	0.32	0.45	0.00	0.07	34	30.03
17.800	0.06	0.32	0.45	0.00	0.07	34	30.03
17.850	0.06	0.32	0.44	0.00	0.06	34	30.03
17.900	0.06	0.31	0.44	0.00	0.06	33	30.02
17.950	0.06	0.31	0.44	0.00	0.06	33	30.02
18.000	0.06	0.31	0.44	0.00	0.06	33	30.02
18.050	0.06	0.31	0.43	0.00	0.06	33	30.02

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.100	0.06	0.31	0.43	0.00	0.06	33	30.02
18.150	0.06	0.31	0.43	0.00	0.06	33	30.02
18.200	0.06	0.31	0.43	0.00	0.06	33	30.02
18.250	0.06	0.31	0.43	0.00	0.06	32	30.01
18.300	0.06	0.31	0.43	0.00	0.06	32	30.01
18.350	0.06	0.31	0.42	0.00	0.06	32	30.01
18.400	0.06	0.31	0.42	0.00	0.06	32	30.01
18.450	0.06	0.31	0.42	0.00	0.06	32	30.01
18.500	0.06	0.31	0.42	0.00	0.06	32	30.01
18.550	0.06	0.31	0.42	0.00	0.06	32	30.01
18.600	0.06	0.31	0.42	0.00	0.06	32	30.01
18.650	0.06	0.31	0.42	0.00	0.06	32	30.01
18.700	0.06	0.31	0.42	0.00	0.06	32	30.01
18.750	0.06	0.31	0.42	0.00	0.06	32	30.01
18.800	0.06	0.31	0.42	0.00	0.06	32	30.01
18.850	0.06	0.31	0.42	0.00	0.06	32	30.01
18.900	0.05	0.31	0.42	0.00	0.06	32	30.01
18.950	0.05	0.31	0.42	0.00	0.05	32	30.01
19.000	0.05	0.31	0.41	0.00	0.05	32	30.01
19.050	0.05	0.31	0.41	0.00	0.05	32	30.01
19.100	0.05	0.30	0.41	0.00	0.05	32	30.01
19.150	0.05	0.30	0.41	0.00	0.05	32	30.01
19.200	0.05	0.30	0.41	0.00	0.05	31	30.01
19.250	0.05	0.30	0.41	0.00	0.05	31	30.01
19.300	0.05	0.30	0.41	0.00	0.05	31	30.00
19.350	0.05	0.30	0.41	0.00	0.05	31	30.00
19.400	0.05	0.30	0.41	0.00	0.05	31	30.00
19.450	0.05	0.30	0.41	0.00	0.05	31	30.00
19.500	0.05	0.30	0.41	0.00	0.05	31	30.00
19.550	0.05	0.30	0.41	0.00	0.05	31	30.00
19.600	0.05	0.30	0.40	0.00	0.05	31	30.00
19.650	0.05	0.30	0.40	0.00	0.05	31	30.00
19.700	0.05	0.30	0.40	0.00	0.05	31	30.00
19.750	0.05	0.30	0.40	0.00	0.05	31	30.00
19.800	0.05	0.30	0.40	0.00	0.05	31	30.00
19.850	0.05	0.30	0.40	0.00	0.05	31	30.00
19.900	0.05	0.30	0.40	0.00	0.05	31	30.00
19.950	0.05	0.30	0.40	0.00	0.05	31	30.00
20.000	0.05	0.30	0.40	0.00	0.05	31	30.00
20.050	0.05	0.30	0.40	0.00	0.05	31	30.00
20.100	0.05	0.30	0.40	0.00	0.05	31	30.00
20.150	0.05	0.30	0.40	0.00	0.05	31	30.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
20.200	0.05	0.30	0.40	0.00	0.05	31	30.00
20.250	0.05	0.30	0.39	0.00	0.05	30	30.00
20.300	0.05	0.30	0.39	0.00	0.05	30	30.00
20.350	0.05	0.30	0.39	0.00	0.05	30	30.00
20.400	0.05	0.30	0.39	0.00	0.05	30	29.99
20.450	0.05	0.30	0.39	0.00	0.05	30	29.99
20.500	0.05	0.30	0.39	0.00	0.05	30	29.99
20.550	0.05	0.30	0.39	0.00	0.05	30	29.99
20.600	0.05	0.30	0.39	0.00	0.05	30	29.99
20.650	0.05	0.30	0.39	0.00	0.05	30	29.99
20.700	0.05	0.30	0.39	0.00	0.05	30	29.99
20.750	0.05	0.30	0.39	0.00	0.05	30	29.99
20.800	0.05	0.30	0.39	0.00	0.05	30	29.99
20.850	0.05	0.30	0.39	0.00	0.05	30	29.99
20.900	0.05	0.30	0.39	0.00	0.05	30	29.99
20.950	0.04	0.30	0.39	0.00	0.05	30	29.99
21.000	0.04	0.30	0.39	0.00	0.04	30	29.99
21.050	0.04	0.30	0.39	0.00	0.04	30	29.99
21.100	0.04	0.30	0.38	0.00	0.04	30	29.99
21.150	0.04	0.30	0.38	0.00	0.04	30	29.99
21.200	0.04	0.29	0.38	0.00	0.04	30	29.99
21.250	0.04	0.29	0.38	0.00	0.04	30	29.99
21.300	0.04	0.29	0.38	0.00	0.04	30	29.99
21.350	0.04	0.29	0.38	0.00	0.04	30	29.99
21.400	0.04	0.29	0.38	0.00	0.04	30	29.99
21.450	0.04	0.29	0.38	0.00	0.04	30	29.99
21.500	0.04	0.29	0.38	0.00	0.04	30	29.99
21.550	0.04	0.29	0.38	0.00	0.04	30	29.99
21.600	0.04	0.29	0.38	0.00	0.04	29	29.99
21.650	0.04	0.29	0.38	0.00	0.04	29	29.99
21.700	0.04	0.29	0.38	0.00	0.04	29	29.99
21.750	0.04	0.29	0.38	0.00	0.04	29	29.98
21.800	0.04	0.29	0.38	0.00	0.04	29	29.98
21.850	0.04	0.29	0.38	0.00	0.04	29	29.98
21.900	0.04	0.29	0.37	0.00	0.04	29	29.98
21.950	0.04	0.29	0.37	0.00	0.04	29	29.98
22.000	0.04	0.29	0.37	0.00	0.04	29	29.98
22.050	0.04	0.29	0.37	0.00	0.04	29	29.98
22.100	0.04	0.29	0.37	0.00	0.04	29	29.98
22.150	0.04	0.29	0.37	0.00	0.04	29	29.98
22.200	0.04	0.29	0.37	0.00	0.04	29	29.98
22.250	0.04	0.29	0.37	0.00	0.04	29	29.98

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
22.300	0.04	0.29	0.37	0.00	0.04	29	29.98
22.350	0.04	0.29	0.37	0.00	0.04	29	29.98
22.400	0.04	0.29	0.37	0.00	0.04	29	29.98
22.450	0.04	0.29	0.37	0.00	0.04	29	29.98
22.500	0.04	0.29	0.37	0.00	0.04	29	29.98
22.550	0.04	0.29	0.37	0.00	0.04	29	29.98
22.600	0.04	0.29	0.37	0.00	0.04	29	29.98
22.650	0.04	0.29	0.37	0.00	0.04	29	29.98
22.700	0.04	0.29	0.36	0.00	0.04	29	29.98
22.750	0.04	0.29	0.36	0.00	0.04	29	29.98
22.800	0.04	0.29	0.36	0.00	0.04	29	29.98
22.850	0.04	0.29	0.36	0.00	0.04	29	29.98
22.900	0.04	0.29	0.36	0.00	0.04	29	29.98
22.950	0.04	0.29	0.36	0.00	0.04	29	29.98
23.000	0.04	0.29	0.36	0.00	0.04	28	29.98
23.050	0.04	0.29	0.36	0.00	0.04	28	29.98
23.100	0.04	0.29	0.36	0.00	0.04	28	29.97
23.150	0.04	0.29	0.36	0.00	0.04	28	29.97
23.200	0.04	0.29	0.36	0.00	0.04	28	29.97
23.250	0.04	0.29	0.36	0.00	0.04	28	29.97
23.300	0.04	0.29	0.36	0.00	0.04	28	29.97
23.350	0.04	0.29	0.36	0.00	0.04	28	29.97
23.400	0.03	0.29	0.36	0.00	0.04	28	29.97
23.450	0.03	0.29	0.36	0.00	0.03	28	29.97
23.500	0.03	0.29	0.35	0.00	0.03	28	29.97
23.550	0.03	0.29	0.35	0.00	0.03	28	29.97
23.600	0.03	0.28	0.35	0.00	0.03	28	29.97
23.650	0.03	0.28	0.35	0.00	0.03	28	29.97
23.700	0.03	0.28	0.35	0.00	0.03	28	29.97
23.750	0.03	0.28	0.35	0.00	0.03	28	29.97
23.800	0.03	0.28	0.35	0.00	0.03	28	29.97
23.850	0.03	0.28	0.35	0.00	0.03	28	29.97
23.900	0.03	0.28	0.35	0.00	0.03	28	29.97
23.950	0.03	0.28	0.35	0.00	0.03	28	29.97
24.000	0.03	0.28	0.35	0.00	0.03	28	29.97
24.050	0.02	0.28	0.34	0.00	0.03	27	29.96
24.100	0.01	0.27	0.31	0.00	0.02	26	29.95
24.150	0.00	0.26	0.28	0.00	0.01	24	29.93
24.200	0.00	0.26	0.27	0.00	0.01	23	29.92
24.250	0.00	0.25	0.26	0.00	0.00	23	29.91
24.300	0.00	0.25	0.25	0.00	0.00	23	29.91
24.350	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
24.400	0.00	0.25	0.25	0.00	0.00	23	29.91
24.450	0.00	0.25	0.25	0.00	0.00	23	29.91
24.500	0.00	0.25	0.25	0.00	0.00	23	29.91
24.550	0.00	0.25	0.25	0.00	0.00	23	29.91
24.600	0.00	0.25	0.25	0.00	0.00	23	29.91
24.650	0.00	0.25	0.25	0.00	0.00	23	29.91
24.700	0.00	0.25	0.25	0.00	0.00	23	29.91
24.750	0.00	0.25	0.25	0.00	0.00	23	29.91
24.800	0.00	0.25	0.25	0.00	0.00	23	29.91
24.850	0.00	0.25	0.25	0.00	0.00	23	29.91
24.900	0.00	0.25	0.25	0.00	0.00	23	29.91
24.950	0.00	0.25	0.25	0.00	0.00	23	29.91
25.000	0.00	0.25	0.25	0.00	0.00	23	29.91
25.050	0.00	0.25	0.25	0.00	0.00	23	29.91
25.100	0.00	0.25	0.25	0.00	0.00	23	29.91
25.150	0.00	0.25	0.25	0.00	0.00	23	29.91
25.200	0.00	0.25	0.25	0.00	0.00	23	29.91
25.250	0.00	0.25	0.25	0.00	0.00	23	29.91
25.300	0.00	0.25	0.25	0.00	0.00	23	29.91
25.350	0.00	0.25	0.25	0.00	0.00	23	29.91
25.400	0.00	0.25	0.25	0.00	0.00	23	29.91
25.450	0.00	0.25	0.25	0.00	0.00	23	29.91
25.500	0.00	0.25	0.25	0.00	0.00	23	29.91
25.550	0.00	0.25	0.25	0.00	0.00	23	29.91
25.600	0.00	0.25	0.25	0.00	0.00	23	29.91
25.650	0.00	0.25	0.25	0.00	0.00	23	29.91
25.700	0.00	0.25	0.25	0.00	0.00	23	29.91
25.750	0.00	0.25	0.25	0.00	0.00	23	29.91
25.800	0.00	0.25	0.25	0.00	0.00	23	29.91
25.850	0.00	0.25	0.25	0.00	0.00	23	29.91
25.900	0.00	0.25	0.25	0.00	0.00	23	29.91
25.950	0.00	0.25	0.25	0.00	0.00	23	29.91
26.000	0.00	0.25	0.25	0.00	0.00	23	29.91
26.050	0.00	0.25	0.25	0.00	0.00	23	29.91
26.100	0.00	0.25	0.25	0.00	0.00	23	29.91
26.150	0.00	0.25	0.25	0.00	0.00	23	29.91
26.200	0.00	0.25	0.25	0.00	0.00	23	29.91
26.250	0.00	0.25	0.25	0.00	0.00	23	29.91
26.300	0.00	0.25	0.25	0.00	0.00	23	29.91
26.350	0.00	0.25	0.25	0.00	0.00	23	29.91
26.400	0.00	0.25	0.25	0.00	0.00	23	29.91
26.450	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
26.500	0.00	0.25	0.25	0.00	0.00	23	29.91
26.550	0.00	0.25	0.25	0.00	0.00	23	29.91
26.600	0.00	0.25	0.25	0.00	0.00	23	29.91
26.650	0.00	0.25	0.25	0.00	0.00	23	29.91
26.700	0.00	0.25	0.25	0.00	0.00	23	29.91
26.750	0.00	0.25	0.25	0.00	0.00	23	29.91
26.800	0.00	0.25	0.25	0.00	0.00	23	29.91
26.850	0.00	0.25	0.25	0.00	0.00	23	29.91
26.900	0.00	0.25	0.25	0.00	0.00	23	29.91
26.950	0.00	0.25	0.25	0.00	0.00	23	29.91
27.000	0.00	0.25	0.25	0.00	0.00	23	29.91
27.050	0.00	0.25	0.25	0.00	0.00	23	29.91
27.100	0.00	0.25	0.25	0.00	0.00	23	29.91
27.150	0.00	0.25	0.25	0.00	0.00	23	29.91
27.200	0.00	0.25	0.25	0.00	0.00	23	29.91
27.250	0.00	0.25	0.25	0.00	0.00	23	29.91
27.300	0.00	0.25	0.25	0.00	0.00	23	29.91
27.350	0.00	0.25	0.25	0.00	0.00	23	29.91
27.400	0.00	0.25	0.25	0.00	0.00	23	29.91
27.450	0.00	0.25	0.25	0.00	0.00	23	29.91
27.500	0.00	0.25	0.25	0.00	0.00	23	29.91
27.550	0.00	0.25	0.25	0.00	0.00	23	29.91
27.600	0.00	0.25	0.25	0.00	0.00	23	29.91
27.650	0.00	0.25	0.25	0.00	0.00	23	29.91
27.700	0.00	0.25	0.25	0.00	0.00	23	29.91
27.750	0.00	0.25	0.25	0.00	0.00	23	29.91
27.800	0.00	0.25	0.25	0.00	0.00	23	29.91
27.850	0.00	0.25	0.25	0.00	0.00	23	29.91
27.900	0.00	0.25	0.25	0.00	0.00	23	29.91
27.950	0.00	0.25	0.25	0.00	0.00	23	29.91
28.000	0.00	0.25	0.25	0.00	0.00	23	29.91
28.050	0.00	0.25	0.25	0.00	0.00	23	29.91
28.100	0.00	0.25	0.25	0.00	0.00	23	29.91
28.150	0.00	0.25	0.25	0.00	0.00	23	29.91
28.200	0.00	0.25	0.25	0.00	0.00	23	29.91
28.250	0.00	0.25	0.25	0.00	0.00	23	29.91
28.300	0.00	0.25	0.25	0.00	0.00	23	29.91
28.350	0.00	0.25	0.25	0.00	0.00	23	29.91
28.400	0.00	0.25	0.25	0.00	0.00	23	29.91
28.450	0.00	0.25	0.25	0.00	0.00	23	29.91
28.500	0.00	0.25	0.25	0.00	0.00	23	29.91
28.550	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
28.600	0.00	0.25	0.25	0.00	0.00	23	29.91
28.650	0.00	0.25	0.25	0.00	0.00	23	29.91
28.700	0.00	0.25	0.25	0.00	0.00	23	29.91
28.750	0.00	0.25	0.25	0.00	0.00	23	29.91
28.800	0.00	0.25	0.25	0.00	0.00	23	29.91
28.850	0.00	0.25	0.25	0.00	0.00	23	29.91
28.900	0.00	0.25	0.25	0.00	0.00	23	29.91
28.950	0.00	0.25	0.25	0.00	0.00	23	29.91
29.000	0.00	0.25	0.25	0.00	0.00	23	29.91
29.050	0.00	0.25	0.25	0.00	0.00	23	29.91
29.100	0.00	0.25	0.25	0.00	0.00	23	29.91
29.150	0.00	0.25	0.25	0.00	0.00	23	29.91
29.200	0.00	0.25	0.25	0.00	0.00	23	29.91
29.250	0.00	0.25	0.25	0.00	0.00	23	29.91
29.300	0.00	0.25	0.25	0.00	0.00	23	29.91
29.350	0.00	0.25	0.25	0.00	0.00	23	29.91
29.400	0.00	0.25	0.25	0.00	0.00	23	29.91
29.450	0.00	0.25	0.25	0.00	0.00	23	29.91
29.500	0.00	0.25	0.25	0.00	0.00	23	29.91
29.550	0.00	0.25	0.25	0.00	0.00	23	29.91
29.600	0.00	0.25	0.25	0.00	0.00	23	29.91
29.650	0.00	0.25	0.25	0.00	0.00	23	29.91
29.700	0.00	0.25	0.25	0.00	0.00	23	29.91
29.750	0.00	0.25	0.25	0.00	0.00	23	29.91
29.800	0.00	0.25	0.25	0.00	0.00	23	29.91
29.850	0.00	0.25	0.25	0.00	0.00	23	29.91
29.900	0.00	0.25	0.25	0.00	0.00	23	29.91
29.950	0.00	0.25	0.25	0.00	0.00	23	29.91
30.000	0.00	0.25	0.25	0.00	0.00	23	29.91
30.050	0.00	0.25	0.25	0.00	0.00	23	29.91
30.100	0.00	0.25	0.25	0.00	0.00	23	29.91
30.150	0.00	0.25	0.25	0.00	0.00	23	29.91
30.200	0.00	0.25	0.25	0.00	0.00	23	29.91
30.250	0.00	0.25	0.25	0.00	0.00	23	29.91
30.300	0.00	0.25	0.25	0.00	0.00	23	29.91
30.350	0.00	0.25	0.25	0.00	0.00	23	29.91
30.400	0.00	0.25	0.25	0.00	0.00	23	29.91
30.450	0.00	0.25	0.25	0.00	0.00	23	29.91
30.500	0.00	0.25	0.25	0.00	0.00	23	29.91
30.550	0.00	0.25	0.25	0.00	0.00	23	29.91
30.600	0.00	0.25	0.25	0.00	0.00	23	29.91
30.650	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
30.700	0.00	0.25	0.25	0.00	0.00	23	29.91
30.750	0.00	0.25	0.25	0.00	0.00	23	29.91
30.800	0.00	0.25	0.25	0.00	0.00	23	29.91
30.850	0.00	0.25	0.25	0.00	0.00	23	29.91
30.900	0.00	0.25	0.25	0.00	0.00	23	29.91
30.950	0.00	0.25	0.25	0.00	0.00	23	29.91
31.000	0.00	0.25	0.25	0.00	0.00	23	29.91
31.050	0.00	0.25	0.25	0.00	0.00	23	29.91
31.100	0.00	0.25	0.25	0.00	0.00	23	29.91
31.150	0.00	0.25	0.25	0.00	0.00	23	29.91
31.200	0.00	0.25	0.25	0.00	0.00	23	29.91
31.250	0.00	0.25	0.25	0.00	0.00	23	29.91
31.300	0.00	0.25	0.25	0.00	0.00	23	29.91
31.350	0.00	0.25	0.25	0.00	0.00	23	29.91
31.400	0.00	0.25	0.25	0.00	0.00	23	29.91
31.450	0.00	0.25	0.25	0.00	0.00	23	29.91
31.500	0.00	0.25	0.25	0.00	0.00	23	29.91
31.550	0.00	0.25	0.25	0.00	0.00	23	29.91
31.600	0.00	0.25	0.25	0.00	0.00	23	29.91
31.650	0.00	0.25	0.25	0.00	0.00	23	29.91
31.700	0.00	0.25	0.25	0.00	0.00	23	29.91
31.750	0.00	0.25	0.25	0.00	0.00	23	29.91
31.800	0.00	0.25	0.25	0.00	0.00	23	29.91
31.850	0.00	0.25	0.25	0.00	0.00	23	29.91
31.900	0.00	0.25	0.25	0.00	0.00	23	29.91
31.950	0.00	0.25	0.25	0.00	0.00	23	29.91
32.000	0.00	0.25	0.25	0.00	0.00	23	29.91
32.050	0.00	0.25	0.25	0.00	0.00	23	29.91
32.100	0.00	0.25	0.25	0.00	0.00	23	29.91
32.150	0.00	0.25	0.25	0.00	0.00	23	29.91
32.200	0.00	0.25	0.25	0.00	0.00	23	29.91
32.250	0.00	0.25	0.25	0.00	0.00	23	29.91
32.300	0.00	0.25	0.25	0.00	0.00	23	29.91
32.350	0.00	0.25	0.25	0.00	0.00	23	29.91
32.400	0.00	0.25	0.25	0.00	0.00	23	29.91
32.450	0.00	0.25	0.25	0.00	0.00	23	29.91
32.500	0.00	0.25	0.25	0.00	0.00	23	29.91
32.550	0.00	0.25	0.25	0.00	0.00	23	29.91
32.600	0.00	0.25	0.25	0.00	0.00	23	29.91
32.650	0.00	0.25	0.25	0.00	0.00	23	29.91
32.700	0.00	0.25	0.25	0.00	0.00	23	29.91
32.750	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.800	0.00	0.25	0.25	0.00	0.00	23	29.91
32.850	0.00	0.25	0.25	0.00	0.00	23	29.91
32.900	0.00	0.25	0.25	0.00	0.00	23	29.91
32.950	0.00	0.25	0.25	0.00	0.00	23	29.91
33.000	0.00	0.25	0.25	0.00	0.00	23	29.91
33.050	0.00	0.25	0.25	0.00	0.00	23	29.91
33.100	0.00	0.25	0.25	0.00	0.00	23	29.91
33.150	0.00	0.25	0.25	0.00	0.00	23	29.91
33.200	0.00	0.25	0.25	0.00	0.00	23	29.91
33.250	0.00	0.25	0.25	0.00	0.00	23	29.91
33.300	0.00	0.25	0.25	0.00	0.00	23	29.91
33.350	0.00	0.25	0.25	0.00	0.00	23	29.91
33.400	0.00	0.25	0.25	0.00	0.00	23	29.91
33.450	0.00	0.25	0.25	0.00	0.00	23	29.91
33.500	0.00	0.25	0.25	0.00	0.00	23	29.91
33.550	0.00	0.25	0.25	0.00	0.00	23	29.91
33.600	0.00	0.25	0.25	0.00	0.00	23	29.91
33.650	0.00	0.25	0.25	0.00	0.00	23	29.91
33.700	0.00	0.25	0.25	0.00	0.00	23	29.91
33.750	0.00	0.25	0.25	0.00	0.00	23	29.91
33.800	0.00	0.25	0.25	0.00	0.00	23	29.91
33.850	0.00	0.25	0.25	0.00	0.00	23	29.91
33.900	0.00	0.25	0.25	0.00	0.00	23	29.91
33.950	0.00	0.25	0.25	0.00	0.00	23	29.91
34.000	0.00	0.25	0.25	0.00	0.00	23	29.91
34.050	0.00	0.25	0.25	0.00	0.00	23	29.91
34.100	0.00	0.25	0.25	0.00	0.00	23	29.91
34.150	0.00	0.25	0.25	0.00	0.00	23	29.91
34.200	0.00	0.25	0.25	0.00	0.00	23	29.91
34.250	0.00	0.25	0.25	0.00	0.00	23	29.91
34.300	0.00	0.25	0.25	0.00	0.00	23	29.91
34.350	0.00	0.25	0.25	0.00	0.00	23	29.91
34.400	0.00	0.25	0.25	0.00	0.00	23	29.91
34.450	0.00	0.25	0.25	0.00	0.00	23	29.91
34.500	0.00	0.25	0.25	0.00	0.00	23	29.91
34.550	0.00	0.25	0.25	0.00	0.00	23	29.91
34.600	0.00	0.25	0.25	0.00	0.00	23	29.91
34.650	0.00	0.25	0.25	0.00	0.00	23	29.91
34.700	0.00	0.25	0.25	0.00	0.00	23	29.91
34.750	0.00	0.25	0.25	0.00	0.00	23	29.91
34.800	0.00	0.25	0.25	0.00	0.00	23	29.91
34.850	0.00	0.25	0.25	0.00	0.00	23	29.91

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: EX. RG (OUT) Storm Event: 10 years
Scenario: Pre-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.900	0.00	0.25	0.25	0.00	0.00	23	29.91
34.950	0.00	0.25	0.25	0.00	0.00	23	29.91
35.000	0.00	0.25	0.25	0.00	0.00	23	29.91
35.050	0.00	0.25	0.25	0.00	0.00	23	29.91
35.100	0.00	0.25	0.25	0.00	0.00	23	29.91
35.150	0.00	0.25	0.25	0.00	0.00	23	29.91
35.200	0.00	0.25	0.25	0.00	0.00	23	29.91
35.250	0.00	0.25	0.25	0.00	0.00	23	29.91
35.300	0.00	0.25	0.25	0.00	0.00	23	29.91
35.350	0.00	0.25	0.25	0.00	0.00	23	29.91
35.400	0.00	0.25	0.25	0.00	0.00	23	29.91
35.450	0.00	0.25	0.25	0.00	0.00	23	29.91
35.500	0.00	0.25	0.25	0.00	0.00	23	29.91
35.550	0.00	0.25	0.25	0.00	0.00	23	29.91
35.600	0.00	0.25	0.25	0.00	0.00	23	29.91
35.650	0.00	0.25	0.25	0.00	0.00	23	29.91
35.700	0.00	0.25	0.25	0.00	0.00	23	29.91
35.750	0.00	0.25	0.25	0.00	0.00	23	29.91
35.800	0.00	0.25	0.25	0.00	0.00	23	29.91
35.850	0.00	0.25	0.25	0.00	0.00	23	29.91
35.900	0.00	0.25	0.25	0.00	0.00	23	29.91
35.950	0.00	0.25	0.25	0.00	0.00	23	29.91
36.000	0.00	0.25	0.25	0.00	0.00	23	29.91

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	29.10
0.050	0.00	0.00	0.00	0.00	0.00	0	29.10
0.100	0.00	0.00	0.00	0.00	0.00	0	29.10
0.150	0.00	0.00	0.00	0.00	0.00	0	29.10
0.200	0.00	0.00	0.00	0.00	0.00	0	29.10
0.250	0.00	0.00	0.00	0.00	0.00	0	29.10
0.300	0.00	0.00	0.00	0.00	0.00	0	29.10
0.350	0.00	0.00	0.00	0.00	0.00	0	29.10
0.400	0.00	0.00	0.00	0.00	0.00	0	29.10
0.450	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.500	0.00	0.00	0.00	0.00	0.00	0	29.10
0.550	0.00	0.00	0.00	0.00	0.00	0	29.10
0.600	0.00	0.00	0.00	0.00	0.00	0	29.10
0.650	0.00	0.00	0.00	0.00	0.00	0	29.10
0.700	0.00	0.00	0.00	0.00	0.00	0	29.10
0.750	0.00	0.00	0.00	0.00	0.00	0	29.10
0.800	0.00	0.00	0.00	0.00	0.00	0	29.10
0.850	0.00	0.00	0.00	0.00	0.00	0	29.10
0.900	0.00	0.00	0.00	0.00	0.00	0	29.10
0.950	0.00	0.00	0.00	0.00	0.00	0	29.10
1.000	0.00	0.00	0.00	0.00	0.00	0	29.10
1.050	0.00	0.00	0.00	0.00	0.00	0	29.10
1.100	0.00	0.00	0.00	0.00	0.00	0	29.10
1.150	0.00	0.00	0.00	0.00	0.00	0	29.10
1.200	0.00	0.00	0.00	0.00	0.00	0	29.10
1.250	0.00	0.00	0.00	0.00	0.00	0	29.10
1.300	0.00	0.00	0.00	0.00	0.00	0	29.10
1.350	0.00	0.00	0.00	0.00	0.00	0	29.10
1.400	0.00	0.00	0.00	0.00	0.00	0	29.10
1.450	0.00	0.00	0.00	0.00	0.00	0	29.10
1.500	0.00	0.00	0.00	0.00	0.00	0	29.10
1.550	0.00	0.00	0.00	0.00	0.00	0	29.10
1.600	0.00	0.00	0.00	0.00	0.00	0	29.10
1.650	0.00	0.00	0.00	0.00	0.00	0	29.10
1.700	0.00	0.00	0.00	0.00	0.00	0	29.10
1.750	0.00	0.00	0.00	0.00	0.00	0	29.10
1.800	0.00	0.00	0.00	0.00	0.00	0	29.10
1.850	0.00	0.00	0.00	0.00	0.00	0	29.10
1.900	0.00	0.00	0.00	0.00	0.00	0	29.10
1.950	0.00	0.00	0.00	0.00	0.00	0	29.10
2.000	0.00	0.00	0.00	0.00	0.00	0	29.10
2.050	0.00	0.00	0.00	0.00	0.00	0	29.10
2.100	0.00	0.00	0.00	0.00	0.00	0	29.10
2.150	0.00	0.00	0.00	0.00	0.00	0	29.10
2.200	0.00	0.00	0.00	0.00	0.00	0	29.10
2.250	0.00	0.00	0.00	0.00	0.00	0	29.10
2.300	0.00	0.00	0.00	0.00	0.00	0	29.10
2.350	0.00	0.00	0.00	0.00	0.00	0	29.10
2.400	0.00	0.00	0.00	0.00	0.00	0	29.10
2.450	0.00	0.00	0.00	0.00	0.00	0	29.10
2.500	0.00	0.00	0.00	0.00	0.00	0	29.10
2.550	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.600	0.00	0.00	0.00	0.00	0.00	0	29.10
2.650	0.00	0.00	0.00	0.00	0.00	0	29.10
2.700	0.00	0.00	0.00	0.00	0.00	0	29.10
2.750	0.00	0.00	0.00	0.00	0.00	0	29.10
2.800	0.00	0.00	0.00	0.00	0.00	0	29.10
2.850	0.00	0.00	0.00	0.00	0.00	0	29.10
2.900	0.00	0.00	0.00	0.00	0.00	0	29.10
2.950	0.00	0.00	0.00	0.00	0.00	0	29.10
3.000	0.00	0.00	0.00	0.00	0.00	0	29.10
3.050	0.00	0.00	0.00	0.00	0.00	0	29.10
3.100	0.00	0.00	0.00	0.00	0.00	0	29.10
3.150	0.00	0.00	0.00	0.00	0.00	0	29.10
3.200	0.00	0.00	0.00	0.00	0.00	0	29.10
3.250	0.00	0.00	0.00	0.00	0.00	0	29.10
3.300	0.00	0.00	0.00	0.00	0.00	0	29.10
3.350	0.00	0.00	0.00	0.00	0.00	0	29.10
3.400	0.00	0.00	0.00	0.00	0.00	0	29.10
3.450	0.00	0.00	0.00	0.00	0.00	0	29.10
3.500	0.00	0.00	0.00	0.00	0.00	0	29.10
3.550	0.00	0.00	0.00	0.00	0.00	0	29.10
3.600	0.00	0.00	0.00	0.00	0.00	0	29.10
3.650	0.00	0.00	0.00	0.00	0.00	0	29.10
3.700	0.00	0.00	0.00	0.00	0.00	0	29.10
3.750	0.00	0.00	0.00	0.00	0.00	0	29.10
3.800	0.00	0.00	0.00	0.00	0.00	0	29.10
3.850	0.00	0.00	0.00	0.00	0.00	0	29.10
3.900	0.00	0.00	0.00	0.00	0.00	0	29.10
3.950	0.00	0.00	0.00	0.00	0.00	0	29.10
4.000	0.00	0.00	0.00	0.00	0.00	0	29.10
4.050	0.00	0.00	0.00	0.00	0.00	0	29.10
4.100	0.00	0.00	0.00	0.00	0.00	0	29.10
4.150	0.00	0.00	0.00	0.00	0.00	0	29.10
4.200	0.00	0.00	0.00	0.00	0.00	0	29.10
4.250	0.00	0.00	0.00	0.00	0.00	0	29.10
4.300	0.00	0.00	0.00	0.00	0.00	0	29.10
4.350	0.00	0.00	0.00	0.00	0.00	0	29.10
4.400	0.00	0.00	0.00	0.00	0.00	0	29.10
4.450	0.00	0.00	0.00	0.00	0.00	0	29.10
4.500	0.00	0.00	0.00	0.00	0.00	0	29.10
4.550	0.00	0.00	0.00	0.00	0.00	0	29.10
4.600	0.00	0.00	0.00	0.00	0.00	0	29.10
4.650	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.700	0.00	0.00	0.00	0.00	0.00	0	29.10
4.750	0.00	0.00	0.00	0.00	0.00	0	29.10
4.800	0.00	0.00	0.00	0.00	0.00	0	29.10
4.850	0.00	0.00	0.00	0.00	0.00	0	29.10
4.900	0.00	0.00	0.00	0.00	0.00	0	29.10
4.950	0.00	0.00	0.00	0.00	0.00	0	29.10
5.000	0.00	0.00	0.00	0.00	0.00	0	29.10
5.050	0.00	0.00	0.00	0.00	0.00	0	29.10
5.100	0.00	0.00	0.00	0.00	0.00	0	29.10
5.150	0.00	0.00	0.00	0.00	0.00	0	29.10
5.200	0.00	0.00	0.00	0.00	0.00	0	29.10
5.250	0.00	0.00	0.00	0.00	0.00	0	29.10
5.300	0.00	0.00	0.00	0.00	0.00	0	29.10
5.350	0.00	0.00	0.00	0.00	0.00	0	29.10
5.400	0.00	0.00	0.00	0.00	0.00	0	29.10
5.450	0.00	0.00	0.00	0.00	0.00	0	29.10
5.500	0.00	0.00	0.00	0.00	0.00	0	29.10
5.550	0.00	0.00	0.00	0.00	0.00	0	29.10
5.600	0.00	0.00	0.00	0.00	0.00	0	29.10
5.650	0.00	0.00	0.00	0.00	0.00	0	29.10
5.700	0.00	0.00	0.00	0.00	0.00	0	29.10
5.750	0.00	0.00	0.00	0.00	0.00	0	29.10
5.800	0.00	0.00	0.00	0.00	0.00	0	29.10
5.850	0.00	0.00	0.00	0.00	0.00	0	29.10
5.900	0.00	0.00	0.00	0.00	0.00	0	29.10
5.950	0.00	0.00	0.00	0.00	0.00	0	29.10
6.000	0.00	0.00	0.00	0.00	0.00	0	29.10
6.050	0.00	0.00	0.00	0.00	0.00	0	29.10
6.100	0.00	0.00	0.00	0.00	0.00	0	29.10
6.150	0.00	0.00	0.00	0.00	0.00	0	29.10
6.200	0.00	0.00	0.00	0.00	0.00	0	29.10
6.250	0.00	0.00	0.00	0.00	0.00	0	29.10
6.300	0.00	0.00	0.00	0.00	0.00	0	29.10
6.350	0.00	0.00	0.00	0.00	0.00	0	29.10
6.400	0.00	0.00	0.00	0.00	0.00	0	29.10
6.450	0.00	0.00	0.00	0.00	0.00	0	29.10
6.500	0.00	0.00	0.00	0.00	0.00	0	29.10
6.550	0.00	0.00	0.00	0.00	0.00	0	29.10
6.600	0.00	0.00	0.00	0.00	0.00	0	29.10
6.650	0.00	0.00	0.00	0.00	0.00	0	29.10
6.700	0.00	0.00	0.00	0.00	0.00	0	29.10
6.750	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.800	0.00	0.00	0.00	0.00	0.00	0	29.10
6.850	0.00	0.00	0.00	0.00	0.00	0	29.11
6.900	0.00	0.00	0.00	0.00	0.00	0	29.12
6.950	0.00	0.01	0.01	0.00	0.00	0	29.14
7.000	0.00	0.01	0.01	0.00	0.00	0	29.18
7.050	0.00	0.01	0.01	0.00	0.00	0	29.22
7.100	0.00	0.02	0.02	0.00	0.00	0	29.27
7.150	0.00	0.03	0.03	0.00	0.00	0	29.33
7.200	0.00	0.04	0.04	0.00	0.00	1	29.40
7.250	0.01	0.04	0.04	0.00	0.00	2	29.48
7.300	0.01	0.06	0.06	0.00	0.00	4	29.57
7.350	0.01	0.07	0.07	0.00	0.00	6	29.62
7.400	0.01	0.08	0.08	0.00	0.00	7	29.65
7.450	0.01	0.10	0.10	0.00	0.00	8	29.67
7.500	0.01	0.11	0.11	0.00	0.00	9	29.70
7.550	0.01	0.13	0.13	0.00	0.00	10	29.73
7.600	0.01	0.15	0.15	0.00	0.00	12	29.75
7.650	0.01	0.17	0.17	0.00	0.00	14	29.79
7.700	0.01	0.19	0.19	0.00	0.00	16	29.82
7.750	0.01	0.22	0.22	0.00	0.00	18	29.86
7.800	0.01	0.24	0.24	0.00	0.00	21	29.90
7.850	0.01	0.26	0.27	0.00	0.01	23	29.92
7.900	0.01	0.26	0.28	0.00	0.01	24	29.93
7.950	0.02	0.26	0.29	0.00	0.01	25	29.93
8.000	0.02	0.27	0.30	0.00	0.02	25	29.94
8.050	0.02	0.27	0.30	0.00	0.02	25	29.94
8.100	0.02	0.27	0.30	0.00	0.02	25	29.94
8.150	0.02	0.27	0.31	0.00	0.02	25	29.94
8.200	0.02	0.27	0.31	0.00	0.02	26	29.94
8.250	0.02	0.27	0.31	0.00	0.02	26	29.95
8.300	0.02	0.27	0.32	0.00	0.02	26	29.95
8.350	0.02	0.27	0.32	0.00	0.02	26	29.95
8.400	0.03	0.27	0.32	0.00	0.02	26	29.95
8.450	0.03	0.28	0.33	0.00	0.03	27	29.96
8.500	0.03	0.28	0.33	0.00	0.03	27	29.96
8.550	0.03	0.28	0.34	0.00	0.03	27	29.96
8.600	0.03	0.28	0.34	0.00	0.03	27	29.96
8.650	0.03	0.28	0.35	0.00	0.03	28	29.97
8.700	0.03	0.28	0.35	0.00	0.03	28	29.97
8.750	0.04	0.29	0.35	0.00	0.03	28	29.97
8.800	0.04	0.29	0.36	0.00	0.04	28	29.98
8.850	0.04	0.29	0.36	0.00	0.04	29	29.98

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.900	0.04	0.29	0.37	0.00	0.04	29	29.98
8.950	0.04	0.29	0.38	0.00	0.04	29	29.98
9.000	0.05	0.29	0.38	0.00	0.04	30	29.99
9.050	0.05	0.30	0.39	0.00	0.05	30	29.99
9.100	0.05	0.30	0.39	0.00	0.05	30	29.99
9.150	0.05	0.30	0.40	0.00	0.05	31	30.00
9.200	0.05	0.30	0.40	0.00	0.05	31	30.00
9.250	0.06	0.30	0.41	0.00	0.05	31	30.01
9.300	0.06	0.31	0.42	0.00	0.06	32	30.01
9.350	0.06	0.31	0.42	0.00	0.06	32	30.01
9.400	0.06	0.31	0.43	0.00	0.06	33	30.02
9.450	0.06	0.31	0.44	0.00	0.06	33	30.02
9.500	0.07	0.31	0.44	0.00	0.06	33	30.02
9.550	0.07	0.32	0.45	0.00	0.07	34	30.03
9.600	0.07	0.32	0.46	0.00	0.07	34	30.03
9.650	0.07	0.32	0.46	0.00	0.07	35	30.04
9.700	0.08	0.32	0.47	0.00	0.07	35	30.04
9.750	0.08	0.33	0.48	0.00	0.08	36	30.05
9.800	0.08	0.33	0.49	0.00	0.08	36	30.05
9.850	0.08	0.33	0.49	0.00	0.08	37	30.05
9.900	0.09	0.33	0.50	0.00	0.08	37	30.06
9.950	0.09	0.34	0.51	0.00	0.09	38	30.06
10.000	0.09	0.34	0.52	0.00	0.09	38	30.07
10.050	0.09	0.34	0.52	0.00	0.09	39	30.07
10.100	0.10	0.35	0.53	0.00	0.09	39	30.08
10.150	0.10	0.35	0.54	0.00	0.10	40	30.08
10.200	0.11	0.35	0.56	0.00	0.10	41	30.09
10.250	0.11	0.36	0.57	0.00	0.11	42	30.10
10.300	0.11	0.36	0.58	0.00	0.11	42	30.10
10.350	0.12	0.36	0.59	0.00	0.12	42	30.11
10.400	0.12	0.36	0.60	0.00	0.12	43	30.11
10.450	0.13	0.36	0.61	0.00	0.12	43	30.11
10.500	0.13	0.36	0.62	0.00	0.13	44	30.12
10.550	0.14	0.36	0.63	0.00	0.13	44	30.12
10.600	0.14	0.36	0.64	0.00	0.14	44	30.12
10.650	0.15	0.36	0.65	0.00	0.14	45	30.13
10.700	0.15	0.36	0.66	0.00	0.15	45	30.13
10.750	0.16	0.36	0.67	0.00	0.15	46	30.13
10.800	0.16	0.36	0.68	0.00	0.16	46	30.14
10.850	0.17	0.36	0.69	0.00	0.16	46	30.14
10.900	0.17	0.36	0.70	0.00	0.17	47	30.14
10.950	0.18	0.36	0.71	0.00	0.18	47	30.15

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.000	0.18	0.36	0.73	0.00	0.18	48	30.15
11.050	0.19	0.37	0.74	0.00	0.19	48	30.16
11.100	0.20	0.37	0.76	0.00	0.20	49	30.16
11.150	0.21	0.37	0.78	0.00	0.21	50	30.17
11.200	0.23	0.37	0.81	0.00	0.22	51	30.18
11.250	0.24	0.37	0.84	0.00	0.24	52	30.19
11.300	0.26	0.37	0.88	0.00	0.25	54	30.20
11.350	0.28	0.37	0.91	0.00	0.27	55	30.21
11.400	0.30	0.37	0.95	0.00	0.29	57	30.23
11.450	0.31	0.38	0.98	0.00	0.30	58	30.24
11.500	0.33	0.38	1.02	0.00	0.32	60	30.25
11.550	0.38	0.38	1.09	0.00	0.35	63	30.27
11.600	0.46	0.39	1.22	0.00	0.42	69	30.32
11.650	0.56	0.40	1.41	0.00	0.51	78	30.38
11.700	0.72	0.41	1.68	0.00	0.64	91	30.47
11.750	0.87	0.42	2.00	0.00	0.79	109	30.58
11.800	1.06	0.50	2.35	0.00	0.93	128	30.69
11.850	1.23	0.55	2.78	0.00	1.12	150	30.80
11.900	1.44	0.20	3.21	0.00	1.50	153	30.82
11.950	1.92	0.00	3.56	0.00	1.78	156	30.83
12.000	2.77	0.00	4.69	0.00	2.34	161	30.86
12.050	3.21	0.00	5.97	0.00	2.99	167	30.89
12.100	3.42	0.00	6.62	0.00	3.31	170	30.90
12.150	3.13	0.00	6.55	0.00	3.27	170	30.90
12.200	2.36	0.00	5.49	0.00	2.74	165	30.87
12.250	1.94	0.00	4.30	0.00	2.15	159	30.85
12.300	1.67	0.00	3.61	0.00	1.80	156	30.83
12.350	1.47	0.26	3.14	0.00	1.44	153	30.82
12.400	1.26	0.38	2.99	0.00	1.31	151	30.81
12.450	1.08	0.59	2.72	0.00	1.06	149	30.80
12.500	0.87	0.55	2.55	0.00	1.00	139	30.75
12.550	0.73	0.45	2.15	0.00	0.85	117	30.62
12.600	0.60	0.41	1.78	0.00	0.68	96	30.50
12.650	0.54	0.40	1.55	0.00	0.58	85	30.43
12.700	0.50	0.40	1.45	0.00	0.52	79	30.39
12.750	0.48	0.40	1.38	0.00	0.49	76	30.37
12.800	0.46	0.39	1.33	0.00	0.47	74	30.35
12.850	0.44	0.39	1.29	0.00	0.45	72	30.34
12.900	0.42	0.39	1.25	0.00	0.43	70	30.33
12.950	0.40	0.39	1.20	0.00	0.41	68	30.31
13.000	0.37	0.38	1.16	0.00	0.39	66	30.30
13.050	0.36	0.38	1.12	0.00	0.37	64	30.28

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.100	0.34	0.38	1.09	0.00	0.35	63	30.27
13.150	0.34	0.38	1.06	0.00	0.34	62	30.26
13.200	0.33	0.38	1.04	0.00	0.33	61	30.26
13.250	0.32	0.38	1.03	0.00	0.33	60	30.25
13.300	0.32	0.38	1.02	0.00	0.32	60	30.25
13.350	0.31	0.38	1.01	0.00	0.32	59	30.25
13.400	0.31	0.38	1.00	0.00	0.31	59	30.24
13.450	0.30	0.38	0.99	0.00	0.30	58	30.24
13.500	0.30	0.38	0.97	0.00	0.30	58	30.23
13.550	0.29	0.38	0.96	0.00	0.29	57	30.23
13.600	0.29	0.38	0.95	0.00	0.29	57	30.23
13.650	0.28	0.37	0.94	0.00	0.28	57	30.22
13.700	0.27	0.37	0.93	0.00	0.28	56	30.22
13.750	0.27	0.37	0.92	0.00	0.27	56	30.22
13.800	0.26	0.37	0.91	0.00	0.27	55	30.21
13.850	0.26	0.37	0.89	0.00	0.26	55	30.21
13.900	0.25	0.37	0.88	0.00	0.26	54	30.20
13.950	0.25	0.37	0.87	0.00	0.25	54	30.20
14.000	0.24	0.37	0.86	0.00	0.24	53	30.20
14.050	0.24	0.37	0.85	0.00	0.24	53	30.19
14.100	0.23	0.37	0.84	0.00	0.24	52	30.19
14.150	0.23	0.37	0.83	0.00	0.23	52	30.19
14.200	0.23	0.37	0.83	0.00	0.23	52	30.19
14.250	0.22	0.37	0.82	0.00	0.23	52	30.18
14.300	0.22	0.37	0.81	0.00	0.22	51	30.18
14.350	0.22	0.37	0.81	0.00	0.22	51	30.18
14.400	0.22	0.37	0.80	0.00	0.22	51	30.18
14.450	0.21	0.37	0.80	0.00	0.21	51	30.18
14.500	0.21	0.37	0.79	0.00	0.21	50	30.17
14.550	0.21	0.37	0.79	0.00	0.21	50	30.17
14.600	0.21	0.37	0.78	0.00	0.21	50	30.17
14.650	0.20	0.37	0.78	0.00	0.20	50	30.17
14.700	0.20	0.37	0.77	0.00	0.20	50	30.17
14.750	0.20	0.37	0.76	0.00	0.20	49	30.16
14.800	0.19	0.37	0.76	0.00	0.20	49	30.16
14.850	0.19	0.37	0.75	0.00	0.19	49	30.16
14.900	0.19	0.37	0.75	0.00	0.19	49	30.16
14.950	0.19	0.37	0.74	0.00	0.19	48	30.16
15.000	0.18	0.37	0.74	0.00	0.19	48	30.16
15.050	0.18	0.36	0.73	0.00	0.18	48	30.15
15.100	0.18	0.36	0.73	0.00	0.18	48	30.15
15.150	0.18	0.36	0.72	0.00	0.18	48	30.15

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
15.200	0.17	0.36	0.71	0.00	0.18	47	30.15
15.250	0.17	0.36	0.71	0.00	0.17	47	30.15
15.300	0.17	0.36	0.70	0.00	0.17	47	30.14
15.350	0.17	0.36	0.70	0.00	0.17	47	30.14
15.400	0.16	0.36	0.69	0.00	0.16	46	30.14
15.450	0.16	0.36	0.69	0.00	0.16	46	30.14
15.500	0.16	0.36	0.68	0.00	0.16	46	30.14
15.550	0.15	0.36	0.67	0.00	0.16	46	30.14
15.600	0.15	0.36	0.67	0.00	0.15	46	30.13
15.650	0.15	0.36	0.66	0.00	0.15	45	30.13
15.700	0.15	0.36	0.66	0.00	0.15	45	30.13
15.750	0.14	0.36	0.65	0.00	0.15	45	30.13
15.800	0.14	0.36	0.65	0.00	0.14	45	30.13
15.850	0.14	0.36	0.64	0.00	0.14	44	30.12
15.900	0.14	0.36	0.63	0.00	0.14	44	30.12
15.950	0.13	0.36	0.63	0.00	0.13	44	30.12
16.000	0.13	0.36	0.62	0.00	0.13	44	30.12
16.050	0.13	0.36	0.62	0.00	0.13	44	30.12
16.100	0.13	0.36	0.61	0.00	0.13	43	30.11
16.150	0.12	0.36	0.61	0.00	0.13	43	30.11
16.200	0.12	0.36	0.61	0.00	0.12	43	30.11
16.250	0.12	0.36	0.60	0.00	0.12	43	30.11
16.300	0.12	0.36	0.60	0.00	0.12	43	30.11
16.350	0.12	0.36	0.60	0.00	0.12	43	30.11
16.400	0.12	0.36	0.60	0.00	0.12	43	30.11
16.450	0.12	0.36	0.59	0.00	0.12	43	30.11
16.500	0.12	0.36	0.59	0.00	0.12	43	30.11
16.550	0.11	0.36	0.59	0.00	0.12	42	30.11
16.600	0.11	0.36	0.59	0.00	0.11	42	30.11
16.650	0.11	0.36	0.58	0.00	0.11	42	30.10
16.700	0.11	0.36	0.58	0.00	0.11	42	30.10
16.750	0.11	0.36	0.58	0.00	0.11	42	30.10
16.800	0.11	0.36	0.58	0.00	0.11	42	30.10
16.850	0.11	0.36	0.57	0.00	0.11	42	30.10
16.900	0.11	0.36	0.57	0.00	0.11	42	30.10
16.950	0.11	0.36	0.57	0.00	0.11	42	30.10
17.000	0.10	0.36	0.57	0.00	0.11	41	30.10
17.050	0.10	0.36	0.56	0.00	0.10	41	30.10
17.100	0.10	0.35	0.56	0.00	0.10	41	30.09
17.150	0.10	0.35	0.56	0.00	0.10	41	30.09
17.200	0.10	0.35	0.55	0.00	0.10	41	30.09
17.250	0.10	0.35	0.55	0.00	0.10	40	30.09

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
17.300	0.10	0.35	0.55	0.00	0.10	40	30.09
17.350	0.10	0.35	0.54	0.00	0.10	40	30.08
17.400	0.09	0.35	0.54	0.00	0.10	40	30.08
17.450	0.09	0.35	0.53	0.00	0.09	39	30.08
17.500	0.09	0.34	0.53	0.00	0.09	39	30.08
17.550	0.09	0.34	0.53	0.00	0.09	39	30.07
17.600	0.09	0.34	0.52	0.00	0.09	39	30.07
17.650	0.09	0.34	0.52	0.00	0.09	38	30.07
17.700	0.09	0.34	0.52	0.00	0.09	38	30.07
17.750	0.09	0.34	0.51	0.00	0.09	38	30.07
17.800	0.08	0.34	0.51	0.00	0.09	38	30.06
17.850	0.08	0.34	0.51	0.00	0.08	37	30.06
17.900	0.08	0.33	0.50	0.00	0.08	37	30.06
17.950	0.08	0.33	0.50	0.00	0.08	37	30.06
18.000	0.08	0.33	0.49	0.00	0.08	37	30.06
18.050	0.08	0.33	0.49	0.00	0.08	37	30.05
18.100	0.08	0.33	0.49	0.00	0.08	36	30.05
18.150	0.08	0.33	0.49	0.00	0.08	36	30.05
18.200	0.08	0.33	0.48	0.00	0.08	36	30.05
18.250	0.08	0.33	0.48	0.00	0.08	36	30.05
18.300	0.08	0.33	0.48	0.00	0.08	36	30.05
18.350	0.08	0.33	0.48	0.00	0.08	36	30.05
18.400	0.08	0.33	0.48	0.00	0.08	36	30.05
18.450	0.08	0.33	0.48	0.00	0.08	36	30.05
18.500	0.07	0.33	0.48	0.00	0.08	36	30.05
18.550	0.07	0.33	0.48	0.00	0.08	36	30.04
18.600	0.07	0.33	0.48	0.00	0.07	36	30.04
18.650	0.07	0.33	0.47	0.00	0.07	35	30.04
18.700	0.07	0.32	0.47	0.00	0.07	35	30.04
18.750	0.07	0.32	0.47	0.00	0.07	35	30.04
18.800	0.07	0.32	0.47	0.00	0.07	35	30.04
18.850	0.07	0.32	0.47	0.00	0.07	35	30.04
18.900	0.07	0.32	0.47	0.00	0.07	35	30.04
18.950	0.07	0.32	0.47	0.00	0.07	35	30.04
19.000	0.07	0.32	0.47	0.00	0.07	35	30.04
19.050	0.07	0.32	0.47	0.00	0.07	35	30.04
19.100	0.07	0.32	0.46	0.00	0.07	35	30.04
19.150	0.07	0.32	0.46	0.00	0.07	35	30.04
19.200	0.07	0.32	0.46	0.00	0.07	35	30.04
19.250	0.07	0.32	0.46	0.00	0.07	35	30.04
19.300	0.07	0.32	0.46	0.00	0.07	35	30.03
19.350	0.07	0.32	0.46	0.00	0.07	34	30.03

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
19.400	0.07	0.32	0.46	0.00	0.07	34	30.03
19.450	0.07	0.32	0.46	0.00	0.07	34	30.03
19.500	0.07	0.32	0.46	0.00	0.07	34	30.03
19.550	0.07	0.32	0.45	0.00	0.07	34	30.03
19.600	0.07	0.32	0.45	0.00	0.07	34	30.03
19.650	0.07	0.32	0.45	0.00	0.07	34	30.03
19.700	0.07	0.32	0.45	0.00	0.07	34	30.03
19.750	0.07	0.32	0.45	0.00	0.07	34	30.03
19.800	0.07	0.32	0.45	0.00	0.07	34	30.03
19.850	0.07	0.32	0.45	0.00	0.07	34	30.03
19.900	0.06	0.32	0.45	0.00	0.07	34	30.03
19.950	0.06	0.32	0.45	0.00	0.07	34	30.03
20.000	0.06	0.32	0.44	0.00	0.06	34	30.03
20.050	0.06	0.32	0.44	0.00	0.06	34	30.03
20.100	0.06	0.31	0.44	0.00	0.06	33	30.02
20.150	0.06	0.31	0.44	0.00	0.06	33	30.02
20.200	0.06	0.31	0.44	0.00	0.06	33	30.02
20.250	0.06	0.31	0.44	0.00	0.06	33	30.02
20.300	0.06	0.31	0.44	0.00	0.06	33	30.02
20.350	0.06	0.31	0.44	0.00	0.06	33	30.02
20.400	0.06	0.31	0.44	0.00	0.06	33	30.02
20.450	0.06	0.31	0.44	0.00	0.06	33	30.02
20.500	0.06	0.31	0.44	0.00	0.06	33	30.02
20.550	0.06	0.31	0.44	0.00	0.06	33	30.02
20.600	0.06	0.31	0.43	0.00	0.06	33	30.02
20.650	0.06	0.31	0.43	0.00	0.06	33	30.02
20.700	0.06	0.31	0.43	0.00	0.06	33	30.02
20.750	0.06	0.31	0.43	0.00	0.06	33	30.02
20.800	0.06	0.31	0.43	0.00	0.06	33	30.02
20.850	0.06	0.31	0.43	0.00	0.06	33	30.02
20.900	0.06	0.31	0.43	0.00	0.06	33	30.02
20.950	0.06	0.31	0.43	0.00	0.06	33	30.02
21.000	0.06	0.31	0.43	0.00	0.06	33	30.02
21.050	0.06	0.31	0.43	0.00	0.06	33	30.02
21.100	0.06	0.31	0.43	0.00	0.06	32	30.02
21.150	0.06	0.31	0.43	0.00	0.06	32	30.01
21.200	0.06	0.31	0.42	0.00	0.06	32	30.01
21.250	0.06	0.31	0.42	0.00	0.06	32	30.01
21.300	0.06	0.31	0.42	0.00	0.06	32	30.01
21.350	0.06	0.31	0.42	0.00	0.06	32	30.01
21.400	0.06	0.31	0.42	0.00	0.06	32	30.01
21.450	0.06	0.31	0.42	0.00	0.06	32	30.01

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.500	0.06	0.31	0.42	0.00	0.06	32	30.01
21.550	0.06	0.31	0.42	0.00	0.06	32	30.01
21.600	0.06	0.31	0.42	0.00	0.06	32	30.01
21.650	0.06	0.31	0.42	0.00	0.06	32	30.01
21.700	0.05	0.31	0.42	0.00	0.06	32	30.01
21.750	0.05	0.31	0.42	0.00	0.05	32	30.01
21.800	0.05	0.31	0.42	0.00	0.05	32	30.01
21.850	0.05	0.31	0.41	0.00	0.05	32	30.01
21.900	0.05	0.31	0.41	0.00	0.05	32	30.01
21.950	0.05	0.30	0.41	0.00	0.05	32	30.01
22.000	0.05	0.30	0.41	0.00	0.05	32	30.01
22.050	0.05	0.30	0.41	0.00	0.05	31	30.01
22.100	0.05	0.30	0.41	0.00	0.05	31	30.01
22.150	0.05	0.30	0.41	0.00	0.05	31	30.00
22.200	0.05	0.30	0.41	0.00	0.05	31	30.00
22.250	0.05	0.30	0.41	0.00	0.05	31	30.00
22.300	0.05	0.30	0.41	0.00	0.05	31	30.00
22.350	0.05	0.30	0.41	0.00	0.05	31	30.00
22.400	0.05	0.30	0.40	0.00	0.05	31	30.00
22.450	0.05	0.30	0.40	0.00	0.05	31	30.00
22.500	0.05	0.30	0.40	0.00	0.05	31	30.00
22.550	0.05	0.30	0.40	0.00	0.05	31	30.00
22.600	0.05	0.30	0.40	0.00	0.05	31	30.00
22.650	0.05	0.30	0.40	0.00	0.05	31	30.00
22.700	0.05	0.30	0.40	0.00	0.05	31	30.00
22.750	0.05	0.30	0.40	0.00	0.05	31	30.00
22.800	0.05	0.30	0.40	0.00	0.05	31	30.00
22.850	0.05	0.30	0.40	0.00	0.05	31	30.00
22.900	0.05	0.30	0.40	0.00	0.05	31	30.00
22.950	0.05	0.30	0.40	0.00	0.05	31	30.00
23.000	0.05	0.30	0.40	0.00	0.05	31	30.00
23.050	0.05	0.30	0.39	0.00	0.05	30	30.00
23.100	0.05	0.30	0.39	0.00	0.05	30	30.00
23.150	0.05	0.30	0.39	0.00	0.05	30	29.99
23.200	0.05	0.30	0.39	0.00	0.05	30	29.99
23.250	0.05	0.30	0.39	0.00	0.05	30	29.99
23.300	0.05	0.30	0.39	0.00	0.05	30	29.99
23.350	0.05	0.30	0.39	0.00	0.05	30	29.99
23.400	0.05	0.30	0.39	0.00	0.05	30	29.99
23.450	0.05	0.30	0.39	0.00	0.05	30	29.99
23.500	0.05	0.30	0.39	0.00	0.05	30	29.99
23.550	0.04	0.30	0.39	0.00	0.05	30	29.99

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.600	0.04	0.30	0.39	0.00	0.04	30	29.99
23.650	0.04	0.30	0.38	0.00	0.04	30	29.99
23.700	0.04	0.30	0.38	0.00	0.04	30	29.99
23.750	0.04	0.29	0.38	0.00	0.04	30	29.99
23.800	0.04	0.29	0.38	0.00	0.04	30	29.99
23.850	0.04	0.29	0.38	0.00	0.04	30	29.99
23.900	0.04	0.29	0.38	0.00	0.04	30	29.99
23.950	0.04	0.29	0.38	0.00	0.04	30	29.99
24.000	0.04	0.29	0.38	0.00	0.04	30	29.99
24.050	0.03	0.29	0.37	0.00	0.04	29	29.98
24.100	0.01	0.28	0.33	0.00	0.03	27	29.96
24.150	0.00	0.27	0.30	0.00	0.01	25	29.94
24.200	0.00	0.26	0.27	0.00	0.01	24	29.92
24.250	0.00	0.25	0.26	0.00	0.00	23	29.91
24.300	0.00	0.25	0.25	0.00	0.00	23	29.91
24.350	0.00	0.25	0.25	0.00	0.00	23	29.91
24.400	0.00	0.25	0.25	0.00	0.00	23	29.91
24.450	0.00	0.25	0.25	0.00	0.00	23	29.91
24.500	0.00	0.25	0.25	0.00	0.00	23	29.91
24.550	0.00	0.25	0.25	0.00	0.00	23	29.91
24.600	0.00	0.25	0.25	0.00	0.00	23	29.91
24.650	0.00	0.25	0.25	0.00	0.00	23	29.91
24.700	0.00	0.25	0.25	0.00	0.00	23	29.91
24.750	0.00	0.25	0.25	0.00	0.00	23	29.91
24.800	0.00	0.25	0.25	0.00	0.00	23	29.91
24.850	0.00	0.25	0.25	0.00	0.00	23	29.91
24.900	0.00	0.25	0.25	0.00	0.00	23	29.91
24.950	0.00	0.25	0.25	0.00	0.00	23	29.91
25.000	0.00	0.25	0.25	0.00	0.00	23	29.91
25.050	0.00	0.25	0.25	0.00	0.00	23	29.91
25.100	0.00	0.25	0.25	0.00	0.00	23	29.91
25.150	0.00	0.25	0.25	0.00	0.00	23	29.91
25.200	0.00	0.25	0.25	0.00	0.00	23	29.91
25.250	0.00	0.25	0.25	0.00	0.00	23	29.91
25.300	0.00	0.25	0.25	0.00	0.00	23	29.91
25.350	0.00	0.25	0.25	0.00	0.00	23	29.91
25.400	0.00	0.25	0.25	0.00	0.00	23	29.91
25.450	0.00	0.25	0.25	0.00	0.00	23	29.91
25.500	0.00	0.25	0.25	0.00	0.00	23	29.91
25.550	0.00	0.25	0.25	0.00	0.00	23	29.91
25.600	0.00	0.25	0.25	0.00	0.00	23	29.91
25.650	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.700	0.00	0.25	0.25	0.00	0.00	23	29.91
25.750	0.00	0.25	0.25	0.00	0.00	23	29.91
25.800	0.00	0.25	0.25	0.00	0.00	23	29.91
25.850	0.00	0.25	0.25	0.00	0.00	23	29.91
25.900	0.00	0.25	0.25	0.00	0.00	23	29.91
25.950	0.00	0.25	0.25	0.00	0.00	23	29.91
26.000	0.00	0.25	0.25	0.00	0.00	23	29.91
26.050	0.00	0.25	0.25	0.00	0.00	23	29.91
26.100	0.00	0.25	0.25	0.00	0.00	23	29.91
26.150	0.00	0.25	0.25	0.00	0.00	23	29.91
26.200	0.00	0.25	0.25	0.00	0.00	23	29.91
26.250	0.00	0.25	0.25	0.00	0.00	23	29.91
26.300	0.00	0.25	0.25	0.00	0.00	23	29.91
26.350	0.00	0.25	0.25	0.00	0.00	23	29.91
26.400	0.00	0.25	0.25	0.00	0.00	23	29.91
26.450	0.00	0.25	0.25	0.00	0.00	23	29.91
26.500	0.00	0.25	0.25	0.00	0.00	23	29.91
26.550	0.00	0.25	0.25	0.00	0.00	23	29.91
26.600	0.00	0.25	0.25	0.00	0.00	23	29.91
26.650	0.00	0.25	0.25	0.00	0.00	23	29.91
26.700	0.00	0.25	0.25	0.00	0.00	23	29.91
26.750	0.00	0.25	0.25	0.00	0.00	23	29.91
26.800	0.00	0.25	0.25	0.00	0.00	23	29.91
26.850	0.00	0.25	0.25	0.00	0.00	23	29.91
26.900	0.00	0.25	0.25	0.00	0.00	23	29.91
26.950	0.00	0.25	0.25	0.00	0.00	23	29.91
27.000	0.00	0.25	0.25	0.00	0.00	23	29.91
27.050	0.00	0.25	0.25	0.00	0.00	23	29.91
27.100	0.00	0.25	0.25	0.00	0.00	23	29.91
27.150	0.00	0.25	0.25	0.00	0.00	23	29.91
27.200	0.00	0.25	0.25	0.00	0.00	23	29.91
27.250	0.00	0.25	0.25	0.00	0.00	23	29.91
27.300	0.00	0.25	0.25	0.00	0.00	23	29.91
27.350	0.00	0.25	0.25	0.00	0.00	23	29.91
27.400	0.00	0.25	0.25	0.00	0.00	23	29.91
27.450	0.00	0.25	0.25	0.00	0.00	23	29.91
27.500	0.00	0.25	0.25	0.00	0.00	23	29.91
27.550	0.00	0.25	0.25	0.00	0.00	23	29.91
27.600	0.00	0.25	0.25	0.00	0.00	23	29.91
27.650	0.00	0.25	0.25	0.00	0.00	23	29.91
27.700	0.00	0.25	0.25	0.00	0.00	23	29.91
27.750	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.800	0.00	0.25	0.25	0.00	0.00	23	29.91
27.850	0.00	0.25	0.25	0.00	0.00	23	29.91
27.900	0.00	0.25	0.25	0.00	0.00	23	29.91
27.950	0.00	0.25	0.25	0.00	0.00	23	29.91
28.000	0.00	0.25	0.25	0.00	0.00	23	29.91
28.050	0.00	0.25	0.25	0.00	0.00	23	29.91
28.100	0.00	0.25	0.25	0.00	0.00	23	29.91
28.150	0.00	0.25	0.25	0.00	0.00	23	29.91
28.200	0.00	0.25	0.25	0.00	0.00	23	29.91
28.250	0.00	0.25	0.25	0.00	0.00	23	29.91
28.300	0.00	0.25	0.25	0.00	0.00	23	29.91
28.350	0.00	0.25	0.25	0.00	0.00	23	29.91
28.400	0.00	0.25	0.25	0.00	0.00	23	29.91
28.450	0.00	0.25	0.25	0.00	0.00	23	29.91
28.500	0.00	0.25	0.25	0.00	0.00	23	29.91
28.550	0.00	0.25	0.25	0.00	0.00	23	29.91
28.600	0.00	0.25	0.25	0.00	0.00	23	29.91
28.650	0.00	0.25	0.25	0.00	0.00	23	29.91
28.700	0.00	0.25	0.25	0.00	0.00	23	29.91
28.750	0.00	0.25	0.25	0.00	0.00	23	29.91
28.800	0.00	0.25	0.25	0.00	0.00	23	29.91
28.850	0.00	0.25	0.25	0.00	0.00	23	29.91
28.900	0.00	0.25	0.25	0.00	0.00	23	29.91
28.950	0.00	0.25	0.25	0.00	0.00	23	29.91
29.000	0.00	0.25	0.25	0.00	0.00	23	29.91
29.050	0.00	0.25	0.25	0.00	0.00	23	29.91
29.100	0.00	0.25	0.25	0.00	0.00	23	29.91
29.150	0.00	0.25	0.25	0.00	0.00	23	29.91
29.200	0.00	0.25	0.25	0.00	0.00	23	29.91
29.250	0.00	0.25	0.25	0.00	0.00	23	29.91
29.300	0.00	0.25	0.25	0.00	0.00	23	29.91
29.350	0.00	0.25	0.25	0.00	0.00	23	29.91
29.400	0.00	0.25	0.25	0.00	0.00	23	29.91
29.450	0.00	0.25	0.25	0.00	0.00	23	29.91
29.500	0.00	0.25	0.25	0.00	0.00	23	29.91
29.550	0.00	0.25	0.25	0.00	0.00	23	29.91
29.600	0.00	0.25	0.25	0.00	0.00	23	29.91
29.650	0.00	0.25	0.25	0.00	0.00	23	29.91
29.700	0.00	0.25	0.25	0.00	0.00	23	29.91
29.750	0.00	0.25	0.25	0.00	0.00	23	29.91
29.800	0.00	0.25	0.25	0.00	0.00	23	29.91
29.850	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.900	0.00	0.25	0.25	0.00	0.00	23	29.91
29.950	0.00	0.25	0.25	0.00	0.00	23	29.91
30.000	0.00	0.25	0.25	0.00	0.00	23	29.91
30.050	0.00	0.25	0.25	0.00	0.00	23	29.91
30.100	0.00	0.25	0.25	0.00	0.00	23	29.91
30.150	0.00	0.25	0.25	0.00	0.00	23	29.91
30.200	0.00	0.25	0.25	0.00	0.00	23	29.91
30.250	0.00	0.25	0.25	0.00	0.00	23	29.91
30.300	0.00	0.25	0.25	0.00	0.00	23	29.91
30.350	0.00	0.25	0.25	0.00	0.00	23	29.91
30.400	0.00	0.25	0.25	0.00	0.00	23	29.91
30.450	0.00	0.25	0.25	0.00	0.00	23	29.91
30.500	0.00	0.25	0.25	0.00	0.00	23	29.91
30.550	0.00	0.25	0.25	0.00	0.00	23	29.91
30.600	0.00	0.25	0.25	0.00	0.00	23	29.91
30.650	0.00	0.25	0.25	0.00	0.00	23	29.91
30.700	0.00	0.25	0.25	0.00	0.00	23	29.91
30.750	0.00	0.25	0.25	0.00	0.00	23	29.91
30.800	0.00	0.25	0.25	0.00	0.00	23	29.91
30.850	0.00	0.25	0.25	0.00	0.00	23	29.91
30.900	0.00	0.25	0.25	0.00	0.00	23	29.91
30.950	0.00	0.25	0.25	0.00	0.00	23	29.91
31.000	0.00	0.25	0.25	0.00	0.00	23	29.91
31.050	0.00	0.25	0.25	0.00	0.00	23	29.91
31.100	0.00	0.25	0.25	0.00	0.00	23	29.91
31.150	0.00	0.25	0.25	0.00	0.00	23	29.91
31.200	0.00	0.25	0.25	0.00	0.00	23	29.91
31.250	0.00	0.25	0.25	0.00	0.00	23	29.91
31.300	0.00	0.25	0.25	0.00	0.00	23	29.91
31.350	0.00	0.25	0.25	0.00	0.00	23	29.91
31.400	0.00	0.25	0.25	0.00	0.00	23	29.91
31.450	0.00	0.25	0.25	0.00	0.00	23	29.91
31.500	0.00	0.25	0.25	0.00	0.00	23	29.91
31.550	0.00	0.25	0.25	0.00	0.00	23	29.91
31.600	0.00	0.25	0.25	0.00	0.00	23	29.91
31.650	0.00	0.25	0.25	0.00	0.00	23	29.91
31.700	0.00	0.25	0.25	0.00	0.00	23	29.91
31.750	0.00	0.25	0.25	0.00	0.00	23	29.91
31.800	0.00	0.25	0.25	0.00	0.00	23	29.91
31.850	0.00	0.25	0.25	0.00	0.00	23	29.91
31.900	0.00	0.25	0.25	0.00	0.00	23	29.91
31.950	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.000	0.00	0.25	0.25	0.00	0.00	23	29.91
32.050	0.00	0.25	0.25	0.00	0.00	23	29.91
32.100	0.00	0.25	0.25	0.00	0.00	23	29.91
32.150	0.00	0.25	0.25	0.00	0.00	23	29.91
32.200	0.00	0.25	0.25	0.00	0.00	23	29.91
32.250	0.00	0.25	0.25	0.00	0.00	23	29.91
32.300	0.00	0.25	0.25	0.00	0.00	23	29.91
32.350	0.00	0.25	0.25	0.00	0.00	23	29.91
32.400	0.00	0.25	0.25	0.00	0.00	23	29.91
32.450	0.00	0.25	0.25	0.00	0.00	23	29.91
32.500	0.00	0.25	0.25	0.00	0.00	23	29.91
32.550	0.00	0.25	0.25	0.00	0.00	23	29.91
32.600	0.00	0.25	0.25	0.00	0.00	23	29.91
32.650	0.00	0.25	0.25	0.00	0.00	23	29.91
32.700	0.00	0.25	0.25	0.00	0.00	23	29.91
32.750	0.00	0.25	0.25	0.00	0.00	23	29.91
32.800	0.00	0.25	0.25	0.00	0.00	23	29.91
32.850	0.00	0.25	0.25	0.00	0.00	23	29.91
32.900	0.00	0.25	0.25	0.00	0.00	23	29.91
32.950	0.00	0.25	0.25	0.00	0.00	23	29.91
33.000	0.00	0.25	0.25	0.00	0.00	23	29.91
33.050	0.00	0.25	0.25	0.00	0.00	23	29.91
33.100	0.00	0.25	0.25	0.00	0.00	23	29.91
33.150	0.00	0.25	0.25	0.00	0.00	23	29.91
33.200	0.00	0.25	0.25	0.00	0.00	23	29.91
33.250	0.00	0.25	0.25	0.00	0.00	23	29.91
33.300	0.00	0.25	0.25	0.00	0.00	23	29.91
33.350	0.00	0.25	0.25	0.00	0.00	23	29.91
33.400	0.00	0.25	0.25	0.00	0.00	23	29.91
33.450	0.00	0.25	0.25	0.00	0.00	23	29.91
33.500	0.00	0.25	0.25	0.00	0.00	23	29.91
33.550	0.00	0.25	0.25	0.00	0.00	23	29.91
33.600	0.00	0.25	0.25	0.00	0.00	23	29.91
33.650	0.00	0.25	0.25	0.00	0.00	23	29.91
33.700	0.00	0.25	0.25	0.00	0.00	23	29.91
33.750	0.00	0.25	0.25	0.00	0.00	23	29.91
33.800	0.00	0.25	0.25	0.00	0.00	23	29.91
33.850	0.00	0.25	0.25	0.00	0.00	23	29.91
33.900	0.00	0.25	0.25	0.00	0.00	23	29.91
33.950	0.00	0.25	0.25	0.00	0.00	23	29.91
34.000	0.00	0.25	0.25	0.00	0.00	23	29.91
34.050	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: EX. RG (OUT) Storm Event: 25 years
Scenario: Pre-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.100	0.00	0.25	0.25	0.00	0.00	23	29.91
34.150	0.00	0.25	0.25	0.00	0.00	23	29.91
34.200	0.00	0.25	0.25	0.00	0.00	23	29.91
34.250	0.00	0.25	0.25	0.00	0.00	23	29.91
34.300	0.00	0.25	0.25	0.00	0.00	23	29.91
34.350	0.00	0.25	0.25	0.00	0.00	23	29.91
34.400	0.00	0.25	0.25	0.00	0.00	23	29.91
34.450	0.00	0.25	0.25	0.00	0.00	23	29.91
34.500	0.00	0.25	0.25	0.00	0.00	23	29.91
34.550	0.00	0.25	0.25	0.00	0.00	23	29.91
34.600	0.00	0.25	0.25	0.00	0.00	23	29.91
34.650	0.00	0.25	0.25	0.00	0.00	23	29.91
34.700	0.00	0.25	0.25	0.00	0.00	23	29.91
34.750	0.00	0.25	0.25	0.00	0.00	23	29.91
34.800	0.00	0.25	0.25	0.00	0.00	23	29.91
34.850	0.00	0.25	0.25	0.00	0.00	23	29.91
34.900	0.00	0.25	0.25	0.00	0.00	23	29.91
34.950	0.00	0.25	0.25	0.00	0.00	23	29.91
35.000	0.00	0.25	0.25	0.00	0.00	23	29.91
35.050	0.00	0.25	0.25	0.00	0.00	23	29.91
35.100	0.00	0.25	0.25	0.00	0.00	23	29.91
35.150	0.00	0.25	0.25	0.00	0.00	23	29.91
35.200	0.00	0.25	0.25	0.00	0.00	23	29.91
35.250	0.00	0.25	0.25	0.00	0.00	23	29.91
35.300	0.00	0.25	0.25	0.00	0.00	23	29.91
35.350	0.00	0.25	0.25	0.00	0.00	23	29.91
35.400	0.00	0.25	0.25	0.00	0.00	23	29.91
35.450	0.00	0.25	0.25	0.00	0.00	23	29.91
35.500	0.00	0.25	0.25	0.00	0.00	23	29.91
35.550	0.00	0.25	0.25	0.00	0.00	23	29.91
35.600	0.00	0.25	0.25	0.00	0.00	23	29.91
35.650	0.00	0.25	0.25	0.00	0.00	23	29.91
35.700	0.00	0.25	0.25	0.00	0.00	23	29.91
35.750	0.00	0.25	0.25	0.00	0.00	23	29.91
35.800	0.00	0.25	0.25	0.00	0.00	23	29.91
35.850	0.00	0.25	0.25	0.00	0.00	23	29.91
35.900	0.00	0.25	0.25	0.00	0.00	23	29.91
35.950	0.00	0.25	0.25	0.00	0.00	23	29.91
36.000	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out)
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.00	0.00	0.00	0	29.10
0.050	0.00	0.00	0.00	0.00	0.00	0	29.10
0.100	0.00	0.00	0.00	0.00	0.00	0	29.10
0.150	0.00	0.00	0.00	0.00	0.00	0	29.10
0.200	0.00	0.00	0.00	0.00	0.00	0	29.10
0.250	0.00	0.00	0.00	0.00	0.00	0	29.10
0.300	0.00	0.00	0.00	0.00	0.00	0	29.10
0.350	0.00	0.00	0.00	0.00	0.00	0	29.10
0.400	0.00	0.00	0.00	0.00	0.00	0	29.10
0.450	0.00	0.00	0.00	0.00	0.00	0	29.10
0.500	0.00	0.00	0.00	0.00	0.00	0	29.10
0.550	0.00	0.00	0.00	0.00	0.00	0	29.10
0.600	0.00	0.00	0.00	0.00	0.00	0	29.10
0.650	0.00	0.00	0.00	0.00	0.00	0	29.10
0.700	0.00	0.00	0.00	0.00	0.00	0	29.10
0.750	0.00	0.00	0.00	0.00	0.00	0	29.10
0.800	0.00	0.00	0.00	0.00	0.00	0	29.10
0.850	0.00	0.00	0.00	0.00	0.00	0	29.10
0.900	0.00	0.00	0.00	0.00	0.00	0	29.10
0.950	0.00	0.00	0.00	0.00	0.00	0	29.10
1.000	0.00	0.00	0.00	0.00	0.00	0	29.10
1.050	0.00	0.00	0.00	0.00	0.00	0	29.10
1.100	0.00	0.00	0.00	0.00	0.00	0	29.10
1.150	0.00	0.00	0.00	0.00	0.00	0	29.10
1.200	0.00	0.00	0.00	0.00	0.00	0	29.10
1.250	0.00	0.00	0.00	0.00	0.00	0	29.10
1.300	0.00	0.00	0.00	0.00	0.00	0	29.10
1.350	0.00	0.00	0.00	0.00	0.00	0	29.10
1.400	0.00	0.00	0.00	0.00	0.00	0	29.10
1.450	0.00	0.00	0.00	0.00	0.00	0	29.10
1.500	0.00	0.00	0.00	0.00	0.00	0	29.10
1.550	0.00	0.00	0.00	0.00	0.00	0	29.10
1.600	0.00	0.00	0.00	0.00	0.00	0	29.10
1.650	0.00	0.00	0.00	0.00	0.00	0	29.10
1.700	0.00	0.00	0.00	0.00	0.00	0	29.10
1.750	0.00	0.00	0.00	0.00	0.00	0	29.10
1.800	0.00	0.00	0.00	0.00	0.00	0	29.10
1.850	0.00	0.00	0.00	0.00	0.00	0	29.10
1.900	0.00	0.00	0.00	0.00	0.00	0	29.10
1.950	0.00	0.00	0.00	0.00	0.00	0	29.10
2.000	0.00	0.00	0.00	0.00	0.00	0	29.10
2.050	0.00	0.00	0.00	0.00	0.00	0	29.10

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	29.10
2.150	0.00	0.00	0.00	0.00	0.00	0	29.10
2.200	0.00	0.00	0.00	0.00	0.00	0	29.10
2.250	0.00	0.00	0.00	0.00	0.00	0	29.10
2.300	0.00	0.00	0.00	0.00	0.00	0	29.10
2.350	0.00	0.00	0.00	0.00	0.00	0	29.10
2.400	0.00	0.00	0.00	0.00	0.00	0	29.10
2.450	0.00	0.00	0.00	0.00	0.00	0	29.10
2.500	0.00	0.00	0.00	0.00	0.00	0	29.10
2.550	0.00	0.00	0.00	0.00	0.00	0	29.10
2.600	0.00	0.00	0.00	0.00	0.00	0	29.10
2.650	0.00	0.00	0.00	0.00	0.00	0	29.10
2.700	0.00	0.00	0.00	0.00	0.00	0	29.10
2.750	0.00	0.00	0.00	0.00	0.00	0	29.10
2.800	0.00	0.00	0.00	0.00	0.00	0	29.10
2.850	0.00	0.00	0.00	0.00	0.00	0	29.10
2.900	0.00	0.00	0.00	0.00	0.00	0	29.10
2.950	0.00	0.00	0.00	0.00	0.00	0	29.10
3.000	0.00	0.00	0.00	0.00	0.00	0	29.10
3.050	0.00	0.00	0.00	0.00	0.00	0	29.10
3.100	0.00	0.00	0.00	0.00	0.00	0	29.10
3.150	0.00	0.00	0.00	0.00	0.00	0	29.10
3.200	0.00	0.00	0.00	0.00	0.00	0	29.10
3.250	0.00	0.00	0.00	0.00	0.00	0	29.10
3.300	0.00	0.00	0.00	0.00	0.00	0	29.10
3.350	0.00	0.00	0.00	0.00	0.00	0	29.10
3.400	0.00	0.00	0.00	0.00	0.00	0	29.10
3.450	0.00	0.00	0.00	0.00	0.00	0	29.10
3.500	0.00	0.00	0.00	0.00	0.00	0	29.10
3.550	0.00	0.00	0.00	0.00	0.00	0	29.10
3.600	0.00	0.00	0.00	0.00	0.00	0	29.10
3.650	0.00	0.00	0.00	0.00	0.00	0	29.10
3.700	0.00	0.00	0.00	0.00	0.00	0	29.10
3.750	0.00	0.00	0.00	0.00	0.00	0	29.10
3.800	0.00	0.00	0.00	0.00	0.00	0	29.10
3.850	0.00	0.00	0.00	0.00	0.00	0	29.10
3.900	0.00	0.00	0.00	0.00	0.00	0	29.10
3.950	0.00	0.00	0.00	0.00	0.00	0	29.10
4.000	0.00	0.00	0.00	0.00	0.00	0	29.10
4.050	0.00	0.00	0.00	0.00	0.00	0	29.10
4.100	0.00	0.00	0.00	0.00	0.00	0	29.10
4.150	0.00	0.00	0.00	0.00	0.00	0	29.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.00	0.00	0.00	0.00	0.00	0	29.10
4.250	0.00	0.00	0.00	0.00	0.00	0	29.10
4.300	0.00	0.00	0.00	0.00	0.00	0	29.10
4.350	0.00	0.00	0.00	0.00	0.00	0	29.10
4.400	0.00	0.00	0.00	0.00	0.00	0	29.10
4.450	0.00	0.00	0.00	0.00	0.00	0	29.10
4.500	0.00	0.00	0.00	0.00	0.00	0	29.10
4.550	0.00	0.00	0.00	0.00	0.00	0	29.10
4.600	0.00	0.00	0.00	0.00	0.00	0	29.10
4.650	0.00	0.00	0.00	0.00	0.00	0	29.10
4.700	0.00	0.00	0.00	0.00	0.00	0	29.10
4.750	0.00	0.00	0.00	0.00	0.00	0	29.10
4.800	0.00	0.00	0.00	0.00	0.00	0	29.10
4.850	0.00	0.00	0.00	0.00	0.00	0	29.10
4.900	0.00	0.00	0.00	0.00	0.00	0	29.10
4.950	0.00	0.00	0.00	0.00	0.00	0	29.10
5.000	0.00	0.00	0.00	0.00	0.00	0	29.10
5.050	0.00	0.00	0.00	0.00	0.00	0	29.10
5.100	0.00	0.00	0.00	0.00	0.00	0	29.10
5.150	0.00	0.00	0.00	0.00	0.00	0	29.10
5.200	0.00	0.00	0.00	0.00	0.00	0	29.10
5.250	0.00	0.00	0.00	0.00	0.00	0	29.10
5.300	0.00	0.00	0.00	0.00	0.00	0	29.10
5.350	0.00	0.00	0.00	0.00	0.00	0	29.11
5.400	0.00	0.00	0.00	0.00	0.00	0	29.12
5.450	0.00	0.01	0.01	0.00	0.00	0	29.15
5.500	0.00	0.01	0.01	0.00	0.00	0	29.18
5.550	0.00	0.01	0.01	0.00	0.00	0	29.23
5.600	0.00	0.02	0.02	0.00	0.00	0	29.28
5.650	0.00	0.03	0.03	0.00	0.00	1	29.34
5.700	0.00	0.04	0.04	0.00	0.00	1	29.42
5.750	0.01	0.05	0.05	0.00	0.00	3	29.50
5.800	0.01	0.06	0.06	0.00	0.00	5	29.60
5.850	0.01	0.07	0.07	0.00	0.00	6	29.63
5.900	0.01	0.08	0.08	0.00	0.00	7	29.66
5.950	0.01	0.10	0.10	0.00	0.00	8	29.68
6.000	0.01	0.12	0.12	0.00	0.00	9	29.70
6.050	0.01	0.13	0.13	0.00	0.00	11	29.73
6.100	0.01	0.15	0.15	0.00	0.00	12	29.76
6.150	0.01	0.17	0.17	0.00	0.00	14	29.79
6.200	0.01	0.19	0.19	0.00	0.00	16	29.82
6.250	0.01	0.22	0.22	0.00	0.00	18	29.86

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.01	0.24	0.24	0.00	0.00	21	29.90
6.350	0.01	0.26	0.27	0.00	0.01	23	29.92
6.400	0.01	0.26	0.28	0.00	0.01	24	29.93
6.450	0.02	0.26	0.29	0.00	0.01	25	29.93
6.500	0.02	0.27	0.30	0.00	0.02	25	29.94
6.550	0.02	0.27	0.30	0.00	0.02	25	29.94
6.600	0.02	0.27	0.30	0.00	0.02	25	29.94
6.650	0.02	0.27	0.31	0.00	0.02	25	29.94
6.700	0.02	0.27	0.31	0.00	0.02	26	29.94
6.750	0.02	0.27	0.31	0.00	0.02	26	29.95
6.800	0.02	0.27	0.31	0.00	0.02	26	29.95
6.850	0.02	0.27	0.32	0.00	0.02	26	29.95
6.900	0.02	0.27	0.32	0.00	0.02	26	29.95
6.950	0.03	0.28	0.32	0.00	0.02	26	29.95
7.000	0.03	0.28	0.33	0.00	0.03	27	29.96
7.050	0.03	0.28	0.33	0.00	0.03	27	29.96
7.100	0.03	0.28	0.33	0.00	0.03	27	29.96
7.150	0.03	0.28	0.34	0.00	0.03	27	29.96
7.200	0.03	0.28	0.34	0.00	0.03	27	29.96
7.250	0.03	0.28	0.35	0.00	0.03	28	29.97
7.300	0.03	0.28	0.35	0.00	0.03	28	29.97
7.350	0.04	0.28	0.35	0.00	0.03	28	29.97
7.400	0.04	0.29	0.36	0.00	0.04	28	29.97
7.450	0.04	0.29	0.36	0.00	0.04	28	29.98
7.500	0.04	0.29	0.36	0.00	0.04	29	29.98
7.550	0.04	0.29	0.37	0.00	0.04	29	29.98
7.600	0.04	0.29	0.37	0.00	0.04	29	29.98
7.650	0.04	0.29	0.38	0.00	0.04	29	29.99
7.700	0.05	0.29	0.38	0.00	0.04	30	29.99
7.750	0.05	0.30	0.39	0.00	0.05	30	29.99
7.800	0.05	0.30	0.39	0.00	0.05	30	29.99
7.850	0.05	0.30	0.39	0.00	0.05	30	30.00
7.900	0.05	0.30	0.40	0.00	0.05	31	30.00
7.950	0.05	0.30	0.40	0.00	0.05	31	30.00
8.000	0.05	0.30	0.41	0.00	0.05	31	30.00
8.050	0.06	0.31	0.41	0.00	0.05	32	30.01
8.100	0.06	0.31	0.42	0.00	0.06	32	30.01
8.150	0.06	0.31	0.42	0.00	0.06	32	30.01
8.200	0.06	0.31	0.43	0.00	0.06	33	30.02
8.250	0.06	0.31	0.44	0.00	0.06	33	30.02
8.300	0.07	0.32	0.45	0.00	0.07	34	30.03
8.350	0.07	0.32	0.45	0.00	0.07	34	30.03

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) | Return Event: 100 years
Label: EX. RG (OUT) | Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.07	0.32	0.46	0.00	0.07	35	30.04
8.450	0.08	0.32	0.47	0.00	0.07	35	30.04
8.500	0.08	0.33	0.48	0.00	0.08	36	30.05
8.550	0.08	0.33	0.49	0.00	0.08	36	30.05
8.600	0.08	0.33	0.49	0.00	0.08	37	30.06
8.650	0.09	0.34	0.50	0.00	0.08	37	30.06
8.700	0.09	0.34	0.51	0.00	0.09	38	30.07
8.750	0.09	0.34	0.52	0.00	0.09	39	30.07
8.800	0.10	0.34	0.53	0.00	0.09	39	30.08
8.850	0.10	0.35	0.54	0.00	0.10	40	30.08
8.900	0.10	0.35	0.55	0.00	0.10	40	30.09
8.950	0.11	0.35	0.56	0.00	0.10	41	30.09
9.000	0.11	0.36	0.57	0.00	0.11	42	30.10
9.050	0.11	0.36	0.58	0.00	0.11	42	30.10
9.100	0.12	0.36	0.59	0.00	0.11	42	30.11
9.150	0.12	0.36	0.59	0.00	0.12	43	30.11
9.200	0.12	0.36	0.60	0.00	0.12	43	30.11
9.250	0.13	0.36	0.61	0.00	0.12	43	30.11
9.300	0.13	0.36	0.62	0.00	0.13	43	30.12
9.350	0.13	0.36	0.62	0.00	0.13	44	30.12
9.400	0.14	0.36	0.63	0.00	0.14	44	30.12
9.450	0.14	0.36	0.64	0.00	0.14	44	30.12
9.500	0.15	0.36	0.65	0.00	0.14	45	30.13
9.550	0.15	0.36	0.66	0.00	0.15	45	30.13
9.600	0.15	0.36	0.66	0.00	0.15	45	30.13
9.650	0.16	0.36	0.67	0.00	0.16	46	30.13
9.700	0.16	0.36	0.68	0.00	0.16	46	30.14
9.750	0.17	0.36	0.69	0.00	0.16	46	30.14
9.800	0.17	0.36	0.70	0.00	0.17	47	30.14
9.850	0.17	0.36	0.71	0.00	0.17	47	30.15
9.900	0.18	0.36	0.72	0.00	0.18	47	30.15
9.950	0.18	0.36	0.73	0.00	0.18	48	30.15
10.000	0.19	0.37	0.73	0.00	0.18	48	30.15
10.050	0.19	0.37	0.74	0.00	0.19	48	30.16
10.100	0.20	0.37	0.75	0.00	0.19	49	30.16
10.150	0.20	0.37	0.77	0.00	0.20	49	30.17
10.200	0.21	0.37	0.78	0.00	0.21	50	30.17
10.250	0.22	0.37	0.80	0.00	0.21	51	30.18
10.300	0.23	0.37	0.81	0.00	0.22	51	30.18
10.350	0.23	0.37	0.83	0.00	0.23	52	30.19
10.400	0.24	0.37	0.84	0.00	0.24	52	30.19
10.450	0.25	0.37	0.86	0.00	0.24	53	30.20

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.26	0.37	0.87	0.00	0.25	54	30.20
10.550	0.26	0.37	0.89	0.00	0.26	54	30.21
10.600	0.27	0.37	0.91	0.00	0.27	55	30.21
10.650	0.28	0.37	0.92	0.00	0.28	56	30.22
10.700	0.29	0.37	0.94	0.00	0.28	57	30.22
10.750	0.30	0.38	0.96	0.00	0.29	57	30.23
10.800	0.30	0.38	0.98	0.00	0.30	58	30.24
10.850	0.31	0.38	0.99	0.00	0.31	59	30.24
10.900	0.32	0.38	1.01	0.00	0.32	60	30.25
10.950	0.33	0.38	1.03	0.00	0.33	60	30.25
11.000	0.34	0.38	1.05	0.00	0.33	61	30.26
11.050	0.35	0.38	1.07	0.00	0.35	62	30.27
11.100	0.37	0.38	1.10	0.00	0.36	63	30.28
11.150	0.39	0.38	1.14	0.00	0.38	65	30.29
11.200	0.42	0.39	1.19	0.00	0.40	67	30.31
11.250	0.44	0.39	1.24	0.00	0.43	70	30.32
11.300	0.47	0.39	1.30	0.00	0.45	72	30.34
11.350	0.50	0.39	1.36	0.00	0.48	75	30.36
11.400	0.53	0.40	1.42	0.00	0.51	78	30.38
11.450	0.55	0.40	1.48	0.00	0.54	81	30.40
11.500	0.59	0.40	1.54	0.00	0.57	84	30.42
11.550	0.66	0.41	1.65	0.00	0.62	90	30.46
11.600	0.80	0.42	1.87	0.00	0.73	101	30.53
11.650	0.98	0.46	2.20	0.00	0.87	119	30.64
11.700	1.24	0.58	2.68	0.00	1.05	147	30.79
11.750	1.48	0.13	3.31	0.00	1.59	154	30.82
11.800	1.78	0.06	3.39	0.00	1.67	155	30.83
11.850	2.05	0.00	3.89	0.00	1.95	157	30.84
11.900	2.38	0.00	4.43	0.00	2.22	160	30.85
11.950	3.14	0.00	5.52	0.00	2.76	165	30.88
12.000	4.48	0.00	7.62	0.00	3.81	175	30.92
12.050	5.12	0.00	9.60	0.00	4.80	184	30.97
12.100	5.40	0.00	10.52	0.00	5.26	189	30.99
12.150	4.90	0.00	10.30	0.00	5.15	188	30.98
12.200	3.67	0.00	8.57	0.00	4.29	179	30.94
12.250	3.01	0.00	6.68	0.00	3.34	170	30.90
12.300	2.57	0.00	5.58	0.00	2.79	165	30.88
12.350	2.26	0.00	4.83	0.00	2.42	162	30.86
12.400	1.93	0.00	4.19	0.00	2.10	159	30.85
12.450	1.65	0.00	3.59	0.00	1.79	156	30.83
12.500	1.33	0.39	2.98	0.00	1.30	151	30.81
12.550	1.12	0.51	2.83	0.00	1.16	150	30.80

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.92	0.55	2.54	0.00	1.00	138	30.74
12.650	0.82	0.48	2.28	0.00	0.90	124	30.66
12.700	0.77	0.43	2.07	0.00	0.82	112	30.60
12.750	0.73	0.42	1.92	0.00	0.75	104	30.55
12.800	0.69	0.42	1.84	0.00	0.71	100	30.52
12.850	0.66	0.41	1.78	0.00	0.68	96	30.50
12.900	0.63	0.41	1.71	0.00	0.65	93	30.48
12.950	0.60	0.41	1.64	0.00	0.62	89	30.46
13.000	0.57	0.40	1.58	0.00	0.59	86	30.44
13.050	0.54	0.40	1.51	0.00	0.56	83	30.41
13.100	0.52	0.40	1.46	0.00	0.53	80	30.40
13.150	0.51	0.40	1.43	0.00	0.51	78	30.39
13.200	0.50	0.40	1.40	0.00	0.50	77	30.38
13.250	0.49	0.40	1.38	0.00	0.49	76	30.37
13.300	0.48	0.39	1.36	0.00	0.48	75	30.36
13.350	0.47	0.39	1.35	0.00	0.48	75	30.36
13.400	0.46	0.39	1.33	0.00	0.47	74	30.35
13.450	0.46	0.39	1.31	0.00	0.46	73	30.35
13.500	0.45	0.39	1.29	0.00	0.45	72	30.34
13.550	0.44	0.39	1.28	0.00	0.44	71	30.34
13.600	0.43	0.39	1.26	0.00	0.43	71	30.33
13.650	0.42	0.39	1.24	0.00	0.43	70	30.32
13.700	0.41	0.39	1.22	0.00	0.42	69	30.32
13.750	0.41	0.39	1.21	0.00	0.41	68	30.31
13.800	0.40	0.39	1.19	0.00	0.40	67	30.31
13.850	0.39	0.39	1.17	0.00	0.39	67	30.30
13.900	0.38	0.38	1.15	0.00	0.38	66	30.29
13.950	0.37	0.38	1.14	0.00	0.38	65	30.29
14.000	0.36	0.38	1.12	0.00	0.37	64	30.28
14.050	0.36	0.38	1.10	0.00	0.36	64	30.28
14.100	0.35	0.38	1.09	0.00	0.35	63	30.27
14.150	0.34	0.38	1.08	0.00	0.35	62	30.27
14.200	0.34	0.38	1.07	0.00	0.34	62	30.27
14.250	0.34	0.38	1.06	0.00	0.34	62	30.26
14.300	0.33	0.38	1.05	0.00	0.33	61	30.26
14.350	0.33	0.38	1.04	0.00	0.33	61	30.26
14.400	0.32	0.38	1.03	0.00	0.33	60	30.25
14.450	0.32	0.38	1.02	0.00	0.32	60	30.25
14.500	0.32	0.38	1.01	0.00	0.32	60	30.25
14.550	0.31	0.38	1.01	0.00	0.31	59	30.25
14.600	0.31	0.38	1.00	0.00	0.31	59	30.24
14.650	0.30	0.38	0.99	0.00	0.31	59	30.24

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.30	0.38	0.98	0.00	0.30	58	30.24
14.750	0.30	0.38	0.97	0.00	0.30	58	30.23
14.800	0.29	0.38	0.96	0.00	0.29	58	30.23
14.850	0.29	0.38	0.96	0.00	0.29	57	30.23
14.900	0.28	0.37	0.95	0.00	0.29	57	30.23
14.950	0.28	0.37	0.94	0.00	0.28	56	30.22
15.000	0.28	0.37	0.93	0.00	0.28	56	30.22
15.050	0.27	0.37	0.92	0.00	0.27	56	30.22
15.100	0.27	0.37	0.91	0.00	0.27	55	30.21
15.150	0.26	0.37	0.90	0.00	0.27	55	30.21
15.200	0.26	0.37	0.90	0.00	0.26	55	30.21
15.250	0.26	0.37	0.89	0.00	0.26	54	30.21
15.300	0.25	0.37	0.88	0.00	0.25	54	30.20
15.350	0.25	0.37	0.87	0.00	0.25	54	30.20
15.400	0.24	0.37	0.86	0.00	0.25	53	30.20
15.450	0.24	0.37	0.85	0.00	0.24	53	30.19
15.500	0.24	0.37	0.85	0.00	0.24	53	30.19
15.550	0.23	0.37	0.84	0.00	0.23	52	30.19
15.600	0.23	0.37	0.83	0.00	0.23	52	30.19
15.650	0.22	0.37	0.82	0.00	0.23	52	30.18
15.700	0.22	0.37	0.81	0.00	0.22	51	30.18
15.750	0.21	0.37	0.80	0.00	0.22	51	30.18
15.800	0.21	0.37	0.79	0.00	0.21	50	30.17
15.850	0.21	0.37	0.79	0.00	0.21	50	30.17
15.900	0.20	0.37	0.78	0.00	0.20	50	30.17
15.950	0.20	0.37	0.77	0.00	0.20	49	30.17
16.000	0.19	0.37	0.76	0.00	0.20	49	30.16
16.050	0.19	0.37	0.75	0.00	0.19	49	30.16
16.100	0.19	0.37	0.74	0.00	0.19	49	30.16
16.150	0.19	0.37	0.74	0.00	0.19	48	30.16
16.200	0.18	0.36	0.73	0.00	0.18	48	30.15
16.250	0.18	0.36	0.73	0.00	0.18	48	30.15
16.300	0.18	0.36	0.73	0.00	0.18	48	30.15
16.350	0.18	0.36	0.72	0.00	0.18	48	30.15
16.400	0.18	0.36	0.72	0.00	0.18	47	30.15
16.450	0.17	0.36	0.71	0.00	0.18	47	30.15
16.500	0.17	0.36	0.71	0.00	0.17	47	30.15
16.550	0.17	0.36	0.71	0.00	0.17	47	30.15
16.600	0.17	0.36	0.70	0.00	0.17	47	30.14
16.650	0.17	0.36	0.70	0.00	0.17	47	30.14
16.700	0.17	0.36	0.70	0.00	0.17	47	30.14
16.750	0.16	0.36	0.69	0.00	0.16	46	30.14

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.16	0.36	0.69	0.00	0.16	46	30.14
16.850	0.16	0.36	0.68	0.00	0.16	46	30.14
16.900	0.16	0.36	0.68	0.00	0.16	46	30.14
16.950	0.16	0.36	0.68	0.00	0.16	46	30.14
17.000	0.15	0.36	0.67	0.00	0.16	46	30.13
17.050	0.15	0.36	0.67	0.00	0.15	46	30.13
17.100	0.15	0.36	0.67	0.00	0.15	45	30.13
17.150	0.15	0.36	0.66	0.00	0.15	45	30.13
17.200	0.15	0.36	0.66	0.00	0.15	45	30.13
17.250	0.15	0.36	0.65	0.00	0.15	45	30.13
17.300	0.14	0.36	0.65	0.00	0.15	45	30.13
17.350	0.14	0.36	0.65	0.00	0.14	45	30.13
17.400	0.14	0.36	0.64	0.00	0.14	45	30.12
17.450	0.14	0.36	0.64	0.00	0.14	44	30.12
17.500	0.14	0.36	0.64	0.00	0.14	44	30.12
17.550	0.14	0.36	0.63	0.00	0.14	44	30.12
17.600	0.13	0.36	0.63	0.00	0.13	44	30.12
17.650	0.13	0.36	0.62	0.00	0.13	44	30.12
17.700	0.13	0.36	0.62	0.00	0.13	44	30.12
17.750	0.13	0.36	0.62	0.00	0.13	44	30.12
17.800	0.13	0.36	0.61	0.00	0.13	43	30.11
17.850	0.12	0.36	0.61	0.00	0.13	43	30.11
17.900	0.12	0.36	0.61	0.00	0.12	43	30.11
17.950	0.12	0.36	0.60	0.00	0.12	43	30.11
18.000	0.12	0.36	0.60	0.00	0.12	43	30.11
18.050	0.12	0.36	0.59	0.00	0.12	43	30.11
18.100	0.12	0.36	0.59	0.00	0.12	43	30.11
18.150	0.12	0.36	0.59	0.00	0.12	42	30.11
18.200	0.11	0.36	0.59	0.00	0.12	42	30.11
18.250	0.11	0.36	0.59	0.00	0.11	42	30.11
18.300	0.11	0.36	0.59	0.00	0.11	42	30.11
18.350	0.11	0.36	0.58	0.00	0.11	42	30.11
18.400	0.11	0.36	0.58	0.00	0.11	42	30.10
18.450	0.11	0.36	0.58	0.00	0.11	42	30.10
18.500	0.11	0.36	0.58	0.00	0.11	42	30.10
18.550	0.11	0.36	0.58	0.00	0.11	42	30.10
18.600	0.11	0.36	0.58	0.00	0.11	42	30.10
18.650	0.11	0.36	0.58	0.00	0.11	42	30.10
18.700	0.11	0.36	0.58	0.00	0.11	42	30.10
18.750	0.11	0.36	0.58	0.00	0.11	42	30.10
18.800	0.11	0.36	0.57	0.00	0.11	42	30.10
18.850	0.11	0.36	0.57	0.00	0.11	42	30.10

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.11	0.36	0.57	0.00	0.11	42	30.10
18.950	0.11	0.36	0.57	0.00	0.11	42	30.10
19.000	0.11	0.36	0.57	0.00	0.11	42	30.10
19.050	0.11	0.36	0.57	0.00	0.11	42	30.10
19.100	0.11	0.36	0.57	0.00	0.11	42	30.10
19.150	0.10	0.36	0.57	0.00	0.11	41	30.10
19.200	0.10	0.36	0.56	0.00	0.10	41	30.10
19.250	0.10	0.36	0.56	0.00	0.10	41	30.10
19.300	0.10	0.35	0.56	0.00	0.10	41	30.10
19.350	0.10	0.35	0.56	0.00	0.10	41	30.09
19.400	0.10	0.35	0.56	0.00	0.10	41	30.09
19.450	0.10	0.35	0.56	0.00	0.10	41	30.09
19.500	0.10	0.35	0.56	0.00	0.10	41	30.09
19.550	0.10	0.35	0.55	0.00	0.10	41	30.09
19.600	0.10	0.35	0.55	0.00	0.10	41	30.09
19.650	0.10	0.35	0.55	0.00	0.10	40	30.09
19.700	0.10	0.35	0.55	0.00	0.10	40	30.09
19.750	0.10	0.35	0.55	0.00	0.10	40	30.09
19.800	0.10	0.35	0.55	0.00	0.10	40	30.09
19.850	0.10	0.35	0.54	0.00	0.10	40	30.08
19.900	0.10	0.35	0.54	0.00	0.10	40	30.08
19.950	0.10	0.35	0.54	0.00	0.10	40	30.08
20.000	0.10	0.35	0.54	0.00	0.10	40	30.08
20.050	0.09	0.35	0.54	0.00	0.10	40	30.08
20.100	0.09	0.35	0.54	0.00	0.09	39	30.08
20.150	0.09	0.35	0.53	0.00	0.09	39	30.08
20.200	0.09	0.35	0.53	0.00	0.09	39	30.08
20.250	0.09	0.34	0.53	0.00	0.09	39	30.08
20.300	0.09	0.34	0.53	0.00	0.09	39	30.08
20.350	0.09	0.34	0.53	0.00	0.09	39	30.08
20.400	0.09	0.34	0.53	0.00	0.09	39	30.08
20.450	0.09	0.34	0.53	0.00	0.09	39	30.07
20.500	0.09	0.34	0.53	0.00	0.09	39	30.07
20.550	0.09	0.34	0.52	0.00	0.09	39	30.07
20.600	0.09	0.34	0.52	0.00	0.09	39	30.07
20.650	0.09	0.34	0.52	0.00	0.09	39	30.07
20.700	0.09	0.34	0.52	0.00	0.09	38	30.07
20.750	0.09	0.34	0.52	0.00	0.09	38	30.07
20.800	0.09	0.34	0.52	0.00	0.09	38	30.07
20.850	0.09	0.34	0.52	0.00	0.09	38	30.07
20.900	0.09	0.34	0.52	0.00	0.09	38	30.07
20.950	0.09	0.34	0.51	0.00	0.09	38	30.07

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.09	0.34	0.51	0.00	0.09	38	30.07
21.050	0.09	0.34	0.51	0.00	0.09	38	30.07
21.100	0.09	0.34	0.51	0.00	0.09	38	30.07
21.150	0.09	0.34	0.51	0.00	0.09	38	30.06
21.200	0.09	0.34	0.51	0.00	0.09	38	30.06
21.250	0.09	0.34	0.51	0.00	0.09	38	30.06
21.300	0.08	0.34	0.51	0.00	0.09	38	30.06
21.350	0.08	0.34	0.51	0.00	0.08	37	30.06
21.400	0.08	0.34	0.50	0.00	0.08	37	30.06
21.450	0.08	0.33	0.50	0.00	0.08	37	30.06
21.500	0.08	0.33	0.50	0.00	0.08	37	30.06
21.550	0.08	0.33	0.50	0.00	0.08	37	30.06
21.600	0.08	0.33	0.50	0.00	0.08	37	30.06
21.650	0.08	0.33	0.50	0.00	0.08	37	30.06
21.700	0.08	0.33	0.50	0.00	0.08	37	30.06
21.750	0.08	0.33	0.50	0.00	0.08	37	30.06
21.800	0.08	0.33	0.49	0.00	0.08	37	30.06
21.850	0.08	0.33	0.49	0.00	0.08	37	30.05
21.900	0.08	0.33	0.49	0.00	0.08	37	30.05
21.950	0.08	0.33	0.49	0.00	0.08	37	30.05
22.000	0.08	0.33	0.49	0.00	0.08	36	30.05
22.050	0.08	0.33	0.49	0.00	0.08	36	30.05
22.100	0.08	0.33	0.49	0.00	0.08	36	30.05
22.150	0.08	0.33	0.49	0.00	0.08	36	30.05
22.200	0.08	0.33	0.48	0.00	0.08	36	30.05
22.250	0.08	0.33	0.48	0.00	0.08	36	30.05
22.300	0.08	0.33	0.48	0.00	0.08	36	30.05
22.350	0.08	0.33	0.48	0.00	0.08	36	30.05
22.400	0.08	0.33	0.48	0.00	0.08	36	30.05
22.450	0.08	0.33	0.48	0.00	0.08	36	30.05
22.500	0.07	0.33	0.48	0.00	0.08	36	30.05
22.550	0.07	0.33	0.48	0.00	0.07	36	30.04
22.600	0.07	0.33	0.47	0.00	0.07	35	30.04
22.650	0.07	0.33	0.47	0.00	0.07	35	30.04
22.700	0.07	0.32	0.47	0.00	0.07	35	30.04
22.750	0.07	0.32	0.47	0.00	0.07	35	30.04
22.800	0.07	0.32	0.47	0.00	0.07	35	30.04
22.850	0.07	0.32	0.47	0.00	0.07	35	30.04
22.900	0.07	0.32	0.47	0.00	0.07	35	30.04
22.950	0.07	0.32	0.47	0.00	0.07	35	30.04
23.000	0.07	0.32	0.47	0.00	0.07	35	30.04
23.050	0.07	0.32	0.46	0.00	0.07	35	30.04

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.07	0.32	0.46	0.00	0.07	35	30.04
23.150	0.07	0.32	0.46	0.00	0.07	35	30.04
23.200	0.07	0.32	0.46	0.00	0.07	35	30.03
23.250	0.07	0.32	0.46	0.00	0.07	34	30.03
23.300	0.07	0.32	0.46	0.00	0.07	34	30.03
23.350	0.07	0.32	0.46	0.00	0.07	34	30.03
23.400	0.07	0.32	0.46	0.00	0.07	34	30.03
23.450	0.07	0.32	0.45	0.00	0.07	34	30.03
23.500	0.07	0.32	0.45	0.00	0.07	34	30.03
23.550	0.07	0.32	0.45	0.00	0.07	34	30.03
23.600	0.07	0.32	0.45	0.00	0.07	34	30.03
23.650	0.07	0.32	0.45	0.00	0.07	34	30.03
23.700	0.07	0.32	0.45	0.00	0.07	34	30.03
23.750	0.06	0.32	0.45	0.00	0.07	34	30.03
23.800	0.06	0.32	0.45	0.00	0.06	34	30.03
23.850	0.06	0.32	0.44	0.00	0.06	34	30.03
23.900	0.06	0.31	0.44	0.00	0.06	33	30.02
23.950	0.06	0.31	0.44	0.00	0.06	33	30.02
24.000	0.06	0.31	0.44	0.00	0.06	33	30.02
24.050	0.05	0.31	0.42	0.00	0.06	32	30.01
24.100	0.02	0.29	0.38	0.00	0.04	29	29.98
24.150	0.01	0.27	0.32	0.00	0.02	26	29.95
24.200	0.00	0.26	0.28	0.00	0.01	24	29.93
24.250	0.00	0.25	0.26	0.00	0.00	23	29.92
24.300	0.00	0.25	0.26	0.00	0.00	23	29.91
24.350	0.00	0.25	0.25	0.00	0.00	23	29.91
24.400	0.00	0.25	0.25	0.00	0.00	23	29.91
24.450	0.00	0.25	0.25	0.00	0.00	23	29.91
24.500	0.00	0.25	0.25	0.00	0.00	23	29.91
24.550	0.00	0.25	0.25	0.00	0.00	23	29.91
24.600	0.00	0.25	0.25	0.00	0.00	23	29.91
24.650	0.00	0.25	0.25	0.00	0.00	23	29.91
24.700	0.00	0.25	0.25	0.00	0.00	23	29.91
24.750	0.00	0.25	0.25	0.00	0.00	23	29.91
24.800	0.00	0.25	0.25	0.00	0.00	23	29.91
24.850	0.00	0.25	0.25	0.00	0.00	23	29.91
24.900	0.00	0.25	0.25	0.00	0.00	23	29.91
24.950	0.00	0.25	0.25	0.00	0.00	23	29.91
25.000	0.00	0.25	0.25	0.00	0.00	23	29.91
25.050	0.00	0.25	0.25	0.00	0.00	23	29.91
25.100	0.00	0.25	0.25	0.00	0.00	23	29.91
25.150	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out)
Label: EX. RG (OUT)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.200	0.00	0.25	0.25	0.00	0.00	23	29.91
25.250	0.00	0.25	0.25	0.00	0.00	23	29.91
25.300	0.00	0.25	0.25	0.00	0.00	23	29.91
25.350	0.00	0.25	0.25	0.00	0.00	23	29.91
25.400	0.00	0.25	0.25	0.00	0.00	23	29.91
25.450	0.00	0.25	0.25	0.00	0.00	23	29.91
25.500	0.00	0.25	0.25	0.00	0.00	23	29.91
25.550	0.00	0.25	0.25	0.00	0.00	23	29.91
25.600	0.00	0.25	0.25	0.00	0.00	23	29.91
25.650	0.00	0.25	0.25	0.00	0.00	23	29.91
25.700	0.00	0.25	0.25	0.00	0.00	23	29.91
25.750	0.00	0.25	0.25	0.00	0.00	23	29.91
25.800	0.00	0.25	0.25	0.00	0.00	23	29.91
25.850	0.00	0.25	0.25	0.00	0.00	23	29.91
25.900	0.00	0.25	0.25	0.00	0.00	23	29.91
25.950	0.00	0.25	0.25	0.00	0.00	23	29.91
26.000	0.00	0.25	0.25	0.00	0.00	23	29.91
26.050	0.00	0.25	0.25	0.00	0.00	23	29.91
26.100	0.00	0.25	0.25	0.00	0.00	23	29.91
26.150	0.00	0.25	0.25	0.00	0.00	23	29.91
26.200	0.00	0.25	0.25	0.00	0.00	23	29.91
26.250	0.00	0.25	0.25	0.00	0.00	23	29.91
26.300	0.00	0.25	0.25	0.00	0.00	23	29.91
26.350	0.00	0.25	0.25	0.00	0.00	23	29.91
26.400	0.00	0.25	0.25	0.00	0.00	23	29.91
26.450	0.00	0.25	0.25	0.00	0.00	23	29.91
26.500	0.00	0.25	0.25	0.00	0.00	23	29.91
26.550	0.00	0.25	0.25	0.00	0.00	23	29.91
26.600	0.00	0.25	0.25	0.00	0.00	23	29.91
26.650	0.00	0.25	0.25	0.00	0.00	23	29.91
26.700	0.00	0.25	0.25	0.00	0.00	23	29.91
26.750	0.00	0.25	0.25	0.00	0.00	23	29.91
26.800	0.00	0.25	0.25	0.00	0.00	23	29.91
26.850	0.00	0.25	0.25	0.00	0.00	23	29.91
26.900	0.00	0.25	0.25	0.00	0.00	23	29.91
26.950	0.00	0.25	0.25	0.00	0.00	23	29.91
27.000	0.00	0.25	0.25	0.00	0.00	23	29.91
27.050	0.00	0.25	0.25	0.00	0.00	23	29.91
27.100	0.00	0.25	0.25	0.00	0.00	23	29.91
27.150	0.00	0.25	0.25	0.00	0.00	23	29.91
27.200	0.00	0.25	0.25	0.00	0.00	23	29.91
27.250	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.300	0.00	0.25	0.25	0.00	0.00	23	29.91
27.350	0.00	0.25	0.25	0.00	0.00	23	29.91
27.400	0.00	0.25	0.25	0.00	0.00	23	29.91
27.450	0.00	0.25	0.25	0.00	0.00	23	29.91
27.500	0.00	0.25	0.25	0.00	0.00	23	29.91
27.550	0.00	0.25	0.25	0.00	0.00	23	29.91
27.600	0.00	0.25	0.25	0.00	0.00	23	29.91
27.650	0.00	0.25	0.25	0.00	0.00	23	29.91
27.700	0.00	0.25	0.25	0.00	0.00	23	29.91
27.750	0.00	0.25	0.25	0.00	0.00	23	29.91
27.800	0.00	0.25	0.25	0.00	0.00	23	29.91
27.850	0.00	0.25	0.25	0.00	0.00	23	29.91
27.900	0.00	0.25	0.25	0.00	0.00	23	29.91
27.950	0.00	0.25	0.25	0.00	0.00	23	29.91
28.000	0.00	0.25	0.25	0.00	0.00	23	29.91
28.050	0.00	0.25	0.25	0.00	0.00	23	29.91
28.100	0.00	0.25	0.25	0.00	0.00	23	29.91
28.150	0.00	0.25	0.25	0.00	0.00	23	29.91
28.200	0.00	0.25	0.25	0.00	0.00	23	29.91
28.250	0.00	0.25	0.25	0.00	0.00	23	29.91
28.300	0.00	0.25	0.25	0.00	0.00	23	29.91
28.350	0.00	0.25	0.25	0.00	0.00	23	29.91
28.400	0.00	0.25	0.25	0.00	0.00	23	29.91
28.450	0.00	0.25	0.25	0.00	0.00	23	29.91
28.500	0.00	0.25	0.25	0.00	0.00	23	29.91
28.550	0.00	0.25	0.25	0.00	0.00	23	29.91
28.600	0.00	0.25	0.25	0.00	0.00	23	29.91
28.650	0.00	0.25	0.25	0.00	0.00	23	29.91
28.700	0.00	0.25	0.25	0.00	0.00	23	29.91
28.750	0.00	0.25	0.25	0.00	0.00	23	29.91
28.800	0.00	0.25	0.25	0.00	0.00	23	29.91
28.850	0.00	0.25	0.25	0.00	0.00	23	29.91
28.900	0.00	0.25	0.25	0.00	0.00	23	29.91
28.950	0.00	0.25	0.25	0.00	0.00	23	29.91
29.000	0.00	0.25	0.25	0.00	0.00	23	29.91
29.050	0.00	0.25	0.25	0.00	0.00	23	29.91
29.100	0.00	0.25	0.25	0.00	0.00	23	29.91
29.150	0.00	0.25	0.25	0.00	0.00	23	29.91
29.200	0.00	0.25	0.25	0.00	0.00	23	29.91
29.250	0.00	0.25	0.25	0.00	0.00	23	29.91
29.300	0.00	0.25	0.25	0.00	0.00	23	29.91
29.350	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.400	0.00	0.25	0.25	0.00	0.00	23	29.91
29.450	0.00	0.25	0.25	0.00	0.00	23	29.91
29.500	0.00	0.25	0.25	0.00	0.00	23	29.91
29.550	0.00	0.25	0.25	0.00	0.00	23	29.91
29.600	0.00	0.25	0.25	0.00	0.00	23	29.91
29.650	0.00	0.25	0.25	0.00	0.00	23	29.91
29.700	0.00	0.25	0.25	0.00	0.00	23	29.91
29.750	0.00	0.25	0.25	0.00	0.00	23	29.91
29.800	0.00	0.25	0.25	0.00	0.00	23	29.91
29.850	0.00	0.25	0.25	0.00	0.00	23	29.91
29.900	0.00	0.25	0.25	0.00	0.00	23	29.91
29.950	0.00	0.25	0.25	0.00	0.00	23	29.91
30.000	0.00	0.25	0.25	0.00	0.00	23	29.91
30.050	0.00	0.25	0.25	0.00	0.00	23	29.91
30.100	0.00	0.25	0.25	0.00	0.00	23	29.91
30.150	0.00	0.25	0.25	0.00	0.00	23	29.91
30.200	0.00	0.25	0.25	0.00	0.00	23	29.91
30.250	0.00	0.25	0.25	0.00	0.00	23	29.91
30.300	0.00	0.25	0.25	0.00	0.00	23	29.91
30.350	0.00	0.25	0.25	0.00	0.00	23	29.91
30.400	0.00	0.25	0.25	0.00	0.00	23	29.91
30.450	0.00	0.25	0.25	0.00	0.00	23	29.91
30.500	0.00	0.25	0.25	0.00	0.00	23	29.91
30.550	0.00	0.25	0.25	0.00	0.00	23	29.91
30.600	0.00	0.25	0.25	0.00	0.00	23	29.91
30.650	0.00	0.25	0.25	0.00	0.00	23	29.91
30.700	0.00	0.25	0.25	0.00	0.00	23	29.91
30.750	0.00	0.25	0.25	0.00	0.00	23	29.91
30.800	0.00	0.25	0.25	0.00	0.00	23	29.91
30.850	0.00	0.25	0.25	0.00	0.00	23	29.91
30.900	0.00	0.25	0.25	0.00	0.00	23	29.91
30.950	0.00	0.25	0.25	0.00	0.00	23	29.91
31.000	0.00	0.25	0.25	0.00	0.00	23	29.91
31.050	0.00	0.25	0.25	0.00	0.00	23	29.91
31.100	0.00	0.25	0.25	0.00	0.00	23	29.91
31.150	0.00	0.25	0.25	0.00	0.00	23	29.91
31.200	0.00	0.25	0.25	0.00	0.00	23	29.91
31.250	0.00	0.25	0.25	0.00	0.00	23	29.91
31.300	0.00	0.25	0.25	0.00	0.00	23	29.91
31.350	0.00	0.25	0.25	0.00	0.00	23	29.91
31.400	0.00	0.25	0.25	0.00	0.00	23	29.91
31.450	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
31.500	0.00	0.25	0.25	0.00	0.00	23	29.91
31.550	0.00	0.25	0.25	0.00	0.00	23	29.91
31.600	0.00	0.25	0.25	0.00	0.00	23	29.91
31.650	0.00	0.25	0.25	0.00	0.00	23	29.91
31.700	0.00	0.25	0.25	0.00	0.00	23	29.91
31.750	0.00	0.25	0.25	0.00	0.00	23	29.91
31.800	0.00	0.25	0.25	0.00	0.00	23	29.91
31.850	0.00	0.25	0.25	0.00	0.00	23	29.91
31.900	0.00	0.25	0.25	0.00	0.00	23	29.91
31.950	0.00	0.25	0.25	0.00	0.00	23	29.91
32.000	0.00	0.25	0.25	0.00	0.00	23	29.91
32.050	0.00	0.25	0.25	0.00	0.00	23	29.91
32.100	0.00	0.25	0.25	0.00	0.00	23	29.91
32.150	0.00	0.25	0.25	0.00	0.00	23	29.91
32.200	0.00	0.25	0.25	0.00	0.00	23	29.91
32.250	0.00	0.25	0.25	0.00	0.00	23	29.91
32.300	0.00	0.25	0.25	0.00	0.00	23	29.91
32.350	0.00	0.25	0.25	0.00	0.00	23	29.91
32.400	0.00	0.25	0.25	0.00	0.00	23	29.91
32.450	0.00	0.25	0.25	0.00	0.00	23	29.91
32.500	0.00	0.25	0.25	0.00	0.00	23	29.91
32.550	0.00	0.25	0.25	0.00	0.00	23	29.91
32.600	0.00	0.25	0.25	0.00	0.00	23	29.91
32.650	0.00	0.25	0.25	0.00	0.00	23	29.91
32.700	0.00	0.25	0.25	0.00	0.00	23	29.91
32.750	0.00	0.25	0.25	0.00	0.00	23	29.91
32.800	0.00	0.25	0.25	0.00	0.00	23	29.91
32.850	0.00	0.25	0.25	0.00	0.00	23	29.91
32.900	0.00	0.25	0.25	0.00	0.00	23	29.91
32.950	0.00	0.25	0.25	0.00	0.00	23	29.91
33.000	0.00	0.25	0.25	0.00	0.00	23	29.91
33.050	0.00	0.25	0.25	0.00	0.00	23	29.91
33.100	0.00	0.25	0.25	0.00	0.00	23	29.91
33.150	0.00	0.25	0.25	0.00	0.00	23	29.91
33.200	0.00	0.25	0.25	0.00	0.00	23	29.91
33.250	0.00	0.25	0.25	0.00	0.00	23	29.91
33.300	0.00	0.25	0.25	0.00	0.00	23	29.91
33.350	0.00	0.25	0.25	0.00	0.00	23	29.91
33.400	0.00	0.25	0.25	0.00	0.00	23	29.91
33.450	0.00	0.25	0.25	0.00	0.00	23	29.91
33.500	0.00	0.25	0.25	0.00	0.00	23	29.91
33.550	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
33.600	0.00	0.25	0.25	0.00	0.00	23	29.91
33.650	0.00	0.25	0.25	0.00	0.00	23	29.91
33.700	0.00	0.25	0.25	0.00	0.00	23	29.91
33.750	0.00	0.25	0.25	0.00	0.00	23	29.91
33.800	0.00	0.25	0.25	0.00	0.00	23	29.91
33.850	0.00	0.25	0.25	0.00	0.00	23	29.91
33.900	0.00	0.25	0.25	0.00	0.00	23	29.91
33.950	0.00	0.25	0.25	0.00	0.00	23	29.91
34.000	0.00	0.25	0.25	0.00	0.00	23	29.91
34.050	0.00	0.25	0.25	0.00	0.00	23	29.91
34.100	0.00	0.25	0.25	0.00	0.00	23	29.91
34.150	0.00	0.25	0.25	0.00	0.00	23	29.91
34.200	0.00	0.25	0.25	0.00	0.00	23	29.91
34.250	0.00	0.25	0.25	0.00	0.00	23	29.91
34.300	0.00	0.25	0.25	0.00	0.00	23	29.91
34.350	0.00	0.25	0.25	0.00	0.00	23	29.91
34.400	0.00	0.25	0.25	0.00	0.00	23	29.91
34.450	0.00	0.25	0.25	0.00	0.00	23	29.91
34.500	0.00	0.25	0.25	0.00	0.00	23	29.91
34.550	0.00	0.25	0.25	0.00	0.00	23	29.91
34.600	0.00	0.25	0.25	0.00	0.00	23	29.91
34.650	0.00	0.25	0.25	0.00	0.00	23	29.91
34.700	0.00	0.25	0.25	0.00	0.00	23	29.91
34.750	0.00	0.25	0.25	0.00	0.00	23	29.91
34.800	0.00	0.25	0.25	0.00	0.00	23	29.91
34.850	0.00	0.25	0.25	0.00	0.00	23	29.91
34.900	0.00	0.25	0.25	0.00	0.00	23	29.91
34.950	0.00	0.25	0.25	0.00	0.00	23	29.91
35.000	0.00	0.25	0.25	0.00	0.00	23	29.91
35.050	0.00	0.25	0.25	0.00	0.00	23	29.91
35.100	0.00	0.25	0.25	0.00	0.00	23	29.91
35.150	0.00	0.25	0.25	0.00	0.00	23	29.91
35.200	0.00	0.25	0.25	0.00	0.00	23	29.91
35.250	0.00	0.25	0.25	0.00	0.00	23	29.91
35.300	0.00	0.25	0.25	0.00	0.00	23	29.91
35.350	0.00	0.25	0.25	0.00	0.00	23	29.91
35.400	0.00	0.25	0.25	0.00	0.00	23	29.91
35.450	0.00	0.25	0.25	0.00	0.00	23	29.91
35.500	0.00	0.25	0.25	0.00	0.00	23	29.91
35.550	0.00	0.25	0.25	0.00	0.00	23	29.91
35.600	0.00	0.25	0.25	0.00	0.00	23	29.91
35.650	0.00	0.25	0.25	0.00	0.00	23	29.91

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: EX. RG (OUT) Storm Event: 100 years
Scenario: Pre-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
35.700	0.00	0.25	0.25	0.00	0.00	23	29.91
35.750	0.00	0.25	0.25	0.00	0.00	23	29.91
35.800	0.00	0.25	0.25	0.00	0.00	23	29.91
35.850	0.00	0.25	0.25	0.00	0.00	23	29.91
35.900	0.00	0.25	0.25	0.00	0.00	23	29.91
35.950	0.00	0.25	0.25	0.00	0.00	23	29.91
36.000	0.00	0.25	0.25	0.00	0.00	23	29.91

Subsection: Pond Inflow Summary Return Event: 1 years
Label: EX. RG (IN) Storm Event: 1 year
Scenario: Pre-Development 1 year

Summary for Hydrograph Addition at 'EX. RG'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1B	3,234	12.100	0.88
Flow (In)	EX. RG	3,234	12.100	0.88

Subsection: Pond Inflow Summary Return Event: 10 years
Label: EX. RG (IN) Storm Event: 10 years
Scenario: Pre-Development 10 year

Summary for Hydrograph Addition at 'EX. RG'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1B	8,818	12.100	2.46
Flow (In)	EX. RG	8,818	12.100	2.46

Hydrologic Calculations

Subsection: Pond Inflow Summary
Label: EX. RG (IN)
Scenario: Pre-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'EX. RG'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1B	12,363	12.100	3.42
Flow (In)	EX. RG	12,363	12.100	3.42

Subsection: Pond Inflow Summary
Label: EX. RG (IN)
Scenario: Pre-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'EX. RG'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	EDA-1B

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-1B	19,910	12.100	5.40
Flow (In)	EX. RG	19,910	12.100	5.40

Subsection: Elevation-Volume-Flow Table (Pond)
Label: SP
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 1 years
Label: SP Storm Event: 1 year
Scenario: Post-Development 1 year

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
31.00	0.10	0	0.06	0.00	0.10	0.10
31.50	0.10	1,374	0.06	0.00	0.10	15.37
32.00	0.10	2,748	0.06	0.00	0.10	30.64
32.50	84.96	4,122	0.06	0.00	84.96	130.76
33.00	192.63	5,496	0.06	0.00	192.63	253.69

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 10 years
Label: SP Storm Event: 10 years
Scenario: Post-Development 10 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
31.00	0.10	0	0.06	0.00	0.10	0.10
31.50	0.10	1,374	0.06	0.00	0.10	15.37
32.00	0.10	2,748	0.06	0.00	0.10	30.64
32.50	84.96	4,122	0.06	0.00	84.96	130.76
33.00	192.63	5,496	0.06	0.00	192.63	253.69

Subsection: Elevation-Volume-Flow Table (Pond) Return Event: 25 years
Label: SP Storm Event: 25 years
Scenario: Post-Development 25 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions

Hydrologic Calculations

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 25 years
Label: SP | Storm Event: 25 years
Scenario: Post-Development 25 year

Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
31.00	0.10	0	0.06	0.00	0.10	0.10
31.50	0.10	1,374	0.06	0.00	0.10	15.37
32.00	0.10	2,748	0.06	0.00	0.10	30.64
32.50	84.96	4,122	0.06	0.00	84.96	130.76
33.00	192.63	5,496	0.06	0.00	192.63	253.69

Subsection: Elevation-Volume-Flow Table (Pond) | Return Event: 100 years
Label: SP | Storm Event: 100 years
Scenario: Post-Development 100 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
31.00	0.10	0	0.06	0.00	0.10	0.10
31.50	0.10	1,374	0.06	0.00	0.10	15.37
32.00	0.10	2,748	0.06	0.00	0.10	30.64
32.50	84.96	4,122	0.06	0.00	84.96	130.76
33.00	192.63	5,496	0.06	0.00	192.63	253.69

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.09 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.10 ft³/s	Time to Peak (Flow, Outlet)	11.400 hours

Elevation (Water Surface, Peak)	31.56 ft
Volume (Peak)	1,549 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	4,014 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	4,019 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	5 ft³
Error (Mass Balance)	0.1 %

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Initial Conditions	
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.12 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	1.81 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	32.01 ft
Volume (Peak)	2,776 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	8,156 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	8,161 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	5 ft³
Error (Mass Balance)	0.1 %

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.70 ft³/s	Time to Peak (Flow, In)	12.100 hours

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Inflow/Outflow Hydrograph Summary			
Flow (Peak Outlet)	3.35 ft³/s	Time to Peak (Flow, Outlet)	12.100 hours

Elevation (Water Surface, Peak)	32.02 ft
Volume (Peak)	2,801 ft³

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	10,566 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	10,571 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	5 ft³
Error (Mass Balance)	0.0 %

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	31.00 ft
Volume (Initial)	0 ft³
Flow (Initial Outlet)	0.10 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.10 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.88 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	4.00 ft³/s	Time to Peak (Flow, Outlet)	12.050 hours

Elevation (Water Surface, Peak)	32.02 ft
Volume (Peak)	2,811 ft³

Mass Balance (ft³)

Subsection: Level Pool Pond Routing Summary
Label: SP (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Mass Balance (ft³)	
Volume (Initial)	0 ft³
Volume (Total Inflow)	15,491 ft³
Volume (Total Infiltration)	0 ft³
Volume (Total Outlet Outflow)	15,496 ft³
Volume (Retained)	0 ft³
Volume (Unrouted)	5 ft³
Error (Mass Balance)	0.0 %

Subsection: Pond Routing Calculations (Total Out)
Label: SP (OUT)
Scenario: Post-Development 1 year

Return Event: 1 years
Storm Event: 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.10	0.00	0.05	0	31.00
0.050	0.00	0.00	0.00	0.00	0.00	0	31.00
0.100	0.00	0.00	0.00	0.00	0.00	0	31.00
0.150	0.00	0.00	0.00	0.00	0.00	0	31.00
0.200	0.00	0.00	0.00	0.00	0.00	0	31.00
0.250	0.00	0.00	0.00	0.00	0.00	0	31.00
0.300	0.00	0.00	0.00	0.00	0.00	0	31.00
0.350	0.00	0.00	0.00	0.00	0.00	0	31.00
0.400	0.00	0.00	0.00	0.00	0.00	0	31.00
0.450	0.00	0.00	0.00	0.00	0.00	0	31.00
0.500	0.00	0.00	0.00	0.00	0.00	0	31.00
0.550	0.00	0.00	0.00	0.00	0.00	0	31.00
0.600	0.00	0.00	0.00	0.00	0.00	0	31.00
0.650	0.00	0.00	0.00	0.00	0.00	0	31.00
0.700	0.00	0.00	0.00	0.00	0.00	0	31.00
0.750	0.00	0.00	0.00	0.00	0.00	0	31.00
0.800	0.00	0.00	0.00	0.00	0.00	0	31.00
0.850	0.00	0.00	0.00	0.00	0.00	0	31.00
0.900	0.00	0.00	0.00	0.00	0.00	0	31.00
0.950	0.00	0.00	0.00	0.00	0.00	0	31.00
1.000	0.00	0.00	0.00	0.00	0.00	0	31.00
1.050	0.00	0.00	0.00	0.00	0.00	0	31.00
1.100	0.00	0.00	0.00	0.00	0.00	0	31.00
1.150	0.00	0.00	0.00	0.00	0.00	0	31.00
1.200	0.00	0.00	0.00	0.00	0.00	0	31.00
1.250	0.00	0.00	0.00	0.00	0.00	0	31.00
1.300	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
1.350	0.00	0.00	0.00	0.00	0.00	0	31.00
1.400	0.00	0.00	0.00	0.00	0.00	0	31.00
1.450	0.00	0.00	0.00	0.00	0.00	0	31.00
1.500	0.00	0.00	0.00	0.00	0.00	0	31.00
1.550	0.00	0.00	0.00	0.00	0.00	0	31.00
1.600	0.00	0.00	0.00	0.00	0.00	0	31.00
1.650	0.00	0.00	0.00	0.00	0.00	0	31.00
1.700	0.00	0.00	0.00	0.00	0.00	0	31.00
1.750	0.00	0.00	0.00	0.00	0.00	0	31.00
1.800	0.00	0.00	0.00	0.00	0.00	0	31.00
1.850	0.00	0.00	0.00	0.00	0.00	0	31.00
1.900	0.00	0.00	0.00	0.00	0.00	0	31.00
1.950	0.00	0.00	0.00	0.00	0.00	0	31.00
2.000	0.00	0.00	0.00	0.00	0.00	0	31.00
2.050	0.00	0.00	0.00	0.00	0.00	0	31.00
2.100	0.00	0.00	0.00	0.00	0.00	0	31.00
2.150	0.00	0.00	0.00	0.00	0.00	0	31.00
2.200	0.00	0.00	0.00	0.00	0.00	0	31.00
2.250	0.00	0.00	0.00	0.00	0.00	0	31.00
2.300	0.00	0.00	0.00	0.00	0.00	0	31.00
2.350	0.00	0.00	0.00	0.00	0.00	0	31.00
2.400	0.00	0.00	0.00	0.00	0.00	0	31.00
2.450	0.00	0.00	0.00	0.00	0.00	0	31.00
2.500	0.00	0.00	0.00	0.00	0.00	0	31.00
2.550	0.00	0.00	0.00	0.00	0.00	0	31.00
2.600	0.00	0.00	0.00	0.00	0.00	0	31.00
2.650	0.00	0.00	0.00	0.00	0.00	0	31.00
2.700	0.00	0.00	0.00	0.00	0.00	0	31.00
2.750	0.00	0.00	0.00	0.00	0.00	0	31.00
2.800	0.00	0.00	0.00	0.00	0.00	0	31.00
2.850	0.00	0.00	0.00	0.00	0.00	0	31.00
2.900	0.00	0.00	0.00	0.00	0.00	0	31.00
2.950	0.00	0.00	0.00	0.00	0.00	0	31.00
3.000	0.00	0.00	0.00	0.00	0.00	0	31.00
3.050	0.00	0.00	0.00	0.00	0.00	0	31.00
3.100	0.00	0.00	0.00	0.00	0.00	0	31.00
3.150	0.00	0.00	0.00	0.00	0.00	0	31.00
3.200	0.00	0.00	0.00	0.00	0.00	0	31.00
3.250	0.00	0.00	0.00	0.00	0.00	0	31.00
3.300	0.00	0.00	0.00	0.00	0.00	0	31.00
3.350	0.00	0.00	0.00	0.00	0.00	0	31.00
3.400	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
3.450	0.00	0.00	0.00	0.00	0.00	0	31.00
3.500	0.00	0.00	0.00	0.00	0.00	0	31.00
3.550	0.00	0.00	0.00	0.00	0.00	0	31.00
3.600	0.00	0.00	0.00	0.00	0.00	0	31.00
3.650	0.00	0.00	0.00	0.00	0.00	0	31.00
3.700	0.00	0.00	0.00	0.00	0.00	0	31.00
3.750	0.00	0.00	0.00	0.00	0.00	0	31.00
3.800	0.00	0.00	0.00	0.00	0.00	0	31.00
3.850	0.00	0.00	0.00	0.00	0.00	0	31.00
3.900	0.00	0.00	0.00	0.00	0.00	0	31.00
3.950	0.00	0.00	0.00	0.00	0.00	0	31.00
4.000	0.00	0.00	0.00	0.00	0.00	0	31.00
4.050	0.00	0.00	0.00	0.00	0.00	0	31.00
4.100	0.00	0.00	0.00	0.00	0.00	0	31.00
4.150	0.00	0.00	0.00	0.00	0.00	0	31.00
4.200	0.00	0.00	0.00	0.00	0.00	0	31.00
4.250	0.00	0.00	0.00	0.00	0.00	0	31.00
4.300	0.00	0.00	0.00	0.00	0.00	0	31.00
4.350	0.00	0.00	0.00	0.00	0.00	0	31.00
4.400	0.00	0.00	0.00	0.00	0.00	0	31.00
4.450	0.00	0.00	0.00	0.00	0.00	0	31.00
4.500	0.00	0.00	0.00	0.00	0.00	0	31.00
4.550	0.00	0.00	0.00	0.00	0.00	0	31.00
4.600	0.00	0.00	0.00	0.00	0.00	0	31.00
4.650	0.00	0.00	0.00	0.00	0.00	0	31.00
4.700	0.00	0.00	0.00	0.00	0.00	0	31.00
4.750	0.00	0.00	0.00	0.00	0.00	0	31.00
4.800	0.00	0.00	0.00	0.00	0.00	0	31.00
4.850	0.00	0.00	0.00	0.00	0.00	0	31.00
4.900	0.00	0.00	0.00	0.00	0.00	0	31.00
4.950	0.00	0.00	0.00	0.00	0.00	0	31.00
5.000	0.00	0.00	0.00	0.00	0.00	0	31.00
5.050	0.00	0.00	0.00	0.00	0.00	0	31.00
5.100	0.00	0.00	0.00	0.00	0.00	0	31.00
5.150	0.00	0.00	0.00	0.00	0.00	0	31.00
5.200	0.00	0.00	0.00	0.00	0.00	0	31.00
5.250	0.00	0.00	0.00	0.00	0.00	0	31.00
5.300	0.00	0.00	0.00	0.00	0.00	0	31.00
5.350	0.00	0.00	0.00	0.00	0.00	0	31.00
5.400	0.00	0.00	0.00	0.00	0.00	0	31.00
5.450	0.00	0.00	0.00	0.00	0.00	0	31.00
5.500	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
5.550	0.00	0.00	0.00	0.00	0.00	0	31.00
5.600	0.00	0.00	0.01	0.00	0.00	0	31.00
5.650	0.00	0.00	0.01	0.00	0.00	0	31.00
5.700	0.00	0.00	0.01	0.00	0.00	0	31.00
5.750	0.00	0.00	0.01	0.00	0.00	0	31.00
5.800	0.00	0.00	0.01	0.00	0.00	0	31.00
5.850	0.00	0.00	0.01	0.00	0.00	0	31.00
5.900	0.00	0.00	0.01	0.00	0.00	0	31.00
5.950	0.00	0.00	0.01	0.00	0.00	0	31.00
6.000	0.00	0.00	0.01	0.00	0.00	0	31.00
6.050	0.00	0.00	0.01	0.00	0.00	0	31.00
6.100	0.00	0.00	0.01	0.00	0.00	0	31.00
6.150	0.00	0.00	0.01	0.00	0.00	0	31.00
6.200	0.00	0.00	0.01	0.00	0.00	0	31.00
6.250	0.00	0.00	0.01	0.00	0.00	0	31.00
6.300	0.00	0.00	0.01	0.00	0.00	0	31.00
6.350	0.00	0.00	0.01	0.00	0.00	0	31.00
6.400	0.01	0.00	0.01	0.00	0.01	0	31.00
6.450	0.01	0.00	0.01	0.00	0.01	0	31.00
6.500	0.01	0.00	0.01	0.00	0.01	0	31.00
6.550	0.01	0.00	0.01	0.00	0.01	0	31.00
6.600	0.01	0.00	0.01	0.00	0.01	0	31.00
6.650	0.01	0.00	0.01	0.00	0.01	0	31.00
6.700	0.01	0.00	0.01	0.00	0.01	0	31.00
6.750	0.01	0.00	0.01	0.00	0.01	0	31.00
6.800	0.01	0.00	0.01	0.00	0.01	0	31.00
6.850	0.01	0.00	0.01	0.00	0.01	0	31.00
6.900	0.01	0.00	0.01	0.00	0.01	0	31.00
6.950	0.01	0.00	0.02	0.00	0.01	0	31.00
7.000	0.01	0.00	0.02	0.00	0.01	0	31.00
7.050	0.01	0.00	0.02	0.00	0.01	0	31.00
7.100	0.01	0.00	0.02	0.00	0.01	0	31.00
7.150	0.01	0.00	0.02	0.00	0.01	0	31.00
7.200	0.01	0.00	0.02	0.00	0.01	0	31.00
7.250	0.01	0.00	0.02	0.00	0.01	0	31.00
7.300	0.01	0.00	0.02	0.00	0.01	0	31.00
7.350	0.01	0.00	0.02	0.00	0.01	0	31.00
7.400	0.01	0.00	0.02	0.00	0.01	0	31.00
7.450	0.01	0.00	0.02	0.00	0.01	0	31.00
7.500	0.01	0.00	0.02	0.00	0.01	0	31.00
7.550	0.01	0.00	0.02	0.00	0.01	0	31.00
7.600	0.01	0.00	0.02	0.00	0.01	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
7.650	0.01	0.00	0.02	0.00	0.01	0	31.00
7.700	0.01	0.00	0.02	0.00	0.01	0	31.00
7.750	0.01	0.00	0.02	0.00	0.01	0	31.00
7.800	0.01	0.00	0.02	0.00	0.01	0	31.00
7.850	0.01	0.00	0.03	0.00	0.01	0	31.00
7.900	0.01	0.00	0.03	0.00	0.01	0	31.00
7.950	0.01	0.00	0.03	0.00	0.01	0	31.00
8.000	0.01	0.00	0.03	0.00	0.01	0	31.00
8.050	0.01	0.00	0.03	0.00	0.01	0	31.00
8.100	0.01	0.00	0.03	0.00	0.01	0	31.00
8.150	0.02	0.00	0.03	0.00	0.02	0	31.00
8.200	0.02	0.00	0.03	0.00	0.02	0	31.00
8.250	0.02	0.00	0.03	0.00	0.02	0	31.00
8.300	0.02	0.00	0.03	0.00	0.02	0	31.00
8.350	0.02	0.00	0.03	0.00	0.02	0	31.00
8.400	0.02	0.00	0.04	0.00	0.02	0	31.00
8.450	0.02	0.00	0.04	0.00	0.02	0	31.00
8.500	0.02	0.00	0.04	0.00	0.02	0	31.00
8.550	0.02	0.00	0.04	0.00	0.02	0	31.00
8.600	0.02	0.00	0.04	0.00	0.02	0	31.00
8.650	0.02	0.00	0.04	0.00	0.02	0	31.00
8.700	0.02	0.00	0.04	0.00	0.02	0	31.00
8.750	0.02	0.00	0.04	0.00	0.02	0	31.00
8.800	0.02	0.00	0.05	0.00	0.02	0	31.00
8.850	0.02	0.00	0.05	0.00	0.02	0	31.00
8.900	0.02	0.00	0.05	0.00	0.02	0	31.00
8.950	0.03	0.00	0.05	0.00	0.02	0	31.00
9.000	0.03	0.00	0.05	0.00	0.03	0	31.00
9.050	0.03	0.00	0.05	0.00	0.03	0	31.00
9.100	0.03	0.00	0.05	0.00	0.03	0	31.00
9.150	0.03	0.00	0.06	0.00	0.03	0	31.00
9.200	0.03	0.00	0.06	0.00	0.03	0	31.00
9.250	0.03	0.00	0.06	0.00	0.03	0	31.00
9.300	0.03	0.00	0.06	0.00	0.03	0	31.00
9.350	0.03	0.00	0.06	0.00	0.03	0	31.00
9.400	0.03	0.00	0.06	0.00	0.03	0	31.00
9.450	0.03	0.00	0.06	0.00	0.03	0	31.00
9.500	0.03	0.00	0.07	0.00	0.03	0	31.00
9.550	0.03	0.00	0.07	0.00	0.03	0	31.00
9.600	0.04	0.00	0.07	0.00	0.03	0	31.00
9.650	0.04	0.00	0.07	0.00	0.04	0	31.00
9.700	0.04	0.00	0.07	0.00	0.04	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
9.750	0.04	0.00	0.07	0.00	0.04	0	31.00
9.800	0.04	0.00	0.08	0.00	0.04	0	31.00
9.850	0.04	0.00	0.08	0.00	0.04	0	31.00
9.900	0.04	0.00	0.08	0.00	0.04	0	31.00
9.950	0.04	0.00	0.08	0.00	0.04	0	31.00
10.000	0.04	0.00	0.08	0.00	0.04	0	31.00
10.050	0.04	0.00	0.08	0.00	0.04	0	31.00
10.100	0.04	0.00	0.09	0.00	0.04	0	31.00
10.150	0.05	0.00	0.09	0.00	0.04	0	31.00
10.200	0.05	0.00	0.09	0.00	0.05	0	31.00
10.250	0.05	0.00	0.10	0.00	0.05	0	31.00
10.300	0.05	0.00	0.10	0.00	0.05	0	31.00
10.350	0.05	0.00	0.10	0.00	0.05	0	31.00
10.400	0.05	0.00	0.10	0.00	0.05	0	31.00
10.450	0.05	0.00	0.11	0.00	0.05	0	31.00
10.500	0.06	0.00	0.11	0.00	0.06	0	31.00
10.550	0.06	0.00	0.11	0.00	0.06	0	31.00
10.600	0.06	0.00	0.12	0.00	0.06	0	31.00
10.650	0.06	0.00	0.12	0.00	0.06	0	31.00
10.700	0.06	0.00	0.12	0.00	0.06	0	31.00
10.750	0.06	0.00	0.13	0.00	0.06	0	31.00
10.800	0.07	0.00	0.13	0.00	0.07	0	31.00
10.850	0.07	0.00	0.13	0.00	0.07	0	31.00
10.900	0.07	0.00	0.14	0.00	0.07	0	31.00
10.950	0.07	0.00	0.14	0.00	0.07	0	31.00
11.000	0.07	0.00	0.14	0.00	0.07	0	31.00
11.050	0.08	0.00	0.15	0.00	0.07	0	31.00
11.100	0.08	0.00	0.16	0.00	0.08	0	31.00
11.150	0.08	0.00	0.16	0.00	0.08	0	31.00
11.200	0.09	0.00	0.17	0.00	0.09	0	31.00
11.250	0.10	0.00	0.18	0.00	0.09	0	31.00
11.300	0.10	0.00	0.20	0.00	0.10	0	31.00
11.350	0.11	0.00	0.21	0.00	0.10	0	31.00
11.400	0.11	0.01	0.22	0.00	0.10	10	31.00
11.450	0.12	0.03	0.24	0.00	0.10	12	31.00
11.500	0.12	0.07	0.28	0.00	0.10	16	31.01
11.550	0.15	0.13	0.34	0.00	0.10	21	31.01
11.600	0.17	0.25	0.45	0.00	0.10	31	31.01
11.650	0.22	0.43	0.64	0.00	0.10	48	31.02
11.700	0.27	0.72	0.92	0.00	0.10	74	31.03
11.750	0.33	1.11	1.32	0.00	0.10	109	31.04
11.800	0.38	1.61	1.82	0.00	0.10	154	31.06

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.850	0.44	2.23	2.44	0.00	0.10	210	31.08
11.900	0.50	2.96	3.17	0.00	0.10	276	31.10
11.950	0.72	3.97	4.18	0.00	0.10	367	31.13
12.000	0.98	5.46	5.67	0.00	0.10	501	31.18
12.050	1.06	7.30	7.50	0.00	0.10	666	31.24
12.100	1.09	9.24	9.45	0.00	0.10	841	31.31
12.150	0.90	11.03	11.24	0.00	0.10	1,002	31.36
12.200	0.65	12.38	12.58	0.00	0.10	1,123	31.41
12.250	0.55	13.37	13.58	0.00	0.10	1,212	31.44
12.300	0.48	14.18	14.39	0.00	0.10	1,286	31.47
12.350	0.42	14.87	15.08	0.00	0.10	1,348	31.49
12.400	0.36	15.44	15.65	0.00	0.10	1,399	31.51
12.450	0.30	15.89	16.10	0.00	0.10	1,440	31.52
12.500	0.24	16.23	16.43	0.00	0.10	1,470	31.53
12.550	0.20	16.46	16.67	0.00	0.10	1,491	31.54
12.600	0.17	16.62	16.83	0.00	0.10	1,505	31.55
12.650	0.15	16.73	16.94	0.00	0.10	1,515	31.55
12.700	0.15	16.83	17.03	0.00	0.10	1,524	31.55
12.750	0.14	16.90	17.11	0.00	0.10	1,531	31.56
12.800	0.13	16.97	17.18	0.00	0.10	1,537	31.56
12.850	0.13	17.02	17.23	0.00	0.10	1,541	31.56
12.900	0.12	17.06	17.27	0.00	0.10	1,545	31.56
12.950	0.11	17.09	17.30	0.00	0.10	1,548	31.56
13.000	0.11	17.11	17.31	0.00	0.10	1,549	31.56
13.050	0.10	17.11	17.32	0.00	0.10	1,549	31.56
13.100	0.10	17.11	17.32	0.00	0.10	1,549	31.56
13.150	0.10	17.10	17.31	0.00	0.10	1,548	31.56
13.200	0.10	17.08	17.29	0.00	0.10	1,547	31.56
13.250	0.09	17.07	17.27	0.00	0.10	1,545	31.56
13.300	0.09	17.05	17.25	0.00	0.10	1,543	31.56
13.350	0.09	17.02	17.23	0.00	0.10	1,541	31.56
13.400	0.09	17.00	17.20	0.00	0.10	1,539	31.56
13.450	0.09	16.96	17.17	0.00	0.10	1,536	31.56
13.500	0.09	16.93	17.14	0.00	0.10	1,533	31.56
13.550	0.08	16.89	17.10	0.00	0.10	1,530	31.56
13.600	0.08	16.85	17.06	0.00	0.10	1,526	31.56
13.650	0.08	16.81	17.02	0.00	0.10	1,522	31.55
13.700	0.08	16.76	16.97	0.00	0.10	1,518	31.55
13.750	0.08	16.72	16.92	0.00	0.10	1,514	31.55
13.800	0.08	16.66	16.87	0.00	0.10	1,509	31.55
13.850	0.08	16.61	16.81	0.00	0.10	1,504	31.55
13.900	0.07	16.55	16.75	0.00	0.10	1,499	31.55

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.950	0.07	16.48	16.69	0.00	0.10	1,493	31.54
14.000	0.07	16.42	16.63	0.00	0.10	1,487	31.54
14.050	0.07	16.35	16.56	0.00	0.10	1,481	31.54
14.100	0.07	16.28	16.48	0.00	0.10	1,474	31.54
14.150	0.07	16.20	16.41	0.00	0.10	1,468	31.53
14.200	0.07	16.13	16.34	0.00	0.10	1,461	31.53
14.250	0.07	16.05	16.26	0.00	0.10	1,454	31.53
14.300	0.06	15.97	16.18	0.00	0.10	1,447	31.53
14.350	0.06	15.89	16.10	0.00	0.10	1,440	31.52
14.400	0.06	15.81	16.02	0.00	0.10	1,432	31.52
14.450	0.06	15.73	15.93	0.00	0.10	1,425	31.52
14.500	0.06	15.64	15.85	0.00	0.10	1,417	31.52
14.550	0.06	15.56	15.76	0.00	0.10	1,409	31.51
14.600	0.06	15.47	15.68	0.00	0.10	1,401	31.51
14.650	0.06	15.38	15.59	0.00	0.10	1,393	31.51
14.700	0.06	15.29	15.49	0.00	0.10	1,385	31.50
14.750	0.06	15.19	15.40	0.00	0.10	1,377	31.50
14.800	0.06	15.10	15.31	0.00	0.10	1,368	31.50
14.850	0.06	15.00	15.21	0.00	0.10	1,360	31.49
14.900	0.05	14.91	15.11	0.00	0.10	1,351	31.49
14.950	0.05	14.81	15.02	0.00	0.10	1,342	31.49
15.000	0.05	14.71	14.91	0.00	0.10	1,333	31.49
15.050	0.05	14.60	14.81	0.00	0.10	1,324	31.48
15.100	0.05	14.50	14.71	0.00	0.10	1,314	31.48
15.150	0.05	14.40	14.60	0.00	0.10	1,305	31.47
15.200	0.05	14.29	14.50	0.00	0.10	1,295	31.47
15.250	0.05	14.18	14.39	0.00	0.10	1,286	31.47
15.300	0.05	14.07	14.28	0.00	0.10	1,276	31.46
15.350	0.05	13.96	14.17	0.00	0.10	1,266	31.46
15.400	0.05	13.85	14.05	0.00	0.10	1,255	31.46
15.450	0.05	13.73	13.94	0.00	0.10	1,245	31.45
15.500	0.05	13.61	13.82	0.00	0.10	1,235	31.45
15.550	0.04	13.50	13.70	0.00	0.10	1,224	31.45
15.600	0.04	13.38	13.58	0.00	0.10	1,213	31.44
15.650	0.04	13.25	13.46	0.00	0.10	1,202	31.44
15.700	0.04	13.13	13.34	0.00	0.10	1,191	31.43
15.750	0.04	13.01	13.22	0.00	0.10	1,180	31.43
15.800	0.04	12.88	13.09	0.00	0.10	1,169	31.43
15.850	0.04	12.75	12.96	0.00	0.10	1,157	31.42
15.900	0.04	12.62	12.83	0.00	0.10	1,146	31.42
15.950	0.04	12.49	12.70	0.00	0.10	1,134	31.41
16.000	0.04	12.36	12.57	0.00	0.10	1,122	31.41

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.050	0.04	12.23	12.44	0.00	0.10	1,110	31.40
16.100	0.04	12.09	12.30	0.00	0.10	1,098	31.40
16.150	0.04	11.96	12.17	0.00	0.10	1,086	31.40
16.200	0.04	11.82	12.03	0.00	0.10	1,073	31.39
16.250	0.04	11.68	11.89	0.00	0.10	1,061	31.39
16.300	0.03	11.54	11.75	0.00	0.10	1,048	31.38
16.350	0.03	11.41	11.61	0.00	0.10	1,036	31.38
16.400	0.03	11.27	11.47	0.00	0.10	1,023	31.37
16.450	0.03	11.13	11.33	0.00	0.10	1,011	31.37
16.500	0.03	10.99	11.19	0.00	0.10	998	31.36
16.550	0.03	10.84	11.05	0.00	0.10	985	31.36
16.600	0.03	10.70	10.91	0.00	0.10	972	31.35
16.650	0.03	10.56	10.77	0.00	0.10	960	31.35
16.700	0.03	10.41	10.62	0.00	0.10	947	31.34
16.750	0.03	10.27	10.48	0.00	0.10	934	31.34
16.800	0.03	10.13	10.33	0.00	0.10	921	31.34
16.850	0.03	9.98	10.19	0.00	0.10	907	31.33
16.900	0.03	9.83	10.04	0.00	0.10	894	31.33
16.950	0.03	9.69	9.89	0.00	0.10	881	31.32
17.000	0.03	9.54	9.75	0.00	0.10	868	31.32
17.050	0.03	9.39	9.60	0.00	0.10	854	31.31
17.100	0.03	9.24	9.45	0.00	0.10	841	31.31
17.150	0.03	9.09	9.30	0.00	0.10	827	31.30
17.200	0.03	8.94	9.15	0.00	0.10	814	31.30
17.250	0.03	8.79	9.00	0.00	0.10	800	31.29
17.300	0.03	8.64	8.84	0.00	0.10	787	31.29
17.350	0.03	8.48	8.69	0.00	0.10	773	31.28
17.400	0.03	8.33	8.54	0.00	0.10	759	31.28
17.450	0.03	8.18	8.38	0.00	0.10	745	31.27
17.500	0.03	8.02	8.23	0.00	0.10	731	31.27
17.550	0.03	7.87	8.07	0.00	0.10	717	31.26
17.600	0.03	7.71	7.92	0.00	0.10	703	31.26
17.650	0.03	7.55	7.76	0.00	0.10	689	31.25
17.700	0.03	7.39	7.60	0.00	0.10	675	31.25
17.750	0.02	7.24	7.44	0.00	0.10	661	31.24
17.800	0.02	7.08	7.29	0.00	0.10	646	31.24
17.850	0.02	6.92	7.13	0.00	0.10	632	31.23
17.900	0.02	6.76	6.97	0.00	0.10	618	31.22
17.950	0.02	6.60	6.80	0.00	0.10	603	31.22
18.000	0.02	6.43	6.64	0.00	0.10	588	31.21
18.050	0.02	6.27	6.48	0.00	0.10	574	31.21
18.100	0.02	6.11	6.32	0.00	0.10	559	31.20

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.150	0.02	5.95	6.15	0.00	0.10	544	31.20
18.200	0.02	5.78	5.99	0.00	0.10	530	31.19
18.250	0.02	5.62	5.83	0.00	0.10	515	31.19
18.300	0.02	5.45	5.66	0.00	0.10	500	31.18
18.350	0.02	5.29	5.50	0.00	0.10	485	31.18
18.400	0.02	5.13	5.33	0.00	0.10	471	31.17
18.450	0.02	4.96	5.17	0.00	0.10	456	31.17
18.500	0.02	4.80	5.00	0.00	0.10	441	31.16
18.550	0.02	4.63	4.84	0.00	0.10	426	31.16
18.600	0.02	4.47	4.67	0.00	0.10	411	31.15
18.650	0.02	4.30	4.51	0.00	0.10	396	31.14
18.700	0.02	4.14	4.34	0.00	0.10	382	31.14
18.750	0.02	3.97	4.18	0.00	0.10	367	31.13
18.800	0.02	3.80	4.01	0.00	0.10	352	31.13
18.850	0.02	3.64	3.85	0.00	0.10	337	31.12
18.900	0.02	3.47	3.68	0.00	0.10	322	31.12
18.950	0.02	3.30	3.51	0.00	0.10	307	31.11
19.000	0.02	3.14	3.35	0.00	0.10	292	31.11
19.050	0.02	2.97	3.18	0.00	0.10	277	31.10
19.100	0.02	2.80	3.01	0.00	0.10	262	31.10
19.150	0.02	2.64	2.84	0.00	0.10	247	31.09
19.200	0.02	2.47	2.68	0.00	0.10	231	31.08
19.250	0.02	2.30	2.51	0.00	0.10	216	31.08
19.300	0.02	2.13	2.34	0.00	0.10	201	31.07
19.350	0.02	1.96	2.17	0.00	0.10	186	31.07
19.400	0.02	1.80	2.00	0.00	0.10	171	31.06
19.450	0.02	1.63	1.83	0.00	0.10	156	31.06
19.500	0.02	1.46	1.67	0.00	0.10	141	31.05
19.550	0.02	1.29	1.50	0.00	0.10	125	31.05
19.600	0.02	1.12	1.33	0.00	0.10	110	31.04
19.650	0.02	0.95	1.16	0.00	0.10	95	31.03
19.700	0.02	0.78	0.99	0.00	0.10	80	31.03
19.750	0.02	0.61	0.82	0.00	0.10	64	31.02
19.800	0.02	0.44	0.65	0.00	0.10	49	31.02
19.850	0.02	0.27	0.48	0.00	0.10	34	31.01
19.900	0.02	0.10	0.31	0.00	0.10	18	31.01
19.950	0.02	0.00	0.14	0.00	0.07	0	31.00
20.000	0.02	0.00	0.04	0.00	0.02	0	31.00
20.050	0.02	0.00	0.04	0.00	0.02	0	31.00
20.100	0.02	0.00	0.04	0.00	0.02	0	31.00
20.150	0.02	0.00	0.04	0.00	0.02	0	31.00
20.200	0.02	0.00	0.04	0.00	0.02	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
20.250	0.02	0.00	0.04	0.00	0.02	0	31.00
20.300	0.02	0.00	0.04	0.00	0.02	0	31.00
20.350	0.02	0.00	0.04	0.00	0.02	0	31.00
20.400	0.02	0.00	0.04	0.00	0.02	0	31.00
20.450	0.02	0.00	0.04	0.00	0.02	0	31.00
20.500	0.02	0.00	0.04	0.00	0.02	0	31.00
20.550	0.02	0.00	0.04	0.00	0.02	0	31.00
20.600	0.02	0.00	0.04	0.00	0.02	0	31.00
20.650	0.02	0.00	0.03	0.00	0.02	0	31.00
20.700	0.02	0.00	0.03	0.00	0.02	0	31.00
20.750	0.02	0.00	0.03	0.00	0.02	0	31.00
20.800	0.02	0.00	0.03	0.00	0.02	0	31.00
20.850	0.02	0.00	0.03	0.00	0.02	0	31.00
20.900	0.02	0.00	0.03	0.00	0.02	0	31.00
20.950	0.02	0.00	0.03	0.00	0.02	0	31.00
21.000	0.02	0.00	0.03	0.00	0.02	0	31.00
21.050	0.02	0.00	0.03	0.00	0.02	0	31.00
21.100	0.02	0.00	0.03	0.00	0.02	0	31.00
21.150	0.02	0.00	0.03	0.00	0.02	0	31.00
21.200	0.02	0.00	0.03	0.00	0.02	0	31.00
21.250	0.02	0.00	0.03	0.00	0.02	0	31.00
21.300	0.02	0.00	0.03	0.00	0.02	0	31.00
21.350	0.02	0.00	0.03	0.00	0.02	0	31.00
21.400	0.02	0.00	0.03	0.00	0.02	0	31.00
21.450	0.02	0.00	0.03	0.00	0.02	0	31.00
21.500	0.02	0.00	0.03	0.00	0.02	0	31.00
21.550	0.02	0.00	0.03	0.00	0.02	0	31.00
21.600	0.02	0.00	0.03	0.00	0.02	0	31.00
21.650	0.02	0.00	0.03	0.00	0.02	0	31.00
21.700	0.02	0.00	0.03	0.00	0.02	0	31.00
21.750	0.02	0.00	0.03	0.00	0.02	0	31.00
21.800	0.02	0.00	0.03	0.00	0.02	0	31.00
21.850	0.02	0.00	0.03	0.00	0.02	0	31.00
21.900	0.02	0.00	0.03	0.00	0.02	0	31.00
21.950	0.02	0.00	0.03	0.00	0.02	0	31.00
22.000	0.02	0.00	0.03	0.00	0.02	0	31.00
22.050	0.02	0.00	0.03	0.00	0.02	0	31.00
22.100	0.02	0.00	0.03	0.00	0.02	0	31.00
22.150	0.02	0.00	0.03	0.00	0.02	0	31.00
22.200	0.01	0.00	0.03	0.00	0.02	0	31.00
22.250	0.01	0.00	0.03	0.00	0.01	0	31.00
22.300	0.01	0.00	0.03	0.00	0.01	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
22.350	0.01	0.00	0.03	0.00	0.01	0	31.00
22.400	0.01	0.00	0.03	0.00	0.01	0	31.00
22.450	0.01	0.00	0.03	0.00	0.01	0	31.00
22.500	0.01	0.00	0.03	0.00	0.01	0	31.00
22.550	0.01	0.00	0.03	0.00	0.01	0	31.00
22.600	0.01	0.00	0.03	0.00	0.01	0	31.00
22.650	0.01	0.00	0.03	0.00	0.01	0	31.00
22.700	0.01	0.00	0.03	0.00	0.01	0	31.00
22.750	0.01	0.00	0.03	0.00	0.01	0	31.00
22.800	0.01	0.00	0.03	0.00	0.01	0	31.00
22.850	0.01	0.00	0.03	0.00	0.01	0	31.00
22.900	0.01	0.00	0.03	0.00	0.01	0	31.00
22.950	0.01	0.00	0.03	0.00	0.01	0	31.00
23.000	0.01	0.00	0.03	0.00	0.01	0	31.00
23.050	0.01	0.00	0.03	0.00	0.01	0	31.00
23.100	0.01	0.00	0.03	0.00	0.01	0	31.00
23.150	0.01	0.00	0.03	0.00	0.01	0	31.00
23.200	0.01	0.00	0.03	0.00	0.01	0	31.00
23.250	0.01	0.00	0.03	0.00	0.01	0	31.00
23.300	0.01	0.00	0.03	0.00	0.01	0	31.00
23.350	0.01	0.00	0.03	0.00	0.01	0	31.00
23.400	0.01	0.00	0.03	0.00	0.01	0	31.00
23.450	0.01	0.00	0.03	0.00	0.01	0	31.00
23.500	0.01	0.00	0.03	0.00	0.01	0	31.00
23.550	0.01	0.00	0.03	0.00	0.01	0	31.00
23.600	0.01	0.00	0.03	0.00	0.01	0	31.00
23.650	0.01	0.00	0.03	0.00	0.01	0	31.00
23.700	0.01	0.00	0.03	0.00	0.01	0	31.00
23.750	0.01	0.00	0.03	0.00	0.01	0	31.00
23.800	0.01	0.00	0.02	0.00	0.01	0	31.00
23.850	0.01	0.00	0.02	0.00	0.01	0	31.00
23.900	0.01	0.00	0.02	0.00	0.01	0	31.00
23.950	0.01	0.00	0.02	0.00	0.01	0	31.00
24.000	0.01	0.00	0.02	0.00	0.01	0	31.00
24.050	0.01	0.00	0.02	0.00	0.01	0	31.00
24.100	0.00	0.00	0.01	0.00	0.00	0	31.00
24.150	0.00	0.00	0.00	0.00	0.00	0	31.00
24.200	0.00	0.00	0.00	0.00	0.00	0	31.00
24.250	0.00	0.00	0.00	0.00	0.00	0	31.00
24.300	0.00	0.00	0.00	0.00	0.00	0	31.00
24.350	0.00	0.00	0.00	0.00	0.00	0	31.00
24.400	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
24.450	0.00	0.00	0.00	0.00	0.00	0	31.00
24.500	0.00	0.00	0.00	0.00	0.00	0	31.00
24.550	0.00	0.00	0.00	0.00	0.00	0	31.00
24.600	0.00	0.00	0.00	0.00	0.00	0	31.00
24.650	0.00	0.00	0.00	0.00	0.00	0	31.00
24.700	0.00	0.00	0.00	0.00	0.00	0	31.00
24.750	0.00	0.00	0.00	0.00	0.00	0	31.00
24.800	0.00	0.00	0.00	0.00	0.00	0	31.00
24.850	0.00	0.00	0.00	0.00	0.00	0	31.00
24.900	0.00	0.00	0.00	0.00	0.00	0	31.00
24.950	0.00	0.00	0.00	0.00	0.00	0	31.00
25.000	0.00	0.00	0.00	0.00	0.00	0	31.00
25.050	0.00	0.00	0.00	0.00	0.00	0	31.00
25.100	0.00	0.00	0.00	0.00	0.00	0	31.00
25.150	0.00	0.00	0.00	0.00	0.00	0	31.00
25.200	0.00	0.00	0.00	0.00	0.00	0	31.00
25.250	0.00	0.00	0.00	0.00	0.00	0	31.00
25.300	0.00	0.00	0.00	0.00	0.00	0	31.00
25.350	0.00	0.00	0.00	0.00	0.00	0	31.00
25.400	0.00	0.00	0.00	0.00	0.00	0	31.00
25.450	0.00	0.00	0.00	0.00	0.00	0	31.00
25.500	0.00	0.00	0.00	0.00	0.00	0	31.00
25.550	0.00	0.00	0.00	0.00	0.00	0	31.00
25.600	0.00	0.00	0.00	0.00	0.00	0	31.00
25.650	0.00	0.00	0.00	0.00	0.00	0	31.00
25.700	0.00	0.00	0.00	0.00	0.00	0	31.00
25.750	0.00	0.00	0.00	0.00	0.00	0	31.00
25.800	0.00	0.00	0.00	0.00	0.00	0	31.00
25.850	0.00	0.00	0.00	0.00	0.00	0	31.00
25.900	0.00	0.00	0.00	0.00	0.00	0	31.00
25.950	0.00	0.00	0.00	0.00	0.00	0	31.00
26.000	0.00	0.00	0.00	0.00	0.00	0	31.00
26.050	0.00	0.00	0.00	0.00	0.00	0	31.00
26.100	0.00	0.00	0.00	0.00	0.00	0	31.00
26.150	0.00	0.00	0.00	0.00	0.00	0	31.00
26.200	0.00	0.00	0.00	0.00	0.00	0	31.00
26.250	0.00	0.00	0.00	0.00	0.00	0	31.00
26.300	0.00	0.00	0.00	0.00	0.00	0	31.00
26.350	0.00	0.00	0.00	0.00	0.00	0	31.00
26.400	0.00	0.00	0.00	0.00	0.00	0	31.00
26.450	0.00	0.00	0.00	0.00	0.00	0	31.00
26.500	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
26.550	0.00	0.00	0.00	0.00	0.00	0	31.00
26.600	0.00	0.00	0.00	0.00	0.00	0	31.00
26.650	0.00	0.00	0.00	0.00	0.00	0	31.00
26.700	0.00	0.00	0.00	0.00	0.00	0	31.00
26.750	0.00	0.00	0.00	0.00	0.00	0	31.00
26.800	0.00	0.00	0.00	0.00	0.00	0	31.00
26.850	0.00	0.00	0.00	0.00	0.00	0	31.00
26.900	0.00	0.00	0.00	0.00	0.00	0	31.00
26.950	0.00	0.00	0.00	0.00	0.00	0	31.00
27.000	0.00	0.00	0.00	0.00	0.00	0	31.00
27.050	0.00	0.00	0.00	0.00	0.00	0	31.00
27.100	0.00	0.00	0.00	0.00	0.00	0	31.00
27.150	0.00	0.00	0.00	0.00	0.00	0	31.00
27.200	0.00	0.00	0.00	0.00	0.00	0	31.00
27.250	0.00	0.00	0.00	0.00	0.00	0	31.00
27.300	0.00	0.00	0.00	0.00	0.00	0	31.00
27.350	0.00	0.00	0.00	0.00	0.00	0	31.00
27.400	0.00	0.00	0.00	0.00	0.00	0	31.00
27.450	0.00	0.00	0.00	0.00	0.00	0	31.00
27.500	0.00	0.00	0.00	0.00	0.00	0	31.00
27.550	0.00	0.00	0.00	0.00	0.00	0	31.00
27.600	0.00	0.00	0.00	0.00	0.00	0	31.00
27.650	0.00	0.00	0.00	0.00	0.00	0	31.00
27.700	0.00	0.00	0.00	0.00	0.00	0	31.00
27.750	0.00	0.00	0.00	0.00	0.00	0	31.00
27.800	0.00	0.00	0.00	0.00	0.00	0	31.00
27.850	0.00	0.00	0.00	0.00	0.00	0	31.00
27.900	0.00	0.00	0.00	0.00	0.00	0	31.00
27.950	0.00	0.00	0.00	0.00	0.00	0	31.00
28.000	0.00	0.00	0.00	0.00	0.00	0	31.00
28.050	0.00	0.00	0.00	0.00	0.00	0	31.00
28.100	0.00	0.00	0.00	0.00	0.00	0	31.00
28.150	0.00	0.00	0.00	0.00	0.00	0	31.00
28.200	0.00	0.00	0.00	0.00	0.00	0	31.00
28.250	0.00	0.00	0.00	0.00	0.00	0	31.00
28.300	0.00	0.00	0.00	0.00	0.00	0	31.00
28.350	0.00	0.00	0.00	0.00	0.00	0	31.00
28.400	0.00	0.00	0.00	0.00	0.00	0	31.00
28.450	0.00	0.00	0.00	0.00	0.00	0	31.00
28.500	0.00	0.00	0.00	0.00	0.00	0	31.00
28.550	0.00	0.00	0.00	0.00	0.00	0	31.00
28.600	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
28.650	0.00	0.00	0.00	0.00	0.00	0	31.00
28.700	0.00	0.00	0.00	0.00	0.00	0	31.00
28.750	0.00	0.00	0.00	0.00	0.00	0	31.00
28.800	0.00	0.00	0.00	0.00	0.00	0	31.00
28.850	0.00	0.00	0.00	0.00	0.00	0	31.00
28.900	0.00	0.00	0.00	0.00	0.00	0	31.00
28.950	0.00	0.00	0.00	0.00	0.00	0	31.00
29.000	0.00	0.00	0.00	0.00	0.00	0	31.00
29.050	0.00	0.00	0.00	0.00	0.00	0	31.00
29.100	0.00	0.00	0.00	0.00	0.00	0	31.00
29.150	0.00	0.00	0.00	0.00	0.00	0	31.00
29.200	0.00	0.00	0.00	0.00	0.00	0	31.00
29.250	0.00	0.00	0.00	0.00	0.00	0	31.00
29.300	0.00	0.00	0.00	0.00	0.00	0	31.00
29.350	0.00	0.00	0.00	0.00	0.00	0	31.00
29.400	0.00	0.00	0.00	0.00	0.00	0	31.00
29.450	0.00	0.00	0.00	0.00	0.00	0	31.00
29.500	0.00	0.00	0.00	0.00	0.00	0	31.00
29.550	0.00	0.00	0.00	0.00	0.00	0	31.00
29.600	0.00	0.00	0.00	0.00	0.00	0	31.00
29.650	0.00	0.00	0.00	0.00	0.00	0	31.00
29.700	0.00	0.00	0.00	0.00	0.00	0	31.00
29.750	0.00	0.00	0.00	0.00	0.00	0	31.00
29.800	0.00	0.00	0.00	0.00	0.00	0	31.00
29.850	0.00	0.00	0.00	0.00	0.00	0	31.00
29.900	0.00	0.00	0.00	0.00	0.00	0	31.00
29.950	0.00	0.00	0.00	0.00	0.00	0	31.00
30.000	0.00	0.00	0.00	0.00	0.00	0	31.00
30.050	0.00	0.00	0.00	0.00	0.00	0	31.00
30.100	0.00	0.00	0.00	0.00	0.00	0	31.00
30.150	0.00	0.00	0.00	0.00	0.00	0	31.00
30.200	0.00	0.00	0.00	0.00	0.00	0	31.00
30.250	0.00	0.00	0.00	0.00	0.00	0	31.00
30.300	0.00	0.00	0.00	0.00	0.00	0	31.00
30.350	0.00	0.00	0.00	0.00	0.00	0	31.00
30.400	0.00	0.00	0.00	0.00	0.00	0	31.00
30.450	0.00	0.00	0.00	0.00	0.00	0	31.00
30.500	0.00	0.00	0.00	0.00	0.00	0	31.00
30.550	0.00	0.00	0.00	0.00	0.00	0	31.00
30.600	0.00	0.00	0.00	0.00	0.00	0	31.00
30.650	0.00	0.00	0.00	0.00	0.00	0	31.00
30.700	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
30.750	0.00	0.00	0.00	0.00	0.00	0	31.00
30.800	0.00	0.00	0.00	0.00	0.00	0	31.00
30.850	0.00	0.00	0.00	0.00	0.00	0	31.00
30.900	0.00	0.00	0.00	0.00	0.00	0	31.00
30.950	0.00	0.00	0.00	0.00	0.00	0	31.00
31.000	0.00	0.00	0.00	0.00	0.00	0	31.00
31.050	0.00	0.00	0.00	0.00	0.00	0	31.00
31.100	0.00	0.00	0.00	0.00	0.00	0	31.00
31.150	0.00	0.00	0.00	0.00	0.00	0	31.00
31.200	0.00	0.00	0.00	0.00	0.00	0	31.00
31.250	0.00	0.00	0.00	0.00	0.00	0	31.00
31.300	0.00	0.00	0.00	0.00	0.00	0	31.00
31.350	0.00	0.00	0.00	0.00	0.00	0	31.00
31.400	0.00	0.00	0.00	0.00	0.00	0	31.00
31.450	0.00	0.00	0.00	0.00	0.00	0	31.00
31.500	0.00	0.00	0.00	0.00	0.00	0	31.00
31.550	0.00	0.00	0.00	0.00	0.00	0	31.00
31.600	0.00	0.00	0.00	0.00	0.00	0	31.00
31.650	0.00	0.00	0.00	0.00	0.00	0	31.00
31.700	0.00	0.00	0.00	0.00	0.00	0	31.00
31.750	0.00	0.00	0.00	0.00	0.00	0	31.00
31.800	0.00	0.00	0.00	0.00	0.00	0	31.00
31.850	0.00	0.00	0.00	0.00	0.00	0	31.00
31.900	0.00	0.00	0.00	0.00	0.00	0	31.00
31.950	0.00	0.00	0.00	0.00	0.00	0	31.00
32.000	0.00	0.00	0.00	0.00	0.00	0	31.00
32.050	0.00	0.00	0.00	0.00	0.00	0	31.00
32.100	0.00	0.00	0.00	0.00	0.00	0	31.00
32.150	0.00	0.00	0.00	0.00	0.00	0	31.00
32.200	0.00	0.00	0.00	0.00	0.00	0	31.00
32.250	0.00	0.00	0.00	0.00	0.00	0	31.00
32.300	0.00	0.00	0.00	0.00	0.00	0	31.00
32.350	0.00	0.00	0.00	0.00	0.00	0	31.00
32.400	0.00	0.00	0.00	0.00	0.00	0	31.00
32.450	0.00	0.00	0.00	0.00	0.00	0	31.00
32.500	0.00	0.00	0.00	0.00	0.00	0	31.00
32.550	0.00	0.00	0.00	0.00	0.00	0	31.00
32.600	0.00	0.00	0.00	0.00	0.00	0	31.00
32.650	0.00	0.00	0.00	0.00	0.00	0	31.00
32.700	0.00	0.00	0.00	0.00	0.00	0	31.00
32.750	0.00	0.00	0.00	0.00	0.00	0	31.00
32.800	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.850	0.00	0.00	0.00	0.00	0.00	0	31.00
32.900	0.00	0.00	0.00	0.00	0.00	0	31.00
32.950	0.00	0.00	0.00	0.00	0.00	0	31.00
33.000	0.00	0.00	0.00	0.00	0.00	0	31.00
33.050	0.00	0.00	0.00	0.00	0.00	0	31.00
33.100	0.00	0.00	0.00	0.00	0.00	0	31.00
33.150	0.00	0.00	0.00	0.00	0.00	0	31.00
33.200	0.00	0.00	0.00	0.00	0.00	0	31.00
33.250	0.00	0.00	0.00	0.00	0.00	0	31.00
33.300	0.00	0.00	0.00	0.00	0.00	0	31.00
33.350	0.00	0.00	0.00	0.00	0.00	0	31.00
33.400	0.00	0.00	0.00	0.00	0.00	0	31.00
33.450	0.00	0.00	0.00	0.00	0.00	0	31.00
33.500	0.00	0.00	0.00	0.00	0.00	0	31.00
33.550	0.00	0.00	0.00	0.00	0.00	0	31.00
33.600	0.00	0.00	0.00	0.00	0.00	0	31.00
33.650	0.00	0.00	0.00	0.00	0.00	0	31.00
33.700	0.00	0.00	0.00	0.00	0.00	0	31.00
33.750	0.00	0.00	0.00	0.00	0.00	0	31.00
33.800	0.00	0.00	0.00	0.00	0.00	0	31.00
33.850	0.00	0.00	0.00	0.00	0.00	0	31.00
33.900	0.00	0.00	0.00	0.00	0.00	0	31.00
33.950	0.00	0.00	0.00	0.00	0.00	0	31.00
34.000	0.00	0.00	0.00	0.00	0.00	0	31.00
34.050	0.00	0.00	0.00	0.00	0.00	0	31.00
34.100	0.00	0.00	0.00	0.00	0.00	0	31.00
34.150	0.00	0.00	0.00	0.00	0.00	0	31.00
34.200	0.00	0.00	0.00	0.00	0.00	0	31.00
34.250	0.00	0.00	0.00	0.00	0.00	0	31.00
34.300	0.00	0.00	0.00	0.00	0.00	0	31.00
34.350	0.00	0.00	0.00	0.00	0.00	0	31.00
34.400	0.00	0.00	0.00	0.00	0.00	0	31.00
34.450	0.00	0.00	0.00	0.00	0.00	0	31.00
34.500	0.00	0.00	0.00	0.00	0.00	0	31.00
34.550	0.00	0.00	0.00	0.00	0.00	0	31.00
34.600	0.00	0.00	0.00	0.00	0.00	0	31.00
34.650	0.00	0.00	0.00	0.00	0.00	0	31.00
34.700	0.00	0.00	0.00	0.00	0.00	0	31.00
34.750	0.00	0.00	0.00	0.00	0.00	0	31.00
34.800	0.00	0.00	0.00	0.00	0.00	0	31.00
34.850	0.00	0.00	0.00	0.00	0.00	0	31.00
34.900	0.00	0.00	0.00	0.00	0.00	0	31.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 1 years
Label: SP (OUT) Storm Event: 1 year
Scenario: Post-Development 1 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.950	0.00	0.00	0.00	0.00	0.00	0	31.00
35.000	0.00	0.00	0.00	0.00	0.00	0	31.00
35.050	0.00	0.00	0.00	0.00	0.00	0	31.00
35.100	0.00	0.00	0.00	0.00	0.00	0	31.00
35.150	0.00	0.00	0.00	0.00	0.00	0	31.00
35.200	0.00	0.00	0.00	0.00	0.00	0	31.00
35.250	0.00	0.00	0.00	0.00	0.00	0	31.00
35.300	0.00	0.00	0.00	0.00	0.00	0	31.00
35.350	0.00	0.00	0.00	0.00	0.00	0	31.00
35.400	0.00	0.00	0.00	0.00	0.00	0	31.00
35.450	0.00	0.00	0.00	0.00	0.00	0	31.00
35.500	0.00	0.00	0.00	0.00	0.00	0	31.00
35.550	0.00	0.00	0.00	0.00	0.00	0	31.00
35.600	0.00	0.00	0.00	0.00	0.00	0	31.00
35.650	0.00	0.00	0.00	0.00	0.00	0	31.00
35.700	0.00	0.00	0.00	0.00	0.00	0	31.00
35.750	0.00	0.00	0.00	0.00	0.00	0	31.00
35.800	0.00	0.00	0.00	0.00	0.00	0	31.00
35.850	0.00	0.00	0.00	0.00	0.00	0	31.00
35.900	0.00	0.00	0.00	0.00	0.00	0	31.00
35.950	0.00	0.00	0.00	0.00	0.00	0	31.00
36.000	0.00	0.00	0.00	0.00	0.00	0	31.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.10	0.00	0.05	0	31.00
0.050	0.00	0.00	0.00	0.00	0.00	0	31.00
0.100	0.00	0.00	0.00	0.00	0.00	0	31.00
0.150	0.00	0.00	0.00	0.00	0.00	0	31.00
0.200	0.00	0.00	0.00	0.00	0.00	0	31.00
0.250	0.00	0.00	0.00	0.00	0.00	0	31.00
0.300	0.00	0.00	0.00	0.00	0.00	0	31.00
0.350	0.00	0.00	0.00	0.00	0.00	0	31.00
0.400	0.00	0.00	0.00	0.00	0.00	0	31.00
0.450	0.00	0.00	0.00	0.00	0.00	0	31.00
0.500	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.550	0.00	0.00	0.00	0.00	0.00	0	31.00
0.600	0.00	0.00	0.00	0.00	0.00	0	31.00
0.650	0.00	0.00	0.00	0.00	0.00	0	31.00
0.700	0.00	0.00	0.00	0.00	0.00	0	31.00
0.750	0.00	0.00	0.00	0.00	0.00	0	31.00
0.800	0.00	0.00	0.00	0.00	0.00	0	31.00
0.850	0.00	0.00	0.00	0.00	0.00	0	31.00
0.900	0.00	0.00	0.00	0.00	0.00	0	31.00
0.950	0.00	0.00	0.00	0.00	0.00	0	31.00
1.000	0.00	0.00	0.00	0.00	0.00	0	31.00
1.050	0.00	0.00	0.00	0.00	0.00	0	31.00
1.100	0.00	0.00	0.00	0.00	0.00	0	31.00
1.150	0.00	0.00	0.00	0.00	0.00	0	31.00
1.200	0.00	0.00	0.00	0.00	0.00	0	31.00
1.250	0.00	0.00	0.00	0.00	0.00	0	31.00
1.300	0.00	0.00	0.00	0.00	0.00	0	31.00
1.350	0.00	0.00	0.00	0.00	0.00	0	31.00
1.400	0.00	0.00	0.00	0.00	0.00	0	31.00
1.450	0.00	0.00	0.00	0.00	0.00	0	31.00
1.500	0.00	0.00	0.00	0.00	0.00	0	31.00
1.550	0.00	0.00	0.00	0.00	0.00	0	31.00
1.600	0.00	0.00	0.00	0.00	0.00	0	31.00
1.650	0.00	0.00	0.00	0.00	0.00	0	31.00
1.700	0.00	0.00	0.00	0.00	0.00	0	31.00
1.750	0.00	0.00	0.00	0.00	0.00	0	31.00
1.800	0.00	0.00	0.00	0.00	0.00	0	31.00
1.850	0.00	0.00	0.00	0.00	0.00	0	31.00
1.900	0.00	0.00	0.00	0.00	0.00	0	31.00
1.950	0.00	0.00	0.00	0.00	0.00	0	31.00
2.000	0.00	0.00	0.00	0.00	0.00	0	31.00
2.050	0.00	0.00	0.00	0.00	0.00	0	31.00
2.100	0.00	0.00	0.00	0.00	0.00	0	31.00
2.150	0.00	0.00	0.00	0.00	0.00	0	31.00
2.200	0.00	0.00	0.00	0.00	0.00	0	31.00
2.250	0.00	0.00	0.00	0.00	0.00	0	31.00
2.300	0.00	0.00	0.00	0.00	0.00	0	31.00
2.350	0.00	0.00	0.00	0.00	0.00	0	31.00
2.400	0.00	0.00	0.00	0.00	0.00	0	31.00
2.450	0.00	0.00	0.00	0.00	0.00	0	31.00
2.500	0.00	0.00	0.00	0.00	0.00	0	31.00
2.550	0.00	0.00	0.00	0.00	0.00	0	31.00
2.600	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.650	0.00	0.00	0.00	0.00	0.00	0	31.00
2.700	0.00	0.00	0.00	0.00	0.00	0	31.00
2.750	0.00	0.00	0.00	0.00	0.00	0	31.00
2.800	0.00	0.00	0.00	0.00	0.00	0	31.00
2.850	0.00	0.00	0.00	0.00	0.00	0	31.00
2.900	0.00	0.00	0.00	0.00	0.00	0	31.00
2.950	0.00	0.00	0.00	0.00	0.00	0	31.00
3.000	0.00	0.00	0.00	0.00	0.00	0	31.00
3.050	0.00	0.00	0.00	0.00	0.00	0	31.00
3.100	0.00	0.00	0.00	0.00	0.00	0	31.00
3.150	0.00	0.00	0.00	0.00	0.00	0	31.00
3.200	0.00	0.00	0.00	0.00	0.00	0	31.00
3.250	0.00	0.00	0.00	0.00	0.00	0	31.00
3.300	0.00	0.00	0.01	0.00	0.00	0	31.00
3.350	0.00	0.00	0.01	0.00	0.00	0	31.00
3.400	0.00	0.00	0.01	0.00	0.00	0	31.00
3.450	0.00	0.00	0.01	0.00	0.00	0	31.00
3.500	0.00	0.00	0.01	0.00	0.00	0	31.00
3.550	0.00	0.00	0.01	0.00	0.00	0	31.00
3.600	0.00	0.00	0.01	0.00	0.00	0	31.00
3.650	0.00	0.00	0.01	0.00	0.00	0	31.00
3.700	0.00	0.00	0.01	0.00	0.00	0	31.00
3.750	0.01	0.00	0.01	0.00	0.00	0	31.00
3.800	0.01	0.00	0.01	0.00	0.01	0	31.00
3.850	0.01	0.00	0.01	0.00	0.01	0	31.00
3.900	0.01	0.00	0.01	0.00	0.01	0	31.00
3.950	0.01	0.00	0.01	0.00	0.01	0	31.00
4.000	0.01	0.00	0.01	0.00	0.01	0	31.00
4.050	0.01	0.00	0.01	0.00	0.01	0	31.00
4.100	0.01	0.00	0.01	0.00	0.01	0	31.00
4.150	0.01	0.00	0.01	0.00	0.01	0	31.00
4.200	0.01	0.00	0.01	0.00	0.01	0	31.00
4.250	0.01	0.00	0.02	0.00	0.01	0	31.00
4.300	0.01	0.00	0.02	0.00	0.01	0	31.00
4.350	0.01	0.00	0.02	0.00	0.01	0	31.00
4.400	0.01	0.00	0.02	0.00	0.01	0	31.00
4.450	0.01	0.00	0.02	0.00	0.01	0	31.00
4.500	0.01	0.00	0.02	0.00	0.01	0	31.00
4.550	0.01	0.00	0.02	0.00	0.01	0	31.00
4.600	0.01	0.00	0.02	0.00	0.01	0	31.00
4.650	0.01	0.00	0.02	0.00	0.01	0	31.00
4.700	0.01	0.00	0.02	0.00	0.01	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.750	0.01	0.00	0.02	0.00	0.01	0	31.00
4.800	0.01	0.00	0.02	0.00	0.01	0	31.00
4.850	0.01	0.00	0.02	0.00	0.01	0	31.00
4.900	0.01	0.00	0.02	0.00	0.01	0	31.00
4.950	0.01	0.00	0.02	0.00	0.01	0	31.00
5.000	0.01	0.00	0.02	0.00	0.01	0	31.00
5.050	0.01	0.00	0.02	0.00	0.01	0	31.00
5.100	0.01	0.00	0.03	0.00	0.01	0	31.00
5.150	0.01	0.00	0.03	0.00	0.01	0	31.00
5.200	0.01	0.00	0.03	0.00	0.01	0	31.00
5.250	0.01	0.00	0.03	0.00	0.01	0	31.00
5.300	0.01	0.00	0.03	0.00	0.01	0	31.00
5.350	0.01	0.00	0.03	0.00	0.01	0	31.00
5.400	0.01	0.00	0.03	0.00	0.01	0	31.00
5.450	0.01	0.00	0.03	0.00	0.01	0	31.00
5.500	0.02	0.00	0.03	0.00	0.01	0	31.00
5.550	0.02	0.00	0.03	0.00	0.02	0	31.00
5.600	0.02	0.00	0.03	0.00	0.02	0	31.00
5.650	0.02	0.00	0.03	0.00	0.02	0	31.00
5.700	0.02	0.00	0.03	0.00	0.02	0	31.00
5.750	0.02	0.00	0.03	0.00	0.02	0	31.00
5.800	0.02	0.00	0.03	0.00	0.02	0	31.00
5.850	0.02	0.00	0.03	0.00	0.02	0	31.00
5.900	0.02	0.00	0.03	0.00	0.02	0	31.00
5.950	0.02	0.00	0.04	0.00	0.02	0	31.00
6.000	0.02	0.00	0.04	0.00	0.02	0	31.00
6.050	0.02	0.00	0.04	0.00	0.02	0	31.00
6.100	0.02	0.00	0.04	0.00	0.02	0	31.00
6.150	0.02	0.00	0.04	0.00	0.02	0	31.00
6.200	0.02	0.00	0.04	0.00	0.02	0	31.00
6.250	0.02	0.00	0.04	0.00	0.02	0	31.00
6.300	0.02	0.00	0.04	0.00	0.02	0	31.00
6.350	0.02	0.00	0.04	0.00	0.02	0	31.00
6.400	0.02	0.00	0.04	0.00	0.02	0	31.00
6.450	0.02	0.00	0.04	0.00	0.02	0	31.00
6.500	0.02	0.00	0.05	0.00	0.02	0	31.00
6.550	0.02	0.00	0.05	0.00	0.02	0	31.00
6.600	0.02	0.00	0.05	0.00	0.02	0	31.00
6.650	0.02	0.00	0.05	0.00	0.02	0	31.00
6.700	0.03	0.00	0.05	0.00	0.03	0	31.00
6.750	0.03	0.00	0.05	0.00	0.03	0	31.00
6.800	0.03	0.00	0.05	0.00	0.03	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.850	0.03	0.00	0.05	0.00	0.03	0	31.00
6.900	0.03	0.00	0.05	0.00	0.03	0	31.00
6.950	0.03	0.00	0.06	0.00	0.03	0	31.00
7.000	0.03	0.00	0.06	0.00	0.03	0	31.00
7.050	0.03	0.00	0.06	0.00	0.03	0	31.00
7.100	0.03	0.00	0.06	0.00	0.03	0	31.00
7.150	0.03	0.00	0.06	0.00	0.03	0	31.00
7.200	0.03	0.00	0.06	0.00	0.03	0	31.00
7.250	0.03	0.00	0.06	0.00	0.03	0	31.00
7.300	0.03	0.00	0.07	0.00	0.03	0	31.00
7.350	0.03	0.00	0.07	0.00	0.03	0	31.00
7.400	0.03	0.00	0.07	0.00	0.03	0	31.00
7.450	0.03	0.00	0.07	0.00	0.03	0	31.00
7.500	0.04	0.00	0.07	0.00	0.04	0	31.00
7.550	0.04	0.00	0.07	0.00	0.04	0	31.00
7.600	0.04	0.00	0.07	0.00	0.04	0	31.00
7.650	0.04	0.00	0.07	0.00	0.04	0	31.00
7.700	0.04	0.00	0.08	0.00	0.04	0	31.00
7.750	0.04	0.00	0.08	0.00	0.04	0	31.00
7.800	0.04	0.00	0.08	0.00	0.04	0	31.00
7.850	0.04	0.00	0.08	0.00	0.04	0	31.00
7.900	0.04	0.00	0.08	0.00	0.04	0	31.00
7.950	0.04	0.00	0.08	0.00	0.04	0	31.00
8.000	0.04	0.00	0.08	0.00	0.04	0	31.00
8.050	0.04	0.00	0.09	0.00	0.04	0	31.00
8.100	0.04	0.00	0.09	0.00	0.04	0	31.00
8.150	0.05	0.00	0.09	0.00	0.04	0	31.00
8.200	0.05	0.00	0.09	0.00	0.05	0	31.00
8.250	0.05	0.00	0.09	0.00	0.05	0	31.00
8.300	0.05	0.00	0.10	0.00	0.05	0	31.00
8.350	0.05	0.00	0.10	0.00	0.05	0	31.00
8.400	0.05	0.00	0.10	0.00	0.05	0	31.00
8.450	0.05	0.00	0.11	0.00	0.05	0	31.00
8.500	0.05	0.00	0.11	0.00	0.05	0	31.00
8.550	0.06	0.00	0.11	0.00	0.06	0	31.00
8.600	0.06	0.00	0.11	0.00	0.06	0	31.00
8.650	0.06	0.00	0.12	0.00	0.06	0	31.00
8.700	0.06	0.00	0.12	0.00	0.06	0	31.00
8.750	0.06	0.00	0.12	0.00	0.06	0	31.00
8.800	0.06	0.00	0.13	0.00	0.06	0	31.00
8.850	0.06	0.00	0.13	0.00	0.06	0	31.00
8.900	0.07	0.00	0.13	0.00	0.07	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.950	0.07	0.00	0.13	0.00	0.07	0	31.00
9.000	0.07	0.00	0.14	0.00	0.07	0	31.00
9.050	0.07	0.00	0.14	0.00	0.07	0	31.00
9.100	0.07	0.00	0.14	0.00	0.07	0	31.00
9.150	0.07	0.00	0.15	0.00	0.07	0	31.00
9.200	0.08	0.00	0.15	0.00	0.07	0	31.00
9.250	0.08	0.00	0.15	0.00	0.08	0	31.00
9.300	0.08	0.00	0.16	0.00	0.08	0	31.00
9.350	0.08	0.00	0.16	0.00	0.08	0	31.00
9.400	0.08	0.00	0.16	0.00	0.08	0	31.00
9.450	0.08	0.00	0.16	0.00	0.08	0	31.00
9.500	0.08	0.00	0.17	0.00	0.08	0	31.00
9.550	0.09	0.00	0.17	0.00	0.09	0	31.00
9.600	0.09	0.00	0.17	0.00	0.09	0	31.00
9.650	0.09	0.00	0.18	0.00	0.09	0	31.00
9.700	0.09	0.00	0.18	0.00	0.09	0	31.00
9.750	0.09	0.00	0.18	0.00	0.09	0	31.00
9.800	0.09	0.00	0.19	0.00	0.09	0	31.00
9.850	0.10	0.00	0.19	0.00	0.10	0	31.00
9.900	0.10	0.00	0.19	0.00	0.10	0	31.00
9.950	0.10	0.00	0.20	0.00	0.10	0	31.00
10.000	0.10	0.00	0.20	0.00	0.10	0	31.00
10.050	0.10	0.00	0.20	0.00	0.10	0	31.00
10.100	0.11	0.00	0.21	0.00	0.10	9	31.00
10.150	0.11	0.01	0.21	0.00	0.10	10	31.00
10.200	0.11	0.02	0.22	0.00	0.10	11	31.00
10.250	0.11	0.03	0.24	0.00	0.10	12	31.00
10.300	0.12	0.06	0.26	0.00	0.10	14	31.01
10.350	0.12	0.09	0.29	0.00	0.10	17	31.01
10.400	0.12	0.12	0.33	0.00	0.10	20	31.01
10.450	0.13	0.16	0.37	0.00	0.10	24	31.01
10.500	0.13	0.21	0.42	0.00	0.10	28	31.01
10.550	0.13	0.27	0.47	0.00	0.10	33	31.01
10.600	0.14	0.33	0.53	0.00	0.10	39	31.01
10.650	0.14	0.39	0.60	0.00	0.10	45	31.02
10.700	0.14	0.47	0.67	0.00	0.10	51	31.02
10.750	0.15	0.55	0.75	0.00	0.10	58	31.02
10.800	0.15	0.63	0.84	0.00	0.10	66	31.02
10.850	0.15	0.72	0.93	0.00	0.10	74	31.03
10.900	0.16	0.82	1.03	0.00	0.10	83	31.03
10.950	0.16	0.93	1.14	0.00	0.10	93	31.03
11.000	0.16	1.04	1.25	0.00	0.10	103	31.04

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.050	0.17	1.16	1.37	0.00	0.10	114	31.04
11.100	0.17	1.30	1.50	0.00	0.10	126	31.05
11.150	0.18	1.45	1.66	0.00	0.10	140	31.05
11.200	0.20	1.62	1.83	0.00	0.10	155	31.06
11.250	0.21	1.82	2.02	0.00	0.10	173	31.06
11.300	0.22	2.03	2.24	0.00	0.10	192	31.07
11.350	0.23	2.27	2.48	0.00	0.10	214	31.08
11.400	0.24	2.54	2.75	0.00	0.10	238	31.09
11.450	0.25	2.83	3.03	0.00	0.10	264	31.10
11.500	0.27	3.14	3.34	0.00	0.10	292	31.11
11.550	0.31	3.50	3.71	0.00	0.10	325	31.12
11.600	0.37	3.98	4.18	0.00	0.10	367	31.13
11.650	0.46	4.60	4.81	0.00	0.10	423	31.15
11.700	0.57	5.42	5.63	0.00	0.10	497	31.18
11.750	0.68	6.46	6.67	0.00	0.10	591	31.21
11.800	0.79	7.71	7.92	0.00	0.10	704	31.26
11.850	0.90	9.19	9.40	0.00	0.10	837	31.30
11.900	1.01	10.90	11.11	0.00	0.10	990	31.36
11.950	1.43	13.14	13.35	0.00	0.10	1,192	31.43
12.000	1.94	16.30	16.51	0.00	0.10	1,477	31.54
12.050	2.08	20.11	20.32	0.00	0.10	1,820	31.66
12.100	2.12	24.10	24.31	0.00	0.10	2,179	31.79
12.150	1.74	27.76	27.97	0.00	0.10	2,508	31.91
12.200	1.25	30.35	30.75	0.00	0.20	2,750	32.00
12.250	1.05	29.03	32.65	0.00	1.81	2,776	32.01
12.300	0.91	30.18	30.99	0.00	0.40	2,753	32.00
12.350	0.79	29.56	31.89	0.00	1.17	2,765	32.01
12.400	0.68	30.15	31.03	0.00	0.44	2,753	32.00
12.450	0.57	29.90	31.40	0.00	0.75	2,759	32.00
12.500	0.46	30.23	30.92	0.00	0.35	2,752	32.00
12.550	0.38	30.13	31.07	0.00	0.47	2,754	32.00
12.600	0.32	30.30	30.83	0.00	0.26	2,751	32.00
12.650	0.29	30.24	30.90	0.00	0.33	2,752	32.00
12.700	0.28	30.31	30.81	0.00	0.25	2,750	32.00
12.750	0.26	30.28	30.85	0.00	0.28	2,751	32.00
12.800	0.25	30.32	30.80	0.00	0.24	2,750	32.00
12.850	0.24	30.31	30.81	0.00	0.25	2,750	32.00
12.900	0.23	30.33	30.78	0.00	0.22	2,750	32.00
12.950	0.22	30.33	30.78	0.00	0.22	2,750	32.00
13.000	0.20	30.35	30.75	0.00	0.20	2,750	32.00
13.050	0.20	30.35	30.75	0.00	0.20	2,750	32.00
13.100	0.19	30.36	30.74	0.00	0.19	2,749	32.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.150	0.18	30.36	30.73	0.00	0.19	2,749	32.00
13.200	0.18	30.37	30.73	0.00	0.18	2,749	32.00
13.250	0.18	30.37	30.72	0.00	0.18	2,749	32.00
13.300	0.17	30.37	30.72	0.00	0.17	2,749	32.00
13.350	0.17	30.37	30.72	0.00	0.17	2,749	32.00
13.400	0.17	30.38	30.71	0.00	0.17	2,749	32.00
13.450	0.17	30.38	30.71	0.00	0.17	2,749	32.00
13.500	0.16	30.38	30.71	0.00	0.16	2,749	32.00
13.550	0.16	30.38	30.70	0.00	0.16	2,749	32.00
13.600	0.16	30.39	30.70	0.00	0.16	2,749	32.00
13.650	0.15	30.39	30.70	0.00	0.15	2,749	32.00
13.700	0.15	30.39	30.69	0.00	0.15	2,749	32.00
13.750	0.15	30.39	30.69	0.00	0.15	2,749	32.00
13.800	0.14	30.40	30.68	0.00	0.14	2,749	32.00
13.850	0.14	30.40	30.68	0.00	0.14	2,749	32.00
13.900	0.14	30.40	30.68	0.00	0.14	2,749	32.00
13.950	0.13	30.40	30.67	0.00	0.13	2,748	32.00
14.000	0.13	30.41	30.67	0.00	0.13	2,748	32.00
14.050	0.13	30.41	30.67	0.00	0.13	2,748	32.00
14.100	0.13	30.41	30.66	0.00	0.13	2,748	32.00
14.150	0.12	30.41	30.66	0.00	0.12	2,748	32.00
14.200	0.12	30.41	30.66	0.00	0.12	2,748	32.00
14.250	0.12	30.41	30.66	0.00	0.12	2,748	32.00
14.300	0.12	30.42	30.66	0.00	0.12	2,748	32.00
14.350	0.12	30.42	30.65	0.00	0.12	2,748	32.00
14.400	0.12	30.42	30.65	0.00	0.12	2,748	32.00
14.450	0.12	30.42	30.65	0.00	0.12	2,748	32.00
14.500	0.11	30.42	30.65	0.00	0.11	2,748	32.00
14.550	0.11	30.42	30.65	0.00	0.11	2,748	32.00
14.600	0.11	30.42	30.65	0.00	0.11	2,748	32.00
14.650	0.11	30.42	30.64	0.00	0.11	2,748	32.00
14.700	0.11	30.43	30.64	0.00	0.11	2,748	32.00
14.750	0.11	30.43	30.64	0.00	0.11	2,748	32.00
14.800	0.11	30.43	30.64	0.00	0.11	2,748	32.00
14.850	0.10	30.43	30.64	0.00	0.10	2,748	32.00
14.900	0.10	30.43	30.64	0.00	0.10	2,748	32.00
14.950	0.10	30.42	30.63	0.00	0.10	2,747	32.00
15.000	0.10	30.42	30.62	0.00	0.10	2,747	32.00
15.050	0.10	30.41	30.61	0.00	0.10	2,746	32.00
15.100	0.10	30.39	30.60	0.00	0.10	2,745	32.00
15.150	0.10	30.38	30.58	0.00	0.10	2,743	32.00
15.200	0.09	30.36	30.56	0.00	0.10	2,741	32.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
15.250	0.09	30.33	30.54	0.00	0.10	2,739	32.00
15.300	0.09	30.31	30.52	0.00	0.10	2,737	32.00
15.350	0.09	30.28	30.49	0.00	0.10	2,735	32.00
15.400	0.09	30.25	30.46	0.00	0.10	2,732	31.99
15.450	0.09	30.21	30.42	0.00	0.10	2,729	31.99
15.500	0.08	30.18	30.38	0.00	0.10	2,725	31.99
15.550	0.08	30.14	30.34	0.00	0.10	2,722	31.99
15.600	0.08	30.09	30.30	0.00	0.10	2,718	31.99
15.650	0.08	30.05	30.26	0.00	0.10	2,714	31.99
15.700	0.08	30.00	30.21	0.00	0.10	2,709	31.99
15.750	0.08	29.95	30.15	0.00	0.10	2,704	31.98
15.800	0.08	29.89	30.10	0.00	0.10	2,700	31.98
15.850	0.07	29.83	30.04	0.00	0.10	2,694	31.98
15.900	0.07	29.77	29.98	0.00	0.10	2,689	31.98
15.950	0.07	29.71	29.92	0.00	0.10	2,683	31.98
16.000	0.07	29.64	29.85	0.00	0.10	2,677	31.97
16.050	0.07	29.57	29.78	0.00	0.10	2,671	31.97
16.100	0.07	29.50	29.71	0.00	0.10	2,664	31.97
16.150	0.07	29.42	29.63	0.00	0.10	2,658	31.97
16.200	0.07	29.35	29.56	0.00	0.10	2,651	31.96
16.250	0.07	29.27	29.48	0.00	0.10	2,644	31.96
16.300	0.06	29.19	29.40	0.00	0.10	2,637	31.96
16.350	0.06	29.12	29.32	0.00	0.10	2,630	31.96
16.400	0.06	29.03	29.24	0.00	0.10	2,622	31.95
16.450	0.06	28.95	29.16	0.00	0.10	2,615	31.95
16.500	0.06	28.87	29.08	0.00	0.10	2,608	31.95
16.550	0.06	28.79	28.99	0.00	0.10	2,600	31.95
16.600	0.06	28.70	28.91	0.00	0.10	2,592	31.94
16.650	0.06	28.61	28.82	0.00	0.10	2,584	31.94
16.700	0.06	28.52	28.73	0.00	0.10	2,577	31.94
16.750	0.06	28.43	28.64	0.00	0.10	2,568	31.93
16.800	0.06	28.34	28.55	0.00	0.10	2,560	31.93
16.850	0.06	28.25	28.46	0.00	0.10	2,552	31.93
16.900	0.06	28.16	28.37	0.00	0.10	2,544	31.93
16.950	0.06	28.06	28.27	0.00	0.10	2,535	31.92
17.000	0.06	27.97	28.17	0.00	0.10	2,526	31.92
17.050	0.05	27.87	28.08	0.00	0.10	2,518	31.92
17.100	0.05	27.77	27.98	0.00	0.10	2,509	31.91
17.150	0.05	27.67	27.88	0.00	0.10	2,500	31.91
17.200	0.05	27.57	27.78	0.00	0.10	2,491	31.91
17.250	0.05	27.47	27.67	0.00	0.10	2,481	31.90
17.300	0.05	27.36	27.57	0.00	0.10	2,472	31.90

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
17.350	0.05	27.26	27.47	0.00	0.10	2,463	31.90
17.400	0.05	27.15	27.36	0.00	0.10	2,453	31.89
17.450	0.05	27.04	27.25	0.00	0.10	2,443	31.89
17.500	0.05	26.93	27.14	0.00	0.10	2,433	31.89
17.550	0.05	26.82	27.03	0.00	0.10	2,423	31.88
17.600	0.05	26.71	26.92	0.00	0.10	2,413	31.88
17.650	0.05	26.60	26.81	0.00	0.10	2,403	31.87
17.700	0.05	26.48	26.69	0.00	0.10	2,393	31.87
17.750	0.05	26.37	26.58	0.00	0.10	2,383	31.87
17.800	0.05	26.25	26.46	0.00	0.10	2,372	31.86
17.850	0.04	26.13	26.34	0.00	0.10	2,361	31.86
17.900	0.04	26.01	26.22	0.00	0.10	2,351	31.86
17.950	0.04	25.89	26.10	0.00	0.10	2,340	31.85
18.000	0.04	25.77	25.98	0.00	0.10	2,329	31.85
18.050	0.04	25.65	25.86	0.00	0.10	2,318	31.84
18.100	0.04	25.52	25.73	0.00	0.10	2,306	31.84
18.150	0.04	25.40	25.61	0.00	0.10	2,295	31.84
18.200	0.04	25.27	25.48	0.00	0.10	2,284	31.83
18.250	0.04	25.15	25.35	0.00	0.10	2,273	31.83
18.300	0.04	25.02	25.23	0.00	0.10	2,261	31.82
18.350	0.04	24.89	25.10	0.00	0.10	2,250	31.82
18.400	0.04	24.77	24.98	0.00	0.10	2,238	31.81
18.450	0.04	24.64	24.85	0.00	0.10	2,227	31.81
18.500	0.04	24.51	24.72	0.00	0.10	2,215	31.81
18.550	0.04	24.38	24.59	0.00	0.10	2,204	31.80
18.600	0.04	24.26	24.46	0.00	0.10	2,192	31.80
18.650	0.04	24.13	24.33	0.00	0.10	2,181	31.79
18.700	0.04	24.00	24.21	0.00	0.10	2,169	31.79
18.750	0.04	23.87	24.08	0.00	0.10	2,157	31.79
18.800	0.04	23.74	23.95	0.00	0.10	2,146	31.78
18.850	0.04	23.61	23.82	0.00	0.10	2,134	31.78
18.900	0.04	23.48	23.68	0.00	0.10	2,122	31.77
18.950	0.04	23.35	23.55	0.00	0.10	2,110	31.77
19.000	0.04	23.21	23.42	0.00	0.10	2,099	31.76
19.050	0.04	23.08	23.29	0.00	0.10	2,087	31.76
19.100	0.04	22.95	23.16	0.00	0.10	2,075	31.76
19.150	0.04	22.82	23.02	0.00	0.10	2,063	31.75
19.200	0.04	22.68	22.89	0.00	0.10	2,051	31.75
19.250	0.04	22.55	22.76	0.00	0.10	2,039	31.74
19.300	0.04	22.42	22.62	0.00	0.10	2,027	31.74
19.350	0.04	22.28	22.49	0.00	0.10	2,015	31.73
19.400	0.04	22.15	22.35	0.00	0.10	2,003	31.73

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
19.450	0.04	22.01	22.22	0.00	0.10	1,990	31.72
19.500	0.04	21.88	22.08	0.00	0.10	1,978	31.72
19.550	0.04	21.74	21.95	0.00	0.10	1,966	31.72
19.600	0.04	21.60	21.81	0.00	0.10	1,954	31.71
19.650	0.04	21.47	21.68	0.00	0.10	1,941	31.71
19.700	0.04	21.33	21.54	0.00	0.10	1,929	31.70
19.750	0.04	21.19	21.40	0.00	0.10	1,917	31.70
19.800	0.04	21.05	21.26	0.00	0.10	1,904	31.69
19.850	0.03	20.92	21.12	0.00	0.10	1,892	31.69
19.900	0.03	20.78	20.99	0.00	0.10	1,879	31.68
19.950	0.03	20.64	20.85	0.00	0.10	1,867	31.68
20.000	0.03	20.50	20.71	0.00	0.10	1,854	31.67
20.050	0.03	20.36	20.57	0.00	0.10	1,842	31.67
20.100	0.03	20.22	20.43	0.00	0.10	1,829	31.67
20.150	0.03	20.08	20.29	0.00	0.10	1,816	31.66
20.200	0.03	19.94	20.15	0.00	0.10	1,804	31.66
20.250	0.03	19.80	20.01	0.00	0.10	1,791	31.65
20.300	0.03	19.66	19.86	0.00	0.10	1,778	31.65
20.350	0.03	19.51	19.72	0.00	0.10	1,766	31.64
20.400	0.03	19.37	19.58	0.00	0.10	1,753	31.64
20.450	0.03	19.23	19.44	0.00	0.10	1,740	31.63
20.500	0.03	19.09	19.30	0.00	0.10	1,727	31.63
20.550	0.03	18.95	19.15	0.00	0.10	1,714	31.62
20.600	0.03	18.80	19.01	0.00	0.10	1,702	31.62
20.650	0.03	18.66	18.87	0.00	0.10	1,689	31.61
20.700	0.03	18.51	18.72	0.00	0.10	1,676	31.61
20.750	0.03	18.37	18.58	0.00	0.10	1,663	31.61
20.800	0.03	18.23	18.43	0.00	0.10	1,650	31.60
20.850	0.03	18.08	18.29	0.00	0.10	1,637	31.60
20.900	0.03	17.94	18.15	0.00	0.10	1,624	31.59
20.950	0.03	17.79	18.00	0.00	0.10	1,611	31.59
21.000	0.03	17.65	17.85	0.00	0.10	1,598	31.58
21.050	0.03	17.50	17.71	0.00	0.10	1,584	31.58
21.100	0.03	17.36	17.56	0.00	0.10	1,571	31.57
21.150	0.03	17.21	17.42	0.00	0.10	1,558	31.57
21.200	0.03	17.06	17.27	0.00	0.10	1,545	31.56
21.250	0.03	16.92	17.12	0.00	0.10	1,532	31.56
21.300	0.03	16.77	16.98	0.00	0.10	1,518	31.55
21.350	0.03	16.62	16.83	0.00	0.10	1,505	31.55
21.400	0.03	16.47	16.68	0.00	0.10	1,492	31.54
21.450	0.03	16.32	16.53	0.00	0.10	1,479	31.54
21.500	0.03	16.18	16.38	0.00	0.10	1,465	31.53

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.550	0.03	16.03	16.24	0.00	0.10	1,452	31.53
21.600	0.03	15.88	16.09	0.00	0.10	1,438	31.52
21.650	0.03	15.73	15.94	0.00	0.10	1,425	31.52
21.700	0.03	15.58	15.79	0.00	0.10	1,412	31.51
21.750	0.03	15.43	15.64	0.00	0.10	1,398	31.51
21.800	0.03	15.28	15.49	0.00	0.10	1,385	31.50
21.850	0.03	15.13	15.34	0.00	0.10	1,371	31.50
21.900	0.03	14.98	15.19	0.00	0.10	1,357	31.49
21.950	0.03	14.83	15.04	0.00	0.10	1,344	31.49
22.000	0.03	14.68	14.88	0.00	0.10	1,330	31.48
22.050	0.03	14.53	14.73	0.00	0.10	1,317	31.48
22.100	0.03	14.37	14.58	0.00	0.10	1,303	31.47
22.150	0.03	14.22	14.43	0.00	0.10	1,289	31.47
22.200	0.03	14.07	14.28	0.00	0.10	1,276	31.46
22.250	0.03	13.92	14.12	0.00	0.10	1,262	31.46
22.300	0.03	13.76	13.97	0.00	0.10	1,248	31.45
22.350	0.03	13.61	13.82	0.00	0.10	1,234	31.45
22.400	0.03	13.46	13.66	0.00	0.10	1,220	31.44
22.450	0.03	13.30	13.51	0.00	0.10	1,207	31.44
22.500	0.03	13.15	13.36	0.00	0.10	1,193	31.43
22.550	0.03	12.99	13.20	0.00	0.10	1,179	31.43
22.600	0.03	12.84	13.05	0.00	0.10	1,165	31.42
22.650	0.03	12.68	12.89	0.00	0.10	1,151	31.42
22.700	0.03	12.53	12.74	0.00	0.10	1,137	31.41
22.750	0.03	12.37	12.58	0.00	0.10	1,123	31.41
22.800	0.03	12.22	12.42	0.00	0.10	1,109	31.40
22.850	0.03	12.06	12.27	0.00	0.10	1,095	31.40
22.900	0.03	11.90	12.11	0.00	0.10	1,081	31.39
22.950	0.03	11.75	11.95	0.00	0.10	1,067	31.39
23.000	0.03	11.59	11.80	0.00	0.10	1,052	31.38
23.050	0.03	11.43	11.64	0.00	0.10	1,038	31.38
23.100	0.02	11.27	11.48	0.00	0.10	1,024	31.37
23.150	0.02	11.12	11.32	0.00	0.10	1,010	31.37
23.200	0.02	10.96	11.17	0.00	0.10	996	31.36
23.250	0.02	10.80	11.01	0.00	0.10	981	31.36
23.300	0.02	10.64	10.85	0.00	0.10	967	31.35
23.350	0.02	10.48	10.69	0.00	0.10	953	31.35
23.400	0.02	10.32	10.53	0.00	0.10	938	31.34
23.450	0.02	10.16	10.37	0.00	0.10	924	31.34
23.500	0.02	10.00	10.21	0.00	0.10	910	31.33
23.550	0.02	9.84	10.05	0.00	0.10	895	31.33
23.600	0.02	9.68	9.89	0.00	0.10	881	31.32

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.650	0.02	9.52	9.73	0.00	0.10	866	31.32
23.700	0.02	9.36	9.57	0.00	0.10	852	31.31
23.750	0.02	9.20	9.40	0.00	0.10	837	31.30
23.800	0.02	9.04	9.24	0.00	0.10	823	31.30
23.850	0.02	8.87	9.08	0.00	0.10	808	31.29
23.900	0.02	8.71	8.92	0.00	0.10	793	31.29
23.950	0.02	8.55	8.76	0.00	0.10	779	31.28
24.000	0.02	8.38	8.59	0.00	0.10	764	31.28
24.050	0.01	8.21	8.42	0.00	0.10	749	31.27
24.100	0.00	8.02	8.23	0.00	0.10	731	31.27
24.150	0.00	7.82	8.03	0.00	0.10	713	31.26
24.200	0.00	7.61	7.82	0.00	0.10	694	31.25
24.250	0.00	7.40	7.61	0.00	0.10	676	31.25
24.300	0.00	7.20	7.40	0.00	0.10	657	31.24
24.350	0.00	6.99	7.20	0.00	0.10	638	31.23
24.400	0.00	6.78	6.99	0.00	0.10	620	31.23
24.450	0.00	6.57	6.78	0.00	0.10	601	31.22
24.500	0.00	6.36	6.57	0.00	0.10	582	31.21
24.550	0.00	6.16	6.36	0.00	0.10	563	31.21
24.600	0.00	5.95	6.16	0.00	0.10	545	31.20
24.650	0.00	5.74	5.95	0.00	0.10	526	31.19
24.700	0.00	5.53	5.74	0.00	0.10	507	31.18
24.750	0.00	5.32	5.53	0.00	0.10	488	31.18
24.800	0.00	5.12	5.32	0.00	0.10	470	31.17
24.850	0.00	4.91	5.12	0.00	0.10	451	31.16
24.900	0.00	4.70	4.91	0.00	0.10	432	31.16
24.950	0.00	4.49	4.70	0.00	0.10	414	31.15
25.000	0.00	4.28	4.49	0.00	0.10	395	31.14
25.050	0.00	4.08	4.28	0.00	0.10	376	31.14
25.100	0.00	3.87	4.08	0.00	0.10	357	31.13
25.150	0.00	3.66	3.87	0.00	0.10	339	31.12
25.200	0.00	3.45	3.66	0.00	0.10	320	31.12
25.250	0.00	3.24	3.45	0.00	0.10	301	31.11
25.300	0.00	3.04	3.24	0.00	0.10	283	31.10
25.350	0.00	2.83	3.04	0.00	0.10	264	31.10
25.400	0.00	2.62	2.83	0.00	0.10	245	31.09
25.450	0.00	2.41	2.62	0.00	0.10	226	31.08
25.500	0.00	2.20	2.41	0.00	0.10	208	31.08
25.550	0.00	2.00	2.20	0.00	0.10	189	31.07
25.600	0.00	1.79	2.00	0.00	0.10	170	31.06
25.650	0.00	1.58	1.79	0.00	0.10	152	31.06
25.700	0.00	1.37	1.58	0.00	0.10	133	31.05

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.750	0.00	1.16	1.37	0.00	0.10	114	31.04
25.800	0.00	0.96	1.16	0.00	0.10	95	31.03
25.850	0.00	0.75	0.96	0.00	0.10	77	31.03
25.900	0.00	0.54	0.75	0.00	0.10	58	31.02
25.950	0.00	0.33	0.54	0.00	0.10	39	31.01
26.000	0.00	0.12	0.33	0.00	0.10	20	31.01
26.050	0.00	0.00	0.12	0.00	0.06	0	31.00
26.100	0.00	0.00	0.00	0.00	0.00	0	31.00
26.150	0.00	0.00	0.00	0.00	0.00	0	31.00
26.200	0.00	0.00	0.00	0.00	0.00	0	31.00
26.250	0.00	0.00	0.00	0.00	0.00	0	31.00
26.300	0.00	0.00	0.00	0.00	0.00	0	31.00
26.350	0.00	0.00	0.00	0.00	0.00	0	31.00
26.400	0.00	0.00	0.00	0.00	0.00	0	31.00
26.450	0.00	0.00	0.00	0.00	0.00	0	31.00
26.500	0.00	0.00	0.00	0.00	0.00	0	31.00
26.550	0.00	0.00	0.00	0.00	0.00	0	31.00
26.600	0.00	0.00	0.00	0.00	0.00	0	31.00
26.650	0.00	0.00	0.00	0.00	0.00	0	31.00
26.700	0.00	0.00	0.00	0.00	0.00	0	31.00
26.750	0.00	0.00	0.00	0.00	0.00	0	31.00
26.800	0.00	0.00	0.00	0.00	0.00	0	31.00
26.850	0.00	0.00	0.00	0.00	0.00	0	31.00
26.900	0.00	0.00	0.00	0.00	0.00	0	31.00
26.950	0.00	0.00	0.00	0.00	0.00	0	31.00
27.000	0.00	0.00	0.00	0.00	0.00	0	31.00
27.050	0.00	0.00	0.00	0.00	0.00	0	31.00
27.100	0.00	0.00	0.00	0.00	0.00	0	31.00
27.150	0.00	0.00	0.00	0.00	0.00	0	31.00
27.200	0.00	0.00	0.00	0.00	0.00	0	31.00
27.250	0.00	0.00	0.00	0.00	0.00	0	31.00
27.300	0.00	0.00	0.00	0.00	0.00	0	31.00
27.350	0.00	0.00	0.00	0.00	0.00	0	31.00
27.400	0.00	0.00	0.00	0.00	0.00	0	31.00
27.450	0.00	0.00	0.00	0.00	0.00	0	31.00
27.500	0.00	0.00	0.00	0.00	0.00	0	31.00
27.550	0.00	0.00	0.00	0.00	0.00	0	31.00
27.600	0.00	0.00	0.00	0.00	0.00	0	31.00
27.650	0.00	0.00	0.00	0.00	0.00	0	31.00
27.700	0.00	0.00	0.00	0.00	0.00	0	31.00
27.750	0.00	0.00	0.00	0.00	0.00	0	31.00
27.800	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.850	0.00	0.00	0.00	0.00	0.00	0	31.00
27.900	0.00	0.00	0.00	0.00	0.00	0	31.00
27.950	0.00	0.00	0.00	0.00	0.00	0	31.00
28.000	0.00	0.00	0.00	0.00	0.00	0	31.00
28.050	0.00	0.00	0.00	0.00	0.00	0	31.00
28.100	0.00	0.00	0.00	0.00	0.00	0	31.00
28.150	0.00	0.00	0.00	0.00	0.00	0	31.00
28.200	0.00	0.00	0.00	0.00	0.00	0	31.00
28.250	0.00	0.00	0.00	0.00	0.00	0	31.00
28.300	0.00	0.00	0.00	0.00	0.00	0	31.00
28.350	0.00	0.00	0.00	0.00	0.00	0	31.00
28.400	0.00	0.00	0.00	0.00	0.00	0	31.00
28.450	0.00	0.00	0.00	0.00	0.00	0	31.00
28.500	0.00	0.00	0.00	0.00	0.00	0	31.00
28.550	0.00	0.00	0.00	0.00	0.00	0	31.00
28.600	0.00	0.00	0.00	0.00	0.00	0	31.00
28.650	0.00	0.00	0.00	0.00	0.00	0	31.00
28.700	0.00	0.00	0.00	0.00	0.00	0	31.00
28.750	0.00	0.00	0.00	0.00	0.00	0	31.00
28.800	0.00	0.00	0.00	0.00	0.00	0	31.00
28.850	0.00	0.00	0.00	0.00	0.00	0	31.00
28.900	0.00	0.00	0.00	0.00	0.00	0	31.00
28.950	0.00	0.00	0.00	0.00	0.00	0	31.00
29.000	0.00	0.00	0.00	0.00	0.00	0	31.00
29.050	0.00	0.00	0.00	0.00	0.00	0	31.00
29.100	0.00	0.00	0.00	0.00	0.00	0	31.00
29.150	0.00	0.00	0.00	0.00	0.00	0	31.00
29.200	0.00	0.00	0.00	0.00	0.00	0	31.00
29.250	0.00	0.00	0.00	0.00	0.00	0	31.00
29.300	0.00	0.00	0.00	0.00	0.00	0	31.00
29.350	0.00	0.00	0.00	0.00	0.00	0	31.00
29.400	0.00	0.00	0.00	0.00	0.00	0	31.00
29.450	0.00	0.00	0.00	0.00	0.00	0	31.00
29.500	0.00	0.00	0.00	0.00	0.00	0	31.00
29.550	0.00	0.00	0.00	0.00	0.00	0	31.00
29.600	0.00	0.00	0.00	0.00	0.00	0	31.00
29.650	0.00	0.00	0.00	0.00	0.00	0	31.00
29.700	0.00	0.00	0.00	0.00	0.00	0	31.00
29.750	0.00	0.00	0.00	0.00	0.00	0	31.00
29.800	0.00	0.00	0.00	0.00	0.00	0	31.00
29.850	0.00	0.00	0.00	0.00	0.00	0	31.00
29.900	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.950	0.00	0.00	0.00	0.00	0.00	0	31.00
30.000	0.00	0.00	0.00	0.00	0.00	0	31.00
30.050	0.00	0.00	0.00	0.00	0.00	0	31.00
30.100	0.00	0.00	0.00	0.00	0.00	0	31.00
30.150	0.00	0.00	0.00	0.00	0.00	0	31.00
30.200	0.00	0.00	0.00	0.00	0.00	0	31.00
30.250	0.00	0.00	0.00	0.00	0.00	0	31.00
30.300	0.00	0.00	0.00	0.00	0.00	0	31.00
30.350	0.00	0.00	0.00	0.00	0.00	0	31.00
30.400	0.00	0.00	0.00	0.00	0.00	0	31.00
30.450	0.00	0.00	0.00	0.00	0.00	0	31.00
30.500	0.00	0.00	0.00	0.00	0.00	0	31.00
30.550	0.00	0.00	0.00	0.00	0.00	0	31.00
30.600	0.00	0.00	0.00	0.00	0.00	0	31.00
30.650	0.00	0.00	0.00	0.00	0.00	0	31.00
30.700	0.00	0.00	0.00	0.00	0.00	0	31.00
30.750	0.00	0.00	0.00	0.00	0.00	0	31.00
30.800	0.00	0.00	0.00	0.00	0.00	0	31.00
30.850	0.00	0.00	0.00	0.00	0.00	0	31.00
30.900	0.00	0.00	0.00	0.00	0.00	0	31.00
30.950	0.00	0.00	0.00	0.00	0.00	0	31.00
31.000	0.00	0.00	0.00	0.00	0.00	0	31.00
31.050	0.00	0.00	0.00	0.00	0.00	0	31.00
31.100	0.00	0.00	0.00	0.00	0.00	0	31.00
31.150	0.00	0.00	0.00	0.00	0.00	0	31.00
31.200	0.00	0.00	0.00	0.00	0.00	0	31.00
31.250	0.00	0.00	0.00	0.00	0.00	0	31.00
31.300	0.00	0.00	0.00	0.00	0.00	0	31.00
31.350	0.00	0.00	0.00	0.00	0.00	0	31.00
31.400	0.00	0.00	0.00	0.00	0.00	0	31.00
31.450	0.00	0.00	0.00	0.00	0.00	0	31.00
31.500	0.00	0.00	0.00	0.00	0.00	0	31.00
31.550	0.00	0.00	0.00	0.00	0.00	0	31.00
31.600	0.00	0.00	0.00	0.00	0.00	0	31.00
31.650	0.00	0.00	0.00	0.00	0.00	0	31.00
31.700	0.00	0.00	0.00	0.00	0.00	0	31.00
31.750	0.00	0.00	0.00	0.00	0.00	0	31.00
31.800	0.00	0.00	0.00	0.00	0.00	0	31.00
31.850	0.00	0.00	0.00	0.00	0.00	0	31.00
31.900	0.00	0.00	0.00	0.00	0.00	0	31.00
31.950	0.00	0.00	0.00	0.00	0.00	0	31.00
32.000	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.050	0.00	0.00	0.00	0.00	0.00	0	31.00
32.100	0.00	0.00	0.00	0.00	0.00	0	31.00
32.150	0.00	0.00	0.00	0.00	0.00	0	31.00
32.200	0.00	0.00	0.00	0.00	0.00	0	31.00
32.250	0.00	0.00	0.00	0.00	0.00	0	31.00
32.300	0.00	0.00	0.00	0.00	0.00	0	31.00
32.350	0.00	0.00	0.00	0.00	0.00	0	31.00
32.400	0.00	0.00	0.00	0.00	0.00	0	31.00
32.450	0.00	0.00	0.00	0.00	0.00	0	31.00
32.500	0.00	0.00	0.00	0.00	0.00	0	31.00
32.550	0.00	0.00	0.00	0.00	0.00	0	31.00
32.600	0.00	0.00	0.00	0.00	0.00	0	31.00
32.650	0.00	0.00	0.00	0.00	0.00	0	31.00
32.700	0.00	0.00	0.00	0.00	0.00	0	31.00
32.750	0.00	0.00	0.00	0.00	0.00	0	31.00
32.800	0.00	0.00	0.00	0.00	0.00	0	31.00
32.850	0.00	0.00	0.00	0.00	0.00	0	31.00
32.900	0.00	0.00	0.00	0.00	0.00	0	31.00
32.950	0.00	0.00	0.00	0.00	0.00	0	31.00
33.000	0.00	0.00	0.00	0.00	0.00	0	31.00
33.050	0.00	0.00	0.00	0.00	0.00	0	31.00
33.100	0.00	0.00	0.00	0.00	0.00	0	31.00
33.150	0.00	0.00	0.00	0.00	0.00	0	31.00
33.200	0.00	0.00	0.00	0.00	0.00	0	31.00
33.250	0.00	0.00	0.00	0.00	0.00	0	31.00
33.300	0.00	0.00	0.00	0.00	0.00	0	31.00
33.350	0.00	0.00	0.00	0.00	0.00	0	31.00
33.400	0.00	0.00	0.00	0.00	0.00	0	31.00
33.450	0.00	0.00	0.00	0.00	0.00	0	31.00
33.500	0.00	0.00	0.00	0.00	0.00	0	31.00
33.550	0.00	0.00	0.00	0.00	0.00	0	31.00
33.600	0.00	0.00	0.00	0.00	0.00	0	31.00
33.650	0.00	0.00	0.00	0.00	0.00	0	31.00
33.700	0.00	0.00	0.00	0.00	0.00	0	31.00
33.750	0.00	0.00	0.00	0.00	0.00	0	31.00
33.800	0.00	0.00	0.00	0.00	0.00	0	31.00
33.850	0.00	0.00	0.00	0.00	0.00	0	31.00
33.900	0.00	0.00	0.00	0.00	0.00	0	31.00
33.950	0.00	0.00	0.00	0.00	0.00	0	31.00
34.000	0.00	0.00	0.00	0.00	0.00	0	31.00
34.050	0.00	0.00	0.00	0.00	0.00	0	31.00
34.100	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 10 years
Label: SP (OUT) Storm Event: 10 years
Scenario: Post-Development 10 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.150	0.00	0.00	0.00	0.00	0.00	0	31.00
34.200	0.00	0.00	0.00	0.00	0.00	0	31.00
34.250	0.00	0.00	0.00	0.00	0.00	0	31.00
34.300	0.00	0.00	0.00	0.00	0.00	0	31.00
34.350	0.00	0.00	0.00	0.00	0.00	0	31.00
34.400	0.00	0.00	0.00	0.00	0.00	0	31.00
34.450	0.00	0.00	0.00	0.00	0.00	0	31.00
34.500	0.00	0.00	0.00	0.00	0.00	0	31.00
34.550	0.00	0.00	0.00	0.00	0.00	0	31.00
34.600	0.00	0.00	0.00	0.00	0.00	0	31.00
34.650	0.00	0.00	0.00	0.00	0.00	0	31.00
34.700	0.00	0.00	0.00	0.00	0.00	0	31.00
34.750	0.00	0.00	0.00	0.00	0.00	0	31.00
34.800	0.00	0.00	0.00	0.00	0.00	0	31.00
34.850	0.00	0.00	0.00	0.00	0.00	0	31.00
34.900	0.00	0.00	0.00	0.00	0.00	0	31.00
34.950	0.00	0.00	0.00	0.00	0.00	0	31.00
35.000	0.00	0.00	0.00	0.00	0.00	0	31.00
35.050	0.00	0.00	0.00	0.00	0.00	0	31.00
35.100	0.00	0.00	0.00	0.00	0.00	0	31.00
35.150	0.00	0.00	0.00	0.00	0.00	0	31.00
35.200	0.00	0.00	0.00	0.00	0.00	0	31.00
35.250	0.00	0.00	0.00	0.00	0.00	0	31.00
35.300	0.00	0.00	0.00	0.00	0.00	0	31.00
35.350	0.00	0.00	0.00	0.00	0.00	0	31.00
35.400	0.00	0.00	0.00	0.00	0.00	0	31.00
35.450	0.00	0.00	0.00	0.00	0.00	0	31.00
35.500	0.00	0.00	0.00	0.00	0.00	0	31.00
35.550	0.00	0.00	0.00	0.00	0.00	0	31.00
35.600	0.00	0.00	0.00	0.00	0.00	0	31.00
35.650	0.00	0.00	0.00	0.00	0.00	0	31.00
35.700	0.00	0.00	0.00	0.00	0.00	0	31.00
35.750	0.00	0.00	0.00	0.00	0.00	0	31.00
35.800	0.00	0.00	0.00	0.00	0.00	0	31.00
35.850	0.00	0.00	0.00	0.00	0.00	0	31.00
35.900	0.00	0.00	0.00	0.00	0.00	0	31.00
35.950	0.00	0.00	0.00	0.00	0.00	0	31.00
36.000	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.10	0.00	0.05	0	31.00
0.050	0.00	0.00	0.00	0.00	0.00	0	31.00
0.100	0.00	0.00	0.00	0.00	0.00	0	31.00
0.150	0.00	0.00	0.00	0.00	0.00	0	31.00
0.200	0.00	0.00	0.00	0.00	0.00	0	31.00
0.250	0.00	0.00	0.00	0.00	0.00	0	31.00
0.300	0.00	0.00	0.00	0.00	0.00	0	31.00
0.350	0.00	0.00	0.00	0.00	0.00	0	31.00
0.400	0.00	0.00	0.00	0.00	0.00	0	31.00
0.450	0.00	0.00	0.00	0.00	0.00	0	31.00
0.500	0.00	0.00	0.00	0.00	0.00	0	31.00
0.550	0.00	0.00	0.00	0.00	0.00	0	31.00
0.600	0.00	0.00	0.00	0.00	0.00	0	31.00
0.650	0.00	0.00	0.00	0.00	0.00	0	31.00
0.700	0.00	0.00	0.00	0.00	0.00	0	31.00
0.750	0.00	0.00	0.00	0.00	0.00	0	31.00
0.800	0.00	0.00	0.00	0.00	0.00	0	31.00
0.850	0.00	0.00	0.00	0.00	0.00	0	31.00
0.900	0.00	0.00	0.00	0.00	0.00	0	31.00
0.950	0.00	0.00	0.00	0.00	0.00	0	31.00
1.000	0.00	0.00	0.00	0.00	0.00	0	31.00
1.050	0.00	0.00	0.00	0.00	0.00	0	31.00
1.100	0.00	0.00	0.00	0.00	0.00	0	31.00
1.150	0.00	0.00	0.00	0.00	0.00	0	31.00
1.200	0.00	0.00	0.00	0.00	0.00	0	31.00
1.250	0.00	0.00	0.00	0.00	0.00	0	31.00
1.300	0.00	0.00	0.00	0.00	0.00	0	31.00
1.350	0.00	0.00	0.00	0.00	0.00	0	31.00
1.400	0.00	0.00	0.00	0.00	0.00	0	31.00
1.450	0.00	0.00	0.00	0.00	0.00	0	31.00
1.500	0.00	0.00	0.00	0.00	0.00	0	31.00
1.550	0.00	0.00	0.00	0.00	0.00	0	31.00
1.600	0.00	0.00	0.00	0.00	0.00	0	31.00
1.650	0.00	0.00	0.00	0.00	0.00	0	31.00
1.700	0.00	0.00	0.00	0.00	0.00	0	31.00
1.750	0.00	0.00	0.00	0.00	0.00	0	31.00
1.800	0.00	0.00	0.00	0.00	0.00	0	31.00
1.850	0.00	0.00	0.00	0.00	0.00	0	31.00
1.900	0.00	0.00	0.00	0.00	0.00	0	31.00
1.950	0.00	0.00	0.00	0.00	0.00	0	31.00
2.000	0.00	0.00	0.00	0.00	0.00	0	31.00
2.050	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
2.100	0.00	0.00	0.00	0.00	0.00	0	31.00
2.150	0.00	0.00	0.00	0.00	0.00	0	31.00
2.200	0.00	0.00	0.00	0.00	0.00	0	31.00
2.250	0.00	0.00	0.00	0.00	0.00	0	31.00
2.300	0.00	0.00	0.00	0.00	0.00	0	31.00
2.350	0.00	0.00	0.00	0.00	0.00	0	31.00
2.400	0.00	0.00	0.00	0.00	0.00	0	31.00
2.450	0.00	0.00	0.00	0.00	0.00	0	31.00
2.500	0.00	0.00	0.00	0.00	0.00	0	31.00
2.550	0.00	0.00	0.00	0.00	0.00	0	31.00
2.600	0.00	0.00	0.00	0.00	0.00	0	31.00
2.650	0.00	0.00	0.01	0.00	0.00	0	31.00
2.700	0.00	0.00	0.01	0.00	0.00	0	31.00
2.750	0.00	0.00	0.01	0.00	0.00	0	31.00
2.800	0.00	0.00	0.01	0.00	0.00	0	31.00
2.850	0.00	0.00	0.01	0.00	0.00	0	31.00
2.900	0.00	0.00	0.01	0.00	0.00	0	31.00
2.950	0.00	0.00	0.01	0.00	0.00	0	31.00
3.000	0.01	0.00	0.01	0.00	0.01	0	31.00
3.050	0.01	0.00	0.01	0.00	0.01	0	31.00
3.100	0.01	0.00	0.01	0.00	0.01	0	31.00
3.150	0.01	0.00	0.01	0.00	0.01	0	31.00
3.200	0.01	0.00	0.01	0.00	0.01	0	31.00
3.250	0.01	0.00	0.01	0.00	0.01	0	31.00
3.300	0.01	0.00	0.01	0.00	0.01	0	31.00
3.350	0.01	0.00	0.02	0.00	0.01	0	31.00
3.400	0.01	0.00	0.02	0.00	0.01	0	31.00
3.450	0.01	0.00	0.02	0.00	0.01	0	31.00
3.500	0.01	0.00	0.02	0.00	0.01	0	31.00
3.550	0.01	0.00	0.02	0.00	0.01	0	31.00
3.600	0.01	0.00	0.02	0.00	0.01	0	31.00
3.650	0.01	0.00	0.02	0.00	0.01	0	31.00
3.700	0.01	0.00	0.02	0.00	0.01	0	31.00
3.750	0.01	0.00	0.02	0.00	0.01	0	31.00
3.800	0.01	0.00	0.02	0.00	0.01	0	31.00
3.850	0.01	0.00	0.02	0.00	0.01	0	31.00
3.900	0.01	0.00	0.02	0.00	0.01	0	31.00
3.950	0.01	0.00	0.02	0.00	0.01	0	31.00
4.000	0.01	0.00	0.02	0.00	0.01	0	31.00
4.050	0.01	0.00	0.03	0.00	0.01	0	31.00
4.100	0.01	0.00	0.03	0.00	0.01	0	31.00
4.150	0.01	0.00	0.03	0.00	0.01	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
4.200	0.01	0.00	0.03	0.00	0.01	0	31.00
4.250	0.01	0.00	0.03	0.00	0.01	0	31.00
4.300	0.01	0.00	0.03	0.00	0.01	0	31.00
4.350	0.02	0.00	0.03	0.00	0.02	0	31.00
4.400	0.02	0.00	0.03	0.00	0.02	0	31.00
4.450	0.02	0.00	0.03	0.00	0.02	0	31.00
4.500	0.02	0.00	0.03	0.00	0.02	0	31.00
4.550	0.02	0.00	0.03	0.00	0.02	0	31.00
4.600	0.02	0.00	0.03	0.00	0.02	0	31.00
4.650	0.02	0.00	0.03	0.00	0.02	0	31.00
4.700	0.02	0.00	0.04	0.00	0.02	0	31.00
4.750	0.02	0.00	0.04	0.00	0.02	0	31.00
4.800	0.02	0.00	0.04	0.00	0.02	0	31.00
4.850	0.02	0.00	0.04	0.00	0.02	0	31.00
4.900	0.02	0.00	0.04	0.00	0.02	0	31.00
4.950	0.02	0.00	0.04	0.00	0.02	0	31.00
5.000	0.02	0.00	0.04	0.00	0.02	0	31.00
5.050	0.02	0.00	0.04	0.00	0.02	0	31.00
5.100	0.02	0.00	0.04	0.00	0.02	0	31.00
5.150	0.02	0.00	0.04	0.00	0.02	0	31.00
5.200	0.02	0.00	0.04	0.00	0.02	0	31.00
5.250	0.02	0.00	0.04	0.00	0.02	0	31.00
5.300	0.02	0.00	0.04	0.00	0.02	0	31.00
5.350	0.02	0.00	0.05	0.00	0.02	0	31.00
5.400	0.02	0.00	0.05	0.00	0.02	0	31.00
5.450	0.02	0.00	0.05	0.00	0.02	0	31.00
5.500	0.02	0.00	0.05	0.00	0.02	0	31.00
5.550	0.02	0.00	0.05	0.00	0.02	0	31.00
5.600	0.02	0.00	0.05	0.00	0.02	0	31.00
5.650	0.03	0.00	0.05	0.00	0.03	0	31.00
5.700	0.03	0.00	0.05	0.00	0.03	0	31.00
5.750	0.03	0.00	0.05	0.00	0.03	0	31.00
5.800	0.03	0.00	0.05	0.00	0.03	0	31.00
5.850	0.03	0.00	0.05	0.00	0.03	0	31.00
5.900	0.03	0.00	0.05	0.00	0.03	0	31.00
5.950	0.03	0.00	0.05	0.00	0.03	0	31.00
6.000	0.03	0.00	0.06	0.00	0.03	0	31.00
6.050	0.03	0.00	0.06	0.00	0.03	0	31.00
6.100	0.03	0.00	0.06	0.00	0.03	0	31.00
6.150	0.03	0.00	0.06	0.00	0.03	0	31.00
6.200	0.03	0.00	0.06	0.00	0.03	0	31.00
6.250	0.03	0.00	0.06	0.00	0.03	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
6.300	0.03	0.00	0.06	0.00	0.03	0	31.00
6.350	0.03	0.00	0.06	0.00	0.03	0	31.00
6.400	0.03	0.00	0.07	0.00	0.03	0	31.00
6.450	0.03	0.00	0.07	0.00	0.03	0	31.00
6.500	0.03	0.00	0.07	0.00	0.03	0	31.00
6.550	0.04	0.00	0.07	0.00	0.04	0	31.00
6.600	0.04	0.00	0.07	0.00	0.04	0	31.00
6.650	0.04	0.00	0.07	0.00	0.04	0	31.00
6.700	0.04	0.00	0.08	0.00	0.04	0	31.00
6.750	0.04	0.00	0.08	0.00	0.04	0	31.00
6.800	0.04	0.00	0.08	0.00	0.04	0	31.00
6.850	0.04	0.00	0.08	0.00	0.04	0	31.00
6.900	0.04	0.00	0.08	0.00	0.04	0	31.00
6.950	0.04	0.00	0.08	0.00	0.04	0	31.00
7.000	0.04	0.00	0.08	0.00	0.04	0	31.00
7.050	0.04	0.00	0.09	0.00	0.04	0	31.00
7.100	0.04	0.00	0.09	0.00	0.04	0	31.00
7.150	0.05	0.00	0.09	0.00	0.04	0	31.00
7.200	0.05	0.00	0.09	0.00	0.05	0	31.00
7.250	0.05	0.00	0.09	0.00	0.05	0	31.00
7.300	0.05	0.00	0.09	0.00	0.05	0	31.00
7.350	0.05	0.00	0.10	0.00	0.05	0	31.00
7.400	0.05	0.00	0.10	0.00	0.05	0	31.00
7.450	0.05	0.00	0.10	0.00	0.05	0	31.00
7.500	0.05	0.00	0.10	0.00	0.05	0	31.00
7.550	0.05	0.00	0.10	0.00	0.05	0	31.00
7.600	0.05	0.00	0.11	0.00	0.05	0	31.00
7.650	0.05	0.00	0.11	0.00	0.05	0	31.00
7.700	0.05	0.00	0.11	0.00	0.05	0	31.00
7.750	0.06	0.00	0.11	0.00	0.06	0	31.00
7.800	0.06	0.00	0.11	0.00	0.06	0	31.00
7.850	0.06	0.00	0.11	0.00	0.06	0	31.00
7.900	0.06	0.00	0.12	0.00	0.06	0	31.00
7.950	0.06	0.00	0.12	0.00	0.06	0	31.00
8.000	0.06	0.00	0.12	0.00	0.06	0	31.00
8.050	0.06	0.00	0.12	0.00	0.06	0	31.00
8.100	0.06	0.00	0.12	0.00	0.06	0	31.00
8.150	0.06	0.00	0.13	0.00	0.06	0	31.00
8.200	0.07	0.00	0.13	0.00	0.07	0	31.00
8.250	0.07	0.00	0.13	0.00	0.07	0	31.00
8.300	0.07	0.00	0.14	0.00	0.07	0	31.00
8.350	0.07	0.00	0.14	0.00	0.07	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
8.400	0.07	0.00	0.14	0.00	0.07	0	31.00
8.450	0.07	0.00	0.15	0.00	0.07	0	31.00
8.500	0.08	0.00	0.15	0.00	0.08	0	31.00
8.550	0.08	0.00	0.16	0.00	0.08	0	31.00
8.600	0.08	0.00	0.16	0.00	0.08	0	31.00
8.650	0.08	0.00	0.16	0.00	0.08	0	31.00
8.700	0.08	0.00	0.17	0.00	0.08	0	31.00
8.750	0.09	0.00	0.17	0.00	0.08	0	31.00
8.800	0.09	0.00	0.17	0.00	0.09	0	31.00
8.850	0.09	0.00	0.18	0.00	0.09	0	31.00
8.900	0.09	0.00	0.18	0.00	0.09	0	31.00
8.950	0.09	0.00	0.18	0.00	0.09	0	31.00
9.000	0.10	0.00	0.19	0.00	0.09	0	31.00
9.050	0.10	0.00	0.19	0.00	0.10	0	31.00
9.100	0.10	0.00	0.20	0.00	0.10	0	31.00
9.150	0.10	0.00	0.20	0.00	0.10	0	31.00
9.200	0.10	0.00	0.20	0.00	0.10	0	31.00
9.250	0.11	0.00	0.21	0.00	0.10	9	31.00
9.300	0.11	0.00	0.21	0.00	0.10	10	31.00
9.350	0.11	0.01	0.22	0.00	0.10	10	31.00
9.400	0.11	0.02	0.23	0.00	0.10	12	31.00
9.450	0.11	0.04	0.25	0.00	0.10	13	31.00
9.500	0.12	0.06	0.27	0.00	0.10	15	31.01
9.550	0.12	0.08	0.29	0.00	0.10	17	31.01
9.600	0.12	0.11	0.32	0.00	0.10	19	31.01
9.650	0.12	0.14	0.35	0.00	0.10	22	31.01
9.700	0.12	0.18	0.39	0.00	0.10	26	31.01
9.750	0.13	0.22	0.43	0.00	0.10	29	31.01
9.800	0.13	0.26	0.47	0.00	0.10	33	31.01
9.850	0.13	0.31	0.52	0.00	0.10	38	31.01
9.900	0.13	0.37	0.57	0.00	0.10	42	31.02
9.950	0.13	0.42	0.63	0.00	0.10	47	31.02
10.000	0.14	0.48	0.69	0.00	0.10	53	31.02
10.050	0.14	0.55	0.76	0.00	0.10	59	31.02
10.100	0.14	0.62	0.83	0.00	0.10	65	31.02
10.150	0.14	0.70	0.90	0.00	0.10	72	31.03
10.200	0.15	0.78	0.99	0.00	0.10	80	31.03
10.250	0.15	0.87	1.08	0.00	0.10	88	31.03
10.300	0.16	0.98	1.18	0.00	0.10	97	31.04
10.350	0.16	1.08	1.29	0.00	0.10	107	31.04
10.400	0.16	1.20	1.41	0.00	0.10	117	31.04
10.450	0.17	1.32	1.53	0.00	0.10	129	31.05

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
10.500	0.17	1.46	1.66	0.00	0.10	140	31.05
10.550	0.18	1.60	1.80	0.00	0.10	153	31.06
10.600	0.18	1.74	1.95	0.00	0.10	166	31.06
10.650	0.18	1.90	2.11	0.00	0.10	180	31.07
10.700	0.19	2.07	2.27	0.00	0.10	195	31.07
10.750	0.19	2.24	2.45	0.00	0.10	211	31.08
10.800	0.20	2.42	2.63	0.00	0.10	227	31.08
10.850	0.20	2.61	2.81	0.00	0.10	244	31.09
10.900	0.20	2.80	3.01	0.00	0.10	262	31.10
10.950	0.21	3.01	3.22	0.00	0.10	280	31.10
11.000	0.21	3.22	3.43	0.00	0.10	299	31.11
11.050	0.22	3.45	3.65	0.00	0.10	320	31.12
11.100	0.23	3.69	3.90	0.00	0.10	341	31.12
11.150	0.24	3.95	4.16	0.00	0.10	365	31.13
11.200	0.26	4.24	4.45	0.00	0.10	391	31.14
11.250	0.27	4.56	4.77	0.00	0.10	420	31.15
11.300	0.29	4.91	5.12	0.00	0.10	452	31.16
11.350	0.30	5.29	5.50	0.00	0.10	486	31.18
11.400	0.32	5.70	5.91	0.00	0.10	522	31.19
11.450	0.33	6.14	6.35	0.00	0.10	562	31.20
11.500	0.35	6.61	6.81	0.00	0.10	604	31.22
11.550	0.41	7.15	7.36	0.00	0.10	653	31.24
11.600	0.48	7.83	8.03	0.00	0.10	714	31.26
11.650	0.60	8.70	8.90	0.00	0.10	792	31.29
11.700	0.74	9.82	10.03	0.00	0.10	893	31.33
11.750	0.87	11.23	11.43	0.00	0.10	1,020	31.37
11.800	1.02	12.91	13.12	0.00	0.10	1,171	31.43
11.850	1.16	14.88	15.09	0.00	0.10	1,349	31.49
11.900	1.30	17.14	17.34	0.00	0.10	1,552	31.56
11.950	1.84	20.07	20.28	0.00	0.10	1,816	31.66
12.000	2.48	24.19	24.39	0.00	0.10	2,186	31.80
12.050	2.65	29.11	29.32	0.00	0.10	2,630	31.96
12.100	2.70	27.77	34.47	0.00	3.35	2,801	32.02
12.150	2.22	29.00	32.69	0.00	1.84	2,776	32.01
12.200	1.59	28.92	32.81	0.00	1.95	2,778	32.01
12.250	1.33	29.60	31.83	0.00	1.12	2,764	32.01
12.300	1.16	29.43	32.08	0.00	1.33	2,768	32.01
12.350	1.01	29.77	31.59	0.00	0.91	2,761	32.00
12.400	0.86	29.73	31.64	0.00	0.95	2,762	32.01
12.450	0.72	29.96	31.32	0.00	0.68	2,757	32.00
12.500	0.58	30.00	31.26	0.00	0.63	2,756	32.00
12.550	0.48	30.13	31.06	0.00	0.46	2,754	32.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
12.600	0.40	30.16	31.02	0.00	0.43	2,753	32.00
12.650	0.37	30.22	30.93	0.00	0.35	2,752	32.00
12.700	0.35	30.22	30.94	0.00	0.36	2,752	32.00
12.750	0.33	30.25	30.90	0.00	0.33	2,752	32.00
12.800	0.32	30.25	30.90	0.00	0.33	2,752	32.00
12.850	0.30	30.27	30.87	0.00	0.30	2,751	32.00
12.900	0.29	30.27	30.86	0.00	0.29	2,751	32.00
12.950	0.27	30.29	30.84	0.00	0.27	2,751	32.00
13.000	0.26	30.30	30.82	0.00	0.26	2,751	32.00
13.050	0.25	30.31	30.81	0.00	0.25	2,750	32.00
13.100	0.24	30.32	30.80	0.00	0.24	2,750	32.00
13.150	0.23	30.32	30.79	0.00	0.23	2,750	32.00
13.200	0.23	30.33	30.79	0.00	0.23	2,750	32.00
13.250	0.22	30.33	30.78	0.00	0.22	2,750	32.00
13.300	0.22	30.33	30.78	0.00	0.22	2,750	32.00
13.350	0.22	30.34	30.77	0.00	0.22	2,750	32.00
13.400	0.21	30.34	30.77	0.00	0.21	2,750	32.00
13.450	0.21	30.34	30.76	0.00	0.21	2,750	32.00
13.500	0.21	30.35	30.76	0.00	0.21	2,750	32.00
13.550	0.20	30.35	30.75	0.00	0.20	2,750	32.00
13.600	0.20	30.35	30.75	0.00	0.20	2,750	32.00
13.650	0.19	30.36	30.74	0.00	0.19	2,749	32.00
13.700	0.19	30.36	30.74	0.00	0.19	2,749	32.00
13.750	0.19	30.36	30.73	0.00	0.19	2,749	32.00
13.800	0.18	30.37	30.73	0.00	0.18	2,749	32.00
13.850	0.18	30.37	30.72	0.00	0.18	2,749	32.00
13.900	0.17	30.37	30.72	0.00	0.17	2,749	32.00
13.950	0.17	30.37	30.72	0.00	0.17	2,749	32.00
14.000	0.17	30.38	30.71	0.00	0.17	2,749	32.00
14.050	0.16	30.38	30.71	0.00	0.16	2,749	32.00
14.100	0.16	30.38	30.70	0.00	0.16	2,749	32.00
14.150	0.16	30.39	30.70	0.00	0.16	2,749	32.00
14.200	0.16	30.39	30.70	0.00	0.16	2,749	32.00
14.250	0.15	30.39	30.70	0.00	0.15	2,749	32.00
14.300	0.15	30.39	30.69	0.00	0.15	2,749	32.00
14.350	0.15	30.39	30.69	0.00	0.15	2,749	32.00
14.400	0.15	30.39	30.69	0.00	0.15	2,749	32.00
14.450	0.15	30.39	30.69	0.00	0.15	2,749	32.00
14.500	0.14	30.40	30.69	0.00	0.14	2,749	32.00
14.550	0.14	30.40	30.68	0.00	0.14	2,749	32.00
14.600	0.14	30.40	30.68	0.00	0.14	2,749	32.00
14.650	0.14	30.40	30.68	0.00	0.14	2,749	32.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
14.700	0.14	30.40	30.68	0.00	0.14	2,749	32.00
14.750	0.14	30.40	30.67	0.00	0.14	2,749	32.00
14.800	0.13	30.41	30.67	0.00	0.13	2,748	32.00
14.850	0.13	30.41	30.67	0.00	0.13	2,748	32.00
14.900	0.13	30.41	30.67	0.00	0.13	2,748	32.00
14.950	0.13	30.41	30.67	0.00	0.13	2,748	32.00
15.000	0.13	30.41	30.66	0.00	0.13	2,748	32.00
15.050	0.12	30.41	30.66	0.00	0.12	2,748	32.00
15.100	0.12	30.41	30.66	0.00	0.12	2,748	32.00
15.150	0.12	30.42	30.66	0.00	0.12	2,748	32.00
15.200	0.12	30.42	30.65	0.00	0.12	2,748	32.00
15.250	0.12	30.42	30.65	0.00	0.12	2,748	32.00
15.300	0.11	30.42	30.65	0.00	0.11	2,748	32.00
15.350	0.11	30.42	30.65	0.00	0.11	2,748	32.00
15.400	0.11	30.42	30.65	0.00	0.11	2,748	32.00
15.450	0.11	30.43	30.64	0.00	0.11	2,748	32.00
15.500	0.11	30.43	30.64	0.00	0.11	2,748	32.00
15.550	0.11	30.43	30.64	0.00	0.11	2,748	32.00
15.600	0.10	30.43	30.64	0.00	0.10	2,748	32.00
15.650	0.10	30.43	30.63	0.00	0.10	2,748	32.00
15.700	0.10	30.42	30.63	0.00	0.10	2,747	32.00
15.750	0.10	30.41	30.61	0.00	0.10	2,746	32.00
15.800	0.10	30.39	30.60	0.00	0.10	2,745	32.00
15.850	0.09	30.37	30.58	0.00	0.10	2,743	32.00
15.900	0.09	30.35	30.56	0.00	0.10	2,741	32.00
15.950	0.09	30.32	30.53	0.00	0.10	2,739	32.00
16.000	0.09	30.29	30.50	0.00	0.10	2,736	32.00
16.050	0.09	30.26	30.47	0.00	0.10	2,733	31.99
16.100	0.09	30.22	30.43	0.00	0.10	2,730	31.99
16.150	0.08	30.19	30.39	0.00	0.10	2,726	31.99
16.200	0.08	30.15	30.35	0.00	0.10	2,722	31.99
16.250	0.08	30.10	30.31	0.00	0.10	2,719	31.99
16.300	0.08	30.06	30.27	0.00	0.10	2,715	31.99
16.350	0.08	30.01	30.22	0.00	0.10	2,711	31.99
16.400	0.08	29.97	30.18	0.00	0.10	2,706	31.98
16.450	0.08	29.92	30.13	0.00	0.10	2,702	31.98
16.500	0.08	29.87	30.08	0.00	0.10	2,698	31.98
16.550	0.08	29.82	30.02	0.00	0.10	2,693	31.98
16.600	0.08	29.76	29.97	0.00	0.10	2,688	31.98
16.650	0.08	29.71	29.92	0.00	0.10	2,683	31.98
16.700	0.08	29.65	29.86	0.00	0.10	2,678	31.97
16.750	0.07	29.59	29.80	0.00	0.10	2,673	31.97

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.800	0.07	29.53	29.74	0.00	0.10	2,667	31.97
16.850	0.07	29.47	29.68	0.00	0.10	2,662	31.97
16.900	0.07	29.41	29.62	0.00	0.10	2,656	31.97
16.950	0.07	29.34	29.55	0.00	0.10	2,650	31.96
17.000	0.07	29.28	29.48	0.00	0.10	2,644	31.96
17.050	0.07	29.21	29.41	0.00	0.10	2,638	31.96
17.100	0.07	29.14	29.34	0.00	0.10	2,632	31.96
17.150	0.07	29.07	29.27	0.00	0.10	2,625	31.96
17.200	0.07	28.99	29.20	0.00	0.10	2,619	31.95
17.250	0.07	28.92	29.12	0.00	0.10	2,612	31.95
17.300	0.07	28.84	29.05	0.00	0.10	2,605	31.95
17.350	0.06	28.76	28.97	0.00	0.10	2,598	31.95
17.400	0.06	28.68	28.89	0.00	0.10	2,591	31.94
17.450	0.06	28.60	28.81	0.00	0.10	2,583	31.94
17.500	0.06	28.52	28.73	0.00	0.10	2,576	31.94
17.550	0.06	28.43	28.64	0.00	0.10	2,568	31.93
17.600	0.06	28.35	28.55	0.00	0.10	2,561	31.93
17.650	0.06	28.26	28.47	0.00	0.10	2,553	31.93
17.700	0.06	28.17	28.38	0.00	0.10	2,545	31.93
17.750	0.06	28.08	28.29	0.00	0.10	2,536	31.92
17.800	0.06	27.98	28.19	0.00	0.10	2,528	31.92
17.850	0.06	27.89	28.10	0.00	0.10	2,519	31.92
17.900	0.06	27.79	28.00	0.00	0.10	2,511	31.91
17.950	0.05	27.70	27.90	0.00	0.10	2,502	31.91
18.000	0.05	27.60	27.80	0.00	0.10	2,493	31.91
18.050	0.05	27.49	27.70	0.00	0.10	2,484	31.90
18.100	0.05	27.39	27.60	0.00	0.10	2,475	31.90
18.150	0.05	27.29	27.50	0.00	0.10	2,465	31.90
18.200	0.05	27.19	27.39	0.00	0.10	2,456	31.89
18.250	0.05	27.08	27.29	0.00	0.10	2,447	31.89
18.300	0.05	26.98	27.18	0.00	0.10	2,437	31.89
18.350	0.05	26.87	27.08	0.00	0.10	2,428	31.88
18.400	0.05	26.77	26.97	0.00	0.10	2,418	31.88
18.450	0.05	26.66	26.87	0.00	0.10	2,409	31.88
18.500	0.05	26.55	26.76	0.00	0.10	2,399	31.87
18.550	0.05	26.45	26.65	0.00	0.10	2,389	31.87
18.600	0.05	26.34	26.55	0.00	0.10	2,380	31.87
18.650	0.05	26.23	26.44	0.00	0.10	2,370	31.86
18.700	0.05	26.12	26.33	0.00	0.10	2,360	31.86
18.750	0.05	26.01	26.22	0.00	0.10	2,350	31.86
18.800	0.05	25.90	26.11	0.00	0.10	2,341	31.85
18.850	0.05	25.79	26.00	0.00	0.10	2,331	31.85

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.900	0.05	25.68	25.89	0.00	0.10	2,321	31.84
18.950	0.05	25.57	25.78	0.00	0.10	2,311	31.84
19.000	0.05	25.46	25.67	0.00	0.10	2,301	31.84
19.050	0.05	25.35	25.56	0.00	0.10	2,291	31.83
19.100	0.05	25.23	25.44	0.00	0.10	2,280	31.83
19.150	0.05	25.12	25.33	0.00	0.10	2,270	31.83
19.200	0.05	25.01	25.22	0.00	0.10	2,260	31.82
19.250	0.05	24.89	25.10	0.00	0.10	2,250	31.82
19.300	0.05	24.78	24.99	0.00	0.10	2,240	31.81
19.350	0.05	24.66	24.87	0.00	0.10	2,229	31.81
19.400	0.05	24.55	24.76	0.00	0.10	2,219	31.81
19.450	0.05	24.43	24.64	0.00	0.10	2,208	31.80
19.500	0.05	24.32	24.52	0.00	0.10	2,198	31.80
19.550	0.05	24.20	24.41	0.00	0.10	2,187	31.80
19.600	0.05	24.08	24.29	0.00	0.10	2,177	31.79
19.650	0.04	23.96	24.17	0.00	0.10	2,166	31.79
19.700	0.04	23.85	24.05	0.00	0.10	2,155	31.78
19.750	0.04	23.73	23.93	0.00	0.10	2,145	31.78
19.800	0.04	23.61	23.82	0.00	0.10	2,134	31.78
19.850	0.04	23.49	23.70	0.00	0.10	2,123	31.77
19.900	0.04	23.37	23.58	0.00	0.10	2,112	31.77
19.950	0.04	23.25	23.45	0.00	0.10	2,102	31.76
20.000	0.04	23.12	23.33	0.00	0.10	2,091	31.76
20.050	0.04	23.00	23.21	0.00	0.10	2,080	31.76
20.100	0.04	22.88	23.09	0.00	0.10	2,069	31.75
20.150	0.04	22.76	22.97	0.00	0.10	2,058	31.75
20.200	0.04	22.63	22.84	0.00	0.10	2,046	31.74
20.250	0.04	22.51	22.72	0.00	0.10	2,035	31.74
20.300	0.04	22.39	22.60	0.00	0.10	2,024	31.74
20.350	0.04	22.26	22.47	0.00	0.10	2,013	31.73
20.400	0.04	22.14	22.35	0.00	0.10	2,002	31.73
20.450	0.04	22.01	22.22	0.00	0.10	1,991	31.72
20.500	0.04	21.89	22.10	0.00	0.10	1,979	31.72
20.550	0.04	21.76	21.97	0.00	0.10	1,968	31.72
20.600	0.04	21.64	21.84	0.00	0.10	1,957	31.71
20.650	0.04	21.51	21.72	0.00	0.10	1,945	31.71
20.700	0.04	21.38	21.59	0.00	0.10	1,934	31.70
20.750	0.04	21.26	21.46	0.00	0.10	1,922	31.70
20.800	0.04	21.13	21.34	0.00	0.10	1,911	31.70
20.850	0.04	21.00	21.21	0.00	0.10	1,899	31.69
20.900	0.04	20.87	21.08	0.00	0.10	1,888	31.69
20.950	0.04	20.74	20.95	0.00	0.10	1,876	31.68

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
21.000	0.04	20.61	20.82	0.00	0.10	1,865	31.68
21.050	0.04	20.49	20.69	0.00	0.10	1,853	31.67
21.100	0.04	20.36	20.56	0.00	0.10	1,841	31.67
21.150	0.04	20.23	20.43	0.00	0.10	1,830	31.67
21.200	0.04	20.10	20.30	0.00	0.10	1,818	31.66
21.250	0.04	19.96	20.17	0.00	0.10	1,806	31.66
21.300	0.04	19.83	20.04	0.00	0.10	1,794	31.65
21.350	0.04	19.70	19.91	0.00	0.10	1,782	31.65
21.400	0.04	19.57	19.78	0.00	0.10	1,771	31.64
21.450	0.04	19.44	19.65	0.00	0.10	1,759	31.64
21.500	0.04	19.30	19.51	0.00	0.10	1,747	31.64
21.550	0.04	19.17	19.38	0.00	0.10	1,735	31.63
21.600	0.04	19.04	19.25	0.00	0.10	1,723	31.63
21.650	0.04	18.90	19.11	0.00	0.10	1,711	31.62
21.700	0.04	18.77	18.98	0.00	0.10	1,699	31.62
21.750	0.04	18.63	18.84	0.00	0.10	1,686	31.61
21.800	0.04	18.50	18.71	0.00	0.10	1,674	31.61
21.850	0.04	18.36	18.57	0.00	0.10	1,662	31.60
21.900	0.04	18.23	18.44	0.00	0.10	1,650	31.60
21.950	0.04	18.09	18.30	0.00	0.10	1,638	31.60
22.000	0.04	17.96	18.16	0.00	0.10	1,625	31.59
22.050	0.04	17.82	18.03	0.00	0.10	1,613	31.59
22.100	0.04	17.68	17.89	0.00	0.10	1,601	31.58
22.150	0.04	17.55	17.75	0.00	0.10	1,588	31.58
22.200	0.04	17.41	17.62	0.00	0.10	1,576	31.57
22.250	0.03	17.27	17.48	0.00	0.10	1,564	31.57
22.300	0.03	17.13	17.34	0.00	0.10	1,551	31.56
22.350	0.03	16.99	17.20	0.00	0.10	1,539	31.56
22.400	0.03	16.85	17.06	0.00	0.10	1,526	31.56
22.450	0.03	16.71	16.92	0.00	0.10	1,513	31.55
22.500	0.03	16.57	16.78	0.00	0.10	1,501	31.55
22.550	0.03	16.43	16.64	0.00	0.10	1,488	31.54
22.600	0.03	16.29	16.50	0.00	0.10	1,475	31.54
22.650	0.03	16.15	16.36	0.00	0.10	1,463	31.53
22.700	0.03	16.01	16.22	0.00	0.10	1,450	31.53
22.750	0.03	15.87	16.07	0.00	0.10	1,437	31.52
22.800	0.03	15.72	15.93	0.00	0.10	1,424	31.52
22.850	0.03	15.58	15.79	0.00	0.10	1,412	31.51
22.900	0.03	15.44	15.65	0.00	0.10	1,399	31.51
22.950	0.03	15.29	15.50	0.00	0.10	1,386	31.50
23.000	0.03	15.15	15.36	0.00	0.10	1,373	31.50
23.050	0.03	15.01	15.21	0.00	0.10	1,360	31.49

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
23.100	0.03	14.86	15.07	0.00	0.10	1,347	31.49
23.150	0.03	14.72	14.92	0.00	0.10	1,334	31.49
23.200	0.03	14.57	14.78	0.00	0.10	1,321	31.48
23.250	0.03	14.43	14.63	0.00	0.10	1,308	31.48
23.300	0.03	14.28	14.49	0.00	0.10	1,294	31.47
23.350	0.03	14.13	14.34	0.00	0.10	1,281	31.47
23.400	0.03	13.99	14.19	0.00	0.10	1,268	31.46
23.450	0.03	13.84	14.05	0.00	0.10	1,255	31.46
23.500	0.03	13.69	13.90	0.00	0.10	1,242	31.45
23.550	0.03	13.54	13.75	0.00	0.10	1,228	31.45
23.600	0.03	13.40	13.60	0.00	0.10	1,215	31.44
23.650	0.03	13.25	13.45	0.00	0.10	1,202	31.44
23.700	0.03	13.10	13.31	0.00	0.10	1,188	31.43
23.750	0.03	12.95	13.16	0.00	0.10	1,175	31.43
23.800	0.03	12.80	13.01	0.00	0.10	1,161	31.42
23.850	0.03	12.65	12.86	0.00	0.10	1,148	31.42
23.900	0.03	12.50	12.71	0.00	0.10	1,134	31.41
23.950	0.03	12.35	12.55	0.00	0.10	1,121	31.41
24.000	0.03	12.20	12.40	0.00	0.10	1,107	31.40
24.050	0.02	12.03	12.24	0.00	0.10	1,092	31.40
24.100	0.00	11.85	12.06	0.00	0.10	1,076	31.39
24.150	0.00	11.64	11.85	0.00	0.10	1,057	31.38
24.200	0.00	11.44	11.65	0.00	0.10	1,039	31.38
24.250	0.00	11.23	11.44	0.00	0.10	1,020	31.37
24.300	0.00	11.02	11.23	0.00	0.10	1,001	31.36
24.350	0.00	10.81	11.02	0.00	0.10	983	31.36
24.400	0.00	10.61	10.81	0.00	0.10	964	31.35
24.450	0.00	10.40	10.61	0.00	0.10	945	31.34
24.500	0.00	10.19	10.40	0.00	0.10	926	31.34
24.550	0.00	9.98	10.19	0.00	0.10	908	31.33
24.600	0.00	9.77	9.98	0.00	0.10	889	31.32
24.650	0.00	9.57	9.77	0.00	0.10	870	31.32
24.700	0.00	9.36	9.57	0.00	0.10	852	31.31
24.750	0.00	9.15	9.36	0.00	0.10	833	31.30
24.800	0.00	8.94	9.15	0.00	0.10	814	31.30
24.850	0.00	8.73	8.94	0.00	0.10	795	31.29
24.900	0.00	8.53	8.73	0.00	0.10	777	31.28
24.950	0.00	8.32	8.53	0.00	0.10	758	31.28
25.000	0.00	8.11	8.32	0.00	0.10	739	31.27
25.050	0.00	7.90	8.11	0.00	0.10	721	31.26
25.100	0.00	7.69	7.90	0.00	0.10	702	31.26
25.150	0.00	7.49	7.69	0.00	0.10	683	31.25

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
25.200	0.00	7.28	7.49	0.00	0.10	664	31.24
25.250	0.00	7.07	7.28	0.00	0.10	646	31.23
25.300	0.00	6.86	7.07	0.00	0.10	627	31.23
25.350	0.00	6.65	6.86	0.00	0.10	608	31.22
25.400	0.00	6.45	6.65	0.00	0.10	590	31.21
25.450	0.00	6.24	6.45	0.00	0.10	571	31.21
25.500	0.00	6.03	6.24	0.00	0.10	552	31.20
25.550	0.00	5.82	6.03	0.00	0.10	533	31.19
25.600	0.00	5.61	5.82	0.00	0.10	515	31.19
25.650	0.00	5.41	5.61	0.00	0.10	496	31.18
25.700	0.00	5.20	5.41	0.00	0.10	477	31.17
25.750	0.00	4.99	5.20	0.00	0.10	458	31.17
25.800	0.00	4.78	4.99	0.00	0.10	440	31.16
25.850	0.00	4.57	4.78	0.00	0.10	421	31.15
25.900	0.00	4.37	4.57	0.00	0.10	402	31.15
25.950	0.00	4.16	4.37	0.00	0.10	384	31.14
26.000	0.00	3.95	4.16	0.00	0.10	365	31.13
26.050	0.00	3.74	3.95	0.00	0.10	346	31.13
26.100	0.00	3.53	3.74	0.00	0.10	327	31.12
26.150	0.00	3.33	3.53	0.00	0.10	309	31.11
26.200	0.00	3.12	3.33	0.00	0.10	290	31.11
26.250	0.00	2.91	3.12	0.00	0.10	271	31.10
26.300	0.00	2.70	2.91	0.00	0.10	253	31.09
26.350	0.00	2.49	2.70	0.00	0.10	234	31.09
26.400	0.00	2.29	2.49	0.00	0.10	215	31.08
26.450	0.00	2.08	2.29	0.00	0.10	196	31.07
26.500	0.00	1.87	2.08	0.00	0.10	178	31.06
26.550	0.00	1.66	1.87	0.00	0.10	159	31.06
26.600	0.00	1.45	1.66	0.00	0.10	140	31.05
26.650	0.00	1.25	1.45	0.00	0.10	122	31.04
26.700	0.00	1.04	1.25	0.00	0.10	103	31.04
26.750	0.00	0.83	1.04	0.00	0.10	84	31.03
26.800	0.00	0.62	0.83	0.00	0.10	65	31.02
26.850	0.00	0.41	0.62	0.00	0.10	47	31.02
26.900	0.00	0.21	0.41	0.00	0.10	28	31.01
26.950	0.00	0.00	0.21	0.00	0.10	0	31.00
27.000	0.00	0.00	0.00	0.00	0.00	0	31.00
27.050	0.00	0.00	0.00	0.00	0.00	0	31.00
27.100	0.00	0.00	0.00	0.00	0.00	0	31.00
27.150	0.00	0.00	0.00	0.00	0.00	0	31.00
27.200	0.00	0.00	0.00	0.00	0.00	0	31.00
27.250	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
27.300	0.00	0.00	0.00	0.00	0.00	0	31.00
27.350	0.00	0.00	0.00	0.00	0.00	0	31.00
27.400	0.00	0.00	0.00	0.00	0.00	0	31.00
27.450	0.00	0.00	0.00	0.00	0.00	0	31.00
27.500	0.00	0.00	0.00	0.00	0.00	0	31.00
27.550	0.00	0.00	0.00	0.00	0.00	0	31.00
27.600	0.00	0.00	0.00	0.00	0.00	0	31.00
27.650	0.00	0.00	0.00	0.00	0.00	0	31.00
27.700	0.00	0.00	0.00	0.00	0.00	0	31.00
27.750	0.00	0.00	0.00	0.00	0.00	0	31.00
27.800	0.00	0.00	0.00	0.00	0.00	0	31.00
27.850	0.00	0.00	0.00	0.00	0.00	0	31.00
27.900	0.00	0.00	0.00	0.00	0.00	0	31.00
27.950	0.00	0.00	0.00	0.00	0.00	0	31.00
28.000	0.00	0.00	0.00	0.00	0.00	0	31.00
28.050	0.00	0.00	0.00	0.00	0.00	0	31.00
28.100	0.00	0.00	0.00	0.00	0.00	0	31.00
28.150	0.00	0.00	0.00	0.00	0.00	0	31.00
28.200	0.00	0.00	0.00	0.00	0.00	0	31.00
28.250	0.00	0.00	0.00	0.00	0.00	0	31.00
28.300	0.00	0.00	0.00	0.00	0.00	0	31.00
28.350	0.00	0.00	0.00	0.00	0.00	0	31.00
28.400	0.00	0.00	0.00	0.00	0.00	0	31.00
28.450	0.00	0.00	0.00	0.00	0.00	0	31.00
28.500	0.00	0.00	0.00	0.00	0.00	0	31.00
28.550	0.00	0.00	0.00	0.00	0.00	0	31.00
28.600	0.00	0.00	0.00	0.00	0.00	0	31.00
28.650	0.00	0.00	0.00	0.00	0.00	0	31.00
28.700	0.00	0.00	0.00	0.00	0.00	0	31.00
28.750	0.00	0.00	0.00	0.00	0.00	0	31.00
28.800	0.00	0.00	0.00	0.00	0.00	0	31.00
28.850	0.00	0.00	0.00	0.00	0.00	0	31.00
28.900	0.00	0.00	0.00	0.00	0.00	0	31.00
28.950	0.00	0.00	0.00	0.00	0.00	0	31.00
29.000	0.00	0.00	0.00	0.00	0.00	0	31.00
29.050	0.00	0.00	0.00	0.00	0.00	0	31.00
29.100	0.00	0.00	0.00	0.00	0.00	0	31.00
29.150	0.00	0.00	0.00	0.00	0.00	0	31.00
29.200	0.00	0.00	0.00	0.00	0.00	0	31.00
29.250	0.00	0.00	0.00	0.00	0.00	0	31.00
29.300	0.00	0.00	0.00	0.00	0.00	0	31.00
29.350	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
29.400	0.00	0.00	0.00	0.00	0.00	0	31.00
29.450	0.00	0.00	0.00	0.00	0.00	0	31.00
29.500	0.00	0.00	0.00	0.00	0.00	0	31.00
29.550	0.00	0.00	0.00	0.00	0.00	0	31.00
29.600	0.00	0.00	0.00	0.00	0.00	0	31.00
29.650	0.00	0.00	0.00	0.00	0.00	0	31.00
29.700	0.00	0.00	0.00	0.00	0.00	0	31.00
29.750	0.00	0.00	0.00	0.00	0.00	0	31.00
29.800	0.00	0.00	0.00	0.00	0.00	0	31.00
29.850	0.00	0.00	0.00	0.00	0.00	0	31.00
29.900	0.00	0.00	0.00	0.00	0.00	0	31.00
29.950	0.00	0.00	0.00	0.00	0.00	0	31.00
30.000	0.00	0.00	0.00	0.00	0.00	0	31.00
30.050	0.00	0.00	0.00	0.00	0.00	0	31.00
30.100	0.00	0.00	0.00	0.00	0.00	0	31.00
30.150	0.00	0.00	0.00	0.00	0.00	0	31.00
30.200	0.00	0.00	0.00	0.00	0.00	0	31.00
30.250	0.00	0.00	0.00	0.00	0.00	0	31.00
30.300	0.00	0.00	0.00	0.00	0.00	0	31.00
30.350	0.00	0.00	0.00	0.00	0.00	0	31.00
30.400	0.00	0.00	0.00	0.00	0.00	0	31.00
30.450	0.00	0.00	0.00	0.00	0.00	0	31.00
30.500	0.00	0.00	0.00	0.00	0.00	0	31.00
30.550	0.00	0.00	0.00	0.00	0.00	0	31.00
30.600	0.00	0.00	0.00	0.00	0.00	0	31.00
30.650	0.00	0.00	0.00	0.00	0.00	0	31.00
30.700	0.00	0.00	0.00	0.00	0.00	0	31.00
30.750	0.00	0.00	0.00	0.00	0.00	0	31.00
30.800	0.00	0.00	0.00	0.00	0.00	0	31.00
30.850	0.00	0.00	0.00	0.00	0.00	0	31.00
30.900	0.00	0.00	0.00	0.00	0.00	0	31.00
30.950	0.00	0.00	0.00	0.00	0.00	0	31.00
31.000	0.00	0.00	0.00	0.00	0.00	0	31.00
31.050	0.00	0.00	0.00	0.00	0.00	0	31.00
31.100	0.00	0.00	0.00	0.00	0.00	0	31.00
31.150	0.00	0.00	0.00	0.00	0.00	0	31.00
31.200	0.00	0.00	0.00	0.00	0.00	0	31.00
31.250	0.00	0.00	0.00	0.00	0.00	0	31.00
31.300	0.00	0.00	0.00	0.00	0.00	0	31.00
31.350	0.00	0.00	0.00	0.00	0.00	0	31.00
31.400	0.00	0.00	0.00	0.00	0.00	0	31.00
31.450	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
31.500	0.00	0.00	0.00	0.00	0.00	0	31.00
31.550	0.00	0.00	0.00	0.00	0.00	0	31.00
31.600	0.00	0.00	0.00	0.00	0.00	0	31.00
31.650	0.00	0.00	0.00	0.00	0.00	0	31.00
31.700	0.00	0.00	0.00	0.00	0.00	0	31.00
31.750	0.00	0.00	0.00	0.00	0.00	0	31.00
31.800	0.00	0.00	0.00	0.00	0.00	0	31.00
31.850	0.00	0.00	0.00	0.00	0.00	0	31.00
31.900	0.00	0.00	0.00	0.00	0.00	0	31.00
31.950	0.00	0.00	0.00	0.00	0.00	0	31.00
32.000	0.00	0.00	0.00	0.00	0.00	0	31.00
32.050	0.00	0.00	0.00	0.00	0.00	0	31.00
32.100	0.00	0.00	0.00	0.00	0.00	0	31.00
32.150	0.00	0.00	0.00	0.00	0.00	0	31.00
32.200	0.00	0.00	0.00	0.00	0.00	0	31.00
32.250	0.00	0.00	0.00	0.00	0.00	0	31.00
32.300	0.00	0.00	0.00	0.00	0.00	0	31.00
32.350	0.00	0.00	0.00	0.00	0.00	0	31.00
32.400	0.00	0.00	0.00	0.00	0.00	0	31.00
32.450	0.00	0.00	0.00	0.00	0.00	0	31.00
32.500	0.00	0.00	0.00	0.00	0.00	0	31.00
32.550	0.00	0.00	0.00	0.00	0.00	0	31.00
32.600	0.00	0.00	0.00	0.00	0.00	0	31.00
32.650	0.00	0.00	0.00	0.00	0.00	0	31.00
32.700	0.00	0.00	0.00	0.00	0.00	0	31.00
32.750	0.00	0.00	0.00	0.00	0.00	0	31.00
32.800	0.00	0.00	0.00	0.00	0.00	0	31.00
32.850	0.00	0.00	0.00	0.00	0.00	0	31.00
32.900	0.00	0.00	0.00	0.00	0.00	0	31.00
32.950	0.00	0.00	0.00	0.00	0.00	0	31.00
33.000	0.00	0.00	0.00	0.00	0.00	0	31.00
33.050	0.00	0.00	0.00	0.00	0.00	0	31.00
33.100	0.00	0.00	0.00	0.00	0.00	0	31.00
33.150	0.00	0.00	0.00	0.00	0.00	0	31.00
33.200	0.00	0.00	0.00	0.00	0.00	0	31.00
33.250	0.00	0.00	0.00	0.00	0.00	0	31.00
33.300	0.00	0.00	0.00	0.00	0.00	0	31.00
33.350	0.00	0.00	0.00	0.00	0.00	0	31.00
33.400	0.00	0.00	0.00	0.00	0.00	0	31.00
33.450	0.00	0.00	0.00	0.00	0.00	0	31.00
33.500	0.00	0.00	0.00	0.00	0.00	0	31.00
33.550	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
33.600	0.00	0.00	0.00	0.00	0.00	0	31.00
33.650	0.00	0.00	0.00	0.00	0.00	0	31.00
33.700	0.00	0.00	0.00	0.00	0.00	0	31.00
33.750	0.00	0.00	0.00	0.00	0.00	0	31.00
33.800	0.00	0.00	0.00	0.00	0.00	0	31.00
33.850	0.00	0.00	0.00	0.00	0.00	0	31.00
33.900	0.00	0.00	0.00	0.00	0.00	0	31.00
33.950	0.00	0.00	0.00	0.00	0.00	0	31.00
34.000	0.00	0.00	0.00	0.00	0.00	0	31.00
34.050	0.00	0.00	0.00	0.00	0.00	0	31.00
34.100	0.00	0.00	0.00	0.00	0.00	0	31.00
34.150	0.00	0.00	0.00	0.00	0.00	0	31.00
34.200	0.00	0.00	0.00	0.00	0.00	0	31.00
34.250	0.00	0.00	0.00	0.00	0.00	0	31.00
34.300	0.00	0.00	0.00	0.00	0.00	0	31.00
34.350	0.00	0.00	0.00	0.00	0.00	0	31.00
34.400	0.00	0.00	0.00	0.00	0.00	0	31.00
34.450	0.00	0.00	0.00	0.00	0.00	0	31.00
34.500	0.00	0.00	0.00	0.00	0.00	0	31.00
34.550	0.00	0.00	0.00	0.00	0.00	0	31.00
34.600	0.00	0.00	0.00	0.00	0.00	0	31.00
34.650	0.00	0.00	0.00	0.00	0.00	0	31.00
34.700	0.00	0.00	0.00	0.00	0.00	0	31.00
34.750	0.00	0.00	0.00	0.00	0.00	0	31.00
34.800	0.00	0.00	0.00	0.00	0.00	0	31.00
34.850	0.00	0.00	0.00	0.00	0.00	0	31.00
34.900	0.00	0.00	0.00	0.00	0.00	0	31.00
34.950	0.00	0.00	0.00	0.00	0.00	0	31.00
35.000	0.00	0.00	0.00	0.00	0.00	0	31.00
35.050	0.00	0.00	0.00	0.00	0.00	0	31.00
35.100	0.00	0.00	0.00	0.00	0.00	0	31.00
35.150	0.00	0.00	0.00	0.00	0.00	0	31.00
35.200	0.00	0.00	0.00	0.00	0.00	0	31.00
35.250	0.00	0.00	0.00	0.00	0.00	0	31.00
35.300	0.00	0.00	0.00	0.00	0.00	0	31.00
35.350	0.00	0.00	0.00	0.00	0.00	0	31.00
35.400	0.00	0.00	0.00	0.00	0.00	0	31.00
35.450	0.00	0.00	0.00	0.00	0.00	0	31.00
35.500	0.00	0.00	0.00	0.00	0.00	0	31.00
35.550	0.00	0.00	0.00	0.00	0.00	0	31.00
35.600	0.00	0.00	0.00	0.00	0.00	0	31.00
35.650	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 25 years
Label: SP (OUT) Storm Event: 25 years
Scenario: Post-Development 25 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
35.700	0.00	0.00	0.00	0.00	0.00	0	31.00
35.750	0.00	0.00	0.00	0.00	0.00	0	31.00
35.800	0.00	0.00	0.00	0.00	0.00	0	31.00
35.850	0.00	0.00	0.00	0.00	0.00	0	31.00
35.900	0.00	0.00	0.00	0.00	0.00	0	31.00
35.950	0.00	0.00	0.00	0.00	0.00	0	31.00
36.000	0.00	0.00	0.00	0.00	0.00	0	31.00

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
0.000	0.00	0.00	0.10	0.00	0.05	0	31.00
0.050	0.00	0.00	0.00	0.00	0.00	0	31.00
0.100	0.00	0.00	0.00	0.00	0.00	0	31.00
0.150	0.00	0.00	0.00	0.00	0.00	0	31.00
0.200	0.00	0.00	0.00	0.00	0.00	0	31.00
0.250	0.00	0.00	0.00	0.00	0.00	0	31.00
0.300	0.00	0.00	0.00	0.00	0.00	0	31.00
0.350	0.00	0.00	0.00	0.00	0.00	0	31.00
0.400	0.00	0.00	0.00	0.00	0.00	0	31.00
0.450	0.00	0.00	0.00	0.00	0.00	0	31.00
0.500	0.00	0.00	0.00	0.00	0.00	0	31.00
0.550	0.00	0.00	0.00	0.00	0.00	0	31.00
0.600	0.00	0.00	0.00	0.00	0.00	0	31.00
0.650	0.00	0.00	0.00	0.00	0.00	0	31.00
0.700	0.00	0.00	0.00	0.00	0.00	0	31.00
0.750	0.00	0.00	0.00	0.00	0.00	0	31.00
0.800	0.00	0.00	0.00	0.00	0.00	0	31.00
0.850	0.00	0.00	0.00	0.00	0.00	0	31.00
0.900	0.00	0.00	0.00	0.00	0.00	0	31.00
0.950	0.00	0.00	0.00	0.00	0.00	0	31.00
1.000	0.00	0.00	0.00	0.00	0.00	0	31.00
1.050	0.00	0.00	0.00	0.00	0.00	0	31.00
1.100	0.00	0.00	0.00	0.00	0.00	0	31.00
1.150	0.00	0.00	0.00	0.00	0.00	0	31.00
1.200	0.00	0.00	0.00	0.00	0.00	0	31.00
1.250	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
1.300	0.00	0.00	0.00	0.00	0.00	0	31.00
1.350	0.00	0.00	0.00	0.00	0.00	0	31.00
1.400	0.00	0.00	0.00	0.00	0.00	0	31.00
1.450	0.00	0.00	0.00	0.00	0.00	0	31.00
1.500	0.00	0.00	0.00	0.00	0.00	0	31.00
1.550	0.00	0.00	0.00	0.00	0.00	0	31.00
1.600	0.00	0.00	0.00	0.00	0.00	0	31.00
1.650	0.00	0.00	0.00	0.00	0.00	0	31.00
1.700	0.00	0.00	0.00	0.00	0.00	0	31.00
1.750	0.00	0.00	0.00	0.00	0.00	0	31.00
1.800	0.00	0.00	0.00	0.00	0.00	0	31.00
1.850	0.00	0.00	0.01	0.00	0.00	0	31.00
1.900	0.00	0.00	0.01	0.00	0.00	0	31.00
1.950	0.00	0.00	0.01	0.00	0.00	0	31.00
2.000	0.00	0.00	0.01	0.00	0.00	0	31.00
2.050	0.01	0.00	0.01	0.00	0.00	0	31.00
2.100	0.01	0.00	0.01	0.00	0.01	0	31.00
2.150	0.01	0.00	0.01	0.00	0.01	0	31.00
2.200	0.01	0.00	0.01	0.00	0.01	0	31.00
2.250	0.01	0.00	0.01	0.00	0.01	0	31.00
2.300	0.01	0.00	0.02	0.00	0.01	0	31.00
2.350	0.01	0.00	0.02	0.00	0.01	0	31.00
2.400	0.01	0.00	0.02	0.00	0.01	0	31.00
2.450	0.01	0.00	0.02	0.00	0.01	0	31.00
2.500	0.01	0.00	0.02	0.00	0.01	0	31.00
2.550	0.01	0.00	0.02	0.00	0.01	0	31.00
2.600	0.01	0.00	0.02	0.00	0.01	0	31.00
2.650	0.01	0.00	0.02	0.00	0.01	0	31.00
2.700	0.01	0.00	0.02	0.00	0.01	0	31.00
2.750	0.01	0.00	0.03	0.00	0.01	0	31.00
2.800	0.01	0.00	0.03	0.00	0.01	0	31.00
2.850	0.01	0.00	0.03	0.00	0.01	0	31.00
2.900	0.01	0.00	0.03	0.00	0.01	0	31.00
2.950	0.02	0.00	0.03	0.00	0.02	0	31.00
3.000	0.02	0.00	0.03	0.00	0.02	0	31.00
3.050	0.02	0.00	0.03	0.00	0.02	0	31.00
3.100	0.02	0.00	0.03	0.00	0.02	0	31.00
3.150	0.02	0.00	0.03	0.00	0.02	0	31.00
3.200	0.02	0.00	0.04	0.00	0.02	0	31.00
3.250	0.02	0.00	0.04	0.00	0.02	0	31.00
3.300	0.02	0.00	0.04	0.00	0.02	0	31.00
3.350	0.02	0.00	0.04	0.00	0.02	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
3.400	0.02	0.00	0.04	0.00	0.02	0	31.00
3.450	0.02	0.00	0.04	0.00	0.02	0	31.00
3.500	0.02	0.00	0.04	0.00	0.02	0	31.00
3.550	0.02	0.00	0.04	0.00	0.02	0	31.00
3.600	0.02	0.00	0.05	0.00	0.02	0	31.00
3.650	0.02	0.00	0.05	0.00	0.02	0	31.00
3.700	0.02	0.00	0.05	0.00	0.02	0	31.00
3.750	0.02	0.00	0.05	0.00	0.02	0	31.00
3.800	0.03	0.00	0.05	0.00	0.02	0	31.00
3.850	0.03	0.00	0.05	0.00	0.03	0	31.00
3.900	0.03	0.00	0.05	0.00	0.03	0	31.00
3.950	0.03	0.00	0.05	0.00	0.03	0	31.00
4.000	0.03	0.00	0.05	0.00	0.03	0	31.00
4.050	0.03	0.00	0.06	0.00	0.03	0	31.00
4.100	0.03	0.00	0.06	0.00	0.03	0	31.00
4.150	0.03	0.00	0.06	0.00	0.03	0	31.00
4.200	0.03	0.00	0.06	0.00	0.03	0	31.00
4.250	0.03	0.00	0.06	0.00	0.03	0	31.00
4.300	0.03	0.00	0.06	0.00	0.03	0	31.00
4.350	0.03	0.00	0.06	0.00	0.03	0	31.00
4.400	0.03	0.00	0.06	0.00	0.03	0	31.00
4.450	0.03	0.00	0.06	0.00	0.03	0	31.00
4.500	0.03	0.00	0.07	0.00	0.03	0	31.00
4.550	0.03	0.00	0.07	0.00	0.03	0	31.00
4.600	0.03	0.00	0.07	0.00	0.03	0	31.00
4.650	0.03	0.00	0.07	0.00	0.03	0	31.00
4.700	0.04	0.00	0.07	0.00	0.04	0	31.00
4.750	0.04	0.00	0.07	0.00	0.04	0	31.00
4.800	0.04	0.00	0.07	0.00	0.04	0	31.00
4.850	0.04	0.00	0.07	0.00	0.04	0	31.00
4.900	0.04	0.00	0.07	0.00	0.04	0	31.00
4.950	0.04	0.00	0.08	0.00	0.04	0	31.00
5.000	0.04	0.00	0.08	0.00	0.04	0	31.00
5.050	0.04	0.00	0.08	0.00	0.04	0	31.00
5.100	0.04	0.00	0.08	0.00	0.04	0	31.00
5.150	0.04	0.00	0.08	0.00	0.04	0	31.00
5.200	0.04	0.00	0.08	0.00	0.04	0	31.00
5.250	0.04	0.00	0.08	0.00	0.04	0	31.00
5.300	0.04	0.00	0.08	0.00	0.04	0	31.00
5.350	0.04	0.00	0.08	0.00	0.04	0	31.00
5.400	0.04	0.00	0.09	0.00	0.04	0	31.00
5.450	0.04	0.00	0.09	0.00	0.04	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
5.500	0.04	0.00	0.09	0.00	0.04	0	31.00
5.550	0.04	0.00	0.09	0.00	0.04	0	31.00
5.600	0.05	0.00	0.09	0.00	0.05	0	31.00
5.650	0.05	0.00	0.09	0.00	0.05	0	31.00
5.700	0.05	0.00	0.09	0.00	0.05	0	31.00
5.750	0.05	0.00	0.09	0.00	0.05	0	31.00
5.800	0.05	0.00	0.09	0.00	0.05	0	31.00
5.850	0.05	0.00	0.10	0.00	0.05	0	31.00
5.900	0.05	0.00	0.10	0.00	0.05	0	31.00
5.950	0.05	0.00	0.10	0.00	0.05	0	31.00
6.000	0.05	0.00	0.10	0.00	0.05	0	31.00
6.050	0.05	0.00	0.10	0.00	0.05	0	31.00
6.100	0.05	0.00	0.10	0.00	0.05	0	31.00
6.150	0.05	0.00	0.10	0.00	0.05	0	31.00
6.200	0.05	0.00	0.11	0.00	0.05	0	31.00
6.250	0.05	0.00	0.11	0.00	0.05	0	31.00
6.300	0.06	0.00	0.11	0.00	0.06	0	31.00
6.350	0.06	0.00	0.11	0.00	0.06	0	31.00
6.400	0.06	0.00	0.11	0.00	0.06	0	31.00
6.450	0.06	0.00	0.12	0.00	0.06	0	31.00
6.500	0.06	0.00	0.12	0.00	0.06	0	31.00
6.550	0.06	0.00	0.12	0.00	0.06	0	31.00
6.600	0.06	0.00	0.12	0.00	0.06	0	31.00
6.650	0.06	0.00	0.13	0.00	0.06	0	31.00
6.700	0.07	0.00	0.13	0.00	0.06	0	31.00
6.750	0.07	0.00	0.13	0.00	0.07	0	31.00
6.800	0.07	0.00	0.13	0.00	0.07	0	31.00
6.850	0.07	0.00	0.14	0.00	0.07	0	31.00
6.900	0.07	0.00	0.14	0.00	0.07	0	31.00
6.950	0.07	0.00	0.14	0.00	0.07	0	31.00
7.000	0.07	0.00	0.14	0.00	0.07	0	31.00
7.050	0.07	0.00	0.15	0.00	0.07	0	31.00
7.100	0.07	0.00	0.15	0.00	0.07	0	31.00
7.150	0.08	0.00	0.15	0.00	0.08	0	31.00
7.200	0.08	0.00	0.15	0.00	0.08	0	31.00
7.250	0.08	0.00	0.16	0.00	0.08	0	31.00
7.300	0.08	0.00	0.16	0.00	0.08	0	31.00
7.350	0.08	0.00	0.16	0.00	0.08	0	31.00
7.400	0.08	0.00	0.16	0.00	0.08	0	31.00
7.450	0.08	0.00	0.17	0.00	0.08	0	31.00
7.500	0.08	0.00	0.17	0.00	0.08	0	31.00
7.550	0.09	0.00	0.17	0.00	0.09	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
7.600	0.09	0.00	0.17	0.00	0.09	0	31.00
7.650	0.09	0.00	0.18	0.00	0.09	0	31.00
7.700	0.09	0.00	0.18	0.00	0.09	0	31.00
7.750	0.09	0.00	0.18	0.00	0.09	0	31.00
7.800	0.09	0.00	0.18	0.00	0.09	0	31.00
7.850	0.09	0.00	0.19	0.00	0.09	0	31.00
7.900	0.09	0.00	0.19	0.00	0.09	0	31.00
7.950	0.10	0.00	0.19	0.00	0.10	0	31.00
8.000	0.10	0.00	0.19	0.00	0.10	0	31.00
8.050	0.10	0.00	0.20	0.00	0.10	0	31.00
8.100	0.10	0.00	0.20	0.00	0.10	0	31.00
8.150	0.10	0.00	0.20	0.00	0.10	0	31.00
8.200	0.11	0.00	0.21	0.00	0.10	9	31.00
8.250	0.11	0.01	0.22	0.00	0.10	10	31.00
8.300	0.11	0.02	0.23	0.00	0.10	11	31.00
8.350	0.11	0.04	0.24	0.00	0.10	13	31.00
8.400	0.12	0.06	0.27	0.00	0.10	15	31.01
8.450	0.12	0.09	0.29	0.00	0.10	17	31.01
8.500	0.12	0.12	0.33	0.00	0.10	20	31.01
8.550	0.12	0.16	0.36	0.00	0.10	23	31.01
8.600	0.13	0.20	0.41	0.00	0.10	27	31.01
8.650	0.13	0.25	0.46	0.00	0.10	32	31.01
8.700	0.13	0.30	0.51	0.00	0.10	37	31.01
8.750	0.14	0.36	0.57	0.00	0.10	42	31.02
8.800	0.14	0.43	0.64	0.00	0.10	48	31.02
8.850	0.14	0.50	0.71	0.00	0.10	54	31.02
8.900	0.14	0.57	0.78	0.00	0.10	61	31.02
8.950	0.15	0.65	0.86	0.00	0.10	68	31.02
9.000	0.15	0.74	0.95	0.00	0.10	76	31.03
9.050	0.15	0.83	1.04	0.00	0.10	84	31.03
9.100	0.15	0.93	1.14	0.00	0.10	93	31.03
9.150	0.16	1.04	1.24	0.00	0.10	103	31.04
9.200	0.16	1.14	1.35	0.00	0.10	112	31.04
9.250	0.16	1.26	1.47	0.00	0.10	123	31.04
9.300	0.17	1.38	1.59	0.00	0.10	134	31.05
9.350	0.17	1.51	1.71	0.00	0.10	145	31.05
9.400	0.17	1.64	1.84	0.00	0.10	157	31.06
9.450	0.17	1.77	1.98	0.00	0.10	169	31.06
9.500	0.18	1.92	2.12	0.00	0.10	182	31.07
9.550	0.18	2.07	2.27	0.00	0.10	195	31.07
9.600	0.18	2.22	2.43	0.00	0.10	209	31.08
9.650	0.19	2.38	2.59	0.00	0.10	224	31.08

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
9.700	0.19	2.55	2.75	0.00	0.10	238	31.09
9.750	0.19	2.72	2.92	0.00	0.10	254	31.09
9.800	0.19	2.89	3.10	0.00	0.10	270	31.10
9.850	0.20	3.08	3.28	0.00	0.10	286	31.10
9.900	0.20	3.26	3.47	0.00	0.10	303	31.11
9.950	0.20	3.46	3.67	0.00	0.10	321	31.12
10.000	0.21	3.66	3.87	0.00	0.10	339	31.12
10.050	0.21	3.87	4.07	0.00	0.10	357	31.13
10.100	0.21	4.08	4.29	0.00	0.10	377	31.14
10.150	0.22	4.30	4.51	0.00	0.10	397	31.14
10.200	0.22	4.54	4.75	0.00	0.10	418	31.15
10.250	0.23	4.78	4.99	0.00	0.10	440	31.16
10.300	0.24	5.04	5.25	0.00	0.10	463	31.17
10.350	0.24	5.31	5.52	0.00	0.10	487	31.18
10.400	0.25	5.59	5.80	0.00	0.10	512	31.19
10.450	0.25	5.88	6.09	0.00	0.10	539	31.20
10.500	0.26	6.18	6.39	0.00	0.10	566	31.21
10.550	0.26	6.50	6.70	0.00	0.10	594	31.22
10.600	0.27	6.82	7.03	0.00	0.10	623	31.23
10.650	0.28	7.16	7.37	0.00	0.10	654	31.24
10.700	0.28	7.51	7.71	0.00	0.10	685	31.25
10.750	0.29	7.86	8.07	0.00	0.10	717	31.26
10.800	0.29	8.24	8.44	0.00	0.10	751	31.27
10.850	0.30	8.62	8.83	0.00	0.10	785	31.29
10.900	0.30	9.01	9.22	0.00	0.10	820	31.30
10.950	0.31	9.42	9.63	0.00	0.10	857	31.31
11.000	0.32	9.83	10.04	0.00	0.10	894	31.33
11.050	0.33	10.27	10.48	0.00	0.10	934	31.34
11.100	0.34	10.73	10.94	0.00	0.10	975	31.35
11.150	0.36	11.22	11.43	0.00	0.10	1,019	31.37
11.200	0.38	11.75	11.96	0.00	0.10	1,067	31.39
11.250	0.40	12.32	12.53	0.00	0.10	1,118	31.41
11.300	0.42	12.93	13.14	0.00	0.10	1,173	31.43
11.350	0.44	13.59	13.80	0.00	0.10	1,232	31.45
11.400	0.46	14.29	14.50	0.00	0.10	1,295	31.47
11.450	0.49	15.03	15.24	0.00	0.10	1,362	31.50
11.500	0.51	15.81	16.02	0.00	0.10	1,432	31.52
11.550	0.59	16.71	16.91	0.00	0.10	1,513	31.55
11.600	0.70	17.79	18.00	0.00	0.10	1,611	31.59
11.650	0.88	19.16	19.37	0.00	0.10	1,734	31.63
11.700	1.07	20.91	21.11	0.00	0.10	1,891	31.69
11.750	1.27	23.05	23.25	0.00	0.10	2,083	31.76

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
11.800	1.48	25.59	25.80	0.00	0.10	2,312	31.84
11.850	1.68	28.54	28.75	0.00	0.10	2,578	31.94
11.900	1.89	29.40	32.11	0.00	1.36	2,768	32.01
11.950	2.66	28.13	33.95	0.00	2.91	2,793	32.02
12.000	3.58	27.84	34.36	0.00	3.26	2,799	32.02
12.050	3.81	27.24	35.23	0.00	4.00	2,811	32.02
12.100	3.88	27.45	34.93	0.00	3.74	2,807	32.02
12.150	3.18	27.74	34.50	0.00	3.38	2,801	32.02
12.200	2.27	28.65	33.19	0.00	2.27	2,783	32.01
12.250	1.90	28.91	32.82	0.00	1.96	2,778	32.01
12.300	1.65	29.16	32.46	0.00	1.65	2,773	32.01
12.350	1.44	29.31	32.25	0.00	1.47	2,770	32.01
12.400	1.23	29.50	31.98	0.00	1.24	2,766	32.01
12.450	1.03	29.65	31.76	0.00	1.06	2,763	32.01
12.500	0.82	29.83	31.50	0.00	0.84	2,760	32.00
12.550	0.69	29.94	31.34	0.00	0.70	2,758	32.00
12.600	0.57	30.04	31.20	0.00	0.58	2,756	32.00
12.650	0.53	30.08	31.13	0.00	0.53	2,755	32.00
12.700	0.50	30.10	31.11	0.00	0.50	2,754	32.00
12.750	0.48	30.12	31.08	0.00	0.48	2,754	32.00
12.800	0.45	30.14	31.05	0.00	0.46	2,754	32.00
12.850	0.43	30.16	31.03	0.00	0.43	2,753	32.00
12.900	0.41	30.17	31.00	0.00	0.41	2,753	32.00
12.950	0.39	30.19	30.98	0.00	0.39	2,753	32.00
13.000	0.37	30.21	30.95	0.00	0.37	2,752	32.00
13.050	0.35	30.22	30.93	0.00	0.35	2,752	32.00
13.100	0.34	30.23	30.92	0.00	0.34	2,752	32.00
13.150	0.33	30.24	30.91	0.00	0.33	2,752	32.00
13.200	0.33	30.25	30.90	0.00	0.33	2,752	32.00
13.250	0.32	30.25	30.89	0.00	0.32	2,752	32.00
13.300	0.31	30.26	30.89	0.00	0.32	2,751	32.00
13.350	0.31	30.26	30.88	0.00	0.31	2,751	32.00
13.400	0.30	30.27	30.87	0.00	0.30	2,751	32.00
13.450	0.30	30.27	30.87	0.00	0.30	2,751	32.00
13.500	0.29	30.27	30.86	0.00	0.29	2,751	32.00
13.550	0.29	30.28	30.85	0.00	0.29	2,751	32.00
13.600	0.28	30.28	30.85	0.00	0.28	2,751	32.00
13.650	0.28	30.29	30.84	0.00	0.28	2,751	32.00
13.700	0.27	30.29	30.83	0.00	0.27	2,751	32.00
13.750	0.26	30.30	30.83	0.00	0.26	2,751	32.00
13.800	0.26	30.30	30.82	0.00	0.26	2,751	32.00
13.850	0.25	30.31	30.81	0.00	0.25	2,750	32.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
13.900	0.25	30.31	30.81	0.00	0.25	2,750	32.00
13.950	0.24	30.32	30.80	0.00	0.24	2,750	32.00
14.000	0.24	30.32	30.79	0.00	0.24	2,750	32.00
14.050	0.23	30.32	30.79	0.00	0.23	2,750	32.00
14.100	0.23	30.33	30.78	0.00	0.23	2,750	32.00
14.150	0.22	30.33	30.78	0.00	0.22	2,750	32.00
14.200	0.22	30.33	30.78	0.00	0.22	2,750	32.00
14.250	0.22	30.33	30.77	0.00	0.22	2,750	32.00
14.300	0.22	30.34	30.77	0.00	0.22	2,750	32.00
14.350	0.21	30.34	30.77	0.00	0.21	2,750	32.00
14.400	0.21	30.34	30.76	0.00	0.21	2,750	32.00
14.450	0.21	30.34	30.76	0.00	0.21	2,750	32.00
14.500	0.21	30.35	30.76	0.00	0.21	2,750	32.00
14.550	0.20	30.35	30.75	0.00	0.20	2,750	32.00
14.600	0.20	30.35	30.75	0.00	0.20	2,750	32.00
14.650	0.20	30.35	30.75	0.00	0.20	2,750	32.00
14.700	0.19	30.35	30.74	0.00	0.20	2,749	32.00
14.750	0.19	30.36	30.74	0.00	0.19	2,749	32.00
14.800	0.19	30.36	30.74	0.00	0.19	2,749	32.00
14.850	0.19	30.36	30.74	0.00	0.19	2,749	32.00
14.900	0.18	30.36	30.73	0.00	0.18	2,749	32.00
14.950	0.18	30.37	30.73	0.00	0.18	2,749	32.00
15.000	0.18	30.37	30.73	0.00	0.18	2,749	32.00
15.050	0.18	30.37	30.72	0.00	0.18	2,749	32.00
15.100	0.17	30.37	30.72	0.00	0.17	2,749	32.00
15.150	0.17	30.37	30.72	0.00	0.17	2,749	32.00
15.200	0.17	30.38	30.71	0.00	0.17	2,749	32.00
15.250	0.17	30.38	30.71	0.00	0.17	2,749	32.00
15.300	0.16	30.38	30.71	0.00	0.16	2,749	32.00
15.350	0.16	30.38	30.70	0.00	0.16	2,749	32.00
15.400	0.16	30.39	30.70	0.00	0.16	2,749	32.00
15.450	0.15	30.39	30.70	0.00	0.16	2,749	32.00
15.500	0.15	30.39	30.69	0.00	0.15	2,749	32.00
15.550	0.15	30.39	30.69	0.00	0.15	2,749	32.00
15.600	0.15	30.39	30.69	0.00	0.15	2,749	32.00
15.650	0.14	30.40	30.68	0.00	0.14	2,749	32.00
15.700	0.14	30.40	30.68	0.00	0.14	2,749	32.00
15.750	0.14	30.40	30.68	0.00	0.14	2,749	32.00
15.800	0.14	30.40	30.68	0.00	0.14	2,749	32.00
15.850	0.13	30.41	30.67	0.00	0.13	2,748	32.00
15.900	0.13	30.41	30.67	0.00	0.13	2,748	32.00
15.950	0.13	30.41	30.67	0.00	0.13	2,748	32.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
16.000	0.13	30.41	30.66	0.00	0.13	2,748	32.00
16.050	0.12	30.41	30.66	0.00	0.12	2,748	32.00
16.100	0.12	30.41	30.66	0.00	0.12	2,748	32.00
16.150	0.12	30.42	30.66	0.00	0.12	2,748	32.00
16.200	0.12	30.42	30.65	0.00	0.12	2,748	32.00
16.250	0.12	30.42	30.65	0.00	0.12	2,748	32.00
16.300	0.12	30.42	30.65	0.00	0.12	2,748	32.00
16.350	0.12	30.42	30.65	0.00	0.12	2,748	32.00
16.400	0.11	30.42	30.65	0.00	0.11	2,748	32.00
16.450	0.11	30.42	30.65	0.00	0.11	2,748	32.00
16.500	0.11	30.42	30.65	0.00	0.11	2,748	32.00
16.550	0.11	30.42	30.65	0.00	0.11	2,748	32.00
16.600	0.11	30.43	30.64	0.00	0.11	2,748	32.00
16.650	0.11	30.43	30.64	0.00	0.11	2,748	32.00
16.700	0.11	30.43	30.64	0.00	0.11	2,748	32.00
16.750	0.11	30.43	30.64	0.00	0.11	2,748	32.00
16.800	0.10	30.43	30.64	0.00	0.10	2,748	32.00
16.850	0.10	30.43	30.64	0.00	0.10	2,748	32.00
16.900	0.10	30.43	30.63	0.00	0.10	2,748	32.00
16.950	0.10	30.42	30.63	0.00	0.10	2,747	32.00
17.000	0.10	30.41	30.62	0.00	0.10	2,747	32.00
17.050	0.10	30.40	30.61	0.00	0.10	2,746	32.00
17.100	0.10	30.39	30.60	0.00	0.10	2,745	32.00
17.150	0.10	30.38	30.59	0.00	0.10	2,743	32.00
17.200	0.09	30.36	30.57	0.00	0.10	2,742	32.00
17.250	0.09	30.34	30.55	0.00	0.10	2,740	32.00
17.300	0.09	30.32	30.53	0.00	0.10	2,738	32.00
17.350	0.09	30.30	30.51	0.00	0.10	2,736	32.00
17.400	0.09	30.27	30.48	0.00	0.10	2,734	31.99
17.450	0.09	30.24	30.45	0.00	0.10	2,731	31.99
17.500	0.09	30.21	30.42	0.00	0.10	2,729	31.99
17.550	0.09	30.18	30.39	0.00	0.10	2,726	31.99
17.600	0.09	30.15	30.35	0.00	0.10	2,722	31.99
17.650	0.08	30.11	30.32	0.00	0.10	2,719	31.99
17.700	0.08	30.07	30.28	0.00	0.10	2,716	31.99
17.750	0.08	30.03	30.23	0.00	0.10	2,712	31.99
17.800	0.08	29.98	30.19	0.00	0.10	2,708	31.99
17.850	0.08	29.93	30.14	0.00	0.10	2,703	31.98
17.900	0.08	29.89	30.09	0.00	0.10	2,699	31.98
17.950	0.08	29.83	30.04	0.00	0.10	2,694	31.98
18.000	0.08	29.78	29.99	0.00	0.10	2,690	31.98
18.050	0.08	29.72	29.93	0.00	0.10	2,684	31.98

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
18.100	0.07	29.67	29.87	0.00	0.10	2,679	31.97
18.150	0.07	29.61	29.81	0.00	0.10	2,674	31.97
18.200	0.07	29.55	29.75	0.00	0.10	2,669	31.97
18.250	0.07	29.49	29.69	0.00	0.10	2,663	31.97
18.300	0.07	29.43	29.63	0.00	0.10	2,658	31.97
18.350	0.07	29.36	29.57	0.00	0.10	2,652	31.97
18.400	0.07	29.30	29.51	0.00	0.10	2,646	31.96
18.450	0.07	29.24	29.45	0.00	0.10	2,641	31.96
18.500	0.07	29.17	29.38	0.00	0.10	2,635	31.96
18.550	0.07	29.11	29.32	0.00	0.10	2,629	31.96
18.600	0.07	29.04	29.25	0.00	0.10	2,623	31.95
18.650	0.07	28.98	29.19	0.00	0.10	2,617	31.95
18.700	0.07	28.91	29.12	0.00	0.10	2,611	31.95
18.750	0.07	28.84	29.05	0.00	0.10	2,605	31.95
18.800	0.07	28.78	28.98	0.00	0.10	2,599	31.95
18.850	0.07	28.71	28.91	0.00	0.10	2,593	31.94
18.900	0.07	28.64	28.85	0.00	0.10	2,587	31.94
18.950	0.07	28.57	28.77	0.00	0.10	2,580	31.94
19.000	0.07	28.50	28.70	0.00	0.10	2,574	31.94
19.050	0.07	28.42	28.63	0.00	0.10	2,568	31.93
19.100	0.07	28.35	28.56	0.00	0.10	2,561	31.93
19.150	0.07	28.28	28.49	0.00	0.10	2,554	31.93
19.200	0.07	28.21	28.41	0.00	0.10	2,548	31.93
19.250	0.07	28.13	28.34	0.00	0.10	2,541	31.92
19.300	0.07	28.06	28.26	0.00	0.10	2,534	31.92
19.350	0.07	27.98	28.19	0.00	0.10	2,528	31.92
19.400	0.07	27.90	28.11	0.00	0.10	2,521	31.92
19.450	0.07	27.83	28.03	0.00	0.10	2,514	31.91
19.500	0.06	27.75	27.96	0.00	0.10	2,507	31.91
19.550	0.06	27.67	27.88	0.00	0.10	2,500	31.91
19.600	0.06	27.59	27.80	0.00	0.10	2,492	31.91
19.650	0.06	27.51	27.72	0.00	0.10	2,485	31.90
19.700	0.06	27.43	27.64	0.00	0.10	2,478	31.90
19.750	0.06	27.35	27.56	0.00	0.10	2,471	31.90
19.800	0.06	27.27	27.47	0.00	0.10	2,463	31.90
19.850	0.06	27.18	27.39	0.00	0.10	2,456	31.89
19.900	0.06	27.10	27.31	0.00	0.10	2,448	31.89
19.950	0.06	27.01	27.22	0.00	0.10	2,441	31.89
20.000	0.06	26.93	27.14	0.00	0.10	2,433	31.89
20.050	0.06	26.84	27.05	0.00	0.10	2,425	31.88
20.100	0.06	26.76	26.97	0.00	0.10	2,418	31.88
20.150	0.06	26.67	26.88	0.00	0.10	2,410	31.88

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
20.200	0.06	26.58	26.79	0.00	0.10	2,402	31.87
20.250	0.06	26.50	26.70	0.00	0.10	2,394	31.87
20.300	0.06	26.41	26.62	0.00	0.10	2,386	31.87
20.350	0.06	26.32	26.53	0.00	0.10	2,378	31.87
20.400	0.06	26.23	26.44	0.00	0.10	2,370	31.86
20.450	0.06	26.14	26.35	0.00	0.10	2,362	31.86
20.500	0.06	26.05	26.26	0.00	0.10	2,354	31.86
20.550	0.06	25.96	26.17	0.00	0.10	2,346	31.85
20.600	0.06	25.87	26.07	0.00	0.10	2,337	31.85
20.650	0.06	25.77	25.98	0.00	0.10	2,329	31.85
20.700	0.06	25.68	25.89	0.00	0.10	2,321	31.84
20.750	0.06	25.59	25.80	0.00	0.10	2,312	31.84
20.800	0.06	25.49	25.70	0.00	0.10	2,304	31.84
20.850	0.06	25.40	25.61	0.00	0.10	2,295	31.84
20.900	0.06	25.30	25.51	0.00	0.10	2,287	31.83
20.950	0.06	25.21	25.42	0.00	0.10	2,278	31.83
21.000	0.06	25.11	25.32	0.00	0.10	2,270	31.83
21.050	0.06	25.02	25.23	0.00	0.10	2,261	31.82
21.100	0.06	24.92	25.13	0.00	0.10	2,252	31.82
21.150	0.06	24.82	25.03	0.00	0.10	2,244	31.82
21.200	0.05	24.73	24.93	0.00	0.10	2,235	31.81
21.250	0.05	24.63	24.84	0.00	0.10	2,226	31.81
21.300	0.05	24.53	24.74	0.00	0.10	2,217	31.81
21.350	0.05	24.43	24.64	0.00	0.10	2,208	31.80
21.400	0.05	24.33	24.54	0.00	0.10	2,199	31.80
21.450	0.05	24.23	24.44	0.00	0.10	2,190	31.80
21.500	0.05	24.13	24.34	0.00	0.10	2,181	31.79
21.550	0.05	24.03	24.23	0.00	0.10	2,172	31.79
21.600	0.05	23.92	24.13	0.00	0.10	2,162	31.79
21.650	0.05	23.82	24.03	0.00	0.10	2,153	31.78
21.700	0.05	23.72	23.93	0.00	0.10	2,144	31.78
21.750	0.05	23.61	23.82	0.00	0.10	2,135	31.78
21.800	0.05	23.51	23.72	0.00	0.10	2,125	31.77
21.850	0.05	23.41	23.61	0.00	0.10	2,116	31.77
21.900	0.05	23.30	23.51	0.00	0.10	2,106	31.77
21.950	0.05	23.19	23.40	0.00	0.10	2,097	31.76
22.000	0.05	23.09	23.30	0.00	0.10	2,087	31.76
22.050	0.05	22.98	23.19	0.00	0.10	2,078	31.76
22.100	0.05	22.87	23.08	0.00	0.10	2,068	31.75
22.150	0.05	22.77	22.97	0.00	0.10	2,058	31.75
22.200	0.05	22.66	22.87	0.00	0.10	2,049	31.75
22.250	0.05	22.55	22.76	0.00	0.10	2,039	31.74

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
22.300	0.05	22.44	22.65	0.00	0.10	2,029	31.74
22.350	0.05	22.33	22.54	0.00	0.10	2,019	31.73
22.400	0.05	22.22	22.43	0.00	0.10	2,009	31.73
22.450	0.05	22.11	22.31	0.00	0.10	1,999	31.73
22.500	0.05	21.99	22.20	0.00	0.10	1,989	31.72
22.550	0.05	21.88	22.09	0.00	0.10	1,979	31.72
22.600	0.05	21.77	21.98	0.00	0.10	1,969	31.72
22.650	0.05	21.66	21.87	0.00	0.10	1,959	31.71
22.700	0.05	21.54	21.75	0.00	0.10	1,948	31.71
22.750	0.05	21.43	21.64	0.00	0.10	1,938	31.71
22.800	0.05	21.31	21.52	0.00	0.10	1,928	31.70
22.850	0.05	21.20	21.41	0.00	0.10	1,917	31.70
22.900	0.05	21.08	21.29	0.00	0.10	1,907	31.69
22.950	0.05	20.97	21.18	0.00	0.10	1,896	31.69
23.000	0.05	20.85	21.06	0.00	0.10	1,886	31.69
23.050	0.05	20.73	20.94	0.00	0.10	1,875	31.68
23.100	0.04	20.61	20.82	0.00	0.10	1,865	31.68
23.150	0.04	20.50	20.70	0.00	0.10	1,854	31.67
23.200	0.04	20.38	20.59	0.00	0.10	1,843	31.67
23.250	0.04	20.26	20.47	0.00	0.10	1,833	31.67
23.300	0.04	20.14	20.35	0.00	0.10	1,822	31.66
23.350	0.04	20.02	20.23	0.00	0.10	1,811	31.66
23.400	0.04	19.90	20.10	0.00	0.10	1,800	31.66
23.450	0.04	19.78	19.98	0.00	0.10	1,789	31.65
23.500	0.04	19.65	19.86	0.00	0.10	1,778	31.65
23.550	0.04	19.53	19.74	0.00	0.10	1,767	31.64
23.600	0.04	19.41	19.62	0.00	0.10	1,756	31.64
23.650	0.04	19.28	19.49	0.00	0.10	1,745	31.63
23.700	0.04	19.16	19.37	0.00	0.10	1,734	31.63
23.750	0.04	19.03	19.24	0.00	0.10	1,722	31.63
23.800	0.04	18.91	19.12	0.00	0.10	1,711	31.62
23.850	0.04	18.78	18.99	0.00	0.10	1,700	31.62
23.900	0.04	18.66	18.86	0.00	0.10	1,688	31.61
23.950	0.04	18.53	18.74	0.00	0.10	1,677	31.61
24.000	0.04	18.40	18.61	0.00	0.10	1,666	31.61
24.050	0.03	18.26	18.47	0.00	0.10	1,653	31.60
24.100	0.01	18.08	18.29	0.00	0.10	1,637	31.60
24.150	0.00	17.88	18.09	0.00	0.10	1,619	31.59
24.200	0.00	17.68	17.88	0.00	0.10	1,600	31.58
24.250	0.00	17.47	17.68	0.00	0.10	1,582	31.58
24.300	0.00	17.26	17.47	0.00	0.10	1,563	31.57
24.350	0.00	17.05	17.26	0.00	0.10	1,544	31.56

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
24.400	0.00	16.84	17.05	0.00	0.10	1,525	31.56
24.450	0.00	16.64	16.84	0.00	0.10	1,507	31.55
24.500	0.00	16.43	16.64	0.00	0.10	1,488	31.54
24.550	0.00	16.22	16.43	0.00	0.10	1,469	31.53
24.600	0.00	16.01	16.22	0.00	0.10	1,450	31.53
24.650	0.00	15.80	16.01	0.00	0.10	1,432	31.52
24.700	0.00	15.60	15.80	0.00	0.10	1,413	31.51
24.750	0.00	15.39	15.60	0.00	0.10	1,394	31.51
24.800	0.00	15.18	15.39	0.00	0.10	1,376	31.50
24.850	0.00	14.97	15.18	0.00	0.10	1,357	31.49
24.900	0.00	14.76	14.97	0.00	0.10	1,338	31.49
24.950	0.00	14.56	14.76	0.00	0.10	1,319	31.48
25.000	0.00	14.35	14.56	0.00	0.10	1,301	31.47
25.050	0.00	14.14	14.35	0.00	0.10	1,282	31.47
25.100	0.00	13.93	14.14	0.00	0.10	1,263	31.46
25.150	0.00	13.72	13.93	0.00	0.10	1,245	31.45
25.200	0.00	13.52	13.72	0.00	0.10	1,226	31.45
25.250	0.00	13.31	13.52	0.00	0.10	1,207	31.44
25.300	0.00	13.10	13.31	0.00	0.10	1,188	31.43
25.350	0.00	12.89	13.10	0.00	0.10	1,170	31.43
25.400	0.00	12.68	12.89	0.00	0.10	1,151	31.42
25.450	0.00	12.48	12.68	0.00	0.10	1,132	31.41
25.500	0.00	12.27	12.48	0.00	0.10	1,114	31.41
25.550	0.00	12.06	12.27	0.00	0.10	1,095	31.40
25.600	0.00	11.85	12.06	0.00	0.10	1,076	31.39
25.650	0.00	11.64	11.85	0.00	0.10	1,057	31.38
25.700	0.00	11.44	11.64	0.00	0.10	1,039	31.38
25.750	0.00	11.23	11.44	0.00	0.10	1,020	31.37
25.800	0.00	11.02	11.23	0.00	0.10	1,001	31.36
25.850	0.00	10.81	11.02	0.00	0.10	982	31.36
25.900	0.00	10.60	10.81	0.00	0.10	964	31.35
25.950	0.00	10.40	10.60	0.00	0.10	945	31.34
26.000	0.00	10.19	10.40	0.00	0.10	926	31.34
26.050	0.00	9.98	10.19	0.00	0.10	908	31.33
26.100	0.00	9.77	9.98	0.00	0.10	889	31.32
26.150	0.00	9.56	9.77	0.00	0.10	870	31.32
26.200	0.00	9.36	9.56	0.00	0.10	851	31.31
26.250	0.00	9.15	9.36	0.00	0.10	833	31.30
26.300	0.00	8.94	9.15	0.00	0.10	814	31.30
26.350	0.00	8.73	8.94	0.00	0.10	795	31.29
26.400	0.00	8.52	8.73	0.00	0.10	777	31.28
26.450	0.00	8.32	8.52	0.00	0.10	758	31.28

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
26.500	0.00	8.11	8.32	0.00	0.10	739	31.27
26.550	0.00	7.90	8.11	0.00	0.10	720	31.26
26.600	0.00	7.69	7.90	0.00	0.10	702	31.26
26.650	0.00	7.48	7.69	0.00	0.10	683	31.25
26.700	0.00	7.28	7.48	0.00	0.10	664	31.24
26.750	0.00	7.07	7.28	0.00	0.10	646	31.23
26.800	0.00	6.86	7.07	0.00	0.10	627	31.23
26.850	0.00	6.65	6.86	0.00	0.10	608	31.22
26.900	0.00	6.44	6.65	0.00	0.10	589	31.21
26.950	0.00	6.24	6.44	0.00	0.10	571	31.21
27.000	0.00	6.03	6.24	0.00	0.10	552	31.20
27.050	0.00	5.82	6.03	0.00	0.10	533	31.19
27.100	0.00	5.61	5.82	0.00	0.10	514	31.19
27.150	0.00	5.40	5.61	0.00	0.10	496	31.18
27.200	0.00	5.20	5.40	0.00	0.10	477	31.17
27.250	0.00	4.99	5.20	0.00	0.10	458	31.17
27.300	0.00	4.78	4.99	0.00	0.10	440	31.16
27.350	0.00	4.57	4.78	0.00	0.10	421	31.15
27.400	0.00	4.36	4.57	0.00	0.10	402	31.15
27.450	0.00	4.16	4.36	0.00	0.10	383	31.14
27.500	0.00	3.95	4.16	0.00	0.10	365	31.13
27.550	0.00	3.74	3.95	0.00	0.10	346	31.13
27.600	0.00	3.53	3.74	0.00	0.10	327	31.12
27.650	0.00	3.32	3.53	0.00	0.10	309	31.11
27.700	0.00	3.12	3.32	0.00	0.10	290	31.11
27.750	0.00	2.91	3.12	0.00	0.10	271	31.10
27.800	0.00	2.70	2.91	0.00	0.10	252	31.09
27.850	0.00	2.49	2.70	0.00	0.10	234	31.09
27.900	0.00	2.28	2.49	0.00	0.10	215	31.08
27.950	0.00	2.08	2.28	0.00	0.10	196	31.07
28.000	0.00	1.87	2.08	0.00	0.10	178	31.06
28.050	0.00	1.66	1.87	0.00	0.10	159	31.06
28.100	0.00	1.45	1.66	0.00	0.10	140	31.05
28.150	0.00	1.24	1.45	0.00	0.10	121	31.04
28.200	0.00	1.04	1.24	0.00	0.10	103	31.04
28.250	0.00	0.83	1.04	0.00	0.10	84	31.03
28.300	0.00	0.62	0.83	0.00	0.10	65	31.02
28.350	0.00	0.41	0.62	0.00	0.10	46	31.02
28.400	0.00	0.20	0.41	0.00	0.10	28	31.01
28.450	0.00	0.00	0.20	0.00	0.10	0	31.00
28.500	0.00	0.00	0.00	0.00	0.00	0	31.00
28.550	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
28.600	0.00	0.00	0.00	0.00	0.00	0	31.00
28.650	0.00	0.00	0.00	0.00	0.00	0	31.00
28.700	0.00	0.00	0.00	0.00	0.00	0	31.00
28.750	0.00	0.00	0.00	0.00	0.00	0	31.00
28.800	0.00	0.00	0.00	0.00	0.00	0	31.00
28.850	0.00	0.00	0.00	0.00	0.00	0	31.00
28.900	0.00	0.00	0.00	0.00	0.00	0	31.00
28.950	0.00	0.00	0.00	0.00	0.00	0	31.00
29.000	0.00	0.00	0.00	0.00	0.00	0	31.00
29.050	0.00	0.00	0.00	0.00	0.00	0	31.00
29.100	0.00	0.00	0.00	0.00	0.00	0	31.00
29.150	0.00	0.00	0.00	0.00	0.00	0	31.00
29.200	0.00	0.00	0.00	0.00	0.00	0	31.00
29.250	0.00	0.00	0.00	0.00	0.00	0	31.00
29.300	0.00	0.00	0.00	0.00	0.00	0	31.00
29.350	0.00	0.00	0.00	0.00	0.00	0	31.00
29.400	0.00	0.00	0.00	0.00	0.00	0	31.00
29.450	0.00	0.00	0.00	0.00	0.00	0	31.00
29.500	0.00	0.00	0.00	0.00	0.00	0	31.00
29.550	0.00	0.00	0.00	0.00	0.00	0	31.00
29.600	0.00	0.00	0.00	0.00	0.00	0	31.00
29.650	0.00	0.00	0.00	0.00	0.00	0	31.00
29.700	0.00	0.00	0.00	0.00	0.00	0	31.00
29.750	0.00	0.00	0.00	0.00	0.00	0	31.00
29.800	0.00	0.00	0.00	0.00	0.00	0	31.00
29.850	0.00	0.00	0.00	0.00	0.00	0	31.00
29.900	0.00	0.00	0.00	0.00	0.00	0	31.00
29.950	0.00	0.00	0.00	0.00	0.00	0	31.00
30.000	0.00	0.00	0.00	0.00	0.00	0	31.00
30.050	0.00	0.00	0.00	0.00	0.00	0	31.00
30.100	0.00	0.00	0.00	0.00	0.00	0	31.00
30.150	0.00	0.00	0.00	0.00	0.00	0	31.00
30.200	0.00	0.00	0.00	0.00	0.00	0	31.00
30.250	0.00	0.00	0.00	0.00	0.00	0	31.00
30.300	0.00	0.00	0.00	0.00	0.00	0	31.00
30.350	0.00	0.00	0.00	0.00	0.00	0	31.00
30.400	0.00	0.00	0.00	0.00	0.00	0	31.00
30.450	0.00	0.00	0.00	0.00	0.00	0	31.00
30.500	0.00	0.00	0.00	0.00	0.00	0	31.00
30.550	0.00	0.00	0.00	0.00	0.00	0	31.00
30.600	0.00	0.00	0.00	0.00	0.00	0	31.00
30.650	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
30.700	0.00	0.00	0.00	0.00	0.00	0	31.00
30.750	0.00	0.00	0.00	0.00	0.00	0	31.00
30.800	0.00	0.00	0.00	0.00	0.00	0	31.00
30.850	0.00	0.00	0.00	0.00	0.00	0	31.00
30.900	0.00	0.00	0.00	0.00	0.00	0	31.00
30.950	0.00	0.00	0.00	0.00	0.00	0	31.00
31.000	0.00	0.00	0.00	0.00	0.00	0	31.00
31.050	0.00	0.00	0.00	0.00	0.00	0	31.00
31.100	0.00	0.00	0.00	0.00	0.00	0	31.00
31.150	0.00	0.00	0.00	0.00	0.00	0	31.00
31.200	0.00	0.00	0.00	0.00	0.00	0	31.00
31.250	0.00	0.00	0.00	0.00	0.00	0	31.00
31.300	0.00	0.00	0.00	0.00	0.00	0	31.00
31.350	0.00	0.00	0.00	0.00	0.00	0	31.00
31.400	0.00	0.00	0.00	0.00	0.00	0	31.00
31.450	0.00	0.00	0.00	0.00	0.00	0	31.00
31.500	0.00	0.00	0.00	0.00	0.00	0	31.00
31.550	0.00	0.00	0.00	0.00	0.00	0	31.00
31.600	0.00	0.00	0.00	0.00	0.00	0	31.00
31.650	0.00	0.00	0.00	0.00	0.00	0	31.00
31.700	0.00	0.00	0.00	0.00	0.00	0	31.00
31.750	0.00	0.00	0.00	0.00	0.00	0	31.00
31.800	0.00	0.00	0.00	0.00	0.00	0	31.00
31.850	0.00	0.00	0.00	0.00	0.00	0	31.00
31.900	0.00	0.00	0.00	0.00	0.00	0	31.00
31.950	0.00	0.00	0.00	0.00	0.00	0	31.00
32.000	0.00	0.00	0.00	0.00	0.00	0	31.00
32.050	0.00	0.00	0.00	0.00	0.00	0	31.00
32.100	0.00	0.00	0.00	0.00	0.00	0	31.00
32.150	0.00	0.00	0.00	0.00	0.00	0	31.00
32.200	0.00	0.00	0.00	0.00	0.00	0	31.00
32.250	0.00	0.00	0.00	0.00	0.00	0	31.00
32.300	0.00	0.00	0.00	0.00	0.00	0	31.00
32.350	0.00	0.00	0.00	0.00	0.00	0	31.00
32.400	0.00	0.00	0.00	0.00	0.00	0	31.00
32.450	0.00	0.00	0.00	0.00	0.00	0	31.00
32.500	0.00	0.00	0.00	0.00	0.00	0	31.00
32.550	0.00	0.00	0.00	0.00	0.00	0	31.00
32.600	0.00	0.00	0.00	0.00	0.00	0	31.00
32.650	0.00	0.00	0.00	0.00	0.00	0	31.00
32.700	0.00	0.00	0.00	0.00	0.00	0	31.00
32.750	0.00	0.00	0.00	0.00	0.00	0	31.00

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
32.800	0.00	0.00	0.00	0.00	0.00	0	31.00
32.850	0.00	0.00	0.00	0.00	0.00	0	31.00
32.900	0.00	0.00	0.00	0.00	0.00	0	31.00
32.950	0.00	0.00	0.00	0.00	0.00	0	31.00
33.000	0.00	0.00	0.00	0.00	0.00	0	31.00
33.050	0.00	0.00	0.00	0.00	0.00	0	31.00
33.100	0.00	0.00	0.00	0.00	0.00	0	31.00
33.150	0.00	0.00	0.00	0.00	0.00	0	31.00
33.200	0.00	0.00	0.00	0.00	0.00	0	31.00
33.250	0.00	0.00	0.00	0.00	0.00	0	31.00
33.300	0.00	0.00	0.00	0.00	0.00	0	31.00
33.350	0.00	0.00	0.00	0.00	0.00	0	31.00
33.400	0.00	0.00	0.00	0.00	0.00	0	31.00
33.450	0.00	0.00	0.00	0.00	0.00	0	31.00
33.500	0.00	0.00	0.00	0.00	0.00	0	31.00
33.550	0.00	0.00	0.00	0.00	0.00	0	31.00
33.600	0.00	0.00	0.00	0.00	0.00	0	31.00
33.650	0.00	0.00	0.00	0.00	0.00	0	31.00
33.700	0.00	0.00	0.00	0.00	0.00	0	31.00
33.750	0.00	0.00	0.00	0.00	0.00	0	31.00
33.800	0.00	0.00	0.00	0.00	0.00	0	31.00
33.850	0.00	0.00	0.00	0.00	0.00	0	31.00
33.900	0.00	0.00	0.00	0.00	0.00	0	31.00
33.950	0.00	0.00	0.00	0.00	0.00	0	31.00
34.000	0.00	0.00	0.00	0.00	0.00	0	31.00
34.050	0.00	0.00	0.00	0.00	0.00	0	31.00
34.100	0.00	0.00	0.00	0.00	0.00	0	31.00
34.150	0.00	0.00	0.00	0.00	0.00	0	31.00
34.200	0.00	0.00	0.00	0.00	0.00	0	31.00
34.250	0.00	0.00	0.00	0.00	0.00	0	31.00
34.300	0.00	0.00	0.00	0.00	0.00	0	31.00
34.350	0.00	0.00	0.00	0.00	0.00	0	31.00
34.400	0.00	0.00	0.00	0.00	0.00	0	31.00
34.450	0.00	0.00	0.00	0.00	0.00	0	31.00
34.500	0.00	0.00	0.00	0.00	0.00	0	31.00
34.550	0.00	0.00	0.00	0.00	0.00	0	31.00
34.600	0.00	0.00	0.00	0.00	0.00	0	31.00
34.650	0.00	0.00	0.00	0.00	0.00	0	31.00
34.700	0.00	0.00	0.00	0.00	0.00	0	31.00
34.750	0.00	0.00	0.00	0.00	0.00	0	31.00
34.800	0.00	0.00	0.00	0.00	0.00	0	31.00
34.850	0.00	0.00	0.00	0.00	0.00	0	31.00

Hydrologic Calculations

Subsection: Pond Routing Calculations (Total Out) Return Event: 100 years
Label: SP (OUT) Storm Event: 100 years
Scenario: Post-Development 100 year

Pond Routing Calculations (Total Out)

Time (hours)	Flow (Total In) (ft³/s)	2S/t - O (ft³/s)	2S/t + O (ft³/s)	Infiltration (ft³/s)	Flow (Outlet) (ft³/s)	Volume (ft³)	Elevation (ft)
34.900	0.00	0.00	0.00	0.00	0.00	0	31.00
34.950	0.00	0.00	0.00	0.00	0.00	0	31.00
35.000	0.00	0.00	0.00	0.00	0.00	0	31.00
35.050	0.00	0.00	0.00	0.00	0.00	0	31.00
35.100	0.00	0.00	0.00	0.00	0.00	0	31.00
35.150	0.00	0.00	0.00	0.00	0.00	0	31.00
35.200	0.00	0.00	0.00	0.00	0.00	0	31.00
35.250	0.00	0.00	0.00	0.00	0.00	0	31.00
35.300	0.00	0.00	0.00	0.00	0.00	0	31.00
35.350	0.00	0.00	0.00	0.00	0.00	0	31.00
35.400	0.00	0.00	0.00	0.00	0.00	0	31.00
35.450	0.00	0.00	0.00	0.00	0.00	0	31.00
35.500	0.00	0.00	0.00	0.00	0.00	0	31.00
35.550	0.00	0.00	0.00	0.00	0.00	0	31.00
35.600	0.00	0.00	0.00	0.00	0.00	0	31.00
35.650	0.00	0.00	0.00	0.00	0.00	0	31.00
35.700	0.00	0.00	0.00	0.00	0.00	0	31.00
35.750	0.00	0.00	0.00	0.00	0.00	0	31.00
35.800	0.00	0.00	0.00	0.00	0.00	0	31.00
35.850	0.00	0.00	0.00	0.00	0.00	0	31.00
35.900	0.00	0.00	0.00	0.00	0.00	0	31.00
35.950	0.00	0.00	0.00	0.00	0.00	0	31.00
36.000	0.00	0.00	0.00	0.00	0.00	0	31.00

Subsection: Pond Inflow Summary Return Event: 1 years
Label: SP (IN) Storm Event: 1 year
Scenario: Post-Development 1 year

Summary for Hydrograph Addition at 'SP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1C	4,014	12.100	1.09
Flow (In)	SP	4,014	12.100	1.09

Subsection: Pond Inflow Summary
Label: SP (IN)
Scenario: Post-Development 10 year

Return Event: 10 years
Storm Event: 10 years

Summary for Hydrograph Addition at 'SP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1C	8,156	12.100	2.12
Flow (In)	SP	8,156	12.100	2.12

Subsection: Pond Inflow Summary
Label: SP (IN)
Scenario: Post-Development 25 year

Return Event: 25 years
Storm Event: 25 years

Summary for Hydrograph Addition at 'SP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1C	10,566	12.100	2.70
Flow (In)	SP	10,566	12.100	2.70

Subsection: Pond Inflow Summary
Label: SP (IN)
Scenario: Post-Development 100 year

Return Event: 100 years
Storm Event: 100 years

Summary for Hydrograph Addition at 'SP'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	PDA-1C

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	PDA-1C	15,491	12.100	3.88
Flow (In)	SP	15,491	12.100	3.88

Index

A

A4 to A3 (Channel Routing Summary, 1 years (Post-Development 1 year))...41

A4 to A3 (Channel Routing Summary, 10 years (Post-Development 10 year))...41, 42

A4 to A3 (Channel Routing Summary, 100 years (Post-Development 100 year))...42, 43

A4 to A3 (Channel Routing Summary, 25 years (Post-Development 25 year))...42

D

DET SYSTEM (Elevation vs. Volume Curve, 1 years (Post-Development 1 year))...146, 147

DET SYSTEM (Elevation vs. Volume Curve, 10 years (Post-Development 10 year))...147, 148

DET SYSTEM (Elevation vs. Volume Curve, 100 years (Post-Development 100 year))...148, 149

DET SYSTEM (Elevation vs. Volume Curve, 25 years (Post-Development 25 year))...148

DET SYSTEM (Elevation-Volume-Flow Table (Pond), 1 years (Post-Development 1 year))...164, 165

DET SYSTEM (Elevation-Volume-Flow Table (Pond), 10 years (Post-Development 10 year))...165, 166

DET SYSTEM (Elevation-Volume-Flow Table (Pond), 100 years (Post-Development 100 year))...167

DET SYSTEM (Elevation-Volume-Flow Table (Pond), 25 years (Post-Development 25 year))...166, 167

DET SYSTEM (IN) (Detention Time, 1 years (Post-Development 1 year))...167, 168

DET SYSTEM (IN) (Detention Time, 10 years (Post-Development 10 year))...169, 170

DET SYSTEM (IN) (Detention Time, 100 years (Post-Development 100 year))...172, 173

DET SYSTEM (IN) (Detention Time, 25 years (Post-Development 25 year))...171

DET SYSTEM (IN) (Level Pool Pond Routing Summary, 1 years (Post-Development 1 year))...168, 169

DET SYSTEM (IN) (Level Pool Pond Routing Summary, 10 years (Post-Development 10 year))...170

DET SYSTEM (IN) (Level Pool Pond Routing Summary, 100 years (Post-Development 100 year))...173

DET SYSTEM (IN) (Level Pool Pond Routing Summary, 25 years (Post-Development 25 year))...171, 172

DET SYSTEM (IN) (Pond Inflow Summary, 1 years (Post-Development 1 year))...243

DET SYSTEM (IN) (Pond Inflow Summary, 10 years (Post-Development 10 year))...243

DET SYSTEM (IN) (Pond Inflow Summary, 100 years (Post-Development 100 year))...244

DET SYSTEM (IN) (Pond Inflow Summary, 25 years (Post-Development 25 year))...244

DET SYSTEM (OUT) (Pond Routing Calculations (Total Out), 1 years (Post-Development 1 year))...174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191

DET SYSTEM (OUT) (Pond Routing Calculations (Total Out), 10 years (Post-Development 10 year))...191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208

DET SYSTEM (OUT) (Pond Routing Calculations (Total Out), 100 years (Post-Development 100 year))...226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243

DET SYSTEM (OUT) (Pond Routing Calculations (Total Out), 25 years (Post-Development 25 year))...208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225

DET SYSTEM (OUT) (Time vs. Elevation, 1 years (Post-Development 1 year))...55, 56, 57, 58, 59

DET SYSTEM (OUT) (Time vs. Elevation, 10 years (Post-Development 10 year))...59, 60, 61, 62, 63

DET SYSTEM (OUT) (Time vs. Elevation, 100 years (Post-Development 100 year))...67, 68, 69, 70

DET SYSTEM (OUT) (Time vs. Elevation, 25 years (Post-Development 25 year))...63, 64, 65, 66, 67

DET SYSTEM (Time vs. Volume, 1 years (Post-Development 1 year))...101, 102, 103, 104, 105

DET SYSTEM (Time vs. Volume, 10 years (Post-Development 10 year))...105, 106, 107, 108

DET SYSTEM (Time vs. Volume, 100 years (Post-Development 100 year))...112, 113, 114, 115, 116

DET SYSTEM (Time vs. Volume, 25 years (Post-Development 25 year))...108, 109, 110, 111, 112

DMH-A3 (Addition Summary, 1 years (Post-Development 1 year))...48

DMH-A3 (Addition Summary, 10 years (Post-Development 10 year))...48, 49

DMH-A3 (Addition Summary, 100 years (Post-Development 100 year))...49, 50

DMH-A3 (Addition Summary, 25 years (Post-Development 25 year))...49

DMH-A4 (Addition Summary, 1 years (Post-Development 1 year))...50

DMH-A4 (Addition Summary, 10 years (Post-Development 10 year))...50

DMH-A4 (Addition Summary, 100 years (Post-Development 100 year))...51

DMH-A4 (Addition Summary, 25 years (Post-Development 25 year))...50, 51

DP-1 (Addition Summary, 1 years (Post-Development 1 year))...51

DP-1 (Addition Summary, 1 years (Pre-Development 1 year))...52

DP-1 (Addition Summary, 10 years (Post-Development 10 year))...52

DP-1 (Addition Summary, 10 years (Pre-Development 10 year))...52

DP-1 (Addition Summary, 100 years (Post-Development 100 year))...53

DP-1 (Addition Summary, 100 years (Pre-Development 100 year))...53, 54

DP-1 (Addition Summary, 25 years (Post-Development 25 year))...52, 53

DP-1 (Addition Summary, 25 years (Pre-Development 25 year))...53

E

EDA-1A (Runoff CN-Area, 1 years (Pre-Development 1 year))...25

EDA-1A (Time of Concentration Calculations, 1 years (Pre-Development 1 year))...17, 18, 19

EDA-1A (Unit Hydrograph Summary, 1 years (Pre-Development 1 year))...27, 28

EDA-1B (Runoff CN-Area, 1 years (Pre-Development 1 year))...25

EDA-1B (Time of Concentration Calculations, 1 years (Pre-Development 1 year))...19, 20

EDA-1B (Unit Hydrograph Summary, 1 years (Pre-Development 1 year))...29, 30

EX. RG (Elevation-Area Volume Curve, 1 years (Pre-Development 1 year))...149

EX. RG (Elevation-Area Volume Curve, 10 years (Pre-Development 10 year))...149

EX. RG (Elevation-Area Volume Curve, 100 years (Pre-Development 100 year))...150

EX. RG (Elevation-Area Volume Curve, 25 years (Pre-Development 25 year))...149, 150

EX. RG (Elevation-Volume-Flow Table (Pond), 1 years (Pre-Development 1 year))...244, 245

EX. RG (Elevation-Volume-Flow Table (Pond), 10 years (Pre-Development 10 year))...245, 246

EX. RG (Elevation-Volume-Flow Table (Pond), 100 years (Pre-Development 100 year))...246, 247

EX. RG (Elevation-Volume-Flow Table (Pond), 25 years (Pre-Development 25 year))...246

EX. RG (IN) (Level Pool Pond Routing Summary, 1 years (Pre-Development 1 year))...247, 248

EX. RG (IN) (Level Pool Pond Routing Summary, 10 years (Pre-Development 10 year))...248, 249

EX. RG (IN) (Level Pool Pond Routing Summary, 100 years (Pre-Development 100 year))...250

EX. RG (IN) (Level Pool Pond Routing Summary, 25 years (Pre-Development 25 year))...249, 250

EX. RG (IN) (Pond Inflow Summary, 1 years (Pre-Development 1 year))...320

EX. RG (IN) (Pond Inflow Summary, 10 years (Pre-Development 10 year))...320

EX. RG (IN) (Pond Inflow Summary, 100 years (Pre-Development 100 year))...321

EX. RG (IN) (Pond Inflow Summary, 25 years (Pre-Development 25 year))...321

EX. RG (OUT) (Pond Routing Calculations (Total Out), 1 years (Pre-Development 1 year))...251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268

EX. RG (OUT) (Pond Routing Calculations (Total Out), 10 years (Pre-Development 10 year))...268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285

EX. RG (OUT) (Pond Routing Calculations (Total Out), 100 years (Pre-Development 100 year))...303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320

EX. RG (OUT) (Pond Routing Calculations (Total Out), 25 years (Pre-Development 25 year))...285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302

EX. RG (OUT) (Time vs. Elevation, 1 years (Pre-Development 1 year))...71, 72, 73, 74

EX. RG (OUT) (Time vs. Elevation, 10 years (Pre-Development 10 year))...74, 75, 76, 77, 78

EX. RG (OUT) (Time vs. Elevation, 100 years (Pre-Development 100 year))...82, 83, 84, 85, 86
EX. RG (OUT) (Time vs. Elevation, 25 years (Pre-Development 25 year))...78, 79, 80, 81, 82
EX. RG (Time vs. Volume, 1 years (Pre-Development 1 year))...116, 117, 118, 119, 120
EX. RG (Time vs. Volume, 10 years (Pre-Development 10 year))...120, 121, 122, 123, 124
EX. RG (Time vs. Volume, 100 years (Pre-Development 100 year))...127, 128, 129, 130, 131
EX. RG (Time vs. Volume, 25 years (Pre-Development 25 year))...124, 125, 126, 127

J

Junction 1 (Addition Summary, 1 years (Pre-Development 1 year))...54
Junction 1 (Addition Summary, 10 years (Pre-Development 10 year))...54
Junction 1 (Addition Summary, 100 years (Pre-Development 100 year))...55
Junction 1 (Addition Summary, 25 years (Pre-Development 25 year))...55

M

Master Network Summary...1, 2, 3, 4, 5

O

OCS-DET-SYS (Composite Rating Curve, 1 years (Post-Development 1 year))...153, 154
OCS-DET-SYS (Outlet Input Data, 1 years (Post-Development 1 year))...151, 152, 153
OCS-EX-RG (Composite Rating Curve, 1 years (Pre-Development 1 year))...158, 159
OCS-EX-RG (Outlet Input Data, 1 years (Pre-Development 1 year))...154, 155, 156, 157, 158
OCS-SP (Composite Rating Curve, 1 years (Post-Development 1 year))...164
OCS-SP (Outlet Input Data, 1 years (Post-Development 1 year))...159, 160, 161, 162, 163

P

PDA-1A (Runoff CN-Area, 1 years (Post-Development 1 year))...25, 26
PDA-1A (Time of Concentration Calculations, 1 years (Post-Development 1 year))...20, 21, 22
PDA-1A (Unit Hydrograph Summary, 1 years (Post-Development 1 year))...31, 32
PDA-1B (Runoff CN-Area, 1 years (Post-Development 1 year))...26
PDA-1B (Time of Concentration Calculations, 1 years (Post-Development 1 year))...22
PDA-1B (Unit Hydrograph Summary, 1 years (Post-Development 1 year))...33, 34
PDA-1C (Runoff CN-Area, 1 years (Post-Development 1 year))...26
PDA-1C (Time of Concentration Calculations, 1 years (Post-Development 1 year))...22

PDA-1C (Unit Hydrograph Summary, 1 years (Post-Development 1 year))...35, 36

PDA-1D (Runoff CN-Area, 1 years (Post-Development 1 year))...26, 27

PDA-1D (Time of Concentration Calculations, 1 years (Post-Development 1 year))...23, 24

PDA-1D (Unit Hydrograph Summary, 1 years (Post-Development 1 year))...37, 38

PDA-1E (Runoff CN-Area, 1 years (Post-Development 1 year))...27

PDA-1E (Time of Concentration Calculations, 1 years (Post-Development 1 year))...24, 25

PDA-1E (Unit Hydrograph Summary, 1 years (Post-Development 1 year))...39, 40

R

Reach (Channel Routing Summary, 1 years (Post-Development 1 year))...43

Reach (Channel Routing Summary, 1 years (Pre-Development 1 year))...43, 44

Reach (Channel Routing Summary, 10 years (Post-Development 10 year))...44, 45

Reach (Channel Routing Summary, 10 years (Pre-Development 10 year))...45

Reach (Channel Routing Summary, 100 years (Post-Development 100 year))...46, 47

Reach (Channel Routing Summary, 100 years (Pre-Development 100 year))...47, 48

Reach (Channel Routing Summary, 25 years (Post-Development 25 year))...45, 46

Reach (Channel Routing Summary, 25 years (Pre-Development 25 year))...46

S

SP (Elevation-Area Volume Curve, 1 years (Post-Development 1 year))...150

SP (Elevation-Area Volume Curve, 10 years (Post-Development 10 year))...150

SP (Elevation-Area Volume Curve, 100 years (Post-Development 100 year))...151

SP (Elevation-Area Volume Curve, 25 years (Post-Development 25 year))...150, 151

SP (Elevation-Volume-Flow Table (Pond), 1 years (Post-Development 1 year))...321, 322

SP (Elevation-Volume-Flow Table (Pond), 10 years (Post-Development 10 year))...322

SP (Elevation-Volume-Flow Table (Pond), 100 years (Post-Development 100 year))...323

SP (Elevation-Volume-Flow Table (Pond), 25 years (Post-Development 25 year))...322, 323

SP (IN) (Level Pool Pond Routing Summary, 1 years (Post-Development 1 year))...324

SP (IN) (Level Pool Pond Routing Summary, 10 years (Post-Development 10 year))...324, 325

SP (IN) (Level Pool Pond Routing Summary, 100 years (Post-Development 100 year))...326, 327

SP (IN) (Level Pool Pond Routing Summary, 25 years (Post-Development 25 year))...325, 326

SP (IN) (Pond Inflow Summary, 1 years (Post-Development 1 year))...396

SP (IN) (Pond Inflow Summary, 10 years (Post-Development 10 year))...

SP (IN) (Pond Inflow Summary, 100 years (Post-Development 100 year))...

SP (IN) (Pond Inflow Summary, 25 years (Post-Development 25 year))...

SP (OUT) (Pond Routing Calculations (Total Out), 1 years (Post-Development 1 year))...327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344

SP (OUT) (Pond Routing Calculations (Total Out), 10 years (Post-Development 10 year))...344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361

SP (OUT) (Pond Routing Calculations (Total Out), 100 years (Post-Development 100 year))...379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396

SP (OUT) (Pond Routing Calculations (Total Out), 25 years (Post-Development 25 year))...362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379

SP (OUT) (Time vs. Elevation, 1 years (Post-Development 1 year))...86, 87, 88, 89

SP (OUT) (Time vs. Elevation, 10 years (Post-Development 10 year))...89, 90, 91, 92, 93

SP (OUT) (Time vs. Elevation, 100 years (Post-Development 100 year))...97, 98, 99, 100, 101

SP (OUT) (Time vs. Elevation, 25 years (Post-Development 25 year))...93, 94, 95, 96, 97

SP (Time vs. Volume, 1 years (Post-Development 1 year))...131, 132, 133, 134, 135

SP (Time vs. Volume, 10 years (Post-Development 10 year))...135, 136, 137, 138, 139

SP (Time vs. Volume, 100 years (Post-Development 100 year))...143, 144, 145, 146

SP (Time vs. Volume, 25 years (Post-Development 25 year))...139, 140, 141, 142, 143

T

Time-Depth - 1 (Time-Depth Curve, 1 years (Post-Development 1 year))...5, 6

Time-Depth - 1 (Time-Depth Curve, 1 years (Pre-Development 1 year))...6, 7, 8

Time-Depth - 1 (Time-Depth Curve, 10 years (Post-Development 10 year))...8, 9

Time-Depth - 1 (Time-Depth Curve, 10 years (Pre-Development 10 year))...10, 11

Time-Depth - 1 (Time-Depth Curve, 100 years (Post-Development 100 year))...11, 12

Time-Depth - 1 (Time-Depth Curve, 100 years (Pre-Development 100 year))...13, 14

Time-Depth - 1 (Time-Depth Curve, 25 years (Post-Development 25 year))...14, 15

Time-Depth - 1 (Time-Depth Curve, 25 years (Pre-Development 25 year))...16, 17

APPENDIX B

NYSDEC STORMWATER SIZING CALCULATIONS

WATER QUALITY VOLUME WORKSHEET
FOR REDEVELOPMENT PROJECTS

JMC Project:	**18119**
Design Point:	**1**
Drainage Area:	**Site**

Initial Water Quality Treatment Volume

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.4	1.51	0.76	0.46	81.47	0.783197584	**5,991**
UNITS	In	Ac	Ac	Ac	%	CF	CF
VALUE	Enhanced Phosphorus Removal (WQ_V = 1-yr Storm Runoff)						

Runoff Reduction Techniques (Area)

DESCRIPTION	Total Area	Impervious Area
SYMBOL	A	I
Conservation of Natural Areas		
Sheetflow to Riparian Buffers or Filter Strips		
Vegetated Swale		
Tree Planting / Tree Pit		
Disconnection of Rooftop Runoff		
Stream Daylighting		
TOTAL		
UNITS	Ac	Ac

Net Water Quality Treatment Volume for Standard Practices (25% I_E + 100% I_N)

DESCRIPTION	Design Storm	Area	Existing Impervious Area	New Impervious Area	Percent Impervious	Runoff Coefficient	Total Required WQ Volume
SYMBOL	P	A	I_E	I_N	%I	R_V	WQ_V
VALUE	1.4	1.51	0.19	0.46	43.46	0.441095452	**3,374**
UNITS	In	Ac	Ac	Ac	%	CF	CF

Net Water Quality Treatment Volume = Adjusted WQv - Provided RRv

Initial Water Quality Treatment Volume	5,991	CF
Adjusted Water Quality Treatment Volume	3,374	CF
Provided Runoff Reduction Volume	986	CF
Net Water Quality Treatment Volume	2,387	CF

RUNOFF REDUCTION VOLUME WORKSHEET

JMC Project:	18119
Design Point:	1
Drainage Area:	1A

Total Water Quality Treatment Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Initial Water Quality Volume	WQ_V	**5,991**	CF
Adjusted Water Quality Volume	WQ_V	**3,374**	CF

Minimum Runoff Reduction Volume

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.4	In
Total Area of *new* Impervious Cover	Aic	0.46	Ac
Hydrologic Soil Group (HSG) Specific Reduction Factor	S	0.40	
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
Impervious Cover targeted for Runoff Reduction [S x Aic]	Ai	0.19	Ac
TOTAL VOLUME Required [RR_V = (P x R_V x Ai) / 12]	RR_V	**895**	CF

Runoff Reduction Techniques (Volume)

GREEN INFRASTRUCTURE PRACTICE / SMP	*SYMBOL*	*VALUE*	*UNITS*
Planter #1	RR_V	100	CF
Planter #2	RR_V	33	CF
Planter #3	RR_V	71	CF
Planter #4	RR_V	85	CF
Planter #5	RR_V	130	CF
Planter #6	RR_V	49	CF
Planter #7	RR_V	48	CF
Planter #8	RR_V	41	CF
Planter #9	RR_V	311	CF
Planter #10	RR_V	118	CF
TOTAL	RR_V	**986**	CF

Runoff Reduction

Is Total RR_V > Adjusted WQ_V?	**NO**
Is Total RR_V > Minimum RR_V?	**YES**

Date Printed: 3/8/2022

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #1

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.05	Ac
Area	A	0.05	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**223**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	223	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**267.74**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**281.87**	SF
Actual Volume Provided		**141**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	223	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	100	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	67	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #2

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.01	Ac
Area	A	0.01	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [WQ_V = (P x R_V x A) / 12]	WQ_V	**72**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	72	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [A_f = (WQ_V x d_f) / (k x (h_f + d_f) x t_f)]	A_f	**86.80**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**117.64**	SF
Actual Volume Provided		**59**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	72	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	33	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	22	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #3

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.03	Ac
Area	A	0.03	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**158**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	158	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**190.19**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**191.61**	SF
Actual Volume Provided		**96**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	158	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	71	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	48	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #4

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.04	Ac
Area	A	0.04	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**188**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	188	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**225.51**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**282.12**	SF
Actual Volume Provided		**141**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	188	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	85	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	56	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #5

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.06	Ac
Area	A	0.06	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**290**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	290	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**347.62**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**377.46**	SF
Actual Volume Provided		**189**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	290	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	130	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	87	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #6

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.02	Ac
Area	A	0.02	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**108**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	108	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**129.68**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**146.46**	SF
Actual Volume Provided		**73**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	108	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	49	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	32	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #7

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.02	Ac
Area	A	0.02	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**107**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	107	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**128.27**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**131.74**	SF
Actual Volume Provided		**66**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	107	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	48	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	32	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #8

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.02	Ac
Area	A	0.02	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**91**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	91	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**108.87**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**111.21**	SF
Actual Volume Provided		**56**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	91	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	41	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	27	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #9

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.14	Ac
Area	A	0.14	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**692**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	692	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**829.92**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**836.19**	SF
Actual Volume Provided		**418**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	692	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	311	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	207	CF

STORMWATER PLANTER WORKSHEET

JMC Project: **18119**

Design Point: **1**

Planter #10

Drainage Area: **PDA-1C**

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.05	Ac
Area	A	0.05	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**263**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Minimum Planter Bed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	263	CF
Coefficient of permeability of filter media (hydraulic conductivity)	k	4.00	Ft / Day
Planter bed Depth (soil media)	d_f	2.00	Ft
Average Height of water above planter bed	h_f	0.50	Ft
Design planter bed drain Time	t_f	4.00	Hours
Required Surface Area of Planter Bed [$A_f = (WQ_V \times d_f) / (k \times (h_f + d_f) \times t_f)$]	A_f	**315.83**	SF

Proposed Area			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Calculated planter bed area (Length x Width)			SF
Surface Area of Planter Bed Provided	A_f	**319.93**	SF
Actual Volume Provided		**160**	CF

Runoff Reduction		
DESCRIPTION	*VALUE*	*UNITS*
Is Proposed Af > Required Af ?	**YES**	
Type of Planter	**FLOW-THROUGH**	
RRv Provided for Infiltration Planter	263	CF
RRv Provided for Flow-Through Planter in HSG 'C' Soils	118	CF
RRv Provided for Flow-Through Planter in HSG 'D' Soils	79	CF

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**18119**
Design Point:	**1**
Drainage Area:	**1B**

CDS

Rainfall Distribution Type: **III**

		A	B	C
Coefficients for the equation unit peak [$R = I_a / P$] [$C_i = A \times R^2 + B \times R + C$]	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.09	Ac
Area	A	0.09	Ac
Percent Impervious	%I	100.00	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.95	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**415**	CF

Water Quality Peak Flow Calculation			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	415	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.4	In
Time of Concentration	t_c	0.0833	Hr
Runoff Volume [$Q = WQ_V / (A \times 3630)$]	Q	1.33	In
Curve Number [$CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\ QP)^{½}$]	CN	99.40	
Curve Number	CN	98	
Initial Abstraction [$I_a = 200 / CN - 2$]	I_a	0.04	In
Ratio [$R = I_a / P$]	R	0.03	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.48	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.19	
Unit Peak Discharge	q_u	588.00	$cfs/mi^2/in$
Peak Discharge [$Q_p = q_u \times A \times Q / 640$]	Q_p	**0.10**	cfs

Proposed Device			
DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**0.70**	cfs
Water Quality Volume Provided [$WQ_V = 640 \times 3600 \times Q_P / q_u$]	WQ_V	**2,743**	CF
Model Designation		CDS2015-4-C	
Quantity		1	

PROPRIETARY PRACTICE WORKSHEET

JMC Project:	**18119**
Design Point:	**1**
Drainage Area:	**1A**

Jellyfish Filter

Rainfall Distribution Type: **III**

Coefficients for the equation unit peak [$R = I_a / P$] [$C_i = A \times R^2 + B \times R + C$]		A	B	C
	C_0	-1.774	0.3301	2.4577
	C_1	1.8622	-0.7397	-0.4627
	C_2	-0.0648	0.2276	-0.1932

Site Data for Drainage Area to be Treated by Practice

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Design Storm [90% Rainfall Event Number]	P	1.4	In
Impervious Area	I	0.62	Ac
Area	A	0.73	Ac
Percent Impervious	%I	84.45	%
Runoff Coefficient [0.05 + 0.009 x %I]	R_V	0.81	CF
TOTAL VOLUME Required [$WQ_V = (P \times R_V \times A) / 12$]	WQ_V	**3,018**	CF
Design Storm [1-yr Storm Depth]	P		In
TOTAL VOLUME Required *(TMDL)* [WQ_V = 1-yr Storm Runoff]	WQ_V		CF

Water Quality Peak Flow Calculation

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Volume	WQ_V	3,018	CF
Design Storm [90% Rainfall Event Number] **or** [1-yr Storm Depth]	P	1.4	In
Time of Concentration	t_c	0.0833	Hr
Runoff Volume [$Q = WQ_V / (A \times 3630)$]	Q	1.13	In
Curve Number [$CN = 1000 / (10 + 5P + 10Q - 10 \times (Q^2 + 1.25\,QP)^{½}$]	CN	97.51	
Curve Number	CN	98	
Initial Abstraction [$I_a = 200 / CN - 2$]	I_a	0.05	In
Ratio [$R = I_a / P$]	R	0.04	
$C_0 = A \times R^2 + B \times R + C$	C_0	2.47	
$C_1 = A \times R2 + B \times R + C$	C_1	-0.49	
$C_2 = A \times R2 + B \times R + C$	C_2	-0.18	
Unit Peak Discharge	q_u	599.44	$cfs/mi^2/in$
Peak Discharge [$Q_p = q_u \times A \times Q / 640$]	Q_p	**0.78**	cfs

Proposed Device

DESCRIPTION	*SYMBOL*	*VALUE*	*UNITS*
Water Quality Peak Flow Provided	Q_p	**1.02**	cfs
Water Quality Volume Provided [$WQ_V = 640 \times 3600 \times Q_P / q_u$]	WQ_V	**3,920**	CF
Model Designation		54" Jellyfish Filter	
Quantity		1	

APPENDIX C

GEOTECHNICAL REPORT

CARLIN • SIMPSON & ASSOCIATES, LLC

Consulting Geotechnical and Environmental Engineers

61 Main Street, Sayreville, New Jersey 08872
Tel. (732) 432-5757
Fax. (732) 432-5717

Principal:
Robert B. Simpson, P.E.

Associates:
Meredith R. Anke, P.E.
Stephen Rossi, P.E.
Kurt W. Anke
Eric J. Shaw
Catherine Simpson, E.I.T.
Michal Wroblewski, E.I.T.

28 September 2020
Revised 2 March 2022

Farrell Building Company
2317 Montauk Highway
Bridgehampton, NY 11932

Attn: Mr. Stephen H. Zagoren

Re: Report on Subsurface Soil and Foundation Investigation
Proposed Apartment Building
16 West Main Street
Beacon, NY (CSA Job #20-07)

Dear Mr. Zagoren:

In accordance with our proposal dated 14 January 2020 and your subsequent authorization, we have completed a Subsurface Soil and Foundation Investigation for the referenced site. The purpose of this study was to determine the nature and engineering properties of the subsurface soil and groundwater conditions for the new construction, to recommend a practical foundation scheme, to determine the allowable bearing capacity of the site soils, and to determine the soil permeability in the new stormwater management area.

We understand that the planned construction will consist of two 4-story apartment buildings and a 3-story bridge that will connect the two buildings. The proposed construction will also include a new stormwater management system and new site retaining walls. To guide us in our study, JMC has provided us with site plans that indicate the location of the proposed construction.

Our scope of work for this project included the following:

1. Reviewed the proposed layout, the existing site conditions, the expected soil conditions, and planned this study.

2. Retained General Borings Inc. to advance sixteen (16) soil borings at the subject site.

3. Laid out the boring locations in the field, provided full time inspection of the explorations, obtained soil samples, and prepared detailed logs and a Boring Location Plan.

4. Performed soil identification tests on selected soil samples in our laboratory.

5. Analyzed the field data and prepared this report containing the results of this study.

1.0 SITE DESCRIPTION

The project site is located at 16 West Main Street in Beacon, New York. The site is currently occupied by a single-story mechanic shop building. The remainder of the site is occupied by asphalt parking lots and grass landscape areas. Site grades generally slope down from west to east. Elevations range from approximately +45.0 to +32.0.

2.0 PROPOSED CONSTRUCTION

We understand that the planned construction will consist of two new 4-story apartment buildings. A 3-story bridge will connect the East and West Buildings. Both proposed buildings have a finished first floor elevation of +37.75. A lower-level utility room is planned in the southwestern corner of the West Building. The lower-level utility room has a finished floor elevation of +30.50. Based on the provided grading plan, cuts ranging up to 13 feet and fills ranging up to 5 feet will be required to achieve the planned finished floor elevations.

In order to achieve the planned site grades, five retaining walls will be required. The new retaining walls will range up to approximately thirteen (13) feet in height. Site development will also include a stormwater management system, new utilities, and new driveways and parking areas.

As of the date of this report, the column loads for the new buildings were not known. Once the planned construction drawings have been further developed, a copy of the plans should be forwarded to our office so that we can review them along with the recommendations in this report. At that time, any changes or additional recommendations can be provided, if required.

3.0 SUBSURFACE CONDITIONS

To determine the subsurface soil and groundwater conditions at the site, sixteen (16) soil borings were advanced by General Borings, Inc. at the locations shown on the enclosed Boring Location Plan. The borings were performed using hollow stem augers and split spoon sampling. Detailed boring logs have been prepared and are included in this report. The borings were completed in July 2020 and November 2021 under the full-time inspection of Carlin-Simpson & Associates. Our field engineer visually identified all of the soil samples obtained during the boring operations and select samples were tested in our laboratory.

3.1 Soils

The soil descriptions shown on the boring logs are based on the Burmister Classification System. In this system, the soil is divided into three components: Sand (S), Silt ($) and Gravel

(G). The major component is indicated in all capital letters, the lesser in lower case letters. The following modifiers indicate the quantity of each lesser component:

Modifier	Quantity
trace (t)	0 -10%
little (l)	10% - 20%
some (s)	20% - 35%
and (a)	35% - 50%

When the site soils are plastic, the following indicators are used:

Plasticity	Plasticity Index	Indicator
None	0 - 1	SILT
Slight	1 - 5	Clayey SILT
Low	5 - 10	SILT & CLAY
Medium	10 - 20	CLAY & SILT
High	20 - 40	Silty CLAY
Very High	40+	CLAY

The subsurface soil conditions encountered in the test borings can be summarized as follows:

Stratum 1A Topsoil — At the surface in portions of the site is topsoil that ranges from approximately 1 to 6 inches in thickness.

Stratum 1B Asphalt — At the surface in the remaining borings is asphalt pavement that ranges from approximately 1 to 12 inches in thickness.

Stratum 2 Existing Fill — Below the surface layer in the majority of the site is existing fill that generally consists of brown, gray, black coarse to fine SAND, little (to and) Silt, little (to and) coarse to fine Gravel. Debris including asphalt, brick, concrete, wood, and other possible obstructions was encountered within the existing fill. The existing fill generally extends to depths ranging from 2’0” to 14’0” below the existing ground surface throughout the site.

Stratum 3 Sandy Clay and Silt — Below the existing fill in borings PB-1, B-3, B-5, B-6, and B-9 is brown, gray soft to very stiff Clayey Silt or SILT and CLAY little (to and), coarse to fine Sand. Where encountered, this stratum extends to depths ranging from 6’3” to 19’0” below the existing ground surface.

Stratum 4 Silty Sand with Gravel (Glacial Till) — Below Stratum 2 and Stratum 3 is medium dense to very dense brown coarse to fine Sand, trace (to and) Silt, little (to and) coarse to fine Gravel. This stratum extends to depths ranging from 13’0” to 25’3” below the existing ground surface.

Stratum 5 Weathered Shale Bedrock — Underlying the upper Strata in portions of the site completely weathered Shale bedrock. This layer is soil like in state, however, there could be denser pockets that cannot be conventionally excavated. This stratum was encountered in borings B-10, B-11, B-12, PB-3, PB-4 and PB-5 at depths ranging from 9'0" to 19'0" below the existing ground surface.

Stratum 6 Shale Bedrock — Auger refusal on probable Shale bedrock was encountered in 11 of the 16 borings at depths ranging from 13'0" to 30'6" below the existing ground surface.

The upper 5-feet of the bedrock was cored at boring location PB-1, PB-3, and PB-5. The rock core recovery ranged from 50% to 78% with a rock quality designation (RQD) ranging from 0% to 78%. Based on the RQD and visual inspection, the upper 5-feet of the bedrock surface is highly weathered to slightly weathered and ranges from a very poor to good condition.

3.2 Groundwater

Observations for groundwater were made during sampling and upon completion of the drilling operations at each boring location. During the subsurface investigation, groundwater was encountered in most of the test borings at depths ranging from 9'0" to 19'0" below the existing ground surface (elevations +36.0 to +21.5). We expect that groundwater may be encountered in portions of the site during construction. In the event that groundwater is encountered during construction, proper dewatering methods will be required.

Groundwater on the subject site will be controlled by the topography and the underlying bedrock surface. As surface water infiltrates the ground, the water will travel along the soil/rock interface and through fractures in the bedrock. Variations in the location of the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not immediately apparent at the time of this exploration.

3.3 Bedrock

Based on our experience and the boring observations, the in-situ bedrock at the site will range from completely weathered rock in a soil-like state, to massive, moderately jointed in a good condition. The rock generally transitions into harder bedrock with increasing depth. The completely weathered rock was encountered at depths ranging from 1'5" to 9'6" below the ground surface (elevations +37.0 to +21.5). Auger refusal on harder bedrock was encountered at depths ranging from 13'0" to 30'6" below the existing ground surface (elevation +31.0 to +6.5). The bedrock observations are summarized in Table 1 below.

Based on the provided grading plan, the completely weathered bedrock and harder bedrock may be encountered during construction. Especially in the northwest portion of the West Building. Penetration into the bedrock and completely weathered rock with excavation equipment will depend on the degree of weathering and fracturing in the rock. The upper few feet of rock may be "rippable" by using large construction equipment, but we anticipate that the

"rippability" of the bedrock will be variable and limited. It should not be assumed that the completely weathered rock (very dense material in a soil-like state) can be excavated with conventional equipment. The use of hydraulic hammers may be required to excavate the harder bedrock.

3.4 Summary of Boring Observations

A summary of the boring observations is provided in Table 1 below.

Table 1 – Summary of Boring Observations

Boring No.	Approximate Ground Surface Elevation	Depth to Groundwater (Elevation)	Depth to Bottom of Existing Fill (Elevation)	Depth to Bottom of Soft Soils (Elevation)	Depth to Bedrock (Elevation)
East Building Borings					
B-1	+42.0	15'0" (+27.0)	3'0" (+39.0)	NE	NE to 22'0"
B-2	+42.0	17'0" (+25.0)	NE	NE	NE to 21'10"
B-3	+36.5	15'0" (+21.5)	5'0" (+31.5)	NE	AR @ 25'3" (+11.3)
PB-1	+37.0	14'3" (+22.8)	7'0" (+30.0)	NE	C @ 30'6" (+6.5)
West Building Borings					
B-4	+32.5	6'0" (+26.5)	6'0" (+26.5)	NE	AR @ 13'0" (+19.5)
B-5	+34.0	10'0" (+24.0)	10'0" (+24.0)	19'0" (+15.0)	NE to 22'0"
B-6	+35.0	13'6" (+21.5)	9'0" (+26.0)	18'6" (+16.5)	AR @ 23'0" (+12.0)
B-9	+37.5	5'9" (+31.8)	9'6" (+28.0)	20'6" (+17.0)	AR @ 23'0" (+14.5)
B-11	+46.0	NE to 22'0"	14'0" (+32.0)	NE	CWR @ 17'0" (+29.0) AR @ 22'0" (+20.0)
B-12	+40.5	7'6" (+33.0)	9'6" (+31.0)	NE	CWR @ 19'0" (+21.5) AR @ 20'3" (+20.25)
PB-3	+48.0	NE to 17'0"	3'0" (+45.0)	NE	CWR @ 9'0" (+39.0) C @ 17'0" (+31.0)
Site Borings					
B-10	+53.0	21'0" (+32.0)	2'0" (+51.0)	NE	CWR @ 14'0" (+39.0) AR @ 22'0" (+31.0)
B-7	+39.5	5'0" (+34.5)	8'0" (+31.5)	> 17'0"	NE to 17'0"
B-8	+38.0	4'10" (+33.2)	10'0" (+27.0)	> 14'0"	NE to 14'0"
PB-4	+51.0	15'0" (+36.0)	6'6" (+44.5)	NE	CWR @ 14'0" (+37.0) AR @ 20'0" (+31.0)
PB-5	+46.0	14'5" (+31.4)	NE	NE	CWR @ 18'0" (+28.0) C @ 19'6" (+26.5)

AR – Auger Refusal on Probable Bedrock
CWR – Completely Weathered Rock
NE – Not Encountered

4.0 SUMMARY OF DESIGN RECOMMENDATIONS

During this subsurface investigation, soft clays and silts were present in the borings performed in the West Building footprint. However, soft clays and silts were not encountered in the borings completed in the East Building area Therefore, the foundation recommendations are different for the West Building and the East Building. The probable extent of the soft clays and silts are shown in FIG-1, which is attached to this report.

Below is a summary of the major design and construction considerations for this project. Additional recommendations are provided in the following sections of this report.

- *Subsurface Conditions (Section 3.0)*
  - Existing Fill is present at the site to depths of 2'0" to 14'0" below the existing ground surface (elevations +51.0 to +24.0).
  - Soft silt and clay soils were encountered in borings B-5, B-6, and B-9 extending to depths ranging from 18'6" to 20'6" (elevations +17.0 to +15.0) below the existing ground surface.
  - Groundwater is present at depths ranging from 4'10" to 21'0" below the existing ground surface (elevations +36.0 to +21.5).
  - Shale bedrock or auger refusal on probable bedrock was encountered throughout the site at depths ranging from 13'0" to 30'6" below the existing ground surface (elevations +31.0 to +6.5).
  - A summary of the subsurface observations is provided in Table 1 above.

- *West Building Recommendations (Section 5.0)*
  - New fill required to achieve the desired grades must be placed early in the construction schedule to consolidate the potential soft compressible soils and reduce future settlements.
  - The existing fill and soft clays and silts present in the West Building area create the possibility of intolerable differential settlements under the new building loads. In order to avoid damaging settlement, the new building loads must be transferred to the underlying dense virgin soils/bedrock using a deep foundation system.
  - The depth of the existing fill, soft soils, and bedrock within the West Building footprint vary greatly, pile lengths will also vary accordingly.
  - 8-inch diameter drilled micropile capable of supporting allowable axial compressive loads of 40 tons can be considered for the proposed West Building.
  - The piles should be cased through the existing fill (Stratum 2) and soft sandy clay and silt (Stratum 3) and develop a bond zone entirely in the silty sand with gravel (glacial till), weathered rock or bedrock (Stratum 4, 5, or 6).
  - We anticipate the following bond zone length:
    - 45-ton drilled micropile: minimum bond zone 20 to 25-feet
    - Downdrag load – 5 tons
    - Pile Working Capacity – 40 tons
    - Load test is required for this alternative to confirm capacity and design.
  - The new floor slab for the West building should also be supported by the pile foundation system.

- *East Building Recommendations (Section 6.0)*
  - Soft soils were not present in the borings completed for the East Building. For this building, traditional shallow spread footing bearing on virgin soil or new compacted fill can be used.

  - *Subgrade Preparation (Section 6.1)*
    - Existing structures must be demolished, existing utilities must be removed, and surface materials must be stripped from proposed construction area.
    - The existing fill is not a suitable bearing material for the new East Building. Where it is encountered at the subgrade elevation, it must be completely removed and replaced with new compacted fill.
    - New backfill shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557).

  - *Foundation Design Recommendations (Section 6.2)*
    - The new foundations may be designed as spread footing type foundations bearing on virgin soil or engineer-approved compacted fill.
    - Net design bearing pressure is 4,000 psf.
    - Minimum depth for frost protection is 42 inches.
    - Seismic Site Class is D or Stiff Soil Profile.

  - *Building Floor Slab Recommendations (Section 6.3)*
    - The floor slab may be designed as slab on grade.
    - The floor slab may bear on densified virgin soil or engineered-approved compacted fill.
    - Modulus of subgrade reaction is 200 pci.

5.0 WEST BUILDING RECOMMENDATIONS

We understand that the planned construction will consist of two new 4-story apartment buildings with a 3-story bridge connecting the two buildings. The new buildings will have a finished floor elevation of +37.75. A partial basement is planned in the in the southwestern corner of the West Building with a finished floor elevation of +30.50. A summary of the boring observations performed in the proposed building area is provided in Table 1 above.

Existing site grades in the proposed West Building range from approximately elevation +50.0 to +29.0. Cuts of up to 13 feet are anticipated in the northern portion of the West Building. Fills of up to 5 feet are anticipated in the southern portion of the West Building. ***New fill to raise site grades will produce settlements of the underlying soft Sandy Clays and Silts on the order of 1 to 2 inches. New fill should be placed early in the project schedule to mitigate long term settlement.***

Existing fill (Stratum 2) is present throughout the site. Existing fill was encountered to depths ranging from 3’0” to 14’0” below the existing ground surface (elevations +51.0 to +24.0) in the West Building. The depth of the existing fill is variable and may be deeper in unexplored areas of the site. In addition, soft sandy clays and silts soils were encountered in borings B-5, B-

6, and B-9 in the eastern portion of the West Building. The soft soils were encountered to depths ranging from 18'6" to 20'6" below the existing ground surface. Both existing fill and soft Sandy Clays and Silts are not acceptable bearing materials for the West Building foundations or floor slab. The consistency and density of the existing fill is not predictable. Certain areas may contain clean dense soils while other areas may contain loose material, void spaces, and/or debris. In addition, the soft clays and silts are susceptible to long term consolidation settlement. The existing fill material and soft clays and silts create the possibility of intolerable differential settlements under loading.

To eliminate the potential for damaging differential settlements, a pile foundation system shall be used to transfer the new loads below the existing fill layer and soft clays and silts to the underlying silty sand with gravel (glacial till), weathered rock, or bedrock (Stratum 4, 5, or 6). As of the date of this report, the foundation for the bridge portion of the planned construction was not yet known. In the event that column footings are required to support the bridge, they shall also be supported by a pile foundation system. Pile foundation recommendations are discussed in more detail below.

5.1 West Building – Pile Foundations

The existing fill and soft soils are not suitable for support of the new West Building foundations and floor slab. The West Building foundations and structural floor slab must be pile supported. We anticipate that a drilled micropile can be considered for support of the West Building.

The depth of the existing fill, soft soils, and bedrock vary significantly across the West building footprint. We expect the total pile lengths will vary from 15 to 40 feet in length.

We also recommend that the new floor slab be designed as structural floor slab supported by piles. Pile recommendations are discussed below.

5.1.1 Drilled-in Micropiles

A micropile system that capable of supporting an allowable axial compressive load of 45 tons is plausible for this site. For this project, steel pipe casing should have a minimum nominal diameter of eight (8) inches and a wall thickness of at least 0.375 inches. The micropiles shall be filled with cement grout having a minimum 28-day compressive strength of at least 5,000 psi. The grout mix shall be designed and proportioned so as to produce a pumpable mixture. Center to center spacing shall be at least three times the outside diameter of the steel casing but not less than 30 inches.

The project structural engineer shall determine the number of piles required and their locations. The micropiles shall be designed by a micropile contractor to meet the specified loading conditions as shown on the structural drawings. The piles must also be designed and installed in accordance with the New York State Building Code (refer to Section BC 1810 – Deep Foundations and Section BC 1810.3.10 – Micropiles).

The piles must extend through the existing fill and develop their load carrying capacity with a pressure grouted bond zone formed entirely in the underlying silty sand with gravel (glacial till), weathered rock or bedrock (Stratum 4, 5, or 6). Estimated bond lengths for a 45-ton allowable capacity micropiles can be found in Table 2 below. In addition, the piles must be cased or have an unbonded zone that extends to a sufficient depth below the existing fill and soft slit and clays or approximately 10 to 20 feet below the existing ground surface. The minimum unbonded or cased length of the pile shall be 10-feet.

Based on the provided grading plan, we understand that fills ranging up to approximately 5-feet will be required in the southern portion of the site. The placement of fill in and around the proposed building area can trigger the settlement of the existing fill and soft clay and silt soils. The soil movement around the piles will cause a negative skin friction (downdrag) on the piles, thereby reducing the net allowable pile capacity of the piles. For this project, we estimate that the downdrag force will be on the order of about five (5) ton per pile. Therefore, the allowable (working) pile capacity shall be 40 tons for the steel pipe piles.

Table 2 – Summary of Pile Capacities and Bond Lengths

Description	Value
Pile Design Capacity	45 tons
Downdrag Load	5 ton
Pile Working Capacity	40 tons
Estimated Length of Casing*	10 to 20 feet
Estimated Bond Length	20 to 25 feet

(*) – Depth below existing site grades

Reinforcing steel extending to the bond zone shall be placed in the casing to the bottom of the bond zone prior to placing grout. The full length of the micropile shall contain either a steel pipe and/or steel reinforcement. Reinforcement steel shall be in accordance with ASTM A 615 Grade 60 or 75 or ASTM A 722 Grade 150. Preliminarily, we anticipate that the core reinforcement steel will consist of a single No. 8 steel threaded bar, ASTM A615 Grade 75 (75 ksi yield strength), extending the full length of the pile. As required for structural design, steel reinforcement bars shall extend from the micropile and up into the pile cap, grade beam, and/or floor slab. The structural engineer will determine the pile to pile cap, grade beam, or slab connection.

Pile Submittals

For this project, the micropile contractor will design the individual pile elements and select the pile construction process and equipment. The micropile contractor shall submit shop drawings and design calculations to Carlin-Simpson & Associates and the project structural engineer for review and approval.

At a minimum, the contractor's submittal should include the following: pile design calculations and shop drawings for all structural steel and pile components prepared and stamped by a New York State registered Professional Engineer; a detailed description of the construction

procedure proposed, including type of equipment to be used for installing the piles; a pile location plan; the proposed grout mix design(s) including supporting laboratory test results; the procedure for placing the grout; and detailed plans and procedures for the pile load test(s), including load test apparatus set-up for the pile load testing and current calibration report for the hydraulic jack and gauges.

Micropile Load Tests and Inspection

A compressional load test will be required per the New York State Building Code (refer to Section 1810.3.3.1.2 – Load Tests) to confirm the micropile contractor's pile design. The test may be performed on either a production pile or a sacrificial pile but production piles shall not be used as reaction piles. The pile load test(s) must be performed under the full-time inspection of a Carlin-Simpson & Associates representative. Piles used for the pile load test should be installed at least one week prior to testing to allow time for the grout to obtain adequate strength for testing.

The piles shall be installed under the full-time inspection of a representative from Carlin-Simpson & Associates. At the completion of the pile installation, Carlin-Simpson & Associates will provide a letter of compliance stating that the piles have been installed in accordance with our recommendations and the project specifications, and that they are capable of supporting the design loads.

5.2 Structural Slab

The new West Building floor slab shall be designed as structural floor slab supported by pile foundation system. We understand that there is a lower-level utility room planned for the West Building. Where the building has a level that extends below grade, a minimum of 12-inches of crushed stone is required for floor slab drainage. In addition, sump pits and pumps are required for all below grade levels.

5.3 Building Foundation Walls

Foundation walls will be constructed along the west side of the West Building, the soil adjacent to the foundation walls will exert a horizontal pressure against the wall. This pressure is based on the soil density and Coefficient of Earth Pressure at Rest (k_o), which is applicable to non-yielding building walls. Foundation wall design parameters are listed in Table 3 below.

Table 3 – Foundation Wall Design Parameters

Soil Type	Value
Moist Unit Weight (γ)	130 pcf
Coefficient of Earth Pressure at Rest (k_o)	0.5
Equivalent Fluid Pressure	65 psf/ft

Where foundation walls are required, we recommend that a footing drain be placed around the exterior of the new structure to prevent water from accumulating against the

foundation wall. This drain may consist of a minimum four (4) inch diameter, rigid wall perforated PVC pipe surrounded by at least 12 inches of 3/4-inch clean crushed stone. The stone shall be wrapped in a geotextile fabric, such as Mirafi 140N or equivalent. The foundation drainpipe should be extended to daylight or to the stormwater collection system. The outside face of the foundation wall, where it extends below grade, must be waterproofed.

Outside the structure, the backfill placed adjacent to the foundation walls and above the footing drain shall consist of either clean crushed stone or an imported sand and gravel mixture containing less than 10% by weight passing a No. 200 sieve and placed in layers not exceeding one (1) foot in thickness. This clean sand and gravel or crushed stone backfill shall extend a minimum of one (1) foot horizontally from the back face of the foundation walls, and shall extend vertically up the wall face to two (2) feet below the finished ground surface elevation. Where retained soils are not covered by concrete or pavement and are exposed to weather, the top two (2) feet of backfill should consist of low permeable soil. This will help to minimize water infiltration behind the wall. Surface grades should be sloped away from the building to prevent water from accumulating adjacent to the wall.

Beyond this point, the foundation walls should be backfilled with suitable soil placed in layers up to one (1) foot in thickness. The suitability of the on-site soil for reuse as compacted fill is discussed in a separate section below. The new fill should be compacted with a vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600) to at least 92% of its Maximum Modified Dry Density (ASTM D-1557). Heavy equipment should not be operated near the building walls as damage to the walls could occur.

6.0 EAST BUILDING RECOMMENDATIONS

The existing site grades in proposed East Building range from approximately elevation +44.0 to +36.0. With a proposed finished floor elevation of +37.75, cuts of up to 6 feet are anticipated in the East Building footprint. Minor fills of up to 1.5 feet are anticipated in the western portion of the East Building footprint.

Existing fill was encountered in three of the four borings performed for the East Building extending to depths ranging from 3'0" to 7'0" below the existing ground surface (approximate elevations +39.0 to +30.0). The depth of the existing fill is variable and may be deeper in unexplored areas of the site. The existing fill is not an acceptable bearing material for the new building foundations or floor slab. The consistency and density of the fill are not predictable. Certain areas may contain clean dense soils while other areas may contain loose material, void spaces, and/or debris, as shown by the boring data. The existing fill material creates the possibility of intolerable differential settlements under loading.

We anticipate that some of the existing fill will be removed from the East Building footprint during excavation to the planned subgrade elevation. Where existing fill is still present at the East Building subgrade elevation, it must be completely removed from the East Building area and replaced with new engineer approved compacted fill as described below in Section 6.1.

Provided the building subgrade is prepared as outlined in this report, the foundations for the East Building may be designed as shallow spread footings bearing on virgin soil or new engineer approved compacted fill. Recommendations for preparation of the East building area is provided in Section 6.1. Foundation recommendations for the new East Building are provided in Section 6.2 below. In addition, the proposed East Building floor slab may be designed as slab on grade bearing on new engineer-approved compacted, virgin soils, or bedrock. Floor slab recommendations can be found in Section 6.3 below.

6.1 East Building Area Preparation

In order to prepare the site for construction, all surface materials such as vegetation and topsoil shall be removed from the planned building area, extending at least ten (10) feet beyond the new construction limits, where practical.

As part of the site development, the existing structures, on the site will be demolished. All debris resulting from the demolition of these structures must be completely removed from the new construction areas, extending at least ten (10) feet beyond the new building limits, where practical. This shall include the complete removal of all foundations, walls, floor slabs, utilities, pavement, and miscellaneous debris. Where the removal of existing structures or associated materials extends below the planned structures, the resulting excavations shall be backfilled with new compacted fill as described below.

Existing utilities, where they are encountered within the planned building area, should be either abandoned or rerouted around the new structure. Once the utility has been rerouted or abandoned, the section of pipe and any associated structure within the building area should be completely removed. The removal of the pipe and structure must also include any loose fill around the pipe or structure. After the pipe, associated structure, and associated loose backfill have been removed, the resulting excavation shall be backfilled with new controlled fill as described below, “Installation of New Structural Fill”.

Removal of Existing Fill

Existing fill was encountered in three of the four borings performed for the East Building extending to depths ranging from 3’0” to 7’0” below the existing ground surface (approximate elevations +39.0 to +30.0). We anticipate that some of the existing fill will be removed from the East Building footprint during excavation to the planned subgrade elevation. As discussed above, the existing fill is not a suitable bearing material. Where existing fill is still present at the building subgrade elevation, it shall be completely removed from the building area and replaced with new engineered approved compacted fill as described below.

The excavation shall extend through the existing fill, down to the virgin soil. At the bottom of the excavation, the removal of the unsuitable material shall extend horizontally beyond the building limits a minimum distance of 1’0” plus a distance equal to the depth of the excavation below the planned foundation bearing elevation. For example, if the removal of the existing fill extends vertically 3’0” below the planned foundation bearing elevation, the

excavation must extend horizontally a minimum of 4'0" (1'0" plus 3'0") beyond the new building limits at that location.

The removal of the existing fill from the proposed building area shall be performed under the full time inspection of Carlin-Simpson & Associates. The on-site representative from Carlin-Simpson & Associates shall direct the contractor during this operation to ensure that all of the unsuitable material has been removed from the proposed building areas.

During the removal of the unsuitable material, the contractor should segregate the potentially re-usable existing soil/fill material from the non-reusable fill (i.e. debris and topsoil). The on-site representative from Carlin-Simpson & Associates shall evaluate the suitability of the excavated materials for use as compacted fill during the excavation and prior to its re-use. Potentially usable fill should be stockpiled and covered with tarps or plastic sheeting for protection from excess moisture. Any fill material that is or becomes wet must be dried prior to its re-use.

Densification of Subgrade Soils (Proofrolling)

After the demolition of the existing structures, removal of existing fill (where required), and the surface materials are removed as outlined above, the exposed subgrade shall be proofrolled with at least five (5) passes of a large vibratory drum roller (i.e. Dynapac CA 250 or equivalent). The proofrolling is necessary to densify the underlying soils. The proofrolling must be performed prior to the excavation for new foundations and the placement of new fill in the building areas. In areas where the existing subgrade is to be cut, the proofrolling of the subgrade in those areas should be performed once the proposed subgrade is achieved.

A representative from Carlin-Simpson & Associates shall observe the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft soil shall be removed and replaced with new compacted fill. The Carlin-Simpson & Associates representative shall be responsible for determining what material, if any, is to be removed and will direct the Contractor during this operation.

Handling Water and Wet Subgrades in the Site Excavations

Groundwater was encountered at the site at depths ranging from 4'10" to 21'0" beneath the existing ground surface. These depths correlate to groundwater levels ranging from approximately elevation +36.0 to +21.5. Based on the boring observations and the site conditions, groundwater may be encountered in the site excavations. Proper groundwater control measures (i.e. sumps and pumps) will be required in the event that water is encountered in the site excavations.

If required, temporary groundwater control measures shall consist of one (1) or more sumps and pumps. The sumps shall consist of a perforated pipe at least eight (8) inches in diameter, surrounded by crushed stone and filter fabric. The sump pits must be installed just outside the planned excavation area and at least two (2) feet below the lowest anticipated subgrade elevation. The sumps and pumps must be set and in operation prior to excavating below

the water table. The pumps shall be used to temporarily lower the surrounding groundwater level and keep the building excavation relatively dry.

In the event that the exposed building subgrade at the bottom of the excavation is wet, stabilizing the subgrade surface with geotextile fabric and crushed stone may be required prior to the placement of new compacted fill. Carlin-Simpson & Associates will determine this during construction as the conditions are exposed. Where needed, the subgrade should be stabilized with geotextile fabric, such as Mirafi 500X or equivalent, and 3/4-inch clean crushed stone.

To prepare the subgrade surface for the geotextile fabric and crushed stone, all surface water, loose soil, mud, topsoil and organic material must be removed from the area. After the subgrade is prepared, a layer of geotextile fabric (Mirafi 500X or equivalent) shall be laid out on the subgrade surface. Adjacent layers of geotextile fabric should be overlapped a minimum of six (6) inches. The excavation shall then be filled with 12 to 18 inches of 3/4-inch clean crushed stone. The crushed stone shall be placed in maximum 12-inch layers and compacted by several passes of a small vibratory drum roller. The crushed stone can then be used to support the proposed building foundations and floor slab. The area may also be brought to planned subgrade elevation with compacted backfill. If this is the case, the stone should be covered with a layer of geotextile fabric (Mirafi 500X or equivalent). The area may then be backfilled with new fill compacted to 95% of its Maximum Modified Dry Density (ASTM D1557) as described above.

Installation of New Structural Fill

New fill required to achieve final grades shall consist of either engineer-approved on-site soil or imported sand and gravel. The new fill shall be placed in layers not exceeding one (1) foot in thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved the Carlin-Simpson & Associates field representative prior to placing subsequent layers. The suitability of the excavated soil for reuse as compacted structural fill is discussed in Section 7.7 below. If imported structural fill will be required during construction, the imported structural fill shall meet the following specified gradation:

US Standard Sieve Size	Percent Finer By Weight
3 inch	100
No. 4	30-80
No. 40	10-50
No. 200	0-20

6.2 Eastern Building - Foundation Recommendations

Once the planned building area has been prepared as described in Section 6.1 above, the new foundations may be constructed on the virgin site soils or new compacted fill. The new building foundations may be designed as shallow spread footings using net design bearing pressures as listed in the Table 4 below. All of the exterior footings shall bear at the minimum depth listed below for protection from frost. Interior column footings may bear on the virgin soil

or new structural fill just below the floor slab provided the structure is heated during winter. The footings shall have minimum dimensions as listed below.

Table 4 – Building Foundation Design Parameters

Description	Value
Foundation Bearing Material	Virgin Soil or New Compacted Fill
Net Design Bearing Pressure	4,000 psf
Minimum Frost Depth	42 inches
Minimum Column Dimension	30 inches
Minimum Wall Dimension	18 inches

The excavations for the new foundations shall be performed under the full-time inspection of Carlin-Simpson & Associates. The on-site representative shall confirm that the foundation bearing material is capable of supporting the design bearing pressure.

Prior to the placement of formwork, reinforcement steel, and concrete, the bearing subgrade soil shall be cleaned of all loose soil and where soil is encountered at the subgrade elevation, it shall be compacted with several passes of a small vibratory drum trench compactor (i.e. Wacker Model RT560), a heavy vibratory plate tamper (i.e. Wacker BPU 3545A or equivalent), or "jumping jack" style tamper (i.e. Wacker Model BS 600). This must be performed under the observation of Carlin-Simpson & Associates. If instability is observed during the compaction of the bearing subgrade, the soft soil shall be removed and replaced with new compacted fill.

6.3 East Building – Floor Slab on Grade

The floor slab may be designed as a slab on grade bearing on densified virgin soil or on new engineer-approved structural fill. Floor slab design parameters are provided in Table 5 below. A minimum of 6 inches of 3/4-inch clean crushed stone is recommended beneath the concrete slab for additional support and drainage. In the event that the new East Building has a level that extends below grade, a minimum of 12-inches of crushed stone is required for floor slab support and drainage. In addition, sump pits and pumps are required for all below grade levels.

Table 5 – East Building Floor Slab Design Parameters

Description	Value
Slab Subgrade Material	Densified Virgin Soil or New Structural Fill
Modulus of Subgrade Reaction (k)	200 pci
Crushed Stone Cushion Thickness	6 inches

New fill for the floor slab shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% material by weight passing a No. 200 sieve. The new fill shall be placed in layers not exceeding one (1) foot in loose thickness and

each layer shall be compacted to at least 92% of its Maximum Modified Dry Density (ASTM D1557). Fill layers shall be compacted, tested, and approved before placing subsequent layers.

6.4 East Building Settlement

The East Building loads were obtained from a drawing prepared by Aryeh Siegel, Architect and A Degree Of Freedom, titled "Foundation Plan – Live Work Alternative", drawing number SSK-1, dated 4 February 2022. The drawing indicated that the proposed column loads vary from 14 kips to 105 kips and all column footings are 5-foot by 5-foot. It was also indicated that the spread footing wall loads vary from 4.4 kips per foot to 6.5 kips per foot, and that all spread footings are 2-feet in width.

The planned 5-foot by 5-foot, 105-kip load column footing located in the northeast corner of the building exceeds the recommended 4,000 psf bearing load. Therefore, a 6-foot by 6-foot footing was used for the settlement calculation, the remainder of the footings were computed using the indicated 5-foot by 5-foot footing size.

The settlement calculations indicate that the settlement of an individual footing placed on natural soils or new compacted fill approved by Carlin-Simpson & Associates and constructed in accordance with the recommendations outlined in this report, will not exceed a total settlement of 1-inch. Maximum differential settlement of the East Building between adjacent columns or load bearing walls is expected to be ½-inch or less.

The computed East Building column footing settlement vary from 0.5-inch to 1-inch. The 1-inch settlement occurs at the heavier loaded column footings. We anticipate that the settlement of the pile supported West Building will be virtually zero. ***It should be noted by the structural engineer that differential settlement between the pile supported West Building and the shallow spread footing East Building will be greater than 0.5-inches but less than 1-inch.***

The above settlement values are based on our engineering experience with similar soil conditions and the anticipated structural loading. It is critical that Carlin-Simpson & Associates be retained to observe the foundation bearing surfaces and to confirm the recommended bearing pressures during construction.

7.0 SITE EVALUATION

Our recommendations for the proposed site development including site seismic design considerations, new stormwater management system, new retaining walls, new underground utilities, new pavement, temporary construction excavations, and the suitability of the existing site soils for reuse as structural fill are provided below. A summary of the subsurface conditions encountered throughout the site are provided in Table 1 above.

New fill to raise site grades will produce settlements of the underlying soft Sandy Clays and Silts on the order of 1 to 2 inches. New fill should be placed early in the project schedule to mitigate long term settlement.

7.1 Seismic Design Considerations

From site-specific test boring data, the Site Class was determined from New York State Building Code Section 1613.2.2. The site-specific data used to determine the Site Class typically includes soil test borings to determine Standard Penetration resistances (N-values). Based on estimated average N-values in the upper 100 feet of soil profile, the site can be classified as Site Class D – Stiff Soil Profile.

New structures should be designed to resist stress produced by lateral forces computed in accordance with Section 1613 of the International Building Code – New York State Edition. The values in Table 6 shall be used for this project.

Table 6 – Seismic Design Values

Description	Value
Mapped Spectral Response Acceleration for Short Periods, [Fig 1613.2.1 (1)]	S_S=0.233g
Mapped Spectral Response Acceleration at 1-Second Period, [Fig 1613.2.1 (2)]	S_1=0.057g
Site Coefficient [Table 1613.2.3 (1)]	F_a= 1.60
Site Coefficient [Table 1613.2.3 (2)]	F_v= 2.40
Max Considered Earthquake Spectral Response for Short Periods [Eq 16-36]	S_{MS}=0.373g
Max Considered Earthquake Spectral Response at 1-Second Period [Eq 16-37]	S_{M1}=0.137g
Design Spectral Response Acceleration for Short Periods [Eq 16-38]	S_{DS}=0.249g
Design Spectral Response Acceleration for 1-Second Period [Eq 16-39]	S_{D1}=0.091g

Since the proposed buildings are multifamily buildings, we expect that the structure has a Risk Category of III. Based on this assumption, the Seismic Design Category (SDC) is B. The Risk Category and SDC should be verified by the project structural engineer. In the event that the structure has a different Risk Category, the SDC should be updated in accordance with Section 1613 of the New York State Building Code.

Liquefaction Potential

Liquefaction is a phenomenon in which saturated or partially saturated soils lose strength and stiffness when subjected to earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact and collapse of the soil skeleton which causes stresses in the soil to be completely transferred to the pore water fluid. Liquefaction is most often observed in saturated, loose sandy soils at depths shallower than 50 feet below the ground surface. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

The liquefaction potential was evaluated with the available data, including the SPT blow counts, soil classification, total unit weight, soil fines content, depth to groundwater, and depth to bedrock. We have determined the potential for liquefaction is very low for the site and is unlikely to occur during a seismic event.

7.2 Stormwater Management System

It is our understanding that a new stormwater management system is planned as part of the proposed site developments. Infiltration testing was planned as a part of this study but could not be performed due to the presence of existing fill and shallow groundwater in the area of the proposed system. Additional testing must be performed to verify the infiltration characteristics of the site soils once the existing building in the area of the proposed system is demolished. A summary of the groundwater conditions encountered at the site can be found in Table 1 above.

Should stormwater management areas be planned in other portions of the property, they should be evaluated on a case-by-case basis. The stormwater management systems must be designed in accordance with the applicable New York State Department of Environmental Conservation (NYSDEC) regulations and the New York State Stormwater Management Design Manual (January 2015). The testing requirements are outlined in Appendix D of the manual.

7.3 Site Retaining Walls

We understand that the proposed construction will include new retaining walls. There are five walls in total. Each wall location is highlighted on the attached Boring Location Plan (FIG-1).

One wall (Wall #1) is located north of the proposed West Building extending approximately 110 feet along the western property line. This wall turns east for approximately 80 feet to accommodate a driveway to the north. This wall is a cut wall where site grades are being lowered. The wall will range in height from 1 foot on the east to 13 feet near the building.

The second proposed retaining wall (Wall #2) is located approximately 10-feet north of the West Building. This wall is approximately 60-feet in length and is perpendicular the western property retaining wall. This wall will be approximately 6-feet in height and will also be a cut wall.

The third proposed retaining wall (Wall #3) begins in the northwestern corner of the property and continues easterly along the northern property line for approximately 100-feet. The wall then turns northerly for an additional 80-feet. This wall ranges from about 5 to 7 feet in height. This wall will also be a cut wall.

The fourth retaining wall (Wall #4) begins approximately 10-feet north of the northeast corner of the East Building and continues northerly for approximately 185-feet running parallel to the eastern property line. Wall #4 ranges in height from about 4 to 8 feet. This planned retaining wall is also a cut wall where site grades are being lowered.

The fifth retaining wall (Wall #5) is located on the northern and eastern property lines near the north parking area in the northeast portion of the site. This wall is approximately 145-feet in length and ranges from 5 to 8 feet in height. This wall is also a cut wall where site grades are being lowered.

Wall #1 is in close proximity to the property line. A soldier pile with concrete lagging wall is a suitable for Wall #1, which is a "cut wall" condition. The soldier pile with concrete lagging wall system is a top-down construction wall and would not require a support of excavation (SOE) system to construct. Soldier pile with concrete lagging wall recommendations are discussed below.

Wall #3, Wall #4, and Wall #5 are also in close proximity to the property lines. While a soldier pile with concrete lagging wall is a suitable alternative for Wall #3, Wall #4, and Wall #5, a gravity segmental block wall (i.e., redirock or equivalent) is also a suitable option for these walls. We understand that Wall #3 and Wall #4 have temporary construction easements. A temporary construction easement may also be required for the construction Wall #5, in order to properly slope back the excavation for the retaining wall.

Wall #2 is not in close proximity to the property line, therefore a mechanically stabilized earth (MSE) wall is a suitable alternative for this wall. The MSE wall consists of segmental concrete block units with geogrid reinforcement. In this case, the MSE wall will require additional excavation beyond the wall area in order to install the geogrid reinforcement. MSE wall system is discussed below. A gravity segmental block wall (i.e., redirock or equivalent) or a soldier pile with concrete lagging would also be suitable alternatives for Wall #2.

The following retaining wall recommendations are preliminary and meant to give guidance during the design process. Once the types of walls have been determined, additional recommendations can be provided.

Soldier Pile with Concrete Lagging Retaining Wall

Drilled soldier pile with concrete lagging walls could be used for this project. For this type of wall, the soldier piles would consist of either "H" beams or micropiles spaced about 5 to 8 feet apart. This type of wall is constructed using a top-down construction sequence, where the ground is excavated in stages (or lifts) of limited height. As the ground is excavated, precast concrete panels would then be installed between the H-piles or between "T" sections welded to the mircopiles.

It may be feasible to cantilever the wall up to about 10 to 12-feet in height. The plans indicate that the proposed wall in the northwest portion of the site has a planned height up to 13-feet

The pile type, pile spacing, and required pile lengths for the wall system will be determined by the Wall Design Engineer. Embedment depth will be determined based on internal wall stability and global slope stability. Where applicable, additional surcharge loads, such as existing structures, vehicle loads, snow loads, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design. Once the wall type has been decided further recommendation can be provided. Carlin-Simpson & Associates can prepare a wall design as an additional service upon request.

The pile type, pile spacing, and required pile lengths for the wall system will be determined by the Wall Design Engineer. Embedment depth will be determined based on internal wall stability and global slope stability. The recommended design parameters for the different soil and rock layers are summarized in Table 7 below. Where applicable, additional surcharge loads, such as existing structures, vehicle loads, snow loads, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design.

Table 7 – Soldier Pile Design Parameters

Stratum	Description	Moist Unit Wt (pcf)	Friction Angle (ϕ) (deg)	Cohesion (c) (psf)
2	Existing Fill	130	28-31	0
3	Sandy Clay and Silt	125	25-28	250
4	Silty Sand with Gravel	134	30-33	0
5	Completely Weathered Shale	140	36-38	0
6	Highly Weathered Shale	145	38-40	0

A drain will be required behind the new wall to prevent water from accumulating against the wall. The drain should consist of a 4-inch diameter perforated PVC pipe, surrounded with 3/4-inch clean crushed stone and wrapped in a geotextile fabric, Mirafi 140N or equivalent. Geocomposite drain strips could also be considered as discussed below for the shotcrete wall. The drain should be installed to collect the water from behind the wall and be either connected into the site stormwater system or extended to daylight beyond the wall area. Drainage aggregate shall extend horizontally a minimum of 12 inches from the back of the wall and shall extend vertically to at least 3 feet below final grade behind the wall.

In the event that backfill is required, the retaining walls shall be backfilled with suitable soil placed in layers up to 12 inches in thickness. The new fill shall be compacted with small hand guided vibratory compactors to a minimum density of 92% of its Maximum Modified Dry Density (ASTM D1557). Heavy equipment should not be operated near the walls as damage to the walls could occur.

Segmental Gravity Block and MSE Retaining Walls

In order to prepare the retaining wall areas for construction, all surface materials including asphalt, concrete, topsoil, and surface vegetation must be completely removed from the new retaining wall areas. The removal of the surface materials shall extend at least 5 feet beyond the proposed construction limits, where practical.

Partial Removal Of Existing Fill

The existing fill is not suitable for support of the proposed retaining wall in its current state. Existing fill was encountered throughout the site, where existing fill is encountered at the retaining wall base subgrade elevation it shall be improved as described below.

In order to provide a stable subgrade for support of the new retaining wall, the retaining wall footprint shall be excavated vertically to a depth of 2 feet below the retaining wall footings/base subgrade elevation. The excavation shall also extend horizontally beyond the foundation/base limits a minimum distance of one (1) foot plus a distance equal to the depth of the excavation below the planned foundation bearing elevation. For example, the removal of the existing fill will extend vertically two (2) feet below the planned foundation bearing elevation, the excavation must therefore extend horizontally a minimum of three (3) feet (1 foot plus 2 feet) beyond the new foundation/base limit. If geogrid is being utilized for the new wall, the foundation/ base area shall also include the geogrid reinforcement zone behind the wall. Thus, the horizontal excavation for a MSE wall with geogrid will extend a minimum of 3-feet beyond the extend of the geogrid reinforcement. The excavations for the new retaining wall subgrade shall be performed under the full time inspection of Carlin-Simpson & Associates. Temporary construction easements may be needed to accommodate the extent of the horizontal excavation.

After the existing fill has been partially removed and prior to the placement of new structural fill, the exposed subgrade must be graded level and proofrolled by several passes of a vibratory drum trench compactor (i.e. Wacker Model RT560) or a vibratory drum roller (i.e. Wacker Model RD-25 Roller). The proofrolling operation is necessary to densify the underlying soils. Carlin-Simpson & Associates shall observe the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft soil shall be removed and replaced with new compacted fill. Carlin-Simpson & Associates shall be responsible for determining what material, if any, is to be removed and will direct the contractor during this operation. The proofrolling may be eliminated, if in the opinion of the geotechnical engineer, the proofrolling will cause pumping or otherwise disturb the stability of the subgrade.

Once the subgrade has been approved by a Carlin-Simpson & Associates representative, it shall be backfilled with engineer-approved structural fill to the planned subgrade elevation. The new fill shall be placed in layers not exceeding one (1) foot in thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved by the Carlin-Simpson & Associates field representative prior to placing subsequent layers.

Retaining Wall Subgrade Densification

In areas where existing fill is not encountered and once the surface materials have been removed. The exposed subgrade at the bottom of the excavation shall then be compacted by several passes with a vibratory drum trench compactor (i.e. Wacker Model RT560) or a vibratory drum roller (i.e. Wacker Model RD-25 Roller). The densification of the subgrade shall be inspected by a representative from Carlin-Simpson & Associates. In the event that soft or unsuitable soil is identified during the densification, the unsuitable material shall be removed, as directed by the Carlin-Simpson & Associates representative, and replaced with new compacted fill.

Once the subgrade has been approved by Carlin-Simpson & Associates, the excavation can be backfilled to the planned subgrade elevation with new structural fill. New compacted fill shall consist of either suitable on-site soil or imported sand and gravel. Imported fill shall contain

less than 20% by weight passing the No. 200 sieve. The fill shall be placed in 12 inch thick loose layers and compacted to at least 95% of its Maximum Modified Dry Density (ASTM D1557). Each layer must be compacted, tested, and approved before placing subsequent layers. The footings or base of the walls can be designed using a net design bearing pressure as outlined in Table 9 below.

Retaining Wall Drainage

Drains must be provided behind the retaining wall to prevent the buildup of hydrostatic pressure against the wall. The wall drain should consist of a 4-inch perforated pipe surrounded by 12 inches of clean 3/4-inch crushed stone immediately behind the wall block units. The pipe and crushed stone shall be wrapped in a geotextile filter fabric (Mirafi 140N or equivalent). The drain pipe for the MSE wall should be installed behind the base or foundation of the retaining wall to collect the water behind the wall and be connected into the site stormwater collection system or extended to daylight beyond the wall area.

Behind the wall, the backfill placed adjacent to the wall and above the drain shall consist of freely draining aggregate meeting the requirements of AASHTO No. 57 or 67 Aggregate. This drainage fill shall extend a horizontally a minimum of 12 inches from the back of the wall and shall extend vertically to at least 2 feet below final grade behind the wall. The crushed stone shall be separated from the surrounding soil using a geotextile filter fabric (Mirafi 140N or equivalent).

Retaining Wall Backfill

Fill material used as backfill beyond the drainage zone shall consist of suitable on-site soil approved by Carlin-Simpson & Associates or an imported sand and gravel mixture containing less than 20% material by weight passing a No. 200 sieve. Backfill placed behind the retaining wall shall be placed in 12-inch loose layers. Each layer shall be compacted using a hand guided mechanical tamper to 92% of its Maximum Modified Dry Density (ASTM D1557). Excessive compaction adjacent to the retaining wall must be avoided. Layers shall be tested and approved before placing subsequent layers. Large compaction equipment must not be used within 10 feet of the new wall to prevent potential damage to the wall.

For a MSE Retaining wall, the fill material used to construct the reinforced soil zone shall consist of one of the following soil types according to their USCS designations (GP, GW, SW, SP, SM). The fill material must also meet the gradation in Table 8 below. The material passing the No. 200 sieve must be either non-plastic or of low plasticity. The maximum particle size shall be limited to 1.5 inches. Materials outside of these criteria, including on-site soils, require approval of the Wall Design Engineer and Carlin-Simpson & Associates.

Table 8 – Gradation Requirements for MSE Wall Reinforcement Zone

Sieve Size	Percent Passing
1.5 inch	100
3/4 inch	75-100
No. 4	20-90
No. 40	0-60
No. 200	0-30

The contractor shall be responsible for providing soil samples and completing all necessary laboratory testing, as required by Carlin-Simpson & Associates, to determine soil design parameters for any imported fill used in the construction of the walls. The wall design engineer must approve the fill to be utilized in the reinforced zone.

Wall Design Considerations

Once the retaining wall subgrade has been prepared as described in Section 4.1, the retaining wall base shall bear on the improved subgrade or virgin soil.

The wall base must be adequately embedded for internal and global stability. In addition, the soil adjacent to the site retaining wall will exert a horizontal pressure against the wall. This pressure is based on the soil density and the Coefficient of Active Earth Pressure (k_a). The values listed in Table 9 below shall be used for design of the new retaining wall.

Table 9 – MSE & Segmental Gravity Block Retaining Wall Design Parameters

Description	Value
Foundation Bearing Material	Improved Subgrade or Virgin Soil
Net Design Bearing Pressure	3,000 psf
Backfill Moist Unit Weight	130 pcf
Backfill Friction Angle	30 degrees
Cohesion	0 psf
Active Earth Pressure Coefficient (k_a) *Level Backslope Behind Wall* *2.5H:1V Backslope Behind Wall*	 0.33 0.43
Equivalent Fluid Pressure (EFP) *Level Backslope Behind Wall* *2.5H:1V Backslope Behind Wall*	 42.9 pcf 55.9 pcf
Friction Coefficient	0.45
Frost Depth	42 inches

Where applicable, additional surcharge loads, such as driveways, parking areas, structures, construction equipment, temporary materials storage, etc. must also be incorporated into the wall design. In Table 9 above, the active earth pressure coefficient (k_a) has been provided for both a level back slope and a 2.5H:1V Backslope behind the wall. If the back slope is a different slope the k_a must be recalculated accordingly.

The Wall Design Engineer shall prepare a complete wall design (i.e. drawings, specifications, and calculations), which shall be designed and sealed by a Professional Engineer registered in the State of New York and submitted to Carlin-Simpson & Associates for review. MSE retaining walls shall be designed in accordance with the recommendations of the NCMA Design Manual for Segmental Retaining Walls (Current Edition) and in accordance with AASHTO standards. Carlin-Simpson & Associates can prepare an MSE wall design as an additional service upon request.

The design shall consider the internal stability of the reinforced soil mass and shall be in completed accordance with acceptable engineering practice. In addition, external stability, including sliding, overturning, and bearing, as well as global stability shall be evaluated in accordance with acceptable engineering practice.

The wall design engineer shall be responsible for determining the required geogrid reinforcement lengths and elevations based on his stability analysis (including global stability) and the properties of the geogrid reinforcement used in the design.

7.4 Utilities

New utilities may bear in the densified existing fill and virgin site soils or new compacted fill. The bottom of all trenches should be excavated clean and shaped so a hard bottom is provided for the pipe support. If any soft or unsuitable soil conditions are encountered during construction, the unsuitable materials must be removed and replaced with new compacted fill.

For areas where existing fill is encountered within the utility excavations, the subgrade at bottom of the utility excavation shall be compacted in place with a vibratory drum trench compactor or “jumping jack” style tamper. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. If instability is observed, portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

Where the building is supported by a deep foundation system, utilities that connect to pile supported building should be designed with flexible connections. Since post construction settlement may continue for several years, the surrounding ground surface will continue to settle while the new pile supported building virtually will not. The flexible connections are recommended so that the pipes will not become damaged due to differential settlement. In addition, utilities beneath the floor slab must be attached to the structural floor slab with hangers.

In the event that the trench bottom becomes soft due to the inflow of surface or trapped water, the soft soil shall be removed and the excavation filled with a minimum of six (6) inches of 3/4-inch clean crushed stone to provide a firm base for support of the pipe. Sump pits and pumps should be adequate to keep the excavations dry.

Trench hammering or blasting may be required to install the new utilities in portions of the site where weathered rock is encountered above the planned utility invert elevation. Where rock is encountered in the utility excavations, it must be removed to at least six (6) inches below

planned pipe invert. The over-excavated six (6) inches shall then be filled with new sandy fill and compacted to at least 92% of its Maximum Modified Dry Density (ASTM D-1557) to act as a cushion on the rock.

After the utility is installed, the trench must be backfilled with compacted fill. The fill shall consist of suitable on-site soil or imported sand and gravel. Imported fill shall contain less than 20% by weight passing a No. 200 sieve. Controlled compacted fill shall be placed in one (1) foot loose layers and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557). The backfill must be free of topsoil, debris, and large boulders or rock fragments.

7.5 Pavement

We understand that the proposed construction will also include new asphalt paved parking areas and driveways. We expect that varying cuts and fills will be required to achieve the planned subgrade elevations in the new pavement areas. Densified existing fill or virgin site soils, and new compacted fill may be used to support the pavement.

To prepare the new pavement areas, the existing surface materials (i.e. topsoil, vegetation, etc.) must be removed from the planned pavement areas. In the proposed pavement areas, the existing structures and debris resulting from the demolition of these structures must be completely removed from the new pavement area, extending at least five (5) feet beyond the new paving limits, where practical. The excavations resulting from the removal of existing structures shall be backfilled using controlled compacted fill. New fill shall consist of either suitable on-site soil or imported sand and gravel placed in one (1) foot loose layers and compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557).

Existing fill was present throughout the site to depths ranging from 2’0” to 14’0” below the existing ground surface. Areas where existing fill is encountered shall be compacted in place. Carlin-Simpson & Associates must evaluate these areas for the presence of soft or unsuitable material within the existing fill matrix. Portions of this fill may have to be removed and replaced with new compacted fill. Carlin-Simpson & Associates will determine this during construction.

After all surface materials have been removed, the area can be excavated to the planned subgrade elevation. Where soil is encountered at the subgrade elevation, the subgrade shall be proofrolled with a large vibratory drum roller (i.e. Dynapac 250 or equivalent) to densify the underlying soils. The on-site representative from Carlin-Simpson & Associates shall witness the proofrolling operation. If any excessive movement is noted during the proofrolling, the soft or unsuitable soil shall be removed and replaced with new compacted fill.

Where new fill is required to achieve final grades, it shall consist of either suitable on-site soil or imported sand and gravel. Imported sand and gravel shall contain less than 20% by weight passing a No. 200 sieve. New fill shall be placed in layers not exceeding one (1) foot in loose thickness and each layer shall be compacted to at least 95% of its Maximum Modified Dry Density (ASTM D-1557). After the planned subgrade has been proofrolled and new compacted

fill has been placed as required, the new pavement subbase may be placed on the existing site soils, bedrock, and new compacted fill.

Asphalt Pavement Section

The new pavement subbase may be placed on engineer-approved densified existing fill, virgin soil, or new compacted fill. Dense graded aggregate (DGA) is recommended for the subbase layer for drainage and additional pavement support. We recommend that the following pavement section be used for the parking lots and driveways. This pavement section is subject to local government approval.

Light Duty Areas – Parking Lots

1 ½"	Asphalt Top Course	NYSDOT, Type 6F
2 ½"	Asphalt Base Course	NYSDOT, Type 3
8"	Stone Subbase (DGA)	NYSDOT, Type 1
	Approved Compacted Subgrade (Minimum CBR = 10)	

Medium Duty Areas – Driveways

2"	Asphalt Top Course	NYSDOT, Type 6F
3"	Asphalt Base Course	NYSDOT, Type 3
8"	Stone Subbase (DGA)	NYSDOT, Type 1
	Approved Compacted Subgrade (Minimum CBR = 10)	

Rigid (Concrete) Pavement

We understand that concrete pavement will be used in portions of the site. Typically, a five (5) inch thick, 4,000-psi concrete section supported on six (6) inches of dense graded aggregate (DGA) base and an approved compacted subgrade is adequate for passenger vehicle traffic and occasional truck traffic.

5.5"	Concrete Section	4,000 psi
6"	Gravel Subbase Course	NYSDOT, Type 4
	Approved Compacted Subgrade (Minimum CBR = 10)	

The rigid concrete pavement should be reinforced with welded wire fabric or reinforcing steel bars for crack control. Contraction joints should also be provided with a maximum spacing of 10 feet. The project structural engineer or the site engineer shall determine the type, size, and spacing of the reinforcement based on the anticipated loading.

Based on the boring data and the laboratory test results, we anticipate that the densified site soils and new compacted fill will provide a CBR value that is equal to or greater than 10, which can adequately support the above pavement sections.

7.6 Temporary Construction Excavations and Excavation Protection

Temporary construction excavations shall be conducted in accordance with the most recent OSHA guidelines or applicable federal, state or local codes. A qualified person should evaluate the excavations at the time of construction to determine the appropriate soil or rock type and the allowable slope configuration. Based on the boring data, we believe the site soil and bedrock would have the following classifications as defined by the OSHA guidelines.

Soil/ Rock Type	Possible Classification	Maximum Slope or Bench
Existing Fill	"C"	1½H:1V
Virgin Soil	"B" or "C"	1H:1V or 1½H:1V
Completely Weathered Rock	"B"	1H:1V

Temporary support (i.e. trench boxes, sheeting and shoring, etc.) should be used for any excavation that cannot be sloped or benched in accordance with the applicable regulations, where necessary to protect adjacent utilities and structures, or where saturated soils or water seepage is encountered within the excavation.

A New York State licensed professional engineer must design all temporary and permanent support systems. The contractor will select the shoring type and submit design calculations for the proposed shoring method to Carlin-Simpson & Associates for review. The soil adjacent to the temporary support system will exert a horizontal pressure against the system. This pressure is based on the soil unit weight, coefficient of active earth pressure, and depth of the excavation. Support of Excavation design parameters are listed in Table 10 below.

Table 10 – Temporary Sheeting and Shoring Design Parameters

Description	Existing Fill	Sandy Clay & Silt	Silty Sand with Gravel
Moist Unit Weight (pcf)	130	125	134
Friction Angle (ϕ, deg)	30	26	32
Cohesion (c, psf)	0	250	0
Active Earth Pressure Coefficient (k_a)	0.33	0.39	0.31
Equivalent Fluid Pressure (pcf)	42.9	48.8	41.5
Passive Earth Pressure Coefficient (k_p)	3.0	2.6	3.3

7.7 Suitability of the In-Situ Soils for Use as Compacted Fill

The suitability of each soil stratum for use as compacted fill is discussed below.

Stratum 2 Existing Fill — The existing fill generally consists of brown, black coarse to fine SAND, little (to some) Silt, little (to and) coarse to fine Gravel. Debris including asphalt, brick, concrete, and other possible obstructions was encountered within the existing fill. The existing fill must remain relatively dry for optimum compaction and all the debris (asphalt, brick and concrete) is removed prior to reuse as compacted fill.

Stratum 3 Sandy Clay and Silt — Stratum 3 generally consists of Clayey Silt or SILT and CLAY little (to and), coarse to fine Sand. This stratum is generally unsuitable for reuse as compacted fill due to its high fines content and moisture sensitivity.

The boring observations indicate that the on-site soils contain a varying percentage of silt (10 to greater than 50%). The moderate to higher silt content soils will be moisture sensitive. If the soil becomes too wet, it will be difficult to achieve adequate compaction. In addition, the site soils that extend below the groundwater table are completely saturated and therefore, unsuitable for reuse.

Proper moisture conditioning of the soil will be required. New compacted fill should be within 2% (+/-) of its optimum moisture content at the time of placement. In the event that the on-site material is too wet at the time of placement and cannot be adequately compacted, the soil should be aerated and allowed to dry or the material removed and a drier cleaner fill material used. In the event that the on-site material is too dry at the time of placement and cannot be adequately compacted, water may be needed to increase the soil moisture content for proper compaction.

The in-situ soils which exist throughout the site may become soft and weave if exposed to excessive moisture and construction traffic. The instability will occur quickly when exposed to these elements and it will be difficult to stabilize the subgrade. We recommend that adequate site drainage be implemented early in the construction schedule and if the subgrade becomes wet, the contractor should limit construction activity until the soil has dried.

The minimum compaction requirements for the various areas of the site are summarized in Table 11 below.

Table 11 – Minimum Compaction Requirements

Area	Maximum Modified Dry Density (ASTM D-1557)
Below Foundation	95%
Below Floor Slab	92%
Behind Retaining Walls	92%
Adjacent to Foundation Walls	92%
Pavement Areas	95%
Exterior Slabs and Sidewalks	92%
Utility Trenches	95%
Landscape Areas	90%

7.8 Related Environmental Concerns of On-Site Soils and Groundwater

During our subsurface exploration, a fuel/ petroleum odor was noted in borings B-7 and B-9 indicating possible contamination of the site soils. During construction, special handling, testing, and/or disposal of potentially contaminated soil and groundwater may be required. An environmental engineering firm must address the suitability of the on-site soils for use on the

project site with respect to any environmental concerns. Proper disposal of all contaminated soil and water must be performed in accordance with applicable federal and state regulations. An environmental engineering firm should be retained by the owner to address these potential issues. Carlin-Simpson & Associates can provide environmental consulting services upon request.

8.0 GENERAL

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our past experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for Carlin-Simpson & Associates to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings and test pits will differ from those encountered at specific boring or test pit locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, Carlin-Simpson & Associates should be retained by the Owner to observe all earthwork and foundation construction, to document that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations Carlin-Simpson & Associates is not responsible or liable for the conclusions and recommendations presented in this report if Carlin-Simpson & Associates does not perform the observation and testing services.

Therefore, in order to preserve continuity in this project, the Owner must retain the services of Carlin-Simpson & Associates to provide full time geotechnical related monitoring and testing during construction. At a minimum, this shall include the observation and testing of the following: 1) the removal of existing fill and unsuitable soil, where required; 2) installation and testing of pile foundations; 3) the proofrolling of the subgrade soil prior to the placement of new compacted fill; 4) the placement and compaction of controlled fill; 5) the excavation for the structure foundations; 6) the preparation of the subgrade for the floor slab and pavement areas; and 7) the construction of site retaining walls.

This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty is expressed or implied. The evaluations and recommendations presented in this report are based on the available project information, as well

as on the results of the exploration. Carlin-Simpson & Associates should be given the opportunity to review the final drawings and site plans for this project to determine if changes to the recommendations outlined in this report are needed. Should the nature of the project change, these recommendations should be re-evaluated.

This report is provided for the exclusive use of Farrell Building Company and the project specific design team and may not be used or relied upon in connection with other projects or by other third parties. Carlin-Simpson & Associates disclaims liability for any such third-party use or reliance without express written permission. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. Carlin-Simpson & Associates is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

If the conditions encountered during construction vary significantly from those stated in this report, this office should be notified immediately so that additional recommendations can be made.

Thank you for allowing us to assist you with this project. Should you have any questions or comments, please contact this office.

Very truly yours,

CARLIN-SIMPSON & ASSOCIATES, LLC



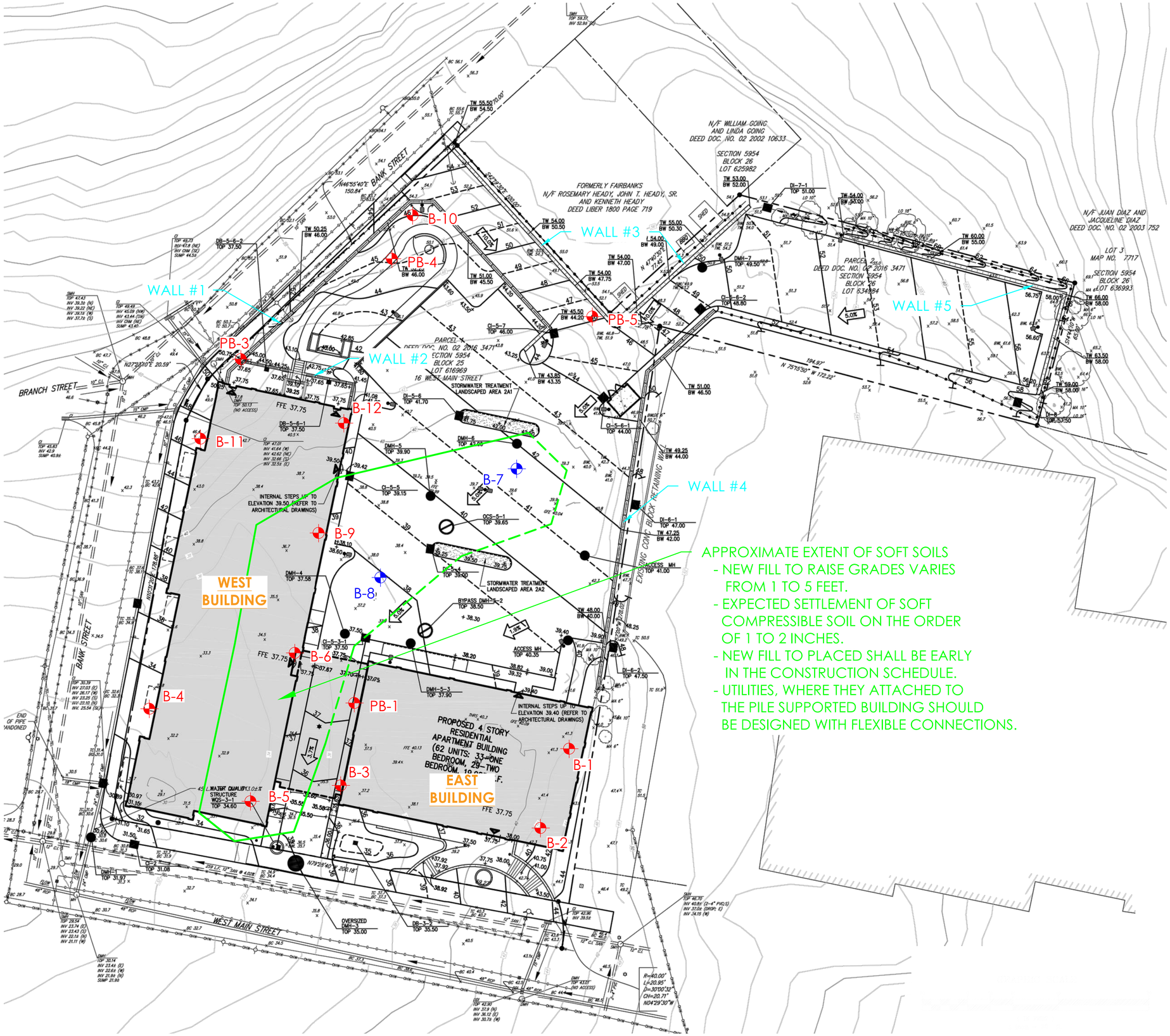
CATHERINE K. SIMPSON, E.I.T.
Project Manager



ROBERT B. SIMPSON, P.E.



File No. 20-07



GENERAL NOTES:

1. GENERAL LAYOUT WAS OBTAINED FROM A DRAWING PREPARED BY JMC, PLLC, ENTITLED "UTILITIES PLAN", DATED 29 OCTOBER 2019.
2. BORING LOCATIONS WERE LAID OUT IN THE FIELD BY CARLIN-SIMPSON & ASSOCIATES (CSA).
3. BORINGS WERE PERFORMED BY GENERAL BORINGS INC. IN JULY 2020 AND NOVEMEBER 2021. UNDER THE FULL TIME INSPECTION OF CSA.
4. LOCATIONS ARE APPROXIMATE.

LEGEND:

- BORING LOCATION
- APPROXIMATE EXTENT OF SOFT SILT AND CLAY

APPROXIMATE EXTENT OF SOFT SOILS
- NEW FILL TO RAISE GRADES VARIES FROM 1 TO 5 FEET.
- EXPECTED SETTLEMENT OF SOFT COMPRESSIBLE SOIL ON THE ORDER OF 1 TO 2 INCHES.
- NEW FILL TO PLACED SHALL BE EARLY IN THE CONSTRUCTION SCHEDULE.
- UTILITIES, WHERE THEY ATTACHED TO THE PILE SUPPORTED BUILDING SHOULD BE DESIGNED WITH FLEXIBLE CONNECTIONS.

NORTH

ROBERT B. SIMPSON, P.E.
PROFESSIONAL ENGINEER

LICENSE NO. | SIGNATURE | DATE

BORING LOCATION PLAN

PROPOSED APARTMENT BUILDINGS
16 WEST MAIN STREET
BEACON, NEW YORK

DRAWN: CKS	SCALE: 1" = 20'
CHECKED: RBS	DATE: 28-SEP-20
PROJECT NO.: 20-07	DWG NO.: FIG -1
APPROVED	

CARLIN-SIMPSON AND ASSOCIATES
61 Main Street
Sayreville, NJ 08872
Consulting Geotechnical and Environmental Engineers

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER PB-1
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		SHEET NO.: 1 of 2
Client: Farrell Building Company		JOB NUMBER: 20-27
Drilling Contractor: General Borings Inc		ELEVATION: +37.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 30/Nov/21
		14'3"		DIA.	3 1/4"	1 3/4"			FINISH DATE: 1/Dec/21
				WGHT		140#			DRILLER: T McGovern
				FALL		30"			INSPECTOR: CKS

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	SYM	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			8			
2		S-1	11		FILL (Gr br cf S, l (+) $, s cf G)	Rec = 10"
			16			moist
3			20			
		S-2	50/4"		FILL (same)	Rec = 0"
4					**FILL (Gray, brown coarse to fine SAND, little (+) Silt, some coarse to fine Gravel)**	moist
5						
			10			
6		S-3	7		FILL (same, s $, a mf G)	Rec = 10"
			4			moist
7			8		7'0"	
			10			
8		S-4	16		Lt br Cy $ l (-), cf S, t (-) f G	Rec = 18"
			21			moist, mottled
9			20			
10						
			4			
11		S-5	14		same, vvd	Rec = 18"
			18		**Light brown Clayey SILT little (-), coarse**	moist, mottled
12			26		**to fine Sand, trace (-) fine Gravel**	
13						
14						
15						
			2			
16		S-6	4		same, C&$	Rec = 16"
			4			wet
17			6		17'0"	change in tip of spoon
18						
19					**Gray, brown coarse to fine SAND,**	
					some Silt, some coarse to fine Gravel	
20						
			19			
21		S-7	27		Gr br cf S, s $, s cf G	Rec = 12"
			46			wet
22			29			

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ					TEST BORING LOG	BORING NUMBER PB-1
Project:	**Proposed Multi Family Building, 16 West Main St, Beacon NY**					**SHEET NO.:** 2 of 2
Client:	**Farrell Building Company**					**JOB NUMBER:** 20-27
Depth (ft.)	**Casing Blows pre Foot**	**Sample Number**	**Blows on Sample Spoon per 6"**	**Sym**	**IDENTIFICATION**	**REMARKS**
23					23'0"	
24						
25						
			49			
26		**S-8**	50/1"		Shale, completely weathered	Rec = 3" wet
27						
28						very dense drilling 25'-30'
29						
30						
		S-9	50/0"		same 30'6"	Rec = 0 wet
31						Auger refusal @ 30'6"
32						
33		**Run #1**			**Shale, crushed, highly weathered**	Run #1 30'6"-35'6"
34						Run = 60" Rec = 24"
35						RQD = 0%
					35'6"	
36					**End of Boring @ 35'6"**	
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER PB-3
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Company		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +48.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 01 Dec 21
				DIA.	3 1/4"	1 3/8"			FINISH DATE: 01 Dec 21
				WGHT		140#			DRILLER: T McGovern
				FALL		30"			INSPECTOR: CKS

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sy r	IDENTIFICATION	REMARKS
			2		**Topsoil** 0'4"	
1		S-1	3		FILL (Br cf S, a (-) $, l cf G, w/bricks, wood)	Rec = 10"
			4		**FILL (Brown coarse to fine SAND,**	moist
2			5		**and (-) Silt, little coarse to fine Gravel,**	
			6		**with bricks, wood)**	
3			8		FILL (same) 3'0"	
			10		Lt br Cy $ l (-), cf S, t (-) f G	
4		S-2	12			Rec = 15"
					Light brown Clayey SILT little, coarse to	moist
5					**fine Sand, trace (-) fine Gravel**	
			8		same	
6			18		6'0"	
			38		Gr, br cf S, l (+) $, a cf G	
7			58			
		S-3			**Gray, brown coarse to fine SAND,**	Rec = 19"
8					**little (+) Silt, and coarse to fine Gravel**	moist
						with pocket of perced water
9					9'0"	
						Dense drilling 5'-10'
10						
			37			
11		S-4	50/2"		Shale, completely weathered	Rec = 4"
						moist
12						
						Dense drilling 10-15'
13						
14						
15						
			22			
16		S-5	54		same	Rec = 5"
			50/1"			moist
17					17'0"	Auger refusal 17'0"
18		Run #1			**Shale, crushed, highly weathered**	Run #1
						17'0"-19'0"
19					19'0"	Run = 24"
					End of Boring @ 19'0"	Rec = 12"
20						RQD = 0%
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER PB-4
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Company		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +51.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 30/Nov/21
				DIA.	3 1/4"	1 3/8"			FINISH DATE: 30/Nov/21
				WGHT		140#			DRILLER: T McGovern
				FALL		30"			INSPECTOR: CKS

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			5			
1			6		**Topsoil with woodchips** 0'10"	
		S-1	8		FILL (Br Cy $ a (+), cf S, l (+) cf G)	Rec = 15"
2			6			moist
			16			
3		**S-2**	6		FILL (same, w/wood)	Rec = 10"
			9		**FILL (Brown Clayey SILT and (+), coarse**	moist
4			10		**to fine Sand, little (+) coarse to fine**	
					Gravel)	
5						
			28			
6		**S-3**	34		FILL (same, w/wood)	Rec = 7"
			27		6'6"	moist
7			17		Lt br Cy $ l (-), cf S, t (-) f G	
			16			
8		**S-4**	25		same, vvd	Rec = 19"
			34		**Light brown Clayey SILT little (-), coarse**	moist
9			36		**to fine Sand, trace (-) fine Gravel**	with pockets of perched
						water, vvd
10					10'0"	
			20			
11		**S-5**	30		Gr, br cf S, s (-) $, s (+) cf G	Rec = 19"
			39			moist
12			43		**Gray, brown coarse to fine SAND,**	with pockets of water and
					some (-) Silt, trace (-) fine Gravel	layers of weathered rock
13						
14					14'0"	
15						
		S-6	50/5"		Shale, completely weathered	Rec = 3"
16						wet
17						
					Shale, completely weathered	
18						
19						
20						
		S-7	50/0"		same, highly weathered	Rec = 0
21					**End of Boring @ 20'0"**	wet
						Auger refusal 20'0" attempted
22						coring barrel kept clogging

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.				TEST BORING LOG					BORING NUMBER PB-5
Project:	Proposed Multi Family Building, 16 West Main St, Beacon NY								SHEET NO.: 1 of 2
Client:	Farrell Building Company								JOB NUMBER: 20-07
Drilling Contractor:	General Borings Inc								ELEVATION: +46.0
GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 30/Nov/21
30/Nov/21	0945	14'5"	HSA	DIA.	3 1/4"	1 3/4"			FINISH DATE: 30/Nov/21
				WGHT		140#			DRILLER: T McGovern
				FALL		30"			INSPECTOR: CKS

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	SYM	IDENTIFICATION	REMARKS
1			2 3		**Topsoil** 1'0"	
2		S-1	9 15		Lt br Cy $ l, cf S, t (-) f G	Rec = 15" moist
3		S-2	6 13		same	Rec = 16"
4			17 21			moist
5						
6		S-3	7 13		same, t (-) cf S	Rec = 16"
7			17 25		**Light brown Clayey SILT little, coarse to fine Sand, trace (-) fine Gravel**	moist vvd
8		S-4	19 28		same	Rec = 17"
9			28 36			moist to wet vvd and slightly mottled
10						saturated able to dilate at 8'0"
11		S-5	7 15		same, vvd, $&C	possible perched Rec = 18"
12			21 21			moist with pocket of net
13						
14						
15					15'0"	
16		S-6	18 22		Br, gr cf S, s $, s (+) cf G	Rec = 20"
17			28 20		**Brown, gray coarse to fine SAND, some Silt, some (+) coarse to fine Gravel**	wet
18					18'0"	
19					**Shale, completely weathered**	Auger refusal @ 19'6"
20		Run #1			**Gray Shale, blocky and seamy, slightly weathered**	Run #1 19'6"-23'0"
21						Run = 42" Rec = 78%
22						RQD = 78%

CARLIN - SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER PB-5
Project: Proposed Multi Family Building, 16 West Main St, Beacon NY		**SHEET NO.:** 2 of 2
Client: Farrell Building Company		**JOB NUMBER:** 20-07

Depth (ft.)	Casing Blows pre Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
23		Run #1			**Gray Shale, blocky and seamy, slightly weathered** 23'0" **End of Boring @ 23'0"**	Run #1 19'6"-23'0" Run = 42" Rec = 78% RQD = 78%
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-1
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +42.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 21-Jul-20
21-Jul-20	1330	15'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 21-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			6		**Topsoil** 0'4"	
1		**S-1**	13		FILL (Br cf S, s $, l (-) cf G, w/brick)	Rec = 6"
			50/2"			moist
2					**FILL (Brown coarse to fine SAND, some**	
					Silt, little (-) coarse to fine Gravel,	
3					**with brick)** 3'0"	
			10			
4		**S-2**	11		Br, gr $ s, cf S, t (+) cf G	Rec = 18"
			14		**Brown, gray SILT some, coarse to fine**	moist
5			16		**SAND, trace (+) coarse to fine Gravel**	
			9			
6		**S-3**	12		same, no cf G	Rec = 10"
			50/3"		6'3"	moist
7						Dense drilling
8						
9						
10						
			18			
11		**S-4**	18		Br cf S, l (+) $, l (+) cf G	Rec = 7"
			24			wet
12			21			Dense drilling
13					**Brown coarse to fine SAND,**	
					little (+) Silt, little (+) coarse to	
14					**fine Gravel**	
15						
			24			
16		**S-5**	27		same	Rec = 18"
			31			wet
17			36			Dense drilling
18						
19						
20						
			11			
21		**S-6**	13		same, gr, s $, l cf G	Rec = 20"
			23			wet
22			27		**End of Boring @ 22'0"** 22'0"	

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-2
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +42.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 21-Jul-20
21-Jul-20	1530	17'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 21-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			4		**Topsoil** 0'6"	
1		**S-1**	10		Br, gr Cy $ s, cf S, t cf G	Rec = 16"
			9			moist
2			9			
			8			
3		**S-2**	11		same, l (+) mf S, no G	Rec = 20"
			13			moist
4			17			
5						
					Brown, gray Clayey SILT some, coarse	
			8		**to fine Sand, trace coarse to fine Gravel**	
6		**S-3**	8		same	Rec = 22"
			12			moist
7			14			
			14			
8		**S-4**	15		same	rec = 24"
			16			moist
9			23			
10					10'0"	
			7			
11		**S-5**	11		Br cf S, l (+) $, l cf G	Rec = 6"
			18			moist
12			19			
13						
14						
					Brown coarse to fine SAND,	
15					**little (+) Silt, little coarse to fine Gravel**	
			40			
16		**S-6**	50/4"		same, gr a cf G	Rec = 2"
						moist
17						
18						
19						
20						
			21			
21		**S-7**	34		same, gr s (-) cf G	Rec = 12"
			42			wet
22			50/4"		**End of Boring @ 21'10"** 21'10"	

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.				TEST BORING LOG					BORING NUMBER B-3
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY									SHEET NO.: 1 of 2
Client: Farrell Building Co									JOB NUMBER: 20-07
Drilling Contractor: General Borings Inc									ELEVATION: +36.5
GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 21-Jul-20
21-Jul-20	1015	15'0"	HSA	DIA.		1 3/8"			FINISH DATE: 21-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'2"	
1						
			7			
2		S-1	50/3"		FILL (Br cf S, t (+) $, a cf G, w/birck, concrete)	Rec = 4"
					FILL (Brown coarse to fine SAND,	moist
3					**trace (+) Silt, and coarse to fine Gravel,**	Auger refusal on concrete 2.5'
			26		**with brick, concrete, debris)**	moved 5' W
4		S-2	20		FILL (same, l $, s cf G)	Rec = 10"
			15			moist
5			9		5'0"	
			2			*mottling, possible perched
6		S-3	3		Br, gr, or mttld C & $ s, cf S, t cf G	Rec = 15"
			11			moist
7			5			
			7			
8		S-4	11		same, lt gr, br, no G	Rec = 19"
			15			moist
9			15			
					Brown, gray, orange mottled Clay and	
10					**SILT some, coarse to fine Sand, trace**	
			6		**coarse to fine Gravel**	
11		S-5	6		same, l mf S	Rec = 21"
			9			wet
12			12			
13						
14						
15						
			1			
16		S-6	3		same, gr S & C	Rec = 24"
			2			wet
17			6			
18					18'0"	
19					**Gray coarse to fine SAND, little Silt,**	
					and coarse to fine Gravel, with cobbles	
20						
			17			
21		S-7	26		Gr cf S, l $, a cf G	Rec = 0"
			22			wet
22			27			

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.					TEST BORING LOG		BORING NUMBER B-3
Project:	Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY						SHEET NO.: 2 of 2
Client:	Farrell Building Co						JOB NUMBER: 20-07
Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
23					**Gray coarse to fine SAND, little Silt, and coarse to fine Gravel**		Dense drilling
24							
25							
		S-8	50/3"		Gr cf S, l $, a cf G	25'3"	Rec = 4"
26					**End of Boring @ 25'3"**		wet
27							Likely bedrock
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-4
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +32.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 22-Jul-20
22-Jul-20	14:30	6'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 22-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'2"	
1						
			8			
2		S-1	9		FILL (Br cf S, l $, s (+) cf G, w/brick, concrete)	Rec = 7"
			12		**FILL (Brown coarse to fine SAND, little**	moist
3			27		**Silt, some (+) coarse to fine Gravel, with**	
			12		**brick, concrete)** 3'6"	
4		S-2	6		FILL (Br, gr Cy $ s, cf S)	Rec = 10"
			5		**FILL (Brown, gray Clayey SITL some,**	moist
5			4		**coarse to fine Sand)** 5'0"	
			3		FILL (Br, bk cf S, s (-) $, a cf G, w/fibers)	
6		S-3	2		**FILL (Brown, black coarse to fine SAND,**	Rec = 6"
			3		**some (-) Silt, and coarse to fine Gravel,**	wet
7			2		**with fibers)** 7'0"	
			1			
8		S-4	1		FILL (Gr $ & C l, cf S	Rec = 12"
			3			wet
9			3		**FILL (Gray SILT and Clay little, coarse**	
					to fine Sand	
10					10'0"	
			7			
11		S-5	7		Br cf S, t (+) $, a cf G	Rec = 7"
			6			wet
12			50/3"		**Brown coarse to fine SAND, trace (+) Silt,**	
					and coarse to fine Gravel	
13					13'0"	Auger refusal @ 13'0"
					End of Boring @ 13'0"	
14						
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-5
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +34.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 22-Jul-20
22-Jul-20	1043	10'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 22-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			12		**Topsoil** 0'1"	
1		**S-1**	17		FILL (Br cf S, t (+) $, a cf G)	Rec = 10"
			10			moist
2			17			
		S-2	50/2"		FILL (same)	Rec = 0
3						Boulder
					FILL (Brown coarse to fine SAND, trace (+) Silt, and coarse to fine Gravel)	
4						
5					5'0"	
			7			
6		**S-3**	3		FILL (Gr C & $ l, cf S, w/roots, sticks)	Rec = 14"
			3			wet
7			2		**FILL (Gray Clay and SILT little, coarse to fine Sand, with roots, sticks, glass)**	slightly mottled
			3			wet
8		**S-4**	3		FILL (same, dk gr, l (-) cf G, w/glass)	Rec = 24"
			5			wet
9			5			
10					10'0"	
			4			
11		**S-5**	4		Br, gr $y C l (-), mf S	Rec = 24"
			4			wet
12			5			
13						
14					**Brown, gray SILTY Clay little (-), medium to fine Sand**	
15						
			WOH/12			
16		**S-6**			same, gr	Rec = 24"
			1			wet
17			2			
18						
19					19'0"	
20					**Brown coarse to fine SAND, little Silt, some coarse to fine Gravel**	
			10			
21		**S-7**	8		Br cf S, l $, s cf G	Rec = 7"
			12			wet
22			22		**End of Boring @ 22'0"** 22'0"	

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.				TEST BORING LOG					BORING NUMBER B-6
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY									SHEET NO.: 1 of 2
Client: Farrell Building Co									JOB NUMBER: 20-07
Drilling Contractor: General Borings Inc									ELEVATION: +35.0
GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 23-Jul-20
23-Jul-20	930	13'6"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 23-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			7			
2		**S-1**	19		FILL (Br cf S, l (-) $, s cf G, w/brick)	Rec = 7"
			50/2"			moist
3						Brick cutting coming up
4					**FILL (Brown coarse to fine SAND, little (-) Silt, some coarse to fine Gravel, with brick)**	
5						
			27			
6		**S-2**	43		FILL (same, a cf G, w/brick)	Rec = 7"
			50/1"			moist
7						Boulder (possible old floor slab)
8						
9					9'0"	
10						
			4			
11		**S-3**	6		Br, gr Cy $ l, mf S	Rec = 24"
			7			moist
12			8			mottled
13					**Brown, gray Clayey SILT little, medium to fine Sand**	
14						
15						
			1/12"			
16		**S-4**			same, gr $ & C	Rec = 24"
			1			wet
17			1			
18						
					18'6"	
19						
					Brown coarse to fine GRAVEL some, coarse to fine Sand, trace Silt	
20						
			9			
21		**S-5**	6		Br cf G s, cf S, t $	Rec = 5"
			14			wet
22			30			

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER B-6
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		SHEET NO.: 2 of 2
Client: Farrell Building Co		JOB NUMBER: 20-07

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
23					**Brown coarse to fine GRAVEL some, coarse to fine Sand, trace Silt**	Auger refusal 23'0"
24					**End of Boring @ 23'0"**	Likely Bedrock
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-7
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +39.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 23-Jul-20
23-Jul-20	1230	5'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 23-Jul-20
23-Jul-20	1330	5'0"	HSA	WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'1"	
1						
			3			
2		S-1	4		FILL (Br, gr cf S, l $, s cf G, w/brick, asphalt)	Rec = 14"
			15			moist
3			8			
			6			
4		S-2	5		FILL (same, brick, asphalt)	Rec = 6"
			3		**FILL (Brown, gray coarse to fine SAND,**	moist
5			4		**little Silt, some coarse to fine Gravel,**	
			1		**with brick, asphalt, wood)**	
6		S-3	1/12"		FILL (same, bk t $, w/wood)	Rec = 4"
						wet
7			50/0"			Petrolum Odor
						Boulder
8					8'0"	
			1			
9		S-4	2		Gr cf G s, cf S, s $	Rec = 6"
			5			wet
10			10			
			2		**Gray coarse to fine GRAVEL some, coarse**	
11		S-5	8		same **to fine Sand, some Silt**	Rec = 3"
			3			wet
12			3			
13					13'0"	
14						
					Brown Clay and SILT little, coarse to	
15					**fine Sand, trace coarse to fine Gravel**	
			2			
16		S-6	3		Br C&$ l, cf S, t cf G	Rec = 20"
			5			wet
17			8		17'0"	
					End of Boring @ 17'0"	
18						
19						
20						
21						
22						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-8
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +38.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 23-Jul-20
23-Jul-20	1115	5'0"	HSA	DIA.	3 1/4"	1 3/8"			FINISH DATE: 23-Jul-20
23-Jul-20	1230	4'10"	Open	WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			7			
2		S-1	6		FILL (Br, gr cf S, l $, s cf G, w/brick)	Rec = 10"
			9			moist
3			8			
			8			
4		S-2	8		FILL (same)	Rec = 12"
			27		**FILL (Brown, gray coarse to fine SAND,**	moist
5			50/2"		**little Silt, some coarse to fine Gravel,**	
			6		**with brick, wood)**	
6		S-3	6		FILL (same, w/wood)	Rec = 6"
			50/1"			wet
7						wood
8						
			3			
9		S-4	7		FILL (same, gr a cf G, w/wood)	Rec = 6"
			8			wet
10			12		10'0"	
			4			
11		S-5	5		Br, gr $&C l, cf S	Rec = 20"
			6			wet
12			9		**Brown, gray SILT and Clay little, coarse**	
			2		**to fine Sand**	
13		S-6	2		same, br t cf G	Rec = 18"
			4			wet
14			4		14'0"	
					End of Boring @ 14'0"	
15						
16						
17						
18						
19						
20						
21						
22						

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.					TEST BORING LOG					BORING NUMBER B-9	
Project:	Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY									SHEET NO.:	1 of 2
Client:	Farrell Building Co									JOB NUMBER:	20-07
Drilling Contractor:	General Borings Inc									ELEVATION:	+37.5
GROUNDWATER						CASING	SAMPLE	CORE	TUBE	DATUM:	Topo
DATE	TIME	DEPTH	CASING		TYPE	HSA	SS			START DATE:	24-Jul-20
24-Jul-20	1015	5'9"	HSA		DIA.	3 1/4"	1 3/8"			FINISH DATE:	24-Jul-20
					WGHT		140#			DRILLER:	J Casson
					FALL		30"			INSPECTOR:	KWA

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'3"	
1						
			4			
2		S-1	6		FILL (Gr Cy $ s, cf S, t (-) f G, w/t roots, asphalt)	Rec = 10"
			10			moist
3			6			
			4			
4		S-2	15		FILL (same, w/brick)	Rec = 10"
			10		**FILL (Gray Clayey SILT some, coarse to**	moist
5			8		**fine Sand, trace (-) fine Gravel, with**	
			3		**trace roots, asphalt, cinders, bricks)**	
6		S-3	3		FILL (Dk gr cinders w/brick)	Rec = 11"
			2			wet
7			2			
			2			
8		S-4	2		FILL (same)	Rec = 9"
			3			wet
9			3			fuel odor
					9'6"	
10						
			3			
11		S-5	2		Gr Cy $ t (+), mf S, w/ t O	Rec = 9"
			4			wet
12			9			
						Oil Scheen on cuttings
13						
14						
					Gray Clayey SILT trace (+), medium to	
15					**fine Sand**	
			1			
16		S-6	1		Gr Cy $ t, f S	Rec = 6"
			1			wet
17			1			
18						
19						
20						
			7		20'6"	
21		S-7	48		Gr cf S, a $, l cf G (till)	Rec = 8"
			50/1"		**Gray coarse to fine SAND, and Silt,**	wet
22					**little coarse to fine Gravel**	

CARLIN - SIMPSON & ASSOCIATES Sayreville, N.J.	TEST BORING LOG	BORING NUMBER B-9
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		SHEET NO.: 2 of 2
Client: Farrell Building Co		JOB NUMBER: 20-07

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
23					**Gray coarse to fine SAND, and Silt, little coarse to fine Gravel** 23'0"	Auger refusal 23'0"
24					**End of Boring @ 23'0"**	Likely Bedrock
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-10
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +53.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	**DATUM:** Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			**START DATE:** 24-Jul-20
24-Jul-20	1515	21'0"	HSA	DIA.	3 1/4"	1 3/8"			**FINISH DATE:** 24-Jul-20
				WGHT		140#			**DRILLER:** J Casson
				FALL		30"			**INSPECTOR:** KWA

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION		REMARKS
					Asphalt	0'3"	
1					**FILL (Brown, gray coarse to fine SAND, little (-) Silt, some coarse to fine Gravel)**		
			20				
2		**S-1**	16			2'0"	Rec = 7"
			7		Br cf S, s $		moist
3			5				
4							
5							
			7				
6		**S-2**	11		same, s (+) $		Rec = 15"
			13		**Brown coarse to fine SAND, some Silt**		moist
7			15				
8							
9							
10							
			7				
11		**S-3**	8		Mttld br, gr, or br Cy $ l (+), cf S	11'0"	Rec = 22"
			15		Br, gr Cy $ l (+), cf S, t cf G		moist
12			18				
					Brown, gray Clayey SILT little (+), coarse		
13					**to fine Sand, trace coarse to fine Gravel**		
14						14'0"	
15							
			62				
16		**S-4**	20/1"		Shale, highly to completely weathered		Rec = 2"
							moist
17							
18							
					Shale, highly to completely weathered		
19							
20							
			36				
21		**S-5**	50/3"		same		Rec = 3"
							moist to wet
22					**End of Boring @ 22'0"**	22'0"	Refusal on auger 22'0"

CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-11
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +46.0

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	DATUM: Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			START DATE: 22-Jul-20
No Groundwater Encountered				DIA.	3 1/4"	1 3/8"			FINISH DATE: 22-Jul-20
				WGHT		140#			DRILLER: JC
				FALL		30"			INSPECTOR: JP

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
			13		**Topsoil** 0'1"	
1		S-1	12		FILL (Br cf S, t (+) $, a cf G, w/brick)	Rec = 6"
			7			moist
2			6			
			4			
3		S-2	6		FILL (same)	Rec = 4"
			16		**FILL (Brown coarse to fine SAND,**	moist
4			10		**trace (+) Silt, and coarse to fine Gravel,**	
					with brick)	
5					5'0"	
			3		**FILL (Gray SILT & CLAY little,**	
6		S-3	6		**coarse to fine Sand** 6'0"	Rec = 10"
			17		FILL (Br cf S, s (-) $, l cf G, w/brick, roots)	wet
7			9			
		S-4	50/2"		FILL (same, a cf G, w/brick)	Rec = 3"
8						moist
9					**FILL (Brown coarse to fine SAND,**	
					some (-) Silt, little coarse to fine Gravel,	
10					**with brick, roots)**	
			3			
11		S-5	3		FILL (same)	Rec = 4"
			50/3"			moist
12						
13						
14					14'0"	
15					**Brown, gray coarse to fine SAND,**	
			26		**little (-) Silt, and coarse to fine Gravel**	
16		S-6	31		Br, gr cf S, l (-) $, a cf G	Rec = 20"
			37			moist
17			43		17'0"	very dense
18						
19					**Shale, highly to completely weathered**	
20						
			45			
21		S-7	50/4"		Shale, highly to completely weathered	Rec = 15"
						moist
22					22'0"	

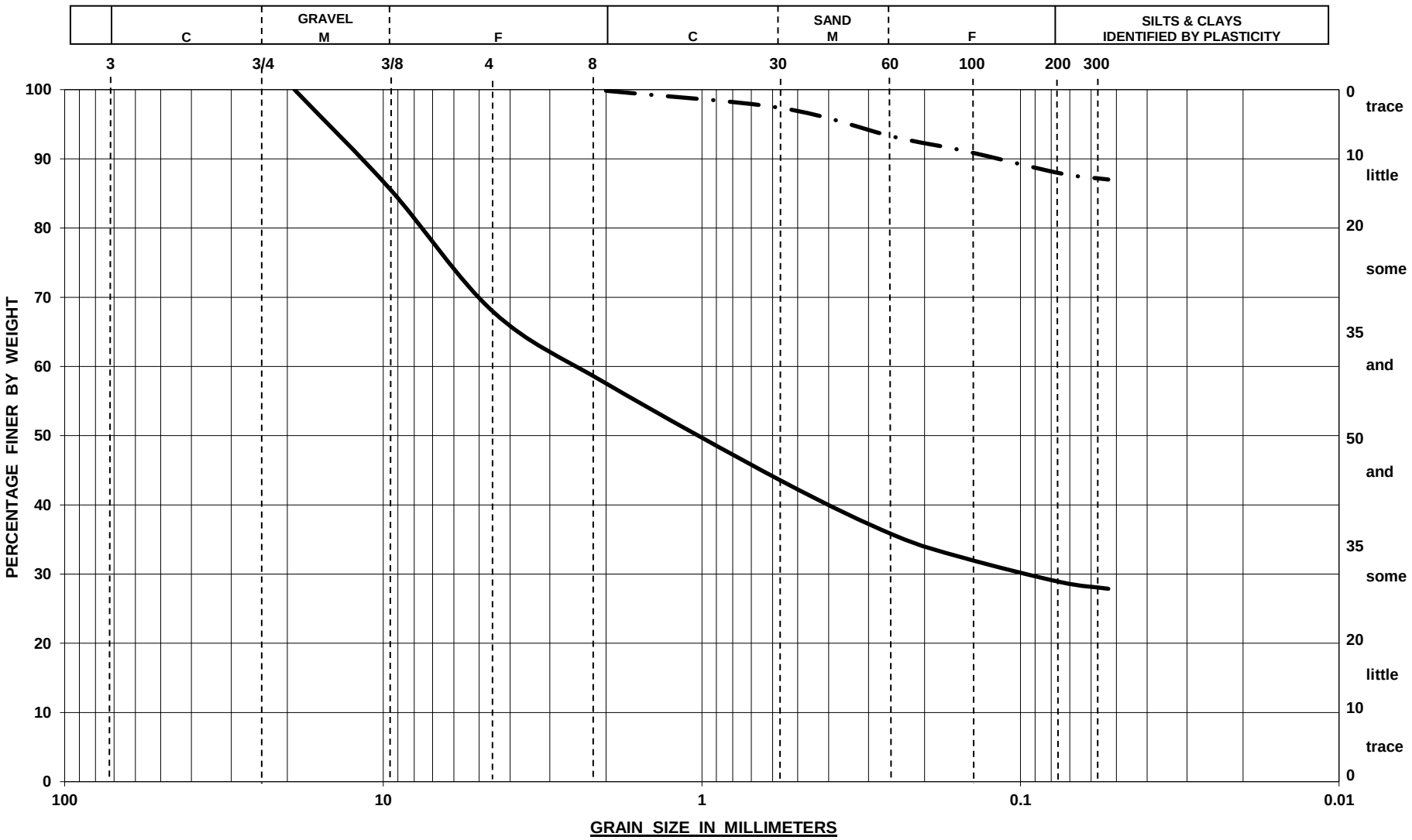
CARLIN-SIMPSON & ASSOCIATES Sayreville, NJ	TEST BORING LOG	BORING NUMBER B-12
Project: Proposed Soil Testing Beacon Commons, 16 West Main St, Beacon NY		**SHEET NO.:** 1 of 1
Client: Farrell Building Co		**JOB NUMBER:** 20-07
Drilling Contractor: General Borings Inc		**ELEVATION:** +40.5

GROUNDWATER					CASING	SAMPLE	CORE	TUBE	**DATUM:** Topo
DATE	TIME	DEPTH	CASING	TYPE	HSA	SS			**START DATE:** 24-Jul-20
24-Jul-20	1300	7'6"	HSA	DIA.	3 1/4"	1 3/8"			**FINISH DATE:** 24-Jul-20
				WGHT		140#			**DRILLER:** J Casson
				FALL		30"			**INSPECTOR:** KWA

Depth (ft.)	Casing Blows per Foot	Sample Number	Blows on Sample Spoon per 6"	Sym	IDENTIFICATION	REMARKS
					Asphalt 0'2"	
1						
			11			
2		S-1	11		**FILL (Gray, brown Clayey SITL little, coarse to fine Sand, trace fine Gravel, with brick, cinders, wood)**	Rec = 0
			13			
3			13			
			11			
4		S-2	8		FILL (Gr br Cy $ l, cf S, t f G, w/brick, cinders, wood)	Rec = 10"
			6			moist
5			7		5'0"	fuel odor on cuttings
		S-3	50/1"		FILL (cobbles, boulders)	
6						
					FILL (cobbles, boulders)	
7						
8					8'0"	
			2		FILL (Gr br Cy $ l, cf S)	Rec = 20"
9		S-4	4		**FILL (Gray brown Clayey SILT, little coarse to fine Sand**	wet
			4		9'6"	
10			6			
			6			
11		S-5	6		Br Cy $ l (-), mf S	Rec = 10"
			7			wet
12			10			
					Brown Clayey SILT little (-), medium to fine Sand	
13						
14					14'0"	
15						
			27			
16		S-6	14		Dk br cf G s (-), cf S, s $	Rec = 11"
			14			wet
17			14		**Dark Brown coarse to fine GRAVEL some (-), coarse to fine Sand, some Silt**	
18						
19					9'0"	
20					**Shale, highly to completely weathered**	
		S-7	50/3"		Shale, highly to completely weathered 20'3"	Rec = 2"
21					**End of Boring @ 20'3"**	wet
22						

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS

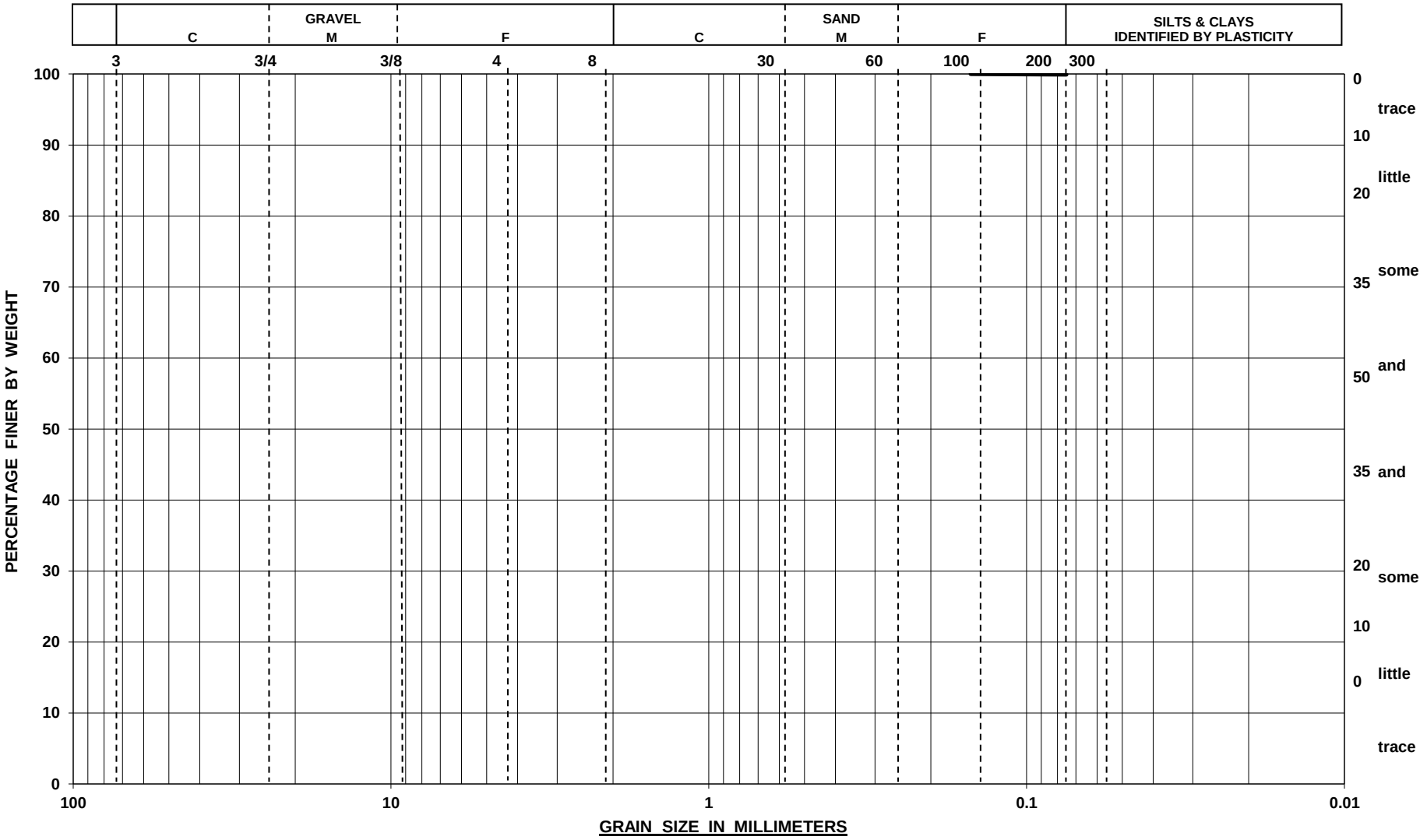


SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
———	PB-1	S-3	5'0" - 7'0"	FILL(Gray brown coarse to fine Sand, some Silt, and medium to fine Gravel	11.2%
— · —	PB-3	S-2	2'0"-4'0"	Light Brown Clayey SILT little (-), coarse to fine Sand, trace (-) fine Gravel	20.3%

PROJECT New Multifamily Buildings, 16 West Main Street Beacon, NY **BY** MJG **DATE** 4-Feb-21 **JOB NO** 20-07

CARLIN-SIMPSON & ASSOCIATES
SAYREVILLE, NJ 08872

SIEVE ANALYSIS



SYMBOL	BORING	SAMPLE	DEPTH	DESCRIPTION	NAT MC
▬	PB-5	S-3	5'0" - 7'0"	Light Brown Clayey SILT trace (-), fine Sand	23.2%

PROJECT New Multifamily Building, 16 West Main Street, Beacon, NY **BY** MJW **DATE** 4-Feb-22 **JOB NO** 20-07

APPENDIX D

WEB SOIL SURVEY REPORT


73° 58' 58" W
73° 58' 43" W
584900
584950
585000
585050
585100
585150
585200
41° 30' 40" N
41° 30' 25" N
4596980
4596930
4596880
4596830
4596780
4596730
4596680
4596630
4596580
DxB
DwB
NwC
Ud
Edgewater Pl
Tompkins Ter
Bank St
High St
W Main St
Beekman St
Soil Map may not be valid at this scale.
Map Scale: 1:2,200 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 30 60 120 180
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 15, Sep 2, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 7, 2013—Feb 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DwB	Dutchess-Cardigan complex, undulating, rocky	B	18.4	77.8%
DxB	Dutchess-Cardigan-Urban land complex, undulating, rocky		3.4	14.6%
NwC	Nassau-Cardigan complex, rolling, very rocky	D	1.7	7.2%
Ud	Udorthents, smoothed	A	0.1	0.5%
Totals for Area of Interest			**23.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher


73° 58' 58" W
73° 58' 43" W
584900
584950
585000
585050
585100
585150
585200
41° 30' 40" N
41° 30' 25" N
4596980
4596930
4596880
4596830
4596780
4596730
4596680
4596630
4596580
DxB
DwB
NwC
Ud
Edgewater Pl
Tompkins Ter
Bank St
High St
W Main St
Beekman St
Soil Map may not be valid at this scale.
Map Scale: 1:2,200 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 30 60 120 180
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Lines

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Soil Rating Points

- Excessively drained
- Somewhat excessively drained
- Well drained
- Moderately well drained
- Somewhat poorly drained
- Poorly drained
- Very poorly drained
- Subaqueous
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 15, Sep 2, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 7, 2013—Feb 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DwB	Dutchess-Cardigan complex, undulating, rocky	Well drained	18.4	77.8%
DxB	Dutchess-Cardigan-Urban land complex, undulating, rocky	Well drained	3.4	14.6%
NwC	Nassau-Cardigan complex, rolling, very rocky	Well drained	1.7	7.2%
Ud	Udorthents, smoothed	Well drained	0.1	0.5%
Totals for Area of Interest			**23.7**	**100.0%**

Description

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher


73° 58' 58" W
73° 58' 43" W
584900
584950
585000
585050
585100
585150
585200
41° 30' 40" N
41° 30' 25" N
4596980
4596930
4596880
4596830
4596780
4596730
4596680
4596630
4596580
DxB
DwB
NwC
Ud
Edgewater Pl
Tompkins Ter
Bank St
High St
W Main St
Beekman St
Soil Map may not be valid at this scale.
Map Scale: 1:2,200 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 30 60 120 180
Feet
0 100 200 400 600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

<= 7.9787

> 7.9787 and <= 9.0000

> 9.0000 and <= 23.9909

Not rated or not available

Soil Rating Lines

<= 7.9787

> 7.9787 and <= 9.0000

> 9.0000 and <= 23.9909

Not rated or not available

Soil Rating Points

<= 7.9787

> 7.9787 and <= 9.0000

> 9.0000 and <= 23.9909

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 15, Sep 2, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 7, 2013—Feb 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Saturated Hydraulic Conductivity (Ksat)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
DwB	Dutchess-Cardigan complex, undulating, rocky	9.0000	18.4	77.8%
DxB	Dutchess-Cardigan-Urban land complex, undulating, rocky	9.0000	3.4	14.6%
NwC	Nassau-Cardigan complex, rolling, very rocky	7.9787	1.7	7.2%
Ud	Udorthents, smoothed	23.9909	0.1	0.5%
Totals for Area of Interest			**23.7**	**100.0%**

Description

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Rating Options

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 72

Units of Measure: Inches

APPENDIX E

TEMPORARY EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE CHECKLIST

PERMANENT STORMWATER PRACTICE OPERATION, MAINTENANCE AND MANAGEMENT INSPECTION CHECKLIST

WATER QUALITY UNIT CERTICATION AND PEAK FLOW CALCULATIONS

JMC Project 18119
Beacon Commons
16 West Main Street
City of Beacon, NY

Temporary Erosion and Sediment Control Inspection and Maintenance Checklist

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Daily	• Periodic top dressing with additional aggregate as required • Clean sediment in public right-of-ways immediately
Silt Fence	Weekly + After Each Rain	• Remove & redistribute sediment when bulges develop in the silt fence.
Inlet Protection	Weekly + After Each Rain	• Remove sediment as necessary and replace filter fabric, crushed stone etc. • Any broken and damaged components should be replaced. • Check all materials for proper anchorage and secure as necessary.
Haybales	Daily	• Remove sediment and debris • Check that all bales are tight against each other and the ground surface.

Permanent Stormwater Management Practice Inspection and Maintenance Checklist

Stormwater Management Practice	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
StormTech Subsurface Detention Facility	(See Maintenance Guidelines in Appendix E)	• Check level of sediment accumulated within the isolator row through the access manhole. If 3 inches of sediment or greater, clean out utilizing a high pressure water nozzle to scour and suspend sediments. • Flush all sediment to access manhole and remove using a vacuum truck.
Drain Inlets	Monthly	• Check for blockage and/or erosion at top of each inlet. Repair/remove as necessary. • Check for sediment and debris collected within sumps and clean out as necessary.
Hydrodynamic Separator Water Quality Structure	(See Maintenance Guidelines in Appendix E)	• Open access cover for visual inspection and measure the distance from the standing water surface to the sediment pile with a measuring stick or tape. If less than 4 feet, insert hose from vacuum truck into the sump and screen through both access covers to clean out the standing water, layer of oil, sediment, trash, etc. • The screen must be powerwashed to ensure it is free of trash and debris.

Stormwater Planters	Early Spring (before new growth is 3 inches high)	• Cut and remove dead stalks and seed heads remaining from previous season. • Remove sticks and debris. • Prune shrubs if necessary. • Divide and move perennials if they are too crowded. • Replenish mulch layer to maintain a • 3 inch layer of shredded bark.
	Late Spring	• Remove weeds. • Water as needed during periods of drought.
	Fall	• Removed weeds and diseased plants. • Remove excess leaves. • If fall is dry, continue to water trees and shrubs until ground begins to freeze (later October). These woody plants need moisture entering winter to ensure survival.

The owner/operator responsible for inspection and maintenance as outlined above:

Farrell Building Company
Mr. Stephen Zagoren
2317 Montauk Highway
Bridgehampton, NY 11932
Phone: (631) 766-0023
Email: zags1413@gmail.com

p:\2018\18119\drainage\reports\18119-temporary & permanent s&e inspection and maintenance checklist.docx

CONTECH®
ENGINEERED SOLUTIONS

CDS Guide
Operation, Design, Performance and Maintenance



CDS®

Using patented continuous deflective separation technology, the CDS system screens, separates and traps debris, sediment, and oil and grease from stormwater runoff. The indirect screening capability of the system allows for 100% removal of floatables and neutrally buoyant material without blinding. Flow and screening controls physically separate captured solids, and minimize the re-suspension and release of previously trapped pollutants. Inline units can treat up to 6 cfs, and internally bypass flows in excess of 50 cfs (1416 L/s). Available precast or cast-in-place, offline units can treat flows from 1 to 300 cfs (28.3 to 8495 L/s). The pollutant removal capacity of the CDS system has been proven in lab and field testing.

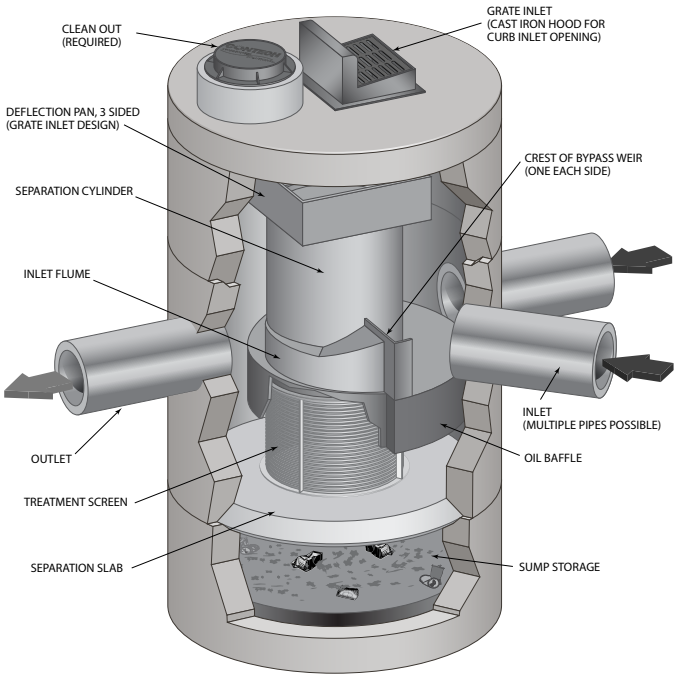
Operation Overview

Stormwater enters the diversion chamber where the diversion weir guides the flow into the unit's separation chamber and pollutants are removed from the flow. All flows up to the system's treatment design capacity enter the separation chamber and are treated.

Swirl concentration and screen deflection force floatables and solids to the center of the separation chamber where 100% of floatables and neutrally buoyant debris larger than the screen apertures are trapped.

Stormwater then moves through the separation screen, under the oil baffle and exits the system. The separation screen remains clog free due to continuous deflection.

During the flow events exceeding the treatment design capacity, the diversion weir bypasses excessive flows around the separation chamber, so captured pollutants are retained in the separation cylinder.



Design Basics

There are three primary methods of sizing a CDS system. The Water Quality Flow Rate Method determines which model size provides the desired removal efficiency at a given flow rate for a defined particle size. The Rational Rainfall Method™ or the and Probabilistic Method is used when a specific removal efficiency of the net annual sediment load is required.

Typically in the Unites States, CDS systems are designed to achieve an 80% annual solids load reduction based on lab generated performance curves for a gradation with an average particle size (d50) of 125 microns (μm). For some regulatory environments, CDS systems can also be designed to achieve an 80% annual solids load reduction based on an average particle size (d50) of 75 microns (μm) or 50 microns (μm).

Water Quality Flow Rate Method

In some cases, regulations require that a specific treatment rate, often referred to as the water quality design flow (WQQ), be treated. This WQQ represents the peak flow rate from either an event with a specific recurrence interval, e.g. the six-month storm, or a water quality depth, e.g. 1/2-inch (13 mm) of rainfall.

The CDS is designed to treat all flows up to the WQQ. At influent rates higher than the WQQ, the diversion weir will direct most flow exceeding the WQQ around the separation chamber. This allows removal efficiency to remain relatively constant in the separation chamber and eliminates the risk of washout during bypass flows regardless of influent flow rates.

Treatment flow rates are defined as the rate at which the CDS will remove a specific gradation of sediment at a specific removal efficiency. Therefore the treatment flow rate is variable, based on the gradation and removal efficiency specified by the design engineer.

Rational Rainfall Method™

Differences in local climate, topography and scale make every site hydraulically unique. It is important to take these factors into consideration when estimating the long-term performance of any stormwater treatment system. The Rational Rainfall Method combines site-specific information with laboratory generated performance data, and local historical precipitation records to estimate removal efficiencies as accurately as possible.

Short duration rain gauge records from across the United States and Canada were analyzed to determine the percent of the total annual rainfall that fell at a range of intensities. US stations' depths were totaled every 15 minutes, or hourly, and recorded in 0.01-inch increments. Depths were recorded hourly with 1-mm resolution at Canadian stations. One trend was consistent at all sites; the vast majority of precipitation fell at low intensities and high intensity storms contributed relatively little to the total annual depth.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Rainfall Method. Since most sites are relatively small and highly impervious, the Rational Rainfall Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS system are

determined. Performance efficiency curve determined from full scale laboratory tests on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Probabilistic Rational Method

The Probabilistic Rational Method is a sizing program Contech developed to estimate a net annual sediment load reduction for a particular CDS model based on site size, site runoff coefficient, regional rainfall intensity distribution, and anticipated pollutant characteristics.

The Probabilistic Method is an extension of the Rational Method used to estimate peak discharge rates generated by storm events of varying statistical return frequencies (e.g. 2-year storm event). Under the Rational Method, an adjustment factor is used to adjust the runoff coefficient estimated for the 10-year event, correlating a known hydrologic parameter with the target storm event. The rainfall intensities vary depending on the return frequency of the storm event under consideration. In general, these two frequency dependent parameters (rainfall intensity and runoff coefficient) increase as the return frequency increases while the drainage area remains constant.

These intensities, along with the total drainage area and runoff coefficient for each specific site, are translated into flow rates using the Rational Method. Since most sites are relatively small and highly impervious, the Rational Method is appropriate. Based on the runoff flow rates calculated for each intensity, operating rates within a proposed CDS are determined. Performance efficiency curve on defined sediment PSDs is applied to calculate solids removal efficiency. The relative removal efficiency at each operating rate is added to produce a net annual pollutant removal efficiency estimate.

Treatment Flow Rate

The inlet throat area is sized to ensure that the WQQ passes through the separation chamber at a water surface elevation equal to the crest of the diversion weir. The diversion weir bypasses excessive flows around the separation chamber, thus preventing re-suspension or re-entrainment of previously captured particles.

Hydraulic Capacity

The hydraulic capacity of a CDS system is determined by the length and height of the diversion weir and by the maximum allowable head in the system. Typical configurations allow hydraulic capacities of up to ten times the treatment flow rate. The crest of the diversion weir may be lowered and the inlet throat may be widened to increase the capacity of the system at a given water surface elevation. The unit is designed to meet project specific hydraulic requirements.

Performance

Full-Scale Laboratory Test Results

A full-scale CDS system (Model CDS2020-5B) was tested at the facility of University of Florida, Gainesville, FL. This CDS unit was evaluated under controlled laboratory conditions of influent flow rate and addition of sediment.

Two different gradations of silica sand material (UF Sediment & OK-110) were used in the CDS performance evaluation. The particle size distributions (PSDs) of the test materials were analyzed using standard method "Gradation ASTM D-422 "Standard Test Method for Particle-Size Analysis of Soils" by a certified laboratory.

UF Sediment is a mixture of three different products produced by the U.S. Silica Company: "Sil-Co-Sil 106", "#1 DRY" and "20/40 Oil Frac". Particle size distribution analysis shows that the UF Sediment has a very fine gradation (d50 = 20 to 30 μm) covering a wide size range (Coefficient of Uniformity, C averaged at 10.6). In comparison with the hypothetical TSS gradation specified in the NJDEP (New Jersey Department of Environmental Protection) and NJCAT (New Jersey Corporation for Advanced Technology) protocol for lab testing, the UF Sediment covers a similar range of particle size but with a finer d50 (d50 for NJDEP is approximately 50 μm) (NJDEP, 2003).

The OK-110 silica sand is a commercial product of U.S. Silica Sand. The particle size distribution analysis of this material, also included in Figure 1, shows that 99.9% of the OK-110 sand is finer than 250 microns, with a mean particle size (d50) of 106 microns. The PSDs for the test material are shown in Figure 1.

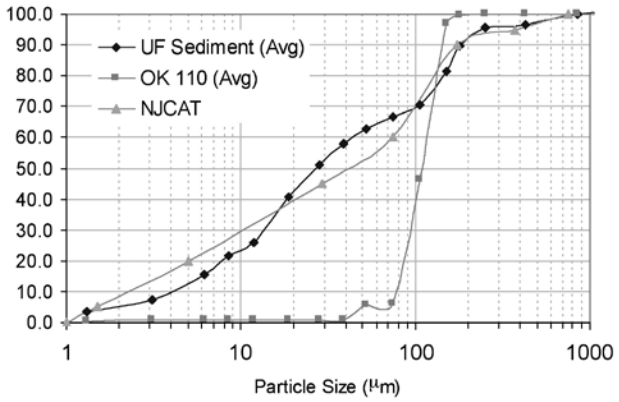


Figure 1. Particle size distributions

Tests were conducted to quantify the performance of a specific CDS unit (1.1 cfs (31.3-L/s) design capacity) at various flow rates, ranging from 1% up to 125% of the treatment design capacity of the unit, using the 2400 micron screen. All tests were conducted with controlled influent concentrations of approximately 200 mg/L. Effluent samples were taken at equal time intervals across the entire duration of each test run. These samples were then processed with a Dekaport Cone sample splitter to obtain representative sub-samples for Suspended Sediment Concentration (SSC) testing using ASTM D3977-97 "Standard Test Methods for Determining Sediment Concentration in Water Samples", and particle size distribution analysis.

Results and Modeling

Based on the data from the University of Florida, a performance model was developed for the CDS system. A regression analysis was used to develop a fitting curve representative of the scattered data points at various design flow rates. This model, which demonstrated good agreement with the laboratory data, can then be used to predict CDS system performance with respect

to SSC removal for any particle size gradation, assuming the particles are inorganic sandy-silt. Figure 2 shows CDS predictive performance for two typical particle size gradations (NJCAT gradation and OK-110 sand) as a function of operating rate.

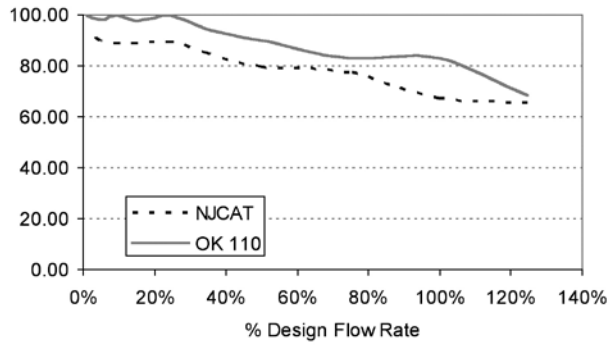


Figure 2. CDS stormwater treatment predictive performance for various particle gradations as a function of operating rate.

Many regulatory jurisdictions set a performance standard for hydrodynamic devices by stating that the devices shall be capable of achieving an 80% removal efficiency for particles having a mean particle size (d50) of 125 microns (e.g. Washington State Department of Ecology — WASDOE - 2008). The model can be used to calculate the expected performance of such a PSD (shown in Figure 3). The model indicates (Figure 4) that the CDS system with 2400 micron screen achieves approximately 80% removal at the design (100%) flow rate, for this particle size distribution (d50 = 125 μm).

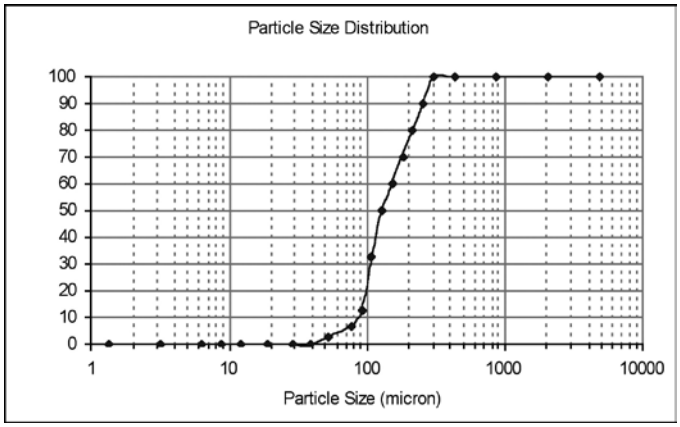


Figure 3. WASDOE PSD

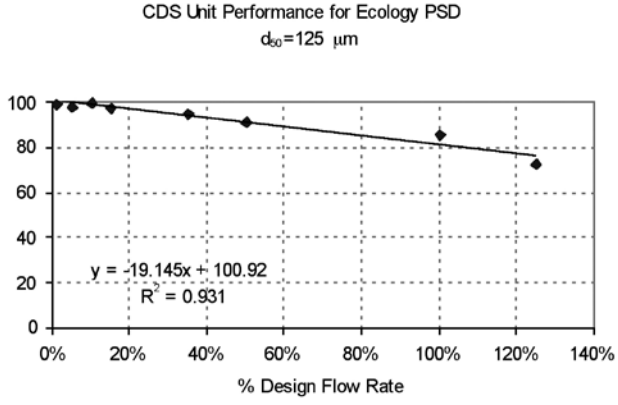


Figure 4. Modeled performance for WASDOE PSD.

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified



during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be cleaned to ensure it is free of trash and debris.

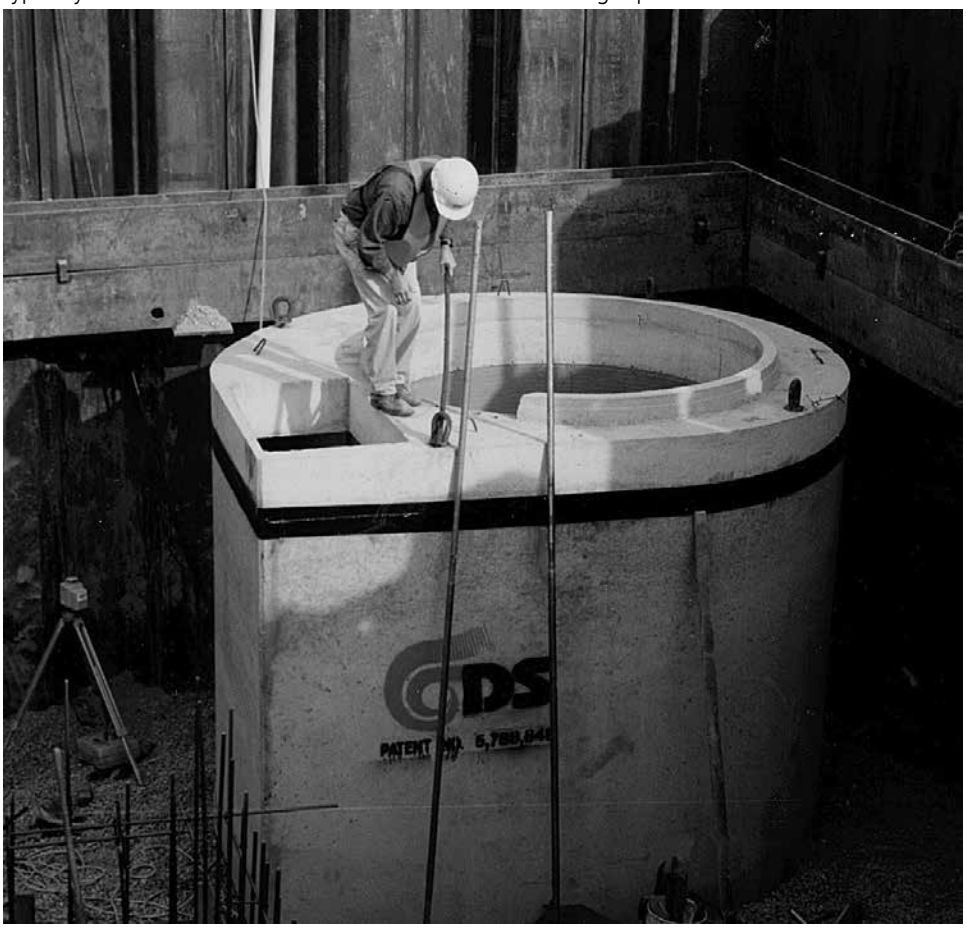
Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y^3	m^3
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.5	3.0	0.9	1.3	1.0
CDS2020	5	1.5	3.5	1.1	1.3	1.0
CDS2025	5	1.5	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

Note: To avoid underestimating the volume of sediment in the chamber, carefully lower the measuring device to the top of the sediment pile. Finer silty particles at the top of the pile may be more difficult to feel with a measuring stick. These finer particles typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.



CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile**.

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

SUPPORT

- Drawings and specifications are available at www.ContechES.com.
- Site-specific design support is available from our engineers.

CONTECH®
ENGINEERED SOLUTIONS
800-338-1122
www.ContechES.com

©2017 Contech Engineered Solutions LLC, a QUIKRETE Company

Contech Engineered Solutions provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, earth stabilization and stormwater treatment products. For information on other Contech division offerings, visit www.ContechES.com or call 800.338.1122

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.

The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; related foreign patents or other patents pending.

cds_manual 3/17 PDF

RECYCLED PAPER

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Nonpoint Pollution Control
Division of Water Quality
401-02B
Post Office Box 420
Trenton, New Jersey 08625-0420
609-633-7021 Fax: 609-777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

March 21, 2017

Derek M. Berg
Contech Engineered Solutions, LLC
71 US Route 1, Suite F
Scarborough, ME 04074

Re: Revised MTD Lab Certification
Continuous Deflective Separator (CDS®) Stormwater Treatment Device by Contech Engineered Solutions, LLC
On-line Installation

TSS Removal Rate 50%

Dear Mr. Berg:

This revised certification letter supersedes the Department's prior certification dated January 9, 2015. This revision was completed to reflect the updated Manufactured Treatment Device (MTD) scaling methodology as agreed upon by the manufacturers' working group on September 19, 2016. In part, the updated scaling for hydrodynamic MTDs is based on the depth of the reference (tested) MTD from the top of the false floor utilized during removal efficiency testing, not from the physical bottom of the unit. Based on the above decision, Table A-2 of the NJCAT Technology Verification report located at http://www.njcat.org/uploads/newDocs/CDSVerificationReportFinal1.pdf has been revised, and Table 1 noted below has been added.

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7 (c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Contech Engineered Solutions, LLC has requested an MTD Laboratory Certification for the CDS® Stormwater Treatment Device.

The verification is subject to the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification

New Jersey is an Equal Opportunity Employer
Printed on Recycled Paper and Recyclable

Appendix dated September 2014 (Revised January 2017) for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The NJDEP certifies the use of the CDS® Stormwater Treatment Device by Contech Engineered Solutions, LLC at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The CDS® Stormwater Treatment Device shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.

3. This CDS® Stormwater Treatment Device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual which can be found on-line at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the CDS® Stormwater Treatment Device. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at http://www.conteches.com/products/stormwater-management/treatment/cds.aspx#1822141-technical-info for any changes to the maintenance requirements.

6. Sizing Requirements:

   The example below demonstrates the sizing procedure for the CDS®:

   Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using a CDS®. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

   Maximum Treatment Flow Rate (MTFR) Evaluation:

   The site runoff (Q) was based on the following:
   time of concentration = 10 minutes
   i=3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
   c=0.99 (runoff coefficient for impervious)
   Q=ciA=0.99x3.2x0.25=0.79 cfs

   Given the site runoff is 0.79 cfs and based on Table 1 below, the CDS® Model CDS-4 with an MTFR of 0.93 cfs would be the smallest model approved that could be used for this site that could remove 50% of the TSS from the impervious area without exceeding the MTFR.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1 and A-2.

Table 1 CDS Models

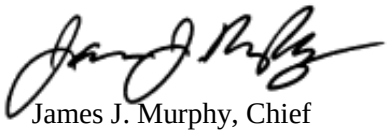
CDS Model	Manhole Diameter (ft.)	Treatment Chamber Depth (ft.)	MTFR (cfs)
CDS-3	3	3.50	0.52
CDS-4	4	3.50	0.93
CDS-5	5	3.75	1.5
CDS-6	6	4.50	2.1
CDS-7	7	5.25	2.8
CDS-8	8	6.00	3.7
CDS-10	10	7.50	5.8
CDS-12	12	9.00	8.4

- Treatment Chamber Depth is defined as the depth below the invert to the top of the false floor installed at 50% sediment depth.

A detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Mr. Shashi Nayak of my office at (609) 633-7021.

Sincerely,



James J. Murphy, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

c: Chron File
Richard Magee, NJCAT
Vince Mazzei, NJDEP - DLUR
Ravi Patraju, NJDEP - BES
Gabriel Mahon, NJDEP - BNPC
Shashi Nayak, NJDEP – BNPC

CONTECH®
ENGINEERED SOLUTIONS

CDS® Inspection and Maintenance Guide – New Jersey



CDS TECHNOLOGIES

Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point allows both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine weather the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump. Refer to Table 1 for depth from water surface to top of sediment pile for each model size indicating that maintenance is required.

Cleaning

Cleaning of a CDS systems should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile[1]		Sediment Storage Capacity	
	ft	m	ft	m	yd^3	m^3
CDS-3	3	0.9	3.0	0.9	0.5	0.4
CDS-4	4	1.2	3.0	0.9	0.9	0.7
CDS-5	5	1.5	3.25	1.0	1.5	1.1
CDS-6	6	1.8	4.0	1.2	2.1	1.6
CDS-7	7	2.1	4.75	1.4	2.9	2.2
CDS-8	8	2.4	5.5	1.7	3.7	2.8
CDS-10	10	3.0	7.0	2.1	5.8	4.4
CDS-12	12	3.4	8.5	2.6	8.4	6.4

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities

[1] Distances from water surface to top of sediment pile are based on 75% of sump capacity being occupied.



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

©2017 Contech Engineered Solutions LLC, a QUIKRETE Company

Contech Engineered Solutions LLC provides site solutions for the civil engineering industry. Contech's portfolio includes bridges, drainage, sanitary sewer, earth stabilization and stormwater treament products. For information, visit www.ContechES.com or call 800.338.1122

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.

The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

CONTECH ENGINEERED SOLUTIONS

800.925.5240
www.ContechES.com

CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

Date	Water depth to sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**

2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

Peak Flow Design Summary

Beacon Commons WQ Unit

Beacon, New York

Information Provided:

- Outlet pipe invert elevation: 31.15'
- Top of the separation cylinder: 33.319' (determined by Contech)
- Peak flow: 0.42 cfs (calculated by the engineer of record)

Size estimates:

The Inline CDS Unit is placed on the main storm drain within one manhole. This system's unique configuration meets multiple engineering objectives by combining both treatment and bypass capabilities in one structure. By utilizing CDS' patented non-blocking screening technology, the Inline Unit ensures removal of both fine and suspended solids along with oil, grease, trash and debris. Offering a remarkably small footprint, this system can be incorporated into new development projects or retrofitted into existing storm water collection systems. It can also be fitted with an inlet grate to accept surface flow.

For this project, the Inline CDS Unit was designed to treat the 1.4" water quality design storm. The peak design storm flow rate is also checked to ensure that the CDS unit can remain inline without threat of re-suspension of accumulated sediment during peak storm events. The elevation of the CDS internal assembly is determined by the outlet pipe elevation to ensure that all incoming flows are treated. The floor of the inlet flume is placed equal to the outlet pipe elevation.

The internal weir that routes the water quality flow through the internal assembly is 1' tall and 1.88' wide for the CDS2015-4. The amount of flow that can bypass over this weir and directly exit the unit is determined by the height of the separation cylinder. The separation cylinder is sized to allow for the rise in water level during peak events whilst not losing floatables and debris. In this case, the top of the separation cylinder is 33.319'. The weir equation is then used to calculate the maximum bypass flow rate that can be passed through the unit.

$$Q = cLH^{3/2}$$

Q = flow in cfs that can be passed over the weir
c = constant for the CDS weir
L = width of the weir
H = head over the weir to the top of the separation cylinder

$$Q = (3.33)(1.88)[33.319-(31.15+1)]^{3/2}$$
$$Q = 7.91 \text{ cfs}$$

The CDS2015-4 is able to bypass up to 7.91 cfs before the treatment cylinder is submerged. Since this is more than the 0.42 cfs peak event that was provided by the engineer of record, the CDS unit can safely be put online. The following page contains details of the CDS internal assembly for clarity.

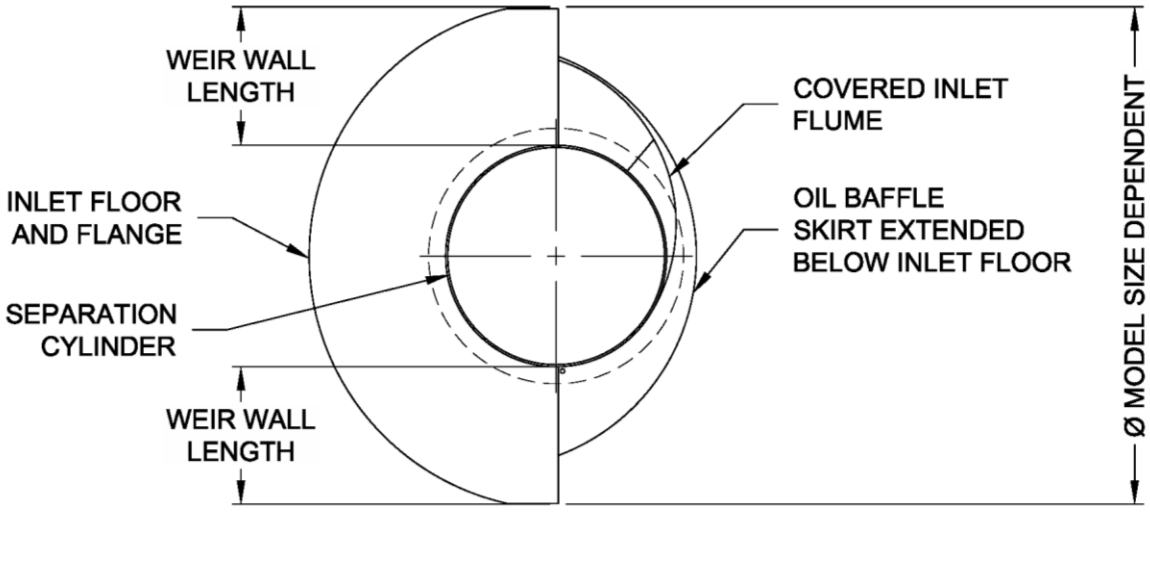


Figure 1. Plan view of the internal assembly showing two weir walls that are added together to make the total weir width.

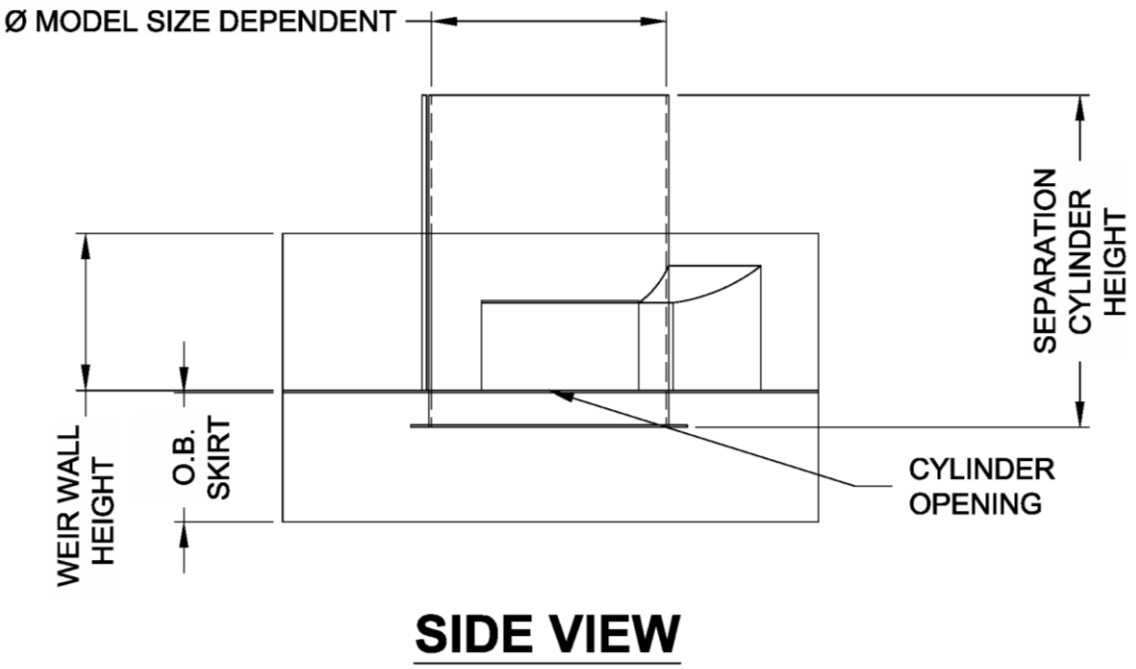
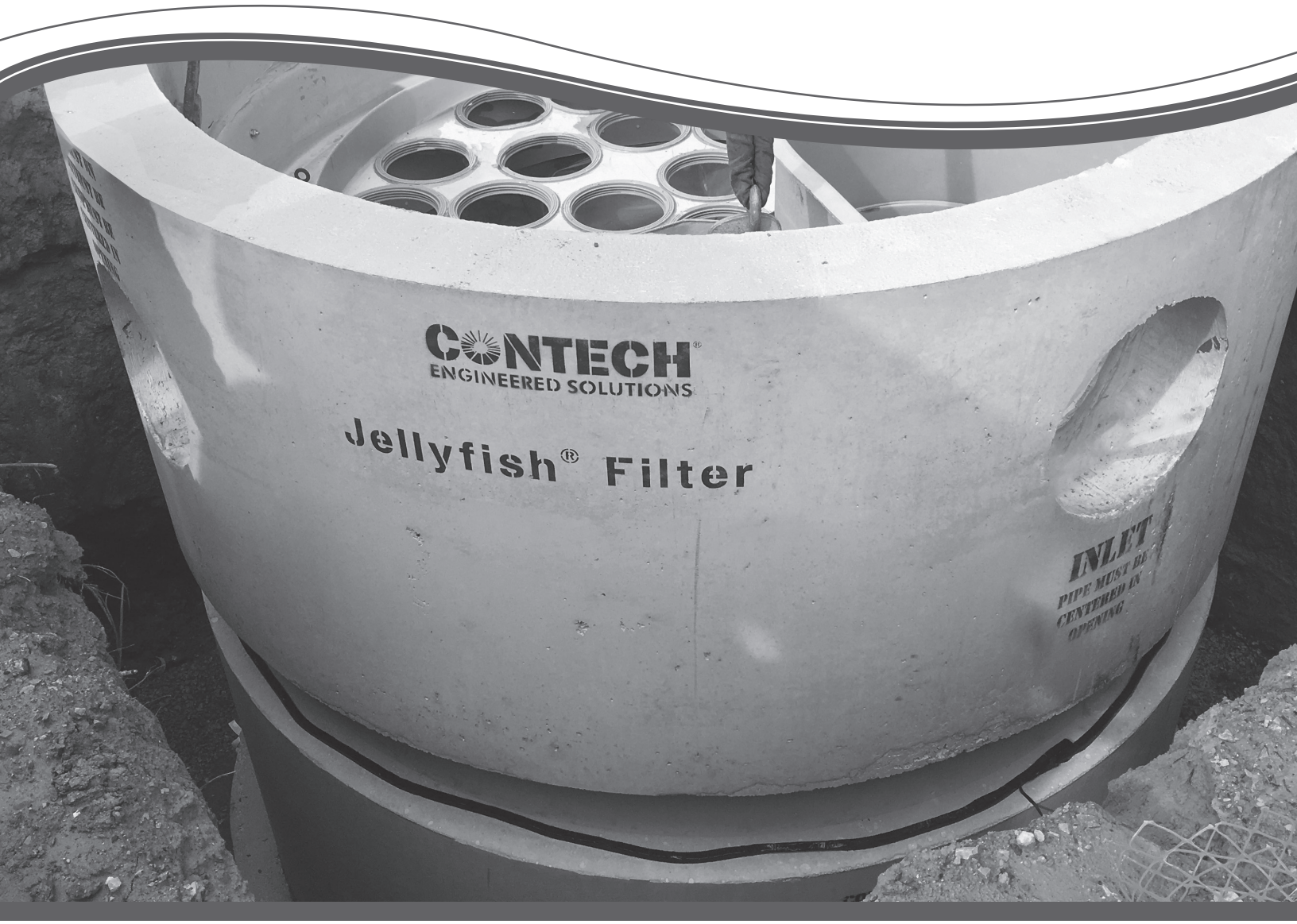


Figure 2. Side elevation view showing the weir wall height and separation cylinder height. The difference in elevation taken from the top of the separation cylinder to the top of the weir wall is the head space available for the peak flow to pass through.

CONTECH®
ENGINEERED SOLUTIONS

Jellyfish® Filter
Owner's Manual



Jellyfish® Filter

869

Table of Contents

Chapter 1
1.0 Owner Specific Jellyfish Product Information 4
Chapter 2
2.0 Jellyfish Filter System Operations & Functions 5
2.1 Components & Cartridges 6
2.2 Jellyfish Membrane Filtration Cartridges Assembly 7
2.3 Installation of Jellyfish Membrane Filtration Cartridges 7
Chapter 3
3.0 Inspection and Maintenance Overview 8
Chapter 4
4.0 Inspection Timing 8
Chapter 5
5.0 Inspection Procedure 8
5.1 Dry Weather Inspections 8
5.1 Wet Weather Inspections 9
Chapter 6
6.0 Maintenance Requirements 9
Chapeter 7
7.0 Maintenance Procedure 9
7.1 Filter Cartridge Removal 9
7.2 Filter Cartridge Rinsing 9
7.3 Sediment and Flotables Extraction 10
7.4 Filter Cartridge Reinstallatino and Replacement 10
7.5 Chemical Spills 10
5.6 Material Disposal 10

Jellyfish Filter Inspection and Maintenance Log 12

THANK YOU FOR PURCHASING THE JELLYFISH® FILTER!

Contech Engineered Solutions would like to thank you for selecting the Jellyfish Filter to meet your project's stormwater treatment needs. With proper inspection and maintenance, the Jellyfish Filter is designed to deliver ongoing, high levels of stormwater pollutant removal.

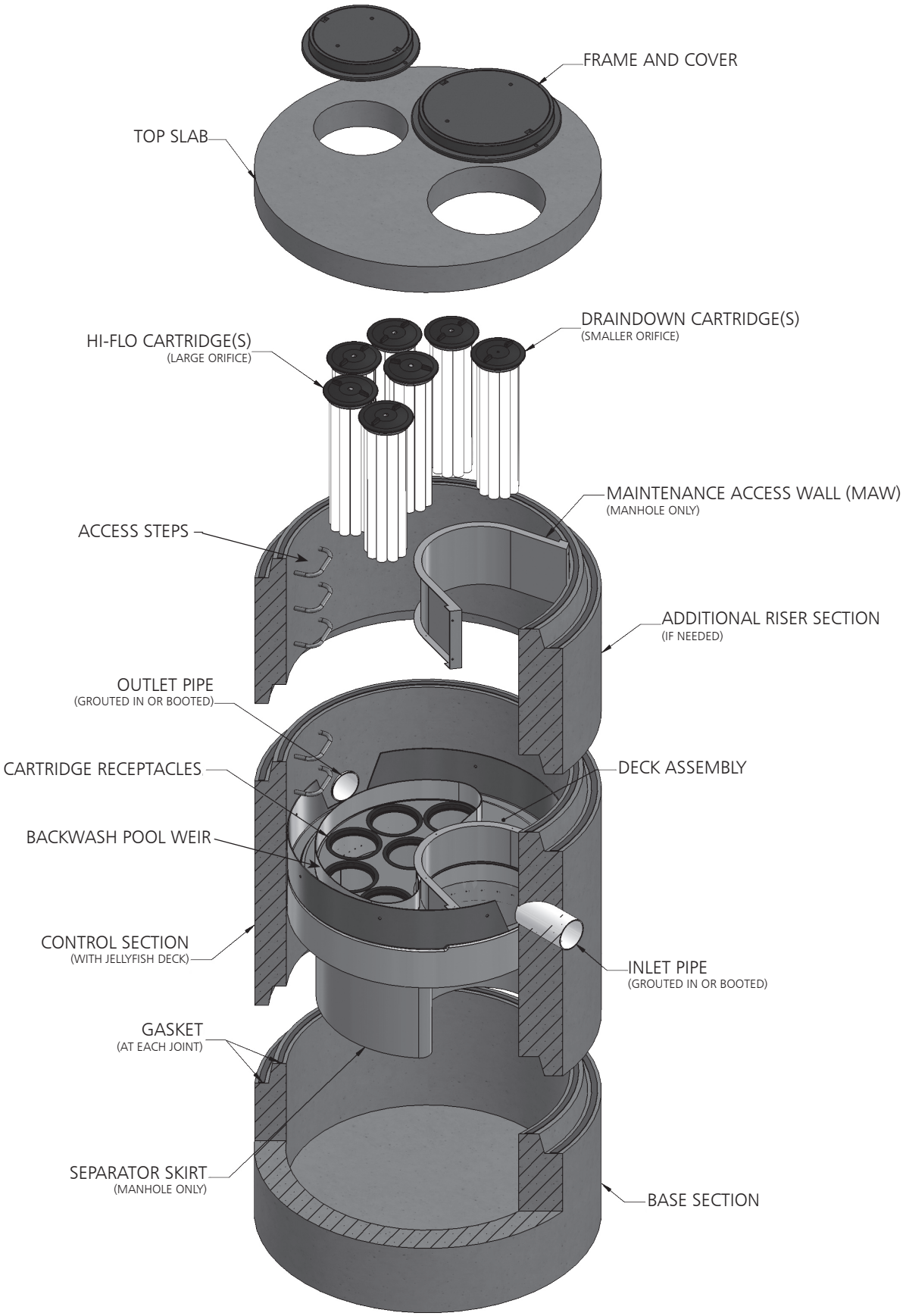
If you have any questions, please feel free to call us or e-mail us:

Contech Engineered Solutions
9025 Centre Pointe Drive, Suite 400 | West Chester, OH 45069
513-645-7000 | 800-338-1122
www.ContechES.com
info@conteches.com

Jellyfish Filter Patents

The Jellyfish Filter is protected by one or more of the following patents:

U.S. Patent Nos. 8,123,935; 8,287,726; 8,221,618
Australia Patent Nos. 2008, 286, 748
Canadian Patent Nos. 2,696,482;
Japanese Patent No. 5,646,681
Korean Patent Nos. 10-1287539; 10-1400257
New Zealand Patent Nos. 583,461; 604,227
South African Patent No. 2010,01068
*other patents pending


FRAME AND COVER
TOP SLAB
DRAINDOWN CARTRIDGE(S)
(SMALLER ORIFICE)
HI-FLO CARTRIDGE(S)
(LARGE ORIFICE)
MAINTENANCE ACCESS WALL (MAW)
(MANHOLE ONLY)
ACCESS STEPS
ADDITIONAL RISER SECTION
(IF NEEDED)
OUTLET PIPE
(GROUTED IN OR BOOTED)
CARTRIDGE RECEPTACLES
DECK ASSEMBLY
BACKWASH POOL WEIR
CONTROL SECTION
(WITH JELLYFISH DECK)
INLET PIPE
(GROUTED IN OR BOOTED)
GASKET
(AT EACH JOINT)
SEPARATOR SKIRT
(MANHOLE ONLY)
BASE SECTION

WARNINGS / CAUTION

1. FALL PROTECTION may be required.
2. WATCH YOUR STEP if standing on the Jellyfish Filter Deck at any time; Great care and safety must be taken while walking or maneuvering on the Jellyfish Filter Deck. Attentive care must be taken while standing on the Jellyfish Filter Deck at all times to prevent stepping onto a lid, into or through a cartridge hole or slipping on the deck.
3. The Jellyfish Filter Deck can be SLIPPERY WHEN WET.
4. If the Top Slab, Covers or Hatches have not yet been installed, or are removed for any reason, great care must be taken to NOT DROP ANYTHING ONTO THE JELLYFISH FILTER DECK. The Jellyfish Filter Deck and Cartridge Receptacle Rings can be damaged under high impact loads.This type of activity voids all warranties. All damaged items to be replaced at owner's expense.
5. Maximum deck load 2 persons, total weight 450 lbs.

Safety Notice

Jobsite safety is a topic and practice addressed comprehensively by others. The inclusions here are intended to be reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s) and Contractor(s). OSHA and Canadian OSH, and Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Contractor's responsibility and outside the scope of Contech Engineered Solutions.

Confined Space Entry

Secure all equipment and perform all training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to proceed safely at all times.

Personal Safety Equipment

Contractor is responsible to provide and wear appropriate personal protection equipment as needed including, but not limited to safety boots, hard hat, reflective vest, protective eyewear, gloves and fall protection equipment as necessary. Make sure all equipment is staffed with trained and/or certified personnel, and all equipment is checked for proper operation and safety features prior to use.

- Fall protection equipment
- Eye protection
- Safety boots
- Ear protection
- Gloves
- Ventilation and respiratory protection
- Hard hat
- Maintenance and protection of traffic plan

Chapter 1

1.0 – Owner Specific Jellyfish Filter Product Information

Below you will find a reference page that can be filled out according to your Jellyfish Filter specification to help you easily inspect, maintain and order parts for your system.

Owner Name:	
Phone Number:	
Site Address:	
Site GPS Coordinates/unit location:	
Unit Location Description:	
Jellyfish Filter Model No.:	
Contech Projetct & Sequence Number	
No. of Hi-Flo Cartridges	
No. of Cartridges:	
Length of Draindown Cartridges:	
No. of Blank Cartridge Lids:	
Bypass Configuration (Online/Offline):	

Notes:

_____

_____

_____

_____

Chapter 2

2.0 – Jellyfish Filter System Operations and Functions

The Jellyfish Filter is an engineered stormwater quality treatment technology that removes a high level and wide variety of stormwater pollutants. Each Jellyfish Filter cartridge consists of eleven membrane - encased filter elements ("filtration tentacles") attached to a cartridge head plate. The filtration tentacles provide a large filtration surface area, resulting in high flow and high pollutant removal capacity.

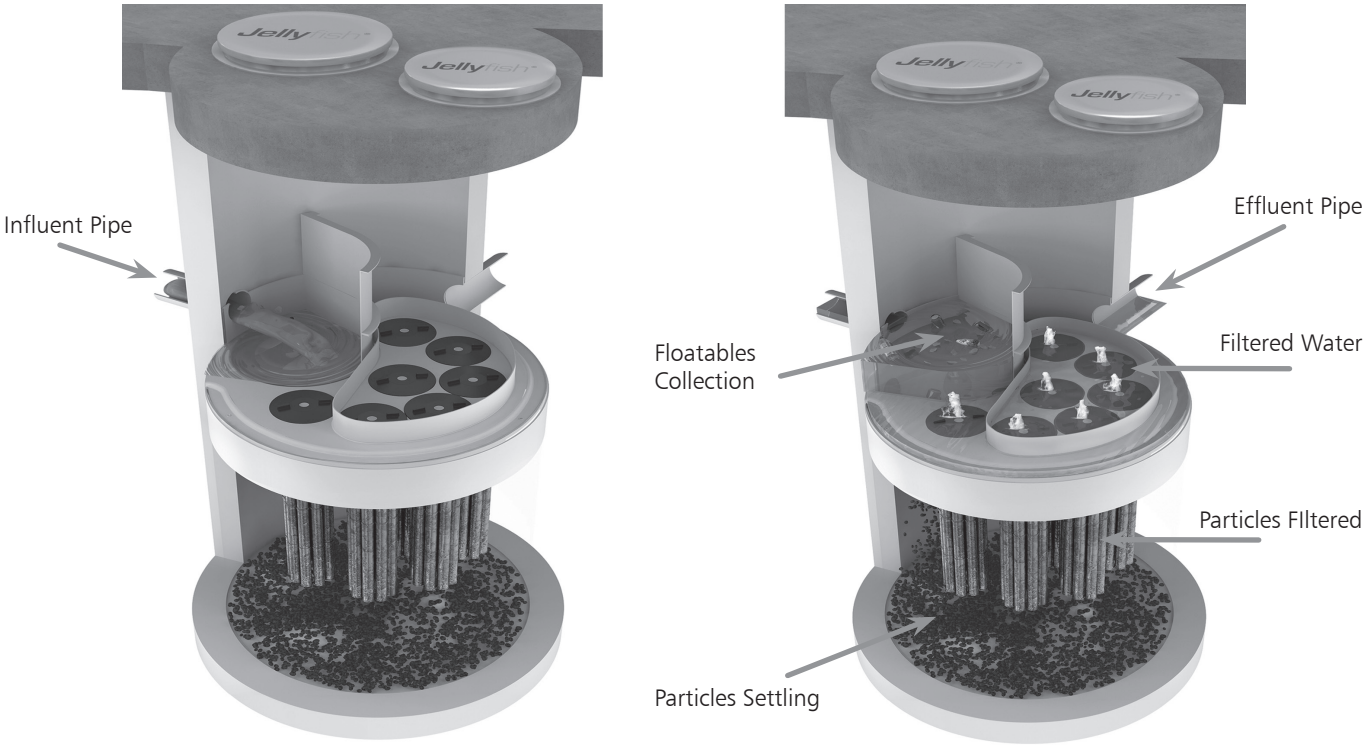
The Jellyfish Filter functions are depicted in Figure 1 below.

FIGURE 1

Jellyfish Filter Treatment Functions

Membrane Filtration

Section View with Maintenance Access Wall (MAW) Cutaway



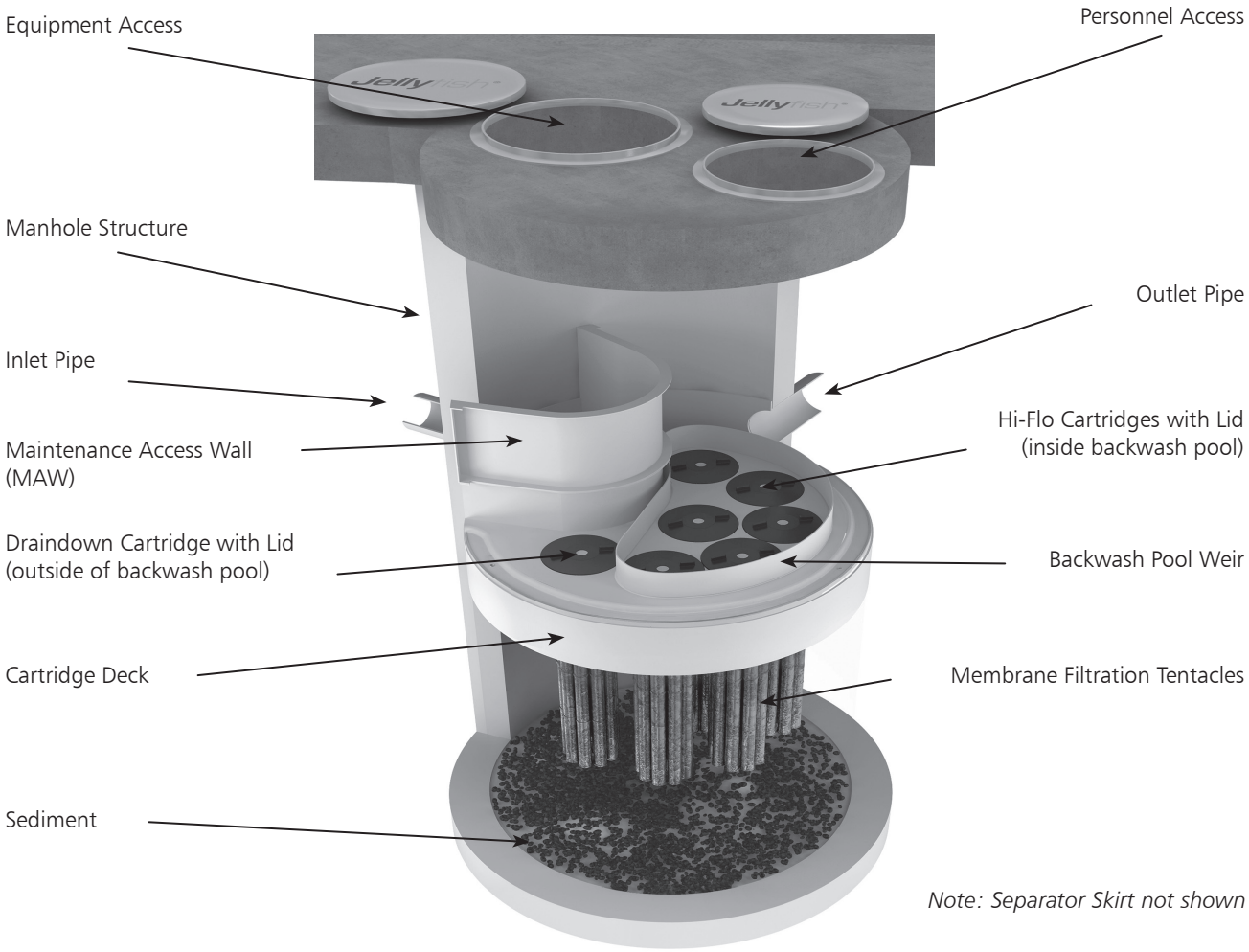
Jellyfish Filter cartridges are backwashed after each peak storm event, which removes accumulated sediment from the membranes. This backwash process extends the service life of the cartridges and increases the time between maintenance events.

For additional details on the operation and pollutant capabilities of the Jellyfish Filter please refer to additional details on our website at www.ContechES.com.

2.1 – Components and Cartridges

The Jellyfish Filter and components are depicted in Figure 2 below.

FIGURE 2 **Jellyfish Filter Components**



Tentacles are available in various lengths as depicted in Table 1 below.

Table 1 – Cartridge Lengths / Weights and Cartridge Lid Orifice Diameters

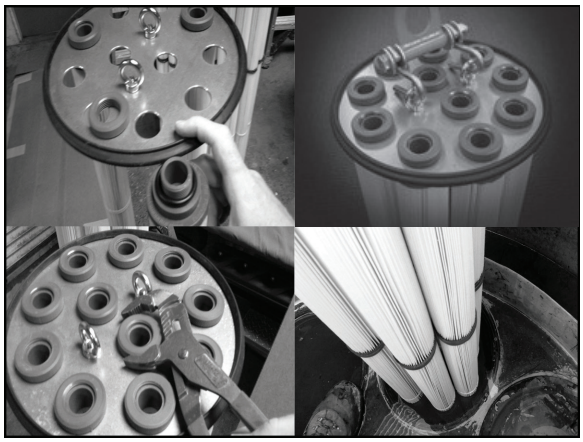
Cartridge Lengths	Dry Weight	Hi-Flo Orifice Diameter	Draindown Orifice Diameter
15 inches (381 mm)	10 lbs (4.5 kg)	35 mm	20 mm
27 inches (686 mm)	14.5 lbs (6.6 kg)	45 mm	25 mm
40 inches (1,016 mm)	19.5 lbs (8.9 kg)	55 mm	30 mm
54 inches (1,372 mm)	25 lbs (11.4 kg)	70 mm	35 mm

2.2 – Jellyfish Membrane Filtration Cartridge Assembly

The Jellyfish Filter utilizes multiple membrane filtration cartridges. Each cartridge consists of removable cylindrical filtration "tentacles" attached to a cartridge head plate. Each filtration tentacle has a threaded pipe nipple and o-ring. To attach, insert the top pipe nipples with the o-ring through the head plate holes and secure with locking nuts. Hex nuts to be hand tightened and checked with a wrench as shown below.

2.3 – Jellyfish Membrane Filtration Cartridge Installation

- Cartridge installation will be performed by trained individuals and coordinated with the installing site Contractor. Flow diversion devices are required to be in place until the site is stabilized (final paving and landscaping in place). Failure to address this step completely will reduce the time between required maintenance.
- Descend to the cartridge deck (see Safety Notice and page 3).
- Refer to Contech's submittal drawings to determine proper quantity and placement of Hi-Flo, Draindown and Blank cartridges with appropriate lids. Lower the Jellyfish membrane filtration cartridges into the cartridge receptacles within the cartridge deck. It is possible that not all cartridge receptacles will be filled with a filter cartridge. In that case, a blank headplate and blank cartridge lid (no orifice) would be installed.



Cartridge Assembly

Do not force the tentacles down into the cartridge receptacle, as this may damage the membranes. Apply downward pressure on the cartridge head plate to seat the lubricated rim gasket (thick circular gasket surrounding the circumference of the head plate) into the cartridge receptacle. (See Figure 3 for details on approved lubricants for use with rim gasket.)

- Examine the cartridge lids to differentiate lids with a small orifice, a large orifice, and no orifice.
  - Lids with a small orifice are to be inserted into the Draindown cartridge receptacles, outside of the backwash pool weir.
  - Lids with a large orifice are to be inserted into the Hi-Flo cartridge receptacles within the backwash pool weir.
  - Lids with no orifice (blank cartridge lids) and a blank headplate are to be inserted into unoccupied cartridge receptacles.
- To install a cartridge lid, align both cartridge lid male threads with the cartridge receptacle female threads before rotating approximately 1/3 of a full rotation until fimrly seated. Use of an approved rim gasket lubricant may faciliate installation.

3.0 Inspection and Maintenance Overview

The primary purpose of the Jellyfish® Filter is to capture and remove pollutants from stormwater runoff. As with any filtration system, these pollutants must be removed to maintain the filter's maximum treatment performance. Regular inspection and maintenance are required to insure proper functioning of the system.
Maintenance frequencies and requirements are site specific and vary depending on pollutant loading. Additional maintenance activities may be required in the event of non-storm event runoff, such as base-flow or seasonal flow, an upstream chemical spill or due to excessive sediment loading from site erosion or extreme runoff events. It is a good practice to inspect the system after major storm events.
Inspection activities are typically conducted from surface observations and include:

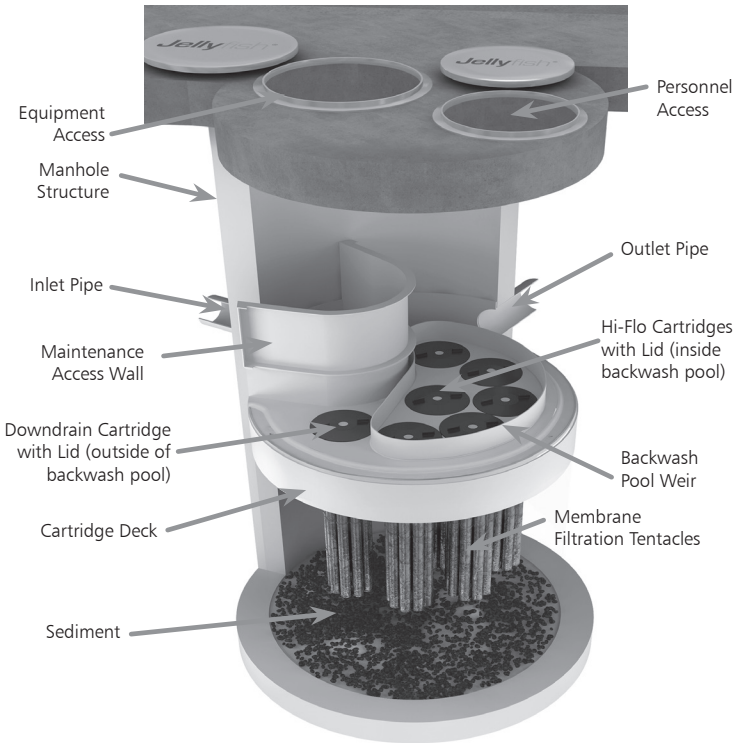
- Observe if standing water is present
- Observe if there is any physical damage to the deck or cartridge lids
- Observe the amount of debris in the Maintenance Access Wall (MAW) or inlet bay for vault systems

Maintenance activities include:

- Removal of oil, floatable trash and debris
- Removal of collected sediments
- Rinsing and re-installing the filter cartridges
- Replace filter cartridge tentacles, as needed

4.0 Inspection Timing

Inspection of the Jellyfish Filter is key in determining the maintenance requirements for, and to develop a history of, the site's pollutant loading characteristics. In general, inspections should be performed at the times indicated below; ***or per the approved project stormwater quality documents (if applicable), whichever is more frequent***.



Note: Separator Skirt not shown

1. A minimum of quarterly inspections during the first year of operation to assess the sediment and floatable pollutant accumulation, and to ensure proper functioning of the system.
2. Inspection frequency in subsequent years is based on the inspection and maintenance plan developed in the first year of operation. Minimum frequency should be once per year.
3. Inspection is recommended after each major storm event.
4. Inspection is required immediately after an upstream oil, fuel or other chemical spill.

5.0 Inspection Procedure

The following procedure is recommended when performing inspections:

1. Provide traffic control measures as necessary.
2. Inspect the MAW or inlet bay for floatable pollutants such as trash, debris, and oil sheen.
3. Measure oil and sediment depth in several locations, by lowering a sediment probe until contact is made with the floor of the structure. Record sediment depth, and presences of any oil layers.
4. Inspect cartridge lids. Missing or damaged cartridge lids to be replaced.
5. Inspect the MAW (where appropriate), cartridge deck and receptacles, and backwash pool weir, for damaged or broken components.

5.1 Dry weather inspections

- Inspect the cartridge deck for standing water, and/or sediment on the deck.
- No standing water under normal operating conditions.
- Standing water inside the backwash pool, but not outside the backwash pool indicates, that the filter cartridges need to be rinsed.



Inspection Utilizing Sediment Probe

- Standing water outside the backwash pool is not anticipated and may indicate a backwater condition caused by high water elevation in the receiving water body, or possibly a blockage in downstream infrastructure.
- Any appreciable sediment (≥1/16") accumulated on the deck surface should be removed.

5.2 Wet weather inspections

- Observe the rate and movement of water in the unit. Note the depth of water above deck elevation within the MAW or inlet bay.
- Less than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges (i.e. cartridges located outside the backwash pool).
- Greater than 6 inches, flow should be exiting the cartridge lids of each of the draindown cartridges and each of the hi-flo cartridges (i.e. cartridges located inside the backwash pool), and water should be overflowing the backwash pool weir.
- 18 inches or greater and relatively little flow is exiting the cartridge lids and outlet pipe, this condition indicates that the filter cartridges need to be rinsed.

6.0 Maintenance Requirements

Required maintenance for the Jellyfish Filter is based upon results of the most recent inspection, historical maintenance records, or the site specific water quality management plan; whichever is more frequent. In general, maintenance requires some combination of the following:

1. Sediment removal for depths reaching 12 inches or greater, or within 3 years of the most recent sediment cleaning, whichever occurs sooner.
2. Floatable trash, debris, and oil removal.
3. Deck cleaned and free from sediment.
4. Filter cartridges rinsed and re-installed as required by the most recent inspection results, or within 12 months of the most recent filter rinsing, whichever occurs sooner.
5. Replace tentacles if rinsing does not restore adequate hydraulic capacity, remove accumulated sediment, or if damaged or missing. It is recommended that tentacles should remain in service no longer than 5 years before replacement.
6. Damaged or missing cartridge deck components must be repaired or replaced as indicated by results of the most recent inspection.
7. The unit must be cleaned out and filter cartridges inspected immediately after an upstream oil, fuel, or chemical spill. Filter cartridge tentacles should be replaced if damaged or compromised by the spill.

7.0 Maintenance Procedure

The following procedures are recommended when maintaining the Jellyfish Filter:

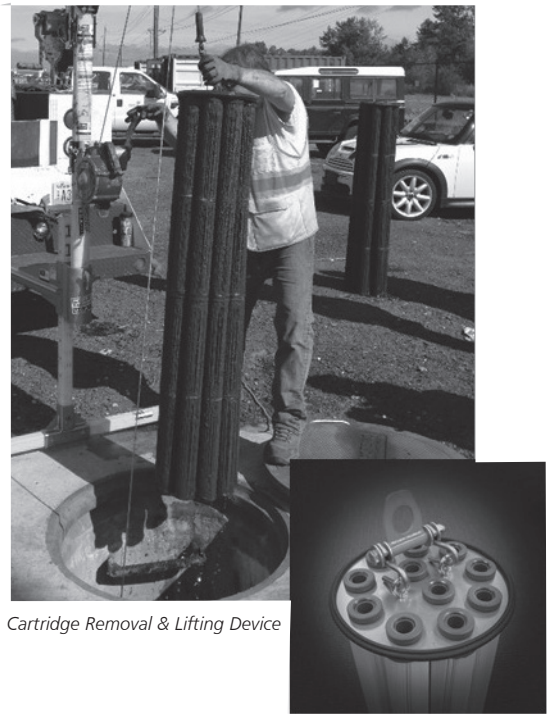
1. Provide traffic control measures as necessary.
2. Open all covers and hatches. Use ventilation equipment as required, according to confined space entry procedures. *Caution: Dropping objects onto the cartridge deck may cause damage*.
3. Perform Inspection Procedure prior to maintenance activity.
4. To access the cartridge deck for filter cartridge service, descend into the structure and step directly onto the deck. Caution: Do not step onto the maintenance access wall (MAW) or backwash pool weir, as damage may result. Note that the cartridge deck may be slippery.
5. Maximum weight of maintenance crew and equipment on the cartridge deck not to exceed 450 lbs.

7.1 Filter Cartridge Removal

1. Remove a cartridge lid.
2. Remove cartridges from the deck using the lifting loops in the cartridge head plate. Rope or a lifting device (available from Contech) should be used. ***Caution: Should a snag occur, do not force the cartridge upward as damage to the tentacles may result. Wet cartridges typically weigh between 100 and 125 lbs***.
3. Replace and secure the cartridge lid on the exposed empty receptacle as a safety precaution. Contech does not recommend exposing more than one empty cartridge receptacle at a time.

7.2 Filter Cartridge Rinsing

1. Remove all 11 tentacles from the cartridge head plate. Take care not to lose or damage the O-ring seal as well as the plastic threaded nut and connector.



Cartridge Removal & Lifting Device

2. Position tentacles in a container (or over the MAW), with the threaded connector (open end) facing down, so rinse water is flushed through the membrane and captured in the container.
3. Using the Jellyfish rinse tool (available from Contech) or a low-pressure garden hose sprayer, direct water spray onto the tentacle membrane, sweeping from top to bottom along the length of the tentacle. Rinse until all sediment is removed from the membrane. ***Caution: Do not use a high pressure sprayer or focused stream of water on the membrane. Excessive water pressure may damage the membrane***.

4. Collected rinse water is typically removed by vacuum hose.
5. Reassemble cartridges as detailed later in this document. Reuse O-rings and nuts, ensuring proper placement on each tentacle.

7.3 Sediment and Flotables Extraction

1. Perform vacuum cleaning of the Jellyfish Filter only after filter cartridges have been removed from the system. Access the lower chamber for vacuum cleaning only through the maintenance access wall (MAW) opening. Be careful not to damage the flexible plastic separator skirt that is attached to the underside of the deck on manhole systems. Do not lower the vacuum wand through a cartridge receptacle, as damage to the receptacle will result.
2. Vacuum floatable trash, debris, and oil, from the MAW opening or inlet bay. Alternatively, floatable solids may be removed by a net or skimmer.



Rinsing Cartridge with Contech Rinse Tool

3. Pressure wash cartridge deck and receptacles to remove all sediment and debris. Sediment should be rinsed into the sump area. Take care not to flush rinse water into the outlet pipe.
4. Remove water from the sump area. Vacuum or pump equipment should only be introduced through the MAW or inlet bay.
5. Remove the sediment from the bottom of the unit through the MAW or inlet bay opening.



Vacuuming Sump Through MAW

6. For larger diameter Jellyfish Filter manholes (≥8-ft) and some vaults complete sediment removal may be facilitated by removing a cartridge lid from an empty receptacle and inserting a jetting wand (not a vacuum wand) through the receptacle. Use the sprayer to rinse loosened sediment toward the vacuum hose in the MAW opening, being careful not to damage the receptacle.

7.4 Filter Cartridge Reinstallation and Replacement

1. Cartridges should be installed after the deck has been cleaned. It is important that the receptacle surfaces be free from grit and debris.
2. Remove cartridge lid from deck and carefully lower the filter cartridge into the receptacle until head plate gasket is seated squarely in receptacle. ***Caution: Do not force the cartridge downward; damage may occur.***
3. Replace the cartridge lid and check to see that both male threads are properly seated before rotating approximately 1/3 of a full rotation until firmly seated. Use of an approved rim gasket lubricant may facilitate installation. See next page for additional details.
4. If rinsing is ineffective in removing sediment from the tentacles, or if tentacles are damaged, provisions must be made to replace the spent or damaged tentacles with new tentacles. Contact Contech to order replacement tentacles.

7.5 Chemical Spills

Caution: If a chemical spill has been captured, do not attempt maintenance. Immediately contact the local hazard response agency and contact Contech.

7.6 Material Disposal

The accumulated sediment found in stormwater treatment and conveyance systems must be handled and disposed of in accordance with regulatory protocols. It is possible for sediments to contain measurable concentrations of heavy metals and organic chemicals (such as pesticides and petroleum products). Areas with the greatest potential for high pollutant loading include industrial areas and heavily traveled roads. Sediments and water must be disposed of in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. This typically requires coordination with a local landfill for solid waste disposal. For liquid waste disposal a number of options are available including a municipal vacuum truck decant facility, local waste water treatment plant or on-site treatment and discharge.

Jellyfish Filter Components & Filter Cartridge Assembly and Installation

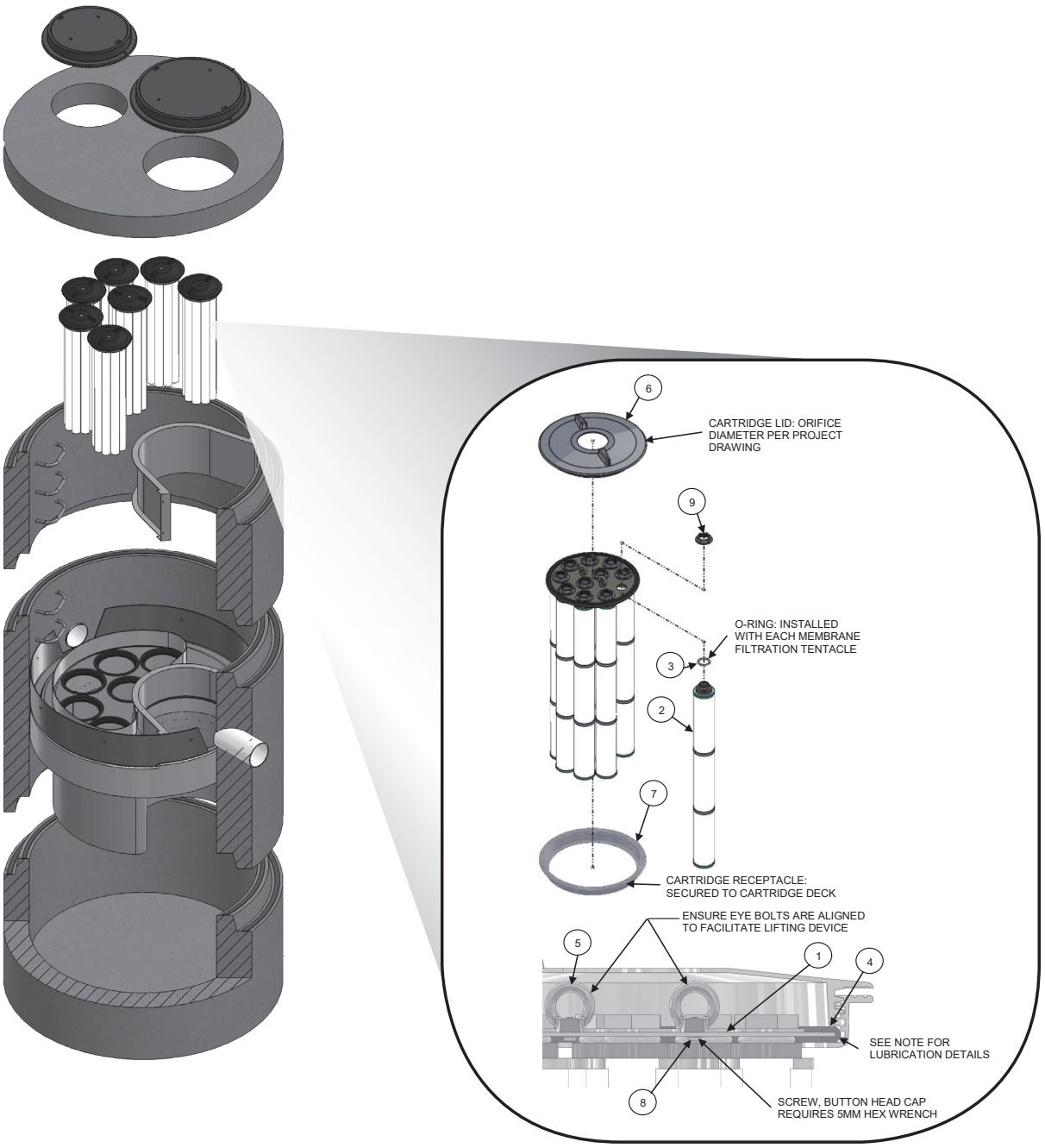


TABLE 1: BOM

ITEM NO.	DESCRIPTION
1	JF HEAD PLATE
2	JF TENTACLE
3	JF O-RING
4	JF HEAD PLATE GASKET
5	JF CARTRIDGE EYELET
6	JF 14IN COVER
7	JF RECEPTACLE
8	BUTTON HEAD CAP SCREW M6X14MM SS
9	JF CARTRIDGE NUT

TABLE 2: APPROVED GASKET LUBRICANTS

PART NO.	MFR	DESCRIPTION
78713	LA-CO	LUBRI-JOINT
40501	HERCULES	DUCK BUTTER
30600	OATEY	PIPE LUBRICANT
PSLUBXL1Q	PROSELECT	PIPE JOINT LUBRICANT

NOTES:

Head Plate Gasket Installation:
Install Head Plate Gasket (Item 4) onto the Head Plate (Item 1) and liberally apply a lubricant from Table 2: Approved Gasket Lubricants onto the gasket where it contacts the Receptacle (Item 7) and Cartridge Lid (Item 6). Follow Lubricant manufacturer's instructions.

Lid Assembly:
Rotate Cartridge Lid counter-clockwise until both male threads drop down and properly seat. Then rotate Cartridge Lid clock-wise approximately one-third of a full rotation until Cartridge Lid is firmly secured, creating a watertight seal.

Jellyfish Filter Inspection and Maintenance Log

Owner: _____ Jellyfish Model No.:_____

Location: _____ GPS Coordinates: _____

Land Use: Commercial:_____ Industrial: _____ Service Station:_____

Road/Highway:____ Airport: _____ Residential: _____ Parking Lot:_____

Date/Time:					
Inspector:					
Maintenance Contractor:					
Visible Oil Present: (Y/N)					
Oil Quantity Removed					
Floatable Debris Present: (Y/N)					
Floatable Debris removed: (Y/N)					
Water Depth in Backwash Pool					
Cartridges externally rinsed/re-commissioned: (Y/N)					
New tentacles put on Cartridges: (Y/N)					
Sediment Depth Measured: (Y/N)					
Sediment Depth (inches or mm):					
Sediment Removed: (Y/N)					
Cartridge Lids intact: (Y/N)					
Observed Damage:					
Comments:					

Jellyfish Bypass Capacity

Beacon Commons WQ Unit

Beacon, NY
2/24/22

Information Provided by Engineer:

- Water quality flow rate = 0.88 cfs
- 100-YR peak flow rate = 5.23 cfs

Design Summary:

During a peak storm event, flows that exceed the water quality flow will bypass over the weir. Although the weir is built into the Peak Diversion Jellyfish vault, it is fully external to the filter components and serves as external bypass. 54" Jellyfish cartridges require 1.5' of activation head. Based on this head, the top of weir elevation was calculated to be 35.00'. The maximum bypass capacity is calculated using the flow over weir calculation below:

$$Q = CLH^{3/2} = 3.2 \times (L) \times (H)^{3/2}$$

where H is the height of the gap over the weir and L is the length of the weir

Unit Name	Vault Size	Rim Elevation	Outlet Invert Elevation	Top of Weir Elevation	Weir Length	Bottom of Top Slab Elevation	Maximum Bypass Capacity, Q (cfs)
JFPD	8x6	39.30	33.50	35.00	2.75	37.96	**46.21**

$$Q = 3.3(2.75)(37.96 - 35.00)^{3/2} = 46.21\ cfs$$

Summary:

Based on the calculation outlined above, the unit is capable of bypassing the peak flow. Thank you for the opportunity to present this information to you and your client. If you have any questions, please feel free to call me at 443-457-1524.

Sincerely,

Joe Agbey
Contech Engineered Solutions LLC

©2017 Contech Engineered Solutions
conteches.com
7037 Ridge Road, Suite 350 | Hanover, MD 21076
Office: 443-457-1500 Fax: 410-740-8492

StormTech®
Detention • Retention • Water Quality
A division of ADS

Save Valuable Land and Protect Water Resources



Isolator® Row O&M Manual

StormTech® Chamber System for Stormwater Management

1.0 The Isolator® Row

1.1 INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row is a patented technique to inexpensively enhance Total Suspended Solids (TSS) removal and provide easy access for inspection and maintenance.



Looking down the Isolator Row from the manhole opening, woven geotextile is shown between the chamber and stone base.

1.2 THE ISOLATOR ROW

The Isolator Row is a row of StormTech chambers, either SC-310, SC-310-3, SC-740, DC-780, MC-3500 or MC-4500 models, that is surrounded with filter fabric and connected to a closely located manhole for easy access. The fabric-wrapped chambers provide for settling and filtration of sediment as storm water rises in the Isolator Row and ultimately passes through the filter fabric. The open bottom chambers and perforated sidewalls (SC-310, SC-310-3 and SC-740 models) allow storm water to flow both vertically and horizontally out of the chambers. Sediments are captured in the Isolator Row protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

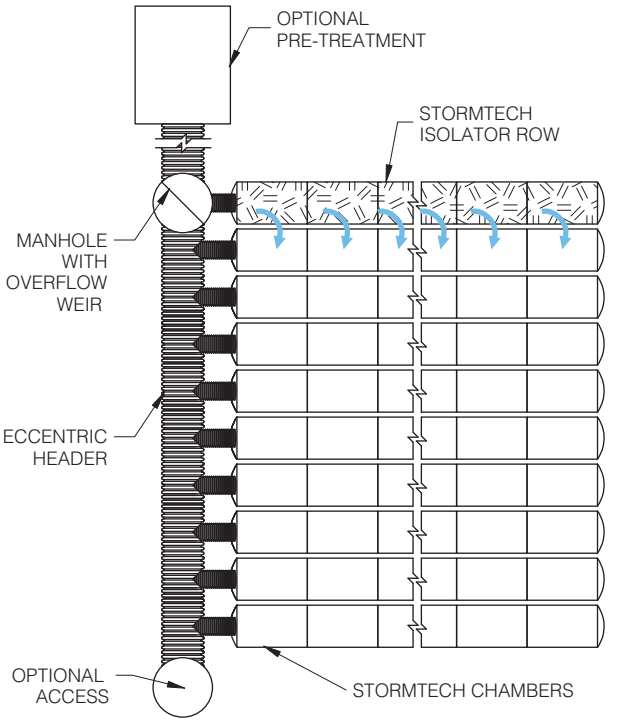
Two different fabrics are used for the Isolator Row. A woven geotextile fabric is placed between the stone and the Isolator Row chambers. The tough geotextile provides a media for storm water filtration and provides a durable surface for maintenance operations. It is also designed to prevent scour of the underlying stone and remain intact during high pressure jetting. A non-woven fabric is placed over the chambers to provide a filter media for flows passing through the perforations in the sidewall of the chamber. The non-woven fabric is not required over the DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row is typically designed to capture the "first flush" and offers the versatility to be sized on a volume basis or flow rate basis. An upstream manhole not only provides access to the Isolator Row but typically includes a high flow weir such that storm water flowrates or volumes that exceed the capacity of the Isolator Row overtop the over flow weir and discharge through a manifold to the other chambers.

The Isolator Row may also be part of a treatment train. By treating storm water prior to entry into the chamber system, the service life can be extended and pollutants such as hydrocarbons can be captured. Pre-treatment best management practices can be as simple as deep sump catch basins, oil-water separators or can be innovative storm water treatment devices. The design of the treatment train and selection of pretreatment devices by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, the Isolator Row is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row.

StormTech Isolator Row with Overflow Spillway
(not to scale)



2.0 Isolator Row Inspection/Maintenance

2.1 INSPECTION

The frequency of Inspection and Maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

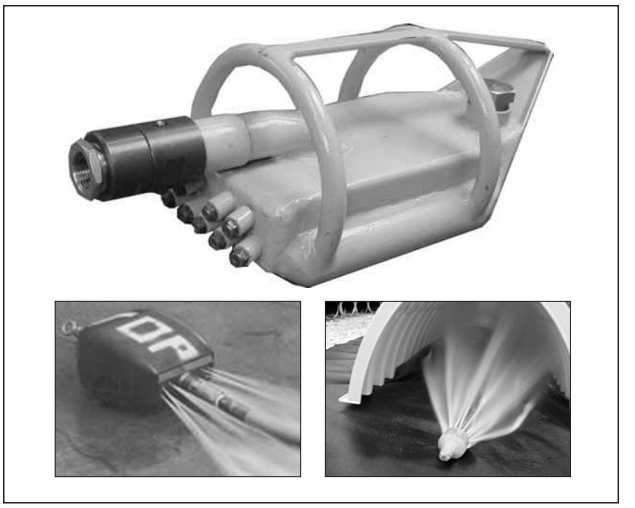
At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3 inches throughout the length of the Isolator Row, clean-out should be performed.

2.2 MAINTENANCE

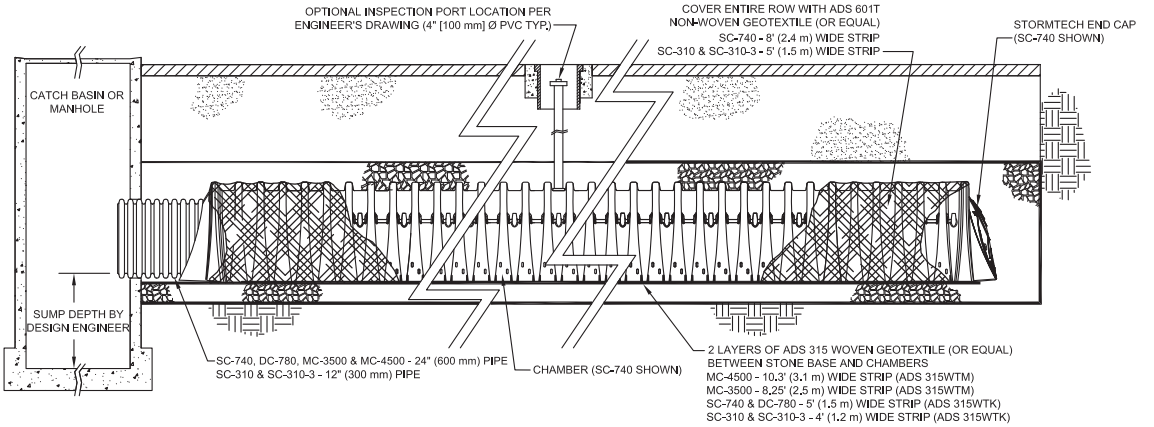
The Isolator Row was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entries.



Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products.)

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Rows that have AASHTO class 1 woven geotextile (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row (not to scale)



NOTE: NON-WOVEN FABRIC IS ONLY REQUIRED OVER THE INLET PIPE CONNECTION INTO THE END CAP FOR DC-780, MC-3500 AND MC-4500 CHAMBER MODELS AND IS NOT REQUIRED OVER THE ENTIRE ISOLATOR ROW.

3.0 Isolator Row Step By Step Maintenance Procedures

Step 1) Inspect Isolator Row for sediment

A) Inspection ports (if present)

i. Remove lid from floor box frame

ii. Remove cap from inspection riser

iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.

iv. If sediment is at, or above, 3 inch depth proceed to Step 2. If not proceed to step 3.

B) All Isolator Rows

i. Remove cover from manhole at upstream end of Isolator Row

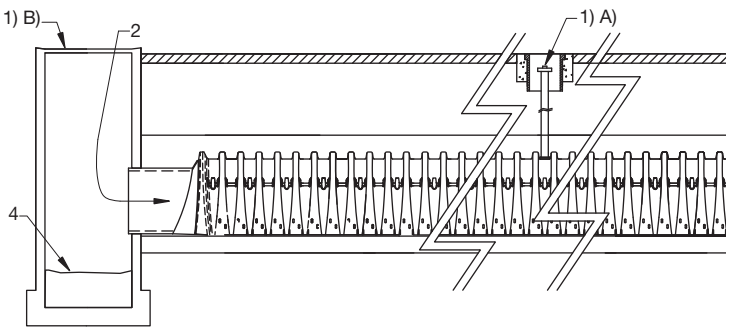
ii. Using a flashlight, inspect down Isolator Row through outlet pipe

1. Mirrors on poles or cameras may be used to avoid a confined space entry

2. Follow OSHA regulations for confined space entry if entering manhole

iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches) proceed to Step 2. If not proceed to Step 3.

StormTech Isolator Row (not to scale)



Step 2) Clean out Isolator Row using the JetVac process

A) A fixed culvert cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable

B) Apply multiple passes of JetVac until backflush water is clean

C) Vacuum manhole sump as required

Step 3) Replace all caps, lids and covers, record observations and actions

Step 4) Inspect & clean catch basins and manholes upstream of the StormTech system

Sample Maintenance Log

Date	Stadia Rod Readings		Sediment Depth (1) - (2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/01	6.3 ft.	none		New installation. Fixed point is CI frame at grade	djm
9/24/01		6.2	0.1 ft.	Some grit felt	sm
6/20/03		5.8	0.5 ft.	Mucky feel, debris visible in manhole and in Isolator row, maintenance due	rv
7/7/03	6.3 ft.		0	System jetted and vacuumed	djm

StormTech®

Detention • Retention • Water Quality

A division of ADS

70 Inwood Road, Suite 3 | Rocky Hill | Connecticut | 06067

860.529.8188 | 888.892.2694 | fax 866.328.8401 | www.stormtech.com

ADS "Terms and Conditions of Sale" are available on the ADS website, www.ads-pipe.com

Advanced Drainage Systems, the ADS logo, and the green stripe are registered trademarks of Advanced Drainage Systems.

Stormtech® and the Isolator® Row are registered trademarks of StormTech, Inc.

Green Building Council Member logo is a registered trademark of the U.S. Green Building Council.

© 2013 Advanced Drainage Systems, Inc. SO90809 02/13

APPENDIX F

CONTRACTOR'S CERTIFICATION

JMC Project 18119
Beacon Commons
16 West Main Street
City of Beacon, NY

CONTRACTOR'S CERTIFICATION

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

Company Name: _____

Address: _____

Telephone Number: _____

Name and Title: _____

Signature: _____Date: _____

Permit Identification No.:_____

Name and Title of Trained Contractor:_____

Elements of the SWPPP Contractor is responsible for:_____

*p:\2018\18119\drainage\reports*18119-nys contractors certification.docx

APPENDIX G

SPDES GENERAL PERMIT NO. GP-0-20-001 & MS4 ACCEPTANCE FORM

Table of Contents

Table of Contents 1
NOI for coverage under Stormwater General Permit for Construction Activity 2
(Submission #: HPF-P1AF-SEZRK, version 1) 2
Details 2
Form Input 2
Owner/Operator Information 2
Project Location 2
Project Details 3
Required SWPPP Components 5
Erosion & Sediment Control Criteria 6
Post-Construction Criteria 6
Post-Construction SMP Identification 8
Other Permits 11
MS4 SWPPP Acceptance 11
Owner/Operator Certification 11
Attachments 11
Status History 12
Processing Steps 12

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.32

(Submission #: HPF-P1AF-SEZRK, version 1)

Details

Submission Alias	18119 - Beacon Commons
Originally Started By	Brahm Siegel
Alternate Identifier	Beacon Commons
Submission ID	HPF-P1AF-SEZRK
Submission Reason	New
Status	Draft
Active Steps	Form Submitted

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Farrell Communities Beacon LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Zagoren

Owner/Operator Contact Person First Name
Stephen

Owner/Operator Mailing Address
PO Box 14

City
Bridgehampton

State
NY

Zip
11932

Phone
6317660023

Email
zags1413@gmail.com

Federal Tax ID
NONE PROVIDED

Project Location

Project/Site Name
Beacon Commons

Street Address (Not P.O. Box)
16 West Main Street

Side of Street
North

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Beacon

State
NY

Zip
12508

DEC Region
3

County
DUTCHESS

Name of Nearest Cross Street
Bank Street

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
East

Tax Map Numbers Section-Block-Parcel
5954-25-616969

Tax Map Numbers
NONE PROVIDED

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
41.5083271,-73.9816714

16 W Main St, Beacon, NY 12508, USA

Project Details

2. What is the nature of this project?
Redevelopment with increase in impervious area

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Commercial

Post-Development Future Land Use
Multifamily Residential

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
1.5

Total Area to be Disturbed (acres)
1.7

Existing Impervious Area to be Disturbed (acres)
0.7

Future Impervious Area Within Disturbed Area (acres)
1.2

5. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
0

B (%)
100

C (%)
0

D (%)
0

7. Is this a phased project?
No

8. Enter the planned start and end dates of the disturbance activities.

Start Date
9/1/2022

End Date
9/1/2023

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Hudson River

9a. Type of waterbody identified in question 9?
River Off Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
NONE PROVIDED

10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?
No

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

16. What is the name of the municipality/entity that owns the separate storm sewer system?
City of Beacon

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
JMC Planning, Engineering, Landscape Architecture & Land Surveying Consultants, PLLC

Contact Name (Last, Space, First)
Spina, Stephen

Mailing Address
120 Bedford Road

City
Armonk

State
New York

Zip
10504

Phone
9142735225

Email
sspina@jmcpllc.com

Download SWPPP Preparer Certification Form
Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification
SWPPP Preparer Certification Form.pdf - 02/22/2022 10:22 AM
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Silt Fence
Stabilized Construction Entrance
Storm Drain Inlet Protection

Biotechnical
None

Vegetative Measures
Mulching
Protecting Vegetation
Seeding
Sodding
Topsoiling

Permanent Structural
Land Grading
Retaining Wall

Other
NONE PROVIDED

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
NONE PROVIDED

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
0.077

29. Post-construction SMP Identification
Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0.022

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
No

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
0.021

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
Yes

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs
Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
0.055

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
0.077

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
NONE PROVIDED

CPv Provided (acre-feet)
NONE PROVIDED

36a. The need to provide channel protection has been waived because:
Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
11.16

Post-Development (CFS)
11.06

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
26.86

Post-Development (CFS)
26.48

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
Farrell Communities Beacon LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
NONE PROVIDED

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs
Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
0.45

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
0.09

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
0.73

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
Contech

Name of Alternative SMP
CDS and Jellyfish Filter

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
Yes

MS4 SWPPP Acceptance Form Download
Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload
NONE PROVIDED
Comment
NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download
Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form
NONE PROVIDED
Comment
NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
2/22/2022 10:22 AM	SWPPP Preparer Certification Form.pdf	Attachment	Brahm Siegel

Status History

	User	Processing Status
2/22/2022 8:52:59 AM	Brahm Siegel	Draft

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted		
Under Review	DAVID GASPER	

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Beacon Commons

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Farrell Communities Beacon LLC

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Stephen	M	Spina
First name	MI	Last Name



Signature

02/22/2022

Date

Revised: January 2020

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Farrell Communities Beacon LLC
2. Contact Person:	Stephen Zagoren
3. Street Address:	PO Box
4. City/State/Zip:	Bridgehampton, NY 11932
II. Project Site Information	
5. Project/Site Name:	Beacon Commons
6. Street Address:	16 West Main Street
7. City/State/Zip:	Beacon, NY 12508
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: Beacon Commons

eNOI Submission Number: HPF-P1AF-SEZRK

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

APPENDIX H

HYDRAULIC PIPE CALCULATIONS

Link Summary

From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio
		(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)	
dmh-a2 (STORM)	dmh-a1 (STORM)	9.23	28.80	28.70	1.0800	24.000	0.0130	12.76	23.55	0.54	7.64	1.05	0.52
dmh-a3 (STORM)	dmh-a2 (STORM)	31.40	32.00	31.60	1.2700	18.996	0.0130	12.76	25.31	0.50	8.09	0.78	0.50
di-a10 (STORM)	di-a9 (STORM)	60.11	38.45	34.90	5.9100	15.000	0.0130	1.83	15.70	0.12	8.57	0.29	0.23
ci-a11 (STORM)	di-a10 (STORM)	47.79	40.40	38.45	4.0800	15.000	0.0130	1.55	13.05	0.12	7.16	0.29	0.23
r-9 (STORM)	dmh-a3 (STORM)	19.73	32.25	32.10	0.7600	12.000	0.0130	0.89	3.11	0.29	3.43	0.37	0.37
wqs-a3-1 (STORM)	dmh-a3 (STORM)	11.68	32.15	32.00	1.2800	15.000	0.0130	0.61	7.32	0.08	3.62	0.24	0.19
di-a5-1-2 (STORM)	di-a5-1-1 (STORM)	63.75	44.05	43.65	0.6300	15.000	0.0130	3.95	5.12	0.77	4.77	0.82	0.66
dmh-a5-2 (STORM)	dmh-a5-1 (STORM)	130.37	42.00	35.75	4.7900	24.000	0.0130	7.15	49.53	0.14	11.23	0.51	0.26
di-a5-3 (STORM)	dmh-a5-2 (STORM)	83.73	47.00	42.00	5.9700	24.000	0.0130	7.16	55.28	0.13	12.15	0.49	0.24
di-a5-4 (STORM)	di-a5-3 (STORM)	141.10	52.00	47.50	3.1900	18.000	0.0130	0.62	18.76	0.03	5.65	0.19	0.12
di-a5-1-1 (STORM)	dmh-a5-1 (STORM)	16.97	36.75	36.50	1.4700	15.000	0.0130	3.95	7.84	0.50	6.40	0.63	0.50
wqs-a8 (STORM)	bypass-a7 (STORM)	26.27	34.75	34.60	0.5700	15.000	0.0130	3.98	4.88	0.81	4.45	0.85	0.69
dmh-a4 (STORM)	dmh-a3 (STORM)	102.86	32.65	32.00	0.6300	24.000	0.0130	12.76	17.98	0.71	6.22	1.24	0.62
ocs-a6 (STORM)	dmh-a5 (STORM)	27.60	34.10	33.90	0.7200	15.000	0.0130	1.69	5.50	0.31	3.94	0.48	0.38
ci-a12 (STORM)	ci-a11 (STORM)	28.71	40.75	40.40	1.2200	15.000	0.0130	1.27	7.13	0.18	4.91	0.36	0.29
r-6 (STORM)	EndNullStruct3	8.25	27.25	27.03	2.6700	12.000	0.0130	1.50	5.82	0.26	6.21	0.35	0.35
r-10 (STORM)	EndNullStruct4	20.83	39.70	39.50	0.9600	15.000	0.0130	0.59	6.33	0.09	3.25	0.26	0.21
di-a9 (STORM)	wqs-a8 (STORM)	19.86	34.90	34.75	0.7600	15.000	0.0130	3.98	5.61	0.71	4.97	0.78	0.62
di-b1 (STORM)	r-10 (STORM)	17.30	39.85	39.70	0.8700	15.000	0.0130	0.20	6.02	0.03	2.56	0.15	0.12
r-1 (STORM)	r-2 (STORM)	19.34	41.50	41.25	1.2900	12.000	0.0130	0.33	4.05	0.08	3.45	0.19	0.19
r-2 (STORM)	r-3 (STORM)	34.23	37.50	37.25	0.7300	12.000	0.0130	0.44	3.04	0.14	2.77	0.26	0.26
r-3 (STORM)	r-4 (STORM)	31.39	32.50	32.25	0.8000	12.000	0.0130	0.67	3.18	0.21	3.22	0.31	0.31
r-4 (STORM)	r-5 (STORM)	39.24	29.00	28.75	0.6400	12.000	0.0130	0.94	2.84	0.33	3.27	0.39	0.40
r-5 (STORM)	r-6 (STORM)	27.72	27.50	27.25	0.9000	12.000	0.0130	1.35	3.38	0.40	4.07	0.44	0.44
Slotted-Drain	di-a9 (STORM)	46.10	35.50	35.15	0.7600	12.000	0.0130	1.02	3.10	0.33	4.59	0.39	0.39
ci-a9-1 (STORM)	di-a9 (STORM)	41.05	35.15	34.90	0.6100	15.000	0.0130	0.50	5.04	0.10	3.58	0.27	0.21
dmh-a5 (STORM)	dmh-a4 (STORM)	87.08	33.15	32.65	0.5700	24.000	0.0130	12.77	17.14	0.75	5.99	1.29	0.64
dmh-a5-1 (STORM)	dmh-a5 (STORM)	15.48	35.75	35.20	3.5500	24.000	0.0130	11.10	42.64	0.26	11.41	0.70	0.35
r-7 (STORM)	EndNullStruct6	11.01	28.65	28.50	1.3600	12.000	0.0130	0.29	4.16	0.07	3.07	0.18	0.18
r-8 (STORM)	r-7 (STORM)	30.47	29.00	28.65	1.1500	12.000	0.0130	0.14	3.82	0.04	3.05	0.13	0.13
r-9-1 (STORM)	r-9 (STORM)	31.10	32.50	32.25	0.8000	12.000	0.0130	0.90	3.19	0.28	4.15	0.36	0.36
dmh-a4	wqs-a3-1 (STORM)	80.88	34.05	32.15	2.3500	15.000	0.0130	0.50	9.90	0.05	6.03	0.19	0.15

APPENDIX I

DRAWINGS AND ROOF DRAINAGE FIGURE:

DA-1 EXISTING DRAINAGE AREA MAP

DA-2 PROPOSED DRAINAGE AREA MAP

ROOF DRAINAGE FIGURE

EXISTING DRAINAGE LEGEND

- 200 — EXISTING GRADE
- WATERSHED BOUNDARY LINE
- BOUNDARY OF COVER TYPE LINE
- FLOW PATH LINE

SOIL TYPE TABLE

DESIGNATION	HYDROLOGIC GROUP	DESCRIPTION
DwB	B	DUTCHESS–CARDIGAN COMPLEX, UNDULATING, ROCKY

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS

Previous Editions Obsolete

APPLICANT/OWNER:
FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

JMC

EDA–1A
5.56

EDA–1B
0.92 AC.

PARCEL
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 25
LOT 616969
16 WEST MAIN STREET

PARCEL 2
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 26
LOT 634814

N/F BEACON TODD LLC
DEED DOC. NO. 02 2017 8111
SECTION 5954
BLOCK 26
LOT 647966

JUNCTION 1

DESIGN POINT 1

ONE STORY
#16 MAIN STREET
BEACON, NEW YORK

ROOF DRAIN LEADERS SPILL ONTO PAVEMENT (TYP.)

ROOF DRAIN LEADERS DRAIN TO REAR OF BUILDING (TYP.)

APPROXIMATE LOCATION OF EXISTING 4" HDPW INTERNAL BUILDING FLOOR DRAIN

APPROXIMATE LOCATION OF DUMPSTERS

EXISTING ASPHALT DRIVE

EXISTING CONCRETE WALK

EXISTING BUILDING

EXISTING GRADE

WATERSHED BOUNDARY LINE

BOUNDARY OF COVER TYPE LINE

FLOW PATH LINE

EXISTING DRAINAGE AREA MAP

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

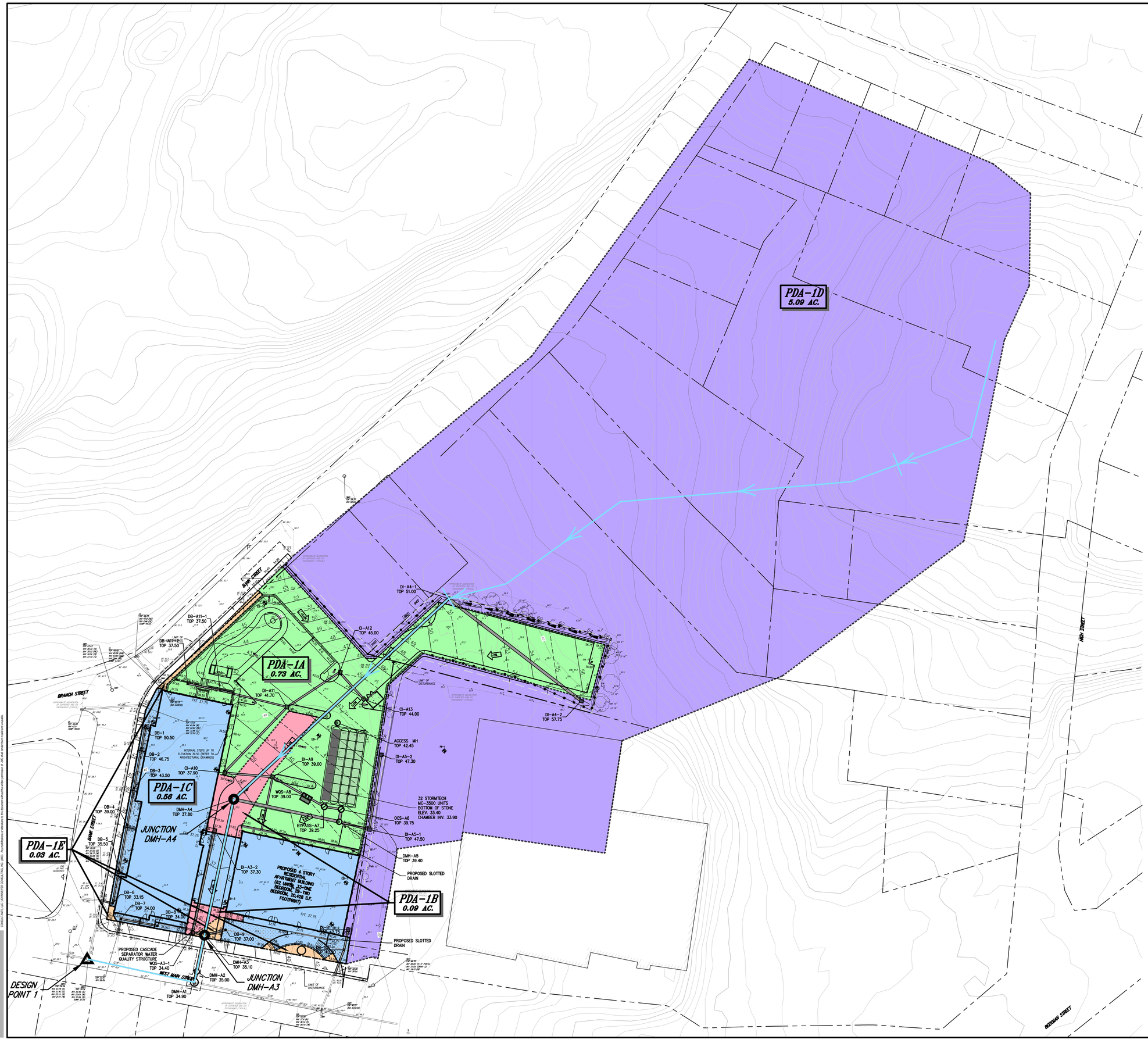
ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn:	BMS	Approved:	SS
Scale:	1" = 30'		
Date:	10/29/2019		
Project No:	18119		
18119-DRAINAGE	EDA	EDA.scr	

DA–1

NOT FOR CONSTRUCTION

COPYRIGHT © 2021 by JMC. All Rights Reserved. All graphics, documents or electronic media in whatever degree of completion or any portion of any thereof, are instruments of service of JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. and shall remain the property of JMC. Any modification or alteration of any kind to these documents, including but not limited to removal of JMC seals and/or name, is prohibited. Unauthorized use of these documents shall be at the user's sole risk and without liability to JMC and its consultants.



PROPOSED DRAINAGE LEGEND

- EXISTING GRADE
- PROPOSED FINISHED GRADE
- WATERSHED BOUNDARY LINE
- FLOW PATH LINE
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED MANHOLE
- EXISTING DRAIN INLET
- PROPOSED DRAIN INLET (DI)

SOIL TYPE TABLE

DESIGNATION	HYDROLOGIC GROUP	DESCRIPTION
DwB	B	DUTCHESS-CARDIGAN COMPLEX, UNDULATING, ROCKY

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS

Previous Editions Obsolete

APPLICANT/OWNER:
FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

PROPOSED DRAINAGE AREA MAP

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn:	BMS
Approved:	SS
Scale:	1" = 30'
Date:	10/29/2019
Project No:	18119
18119-DRAINAGE	PDA
PDA.scr	
Drawing No:	DA-2

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.

909



BEACON COMMONS

16 WEST MAIN STREET — BEACON, NY 12508

ROOF DRAINAGE FIGURE

DATE: 10/01/2020
DATE: 09/29/2020
DATE: 07/27/2021

JMC PROJECT: 18119

FIGURE: 2 — SCALE: 1" = 30'

120 BEDFORD RD
ARMONK
NY 10504

(914) 273-5225
fax 273-2102

JMCPLLC.COM

COPYRIGHT © 2022 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.

18119_SITE.dwg; ROOF tab; UTIL_ROOF.ctb

SITE PLAN DRAWINGS

BEACON COMMONS

TAX MAP SECTION 5954 | BLOCK 25 | LOT 616969

DUTCHESS COUNTY

16 WEST MAIN STREET

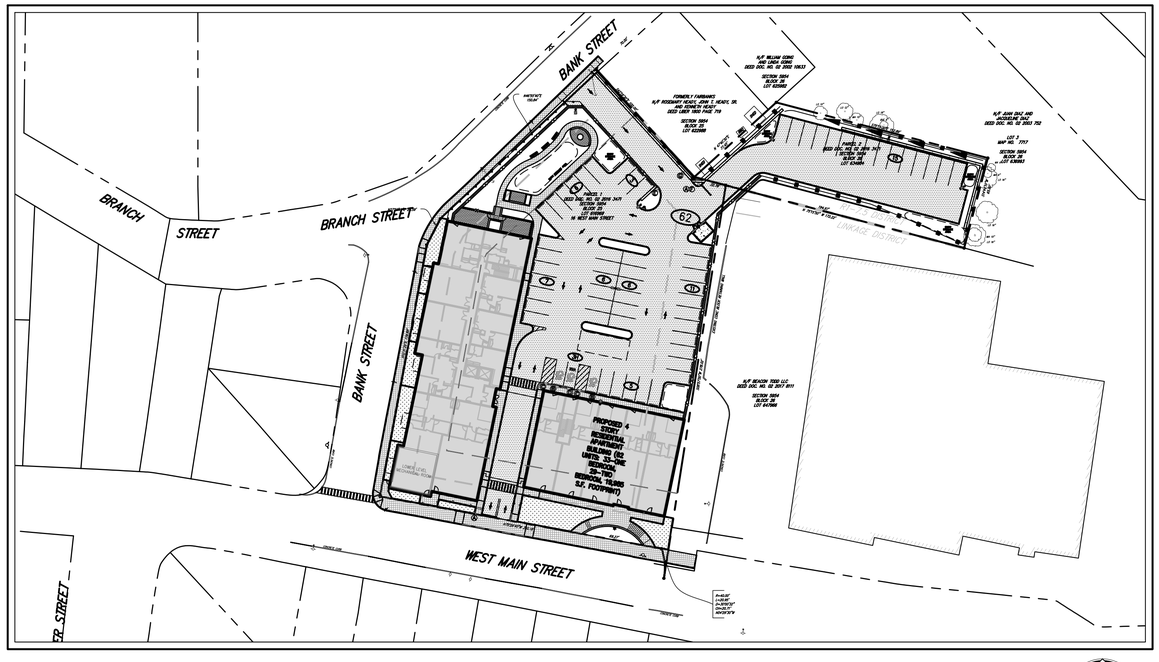
BEACON, NY 12508

Applicant:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932
(631) 549-9800

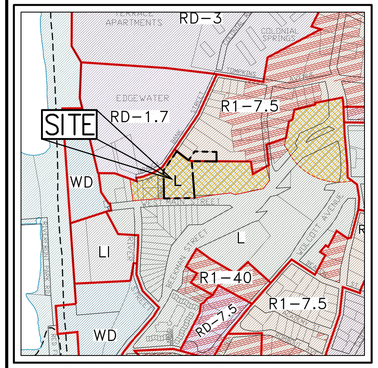
Architect:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508
(845) 838-2490

Site Planner, Civil & Traffic Engineer, Surveyor and Landscape Architect:
120 BEDFORD ROAD
ARMONK, NY 10504
(914) 273-5225

Geotechnical Engineer:
CARLIN-SIMPSON & ASSOCIATES
61 MAIN STREET
SAYREVILLE, NJ 08872
(732) 432-5757



AREA MAP
SCALE: 1" = 50'



ZONING / VICINITY MAP
SCALE: 1" = 500'
CITY OF BEACON.ORG:
ZONING / 10/04/2017

LEGEND

	SITE PROPERTY LINE
	ZONING BOUNDARY
	LOT LINE
L	LINKAGE
LI	LIGHT INDUSTRIAL
WD	WATER FRONT DEVELOPMENT
R1-40	ONE FAMILY RESIDENTIAL
R1-7.5	ONE FAMILY RESIDENTIAL
RD-1.7	DESIGNED RESIDENCE
CB	CENTRAL BUSINESS

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1-800-962-7962) TO HAVE UNDERGROUND UTILITIES LOCATED. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, INSOFAR AS THEY MAY BE ENDANGERED BY THE CONTRACTOR'S OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.
2. CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT. THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC AND THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTIFIED IN WRITING. THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.
4. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA); AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107-05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYSDOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.
5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.

SUBSURFACE UTILITY LOCATIONS ARE BASED ON A COMPILATION OF FIELD EVIDENCE, AVAILABLE RECORD PLANS AND/OR UTILITY MARK-OUTS. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

811 Know what's below. Call before you dig.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

JMC Drawing List:

C-000	(SHEET 1 OF 26)	COVER SHEET
C-010	(SHEET 2 OF 26)	EXISTING CONDITIONS PLAN
C-020	(SHEET 3 OF 26)	DEMOLITION PLAN
C-100	(SHEET 4 OF 26)	SITE PLAN
C-200	(SHEET 5 OF 26)	GRADING PLAN
C-300	(SHEET 6 OF 26)	UTILITIES PLAN
C-310	(SHEET 7 OF 26)	STORM PROFILES
C-400	(SHEET 8 OF 26)	SEDIMENT AND EROSION CONTROL PLAN
C-600	(SHEET 9 OF 26)	LIGHTING PLAN
C-700	(SHEET 10 OF 26)	GARBAGE TRUCK TURNING PLAN (FRONT-LOADING)
C-701	(SHEET 11 OF 26)	GARBAGE TRUCK TURNING PLAN (REAR-LOADING)
C-702	(SHEET 12 OF 26)	FIRE TRUCK TURNING PLAN (SCENARIO 1)
C-703	(SHEET 13 OF 26)	FIRE TRUCK TURNING PLAN (SCENARIO 2)
C-704	(SHEET 14 OF 26)	FIRE TRUCK TURNING PLAN (SCENARIO 3)
C-800	(SHEET 15 OF 26)	AERIAL SITE PLAN
C-801	(SHEET 16 OF 26)	SIGHT DISTANCE PLAN
C-900	(SHEET 17 OF 26)	CONSTRUCTION DETAILS
C-901	(SHEET 18 OF 26)	CONSTRUCTION DETAILS
C-902	(SHEET 19 OF 26)	CONSTRUCTION DETAILS
C-903	(SHEET 20 OF 26)	CONSTRUCTION DETAILS
C-904	(SHEET 21 OF 26)	CONSTRUCTION DETAILS
C-905	(SHEET 22 OF 26)	CONSTRUCTION DETAILS
C-906	(SHEET 23 OF 26)	CONSTRUCTION DETAILS
C-907	(SHEET 24 OF 26)	CONSTRUCTION DETAILS
C-908	(SHEET 25 OF 26)	CONSTRUCTION DETAILS
L-100	(SHEET 26 OF 26)	LANDSCAPING PLAN

ARYEH SIEGEL ARCHITECT Drawing List:

A-100	(SHEET 1 OF 3)	BUILDING PLANS
A-101	(SHEET 2 OF 3)	BUILDING PLANS
A-200	(SHEET 3 OF 3)	ELEVATIONS

TABLE OF LAND USE

SECTION 5954, BLOCK 25, LOT 616969
ZONE "L" – "LINKAGE DISTRICT"
PROPOSED USE: RESIDENTIAL
FIRE DISTRICT: CITY OF BEACON
WATER DISTRICT: CITY OF BEACON
BEACON CITY SCHOOL DISTRICT
SEWER DISTRICT: CITY OF BEACON

DESCRIPTION		REQUIRED	EXISTING	PROPOSED
LOT AREA (PARCELS 1, 2 & 3)	(FEET)	–	1.5 ACRES	1.5 ACRES
LOT WIDTH	(FEET)	–	201'	201'
LOT FRONTAGE	(FEET)	–	555'	555'
LOT DEPTH	(FEET)	75'	320'	320'
BUILDING HEIGHT	(FEET/STORIES)	48'/4 STORIES	–	48'/4 STORIES
FLOOR AREA RATIO		–	–	–
LOT COVERAGE BY LANDSCAPING	(PERCENT)	15% MIN.	47%	17%
YARDS				
FRONT BUILDING SETBACK	(FEET)	MIN. 0'/MAX. 20'	53'/107'	4'
REAR BUILDING SETBACK	(FEET)	MIN. 25'	88'	112'
SIDE BUILDING SETBACK (CORNER LOT)	(FEET)	MIN. 0'/MAX. 30'	13'	3'
PARKING SETBACKS				
FRONT/SIDE (FOR CORNER) PARKING SETBACK	(FEET)	40'/40'	29'/24'	97'/40'
REAR PARKING SETBACK	(FEET)	–	–	–
SIDE PARKING SETBACK	(FEET)	–	–	–
PARKING SUMMARY				
TOTAL SPACES REQUIRED	(1 SPACE/UNIT)	62	28	62
STANDARD SPACES		59	26	59
ACCESSIBLE SPACES		3	2	3

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.



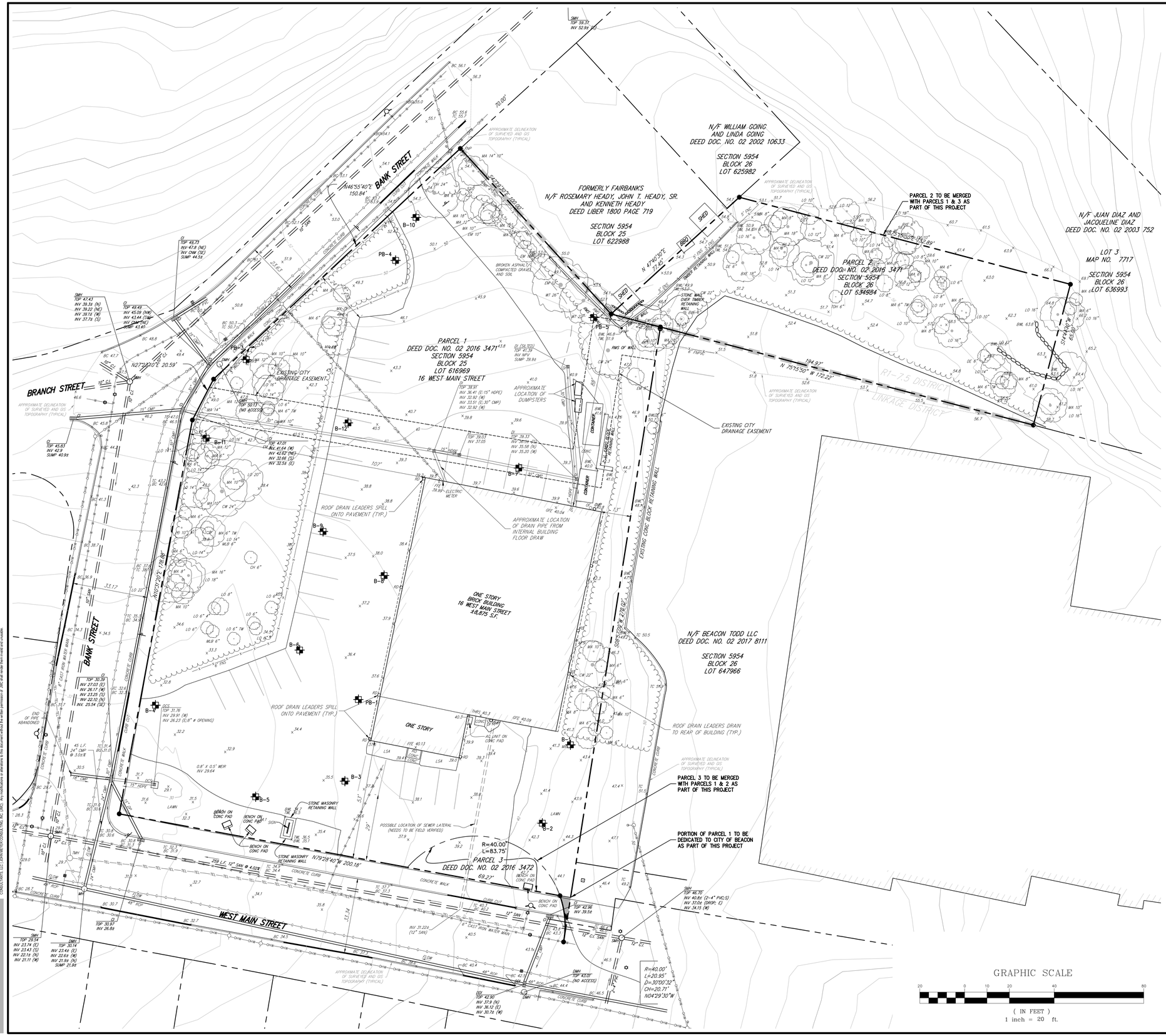
JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

Drawn:	BMS	Approved:	SS
Scale:	AS SHOWN		
Date:	10/29/2019		
Project No:	18119		
18119-COVER	COVER	COVER.scr	
Drawing No:	C-000 (Sheet 1 of 26)		

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. (JMC). Any reproduction or alteration to this document and/or its use without permission of JMC shall be unlawful and actionable.

911



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- EXISTING SPOT GRADE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE LINE
- EXISTING PARKING
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- BORING LOCATION & DESIGNATION

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECURE & LAND SURVEYING, PLLC, DATED 09/20/2018, LAST REVISED 03/02/2020.
2. THE TOPOGRAPHY SHOWN IS REFERENCED FROM NAVD88 VERTICAL DATUM AS SHOWN ON THE ABOVE TOPOGRAPHIC SURVEY.
3. SUPPLEMENTAL TOPOGRAPHY BEYOND THE LIMIT OF SURVEYED TOPOGRAPHY IS TAKEN FROM DUTCHESS COUNTY GIS.
4. THE PROJECT SITE IS LOCATED IN ZONE X, "AREA OF MINIMAL FLOOD HAZARD," ACCORDING TO FEMA MAP NO. 36027C0463E, EFFECTIVE 05/02/2012.
5. THE EXISTING SANITARY SEWER SERVICE LATERAL WAS NOT LOCATED AND IS PROPOSED TO BE REMOVED. IT IS ASSUMED TO BE LOCATED FROM THE SOUTH SIDE OF THE BUILDING TO THE MAIN WITHIN WEST MAIN STREET. THE CONTRACTOR SHALL VERIFY AND REMOVE IN ACCORDANCE WITH DUTCHESS COUNTY HEALTH DEPARTMENT AND CITY OF BEACON STANDARDS.
6. SOIL BORING DATA SHOWN ON THIS PLAN WAS TAKEN FROM THE "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION," DATED 09/28/2020, LAST REVISED 03/02/2022, PREPARED BY CARLIN SIMPSON & ASSOCIATES.

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

EXISTING CONDITIONS PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · LICENSED PROFESSIONAL ENGINEER · 085983

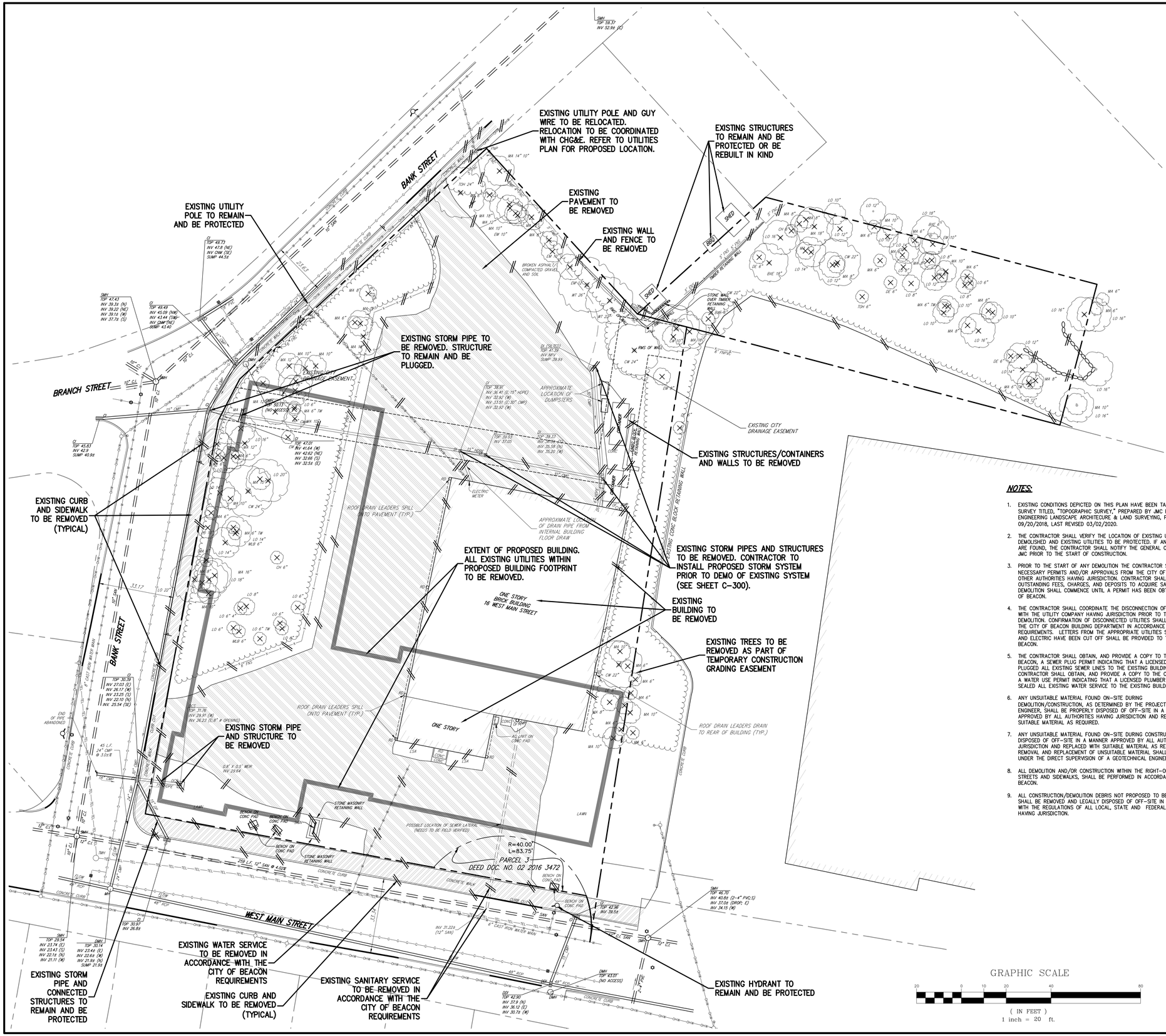
No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119-EXISTING	EXIST	EXIST.scr	

Drawing No:
C–010
(Sheet 2 of 26)

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC ("JMC"). The modification or alteration of this document by any party other than JMC, or its employees, without the written permission of JMC shall render JMC and its employees released and indemnified.
FARRELL COMMUNITIES BEACON LLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC., ARYEH SIEGEL ARCHITECT

NOT FOR CONSTRUCTION



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING TREE TO BE REMOVED
- EXISTING TREE LINE
- EXISTING PARKING
- 36" RCP — EXISTING STORM DRAIN LINE AND SIZE
- 8" SAN — EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING FEATURE TO BE REMOVED
- PAVEMENT REMOVAL
- CONCRETE REMOVAL
- PROPOSED BUILDING FOOTPRINT

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, DATED 09/20/2018, LAST REVISED 03/02/2020.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE DEMOLISHED AND EXISTING UTILITIES TO BE PROTECTED. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND JMC PRIOR TO THE START OF CONSTRUCTION.
3. PRIOR TO THE START OF ANY DEMOLITION THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND/OR APPROVALS FROM THE CITY OF BEACON AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL PAY ALL OUTSTANDING FEES, CHARGES, AND DEPOSITS TO ACQUIRE SAID PERMITS. NO DEMOLITION SHALL COMMENCE UNTIL A PERMIT HAS BEEN OBTAINED FROM CITY OF BEACON.
4. THE CONTRACTOR SHALL COORDINATE THE DISCONNECTION OF ALL UTILITIES WITH THE UTILITY COMPANY HAVING JURISDICTION PRIOR TO THE START OF DEMOLITION. CONFIRMATION OF DISCONNECTED UTILITIES SHALL BE PROVIDED TO THE CITY OF BEACON BUILDING DEPARTMENT IN ACCORDANCE WITH THEIR REQUIREMENTS. LETTERS FROM THE APPROPRIATE UTILITIES STATING THAT GAS AND ELECTRIC HAVE BEEN CUT OFF SHALL BE PROVIDED TO THE CITY OF BEACON.
5. THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE CITY OF BEACON, A SEWER PLUG PERMIT INDICATING THAT A LICENSED PLUMBER HAS PLUGGED ALL EXISTING SEWER LINES TO THE EXISTING BUILDING. THE CONTRACTOR SHALL OBTAIN, AND PROVIDE A COPY TO THE CITY OF BEACON, A WATER USE PERMIT INDICATING THAT A LICENSED PLUMBER HAS CUT AND SEALED ALL EXISTING WATER SERVICE TO THE EXISTING BUILDING.
6. ANY UNSUITABLE MATERIAL FOUND ON-SITE DURING DEMOLITION/CONSTRUCTION, AS DETERMINED BY THE PROJECT'S GEOTECHNICAL ENGINEER, SHALL BE PROPERLY DISPOSED OF OFF-SITE IN A MANNER APPROVED BY ALL AUTHORITIES HAVING JURISDICTION AND REPLACED WITH SUITABLE MATERIAL AS REQUIRED.
7. ANY UNSUITABLE MATERIAL FOUND ON-SITE DURING CONSTRUCTION SHALL BE DISPOSED OF OFF-SITE IN A MANNER APPROVED BY ALL AUTHORITIES HAVING JURISDICTION AND REPLACED WITH SUITABLE MATERIAL AS REQUIRED. ALL REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL SHALL BE COMPLETED UNDER THE DIRECT SUPERVISION OF A GEOTECHNICAL ENGINEER.
8. ALL DEMOLITION AND/OR CONSTRUCTION WITHIN THE RIGHT-OF-WAY, INCLUDING STREETS AND SIDEWALKS, SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF BEACON.
9. ALL CONSTRUCTION/DEMOLITION DEBRIS NOT PROPOSED TO BE RECYCLED SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH THE REGULATIONS OF ALL LOCAL, STATE AND FEDERAL AGENCIES HAVING JURISDICTION.
10. PRIOR TO THE START OF SITE DEMOLITION, EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF BEACON, AS REQUIRED AND/OR DIRECTED BY THE CITY OF BEACON OR JMC.
11. EXISTING DRAINAGE PATTERNS ON SITE SHALL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICABLE.
12. ALL EXISTING UTILITY CASTINGS WHICH ARE TO REMAIN SHALL BE REMOVED AND RESET TO THE NEW PROPOSED GRADES IN ACCORDANCE WITH THE DIRECTIONS OF THE OWNER'S FIELD REPRESENTATIVE. EXISTING CASTINGS WHICH ARE DAMAGED OR UNFIT FOR INSTALLATION IN THE NEW CONSTRUCTION, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, SHALL BE REPLACED.
13. ALL EXISTING SIDEWALKS, CURBS, PAVEMENT, ETC. TO REMAIN, WHICH ARE DISTURBED OR DAMAGED DUE TO THE NEW CONSTRUCTION, ARE TO BE REPLACED WITH MATERIALS CONSISTENT WITH EXISTING CONDITIONS.
14. THESE PLANS ARE TO BE PROVIDED TO BOTH THE DEMOLITION CONTRACTOR AND THE SITE CONTRACTOR FOR THEIR USE, INFORMATION AND COORDINATION. ANY QUESTIONS OF CONTRACTOR RESPONSIBILITY AND/OR SEPARATION OF WORK SHALL BE DIRECTED TO THE GENERAL CONTRACTOR IN WRITING PRIOR TO ISSUANCE OF BID.
15. THE OWNER SHALL RETAIN A LICENSED AND QUALIFIED PROFESSIONAL, CERTIFIED BY THE CITY OF BEACON, TO INSPECT FOR THE PRESENCE OF ASBESTOS AND/OR OTHER HAZARDOUS MATERIALS WITHIN DEMOLITION AREAS PRIOR TO THE COMMENCEMENT OF DEMOLITION. IF REMEDIATION IS REQUIRED, THE OWNER SHALL DO SO IN ACCORDANCE WITH THE NYS ASBESTOS RULES AND REGULATIONS AND/OR ANY AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DOCUMENTATION TO THE NYS PRIOR TO OBTAINING A DEMOLITION PERMIT.
16. THE CONTRACTOR SHALL EXTERMINATE RODENTS AS REQUIRED BY THE DUTCHESS COUNTY DEPARTMENT OF HEALTH AND MENTAL HYGIENE. A LETTER FROM THE HEALTH DEPARTMENT CERTIFYING THAT A LICENSED EXTERMINATOR HAS TREATED THE EXITING BUILDING SHALL BE PROVIDED TO THE CITY OF BEACON DEPARTMENT OF BUILDINGS.
17. PRIOR TO COMMENCEMENT OF DEMOLITION, THE CONTRACTOR MUST PROVIDE 24-HOUR NOTIFICATION TO THE CITY OF BEACON.
18. THE CONTRACTOR SHALL PROVIDE VERIFICATION TO THE CITY OF BEACON THAT FIVE (5) DAYS' PRIOR NOTIFICATION WAS GIVEN TO ALL ADJOINING OWNERS AND THAT NOTIFICATION WAS GIVEN TO THE APPROPRIATE COMMUNITY BOARD PRIOR TO THE COMMENCEMENT OF DEMOLITION.
19. REFER TO "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION," DATED 09/28/2020, LAST REVISED 03/02/2022 FOR GEOTECHNICAL INFORMATION.
20. TREE REMOVAL SHOULD BE CONDUCTED DURING THE WINTER TIME FRAME OF NOVEMBER 1ST TO MARCH 31ST TO AVOID ADVERSE IMPACTS TO THE BATS. IF TREE REMOVAL IS PLANNED OUTSIDE OF THIS TIME FRAME, A SITE ASSESSMENT

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

DEMOLITION PLAN

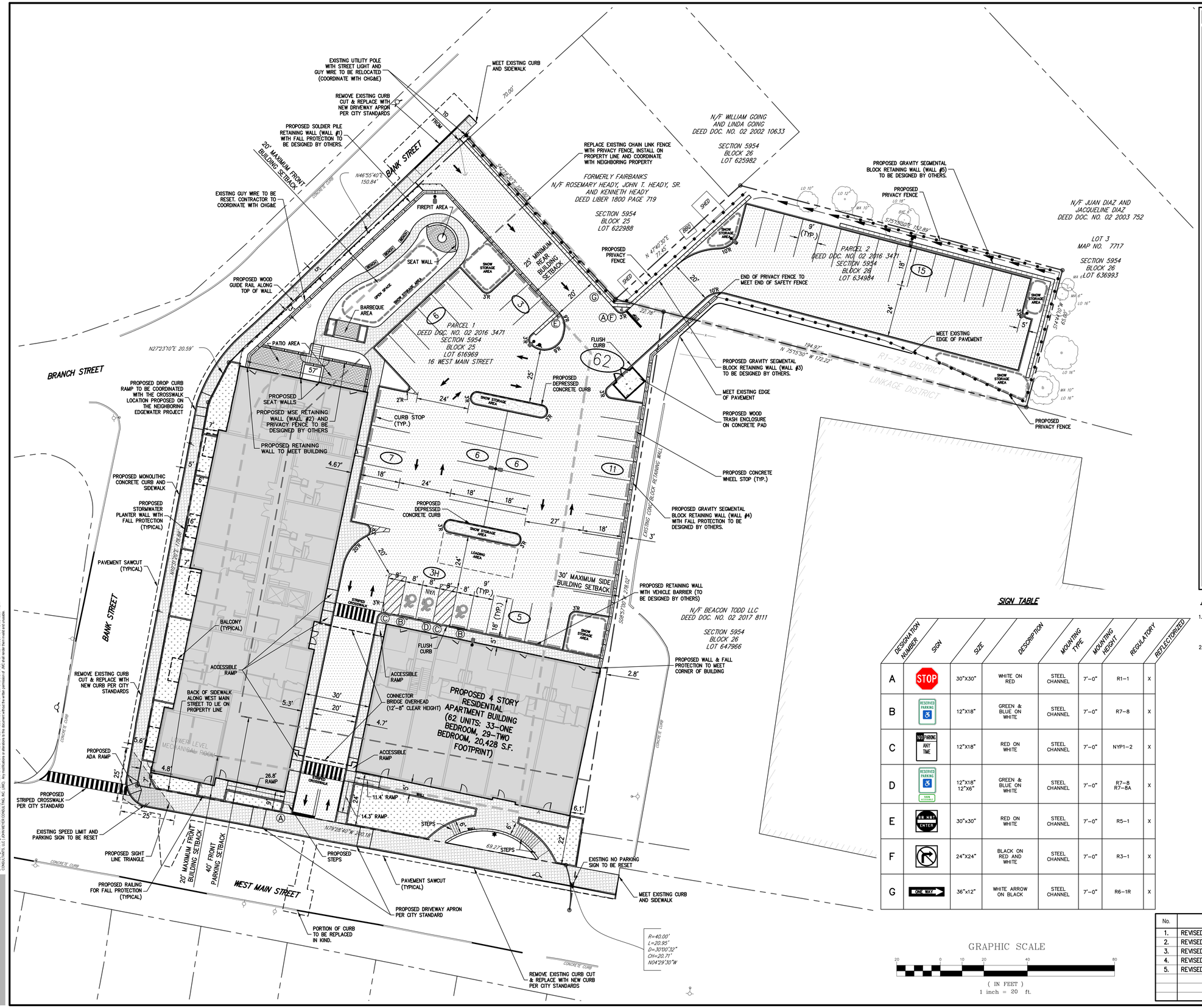
BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

STATE OF NEW YORK · STEPHEN SPINA · 085983 · LICENSED PROFESSIONAL ENGINEER

Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119-EXISTING	DEMO	DEMO.scr	
Drawing No:	C-020		
	(Sheet 3 of 26)		

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC., or ARYEH SIEGEL ARCHITECT. Any modifications or alterations to this document should be made by or under permission of JMC or Aryeh Siegel Architect as applicable.

NOT FOR CONSTRUCTION



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING SETBACK LINE
- EXISTING PARKING SETBACK LINE
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING PARKING
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED CONCRETE FLUSH CURB
- PROPOSED SAWCUT LINE
- PROPOSED ACCESSIBLE PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED PARKING SPACES WITH NUMBER OF SPACES INDICATED (REFER TO STRIPING DETAILS)
- PROPOSED CONCRETE SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVERS
- PROPOSED CONCRETE PAD
- PROPOSED RETAINING WALL (DESIGN BY OTHERS)
- PROPOSED SAFETY FENCE
- PROPOSED PRIVACY FENCE
- PROPOSED WOOD GUIDE RAIL
- PROPOSED 12" WIDE WHITE STOP LINE
- PROPOSED ARROW MARKING ON PAVEMENT
- TRAFFIC SIGN LOCATION & DESIGNATION
- PEDESTRIAN CROSSING
- PROPOSED DOUBLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
- PROPOSED SINGLE ARM LIGHTING STANDARD (DESIGN BY OTHERS)
- PROPOSED BOLLARD LIGHTING STANDARD

SIGN TABLE

DESIGNATION NUMBER	SIGN	SIZE	DESCRIPTION	MOUNTING TYPE	MOUNTING HEIGHT	REGULATORY	REFLECTORIZED
A	STOP	30"X30"	WHITE ON RED	STEEL CHANNEL	7'-0"	R1-1	X
B	RESERVED PARKING	12"X18"	GREEN & BLUE ON WHITE	STEEL CHANNEL	7'-0"	R7-8	X
C	NO PARKING ANY TIME	12"X18"	RED ON WHITE	STEEL CHANNEL	7'-0"	NYP1-2	X
D	RESERVED PARKING VAN ACCESSIBLE	12"X18" 12"X6"	GREEN & BLUE ON WHITE	STEEL CHANNEL	7'-0"	R7-8 R7-8A	X
E	ONE WAY ENTRY	30"x30"	RED ON WHITE	STEEL CHANNEL	7'-0"	R5-1	X
F		24"X24"	BLACK ON RED AND WHITE	STEEL CHANNEL	7'-0"	R3-1	X
G	ONE WAY	36"x12"	WHITE ARROW ON BLACK	STEEL CHANNEL	7'-0"	R6-1R	X

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, DATED 09/20/2018, LAST REVISED 03/02/2020.
2. SNOW REMOVAL SHALL BE STORED IN THE DESIGNATED AREAS ON THIS PLAN. ANY EXCESS SNOW SHALL BE DISPOSED OFF-SITE.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085983 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn: BMS Approved: SS
Scale: 1" = 20'
Date: 11/26/2019
Project No: 18119
18119-SITE | LAY | LAY.scr
Drawing No:

C–100
(Sheet 4 of 26)

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

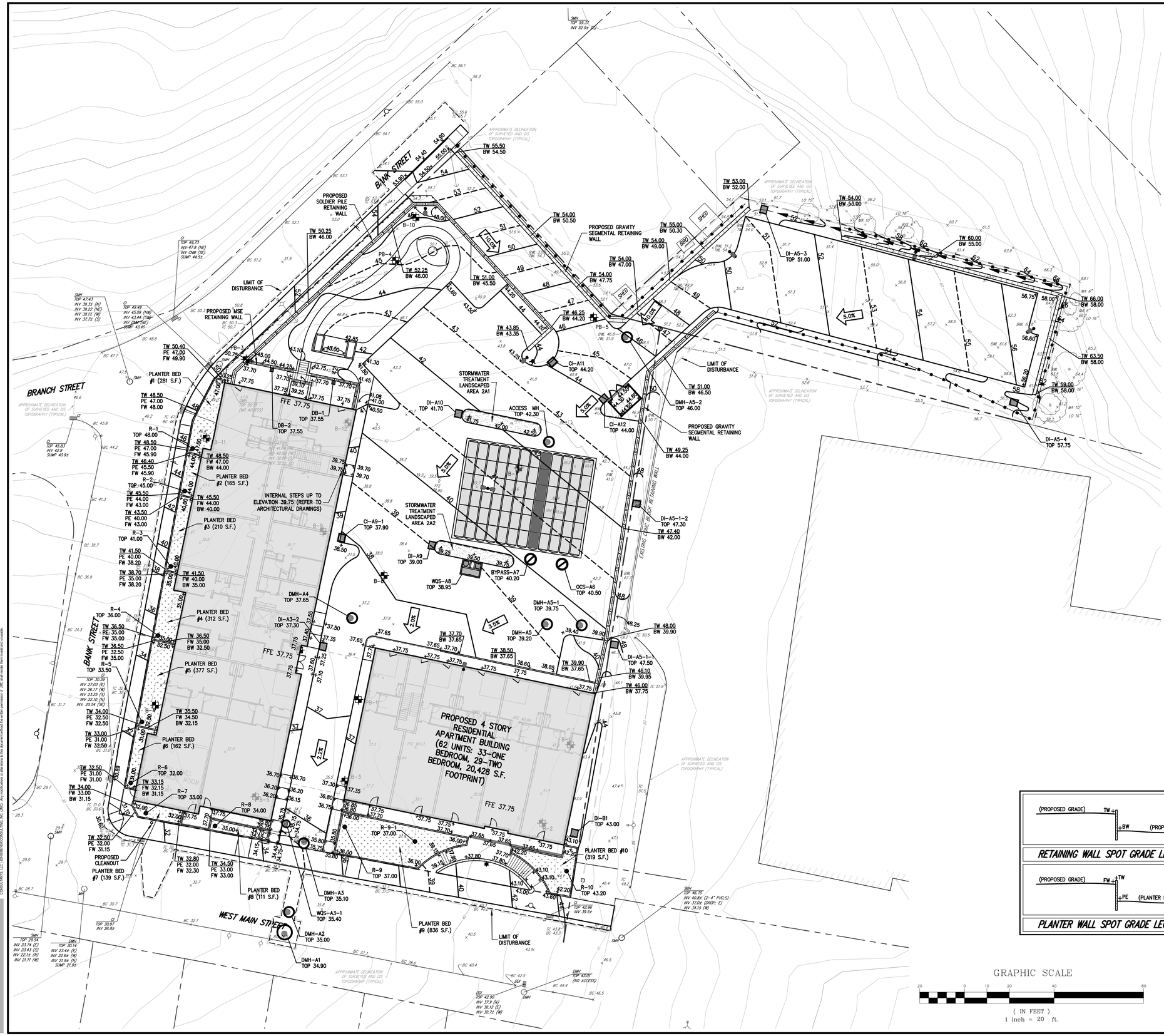
JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SITE PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. or ARYEH SIEGEL ARCHITECT. Any modification or amendment to this document without the written permission of JMC or Aryeh Siegel Architect is prohibited.



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING LINE
- EXISTING CURB LINE
- EXISTING INDEX CONTOUR
- EXISTING CONTOUR
- EXISTING SPOT GRADE
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- EXISTING BORING LOCATION & DESIGNATION
- PROPOSED BORING LOCATION & DESIGNATION
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED FINISHED GRADE
- PROPOSED SPOT GRADE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED TYPE CI DRAIN INLET
- PROPOSED TYPE DI DRAIN INLET
- PROPOSED TYPE DB DRAIN BASIN
- PROPOSED WATER QUALITY STRUCTURE
- PROPOSED SUBSURFACE DRAINAGE OUTLET CONTROL STRUCTURE
- PROPOSED CLEANOUT
- PROPOSED WOOD GUIDE RAIL
- PROPOSED RETAINING WALL AND SAFETY FENCE (DESIGN BY OTHERS)
- PROPOSED PRIVACY RAIL
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED LIGHTING STANDARD (DESIGN BY OTHERS)

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECURE & LAND SURVEYING, PLLC, DATED 09/20/2018, LAST REVISED 03/02/2020.
2. SOIL BORING DATA SHOWN ON THIS PLAN WAS TAKEN FROM THE "REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION," DATED 09/28/2020, LAST REVISED 03/02/2022, PREPARED BY CARLIN SIMPSON & ASSOCIATES.
3. FILL MATERIAL, TO BE PLACED IN ADVANCE OF CONSTRUCTION, IS TO BE COORDINATED WITH LATEST GEOTECHNICAL REPORT BY CARLIN SIMPSON & ASSOCIATES AND MONITORED BY CARLIN SIMPSON & ASSOCIATES.
4. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
5. ALL FILLS SHALL BE COMPACTED TO PROVIDE STABILITY OF MATERIAL AND TO PREVENT SETTLEMENT.
6. EXCAVATIONS AND FILLS SHALL NOT ENDANGER ADJOINING PROPERTIES, NOR DIVERT WATER ONTO THE PROPERTY OF OTHERS AT ANY TIME DURING THE COURSE OF CONSTRUCTION.
7. CONTRACTOR SHALL REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR FURTHER DIRECTION REGARDING SITE STABILIZATION THROUGHOUT THE COURSE OF CONSTRUCTION.
8. FILL MATERIAL SHALL BE PLACED 2 TO 3 MONTHS PRIOR TO CONSTRUCTION OF BUILDING AND ALL INSTALLATION SHALL BE WITNESSED BY CARLIN SIMPSON & ASSOCIATES.
9. REFER TO LATEST REVISION OF REPORT ON SUBSURFACE SOIL AND FOUNDATION INVESTIGATION, BY CARLIN SIMPSON & ASSOCIATES. ALL PILES FOR THE PROPOSED BUILDING ARE TO BE DRILLED.
10. AS INDICATED ON THE LATEST CARLIN SIMPSON & ASSOCIATES GEOTECHNICAL REPORT, ALL PILE OPERATIONS SHALL BE DRILLED.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn: BMS Approved: SS
Scale: 1" = 20'
Date: 10/29/2019
Project No: 18119
18119-SITE | GRAD | GRAD.scr
Drawing No: C–200 (Sheet 5 of 26)

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

GRADING PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085983 · LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

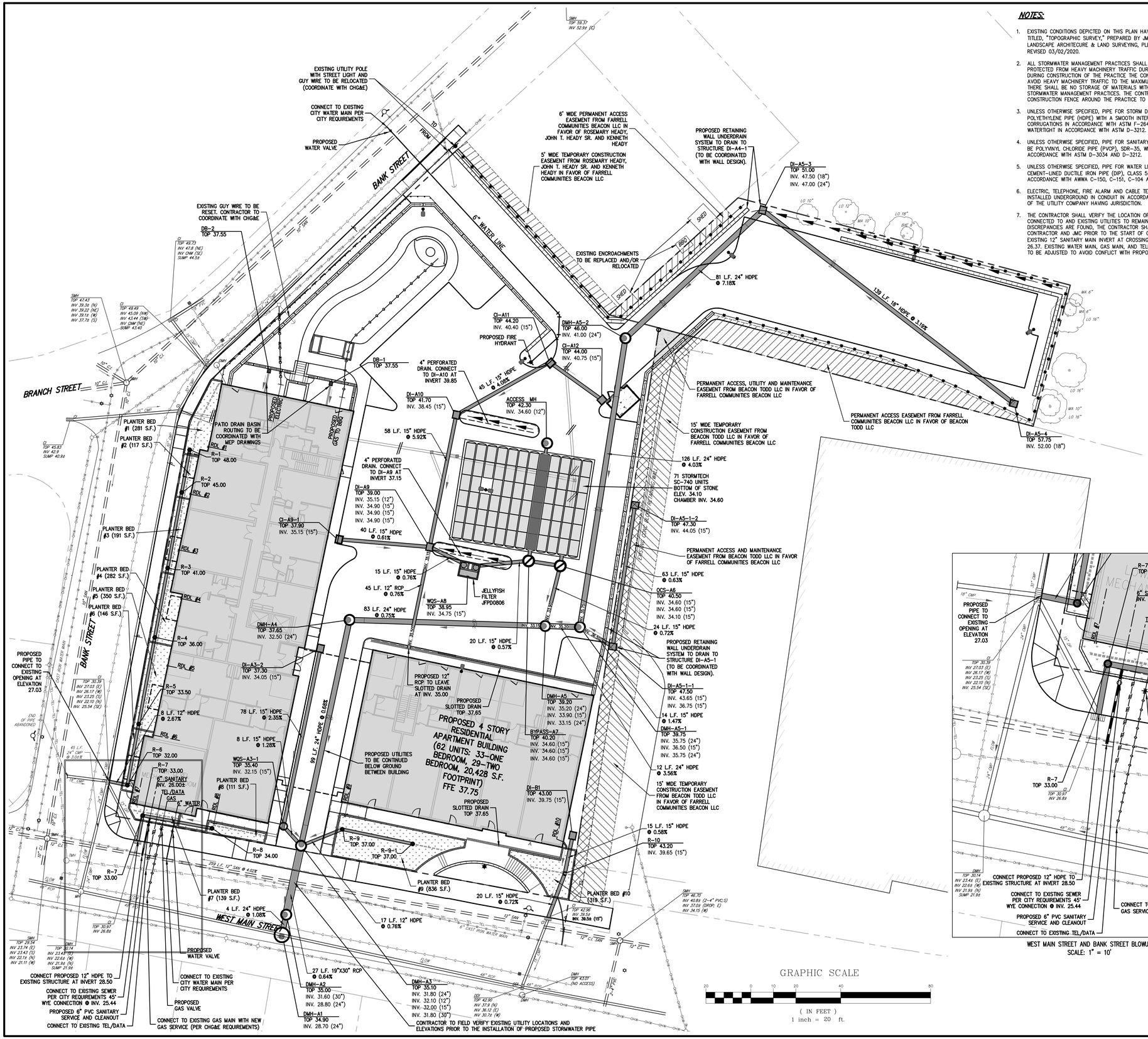
COPYRIGHT © 2020 by JMC All rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC. JMC SITE DEVELOPMENT CONSULTANTS, LLC. JOHN MEYER CONSULTING, INC. Any unauthorized use of any portion is to be deemed unlawful and subject to action by owner pursuant to JMC Code of Ethics and Conduct.

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECURE & LAND SURVEYING, PLLC, DATED 09/20/2018, LAST REVISED 03/02/2020.
2. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
3. UNLESS OTHERWISE SPECIFIED, PIPE FOR STORM DRAINS SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE) WITH A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS IN ACCORDANCE WITH ASTM F-2648. JOINTS SHALL BE WATERTIGHT IN ACCORDANCE WITH ASTM D-3212.
4. UNLESS OTHERWISE SPECIFIED, PIPE FOR SANITARY SEWER GRAVITY LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVCP), SDR-35, WITH PUSH-ON JOINTS IN ACCORDANCE WITH ASTM D-3034 AND D-3212.
5. UNLESS OTHERWISE SPECIFIED, PIPE FOR WATER LINES SHALL BE DOUBLE CEMENT-LINED DUCTILE IRON PIPE (DIP), CLASS 54, WITH MECHANICAL JOINTS IN ACCORDANCE WITH AWWA C-150, C-151, C-104 AND C-111.
6. ELECTRIC, TELEPHONE, FIRE ALARM AND CABLE TELEVISION LINES SHALL BE INSTALLED UNDERGROUND IN CONDUIT IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION.
7. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES TO BE CONNECTED TO AND EXISTING UTILITIES TO REMAIN AND BE PROTECTED. IF ANY DISCREPANCIES ARE FOUND, THE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR AND JMC PRIOR TO THE START OF CONSTRUCTION. EXISTING 12" SANITARY MAIN INVERT AT CROSSING OF NEW 30" STORM PIPE IS 26.37. EXISTING WATER MAIN, GAS MAIN, AND TELEPHONE/DATA LINE MAY NEED TO BE ADJUSTED TO AVOID CONFLICT WITH PROPOSED STORM.

LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING STORM DRAIN LINE AND SIZE
- EXISTING SANITARY LINE AND SIZE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING OVERHEAD WIRES
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING GAS VALVE
- EXISTING WATER VALVE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SIGN
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED EASEMENT LINE
- PROPOSED CONCRETE SIDEWALK
- PROPOSED DROP CURB AND RAMP
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED TYPE CI DRAIN INLET
- PROPOSED TYPE DI DRAIN INLET
- PROPOSED TYPE DB DRAIN BASIN
- PROPOSED WATER QUALITY STRUCTURE
- PROPOSED SUBSURFACE DRAINAGE OUTLET CONTROL STRUCTURE
- PROPOSED CLEANOUT
- PROPOSED STORM DRAIN LINE & SIZE
- PROPOSED SANITARY SEWER LINE & SIZE
- PROPOSED WATER LINE & SIZE
- PROPOSED GAS LINE
- PROPOSED OVERHEAD WIRES
- PROPOSED WATER VALVE
- PROPOSED GAS VALVE
- PROPOSED WOOD GUIDE RAIL
- PROPOSED RETAINING WALL AND SAFETY FENCE (DESIGN BY OTHERS)
- PROPOSED PRIVACY FENCE
- PROPOSED UTILITY POLE



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

WEST MAIN STREET AND BANK STREET BLOWUP
SCALE: 1" = 10'

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS

Previous Editions Obsolete

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

UTILITIES PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

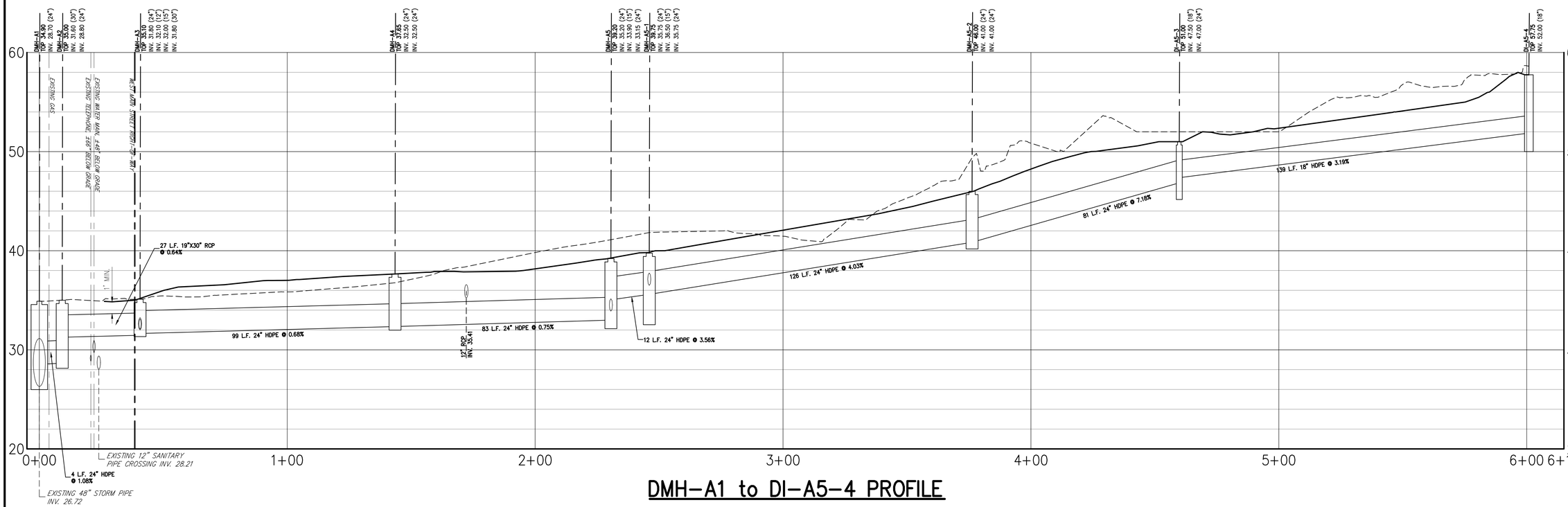
ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · LICENSED PROFESSIONAL ENGINEER · 085983

Drawn: BMS Approved: SS
Scale: 1" = 20'
Date: 10/29/2019
Project No: 18119
18119-SITE | UTIL | UTIL.scr
Drawing No:
C-300
(Sheet 6 of 26)

COPYRIGHT © 2020 by JMC. All rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. Any modification of a document or its format cannot be done without the written consent of JMC. Any reuse without written consent is unlawful.

NOT FOR CONSTRUCTION



DMH-A1 to DI-A5-4 PROFILE

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'

COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.

NOT FOR CONSTRUCTION

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

STORM PROFILE

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

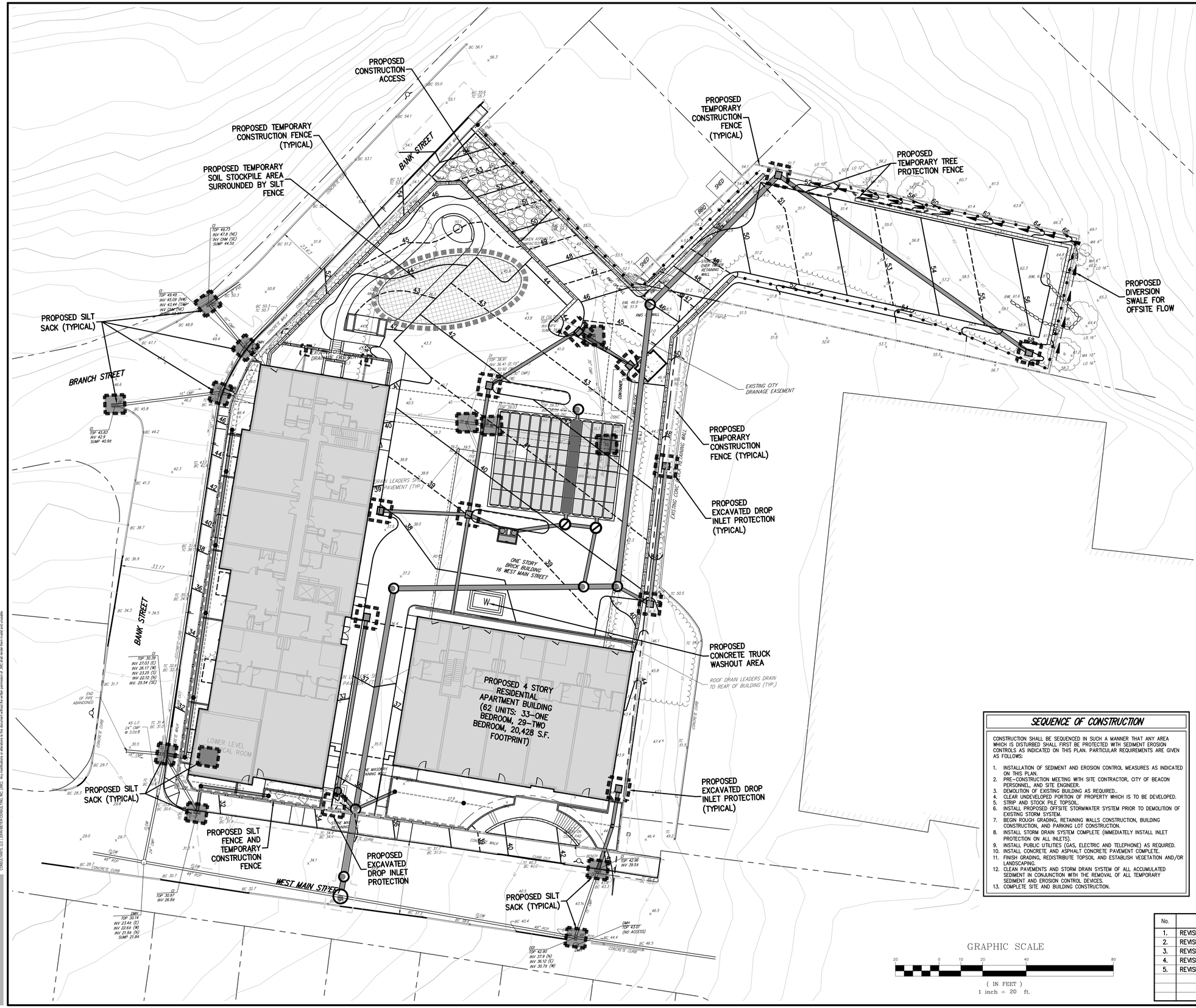
STATE OF NEW YORK · STEPHEN SPINA · 985983 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	07/27/2021	BMS
2.	REVISED PER CITY COMMENTS	03/25/2022	BMS

Previous Editions Obsolete

Drawn: BMS Approved: SS
Scale: AS SHOWN
Date: 09/29/2020
Project No: 18119
18119-SITE | STORM PROFILE | UTIL.scr
Drawing No: C-310
(Sheet 7 of 26)

917



LEGEND

- PROPOSED EXCAVATED DROP INLET PROTECTION
- PROPOSED SILT SACK
- PROPOSED CONSTRUCTION FENCE
- PROPOSED TEMP. TREE PROTECTION FENCE
- PROPOSED SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED STOCKPILE AREA
- EXISTING TREE AND DESIGNATION

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECURE & LAND SURVEYING, PLLC, DATED 09/20/2018, LAST REVISED 03/02/2020.
2. THIS PLAN IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL INFORMATION ONLY.
3. PRIOR TO BEGINNING ANY CLEARING, GRUBBING OR EXCAVATION, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL THE PLANS AND SPECIFICATIONS. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED. FINAL STABILIZATION OF LANDSCAPED AREAS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE PLAN.
4. THE CONTRACTOR SHALL INSPECT AND MAINTAIN ON–SITE EROSION AND SEDIMENT CONTROL MEASURES ON A DAILY BASIS. ALL COLLECTED SEDIMENT WITHIN SEDIMENT BARRIERS SHALL BE REMOVED PERIODICALLY AS REQUIRED TO MAINTAIN THE FUNCTION OF THE SEDIMENT BARRIERS. ALL SEDIMENT COLLECTED SHALL BE RESPREAD ON–SITE WITHIN STABILIZED AREAS AS DIRECTED BY THE OWNERS REPRESENTATIVE.
5. THE CONTRACTOR SHALL INSPECT DOWNSTREAM CONDITIONS FOR EVIDENCE OF SEDIMENTATION ON A WEEKLY BASIS, AFTER EACH RAINSTORM, AND AS MAY BE REQUIRED OR DIRECTED BY ALL APPLICABLE APPROVALS AND PERMITS. THE CONTRACTOR SHALL IMMEDIATELY PROVIDE A WRITTEN REPORT ON FINDINGS OF SEDIMENT IN DOWNSTREAM AREAS TO ALL AUTHORITIES HAVING JURISDICTION AND MAKE REPAIRS AS REQUIRED OR DIRECTED.
6. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED/WARRANTED BY FIELD CONDITIONS AND AS DIRECTED BY THE OWNERS REPRESENTATIVE, JMC, AND/OR ANY AUTHORITY HAVING JURISDICTION.
7. STOCKPILING OF CONSTRUCTION MATERIAL SHALL BE PLACED ON–SITE IN THE AREA DESIGNATED ON THIS PLAN OR AS APPROVED BY THE OWNERS REPRESENTATIVE. STOCKPILED EXCAVATED MATERIAL SHALL HAVE TWO ROWS OF SILT FENCE LOCATED AROUND ITS PERIMETER. ALL STOCKPILED MATERIAL SHALL BE MAINTAINED IN AN ORDERLY MANNER SO AS NOT TO IMPEDE ON PEDESTRIAN AND/OR VEHICULAR TRAFFIC CIRCULATION ROUTES.
8. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNERS REPRESENTATIVE.
9. ALL STORMWATER MANAGEMENT PRACTICES SHALL REMAIN UNDISTURBED AND BE PROTECTED FROM HEAVY MACHINERY TRAFFIC DURING CONSTRUCTION. HOWEVER DURING CONSTRUCTION OF THE PRACTICE THE CONTRACTOR SHALL MINIMIZE AND AVOID HEAVY MACHINERY TRAFFIC TO THE MAXIMUM EXTENT PRACTICABLE. THERE SHALL BE NO STORAGE OF MATERIALS WITHIN AREAS TO BE USED FOR STORMWATER MANAGEMENT PRACTICES. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND THE PRACTICE TO DISCOURAGE VEHICLE TRAFFIC.
10. ALL EXPOSED SLOPES AND GRADED/DISTURBED AREAS, THAT WILL NOT BE FURTHER DISTURBED WITHIN 14 CALENDAR DAYS (7 DAYS FOR CONSTRUCTION SITES THAT EITHER DIRECTLY DISCHARGE TO ONE OF THE 303(d) SEGMENTS LISTED IN APPENDIX E OF THE GENERAL PERMIT OR ARE LOCATED WITHIN ONE OF THE WATERSHEDS LISTED IN APPENDIX C OF THE GENERAL PERMIT), SHALL BE TEMPORARILY SEEDED WITHIN 24 HOURS OF DISTURBANCE, IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "EROSION AND SEDIMENT CONTROL GUIDELINES" AND THE ANSI A300 "BEST MANAGEMENT PRACTICES FOR TREE AND SHRUB PLANTING, TRANSPLANTING, MAINTENANCE AND CARE," PREPARED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), LATEST EDITIONS, AS FOLLOWS:
    A. SEED MIXTURE AND RATE OF APPLICATION:
        A.1. IN SPRING, SUMMER OR EARLY FALL, SEED THE AREA WITH RYEGRASS (ANNUAL OR PERENNIAL) AT 30 POUNDS PER ACRES (APPROXIMATELY 0.7 POUNDS/1000 SQUARE FEET OR USE 1 POUND/1000 SQUARE FEET).
        A.2. IN LATE FALL OR EARLY WINTER, SEED THE AREA WITH CERTIFIED "AROOSTOOK" WINTER RYE (CEREAL RYE) AT 100 POUNDS PER ACRE (2.5 POUNDS/1000 SQUARE FEET).
    B. APPLICATION SHALL BE UNIFORM BY MECHANICAL OR HYDROSEED METHODS.
    C. MULCH ALL SEEDED AREAS WITH STRAW AT A RATE OF 2 TONS PER ACRE (90 POUNDS PER 1,000 SQUARE FEET) SUCH THAT THE MULCH FORMS A CONTINUOUS BLANKET.
11. ALL SEEDED AREAS SHALL BE FERTILIZED, RESEEDED, AND MULCHED AS NECESSARY TO MAINTAIN VIGOROUS, DENSE VEGETATIVE COVER.
12. TEMPORARY SEED MIXTURES SHALL NOT BE PLACED ON AREAS WHERE FINAL GRADE HAS BEEN ESTABLISHED AND TOPSOIL HAS BEEN PLACED UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.
13. SUMPS SHALL BE INSTALLED FOR DEWATERING OF GROUNDWATER DURING CONSTRUCTION. PUMPED GROUNDWATER WILL BE DISCHARGED INTO SEDIMENT SETTLING TANKS AND THEN DISCHARGE LINE SHALL HAVE A FILTER SOCK ON THE END OF THE LINE. THE FILTERED GROUNDWATER SHALL THEN BE DISCHARGED OFF–SITE WITHIN ADJACENT DRAINAGE STRUCTURES.
14. ACCORDING TO THE U.S. FISH AND WILDLIFE SERVICE (USFWS), TREE REMOVAL SHOULD BE CONDUCTED DURING THE WINTER TIME FRAME OF NOVEMBER 1ST TO MARCH 31ST TO AVOID ADVERSE IMPACTS TO THE BATS. IF TREE REMOVAL IS PLANNED OUTSIDE OF THIS TIME FRAME, A SITE ASSESSMENT BY A BAT BIOLOGIST OR A QUALIFIED BAT SURVEYOR SHOULD BE PERFORMED. SUCH A SURVEY WILL IDENTIFY POTENTIAL CONCERNS AND ALLOW FOR IMPLEMENTATION OF SITE ACTIVITY PROTECTIONS.

SEQUENCE OF CONSTRUCTION

CONSTRUCTION SHALL BE SEQUENCED IN SUCH A MANNER THAT ANY AREA WHICH IS DISTURBED SHALL FIRST BE PROTECTED WITH SEDIMENT EROSION CONTROLS AS INDICATED ON THIS PLAN. PARTICULAR REQUIREMENTS ARE GIVEN AS FOLLOWS:

1. INSTALLATION OF SEDIMENT AND EROSION CONTROL MEASURES AS INDICATED ON THIS PLAN.
2. PRE–CONSTRUCTION MEETING WITH SITE CONTRACTOR, CITY OF BEACON PERSONNEL, AND SITE ENGINEER.
3. DEMOLITION OF EXISTING BUILDING AS REQUIRED..
4. CLEAR UNDEVELOPED PORTION OF PROPERTY WHICH IS TO BE DEVELOPED.
5. STRIP AND STOCK PILE TOPSOIL.
6. INSTALL PROPOSED OFFSITE STORMWATER SYSTEM PRIOR TO DEMOLITION OF EXISTING STORM SYSTEM.
7. BEGIN ROUGH GRADING, RETAINING WALLS CONSTRUCTION, BUILDING CONSTRUCTION, AND PARKING LOT CONSTRUCTION.
8. INSTALL STORM DRAIN SYSTEM COMPLETE (IMMEDIATELY INSTALL INLET PROTECTION ON ALL INLETS).
9. INSTALL PUBLIC UTILITIES (GAS, ELECTRIC AND TELEPHONE) AS REQUIRED.
10. INSTALL CONCRETE AND ASPHALT CONCRETE PAVEMENT COMPLETE.
11. FINISH GRADING, REDISTRIBUTE TOPSOIL AND ESTABLISH VEGETATION AND/OR LANDSCAPING.
12. CLEAN PAVEMENTS AND STORM DRAIN SYSTEM OF ALL ACCUMULATED SEDIMENT IN CONJUNCTION WITH THE REMOVAL OF ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES.
13. COMPLETE SITE AND BUILDING CONSTRUCTION.

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS

Previous Editions Obsolete

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SEDIMENT AND EROSION CONTROL PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

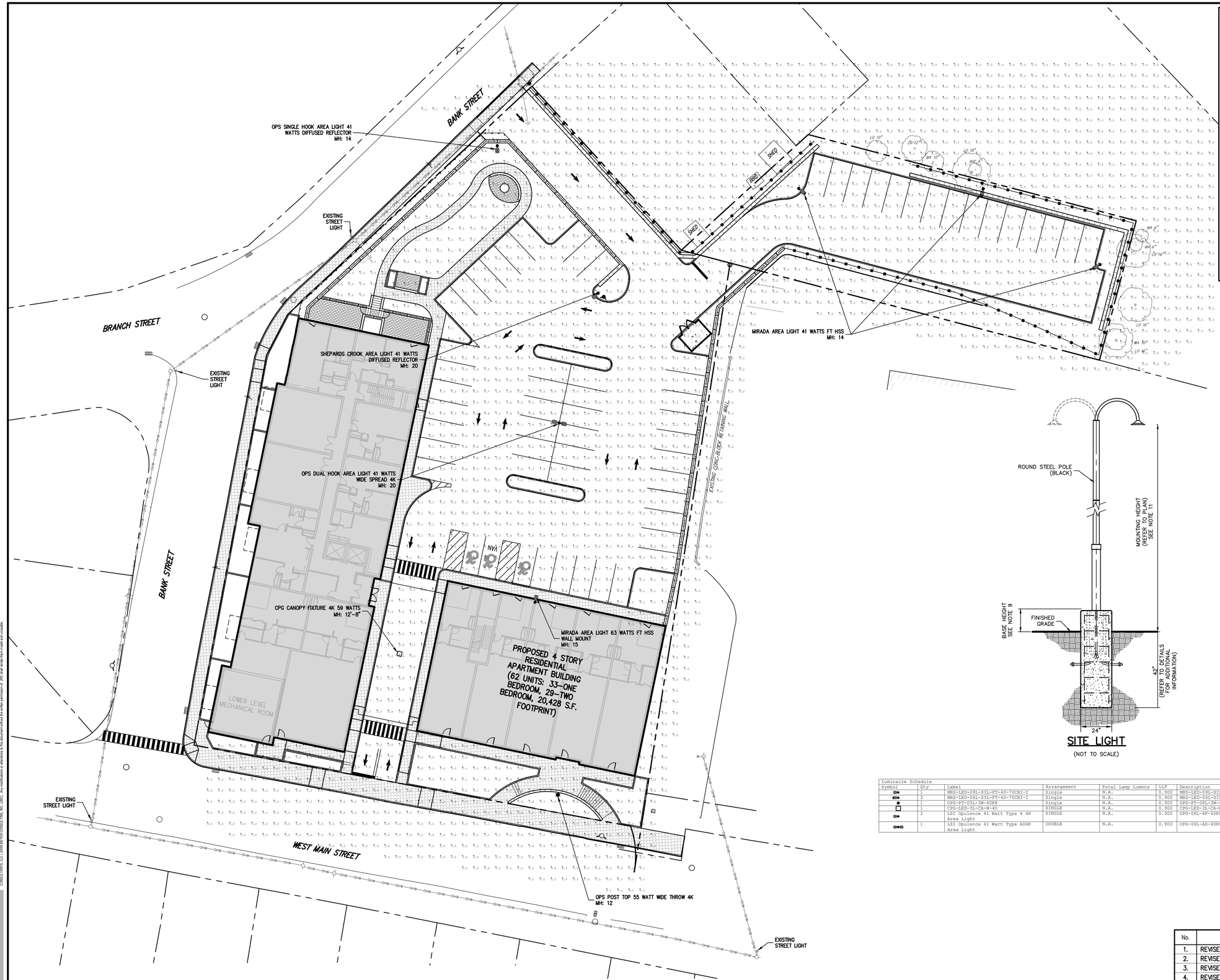
STATE OF NEW YORK
STEPHEN SPINA
085983
LICENSED PROFESSIONAL ENGINEER

Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119–SITE	SAE	SAE.scr	

Drawing No:
C–400
(Sheet 8 of 26)

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC. JMC SITE DEVELOPMENT CONSULTANTS, LLC. JOHN MEYER CONSULTING, INC. JMC, the publication or any portion is to be reused without the written permission of JMC or as stated in the contract and is unlawful.

NOT FOR CONSTRUCTION



LEGEND

- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING LINE
- EXISTING CURB LINE
- EXISTING STONE WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- PROPOSED BUILDING LINE
- PROPOSED CONCRETE CURB
- PROPOSED CONCRETE SIDEWALK
- PROPOSED GUIDE RAIL
- PROPOSED PRIVACY FENCE
- PROPOSED RETAINING WALL AND SAFETY FENCE (DESIGN BY OTHERS)
- PROPOSED LIGHTING STANDARD
- PROPOSED UNDERPASS LIGHT
- PROPOSED ILLUMINANCE IN FOOT-CANDLES

NOTES:

1. ALL CABLES AND WIRING SHALL BE INSTALLED UNDERGROUND IN CONDUIT. CONDUIT SHALL BE SCHEDULE 40 PVC INSTALLED WITH TWO (2) FEET OF COVER. MINIMUM SIZE OF CONDUIT SHALL BE TWO (2) INCH DIAMETER.
2. CIRCUIT WIRING SHALL BE DESIGNED BY THE PROJECT ELECTRICAL ENGINEER.
3. LIGHTING LEVELS ARE MEASURED AT GROUND SURFACE ELEVATION.
4. THE PROPOSED SITE LIGHT FIXTURES SHALL:
   (1) HAVE A COLOR RENDERING INDEX (CRI) IN THE RANGE OF 80-100.
   (2) HAVE A MAXIMUM TEMPERATURE OF 4,000 K.
   (3) BE FULL CUT-OFF THAT DO NOT LIGHT ABOVE HORIZONTAL PLANE.
   (4) BE DARK SKY COMPLIANT.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND VERIFY ALL ANCHOR BOLT DIMENSIONS (SIZE, BOLT CIRCLE, ETC.) WITH THE POLE MANUFACTURER PRIOR TO INSTALLATION OF THE FOUNDATIONS.
6. CHAMFER EXPOSED EDGES OF ALL FOUNDATIONS.
7. PROVIDE INSULATED GROUNDING BUSHING ON EXPOSED ENDS (IN BASE OF POLE) OF ALL GALVANIZED STEEL BENDS.
8. COLOR OF LUMINAIRE SHALL MATCH COLOR OF POLE.
9. CONCRETE BASE IN PARKING AREAS: 2'-6" CONCRETE BASE IN LANDSCAPED AREAS: 2"
10. LIGHT POLE LENGTHS SHALL BE ADJUSTED DEPENDING ON MOUNTING APPLICATION SUCH AS LAWN AREAS, IN PARKING AREAS. AND MH: MOUNTING HEIGHT IS THE DISTANCE FROM THE GROUND BELOW THE LIGHT TO THE TOP OF THE LIGHT FIXTURE.
11. LIGHT FIXTURES ARE DARK SKY COMPLIANT WITH FULL CUT-OFF SHIELDS.
12. LUMINAIRES AND POLES ARE TO BE THE PRODUCT OF LSI OR APPROVED EQUAL.

SITE LIGHT
(NOT TO SCALE)

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	1	MRS-LED-09L-SIL-FT-40-70CRI-I	Single	N.A.	0.900	MRS-LED-09L-SIL-FT-40-70CRI-IH
	3	MRS-LED-06L-SIL-FT-40-70CRI-I	Single	N.A.	0.900	MRS-LED-06L-SIL-FT-40-70CRI-IH
	1	OPS-FT-09L-3W-40K8	Single	N.A.	0.900	OPS-FT-09L-3W-40K8
	1	CPG-LED-3L-CA-W-40	SINGLE	N.A.	0.900	CPG-LED-3L-CA-W-40
	2	LSI Opulence 41 Watt Type 4 4K Area Light	SINGLE	N.A.	0.900	OPS-06L-4F-40K8_IES
	1	LSI Opulence 41 Watt Type AD4K Area Light	DOUBLE	N.A.	0.900	OPS-06L-AD-40K8_IES

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · LICENSED PROFESSIONAL ENGINEER · 085983

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

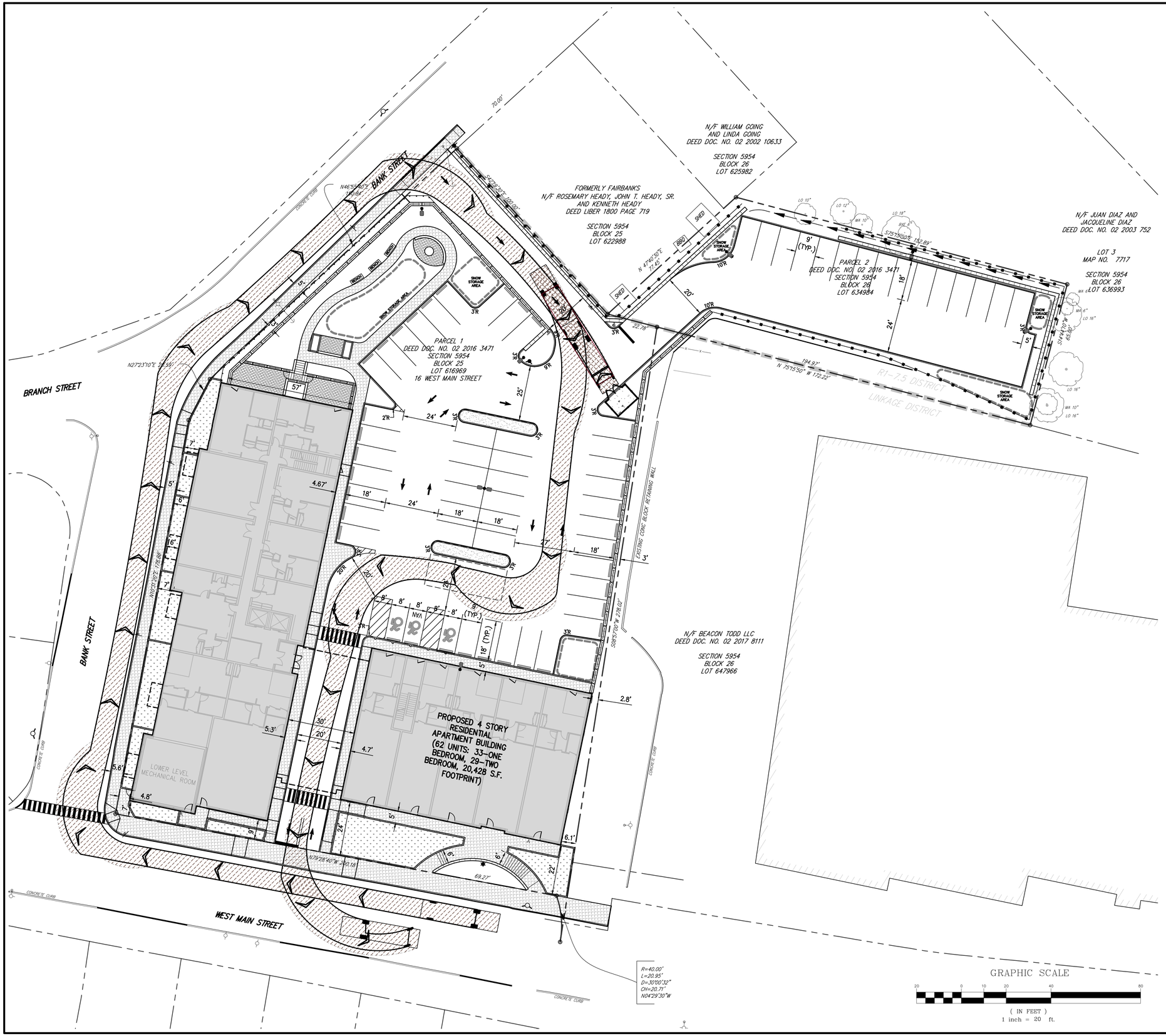
LIGHTING PLAN

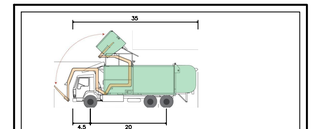
BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

Drawn:	BMS
Approved:	SS
Scale:	1" = 20'
Date:	10/29/2019
Project No:	18119
18119-LIGHTING	LIGHTING	LIGHT.scr
Drawing No:	C-600 (Sheet 9 of 26)

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC. (JMC SITE DEVELOPMENT CONSULTANTS, LLC.) CONNECTICUT, LLC. (JOHN MEYER CONSULTING, INC.) JMC. Any modification or alteration to this document will render it invalid and unauthorized for use without permission of JMC and will void all warranties and liability.

NOT FOR CONSTRUCTION





Front-Load Garbage Truck	
Overall Length	35.000ft
Overall Width	8.375ft
Overall Body Height	10.5416ft
Min Body Ground Clearance	1.000ft
Track Width	8.375ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	29.300ft

PROFILE

SCALE: NTS

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

GARBAGE TRUCK TURNING PLAN (FRONT LOADING)

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085583 · LICENSED PROFESSIONAL ENGINEER

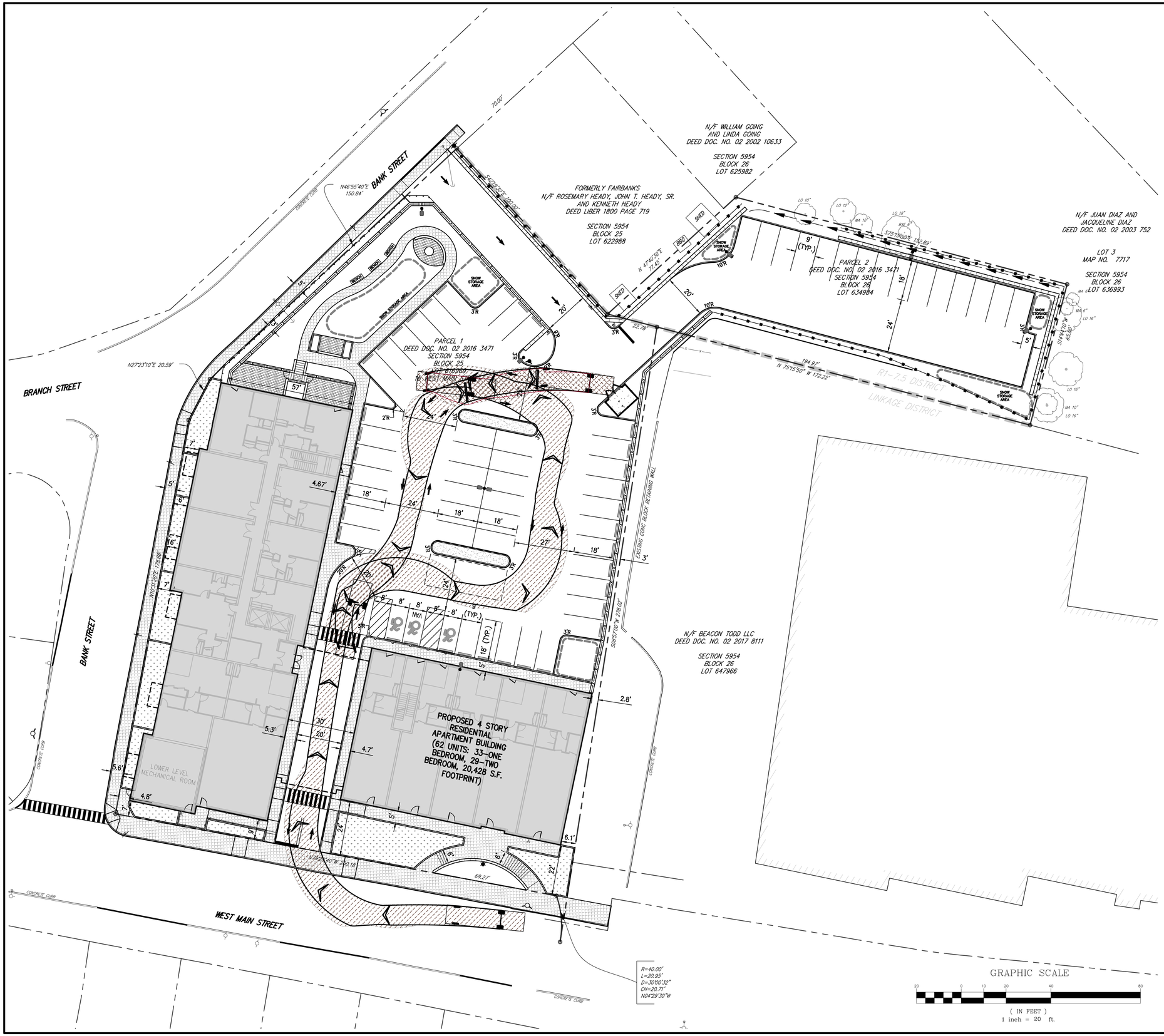
No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

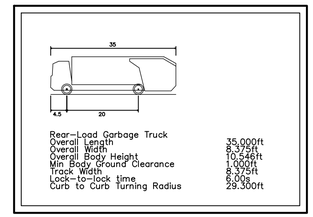
Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119-SITE	TRUCK-1	TRUCK.scr	

Drawing No:
C-700
(Sheet 10 of 26)

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC - All Rights Reserved - No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. (JMC). Any unauthorized use of services & the document will be held responsible for all damages resulting therefrom. JMC will not be liable for unauthorized use of this document.





Rear-Load Garbage Truck	
Overall Length	35.000ft
Overall Width	8.375ft
Overall Body Height	10.546ft
Min Body Ground Clearance	1.000ft
Track Width	8.375ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	29.300ft

PROFILE

SCALE: NTS

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. or JMC. Any unauthorized use of services & the document will be at user's sole risk without liability to JMC and user shall indemnify and hold JMC and its consultants harmless.

NOT FOR CONSTRUCTION

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

GARBAGE TRUCK TURNING PLAN (REAR LOADING)

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085583 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119-SITE	TRUCK-2	TRUCK.scr	

Drawing No:
C-701
(Sheet 11 of 26)

EXISTING FIRE HYDRANT

BANK STREET

N46°55'40"E 150.84'

70.00'

N/F WILLIAM GOING AND LINDA GOING
DEED DOC. NO. 02 2002 10633

SECTION 5954
BLOCK 26
LOT 625982

FORMERLY FAIRBANKS
N/F ROSEMARY HEADY, JOHN T. HEADY, SR. AND KENNETH HEADY
DEED LIBER 1800 PAGE 719

SECTION 5954
BLOCK 25
LOT 622988

N/F JUAN DIAZ AND JACQUELINE DIAZ
DEED DOC. NO. 02 2003 752

LOT 3
MAP NO. 7717

SECTION 5954
BLOCK 26
LOT 636993

PARCEL 1
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 25
LOT 615609
16 WEST MAIN STREET

PARCEL 2
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 26
LOT 634984

PROPOSED FIRE HYDRANT

BRANCH STREET

N27°23'10"E 20.59'

PROPOSED 4 STORY RESIDENTIAL APARTMENT BUILDING (62 UNITS: 33-ONE BEDROOM, 29-TWO BEDROOM, 20,428 S.F. FOOTPRINT)

LOWER LEVEL MECHANICAL ROOM

PROPOSED BUILDING OVER DRIVEWAY MINIMUM HEIGHT CLEARANCE TO BE 12'-8"

SNOW STORAGE AREA

EXISTING FIRE HYDRANT

PROPOSED FIRE DEPARTMENT CONNECTION

PROPOSED SIGHT LINE TRIANGLE

PROPOSED FIRE DEPARTMENT CONNECTION

EXISTING FIRE HYDRANT

WEST MAIN STREET

CONCRETE CURB

EXISTING CONC. BLOCK RETAINING WALL

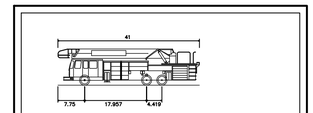
N/F BEACON TODD LLC
DEED DOC. NO. 02 2017 8111

SECTION 5954
BLOCK 26
LOT 647966

R=40.00'
L=20.95'
D=30°00'32"
CH=20.71'
N04°29'30"W

R1-7.5 DISTRICT
LINKAGE DISTRICT

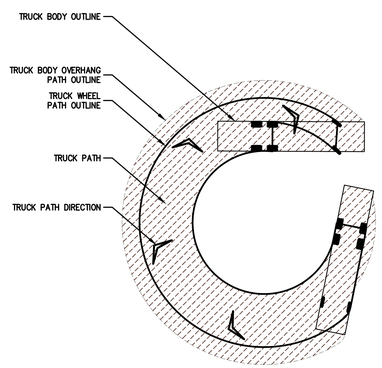
*MINIMUM HEIGHT CLEARANCE FOR THE DRIVEWAY UNDER THE BUILDING WILL BE 12'-8"



Beacon Fire Truck	
Overall Length	41.000ft
Overall Width	8.333ft
Overall Body Height	11.250ft
Min Body Ground Clearance	0.935ft
Track Width	8.417ft
Lock-to-lock time	4.083 s
Curb to Curb Turning Radius	34.833ft

PROFILE

SCALE: NTS



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085583 · LICENSED PROFESSIONAL ENGINEER

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

FIRE TRUCK TURNING PLAN (SCENARIO 1)

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119-SITE	TRUCK-3	TRUCK.scr	

Drawing No:
C-702
(Sheet 12 of 26)

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any unauthorized use of services for this document will be held responsible for all damages incurred by JMC as well as any and all costs.

EXISTING FIRE HYDRANT

BANK STREET

BRANCH STREET

WEST MAIN STREET

CONCRETE CURB

N/F WILLIAM GOING AND LINDA GOING
DEED DOC. NO. 02 2002 10633

SECTION 5954
BLOCK 26
LOT 625982

FORMERLY FAIRBANKS
N/F ROSEMARY HEADY, JOHN T. HEADY, SR. AND KENNETH HEADY
DEED LIBER 1800 PAGE 719

SECTION 5954
BLOCK 25
LOT 622988

N/F JUAN DIAZ AND JACQUELINE DIAZ
DEED DOC. NO. 02 2003 752

LOT 3
MAP NO. 7717

SECTION 5954
BLOCK 26
LOT 636993

PARCEL 1
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 25
LOT 616969
16 WEST MAIN STREET

PARCEL 2
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 26
LOT 634984

R1-7.5 DISTRICT
LINKAGE DISTRICT

N/F BEACON TODD LLC
DEED DOC. NO. 02 2017 8111

SECTION 5954
BLOCK 26
LOT 647966

PROPOSED 4 STORY RESIDENTIAL APARTMENT BUILDING (62 UNITS: 33-ONE BEDROOM, 29-TWO BEDROOM, 20,428 S.F. FOOTPRINT)

LOWER LEVEL MECHANICAL ROOM

PROPOSED BUILDING OVER DRIVEWAY MINIMUM HEIGHT CLEARANCE TO BE 12'-8"

PROPOSED FIRE HYDRANT

EXISTING FIRE HYDRANT

PROPOSED FIRE DEPARTMENT CONNECTION

PROPOSED SIGHT LINE TRIANGLE

SNOW STORAGE AREA

SHED

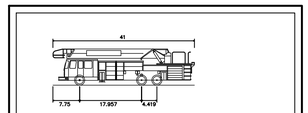
PROPOSED

EXISTING CONC. BLOCK RETAINING WALL

R=40.00'
L=20.95'
D=30°00'32"
CH=20.71'
N04°29'30"W

*MINIMUM HEIGHT CLEARANCE FOR THE DRIVEWAY UNDER THE BUILDING WILL BE 12'-8"

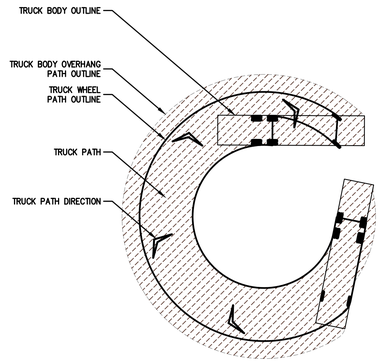
GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.



Beacon Fire Truck	
Overall Length	41.000ft
Overall Width	8.333ft
Overall Body Height	11.500ft
Min Body Ground Clearance	0.935ft
Track Width	8.417ft
Lock-to-lock time	4.083
Curb to Curb Turning Radius	34.833ft

PROFILE

SCALE: NTS



APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

FIRE TRUCK TURNING PLAN (SCENARIO 2)

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK
STEPHEN SPINA
085583
LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn:	BMS	Approved:	SS
Scale:	1" = 20'		
Date:	10/29/2019		
Project No:	18119		
18119-SITE	TRUCK-4	TRUCK.scr	

Drawing No:
C-703
(Sheet 13 of 26)

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. or JMC. It is not to be used on any other project, and is not to be loaned, copied or altered in any way whatsoever without the written permission of JMC and shall be returned upon request.

EXISTING FIRE HYDRANT

BANK STREET

GRAPHIC SCALE

BRANCH STREET

BANK STREET

WEST MAIN STREET

PARCEL 1
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 25
LOT 626969
16 WEST MAIN STREET

FORMERLY FAIRBANKS
N/F ROSEMARY HEADY, JOHN T. HEADY, SR.
AND KENNETH HEADY
DEED LIBER 1800 PAGE 719

SECTION 5954
BLOCK 25
LOT 622988

N/F WILLIAM GOING
AND LINDA GOING
DEED DOC. NO. 02 2002 10633

SECTION 5954
BLOCK 26
LOT 625982

N/F JUAN DIAZ AND
JACQUELINE DIAZ
DEED DOC. NO. 02 2003 752

LOT 3
MAP NO. 7717

SECTION 5954
BLOCK 26
LOT 636993

PARCEL 2
DEED DOC. NO. 02 2016 3471
SECTION 5954
BLOCK 26
LOT 634984

N/F BEACON TODD LLC
DEED DOC. NO. 02 2017 8111

SECTION 5954
BLOCK 26
LOT 647966

PROPOSED 4 STORY
RESIDENTIAL
APARTMENT BUILDING
(62 UNITS: 33-ONE
BEDROOM, 29-TWO
BEDROOM, 20,428 S.F.
FOOTPRINT)

LOWER LEVEL
MECHANICAL ROOM

PROPOSED
BUILDING OVER
DRIVEWAY MINIMUM
HEIGHT CLEARANCE
TO BE 12'-8"

PROPOSED FIRE
HYDRANT

PROPOSED FIRE
DEPARTMENT
CONNECTION

PROPOSED SIGHT
LINE TRIANGLE

EXISTING FIRE
HYDRANT

EXISTING FIRE
DEPARTMENT
CONNECTION

SNOW STORAGE AREA

SHED

EXISTING CONC. BLOCK RETAINING WALL

CONCRETE CURB

R1-7.5 DISTRICT
LINKAGE DISTRICT

*MINIMUM HEIGHT CLEARANCE FOR THE DRIVEWAY UNDER
THE BUILDING WILL BE 12'-8"

Beacon Fire Truck	
Overall Length	41.000ft
Overall Width	8.333ft
Overall Body Height	11.000ft
Min Body Ground Clearance	0.935ft
Track Width	8.417ft
Lock-to-lock time	4.083 s
Curb to Curb Turning Radius	34.833ft

PROFILE

SCALE: NTS

TRUCK BODY OUTLINE
TRUCK BODY OVERHANG PATH OUTLINE
TRUCK WHEEL PATH OUTLINE
TRUCK PATH
TRUCK PATH DIRECTION

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape
Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

FIRE TRUCK TURNING PLAN (SCENARIO 3)

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085583 · LICENSED PROFESSIONAL ENGINEER

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn: BMS Approved: SS
Scale: 1" = 20'
Date: 10/29/2019
Project No: 18119
18119-SITE | TRUCK-5 | TRUCK.scr
Drawing No:

C-704
(Sheet 14 of 26)

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. and JMC. It is not to be used on any extensions to the scope of the project, whether the project is completed or not, for completion of the project by others, except with the written permission of JMC and unless appropriate compensation is received by JMC.

NOT FOR CONSTRUCTION



ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	02/24/2020	AH
2.	REVISED PER CITY COMMENTS	09/29/2020	AH
3.	REVISED PER CITY COMMENTS	07/27/2021	BMS
4.	REVISED PER CITY COMMENTS	03/25/2022	BMS

Previous Editions Obsolete

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

AERIAL SITE PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

STATE OF NEW YORK
STEPHEN SPINA
985983
LICENSED PROFESSIONAL ENGINEER

Drawn: BMS Approved: SS
Scale: 1" = 40'
Date: 12/30/2019
Project No: 18119
18119-SITE AERIAL AERIAL.scr
Drawing No: C-800
(Sheet 15 of 26)

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render them invalid and unusable.

925

NOTES:

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, DATED 09/20/2018, REVISED 09/23/2019.
2. THE INTERSECTION AND STOPPING SIGHT DISTANCES HAVE BEEN CALCULATED FOLLOWING THE PROCEDURE OUTLINED IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS 2018, 7TH EDITION" PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).
3. INTERSECTION SIGHT DISTANCE CALCULATIONS

   ONTO WEST MAIN STREET:

   POSTED SPEED LIMIT = 25 MPH
   DESIGN SPEED = 35 MPH

   MINOR ROAD APPROACH GRADE = 3% DOWNGRADE

   LEFT TURN (LOOKING RIGHT) (PER AASHTO TABLE 9-7):

   CALCULATED: 385.9 FT
   PROVIDED: 390 FT

   RIGHT TURN (LOOKING LEFT) (PER AASHTO TABLE 9-9):

   CALULATED: 334.4 FT
   PROVIDED: 335 FT

4. STOPPING SIGHT DISTANCE CALCULATIONS

   $SSD = 1.47\ V\ t + \frac{V^2}{30[(a/32.2)\pm G]}$

   V = DESIGN SPEED, 35 MPH
   t = BRAKE REACTION TIME, 2.5 S
   a = DECELERATION RATE, 11.2 FT/S^2
   G = MAJOR ROAD APPROACH GRADE, RISE/RUN, FT/FT

   ONTO WEST MAIN STREET:

   POSTED SPEED LIMIT = 25 MPH
   DESIGN SPEED = 35 MPH

   LEFT TURN (LOOKING RIGHT):

   G = 0.043 FT/FT (UPGRADE)

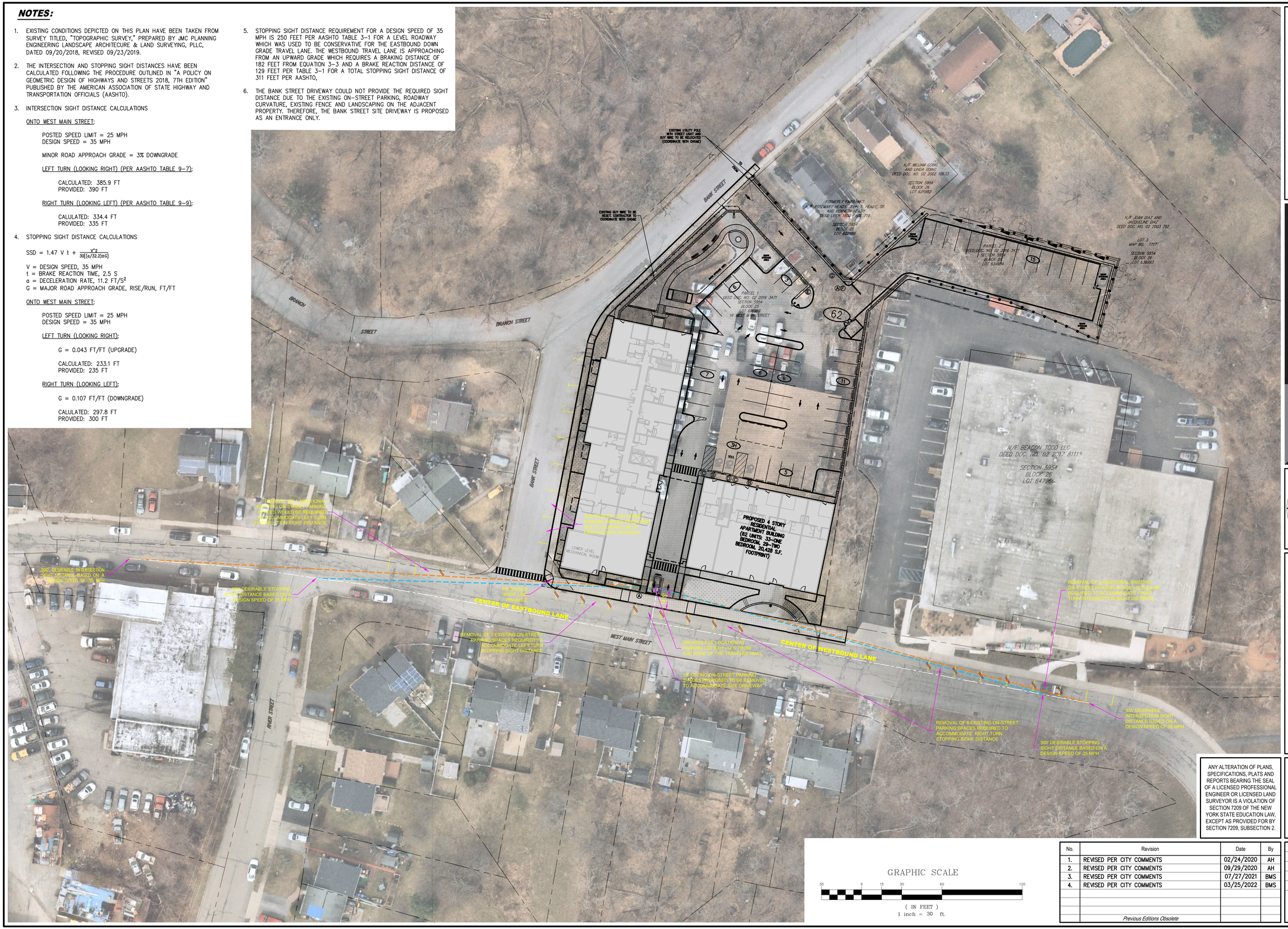
   CALCULATED: 233.1 FT
   PROVIDED: 235 FT

   RIGHT TURN (LOOKING LEFT):

   G = 0.107 FT/FT (DOWNGRADE)

   CALULATED: 297.8 FT
   PROVIDED: 300 FT

5. STOPPING SIGHT DISTANCE REQUIREMENT FOR A DESIGN SPEED OF 35 MPH IS 250 FEET PER AASHTO TABLE 3-1 FOR A LEVEL ROADWAY WHICH WAS USED TO BE CONSERVATIVE FOR THE EASTBOUND DOWN GRADE TRAVEL LANE. THE WESTBOUND TRAVEL LANE IS APPROACHING FROM AN UPWARD GRADE WHICH REQUIRES A BRAKING DISTANCE OF 182 FEET FROM EQUATION 3-3 AND A BRAKE REACTION DISTANCE OF 129 FEET PER TABLE 3-1 FOR A TOTAL STOPPING SIGHT DISTANCE OF 311 FEET PER AASHTO,
6. THE BANK STREET DRIVEWAY COULD NOT PROVIDE THE REQUIRED SIGHT DISTANCE DUE TO THE EXISTING ON-STREET PARKING, ROADWAY CURVATURE, EXISTING FENCE AND LANDSCAPING ON THE ADJACENT PROPERTY. THEREFORE, THE BANK STREET SITE DRIVEWAY IS PROPOSED AS AN ENTRANCE ONLY.



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	02/24/2020	AH
2.	REVISED PER CITY COMMENTS	09/29/2020	AH
3.	REVISED PER CITY COMMENTS	07/27/2021	BMS
4.	REVISED PER CITY COMMENTS	03/25/2022	BMS

Previous Editions Obsolete

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

SIGHT DISTANCE PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

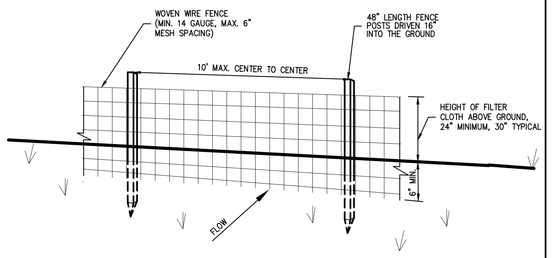
ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · 085983 · LICENSED PROFESSIONAL ENGINEER

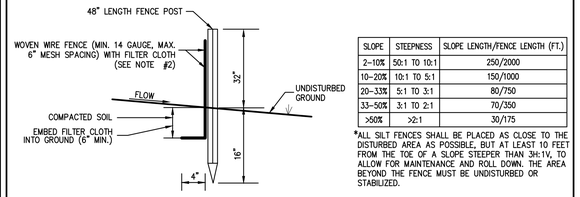
Drawn:	BMS
Approved:	SS
Scale:	1" = 30'
Date:	12/30/2019
Project No:	18119
18119-SITE	SIGHT 1_ISO.scr
Drawing No:	C-801 (Sheet 16 of 26)

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING ENGINEERING LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC/ JMC SITE DEVELOPMENT CONSULTING, LLC/ JOHN MEYER CONSULTING, INC. JMC assumes no responsibility and accepts no liability for any unauthorized use, or any modifications of this document by any party other than JMC, and any such use or modification without the express written permission of JMC will be void and of no effect.



PERSPECTIVE VIEW



SECTION

SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT.)
2–10%	50:1 TO 10:1	250/2000
10–20%	10:1 TO 5:1	150/1000
20–33%	5:1 TO 3:1	80/750
33–50%	3:1 TO 2:1	70/350
>50%	>2:1	30/175

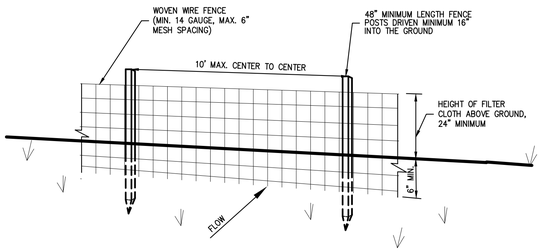
*ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE, BUT AT LEAST 10 FEET FROM THE TOE OF A SLOPE STEEPER THAN 3H:1V, TO ALLOW FOR MAINTENANCE AND ROLL DOWN. THE AREA BEYOND THE FENCE MUST BE UNDISTURBED OR STABILIZED.

NOTES:

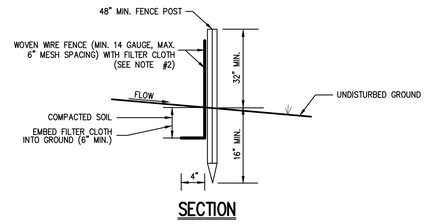
1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVROFENCE, OR APPROVED EQUAL.
5. INSPECT WEEKLY AND AFTER EACH RAIN. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE

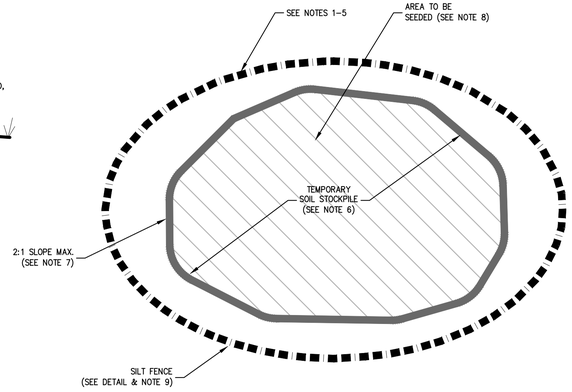
1



PERSPECTIVE VIEW



SECTION



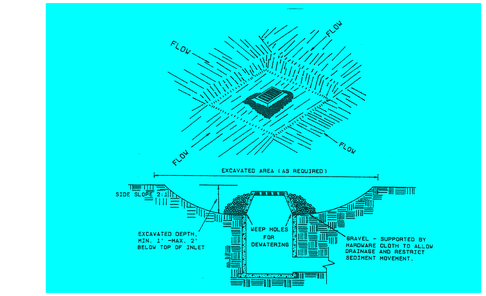
PLAN VIEW

NOTES:

1. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
2. FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVROFENCE, OR APPROVED EQUAL.
5. INSPECT WEEKLY AND AFTER EACH RAIN. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
6. THE AREA CHOSEN FOR ALL TEMPORARY SOIL STOCKPILES SHALL BE DRY AND STABLE.
7. ALL STOCKPILED SOIL SHALL NOT CONTAIN SLOPES GREATER THAN 2:1.
8. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SEEDED WITHIN 24 HOURS. PERENNIAL OR ANNUAL RYEGRASS SHALL BE PLANTED DURING SPRING, SUMMER OR EARLY FALL. WINTER RYE (CEREAL RYE) SHALL BE PLANTED DURING LATE FALL OR EARLY WINTER.
9. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED AROUND THE PERIMETER.

TEMPORARY SOIL STOCKPILE WITH SILT FENCE

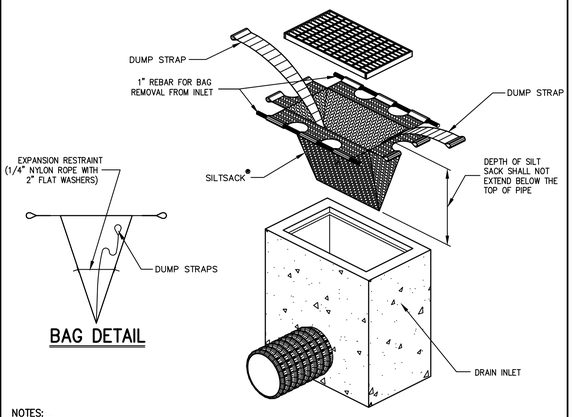
2



1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION.
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.
3. WEEP HOLES SHALL BE PROCTECTED BY/STONE.
4. PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPAIR OR REPLACE INLET PROTECTION TO MAINTAIN EFFECTIVENESS OF THE INSTALLATION.
5. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA. SEAL WEEP HOLES FILL BASIN WITH STABLE SOIL TO FINAL GRADE. COMPACT IT PROPERLY AND STABILIZE WITH PERMANENT SEEDING.

EXCAVATED DROP INLET PROTECTION

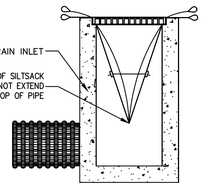
3



BAG DETAIL

NOTES:

1. CURB INLETS SHALL BE TYPE B WITH CURB DEFLECTOR.
2. INLET PROTECTION SHALL BE INSPECTED WEEKLY AND AFTER EACH RAIN. SEDIMENT SHALL BE REMOVED AS NECESSARY. FILTER FABRIC, CRUSHED STONE, AND ANY OTHER COMPONENTS SHALL BE REPLACED IF DAMAGED. ALL MATERIALS SHALL BE CHECKED FOR PROPER ANCHORAGE AND SECURED AS NECESSARY.



INSTALLATION DETAIL

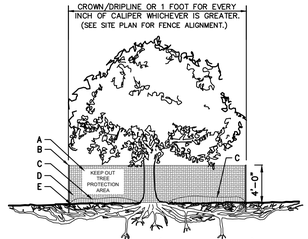
HI-FLOW SILT SACK AS MANUFACTURED BY ACF ENVIRONMENTAL OR APPROVED EQUAL©

(FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC $^{-1}$

SILT SACK

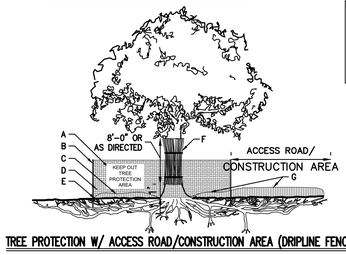
4



TREE PROTECTION (DRIPLINE FENCE)

A	8.5"X11" SIGN LAMINATED IN PLASTIC SPACED EVERY 50' ALONG FENCE.
B	2"X6" STEEL POSTS OR APPROVED EQUAL.
C	5" THICK LAYER OF MULCH.
D	TREE PROTECTION FENCE: HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR ORANGE. STEEL POSTS INSTALLED AT 8' O.C.
E	MAINTAIN EXISTING GRADE WITHIN THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS.
F	INSTALL ROUGH SAWN WOOD WHERE AND AS DIRECTED BY PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SEE CHART FOR WOOD SIZE BOUND WITH 9 GAUGE WIRE.
G	8"–12" THICK LAYER OF MULCH ON MAINTENANCE ROAD. 5" THICK LAYER INSIDE TREE PROTECTION AREA.

TREE DIAMETER	ROUGH SAWN WOOD SIZE
<12"	2"X2"
13"–24"	2"X4"
>25"	2"X6"



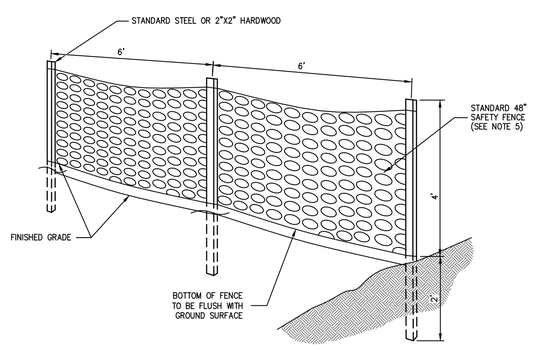
TREE PROTECTION W/ ACCESS ROAD/CONSTRUCTION AREA (DRIPLINE FENCE)

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
2. IF THERE IS NO EXISTING IRRIGATION, SEE SPECIFICATIONS FOR WATERING REQUIREMENTS.
3. NO PRUNING SHALL BE PERFORMED EXCEPT BY APPROVED ARBORIST.
4. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
5. SEE SITE PLANS FOR IDENTIFICATIONS/LOCATIONS OF INDIVIDUAL TREES TO BE PROTECTED.
6. ALL EXCAVATION WITHIN THE CROWN/DRIPLINE OF ANY TREE SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF THE PROJECT LANDSCAPE ARCHITECT OR PROFESSIONAL ARBORIST. SPECIAL MEASURES, SUCH AS THE USE OF AN AIR SPADE MAY BE REQUIRED.
7. THE CONTRACTOR MAY PROPOSE THE USE OF ENGINEERED MATTING OR OTHER ENGINEERED PRODUCTS IN LIEU OF MULCH, WHICH SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION.

TREE PROTECTION

5

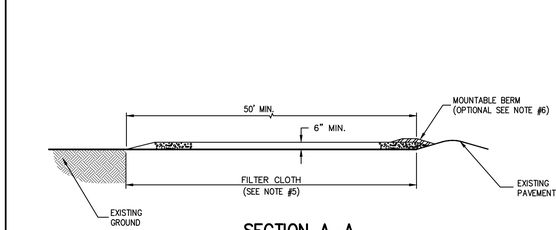


NOTES:

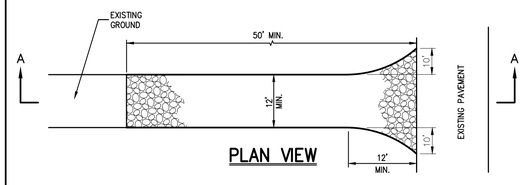
1. SPACE SUPPORT FENCE POSTS AT 6 FOOT INTERVALS.
2. DRIVE SUPPORT POSTS 2 FEET INTO GROUND.
3. FIRMLY FASTEN FENCE MATERIAL IN PLACE BY WIRING TO FENCE POST WHILE MAINTAINING TENSION ACROSS FULL HEIGHT OF FENCE. WIRING SHALL BE DONE IN A MANNER THAT WILL PREVENT SAGGING OF FENCE MATERIAL.
4. PROVIDE PERIODIC INSPECTION AND MAINTENANCE OF FENCE INCLUDING REPAIRS AS NECESSARY AND REQUIRED.
5. PLASTIC FENCE SHALL BE INTERNATIONAL ORANGE COLOR, AS MANUFACTURED BY ADPI ENTERPRISES, INC. OR APPROVED EQUAL.
6. REMOVE CONSTRUCTION FENCE AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE.

CONSTRUCTION FENCE

6



SECTION A–A



PLAN VIEW

NOTES

1. STONE SIZE – USE 1" TO 4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH TO BE PLACED OVER THE ENTIRE WIDTH AND LENGTH OF AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. DAILY INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE

7

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

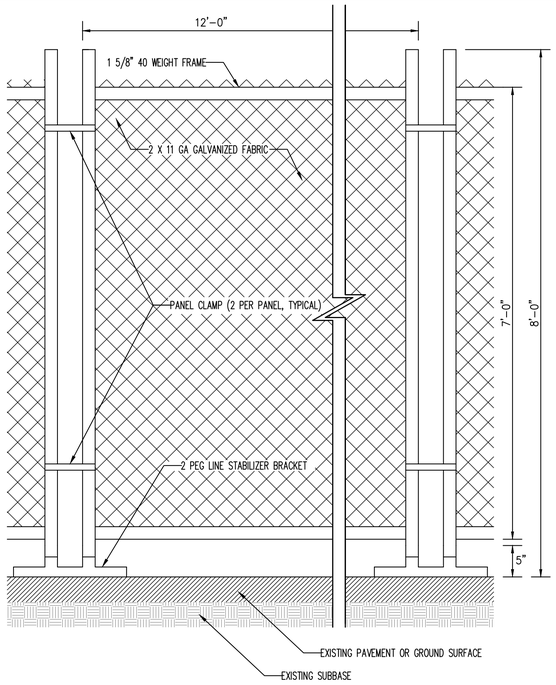
STATE OF NEW YORK · STEPHEN SKIRA · 085983 · LICENSED PROFESSIONAL ENGINEER

Drawn:	BMS	Approved:	SS
Scale:	NOT TO SCALE		
Date:	10/29/2019		
Project No:	18119		
18119-DETAILS	C-900	–	

Drawing No: C-900 (Sheet 17 of 26)

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, OR JOHN MEYER CONSULTING, INC. (JMC). Any modification of this document or its contents without the written permission of JMC shall render such use unlawful.

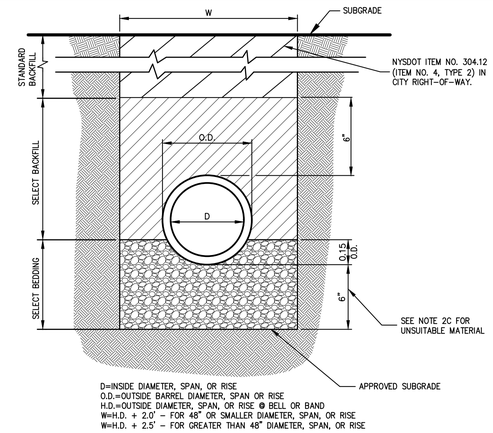
NOT FOR CONSTRUCTION



NOTE:
STABILIZED BRACKET TO BE HOT DIPPED GALVANIZED STEEL PIPE.

TEMPORARY CHAIN LINK CONSTRUCTION FENCE

8



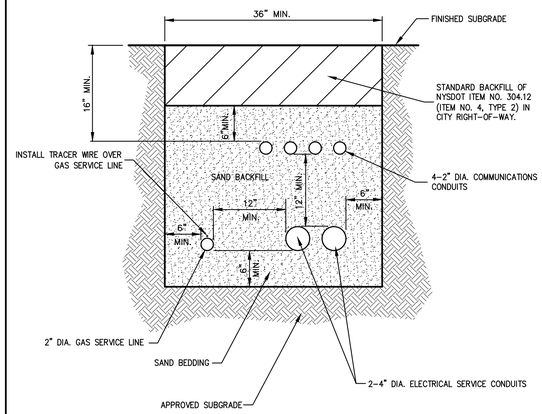
D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0" – FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5' – FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

NOTES:

1. FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
   A. EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
   B. 3/4"CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
2. TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
   A. FOR ALL CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) AND PVC PIPE AND CONDUIT INSTALLATION.
   B. WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH.
   C. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
3. FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
4. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D-1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

TYPE II TRENCH

9



NOTES:

1. UTILITIES TO BE INSTALLED IN ACCORDANCE WITH THE REGULATIONS AND REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION.
2. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES. UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D-1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.
3. CONTRACTOR SHALL STAKE THE PROPOSED SERVICE LINES AND CONDUITS PRIOR TO BACKFILLING TO ENSURE SERVICES DO NOT MOVE WITHIN TRENCH.

UTILITY TRENCH DETAIL

10

NOTES PERTAINING TO DRAIN INLETS

A-1 STEPS WILL NOT BE REQUIRED IN INLETS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN INLETS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR DRAIN INLETS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).

A-2 WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".

A-3 FOR MASONRY STRUCTURES, THE FIRST COURSE OF MASONRY SHALL BE SET IN THE CONCRETE FOUNDATION BEFORE THE CONCRETE HAS SET. CONCRETE FOUNDATION SHALL BE CLASS "A"(4000 psi) CONCRETE, TWELVE (12) INCHES THICK AND SHALL EXTEND SIX (6) INCHES BEYOND THE OUTSIDE FACE THE STRUCTURE.

A-4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

A-5 ALL NECESSARY PATCHING FOR DRAIN STRUCTURES SHALL BE ACCOMPLISHED WITH NON-SHRINKING CEMENT MORTAR GROUT, APPROVED EQUAL TO SIKA-SET AS MANUFACTURED BY THE SIKA CHEMICAL CORP.

A-6 FOUNDATIONS FOR PRECAST CONCRETE STRUCTURES SHALL BE SET ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.

A-7 ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.

A-8 PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED DRAIN INLETS WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF FRAME & GRATE.

A-9 FOR MASONRY STRUCTURES GREATER THAN TEN (10) FEET IN DEPTH, THICKNESS OF MASONRY WALLS SHALL BE INCREASED TO TWELVE (12) INCHES.

A-10 FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

NOTES PERTAINING TO MANHOLES

B-1 PRECAST CONCRETE MANHOLES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.

B-2 FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.

B-3 FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.

B-4 TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.

B-5 INVERT CHANNELS FOR PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.

B-6 NOTES A-1, A-2, A-4, A-5, A-6 & A-7 UNDER "NOTES PERTAINING TO DRAIN INLETS" ABOVE SHALL APPLY TO MANHOLES.

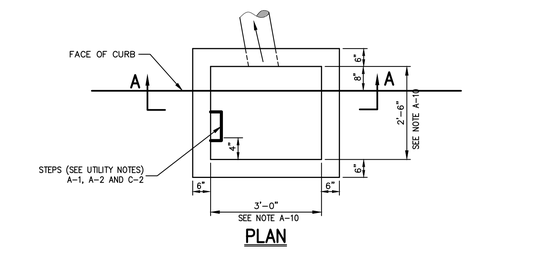
NOTES PERTAINING TO PRECAST CONCRETE STRUCTURES FOR STORM DRAINS, SANITARY SEWERS AND WATER LINES

C-1 ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.

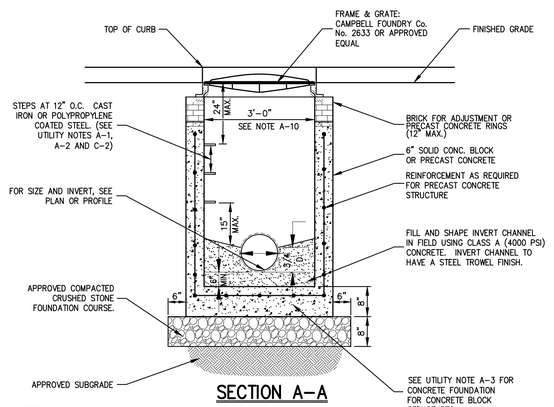
C-2 STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES WHEN PRACTICABLE.

UTILITY NOTES

11



PLAN



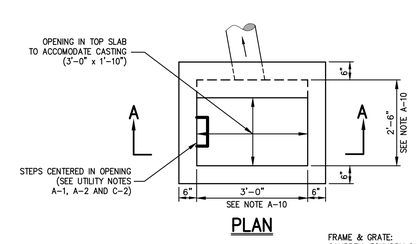
SECTION A-A

NOTE:
1. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C-901
2. DRAIN INLETS SHALL BE INSPECTED MONTHLY FOR BLOCKAGE AND/OR EROSION AT TOP OF EACH INLET. BLOCKAGE SHALL BE REMOVED AND INLETS SHALL BE REPAIRED AS NECESSARY.

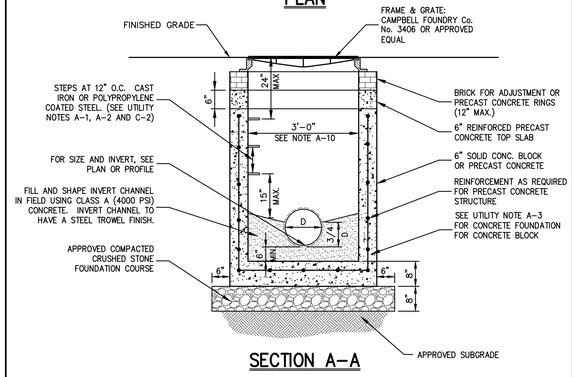
DRAIN INLET (TYPE CI)

(w/o sump-w/o finger underdrains)

12



PLAN



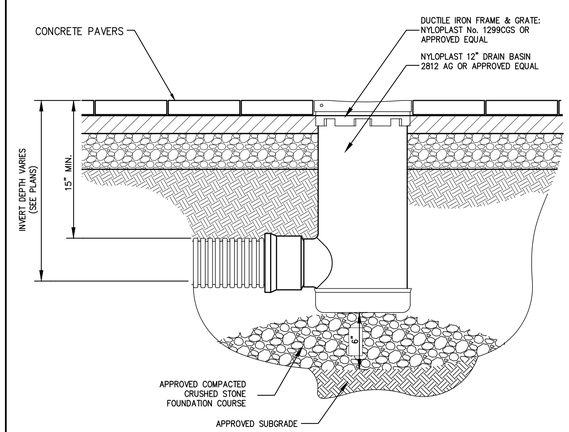
SECTION A-A

NOTE
1. REINFORCE PRECAST CONCRETE TOP SLAB AND REINFORCE PRECAST CONCRETE STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.
2. LOCATIONS OF FINGER UNDERDRAINS MAY VARY FROM THAT AS SHOWN DEPENDING UPON NUMBER AND SIZE OF STORM DRAIN LINES ENTERING AND EXITING THE STRUCTURE.
3. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON DRAWING C-901
4. DRAIN INLETS SHALL BE INSPECTED MONTHLY FOR BLOCKAGE AND/OR EROSION AT TOP OF EACH INLET. BLOCKAGE SHALL BE REMOVED AND INLETS SHALL BE REPAIRED AS NECESSARY.

DRAIN INLET (TYPE DI)

(w/o sump-w/o finger underdrains)

13



NOTES:

1. ALL MATERIALS SHALL BE PRODUCT OF NYLOPLAST OR APPROVED EQUAL.
   ADDRESS: 3130 VERONA AVENUE, BUFORD, GA 30518
   PHONE: (770) 932 2443.
2. ALL MATERIALS SHALL BE DESIGNED TO ACCOMODATE AN H-20 DESIGN LOAD.
3. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
4. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
5. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE.

DRAIN BASIN (TYPE DB)

(w/o sump)

14

X

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

JMC

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK
STEPHEN SPINA
085983
LICENSED PROFESSIONAL ENGINEER

Drawn:	BMS	Approved:	SS
Scale:	NOT TO SCALE		
Date:	10/29/2019		
Project No:	18119		
18119-DETAILS	C-901	-	

Drawing No:
C-901
(Sheet 18 of 26)

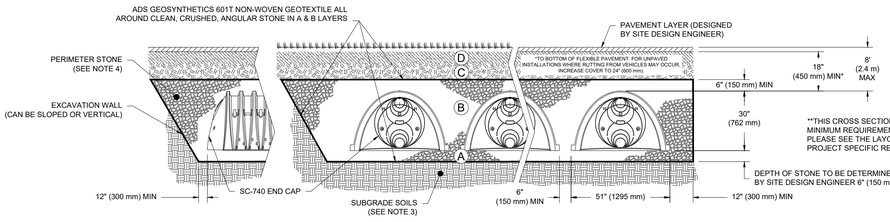
NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC. All rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. Any modification of a document or drawing by any person other than the author or his/her professional seal of practice shall void all warranties.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

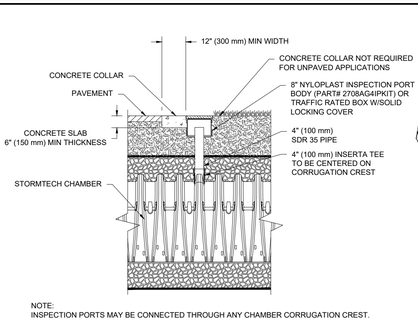
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

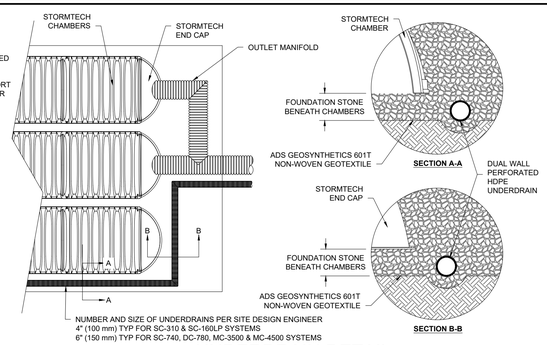
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/IN/IN, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SC-740 CROSS SECTION DETAIL



NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL
(SC SERIES CHAMBER)



UNDERDRAIN DETAIL

SEE MAINTENANCE GUIDELINES IN APPENDIX E OF SWPPP REPORT. LEVEL OF SEDIMENT ACCUMULATED WITHIN THE ISOLATOR ROW SHALL BE INSPECTED THROUGH THE ACCESS MANHOLE. IF 3 INCHES OF SEDIMENT OR GREATER HAS ACCUMULATED, IT SHALL BE CLEANED OUT UTILIZING A HIGH-PRESSURE WATER NOZZLE TO SCOUR AND SUSPEND SEDIMENTS. ALL SEDIMENT SHALL BE FLUSHED TO ACCESS MANHOLE AND REMOVED USING A VACUUM TRUCK.

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

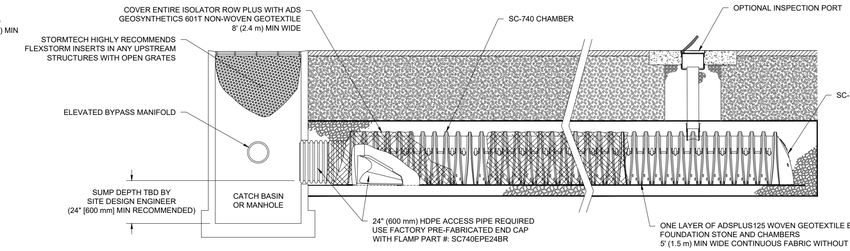
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



SC-740 ISOLATOR ROW PLUS DETAIL

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

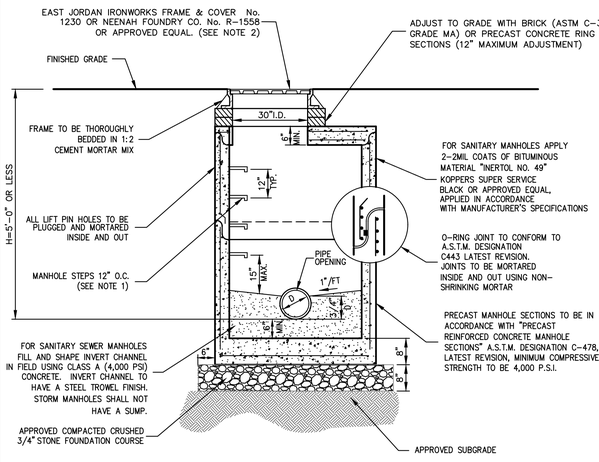
Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

DETENTION SYSTEM

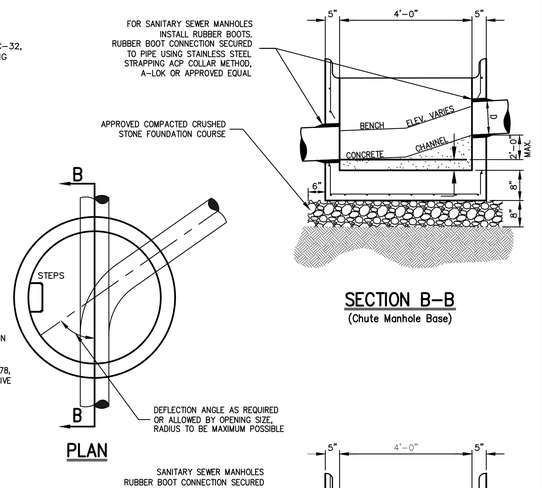
(STORMTECH CHAMBERS SC-740)

15



NOTES:

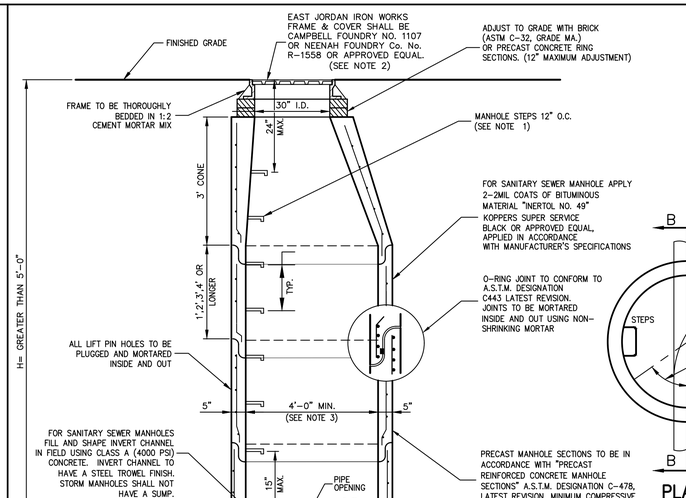
1. MANHOLE STEPS SHALL BE CAST IRON NEENAH No. R-1981-0 OR CAMPBELL FOUNDRY No. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS FOR STORM DRAIN MANHOLES ONLY SHALL HAVE VENT HOLES.
3. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
4. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C-901
5. COATING SHALL BE TOUCHED UP ON SITE AS NEEDED OR AS DIRECTED BY CITY ENGINEER.



MANHOLE (TYPE A)

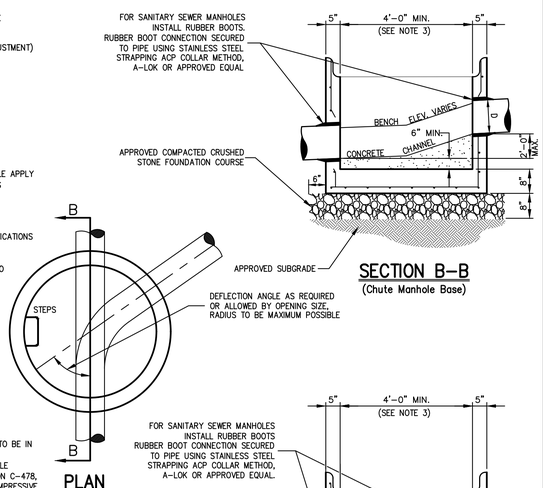
(H < 5'-0")

16



NOTES:

1. MANHOLE STEPS SHALL BE CAST IRON NEENAH No. R-1981-0 OR CAMPBELL FOUNDRY No. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. UNLESS OTHERWISE SPECIFIED, SANITARY SEWER MANHOLES SHALL HAVE LETTERS "SEWER" AND STORM DRAIN MANHOLES SHALL HAVE LETTERS "DRAIN" CAST ON COVER. THE COVERS FOR STORM DRAIN MANHOLES ONLY SHALL HAVE VENT HOLES.
3. MANHOLES WITH DEPTH (h) 10' OR GREATER SHALL BE FIVE (5) FEET IN DIAMETER.
4. MANHOLES SHALL MEET OR EXCEED A.S.T.M. AND O.S.H.A. REQUIREMENTS.
5. SEE "NOTES PERTAINING TO MANHOLES" UNDER "UTILITY NOTES" ON DRAWING C-901



MANHOLE (TYPE B)

(H > 5'-0"<10'-0")

17

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

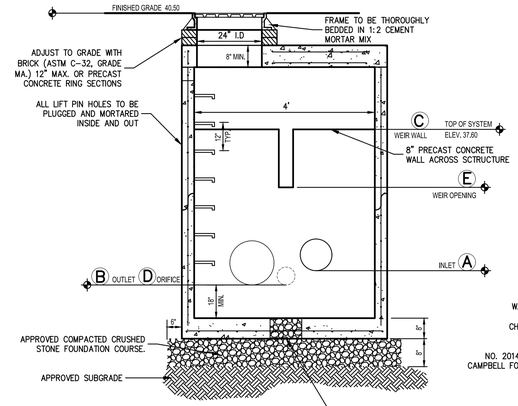
STATE OF NEW YORK · STEPHEN SPINA · 085983 · LICENSED PROFESSIONAL ENGINEER

Drawn:	BMS
Approved:	SS
Scale:	NOT TO SCALE
Date:	10/29/2019
Project No:	18119
18119-DETAILS	C-902 –

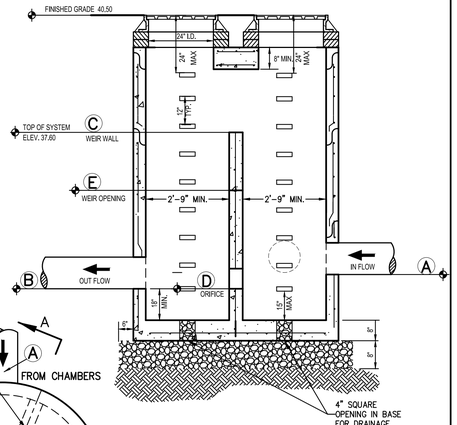
Drawing No:
C-902
(Sheet 19 of 26)

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. Any reproduction or unauthorized use without the written permission of JMC will be subject to legal action.

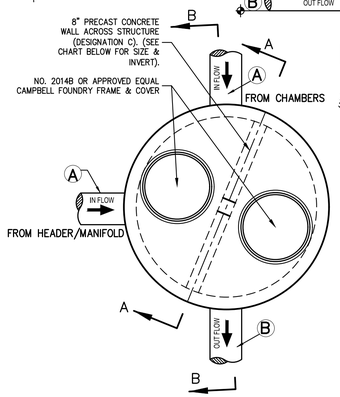
NOT FOR CONSTRUCTION



SECTION A–A
N.T.S.



SECTION B–B
N.T.S.



PLAN VIEW
N.T.S.

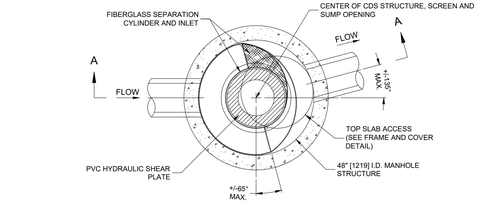
SCHEDULE OF INVERTS

DESIGNATION	A		B		C		D		E	
	INLET		OUTLET		WEIR TOP		ORIFICE		WEIR OPENING	
	SIZE	INVERT	SIZE	INVERT	SIZE	INVERT	SIZE	ELEVATION	SIZE	ELEVATION
OCS-A6	15" HDPE	34.60	15" HDPE	34.10	WEIR WALL	37.60	4"	34.10	4"	35.15

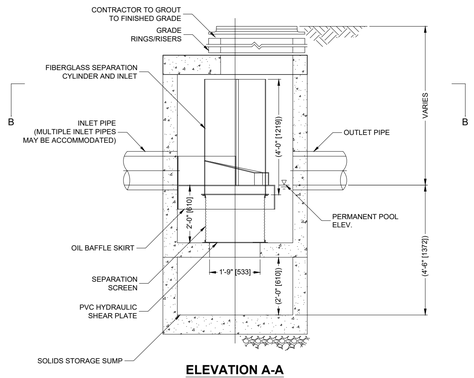
NOTES:
1. STEPS SHALL BE CAST IRON NEENAH No. R-1981-0 OR CAMPBELL FOUNDRY No. 2588-1 OR POLYPROPYLENE COATED STEEL (SEE SPECIFICATIONS) OR APPROVED EQUAL.
2. STRUCTURES SHALL MEET OR EXCEED A.S.T.M AND O.S.H.A REQUIREMENTS.
3. STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE H-20 LOADING.
4. SEE UTILITY NOTES ON DRAWING C-901.

OUTLET CONTROL STRUCTURE

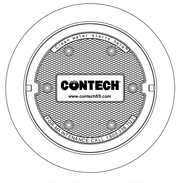
18



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

~~GRATED INLET ONLY (NO INLET PIPE)~~
GRATED INLET WITH INLET PIPE OR PIPES
~~CURB INLET ONLY (NO INLET PIPE)~~
~~CURB INLET WITH INLET PIPE OR PIPES~~
~~SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)~~
~~SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS~~

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			WQS-A3-1
WATER QUALITY FLOW RATE (CFS OR L/s)			0.7
PEAK FLOW RATE (CFS OR L/s)			0.7
RETURN PERIOD OF PEAK FLOW (YRS)			1
SCREEN APERTURE (2400 OR 4700)			*
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	32.15	HDPE	15"
INLET PIPE 2	*	*	*
OUTLET PIPE	32.15	HDPE	15"
RIM ELEVATION			35.40
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

NOTE
1. SEE MAINTENANCE GUIDLINES IN APPENDIX E OF SWPPP REPORT. OPEN ACCESS COVER FOR VISUAL INSPECTION AND MEASURE THE DISTANCE FROM THE STANDING WATER SURFACE TO THE SEDIEMENT PILE WITH A MEASURING STICK OR TAPE. IF LESS THAN 4 FEET, INSERT HOSE FROM VACUUM TRUCK INTO THE SUMP AND SCREEN THROUGH BOTH ACCESS COVERS TO CLEAN OUT THE STANDING WATER, LAYER OF OIL, SEDIMENT, TRASH, ETC. THE SCREEN MUST BE POWERWASHED TO ENSURE IT IS FREE OF TRASH AND DEBRIS.

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C
INLINE CDS
STANDARD DETAIL

HYDRODYNAMIC WATER QUALITY STRUCTURE

19

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

JMC

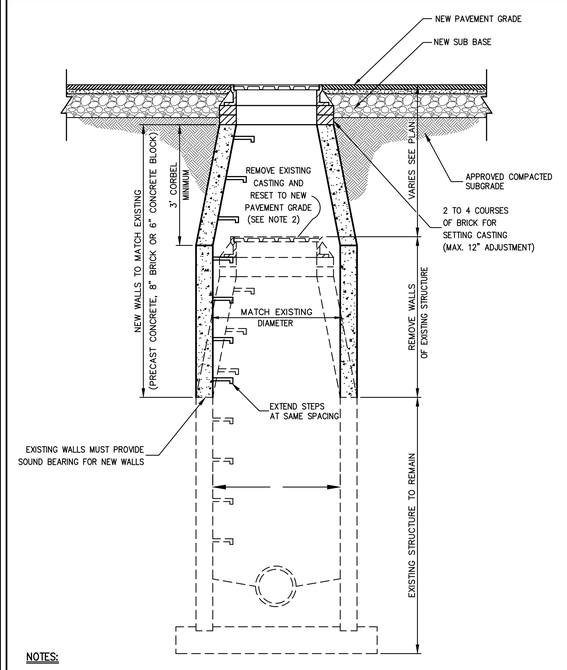
CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK
STEPHEN SPINA
LICENSED PROFESSIONAL ENGINEER
085983

Drawn:	BMS
Approved:	SS
Scale:	NOT TO SCALE
Date:	10/29/2019
Project No:	18119
18119-DETAILS	C-903 –
Drawing No:	C-903 (Sheet 20 of 26)

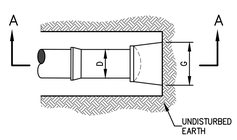


NOTES:
1. SEE "UTILITY NOTES" ON DRAWING C-901 WHICH SHALL APPLY TO THIS DETAIL.
2. IF EXISTING CASTING IS UNFIT FOR RESETTING IN THE NEW CONSTRUCTION, AS DETERMINED BY THE OWNER'S FIELD REPRESENTATIVE, CONTRACTOR SHALL FURNISH AND SET NEW CASTING.

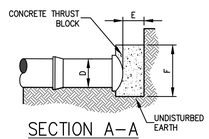
EXISTING MANHOLE RECONSTRUCTED AND RAISED

20

END CAP

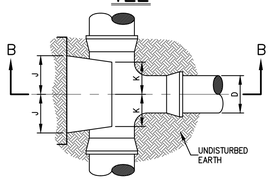


PLAN VIEW

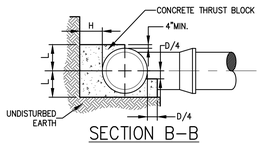


SECTION A–A

TEE

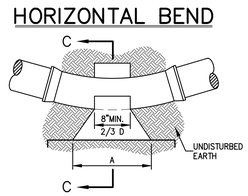


PLAN VIEW

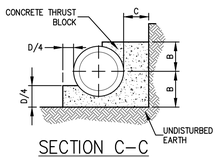


SECTION B–B

HORIZONTAL BEND

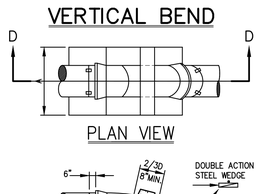


PLAN VIEW



SECTION C–C

VERTICAL BEND



SECTION D–D

END CAP CHART

D	4"	6"	8"	10"	12"
E	6"	6"	8"	8"	10"
F	12"	12"	1'-4"	1'-8"	2'-0"
G	1'-5"	1'-5"	2'-0"	2'-5"	3'-0"

NOTES:
1. ALL CONCRETE TO BE CLASS A (4,000 PSI).
2. ALL DIMENSIONS ARE MINIMUMS; ALL ANCHOR AND THRUST BLOCKS SHALL BEAR ON UNDISTURBED EARTH.
3. IN ALL CASES SHOWN, MEASUREMENT "D" REFERS TO THE INSIDE PIPE DIAMETER.
4. ANCHOR AND THRUST BLOCK DIMENSIONS SHOWN ARE MINIMUM FOR 100 PSI WATER PRESSURE AND SOIL RESISTANCE OF 2 KIPS PER SQ FT. CONTRACTOR SHALL ADJUST FOR OTHER CONDITIONS AND SUBMIT FOR APPROVAL.
5. IF THE OWNER OF THE WATER SYSTEM REQUIRES A METHOD THAT RESTRAINS INDIVIDUAL JOINTS, EACH JOINT THAT FALLS WITHIN THE MINIMUM RESTRAINED LENGTH, MEASURED FROM THE CENTER OF THE FITTING, AS SHOWN ON THESE SHEETS SHALL BE RESTRAINED, AND SHALL WITHSTAND THE MAXIMUM PRESSURE APPLIED TO THE SYSTEM.
6. CLASS A CONCRETE SHALL NOT BE PLACED UNDER WATER. THE CONTRACTOR SHALL DEWATER THE EXCAVATION OR PLACE TYPE G CONCRETE USING APPROPRIATE UNDERWATER PLACEMENT TECHNIQUES.

TEE CHART

D	4"	6"	8"	10"	12"
H	6"	7"	9"	10"	12"
L	8"	8"	10"	12"	1'-3"
J	7"	7"	9"	12"	1'-2"
K	6"	6"	8"	8"	8"

7. CONCRETE FOR THRUST BLOCKS SHALL NOT BE ALLOWED TO COVER OR INTERFERE WITH JOINT OR RESTRAINT HARDWARE, PLASTIC SHEETING OR BUILDING FELT MAY BE PLACED OVER PIPE OR FITTINGS TO PREVENT CONCRETE FROM ADHERING TO SURFACES.
8. FOR BENDS, BEARING AREA SHALL BE PARALLEL TO THE EDGE OF THE FITTING AT THE FITTING MIDPOINT.
9. FOR TEES, BEARING AREA SHALL BE PERPENDICULAR TO THE BRANCH (SINGLE LEG) AXIS.
10. FOR REDUCERS, BEARING AREA SHALL BE PERPENDICULAR TO THE FITTING AXIS. THE MINIMUM THICKNESS ALONG THE FITTING AXIS SHALL BE 1'-0" OR THE LENGTH BETWEEN THE BELLS, WHICHEVER IS SMALLER.
11. THRUST RESTRAINTS FOR SIZES OR FITTINGS NOT SHOWN ON THESE SHEETS WILL BE DESIGNED ON A CASE BY CASE BASIS, AND WILL BE SHOWN IN THE CONTRACT DOCUMENTS.

HORIZONTAL BEND CHART

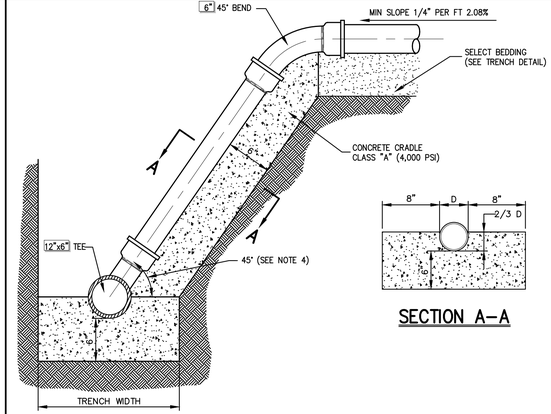
BEND (DEGREES)		DIAMETER (D) 4"	6"	8"	10"	12"
1/32 (11¼°)	A	8"	8"	8"	10"	12"
	B	7"	7"	8"	9"	10"
	C	7"	7"	7"	8"	8"
1/16 (22½°)	A	9"	9"	12"	1'-6"	1'-9"
	B	7"	7"	8"	9"	10"
	C	8"	8"	9"	10"	11"
1/8 (45°)	A	1'-3"	1'-3"	1'-8"	2'-1"	2'-6"
	B	7"	7"	8"	9"	11"
	C	8"	8"	9"	10"	11"
1/4 (90°)	A	2'-0"	2'-0"	2'-6"	3'-0"	3'-6"
	B	7"	7"	9"	12"	1'-3"
	C	2'-0"	2'-0"	1'-9"	1'-8"	1'-7"

VERTICAL BEND CHART

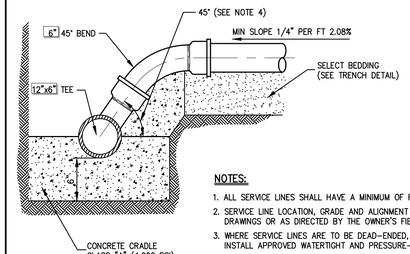
BEND (DEGREES)		DIAMETER (D) 4"	6"	8"	10"	12"	16"
1/32 (11¼°)	A	1'-6"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"
	B	1'-3"	1'-3"	1'-9"	1'-3"	2'-0"	2'-0"
	C	2'-0"	2'-0"	2'-6"	2'-9"	3'-0"	4'-0"
1/16 (22½°)	A	2'-0"	2'-0"	3'-4"	3'-8"	4'-0"	4'-4"
	B	1'-9"	1'-9"	2'-3"	2'-6"	2'-6"	2'-6"
	C	2'-6"	2'-6"	2'-8"	4'-0"	4'-0"	5'-6"
1/8 (45°)	A	2'-6"	2'-6"	3'-0"	4'-0"	4'-6"	5'-2"
	B	2'-6"	2'-6"	2'-9"	3'-0"	3'-6"	4'-0"
	C	3'-0"	3'-0"	4'-0"	4'-6"	4'-9"	6'-6"

ANCHOR AND THRUST BLOCKS

21



SECTION A–A



NOTES:
1. ALL SERVICE LINES SHALL HAVE A MINIMUM OF FOUR (4) FEET OF COVER.
2. SERVICE LINE LOCATION, GRADE AND ALIGNMENT SHALL BE AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE OWNER'S FIELD REPRESENTATIVE.
3. WHERE SERVICE LINES ARE TO BE DEAD-ENDED, CONTRACTOR SHALL INSTALL APPROVED WATERTIGHT AND PRESSURE-TIGHT PLUGS.
4. IF MINIMUM COVER CANNOT BE ATTAINED WHILE MAINTAINING MINIMUM SLOPE, THE ANGLE OF CONNECTION MAY BE REDUCED TO 22.5°, IF APPROVED BY THE OWNER'S FIELD REPRESENTATIVE AND GOVERNING BODY WITH JURISDICTION.
5. SANITARY SEWER SERVICE LINE INCLUDING FITTINGS SHALL BE PVC, SDR 35.

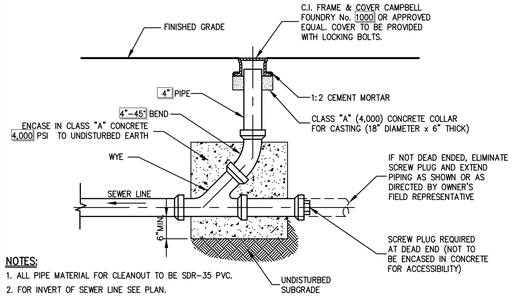
SANITARY SEWER SERVICE CONNECTION

22

COPYRIGHT © 2021 by JMC All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. JMC's the reproduction of drawings is to be licensed unless the express written permission of JMC has been obtained beforehand.

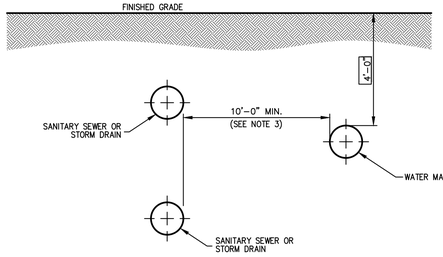
NOT FOR CONSTRUCTION

CLEANOUT W/O MANHOLE — 23

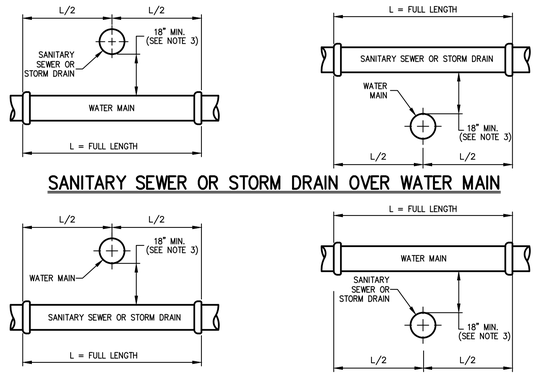


NOTES:
1. ALL PIPE MATERIAL FOR CLEANOUT TO BE SDR-35 PVC.
2. FOR INVERT OF SEWER LINE SEE PLAN.

SEPARATION OF WATER AND SANITARY SEWER/STORM DRAIN LINES — 24



HORIZONTAL SEPARATION



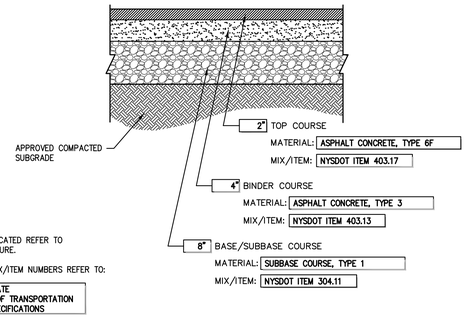
SANITARY SEWER OR STORM DRAIN OVER WATER MAIN

WATER MAIN OVER SANITARY SEWER OR STORM DRAIN

VERTICAL SEPARATION

NOTES:
1. NORMAL CONDITIONS:
   - A. WHENEVER A WATER MAIN MUST CROSS OVER OR UNDER A SANITARY SEWER OR STORM DRAIN, THE PIPES SHALL BE LAID TO PROVIDE A VERTICAL SEPARATION BETWEEN THEM OF AT LEAST 18 INCHES, AS MEASURED FROM THE BOTTOM OF THE HIGHER PIPE TO THE CROWN OF THE LOWER PIPE.
   - B. FULL LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING; NO JOINTS WILL BE PERMITTED AT THE POINT OF CROSSING.
2. WATER MAIN CROSSING UNDER SANITARY SEWERS:
   - A. VERTICAL SEPARATION OF 18 INCHES MUST BE PROVIDED.
   - B. ADEQUATE STRUCTURAL SUPPORT MUST BE PROVIDED FOR THE SANITARY SEWER TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING.
   - C. FULL LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING; NO JOINTS WILL BE PERMITTED AT THE POINT OF CROSSING.
3. IF DURING CONSTRUCTION IT IS FOUND THAT THE REQUIRED SEPARATION OF WATER MAINS, SANITARY SEWERS, STORM SEWERS AND BUILDING SANITARY SEWERS CANNOT BE MET, THE CONTRACTOR OR HIS AUTHORIZED REPRESENTATIVE SHALL IN WRITING ADVISE JMC OF THE SPECIFIC CONDITIONS ENCOUNTERED. APPROVAL OF ALTERNATIVE SEPARATION CRITERIA SHALL BE OBTAINED FROM THE DUTCHESS COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION.

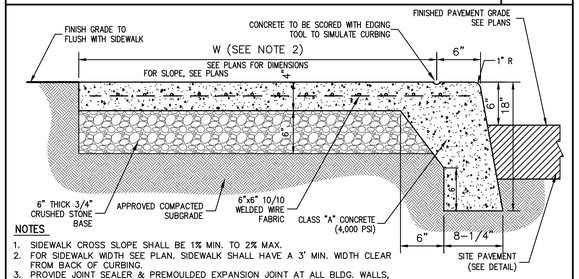
SITE PAVEMENT — 25



NOTES:
1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. MATERIAL AND MIX/ITEM NUMBERS REFER TO:

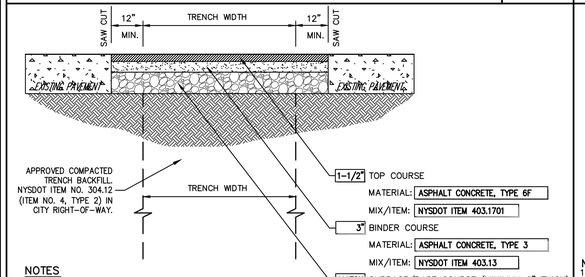
NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS

MONOLITHIC CONCRETE CURB AND SIDEWALK (WITHIN RIGHT-OF-WAY) — 26



NOTES
1. SIDEWALK CROSS SLOPE SHALL BE 1% MIN. TO 2% MAX.
2. FOR SIDEWALK WIDTH SEE PLAN. SIDEWALK SHALL HAVE A 3' MIN. WIDTH CLEAR FROM BACK OF CURBING.
3. PROVIDE JOINT SEALER & PREMOULDED EXPANSION JOINT AT ALL BLDG. WALLS, CONSTRUCTION JOINTS AND OTHER FIXED OBJECTS (HYDRANTS, LIGHT POLES, ETC.)
4. SIDEWALK SHALL HAVE LIGHT BROOM FINISH.
5. PROVIDE 1/2" PREMOULDED EXPANSION JOINTS AT 10 FOOT INTERVALS AND SCORE WITH EDGING TOOL TO SIMULATE JOINTS AT MIDPOINTS BETWEEN EXPANSION JOINTS.
6. REINFORCEMENT SHALL NOT EXTEND THROUGH EXPANSION JOINTS.
7. CONCRETE SIDEWALK SHALL BE SEALED TO PROTECT AGAINST DE-ICING AGENTS.

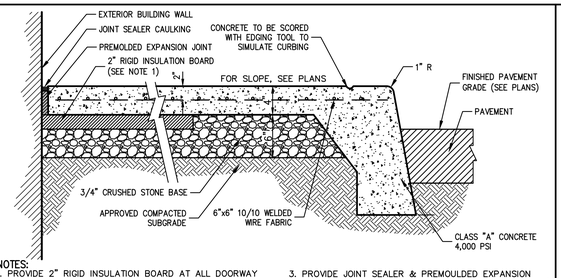
PAVEMENT REPLACEMENT OVER TRENCH — 27



NOTES
1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. ITEM NUMBERS REFER TO:

NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS

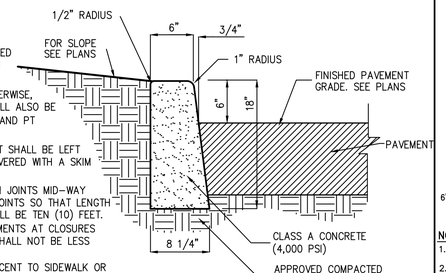
BUILDING PERIMETER MONOLITHIC CURB & SIDEWALK — 29



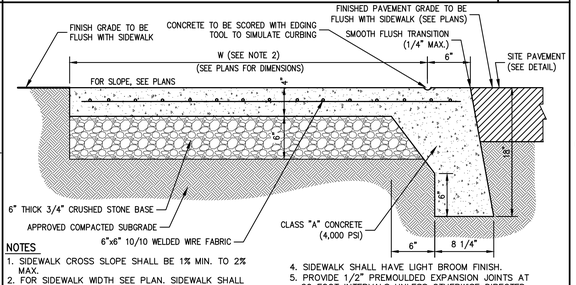
NOTES:
1. PROVIDE 2" RIGID INSULATION BOARD AT ALL DOORWAY OPENINGS AND EXTEND 8' MIN. IN ALL DIRECTIONS OR TO CONSTRUCTION/CONTRACTION JOINT, WHICHEVER IS GREATER.
2. JOINT SEALER CAULKING SHALL BE PSI-641 LOW MODULUS SILICONE SEALANT, BY POLYMERIC SYSTEMS INC. OR APPROVED EQUAL. PREMOULDED EXPANSION JOINT SHALL BE FLEXCELL OR APPROVED EQUAL.
3. PROVIDE JOINT SEALER & PREMOULDED EXPANSION JOINT AT ALL BLDG. WALLS, CONSTRUCTION JOINTS AND OTHER FIXED OBJECTS (HYDRANTS, LIGHT POLES, ETC.)
4. SIDEWALK SHALL HAVE LIGHT BROOM FINISH
5. SIDEWALK CROSS SLOPE SHALL BE 1% MIN. 2% MAX.
6. FOR SIDEWALK WIDTH SEE PLAN. SIDEWALK SHALL HAVE A 3' MIN. WIDTH CLEAR FROM BACK OF CURBING.

CAST-IN-PLACE CONCRETE CURB — 28

NOTES:
1. INSTALL 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT EVER 20 FEET.
2. UNLESS DIRECTED OTHERWISE, EXPANSION JOINTS SHALL ALSO BE INSTALLED AT THE PC AND PT OF ALL RADIUS CURB.
3. EACH EXPANSION JOINT SHALL BE LEFT EXPOSED AND NOT COVERED WITH A SKIM COAT OF CONCRETE.
4. INSTALL CONSTRUCTION JOINTS MID-WAY BETWEEN EXPANSION JOINTS SO THAT LENGTH OF CURB SEGMENTS WILL BE TEN (10) FEET.
5. LENGTH OF CURB SEGMENTS AT CLOSURES MAY BE VARIED BUT SHALL NOT BE LESS THAN FOUR (4) FEET.
6. WHEN INSTALLED ADJACENT TO SIDEWALK OR CONCRETE PAVEMENT, MATCH EXPANSION JOINTS.

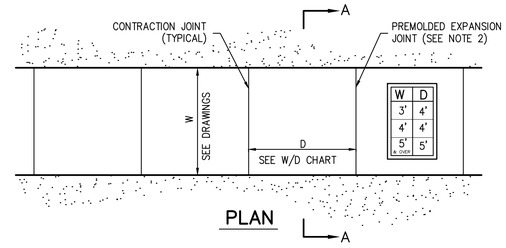


MONOLITHIC CONCRETE FLUSH CURB AND SIDEWALK — 30



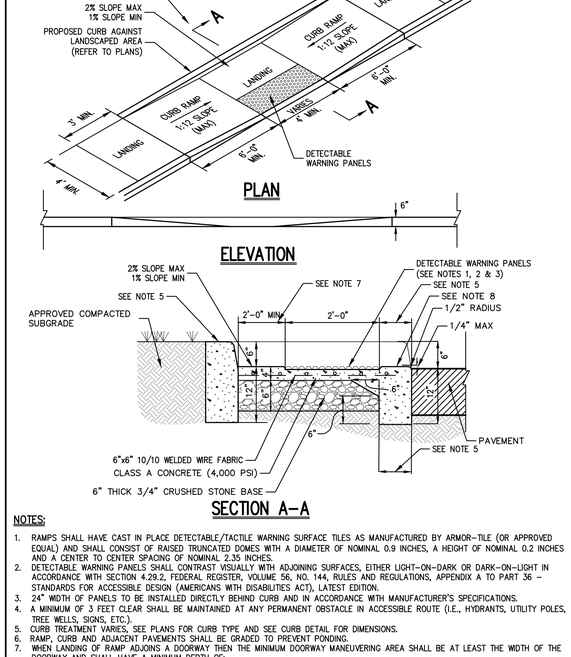
NOTES
1. SIDEWALK CROSS SLOPE SHALL BE 1% MIN. TO 2% MAX.
2. FOR SIDEWALK WIDTH SEE PLAN. SIDEWALK SHALL HAVE A 3' MIN. WIDTH CLEAR FROM BACK OF CURBING.
3. PROVIDE JOINT SEALER & PREMOULDED EXPANSION JOINTS AT ALL BLDG. WALLS, CONSTRUCTION JOINTS AND OTHER FIXED OBJECTS (HYDRANTS, LIGHT POLES, ETC.)
4. SIDEWALK SHALL HAVE LIGHT BROOM FINISH.
5. PROVIDE 1/2" PREMOULDED EXPANSION JOINTS AT 20 FOOT INTERVALS UNLESS OTHERWISE DIRECTED.
6. REINFORCEMENT SHALL NOT EXTEND THROUGH EXPANSION JOINTS.

CONCRETE SIDEWALK — 31



NOTES:
1. SIDEWALK CROSS SLOPE SHALL BE 1% MIN. TO 2% MAX.
2. PROVIDE 1/2" PREMOLDED EXPANSION JOINTS AT 20' INTERVALS UNLESS OTHERWISE DIRECTED.
3. REINFORCING SHALL NOT EXTEND THROUGH EXPANSION JOINTS.
4. SIDEWALK SHALL HAVE LIGHT BROOM FINISH

DROP CURB & RAMP (TYPE B) WITH DETECTABLE WARNING — 32



NOTES:
1. RAMPS SHALL HAVE CAST IN PLACE DETECTABLE/TACTILE WARNING SURFACE TILES AS MANUFACTURED BY ARMOR-TILE (OR APPROVED EQUAL) AND SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCHES, A HEIGHT OF NOMINAL 0.2 INCHES AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 INCHES.
2. DETECTABLE WARNING PANELS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT IN ACCORDANCE WITH SECTION 4.29.2, FEDERAL REGISTER, VOLUME 56, NO. 144, RULES AND REGULATIONS, APPENDIX A TO PART 36 - STANDARDS FOR ACCESSIBLE DESIGN (AMERICANS WITH DISABILITIES ACT), LATEST EDITION.
3. 24" WIDTH OF PANELS TO BE INSTALLED DIRECTLY BEHIND CURB AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
4. A MINIMUM OF 3 FEET CLEAR SHALL BE MAINTAINED AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS, ETC.).
5. CURB TREATMENT VARIES, SEE PLANS FOR CURB TYPE AND SEE CURB DETAIL FOR DIMENSIONS.
6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. WHEN LANDING OF RAMP ADJOINS A DOORWAY THEN THE MINIMUM DOORWAY MANEUVERING AREA SHALL BE AT LEAST THE WIDTH OF THE DOORWAY AND SHALL HAVE A MINIMUM DEPTH OF:
   MANUAL SWING DOORS = 60" MIN.
   FULL POWERED AUTOMATIC SLIDING DOORS = 48" MIN.
8. CONTRACTOR TO ENSURE TOP OF CURB MATCHES SLOPE OF RAMP.

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD - ARMONK, NY 10504
voice 914.273.5225 - fax 914.273.2102
www.jmcplic.com

JMC

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

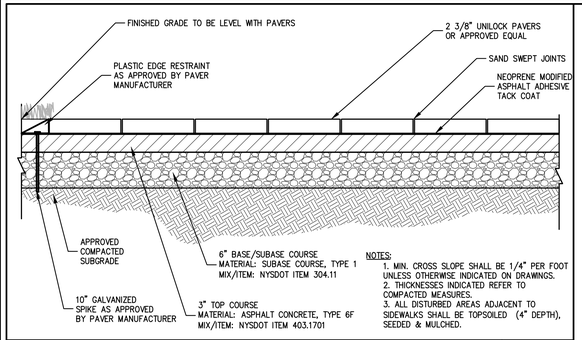
STATE OF NEW YORK · STEPHEN SPINA · 085983 · LICENSED PROFESSIONAL ENGINEER

Drawn:	BMS	Approved:	SS
Scale:	NOT TO SCALE		
Date:	10/29/2019		
Project No:	18119		
18119-DETAILS	C-904	-	

Drawing No: C-904 (Sheet 21 of 26)

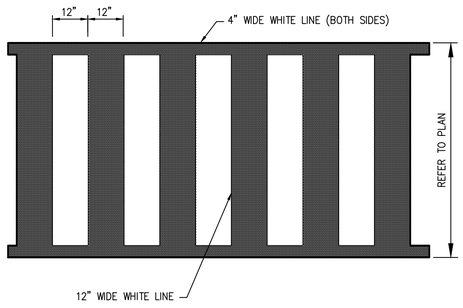
COPYRIGHT © 2021 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JMC. Any unauthorized use or alteration is to be considered a violation of law and will be subject to legal prosecution.

NOT FOR CONSTRUCTION

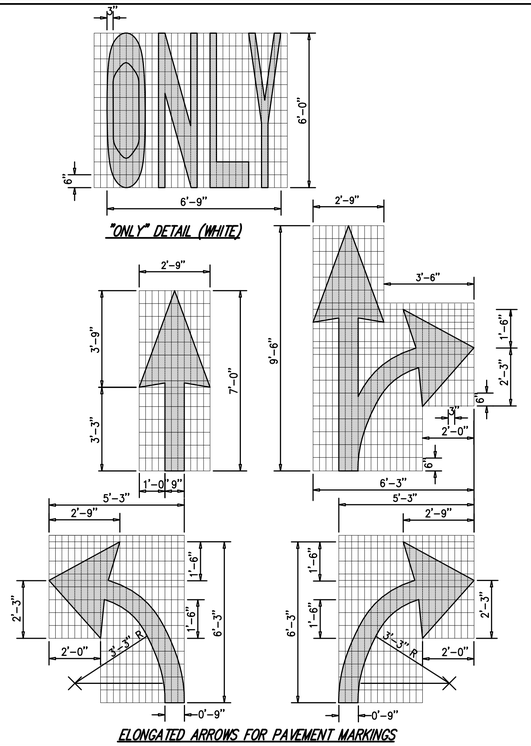


NOTES:
1. MIN. CROSS SLOPE SHALL BE 1/4" PER FOOT UNLESS OTHERWISE INDICATED ON DRAWINGS.
2. THICKNESSES INDICATED REFER TO COMPACTED MEASURES.
3. ALL DISTURBED AREAS ADJACENT TO SIDEWALKS SHALL BE TOPSOILED (4" DEPTH), SEEDED & MULCHED.

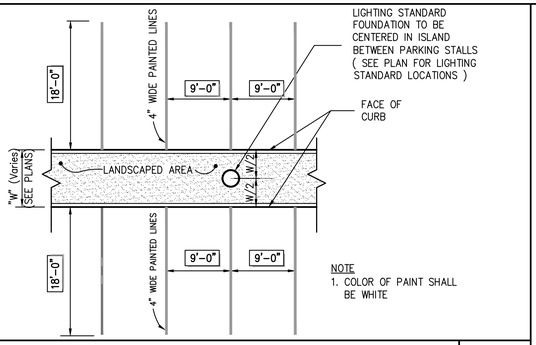
PATIO 33



PEDESTRIAN CROSSING 34

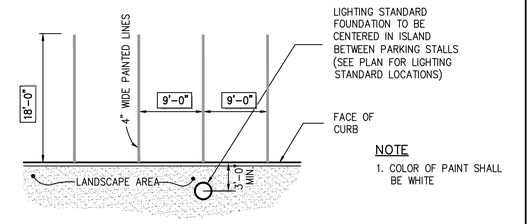


PAVEMENT TEXT & ARROWS (ON-SITE) 35



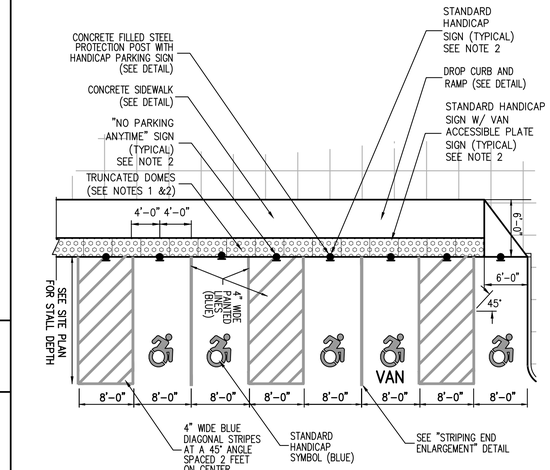
NOTE
1. COLOR OF PAINT SHALL BE WHITE

90° PARKING (SINGLE STRIPING – CURBED ISLAND) 36



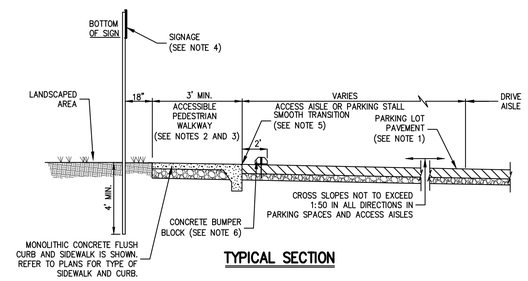
NOTE
1. COLOR OF PAINT SHALL BE WHITE

90° PARKING (SINGLE STRIPING – CURBED PERIMETER) 37



NOTES:
1. RAMPS AND SIDE RAMPS SHALL HAVE DETECTABLE WARNINGS CONSISTING OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCHES, A HEIGHT OF NOMINAL 0.2 INCHES AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 INCHES.
2. THEY SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT–ON–DARK OR DARK–ON–LIGHT IN ACCORDANCE WITH SECTION 4.29.2, FEDERAL REGISTER, VOLUME 56, NO. 144, RULES AND REGULATIONS, APPENDIX A TO PART 36 – STANDARDS FOR ACCESSIBLE DESIGN (AMERICANS WITH DISABILITIES ACT), DATED JULY 26, 1991 AND SUBSEQUENT REVISIONS.
3. SLOPES IN HANDICAP PARKING AREAS SHALL NOT EXCEED 1.5%.
4. SEE SITE PLANS/SIGN TABLE FOR SIGN DESIGNATIONS, LOCATIONS AND SPECIFICATIONS.

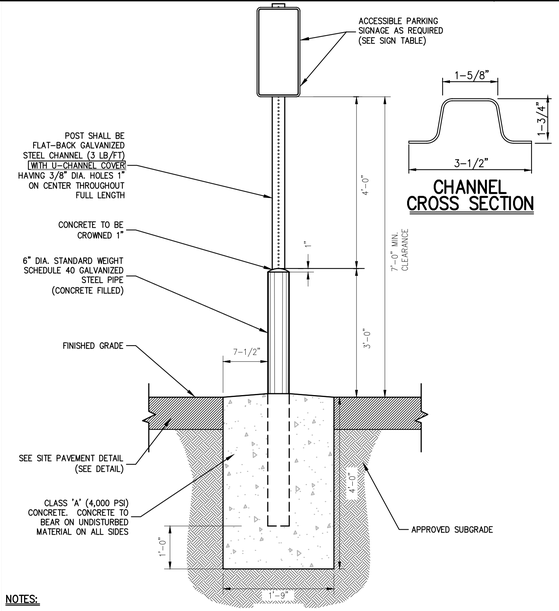
HANDICAP PARKING 38
SINGLE STRIPING – CURBLINE ALIGNMENT – W/SIDEWALK)
(NEW YORK)



TYPICAL SECTION

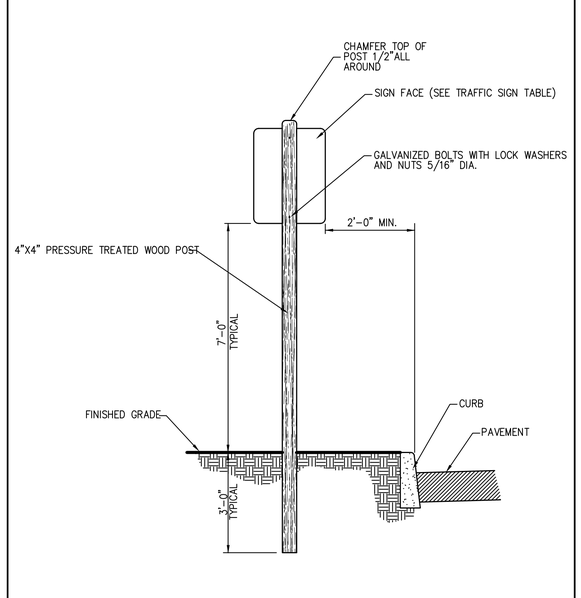
NOTES:
1. THIS SHEET IS INTENDED TO DEPICT THE DIMENSIONAL REQUIREMENTS OF TYPICAL ACCESSIBLE PARKING SPACES. THE SIDEWALK, CURBING, AND PAVEMENT MATERIAL SHALL BE AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS.
2. LOCATION – PARKING SPACES FOR USE BY PERSONS WITH DISABILITIES SHALL BE IN THE SPACES CLOSEST TO THE NEAREST ACCESSIBLE BUILDING OR FACILITY ENTRANCE ON AN ACCESSIBLE ROUTE.
3. SURFACE SLOPES – SLOPES AT ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND ADJOINING WALKWAYS SHALL NOT EXCEED 1:50 IN ANY DIRECTION.
4. SIGNAGE – EACH ACCESSIBLE PARKING SPACE SHALL BE MARKED BY PERMANENTLY INSTALLED ABOVE GROUND SIGNS WHICH DISPLAY THE INTERNATIONAL SYMBOL OF ACCESS. EACH ACCESS AISLE SHALL BE MARKED BY PERMANENTLY INSTALLED ABOVE GROUND SIGNS INDICATING THAT PARKING IS NOT PERMITTED IN THE AISLE. SIGNS SHALL NOT BLOCK THE ACCESSIBLE CLEAR WIDTH OF ADJACENT WALKWAYS, SIGNS LOCATED WHERE THEY MAY BE HIT BY VEHICLES BEING PARKED SHALL BE INSTALLED AS SHOWN IN THE PROTECTION POST BASE DETAIL. THE BOTTOMS OF THE SIGNS LOCATED ON POST INSTALLED IN PAVED AREAS SHALL BE AT LEAST 7' ABOVE THE WALKWAY SURFACE. THE BOTTOMS OF SIGNS LOCATED IN UNPAVED AREAS SHALL BE 7' ABOVE THE ADJACENT PAVEMENT SURFACE.
5. A SMOOTH, FLUSH TRANSITION MUST BE PROVIDED BETWEEN ALL PEDESTRIAN WALKWAYS AND THE ACCESSIBLE PARKING SPACES AND AISLES.
6. VEHICLE SIDE FACE OF CONCRETE BUMPER BLOCKS SHALL BE SET 2' BACK FROM EDGE OF PARKING STALL. CONCRETE BLOCKS SHALL NOT BE INSTALLED WITHIN ACCESS AISLES.

TYPICAL ACCESSIBLE PARKING STALL AND AISLE (TYPE B) 39

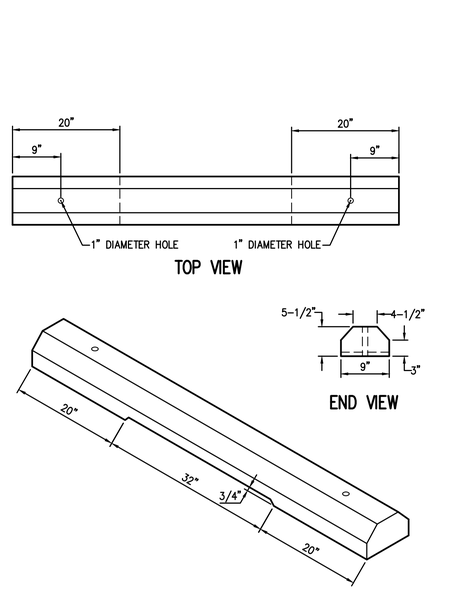


NOTES:
1. GALVANIZED STEEL CHANNEL SHALL BE EMBEDDED A MIN. OF 3 FT. INTO THE CONCRETE
2. POSTS FOR HANDICAP PARKING STALLS AND ACCESS AISLES SHALL BE PAINTED BLUE AS FOLLOWS:
   A. SOLVENT CLEAN TO REMOVE OIL, GREASE AND OTHER CONTAMINANTS.
   B. APPLY METAL PRIMER FOR GALVANIZED SURFACES.
   C. APPLY TWO (2) FINISH COATS OF APPROVED EXTERIOR PAINT FOR METAL SURFACES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF THE PARKING SIGNS, BOLLARDS AND FOUNDATIONS WITH THE DESIGN AND INSTALLATION OF THE SITE SIDEWALKS, CURBING, PAVEMENT AND ANY OTHER SITE FEATURES SHOWN ON THE PLANS.
4. FASTEN SIGN TO POSTS WITH GALVANIZED STEEL BOLTS, LOCK WASHERS, AND NUTS (5/16" DIA.)
5. U-CHANNEL COVERS FOR POSTS SHALL BE BLUE WITH WHITE STRIPE FOR HANDICAP PARKING STALLS AND HANDICAP ACCESS AISLES.

ACCESSIBLE PARKING SIGN DETAIL 40



TRAFFIC SIGN POST (WOOD) 41



NOTES
1. CONCRETE MINIMUM STRENGTH–4,000 PSI AT 28 DAYS
2. REINFORCEMENT–#4 REBAR

CONCRETE BUMPER BLOCK 42

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

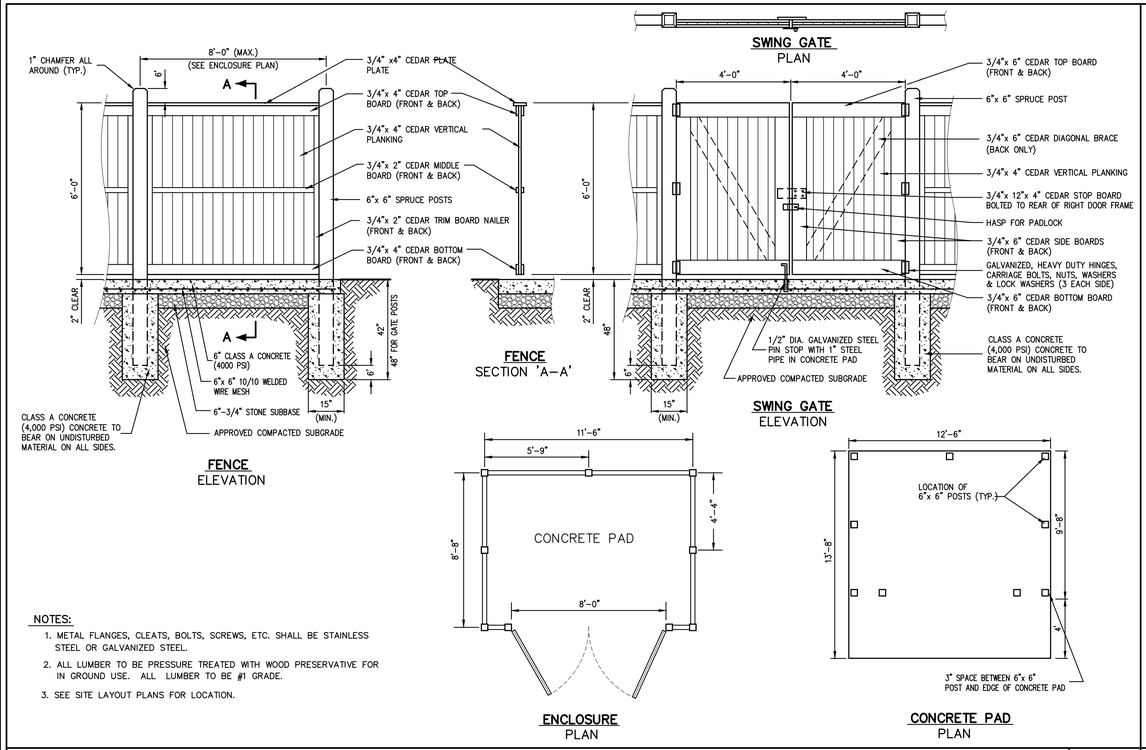
ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

STATE OF NEW YORK · STEPHEN SPINA · LICENSED PROFESSIONAL ENGINEER · 085983

Drawn: BMS	Approved: SS
Scale: NOT TO SCALE	
Date: 10/29/2019	
Project No: 18119	
18119-DETAILS	C-905 –
Drawing No: C-905 (Sheet 22 of 26)	

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. (JMC). This reproduction is of limited duration and is made under written permission of JMC and is not to be used, sold, loaned or transferred to any unauthorized party. All such uses without JMC's written permission are unlawful and prohibited.

NOT FOR CONSTRUCTION



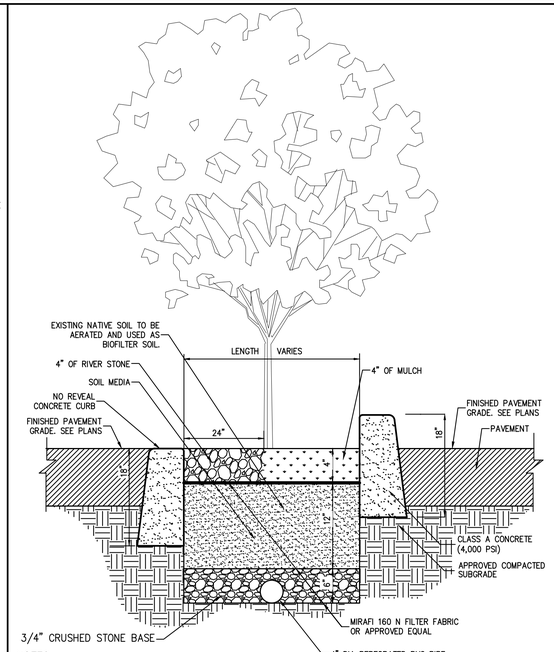
NOTES:

1. METAL FLANGES, CLEATS, BOLTS, SCREWS, ETC. SHALL BE STAINLESS STEEL OR GALVANIZED STEEL.
2. ALL LUMBER TO BE PRESSURE TREATED WITH WOOD PRESERVATIVE FOR IN GROUND USE. ALL LUMBER TO BE #1 GRADE.
3. SEE SITE LAYOUT PLANS FOR LOCATION.

TRASH ENCLOSURE WITH CONCRETE PAD

(WOOD)

43



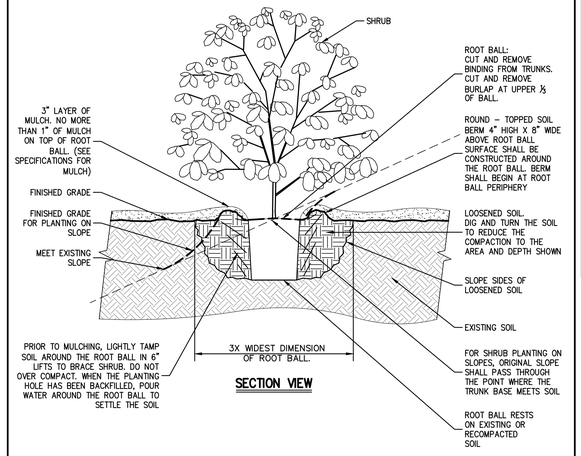
NOTES:

1. INSTALL 1/2" PREMOLDED BITUMINOUS EXPANSION JOINT EVERY 20 FEET.
2. INSTALL CONSTRUCTION JOINTS MID-WAY BETWEEN EXPANSION JOINTS SO THAT LENGTH OF CURB SEGMENTS WILL BE TEN (10) FEET.
3. LENGTH OF CURB SEGMENTS AT CLOSURES MAY BE VARIED BUT SHALL NOT BE LESS THAN FOUR (4) FEET.
4. THE SOIL MEDIA FOR THE RAIN GARDEN IS BASED ON THE NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL SPECIFICATIONS. THE SOIL COMPOSITION SHOULD CONSIST OF 50% TO 70% SAND (LESS THAN 5% CLAY CONTENT), 50% TO 30% TOPSOIL WITH AN AVERAGE OF 5% ORGANIC MATERIAL, SUCH AS COMPOST OR PEAT, FREE OF STONES, ROOTS, WOODY DEBRIS AND ANIMAL WASTE. THE DEPTH OF SOIL SHOULD BE APPROXIMATELY 4 INCHES BELOW THE BOTTOM OF THE DEEPEST ROOT BALL OF ANY TREES OR SHRUBS WITHIN THE RAIN GARDEN.

STORMWATER TREATMENT LANDSCAPED AREA 2A1, 2A2

(W/ UNDERDRAIN)

44

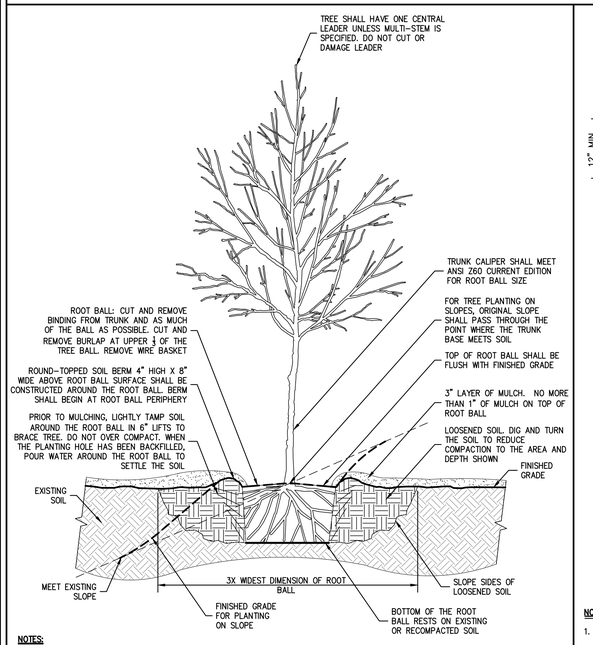


NOTES:

1. ALL PLANTING BEDS SHALL BE FREE OF WEEDS AND GRASS PRIOR TO AND FOLLOWING INSTALLATION OF PLANTS.
2. PLANTS IN CONTAINERS MUST HAVE THE FIBROUS ROOTS PULLED APART.
3. PROPOSED PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

SHRUB PLANTING

45



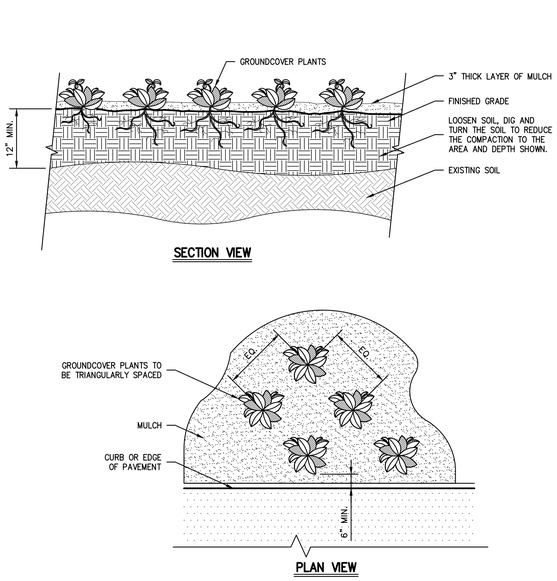
NOTES:

1. ALL PLANTING BEDS SHALL BE FREE OF WEEDS AND GRASS PRIOR TO AND FOLLOWING INSTALLATION OF PLANTS.
2. PLANTS IN CONTAINERS MUST HAVE THE FIBROUS ROOTS PULLED APART.
3. PROPOSED PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.
4. SEE TREE STAKING DETAIL IF STAKING IS REQUIRED.

TREE PLANTING

(DECIDUOUS AND EVERGREEN)

46

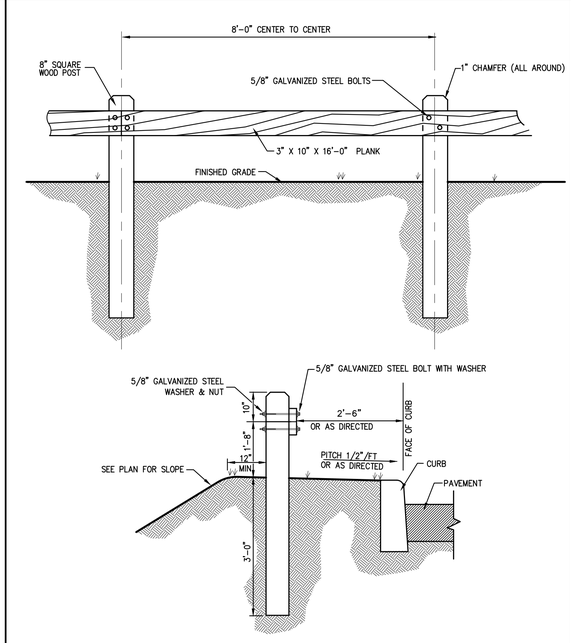


NOTES:

1. SEE PLANTING PLAN FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION.
2. SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PLANT PRIOR TO MULCHING.
3. ALL PLANTING BEDS SHALL BE FREE OF WEEDS AND GRASS PRIOR TO AND FOLLOWING INSTALLATION OF PLANTS.
4. PLANTS IN CONTAINERS MUST HAVE THE FIBROUS ROOTS PULLED APART.
5. PROPOSED PLANT MATERIAL SHALL BEAR THE SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

GROUNDCOVER

47

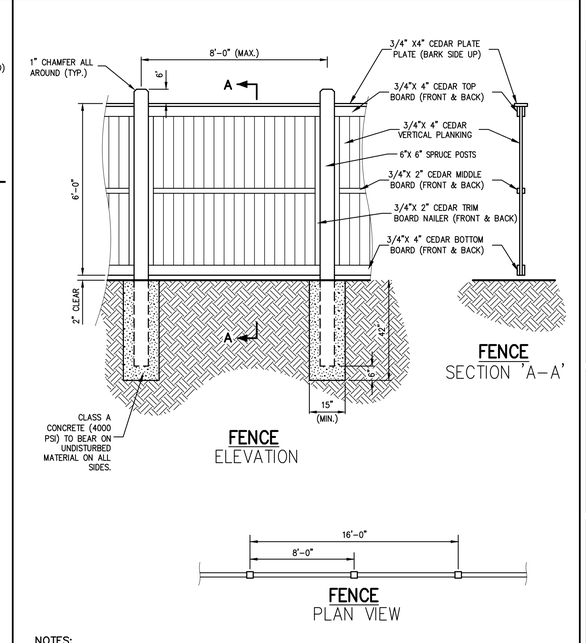


NOTES

1. ALL WOOD TO BE SEASONED NO.1 DOUGLAS FIR, SOUTHERN PINE OR OTHER APPROVED STRUCTURAL LUMBER.
2. GALVANIZED BOLT AND NUT TO BE 4000# MIN., 5400# MAX. TENSILE STRENGTH. AFTER GALVANIZING BOLT AND NUT, THE NUT SHALL BE FREE RUNNING ON THE BOLT.

WOOD GUIDE RAIL

48



NOTES:

1. METAL FLANGES, CLEATS, BOLTS, SCREWS, ETC. SHALL BE STAINLESS STEEL OR GALVANIZED STEEL.
2. ALL LUMBER, EXCEPT WHERE NOTED ON FENCE, TO BE PRESSURE TREATED WITH WOOD PRESERVATIVE FOR IN GROUND USE. ALL LUMBER TO BE #1 GRADE.
3. SEE SITE LAYOUT PLAN FOR LOCATION.

WOODEN PRIVACY FENCE

49

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD - ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

JMC

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

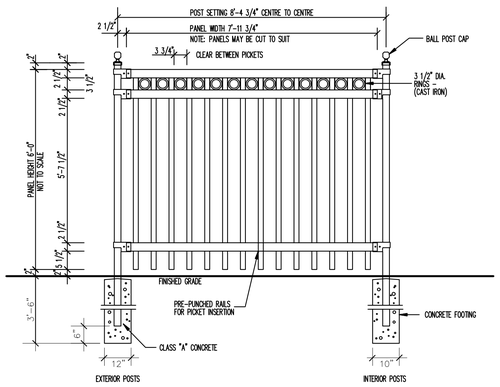
STATE OF NEW YORK
STEPHEN SPINA
LICENSED PROFESSIONAL ENGINEER
085983

Drawn:	BMS	Approved:	SS
Scale:	NOT TO SCALE		
Date:	10/29/2019		
Project No:	18119		
18119-DETAILS	C-906	-	

Drawing No:
C-906
(Sheet 23 of 26)

COPYRIGHT © 2020 by JMC - All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. / Any unauthorized use of this document will be subject to action by the owner and/or consultant of JMC to the maximum extent of the law as may be allowed at a minimum.

NOT FOR CONSTRUCTION



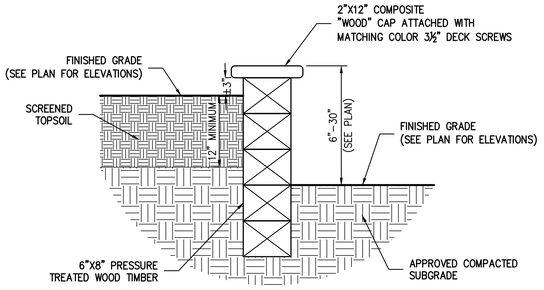
SPECIFICATIONS:

POSTS, RAILS & PICKETS :	COLD FORMED STEEL TUBING INTERIOR & EXTERIOR GALVALUME™ COATING CHROMATE CONVERSION COATING ELECTROSTATICALLY APPLIED THERMALLY BONDED POLYESTER POWDER COATING MINIMUM FILM THICKNESS 2.5 mils	PICKETS:	3/4" x 1 1/2", 16 GAUGE
		FITTINGS:	12 GAUGE STAMP FORGED FACTORY FINISH AS ABOVE
		WELDS:	STAINLESS STEEL
POSTS:	3"x3", 14 GAUGE OR SCH 40 POST SPACING (CENTRE TO CENTRE): 8'-4 3/4"	PANEL:	WIDTH OF 7'-11 3/4" HEIGHT OF 6'
POST FLANGES:	8"x8" x 1/2" 10"x10" x 1/2"	COLOUR:	BLACK
POST CAP:	BALL	WARRANTY:	5 YEAR MAINTENANCE FREE
RAILS:	1 1/2" x 2 1/2", 16 GAUGE		

FENCE TO BE SILVER EAGLE C/W RINGS AS MANUFACTURED BY IRON EAGLE INDUSTRIES, INC. OF MISSISSAUGA, ONTARIO OR APPROVED EQUAL.

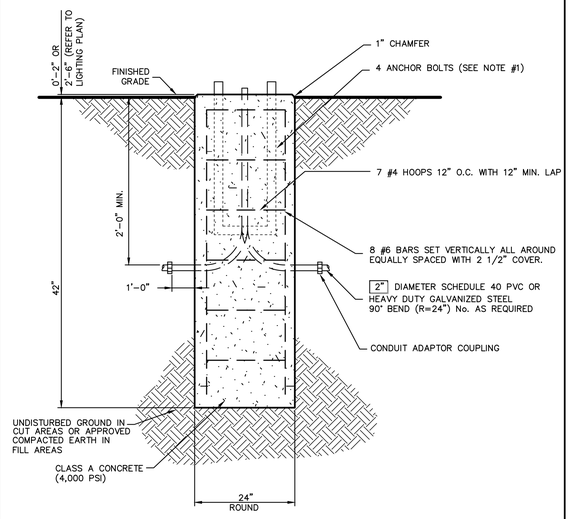
BLACK ALUMINUM SAFETY FENCE

50



SEAT/GARDEN WALL

51



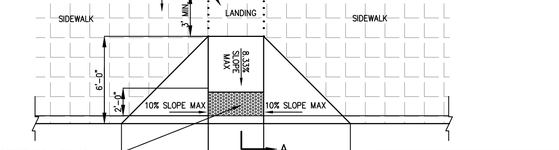
NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND VERIFY ALL ANCHOR BOLT DIMENSIONS (SIZE, BOLT CIRCLE, ETC.) WITH THE CONTRACTOR WHO WILL BE INSTALLING THE LIGHTING STANDARD PRIOR TO INSTALLATION OF THE FOUNDATIONS.
2. CHAMFER EXPOSED EDGES OF ALL FOUNDATIONS.
3. PROVIDE INSULATED GROUNDING BUSHING ON EXPOSED ENDS (IN BASE OF POLE) OF ALL GALVANIZED STEEL BENDS.
4. POLES AND LUMINAIRES WILL BE FURNISHED AND INSTALLED BY OTHERS.

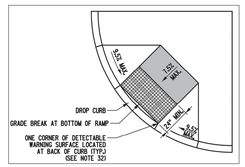
SITE LIGHTING STANDARD FOUNDATION

(ROUND)

52



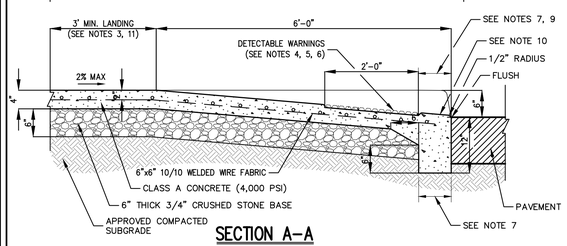
PLAN



OPTION ON CURB



ELEVATION



SECTION A-A

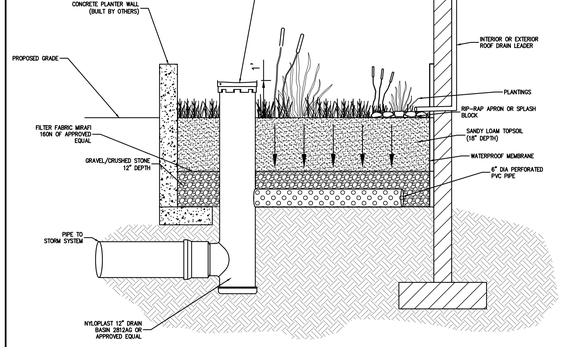
NOTES:

1. THE MAXIMUM RUNNING SLOPE OF A CURB RAMP SHALL BE 8.33%, THE MAXIMUM CROSS SLOPE SHALL BE 2.0%, AND WHERE PROVIDED, CURB RAMP FLARES SHALL NOT EXCEED 10% ALONG CURB MEASURED WITH A 2 FOOT SMART LEVEL AS SPECIFIED IN "DIMENSIONAL TOLERANCES IN CONSTRUCTION AND FOR SURFACE ACCESSIBILITY", BY UNITED STATES ACCESS BOARD, LATEST EDITION.
2. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 5%. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS AND STREETS SHALL BE AT THE SAME LEVEL.
3. LANDINGS SHALL BE PROVIDED AT THE TOP OF CURB RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE THIRTY-SIX (36) INCHES MINIMUM. THE CLEAR WIDTH OF THE LANDING SHALL BE AT LEAST AS WIDE AS THE CURB RAMP, EXCLUDING FLARED SIDES, LEADING TO THE LANDING. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2% IN ANY DIRECTION MEASURED WITH A 2 FOOT SMART LEVEL AS SPECIFIED IN "DIMENSIONAL TOLERANCES IN CONSTRUCTION AND FOR SURFACE ACCESSIBILITY", BY UNITED STATES ACCESS BOARD, LATEST EDITION.
4. RAMPS SHALL HAVE CAST IN PLACE DETECTABLE WARNINGS AS MANUFACTURED BY ARMOR-TILE (OR APPROVED EQUAL) AND SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A BASE DIAMETER OF NOMINAL 0.9 INCHES, A HEIGHT OF NOMINAL 0.2 INCHES AND A CENTER TO CENTER SPACING OF NOMINAL 1.6 INCHES.
5. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN, THE BUILDING CODE, AND APPLICABLE LOCAL LAWS AND REGULATIONS, LATEST EDITIONS.
6. 24" WIDTH OF PANELS TO BE INSTALLED DIRECTLY BEHIND CURB AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. SEE PLANS AND DETAILS FOR CURB TYPE AND DIMENSIONS.
8. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
9. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
10. CONTRACTOR TO ENSURE TOP OF CURB MATCHES SLOPE OF RAMP.
11. CURB RAMPS SHALL NOT BE LOCATED IN AN AREA THAT INTERFERES WITH MINIMUM MANEUVERING CLEARANCES AT DOORS AND GATES.
12. CURB RAMP SHALL HAVE LIGHT BROOM FINISH.
13. THE MINIMUM WIDTH OF A CURB SHALL BE 4'-0".
14. THE GRADE (RUNNING SLOPE) OF A CURB RAMP SHALL BE A MINIMUM OF 5%. THE GRADE FOR DESIGN AND LAYOUT SHALL BE A MAXIMUM OF 7.5% OF THE GRADE FOR ADA ACCESSIBILITY AND WORK ACCEPTANCE SHALL BE A MAXIMUM OF 8.3%.
15. THE CROSS SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS POSSIBLE AND STILL PROVIDE POSITIVE DRAINAGE. THE CROSS SLOPE OF A CURB RAMP SHALL BE 1.5% MAXIMUM FOR DESIGN AND LAYOUT, AND 2% MAXIMUM FOR WORK ACCEPTANCE.
16. WHERE A PEDESTRIAN CIRCULAR PATH CROSSES THE CURB RAMP, FLARED SIDES SHALL BE INSTALLED WITH A MAXIMUM SLOPE OF 9.5% FOR DESIGN AND LAYOUT, AND 10% MAXIMUM FOR WORK ACCEPTANCE. THE SLOPE OF FLARED SIDES IS MEASURED PARALLEL TO THE CURB LINE.
17. WHERE A CHANGE IN DIRECTION IS REQUIRED TO UTILIZE A CURB RAMP, A TURNING SPACE SHALL BE PROVIDED AT THE BASE OR THE TOP OF A CURB RAMP AS APPLICABLE. TURNING SPACES SHALL BE PERMITTED TO OVERLAP CLEAR SPACES.
18. DETECTABLE WARNING SURFACES SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS ON PEDESTRIAN ACCESS ROUTES:
    A. CURB RAMPS AND BLENDED TRANSITIONS AT PEDESTRIAN STREET CROSSINGS.
    B. PEDESTRIAN REFUGE ISLANDS (WHERE THE LENGTH OF THE PEDESTRIAN ACCESS ROUTE ACROSS THE REFUGE ISLAND IS GREATER THAN OR EQUAL TO 6 FEET).
    C. PEDESTRIAN AT-GRADE RAIL CROSSINGS NOT LOCATED WITHIN A STREET OR HIGHWAY.
19. DETECTABLE WARNING SURFACES SHALL BE PROVIDED WHERE THE PEDESTRIAN ACCESS ROUTE CROSSES DRIVEWAYS WITH SIGNAL, YIELD OR STOP CONTROL. DETECTABLE WARNING SURFACES SHALL NOT BE PROVIDED AT CROSSINGS OR UNCONTROLLED DRIVEWAY APRONS.
20. SOME DETECTABLE WARNING PRODUCTS REQUIRE A CONCRETE BORDER FOR PROPER INSTALLATION. IF REQUIRED, THE BORDER SHALL NOT EXCEED 2". WHERE THE BACK OF CURB EDGE IS TOOLED TO PROVIDE A RADIUS, THE BORDER DIMENSION SHALL BE MEASURED FROM THE INSIDE EDGE OF THE CURB RADIUS.

PERPENDICULAR CURB RAMP

(WITH DETECTABLE WARNING)

53



NOTES:

1. FLOW-THROUGH AND INFILTRATION STORMWATER PLANTERS SHOULD NOT RECEIVE DRAINAGE FROM IMPERVIOUS AREAS GREATER THAN 15,000 SQUARE FEET.
2. INFILTRATION PLANTERS SHOULD BE LOCATED A MINIMUM DISTANCE OF TEN FEET FROM STRUCTURES.
3. RIP-RAP MUST BE PLACED BELOW DOWNSPOUTS OR WHERE STORMWATER ENTERS THE PLANTER TO PREVENT EROSION.
4. STORMWATER PLANTERS ARE DESIGNED TO POND WATER LESS THEN 12 HOURS, WITH A MAXIMUM OF PONDING DEPTH OF 12 INCHES.
5. FLOW-THROUGH AND INFILTRATION PLANTERS MUST HAVE A MINIMUM WIDTH OF 1.5 AND 2.5 FEET, RESPECTIVELY.
6. SOILS SPECIFICATIONS FOR THE STORMWATER PLANTERS GROWING MEDIUM SHOULD ALLOW AN INFILTRATION RATE OF 2 INCHES PER HOUR, AND 5 INCHES AN HOUR FOR THE DRAINAGE LAYER.
7. SOIL COMPACTION MUST BE NO GREATER THAN 85% IN THE PLANTER.
8. THE GROWING MEDIUM DEPTH FOR ALL THREE STORMWATER PLANTERS TYPES SHOULD BE AT LEAST 18 INCHES. GROWING MEDIA SHOULD BE A UNIFORM MIXTURE OF 70% SAND (100% PASSING THE 1-INCH SIEVE AND 5% PASSING THE NO. 200 SIEVE) AND 30% TOPSOIL WITH AN AVERAGE OF 5% ORGANIC MATERIAL, SUCH AS COMPOST OR PEAT, FREE OF STONES, ROOTS AND WOODY DEBRIS AND ANIMAL WASTE.
9. FOR INFILTRATION AND FLOW-THROUGH PLANTERS THE DRAINAGE LAYER SHOULD HAVE A MINIMUM DEPTH OF 12 INCHES. DRAINAGE LAYER SHOULD BE CLEAN SAND WITH 100% PASSING THE 1-INCH SIEVE AND 5% PASSING THE NO. 200 SIEVE.
10. A MINIMUM INFILTRATION DEPTH OF 3 FEET SHOULD BE PROVIDED BETWEEN THE BOTTOM OF THE INFILTRATION PRACTICE AND ANY IMPERMEABLE BOUNDARIES, SUCH AS THE SEASONAL HIGH GROUNDWATER LEVEL OR ROCK.
11. INFILTRATION PLANTERS MUST BE DESIGNED AND CONSTRUCTED WITH NO LONGITUDINAL OR LATERAL SLOPE.

FLOW-THROUGH STORMWATER PLANTER

(WITH UNDER DRAIN)

54

X

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD - ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

JMC

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

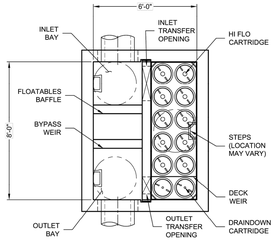
STATE OF NEW YORK · STEPHEN SPINA · LICENSED PROFESSIONAL ENGINEER · 085983

Drawn:	BMS	Approved:	SS
Scale:	NOT TO SCALE		
Date:	10/29/2019		
Project No:	18119		
18119-DETAILS	C-907	-	

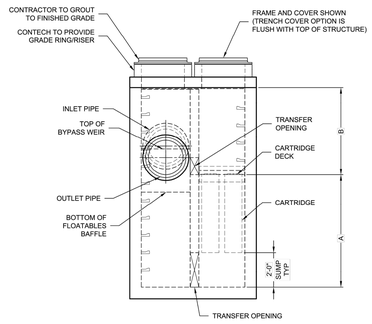
Drawing No: C-907 (Sheet 24 of 26)

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC/ JMC SITE DEVELOPMENT CONSULTING, LLC/ JOHN MEYER CONSULTING, INC. Any modifications or alterations to this document without the written permission of JMC shall be done at user's sole risk and liability.

NOT FOR CONSTRUCTION



PLAN VIEW
(TOP SLAB NOT SHOWN FOR CLARITY)



ELEVATION VIEW

JELLYFISH DESIGN NOTES

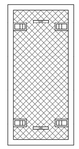
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE LENGTH AND THE NUMBER OF CARTRIDGES. THE STANDARD PEAK DIVERSION STYLE WITH PRECAST TOP SLAB IS SHOWN. ALTERNATE OFFLINE VAULT AND/OR SHALLOW ORIENTATIONS ARE AVAILABLE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD

CARTRIDGE SELECTION

CARTRIDGE LENGTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-6"	5'-4"	4'-3"	3'-3"
FLOW RATE HI-FLO / DRAINDOWN (CFS) (PER CART)	0.178 / 0.089	0.133 / 0.067	0.089 / 0.045	0.049 / 0.025
MAX. TREATMENT (CFS)	1.96	1.47	0.98	0.54
DECK TO INSIDE TOP (MIN) (B)	5.00	4.00	4.00	4.00



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



24" TRENCH COVER
(LENGTH VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	*
WATER QUALITY FLOW RATE (cfs)	*
PEAK FLOW RATE (cfs)	*
RETURN PERIOD OF PEAK FLOW (yrs)	*
# OF CARTRIDGES REQUIRED (HF / DD)	*
CARTRIDGE LENGTH	*

PIPE DATA:	I.E.	MAT'L	DIA	SLOPE %	HGL
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*

SEE GENERAL NOTES 6-7 FOR INLET AND OUTLET HYDRAULIC AND SIZING REQUIREMENTS.

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 10', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857, ASTM C-918, AND AASHTO LOAD FACTOR DESIGN METHOD.
6. OUTLET PIPE INVERT IS EQUAL TO THE CARTRIDGE DECK ELEVATION.
7. THE OUTLET PIPE DIAMETER FOR NEW INSTALLATIONS IS RECOMMENDED TO BE ONE PIPE SIZE LARGER THAN THE INLET PIPE AT EQUAL OR GREATER SLOPE.
8. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES
A. ANY SUB-BASE/ BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE.
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION.

Jellyfish® Filter
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENT NO. 7,425,262; 7,470,362; 7,704,393; OR 8,123,935. OTHER INTERNATIONAL PATENTS PENDING

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

JELLYFISH JFPD0806
STANDARD DETAIL
PEAK DIVERSION CONFIGURATION

NOTES:

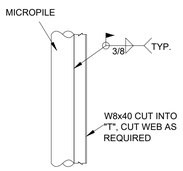
REQUIRED MAINTENANCE FOR THE JELLYFISH FILTER IS BASED UPON RESULTS OF THE MOST RECENT INSPECTION, HISTORICAL MAINTENANCE RECORDS, OR THE SITE SPECIFIC WATER QUALITY MANAGEMENT PLAN; WHICHEVER IS MORE FREQUENT. IN GENERAL, MAINTENANCE REQUIRES SOME COMBINATION OF THE FOLLOWING:

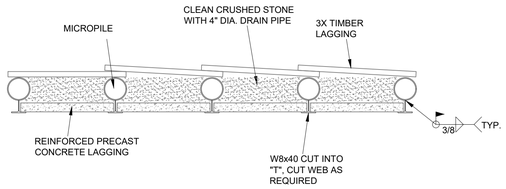
1. SEDIMENT REMOVAL FOR DEPTHS REACHING 12 INCHES OR GREATER, OR WITHIN 3 YEARS OF THE MOST RECENT SEDIMENT CLEANING, WHICHEVER OCCURS SOONER.
2. FLOATABLE TRASH, DEBRIS AND OIL REMOVAL.
3. DECK CLEANED AND FREE FROM SEDIMENT.
4. FILTER CARTRIDGES RINSED AND RE-INSTALLED AS REQUIRED BY THE MOST RECENT INSPECTION RESULTS, OR WITHIN 12 MONTHS OF THE MOST RECENT FILTER RINSING, WHICHEVER OCCURS SOONER.
5. REPLACE TENTACLES IF RINSING DOES NOT RESTORE ADEQUATE HYDRAULIC CAPACITY, REMOVE ACCUMULATED SEDIMENT, OR IF DAMAGED OR MISSING. IT IS RECOMMENDED THAT TENTACLES SHOULD REMAIN IN SERVICE NO LONGER THAN 5 YEARS BEFORE REPLACEMENT.
6. DAMAGED OR MISSING CARTRIDGE DECK COMPONENTS MUST BE REPAIRED OR REPLACED AS INDICATED BY RESULTS OF THE MOST RECENT INSPECTION.
7. THE UNIT MUST BE CLEANED OUT AND FILTER CARTRIDGES INSPECTED IMMEDIATELY AFTER AN UPSTREAM OIL, FUEL, OR CHEMICAL SPILL. Filter CARTRIDGE TENTACLES SHOULD BE REPLACES IF DAMAGED OR COMPROMISED BY THE SPILL.

JELLYFISH FILTER

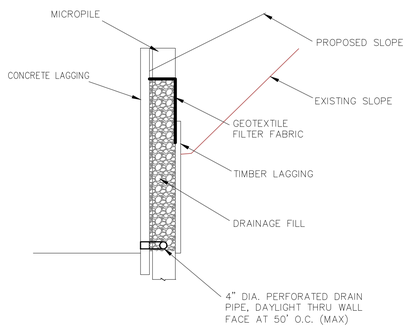
55

X





PLAN



TYPICAL SECTION



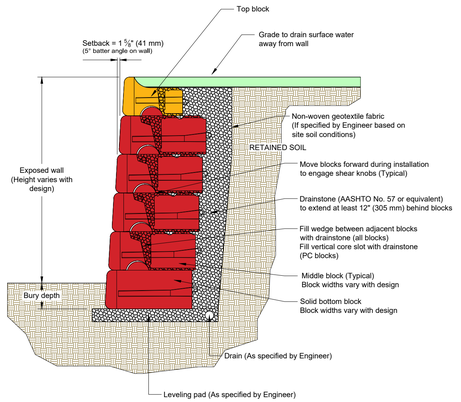
EXAMPLE IMAGE

NOTE:
1. RETAINING WALLS THAT INCLUDE FALL PROTECTION SHALL USE ALUMINUM DECORATIVE FENCE AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.

SOLDIER PILE RETAINING WALL
(FOR REFERENCE ONLY)

56

Typical Gravity Wall Section



This drawing is for reference only. Determination of the suitability and/or manner of use of any details contained in this document is the sole responsibility of the design engineer of record. Final project designs, including all construction details, shall be prepared by a licensed professional engineer using the actual conditions of the proposed site.

DRAWN BY:	JRJ	TITLE:	Typical Gravity Wall Detail
APPROVED BY:	JRJ		
DATE:	17MAR2016	FILE:	1 Typical Gravity Wall Detail 031716.dwg
SHEET:	1 of 1		

REDI ROCK®
(5481 US 31 SOUTH, CHARLEVOIX, MI 49720
(866) 222-8400 ext 3010 • engineering@redi-rock.com
www.redi-rock.com



EXAMPLE IMAGE

NOTE:
1. RETAINING WALLS THAT INCLUDE FALL PROTECTION SHALL USE ALUMINUM DECORATIVE FENCE AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.

REDI ROCK GRAVITY WALL
(FOR REFERENCE ONLY)

57

No.	Revision	Date
1.	REVISED PER CITY COMMENTS	12/30/19
2.	REVISED PER CITY COMMENTS	02/24/2020
3.	REVISED PER CITY COMMENTS	09/29/2020
4.	REVISED PER CITY COMMENTS	07/27/2021
5.	REVISED PER CITY COMMENTS	03/25/2022

Previous Editions Obsolete

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcplic.com

JMC

CONSTRUCTION DETAILS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

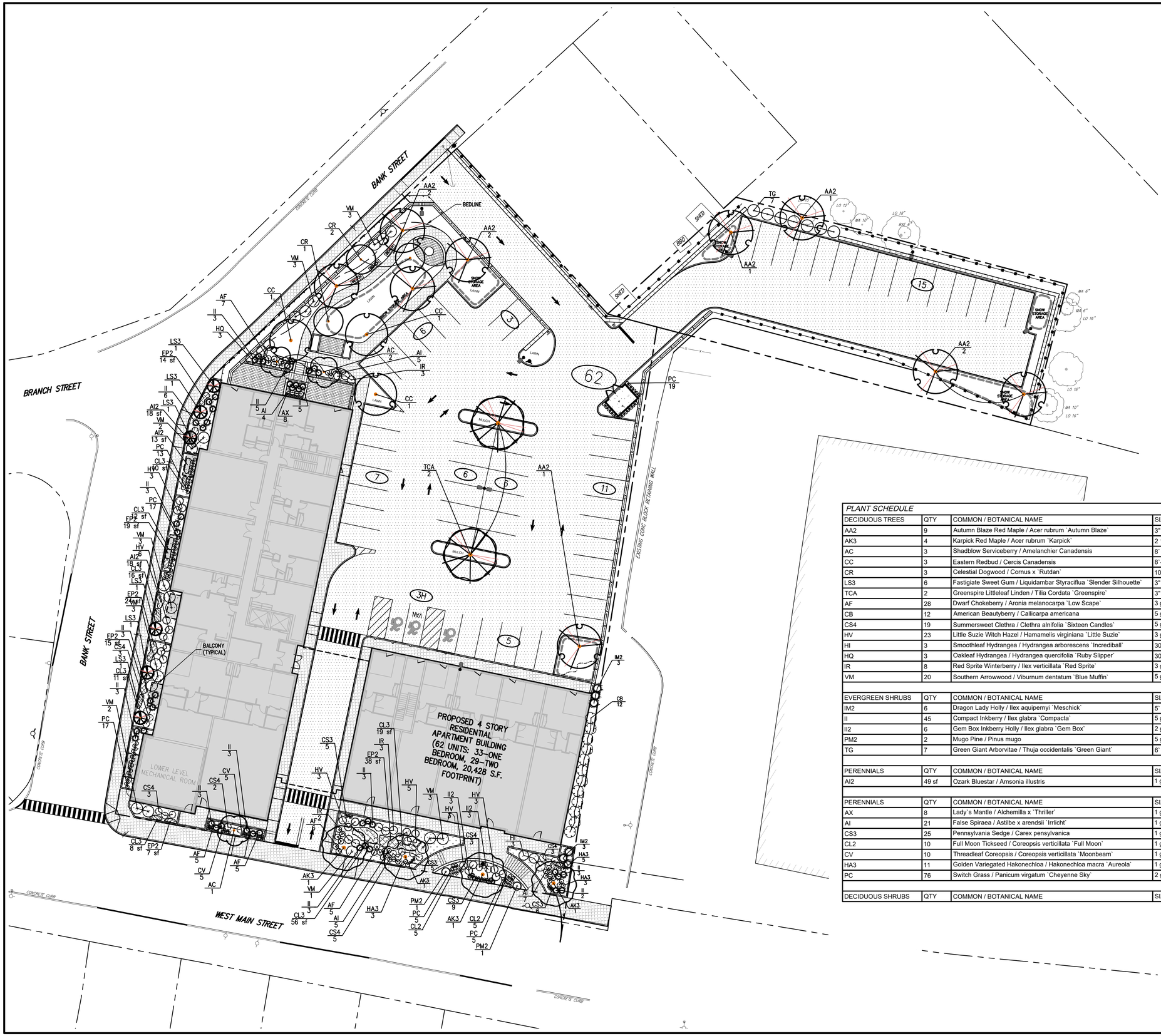
STATE OF NEW YORK
STEPHEN SPINA
LICENSED PROFESSIONAL ENGINEER
085983

Drawn:	BMS	Approved:	SS
Scale:	NOT TO SCALE		
Date:	09/29/2020		
Project No:	18119		
18119-DETAILS	C-908	-	

Drawing No:
C-908
(Sheet 25 of 26)

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTING, LLC | JOHN MEYER CONSULTING, INC. (JMC). Any modification or alteration to this document without the written permission of JMC shall render such alteration unlawful.

NOT FOR CONSTRUCTION



LEGEND

- EXISTING TREE AND DESIGNATION
- PROPOSED DECIDUOUS TREE
- PROPOSED FLOWERING TREE
- PROPOSED CONIFEROUS TREE
- PROPOSED SHRUBS

NOTES:

1. ALL PLANT MATERIAL SHALL BE FIRST QUALITY STOCK. PLANTED MATERIAL AND METHODS OF INSTALLATION SHALL CONFORM TO THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION, AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION.
2. ALL AREAS OF THE SITE NOT OCCUPIED BY BUILDING OR PAVEMENT AND NOT SPECIFIED AS BEING PLANTED WITH TREES, SHRUBS OR GROUND COVER SHALL BE LAWN.
3. ALL PLANTING BEDS SHALL BE MULCHED WITH 3" OF BROWN MULCH. MULCH SHALL BE CLEAN, NON-DYED, TOXIC FREE, SHREDDED HARDWOOD.
4. PLANT MATERIALS AS SPECIFIED ON THE DRAWINGS AND DELIVERED TO THE SITE SHALL BE NURSERY GROWN AND CERTIFIED TRUE TO THEIR GENUS, SPECIES AND VARIETY. SUBSTITUTIONS ARE NOT PERMITTED WITHOUT THE PROJECT LANDSCAPE ARCHITECTS WRITTEN APPROVAL.
5. ALL LANDSCAPING SHALL CONTINUE TO BE MAINTAINED IN A HEALTHY GROWING CONDITION THROUGHOUT THE DURATION OF THE PROJECT. ANY PLANTING NOT SO MAINTAINED SHALL BE REPLACED WITH NEW PLANTS AT THE BEGINNING OF THE NEXT, IMMEDIATELY FOLLOWING, GROWING SEASON.
6. ALL TREES AND SHRUBS SHALL BE PRUNED AND SHAPED AND BE SUBJECT TO THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND GOVERNMENTAL AUTHORITIES HAVING JURISDICTION. ANY TREES AND SHRUBS THAT WILL POSSIBLY MATURE AND GROW TOWARDS THE BUILDING, LIGHT POLES, RETAINING WALLS, FENCES, PARKING SPACES, ETC. SHALL BE TRIMMED/PRUNED BACK APPROPRIATELY.
7. PLANTING STOCK SHALL BE WELL-BRANCHED AND WELL-FORMED, SOUND, VIGOROUS, HEALTHY, FREE FROM DISEASE, SUN-SCALE, WINDBURN, ABRASION, AND HARMFUL INSECTS OR INSECTS EGGS; AND SHALL HAVE HEALTHY, NORMAL UNBROKEN ROOT SYSTEMS. DECIDUOUS TREES AND SHRUBS SHALL BE SYMMETRICALLY DEVELOPED, OF UNIFORM HABIT OF GROWTH, WITH STRAIGHT TRUNKS OR STEMS, AND FREE FROM OBJECTIONABLE DISFIGUREMENTS. EVERGREEN TREES AND SHRUBS SHALL HAVE WELL-DEVELOPED SYMMETRICAL TOPS WITH TYPICAL SPREAD OF BRANCHES FOR EACH PARTICULAR SPECIES OR VARIETY. ONLY VINES AND GROUND COVER PLANTS WELL ESTABLISHED IN REMOVAL CONTAINERS, INTEGRAL CONTAINERS, OR FORMED HOMOGENEOUS SOIL SECTIONS SHALL BE USED. PLANTS SHALL BE GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT.
8. ALL STOCK SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN STOCK, UNLESS OTHERWISE SPECIFIED. BAREROOT STOCK OF ANY KIND IS UNACCEPTABLE UNLESS SPECIFIED.
9. ALL PLANTING BEDS, LAWNS AND LANDSCAPED AREAS SHALL RECEIVE A MINIMUM 4" THICK LAYER OF TOPSOIL, UNLESS OTHERWISE SPECIFIED.

PLANT SCHEDULE

DECIDUOUS TREES	QTY	COMMON / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS
AA2	9	Autumn Blaze Red Maple / Acer rubrum `Autumn Blaze`	3" CAL.	B & B	
AK3	4	Karpick Red Maple / Acer rubrum `Karpick`	2 1/2" - 3" CAL.	B & B	
AC	3	Shadblow Serviceberry / Amelanchier Canadensis	8` - 10` HT.	B & B	Full Heavy Multi Ste
CC	3	Eastern Redbud / Cercis Canadensis	8`-10` HT	B & B	
CR	3	Celestial Dogwood / Cornus x `Rutdan`	10` - 12` HT	B & B	Full Heavy
LS3	6	Fastigiate Sweet Gum / Liquidambar Styraciflua `Slender Silhouette`	3" CAL.	B & B	
TCA	2	Greenspire Littleleaf Linden / Tilia Cordata `Greenspire`	3" CAL.	B & B	
AF	28	Dwarf Chokeberry / Aronia melanocarpa `Low Scape`	3 gal	Cont.	
CB	12	American Beautyberry / Callicarpa americana	5 gal	Cont.	
CS4	19	Summersweet Clethra / Clethra alnifolia `Sixteen Candles`	5 gal	Cont.	
HV	23	Little Suzie Witch Hazel / Hamamelis virginiana `Little Suzie`	3 gal	Cont.	
HI	3	Smoothleaf Hydrangea / Hydrangea arborescens `Incrediball`	30" - 36"	B & B	
HQ	3	Oakleaf Hydrangea / Hydrangea quercifolia `Ruby Slipper`	30" - 36"	B & B	
IR	8	Red Sprite Winterberry / Ilex verticillata `Red Sprite`	3 gal	Cont.	
VM	20	Southern Arrowwood / Viburnum dentatum `Blue Muffin`	5 gal	Cont.	
EVERGREEN SHRUBS	QTY	COMMON / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS
IM2	6	Dragon Lady Holly / Ilex aquipernyi `Meschick`	5` - 6` HT	B&B	
II	45	Compact Inkberry / Ilex glabra `Compacta`	5 gal	Cont.	
II2	6	Gem Box Inkberry Holly / Ilex glabra `Gem Box`	2 gal	Cont.	
PM2	2	Mugo Pine / Pinus mugo	5 gal	Cont.	
TG	7	Green Giant Arborvitae / Thuja occidentalis `Green Giant`	6` - 8` HT	B & B	
PERENNIALS	QTY	COMMON / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS
AI2	49 sf	Ozark Bluestar / Amsonia illustris	1 gal		
PERENNIALS	QTY	COMMON / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS
AX	8	Lady`s Mantle / Alchemilla x `Thriller`	1 gal	Cont.	
AI	21	False Spiraea / Astilbe x arendsii `Irrlicht`	1 gal	Cont.	
CS3	25	Pennsylvania Sedge / Carex pensylvanica	1 gal	Cont.	
CL2	10	Full Moon Tickseed / Coreopsis verticillata `Full Moon`	1 gal	Cont.	
CV	10	Threadleaf Coreopsis / Coreopsis verticillata `Moonbeam`	1 gal	Cont.	
HA3	11	Golden Variegated Hakonechloa / Hakonechloa macra `Aureola`	1 gal	Cont.	
PC	76	Switch Grass / Panicum virgatum `Cheyenne Sky`	2 gal	Cont.	
DECIDUOUS SHRUBS	QTY	COMMON / BOTANICAL NAME	SIZE	ROOT COND.	REMARKS

APPLICANT/OWNER:
FARRELL COMMUNITIES BEACON LLC
PO BOX 14
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

LANDSCAPING PLAN

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

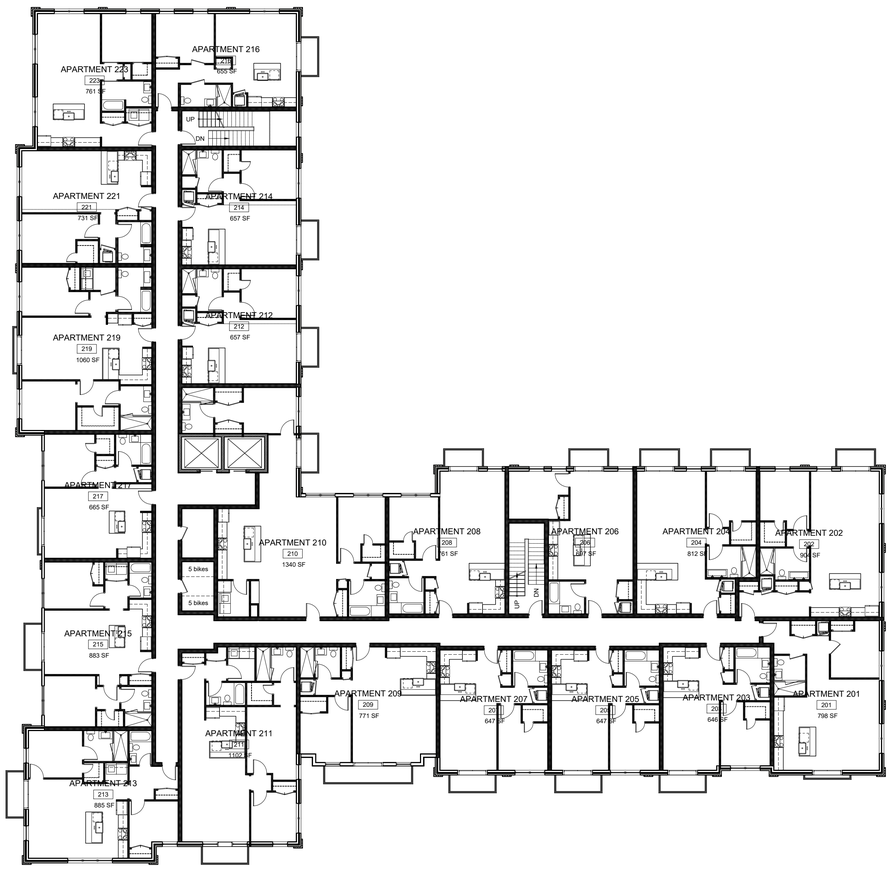
STATE OF NEW YORK · STEPHEN SPINA · LICENSED PROFESSIONAL ENGINEER · 085983

No.	Revision	Date	By
1.	REVISED PER CITY COMMENTS	12/30/19	AH
2.	REVISED PER CITY COMMENTS	02/24/2020	AH
3.	REVISED PER CITY COMMENTS	09/29/2020	AH
4.	REVISED PER CITY COMMENTS	07/27/2021	BMS
5.	REVISED PER CITY COMMENTS	03/25/2022	BMS
	Previous Editions Obsolete		

Drawn: BMS Approved: SS
Scale: 1" = 20'
Date: 10/29/2019
Project No: 18119
18119-LAND | LAND | LAND.scr
Drawing No: L-100
(Sheet 26 of 26)

NOT FOR CONSTRUCTION

COPYRIGHT © 2020 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC | JMC SITE DEVELOPMENT CONSULTANTS, LLC | JOHN MEYER CONSULTING, INC. | Any modifications or conversion to this document without the written permission of JMC shall render this document void and invalid.



2nd Floor Plan

BANK STREET



1st Floor Plan

62 Total Apartments

= 1 Bedroom Apartment (Qty. = 33)

= 2 Bedroom Apartment (Qty. = 29)

*BMR = **Below-market-rate Unit**
(3 - 1 Bedroom & 3 - 2 Bedroom Units)

GRAPHIC SCALE
0 8' 16' 32'
SCALE: 1/16" = 1'-0"

No.	Revision	Date	By
1	REVISED PER PLANNING BOARD COMMENTS	11/26/19	AJS
2	REVISED PER PLANNING BOARD COMMENTS	12/31/19	AJS
3	REVISED PER PLANNING BOARD COMMENTS	01/28/20	AJS
4	REVISED PER PLANNING BOARD COMMENTS	09/29/20	AJS
5	REVISED PER PLANNING BOARD COMMENTS	07/27/21	AJS
6	REVISED PER PLANNING BOARD COMMENTS	03/25/22	AJS
	Previous Editions Obsolete		

Drawn: PW Approved: AS
Scale: 1/16" = 1'-0"
Date: 09/24/2019
Project No: 18119
Drawing No: A-100 (1 of 3)

APPLICANT/OWNER:
FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

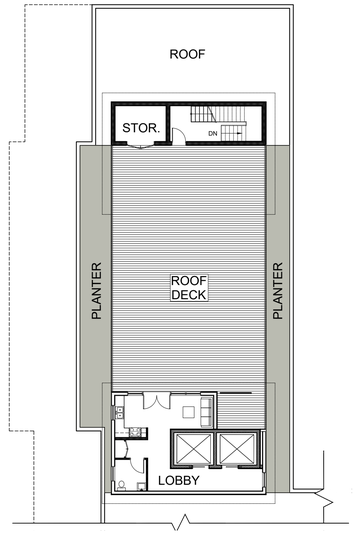
JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

BUILDING PLANS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

NOT FOR CONSTRUCTION

COPYRIGHT © 2019 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC, JOHN MEYER CONSULTING, INC. (JMC). Any reproduction or distribution of this document, which has written permission of JMC, shall retain all notices and credits as provided.



Partial Roof Plan



4th Floor Plan



3rd Floor Plan

62 Total Apartments

	= 1 Bedroom Apartment (Qty. = 34)		= 2 Bedroom Apartment (Qty. = 20)	*BMR =	**Below-market-rate Unit** (3) 1-Bedroom Units (3) 2- Bedroom Units
	= Live Work (Qty. = 7)		= Studio Apartment (Qty. = 1)		

0 8' 16' 32'

SCALE: 1/16" = 1'-0"

No.	Revision	Date	By
1	REVISED PER PLANNING BOARD COMMENTS	11/26/19	AJS
2	REVISED PER PLANNING BOARD COMMENTS	12/31/19	AJS
3	REVISED PER PLANNING BOARD COMMENTS	01/28/20	AJS
4	REVISED PER PLANNING BOARD COMMENTS	09/29/20	AJS
5	REVISED PER PLANNING BOARD COMMENTS	07/27/21	AJS
6	REVISED PER PLANNING BOARD COMMENTS	03/25/22	AJS
	Previous Editions Obsolete		

Drawn: PW Approved: AS
Scale: 1/16" = 1'-0"
Date: 09/24/2019
Project No: 18119
Drawing No: A- 101 (2 of 3)

APPLICANT/OWNER:
FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

BUILDING PLANS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

NOT FOR CONSTRUCTION

COPYRIGHT © 2019 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC / JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. (JMC). Any modifications or alterations to this document without the written permission of JMC shall render it null and void.



HARDIE BOARD VERTICAL BOARD AND BATTEN SIDING: COLOR: BRICK RED

PAINTED METAL RAILING. COLOR: BLACK

CLAD ALUMINUM WINDOWS - ANDERSEN 400 SERIES OR APPROVED EQUAL. COLOR: BLACK

BRICK SIDING - GLEN GARY 56DD OR APPROVED EQUAL

PAINTED METAL BALCONY WITH 40" HIGH VERTICAL RAILING

GLASS AND METAL RAILING AT CONNECTION

ELEVATION - WEST MAIN STREET



HARDIE BOARD VERTICAL BOARD AND BATTEN SIDING; COLOR: BRICK RED

PAINTED METAL RAILING. COLOR: BLACK

CLAD ALUMINUM WINDOWS - ANDERSEN 400 SERIES OR APPROVED EQUAL. COLOR: BLACK

BRICK SIDING - GLEN GARY 56DD OR APPROVED EQUAL

HARDIE BOARD VERTICAL BOARD AND BATTEN SIDING: COLOR: BRICK RED

PAINTED METAL BALCONY WITH 40" HIGH VERTICAL RAILING

GLASS AND METAL RAILING AT CONNECTION

ELEVATION - BANK STREET



PERSPECTIVE - LOOKING TOWARDS WEST MAIN STREET



PERSPECTIVE - CORNER OF WEST MAIN STREET & BANK STREET



PERSPECTIVE - LOOKING WEST ON WEST MAIN STREET



PERSPECTIVE - LOOKING ACROSS WEST MAIN STREET TO PORTE COCHERE ENTRY



PERSPECTIVE - PORTE COCHERE ENTRY

APPLICANT/OWNER:
FARRELL BUILDING COMPANY
2317 MONTAUK HIGHWAY
BRIDGEHAMPTON, NY 11932

ARCHITECT:
ARYEH SIEGEL ARCHITECT
84 MASON CIRCLE
BEACON, NY 12508

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcpllc.com

ELEVATIONS

BEACON COMMONS
16 WEST MAIN STREET
BEACON, NY 12508

No.	Revision	Date	By
1	REVISED PER PLANNING BOARD COMMENTS	11/26/19	AJS
2	REVISED PER PLANNING BOARD COMMENTS	12/31/19	AJS
3	REVISED PER PLANNING BOARD COMMENTS	01/28/20	AJS
4	REVISED PER PLANNING BOARD COMMENTS	09/29/20	AJS
5	REVISED PER PLANNING BOARD COMMENTS	07/27/21	AJS
6	REVISED PER PLANNING BOARD COMMENTS	03/25/22	AJS
	Previous Editions Obsolete		

Drawn: PW Approved: AS
Scale: NTS
Date: 09/24/2019
Project No: 18119
Drawing No: A- 200 (3 of 3)

NOT FOR CONSTRUCTION

COPYRIGHT © 2019 by JMC. All Rights Reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of JMC PLANNING, ENGINEERING, LANDSCAPE ARCHITECTURE & LAND SURVEYING, PLLC, JMC SITE DEVELOPMENT CONSULTANTS, LLC / JOHN MEYER CONSULTING, INC. (JMC). Any modification or alteration to this document without the written permission of JMC shall render said plan unusable.

John Clarke Planning and Design jclarkeplandesign@gmail.com
25 Beech Street, Rhinebeck NY 12572 845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **Beacon Commons, 16 West Main Street, Site Plan and Merger of Three Lots**

I have reviewed a March 25, 2022 response letter from JMC, March 8, 2022 Traffic Study by JMC, lighting information from Synergy Electrical Sales, and a 26-sheet Site Plan set and 3-sheet Building Plans set from JMC, all with the last revision date of March 25, 2022.

Proposal

The applicant is proposing to construct a 62-unit multifamily building on a 1.5-acre site in the Linkage and R1-7.5 districts and within the Local Waterfront Revitalization Program (LWRP) boundary.

Comments and Recommendations

1. Parking in the adjacent residential district will need a Special Permit from the City Council. The Planning Board should issue a recommendation to the Council.

2. For the Sheet 9 Lighting Plan:

    a. The fixture illustrations and a summary of the specifications should be shown on the plans, confirming the full cut-off, temperatures, and Color Rendering Index to comply with Section 223-14B. Four of the fixtures specified have a CRI of 70, outside the 80-100 range.

    b. For the underpass driveway, I suggest two canopy lights near both ends and crosswalks.

3. For the Sheet 16 Sight Distance Plan, the Board should discuss the suggested removal of up to 13 existing West Market Street parking spaces, balancing appropriate sight distance with the need for on-street parking in an area designated for commercial uses.

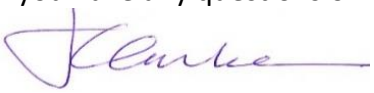
4. For the Sheets A-100 to A-200 Building Plans:

    a. Scaled elevations should be provided with building heights and floor-to-floor heights labeled, along with major rooftop features and a detail for the roof railings.

    b. Acceptable rooftop accessory structures are described in Section 223-41.21 D(5), including the need for a 15-foot setback from the front edge of the roof. The proposed storage room, bathroom, and kitchen do not meet the setback requirement.

    c. A complete roof plan should be provided with locations for mechanical equipment. The rooftop plantings should be generally described, and the applicant should consider green coverings for the rest of the roof.

If you have any questions or need additional information, please feel free to contact me.



John Clarke, Beacon Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Aryeh Siegel, Project Architect

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal

Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal

John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 8, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: 16 West Main Street/Beacon Commons
City of Beacon
Tax Map No. 5954-25-616969

Dear Mr. Gunn:

My office has received the following in regard to the above application:

- Response correspondence from JMC Consulting dated March 25, 2022.
- Traffic Study – Beacon Commons, with the latest revision date of March 8, 2022, as prepared by JMC Consulting.
- Subsurface Soil and Foundation Investigation Report, with the latest revision date of March 2, 2022, as prepared by Carlin, Simpson & Associates, LLC.
- Cut sheets for proposed site lighting from Synergy Electrical Sales.
- Stormwater Pollution Prevention Plan (SWPPP) titled "Beacon Commons – 16 West Main", last revised March 25, 2022, as prepared by JMC Consulting.
- Plan set titled "Site Plan Drawings – Beacon Commons", with the latest revision date of March 25, 2022, and consisting of Sheets 1 of 26 through 26 of 26, as prepared by JMC Consulting.
- Plan set titled "Building Plans" and consisting of Sheets A-100, A-101 and A-200 with the latest revision date of March 25, 2022, as prepared by Aryeh Siegel, Architect.

Based upon our review of the above referenced documents and plans, we offer the following comments:

General Comments:

1. A Performance Bond will need to be posted for all public improvements proposed as part of the project. As the project progresses, the applicant's engineer should prepare an itemized cost estimate for all public improvements and submit to the City Engineer's office for review. ***Applicant acknowledges this comment.***

2. As the building plans are noted as part of the overall plan set, they should be attached to the overall plan set.

3. A note shall be added to the plans stating that all stormwater facilities to be constructed as part of the project shall be inspected by a licensed engineer on a yearly basis, with a copy of the report being provided to the City Building Department. The report shall include all findings and recommendations.

4. The submitted revised Stormwater Pollution Prevention Plan (SWPPP) has been reviewed and found to be acceptable.

Demolition Plan (Sheet 3 of 26):

1. As the plan is showing the sidewalk along West Main to be removed, a pedestrian accessway shall be established to allow pedestrians walking along the roadway to continue in a safe manner since there is no sidewalk on the opposite side of the roadway. This would also apply to the sidewalk along Bank Street.

Site Plan (Sheet 4 of 26)

1. Given the amount of parking area that will require clearing during snowstorm events, it does not appear that sufficient area has been provided for snow storage. Snow should not be stored within parking stalls. How does the applicant plan on handling snow storage and removal from the site? This information shall also be provided on the plan. ***Applicant has noted that excess snow shall be disposed off-site.*** The note on the plan shall be expanded upon to provide a time frame as to how quickly the excess snow will be removed from the site.

Utilities Plan (Sheet 6 of 26):

1. The sewer lateral running out from the lower building to the City sewer collection system will be in conflict with the existing storm drainage structure located in this area. Additional room shall be provided between the storm drainage structure and sewer lateral to allow for proper maintenance/replacement of either utility without impact to the other utility. Although the applicant has slightly shifted the location of the sewer lateral, we still believe there is insufficient room to pass by the structure without impact once the wall thickness of the structure is accounted for along with the diameter of the proposed lateral.

2. The connection of the sanitary sewer lateral to the existing sewer main will require a saddle. The plan should note the use of a saddle that is approved by the City of Beacon. A construction detail for this connection shall be included on the plans.

3. The 6" water service line is proposed to connect to the existing 6" water line within West Main Street in a location where the water and sewer are located atop one another. As it is unclear as to the separation distance between these utilities, we recommend that the applicant look at connecting the 6" water service to the 8" water line located in Bank Street so as to avoid conflicts. Construction details for the proposed water tapping shall be provided on the plans.

4. The applicant should verify the pressures within the water mains along Bank Street and West Main Street, along with the available fire flows form the hydrants. This information will be required for the design of the sprinkler system that will be required in the building. **The applicant has noted that the MEP Engineer will coordinate with the City to obtain fire flow data and pressures needed for the design of the fire suppression system.**

Storm Profile (Sheet 7 of 26):

1. The profile shows the proposed storm drainage pipe to be installed on West Main Street will be directly atop of the existing water main. This does not comply with NYSDOH requirements for separation, which requires a minimum of 18" of separation between the two. Furthermore, at least 12" should be provided between utilities to allow for proper maintenance repair of them. The plan shall be revised to show proper separation distances in accordance with NYSDOH standards.

Sediment and Erosion Control (Sheet 8 of 26):

1. Stone check dams shall be shown for the swale line proposed north and east side of the rear parking lot, in accordance with NYSDEC standards, until vegetation is established, at which time the stone check dams can be removed. A construction detail for the stone check dams shall be provided on the plans.

This completes our review at this time. Further comments may be forth coming based upon future submissions. **A written response letter addressing each of the above comments should be provided with the next submission.** If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,

LANC & TULLY, P.C.

John Russo, P.E.

Cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

City of Beacon
Planning Board Subcommittee on Architectural Review
Recommendation and Report

Description: Proposed 62-unit multifamily building on 1.5-acres in Linkage and R1-7.5 districts

Project Name: Beacon Commons

Project Address: 16 West Main Street

Date of Meeting(s) of ARB Subcommittee: September 17, 2021, 11 - 12 am

Attendees: Jill Reynolds, Kevin Byrne, Len Warner, Dave Buckley, John Clarke

Aryeh Siegel, Project Architect

On the above-referenced dates, the Architectural Review Subcommittee reviewed the above-referenced project at which meeting the applicant and its representatives were provided an opportunity to be heard. The sole focus of the Committee was to review the architecture of the proposed building(s). The Committee reviewed the following plans and materials:

Updated floor plans, showing live/work units with retail spaces on first floor facing West Main Street.
Color architectural renderings and elevations, dated July 27, 2021, showing eight different views of the proposed building from West Main and Bank Street.

The Architectural Review Committee offers the following specific comments, as applicable as indicted:

1) Doors and windows: Window proportions more vertical than in previous versions.

   Aryeh clarified that the balcony doors would be swing-open French doors, not sliding, and that the depth and detailing of the French doors will match the other windows.

2) Roof: The piers extending above the roofline were considered bulky and unnecessary, so the next version will end the piers at the cornice line.

3) Projections, such as rooftop elevators, stairwells, balconies, beams, etc.:

4) North elevation: Elevations for the north side will be needed for final Board review.

5) South elevation: Len suggested adding transom details at the top of the retail space windows and Jill liked the idea of having canopies on every retail window. All agreed. The south elevation east of the underpass will also need to have significant breaks in the façade at least every 35 feet to meet the L district design standards

6) West elevation: Kevin suggested having the fiber-cement siding drop down to lower brick levels, similar to the east elevation. He also pointed out that the brick pier between the fiber cement sections looked too thin and out-of-place.

7) East elevation: Remove the brickwork opening above the 3rd floor cornice.

8) Signs: _____

9) Color and material type: OK with red color for the fiber-cement siding, although it should be compatible with the brick color and not overly bright. Need to specify colors and whether thin or full-size bricks will be used.

In addition to the above specific comments, the Architectural Review Subcommittee offers the following general comments/recommendations:

Jill supported balconies at least 6 feet deep and recessed into building to make the spaces much more usable and architecturally attractive. Aryeh will discuss with owners. Juliet balconies were also considered as alternatives, but they do not provide extra outdoor spaces.

Jill was concerned for safety reasons about the dead-end space below sidewalk visibility at the eastern corner of the building. The site plan showed that the area was not as deep as represented on the renderings, but Aryeh will make sure that the concern is addressed.

This Report was reviewed and adopted by the Architectural Review Subcommittee by vote of 3 to 0 at its meeting on September 17, 2021.

****NOTE: Adoption of this Report does not constitute architectural review approval for the Project. Architectural review approval must be obtained from the Planning Board. It is recommended that any approval resolution by the Planning Board reference the final elevations and any other relevant plans relied upon in the architectural review of the Project.**

Draft September 17, 2021

City of Beacon Planning Board Agenda
04/12/2022

Title:

Continue Review of application for Special Use Permit and Site Plan Approval, Mirbeau Inn & Spa @ Howland Estate, 7 Craig House Lane, submitted by The Mirbeau Companies

ATTACHMENTS

Mirbeau Application for Special Use Permit.pdf

Mirbeau Cover Letter.pdf

Mirbeau Existing and Proposed Design.pdf

Mirbeau Preliminary SWPPP.pdf

Mirbeau Sheet 1 -Site Plan Cover Sheet.pdf

Mirbeau Sheet 2 Existing Conditions.pdf

Mirbeau Sheet 3 Overall Master Plan.pdf

Mirbeau Sheet 4 Site Plan 1.pdf

Mirbeau Sheet 5 Site Plan 2.pdf

Mirbeau Sheet 6 Site Plan 3.pdf

Mirbeau Sheet 7 Grading & Utilities 1.pdf

Mirbeau Sheet 8 Grading & Utilities 2.pdf

Mirbeau Sheet 9 Erosion & Sediment Control 1.pdf

Mirbeau Sheet 10 Erosion & Sediment Control 2.pdf

Mirbeau Sheet 11 Preliminary Planting Plan 2.pdf

Mirbeau Sheet 12 Preliminary Planting Plan 3.pdf

Mirbeau Sheet 13 Lighting Plan 2.pdf

Mirbeau Sheet 14 Lighting Plan 3.pdf

Mirbeau Sheet 15 Construction Details 1.pdf

Mirbeau Sheet 16 Construction Details 2.pdf

Mirbeau Sheet 17 Construction Details 3.pdf

Mirbeau Sheet 18 Construction Details 4.pdf

Mirbeau Threatened & Endangered Species Report.pdf

Mirbeau Traffic Study.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

Mirbeau EAF Parts 1 and 2.pdf

APPLICATION FOR SPECIAL USE PERMIT

Submit to Planning Board Secretary, One Municipal Plaza, Suite One, Beacon, New York 12508

IDENTIFICATION OF APPLICANT

Name: Mirbeau of Beacon LLC

Address: 433 Broadway STE 203
Saratoga Springs, NY 12866

Signature: [signature]

Date: 3/29/22

Phone: 315-217-4164

(For Official Use Only)	Date	Initials
Application & Fee Rec'd	3-29-2022	EG
Initial Review	4-12-2022	
PB Public Hearing		
Sent to City Council		
City Council Workshop		
City Council Public Hearing		
City Council Approve/Disapprove		

IDENTIFICATION OF REPRESENTATIVE / DESIGN PRFESSIONAL

Name: Arrowstreet

Address: 10 Post Office Square STE 700N
Boston, MA 02109

Phone: 617-666-7015

Fax:

Email address: Bois@arrowstreet.com

IDENTIFICATION OF SUBJECT PROPERTY:

Property Address: 7 Craig House Lane, Beacon NY

Tax Map Designation: Section 6054-13-001258 Block Lot(s)

Land Area: 64.35 acres

Zoning District(s) R1-80, Historic District and Landmark Overlay Zone

DESCRIPTION OF PROPOSED DEVELOPMENT:

Proposed Use: Mirbeau Inn & Spa Resort, including Hotel, Spa, Restaurant and Event Facilities

Gross Non-Residential Floor Space: Existing 61,282 Proposed 104,722

TOTAL:

Dwelling Units (by type): Existing 0 Proposed 0

TOTAL: 0

ITEMS TO ACCOMPANY THIS APPLICATION

a. Five (5) **folded** copies and One (1) digital copy of a site location sketch showing the location of the subject property and the proposed development with respect to neighboring properties and developments.

b. Five (5) **folded** copies and One (1) digital copy of the proposed site development plan, consisting of sheets, showing the required information as set forth on the back of this form and other such information as deemed necessary by the City Council or the Planning Board to determine and provide for the property enforcement of the Zoning Ordinance.

c. Five (5) **folded** copies and One (1) digital copy of additional sketches, renderings or other information.

d. An application fee, payable to the City of Beacon, computed per the attached fee schedule.

e. An initial escrow amount, payable to the City of Beacon, as set forth in the attached fee schedule.

INFORMATION TO BE SHOWN ON SITE LOCATION SKETCH

a. Property lines, zoning district boundaries and special district boundaries affecting all adjoining strets and properties, including properties located on the opposite sides of adjoining streets.
b. Any reservations, easements or other areas of public or special use which affect the subject property.
c. Section, block and lot numbers written on the subject property and all adjoining properties, including the names of the record owners of such adjoining properties.

INFORMATION TO BE SHOWN ON THE SITE DEVELOPMENT PLAN

a. Title of development, date and revision dates if any, north point, scale, name and address of record owner of property, and of the licensed engineer, architect, landscape architect, or surveyor preparing the site plan.
b. Existing and proposed contours at a maximum vertical interval of two (2) feet.
c. Location and identification of natural features including rock outcrops, wooded areas, single trees with a caliper of six (6) or more inches measured four (4) feet above existing grade, water bodies, water courses, wetlands, soil types, etc.
d. Location and dimensions of all existing and proposed buildings, retaining walls, fences, septic fields, etc.
e. Finished floor level elevations and heights of all existing and proposed buildings.
f. Location, design, elevations, and pavement and curbing specifications, including pavement markings, of all existing and proposed sidewalks, and parking and truck loading areas, including access and egress drives thereto.
g. Existing pavement and elevations of abutting streets, and proposed modifications.
h. Location, type and design of all existing and proposed storm drainage facilities, including computation of present and estimated future runoff of the entire tributary watershed, at a maximum density permitted under existing zoning, based on a 100 year storm.
i. Location and design of all existing and proposed water supply and sewage disposal facilities.
j. Location of all existing and proposed power and telephone lines and equipment, including that located within the adjoining street right-of-way. All such lines and equipment must be installed underground.
k. Estimate of earth work, including type and quantities of material to be imported to or removed from the site.
l. Detailed landscape plan, including the type, size, and location of materials to be used.
m. Location, size, type, power, direction, shielding, and hours of operation of all existing and proposed lighting facilities.
n. Location, size, type, and design of all existing and proposed business and directional signs.
o. Written dimensions shall be used wherever possible.
p. Signature and seal of licensed professional preparing the plan shall appear on each sheet.
q. Statement of approval, in blank, as follows:

Approved by Resolution of the Beacon Planning Board
on the _____ day of _____, 20_____
subject to all conditions as stated therein

_____ _____
Chairman, City Planning Board **Date**

APPLICATION PROCESSING RESTRICTION LAW

Affidavit of Property Owner

Property Owner: Mirbeau of Beacon LLC

If owned by a corporation, partnership or organization, please list names of persons holding over 5% interest.
The Mirbeau Companies LLC

List all properties in the City of Beacon that you hold a 5% interest in:
7 Craig House Lane, 668 Wolcott Avenue

Applicant Address: 433 Broadway STE 203, Saratoga Springs, NY 12866

Project Address: 7 Craig House Ln, Beacon, NY 12508

Project Tax Grid # 6054-13-001258

Type of Application Special Use Permit, Site Plan Approval

Please note that the property owner is the applicant. "Applicant" is defined as any individual who owns at least five percent (5%) interest in a corporation or partnership or other business.

I, Mirbeau of Beacon LLC, by Jonathan Dal Pos, the undersigned owner of the above referenced property, hereby affirm that I have reviewed my records and verify that the following information is true.

1. No violations are pending for ANY parcel owned by me situated within the City of Beacon — JD
2. Violations are pending on a parcel or parcels owned by me situated within the City of Beacon — -----
3. ALL tax payments due to the City of Beacon are current — JD
4. Tax delinquencies exist on a parcel or parcels owned by me within the City of Beacon — JD
5. Special Assessments are outstanding on a parcel or parcels owned by me in the City of Beacon — -----
6. ALL Special Assessments due to the City of Beacon on any parcel owned by me are current — JD

Signature of Owner

LLC Member, The Mirbeau Companies LLC

Title if owner is corporation

Office Use Only:	NO	YES	Initial
Applicant has violations pending for ANY parcel owned within the City of Beacon (Building Dept.)	✓		EG
ALL taxes are current for properties in the City of Beacon are current (Tax Dept.)		X	
ALL Special Assessments, i.e. water, sewer, fines, etc. are current (Water Billing)		X	

FOR OFFICE USE ONLY
Application #

CITY OF BEACON

1 Municipal Plaza, Beacon, NY

Telephone (845) 838-5000 • http://cityofbeacon.org/

ENTITY DISCLOSURE FORM

(This form must accompany every land use application and every application for a building permit or certificate of occupancy submitted by any person(s))

Disclosure of the names and addresses of all persons or entities owning any interest or controlling position of any Limited Liability Company, Partnership, Limited Partnership, Joint Venture, Corporation or other business entity (hereinafter referred to as the "Entity") filing a land-use application with the City is required pursuant to Section 223-62 of the City Code of the City of Beacon. Applicants shall submit supplemental sheets for any additional information that does not fit within the below sections, identifying the Section being supplemented.

SECTION A

Name of Applicant: Mirbeau of Beacon LLC

Address of Applicant: 433 Broadway STE 203, Saratoga Springs, NY 12866

Telephone Contact Information: 315-217-4164 (Jonathan Dal Pos)

SECTION B. List all owners of record of the subject property or any part thereof.

Name	**Residence or Business Address**	**Telephone Number**	**Date and Manner title was acquired**	**Date and place where the deed or document of conveyance was recorded or filed.**
The Mirbeau Companies LLC	433 Broadway STE 203, Saratoga Springs, NY 12866	315-217-4164	Purchase, February 18, 2022	Dutchess County Clerk, Feb. 2022

SECTION B. Is any owner of record an officer, elected or appointed, or employee of the City of Beacon or related, by marriage or otherwise, to a City Council member, planning board member, zoning board of appeals member or employee of the City of Beacon ?

☐ **YES** ☒ **NO**

If yes, list every Board, Department, Office, agency or other position with the City of Beacon with which a party has a position, unpaid or paid, or relationship and identify the agency, title, and date of hire.

Agency	**Title**	**Date of Hire, Date Elected, or Date Appointed**	**Position or Nature of Relationship**

SECTION C. If the applicant is a contract vendee, a duplicate original or photocopy of the full and complete contract of purchase, including all riders, modification and amendments thereto, shall be submitted with the application.

SECTION D. Have the present owners entered into a contract for the sale of all or any part of the subject property and, if in the affirmative, please provide a duplicate original or photocopy of the fully and complete contract of sale, including all riders, modifications and amendments thereto.

☐ **YES** ☒ **NO**

I, Jonathan Dal Pos being first duly sworn, according to law, deposes and says that the statements made herein are true, accurate, and complete.

(Print) Jonathan Dal Pos

(Signature) 

CITY OF BEACON
SITE PLAN SPECIFICATION FORM

Name of Application: Preliminary Discussion for Special Use Permit

PLEASE INDICATE WHETHER THE SITE PLAN DRAWINGS SHOW THE SUBJECT INFORMATION BY PLACING A CHECK MARK IN THE APPROPRIATE BOXES BELOW.	YES	NO
The site plan shall be clearly marked "Site Plan", it shall be prepared by a legally certified individual or firm, such as a Registered Architect or Professional Engineer, and it shall contain the following information:	X	
LEGAL DATA		
Name and address of the owner of record.		X
Name and address of the applicant (if other than the owner).	X	
Name and address of person, firm or organization preparing the plan.		X
Date, north arrow, and written and graphic scale.	X	
NATURAL FEATURES		
Existing contours with intervals of two (2) feet, referred to a datum satisfactory to the Planning Board.	X	
Approximate boundaries of any areas subject to flooding or stormwater overflows.		X
Location of existing watercourses, wetlands, wooded areas, rock outcrops, isolated trees with a diameter of eight (8) inches or more measured three (3) feet above the base of the trunk, and any other significant existing natural features.		X
EXISTING STRUCTURES, UTILITIES, ETC.		
Outlines of all structures and the location of all uses not requiring structures. Paved areas, sidewalks, and vehicular access between the site and public streets.		X
Locations, dimensions, grades, and flow direction of any existing sewers, culverts, water lines, as well as other underground and above ground utilities within and adjacent to the property.		X
Other existing development, including fences, retaining walls, landscaping, and screening.		X
Sufficient description or information to define precisely the boundaries of the property.	X	
The owners of all adjoining lands as shown on the latest tax records.		X
The locations, names, and existing widths of adjacent streets and curb lines.		X
Location, width, and purpose of all existing and proposed easements, setbacks, reservations, and areas dedicated to private or public use within or adjacent to the properties.		X

CITY OF BEACON
SITE PLAN SPECIFICATION FORM

Name of Application: Mirbeau of Beacon LLC

PLEASE INDICATE WHETHER THE SITE PLAN DRAWINGS SHOW THE SUBJECT INFORMATION BY PLACING A CHECK MARK IN THE APPROPRIATE BOXES BELOW.		
	YES	**NO**
The site plan shall be clearly marked "Site Plan", it shall be prepared by a legally certified individual or firm, such as a Registered Architect or Professional Engineer, and it shall contain the following information:	X	
LEGAL DATA		
Name and address of the owner of record.	X	
Name and address of the applicant (if other than the owner).	X	
Name and address of person, firm or organization preparing the plan.	X	
Date, north arrow, and written and graphic scale.	X	
NATURAL FEATURES		
Existing contours with intervals of two (2) feet, referred to a datum satisfactory to the Planning Board.	X	
Approximate boundaries of any areas subject to flooding or stormwater overflows.	X	
Location of existing watercourses, wetlands, wooded areas, rock outcrops, isolated trees with a diameter of eight (8) inches or more measured three (3) feet above the base of the trunk, and any other significant existing natural features.	X	
EXISTING STRUCTURES, UTILITIES, ETC.		
Outlines of all structures and the location of all uses not requiring structures. Paved areas, sidewalks, and vehicular access between the site and public streets.	X	
Locations, dimensions, grades, and flow direction of any existing sewers, culverts, water lines, as well as other underground and above ground utilities within and adjacent to the property.	X	
Other existing development, including fences, retaining walls, landscaping, and screening.	X	
Sufficient description or information to define precisely the boundaries of the property.	X	
The owners of all adjoining lands as shown on the latest tax records.	X	
The locations, names, and existing widths of adjacent streets and curb lines.	X	
Location, width, and purpose of all existing and proposed easements, setbacks, reservations, and areas dedicated to private or public use within or adjacent to the properties.	x	

PROPOSED DEVELOPMENT	YES	NO
The location, use and design of proposed buildings or structural improvements.	X	
The location and design of all uses not requiring structures, such as outdoor storage (if permitted), and off-street parking and unloading areas.	X	
Any proposed division of buildings into units of separate occupancy.	X	
The location, direction, power, and time of use for any proposed outdoor lighting.	X	
The location and plans for any outdoor signs.	X	
The location, arrangement, size(s) and materials of proposed means of ingress and egress, including sidewalks, driveways, or other paved areas.	X	
Proposed screening and other landscaping including a planting plan and schedule prepared by a qualified individual or firm.	X	
The location, sizes and connection of all proposed water lines, valves, and hydrants and all storm drainage and sewer lines, culverts, drains, etc.	X	
Proposed easements, deed restrictions, or covenants and a notation of any areas to be dedicated to the City.	X	
Any contemplated public improvements on or adjoining the property.	X	
Any proposed new grades, indicating clearly how such grades will meet existing grades of adjacent properties or the street.	X	
Elevations of all proposed principal or accessory structures.	X	
Any proposed fences or retaining walls.	X	
MISCELLANEOUS		
A location map showing the applicant's entire property and adjacent properties and streets, at a convenient scale.	X	
Erosion and sedimentation control measures.	X	
A schedule indicating how the proposal complies with all pertinent zoning standards, including parking and loading requirements.	X	
An indication of proposed hours of operation.	X	
If the site plan only indicates a first stage, a supplementary plan shall indicate ultimate development.	X	

For all items marked "NO" above, please explain below why the required information has not been provided:

Applicant/Sponsor Name: Mirbeau of Beacon LLC

Signature:

Date: 3/29/22

BNR
Berlandi Nussbaum & Reitzas LLP
Attorneys at Law

NEW YORK CITY OFFICE
125 PARK AVENUE
25TH FLOOR
NEW YORK, NY 10017

WHITE PLAINS OFFICE
445 HAMILTON AVENUE
14TH FLOOR
WHITE PLAINS, NY 10601

PAWLING OFFICE
527 ROUTE 22
SUITE 2
PAWLING, NY 12564

TELEPHONE (212) 804-6329
FACSIMILE (646) 461-2312

WWW.BNRLLP.COM

Please respond to Pawling Office

March 29, 2022

By Electronic Transmission and Hand Delivery
Hon. John Gunn,
Chairman, and Members of the Planning Board of the City of Beacon
One Municipal Plaza, Suite One
Beacon, NY 12508

Re: Mirbeau of Beacon, LLC, Special Use Permit Application:
7 Craig House Lane, Beacon, New York 12508
Tax Parcel ID 6054-13-001268

Dear Chairman Gunn and Members of the Planning Board:

As you know from our pre-submission conference before the Planning Board on December 14, 2021, the undersigned represents Mirbeau of Beacon, LLC, (the "Applicant"), in connection with the proposed adaptive reuse, restoration and revitalization of the former Howland Estate property as a new hospitality spa/resort in the City of Beacon. The subject property is located at 7 Craig House Lane (Tax Map ID 6054-13-001258), and consists of +/-64.35 acres with direct frontage on and access to NYS Route 9D a/k/a Wolcott Avenue (the "Premises). The Premises is currently improved with the former Howland Mansion, the former Tioronda School, two gate houses and a building that was constructed in 1978 to serve the former mental health use when it was the Craig House, as well as related parking areas. The Craig House psychiatric facility closed in 1999, and all of the buildings on the Premises have remained vacant and unused since that time.

As a follow-up to our pre-submission conference, enclosed herein please find five (5) sets of application materials, including the following:

- Special Use Permit Application, prepared by Mirbeau of Beacon LLC, dated March 29, 2022
- A Full Environmental Assessment Form ("EAF"), with Part 1 completed and verified by the Applicant, dated March 26, 2022, together with a draft Part 2 submitted for discussion purposes only.

BNR

- Architecture Plans/Renderings by Arrowstreet Architecture& Design, dated March 29, 2022.
- A set of site plan drawings, consisting of eighteen (18) sheets, dated March 29, 2022, prepared by Hudson Land Design Professional Engineering, P.C. and LRC Landscape Architecture.
- Threatened and Endangered Species Habitat Suitability Assessment Report prepared by Ecological Solutions, LLC, dated March 25, 2022.
- Traffic Impact Study, prepared by Colliers Engineering & Design, dated March 28, 2022.

PROJECT DESCRIPTION: For over a century and a half the famed estate of Joseph and Eliza Howland, known as "Tioronda" had been a place of healing – a sanctuary for physical and mental wellness in a variety of forms and by a number of notable individuals. Uninhabited for over 20 years, the Applicant, a well-established and celebrated hospitality and wellness organization, now proposes to bring its unique approach to the historic use of the Premises; reimagining it in a modern, elegant form.

Specifically, the project as proposed by the Applicant will revitalize this long dormant property through adaptive re-use and restoration of existing buildings, and by adding new buildings and improvements, including a hotel with accessory uses, a spa, fine dining restaurant, event facilities, estate-caliber gardens, water features and other site amenities (the "Project"). The Project will consist of the restoration, renovation and expansion of the existing mansion to principally provide amenities associated with the spa and a restaurant. The Project includes four (4) hotel rooms in the mansion, eight (8) grotto hotel rooms within the proposed mansion expansion and sixty-three (63) hotel rooms to be located in a newly constructed, four (4) story spa château building, which includes a proposed spa at the garden level. This new spa chateau building will be consistent with the Mansion in design and dimension and will be well screened relative to the Route 9D corridor (and Grandview Avenue), so as not to be visually obtrusive from public roads. It will replace the existing contemporary, institutional building to the south of the mansion built in the 1970s for the former Craig House sanitarium, which will be demolished. Project specifics are set forth in the enclosed Memorandum of Arrowstreet Architecture & Design, dated March 29, 2022.

FUTURE PHASES:
Resort Rental Cottages: The 6.5 acre parcel delineated on the site plan will be subdivided from the Premises for future related development by an affiliated entity, and will have a density limited to a maximum of fifteen (15) resort-related rental cottages, with two (2) to three (3) bedrooms in each cottage.

Resort Farm: A passive, resort-servicing micro-farm will be constructed at the Southeast corner of the Premises along Grandview Ave. This will include lavender and spice fields and production of on-site farm to table products. The proposed future farm area is shown on the accompanying site plan drawings.

BNR

Tioronda School Event Facility and Pond Recreation Area: The entire west side of the property found at the bottom of the steep slope and along the Fishkill Creek will be planned to accommodate a wellness and outdoor recreation center to be used by the resort guests. This will include trails, tennis games, sitting areas with views of the Fishkill creek and the re-use of the former School.

HISTORICAL: As summarized by the Project Architect at our last appearance, and as noted above, the Applicant recognizes the historic nature of the Premises and intends to undertake preservation and restoration of the existing historic buildings on-site, including the original Tioronda/Howland Estate House, the Tioronda School, the Tennis shed and bottle sterilizer and the two gate houses, including the one formerly known as "Dr. Bennet's Cottage".

The Applicant further understands the historic background of the horticulture of the former estate gardens, and intends to create landscaping that will be consistent with the original estate features of the Premises, while eliminating overgrowth and other undesirable landscape conditions presently extant thereon (attributed to dormancy/neglect). All existing historic specimen trees capable of being saved will be preserved, including Sargent's famed Weeping Hemlocks. The Site Plan has also been prepared to respect the sensitive historical and archaeological features found on the site.

TRAFFIC: The Project will utilize existing driveways and road beds, but also proposes a widening of the existing access point on Route 9D/Wolcott Avenue to create a new left turning lane, and a new secondary fire egress from the proposed chateau spa building to the south on Route 9D/Wolcott Avenue. Based upon the studies and conclusion of the Colliers Traffic Impact Study submitted herewith, the Project is not expected to have a significant impact on levels of service and delays at the area intersections. In sum, the Project will not cause significant traffic congestion, impair pedestrian safety, or overload existing roads.

PARKING: Parking will be self-contained and no parking variances or waivers will be needed for the Project. Pursuant to Section 223.26 F and Section 223-14.1.C of the Beacon Code, the Project requires a minimum of 213 parking spaces for the various proposed uses. The Project proposes a total of 272 spaces in the immediate vicinity of the hotel, spa and restaurant for use by guests of those facilities, as well designated employee parking. An additional 25 parking spaces will be provided in the vicinity of the Tioronda School. The Colliers Report Parking Analysis concludes that there will be sufficient on-site parking to accommodate the parking demand for the Project.

UTILITIES: The Applicant has submitted a Water & Sewer Demand analysis to the City and received confirmation that the existing services have adequate capacity to serve the site. The development plan does reflect the need for additional infrastructure improvements on 9D, Grandview Ave, and South Ave will be made to provide connection to the site. An extensive distribution of these utilities will be constructed on site to serve the Project and any future phases.

WETLAND: The Applicant has completed an in-depth study of the Wetlands found on the western portion of the site surrounding the existing Ponds. The Wetlands have been identified with the criteria established by the Army

BNR

Corps of Engineers. There is no planned improvements or disturbance in this area that creates the need for mitigation.

HABITAT: A thorough review of all species identified in the EAF has been completed. It has been concluded that there will no impact as part of the site development. This is further discussed in the Ecological Solutions LLC Report included in this submission.

ZONING AND COMPREHENSIVE PLAN: Pursuant to the City of Beacon Zoning Code and current Zoning Map, the Premises for the Project is currently classified within the Historic District and Landmark Overlay (HDLO) Zone, which overlays the underlying R1-80 Zone applicable to single-family residential development. As more fully set forth in §223.24.7 B. of the Beacon Code, the HDLO allows hotels and hotel accessory uses and structures by special permit from the Planning Board, provided they are appropriate to the structure(s)/site, compatible with the neighborhood and are located on a road that can accommodate increased traffic.

Section 223-24.7 contemplates development in the HDLO at a scale to accommodate uses permitted under Subsection B. such as hotel and hotel accessory uses, with the Planning Board looking at the following as part of its' review: building size, building configuration, the nature of proposed preservation and/or adaptive reuse of the buildings, and/or adaptive reuse of the buildings, and the historic nature and context of the buildings and the need for preservation and/or adaptive reuse

As previously noted, this Project will re-activate and revitalize a large site that has been dormant for over 20 years. The location, size, nature and intensity of the Project is in harmony with appropriate and orderly development within the HDLO District, which was established to facilitate and incentivize the rehabilitation and reuse of historic buildings, structures and sites. This is precisely what the Applicant is proposing with this Project.

In accordance with the express purpose of the HDLO, the Applicant proposes to restore and adaptively re-use historic buildings on the Premises for hotel and hotel accessory uses, and in a way that is consistent with the City's 2017 Comprehensive Plan Update, which in turn supports the revitalization and restoration of the Premises (See City of Beacon 2017 Comprehensive Plan, pp. 30, 117-118).

Given the size of the site in relation to the Project, and the location of the site and Project with respect to access to Route 9D/Wolcott Avenue, the Project is an appropriate development within the HDLO , and the adaptive reuse of the site is not expected to have any detrimental impact on access, traffic, parking, infrastructure, or adjacent areas.

As discussed above, the Premises was specifically zoned to encourage the preservation of historic buildings and structures and to permit the establishment of hotels and hotel accessory uses, as the Applicant now proposes with this Project. In addition, the Project's scale and proposed landscaping is appropriate for the Site, and will not hinder appropriate development of adjacent land or buildings.

BNR

Finally, the Project is not anticipated to generate any noise, fumes or vibrations that will be objectionable to nearby properties, either during renovation/restoration, or once constructed and operational.

Based on the above and the application materials submitted herewith, the Applicant believes that the Project will meet the standards for a Special Permit under Section 223.18.(B)(1) and Section 223-24.7(D) (1) for the HDLO, and will be prepared to fully discuss this submission with you at the Planning Board meeting scheduled on April 12, 2022.

Thank you for your consideration of the foregoing.

Very truly yours,

BERLANDI NUSSBAUM & REITZAS LLP

By: _____
Daniel F. Leary

Enclosures

cc: Jennifer L Gray, Esq., Planning Board Attorney
Dave Buckley, Building Inspector
John Clarke, City of Beacon Planner
Arthur R. Tully. P.E., City Engineer
John Russo, P.E., City of Engineer
Mirbeau of Beacon, LLC

EXISTING CONDITION



DESIGN VISION



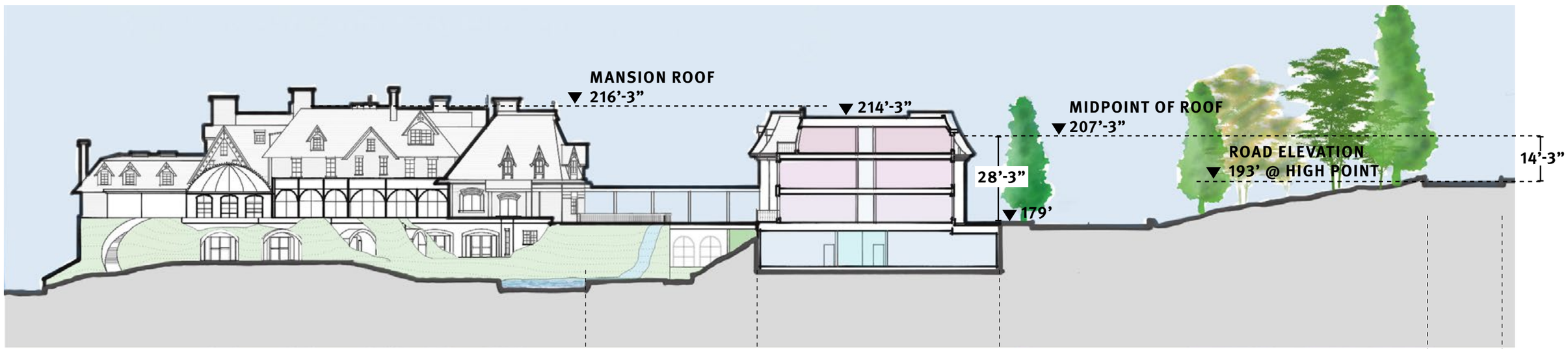
EXISTING CONDITION

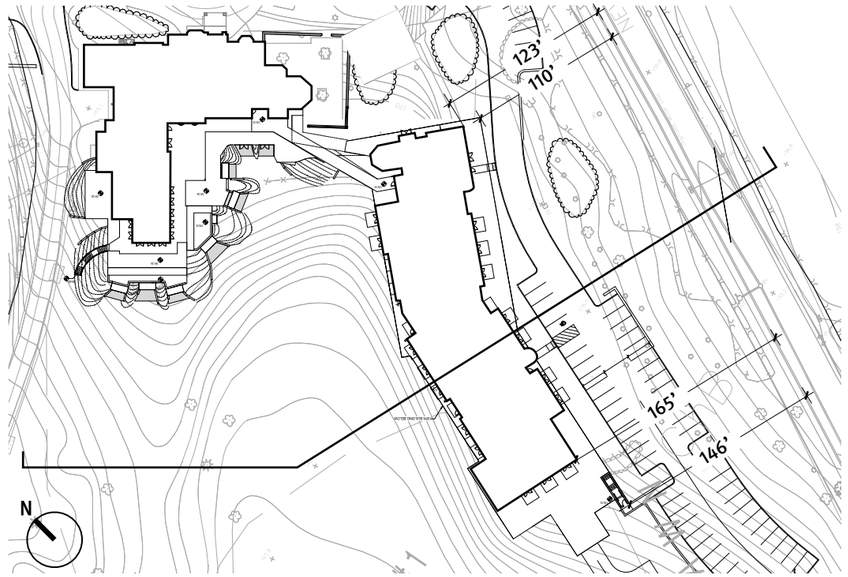


DESIGN VISION



SITE SECTION
ROUTE 9D AND HOTEL ADDITION





Preliminary Stormwater Pollution Prevention Plan for Mirbeau Beacon Inn & Spa

Prepared for:
Mirbeau Beacon, LLC.
433 Broadway STE 203
Saratoga Springs, NY 12866

March 29, 2022

PRELIMINARY

Prepared by:
Hudson Land Design Professional Engineering, P.C.
174 Main Street
Beacon, NY 12508 (Main Office and Mailing Address)
13 Chambers Street
Newburgh, NY 12550 (Satellite Office)

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Overview 1
1.2 Land Disturbance 2
1.2.1 Special Habitat Considerations 2

2.0 PROJECT DESCRIPTION 3
2.1 Project Location 3
2.2 Project Scope and Description 3
2.3 Surface Water Bodies 4
2.3.1 Wetlands 4
2.3.2 Streams 4
2.3.3 Floodplains 4
2.4 State Historic Preservation Office (SHPO) 5
2.4.1 Archaeological Sensitive Area 5

3.0 NOTICE OF INTENT 5

4.0 SOILS 5

5.0 RAINFALL 6
5.1 Overview 6
5.2 Rainfall Event Sizing Criteria 6

6.0 STORMWATER ANALYSIS AND MANAGEMENT 7
6.1 Methodology 7
6.1.1 Hydrologic Analysis 7
6.1.2 Stormwater Design Points 7
6.2 Pre-Development Watershed Conditions 7
6.3 Post-Development Watershed Conditions 8
6.3.1 Downstream Analysis 8
6.4 Hydrologic Review 10
6.5 Stormwater Management System 10
6.6 Green Infrastructure for Stormwater Management 11
6.6.1 Green Infrastructure Practices 11
6.6.2 Five Step Process for Stormwater Site Planning and Selection Design 12
6.7 Qualitative Practices 12
6.7.2 Pre-Treatment Practices 14
6.7.3 Treatment Practices 14
6.8 Runoff Reduction Volume (RRv) 15
6.9 Soil Restoration 17
6.9.1 Soil Restoration Methods 18

7.0 EROSION AND SEDIMENT CONTROL 18
7.1 Overview 18
7.2 Temporary Erosion and Sediment Control Measures 19
7.2.1 Silt Fence 19
7.2.2 Stabilized Construction Entrance 19
7.2.3 Check Dams 19
7.2.4 Inlet Protection 19
7.2.5 Temporary Channels 20
7.2.6 Sediment Traps & Sediment Basins 20
7.2.7 Water Bars 20
7.2.8 Straw Bale Barriers 21
7.2.9 Temporary Soil Stockpiles 21
7.2.10 Dust Control 21
7.2.11 Temporary Soil Stabilization Practices 21
7.3 Permanent Erosion and Sediment Control Measures 22
7.3.1 Outlet Protection 22
7.3.2 Permanent Soil Stabilization Practices 22
7.4 Erosion and Sediment Control Sequencing Schedule 23
7.5 Maintenance Schedules 23
7.6 Construction Staging Areas 24
7.7 Site Assessments, Inspections and Reporting 24
7.7.1 Prior to Construction 24
7.7.2 During Construction 24
7.7.3 Quarterly Report 26
7.7.4 End of Term 26
7.8 Construction Logbook 27
7.9 Long Term Operation and Maintenance Plan of Stormwater System and Landscape Areas 27
7.9.1 Catch Basins and Piping 27
7.9.2 Hydrodynamic Separators (Contech CDS® Units) 27
7.9.3 Infiltration Basins 27
7.9.4 Bioretention Areas 27
7.9.5 Pre-treatment Forebays and Plunge Pools 28

8.0 GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES 28
8.1 Waste Materials 28
8.2 Chemical 28
8.3 Fuels and Oil 28
8.4 Fertilizers 28
8.5 Paint 29
8.6 Sanitary Waste Facilities 29
8.7 Container Disposal 29
8.8 Concrete and Asphalt Trucks 29
8.9 Site Supervisor 29

9.0 SWPPP AMENDMENT 29

10.0 CONTRACTOR CERTIFICATIONS 30

11.0 OWNER/OPERATOR CERTIFICATION 30

12.0 CONCLUSIONS 30

APPENDICES

APPENDIX A: NOTICE OF INTENT AND MS4 ACCEPTANCE
APPENDIX B: SOILS DATA
APPENDIX C: RAINFALL DATA, NYSDEC ERM, FLOOD MAP, SHPO AND WETLAND MAP
APPENDIX D: FISHKILL CREEK OVERALL WATERSHED
APPENDIX E: POST-DEVELOPMENT HYDROCAD MODEL
APPENDIX F: STORMWATER MANAGEMENT PRACTICE DESIGN
APPENDIX G: PRE-CONSTRUCTION SITE ASSESSMENT CHECKLIST
APPENDIX H: STORMWATER CONSTRUCTION INSPECTION CHECKLISTS
APPENDIX I: CONTRACTOR AND SUBCONTRACTOR CERTIFICATIONS
APPENDIX J: QUALIFIED PROFESSIONAL'S CERTIFICATION
APPENDIX K: OWNER/OPERATOR CERTIFICATION
APPENDIX L: POST-DEVELOPMENT MAINTENANCE AND INSPECTION CHECKLIST
APPENDIX M: CONSTRUCTION INSPECTION REPORT
APPENDIX N: NOTICE OF TERMINATION
APPENDIX O: DRAINAGE MAPS

1.0 INTRODUCTION

1.1 Overview

This preliminary Stormwater Pollution Prevention Plan (SWPPP) has been developed in accordance with New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001, which authorizes stormwater discharges to surface waters of the State from the following construction activities identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. Construction activities involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land; excluding routine maintenance activity that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. Construction activities involving soil disturbances of less than one (1) acre where the Department has determined that a SPDES permit is required for stormwater discharges based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to surface waters of the State.
3. Construction activities located in the New York City, East of Hudson watershed, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

This project qualifies for SPDES coverage under provision 1 as stated above.

The objectives of this SWPPP are as follows:

- To develop a sediment and erosion control plan in accordance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, which implements best management practices to stabilize disturbed areas, protect off site areas and sensitive areas and minimize the transport of sediment.
- To demonstrate that the resulting stormwater runoff from the development exiting the site will not adversely impact offsite properties, stormwater conveyance systems or receiving water bodies, and that temporary and permanent stormwater systems and facilities are designed in accordance with the latest revision to the New York State Stormwater Management Design Manual (SDM), January 2015.
- To demonstrate that runoff reduction measures have been implemented into the design of the site.
- To demonstrate that the required runoff from the development is captured and treated through approved water quality measures.

Construction activities are not permitted to begin until such time that authorization is obtained under the General Permit. This project is not located within a Municipal Separate Storm Sewer System (MS4) area. Authorization to commence construction activities may commence seven (7) days following receipt of the Notice of Intent (NOI).

A copy of the General Permit, SWPPP, NOI, NOI acknowledgment letter, inspection reports and accompanying plans shall be maintained on-site from the date of initiation of construction activities until final stabilization of all disturbed areas has been achieved and the Notice of Termination (NOT) has been submitted.

1.2 Land Disturbance

Per the General Permit, no more than five (5) acres of land disturbance may occur at any one time without written approval from the NYSDEC. At a minimum, the owner or operator must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The owner or operator shall have a qualified inspector conduct at least two (2) site inspections every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has been temporarily or permanently ceased, temporary and/or permanent soil stabilization measures shall be installed and/or implemented within seven (7) days from the date the soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the most current version of the technical standard, New York State Standards and Specifications for Erosion and Sediment Control.

c. The owner or operator shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The owner or operator shall install any additional site-specific practices needed to protect water quality.

Disturbance of more than five (5) acres at any one time is not anticipated for this project. Phasing of the construction activities is planned to limit the amount of disturbance at any one time.

1.2.1 Special Habitat Considerations

The NYSDEC EAF Mapper identifies the following species as a species of concern, threatened or endangered: Atlantic Sturgeon, Timber Rattlesnake, Spongy-Leaved Arrowhead, Bald Eagle, Pied-billed Grebe, Short nose Sturgeon. An onsite habitat assessment was conducted on the site. No species were identified on the site, nor was any habitat found ; however, suitable habitat was found for the Northern Long Eared Bat and Indiana Bat.

1.2.1.1 Northern Long Eared Bat and Indiana Bat

The NYSDEC Environmental Resource Mapper indicated that endangered species reside within the site but are not specific on the particular species present. Need to contact the local NYSDEC Regional Office for information.
The NYSDEC Environmental Resource Mapper does not indicate Northern Long Eared Bat or Indiana Bat on or near the property. Therefore, there will be no impact to their habitat.

In the unlikely event that either bat is discovered on the site, tree removal shall consider the habitat of the Northern Long Eared Bat and the Indiana Bat. To protect these bats from unintentional harm,

forest management practices shall take place during the hibernation period, November 1 through April 1, when bats are not expected to be present. However, the DEC places no restrictions on tree cutting unless a project is located within 5 miles of a known hibernation site or 1.5 miles of a documented summer occurrence. For projects requiring the removal of trees, the DEC recommends the following actions:

- Leave snag and cavity trees uncut unless their removal is necessary for protection of human life and property.
- If any bats are observed flying from a tree, or on a tree that has been cut, tree management activities in the area should be suspended and DEC Wildlife staff notified as soon as possible. A permit may be required to continue work, or you may have to wait until November 1 to resume activities.

Information in regard to the Long Eared Bat and Indiana Bat can be found within Appendix C.

2.0 PROJECT DESCRIPTION

2.1 Project Location

The project site is located at 7 Craig House Lane, in the City of Beacon, Dutchess County, New York and consists of 64.35 aacres. The project site is located on the west side of Wolcott Avenue (NYS Route 9D) and is bounded by Grandview and South Avenue on its southerly property line. The Dutchess County Parcel viewer website lists the parcel's tax parcel number is 6054-13-001258.

The project site is previously improved and consists of the former Howland Mansion, the former Tioranda School, two gate houses and a building that was constructed in 1978 to serve the former mental health use when it was the Craig House, as well as related parking areas. The Craig House psychiatric facility closed in 1999, and all of the buildings on the premises have remained vacant and unused since that time.

The remaining existing site cover consists of a mixture of forested areas, open grass fields, specimen trees, some ponds with wetlands and Fishkill Creek binds its westerly property line.

2.2 Project Scope and Description

The scope of the project will be limited only to the 7 Craig House Lane Lot. No work is proposed on the parcel east of Wolcott Avenue (NYS Route 9D). Specifically, the project as proposed by the Applicant will revitalize this long dormant property through adaptive re-use and restoration of existing buildings, and by adding new buildings and improvements, including a hotel with accessory uses, a spa, fine dining restaurant, event facilities, estate-caliber gardens, water features and other site amenities (the "Project"). The Project will consist of the restoration, renovation and expansion of the existing mansion to principally provide amenities associated with the spa and a restaurant. The Project includes four (4) hotel rooms in the mansion, eight (8) grotto hotel rooms within the proposed mansion expansion and sixty-three (63) hotel rooms to be located in a newly constructed, spa chateau building, which includes a proposed spa at the garden level. New asphalt

parking areas will be constructed to serve the proposed use. A new maintenance building will be constructed which will provide storage of equipment and offices for buildings and grounds staff.

Future uses include Resort Rental Cottages: The 6.5 acre parcel delineated on the site plan will be subdivided from the Premises for future related development by an affiliated entity, and will have a density limited to a maximum of fifteen (15) resort-related rental cottages, with two (2) to three (3) bedrooms in each cottage. Resort Farm: A passive, resort-servicing micro-farm will be constructed at the Southeast corner of the Premises along Grandview Ave. This will include lavender and spice fields and production of on-site farm to table products. The proposed future farm area is shown on the accompanying site plan drawings.

The proposed project at full build-out will disturb approximately ±10.5 acres. The total drainage study area is ±193 square miles. The proposed development will increase impervious area ±0.91 acres in comparison to the pre-developed area.

2.3 Surface Water Bodies

2.3.1 Wetlands

The NYSDEC Resource Mapper indicates that there are no State regulated wetlands on the site. The database also indicates that the nearest State regulated wetland is located about 1,114 feet west of the site's westernmost boundary, this places the site well beyond the nearest State wetland's 100-foot buffer.

The NWI website indicates there are NWI freshwater wetlands, ponds and riverines present on and adjacent to the site. Of the two (2) freshwater ponds on the site's western side near its border with the Fishkill Creek, the DEC map indicates that that southern pond is a C class waterbody under regulation 862-237. The northern pond is classified by the NWI database as a PUBFh freshwater pons with an area of 0.83 acres. No disturbances are proposed to the on-site wetlands

2.3.2 Streams

NWI mapping and the NYSDEC mapper indicates no streams located on the premises. However, Fishkill Creek borders the westerly property line of the parcel. The DEC map indicates that the Fishkill Creek as a Class C stream under regulation 862-237. No disturbances are proposed to the bed or banks of the Fishkill Creek.

2.3.3 Floodplains

Based upon review of the National Flood Insurance Program Flood Insurance Rate Map panels 36027C0576E and 36027C0577E, dated May 2, 2012, for the City of Beacon, New York, it was found that the western portion of the site (along the Fishkill Creek and on-site ponds) is situated along a Zone AE Floodway. The remainder, eastern portion of the site was found to be on an area of minimal flood hazard (Zone X). Please refer to Appendix C for supporting information and details regarding flood hazard zones on site (FEMA FIRMette).

2.4 State Historic Preservation Office (SHPO)

2.4.1 Archaeological Sensitive Area

This project is located within and is adjacent to survey archaeologic area according to the SHPO CRIS website. The site is also adjacent to National Register Building sites along its west and north boundaries according to the SHPO CRIS website. The CRIS site indicates that the existing gates houses, Tioranda School building and Hasbrook Mansion are eligible for historic status. The archaeologic sensitive area origin is approximately 1,865 feet northwest of the project's north boundary.

3.0 NOTICE OF INTENT

Prior to commencement of construction activities, the Owner/Operator shall submit a Notice of Intent (NOI) to the NYSDEC for authorization. The NYSDEC authorization schedule is as follows:

For construction activities that are not subject to the requirements of a regulated, traditional land use control MS4:

- Five (5) business days from the date the NYSDEC receives a complete NOI for construction activities with a SWPPP that has been prepared in conformance with the technical standards, or
- Sixty (60) business days from the date the NYSDEC receives a complete NOI for construction activities with a SWPPP that has not been prepared in conformance with the technical standards.

For construction activities that are subject to the requirements of a regulated, traditional land use control MS4:

- Five (5) business days from the date the NYSDEC receives a complete NOI and signed "MS4 SWPPP Acceptance" form.

The project area is under the control of a regulated MS4, therefore the NOI shall be submitted directly to the NYSDEC along with the MS4 SWPPP Acceptance Form. A draft completed NOI is included in Appendix A of this SWPPP.

4.0 SOILS

The hydrologic soil characteristics of the watershed areas were obtained from Web Soil Survey Mapping of Dutchess County, New York, and available Geographical Information Systems (GIS) and are as follows:

Symbol	Description	Hydrologic Soil Group
BeC	Bernardston silt loam, 8 to 15 percent slopes	C/D
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	B
DwB	Dutchess-Cardigan complex, undulating, rocky	B/C
HsA	Hoosic gravelly loam, nearly level	A
HsB	Hoosic gravelly loam, undulating	A

NwC	Nassau-Cardigan complex, rolling, very rocky	C/D
NwD	Nassau-Cardigan complex, hilly, very rocky	C/D

SOIL PROPERTIES

Symbol	Erosion Hazard (k)
BeC	0.32 - Slight
ChB	0.24 - Slight
DwB	0.32 - Slight
HsA	0.10 - Slight
HsB	0.10 - Slight
NwC	0.17 - Slight
NwD	0.17 - Slight

Supporting soils information is provided in Appendix B of this SWPPP.

5.0 RAINFALL

5.1 Overview

The rainfall data utilized in the analysis of the watershed was obtained from Extreme Precipitation Tables from the Northeast Regional Climate Center. Supporting information is provided in Appendix C of this SWPPP. The storm events are as follows:

Storm Event	24-Hour Rainfall (in)
1 - year	2.61
10 - year	4.72
25 - year	5.93
100 - year	8.40

Rainfall data is provided in Appendix C of this SWPPP.

5.2 Rainfall Event Sizing Criteria

The stream channel protection volume (Cpv) criteria, intended to protect stream banks from erosion, will be demonstrated by providing 24 hour extended detention of the Type III 1-year, 24-hour storm event, or by infiltrating the entire volume. When providing extended detention, the channel protection volume criterion is not required where the resulting diameter of the stormwater management basin orifice is less than three (3) inches with a trash rack. Cpv can be met by use of green infrastructure treatment practices described in greater detail in Section 6 of this report.

The overbank flood control (Qp) criteria, intended to prevent an increase in frequency and magnitude of out of bank flooding generated by new development, will be demonstrated by attenuating the Type III 10-year, 24-hour peak discharge rate to pre-development conditions. The overbank flood criteria can be waived if the project site discharges to a tidal water or fifth order stream.

The extreme flood control (Qf) criteria, intended to prevent the increased risk of flood damage from large storm events, maintain the boundaries of pre-development conditions, and protect the physical integrity of stormwater management practices, will be demonstrated by attenuating the Type III 100-year, 24 hour peak discharge rate to pre-development conditions. The extreme flood control criteria can be waived if the project site discharges to a tidal water or fifth order stream. The use of on-site green infrastructure stormwater treatment practices can mitigate post-developed Qp and Qf rates and volumes.

The pre and post-development runoff rates will be compared utilizing the Type III 1-year (channel protection), 10-year (overbank flood control), and 100-year (extreme flood control) year, 24-hour storm events. The pre- versus post-development analysis will include the analysis of the Qp and Qf storm events.

6.0 STORMWATER ANALYSIS AND MANAGEMENT

6.1 Methodology

6.1.1 Hydrologic Analysis

The HydroCAD stormwater modeling system computer program by Applied Microcomputer Systems will be used to analyze, design and document the complete drainage system. The program uses standard hydrograph generation and routing techniques based on the USDA-NRCS Technical Releases TR-20 and TR-55 to develop stormwater runoff rates and volumes.

The program determines the rate and volume of runoff based on inputs of the watershed area, and characteristics of the land including vegetative coverage, slope, soil type, and impervious area.

6.1.2 Stormwater Design Points

Design Points represent the location where the majority of runoff from an area exits the site. The same design points are identified in post-development conditions so that a comparison can be made between the pre-development and post-development conditions. Three design points for the project were selected, as follows:

Stormwater Discharge Points	
SDP	**Description**
1	Fishkill Creek at the Tioranda Bridge.

6.2 Pre-Development Watershed Conditions

The pre-developed site is broken into one overall Fishkill Creek watershed to the design point located at the Tioranda bridge which is summarized below:

Subcatchment 1 is comprised of approximately 193 square miles of Fishkill Creek watershed area including off-site and on-site areas tributary to DP 1. The offsite area consists of mostly wooded areas, open field areas, residential area and the City of Beacon. The on-site area is undeveloped wooded areas, wetlands, existing buildings and open grass fields. The subcatchment area contains soils in hydrologic soil groups A, B, C, & D. Runoff from the site travels via sheet flow, shallow concentrated flow and stream flow to DP 1. All flow from the site discharges to the Fishkill Creek and ultimately to DP 1.

Detailed stormwater calculations and routing for the pre-development conditions have been included in Appendix D.

The following table summarizes the pre-development watershed conditions:

Pre-Development Watershed Conditions					
Subcatchment	**Area (sq. mi.)**	**Cover**	**Average Curve #**	**Hydrologic Soil Group(s)**	**Time of Concentration**
1	193	Wooded, open fields, developed areas and water surface areas	N/A	A, B C, & D	N/A

6.3 Post-Development Watershed Conditions

6.3.1 Downstream Analysis

The project site is located at the mouth of the Fishkill Creek as it enters the Hudson River. The creek is a fourth order stream at this point with a 193 square mile watershed contributing to the design point. The 64.35 acre site is less than a fraction of a percent of the overall watershed of Fishkill creek. The overall Fishkill Creek watershed peak discharge rates occur at a much later time that the on-site peak discharge rates due to the much larger sized overall watershed. Therefore, the goal is to perform a downstream analysis to demonstrate that on-site peak "beats the peak" of the Fishkill Creek by occurring at earlier times than the Fishkill Creek, thereby not increasing the overall peak discharge of the Creek because they don't occur at the same time.

This project meets the downstream analysis criteria as defined in Section 4.10 of the NYS Stormwater Design Manual. Therefore Qp and Qf can be waived. The post-developed subcatchment areas are broken up to determine WQv, RRv and CPv only. Peak discharge rates of the site are not required.

The post-developed site is broken into six (6) on-site subcatchments. Stormwater treatment will be provided through three proposed bioretention basins and an underground infiltration/detention storage chamber system. The following is a description of the subcatchments:

Subcatchment 11 is comprised of ±5.39 acres of onsite area. Land cover consists of open grass field area with mature trees, proposed hotel/spa development and impervious areas. The subcatchment area contains soils in hydrologic soil group B. Runoff from the subcatchment travels via sheet flow, shallow concentrated flow and pipe flow to a proposed underground infiltration/detention chamber system. Discharge from the chamber system flows westerly through existing drainage ditches on the site to DP1.

Subcatchment 12 is comprised of ±2.45 acres of onsite area. Land cover consists of open grass field area with mature trees, hotel/spa development and impervious areas. The subcatchment area contains soils in hydrologic soil group B. Runoff from the subcatchment travels via sheet flow, shallow concentrated flow and pipe flow to a proposed bioretention basin. Discharge from the chamber system flows westerly through an existing drainage ditch on the site to Fishkill Creek, and ultimately to DP1.

Subcatchment 13 is comprised of ±0.38 acres of onsite area. Land cover consists of open grass field area with mature trees, 3 rental cottages and impervious areas. The subcatchment area contains soils in hydrologic soil groups B & C. Runoff from the subcatchment travels via sheet flow and shallow concentrated flow to a proposed bioretention basin. Discharge from the bioretention flows westerly through an existing drainage ditch on the site to Fishkill Creek, and ultimately to DP1.

Subcatchment 14 is comprised of ±0.18 acres of onsite area. Land cover consists of open grass field area with mature trees, 2 rental cottages and impervious areas. The subcatchment area contains soils in hydrologic soil group A. Runoff from the subcatchment travels via sheet flow and shallow concentrated flow to a proposed bioretention basin. Discharge from the bioretention flows westerly through an existing drainage ditch on the site to Fishkill Creek, and ultimately to DP1.

Subcatchment 15 is comprised of ±1.89 acres of future re-developed onsite area. Land cover consists of open grass field area with mature trees, the former Tioranda School building and impervious parking areas. The subcatchment area contains soils in hydrologic soil groups A & C. Runoff from the subcatchment travels via sheet flow and shallow concentrated flow to a proposed bioretention basin. Discharge from the bioretention flows westerly through an existing drainage ditch on the site to Fishkill Creek, and ultimately to DP1.

Subcatchment P is comprised of ±0.89 acres of self-contained onsite water garden area. The proposed water garden is a tiered recirculating waterbody system. Contributing drainage is the garden itself which does contain a small amount of impervious walkways and a small portion of building. The Land cover consists of open grass area, landscaped areas, open water and impervious areas. The subcatchment area contains soils in hydrologic soil group B. Runoff from the subcatchment travels via sheet flow and shallow concentrated flow to the water garden system. The water garden is a closed recirculating pump system that will only overflow during rain events. Discharge from the garden flows westerly through an existing drainage ditch on the site to Fishkill Creek, and ultimately to DP1.

Detailed stormwater calculations and routing for the post-development condition have been included in Appendix E.

The following table summarizes the post-development watershed conditions:

Post-Development Watershed Conditions					
Subcatchment	**Area (ac)**	**Cover**	**Average Curve #**	**Hydrologic Soil Group(s)**	**Time of Concentration**
11	5.39	Developed lawn/landscaped areas and impervious areas	To be provided	B	To be provided
12	2.45	Developed lawn/landscaped areas and impervious areas	To be provided	B	To be provided
13	0.38	Developed lawn/landscaped areas and impervious areas	To be provided	B & C	To be provided
14	0.18	Developed lawn/landscaped areas and impervious areas	To be provided	A	To be provided
15	1.89	Developed lawn/landscaped areas and impervious areas	To be provided	A & C	To be provided
P	0.89	Developed lawn/landscaped areas and impervious areas	To be provided	B	To be provided

6.4 Hydrologic Review

The stormwater CPv computations are summarized below.

Post-Development Watershed Conditions			
Subcatchment	**Area (ac)**	**Cover**	**CPv Runoff Volume**
11	5.39	Developed lawn/landscaped areas and impervious areas	To be provided
12	2.45	Developed lawn/landscaped areas and impervious areas	To be provided
13	0.38	Developed lawn/landscaped areas and impervious areas	To be provided
14	0.18	Developed lawn/landscaped areas and impervious areas	To be provided
15	1.89	Developed lawn/landscaped areas and impervious areas	To be provided
P	0.89	Developed lawn/landscaped areas and impervious areas	To be provided

6.5 Stormwater Management System

The stormwater management system will consist of an onsite closed pipe network that will collect site runoff from impervious and pervious surfaces and convey it to the various stormwater practices prior to discharge to stormwater discharge points under overflow conditions.

6.6 Green Infrastructure for Stormwater Management

The SDM encourages the use of green infrastructure (GI) practices for stormwater management. Green infrastructure approach for stormwater management reduces a site's impact on an aquatic ecosystem through the use of site planning techniques, runoff reduction techniques, and certain standard stormwater management practices. The objective is to replicate the pre-development hydrology by maintaining pre-construction infiltration, peak runoff flow, discharge volume, and minimizing concentrated runoff by use of runoff control techniques. When implemented, green infrastructure can reduce volume, peak flow, and flow duration, promote infiltration and evapotranspiration, improve groundwater recharge, reduce downstream flooding, and protect downstream water and wetlands.

6.6.1 Green Infrastructure Practices

Green infrastructure consists of implementing several techniques during the site planning process which are:

- Preservation of Natural Resources – Preservation of undisturbed areas; preservation of buffers; reduction of clearing and grading; locating development in less sensitive areas; open space (park) design; soil restoration.
- Reduction of Impervious Cover – Roadway reduction; sidewalk reduction; driveway reduction; building footprint reduction; parking reduction.
- Runoff Reduction Techniques – Conservation of natural areas; sheet flow to riparian buffers or filter strips; vegetated open swale; tree planting/tree box; disconnection of roof runoff; stream daylighting for redevelopment projects; bioretention areas; rain gardens; green roofs; stormwater planters; rain tank/cistern; pervious pavement.

During the planning process, the above techniques are implemented to the greatest extent possible to reduce runoff developed by the site. The following summarizes the GI techniques implemented on the site:

- Conservation of natural areas
- Sheet flow to riparian buffers
- Impervious cover has been reduced wherever possible.
- Bioretention basins are proposed to provide quantity and quality treatment of stormwater runoff.

6.6.1.1 Conservation of Natural Areas

No conservation easements are proposed on the subject premises; however, all of the forest area between the existing developed area will remain undisturbed as part of the project. Therefore, runoff to this area will continue to be filtered through undisturbed forest surface and allowed to infiltrate where possible prior to discharging to the onsite and offsite waterbodies.
Runoff from areas of the project area that are directed to riparian buffers can treated for water quality by flowing through the vegetated buffer area. If no riparian buffers exist, a level spreader and vegetated filter strip may be constructed to mimic the riparian buffer. Runoff must be directed to the buffers or filter strip through sheet flow and may require the construction of a level spreader.

6.6.1.2 Bioretention Basins and Infiltration Basins

Runoff from the proposed development will be directed to bioretention basins with infiltration capacity and an underground infiltration/detention system thereby providing RRv capacity.

6.6.2 Five Step Process for Stormwater Site Planning and Selection Design

Stormwater management using GI is summarized in the five-step process described below.

Step 1: Site Planning
The site design will incorporate the preservation of natural resources including protection of natural areas, avoidance of sensitive areas, minimizing grading and soil disturbance, minimizing impervious areas on roads, driveways and parking lots. The site layout will avoid wetlands, waterways, buffers, areas of highly erodible soils and critical areas. The site design will also maintain natural drainage design points.

Step 2: Determine Water Quality Volume (WQv)
The WQv will be calculated for the site prior to implementation of GI practices. The calculated WQv must be reduced by implementation of GI & SMP's.

Step 3: Runoff Reduction by Applying Green Infrastructure Techniques
Green infrastructure practices will be implemented wherever possible to reduce runoff from the site. GI for this site will consist of reduction of roadway widths, providing parking beneath buildings and the use of infiltration practices.

Step 4: Apply Standard SMP's to Address Remaining Wqv
Standard SMP's such as ponds, filtering practices or stormwater wetlands to meet additional water quality volume requirements. It is not anticipated that additional standard SMP's will be required for this project based upon the reduction of impervious surfaces.

Step 5: Apply Volume and Peak Rate Control Practices (if needed)
Cpv, Qp and Qf must also be met, either by standard practices, or other accepted techniques such as meeting criteria set forth in the NYS SWDM, where Cpv, Qp and Qf are required. Cpv, Qp and Qf are met by the installation of the stormwater pond with an outlet control structure on the east side and bioretention basin with outlet control structure on the west side which reduce the peak flows associated with each criterion.

6.7 Qualitative Practices

Small sized, frequently occurring storms account for the majority of runoff events that generate stormwater runoff. As a result, the runoff from these storms is recognized as a major contributor of pollutants. Therefore, treating these frequently occurring smaller rainfall events and a portion of the larger events offers an opportunity to minimize the water quality impacts associated with developed areas.

The water quality volume, denoted as WQ_v, specifies a treatment volume required to be captured and treated by intercepting 90% of the average annual stormwater runoff volume. This criterion strives to achieve an 80% Total Suspended Solids (TSS) removal and 40% Total Phosphorous (TP) removal on an annual basis.

In numerical terms, it is calculated using the formula below which was obtained from Section 4.2 of the New York State Stormwater Management Design Manual, January 2015:

$$WQ_v = (P \times R_v \times A) / 12$$

Where:

WQ_v = Water Quality Volume (acre-feet)

P = 90% Rainfall Event Number

$R_v = 0.05+0.009 \times I$, where I is percent impervious (minimum $R_v = 0.2$)

A = Site area in acres (contributing area)

The following table has been developed summarizing the pre-treatment volume, water quality volume and treatment practices for the main project area. Areas 11, 12 and 31 are mainly undeveloped portions of the site that are diverted around treatment areas.

Watershed	Total Required WQv (cf)	Required Pre-Treatment Volume (cf)	Pre-Treatment Practice	Treatment Practice	WQv Provided (cf)
11	13,122	6,561	Isolator Row X 2	Underground Detention/Infiltration A	To be provided
12	6,400	6,400	Hydrodynamic Device	Bioretention A	To be provided
13	578	578	Plunge Pool	Bioretention B	To be provided
14	349	349	Plunge Pool	Bioretention C	To be provided
15	2,139	578	Plunge Pools	Bioretention D & E	To be provided
P	684	171	Overland Sheet Flow	Water Garden	To be provided
Total	**23,372**				**To be provided**

It is noted that the WQv computations are calculated based upon 100% of the existing and proposed impervious areas. However, under re-development projects with an increase in impervious area, treatment for 25% of the existing disturbed impervious area is required. These computations will be refined and provided in a revised SWPPP.

A major concern with runoff into waterbodies is phosphorus loading. Phosphorus, like nitrogen, is an essential nutrient for aquatic life in waterbodies. However, increased amounts of phosphorus entering surface waters promotes excessive algae growth, which decreases water clarity, causes variations in dissolved oxygen, disagreeable odors, habitat loss and fish kills. The protection of waterbodies from the harmful effects of phosphorus can be accomplished from reducing the runoff volume entering surface waters. Reduction of runoff volume reduces the concentrations of pollutants entering the surface water and thus decreases harmful effects. The removal of enhanced

phosphorus can be accomplished using stormwater management practices. Whether in particulate or dissolved speciation, phosphorus can be removed using unit operations. Particulate phosphorus in particular can be removed using biortention basins and through sedimentation of runoff before entering surface water. Primarily, reducing the WQv entering a surface water body will lower phosphorus pollutant loading.

6.7.2 Pre-Treatment Practices

The following pre-treatment practices have been incorporated into the design of this project. Preventative and corrective maintenance measures to provide long-term effectiveness of stormwater attenuation practices if properly implemented will be included in Appendix L.

6.7.2.1 Forebays and Plunge Pools

Forebays and plunge pools are depressions located within a drainage path, adjacent to an inlet, which are designed to promote the deposition of sediment from the runoff, prior to entering the stormwater management facility. Four (4) forebays have been incorporated into the design – one each at Bioretention Basin 1 & 2, and two (2) at Bioretention Basin 3.

6.7.2.2 Hydrodynamic Devices

Hydrodynamic devices are designed to intercept and store pollutants such as sediment and floatables for later removal and safe disposal.

6.7.2.3 Vegetated Swales

The design incorporates several vegetated swales along the proposed roadway with no curbing to convey stormwater at minimal slopes that allow for some infiltration as well as quality treatment; however, no pre-treatment credit is taken for the vegetated swales.

6.7.2.4 Overland Flow

A significant portion of the runoff will flow overland to receiving water bodies or offsite properties. Much of the site's existing natural vegetation is proposed to remain, and the post developed land cover will be restored to turf grass and landscaped areas. The meadow and landscaped areas will capture sediment and floatables prior to discharge at the stormwater discharge point.

6.7.3 Treatment Practices

The following treatment practices have been incorporated into the design of this project. Preventative and corrective maintenance measures to provide long-term effectiveness of stormwater attenuation practices if properly implemented are included in Appendix L.

6.7.3.1 Bioretention Areas

Bioretention areas are shallow landscaped stormwater basins which utilize engineered soils and vegetation to capture and treat runoff. A standard profile would show an aged shredded hardwood mulch layer above 30 to 48 inches of planting media, with underdrain in gravel jacket below. Native plants (grasses, shrubs, trees) are provided in the bioretention area. Bioretention areas provide water quality treatment, and in cases with soils exhibiting high infiltrative rates, are capable of handling the CPv. In most cases, flows from larger storms are diverted to other practices

more suited to attenuate flows for larger storm events. Underdrains are required elements in HSG C & D, but may not be necessary in those soil types if infiltration testing proves adequate infiltrative capacity exists. All three Bioretention Basins are located in D soils. Therefore, they are equipped with underdrains and provide 40% runoff reduction.

6.7.3.2 Infiltration Basins

Stormwater infiltration practices capture and temporarily store the water quality volume before allowing it to infiltrate through the floor of each practice into the soil over a two-day period. In areas where the subsurface soils exhibit high infiltration rates, the channel protection volume may also be infiltrated. Infiltration facilities are not typically capable of infiltrating the overbank flood or extreme flood volumes. Adequate outflows are required for these larger storm events. Soil testing to obtain infiltration rates are required as part of the design of infiltration facilities. Varying degrees of pre-treatment of the water quality are required based on the field determined infiltration rate of the subsurface soils. 100% of the water quality volume is required where the infiltration rate exceeds 5 inches per hour, 50% for infiltration rates between 2 and 5 inches per hour, and 25% for infiltration rates less than 2 inches per hour. Pre-treatment is typically accomplished through installation of plunge pools and other filtering methods. Infiltration practices must be isolated and protected from stormwater run-off during construction. The contributory drainage area shall be completely constructed and stabilized before connection of the stormwater conveyance system to the infiltration practice. Infiltration basins are typically landscaped by providing a hardy, drought tolerant grass species that is capable of tolerating periodic inundation. The established grass requires mowing twice annually (or as needed). Proper maintenance of the contributing conveyance system and pre-treatment practice are important in maintaining infiltration rates.

6.8 Runoff Reduction Volume (RRv)

RRv is not required for re-development projects. Typically, RRv is met with the use of individual treatment practices since the re-development project meets the criteria set forth in the NYS SWDM §9.3.3. A bioretention area, infiltration basin, underground infiltration area, and rooftop disconnects are proposed to manage and treat the runoff generated from the sites impervious areas.

RRv (measured in acre-feet) is reduction of the total WQv by application of GI techniques and SMP's to replicate the pre-development hydrology. The minimum required RRv is defined as the specified Reduction Factor (S), provided objective technical justification is documented.

RRv must be achieved by infiltration, groundwater recharge, reuse, recycle, evaporation/evapotranspiration of 100% of the post-developed WQv's to replicate pre-development hydrology by maintaining pre-construction infiltration, peak runoff flow, discharge volume, as well as minimizing concentrated flow by using runoff control techniques to provide treatment in a distributed manner before runoff reaches the collection system.

RRv is calculated based upon three methods:

1. Reduction of the practice contributing area in WQv computation.
2. Reduction of runoff volume by storage capacity of the practice.
3. Reduction using standard SMP's with runoff reduction capacity.

Projects that cannot meet 100% of the runoff reduction requirement must provide a justification that evaluates each of the GI planning and reduction techniques and identify the specific limitations of the site according to which application of this criterion is technically infeasible. Projects that do not achieve runoff reduction to pre-construction must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the site. The percent reduction is based on the Hydrologic Soil Group(s) (HSG) of the site and is defined as Specific Reduction Factor (S).

The following lists the specific reduction factors for the HSG's.

HSG A = 0.55

HSG B = 0.40

HSG C = 0.30

HSG D = 0.20

The specific reduction factor (S) is based on the HSG's present at the site. The values are defined based on a hydrology analysis of low, medium, and high imperviousness. The reduction is achieved when runoff from a percentage of the impervious area on a site is captured, routed through GI or an SMP, infiltrated to the ground, reused, reduced by evapotranspiration, and eventually removed from the stormwater discharge from the site.

The following equation is used to determine the minimum RRv:

RRv (in acre-feet of storage) = [(P)(Rv*)(Ai)]/12

Ai = (S)(Aic)

Ai = impervious cover targeted for runoff reduction

(Aic) = total area of new impervious cover

Rv * = 0.05+0.009(I) where I is 100% impervious

S = Hydrologic Soil Group (HSG) Specific Reduction Factor (S)

The goal of the SWPPP is to utilize as many runoff reduction methods as possible on a site. All GI practices will be quantified and compared to the overall WQv for the site. If the RRv is greater than or equal to the WQv, then standard SMP's can be implemented to control peak rate leaving the site if applicable.

The following table summarizes required 100% RRv, minimum RRv, RRv reduced by use of runoff reduction techniques, RRv provided by standard SMP's with RRv and provided RRv for the main project area. The table will be completed after calculation of RRv for the approved layout.

Watershed	Required Total RRv (cf)	Required Minimum RRv (cf)	RRv reduced by use of runoff reduction techniques (cf)	RRv provided by standard SMP with RRv (cf)*	RRv (cf) Provided*
11	13,122	6,823	-	To be provided	To be provided
12	6,400	3,344	-	To be provided	To be provided
13	578	200	-	To be provided	To be provided
14	349	176	-	To be provided	To be provided
15	2,139	963	-	To be provided	To be provided
P	684	145	-	To be provided	To be provided
Total	**23,372**	**11,651**	**-**	**To be provided**	**To be provided**

* Treatment practices can be oversized to provide additional runoff reduction (RRv); however, they can only be oversized to provide up to 100% of the RRv. No additional credit can be taken for RRv for practices that provide greater than 100% RRv.

6.9 Soil Restoration

Soils within disturbed areas tend to over compact as a result of heavy construction traffic; thus, limiting their infiltrative capacity. Under the GP-0-020-001 permit, soil restoration is required in disturbed areas that will be vegetated in order to recover the original properties and porosity of the soil, especially in areas that receive high construction traffic, or areas that have soils that are poorly drained.

Many runoff reduction practices need Soil Restoration measures applied over and adjacent to the practice to achieve runoff reduction performance. Some key benefits of soil restoration are less runoff, better water quality; healthier, aesthetically pleasing landscapes; increased porosity on redevelopment sites where impervious cover is converted to pervious; decreases runoff volume generated and lowers the demand on runoff control structures; enhances direct groundwater recharge; promotes successful long-term re-vegetation by restoring soil organic matter, permeability, drainage and water holding capacity for healthy root system development of trees, shrubs and deep-rooted ground covers, minimizing lawn chemical requirements, plant drowning during wet periods, and burnout during dry periods.

Soil restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.

6.9.1 Soil Restoration Methods

- Topsoil Application – Applying 6" of topsoil in soils with an HSG of A & B and have only been stripped, cut or filled. Soils with HSG of C or D that have only been stripped require aeration in addition to topsoil.
- Aeration - Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
- Tilling – Tilling includes the use of a cat-mounted ripper, tractor mounted disc, or tiller in order to expose the compacted soil devoid of oxygen to air an recreates temporary air space which allows for infiltration.
- Full Soil Restoration - Consists of Deep Ripping and De-Compaction, Compost Enhancement, and/or Deep Subsoiling. Deep Ripping includes the use of a cat mounted ripper, and is typically done at 12" to 24" depths. Compost Enhancement is done by using a deep subsoiler after topsoil has been applied. The goal is to alleviate the compaction that may have occurred during the placement of topsoil. This method mixes the topsoil and compost with subsoils.

Restoration techniques shall not be done until construction is complete and traffic will not travel through green areas. It is expected that full soil restoration will be required in areas around residential dwellings where undisturbed soil existed proposed to landscaped. These areas are shown on the erosion and sediment control plan. Other soil restoration techniques are shown where light grading, or minor cuts and fills are proposed. The type of soil restoration in these areas depends on the hydrologic soil group.

7.0 EROSION AND SEDIMENT CONTROL

7.1 Overview

The most sensitive stage of the development cycle is the period when vegetation is cleared and a site is graded. The potential impacts to on-site and off-site receiving waters and adjoining properties are particularly high at this stage. For example, trees and topsoil are removed, soils are exposed to erosion, and natural topography and drainage patterns are altered. Control of erosion and sediment during these periods is an essential function of this SWPPP and accompanying plans.

Effective and practical measures employed to minimize the erosion potential and prevent sediment from leaving the construction site and reaching streams or other water bodies have been recommended in accordance with:

- New York State Standards and Specifications for Erosion and Sediment Control, November, 2016

In order to ensure the effectiveness of the measures recommended herein, routine inspections and documentation, along with procedures for monitoring the findings, maintenance, and corrective actions resulting from each inspection are outlined within this section of the SWPPP.

7.2 Temporary Erosion and Sediment Control Measures

The following temporary measures have been incorporated into the erosion and sediment control plans for the site construction activities. These measures are also detailed on the site plans.

7.2.1 Silt Fence

A silt fence is a temporary sediment barrier consisting of a filter fabric stretched across and attached to supporting posts, entrenched, and supported with woven wire fence. Silt fences are installed on the contours across a slope and used to trap sediment by intercepting and detaining sediment laden runoff from disturbed areas in order to promote sedimentation on the uphill side of the fence.

Silt fences are suitable for perimeter and interior control, placed below areas where runoff may occur in the form of sheet flow. It should not be placed in channels or areas where flow is concentrated. In addition to interior and perimeter control a silt fence can be applied in the following applications:

- Below the toe or down slope of exposed and erodible slopes.
- Along streams and channels banks.
- Around temporary spoil area and stockpiles.

7.2.2 Stabilized Construction Entrance

A stabilized construction entrance consists of a pad of aggregate overlaying a geotextile fabric located at a point where construction vehicles enter or exit a site to reduce or eliminate the tracking of sediment onto public right of ways, street, alleys or parking areas, thereby preventing the transportation of sediment into local stormwater collection systems. Efficiency is greatly increased when a washing area is included as part of a stabilized construction entrance.

Stabilized construction entrances shall be a minimum of fifty (50) feet long and twelve (12) feet wide, but not less than the full width of points where vehicles enter and exit the site. Where there is only one access point to the site, the stabilized construction entrance shall be a minimum of twenty-four (24) feet wide. Stabilized construction entrances shall be a minimum of six (6) inches in depth consisting of one (1) to four (4) inch stone or reclaimed or recycled equivalent.

7.2.3 Check Dams

Check dams shall be placed in channels to reduce scour and erosion by reducing flow velocity and promoting sediment settlement. Check dams shall be spaced in the channel so that the crest of the downstream dam is at the elevation of the toe of the upstream dam. Check dams, consisting of a well-graded stone two (2) – nine (9) inches in size (NYSDOT – Light Stone) shall maintain a height of two (2) feet with side slopes of 2:1 extending beyond the bank of the channel by a minimum of one and a half (1.5) feet. Check dams shall be anchored in the channel by a cutoff trench of one and a half (1.5) feet in width by a half (0.5) foot in depth.

7.2.4 Inlet Protection

Inlet protection consists of a filtering measure placed around or upstream of a storm drain used to trap sediment by temporary ponding runoff before it enters the storm drain. Inlet protection is not considered to be a primary means of sediment control and should be used with an overall integrated

sediment control program. There are four types of storm drain inlet protection consisting of: excavated drop inlet protection, fabric drop inlet protection, stone and block drop inlet protection and curb drop inlet protection.

Inlet protection shall be implemented for all inlets that could potentially be impacted by sediment laden runoff.

7.2.5 Temporary Channels

Temporary channels in the form of diversion swales or berms may be used to intercept and direct runoff under the following applications:

- Above disturbed areas in order to direct and prevent clean runoff from flowing over disturbed areas until the area is permanently stabilized.
- Below disturbed areas to convey sediment laden runoff to sediment traps.
- Across disturbed slopes to reduce slope lengths.

Where used to convey sediment laden runoff, temporary channels shall be equipped with check dams.

7.2.6 Sediment Traps & Sediment Basins

A sediment trap or basin is a containment area, where sediment laden runoff collected from disturbed areas is temporarily detained allowing sediment to settle out before the runoff is discharged. Sediment traps and basins are formed by excavating an area or constructing an earthen embankment where sediment control is needed.

There are several types of sediment traps. The outlet of a rip rap outlet sediment traps shall be through a partially excavated channel through the embankment lined with rip rap. Pipe outlet sediment traps are equipped with an outlet structure including a perforated riser. The pipe outlet typically is installed through the embankment.

Sediment traps and basins are designed to treat 3,600 cubic feet per acre of drainage area collected. Pipe outlet sediment traps are limited to drainage areas of less than five (5) acres, rip rap outlet sediment traps are limited to fifteen (15) acres of drainage area, and sediment basins can accommodate upwards of one hundred (100) acres.

Sediment shall be removed, and the trap or basin shall be restored to the original dimensions when the sediment has accumulated to ½ of the design depth. The required and provided storage/cleanout elevations have been provided on the plan set. Calculations for sizing the facilities will be provided in the final SWPPP if necessary.

7.2.7 Water Bars

Water bars are temporary earth barriers constructed across construction roads used to intercept and divert roadway runoff toward temporary sediment traps or channels, prevent runoff from concentrating, and minimize the potential of gullies from forming. Spacing of water bars is dependent upon the road slope and shall be installed in accordance with the schedule depicted on the Erosion and Sediment Control detail sheet.

7.2.8 Straw Bale Barriers

Straw bale barriers are used to intercept and contain sediment from disturbed areas of limited size in order to prevent sediment from exiting the site. Bales should be placed in a single row lengthwise along the contour, with ends abutting one another. Straw bales shall be bound and installed so that the bindings are oriented around the sides. Straw bales shall be entrenched a minimum of four (4) inches, backfilled, and anchored using either two stakes or rebar driven through the straw bales to a depth of one and a half (1.5) to two (2) feet below grade.

Straw bales shall be used where no other measure is feasible. They shall not be used where there is a concentration of flow within a channel or other area.

The useful life of a straw bale barrier is three (3) months.

7.2.9 Temporary Soil Stockpiles

Stockpiling of soil is a method of preserving soil and topsoil for regrading and vegetating disturbed areas. Stockpiles shall be located away from environmentally sensitive areas (i.e. wetlands and associated buffers, streams, water bodies) and shall be protected with a peripheral silt fence. Slopes of stockpiles shall not exceed 2:1. Temporary stabilization measures shall be completed within fourteen (14) days of stockpile formation.

7.2.10 Dust Control

Dust control measures reduce the surface and air transport of dust, thereby preventing pollutants from mixing into stormwater. Dust control measures for the construction activities associated within this project consist of windbreaks, minimization of soil disturbance (preserving buffer areas of vegetation where practical), mulching, temporary and permanent vegetation cover, barriers (i.e. geotextile on driving surfaces) and water spraying.

Construction activities shall be scheduled to minimize the amount of area disturbed at any one time.

7.2.11 Temporary Soil Stabilization Practices

Stabilization practices reduce the potential for soil detachment by shielding the soil surface from the impact of rainfall and reducing overland flow velocity.

The Contractor shall initiate stabilization measures as soon as possible in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. This requirement does not apply where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions.

Temporary stabilization practices may include:

7.2.11.1 Mulching

Mulching is a temporary soil stabilization practice. Mulching prevents erosion by protecting soil from raindrop impact and by reducing the velocity of overland flow. Mulching also retains moisture within the soil surface and prevents germination. Where mulching consists of wood chips or shavings, it shall be applied at a rate of 500-900 lbs per 1000 s.f. Where mulching consists of

straw, it shall be applied at a rate of 90-100 lbs. per 1000 s.f. All temporary grass areas shall receive a standard application of mulch consisting of straw, unless the area is hydroseeded.

7.2.11.2 Temporary Seeding

Temporary seeding provides additional benefits over other stabilization practices by creating a vegetation system holding soil particles in place with root systems and maintaining the soils capacity to absorb runoff. Temporary vegetation shall be placed in accordance with project plans. Irrigation shall be used when the soil is dry or when summer plantings are done.

7.2.11.3 Temporary Erosion Control Blanket

A temporary erosion control blanket is a degradable erosion control blanket used to hold seed and soil in place until vegetation is established in disturbed areas. Temporary erosion control blankets insulate and conserve seed moisture thus reducing evaporation and increasing germination rates and protect seeds from birds. Temporary erosion control blankets may consist of straw blankets, excelsior blankets (curled wood excelsior), coconut fiber blankets, or wood fiber blankets (reprocessed wood fibers which do not possess or contain any growth or germination inhibiting factors).

7.3 Permanent Erosion and Sediment Control Measures

The following permanent measures have been incorporated into the erosion and sediment control plans for the site construction activities.

7.3.1 Outlet Protection

Outlet protection is used to reduce stormwater velocity and dissipate the energy of flow exiting a culvert before discharging into receiving channels. Rip-rap treatment extends between the point where flows exit the culvert and where the velocity and/or energy from runoff is dissipated to a degree where there is minimal erosion downstream of the discharge point.

A geotextile fabric shall be placed beneath the rip-rap to prevent soil movement into and through the rip-rap.

7.3.2 Permanent Soil Stabilization Practices

Stabilization practices reduce the potential for soil detachment by shielding the soil surface from the impact of rainfall and reducing overland flow velocity.

The Contractor shall initiate stabilization measures as soon as possible in portions of the site where construction activities have permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has permanently ceased.

Permanent stabilization practices may include:

7.3.2.1 Sod

Where exposed soils have the potential to generate off-site sediment loading, sod can provide a immediate form of stabilization and extra protection to a disturbed area. Where applied, sod shall be blue grass or a bluegrass/red fescue mixture or a perennial ryegrass and machine cut with a uniform soil thickness of ¾ inch, plus or minus ¼ inch. Sod shall be used at the discretion of the Owner, unless specifically required by the plans.

7.3.2.2 Permanent Vegetation

Permanent vegetation shall be used to provide a protective cover for exposed areas that have received final grading. Permanent stabilization shall be applied where topsoil has been placed or returned and incorporated into the soil surface. When used, this process shall be followed with the application of straw mulch to protect soil from erosion and seed from drying out. Irrigation shall be used when the soil is dry or when summer plantings are done. Permanent vegetation shall be placed in accordance with project plans.

7.3.2.3 Hydroseeding

Hydroseeding is the hydraulic application of seed and fertilizer onto prepared seed beds. When used, this process shall be followed with the application of straw mulch to protect soil from erosion and seed from drying out. Irrigation shall be used when the soil is dry or when summer plantings are done. Hydroseeding shall be used at the discretion of the Contractor, unless specifically required by the plans.

7.3.2.4 Permanent Erosion Control Blankets

Permanent erosion control blankets are comprised of synthetic materials that form a high strength mat that helps prevent soil erosion in channels and on steep slopes. Stems and roots become intertwined within the matrix, thus reinforcing the vegetation and anchoring the mat. Permanent erosion control blankets insulate and conserve seed moisture thus reducing evaporation and increasing germination rates and protect seeds from birds. When used within channels, permanent erosion control blankets can aid in the establishment of vegetation and increase the maximum permissible velocity of the given channel by reinforcing the soil and vegetation to resist the forces of erosion during runoff events.

7.4 Erosion and Sediment Control Sequencing Schedule

Implementation schedules for the installation of erosion and sediment control measures prior to and during the course of construction will depend greatly on the actual construction schedule and the varying field conditions that may warrant temporary construction stops and/or work commencing in other locations. A construction sequence is provided demonstrating how the project will be phased to limit to soil disturbance to less than 5-acres at any one time.

Erosion control measures shall be inspected and repaired as needed during construction activities and based on the maintenance schedule. Additional erosion control measures based on site conditions shall be provided as necessary in order to protect adjacent parcels and waters.

7.5 Maintenance Schedules

Maintenance of the erosion and sediment controls incorporated into this project shall be performed on a regular basis to assure continued effectiveness. This includes repairs and replacement to all erosion and sediment control practices, including cleanout of all sediment retaining measures. Those measures found to be ineffective during routine inspections shall be repaired or replaced and cleaned out (where applicable) before the next anticipated storm event or within 24-hours of being notified, whichever comes first. A more detailed description of the maintenance procedures for the site-specific erosion and sediment control practices has been provided on the plan set.

7.6 Construction Staging Areas

Construction staging areas are areas designated within construction sites where most equipment and materials are stored. The locations of the construction staging areas for this project have been shown on the plan set.

7.7 Site Assessments, Inspections and Reporting

Regular inspections of the construction site shall be performed by a qualified professional who is familiar with all aspects of the SWPPP and the implemented control practices. Inspections are intended to identify areas where the pollutant control measures at the site are ineffective and have the potential to allow pollutants to enter water bodies or adjoining properties.

7.7.1 Prior to Construction

Prior to the commencement of construction, a qualified professional shall conduct an inspection of the site and certify in an inspection report that the appropriate erosion and sediment control measures have been installed as indicated by the project plan set and SWPPP. This certification shall be forwarded to the Owner's Representative and Contractor for filing in the construction logbook.

A copy of the "Pre-Construction Site Assessment Checklist" has been provided in Appendix G.

7.7.2 During Construction

Following the commencement of construction, a qualified professional shall perform inspections of site construction activities in accordance with the SPDES General Permit. Inspections shall occur every seven (7) calendar days. Refer to Section 1.2 of this SWPPP for additional inspection requirements associated with disturbance of greater than five (5) acres at any time.

For project areas where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the qualified inspector shall conduct a site inspection at least once every thirty (30) calendar days. The owner or operator shall notify the Regional Office stormwater contact person in writing prior to reducing the frequency of inspections.

For project areas where soil disturbance activities have been shut down with partial project completion, the qualified inspector can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The owner or operator shall notify the Regional Office stormwater contact person in writing prior to the shutdown.

The inspections shall include observation of installed and maintained erosion and sediment control measures for consistency with project specifications and documentation of items to be corrected and recommendations for mitigating concerns. The following information, at minimum, shall be recorded during each inspection:

- Date and time of inspection;
- Name and title of person(s) performing inspection;

- A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

- A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

- A description of the condition of all-natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody.

- Identification of all erosion and sediment control practices that need repair or maintenance.

- Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

- Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

- Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

- Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water (where applicable);

- Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of the sediment storage volume;

- Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

- Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report being maintained on site within seven (7) calendar days of the date of the inspection. The qualified inspector

shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection;

- A brief description of any erosion and sediment control practice repairs, maintenance or installations made as a result of previous inspection; and

- All deficiencies that are identified with the implementation of the SWPPP.

Summary reports shall be forwarded to the Owner's Representative and Contractor. Reports shall be incorporated into the construction logbook. Within one business day of the completion of an inspection, the qualified inspector shall notify the owner or operator and appropriate contractor or subcontractor of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

A copy of the "Construction" inspection report has been provided in Appendix M.

7.7.3 Quarterly Report

The Owner shall prepare a written summary of its status with respect to compliance with the SPDES General Permit at a minimum frequency of every three months during which coverage under the permit exists. The summary should address the status of achieving each component of the SWPPP. The report shall include the overall performance of the stormwater facilities, average, minimum and maximum depths of sediment within the stormwater facilities, the physical condition of all drainage structures, maintenance reports from the previous year, and any recommendations for any repairs, modifications or adjustments to the stormwater facilities.

7.7.4 End of Term

Termination of coverage under SPDES General Permit is accomplished by filing a Notice of Termination with the NYSDEC. Prior to the filing of the Notice of Termination (NOT), the Owner shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods, that all temporary erosion and sediment control structures have been removed, and that all permanent erosion control and stormwater facilities have been installed and are operational in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The owner or operator shall then submit the completed NOT form to the NYSDEC. "Final stabilization" means that all soil disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextile) have been employed on all unpaved areas and area not covered by permanent structures.

A NOT is provided in Appendix N.

7.8 Construction Logbook

The construction logbook shall be maintained on-site from the date of initiation of construction activities to the date of final stabilization and shall be made available to the permitting authority upon request. The construction logbook shall contain a record of all inspections; preparer's, qualified professional's, owner's/operator's, contractor's, and sub-contractor's (if applicable) certifications; and weekly and quarterly reports.

7.9 Long Term Operation and Maintenance Plan of Stormwater System and Landscape Areas

7.9.1 Catch Basins and Piping

Catch basins shall be inspected after every storm event and remove trash and debris that may be blocking the flow capability of the structure. The owner should pay close attention during the fall months where leave debris will be heavy. The catch basins and piping shall be inspected for sediment accumulation at least once a year, and utilize vacuum trucks as necessary to remove the accumulated sediment.

7.9.2 Hydrodynamic Separators (Contech CDS® Units)

The manufacture recommends that the CDS units be inspect bi-annually (once in the spring and once in the fall). The structure shall be visually inspected for blockages or obstructions in the inlet or separation screen. The inspection should also quantify accumulation of hydrocarbons, sediment and trash within the system. Inspections and maintenance shall be performed by qualified personnel with adequate training in these types of units. A record of inspections and scheduled cleanings shall be kept on site at all times. Manufacture's inspection recommendations and a sample report is provided in Appendix H.

7.9.3 Infiltration Basins

Infiltration basins shall be inspected monthly for sediment and debris accumulation. Inflow pipes, outlet structures and spillways should also be inspected for sediment and debris monthly. Any accumulated sediment or debris should be removed as necessary. After storm events, the infiltration basin's dewatering duration should also be monitored. The basin floor shall be mowed when the grass reaches a height of 18". Sediment shall be cleaned out of the basin annually.

7.9.4 Bioretention Areas

Bioretention areas shall be inspected monthly for sediment and debris accumulation. Inflow pipes, outlet structures and spillways should also be inspected for sediment and debris monthly. Any accumulated sediment or debris should be removed as necessary. Plantings shall be inspected monthly for height, fertilizer, quantity and unauthorized invasive or inappropriate species. Grass height shall be kept below 6" in height. After storm events, the bioretention's dewatering duration should also be monitored. Sediment shall be cleaned out of the bioretention area annually.

7.9.5 Pre-treatment Forebays and Plunge Pools

Pre-treatment forebays or plunge pools shall be inspected annually for overall performance and sediment accumulation. Sediment shall be removed when sediment accumulation reaches 50% of the design capacity volume. Inspection checklists for infiltration, bioretention and sediment forebays are included in Appendix R.

8.0 GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES

The following good housekeeping and material management practices shall be followed to reduce the risk of spills or exposure of materials to stormwater runoff.

8.1 Waste Materials

All waste material, including but not limited to trash and construction debris, generated during construction shall be collected and stored in a proper receptacle in accordance with Federal, State, County and Local regulations. No waste material shall be buried on-site. All collected waste material shall be hauled to an approved waste disposal facility.

8.2 Chemical

Chemicals used on-site shall be kept in small quantities and stored in closed watertight containers undercover in a neat and orderly manner and kept out of direct contact with stormwater. Chemical products shall not be mixed with one another unless recommended by manufacturer.

All on-site personnel shall have access to material safety data sheets (MSDS) and National Institute for Occupational Safety and Health (NIOSH) Guide to Chemical Hazards (latest edition) for all chemicals stored and used on-site.

Manufacturer's and/or Federal, State, County and Local guidelines for proper use and disposal shall be followed. Any spills or contamination of runoff with chemicals shall be contained, collected, cleaned up immediately and disposed of in accordance with Federal, State, County and Local regulations.

8.3 Fuels and Oil

All on-site vehicles, tools, and construction equipment shall be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. On-site vehicle and equipment refueling shall be conducted at a location away from access to surface waters and runoff. Any on-site storage tanks shall have a means of secondary containment. Oil products shall be kept in their original containers with original manufacturer's label. In the event of a spill, it shall be contained, cleaned up immediately and the material, including any contaminated soil, shall be disposed of in accordance with Federal, State, County and Local regulations.

Fuel and oil spills in excess of reportable quantities shall be reported to the NYSDEC as soon as the discharge is discovered.

8.4 Fertilizers

Fertilizers used on-site shall be stored in closed watertight containers undercover in a neat orderly manner and kept out of direct contact with stormwater. Manufacturer's and/or Federal, State,

County and Local guidelines for proper use and disposal shall be followed. Any spills or contamination of runoff with fertilizers shall be contained, collected, cleaned up immediately, and disposed of in accordance with Federal, State, County and Local regulations.

8.5 Paint

Paints used on-site shall be stored in closed, watertight containers undercover in a neat and orderly manner and kept out of direct contact with stormwater. Manufacturer's and/or Federal, State, County and Local guidelines for proper use and disposal shall be followed. Any spills or contamination of runoff with paint shall be contained, collected, cleaned up immediately, and disposed of in accordance with Federal, State, County and Local regulations.

8.6 Sanitary Waste Facilities

Should portable units be located on-site, they shall be placed in upland areas away from direct contact with surface waters. They shall be serviced and cleaned on a weekly basis by a licensed portable toilet and septic disposal service. Any spills occurring during service shall be cleaned up immediately and disposed of in accordance with Federal, State, County, and Local regulations.

8.7 Container Disposal

All of a product shall be used up before disposal of the container. Empty containers that may contain chemical residue shall be disposed of in accordance with Federal, State, County and Local regulations.

8.8 Concrete and Asphalt Trucks

Concrete and asphalt trucks shall not be allowed to wash out or discharge surplus material on-site.

8.9 Site Supervisor

It shall be the responsibility of the Contractor's Site Supervisor to inspect daily and ensure the proper use, storage and disposal of all on-site materials.

9.0 SWPPP AMENDMENT

The SWPPP shall be updated by a licensed professional engineer whenever any of the following apply:

1) There is a significant change in design, construction, operation or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP.
2) The SWPPP proves to be ineffective in:
    - Eliminating or significantly minimizing pollutants from sources identified in the SWPPP required by the SPDES Permit; or
    - Achieving the general objective of controlling pollutants in stormwater discharges from permitted construction activity.
3) Identify any new contractor or subcontractor that will implement any measure of the SWPPP.

4) NYSDEC notifies the Permittee that the SWPPP does not meet one or more of the minimum requirements of the SPDES Permit. Within seven (7) days of such notification or as provided for by the NYSDEC, the Permittee shall make amendments to the SWPPP and submit to the NYSDEC a written certification that the requested changes have been made.

Since this project is subject to the requirements of a regulated, traditional land use control MS4, the owner or operator shall notify the MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP. Unless otherwise notified by the MS4, the owner or operator shall have the SWPPP amendments or modifications reviewed and accepted by the MS4 prior to commencing construction of the post-construction stormwater management practice.

10.0 CONTRACTOR CERTIFICATIONS

All contractors and subcontractors that have any responsibility to install, inspect or maintain erosion or sediment control measures shall sign a copy of the certification statement included in Appendix I before undertaking any construction activity at the site identified in the SWPPP.

11.0 OWNER/OPERATOR CERTIFICATION

The Owner/Operator must review and sign the owner/operator certification statement included in Appendix K.

12.0 CONCLUSIONS

This SWPPP demonstrates that the proposed project generally meets the requirements of SPDES GP-0-20-001, as follows:

- An erosion and sediment control plan in accordance with the latest revision to the New York State Standards and Specifications for Erosion and Sediment Control, November 2016, has been developed for the project and is included in the site plan set.
- Hydrologic and Hydraulic calculations for all storm events modeled will demonstrate that the resulting stormwater runoff from the development, exiting the site will not adversely impact offsite properties, stormwater conveyance systems or receiving water bodies. Temporary and permanent stormwater systems and facilities are designed in accordance with the latest revision to the New York State Stormwater Management Design Manual, January 2015.
- The project has been designed to capture and treat 90% of the average annual stormwater runoff from the development through approved water quality measures in all available areas.
- The standard stormwater management practices provide more than the required minimum runoff reduction volume (RRv).

APPENDIX A

NOTICE OF INTENT & MS4 ACCEPTANCE FORM

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.34

(Submission #: HPG-HM91-KKRDP, version 1)

Details

Originally Started By	Luis Pajuelo
Alternate Identifier	Mirbeau Beacon Inn & Spa
Submission ID	HPG-HM91-KKRDP
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Mirbeau Beacon, LLC.

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Kellogg

Owner/Operator Contact Person First Name
Edward

Owner/Operator Mailing Address
433 Broadway STE 203

City
Saratoga Springs

State
New York

Zip
12866

Phone
8455167357

Email
ekellogg@mirbeau.com

Federal Tax ID
NONE PROVIDED

Project Location

Project/Site Name
Mirbeau Beacon Inn & Spa

Street Address (Not P.O. Box)
7 Craig House Lane

Side of Street
North

City/Town/Village (THAT ISSUES BUILDING PERMIT)
City of Beacon

State
NY

Zip
12508

DEC Region
3

County
DUTCHESS

Name of Nearest Cross Street
Wolcott Avenue (NYS Route 9D)

Distance to Nearest Cross Street (Feet)
344

Project In Relation to Cross Street
West

Tax Map Numbers Section-Block-Parcel
6054-13-001258

Tax Map Numbers
NONE PROVIDED

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
41.4888975,-73.967196

Project Details

2. What is the nature of this project?
Redevelopment with increase in impervious area

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Other: Forest, Commercial, Aquatic, Residential

Post-Development Future Land Use
Commercial

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
64.4

Total Area to be Disturbed (acres)
10.5

Existing Impervious Area to be Disturbed (acres)
1.9

Future Impervious Area Within Disturbed Area (acres)
4.4

5. Do you plan to disturb more than 5 acres of soil at any one time?
No

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
31.8

B (%)
34.5

C (%)
9.5

D (%)
24.2

7. Is this a phased project?
Yes

8. Enter the planned start and end dates of the disturbance activities.

Start Date
6/1/2022

End Date
6/1/2026

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
On Site Ponds

9a. Type of waterbody identified in question 9?
Lake On Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
NONE PROVIDED

10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?
No

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

16. What is the name of the municipality/entity that owns the separate storm sewer system?
City of Beacon

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
Hudson Land Design

Contact Name (Last, Space, First)
Bodendorf Michael

Mailing Address
174 Main Street

City
Beacon

State
New York

Zip
12508

Phone
8454406926

Email
mbodendorf@hudsonlanddesign.com

Download SWPPP Preparer Certification Form
Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form

3) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Silt Fence
Stabilized Construction Entrance

Biotechnical
None

Vegetative Measures
Seeding
Topsoiling

Permanent Structural
Land Grading
Rock Outlet Protection

Other
NONE PROVIDED

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
NONE PROVIDED

29. Post-construction SMP Identification
Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
NONE PROVIDED

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
NONE PROVIDED

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
NONE PROVIDED

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs
Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
NONE PROVIDED

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
NONE PROVIDED

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
NONE PROVIDED

CPv Provided (acre-feet)
NONE PROVIDED

36a. The need to provide channel protection has been waived because:
NONE PROVIDED

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
NONE PROVIDED

Post-Development (CFS)
NONE PROVIDED

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
NONE PROVIDED

Post-Development (CFS)
NONE PROVIDED

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
NONE PROVIDED

If Yes, Identify the entity responsible for the long term Operation and Maintenance
NONE PROVIDED

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
NONE PROVIDED

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs
Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
Endangered or Threatened Species (Incidental Take Permit)
Individual SPDES

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
No

MS4 SWPPP Acceptance Form Download
Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload
NONE PROVIDED
Comment
NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download
Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form
NONE PROVIDED
Comment
NONE PROVIDED

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Mirbeau Beacon, LLC.
2. Contact Person:	Ed Kellogg
3. Street Address:	433 Broadway STE 203
4. City/State/Zip:	Saratoga Springs, New York, 12866
II. Project Site Information	
5. Project/Site Name:	Mirbeau Inn & Spa at Beacon
6. Street Address:	7 Craig House Lane
7. City/State/Zip:	Beacon, New York, 12508
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	City of Beacon
12. MS4 SPDES Permit Identification Number: NYR20A	040
13. Contact Person:	Michael Manzi
14. Street Address:	1 Municipal Plaza
15. City/State/Zip:	Beacon, New York, 12508
16. Telephone Number:	(845) 831-0932

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date: 02/22/2022

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

APPENDIX B

SOILS DATA

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Dutchess County, New York



March 23, 20

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Dutchess County, New York.....13
BeC—Bernardston silt loam, 8 to 15 percent slopes.....13
ChB—Charlton fine sandy loam, 3 to 8 percent slopes.....14
DwB—Dutchess-Cardigan complex, undulating, rocky.....16
HsA—Hoosic gravelly loam, nearly level.....18
HsB—Hoosic gravelly loam, undulating.....19
NwC—Nassau-Cardigan complex, rolling, very rocky.....20
NwD—Nassau-Cardigan complex, hilly, very rocky.....22
W—Water.....24
Soil Information for All Uses.....25
Soil Properties and Qualities.....25
Soil Erosion Factors.....25
K Factor, Whole Soil (Mirbeau Inn & Spa at Beacon).....25
Soil Qualities and Features.....28
Hydrologic Soil Group (Mirbeau Inn & Spa at Beacon).....29
References.....33

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


73° 58' 38" W
73° 57' 40" W
41° 29' 33" N
41° 29' 5" N
585400
585500
585600
585700
585800
585900
586000
586100
586200
586300
586400
586500
586600
586700
4593900
4593800
4593700
4593600
4593500
4593400
4593300
4593200
4593100
Cherry St
South Ave
Fishkill Creek
High Goal Ln
ESB
HsA
ChB
DwB
W
NwC
NwD
HsB
BeC
9d
Soil Map may not be valid at this scale.
Map Scale: 1:6,090 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 50 100 200 300
Feet
0 250 500 1000 1500
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 18, Sep 1, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2020—Oct 14, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeC	Bernardston silt loam, 8 to 15 percent slopes	5.6	7.7%
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	8.4	11.5%
DwB	Dutchess-Cardigan complex, undulating, rocky	15.5	21.3%
HsA	Hoosic gravelly loam, nearly level	11.5	15.9%
HsB	Hoosic gravelly loam, undulating	10.3	14.2%
NwC	Nassau-Cardigan complex, rolling, very rocky	2.7	3.7%
NwD	Nassau-Cardigan complex, hilly, very rocky	13.6	18.8%
W	Water	4.9	6.8%
Totals for Area of Interest		**72.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a

given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Dutchess County, New York

BeC—Bernardston silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9rdn
Elevation: 0 to 1,000 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Bernardston and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bernardston

Setting

Landform: Till plains, hills, drumlinoid ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy, acid, dense till derived mainly from phyllite, shale, slate, and schist

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 27 inches: silt loam
H3 - 27 to 80 inches: silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 15 to 30 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Punsit

Percent of map unit: 5 percent
Hydric soil rating: No

Pittstown
Percent of map unit: 5 percent
Hydric soil rating: No

Stockbridge
Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils, fine-loamy
Percent of map unit: 3 percent
Hydric soil rating: No

Sun
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Canandaigua
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

ChB—Charlton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2wh0n
Elevation: 0 to 1,440 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Charlton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile
Ap - 0 to 7 inches: fine sandy loam
Bw - 7 to 22 inches: gravelly fine sandy loam

C - 22 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton

Percent of map unit: 8 percent
Landform: Hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Paxton

Percent of map unit: 5 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Chatfield

Percent of map unit: 1 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Leicester

Percent of map unit: 1 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

DwB—Dutchess-Cardigan complex, undulating, rocky

Map Unit Setting

National map unit symbol: 9rfn
Elevation: 0 to 1,330 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Dutchess and similar soils: 40 percent
Cardigan and similar soils: 30 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dutchess

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from phyllite, slate, schist, and shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 28 inches: silt loam
H3 - 28 to 86 inches: channery silt loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam
H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Georgia

Percent of map unit: 10 percent
Hydric soil rating: No

Nassau

Percent of map unit: 9 percent
Hydric soil rating: No

Massena

Percent of map unit: 9 percent
Hydric soil rating: No

Sun

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: Unranked

HsA—Hoosic gravelly loam, nearly level

Map Unit Setting

National map unit symbol: 9rgj
Elevation: 100 to 1,100 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hoosic and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoosic

Setting

Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 24 inches: very gravelly sandy loam
H3 - 24 to 70 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Knickerbocker
Percent of map unit: 5 percent
Hydric soil rating: No

Copake
Percent of map unit: 5 percent
Hydric soil rating: No

Haven
Percent of map unit: 5 percent
Hydric soil rating: No

Fredon
Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Halsey
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

HsB—Hoosic gravelly loam, undulating

Map Unit Setting
National map unit symbol: 9rgk
Elevation: 100 to 1,100 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Hoosic and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hoosic

Setting
Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits

Typical profile
H1 - 0 to 9 inches: gravelly loam

H2 - 9 to 24 inches: very gravelly sandy loam
H3 - 24 to 70 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Knickerbocker

Percent of map unit: 5 percent
Hydric soil rating: No

Haven

Percent of map unit: 5 percent
Hydric soil rating: No

Copake

Percent of map unit: 5 percent
Hydric soil rating: No

Fredon

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

Halsey

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

NwC—Nassau-Cardigan complex, rolling, very rocky

Map Unit Setting

National map unit symbol: 9rhd
Elevation: 0 to 1,800 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F

Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Nassau and similar soils: 45 percent
Cardigan and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nassau

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 5 inches: channery silt loam
H2 - 5 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam

H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Dutchess

Percent of map unit: 9 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Unnamed soils, very shallow

Percent of map unit: 5 percent
Hydric soil rating: No

Sun

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

NwD—Nassau-Cardigan complex, hilly, very rocky

Map Unit Setting

National map unit symbol: 9rhf
Elevation: 0 to 1,800 feet
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Nassau and similar soils: 45 percent

Cardigan and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nassau

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 5 inches: channery silt loam
H2 - 5 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: F144AY033MA - Shallow Dry Till Uplands
Hydric soil rating: No

Description of Cardigan

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or colluvium derived from phyllite, slate, shale, and schist

Typical profile

H1 - 0 to 8 inches: channery silt loam
H2 - 8 to 20 inches: channery loam
H3 - 20 to 30 inches: channery silt loam
H4 - 30 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Dutchess

Percent of map unit: 10 percent
Hydric soil rating: No

Sun

Percent of map unit: 10 percent
Landform: Depressions
Hydric soil rating: Yes

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

W—Water

Map Unit Setting

National map unit symbol: 9rjc
Mean annual precipitation: 41 to 47 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

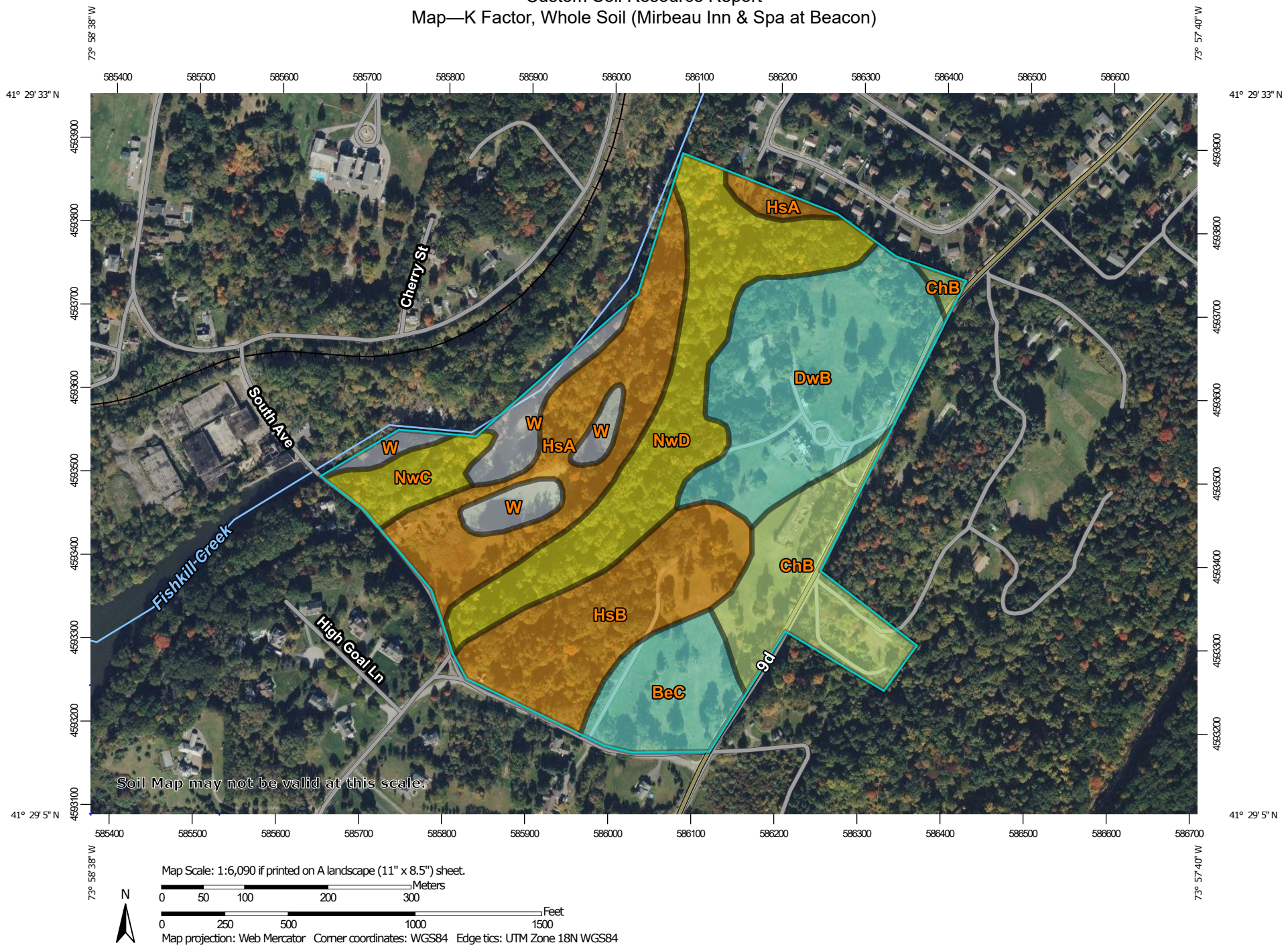
K Factor, Whole Soil (Mirbeau Inn & Spa at Beacon)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Map—K Factor, Whole Soil (Mirbeau Inn & Spa at Beacon)



Map Scale: 1:6,090 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Soil Rating Lines
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Soil Rating Points
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 18, Sep 1, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2020—Oct 14, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil (Mirbeau Inn & Spa at Beacon)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeC	Bernardston silt loam, 8 to 15 percent slopes	.32	5.6	7.7%
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	.24	8.4	11.5%
DwB	Dutchess-Cardigan complex, undulating, rocky	.32	15.5	21.3%
HsA	Hoosic gravelly loam, nearly level	.10	11.5	15.9%
HsB	Hoosic gravelly loam, undulating	.10	10.3	14.2%
NwC	Nassau-Cardigan complex, rolling, very rocky	.17	2.7	3.7%
NwD	Nassau-Cardigan complex, hilly, very rocky	.17	13.6	18.8%
W	Water		4.9	6.8%
Totals for Area of Interest			**72.4**	**100.0%**

Rating Options—K Factor, Whole Soil (Mirbeau Inn & Spa at Beacon)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (Mirbeau Inn & Spa at Beacon)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

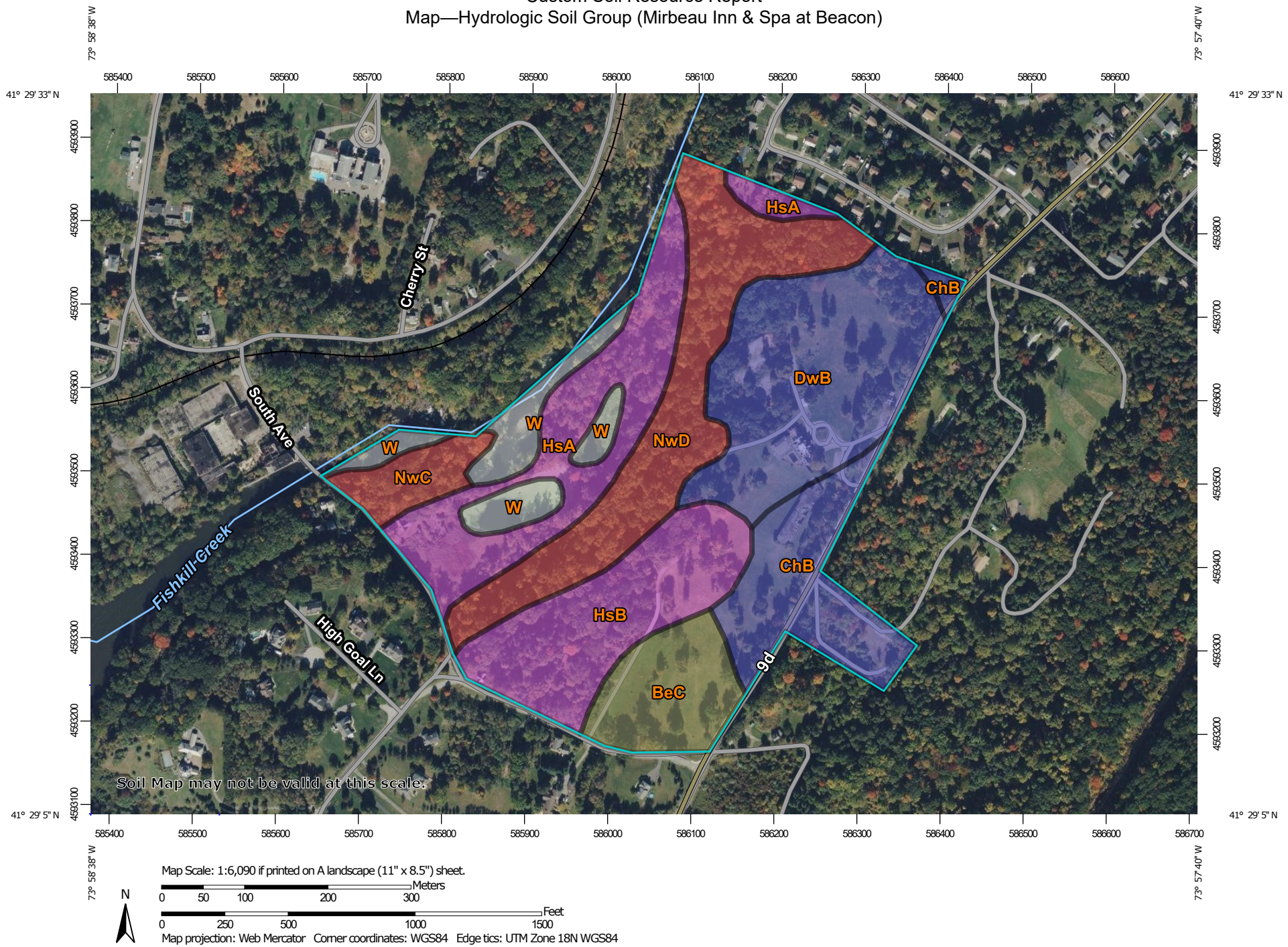
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map—Hydrologic Soil Group (Mirbeau Inn & Spa at Beacon)



Map Scale: 1:6,090 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 18, Sep 1, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2020—Oct 14, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (Mirbeau Inn & Spa at Beacon)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeC	Bernardston silt loam, 8 to 15 percent slopes	C/D	5.6	7.7%
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	B	8.4	11.5%
DwB	Dutchess-Cardigan complex, undulating, rocky	B	15.5	21.3%
HsA	Hoosic gravelly loam, nearly level	A	11.5	15.9%
HsB	Hoosic gravelly loam, undulating	A	10.3	14.2%
NwC	Nassau-Cardigan complex, rolling, very rocky	D	2.7	3.7%
NwD	Nassau-Cardigan complex, hilly, very rocky	D	13.6	18.8%
W	Water		4.9	6.8%
Totals for Area of Interest			**72.4**	**100.0%**

Rating Options—Hydrologic Soil Group (Mirbeau Inn & Spa at Beacon)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

APPENDIX C

RAINFALL DATA,NYSDEC ERM, FLOOD MAP, WETLAND MAP AND SHPO INFORMATION

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New York
Location	
Longitude	73.967 degrees West
Latitude	41.489 degrees North
Elevation	0 feet
Date/Time	Tue, 22 Mar 2022 11:31:04 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.33	0.50	0.62	0.82	1.02	1.27	**1yr**	0.88	1.20	1.45	1.77	2.15	2.61	2.96	**1yr**	2.31	2.85	3.30	3.96	4.60	**1yr**
2yr	0.39	0.60	0.74	0.98	1.23	1.53	**2yr**	1.06	1.43	1.76	2.15	2.62	3.17	3.58	**2yr**	2.80	3.44	3.94	4.65	5.29	**2yr**
5yr	0.46	0.71	0.89	1.19	1.52	1.92	**5yr**	1.32	1.77	2.20	2.71	3.29	3.98	4.53	**5yr**	3.52	4.36	5.01	5.79	6.55	**5yr**
10yr	0.51	0.80	1.02	1.38	1.79	2.27	**10yr**	1.55	2.07	2.62	3.22	3.92	4.72	5.42	**10yr**	4.18	5.21	6.01	6.84	7.70	**10yr**
25yr	0.60	0.95	1.21	1.67	2.23	2.85	**25yr**	1.92	2.56	3.30	4.07	4.94	5.93	6.88	**25yr**	5.25	6.62	7.65	8.53	9.54	**25yr**
50yr	0.68	1.09	1.39	1.95	2.62	3.38	**50yr**	2.26	3.01	3.93	4.85	5.88	7.06	8.24	**50yr**	6.25	7.93	9.19	10.09	11.22	**50yr**
100yr	0.77	1.24	1.60	2.27	3.10	4.02	**100yr**	2.67	3.53	4.68	5.79	7.02	8.40	9.88	**100yr**	7.43	9.50	11.04	11.93	13.22	**100yr**
200yr	0.87	1.42	1.85	2.65	3.66	4.79	**200yr**	3.16	4.15	5.58	6.91	8.37	10.00	11.85	**200yr**	8.85	11.39	13.27	14.12	15.58	**200yr**
500yr	1.05	1.73	2.25	3.27	4.58	6.02	**500yr**	3.95	5.15	7.04	8.72	10.57	12.61	15.07	**500yr**	11.16	14.49	16.95	17.66	19.37	**500yr**

Lower Confidence Limits

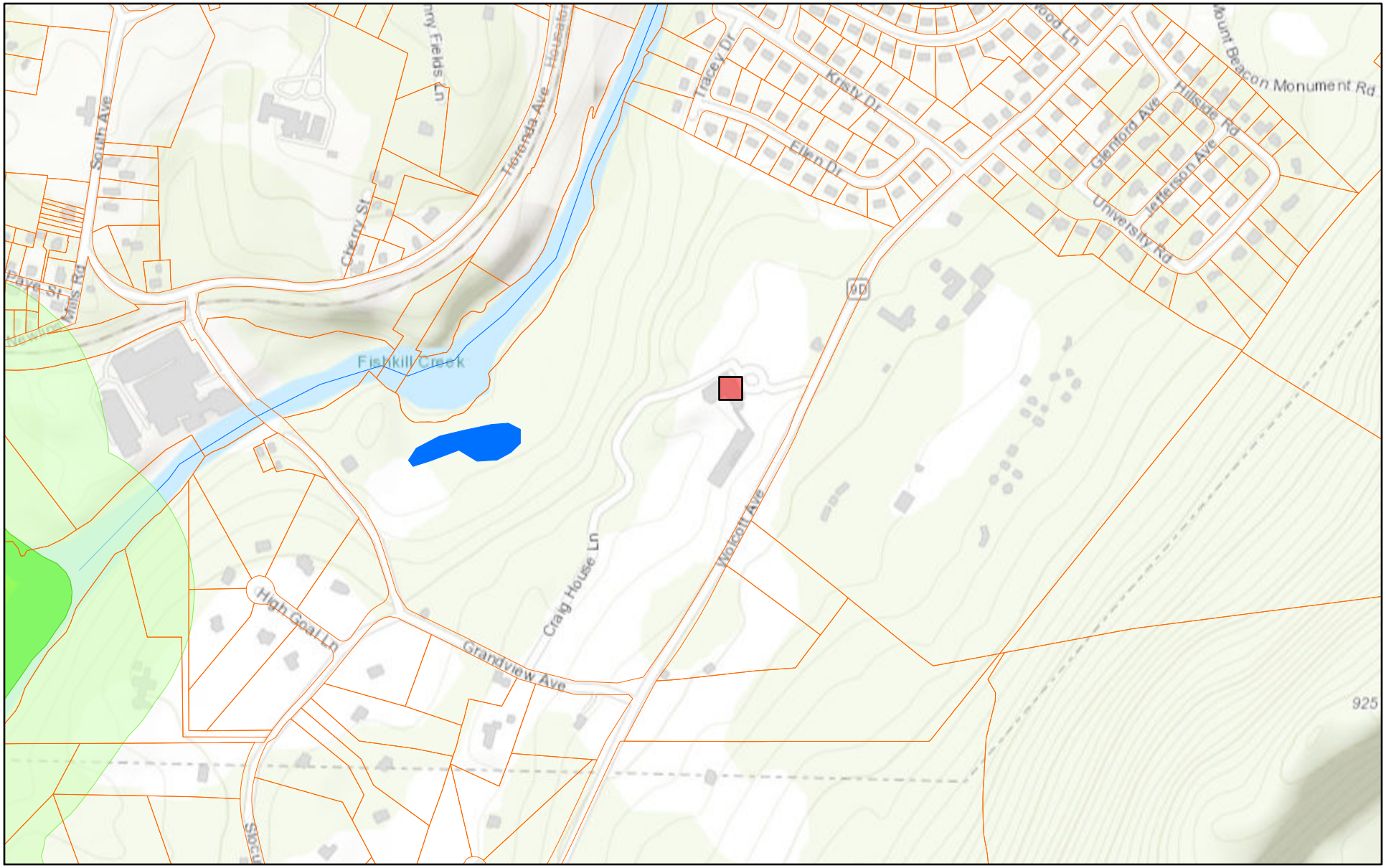
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.44	0.53	0.72	0.88	1.09	**1yr**	0.76	1.07	1.25	1.60	2.01	2.08	2.36	**1yr**	1.84	2.27	2.64	3.38	4.15	**1yr**
2yr	0.37	0.58	0.71	0.97	1.19	1.42	**2yr**	1.03	1.39	1.61	2.06	2.59	3.08	3.46	**2yr**	2.73	3.33	3.79	4.49	5.15	**2yr**
5yr	0.42	0.65	0.81	1.11	1.41	1.66	**5yr**	1.22	1.62	1.89	2.42	3.02	3.68	4.19	**5yr**	3.26	4.03	4.60	5.33	6.10	**5yr**
10yr	0.47	0.72	0.89	1.25	1.62	1.86	**10yr**	1.39	1.81	2.12	2.72	3.39	4.18	4.84	**10yr**	3.70	4.66	5.30	6.05	6.93	**10yr**
25yr	0.54	0.82	1.02	1.46	1.93	2.14	**25yr**	1.66	2.09	2.46	3.07	3.95	4.92	5.86	**25yr**	4.36	5.63	6.39	7.16	8.23	**25yr**
50yr	0.60	0.92	1.14	1.64	2.21	2.39	**50yr**	1.91	2.33	2.78	3.43	4.45	5.59	6.77	**50yr**	4.94	6.51	7.37	8.13	9.38	**50yr**
100yr	0.68	1.03	1.29	1.86	2.55	2.68	**100yr**	2.20	2.62	3.14	3.83	5.04	6.31	7.84	**100yr**	5.58	7.54	8.49	9.23	10.70	**100yr**
200yr	0.77	1.16	1.47	2.13	2.97	3.00	**200yr**	2.56	2.93	3.54	4.30	5.69	7.09	9.11	**200yr**	6.27	8.76	9.81	10.47	12.23	**200yr**
500yr	0.92	1.37	1.76	2.55	3.63	3.49	**500yr**	3.13	3.41	4.19	5.01	6.73	8.28	11.11	**500yr**	7.33	10.69	11.87	12.37	14.60	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.36	0.56	0.68	0.92	1.13	1.36	**1yr**	0.97	1.33	1.53	1.97	2.43	2.81	3.21	**1yr**	2.49	3.09	3.58	4.25	4.95	**1yr**
2yr	0.40	0.62	0.77	1.04	1.28	1.54	**2yr**	1.11	1.51	1.75	2.25	2.80	3.34	3.71	**2yr**	2.96	3.57	4.10	4.82	5.47	**2yr**
5yr	0.49	0.76	0.94	1.29	1.65	1.96	**5yr**	1.42	1.91	2.26	2.89	3.66	4.27	4.88	**5yr**	3.78	4.69	5.41	6.28	7.01	**5yr**
10yr	0.58	0.89	1.11	1.55	2.00	2.37	**10yr**	1.73	2.32	2.74	3.54	4.49	5.21	6.01	**10yr**	4.61	5.78	6.69	7.67	8.48	**10yr**
25yr	0.72	1.10	1.37	1.95	2.57	3.05	**25yr**	2.22	2.98	3.57	4.73	5.88	6.81	7.92	**25yr**	6.03	7.61	8.89	10.01	10.92	**25yr**
50yr	0.85	1.29	1.61	2.32	3.12	3.71	**50yr**	2.69	3.62	4.35	5.83	7.20	8.35	9.75	**50yr**	7.39	9.38	11.04	12.26	13.22	**50yr**
100yr	1.01	1.52	1.91	2.75	3.78	4.50	**100yr**	3.26	4.40	5.30	7.19	8.83	10.24	12.00	**100yr**	9.06	11.54	13.71	15.03	16.01	**100yr**
200yr	1.19	1.79	2.27	3.28	4.57	5.46	**200yr**	3.95	5.34	6.47	8.84	10.81	12.58	14.80	**200yr**	11.13	14.23	17.03	18.42	19.41	**200yr**
500yr	1.49	2.22	2.85	4.14	5.89	7.06	**500yr**	5.08	6.91	8.40	11.67	14.15	16.53	19.49	**500yr**	14.63	18.74	22.72	24.14	25.01	**500yr**

Powered by ACIS Northeast Regional Climate Center

NYSDEC Wetland Mapper-DEC Wetlands near 7 Craig House Ln., Beacon NY



March 22, 2022

1:9,028

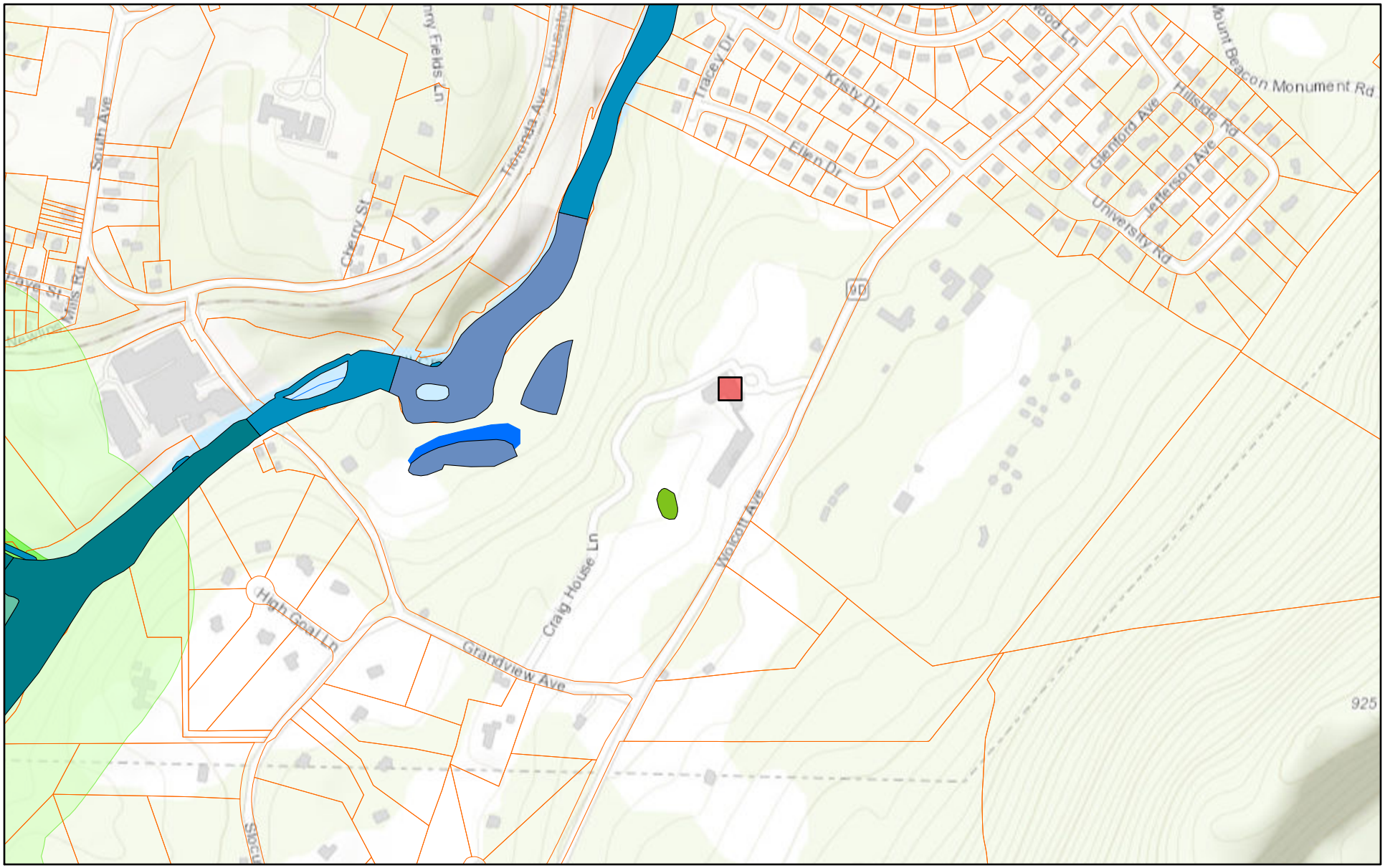
0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

NYS Department of Environmental Conserva
Not a legal docur

NYSDEC Wetland Mapper-DEC & NWI Wetlands near 7 Craig House Ln., Beacon NY



March 22, 2022

1:9,028

0 0.05 0.1 0.2 mi

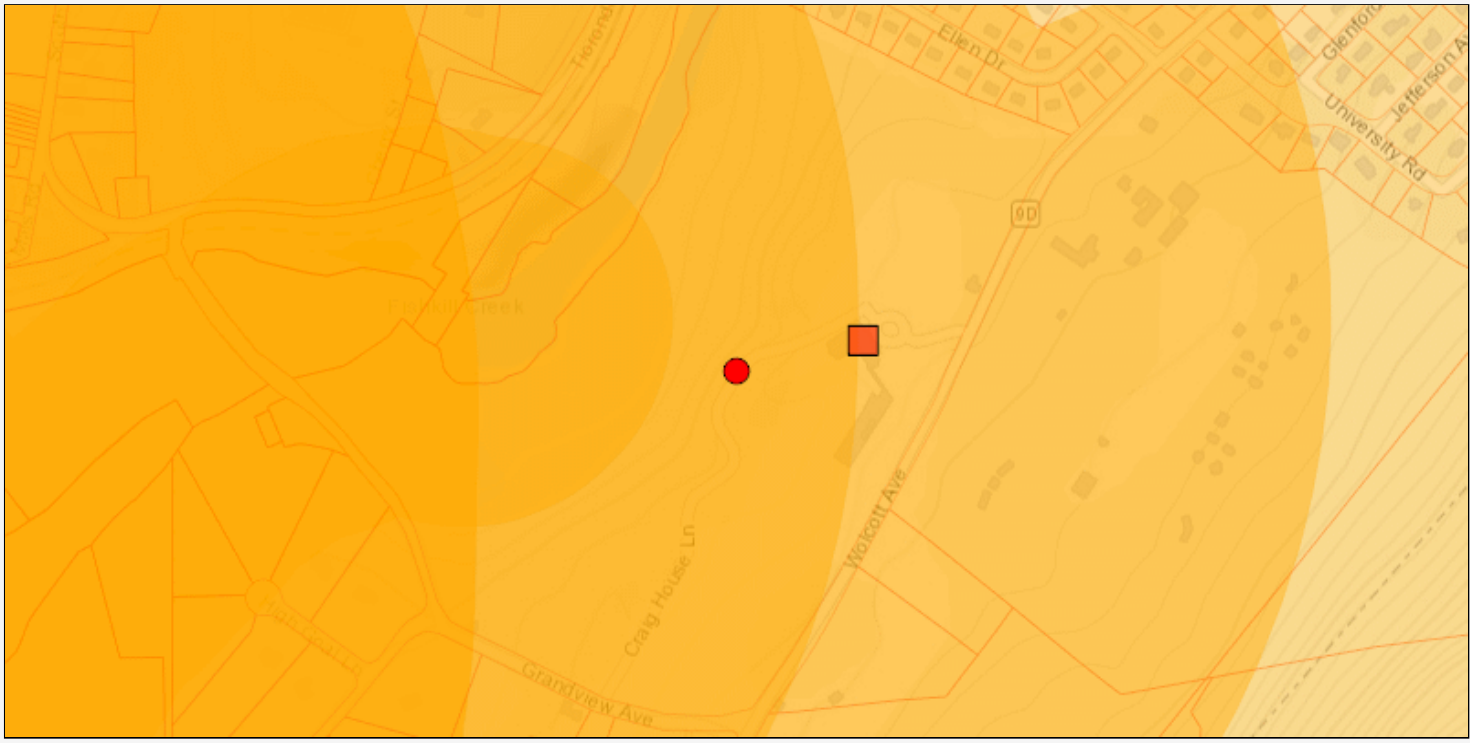
0 0.07 0.15 0.3 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

NYS Department of Environmental Conserva
Not a legal docur

1058

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	586101.2766505829	**Northing:**	4593511.069399186
Longitude/Latitude	**Longitude:**	-73.96857643571313	**Latitude:**	41.48859965420632

The approximate address of the point you clicked on is:
1-53 Craig House Ln, Beacon, New York, 12508

County: Dutchess
City: Beacon
USGS Quad: WEST POINT

Natural Communities in the Vicinity

Natural Community Name: Appalachian oak-hickory forest
Location: Breakneck Scofield Fishkill Ridge
Significance: High Quality Occurrence

Natural Community Name: Brackish intertidal mudflats
Location: Fishkill Creek Mouth
Significance: Rare Community Type

Natural Community Name: Brackish tidal marsh
Location: Fishkill Creek Mouth
Significance: High Quality Occurrence of Rare Community Type

Natural Community Name: Tidal river
Location: Hudson River Estuary

Significance: High Quality Occurrence of Uncommon Community Type

Rare Plants and Rare Animals

This location is in the vicinity of Rare Plants Listed as Endangered, Threatened, or Rare by NYS

This location is in the vicinity of Significant Anadromous Fish Concentration Area – Contact NYSDEC

This location is in the vicinity of Animals Listed as Endangered or Threatened - Contact NYSDEC Regional Office

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

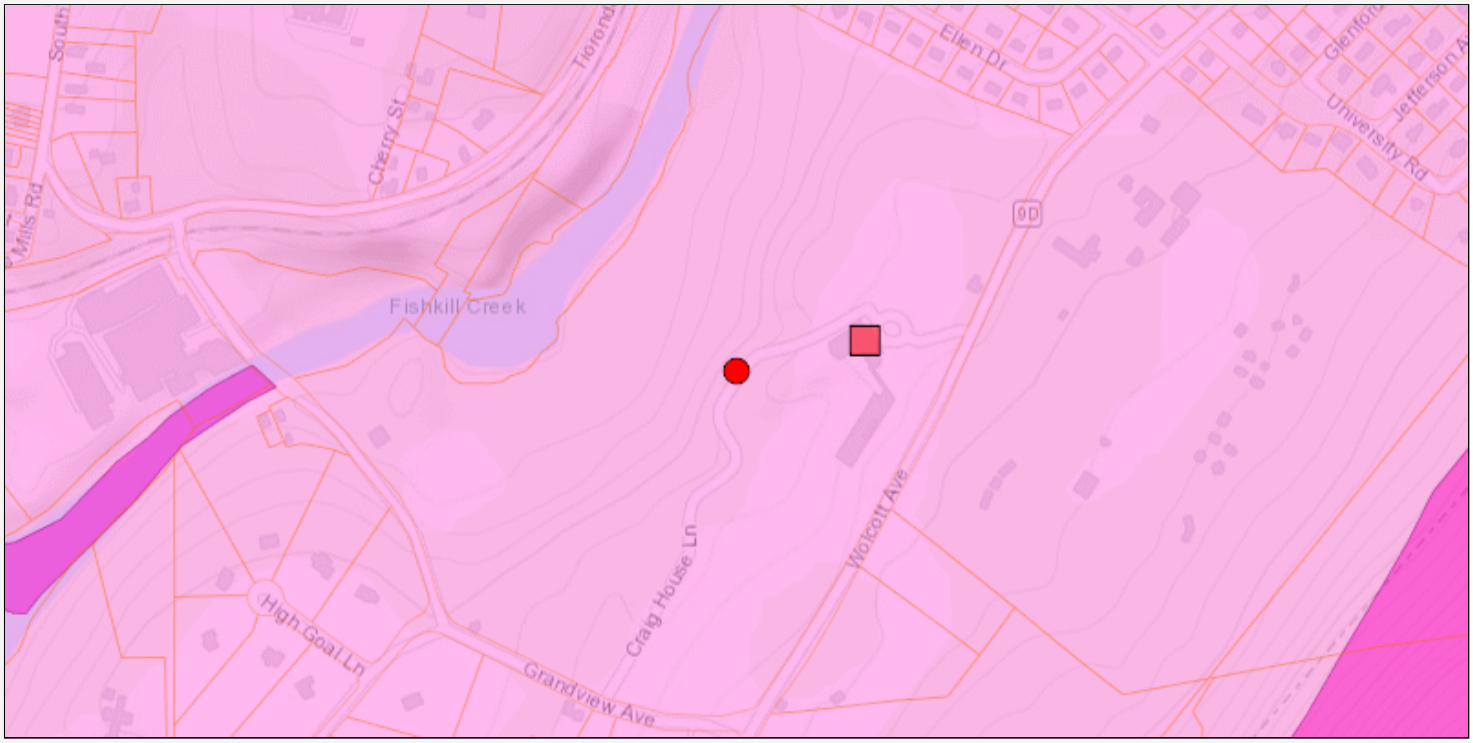
If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	586099.4853840459	**Northing:**	4593511.048035164
Longitude/Latitude	**Longitude:**	-73.96859789338525	**Latitude:**	41.48859965420632

The approximate address of the point you clicked on is:
1-53 Craig House Ln, Beacon, New York, 12508

County: Dutchess
City: Beacon
USGS Quad: WEST POINT

Natural Communities in the Vicinity

Natural Community Name: Appalachian oak-hickory forest
Location: Breakneck Scofield Fishkill Ridge
Significance: High Quality Occurrence

Natural Community Name: Brackish intertidal mudflats
Location: Fishkill Creek Mouth
Significance: Rare Community Type

Natural Community Name: Brackish tidal marsh
Location: Fishkill Creek Mouth
Significance: High Quality Occurrence of Rare Community Type

Natural Community Name: Tidal river
Location: Hudson River Estuary

Significance: High Quality Occurrence of Uncommon Community Type

Rare Plants and Rare Animals

This location is in the vicinity of Rare Plants Listed as Endangered, Threatened, or Rare by NYS

This location is in the vicinity of Significant Anadromous Fish Concentration Area – Contact NYSDEC

This location is in the vicinity of Animals Listed as Endangered or Threatened - Contact NYSDEC Regional Office

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Mirbeau Inn & Spa at Beacon



March 22, 2022

Wetlands

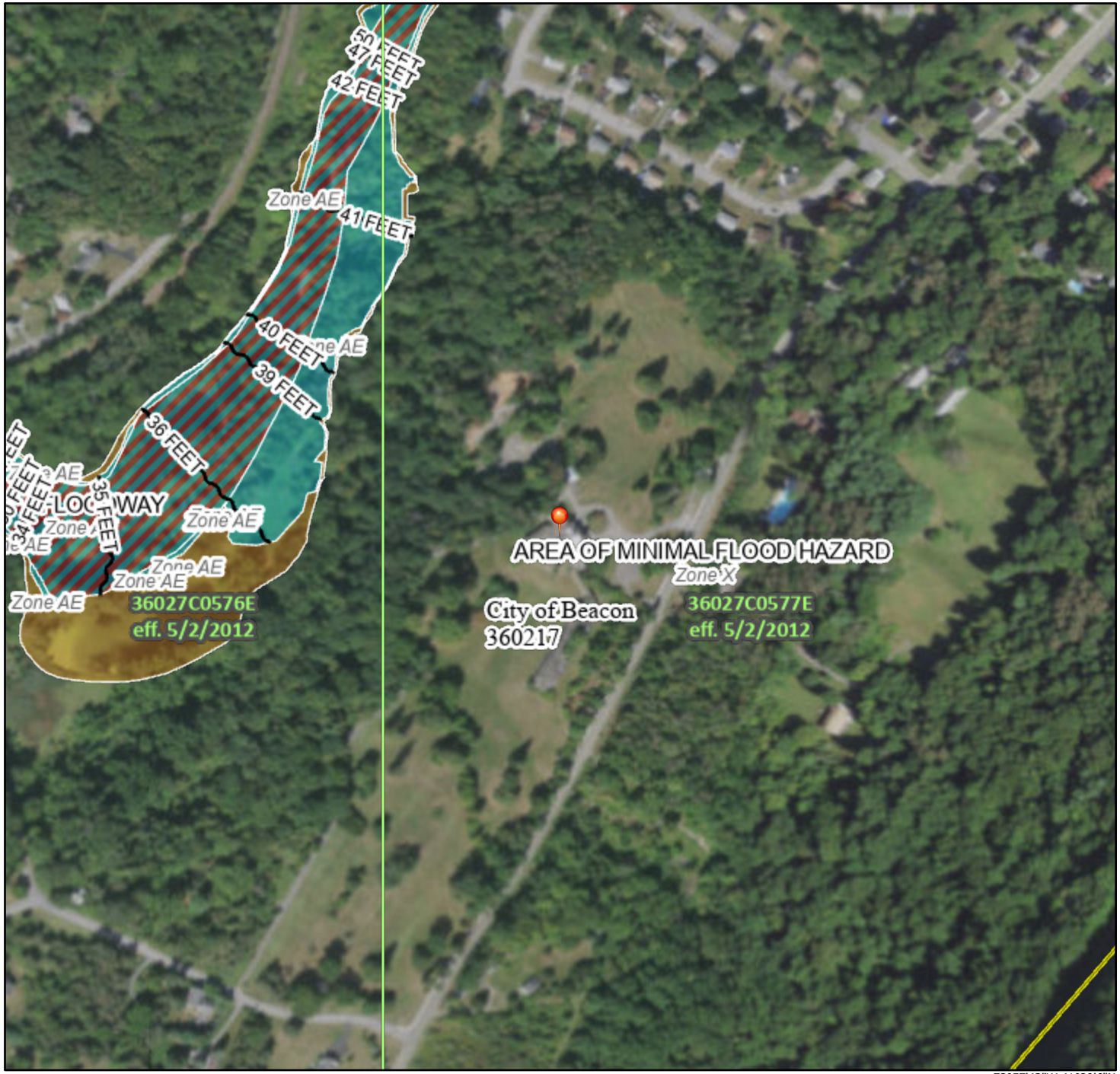
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Flood Hazard Layer FIRMette

FEMA

73°58'20"W 41°29'33"N



73°57'43"W 41°29'6"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

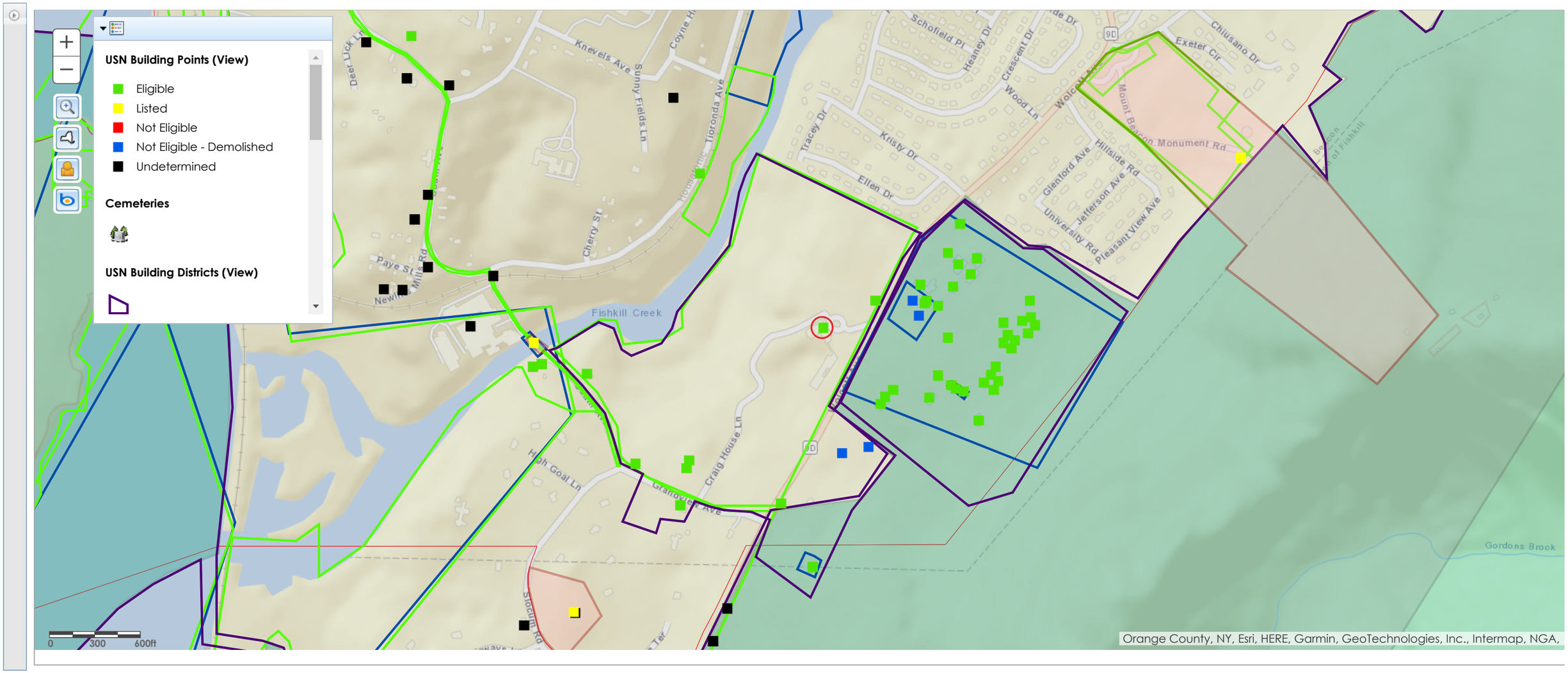
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/22/2022 at 11:36 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used f regulatory purposes.

CRIS NYS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE

Welcome Guest User | Contact Us | F

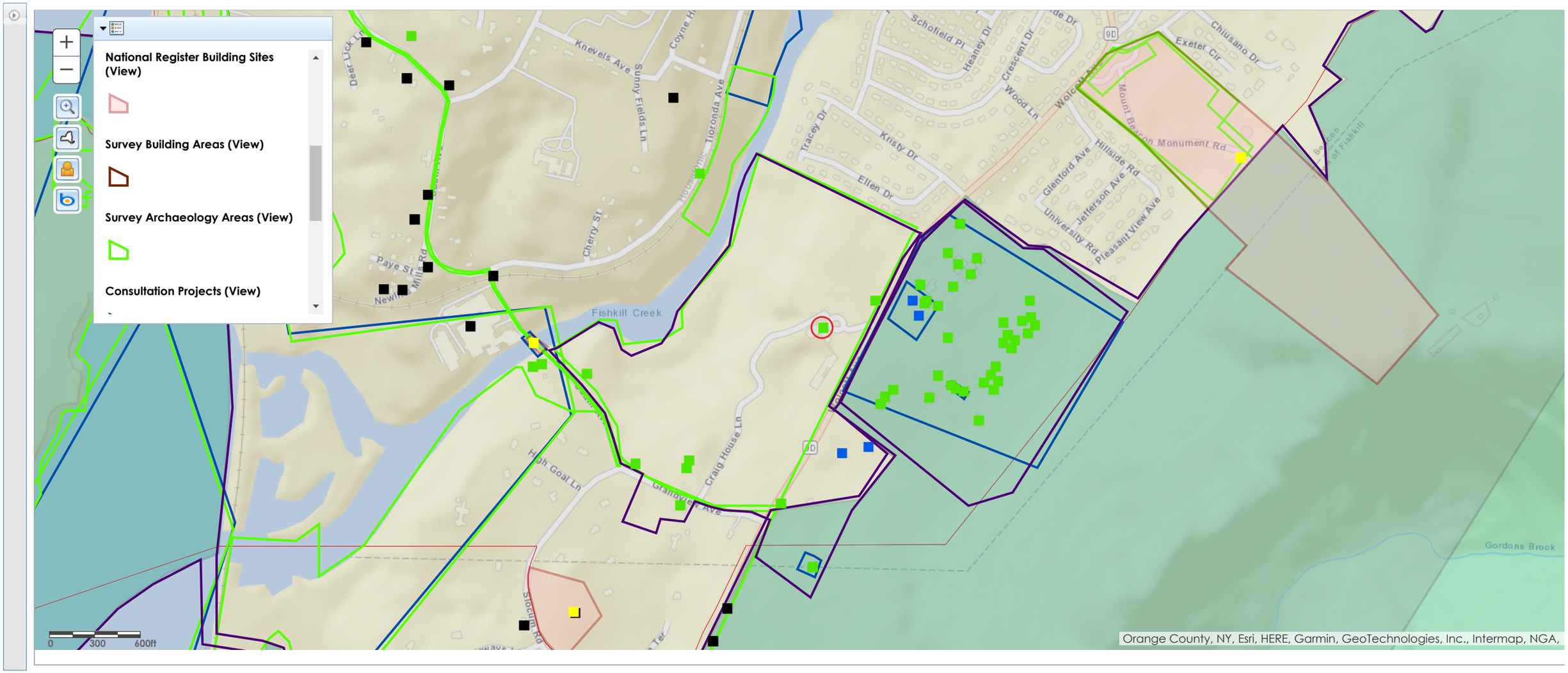


© 2022 New York State Office of Parks, Recreation & Historic Preservation. All rights reserved.

CRIS NYS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE

Welcome Guest User | Contact Us | F

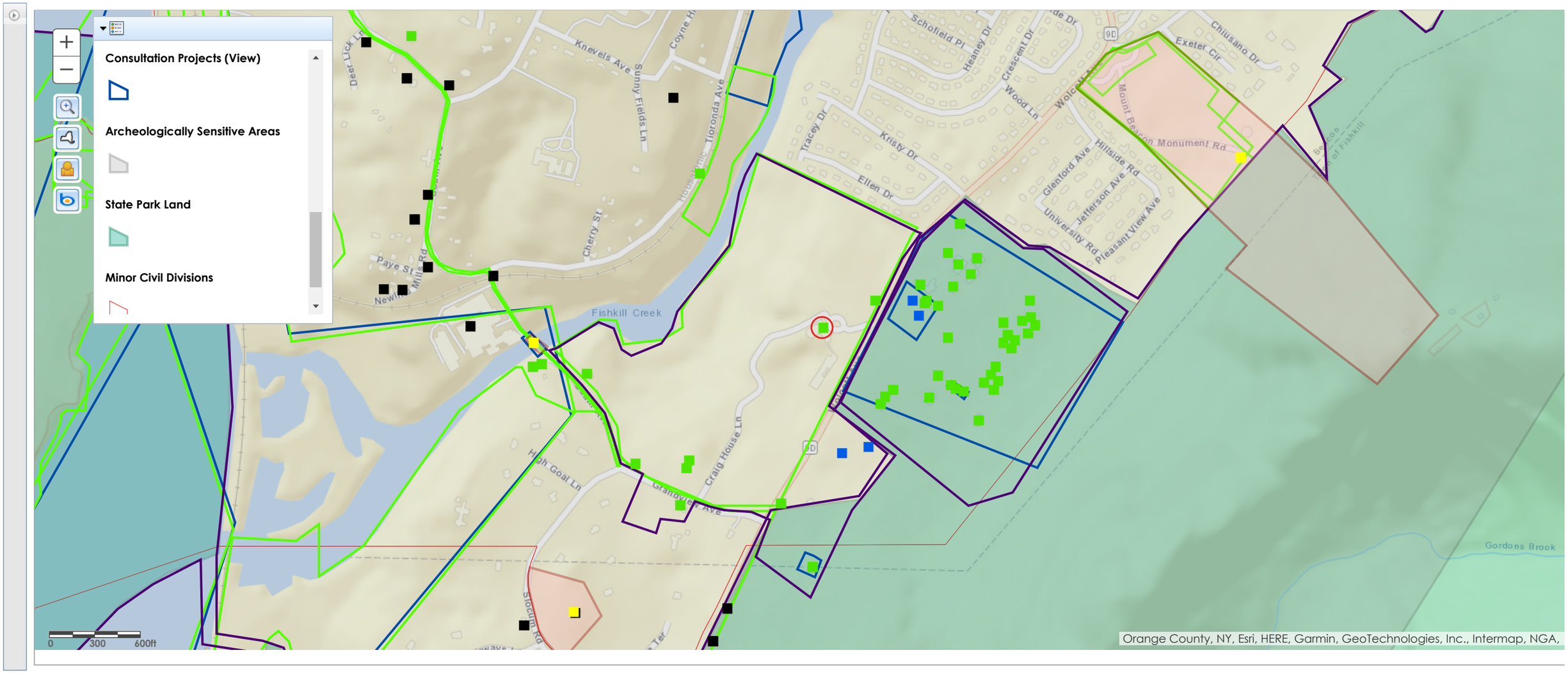


© 2022 New York State Office of Parks, Recreation & Historic Preservation. All rights reserved.

CRIS NYS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE

Welcome Guest User | Contact Us | F

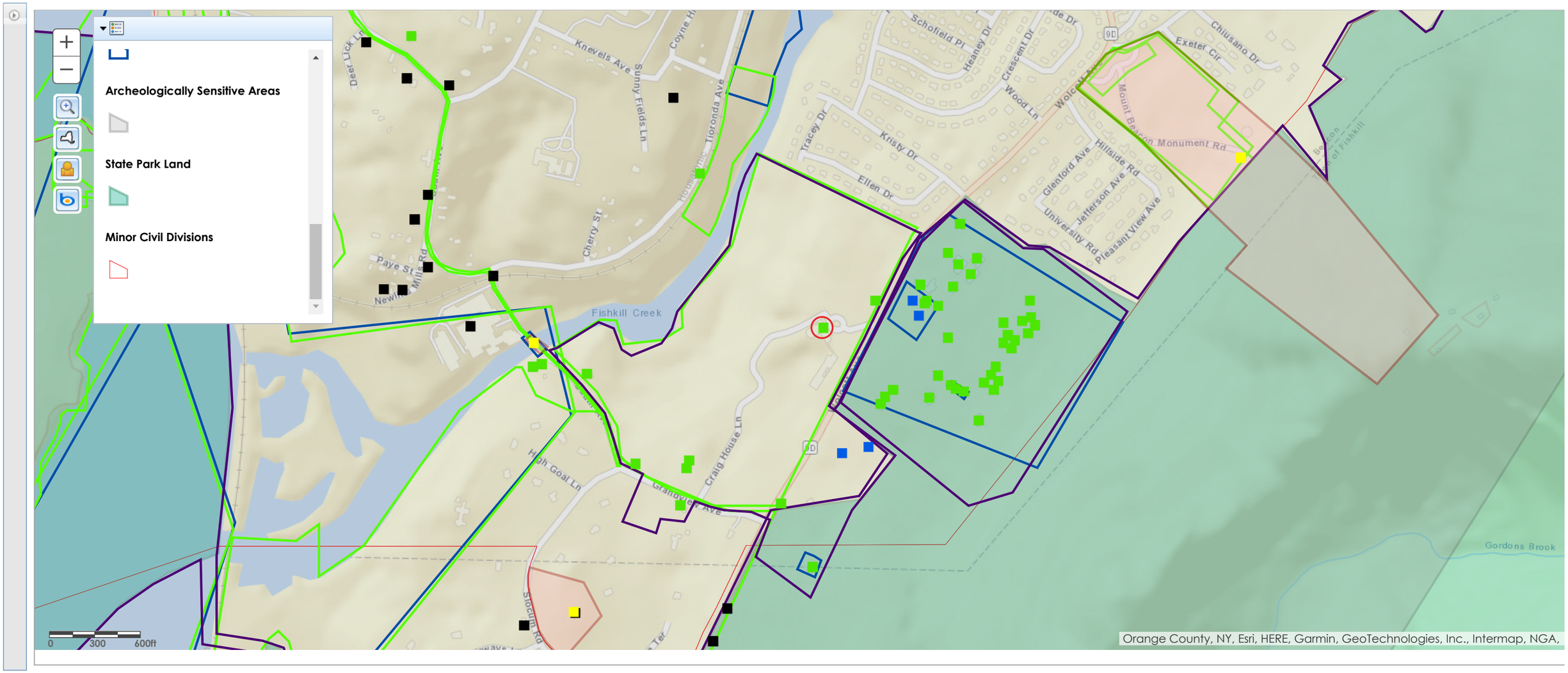


© 2022 New York State Office of Parks, Recreation & Historic Preservation. All rights reserved.

CRIS NYS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE

Welcome Guest User | Contact Us | F



© 2022 New York State Office of Parks, Recreation & Historic Preservation. All rights reserved.

REQUEST FOR STATE HISTORIC PRESERVATION ACT REVIEW

Department of Environmental Conservation

This form is being submitted to NYS Office of Parks, Recreation and Historic Preservation to request consultation on historic properties or archeological resources or both in accordance with the Letter of Resolution between NYS Department of Environmental Conservation and the NYS OPRHP regarding compliance with PRHPL §14.09 for the SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001).

Important: Complete Form and Return to Both Addresses

New York State Office of Parks, Recreation and Historic Preservation (OPRHP) Field Services Bureau
Peebles Island State Park
Waterford, NY 12188-0189

Copy To:
New York State Department of Environmental Conservation
Agency Historic Preservation Officer (APO)
Division of Lands and Forests
625 Broadway
Albany, NY 12233-4255

Name of Owner/Operator of Proposed Construction Activity: The Mirbeau Companies, LI
Date: 3/22/2022
Telephone: 315-217-4164 Email: jdalpos@mirbeau.com
Project Name: Mirbeau Inn & Spa at Beacc
Project Location: 7 Craig House Lane, Beaco
City/Town/Village: City of Beacon County: Dutchess

CONSULTATION WITH OPRHP CRIS WEB SITE AT http://cris.parks.ny.gov or the DEC EAF Mapper http://www.dec.ny.gov/eafmapper indicates the Project Site:

- (•) Project is located within an archeologically sensitive area as indicated on sensitivity map.
- ( ) Project is located immediately adjacent to or contains an historic property.
- ( ) Other _____

PLEASE ADVISE ON:

- ( ) Need for Survey/Scope of Survey Needed
- (•) Significance of Identified Unevaluated Property
- ( ) Impact on Significant Cultural Resources
- ( ) Other _____
- ( ) Adequacy of Survey to Date
- ( ) Significance of Identified Archeological Resources
- ( ) Project Alternatives (As Described)
- ( ) Need for Mitigation

Supporting Documentation Attached

- ( ) Project Description
- (•) Maps
- ( ) Archaeological Studies
- ( ) Agreement reached with OPRHP through the State Environmental Quality Review Act
- ( ) Other documentation that impacts to Historic properties or archaeological resources, or both have been addressed.
- ( ) Other. Please describe. _____

OPRHP PROJECT NUMBER (Assigned by OPRHP): PR# _____

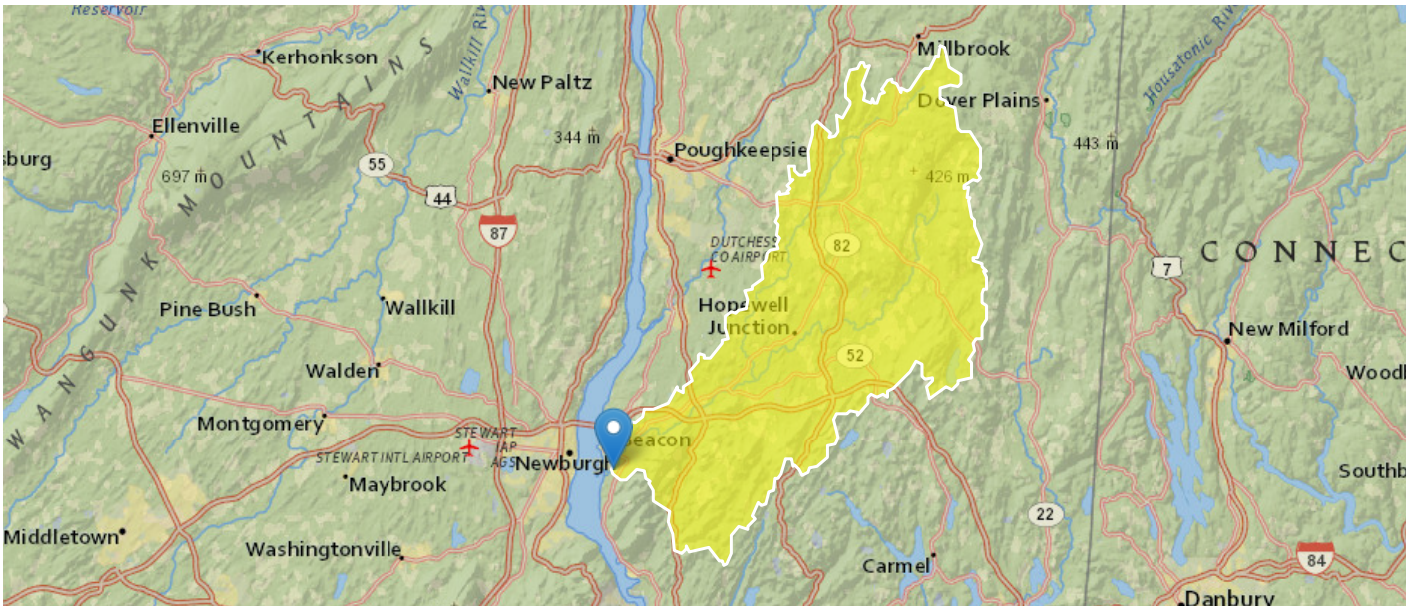
[1] Buildings, structures or objects that are greater than 50 years of age that have not been evaluated for eligibility for listing on the State or National Registers of Historic Places.

APPENDIX D

FISHKILL CREEK OVERALL WATERSHED

Mirbeau - Fishkill Creek Drainage Area

Region ID: NY
Workspace ID: NY20220323210841193000
Clicked Point (Latitude, Longitude): 41.48859, -73.97408
Time: 2022-03-23 17:09:03 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	193	square miles
LAGFACTOR	Lag Factor as defined in SIR 2006-5112	1.99	dimensionless
STORAGE	Percentage of area of storage (lakes ponds reservoirs wetlands)	4.86	percent
MAR	Mean annual runoff for the period of record in inches	21.6	inches
BSLOPCM	Mean basin slope determined by summing lengths of all contours in basin mulitplying by contour interval and dividing product by drainage area	586	feet per mi
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	601893.5	meters
CENTROIDY	Basin centroid vertical (y) location in state plane units	4605697.8	meters
CONTOUR	Total length of all elevation contours in drainage area in miles	1133.67	miles
CSL1085LO	10-85 slope of lower half of main channel in feet per mile.	8.16	feet per mi
CSL1085UP	10-85 slope of upper half of main channel in feet per mile.	34.9	feet per mi
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	18.7	feet per mi
EL1200	Percentage of basin at or above 1200 ft elevation	1.62	percent
FOREST	Percentage of area covered by forest	67.7	percent
JULAVPRE	Mean July Precipitation	4.61	inches
JUNAVPRE	Mean June Precipitation	4.18	inches
JUNMAXTMP	Maximum June Temperature, in degrees F	78.4	degrees F
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	20.4	percent

Parameter Code	Parameter Description	Value	Unit
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	5.47	percent
LENGTH	Length along the main channel from the measuring location extended to the basin divide	36.1	miles
MAYAVPRE	Mean May Precipitation	4.53	inches
MXSNO	50th percentile of seasonal maximum snow depth from Northeast Regional Climate Center atlas by Cember and Wilks, 1993	12.8	inches
OUTLETX	Basin outlet horizontal (x) location in state plane coordinates	585645	feet
OUTLETY	Basin outlet vertical (y) location in state plane coordinates	4593505	feet
PRECIP	Mean Annual Precipitation	42.5	inches
PRJUNAUG00	Basin average mean precip for June to August from PRISM 1971-2000	13.1	inches
SLOPERATIO	Ratio of main channel slope to basin slope as defined in SIR 2006-5112	0.0319	dimensionless
SSURGOA	Percentage of area of Hydrologic Soil Type A from SSURGO	9.45	percent
SSURGOB	Percentage of area of Hydrologic Soil Type B from SSURGO	36.7	percent

Peak-Flow Statistics Parameters [2006 Full Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	193	square miles	1.93	996
LAGFACTOR	Lag Factor	1.99	dimensionless	0.014	6.997
STORAGE	Percent Storage	4.86	percent	0	11.88
MAR	Mean Annual Runoff in inches	21.6	inches	16.03	33.95

Peak-Flow Statistics Flow Report [2006 Full Region 2]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SE	ASEp	Equiv. Yrs.
80-percent AEP flood	2350	ft^3/s	25.5	25.5	4.8
66.7-percent AEP flood	2790	ft^3/s	25.6	25.6	4.3
50-percent AEP flood	3430	ft^3/s	25.8	25.8	4.4
20-percent AEP flood	5290	ft^3/s	27	27	7.3
10-percent AEP flood	6830	ft^3/s	28.2	28.2	10.1
4-percent AEP flood	9080	ft^3/s	29.9	29.9	13.6
2-percent AEP flood	11000	ft^3/s	31.5	31.5	15.8
1-percent AEP flood	13100	ft^3/s	33.3	33.3	17.6
0.5-percent AEP flood	15500	ft^3/s	35.3	35.3	18.9
0.2-percent AEP flood	19000	ft^3/s	38.4	38.4	20.1

Peak-Flow Statistics Citations

Lumia, Richard, Freehafer, D.A., and Smith, M.J.,2006, Magnitude and Frequency of Floods in New York: U.S. Geological Survey Scientific Investigations Report 2006–5112, 152 p. (http://pubs.usgs.gov/sir/2006/5112/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.7.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

APPENDIX E

POST-DEVELOPMENT HYDROCAD MODEL

(TO BE PROVIDED)

APPENDIX F

STORMWATER MANAGEMENT PRACTICE DESIGN

Project:	Mirabeau			
Description:	Stormwater Quality Design			
By/Date:	ESR	3/29/2022	Reviewed/Date:	MAB

Hudson Land Design, P.C.
174 Main Street
Beacon, NY 12508
845-440-6926

Underground Infiltration A

1) Determine Water Quality Volume

Water quality volume to be treated will be calculated using the 90% rule from Section 4.2 of the New York State Storm Water Design Manual (January 2015), hereinafter referred to as NYSSDM.

$WQ_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
WQ_V = Water quality volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area
A = Watershed (ac)

Watershed	P (in)	Impervious Area (ac)	Impervious (Coverage %)	Rv	Total Area (ac)	WQv (cf)	Pre-Treatment Practice	Treatment Practice
11	1.40	2.57	48	0.48	5.39	13,122	Separator Row x 2	Infiltration

2) Determine Minimum Runoff Reduction Volume (RR_V)

Goal: Provide 100% RR_V by implementing Green Infrastructure techniques and Stormwater Management Practices

$RR_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
RR_V = Runoff Reduction Volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area — R_V: 0.48
A = Watershed (ac)
100% RR_V: 13,122 cf

* Minimum Rv of of 0.2 not applicable to RR_V calculations (use actual calculated Rv).

For projects that cannot meet 100% RR_V: Implement Specific Reduction Factor (S), which provides an absoulte minimum acceptable RR_V.

Drainage Area with Hydrologic Soil Group A:	5.390 acres	Corresponding S: 0.55
Drainage Area with Hydrologic Soil Group B:	0.000 acres	Corresponding S: 0.40
Drainage Area with Hydrologic Soil Group C:	0.000 acres	Corresponding S: 0.30
Drainage Area with Hydrologic Soil Group D:	0.000 acres	Corresponding S: 0.20
Total Area:	5.390 acres	
Total Area Matches		Calculated S: 0.55

Minimum RR_V (acre-feet) = [(P)(Rv*)(Ai)]/12

Calculated Ai: 1.4132
Calculated Rv*: 0.95
Calculated Minimum RR_V: 6823 cf

Where:
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv* = 0.05 + 0.009 x I , where I is % impervious area (100%)
Ai = (S)(Aic)
Aic = Total area of new impervious cover

Project:	Mirabeau			
Description:	Stormwater Quality Design			
By/Date:	ESR	3/29/2022	Reviewed/Date:	MAB

Hudson Land Design, P.C.
174 Main Street
Beacon, NY 12508
845-440-6926

Bioretention Area A

1) Determine Water Quality Volume

Water quality volume to be treated will be calculated using the 90% rule from Section 4.2 of the New York State Storm Water Design Manual (January 2015), hereinafter referred to as NYSSDM.

$WQ_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
WQ_V = Water quality volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area
A = Watershed (ac)

Watershed	P (in)	Impervious Area (ac)	Impervious (Coverage %)	Rv	Total Area (ac)	WQv (cf)	Pre-Treatment Practice	Treatment Practice
12	1.40	1.26	52	0.51	2.45	6,400	Forebays	Bioretention

2) Determine Minimum Runoff Reduction Volume (RR_V)

Goal: Provide 100% RR_V by implementing Green Infrastructure techniques and Stormwater Management Practices

$RR_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
RR_V = Runoff Reduction Volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area — R_V: 0.51
A = Watershed (ac)
100% RR_V: 6,400 cf

* Minimum Rv of of 0.2 not applicable to RR_V calculations (use actual calculated Rv).

For projects that cannot meet 100% RR_V: Implement Specific Reduction Factor (S), which provides an absoulte minimum acceptable RR_V.

Drainage Area with Hydrologic Soil Group A:	2.434 acres	Corresponding S: 0.55
Drainage Area with Hydrologic Soil Group B:	0.000 acres	Corresponding S: 0.40
Drainage Area with Hydrologic Soil Group C:	0.016 acres	Corresponding S: 0.30
Drainage Area with Hydrologic Soil Group D:	0.000 acres	Corresponding S: 0.20
Total Area:	2.450 acres	
Total Area Matches		Calculated S: 0.548367253

Minimum RR_V (acre-feet) = [(P)(Rv*)(Ai)]/12

Calculated Ai: 0.6926
Calculated Rv*: 0.95
Where: Calculated Minimum RR_V: 3344 cf
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv* = 0.05 + 0.009 x I , where I is % impervious area (100%)
Ai = (S)(Aic)
Aic = Total area of new impervious cover

Project:	Mirabeau			
Description:	Stormwater Quality Design			
By/Date:	ESR	3/24/2022	Reviewed/Date:	MAB

Hudson Land Design, P.C.
174 Main Street
Beacon, NY 12508
845-440-6926

Bioretention Area B

1) Determine Water Quality Volume

Water quality volume to be treated will be calculated using the 90% rule from Section 4.2 of the New York State Storm Water Design Manual (January 2015), hereinafter referred to as NYSSDM.

$WQ_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
WQ_V = Water quality volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area
A = Watershed (ac)

Watershed	P (in)	Impervious Area (ac)	Impervious (Coverage %)	Rv	Total Area (ac)	WQv (cf)	Pre-Treatment Practice	Treatment Practice
13	1.40	0.11	28	0.30	0.38	578	Forebays	Bioretention

2) Determine Minimum Runoff Reduction Volume (RR_V)

Goal: Provide 100% RR_V by implementing Green Infrastructure techniques and Stormwater Management Practices

$RR_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
RR_V = Runoff Reduction Volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area — R_V: 0.30
A = Watershed (ac)
100% RR_V: 0,578 cf

* Minimum Rv of of 0.2 not applicable to RR_V calculations (use actual calculated Rv).

For projects that cannot meet 100% RR_V: Implement Specific Reduction Factor (S), which provides an absoulte minimum acceptable RR_V.

Drainage Area with Hydrologic Soil Group A:	0.000 acres	Corresponding S: 0.55
Drainage Area with Hydrologic Soil Group B:	0.357 acres	Corresponding S: 0.40
Drainage Area with Hydrologic Soil Group C:	0.023 acres	Corresponding S: 0.30
Drainage Area with Hydrologic Soil Group D:	0.000 acres	Corresponding S: 0.20
Total Area:	0.380 acres	
Total Area Matches		Calculated S: 0.394

Minimum RR_V (acre-feet) = [(P)(Rv*)(Ai)]/12

Calculated Ai: 0.0415
Calculated Rv*: 0.95
Calculated Minimum RR_V: 200 cf

Where:
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv* = 0.05 + 0.009 x I , where I is % impervious area (100%)
Ai = (S)(Aic)
Aic = Total area of new impervious cover

Project:	Mirabeau			
Description:	Stormwater Quality Design			
By/Date:	ESR	3/29/2022	Reviewed/Date:	MAB

Hudson Land Design, P.C.
174 Main Street
Beacon, NY 12508
845-440-6926

Bioretention Area C

1) Determine Water Quality Volume

Water quality volume to be treated will be calculated using the 90% rule from Section 4.2 of the New York State Storm Water Design Manual (January 2015), hereinafter referred to as NYSSDM.

$WQ_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
WQ_V = Water quality volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area
A = Watershed (ac)

Watershed	P (in)	Impervious Area (ac)	Impervious (Coverage %)	Rv	Total Area (ac)	WQv (cf)	Pre-Treatment Practice	Treatment Practice
14	1.40	0.07	37	0.38	0.18	349	Forebays	Bioretention

3) Determine Minimum Runoff Reduction Volume (RR_V)

Goal: Provide 100% RR_V by implementing Green Infrastructure techniques and Stormwater Management Practices

$RR_V = 43{,}560 \times [P \times Rv \times A] / 12$

Where:
RR_V = Runoff Reduction Volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area — R_V: 0.38
A = Watershed (ac)
100% RR_V: 0,349 cf

* Minimum Rv of of 0.2 not applicable to RR_V calculations (use actual calculated Rv).

For projects that cannot meet 100% RR_V: Implement Specific Reduction Factor (S), which provides an absoulte minimum acceptable RR_V.

Drainage Area with Hydrologic Soil Group A:	0.180 acres	Corresponding S: 0.55
Drainage Area with Hydrologic Soil Group B:	0.000 acres	Corresponding S: 0.40
Drainage Area with Hydrologic Soil Group C:	0.000 acres	Corresponding S: 0.30
Drainage Area with Hydrologic Soil Group D:	0.000 acres	Corresponding S: 0.20
Total Area:	0.180 acres	
Total Area Matches		Calculated S: 0.55

Minimum RR_V (acre-feet) = [(P)(Rv*)(Ai)]/12 — Calculated Ai: 0.0364
Calculated Rv*: 0.95
Where: Calculated Minimum RR_V: 176 cf
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv* = 0.05 + 0.009 x I , where I is % impervious area (100%)
Ai = (S)(Aic)
Aic = Total area of new impervious cover

Project:	Mirabeau			
Description:	Stormwater Quality Design			
By/Date:	ESR	3/29/2022	Reviewed/Date:	MAB

Hudson Land Design, P.C.
174 Main Street
Beacon, NY 12508
845-440-6926

Bioretention Area D & E

1) Determine Water Quality Volume

Water quality volume to be treated will be calculated using the 90% rule from Section 4.2 of the New York State Storm Water Design Manual (January 2015), hereinafter referred to as NYSSDM.

$WQ_V = 43,560 \times [P \times Rv \times A] / 12$

Where:
WQ_V = Water quality volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area
A = Watershed (ac)

Watershed	P (in)	Impervious Area (ac)	Impervious (Coverage %)	Rv	Total Area (ac)	WQv (cf)	Pre-Treatment Practice	Treatment Practice
15	1.40	0.36	19	0.22	1.89	2,139	Forebays	Bioretention

3) Determine Minimum Runoff Reduction Volume (RR_V)

Goal: Provide 100% RR_V by implementing Green Infrastructure techniques and Stormwater Management Practices

$RR_V = 43,560 \times [P \times Rv \times A] / 12$

Where:
RR_V = Runoff Reduction Volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area — R_V: 0.22
A = Watershed (ac)
100% RR_V: 2,139 cf

* Minimum Rv of of 0.2 not applicable to RR_V calculations (use actual calculated Rv).

For projects that cannot meet 100% RR_V: Implement Specific Reduction Factor (S), which provides an absoulte minimum acceptable RR_V.

Drainage Area with Hydrologic Soil Group A:	1.890 acres	Corresponding S: 0.55
Drainage Area with Hydrologic Soil Group B:	0.000 acres	Corresponding S: 0.40
Drainage Area with Hydrologic Soil Group C:	0.000 acres	Corresponding S: 0.30
Drainage Area with Hydrologic Soil Group D:	0.000 acres	Corresponding S: 0.20
Total Area:	1.890 acres	
Total Area Matches		Calculated S: 0.55

Minimum RR_V (acre-feet) = [(P)(Rv*)(Ai)]/12
Calculated Ai: 0.1995
Calculated Rv*: 0.95
Calculated Minimum RR_V: 963 cf

Where:
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv* = 0.05 + 0.009 x I , where I is % impervious area (100%)
Ai = (S)(Aic)
Aic = Total area of new impervious cover

Project:	Mirabeau			
Description:	Stormwater Quality Design			
By/Date:	ESR	3/29/2022	Reviewed/Date:	MAB

Hudson Land Design, P.C.
174 Main Street
Beacon, NY 12508
845-440-6926

Self Contained Water Garden

1) Determine Water Quality Volume

Water quality volume to be treated will be calculated using the 90% rule from Section 4.2 of the New York State Storm Water Design Manual (January 2015), hereinafter referred to as NYSSDM.

$WQ_V = 43,560 \times [P \times Rv \times A] / 12$

Where:
WQ_V = Water quality volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area
A = Watershed (ac)

Watershed	P (in)	Impervious Area (ac)	Impervious (Coverage %)	Rv	Total Area (ac)	WQv (cf)	Pre-Treatment Practice	Treatment Practice
P	1.40	0.10	11	0.15	0.89	684	Forebay	Bioretention

2) Determine Minimum Runoff Reduction Volume (RR_V)

Goal: Provide 100% RR_V by implementing Green Infrastructure techniques and Stormwater Management Practices

$RR_V = 43,560 \times [P \times Rv \times A] / 12$

Where:
RR_V = Runoff Reduction Volume (cf)
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv = 0.05 + 0.009 x I , where I is % impervious area — R_V: 0.15
A = Watershed (ac)
100% RR_V: 0,684 cf

* Minimum Rv of of 0.2 not applicable to RR_V calculations (use actual calculated Rv).

For projects that cannot meet 100% RR_V: Implement Specific Reduction Factor (S), which provides an absoulte minimum acceptable RR_V.

Drainage Area with Hydrologic Soil Group A:	0.002 acres	Corresponding S: 0.55
Drainage Area with Hydrologic Soil Group B:	0.000 acres	Corresponding S: 0.40
Drainage Area with Hydrologic Soil Group C:	0.888 acres	Corresponding S: 0.30
Drainage Area with Hydrologic Soil Group D:	0.000 acres	Corresponding S: 0.20
Total Area:	0.890 acres	
Total Area Matches		Calculated S: 0.300561024

Minimum RR_V (acre-feet) = [(P)(Rv*)(Ai)]/12
Calculated Ai: 0.0301
Calculated Rv*: 0.95
Calculated Minimum RR_V: 145 cf

Where:
P = 90 % Rainfall Event Number (in), per Figure 4.1
Rv* = 0.05 + 0.009 x I , where I is % impervious area (100%)
Ai = (S)(Aic)
Aic = Total area of new impervious cover

APPENDIX G

PRE-CONSTRUCTION SITE ASSESSMENT CHECKLIST

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

APPENDIX H

STORMWATER CONSTRUCTION INSPECTION CHECKLISTS

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Comments:

Actions to be Taken:

Open Channel System Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility location staked out		
2. Excavation		
Size and location		
Side slope stable		
Soil permeability		
Groundwater / bedrock		
Lateral slopes completely level		
Longitudinal slopes within design range		
Excavation does not compact subsoils		
3. Check dams		
Dimensions		
Spacing		
Materials		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
4. Structural Components		
Underdrain installed correctly		
Inflow installed correctly		
Pretreatment devices installed		
5. Vegetation		
Complies with planting specifications		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
6. Final inspection		
Dimensions		
Check dams		
Proper outlet		
Effective stand of vegetation and stabilization		
Contributing watershed stabilized before flow is routed to the factility		

Comments:

Actions to be Taken:

APPENDIX I

CONTRACTOR AND SUBCONTRACTOR CERTIFICATIONS

CERTIFICATION STATEMENT

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Contractor:

Name:_____

Signature:_____

Title:_____

Company Name:_____

Company Address:_____

_____

_____

_____

Company Phone Number:_____

Site Address:_____

_____

_____

_____

Specific SWPPP Responsibilities:

_____

_____

_____

_____

_____

Date of Certification: _____

Name and Title of Trained Contractor for SWPPP Implementation:_____

_____

CERTIFICATION STATEMENT

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

Sub-Contractor:

Name:_____

Signature:_____

Title:_____

Company Name:_____

Company Address:_____

_____

_____

_____

Company Phone Number:_____

Site Address:_____

_____

_____

_____

Specific SWPPP Responsibilities:

_____

_____

_____

_____

_____

Date of Certification: _____

Name and Title of Trained Contractor for SWPPP Implementation:_____

_____

APPENDIX J

QUALIFIED PROFESSIONAL'S CERTIFICATION

QUALIFIED PROFESSIONAL'S CERTIFICATION

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the Pre-Construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (Print):_____

Title:_____

Date:_____

Company Name:_____

Company Address:_____

_____

_____

_____

Company Phone Number:_____

Company Email:_____

Signature:_____

APPENDIX K

OWNER/OPERATOR CERTIFICATION

CERTIFICATION STATEMENT

"I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I also certify under penalty of law that that this document and the corresponding documents were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, I am acknowledging that this SWPPP has been developed and will be implemented as the first element of construction and agree to comply with all the terms and conditions of the general permit for which the NOI is being submitted."

Name (Print):_____

Title:_____

Date:_____

Company Name:_____

Company Address:_____

_____

_____

_____

Company Phone Number:_____

Company Email:_____

Signature:_____

APPENDIX L

POST-DEVELOPMENT MAINTENANCE AND INSPECTION CHECKLIST

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Comments:

Actions to be Taken:

Open Channel Operation, Maintenance, and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Contributing areas clean of debris		
2. Check Dams or Energy Dissipators (Annual, After Major Storms)		
No evidence of flow going around structures		
No evidence of erosion at downstream toe		
Soil permeability		
Groundwater / bedrock		
3. Vegetation (Monthly)		
Mowing done when needed		
Minimum mowing depth not exceeded		
No evidence of erosion		
Fertilized per specification		
4. Dewatering (Monthly)		
Dewaters between storms		

MAINTENANCE ITEM	SATISFACTORY/ UNSATISFACTORY	COMMENTS
5. Sediment deposition (Annual)		
Clean of sediment		
6. Outlet/Overflow Spillway (Annual)		
Good condition, no need for repairs		
No evidence of erosion		

Comments:

Actions to be Taken:

APPENDIX M

CONSTRUCTION INSPECTION REPORT

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Inspector (print name)	**Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

APPENDIX N

NOTICE OF TERMINATION

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name: Mirbeau Beacon, LLC.

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name: Mirbeau Inn & Spa at Beacon

6. Street Address: 7 Craig House Lane

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

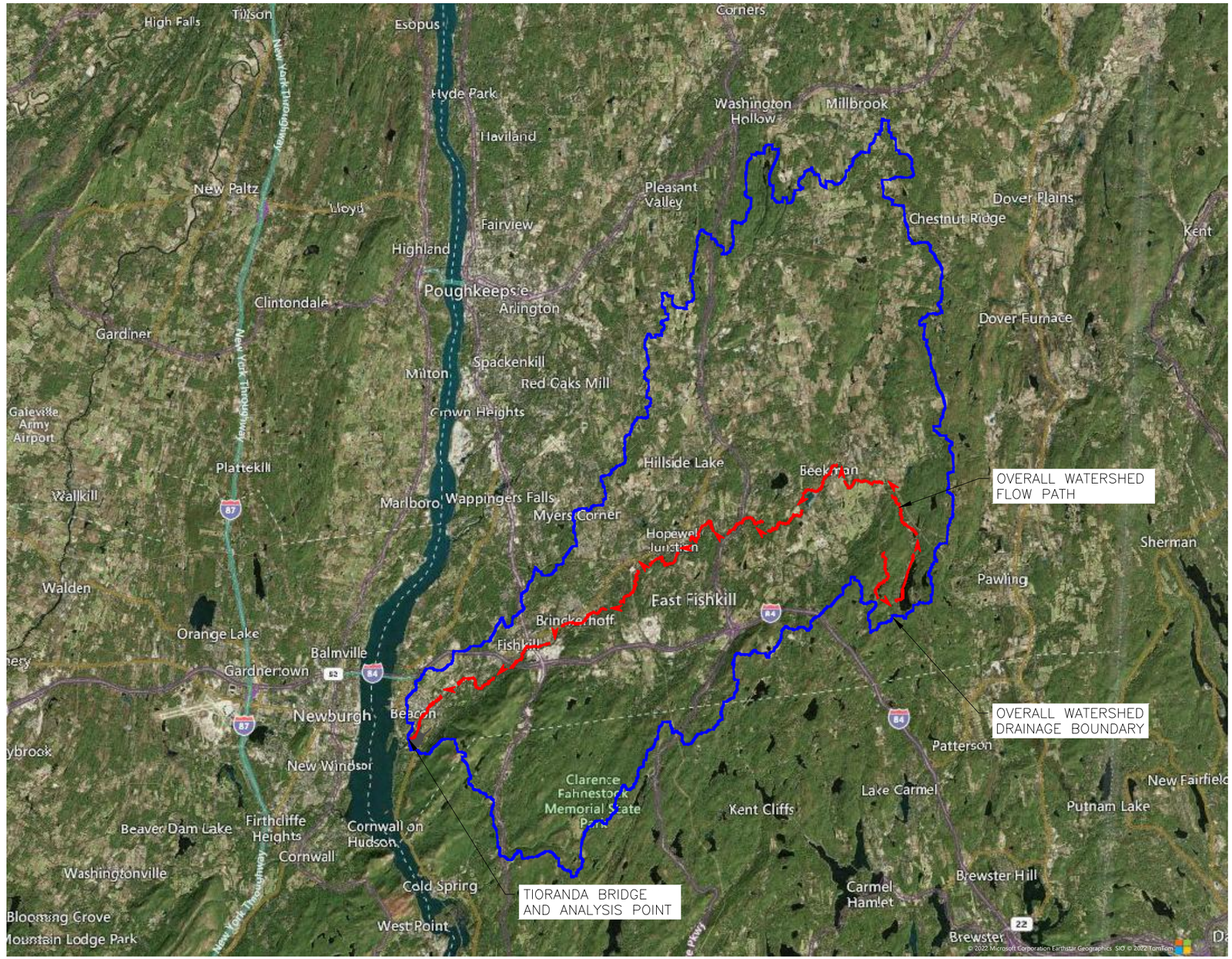
I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

APPENDIX O

DRAINAGE MAPS



24:30° West Longitude

True North at

DRAWN BY: ESR	CHECKED BY: MAB

REVISIONS:

NO.	DATE	DESCRIPTION	BY

3/29/2022 6:14:08 PM

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

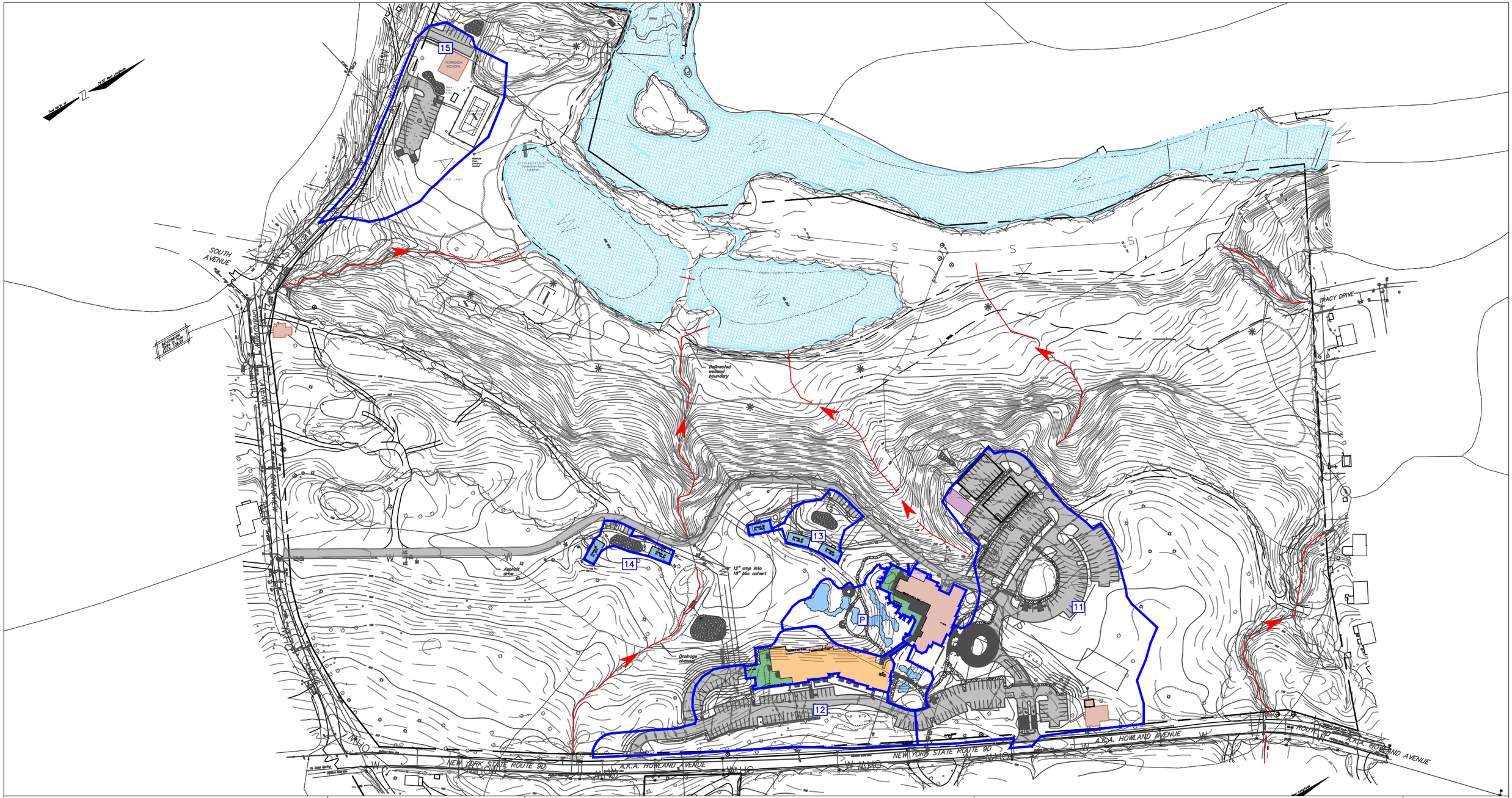
OVERALL WATERSHED MAP

MIRBEAU INN & SPA BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #: 2021:051
DATE: 3/29/2022
SCALE: 1" = 20,000'
TITLE: DR-1
SHEET: 1 OF 1

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION



DRAWN BY: ESR	CHECKED BY: DGK

REVISIONS:

NO.	DATE	DESCRIPTION	BY

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

SEAL

POST-DEVELOPMENT CONDITIONS MAP (DETAILED)

MIRBEAU BEACON INN & SPA

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2022
SCALE:	1" = 200'
TITLE:	DR-2
SHEET:	1 OF 1

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION

APPLICATION FOR SITE PLAN & SPECIAL USE PERMIT

MIRBEAU BEACON INN & SPA

7 CRAIG HOUSE LANE
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258
LOT AREA: ±64.35
R1-80 ZONING DISTRICT

OWNER & APPLICANT:
MIRBEAU BEACON, LLC;
433 BROADWAY STE 203,
SARATOGA SPRINGS, NY 12866



AREA MAP SCALE: 1" = 500'

SITE PLAN DRAWING INDEX:

SHEET 1:	COVER SHEET: CV-1
SHEET 2:	EXISTING CONDITIONS AND REMOVALS PLAN: XC-1
SHEET 3:	OVERALL MASTER PLAN: SP-1
SHEET 4:	SITE PLAN - NORTH: SP-2
SHEET 5:	SITE PLAN - SOUTH: SP-3
SHEET 6:	SITE PLAN - SOUTH WEST: SP-4
SHEET 7:	GRADING & UTILITY PLAN - NORTH: GU-1
SHEET 8:	GRADING & UTILITY PLAN - SOUTH: GU-2
SHEET 9:	EROSION & SEDIMENT CONTROL PLAN - NORTH: ESC-1
SHEET 10:	EROSION & SEDIMENT CONTROL PLAN - SOUTH: ESC-2
SHEET 11:	PRELIMINARY PLANTING PLAN - NORTH: LL-2
SHEET 12:	PRELIMINARY PLANTING PLAN - SOUTH: LL-3
SHEET 13:	SITE LIGHTING PLAN - NORTH: LP-2
SHEET 14:	SITE LIGHTING PLAN - SOUTH: LP-3
SHEET 15:	DETAILS: CD-1
SHEET 16:	DETAILS: CD-2
SHEET 17:	DETAILS: CD-3
SHEET 18:	DETAILS: CD-4

PROJECT ENGINEER:
HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN STREET
BEACON, NEW YORK 12508
PH: 845-440-6926
F: 845-440-6637

PROJECT ARCHITECT:
ARROWSTREET
10 POST OFFICE SQUARE
SUITE 700N
BOSTON, MA 02109
PH: 617-623-5555

PROJECT LANDSCAPE ARCHITECT:
THE LRC GROUP
85 CIVIC CENTER PLAZA
SUITE 204
POUGHKEEPSIE, NY 12601
PH: 845-243-2880

PROJECT WETLAND & WIDLIFE BIOLOGIST:
ECOLOGICAL SOLUTIONS, LLC
121 LEON STOCKER DRIVE
STRATTON, VT 05360
(203) 910-4716

PROJECT SURVEYOR:
BADEY & WATSON
SURVEYING & ENGINEERING D.P.C.
3063 U.S. 9
COLD SPRING, NY 10516
PH: 845-265-9217

PROJECT TRAFFIC CONSULTANT:
COLLIERS ENGINEERING & DESIGN P.C.
400 COLUMBUS AVENUE,
SUITE 108E
VALHALLA, NY 10595
PH: 914-347-7500

PROJECT ATTORNEY:
BERLANDI NUSSBAUM & REITZAS LLP.
527 ROUTE 22, SUITE #2
PAWLING, NY 12564
PH: 212-804-6329

OWNER'S CONSENT:
THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ _____
MIRBEAU BEACON, LLC DATE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE

_____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BADEY 024455 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

COVER SHEET

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	AS SHOWN
TITLE:	XC-1
SHEET:	1 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

1119



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN

PROJECT INFORMATION:

PARCEL OWNER:	THE MIRBEAU COMPANIES, LLC., 433 BROADWAY STE 203, SARATOGA SPRINGS NY 12866
PROJECT ENGINEER:	HUDSON LAND DESIGN P.C., 174 MAIN STREET, BEACON NY 12508
PARCEL LOCATION:	7 CRAIG HOUSE LANE, BEACON NY 12508
TAX PARCEL ID:	6054-13-001258 (±64.39 ACRES) & 6054-17-047180 (±2.24 ACRES)
PARCEL AREA:	±66.63-ACRES TOTAL
WATER SUPPLY:	CITY OF BEACON MUNICIPAL WATER
SEWAGE DISPOSAL:	CITY OF BEACON MUNICIPAL SEWER

MAP REFERENCES:

1. "TOPOGRAPHIC MAP PREPARED FOR MIRBEAU INN & SPA RHINEBECK" DATED OCTOBER 21, 2003 AS PREPARED BY BADEY & WATSON SURVEYING & ENGINEERING D.P.C., N.Y.S. LICENSE NO. 48167 AND REVISED ON MARCH 17, 2022.

SURVEY NOTES:

1. COPYRIGHT "2003 & 2022" BY BADEY & WATSON, SURVEYING & ENGINEERING, D.P.C. ALL RIGHTS RESERVED. UNAUTHORIZED DUPLICATION IS A VIOLATION OF APPLICABLE LAWS.
2. UNAUTHORIZED ALTERATION OR ADDITION TO A DOCUMENT PREPARED BY A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 , SUB-DIVISION 2 OF THE NEW YORK STATE EDUCATION LAW.
3. THE TOPOGRAPHIC DATA HEREON WAS COMPILED PHOTOGRAMMETRICALLY FROM AERIAL PHOTOGRAPHS DATED APRIL 14, 2003. THE PHOTO SCALE WAS 1 INCH TO 500 FEET. THE COMPILATION SCALE WAS 1 INCH TO 40 FEET.
4. THE MERIDIAN AND COORDINATE VALUES HEREON REFER TO THE NEW YORK STATE COORDINATE SYSTEM, EAST ZONE (NAVD-1983).
5. THE VERTICAL DATUM HEREON IS THE NORTH AMERICAN VERTICAL DATUM OF 1988.
6. PROPERTY LINE TAKEN FROM 2003 SURVEY BY PETER A. HUSTIS, L.S. IT IS NOT THE PRODUCT OF A SURVEY BY BADEY & WATSON SURVEYING & ENGINEERING, P.C.
7. REVISED ON MARCH 17, 2022 AS FOLLOWS
   - A. UPDATED LOGO,
   - B. ADDED GRAPHIC SCALE,
   - C. REMOVED 2003 WETLANDS BOUNDARY FLAGGING.
   - C. ADDED WETLAND FLAGGING BY MICHAEL NOWICKI AND RELATED DATA.
   - D. VERIFIED MH273 LOCATION AND INVERTS, AND SEWER LINE NORTH ALONG SOUTH AVENUE, AND RELATED DATA.
8. WETLANDS FLAGS A29, B13 AND H11 WERE NOT FOUND IN FIELD. APPROXIMATE LOCATION BASED ON SKETCH BY MICHAEL NOWICKI.

EXISTING CONDITIONS AND REMOVALS PLAN

SCALE: 1" = 100'

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204, Poughkeepsie NY 12601, Tel: 845.243.2880
160 West Street, Suite E, Cromwell, CT 06416, Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BOGENSCHUTZ 084488 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

EXISTING CONDITIONS & REMOVALS PLAN

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 100'
TITLE:	XC-1
SHEET:	2 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

SCHEDULE OF REGULATIONS (R1–80 ZONING DISTRICT & HDLO ZONE) AND LOT CONFORMANCE TABLE:

PARAMETER	REQUIREMENT (SEE NOTE)	EXISTING LOT	EX. MANSION	EX. S GATE HOUSE	EX. TIORANDA SCH.	EX. BENNET HSE	PROP. HOTEL	PROP. MAINT. BLG.
LOT AREA:	80,000 SQFT MIN./UNIT	±2,804,828 SQFT						
LOT WIDTH:	150 FEET MINIMUM	±2,084.45 FEET						
LOT DEPTH:	200 FEET MINIMUM	±1,103.91 FEET						
YARD SETBACKS:								
FRONT YARD:	50 FEET		±189.5 FEET	±4.1 FEET*	±50.1 FEET	±5.4 FEET*	±108.2 FEET	±476.8 FEET
SIDE YARD:	30 FEET		±783.0 FEET	±745.8 FEET	±226.8 FEET	±521.8 FEET	±806.1 FEET	±754.24 FEET
REAR YARD:	50 FEET MINIMUM		±731.6 FEET	±745.8 FEET	±296.3 FEET	±1042.4 FEET	±958.8 FEET	±568.8 FEET
MAX. BUILDING HEIGHT:	35 FT, 2.5 STORIES		±38 FEET*	EXISTING	EXISTING	EXISTING	±35 FEET	±25 FEET
MAX. BUILDING COVERAGE:	10% MAX.	±1.3%						

*EXISTING NON–CONFORMING

NOTES:
1. THE HISTORIC DISTRICT AND LANDMARK OVERLAY (HDLO) ZONE OVERLAYS THE UNDERLYING R1–80 ZONE APPLICABLE TO SINGLE–FAMILY RESIDENTIAL DEVELOPMENT. THE PLANNING BOARD HAS THE AUTHORITY TO APPROVE BUILDING SIZE AND BUILDING CONFIGURATION FOR A PROJECT WITHIN THE HDLO AS PART OF IT'S SPECIAL PERMIT REVIEW.

PARKING CONFORMANCE TABLE:

LAND USE	CODE REQUIREMENT	REQUIRED
HOTEL (75 ROOMS)	1 SPACE/ROOM	75 SPACES
COTTAGES (5)	2 SPACES/COTTAGE	10 SPACES
RESTAURANT (110 SEATS/2,364 SQFT)	1 SPACE/3 PERSONS	37 SPACES
	OR	OR
	1 SPACE/150 SQFT GROSS	16 SPACES
	FLR. AREA EXCL. UTILITY AREAS	
SPA (21 ROOMS/6,125 SQFT)	1 SPACE/200 SQFT OF GROSS	31 SPACES
	FLR. AREA EXCL. UTILITY AREAS	
EMPLOYEES (60 AT ANY ONE TIME)	1 SPACE/EMPLOYEE	60 SPACES

TOTAL REQUIRED: 213 SPACES
TOTAL PROVIDED: 272 SPACES

NOTES:
1. PARKING FOR THE COTTAGES IS PROPOSED TO BE PROVIDED AT A RATE OF 2 SPACES PER COTTAGE.
2. 60 EMPLOYEES IS THE ANTICIPATED NUMBER OF EMPLOYEES ONSITE AT ANY ONE TIME TO SERVICE THE HOTEL, RESTAURANT AND SPA AS WELL AS OTHER PORTIONS OF THE PROJECT.
3. SPA SQUARE FOOTAGE INCLUDES ALL PUBLICLY AVAILABLE SPA SPACE. BACK–OF–HOUSE OR SUPPORT SPACE HAS BEEN EXCLUDED FROM THIS CALCULATION.
4. THE FUTURE TIORANDA RECREATION AREA PROVIDES AN ADDITIONAL 38 PARKING SPACES.

LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- 250 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- OHW EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- SS EXISTING SEWER SERVICE LINE
- S EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- W EXISTING WATER LINE
- WS EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- CB 50 EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- 250 PROPOSED MAJOR CONTOUR
- 252 PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- S PROPOSED SEWER LINE
- SS PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- ST PROPOSED STORM WATER LINE
- RL PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- W PROPOSED WATER LINE
- WS PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE

MAP REFERENCES:

1. "UPDATED TOPOGRAPHIC SURVEY PREPARED OF 3 MONELL PLACE" DATED NOVEMBER 5, 2020 AS PREPARED BY TOM E. CERCHIARA, LAND SURVEYOR, N.Y.S. LICENSE NO. 50732.



OVERALL MASTER PLAN
SCALE: 1" = 100'
GRAPHIC SCALE

100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204, Poughkeepsie NY 12601, Tel: 845.243.2880
160 West Street, Suite E, Cromwell, CT 06416, Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BENSCHOTER 084455 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

OVERALL MASTER PLAN

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 100'
TITLE:	SP-1
SHEET:	3 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



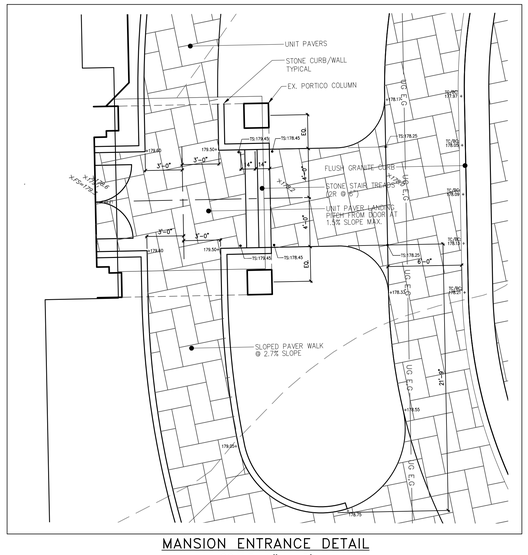
SITE PLAN - NORTH
SCALE: 1" = 40'

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- 250 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- OHW EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- SS EXISTING SEWER SERVICE LINE
- S EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- W EXISTING WATER LINE
- WS EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- WV EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- CB 50 EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- 250 PROPOSED MAJOR CONTOUR
- 252 PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- S PROPOSED SEWER LINE
- SS PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- ST PROPOSED STORM WATER LINE
- RL PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- W PROPOSED WATER LINE
- WS PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE



MANSION ENTRANCE DETAIL
SCALE: 1" = 5'

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION, ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York Call 811 before you dig

DRAWN BY: CMB	CHECKED BY: MAB

REVISIONS:

NO.	DATE	DESCRIPTION	BY

REVISIONS:

NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809

- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BOGDANOS 084486 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

SITE PLAN - NORTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	SP-2
SHEET:	4 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- 250 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- OHW EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- SS SS EXISTING SEWER SERVICE LINE
- S EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- W EXISTING WATER LINE
- WS WS EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- CB 50 EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- 250 PROPOSED MAJOR CONTOUR
- 252 PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- S PROPOSED SEWER LINE
- SS SS PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- ST PROPOSED STORM WATER LINE
- RL PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- W PROPOSED WATER LINE
- WS WS PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE

SITE PLAN – SOUTH
SCALE: 1" = 40'
GRAPHIC SCALE

40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BRADLEY 084486 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

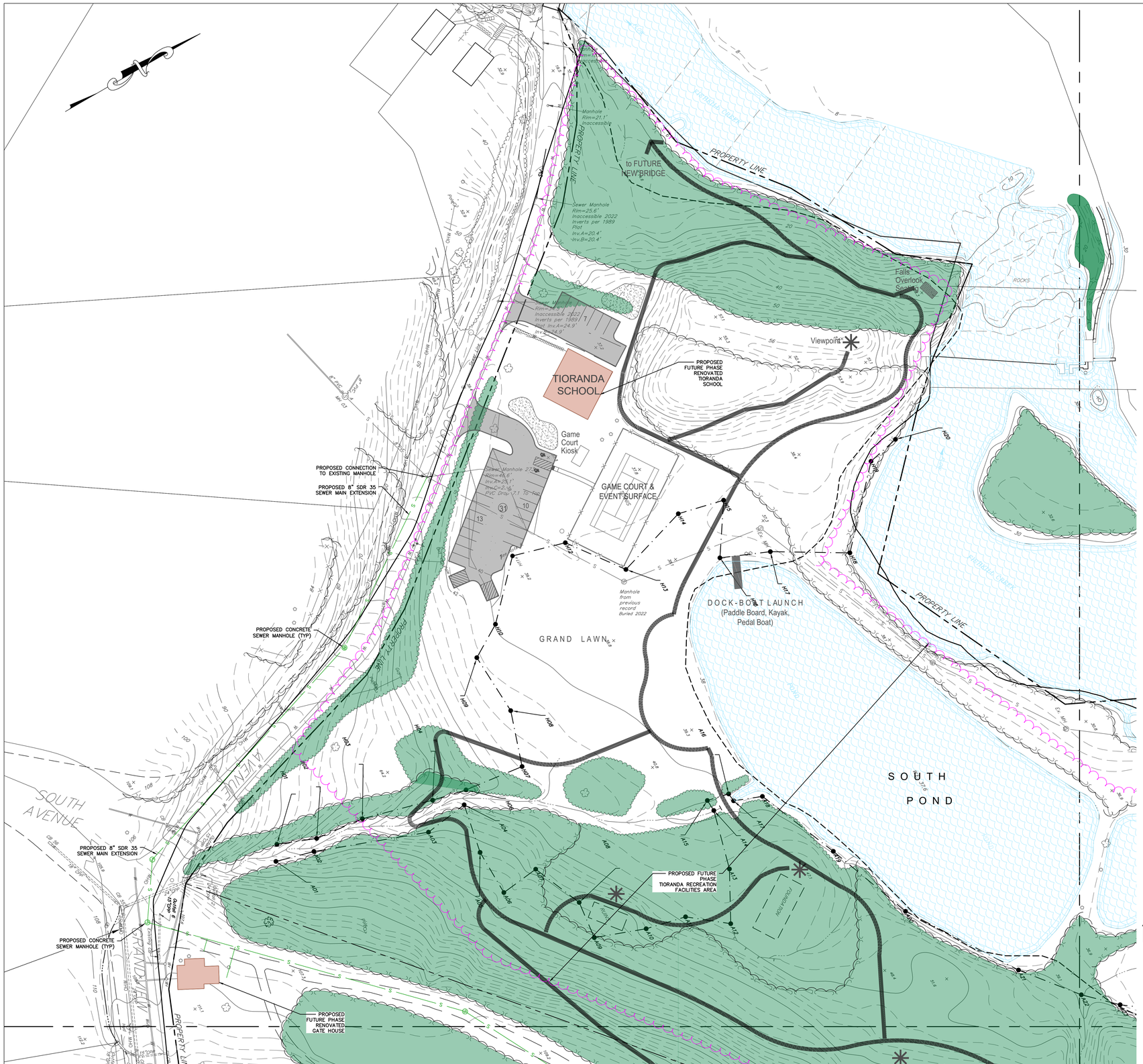
SITE PLAN – SOUTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	SP-3
SHEET:	5 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- PROPOSED STORM WATER LINE
- PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE

SITE PLAN – SOUTH WEST

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204, Poughkeepsie NY 12601, Tel: 845.243.2880
160 West Street, Suite E, Cromwell, CT 06416, Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

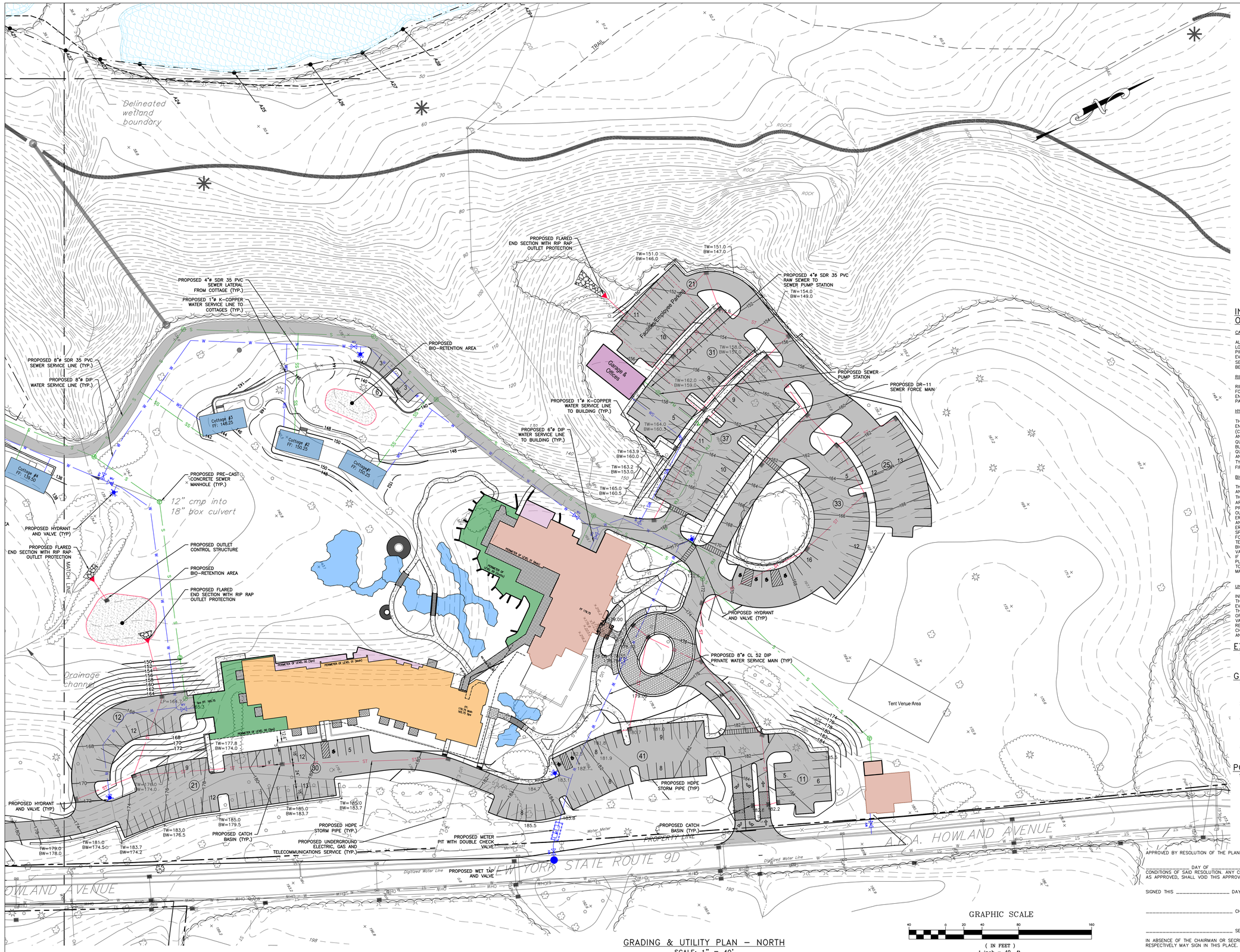
SITE PLAN – SOUTH WEST

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	SP-4
SHEET:	6 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- PROPOSED STORM WATER LINE
- PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE

INSPECTION SCHEDULE & LONG TERM MAINTENANCE OF STORMWATER STRUCTURES

CATCH BASINS, PIPING AND FLARED END SECTIONS:

ALL CATCH BASINS, PIPING AND FLARED END SECTIONS SHALL BE INSPECTED EVERY SPRING AND FALL. LOOK FOR OBSTRUCTIONS, VEGETATION, DEBRIS, LITTER, SEDIMENT, ETC. BLOCKING THE STRUCTURES OR PIPES. UTILIZE VACUUM TRUCK IF NECESSARY. OBSERVE THE FLOW OF WATER AFTER A RAINFALL EVENT. ANY EVIDENCE OF PONDING IN THE STRUCTURE INDICATES A POTENTIAL BLOCKAGE. WHEN SEDIMENT ACCUMULATION WITHIN THE CATCH BASIN SUMP REACHES 1/2 OF THE SUMP DEPTH, IT SHALL BE REMOVED.

RIP RAP OUTLET PROTECTION AND EMERGENCY OVERFLOW WEIR:

RIP RAP OUTLET PROTECTION AND THE EMERGENCY OVERFLOW WEIR SHALL BE INSPECTED QUARTERLY FOR SEDIMENT BUILD-UP, VEGETATION, DEBRIS, LITTER, AND OBSTRUCTIONS. IF SEDIMENT BUILDS UP ENOUGH TO FILL IN THE VOID SPACE BETWEEN THE STONES OR GRASS PAVERS, THEN THE RIP RAP OR PAVERS SHALL BE CLEANED OR REPLACED.

HYDRODYNAMIC DEVICES:

THE HYDRODYNAMIC PRETREATMENT DEVICES (HPD) REQUIRE REGULAR INSPECTION AND MAINTENANCE TO ENSURE OPTIMAL PERFORMANCE. MAINTENANCE FREQUENCY WILL BE DRIVEN BY UPSTREAM CONDITIONS (CONTRIBUTING DRAINAGE AREA STABILIZATION) AND PROPER MAINTENANCE OF UPSTREAM STRUCTURES AND CULVERT PIPES. THE MANUFACTURER RECOMMENDS THAT THE HPD UNITS BE INSPECTED QUARTERLY (AT EACH CHANGE OF SEASON). THE STRUCTURE SHALL BE VISUALLY INSPECTED FOR BLOCKAGES OR OBSTRUCTIONS IN THE INLET OR SEPARATION SCREEN. THE INSPECTION SHOULD ALSO QUANTIFY ACCUMULATION OF HYDROCARBONS, SEDIMENT AND TRASH WITHIN THE SYSTEM. INSPECTIONS AND MAINTENANCE SHALL BE PERFORMED BY QUALIFIED PERSONNEL WITH ADEQUATE TRAINING IN THESE TYPES OF UNITS. THE UNITS SHALL BE CLEANED BY VACUUM TRUCK ONCE A YEAR (EXCEPT FOR THE FIRST YEAR WHERE MORE FREQUENT CLEANINGS MAY BE REQUIRED).

BIORETENTION AREA:

THE BIORETENTION AREA SHALL BE INSPECTED MONTHLY FOR SEDIMENT AND DEBRIS ACCUMULATION. ANY ACCUMULATED SEDIMENT OR DEBRIS SHOULD BE REMOVED AS NECESSARY. AFTER STORM EVENTS, THE BIORETENTION AREA'S DEWATERING DURATION SHOULD ALSO BE MONITORED. THE BIORETENTION AREA'S FLOOR SHALL BE MOWED WHEN THE GRASS REACHES A HEIGHT OF 18"(ONLY IF LAWN GRASS IS PRESENT). CUT ORNAMENTAL GRASSES ANNUALLY IN THE LATE FALL. SEDIMENT SHALL BE CLEANED OUT OF THE BASIN ANNUALLY. IN THE SPRING AND FALL, INSPECT INFLOW AND OUTFLOW POINTS FOR EROSION OR CLOGGING. INSPECT TREES, SHRUBS AND OTHER VEGETATION TO EVALUATE THEIR HEALTH AND REPLACE ANY DEAD OR DISEASED VEGETATION. INSPECT SURROUNDING DRAINAGE AREA FOR EROSION OR SIGNS OF SEDIMENT DELIVERY TO THE BIORETENTION AREA. REMOVE ANY INVASIVE PLANT SPECIES. REMOVE CLOGS FROM THE STORMWATER SYSTEM INFLOW AND OUTFLOW COMPONENTS. CHECK FOR SIGNS OF VEGETATION OVERGROWTH, OBSERVE DEWATERING CAPABILITY, CHECK FERTILIZER, AND TEST SOILS FOR PH ANNUALLY. HARVEST OVERGROWN VEGETATION AND REMOVE FROM THE BIORETENTION AREA. IF IT TAKES LONGER THAN 24 HOURS TO DEWATER THE BIORETENTION AREA, THE VALVE ON THE UNDERDRAIN SHALL BE OPENED SLIGHTLY TO PROVIDE FULL DEWATERING IN 24 HOURS. IF THE PH IS BELOW 5.2, LIME SHOULD BE APPLIED. IF THE PH IS ABOVE 7.0 TO 8.0, IRON SULFATE PLUS SULFUR CAN BE APPLIED TO REDUCE THE PH. REPLACE MULCH OVER ENTIRE AREA EVERY TWO TO THREE YEARS. IF DEWATERING IS A PROBLEM, CORE AERATION OF CULTIVATING UN-VEGETATED AREAS MAY BE REQUIRED TO ENSURE ADEQUATE FILTRATION.

UNDERGROUND DETENTION/INFILTRATION SYSTEM:

INFILTRATION BASINS SHALL BE INSPECTED MONTHLY FOR SEDIMENT AND DEBRIS ACCUMULATION DURING THE FIRST YEAR OF OPERATION. AFTER 50 YEARS OF SERVICE LIFE THE SYSTEM SHOULD BE EVALUATED, IF THE SYSTEM IS NO LONGER FUNCTIONING IN ACCORDANCE WITH THE ORIGINAL DESIGN, THE SYSTEM SHALL BE RESTORED OR REPLACED. THERE ARE FOUR INSPECTION PORTS AT THE CORNERS OF THE SYSTEM TO PROVIDE FOR VISUAL INSPECTION, AND A MEANS OF CLEANING SYSTEM WITH A VACUUM TRUCK. IN THE SPRING AND FALL, INSPECT THE INLET AND OUTLET FOR CLOGGING AND DEBRIS. REMOVE OBSTRUCTIONS, DEBRIS, ETC. INSPECT THE INTERIOR OF THE STORMWATER MANAGEMENT CHAMBERS THROUGH INSPECTION PORT FOR DEBRIS EVERY FIVE YEARS. CLEAN DEBRIS FROM CHAMBERS AND FEED CONNECTORS.

EXISTING UNDERGROUND UTILITY NOTES:

1. CONTRACTOR SHALL DIG TEST PITS TO VERIFY LOCATION, SIZE AND PIPE MATERIAL OF EXISTING UNDERGROUND UTILITIES. IF ANY EXISTING UTILITIES ARE NOT IN THE LOCATION WHERE THEY ARE SHOWN ON THE PLAN, IT SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.

GENERAL CONSTRUCTION NOTES:

1. ALL OTHER UTILITIES (TELEPHONE, ELECTRIC, GAS, CABLE, ETC.) SHALL BE INCORPORATED PRIOR TO CONSTRUCTION. ALL SUCH UTILITY DESIGNS SHALL BE DEVELOPED IN COOPERATION WITH THE RESPECTIVE UTILITY COMPANIES.
2. THE CONTRACTOR SHALL PERFORM A UTILITIES CALL-OUT PRIOR TO CONSTRUCTION TO VERIFY ALL UNDERGROUND UTILITY LOCATIONS BY CONTACTING UFPO @ 1-800-962-7962.
3. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND INVERTS OF ALL CATCH BASINS & STORM SEWER LINES, SANITARY MANHOLES & SEWER LINES, WATERLINES AND OTHER UNDERGROUND UTILITY LINES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOT ASSUME THAT ALL LOCATIONS AS SHOWN ON THE PLAN ARE CORRECT. INVESTIGATIVE TEST PITS MAY BE REQUIRED TO VERIFY LOCATIONS.
4. PIPE CONNECTIONS TO ALL CATCH BASINS SHALL BE MADE WATERTIGHT, WITH PARTICULAR ATTENTION BEING PAID TO CONNECTIONS LOCATED WITHIN 10 FEET OF SEWER MAINS (AND SERVICE LATERALS).

POST CONSTRUCTION NOTES:

1. UPON COMPLETION OF CONSTRUCTION OF THE STORMWATER FACILITIES, AS-BUILT DRAWINGS OF ALL STORMWATER PRACTICES AND AN OPERATION AND MAINTENANCE PLAN MANUAL SHALL BE PROVIDED TO THE CITY OF BEACON.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York. Call 811 before you dig

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

GRADING & UTILITY PLAN – NORTH
SCALE: 1" = 40'

DRAWN BY: CMB			CHECKED BY: MAB			
REVISIONS:			REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.632.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
• Landscape Architecture
• Civil Engineering
• Environmental Services
• Land Surveying
• Land Planning

HUDSON LAND DESIGN

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

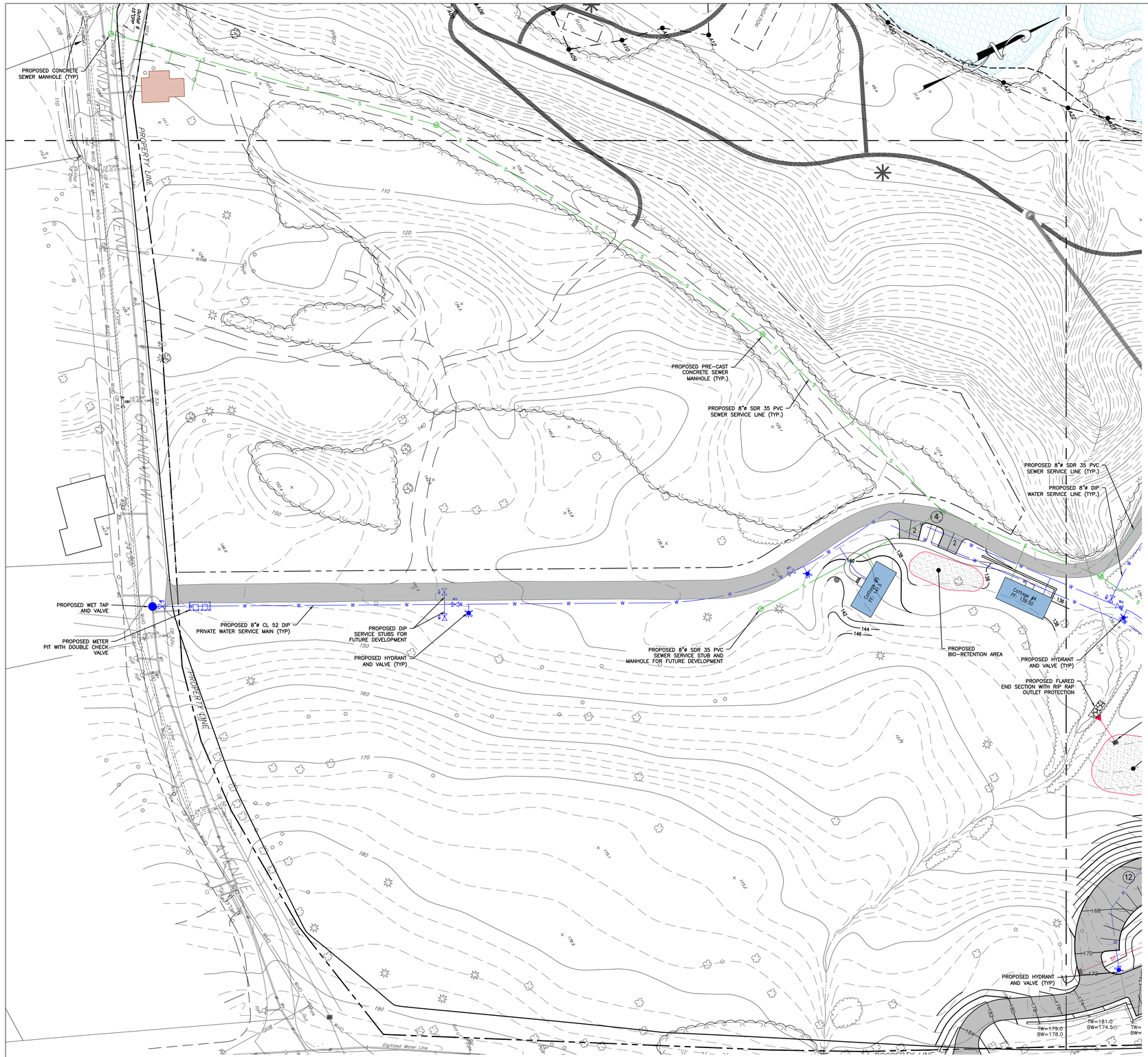
GRADING & UTILITY PLAN – NORTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	GU-1
SHEET:	7 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



GRADING & UTILITY PLAN – SOUTH
SCALE: 1" = 40'

LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- PROPOSED STORM WATER LINE
- PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION, ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

GRADING & UTILITY PLAN – SOUTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	GU-2
SHEET:	8 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN

- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- PROPOSED STORM WATER LINE
- PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE
- PROPOSED SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED CATCH BASIN INLET PROTECTION
- PROPOSED CONSTRUCTION ENTRANCE

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES EMPLOYED DURING THE CONSTRUCTION PROCESS SHALL BE INSPECTED BY THE CONTRACTOR IN ACCORDANCE WITH THE MAINTENANCE SCHEDULE. ALL EROSION CONTROL STRUCTURES SHALL BE REPAIRED AND MAINTAINED AS NECESSARY BY THE CONTRACTOR.
2. ALL STORMWATER MANAGEMENT STRUCTURES (E.G. CATCH BASINS) SHALL BE REGULARLY INSPECTED FOR SEDIMENT ACCUMULATIONS. CATCH BASINS SHALL BE CLEANED WHEN SEDIMENT DEPTH REACHES A MAXIMUM OF ONE-HALF THE AVAILABLE SUMP DEPTH.
3. ALL EROSION CONTROL INSTALLATION AND MAINTENANCE MEASURES SHALL MEET THE REQUIREMENTS OF THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
4. ANY PILE OF POTENTIALLY EROSIVE MATERIAL TEMPORARILY STOCKPILED ON THE SITE DURING THE CONSTRUCTION PROCESS SHALL BE LOCATED IN AN AREA AWAY FROM STORM DRAINAGE AND SHALL BE PROPERLY PROTECTED FROM EROSION BY A SURROUNDING SILT FENCE.
5. PERMANENT SEEDED AREAS FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH DETAIL AND SPECIFICATIONS ON THE DETAILS SHEET.
6. AREAS UNDERGOING CLEARING OR GRADING AND WHERE WORK IS DELAYED OR COMPLETED AND WILL NOT BE REDISTURBED FOR A PERIOD OF 21 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATIVE COVER WITHIN 14 DAYS.
7. ON-SITE DUST CONTROL SHALL BE ACCOMPLISHED BY STANDARD METHODS OF LIGHTLY WATERING ALL EXPOSED SOIL AND RAPIDLY STABILIZING THE REGRADED AREAS WITH TOPSOIL, LOAM AND/OR SEEDING.
8. THE TOWN ENGINEER AND PROJECT ENGINEER SHALL BE NOTIFIED NO LESS THAN 48 HOURS PRIOR TO THE START OF ANY SITE WORK, AND BY SUCH NOTIFICATION, SHALL BE PROVIDED WITH THE NAME AND TELEPHONE NUMBER OF THE GENERAL CONTRACTOR RESPONSIBLE FOR SUCH WORK.
9. THE TOWN AND/OR ITS REPRESENTATIVES MAY INSPECT EROSION AND SEDIMENT CONTROL PRACTICES ON THE SITE DURING CONSTRUCTION AND RECOMMEND THAT THE CONTRACTOR INSTALL ADDITIONAL EROSION CONTROL MEASURES IF DEEMED NECESSARY TO PROTECT ANY UNDISTURBED AREAS OF THE SITE. ANY SUCH REQUESTS SHALL BE MADE DIRECTLY TO THE CONTRACTOR AND QUALIFIED PROFESSIONAL AND FOLLOWED UP WITH A WRITTEN NOTIFICATION TO THE DEVELOPER. IN ADDITION, THE PROJECT ENGINEER SHALL BE CONSULTED ON ANY SPECIAL ADDITIONS OR DELETIONS OF EROSION CONTROL MEASURES WARRANTED BY CHANGING FIELD CONDITIONS. THE NOTICE OF INTENT (NOI) MAY NEED TO BE UPDATED AS A RESULT OF THE CHANGES.
10. THE CONTRACTOR/OWNER SHALL MAINTAIN A RECORD OF ALL EROSION AND SEDIMENT CONTROL INSPECTION REPORTS AT THE SITE IN A LOG BOOK. THE SITE LOG BOOK SHALL BE MAINTAINED ON SITE AND BE MADE AVAILABLE TO THE PERMITTING AUTHORITY. THE OWNER/CONTRACTOR SHALL, ON A MONTHLY BASIS, POST AT THE SITE A SUMMARY OF THE SITE INSPECTION ACTIVITIES IN A PUBLICLY ACCESSIBLE LOCATION.
11. THE OWNER SHALL FILE A NOI WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES AND A NOTICE OF TERMINATION (NOT) WITH THE NYSDEC FOLLOWING CONSTRUCTION ACTIVITIES.
12. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONSTRUCT A DEWATERING PIT IN ACCORDANCE WITH NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL TO FILTER WATER FOR PUMPING TO A SUITABLE LOCATION.
13. WHEN ALL DISTURBED AREAS ARE STABLE, ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED PER THE APPROVAL OF THE TOWN ENGINEER AND QUALIFIED PROFESSIONAL.

EROSION & SEDIMENT CONTROL PLAN – NORTH

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

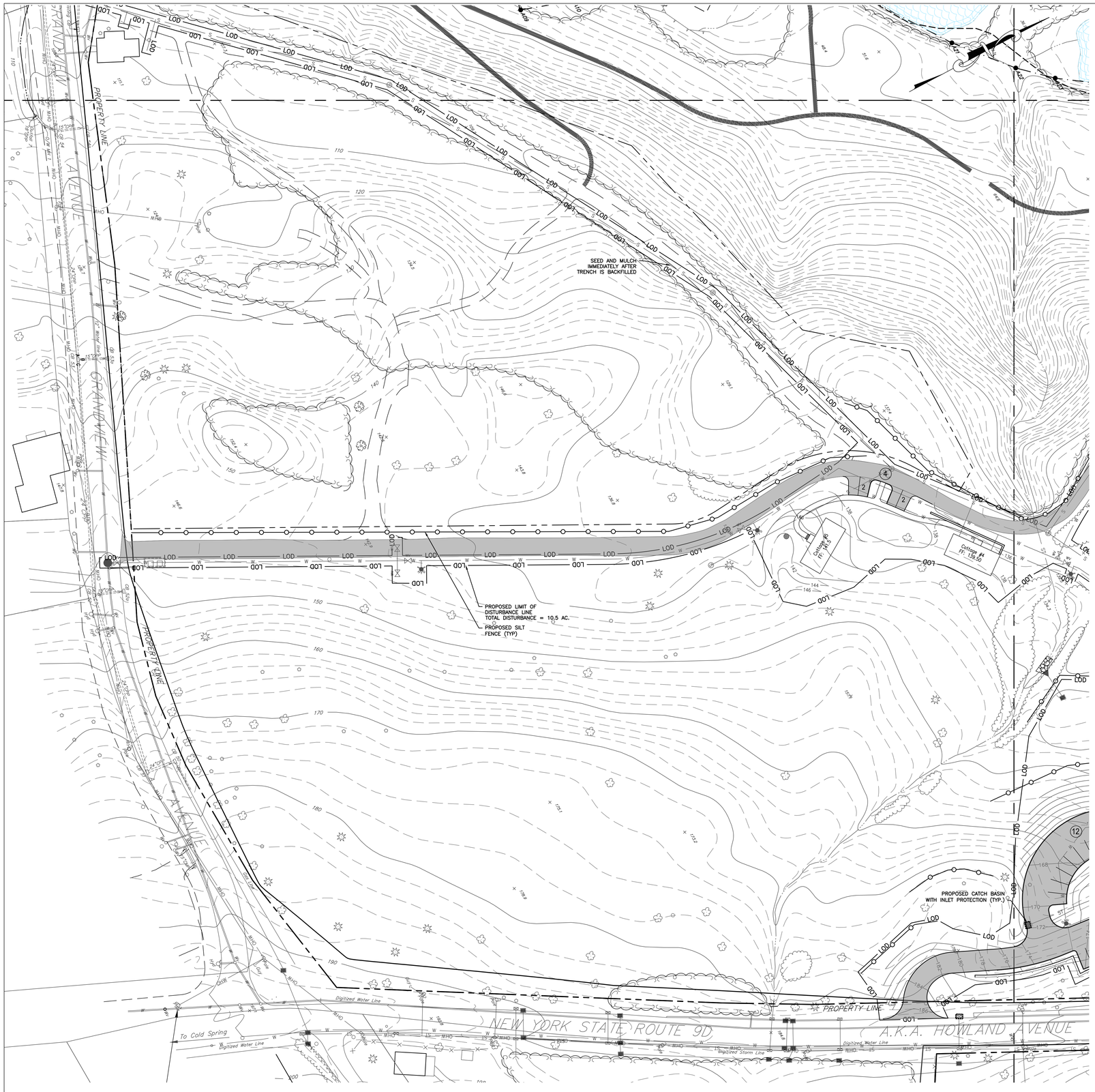
EROSION & SEDIMENT CONTROL PLAN – NORTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	ESC-1
SHEET:	9 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING STREAM
- EXISTING WETLAND BOUNDARY
- 100' WETLAND BUFFER
- 100 YEAR FLOOD PLANE
- 250 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING TREE LINE
- OHW EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- SS SS EXISTING SEWER SERVICE LINE
- S EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- W EXISTING WATER LINE
- WS WS EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- CB 50 EXISTING CATCH BASIN
- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- 250 PROPOSED MAJOR CONTOUR
- 252 PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- S PROPOSED SEWER LINE
- SS SS PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- ST PROPOSED STORM WATER LINE
- RL PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- W PROPOSED WATER LINE
- WS WS PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE
- PROPOSED SILT FENCE
- LOD PROPOSED LIMIT OF DISTURBANCE
- PROPOSED CATCH BASIN INLET PROTECTION
- PROPOSED CONSTRUCTION ENTRANCE

EROSION & SEDIMENT CONTROL PLAN – SOUTH

SCALE: 1" = 40'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

Dig Safely. New York Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN

10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880

160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877

www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.

LRC Proj. No. 21-2809

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BOGDANOS 084486 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

EROSION & SEDIMENT CONTROL PLAN – SOUTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	ESC-2
SHEET:	10 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- Existing Signficant Deciduous & Evergreen Trees
- Deciduous Shade / Major Trees
- Ornamental and Flowering Trees (Understory Scale)
- Evergreen Trees (Major & Minor)
- Shrub Mass – 3-4' ht.
- Decidous Shrubs
- Evergreen Shrubs

SEEDING LEGEND:

SEED MIX A = LOW – MOW LAWN
SEED MIX B = FUZZ & BUZZ MIX
SEED MIX C = RAIN GARDEN GRASS MIX
SEED MIX D = CONTRACTOR'S LAKEVIEW CONSERVATION MIX

PLANTING NOTES:

1. THE LANDSCAPE PLAN AND DETAIL SHEET ARE FOR LANDSCAPING INFORMATION ONLY. PLEASE REFER TO THE SITE LAYOUT PLAN, LIGHTING PLAN, GRADING PLAN AND UTILITIES PLAN FOR ALL OTHER INFORMATION.
2. THE CONTRACTOR SHALL GUARANTEE THAT ALL PLANTS, TREES, AND SHRUBS SHALL BE HEALTHY AND FREE OF DISEASE FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION AND ACCEPTANCE BY OWNER OR LANDSCAPE ARCHITECT. CONTRACTOR SHALL REPLACE ANY DEAD OR UNHEALTHY PLANTS AT CONTRACTOR'S EXPENSE. PLANT MATERIAL REPLACEMENTS SHALL BE GUARANTEED FOR ONE FULL YEAR FROM DATE OF REPLACEMENT. FINAL ACCEPTANCE SHALL BE MADE IF ALL PLANTS MEET THE GUARANTEE REQUIREMENTS INCLUDING MAINTENANCE. MAINTENANCE RESPONSIBILITIES INCLUDE CULTIVATING, SPRAYING, WEEDING, WATERING, TIGHTENING GUYS, PRUNING, FERTILIZING, MULCHING, AND ANY OTHER OPERATIONS NECESSARY TO MAINTAIN PLANT VIABILITY. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND CONTINUE UNTIL THE END OF THE ONE YEAR GUARANTEE PERIOD.
3. THE CONTRACTOR SHALL SUPPLY ALL LABOR, PLANTS, AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER SHALL APPLY.
4. ALL SHRUB MASSINGS SHALL BE MULCHED TO A DEPTH OF 3". ANNUAL AND PERENNIAL BEDS SHALL BE MULCHED TO A DEPTH OF 2" WITH SHREDDED HARDWOOD BARK MULCH.
5. NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY ENGINEER. STAKING THE LOCATION OF ALL TREES AND SHRUBS SHALL BE COMPLETED PRIOR TO PLANTING FOR APPROVAL BY THE OWNER OR LANDSCAPE ARCHITECT. STAKING OF THE INSTALLED TREE MUST BE COMPLETED THE SAME DAY AS IT IS INSTALLED. ALL TREES SHALL BE STAKED OR GUYED PER DETAIL. SEE SHEET 38 FOR PLANTING DETAILS.
6. COORDINATE PLANT MATERIAL LOCATIONS WITH SITE UTILITIES. SEE SITE LAYOUT, GRADING AND UTILITY DRAWINGS FOR STORM, SANITARY AND WATER LINES. SEE LIGHTING PLAN FOR ELECTRICAL AND LIGHTING LAYOUT AND DETAILS. UTILITY LOCATIONS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE.
7. LANDSCAPE PLANTING PITS MUST BE FREE DRAINING. PAVEMENT, COMPACTED SUBGRADE, AND BLASTED ROCK SHALL BE REMOVED FROM WITHIN TRAFFIC ISLANDS TO BE LANDSCAPED TO A DEPTH OF 2' OR TO A GREATER DEPTH IF REQUIRED BY PLANTING DETAILS OR SPECIFICATIONS. REPLACE SOIL WITHIN ISLANDS WITH MODERATELY COMPACTED LOAM OR SANDY LOAM FREE FROM STONES AND RUBBISH 1" OR GREATER IN DIAMETER AND ANY OTHER MATERIAL HARMFUL TO PLANT GROWTH AND DEVELOPMENT. PLANTING INSTALLATION WITHIN ISLANDS SHALL BE AS DETAILED AND CONTAIN PLANTING MIX AS SPECIFIED.
8. PLANTING SOIL MIXTURE FOR TREES AND SHRUBS:
   - 1 PART PEAT MOSS
   - 3 PARTS TOPSOIL
   - FERTILIZER/LIME (APPLY AS RECOMMENDED BY SOIL ANALYSIS)
   - MYCORRHIZA INOCULANT – "TRANSPLANT 1–STEP" AS MANUFACTURED BY ROOTS, INC. OR APPROVED EQUAL. USE PER MANUFACTURER'S RECOMMENDATIONS FOR TREES AND SHRUBS.
9. PLANTING SOIL MIXTURE FOR PERENNIAL AND ORNAMENTAL GRASS BEDS:
   - 1 PART PEAT MOSS
   - 1 PART MANURE (WEED FREE)
   - 3 PARTS TOPSOIL
   - FERTILIZER/LIME (APPLY AS RECOMMENDED BY SOIL ANALYSIS)
   - MILORGANITE APPLIED AT 5 LBS. PER 100 S.F.
10. TIME OF PLANTING: NEW PLANT MATERIALS SHALL BE INSTALLED BETWEEN APRIL 1 AND JUNE 1, OR AFTER SEPTEMBER 15TH AND NO LATER THAN OCTOBER 31ST.
11. TOPSOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 6". CONTRACTOR SHALL SUBMIT TOPSOIL TO A CERTIFIED TESTING LABORATORY TO DETERMINE PH, FERTILITY, ORGANIC CONTENT AND MECHANICAL COMPOSITION. THE CONTRACTOR SHALL SUBMIT THE TEST RESULTS FROM REGIONAL EXTENSION OFFICE OF USDA TO THE OWNER OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. CONTRACTOR SHALL INCORPORATE AMENDMENTS FOR GOOD PLANT GROWTH AND PROPER SOIL ACIDITY RECOMMENDED FROM THE TOPSOIL TEST.
12. SEED MIX A:
    "LOW–MOW SEED MIX" – BLEND OF 3–5 CREEPING RED FESCUES.
    SEEDING RATE: 4.5 LBS PER 1,000 S.F. (ADD 10% TO QUANTITY IF HYDROSEEDED).
    SEEDING DATE: AUGUST 15–OCTOBER 1 AND APRIL 15–JUNE 15 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
13. SEED MIX B:
    "FUZZ & BUZZ MIX–PREMIUM" – ERNMX–147 AS BLENDED BY ERNST CONSERVATION SEEDS, MEADVILLE, PA; 1–800–873–3321.
    SEEDING RATE: 42 LBS PER ACRE
    SEEDING DATE: AUGUST 15–OCTOBER 1 AND APRIL 15–JUNE 15 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
14. SEED MIX C:
    "RAIN GARDEN GRASS MIX" – ERNMX–180–1 AS BLENDED BY ERNST CONSERVATION SEEDS, MEADVILLE, PA; 1–800–873–3321.
    SEEDING RATE: 15 LBS PER ACRE
    SEEDING DATE: AUGUST 15–OCTOBER 1 AND APRIL 15–JUNE 15 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
15. SEED MIX D:
    "CONTRACTOR'S LAKEVIEW CONSERVATION MIX" – ERNMX–116–AS BLENDED BY ERNST CONSERVATION SEEDS, MEADVILLE, PA; 1–800–873–3321.
    SEEDING RATE: 75–150 LBS PER ACRE (3LBS PER 1,000 S.F.)
    SEEDING DATE: AUGUST 15–OCTOBER 1 AND APRIL 15–JUNE 15 UNLESS OTHERWISE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
16. ALL SLOPES GREATER THAN 3:1 RECEIVING A GRASS SEEDING MIXTURE SHALL BE COVERED WITH AN EROSION CONTROL BLANKET.

GRAPHIC SCALE
00 00 0 00
SCALE IN FEET

See sheet LL–3 for Plant List & sheet CD–1 for Planting Details.

Dig Safely. New York Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
• Landscape Architecture
• Civil Engineering
• Environmental Services
• Land Surveying
• Land Planning
LRC Proj. No. 21-2809

HUDSON LAND DESIGN
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845–440–6926
F: 845–440–6637

PRELIMINARY PLANTING PLAN – NORTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054–13–001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	LL–2
SHEET:	11 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



PLANT LIST:

	CODE	QTY.	BOTANICAL NAME	COMMON NAME	ROOT	SIZE INSTALLED	SIZE MATURE	COMMENTS
SPECIMEN & SHADE TREES:	AFA	–	ACER x FREEMANII 'ARMSTRONG'	ARMSTRONG RED MAPLE	B&B	2.5–3" cal.	20x50' ht.	Narrow Upright habit
	ARK	–	ACER RUBRUM 'KARPICK'	KARPICK RED MAPLE	B&B	2.5–3" cal.	20x40' ht.	Narrow Pyramidal crown
	ARR	–	ACER RUBRUM 'RED SUNSET'	RED SUNSET RED MAPLE	B&B	3.5–4" cal.	40' ht.	Upright ovcl crown
	ASG	–	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	B&B	2.5–3" cal.	55' ht.	Upright ovcl crown
	ASF	–	ACER SACCHARUM 'FLAX HILL'	FLAX HILL MAJESTY SUGAR MAPLE	B&B	2.5–3" cal.	50'	Ovate crown
	ACB	–	AESCULUS CARNEA 'BRIOTTII'	RED HORSECHESTNUT	B&B	2.5–3" cal.	40' ht.	
	LS	–	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	B&B	3.5–4" cal.	60' ht.	SPECIMEN GRADE
	LT	–	LIRIODENDRON TULIPIFERA	TULIP TREE	B&B	2–2.5" cal.	80' ht.	
	MG	–	METASEQUOIA GLYPTOSTROBOIDES	DAWN REDWOOD	B&B	12–14' ht.	60' ht.	Deciduous Conifer
	PAB	–	PLATANUS ACERIFOLIA 'BLOODGOOD'	LONDON PLANE TREE	B&B	2.5–3" cal.	50' ht.	Rounded crown
	PSA	–	PRUNUS SARGENTII	SARGENT CHERRY	B&B	2.5–3" cal.	35' ht.	
	QP	–	QUERCUS PALUSTRIS	PIN OAK	B&B	2–2.5" cal.	50–75' ht.	Orange–Scarlet fall
	QR	–	QUERCUS RUBRA	NORTHERN RED OAK	B&B	2.5–3" cal.	75' ht.	
	TAR	–	TILIA AMERICANA 'REDMOND'	REDMOND LINDEN	B&B	3–3.5" cal.	70' ht.	
	UPA	–	ULMUS PARVIFOLIA 'ALLEE'	ALLEE LACEBARK ELM	B&B	2.5–3" cal.	35x50' ht.	
SMALL SCALE TREES:	AMC	–	AMELANCHIER CANDENSIS	SHADBLOW	B&B	6–7' ht.	25' ht.	Clump Form
	BPW	–	BETULA POPULIFOLIA 'WHITESPIRE'	WHITESPIRE GRAY BIRCH	B&B	8–10' ht.	20–40'	MULTI–STEM
	CFF	–	CARPINUS BET. 'FRANS FONTAINE'	FRANS FONTAINE HORNMBEAM	B&B	2.5–3" cal.	20–30' ht.	MATCHED
	CC	–	CARPINUS CAROLINIANA	AMERICAN HORNMBEAM	B&B	2–2.5" cal.	25–35' ht.	
	CC	–	CERCIS CANADENSIS	EASTERN REDBUD	B&B	2.5–3" cal.	25–30' ht.	
	CF	–	CORNUS FLORIDA	FLOWERING DOGWOOD	B&B	2–2.5" cal.	20–25' ht.	White
	CFR	–	CORNUS FLORIDA 'RUBRA'	PINK FLOWERING DOGWOOD	B&B	2–2.5" cal.	20–25' ht.	Pink
	CR	–	CORNUS RACEMOSA	GRAY DOGWOOD	Cont.	7 Gal.	8'x8'	White
	QR	–	QUERCUS ROBUR x ALBA 'CRIMSCHMIDT'	CRIMSON SPIRE RED OAK	B&B	2.5–3" cal.	20x45' ht.	
EVERGREEN TREES:	AF	–	ABIES FRASERI	FRASIER FIR	B&B	7–8' ht.	30–50' ht.	
	IO	–	ILEX OPACA	AMERICAN HOLLY	B&B	7–8' ht.	40–50' ht.	20–40'w
	IJP	–	ILEX OPACA 'JERSEY PRINCESS'	JERSEY PRINCESS AMERICAN HOLLY	B&B	7–8' ht.	30–35' ht.	
	PA	–	PICEA ABIES	NORWAY SPRUCE	B&B	8–10' ht.	40–60' ht.	
	PG	–	PICEA GLAUCA	WHITE OR CANADIAN SPRUCE	B&B	8–10' ht.	20'x60' ht.	
	PS	–	PINUS STROBUS	EASTERN WHITE PINE	B&B	8–10' ht.	50–80' ht.	
	TSC	–	TSUGA CANADENSIS 'PENDULA'	SARGENT'S WEEPING HEMLOCK	B&B	4–6' HT.	5–8'x10–12'	
LARGE SHRUBS:	CSB	–	CORNUS SERICEA 'BAILEYI'	BAILEY'S RED TWG DOGWOOD	CONT.	18–24" ht.	8–10' ht.	
	CSF	–	CORNUS SERICEA 'FLAVIRAMEA'	YELLOW TWG DOGWOOD	CONT.	18–24" ht.	6–8' ht.	
	HSA	–	HIBISCUS SYRIACUS 'ARDENS'	ROSE OF SHARON	B&B	36–42" ht.	8–10' ht.	Double Rosy Purple
	HSB	–	HIBISCUS SYRIACUS 'BLUE SATIN'	ROSE OF SHARON	B&B	36–42" ht.	8–10' ht.	Single Royal Blue
	HQR	–	HYDRANGEA QUERC. 'RUBY SLIPPERS'	RUBY SLIPPERS OAKLEAF HYDRANGEA	CONT.	#5	6–8' ht.	White to Pink
	IGD	–	ILEX GLABRA 'DENSA'	INKBERRY	CONT.	18–24" ht.	6–8' ht.	
	IVJ	–	ILEX VERTICILLATA 'JIM DANDY'	JIM DANDY (MALE) WINTERBERRY	CONT.	#5	6–8' ht.	
	IVR	–	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	CONT.	#5	6' ht.	
	KLR	–	KALMIA LATIFOLIA 'RASPBERRY GLOW'	RASPBERRY GLOW MOUNTAIN LAUREL	CONT.	18–24" ht.	6–8' ht.	Burgundy to Pink
	MPM	–	MORELLA PENSYLVANICA 'MORTON MALE'	MALE SILVER SPRITE BAYBERRY	CONT.	24" min.ht.	3–5' ht.	
	MPS	–	MORELLA PENSYLVANICA 'SILVER SPRITE'	SILVER SPRITE BAYBERRY	CONT.	24" min.ht.	3–5' ht.	
	RCA	–	RHODODENDRON CATAWBIENSE 'ALBA'	WHITE CATAWBA RHODODENDRON	CONT.	18–24" ht.	8' ht.	
	RC	–	RHODODENDRON CATAWBIENSE	CATAWBA RHODODENDRON	CONT.	18–24" ht.	8' ht.	
	RPJ	–	RHODODENDRON 'PJM'	PJM RHODODENDRON	CONT.	24–30" ht.	8' ht.	
	RAL	–	RHUS AROMATICA 'LACETTE'	LACY FRAGRANT SUMAC	CONT.	#5	6x3–4' ht.	Red Fall; White Bloom
	VCO	–	VACCINEUM CORYMBOSUM	HIGHBUSH BLUEBERY	CONT.	18–24" ht.	8–10' ht.	
	VD	–	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	CONT.	#7	8–10' ht.	
SMALL SHRUBS:	AMH	–	ARONIA MELANOCARPA 'UCONNAM166'	LOW SCAPE HEDGER CHOKEBERRY	CONT.	#5	2–3x3–5'	2–3' o.c.; Red–Or Fall
	FGA	–	FOTHERGILLA GARDENII 'APPALACHIA'	DWARF FOTHERGILLA	CONT.	24" min.ht.	2–3' ht.	
	CAV	–	CLETHRA ALNIFOLIA 'VANILLA SPICE'	VANILLA SPICE SUMMERSWEET	CONT.	24–30" ht.	3–4' ht.	
	FG	–	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	CONT.	#3	3–4' ht.	
	HQP	–	HYDRANGEA QUERCIFOLIA 'PEEWEE'	PEE WEE OAKLEAF HYDRANGEA	CONT.	#5	3–5' ht.	White; Burgundy fall
	KLE	–	KALMIA LATIFOLIA 'ELF'	ELF MIN. MOUNTAIN LAUREL	CONT.	18–24" ht.	3–4' ht.	White
	KLL	–	KALMIA LATIFOLIA 'LITTLE LINDA'	LITTLE LINDA MIN. MOUNTAIN LAUREL	CONT.	18–24" ht.	3–4' ht.	Red to Pink
	MC	–	MYRICA GALE	SWEET GALE	CONT.	18" min.spd.	2–4' ht.	
	PO1	–	PHYSOCARPUS OPULIFOLIUS 'TINY WINE'	TINY WINE NINEBARK	CONT.	18–24" ht.	3–4' ht.	
	PO2	–	PHYSOCARPUS OP. 'TINY WINE GOLD'	GOLD TINY WINE NINEBARK	CONT.	18–24" ht.	3–4' ht.	
	VDB	–	VIBURNUM DENTATUM 'BLUE MUFFIN'	BLUE MUFFIN ARROWWOOD VIBURNUM	CONT.	#7	4–6' ht.	
GROUND COVER SHRUBS:	AML	–	ARONIA MEL. LOW SCAPE MOUND	LOW SCAPE MOUND CHOKEBERRY	CONT.	12" min.spd.	12–24" ht.	
	JHB	–	JUNIPERUS HORIZ. 'BLUE CHIP'	BLUE CHIP JUNIPER	CONT.	18–24" spd.	18–24" ht.	Gray–Green to Bronze–Purple
	VA	–	VACCINEUM ANGUSTIFOLIUM	LOWBUSH BLUEBERY	CONT.	15–18" ht.	12" ht.x2'	
	VCL	–	VIBURNUM CASSINOIDES 'LIL DITTY'	LIL DITTY WITHEROD VIBURNUM	CONT.	15" min.ht.	12–24" ht.	
PERENNIALS:	AAB	–	ACHILLEA MILLE. 'APPLE BLOSSOM'	APPLE BLOSSOM YARROW	CONT.	#SP4	24" ht.	15" o.c.; Lilac Pink
	AST	–	ACHILLEA MILLE. 'STRAWBERY SEDUCTION'	STRAWBERRY SEDUCTION YARROW	CONT.	#SP4	18–20" ht.	15" o.c.; Dk. Red
	ADK	–	ASTER DUMOSUS 'PROF. KIPPENBURG'	PROFESSOR KIPPENBERG ASTER	CONT.	#SP4	20" ht.	18" o.c.; Lav–Blue Late Sum.
	ANB	–	ASTER NOVAE–BELGII 'MARIE BALLARD'	MARIE BALLARD (NY) ASTER	POT	#SP5	30" ht.	18" o.c.; Vio–blue Late Sum.
	ANW	–	ASTER NOVAE–BELGII 'WIN. CHURCHILL'	WINSTON CHURCHILL (NY) ASTER	POT	#SP5	36" ht.	18" o.c.; Deep Red Fall
	ECH	–	ECHINACAEA 'B'S KNEES'	B'S KNEES ECHINACEA	CONT.	#SP5	30" ht.	18" o.c.
	EDB	–	EUPATORIUM DUBIUM 'BABY JOE'	BABY JOE PIEWEED	POT	#SP5	16–24" ht.	24" o.c.; Lav–Rose
	GSR	–	GERANIUM 'ROZANNE'	ROZANNE GERANIUM	CONT.	#SP5	20–24" ht.	18" o.c.; Deep Blue; Ju–Oct.
	GSH	–	GERANIUM 'SWEET HEIDI'	SWEET HEIDI GERANIUM	CONT.	#SP5	14–18" ht.	18" o.c.; Lav blue; Sp–Fall
	IVC	–	IRIS VERSICOLOR	NORTHERN BLUE FLAG	POT	#SP5	36" ht.	Red–Purple
	NN	–	NIPPONANTHEMUM NIPPONICUM	MONTAUK DAISY	CONT.	#2	30–36" ht.	
	PVR	–	PANICUM VIRGATUM 'RUBY RIBBONS'	RUBY RIBBONS SWITCHGRASS	CONT.	#2	3' ht.	Red Blades; 2' o.c.
	PAL	–	PENNISETUM ALOPCUROIDES	FOUNTAIN GRASS	POT	#3	2–4' Blades	3–5' Tassels; 2' o.c.
	PAH	–	PENNISETUM ALOPCUROIDES 'HAMELN'	HAMELN DWARF FOUNTAIN GRASS	CONT.	#2	24" ht.	18" o.c.
	POA	–	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN	CONT.	#1	1–3' ht.	Dark leathery fronds
	RFF	–	RUDBECKIA FULGIDA var. 'FULGIDA'	CONFLOWER (Black Eyed Susan)	POT	#SP5	24–30" HT.	15" o.c.; July–Oct.
	SAL	–	SALVIA NEMEROSA 'BLUE HILL'	BLUE HILL SALVIA	POT	#SP5	24" ht.	15" o.c.; Blue.
	SNM	–	SALVIA NEMEROSA 'MAY NIGHT'	BLUE MAY NIGHT	POT	#SP5	24" ht.	15" o.c.; Violet.

GRAPHIC SCALE
00 00 0 00
SCALE IN FEET

See sheet LL–2 for Planting Notes & sheet CD–1 for Planting Details.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: HT/CH/DW				CHECKED BY: HT			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie, NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN
SEAL

HUDSON LAND DESIGN PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

PRELIMINARY PLANTING PLAN – SOUTHEAST

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	LL–3
SHEET:	12 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

KEY TO LIGHT FIXTURES:

P2, P3, P4 & P5 — POLE MOUNTED LIGHTS: "UNIVERSE" BY ARCHITECTURAL AREA LIGHTING WITH LED LAMP TYPE WITH COLOR TEMPERATURE OF 3000K. LAMP IS FITTED IN CAP OF FIXTURE WITH POLE HEIGHTS TO SET FACE DOWNWARD AT A 12' HEIGHT ABOVE GRADE. OPTICAL DISTRIBUTION PATTERNS TYPE 2, 3, 4 ND 5 AS NOTED ON PLAN. LED FIXTURE PERFORMANCE IS FULL CUT-OFF.

P3

B2 & B4 — BOLLARD LIGHTS: "UNIVERSE" BOLLARD BY ARCHITECTURAL AREA LIGHTING WITH LED LAMP TYPE WITH COLOR TEMPERATURE OF 3000K. HEIGHT TO BASE OF LAMP HEAD IS 36" ABOVE GRADE. OPTICAL DISTRIBUTION PATTERNS ARE TYPE 2 OR 4 AS NOTED ON PLAN AND SHOWN ON CUT SHEET.

B2

NOTE: ALL BOLLARD LIGHTS TO BE EQUIPPED WITH DIMMER CONTROLS TO ALLOW FOR REDUCING LIGHT OUTPUT TO 50% OF FULL LIGHT LEVELS SHOWN ON THE PHOTOMETRIC PLAN.

LIGHT FIXTURES – IMAGERY





GRAPHIC SCALE

00 00 0 00

SCALE IN FEET

See sheet LP-3 for Fixture Specification Order Sheets, & for Lighting Schedule & Computations.

Dig Safely. New York. Call 811 before you dig

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809

- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

SITE LIGHTING PLAN – NORTH

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	LP-2
SHEET:	13 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LIGHT FIXTURE SPEC SHEETS:

"P" – POST TOP FIXTURES

Universe® Collection Medium LED – UCM

TYPE



SKIRTED BELL HOOD CONFIGURATION	UCM-SKB
DIAMETER	24"/610mm
HEIGHT	19.7"/500mm
WEIGHT	20.5 lbs/9.3kg
EPA	.90

ORDERING INFORMATION

1	2	3	4	5	6	7	8	9	10
UCM	SKB	T3/T4	3K	700	BLT	FLD	-	(tbd)	SLA-4
MODEL	Hood	Distribution	CCT	Lumen Package	Finish	Options	Control	Voltage	Mounting

1. MODEL
- UCM — *Universe medium without luminous element*
- UCM-WND — *Universe medium with luminous window*
- UCM-SR — *Universe medium with luminous solid rings*
- UCM-VSL — *Universe medium with luminous vertical slots*
- UCM-LUM — *Universe medium with luminous rings*

2. HOOD (May choose one)
- FLR — *Flared hood*
- FLR-STS — *Flared hood in natural brushed stainless steel*
- FLR-COP — *Flared hood in natural brushed copper*
- ANG — *Angled hood*
- ANG-STS — *Angled hood in natural brushed stainless steel*
- ANG-COP — *Angled hood in natural brushed copper*
- STR — *Straight hood*
- STR-STS — *Straight hood in natural brushed stainless steel*
- STR-COP — *Straight hood in natural brushed copper*
- BEL — *Bell hood*
- BEL-STS — *Bell hood in natural brushed stainless steel*
- BEL-COP — *Bell hood in natural brushed copper*
- SKB — *Skirted bell hood*
- SKB-STS — *Skirted bell hood in natural brushed stainless steel*
- SKB-COP — *Skirted bell hood in natural brushed copper*

3. DISTRIBUTION
MicroCore Precision aimed optics
- T2-SQLED — *Type 2*
- T3-SQLED — *Type 3*
- T4-SQLED — *Type 4*
- T5W-SQLED — *Type 5 Wide*
- TX-SQLED — *Custom*

4. COLOR TEMPERATURE
- 3K — *3000K*
- 4K — *4000K*
- 5K — *5000K*
- 27K — *2700K* [1]
- 35K — *3500K* [1]
- AM — *>560 nm monochromatic amber* [1]

5. LUMEN PACKAGE
- 700 — *71 watts*
- XMA — *Custom wattage or drive current* [1]

6. FINISH
Standard Color
- WH — *Arctic White*
- BL — *Black*
- BLT — *Matte Black*
- DB — *Dark Bronze*
- DGN — *Dark Green*
- TT — *Titanium*
- WDB — *Weathered Bronze*
- MDB — *Bronze Metallic*
- VBU — *Verde Blue*
- CRT — *Corten*
- MAL — *Matte Aluminum*
- MG — *Medium Grey*
- AGN — *Antique Green*
- LG — *Light Grey*

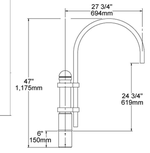
Premium Color
- SHK — *Shamrock*
- SPP — *Salt and Pepper*
- SPM — *Sadtan*
- WCP — *Weathered Copper*
- RAL — *RAL 4 digit Color*
- CUSTOM — *Custom Color*

7. OPTIONS (May choose as noted)
- FLD — *Flat diffused glass lens*
- SAG — *Sag clear glass lens*
- HSS — *House-Side shield for Type 4*
- SLC — *Unlit (luminous) element*
- R80 — *80 CRI minimum* [1]
- BLU — *Blue inner lens*
- RD — *Red inner lens*
- GRN — *Green inner lens*

8. CONTROLS – (May choose as noted)
- WIR — *wiScape connectivity*
- WIRSC — *wiScape connectivity, integral motion sensor*
- SCP — *Integral photo-control and motion sensor* [1]
- SCPREMOTE — *Handheld commissioning tool* [1]

9. VOLTAGE
- 120-277 — *120-277 VAC Input*
- 347 — *347 VAC Input*
- 480 — *480 VAC Input*

9. MOUNTING
POLE MOUNT
- SLA2 — *2" Arm*
- SLA4-2 — *4" Arm*
- SLA7(5) — *7" Arm (5" Arm)*
- SLA9 — *9" Arm*
- SLA10-2 — *10" Arm*
- SLA11 — *11" Arm*
- SLA17(5)-2 — *17" Arm (5" Arm)*
- SLA18 — *18" Arm*
- SLA20-2 — *20" Arm*
- SLA24-2 — *24" Arm*
- SLA3 — *3" Arm*
- SLA7 — *7" Arm*
- SLA8-2 — *8" Arm*
- SLA16-2 — *16" Arm*
- SLA17(5) — *17" Arm (5" Arm)*
- SLA18-2 — *18" Arm*
- SLA20A — *20" Arm*
- SLA20B-2 — *20" Arm*
- SLA20C-2 — *20" Arm*
- SLA20D — *20" Arm*
- SLA24 — *24" Arm*
- SLA24(5) — *24" Arm (5" Arm)*
- TRA2 — *2" Tenon Adapter*
- TRA4 — *4" Tenon Adapter*
- TRA7 — *7" Tenon Adapter*
- TRA8 — *8" Tenon Adapter*
- TRA8-2 — *8" Tenon Adapter*
- TRA9 — *9" Tenon Adapter*
- SLA4 — *4" Arm*



architectural arealighting
ARCHITECTURAL AREA LIGHTING
17760 Rowland Street I City of Industry I CA 91748
T 626.968.5666 I F 626.369.2695 I www.aal.net
Copyright © 2014 January 11, 2017 10:16 AM

"B" – BOLLARD FIXTURES

UCB – Universe Bollard

TYPE

- LED technology
- Modular system offers five luminous choices and two hood options for customization to complement site design
- Full cutoff option available
- Glass refractor lens, IES Type 5 distribution
- IP55 rated
- Powder coat finish in 13 standard colors with a polymer primer sealer

1. LUMINAIRE	2. LUMINOUS	3. HOOD	4. LAMP/BALLAST	5. COLOR	6. OPTIONS	7. OPTIONS (Internal)
UCB	BLANK	STR	12LED-WW	BLT		HSS (QTY. 7)



1. LUMINAIRE
- UCB — *Universe bollard*

2. LUMINOUS ELEMENT – *Optional*
- BLANK (No luminous element)
- LUM (Luminous Rings - 7.625"/193mm OAH x 2.75"/70mm Ht)
- WND (3 Windows - 5.25"/133mm DIA x 2.75"/70mm Ht)
- VSL (Vertical Slots - 5.25"/133mm DIA x 2.75"/70mm Ht)

3. HOOD
- STR (Straight Hood - 97.4/50mm DIA x 3.12"/80mm Ht)
- FLR (Flared Hood - 10.25"/260mm DIA x 4.75"/120mm Ht)

4. LAMP/BALLAST

LED *(Warm white (3000K), Neutral white (4000K), Bright white (5000K). 32 watts.*
- 12LED-WW *(Warm white)*
- 12LED-NW *(Neutral white)*
- 12LED-BW *(Bright white)*

COMPACT FLUORESCENT *(120 thru 277 volt ballast. Use 4-pin, 26, 32 or 42 watt lamp. -18°C min start temp)*
- CF

METAL HALIDE
Medium base, ED-17 lamp
- 50MH — 70MH
ED2 base, T-6 ceramic lamp
- 70MHT6

ELECTRONIC METAL HALIDE
Medium base, ED-17 lamp
- 50MHEB — 70MHEB
ED2 base, T-6 ceramic lamp
- 70MHT6EB — 39MHT6EB

HIGH PRESSURE SODIUM
Medium base, ED-17 lamp
- 50HPS — 70HPS

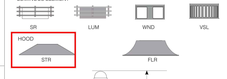
All ballasts and LED drivers are powered for 277 volts unless specified. Lamps not included (except LED and IL options).

5. COLOR
- WH — *Arctic White*
- BL — *Black*
- BLT — *Matte Black*
- DB — *Dark Bronze*
- DGN — *Dark Green*
- TT — *Titanium*
- WDB — *Weathered Bronze*
- MDB — *Bronze Metallic*
- VBU — *Verde Blue*
- CRT — *Corten*
- MAL — *Matte Aluminum*
- MG — *Medium Grey*
- AGN — *Antique Green*
- LG — *Light Grey*
- RAL — *Premium Color*
- CUSTOM * — *Contact Factory*

6. OPTIONS - HOOD
The natural copper and stainless steel hoods are unfinished to develop a patina over time. All hoods have the under side finished in high reflectance white.
- COP (Copper)
- STS (Stainless steel)

7. OPTIONS - INTERNAL
SLC (Internal sleeve to block light when luminous element chosen)
347 (For HID, except 50MH & 50HPS. Not available with LED)
HSS (House side shield. Factory installed)
BBU (Battery backup powers a compact fluorescent lamp for up to 90 minutes during a power failure. Operating temp 0°C to 55°C. Not available with LED)

DIMENSIONS
LUMINOUS ELEMENT



SPECIFICATIONS

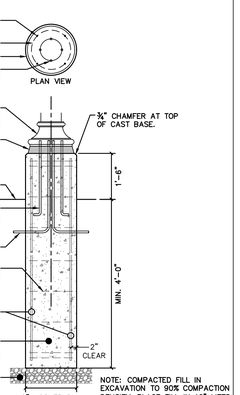
HOUSING
The fixture housing, shade, and base are cast aluminum, A356 alloy, free of any porosity, foreign materials, or cosmetic fillers. The shaft shall be 6" wide and 3/4 1/4" tall, extended 4(OD)-T6 aluminum. The ballast or driver is mounted internally and accessed by loosening three set screws and lifting the fixture head off of the shaft. Relamping is done by removing three stainless steel acorn nuts underneath the shade and lifting it off the base. The lens is press molded, tempered borosilicate glass, sealed to the fixture body with a one piece silicone gasket. All internal and external hardware is stainless steel.

ELECTRICAL
The ballast is integral to the fixture, mounted on a prewired module with a quick disconnect plug. The ballast module has two keyhole slots and is removable by loosening two screws. Sockets are pulse rated porcelain. HID ballasts are high power factor, rated for -30°C starting. Ballasts are multitap, wired at the factory for 277 volts, unless specified. Compact fluorescent transformers are electronic, 100 through 277 volt for 26, 32 or 42 watt 4 pin lamps. Standard LED color temperatures are 3000K, 4000K and 5000K. Other color temperatures available. Please contact factory. LED constant current driver operates at 700mA.

FINISH
Fixture finish consists of a five stage pretreatment regimen with a polymer primer sealer, oven dry off, and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

architectural arealighting
ARCHITECTURAL AREA LIGHTING
16555 East Gale Ave. I City of Industry I CA 91745
P 626.968.5666 I F 626.369.2695 I www.aal.net
Copyright © 2012 I Rev 10.15

LIGHT POLE BASE DETAIL:



1 CONC. LIGHT POLE BASE-ROUND
SCALE: 1/2" = 1'–0"

LIGHTING SCHEDULE & COMPUTATIONS:

GRAPHIC SCALE
00 00 0 00
SCALE IN FEET

Dig Safely. New York. Call 811 before you dig

DRAWN BY: HT/CH/DW	CHECKED BY: HT	
REVISIONS:	REVISIONS:	

NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN
SEAL

HUDSON LAND DESIGN PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

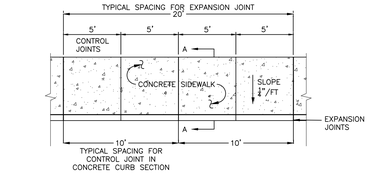
SITE LIGHTING PLAN – SOUTHEAST

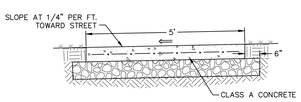
MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	1" = 40'
TITLE:	LP–3
SHEET:	14 OF 18

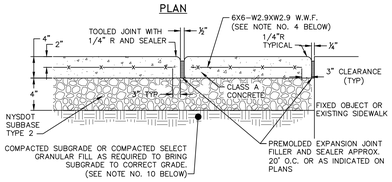
UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



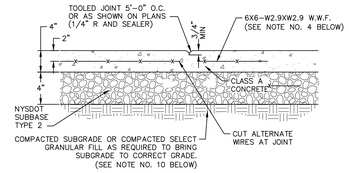


SECTION A–A

PLAN



EXPANSION JOINT

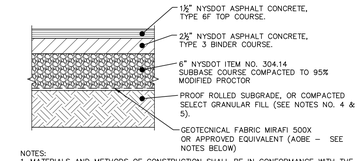


CONTROL JOINT

NOTES:

1. 10' SPACING OF CONTROL JOINTS SHALL BE USED FOR CAST IN PLACE CONCRETE CURBS.
2. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JANUARY 2, 2002, AND ALL ADDENDA THERETO; THE ONLY EXCEPTION BEING THAT THE WORK OF THIS CONTRACT SHALL BE MEASURED IN ENGLISH UNITS.
3. ALL CONCRETE SHALL BE 3,500 PSI CLASS A CONCRETE. CONCRETE MATERIALS, PLACEMENT, AND CONSTRUCTION SHALL CONFORM WITH SECTION 500 OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
4. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND AS SPECIFICALLY CALLED OUT IN THE DRAWINGS.
5. ALL EXPOSED SURFACED SHALL HAVE A BROOM TEXTURED FINISH.
6. EXPANSION JOINTS SHALL BE LOCATED A MAXIMUM OF 20' ON CENTER, OR AS INDICATED ON PLANS.
7. JOINTS SHALL NOT BE SAW CUT.
8. EXPOSED CONCRETE SURFACES SHALL BE TREATED WITH "SUREBOND"/"SAFEBOND"SB–7000 INTENSIFIER BRIGHT PROTECTOR AND SIDEWALK SEALER, OR EQUAL. RATE AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
9. SUBBASE MATERIAL SHALL CONFORM WITH SECTION 304 OF THE ABOVE REFERENCED NYSDOT STANDARD.
10. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSE OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMATION WITH SECTION 203–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
11. ALL WORK SHALL CONFORM WITH SECTION 608–SIDEWALK, DRIVEWAYS, AND BICYCLE PATHS OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.

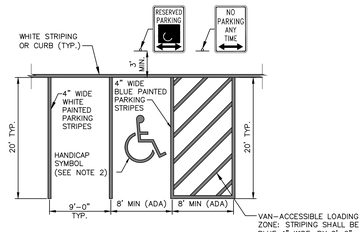
CONCRETE SIDEWALK DETAIL
NOT TO SCALE



NOTES:

1. MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JANUARY 2, 2002.
2. SUBGRADE SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS.
3. TACK COAT WHEN SPECIFIED OR CALLED OUT IN THESE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATIONS SHALL CONFORM WITH SECTION 407–TACK COAT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
4. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSES OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMANCE WITH SECTION 203–EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
5. IT IS EXPECTED THAT THE EXISTING SITE SUB–SOILS ARE SAND AND GRAVEL IN NATURE (CALIFORNIA BEARING RATIO RANGE BETWEEN 40 AND 80) . IF UNSUITABLE SOILS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR POSSIBLE MODIFICATIONS TO THE PAVEMENT DETAIL.

PAVEMENT SECTION DETAIL
NOT TO SCALE



TYPICAL PARKING STRIPING

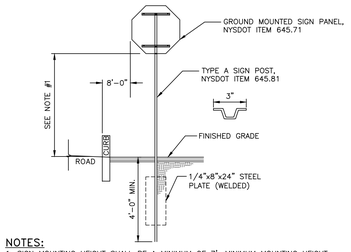
HANDICAP PARKING STRIPING

NOTES:

1. ALL DIMENSIONS SUBJECT TO CURRENT MUNICIPALITY ZONING AND SITE REGULATIONS.
2. PAINTED HANDICAP SYMBOL TO BE IN ACCORDANCE WITH NYSDOT AND ADA STANDARDS.
3. IF PARKING ABUTS A SIDEWALK, THEN THE REGULATORY SIGNS SHALL BE PLACED BEHIND THE SIDEWALK.

PARKING AND STRIPING DETAIL
NOT TO SCALE

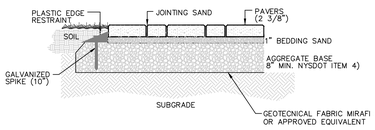
TEXT	APPROXIMTE SIZE OF SIGN	MUTCD NO.	COLOR		TYPE OF MOUNTING
			BACKGROUND	LEGEND	
STOP	30"x30"	R1–1	RED	WHITE	POST MOUNT



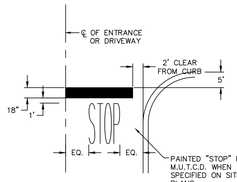
NOTES:

1. SIGN MOUNTING HEIGHT SHALL BE A MINIMUM OF 7'. MINIMUM MOUNTING HEIGHT MAY BE ADJUSTED ONLY IN ACCORDANCE WITH PROVISIONS OUTLINED IN "NYCRR, CHAPTER V–UNIFORM TRAFFIC CONTROL DEVICES."
2. SIGN POST SHALL BE IN ACCORDANCE W/ NYSDOT STANDARD SPECS SECTION 730.
3. SIGN BRACING PER NYSDOT STANDARD SHEETS.
4. SIGN POSTS WITHIN THE COUNTY RIGHT–OF–WAY SHALL BE BREAKAWAY TYPE MEETING THE REQUIREMENTS OF THE NYSDOT.

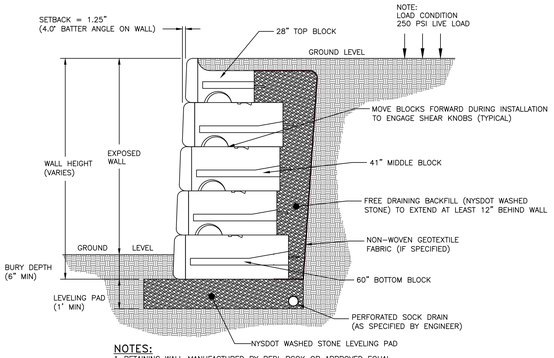
SINGLE POST SIGN DETAIL
NOT TO SCALE



CONCRETE PAVER DETAIL
NOT TO SCALE



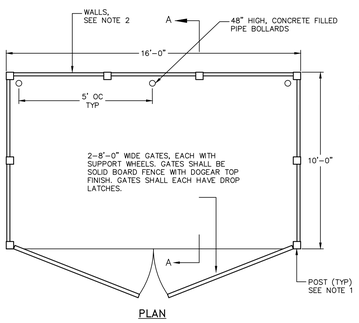
STOP BAR DETAIL
NOT TO SCALE



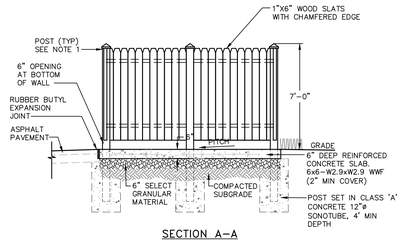
NOTES:

1. RETAINING WALL MANUFACTURED BY REDI–ROCK OR APPROVED EQUAL.
2. REDI–ROCK WALLS ARE PROPOSED AT THE PARKING AREA NEAR BUILDINGS 1 AND 2, BEHIND BUILDING 5 & 6 AND AT THE WEST SIDE OF THE SITE ENTRANCE DRIVEWAY OFF BRANCH STREET. THE RETAINING WALL AT BUILDING 4 IS A CAST–IN–PLACE CONCRETE WALL DESIGNED BY OTHERS.
3. THE RETAINING WALL SHALL BE DESIGNED BY A NEW YORK STATE LICENSED ENGINEER AND PLANS SHALL BE SUBMITTED TO THE BEACON BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.
4. SEE MANUFACTURER'S DETAILS AND INSTALLATION GUIDELINES FOR FURTHER REQUIREMENTS.

TYPICAL REDI–ROCK GRAVITY WALL WITH 41" BLOCKS
NOT TO SCALE



PLAN

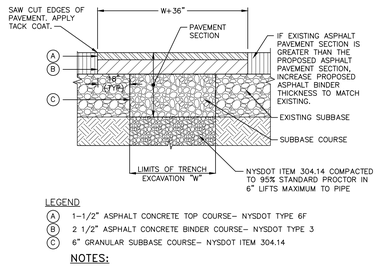


SECTION A–A

NOTES

1. POSTS SHALL HAVE A DECORATIVE CAP, CONSISTENT WITH THE ARTS & CRAFTS STYLE, AS APPROVED BY OWNER. POST SPACING SHALL BE AS REQUIRED BY WALL CONSTRUCTION.
2. WALLS OF DUMPSTER ENCLOSURE SHALL BE A SOLID WOOD PRIVACY FENCING NATURAL STAIL OR PAINT TO COMPLEMENT BUILDING.

TRASH ENCLOSURE DETAILS
NOT TO SCALE



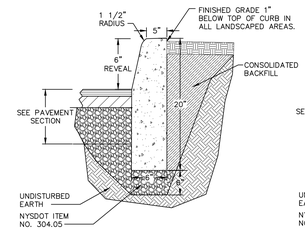
LEGEND

(A) 1–1/2" ASPHALT CONCRETE TOP COURSE– NYSDOT TYPE 6F
(B) 2 1/2" ASPHALT CONCRETE BINDER COURSE– NYSDOT TYPE 3
(C) 6" GRANULAR SUBBASE COURSE– NYSDOT ITEM 304.14

NOTES:

1. SAW CUT MIN. 18" BEYOND EXCAVATION WITH SMOOTH EDGES. 18" JOINT BETWEEN EXISTING AND NEW TOP COURSE TO BE MILLED. JOINT TO BE SEALED WITH POLYMER MODIFIED SEALER.
2. FURNISH, PLACE, AND COMPACT SUBBASE.
3. TACK COAT IN ACCORDANCE WITH NYSDOT STANDARD SPEC.
4. FURNISH AND PLACE ASPHALT CONCRETE PAVEMENT AS SPECIFIED.

PAVEMENT RESTORATION DETAIL
NOT TO SCALE



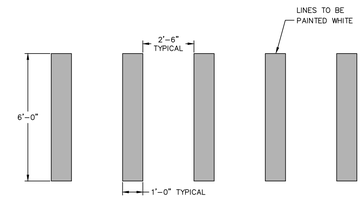
ABUTTING GRASS OR LANDSCAPE

ABUTTING SIDEWALK

NOTES:

1. CONCRETE CURB SHALL BE 4,000 PSI CAST–IN–PLACE, AND IN ACCORDANCE WITH NYSDOT STANDARD SPECIFICATION SECTION 609.
2. EXPANSION JOINTS OF 1/2" CELLULOSE OR SIMILAR MATERIAL SHALL BE PLACED AT 10 FOOT INTERVALS.
3. FOR MOUNTABLE CURBS ABUTTING SIDEWALK OR OTHER HARDSCAPE, REFER TO "ABUTTING SIDEWALK" DETAIL.

CAST–IN–PLACE CONCRETE CURB DETAIL
NOT TO SCALE



PAINTED CROSSWALK DETAIL
NOT TO SCALE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
● Landscape Architecture
● Civil Engineering
● Environmental Services
● Land Surveying
● Land Planning
85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880
160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809

HUDSON LAND DESIGN

STATE OF NEW YORK MICHAEL A. BOGDANOS 084486 LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845–440–6926
F: 845–440–6637

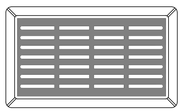
CONSTRUCTION DETAILS

MIRBEAU BEACON

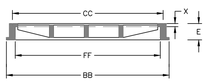
7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054–13–001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	AS SHOWN
TITLE:	CD–1
SHEET:	15 OF 18

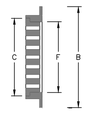
UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



PLAN VIEW



SECTION VIEW 1



SECTION VIEW 2

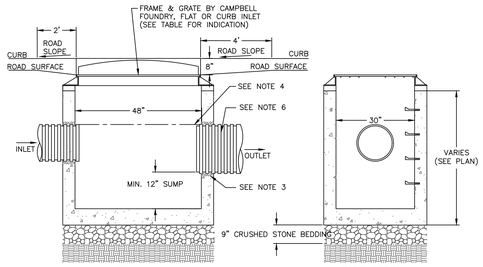
DIMENSION TABLE:

B	C	E	F	X	BB	CC	FF
30"	24"	4"	22"	1"	42"	36"	54"

NOTES:

1. HEAVY DUTY RECTANGULAR STORMWATER INLET GRATE TO BE CAMPBELL FOUNDRY MODEL 3433, OR APPROVED EQUAL.
2. CATCH BASINS TO RECEIVE FLAT INLETS ARE: CB 101, CB 101A, CB 102, CB 103, CB 202, CB 208, CB 304A, CB 305A AND CB 305B.
3. DMH 1 AND DMH 3 RECEIVE SOLID CAST IRON COVERS.

CAST IRON STORMWATER FLAT INLET GRATE DETAIL
NOT TO SCALE

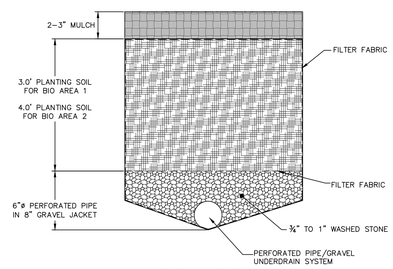


FRONT VIEW SIDE VIEW

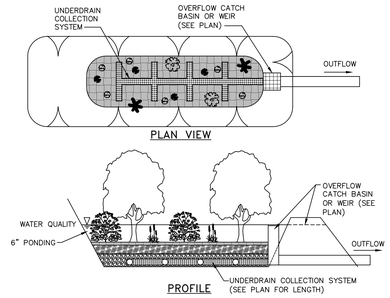
NOTES:

1. PRECAST CONCRETE CATCH BASIN WITH CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE ENDS OF ALL PIPES SHALL BE CUT OFF FLUSH WITH THE INSIDE SURFACE OF THE CATCH BASIN AND PARGED AROUND.
3. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE. CONNECTIONS MADE WITHIN 10 FEET OF A WATER MAIN (OR SERVICE LINE) OR A SEWER MAIN (OR SERVICE LATERAL) SHALL BE MADE WATERTIGHT.
4. PROVIDE A MINIMUM 0.1' DROP BETWEEN INLET AND OUTLET INVERTS (MATCH CROWNS FOR PIPES WITH DIFFERENT SIZE) UNLESS OTHERWISE NOTED ON THE PLAN.
5. CATCH BASINS WITH AN INTERIOR DEPTH OF 4' AND GREATER SHALL BE FURNISHED WITH STEEL REINFORCED POLYPROPYLENE PLASTIC STEPS AT 12" INTERVALS.
6. HDPE PIPE SHALL BE PROVIDED WITH WATERTIGHT CONNECTIONS. ADS MODEL N12 WT IB OR APPROVED EQUAL.

CATCH BASIN DETAIL
NOT TO SCALE



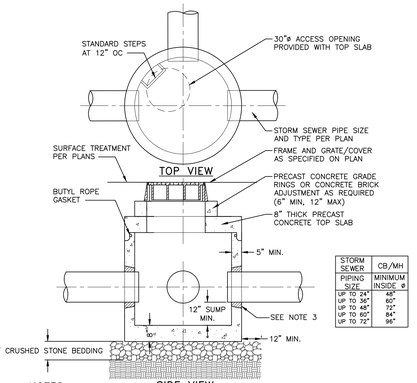
TYPICAL SECTION



NOTES:

1. NO RUNOFF IS TO ENTER THE BIORETENTION AREA UNTIL ALL CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED.
2. LANDSCAPING TO BE PROVIDED BY THE PROJECT LANDSCAPE ARCHITECT AND AS FOLLOWS:
   - NATIVE PLANT SPECIES SHOULD BE SPECIFIED BASED ON SPECIFIED ZONE OF HYDRIC TOLERANCE
   - SELECTIONS OF TREES WITH AN UNDERSTORY OF SHRUBS AND HERBACEOUS MATERIALS SHOULD BE PROVIDED.
   - WOODY VEGETATION SHOULD NOT BE SPECIFIED AT INFLOW LOCATIONS.
   - TREES SHOULD BE PLANTED PRIMARILY ALONG THE PERIMETER OF THE FACILITY.
   - A TREE DENSITY OF 1 TREE PER 100 SQUARE FEET IS RECOMMENDED, AND SHRUBS/HERBACEOUS VEGETATION SHOULD GENERALLY BE PLANTED AT HIGHER DENSITIES (FIVE FEET ON CENTER AND 2.5 FEET ON CENTER, RESPECTIVELY).
3. SEE PLAN FOR PRETREATMENT.

TYPICAL BIORETENTION DETAIL
NOT TO SCALE



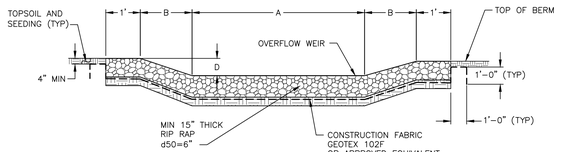
STORM SEWER PIPING SIZE	CB/MH MINIMUM INSIDE ø
UP TO 24"	48"
UP TO 36"	60"
UP TO 48"	72"
UP TO 60"	84"
UP TO 72"	96"

SIDE VIEW

NOTES:

1. PRECAST CONCRETE MANHOLE WITH CONCRETE STRENGTH OF 4,000 PSI @ 28 DAYS.
2. THE ENDS OF ALL PIPES SHALL BE CUT OFF FLUSH WITH THE INSIDE SURFACE OF THE MANHOLE AND PARGED AROUND.
3. PIPES SHALL BE PARGED AROUND INTERIOR AND EXTERIOR PRIOR TO BACKFILLING OF STRUCTURE. 4. CONCRETE STRUCTURE AND CASTING SHALL BE RATED FOR H20 TRAFFIC LOADING.
5. INLET FRAME SHALL BE FULLY SUPPORTED ON THE CONCRETE STRUCTURE FOR H20 LOADING.
6. MANHOLES WITH AN INTERIOR DEPTH OF 4' AND GREATER SHALL BE FURNISHED WITH STEEL REINFORCED POLYPROPYLENE PLASTIC STEPS AT 12" INTERVALS.

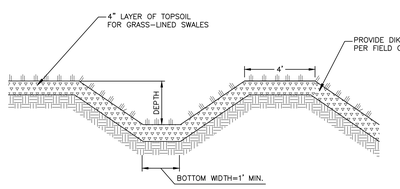
STORMWATER MANHOLE DETAIL
NOT TO SCALE



NOTES:

1. RIP RAP OUTLET PROTECTION SHALL BE 15" OF LIGHT STONE FILLING. STONE FILLING SIZE d50=6", RIVER ROCK MAY BE SUBSTITUTED FOR ANGULAR STONE.

EMERGENCY OVERFLOW WEIR DETAIL
NOT TO SCALE

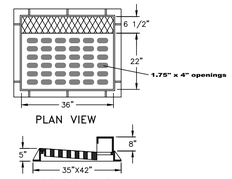


SECTION VIEW

NOTES:

1. MINIMUM 1' DEPTH AND 1' WIDTH FOR ALL SWALES.
2. SWALE SHALL BE SEEDED WITH FAST GERMINATING RYE 15 TO 25 POUNDS PER 1,000 SQUARE FEET AND MULCHED.

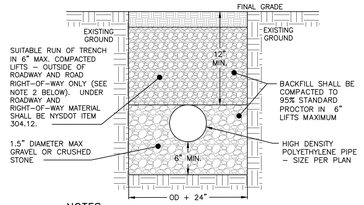
TEMPORARY GRASS LINED SWALE/DIKE DETAIL
NOT TO SCALE



NOTES:

1. HEAVY DUTY RECTANGULAR STORMWATER INLET GRATE TO BE CAMPBELL FOUNDRY MODEL 2541, OR APPROVED EQUAL.
2. CATCH BASINS TO RECEIVE CURB INLETS ARE: CB 104, CB 301, CB 301A, CB 302, CB 303, CB 304, AND CB 305.

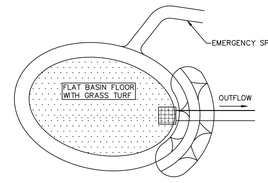
CAST IRON STORMWATER CURB INLET GRATE DETAIL
NOT TO SCALE



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.

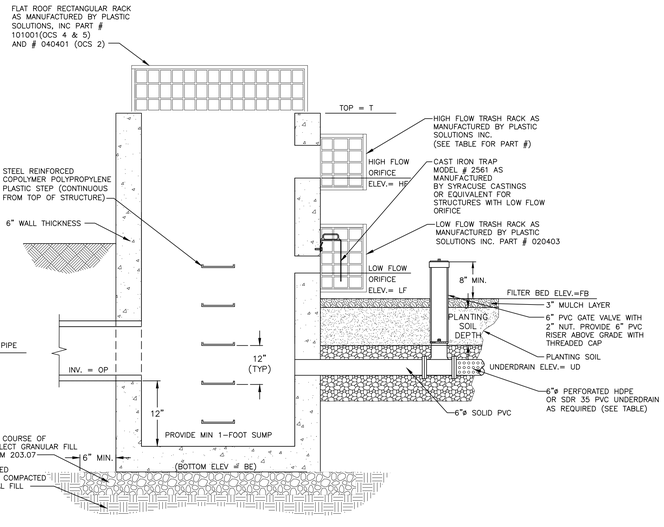
STORM LINE TRENCH DETAIL
NOT TO SCALE



NOTES:

1. THE INFILTRATION BASIN SHALL NOT SERVE AS A SEDIMENT TRAP DURING CONSTRUCTION AND SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITY.
2. RELATIVELY LIGHT TRACKED EQUIPMENT IS RECOMMENDED FOR CONSTRUCTION PURPOSES TO AVOID COMPACTION OF THE BASIN FLOOR.
3. A HIGHLY POROUS SURFACE TEXTURE SHALL BE RETAINED ALONG THE BASIN FLOOR, ESPECIALLY WITHIN THE AREA IDENTIFIED AS BEING USED FOR INFILTRATION.
4. ESTABLISH DENSE VEGETATION ON THE BASIN SIDE SLOPES AND FLOOR TO PREVENT EROSION AND SLOUGHING AND TO PROVIDE A NATURAL MEANS OF MAINTAINING RELATIVELY HIGH INFILTRATION RATES. GRASSES OF THE FESCUE FAMILY (ALTAI FESCUE, WESTERN FESCUE OR RED FESCUE) ARE SPECIFIED ON THIS PLAN, PRIMARILY DUE TO THEIR ADAPTABILITY TO DRY SANDY SOILS, DROUGHT RESISTANCE, HARDINESS, AND ABILITY TO WITHSTAND BRIEF INUNDATIONS. FESCUE WILL ALSO ALLOW FOR LONG INTERVALS BETWEEN MOWINGS, WHICH SHALL OCCUR TWICE PER YEAR MINIMUM, TYPICALLY IN JUNE AND SEPTEMBER IS SATISFACTORY.
5. THE BERMS SHALL BE SUFFICIENTLY COMPACTED AND OF SUCH MATERIAL TO PREVENT SEEPAGE.

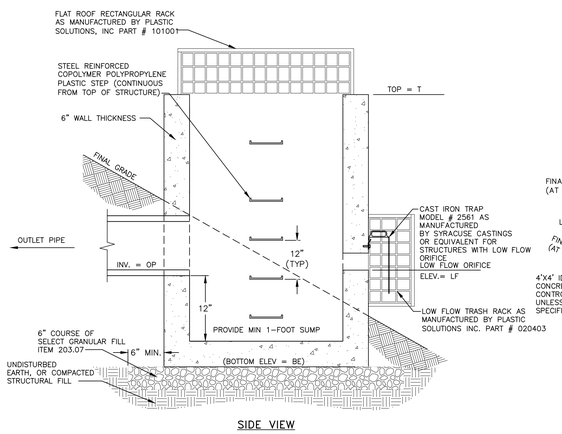
TYPICAL INFILTRATION BASIN DETAIL
NOT TO SCALE



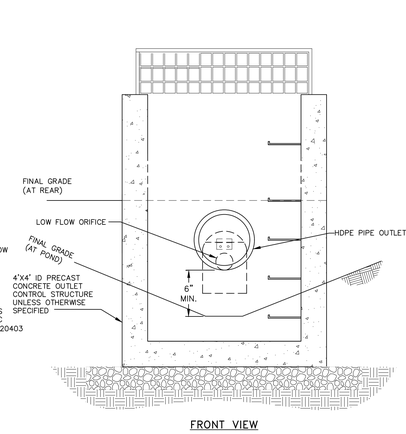
NOTES:

1. ALL TRASH RACKS SHALL HAVE UV PROTECTION MEETING OR EXCEEDING THE REQUIREMENTS OF ASTM D2565–99.
2. TRASH RACKS SHALL BE SECURED PER THE MANUFACTURER'S RECOMMENDATIONS.
3. WHERE HIGH FLOW ORIFICE EXTENDS TO TOP OF STRUCTURE, THE MAXIMUM ALLOWABLE GAP BETWEEN THE TRASH RACKS SHALL BE 4".

BIORETENTION OUTLET CONTROL STRUCTURE DETAIL
NOT TO SCALE



SIDE VIEW



FRONT VIEW

NOTES:

1. ALL TRASH RACKS SHALL HAVE UV PROTECTION MEETING OR EXCEEDING THE REQUIREMENTS OF ASTM D2565–99.
2. TRASH RACKS SHALL BE SECURED PER THE MANUFACTURER'S RECOMMENDATIONS.
3. WHERE HIGH FLOW ORIFICE EXTENDS TO TOP OF STRUCTURE, THE MAXIMUM ALLOWABLE GAP BETWEEN THE TRASH RACKS SHALL BE 4".

INFILTRATION OUTLET CONTROL STRUCTURE DETAIL
NOT TO SCALE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204, Poughkeepsie NY 12601, Tel: 845.243.2880
160 West Street, Suite E, Cromwell, CT 06416, Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK — MICHAEL A. BOGNANNI — 084486 — LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

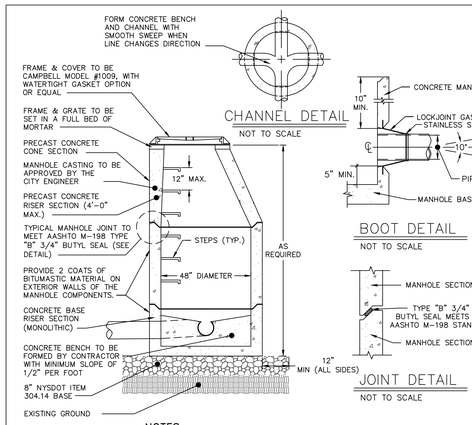
CONSTRUCTION DETAILS

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	AS SHOWN
TITLE:	CD-2
SHEET:	16 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



CHANNEL DETAIL
NOT TO SCALE

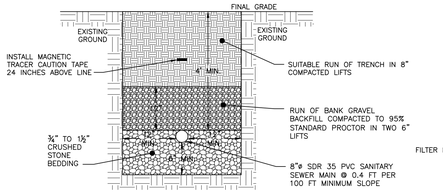
BOOT DETAIL
NOT TO SCALE

JOINT DETAIL
NOT TO SCALE

NOTES:

1. PIPE CONNECTION TO BE STANDARD "LOCKJOINT" BOOT 5" OFF BASE OF MANHOLE (SEE DETAIL).
2. CONCRETE STRENGTH OF MANHOLE COMPONENTS TO BE 4000 PSI @ 28 DAYS IN ACCORDANCE WITH ASTM C-478-86.
3. STEEL REINFORCMENT OF MANHOLE COMPONENTS TO MEET ASTM A615-A497 REQUIREMENTS.
4. LOADING OF MANHOLE COMPONENTS TO MEET H-20 REQUIREMENTS.
5. CONCRETE USED IN MANHOLE COMPONENTS TO CONTAIN 6% AIR ENTRAINMENT.
6. 4' MAXIMUM FROM MANHOLE TO PIPE JOINT.

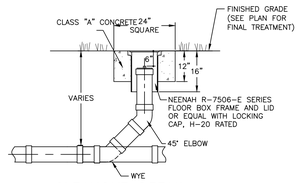
PRE-CAST CONCRETE SANITARY MANHOLE DETAIL
NOT TO SCALE



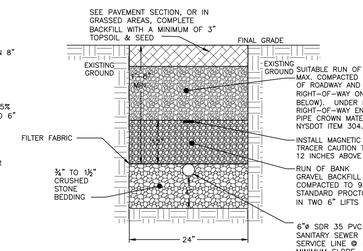
NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. SEWER MAIN MATERIAL SHALL BE 8" DIAMETER SDR-26 PVC BELL AND SPIGOT GRAVITY SEWER PIPE, WITH GASTIGHT AND WATERTIGHT JOINTS.

SANITARY SEWER MAIN TRENCH DETAIL
NOT TO SCALE



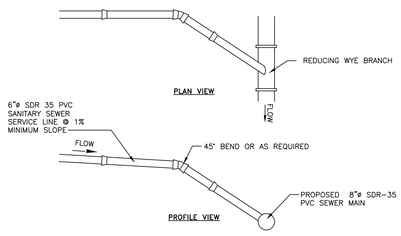
CLEANOUT DETAIL
NOT TO SCALE



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.

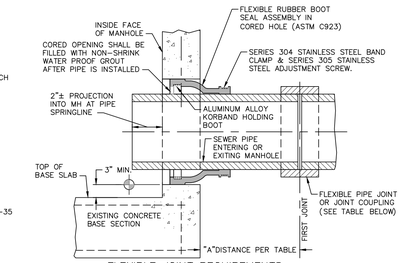
SANITARY SEWER SERVICE LINE TRENCH DETAIL
NOT TO SCALE



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.

SANITARY SEWER SERVICE CONNECTION DETAIL
NOT TO SCALE



FLEXIBLE JOINT REQUIREMENTS

SEWER PIPE TYPE	FLEXIBLE JOINT TYPE IN & OUT	"A" DISTANCE (FEET)
DUCTILE IRON	STD RUBBER GASKET PIPE JOINT ONLY	10" MAX
PVC	STD RUBBER GASKET PIPE JOINT ONLY	3" MAX

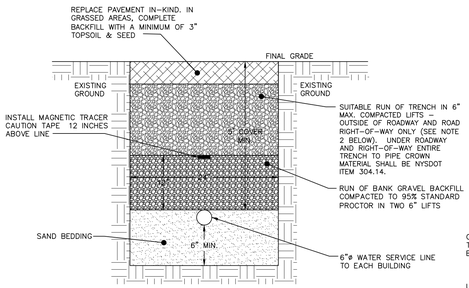
NOTE:

REFERENCE MANHOLE DETAIL(S) FOR REQUIRED INVERT CHANNEL CONFIGURATION.

CORED HOLE AND INSERTED BOOT DETAIL
NOT TO SCALE

SANITARY SEWER NOTES:

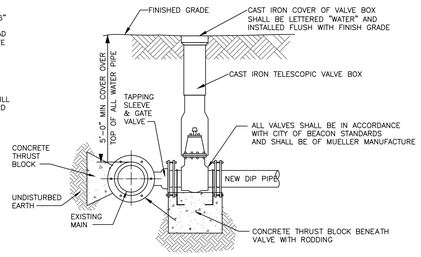
1. THE PROPOSED APARTMENTS ARE TO BE SERVED BY THE CITY OF BEACON MUNICIPAL SEWER SYSTEM. INSTALLATION OF ALL COMPONENTS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY CODE, CHAPTER 179.
2. REFER TO THE DUTCHESS COUNTY DEPARTMENT OF HEALTH STANDARD NOTES FOR ADDITIONAL PERTINENT INFORMATION.
3. THE DUTCHESS COUNTY DEPARTMENT OF HEALTH, CITY OF BEACON CHIEF SEWER OPERATOR, AND THE CERTIFYING PROFESSIONAL ENGINEER SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF THE SEWER MAIN INSTALLATION.
4. SEWER MAIN MATERIAL SHALL BE 8" DIAMETER SDR-35 OR SDR-26 PVC BELL AND SPIGOT GRAVITY SEWER PIPE, WITH GASTIGHT AND WATERTIGHT JOINTS.
5. SEWER MAIN SHALL BE LAID IN STRAIGHT ALIGNMENT. MANHOLES SHALL BE CONSTRUCTED AT ALL CHANGES IN SLOPE, ALIGNMENT OR AT INTERVALS NOT EXCEEDING 400 LINEAR FEET. STRAIGHT ALIGNMENT SHALL BE VERIFIED BY DEFLECTION TESTING.
6. THE SEWER MAIN SHALL BE INSTALLED AND TESTED FOR EXFILTRATION PRIOR TO BEING PERMITTED TO OPERATE. ALL NEW SANITARY SEWER GRAVITY LINES SHALL PASS A LOW PRESSURE AIR TEST IN ACCORDANCE WITH ASTM C-828 AT A PRESSURE OF 3.5 PSI.
7. MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C-1244. IF PRESSURE DROP EXCEEDS THE SPECIFIED AMOUNT, THE NECESSARY REPAIRS OR REPLACEMENTS REQUIRED SHALL BE MADE TO REDUCE THE PRESSURE DROP TO WITHIN THE SPECIFIED LIMIT, AND THE TESTS SHALL BE REPEATED UNTIL THE REQUIREMENT IS MET.
8. SERVICE LATERALS SHALL BE 6" DIAMETER SDR-35 PVC WITH A MINIMUM SLOPE OF 1%, UNLESS OTHERWISE NOTED ON THE PLAN.
9. ALL SANITARY SEWER MAINS AND MANHOLES UP TO, BUT NOT INCLUDING, THE EXISTING CONNECTION MANHOLE ON BRANCH STREET SHALL BE OWNED, OPERATED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, ENLOGATED PARTICLES, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. IN AREAS WHERE 5' COVER REQUIREMENT CANNOT BE MET, THE CONTRACTOR SHALL PROVIDE PIPE INSULATION TO PREVENT FREEZING.

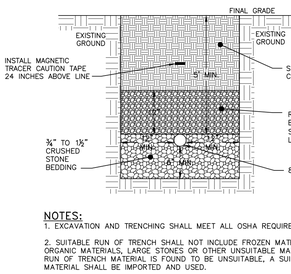
WATER SERVICE LINE TRENCH DETAIL
NOT TO SCALE



NOTES:

1. ALL VALVES SHALL OPEN BY TURNING LEFT (COUNTERCLOCKWISE) AND HAVE A 2-INCH SQUARE-OPERATING NUT PAINTED RED.
2. ALL VALVES SHALL BE M.J. RESILIENT WEDGE TYPE WITH "O" RING PACKING, DESIGNED FOR A WORKING PRESSURE OF 150 PSI AND BE IN FULL CONFORMANCE WITH AWWA C500.
3. TAPPING SLEEVE AND GATE VALVE SHOWN ARE MUELLER H-615, AND T-2630 RESPECTIVELY.

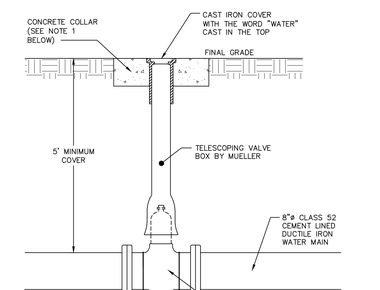
TAPPING SLEEVE DETAIL
NOT TO SCALE



NOTES:

1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. WATER MAIN MATERIAL SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON PIPE WITH MECHANICAL JOINTS AND SHALL MEET THE REQUIREMENTS OF AWWA C150 AND ANSI A21.50.

WATER MAIN TRENCH DETAIL
NOT TO SCALE



NOTES:

1. CONCRETE COLLAR TO BE PROVIDED IN AREAS THAT ARE NOT PAVED. THE COLLAR SHALL BE 6" FROM THE COVER AND SHALL EXTEND 6" BELOW FINAL GRADE.

GATE VALVE DETAIL
NOT TO SCALE

WATER NOTES:

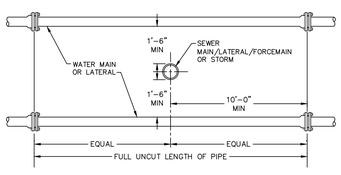
1. THE PROPOSED APARTMENT BUILDINGS ARE TO BE SERVED BY THE CITY OF BEACON MUNICIPAL WATER SYSTEM. INSTALLATION OF ALL COMPONENTS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY CODE, CHAPTER 219.
2. REFER TO THE DUTCHESS COUNTY DEPARTMENT OF HEALTH STANDARD NOTES FOR ADDITIONAL PERTINENT INFORMATION.
3. THE WATER MAIN SHALL BE INSTALLED, PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C600 (SEE NOTES BELOW).
4. THE DUTCHESS COUNTY DEPARTMENT OF HEALTH, CITY OF BEACON WATER OPERATOR, AND THE CERTIFYING PROFESSIONAL ENGINEER SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF THE WATER MAIN INSTALLATION.
5. THE WATER MAIN SHALL BE DISINFECTED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C651 (SEE NOTES BELOW).
6. WATER MAIN MATERIAL SHALL BE CLASS 52 CEMENT LINED DUCTILE IRON PIPE WITH MECHANICAL JOINTS AND SHALL MEET THE REQUIREMENTS OF AWWA C150 AND ANSI A21.51.
7. MEGALUG RESTRAINING SYSTEMS SHALL BE USED AT ALL FITTINGS, VALVES AND HYDRANTS (SEE SCHEDULE ON SHEET 14).
8. GATE VALVES SHALL BE MUELLER RESILIENT WEDGE, NON-RISING STEM, MECHANICAL JOINT.
9. HYDRANTS SHALL BE A-423 MUELLER CENTURION, WITH A MUELLER GATE VALVE BEFORE THE HYDRANT.
10. SERVICE LINES SHALL BE 6"ø CL 52 DIP, UNLESS OTHERWISE NOTED ON THE PLAN.
11. THE CONTRACTOR SHALL VERIFY THE EXISTING WATER MAIN MATERIAL AND BE PREPARED TO PROVIDE A SPECIAL COUPLING FOR CONNECTION OF THE PROPOSED DUCTILE IRON WATER MAIN.
12. A PRESSURE REDUCING VALVE SHALL BE INSTALLED FOR EACH NEW TOWNHOME, WATTS MODEL 25AUB-Z3 OR EQUAL AS APPROVED BY THE CITY OF BEACON WATER DEPARTMENT.
13. THE CITY OF BEACON SHALL OWN, OPERATE AND MAINTAIN THE WATER MAIN THROUGHOUT THE SITE, INCLUDING ALL APPURTENANCES.
14. THE HOA OR OWNER SHALL ANNUALLY EXERCISE ALL WATER VALVES.

WATER MAIN PRESSURE & LEAKAGE TESTING

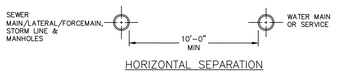
GENERAL: ALL PIPING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF AWWA C600, EXCEPT AS ADDED OR AMENDED BELOW:
1. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR ANY AND ALL REQUIRED PIPE TAPS FOR TESTING, AND AS NECESSARY FOR TESTING AS SPECIFIED. EQUIPMENT WILL BE SUCH THAT THE ENGINEER MAY INSTALL HIS OWN PRESSURE GAUGE.
2. A PRESSURE TEST AND LEAKAGE TEST ARE REQUIRED FOR ALL PIPE.
3. TESTING TO BE PERFORMED ONLY AFTER PARTIAL OR COMPLETE BACKFILL AND RESTRAINT BLOCKING (USING HIGH EARLY CEMENT) HAS HAD 36 HOURS TO CURE OR BLOCKING USING STANDARD CEMENT HAS HAD 7 DAYS TO CURE.
4. THE MAIN SHALL BE PARTIALLY BACKFILLED OR BRACED AGAINST MOVEMENT DURING THE TEST. ALL AIR MUST BE BLED OUT OF THE SECTION TO BE TESTED. IF NECESSARY, CONTRACTOR SHALL INSTALL CORPORATION STOPS AT THE HIGH POINTS, FOR BLOW-OFFS. AFTER ALL AIR HAS BEEN EXPELLED, THE CORPORATION COCKS SHALL BE CLOSED AND THE PRESSURE TEST APPLIED. AFTER EXAMINATION OF EXPOSED PARTS OF THE SYSTEM, THE TEST PRESSURE SHALL BE INCREASED TO 1 1/2 TIMES THE NORMAL PRESSURE, BASED UPON THE ELEVATION OF THE LOWEST POINT IN THE LINE OR SECTION UNDER THE TEST, BUT SUCH PRESSURE SHALL NOT BE LESS THAN 150 PSI NOR MORE THAN 200 PSI, AND EXPOSED PARTS AGAIN EXAMINED. THE MINIMUM DURATION OF THE LEAKAGE TEST SHALL BE TWO (2) HOURS.
5. ALLOWABLE SYSTEM LEAKAGE AS SPECIFIED IN THE REFERENCED STANDARDS. IF LEAKAGE IN SYSTEM IS GREATER THAN ALLOWABLE, CONTRACTOR WILL LOCATE AND REPAIR SYSTEM AT HIS EXPENSE AND RETEST, CONTINUE TO TEST AND REPAIR THE SYSTEM UNTIL LEAKAGE IS WITHIN ACCEPTABLE LIMITS.
6. NO DUCTILE IRON PIPE INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FOLLOWING FORMULA:

$$L = \frac{SD\,P}{148{,}000}$$

WHERE
L = LEAKAGE IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE IN INCHES
P = AVERAGE TEST PRESSURE DURING LEAKAGE TEST, IN PSI (GAUGE)



VERTICAL SEPARATION

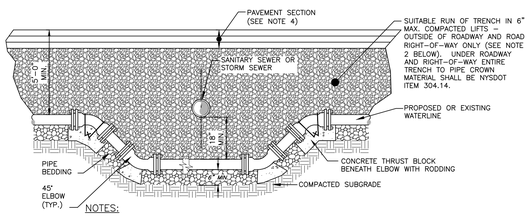


HORIZONTAL SEPARATION

NOTE:

1. NO DEVIATION IN THE SEPARATION REQUIREMENTS WILL BE PERMITTED WITHOUT THE EXPRESS APPROVAL OF THE DUTCHESS COUNTY DEPARTMENT OF HEALTH AND THE CITY OF BEACON. CONCRETE ENCASEMENT OF WATERLINE OR OFFSETTING OF WATERLINE SHALL BE REQUIRED WHERE SEPARATION DISTANCES CANNOT BE MAINTAINED.

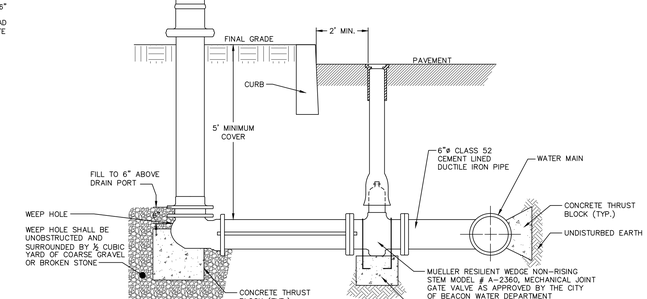
WATER LINE SEPARATION DETAIL
NOT TO SCALE



NOTES:

1. WHEN THE ELEVATION OF THE SANITARY OR STORM SEWER CAN NOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER SERVICE LINE OR MAIN SHALL BE RELOCATED TO PROVIDE THIS REQUIRED SEPARATION OR RECONSTRUCTED WITH MECHANICAL JOINT PIPE FOR A DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATERMAIN SHALL BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR AWAY FROM THE SEWER AS POSSIBLE.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, ENLOGATED PARTICLES, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. THE RELOCATED WATER MAIN/SERVICE LINE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA, NYSDOH AND DCDOH STANDARDS.
4. PAVEMENT RESTORATION SHALL BE IN ACCORDANCE WITH THE PAVEMENT RESTORATION DETAIL.
5. ALL REPLACED WATERMAIN SHALL BE 12"ø CLASS 52 DUCTILE IRON.

WATER LINE OFFSET DETAIL
NOT TO SCALE



NOTES:

1. THE GATE VALVE SHALL BE LOCATED THIRTY SIX (36) INCHES FROM THE HYDRANT CENTER LINE.
2. 3/4" STEEL TIE RODS TO BE PROVIDED BETWEEN THE GATE VALVE AND THE HYDRANT.
3. ALL HYDRANTS SHALL BE PAINTED RED IN ACCORDANCE WITH NFPA AND CITY OF BEACON SPECIFICATIONS.

HYDRANT DETAIL
NOT TO SCALE

WATERMAIN DISINFECTION & TESTING

1. THE CONTRACTOR SHALL NOTIFY THE CITY OF BEACON WATER DEPARTMENT PRIOR TO TESTING AND SHALL ALSO COORDINATE HIS ACTIONS WITH THE CITY ENGINEER SO AS TO AVOID UNDUE DISTURBANCE OF THE WATER SUPPLY TO ANY EXISTING USERS.
2. THE CONTRACTOR SHALL INFORM THE DESIGN ENGINEER'S AND CITY ENGINEER'S OFFICE A MINIMUM OF 24 HOURS PRIOR TO TESTING SUCH THAT WITNESSING CAN TAKE PLACE AND PROPER CERTIFICATIONS CAN BE ISSUED.
3. ALL NEWLY INSTALLED WATER MAINS SHALL BE FLUSHED AT A MINIMUM VELOCITY OF 2.5 FT/SECOND BEFORE AND AFTER DISINFECTION.
4. ALL WATER LINES SHALL BE DISINFECTED USING THE PROCEDURES DESCRIBED IN THE LATEST EDITION OF AWWA C651 SPECIFICATIONS FOR DISINFECTION OF WATER LINES (WITH THE EXCEPTION OF THE TABLET METHOD). WATER ENTERING THE NEW MAIN SHALL RECEIVE A DOSE OF CHLORINE FED AT A CONSTANT RATE SUCH THAT THE WATER WILL HAVE NOT LESS THAN 25 MG/L FREE CHLORINE. CHLORINE APPLICATION SHALL NOT CEASE UNTIL THE ENTIRE MAIN IS FILLED WITH HEAVILY CHLORINATED WATER.
5. DISINFECTED WATER SHALL REMAIN IN THE NEWLY INSTALLED WATER LINE FOR A MINIMUM OF 24 HOURS. AFTER THIS RETENTION PERIOD, THE HEAVILY CHLORINATED WATER SHALL BE FLUSHED FROM THE MAIN UNTIL CHLORINE MEASUREMENTS SHOW A CONCENTRATION IN THE WATER LEAVING THE MAIN HAS NO HIGHER THAN THAT GENERALLY PREVAILING IN THE SYSTEM. AT SUCH TIME, BACTERIOLOGICAL SAMPLING FOR SUBMITTAL TO STATE HEALTH LABORATORIES SHALL BE PERFORMED BY THE CONTRACTOR.
6. WATER SAMPLES SHALL BE TESTED FOR TOTAL COLIFORM, TPC (HETEROTROPHIC PLATE COUNT), TURBIDITY & COLOR.
7. CONTRACTOR WILL CONTINUE FLUSHING AND DISINFECTION OPERATION UNTIL ACCEPTABLE BACTERIOLOGICAL RESULTS ARE OBTAINED. TWO (2) SUCCESSIVE SAMPLES ARE TO BE TAKEN AT TWENTY-FOUR (24) HOUR INTERVALS.
8. THE ENVIRONMENT INTO WHICH THE HEAVILY CHLORINATED WATER IS TO BE DISCHARGED SHALL BE INSPECTED, AND IF THERE IS ANY LIKELIHOOD THAT THE CHLORINATED DISCHARGE WILL CAUSE DAMAGE, THEN A REDUCING AGENT SHALL BE APPLIED TO THE WATER TO BE WASTED TO THOROUGHLY NEUTRALIZE THE CHLORINE RESIDUAL IN THE WATER. PERMITS MAY BE REQUIRED. THE CITY ENGINEER SHALL BE NOTIFIED PRIOR TO DISPOSAL OF HIGHLY CHLORINATED WATER.

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN
10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
85 Civic Center Plaza, Suite 204, Poughkeepsie NY 12601, Tel: 845.243.2880
160 West Street, Suite E, Cromwell, CT 06416, Tel: 860.635.2877
www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.
LRC Proj. No. 21-2809
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

HUDSON LAND DESIGN

STATE OF NEW YORK — MICHAEL A. BRADDOCK — 084484 — LICENSED PROFESSIONAL ENGINEER
SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

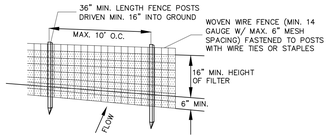
CONSTRUCTION DETAILS

MIRBEAU BEACON

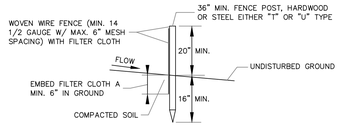
7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	AS SHOWN
TITLE:	CD-3
SHEET:	17 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



PERSPECTIVE VIEW

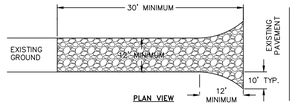


SECTION VIEW

NOTES:

1. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUAL.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL
NOT TO SCALE



NOTES:

1) STONE SIZE – USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

2) LENGTH – NOT LESS THAN 30 FEET FOR A SINGLE RESIDENCE LOT.

3) THICKNESS – NOT LESS THAN SIX (6) INCHES.

4) WIDTH – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.

5) GEOTEXTILE – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

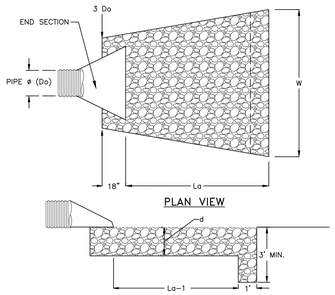
6) SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE, IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.

7) MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

8) WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

9) PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

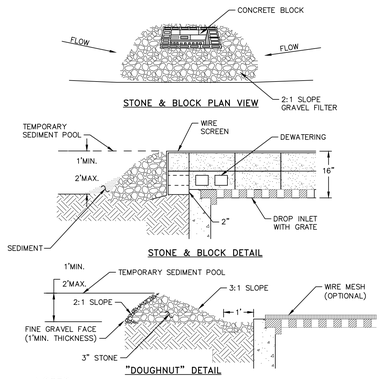


NOTES:

1. SIZING INFORMATION TAKEN FROM FIGURE 5B.12 (PAGE 5B.25) AND/OR FIGURE 5B.13 (PAGE 5B.26) OF THE "NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" 2016 EDITION.
2. RIPRAP SHALL BE COMPOSED OF A WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES SHALL BE LARGER, BY WEIGHT, THAN THE SPECIFIED d50. THE LARGEST STONE SIZE SHALL BE 1.5 TIMES d50.
3. THE MINIMUM THICKNESS OF THE RIPRAP LAYER SHALL BE 1.5 TIMES THE MAXIMUM STONE DIAMETER FOR d50 OF 15 INCHES OR LESS; AND 1.2 TIMES THE MAXIMUM STONE SIZE FOR d50 GREATER THAN 15 INCHES.
4. A LAYER OF FILTER FABRIC (THICKNESS 20-60 MILS, GRAB STRENGTH 90-120 LBS, SHALL CONFORM TO ASTM D-1777 AND ASTM D-1682) SHALL BE PLACED BETWEEN THE RIPRAP AND THE UNDERLYING SOIL SURFACE. FILTER FABRIC SHALL HAVE A MINIMUM 1' OVERLAP AT ALL SEEMS.

ROCK OUTLET PROTECTION DETAIL
NOT TO SCALE

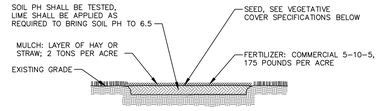
ROCK OUTLET PROTECTION TABLE
NOT TO SCALE



NOTES:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS. MAXIMUM DRAINAGE AREA 1 ACRE

CATCH BASIN INLET PROTECTION DETAIL
NOT TO SCALE



NOTES:

1. TOPSOIL, SEED, MULCH, AND FERTILIZE DISTURBED SOIL AREAS THAT WILL BE LEFT EXPOSED FOR 14 DAYS OR MORE.
2. SEED MIXTURE FOR USE ON LAWNS IN SUNNY AREAS:

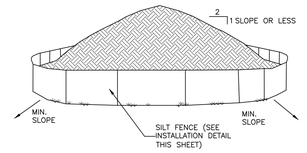
65% KENTUCKY BLUE GRASS BLEND	114 POUNDS PER ACRE
20% PERENNIAL RYEGRASS	35 POUNDS PER ACRE
15% FINE FESCUE	26 POUNDS PER ACRE
	175 POUNDS PER ACRE

3. SEED MIXTURE FOR USE IN SHADY AREAS:

80% BLEND OF SHADE TOLERANT KENTUCKY BLUEGRASS	138 POUNDS PER ACRE
20% FINE FESCUE	37 POUNDS PER ACRE
	175 POUNDS PER ACRE

4. SEED BETWEEN APRIL 1ST AND MAY 15TH OR AUGUST 15TH AND OCTOBER 15TH. SEEDING MAY OCCUR BETWEEN MAY 15TH AND AUGUST 15TH IF ADEQUATE IRRIGATION IS PROVIDED.
5. TOPSOIL SHALL HAVE AT LEAST 6% BY WEIGHT OF FINE TEXTURED STABLE ORGANIC MATERIAL, AND NO GREATER THAN 20%. TOPSOIL SHALL HAVE NOT LESS THAN 20% FINE TEXTURED MATERIAL (PASSING THE NO. 200 SIEVE) AND NOT MORE THAN 15% CLAY.

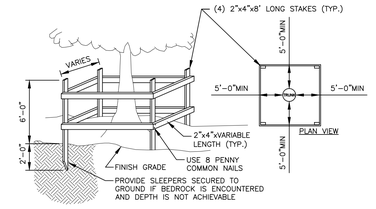
TOPSOIL, SEED AND MULCH DETAIL
NOT TO SCALE



NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.

TEMPORARY SOIL STOCKPILE DETAIL
NOT TO SCALE



NOTES:

1. TREES TO REMAIN NOTED ON EXISTING CONDITIONS PLAN.
2. NOT ALL TREES TO REMAIN REQUIRE PROTECTION. TREE PROTECTION TO BE UTILIZED ON TREES WHERE CONSTRUCTION TRAFFIC WOULD COMPACT THE ROOT ZONE OF THE TREE.

TEMPORARY TREE PROTECTION DETAIL
NOT TO SCALE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____ SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: MAB			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

ARROWSTREET
ARCHITECTURE & DESIGN

10 POST OFFICE SQUARE
SUITE 700N
BOSTON MA 02109
617.623.5555
arrowstreet.com

Mirbeau INN & SPA

LANDSCAPE ARCHITECTS:
LRC GROUP
- Landscape Architecture
- Civil Engineering
- Environmental Services
- Land Surveying
- Land Planning

85 Civic Center Plaza, Suite 204
Poughkeepsie NY 12601
Tel: 845.243.2880

160 West Street, Suite E
Cromwell, CT 06416
Tel: 860.635.2877

www.lrcconsult.com
LRC Engineering & Surveying, DPC
LRC Engineering & Surveying, LLC
LRC Environmental Services, Inc.

LRC Proj. No. 21-2809

HUDSON LAND DESIGN

STATE OF NEW YORK — MICHAEL A. BOCCHIERI — 084484 — LICENSED PROFESSIONAL ENGINEER

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

CONSTRUCTION DETAILS

MIRBEAU BEACON

7 CRAIG HOUSE LANE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-13-001258

JOB #:	2021:051
DATE:	3/29/2021
SCALE:	AS SHOWN
TITLE:	CD-4
SHEET:	18 OF 18

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

Threatened and Endangered Species Habitat Suitability Assessment Report

Mirbeau Inn & Spa Site
7 Craig House Lane
City of Beacon, New York

March 25, 2022

Prepared by:

Michael Nowicki
Ecological Solutions, LLC
121 Leon Stocker Drive
Stratton, VT 05360
(203) 910-4716

1.0 INTRODUCTION 3
TABLE 1 COVER TYPES IDENTIFIED ON THE SITE 3

2.0 HABITAT SUITABILITY ASSESSMENT/CONCLUSIONS 4

2.1 Timber Rattlesnake 4

2.2 Shortnose sturgeon and Atlantic sturgeon 4

2.3 Spongy leaved arrowhead 5

2.4 Bald eagle 5

2.5 Pied-billed Grebe 6

2.6 Indiana bat and Northern long-eared bat 6

3.0 REFERENCE 8

4.0 PHOTOGRAPHS 9

Figure 1 Location Map 12
Figure 2 Soils Map 13

1.0 INTRODUCTION

Ecological Solutions, LLC completed a threatened and endangered species habitat suitability assessment on the 64.39 acres Mirbeau Inn & Spa site located at 7 Craig House Lane in the City of Beacon, Dutchess County, New York (*Figure 1*).

The Applicant seeks an adaptive re-use of an existing estate for a proposed 75-room hotel with accessory uses including a spa and restaurant, renovation and expansion of an existing mansion to accommodate the spa, and restaurant.

The New York State Department of Environmental Conservation (NYSDEC) Environmental Assessment Form Mapper indicates that timber rattlesnake (*Crotalus horridus*), short-nose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), spongy-leaved arrowhead (Sagittaria *montevidensis ssp. spongiosa*), bald eagle (*Haliaeetus leucocephalus*), and pied-billed grebe (*Podilymbus podiceps*) (*Attachment 1*). In addition, the US Fish and Wildlife Service (USFWS) lists the Indiana bat (Myotis sodalis) and Northern long-eared bat (Myotis septentrionalis) as potentially located on or in the vicinity of the site (*Attachment 2*). Habitat observed on the site during the summer and fall of 2021 and winter of 2022 is listed in Table 1.

TABLE 1
COVER TYPES IDENTIFIED ON THE SITE

1	Developed Area
2	Upland Hardwood Forest
3	Wetlands

Developed Area - The site is mainly developed with several structures and lawn-landscaping.

Upland Hardwood Forest - The steep slopes on the site are covered with upland hardwood forest which is a mature forest type with rocky soils that are well drained. The canopy is dominated by a mixture of oaks and maples. The oaks include one or more of the following: black oak (*Quercus velutina*), chestnut oak (*Q. montana*), red oak (*Q. rubra*), and white oak (*Q. alba*). American beech (*Fagus grandifolia*), and black cherry (*Prunus serotina*) are common associates occurring at low densities. Sizes of the trees vary from saplings to mature trees with a wide range of dbh and tree conditions including dead wood, crevices, and holes.

Wetlands - Wetlands on the site are marsh areas with two ponds and the Fishkill Creek also occurring.

2.0 HABITAT SUITABILITY ASSESSMENT/CONCLUSIONS

2.1 Timber Rattlesnake

The site was assessed to determine if any timber rattlesnake den sites or basking areas could potentially be found by reviewing the soils map and traveling through the site to suitable locations based on the soil survey. Requirements for timber rattlesnake dens generally include a southeast to southwest facing rock formation of either fractured ledge or talus with a nearby open basking area with sufficient rock cover for gestating females and post-emergence basking. Upon emerging from the den, timber rattlesnakes are very lethargic and basking area where the snakes can warm up is usually nearby. The site has no rock outcrops (*Figure 2*).

No open rocky summit areas which are characteristics of timber rattlesnake den and basking areas were observed on the site. Rattlesnake movements are dependent upon availability of suitable basking/gestating areas, successful foraging, and mating activity. It is known that timber rattlesnakes, particularly females, may move considerable distances overland (generally migrate from 1.3 to 2.5 miles (2 to 4 km) from their den each summer) and may utilize any upland mixed forest area during the summer season. In addition to potential den sites and associated basking area the site was assessed for potential foraging habitat. The site contains forested and open field areas adjacent to the existing developed areas and therefore has potential foraging characteristics because the habitat on the site can offer shade, rest, and prey opportunities for this species.

Conclusion - The site has been a developed site for decades and impact to potential habitat for this species is unlikely and no mitigation measures are proposed or required for the building renovation activities or proposed project.

2.2 Shortnose sturgeon and Atlantic sturgeon

The shortnose sturgeon is semi-anadromous. Each year, between April and May, adult sturgeon migrate up the Hudson River from their mid-Hudson overwintering area to spawn in freshwater sites north of Coxsackie. Males spawn every other year and females every third year. Eggs are deposited and hatch in approximately 13 days. The newly-hatched fry are poor swimmers and drift with the currents along the bottom. As they grow and mature, the fish move downriver into the most brackish waters of the lower Hudson. The shortnose sturgeon is restricted in range to the Atlantic seaboard in North America. It occurs in estuaries and large coastal rivers. In New York State, it is found in the lower portion of the Hudson River from the southern tip of Manhattan upriver to the Federal Dam at Troy.

Atlantic sturgeon are anadromous, migrating from saltwater to spawn in freshwater. At spawning time, male sturgeon move into the river first followed by the females. Spawning occurs from April-June upstream of the salt front. Individual fish have been known to travel over 900 miles to spawn. Following spawning, female Atlantic sturgeon will move out of the river while males may remain until the fall. After spending up to the seven years of life in freshwater, Atlantic sturgeon migrate out to sea to spend the rest of their lives. Only during spawning season do adult sturgeon return to large costal rivers and estuaries. In New York, Atlantic sturgeon are generally found in the deeper portions of the Hudson River.

Conclusion - The Hudson River is about 0.25 miles from the site. There is no impact to the Hudson River and therefore no impact to sturgeon from the proposed project. Best management practices (erosion controls) will be used to prevent the loss of sediment and debris from the site into the River.

2.3 Spongy leaved arrowhead

Spongy arrowhead is an annual herbaceous plant. It grows in tidally flooded areas. During low tide the entire plant is often above water. At high tide the plants become mostly or entirely submerged. The leaves arise from the base of the plants in dense whorls and are spongy, very narrow, and strap-like. The tips of these leaves sometimes become somewhat expanded. The flowering stalks are shorter than the leaves and have a few whorls of long-stalked flowers towards their tips. The flowers are small and not showy

In New York, this species occurs in freshwater to brackish intertidal mud flats and occasionally occurs in lower abundance in the taller vegetation associated with the adjacent and upslope brackish or fresh tidal marshes.

Conclusion - The species is typically located in a tidal zone. There are no impacts proposed along the Fishkill Creek or to any tidally influenced area on the site and therefore no impacts are likely to this species if it is located here.

2.4 Bald eagle

Bald eagles generally nest near coastlines, rivers, large lakes or streams that support an adequate food supply. They often nest in mature or old-growth trees; snags (dead trees) and with increasing frequency on man-made structures such as power poles and communication towers. In forested areas, bald eagles often select the tallest trees usually white pine with limbs strong enough to support a nest that can weigh more than 1,000 pounds. Nest sites typically include at least one perch with a clear view of the water where the eagles usually forage. Shoreline trees or snags located in reservoirs provide the visibility and accessibility needed to locate aquatic prey.

Bald eagles are sensitive to a variety of human activities during various stages of the breeding season including courtship and nest building which is the most sensitive period for eagles and in New York occurs from December through the beginning of March. Egg laying, incubation, and early nesting are very sensitive periods and in New York occur from February through early May. The nestling period (4-8 weeks old) is a moderately sensitive period that in New York typically occurs from March to July. Nestlings from 8 weeks old through fledging is again a very sensitive period that in New York occurs from mid May to September.

Conclusion - There is no nest visible on or adjacent to the subject site. There was no nesting or breeding activity observed on the site or within 660 feet of the site. No mitigation measures are required for the proposed development.

2.5 Pied-billed Grebe

The pied-billed grebe is found in and around ponds and marshes where it breeds and advertises its presence with loud, barking calls. It eats small fish, crustaceans, and aquatic insects but is especially fond of crayfish, which it crushes easily with its stout bill. When alarmed, this grebe often sinks slowly into the water, resurfacing out of sight among the reeds. It can also dive with amazing speed, a habit that has earned it the nickname "Hell-diver." It is also called the "Dabchick" in some areas. It is the most common nesting grebe in the East. The pied-billed grebe is 12-15" (30-38 cm) or pigeon-sized. It is a stocky, uniformly brownish water bird, with stout whitish bill that has black ring around it during breeding season.

Conclusion - There is no appropriate habitat that will be impacted on the site. Suitable habitat will remain and no impacts will occur to this species.

2.6 Indiana bat and Northern long-eared bat

The Indiana bat typically hibernates in caves/mines in the winter and roosts under bark or in tree crevices in the spring, summer, and fall. Suitable potential summer roosting habitat is characterized by trees (dead, dying, or alive) or snags with exfoliating or defoliating bark, or containing cracks or crevices that could potentially be used by Indiana bats as a roost. The minimum diameter of roost trees observed to date is 2.5 inches for males and 4.3 inches for females. However, maternity colonies generally use trees greater than or equal to 9 inches dbh. Overall, roost tree structure appears to be more important to Indiana bats than a particular tree species or habitat type. Females appear to be more habitat specific than males presumably because of the warmer temperature requirements associated with gestation and rearing of young. As a result, they are generally found at lower elevations than males may be found. Roosts are warmed by direct exposure to solar radiation, thus trees exposed to extended periods of direct sunlight are preferred over those in shaded areas. However, shaded roosts may be preferred in very hot conditions. As larger trees afford a greater thermal mass for heat retention, they appear to be preferred over smaller trees.

Streams associated with floodplain forests, and impounded water bodies (ponds, wetlands, reservoirs, etc.) where abundant supplies of flying insects are likely found provide preferred foraging habitat for Indiana bats, some of which may fly up to 2-5 miles from upland roosts on a regular basis. Indiana bats also forage within the canopy of upland forests, over clearings with early successional vegetation (*e.g.,* old fields), along the borders of croplands, along wooded fencerows, and over farm ponds in pastures. While Indiana bats appear to forage in a wide variety of habitats, they seem to tend to stay fairly close to tree cover.

Conclusion - Although suitable habitat is located on the site for this species and occurs in the wooded areas of the site as well as the edge of the wooded areas and the open meadows and fields there is no tree clearing proposed. If work requires tree clearing then the site owner proposes to avoid, minimize, and mitigate for effects by:

• Completing tree clearing between October 1 and March 31 when bats are not on site;
• Site lighting on the site will use Planning Board approved light fixtures that have tops that direct light down to minimize light pollution and not interfere with potential bat foraging activities;

• Implementing soil conservation and dust control best management practices, such as watering dry disturbed soil areas to keep dust down, and using staked, recessed silt fence and anti tracking pads to prevent erosion and sedimentation in surface waters on the site, and;
• Stormwater pond/s will not be maintained with any chemicals that might adversely affect bats or insect populations on which they may feed.

These measures will result in avoiding adverse effects to Indiana and Northern long-eared bats.

3.0 REFERENCE

Stechert, R. 2001. Effectiveness of an experimental timber rattlesnake *(Crotalus horridus)* exclusion fence at Schunemunk Mountain, Town of Woodbury, Orange County, New York. Report to the Eastern Chapter of the New York Natural Conservancy and the New York State Department of Environmental Conservation. 23p.

4.0 PHOTOGRAPHS

Pond and wetland



General developed area of the site



General wooded area of the site



Figure 1 Location Map

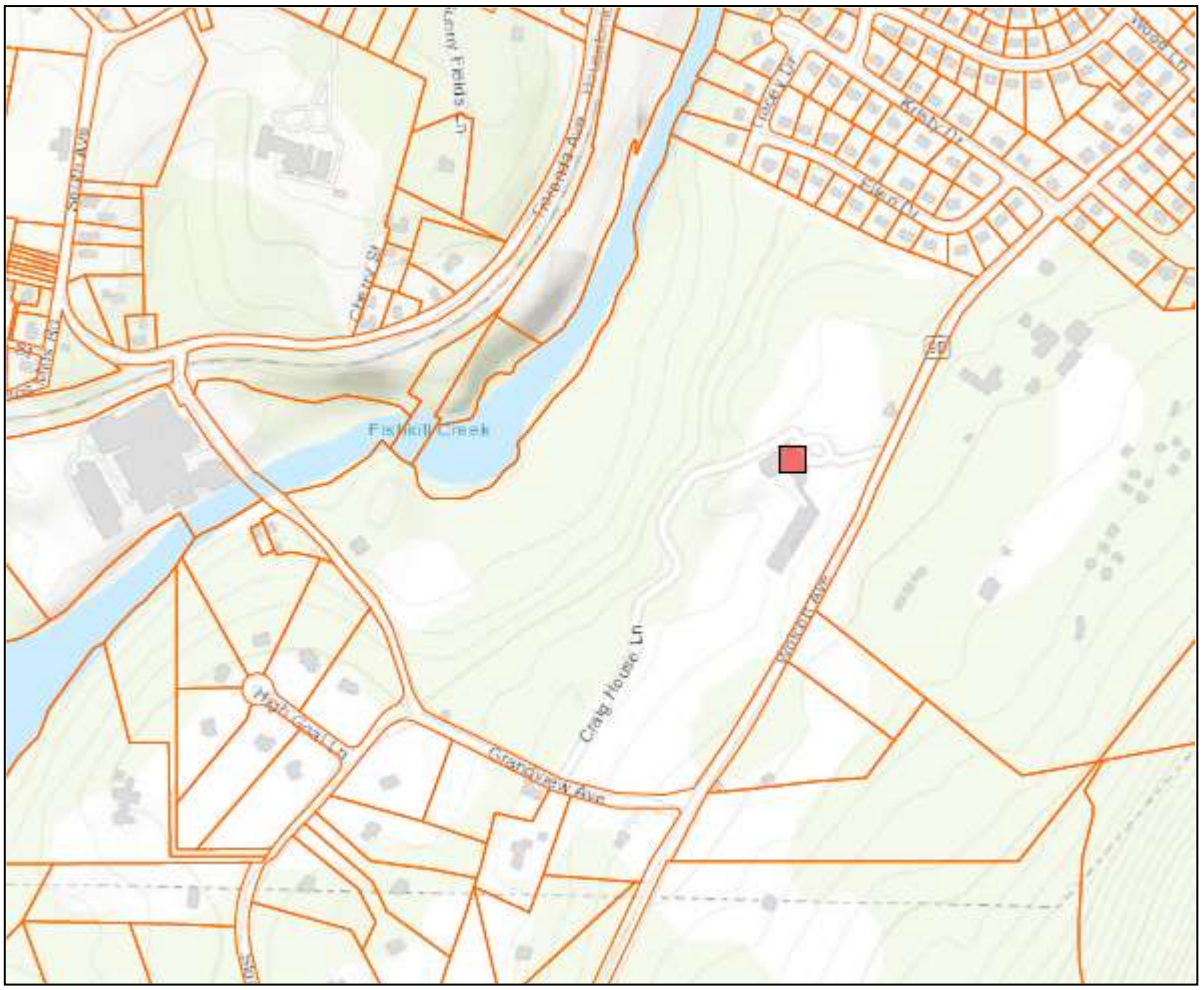
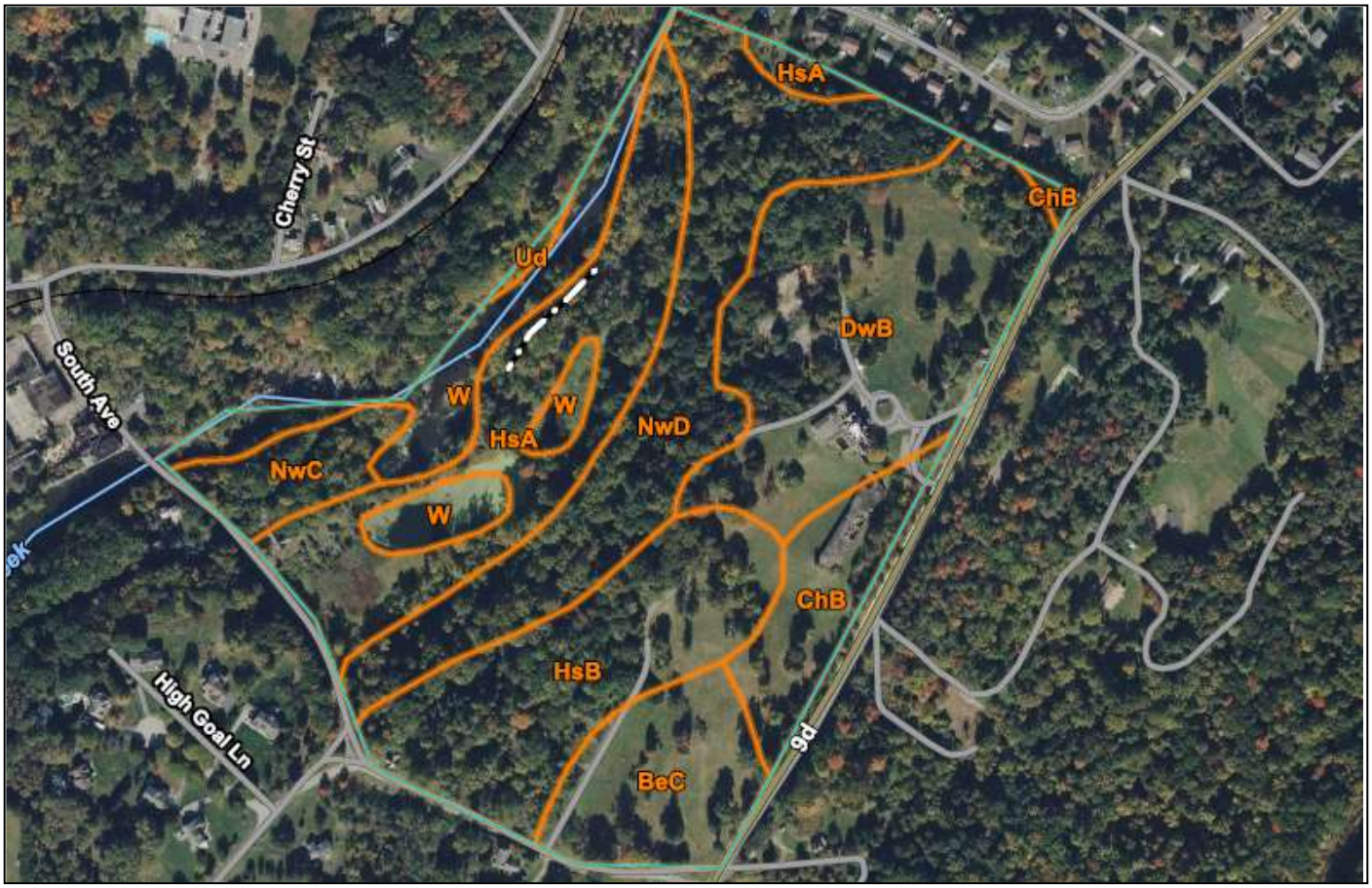


Figure 2 Soils Map



Map Unit Symbol	Map Unit Name
BeC	Bernardston silt loam, 8 to 15 percent slopes
ChB	Charlton fine sandy loam, 3 to 8 percent slopes
DwB	Dutchess-Cardigan complex, undulating, rocky
HsA	Hoosic gravelly loam, nearly level
HsB	Hoosic gravelly loam, undulating
NwC	Nassau-Cardigan complex, rolling, very rocky
NwD	Nassau-Cardigan complex, hilly, very rocky
Ud	Udorthents, smoothed
W	Water

Colliers Engineering & Design

Traffic Impact Study

March 28, 2022

Mirbeau Beacon
Wolcott Avenue (NYS Route 9D)
City of Beacon, Dutchess County, NY

Prepared for:

The Mirbeau Companies LLC
433 Broadway STE 203
Saratoga Springs, NY 12866

Prepared by:

Philip J. Grealy, Ph.D., P.E.
New York Professional Engineer
License No.58958

Richard G. D'Andrea, P.E., PTOE
New York Professional Engineer
License No. 090241

Colliers Engineering & Design
400 Columbus Avenue
Suite 180E
Valhalla New York 10595
Main: 877 627 3772
Colliersengineering.com

Project No. 21007271A

Maser Consulting is now Colliers Engineering & Design

Colliers Engineering & Design

Table of contents

I. Introduction 1
A. Project Description and Location 1
B. Scope of Study 2

II. Existing Roadway and Traffic Descriptions 3
A. Description of Existing Roadways 3
1. Wolcott Avenue (NYS Route 9D) 3
2. Grandview Avenue 3
3. Howland Avenue 4
4. Tioronda Avenue 4
B. 2021 Existing Traffic Volumes 4
C. Public Transportation 5

III. Evaluation of Future Traffic Conditions 6
A. 2025 No-Build Traffic Volumes 6
B. Site Generated Traffic Volumes 6
C. Arrival/Departure Distribution 7
D. 2025 Build Conditions Traffic Volumes 8
E. Description of Analysis Procedures 8
Signalized Intersection Capacity Analysis 8
Unsignalized Intersection Capacity Analysis 8
F. Results of Analysis 9
1. Wolcott Avenue (NYS Route 9D) and Tioronda Avenue 9
2. Wolcott Avenue (NYS Route 9D) and Howland Avenue 9
3. Wolcott Avenue (NYS Route 9D) and Kristy Drive 10
4. Wolcott Avenue (NYS Route 9D) and Site Access 10
5. Wolcott Avenue (NYS Route 9D) and Grandview Avenue 11
G. Site Access Sight Distance Analysis 11
H. Site Access Left Turn 12

IV. Parking Analysis 13

V. Summary and Conclusion 14

Colliers Engineering & Design

Appendices

APPENDIX A ..... FIGURES
APPENDIX B ..... TABLES
APPENDIX C ..... LEVEL OF SERVICE STANDARDS
APPENDIX D ..... CAPACITY ANALYSIS
APPENDIX E ..... TRAFFIC VOLUME DATA
APPENDIX F ..... PUBLIC TRANSPORTATION DATA

Colliers Engineering & Design

I. Introduction

A. Project Description and Location

(Figure No. 1)

This report has been prepared to evaluate the potential traffic impacts associated with the Mirbeau Beacon development ("the Project"), which is proposed to be developed on the property located on the west side of Wolcott Avenue (NYS Route 9D) in the City of Beacon, Dutchess County, New York. As shown on Figure No. 1, the property is generally bounded by Wolcott Avenue to the east, the Fishkill Creek to the west, Grandview Avenue & South Avenue to the south and Ellen Drive to the north. The property is part of the former Howland Estate, also known as the Craig House, but is currently vacant. The existing site is currently accessed via two driveway connections to Wolcott Avenue approximately opposite the Beacon Glades Disc Golf. The two existing driveways are separated by approximately 240 ft. The site also has an existing access to Grandview Avenue approximately 470 ft. west of Wolcott Avenue. The southwest corner of the property along South Avenue also contains the former Tioronda School building.

The Project is proposed to consist of a resort type hotel and spa. The Hotel will consist of 75 rooms contained within the existing mansion building and a new extension wing plus an additional 5 cottages that will be located at other locations within the property. The Spa will consist of 21 spa treatment rooms and will be open to both hotel guests and the general public. The Project will also include a 110-seat restaurant as well as other ancillary supporting facilities within the main hotel such as small meeting and/or banquet rooms.

In addition to these main portions of the Project, also proposed are the adaptive reuse of the former Tioronda School Building, a tented event space and associated support facilities and a small farm facility that will generally support the restaurant for farm-to-table style dining. The use of the Tioronda School Building is planned to be for the exclusive use of hotel guests and therefore is not anticipated to generate any additional traffic demand for the Project. The tented event space is anticipated to be utilized for weddings or similar type events and will have a maximum capacity of approximately 100 attendees. Separate parking is proposed to be provided for these events totaling approximately 49 spaces in a reinforced grassed area. The farm facility, while generally proposed to support the restaurant, will also include a small, approximately 500 sq. ft., farm store that will be open to hotel guests as well as the general public.

Access to the Project is proposed to be provided via a reconfiguration of the existing northerly driveway connection to Wolcott Avenue. The existing southerly driveway connection to Wolcott Avenue will be removed as part of the Project while a new "Emergency Only" access driveway will be constructed connecting to Route 9D south of the proposed spa building extension. In addition to the Wolcott Avenue access driveway locations, the existing access driveway to Grandview Avenue is also proposed to remain in addition to a new access driveway to connection to Grandview Avenue for the farm store to be located approximately 100 ft. west of Wolcott Avenue.

A Design Year of 2025 has been utilized in completing the traffic analysis in order to evaluate future traffic conditions associated with this proposed development.

B. Scope of Study

This study has been prepared to identify current and future traffic operating conditions on the surrounding roadway network and to assess the potential traffic impacts of the proposed Mirbeau Beacon development.

All available traffic count data for the study area intersections were obtained from previous reports prepared by our office. These data were supplemented with new traffic counts collected by representatives of Colliers Engineering & Design CT, P.C. These data were also compared to count data obtained from the New York State Department of Transportation (NYSDOT). Together these data were utilized to establish the 2021 Existing Traffic Volumes representing existing traffic conditions in the vicinity of the site.

The 2021 Existing Traffic Volumes were then projected to the 2025 Design Year to take into account background traffic growth. In addition, traffic for other specific potential or approved developments in the area were estimated and then added to the Projected Traffic Volumes to obtain the 2025 No-Build Traffic Volumes.

Estimates were then made of the potential traffic that the proposed development would generate during each of the peak hours (see Section III-C for further discussion). The resulting site generated traffic volumes were then added to the roadway system and combined with the 2025 No-Build Traffic Volumes resulting in the 2025 Build Traffic Volumes.

The Existing, No-Build and Build Traffic Volumes were then compared to roadway capacities based on the procedures from the Highway Capacity Manual to determine existing and future Levels of Service and operating conditions. Recommendations for improvements were made where necessary to serve the existing and/or future traffic volumes.

In addition to the traffic analysis summarized above a detailed analysis of the required parking for the Project was also conducted based on the City of Beacon Code as well as industry standard requirements.

II. Existing Roadway and Traffic Descriptions

A. Description of Existing Roadways

The following is a brief description of the roadways located within the study area. In addition to the below, Section III-F provides a further description of the existing geometrics, traffic control and a summary of the existing and future Levels of Service and any recommended improvements for each of the study area intersections. Appendix "D" contains copies of the capacity analyses which indicate the existing geometrics (including lane widths) and other characteristics for each of the individual intersections studied.

1. Wolcott Avenue (NYS Route 9D)

Wolcott Avenue (NYS Route 9D) is classified as a Minor Arterial roadway in the study area under the jurisdiction of the City of Beacon from the southern City line north to South Avenue. The roadway is under the jurisdiction of the New York State Department of Transportation (NYSDOT) from south avenue north. Wolcott Avenue generally traverses in a north/south direction throughout Putnam and Southern Dutchess Counties. In the vicinity of the site the roadway provides regional access to I-84 as well as the Beacon Main Street area and the Beacon Train Station. The roadway generally consists of a two-lane cross-section in the immediate area of the project site with additional lanes provided in the vicinity of the I-84 interchange. The posted speed limit is 30 MPH except for the school zone area between Coffey Avenue and Tioronda Avenue in the vicinity of the Sargent School, where the posted speed limit is 15 MPH. Sidewalks are provided along both sides of the roadway for most of the roadway's length within the City of Beacon. In the immediate Project area, the sidewalks along the west side of Wolcott Avenue terminate at Grandview Avenue, while the sidewalks along the east side of Wolcott Avenue terminate at Hillside Road approximately 450 ft. south of Howland Avenue. The speed limit of Route 9D also changes to 45 MPH immediately south of Grandview Avenue.

2. Grandview Avenue

Grandview Avenue is a City roadway that originates at an unsignalized "T-shaped" intersection with NYS Route 9D. The roadway traverses in a westerly direction and provides access to several residential single-family homes. The roadway is approximately 20-22 feet wide depending on location and provides a single lane in each direction. Grandview Avenue becomes South Avenue continuing west towards the Fishkill Creek where the roadway currently terminates the abandoned bridge over the Fishkill Creek. It should be noted that the City of Beacon has plans for the potenatial reestablishment of this bridge as a vehicle and pedestrian passage, however the final configuration of the possible bridge is not currently known. There are no existing sidewalks along Grandview Avenue.

3. **Howland Avenue**

   Howland Avenue is a two-lane City roadway which has an unsignalized intersection with NYS Route 9D north of the Project site location. The roadway, which continues north from Wolcott Avenue, serves both residential and institutional land uses and terminates at an unsignalized intersection with East Main Street. From this intersection the roadway continues north as Depuyster Avenue and ultimately can be utilized as an alternate Route between Wolcott Avenue and NYS Route 52/Interstate 84 in the Town of Fishkill. The roadway has a speed limit of 30 MPH. There is an existing bus stop on the south side of Howland Avenue in the vicinity of the Mount Beacon Trailhead parking area. Section between Wolcott Avenue and the Mount Beacon Trailhead is the only section of the roadway where sidewalks are provided.

4. **Tioronda Avenue**

   Tioronda Avenue is a City roadway that intersects with Wolcott Avenue at a signalized four-way intersection immediately west of the Fishkill Creek overpass. South of Wolcott Avenue, the roadway connects to South Avenue on the west side of the Fishkill Creek. North of Wolcott Avenue the roadway provides access to the Main Street area intersecting Main Street at an unsignalized intersection where the roadway terminates. There is an existing sidewalk along the west side of Tioronda Avenue between Wolcott Avenue Main Street. This portion of the roadway also accommodates on-street parking. There is also an existing bus stop on the west side of Tioronda Avenue immediately north of Wolcott Avenue. The roadway has a speed limit of 25 mph. It should also be noted that signage along Wolcott Avenue approaching Tioronda Avenue from the south directs motorists to Tioronda Avenue for access to Main Street.

B. 2021 Existing Traffic Volumes

(Figures No. 2 and 3)

Manual traffic counts were collected by representatives of Colliers Engineering & Design CT, P.C. on Friday April 23 and Saturday April 24, 2021 for the Weekday PM Peak and Saturday Peak Hours to determine the existing traffic volume conditions at the study area intersections. In addition, an Automatic Traffic Recorder (ATR) machine was also installed along Wolcott Avenue in the vicinity of the Project site in order to collect traffic volume, vehicle classification and vehicle speed data over an approximately one-week period (add dates) to identify any hourly or daily variations in traffic volumes along the roadway as well as to collect vehicle speed and classification data in the vicinity of the site access. All traffic volume data is provided in Appendix E for reference.

These traffic counts were then compared to traffic volume data from previous traffic studies conducted by our office and to traffic volume data available from the New York State Department of Transportation (NYSDOT) for the NYS Route 9D corridor. Based on this information, the Year 2021 Existing Traffic Volumes were established for the Weekday Peak AM and Weekday Peak PM Hours at the following study area intersections.

- NYS Route 9D and Tioronda Avenue
- NYS Route 9D and Howland Avenue
- NYS Route 9D and Kristy Drive
- NYS Route 9D and Site Access
- NYS Route 9D and Grandview Avenue

Based upon a review of the traffic counts, the peak hours were generally identified as follows:

- Friday PM Peak Hour 4:45 PM – 5:45 PM
- Saturday Peak Hour 2:30 PM – 3:30 PM

The resulting 2021 Existing Traffic Volumes are shown on Figures No. 2 and 3 for the Friday PM Peak Hour and Saturday Peak Hour, respectively.

C. Public Transportation

(Appendix F)

The City of Beacon has several public transportation options including Metro-North Trains via the Beacon Metro-North Train Station located approximately 2.5 miles north of the Project site as well as Ducthess County buses. The Dutchess County busses serving the City of Beacon include the Poughkeepsie Transit Hub to Fishkill (Route A) and the Poughkeepsie Transit Hub to Beacon Routes (Route B), the Beacon to Hopewell Junction Route (Route F), and the Beacon Free Loop (Route G). The nearest bus stop to the Project site is located at the intersection of Wolcott Avenue and Howland Avenue near the Mount Beacon Trailhead, which is only serviced by the Beacon Free Loop bus. The various bus route maps and schedules are provided in Appendix F for reference. It should be noted that some portion of the guests of the Project would be expected to utilize the nearby Metro-North train station for travel to the Site, especially those arriving from New York City, however no credit for the public transportation usage has been taken in this traffic and parking analyses contained herein. It is also not anticipated that a significant portion of Project guests will utilize the available bus transportation due to its limited availability and since it is generally remotely located from the Project site.

III. Evaluation of Future Traffic Conditions

A. 2025 No-Build Traffic Volumes

(Figure No. 4 through 9)

The 2021 Existing Traffic Volumes were increased by a growth factor of 2% per year to account for general background growth resulting in the 2025 Projected Traffic Volumes, which are shown on Figures No. 4 and 5 for each of the Peak Hours. In addition, traffic from other specific potential developments in the area including the proposed 248 Tioronda Avenue and 1113 Wolcott Avenue projects were identified. The resulting traffic volumes associated with these other developments are shown on Figures No. 6 and 7 for each of the peak hours. These volumes were added to the 2025 Projected Traffic Volumes resulting in the 2025 No-Build Traffic Volumes, which are shown on Figures No. 8 and 9 for the Friday PM and Saturday Peak Hours, respectively.

B. Site Generated Traffic Volumes

(Tables No. 1, 1E, 1P and 2)

In order to project the traffic generated by the Project, the existing Mirbeau Inn & Spa Rhinebeck was reviewed. Existing traffic generation data was collected for that facility, which is located on W. Market Street in the Village of Rhinebeck, New York. The traffic generation data was collected continuously from Friday December 3, 2021 through Monday December 6, 2021 in order to document actual traffic generation for similar type facility. The Mirbeau Rhinebeck traffic generation data is summarized in Table No. 1 contained in Appendix B. The peak hours of traffic for each day of data collection are also identified in this table. It should be noted that the Mirbeau Rhinebeck facility is similar to the proposed Project, but somewhat smaller in size. The Mirbeau Rhinebeck facility consists of 50 hotel rooms, a 15-room spa and a 150-seat restaurant along with other ancillary amenities. It should be noted that during the data collection at the Mirbeau Rhinebeck facility, the hotel, spa and restaurant were all near full capacity utilization.

The peak hour traffic generation observed at the existing Mirbeau Rhinebeck was then compared to traffic generation estimates for a 50-room hotel based on information published by the Institute of Transportation Engineers (ITE) as contained in the report entitled "Trip Generation", 11th Edition, 2021, utilizing Land Use Category – 310 – Hotel. It should be noted that the ITE description for Land Use Category 310 indicates *"A hotel is a place of lodging that provides sleeping accommodations and supporting facilities such as a full-service restaurant, cocktail lounge, meeting rooms, banquet room, and convention facilities. A hotel typically provides a swimming pool or another recreational facility such as a fitness room."* Therefore, the ITE Land Use generally encompasses the uses proposed on the Site. The comparison of the ITE data to the traffic generation data collected at the Mirbeau Rhinebeck facility is provided in Table No. 1E. As indicated in Table the ITE data is generally comparable to but in some cases is slightly lower than the traffic generation observed at the existing Mirbeau Rhinebeck facility.

The ITE data as well as the traffic generation rates observed at the Mirbeau Rhinebeck facility were then utilized to estimate the traffic that will be generated by the proposed Beacon facility. These estimates are presented in Table No. 1P. Again, this table indicates that the ITE data is generally comparable to but in some cases is slightly lower than the traffic generation estimated based on traffic generation rates observed at the existing Mirbeau Rhinebeck facility. Therefore, it was determined to utilize the traffic generation estimates based on the observed generation rates for the analysis of future traffic impacts. The traffic generation estimates utilized in the analysis are summarized in Table No. 2. This table also provides separate traffic generation estimates for the 500 sq. ft. farm store which is unique to the Beacon facility. These estimates are based on ITE data for Land Use Category 822 – Retail Plaza.

As previously indicated the Project also proposes to hold special events such as weddings or other similar type parties. These events are planned to be tented events accommodating approximately 100 attendees. Estimates of the amount of traffic generated by these events are also provided in Table No. 2. These estimates assume a car occupancy for event attendees of 2.75 persons/vehicle. For the purposes of the analysis it is conservatively assumed that all attendees will be arriving from offsite, but it is likely that a significant portion of the attendees will also be staying at the hotel, which would reduce the actual traffic generation during these events. It is assumed that all 100 attendees will enter and exit within the peak hour periods, which is also very conservative since these events will typically span a 2 to 5-hour period.

C. Arrival/Departure Distribution

(Figures No. 10, 11, 12, 13, 20 and 21)

It was necessary to establish arrival and departure distributions to assign the site generated traffic volumes to the surrounding roadway network. Based on a review of the Existing Traffic Volumes and the expected travel patterns on the surrounding roadway network, the anticipated draw areas for hotel, spa and restaurant guests as well as a review of travel time data, the distributions were identified. The anticipated arrival and departure distributions expressed as percentages are shown on Figures No. 10 and 11 for the hotel, spa and restaurant uses. Separate distributions were also identified for the Farm Store since this will be accessed via a separate driveway connection to Grandview Road. The farm store distributions are shown on Figures No. 12 and 13.

In addition, separate distributions for the anticipated events were also development. These distributions are shown on Figures No. 20 and 21.

D. 2025 Build Conditions Traffic Volumes

(Figures No. 14 through 19 and 22 through 25)

The site generated traffic volumes were assigned to the roadway network based on the arrival and departure distributions referenced above. The resulting hotel, spa and restaurant site generated traffic volumes for each of the study area intersections are shown on Figures No. 14 and 15 for each of the peak hours, respectively. The resulting Farm Store Site Generated Traffic Volumes are identified on Figures No. 16 and 17. The site generated traffic volumes were then added to the 2025 No-Build Traffic Volumes to obtain the 2025 Build Traffic Volumes. The resulting 2025 Build Traffic Volumes are shown on Figures No. 18 and 19 for the Friday PM and Saturday Peak Hours, respectively.

In addition, separate site generated traffic volumes were developed for the additional traffic that is anticipated to be generated by the proposed tented events. These Event site generated traffic volumes are identified on Figures No. 22 and 23. These volumes were then added to the 2025 Built Traffic Volumes previously discussed to obtain the 2025 Event Conditions Build Traffic Volumes, which are summarized on Figures No. 24 and 25 for the Friday PM and Saturday Peak Hours, respectively.

E. Description of Analysis Procedures

It was necessary to perform capacity analyses in order to determine existing and future traffic operating conditions at the study area intersections. The following is a brief description of the analysis method utilized in this report:

Signalized Intersection Capacity Analysis

The capacity analysis for a signalized intersection was performed in accordance with the procedures described in the Highway Capacity Manual, 6th Edition, dated 2016, published by the Transportation Research Board. The terminology used in identifying traffic flow conditions is Levels of Service. A Level of Service "A" represents the best condition and a Level of Service "F" represents the worst condition. A Level of Service "C" is generally used as a design standard while a Level of Service "D" is acceptable during peak periods. A Level of Service "E" represents an operation near capacity. In order to identify an intersection's Level of Service, the average amount of vehicle delay is computed for each approach to the intersection as well as for the overall intersection.

Unsignalized Intersection Capacity Analysis

The unsignalized intersection capacity analysis method utilized in this report was also performed in accordance with the procedures described in the Highway Capacity Manual, 6th Edition, dated 2016. The procedure is based on total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. The average total delay for any particular critical movement is a function of the service rate or capacity of the approach and the degree of saturation. In order to identify the Level of Service, the average amount of vehicle delay is computed for each critical movement to the intersection.

Additional information concerning signalized and unsignalized Levels of Service can be found in Appendix "C" of this report.

F. Results of Analysis

(Table No. 2)

Capacity analyses which take into consideration appropriate truck percentages, pedestrian activity, roadway grades and other factors were performed at the study area intersections utilizing the procedures described above to determine the Levels of Service and average vehicle delays. Summarized below are a description of the existing geometrics, traffic control and a summary of the existing and future Levels of Service as well as any recommended improvements.

Table No. 2 summarizes the results of the capacity analysis for the 2021 Existing, 2025 No-Build and 2025 Build Conditions. Appendix "D" contains copies of the capacity analysis which also indicate the existing geometrics (including lane widths) and other characteristics for each of the individual intersections studied.

1. **Wolcott Avenue (NYS Route 9D) and Tioronda Avenue**

   Wolcott Avenue intersects Tioronda Avenue at a signalized full movement intersection. All approaches to the intersection consist of one lane and sight distances are good for all approaches. Sidewalks are provided along all corners of the intersection and striped signalized pedestrian crosswalks are provided on the west, north and south sides at the intersection.

   Capacity analysis was conducted for this intersection utilizing the 2021 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service "A" during the Friday PM and Saturday Peak Hours.

   The capacity analysis was recomputed using the 2025 No-Build and Build Traffic volumes. These results indicate that the intersection is expected to continue to operate at similar Levels of Service during the Friday PM and Saturday Peak Hours under all analyzed volume conditions including the event conditions.

2. **Wolcott Avenue (NYS Route 9D) and Howland Avenue**

   Wolcott Avenue and Howland Avenue intersect at a "T" shaped unsignalized intersection. All of the approaches consist of a single lane. There is a striped pedestrian crosswalk crossing Howland Avenue on the east side of Wolcott Avenue at this intersection.

   Capacity analysis was conducted for this intersection utilizing the 2021 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service "B" during the Friday PM and Saturday Peak Hours.

   The capacity analysis was recomputed using the 2025 No-Build Traffic volumes. These volumes indicate that the intersection is expected to experience Levels of Service "C" or better during the Friday PM and Saturday Peak Hours without the Project.

The capacity analysis was again recomputed using the 2025 Build and 2025 Event Conditions Build Traffic volumes. These results indicate that the intersection is expected to continue to experience a Level of Service "C" or better during each of the peak hours.

It should be noted that the drop in Level of Service from "B" under existing conditions to "C" under the No-Build and Build conditions results from an average increase in delay of less than 5-seconds per vehicle and is not considered significant.

3. **Wolcott Avenue (NYS Route 9D) and Kristy Drive**

NYS Route 9D and Kristy Drive intersect at a "T" shaped unsignalized intersection. All of the approaches consist of a single lane approach. There is a striped pedestrian crosswalk crossing Kristy Avenue on the west side of Wolcott Avenue at this intersection.

Capacity analysis was conducted for this intersection utilizing the 2021 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at an overall Level of Service "C" during the Friday PM and Saturday Peak Hours.

The capacity analysis was recomputed using the 2025 No-Build and 2025 Build Traffic volumes. These volumes indicate that the intersection is expected to continue to experience Levels of Service "C" or better during the Friday PM and Saturday Peak Hours.

It should be noted that the Friday PM Event Conditions Build analysis does indicate that vehicles exiting Kristy Drive may experience a Level of Service "D" during this time period. However as note previously the Event Conditions analysis is very conservative. Furthermore, this will be a short duration impact occurring only during the Event Condition entry or exit period.

4. **Wolcott Avenue (NYS Route 9D) and Site Access**

As previously discussed, the Project is proposed to be access via a reconfigured driveway connection to Wolcott Avenue at the approximate location of the existing northern driveway to the property. The driveway will form an unsignalized "T"-shaped intersection and is proposed to consist of two exiting lanes with a single-entry lane. The entry and exit lanes will be separate by a raised median.

The capacity analysis was computed for the future site access. The analysis indicates a Level of Service "C" will be experienced during each of the peak hours under both the typical build and event conditions build scenarios.

For a discussion of sight distances and the potential need for a left turn lane at the proposed site access driveway location to Wolcott Avenue see Section III.G and III.H below.

5. **Wolcott Avenue (NYS Route 9D) and Grandview Avenue**

Wolcott Avenue (NYS Route 9D) intersections Grandview Avenue at an unsignalized "T-shaped" intersection. All approaches to the intersection consist of one lane and sight distances are good for all approaches. There is a sidewalk on the west side of the Wolcott Avenue southbound approach, which turns the corner onto Grandview Avenue and terminates approximately 15 ft. west of the intersection.

Capacity analysis was conducted for this intersection utilizing the 2021 Existing Traffic Volumes. The analysis results indicate that the intersection is currently operating at a Level of Service "C" or better during the Friday PM and Saturday Peak Hours.

The capacity analysis was recomputed using the 2025 No-Build and Build Traffic volumes. These results indicate that the intersection is expected to continue to operate at similar Levels of Service during the Friday PM and Saturday Peak Hours under all analyzed volume conditions including the event conditions.

G. Site Access Sight Distance Analysis

Sight distance was reviewed at the proposed Site Access location to Wolcott Avenue. The observed sight distances bases on field measurements taken by representatives of Colliers Engineering & Design, are summarized in the table below. These sight distances were then compared to the AASHTO required sight distances for these access locations based on the measured 85th Percentile speed along Wolcott Avenue of 45 MPH as recorded by the ATR machine data installed in the vicinity of the Site Access driveway.

Sight Distance Summary Table

Sight Distance Direction	Measured Sight Distance	AASHTO Required Sight Distance	
		Stopping Sight Distance	Intersection Sight Distance
Looking Left (North)	710 ft.	360 ft.	500 ft.
Looking Right (South)	725 ft.	360 ft.	500 ft.
Left Turn Entry (Ahead)	625 ft.	360 ft.	365 ft.
Left Turn Entry (Rear End)	700 ft.	360 ft.	---

Source: AASHTO Required Sight Distances are based on ***A Policy on Geometric Design of Highways & Streets, 7th Edition*** dated 2018 for an assumed operating speed of 45 MPH along Wolcott Avenue.

As shown in the table, the required sight distances will be exceeded at the access location.

H. Site Access Left Turn

(Table No. 4, Sheet No. CP-1)

The need for the construction of a separate left turn lane along Wolcott Avenue at the site access location was also assessed based on the AASHTO Left Turn Lane Warrant criteria. The AASHTO criteria identify the potential need for a left turn lane at an unsignalized intersection location based on the number of left turn vehicles from the main road vs. the number of opposing vehicles passing the intersection location in the opposite direction. The left turn lane warrant analysis is provided in Table No. 4 contained in Appendix B. This analysis was conducted utilizing the 2025 Build Conditions traffic volumes under for the Friday PM and Saturday Peak Hours. The analysis indicates that a left turn lane will be warranted at this location with the Project generated traffic.

A preliminary concept plan for this left turn lane has been prepared and is provided on Sheet No. CP-1 contained in Appendix A. This left turn lane widening will require modification to existing drainage facilities and as well as the existing sidewalk on the west side of Wolcott Avenue. Some dedication of lands to the City of Beacon to accommodate the relocated sidewalk may also be required. The concept plan for the left turn lane widening also identifies recommended signage to be installed for the left turn lane as well as to alert passing vehicles of the intersection location. In addition, this plan identifies the installation of "Stop" sign on the driveway exit approach. A more detail design of this left turn lane will be required to identify limits of widening, materials, grading and drainage treatments, etc. for review and approval by the City of Beacon.

IV. Parking Analysis

The City of Beacon Code Section 223-26.F and Section 223-14.1.C specifies the minimum number of required parking spaces for various potential uses. The minimum number of required parking spaces for the Project per the code parking requirements are identified in Table No. P-1 below.

Table No. P-1 – City of Beacon Code Required Parking Spaces

Land Use	Code Requirement	Required Parking Spaces
Hotel (75 Rooms)	1 Space/Room	75 Spaces
Cottages (5)	2 Spaces/Cottage	10 Spaces
Restaurant (110 seats/2,364 Sq. Ft.)	1 Space/3 Persons OR 1 Space/150 Sq. Ft. of Gross Floor Area Excluding Kitchen & Storage Area	37 Spaces OR 16 Spaces
Spa (21 Rooms/6,125 Sq. Ft.)	1 Space/200 Sq. Ft. of Gross Floor Area Excluding Utility Areas	31 Spaces
Employees (60 Persons at any one time)	1 Space/Employee	60 Spaces
	Total	**213 Spaces**

Note:

1. Parking for Cottages is proposed to be provided at a rate of 2 Spaces/Cottage
2. 60 Employees is anticipated number of total employees onsite at any one time to service the Hotel, Restaurant and Spa as well as other portions of the Project.
3. Spa Square Footage includes all publicly available spa space. Certain areas within the spa will be limited to hotel quests such as workout space and salons. Locker rooms reception area and other "back-of-house or support space has been excluded from this calculation.

The Project currently proposes to provide a total of 272 paved parking spaces in the immediate vicinity of the hotel, spa & restaurant for use by hotel, spa and restaurant guests as well as designated employee parking. This also includes 10 parking spaces for use of the cottage Guests that will be positioned in proximity to the cottages. Approximately 38 additional parking spaces will also be provided in the vicinity of Tioronda School. Based on the above parking analysis, it is the opinion of Colliers Engineer & Design that there will be sufficient parking within the Site to accommodate the parking demand for the Project.

V. Summary and Conclusion

Based on the above analysis, similar Levels of Service and delays will be experienced at the area intersections under the future No-Build and future Build Conditions. Thus, the Mirbeau Beacon development traffic is not expected to cause any significant impact in overall operation.

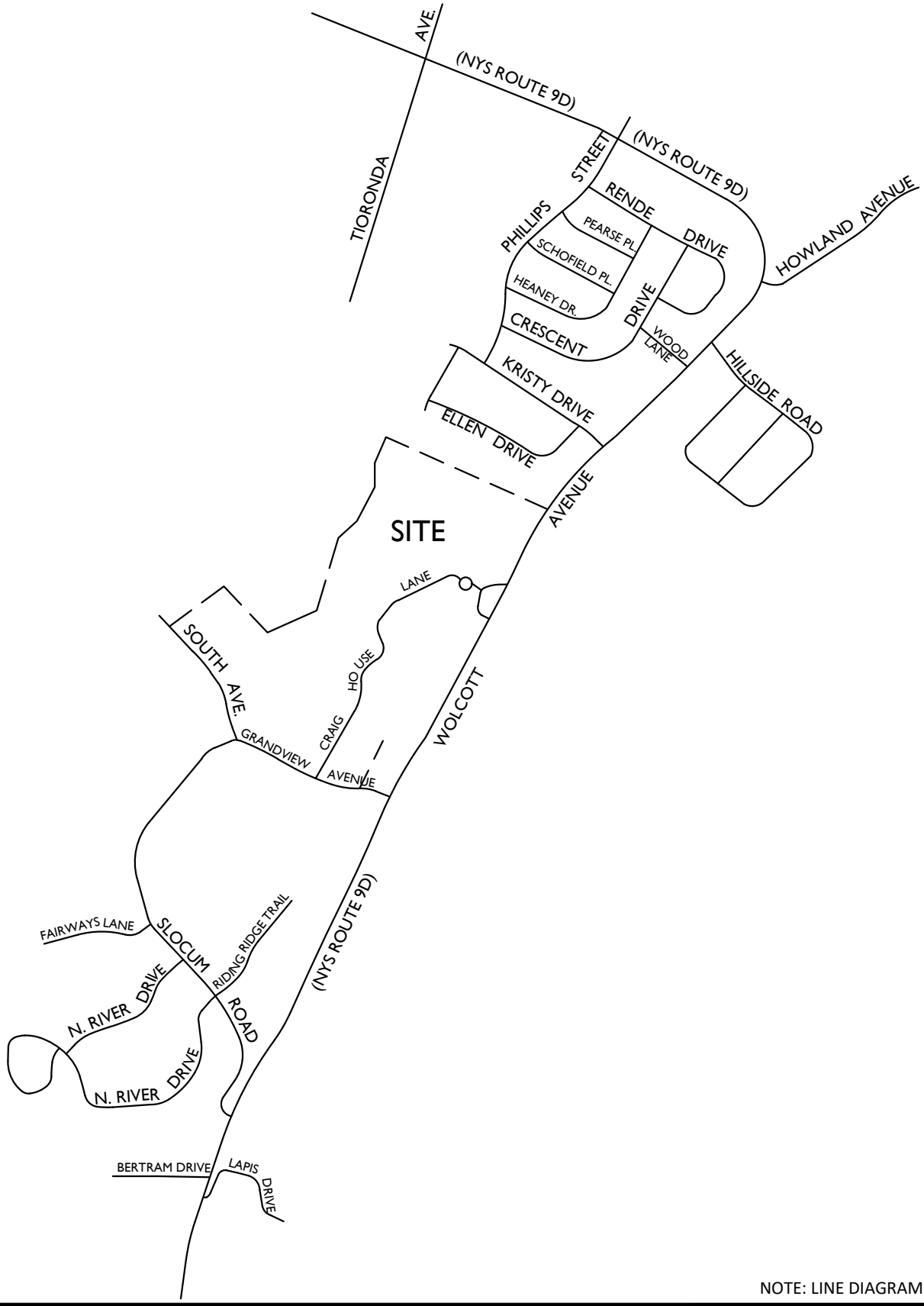
The proposed left turn lane at the Site Access location will require further detailed design and review and approval by the City of Beacon prior to implementation. This left turn lane widening will require modification to existing drainage facilities and as well as the existing sidewalk on the west side of Wolcott Avenue. Some dedication of lands to the City of Beacon to accommodate the relocated sidewalk may also be required. The details of these will be assessed as part of the further detailed design of the left turn lane widening.

As discussed above, the Project proposes to provide sufficient parking to accommodate the maximum parking needs of the development and meeting or exceeding the requirements of the City of Beacon Code.

Colliers Engineering & Design

Traffic Impact Study

Appendix A | Traffic Figures



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue,
Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING
ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

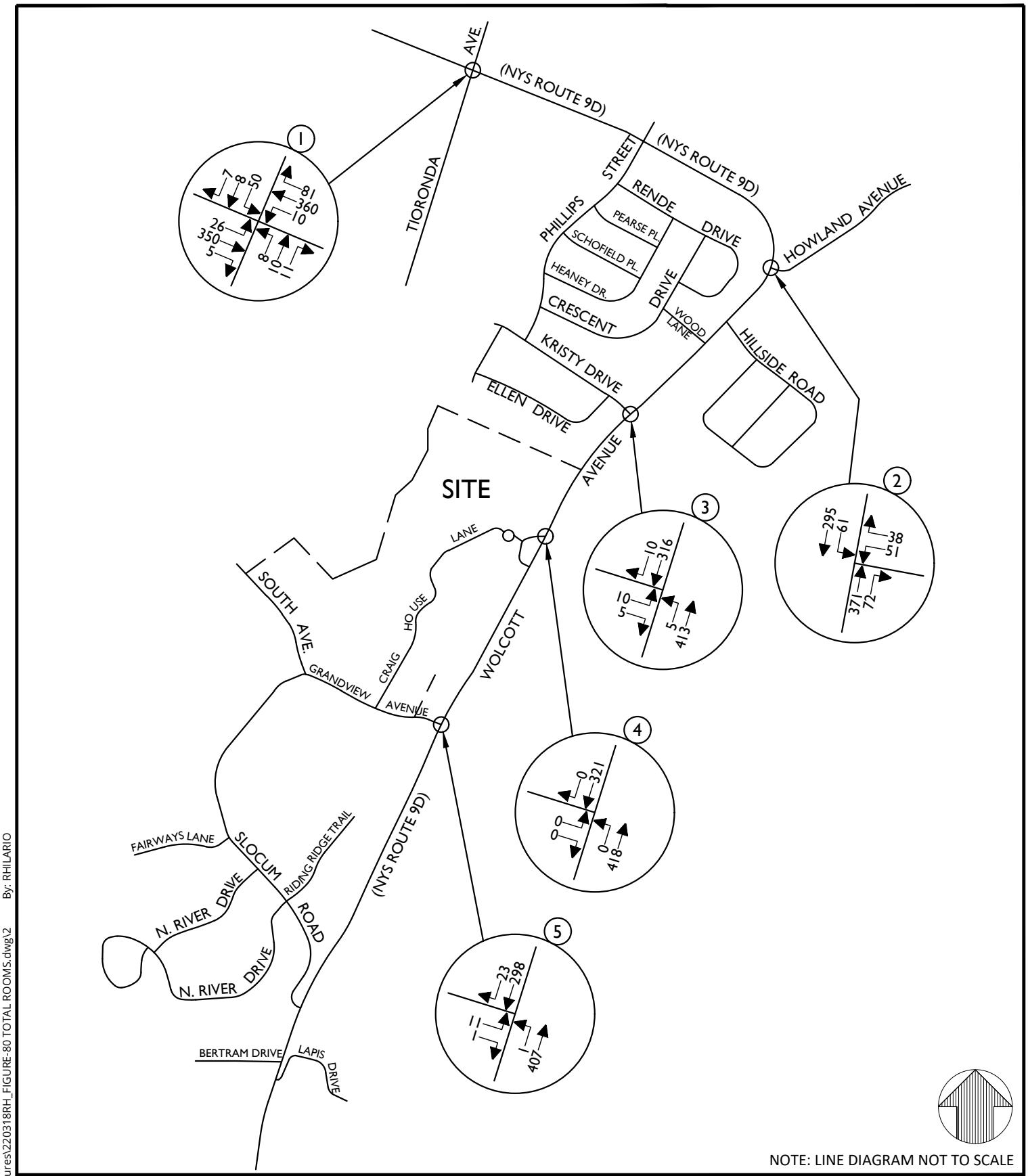
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE: SITE LOCATION MAP

SHEET NUMBER: 1

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\1 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

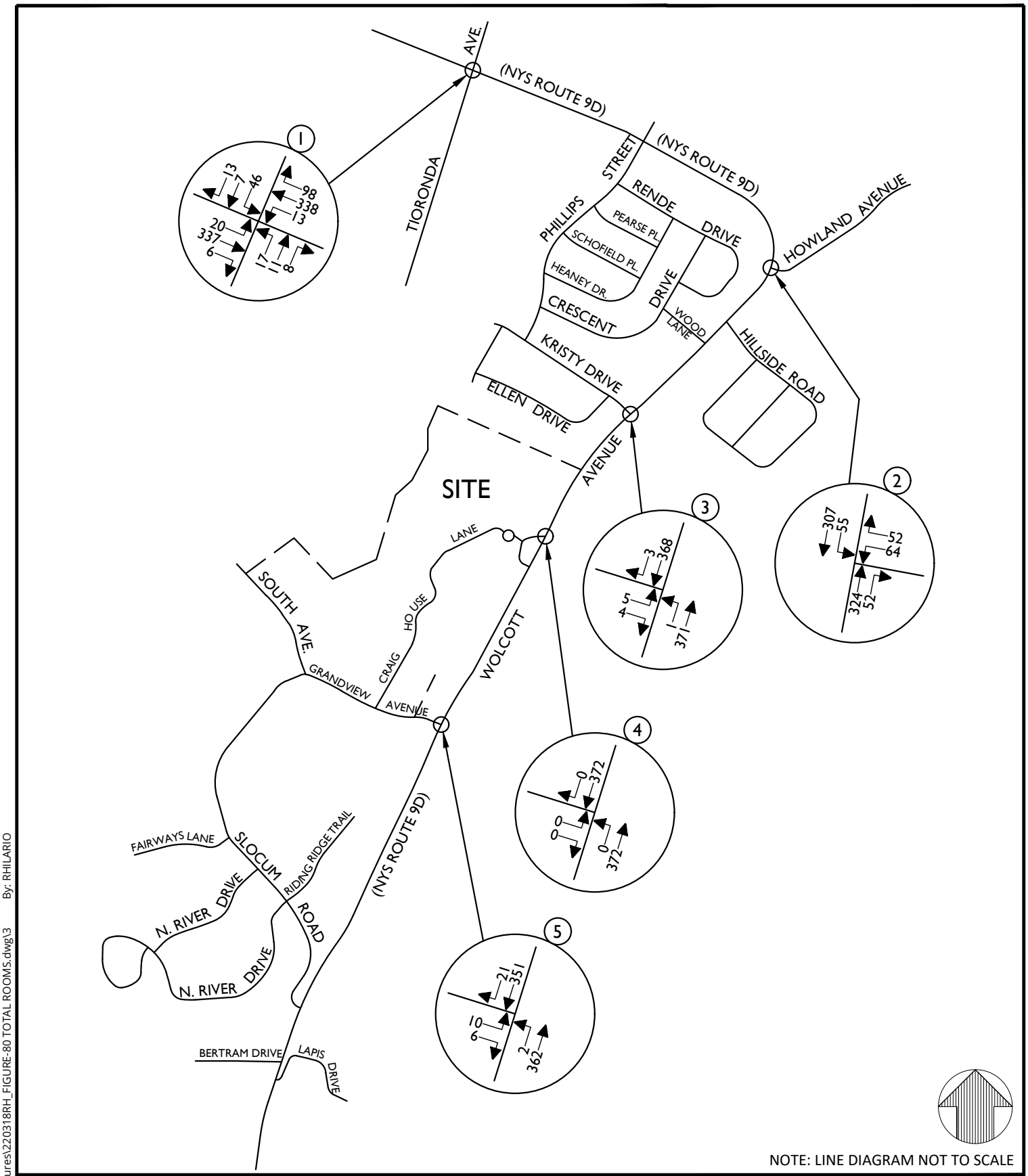
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2021 EXISTING TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR

SHEET NUMBER: 2

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\2 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

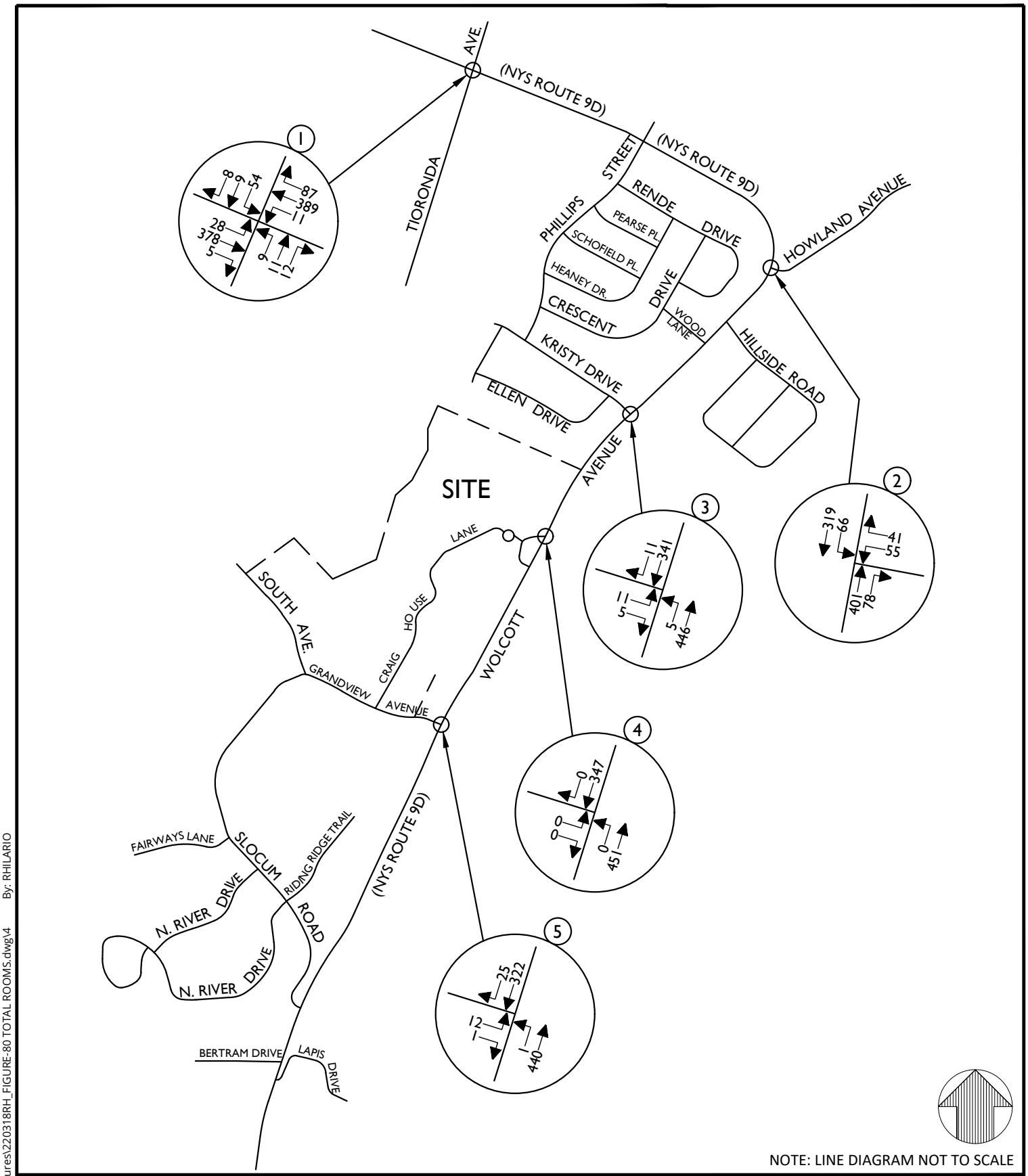
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2021 EXISTING TRAFFIC VOLUMES
WEEKEND PEAK SAT HOUR

SHEET NUMBER: 3

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\3 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

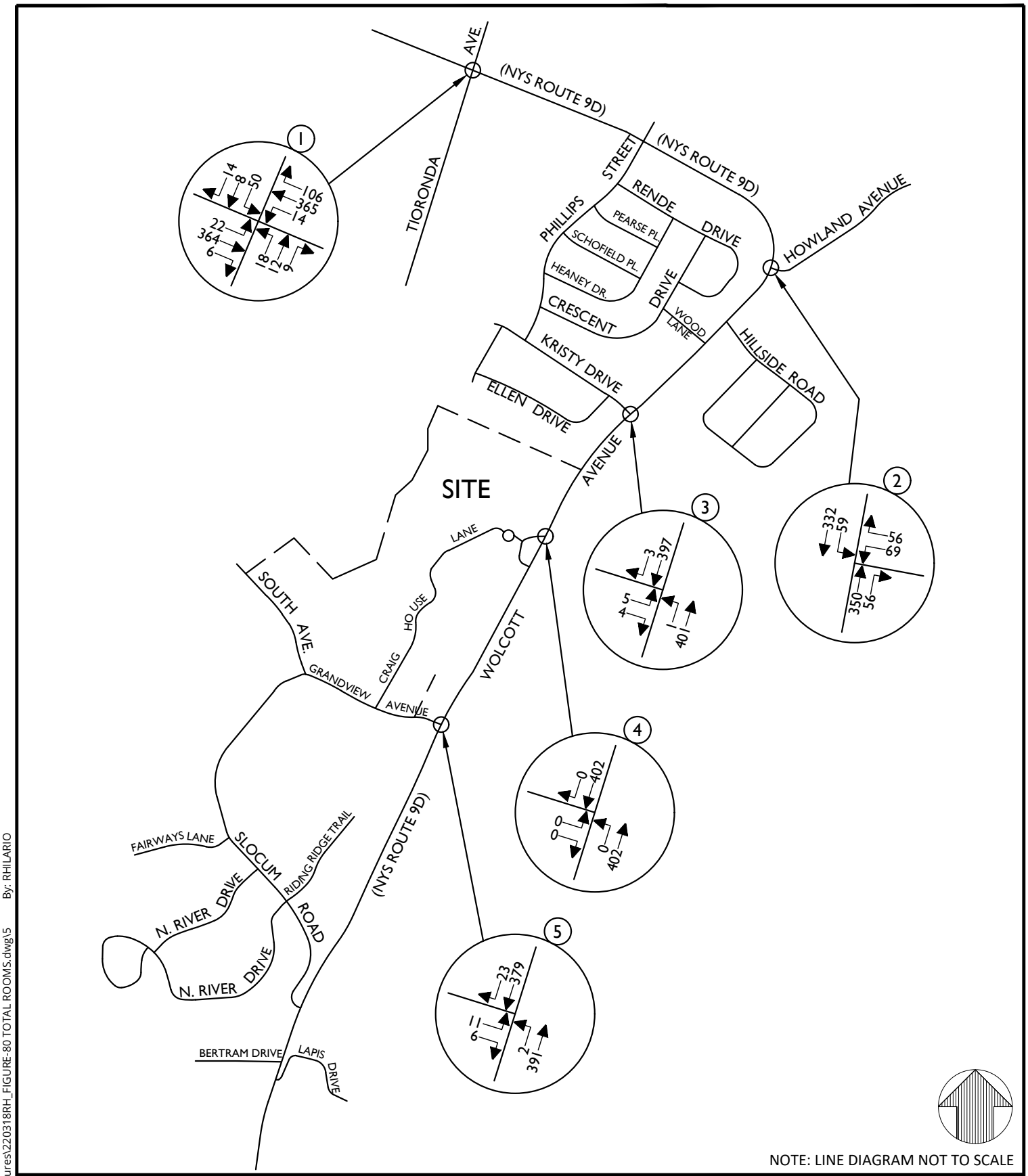
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2025 PROJECTED TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR

SHEET NUMBER: 4

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\4 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

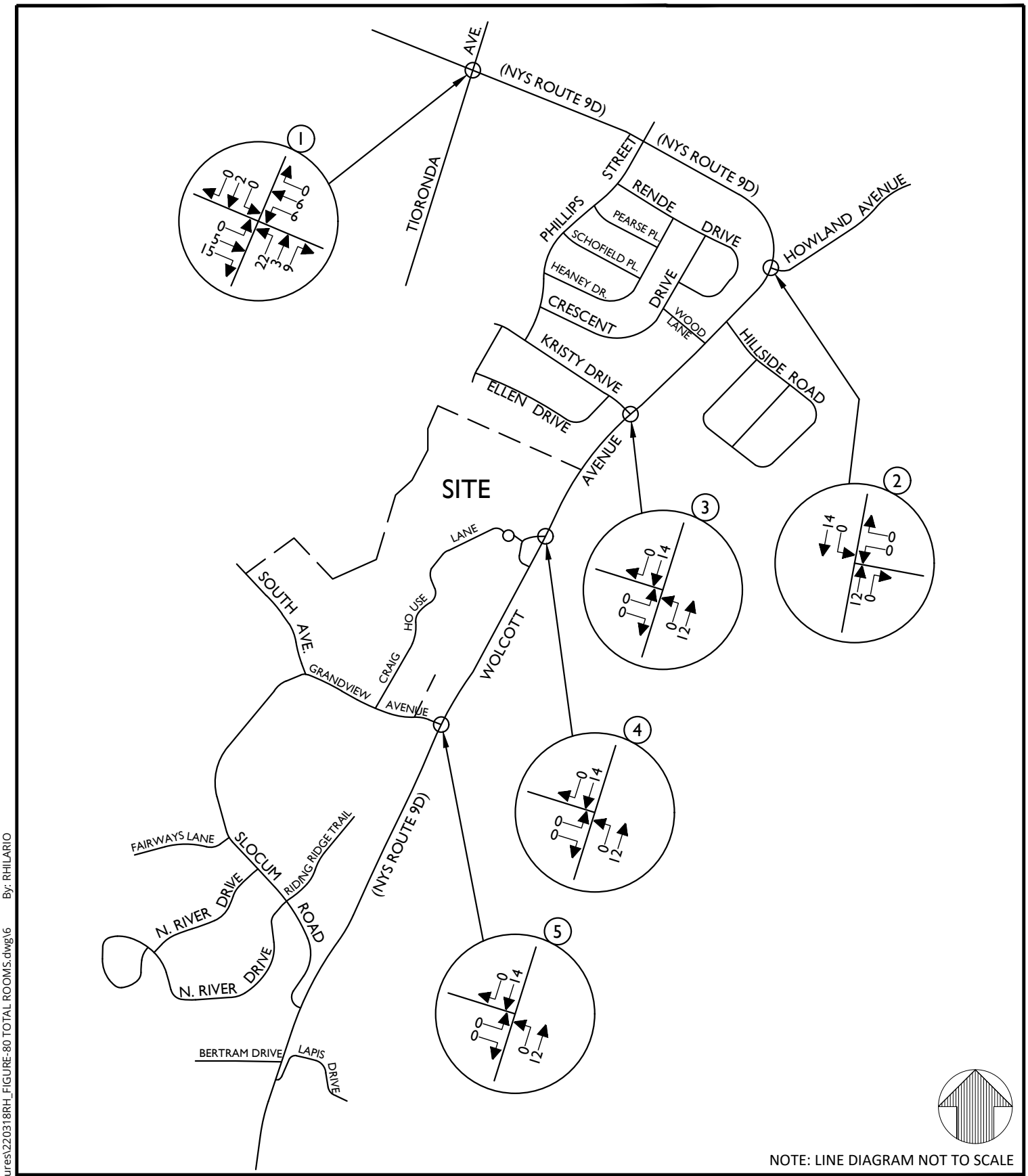
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE: 2025 PROJECTED TRAFFIC VOLUMES WEEKEND PEAK SAT HOUR

SHEET NUMBER: 5

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\5 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

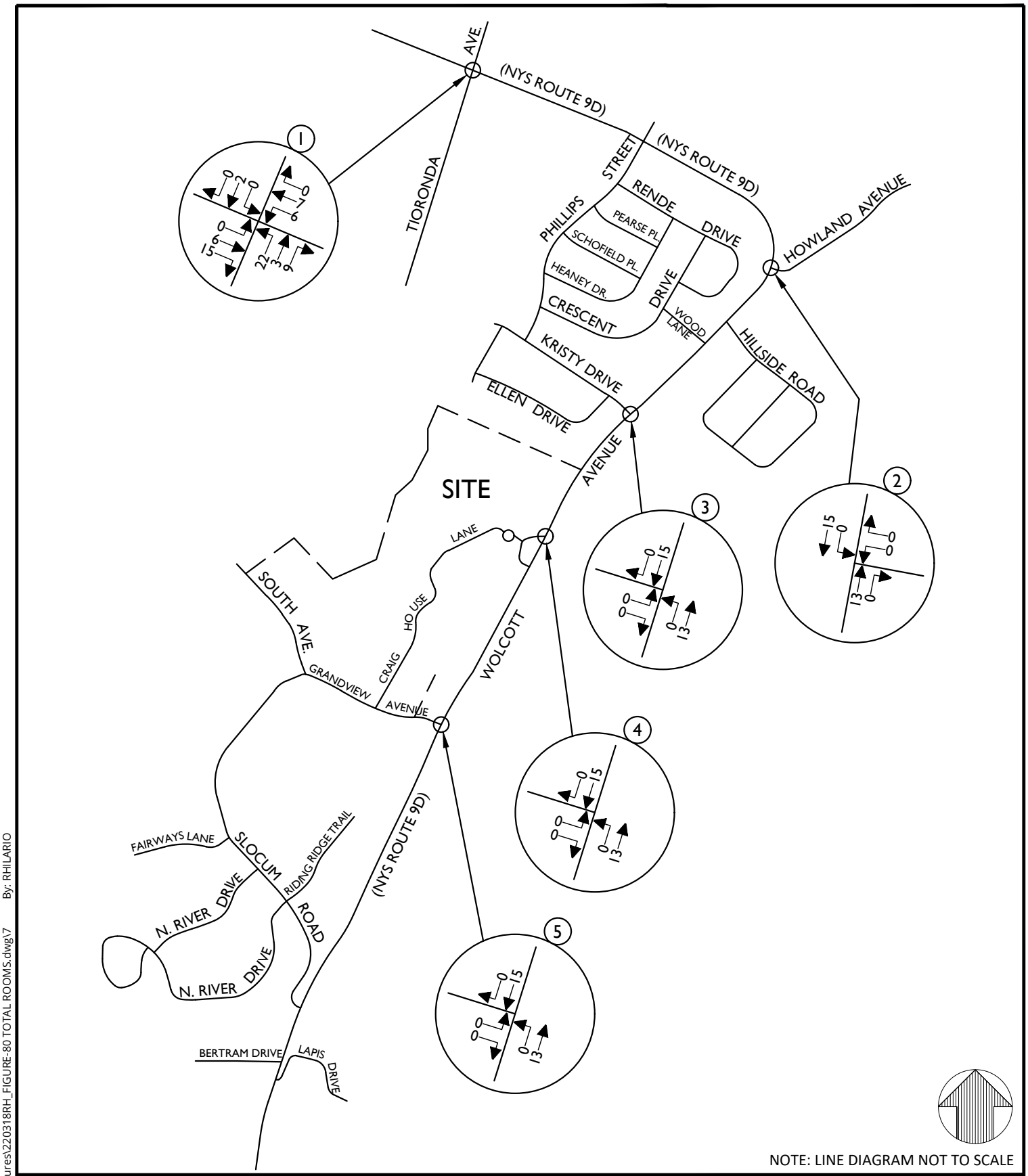
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
OTHER DEVELOPMENT
TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR

SHEET NUMBER: 6

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\6 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

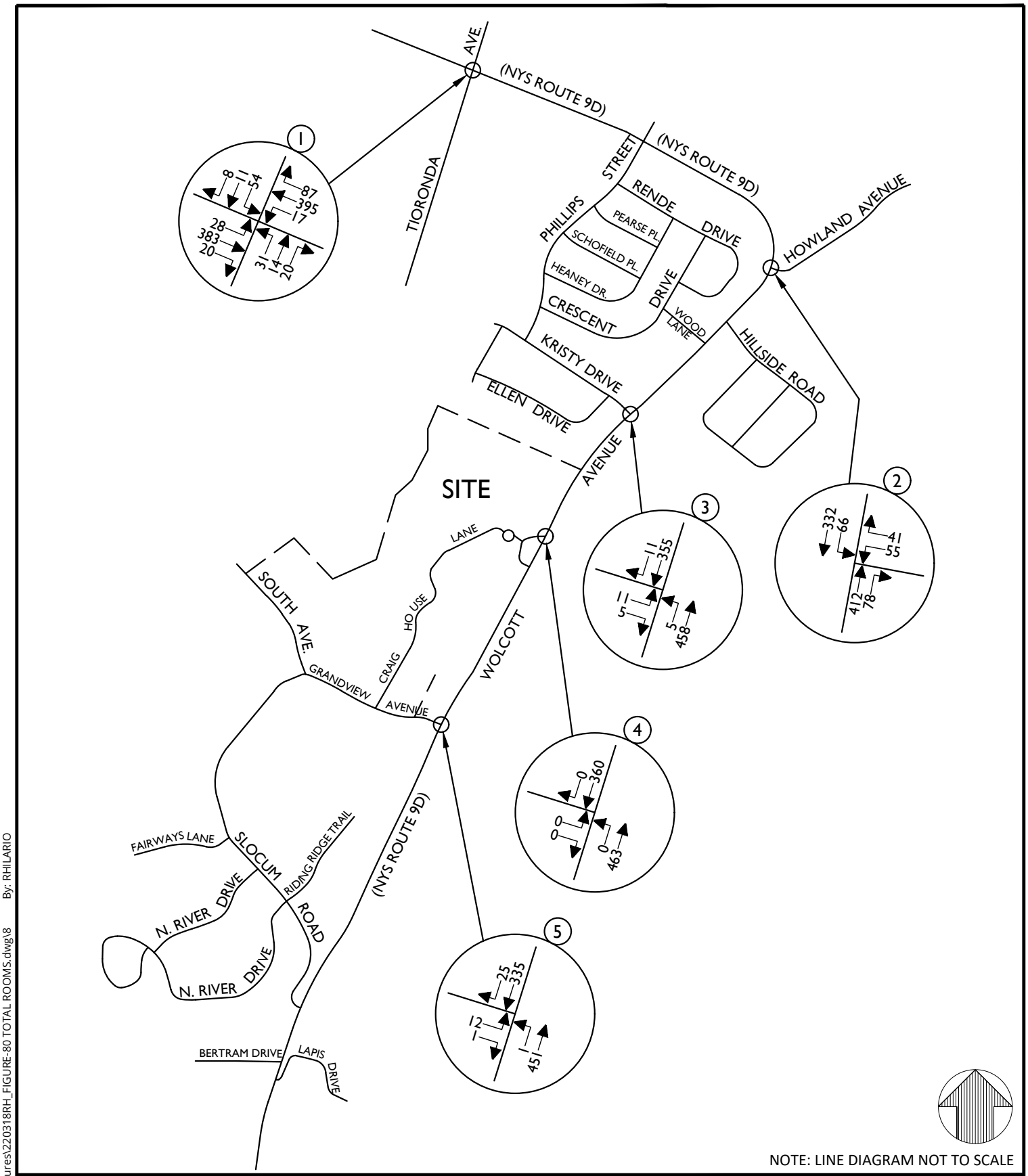
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
OTHER DEVELOPMENT
TRAFFIC VOLUMES
WEEKEND PEAK SAT HOUR

SHEET NUMBER: 7

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\7 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

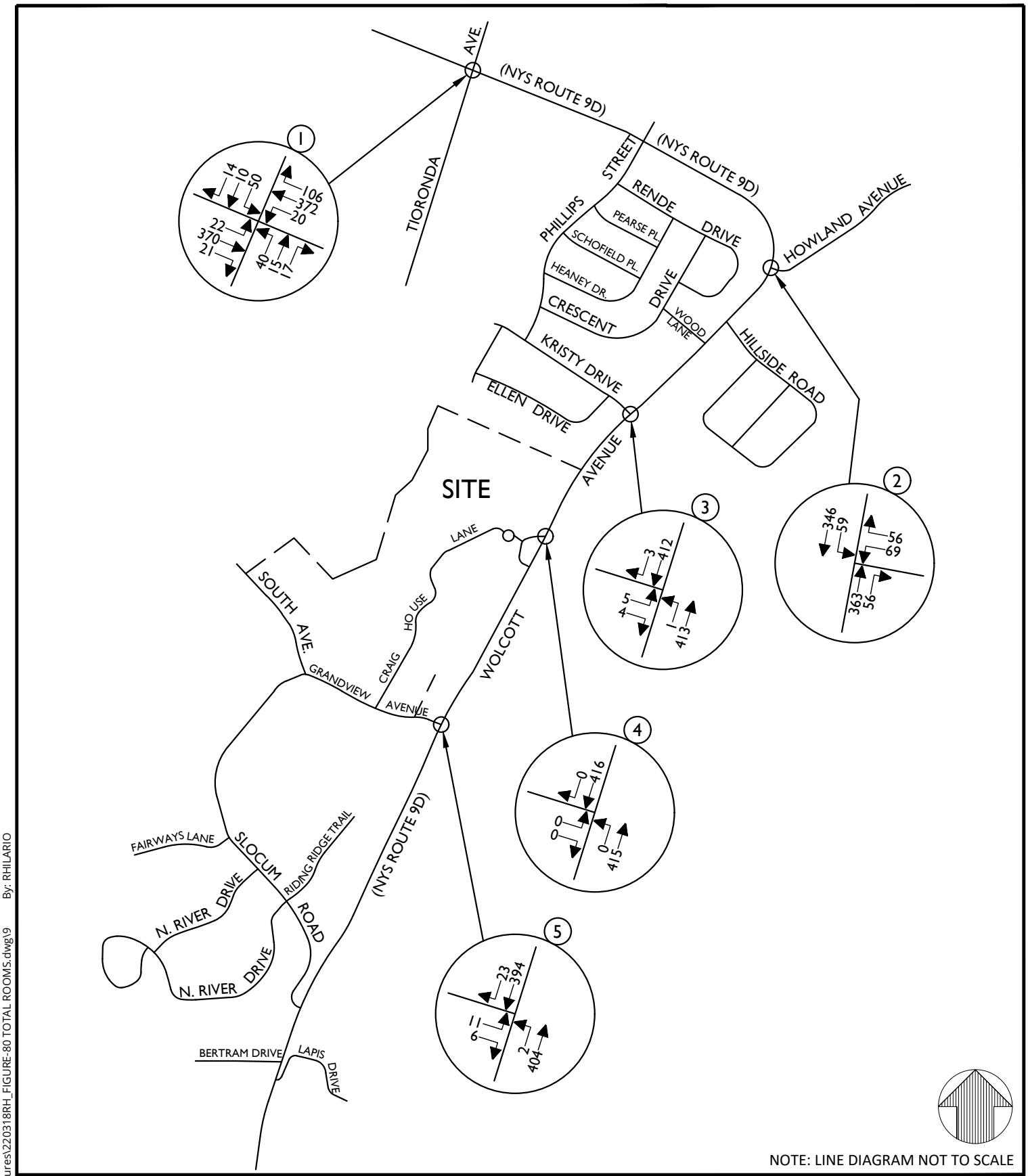
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2025 NO-BUILD TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR

SHEET NUMBER: 8

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\8 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

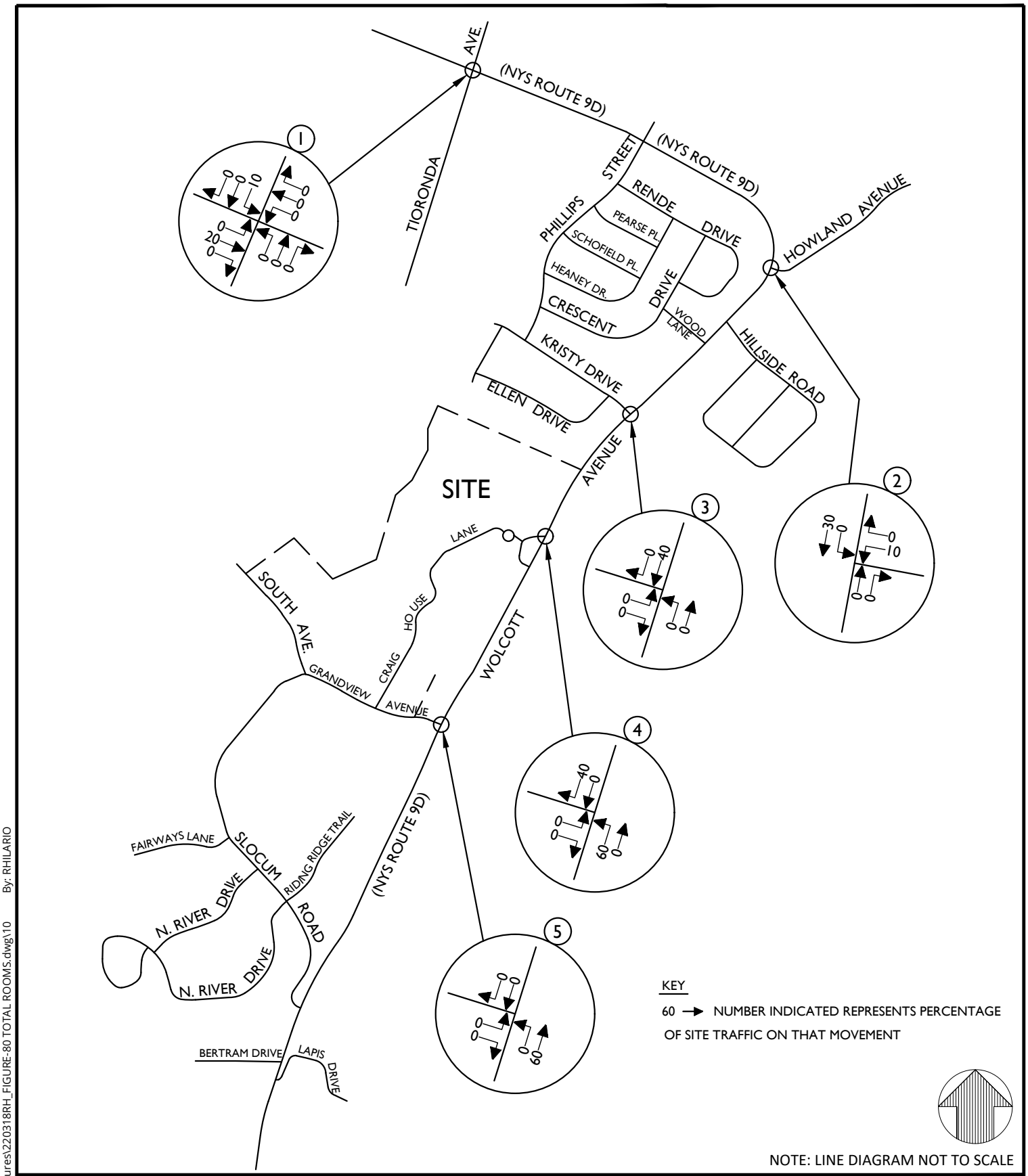
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2025 NO-BUILD TRAFFIC VOLUMES
WEEKEND PEAK SAT HOUR

SHEET NUMBER: 9

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\9 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

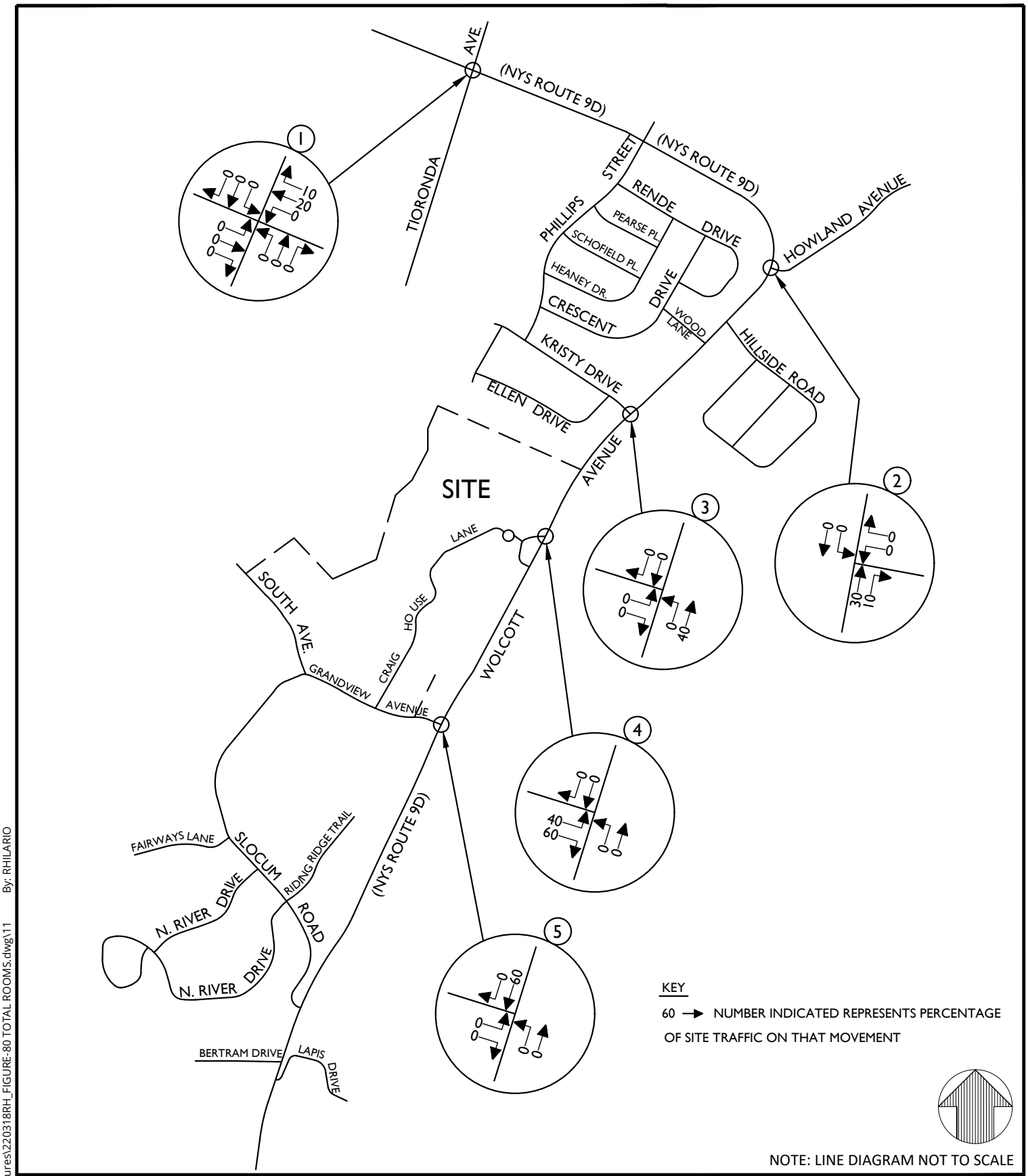
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
ARRIVAL DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)
(MIRBEAU SPA)

SHEET NUMBER: 10

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\10 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

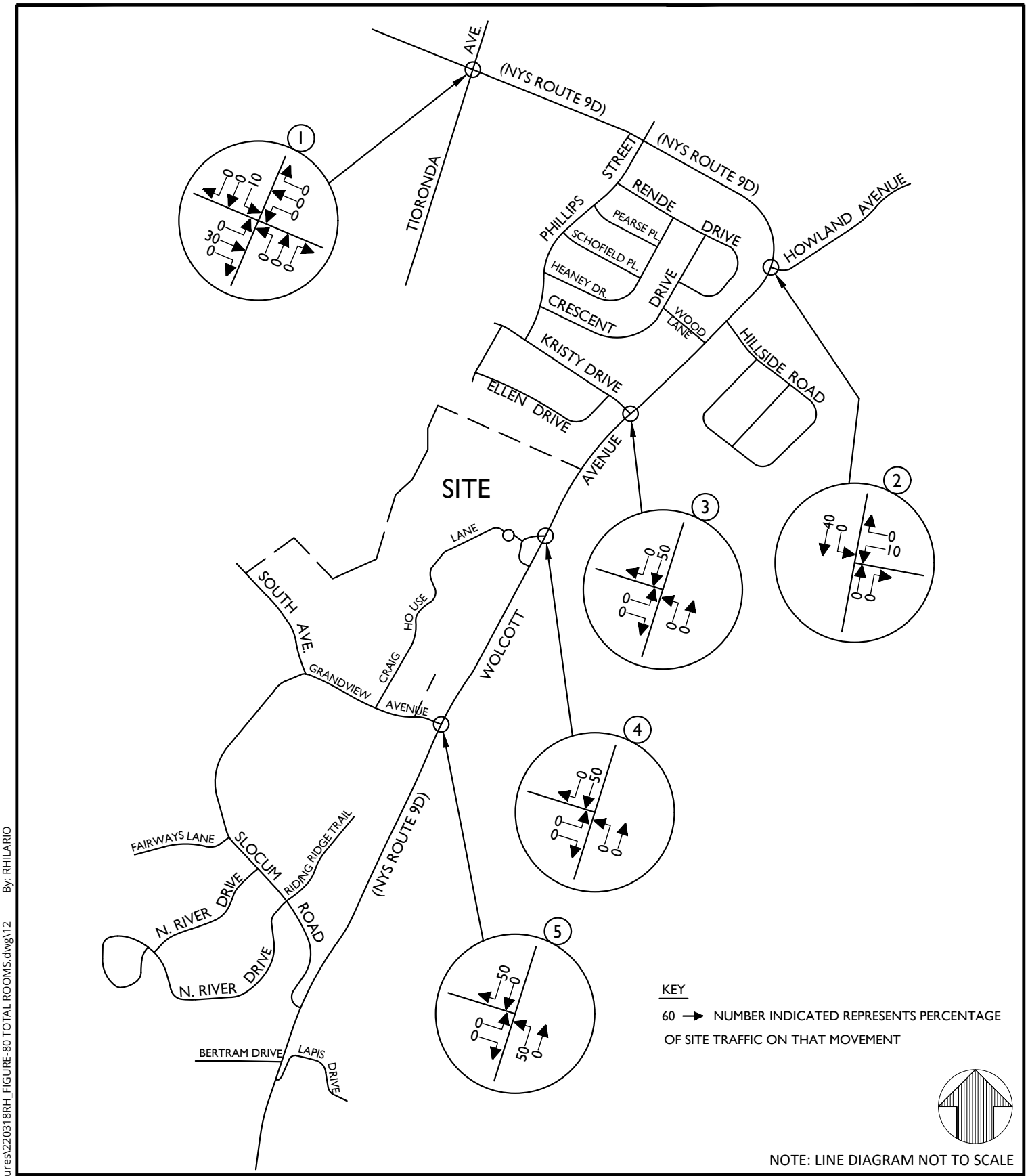
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
DEPARTURE DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)
(MIRBEAU SPA)

SHEET NUMBER:
11

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\11 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

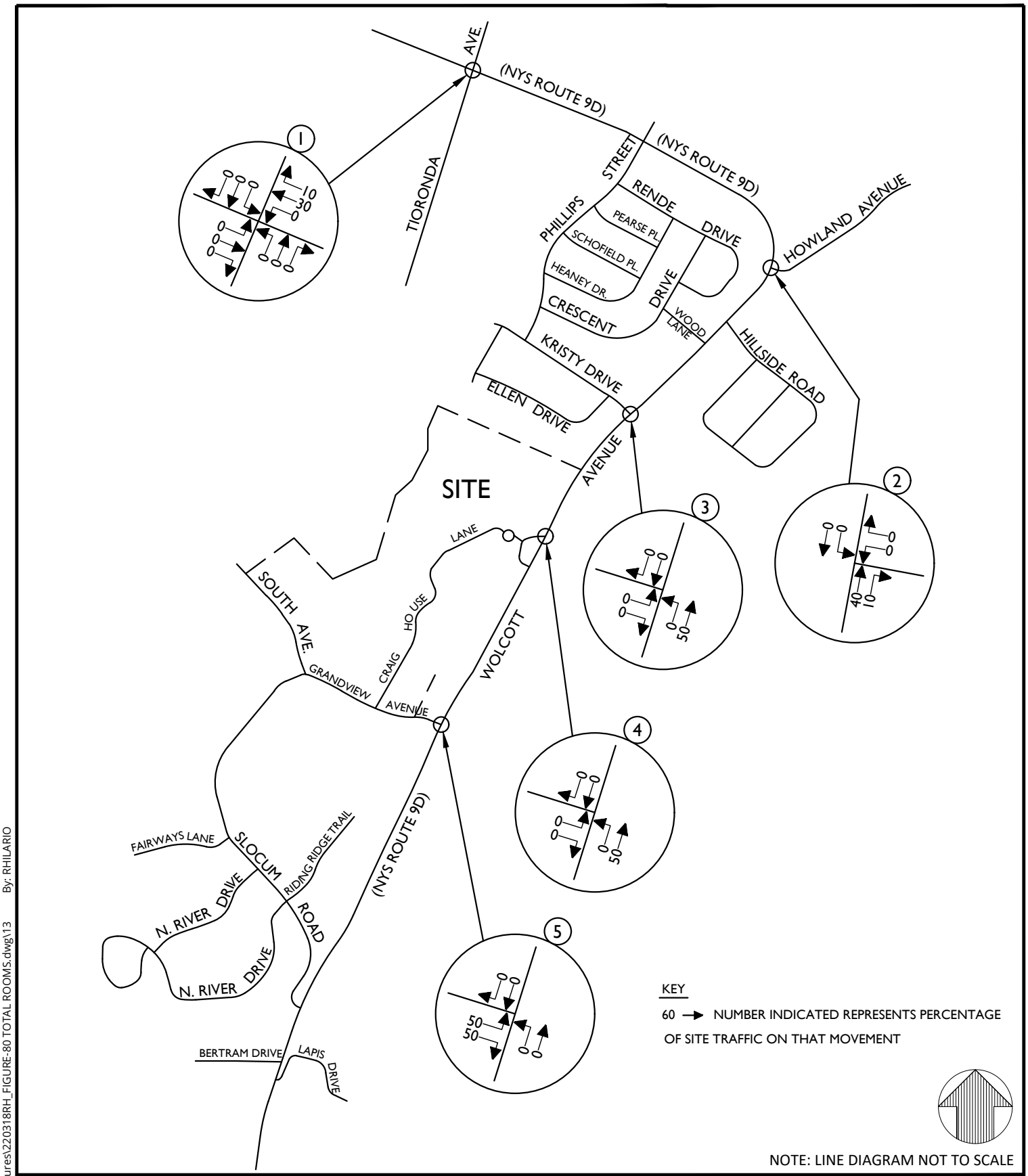
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
ARRIVAL DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)
(RETAIL STORE)

SHEET NUMBER: 12

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\12 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

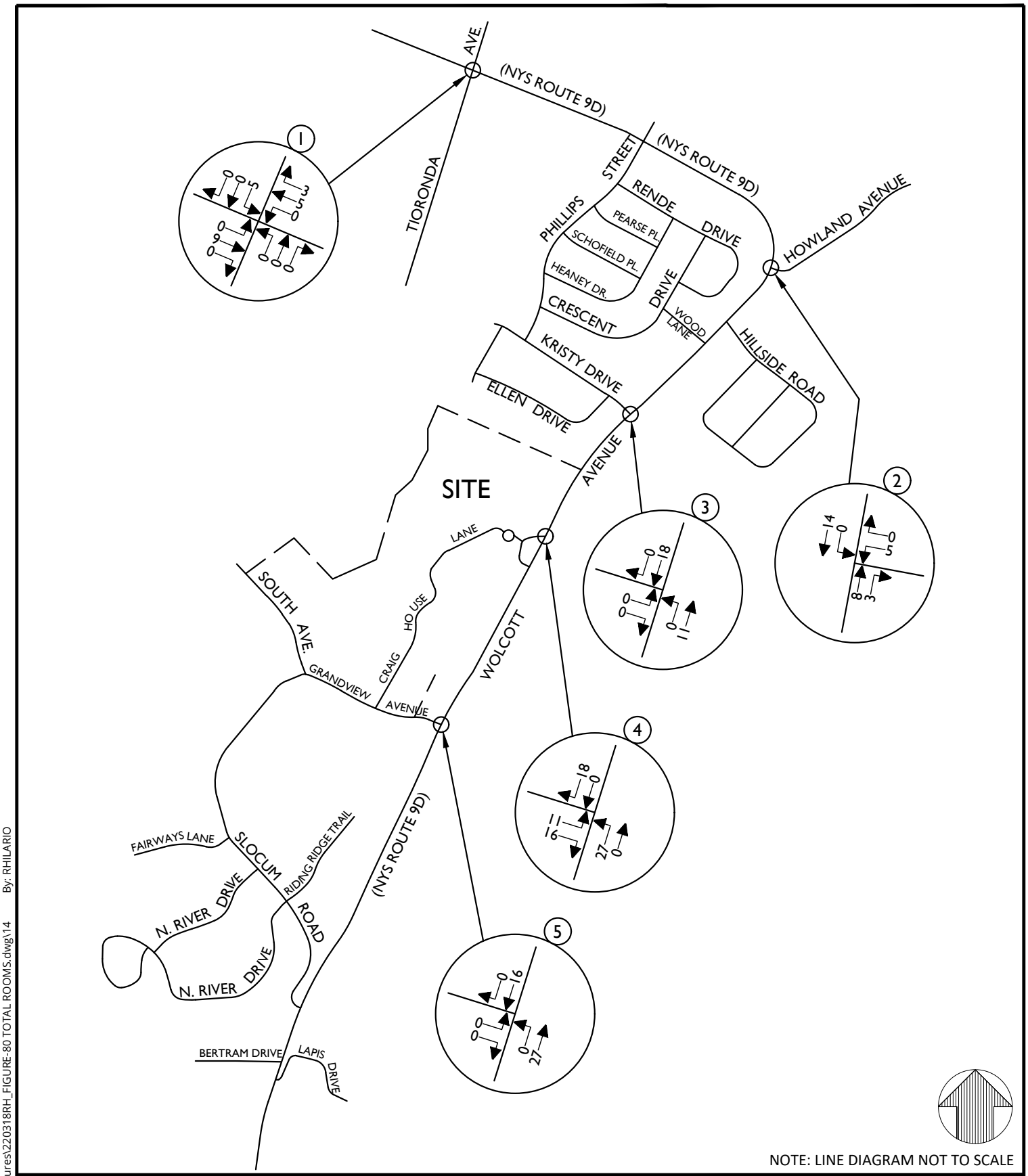
PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
DEPARTURE DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)
(RETAIL STORE)

SHEET NUMBER: 13

1180

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\13 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

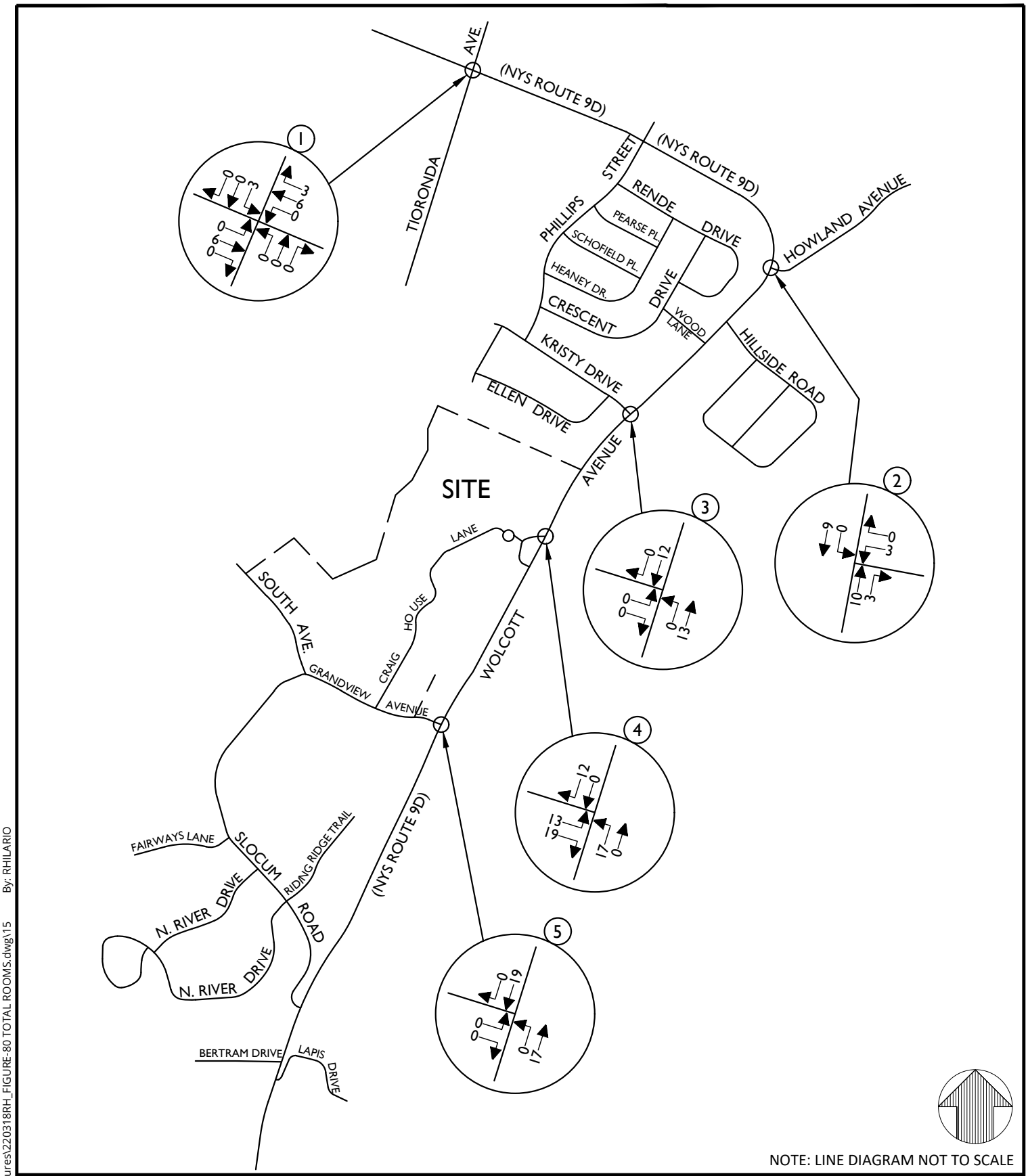
PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR
(MIRBEAU SPA)

SHEET NUMBER: 14

1181

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\14 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

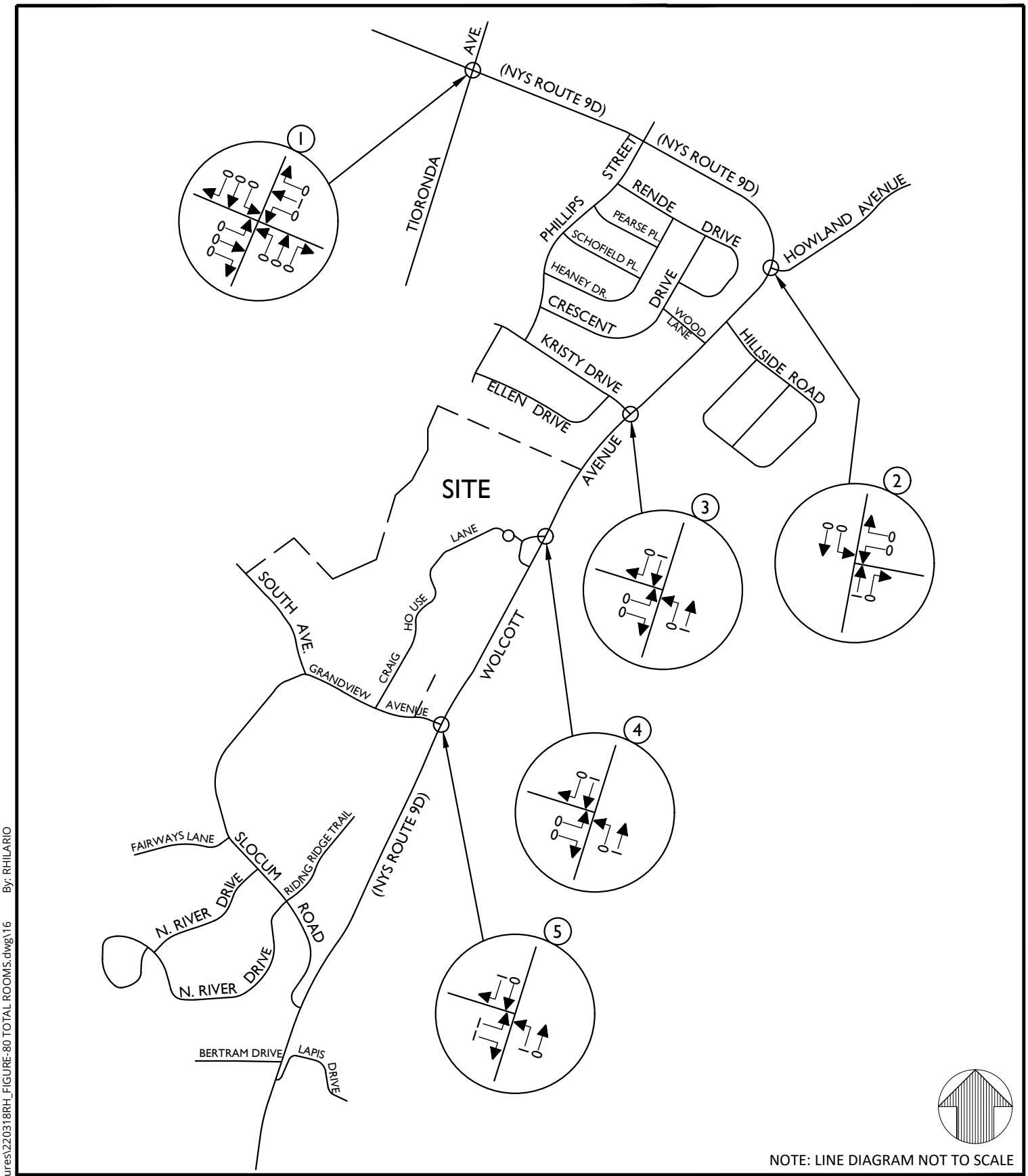
PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
WEEKEND PEAK SAT HOUR
(MIRBEAU SPA)

SHEET NUMBER: 15

1182

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\15 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

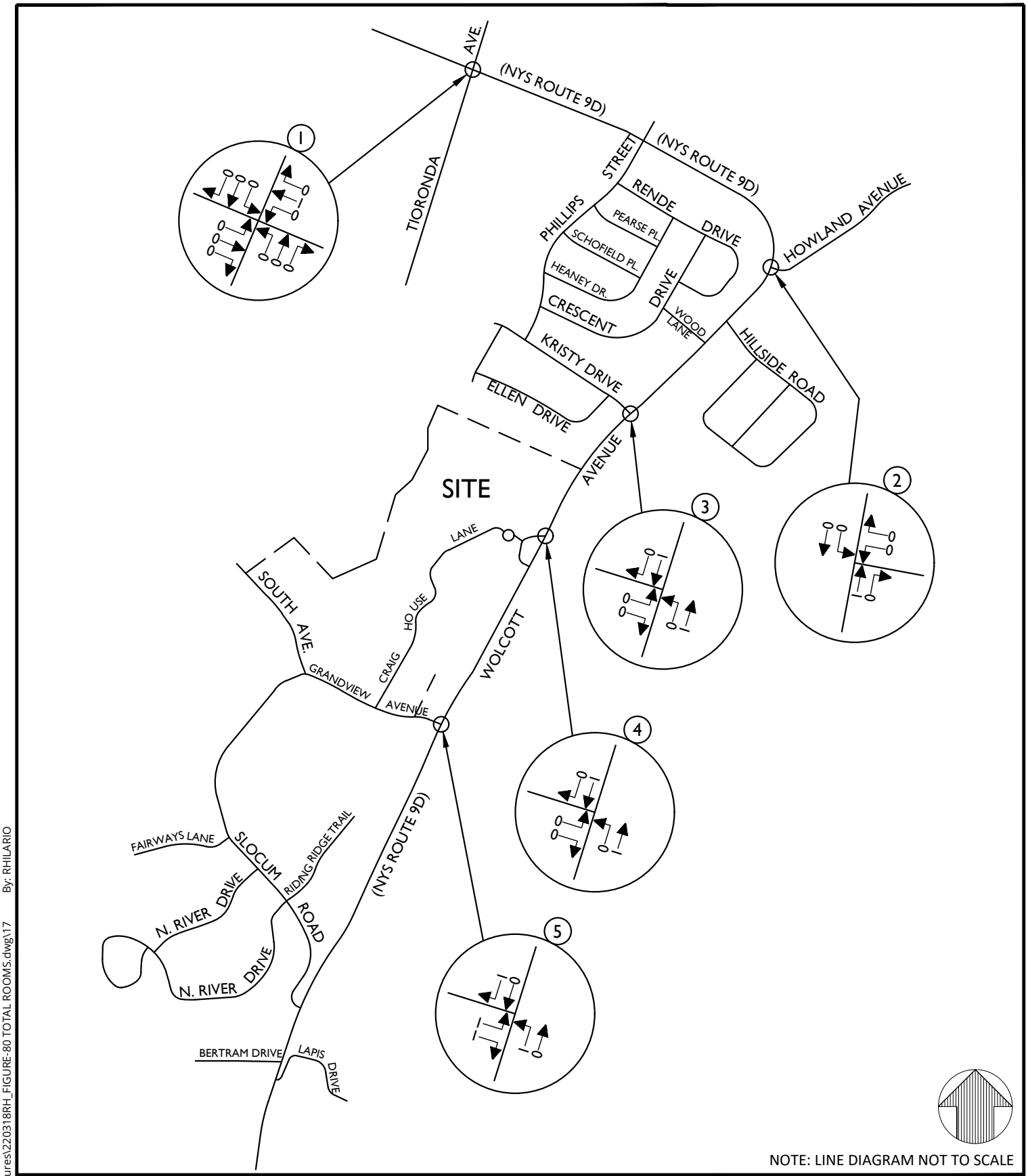
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR
(RETAIL STORE)

SHEET NUMBER: 16

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\16 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

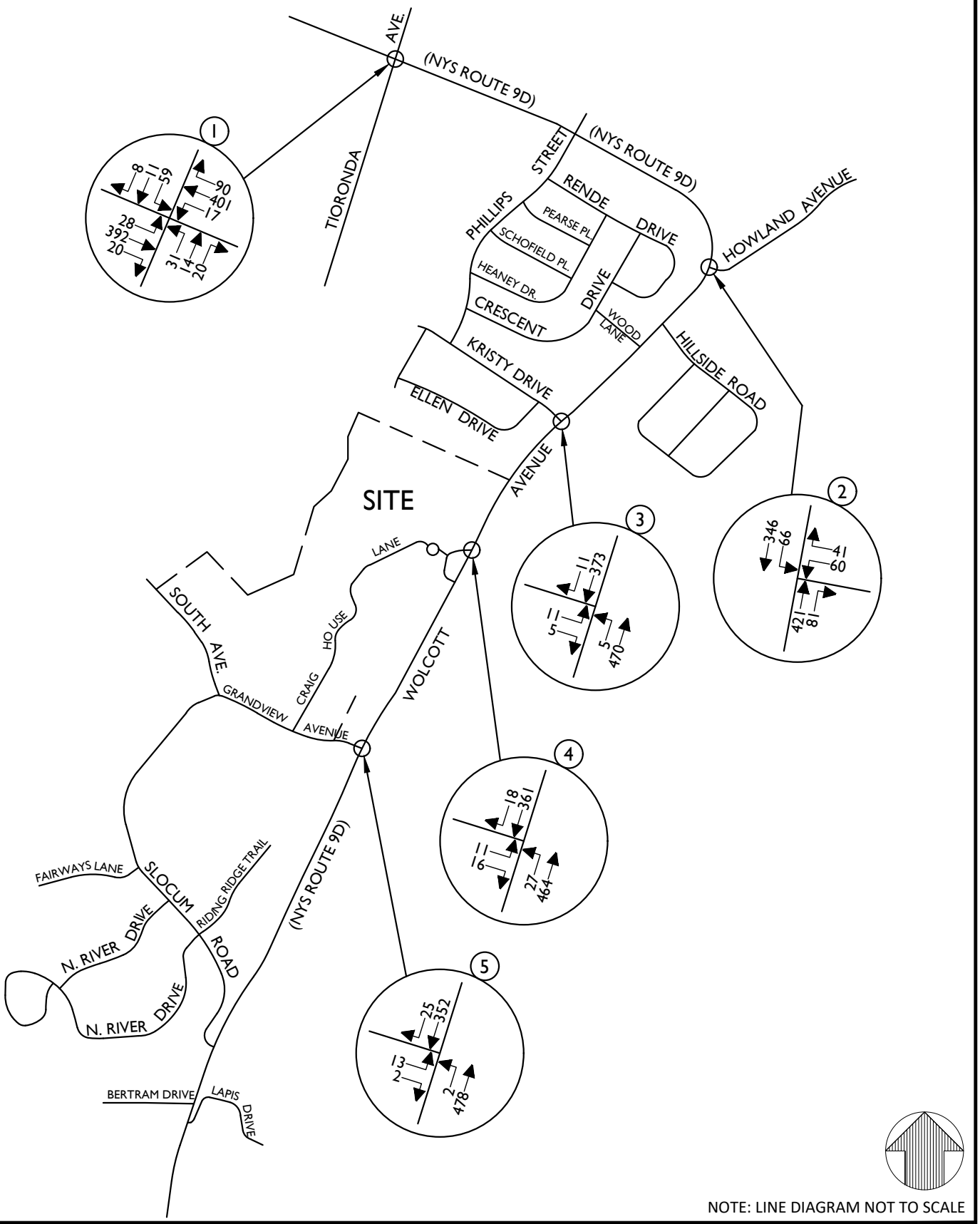
PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
WEEKEND PEAK SAT HOUR
(RETAIL STORE)

SHEET NUMBER: 17

1184

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\17 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

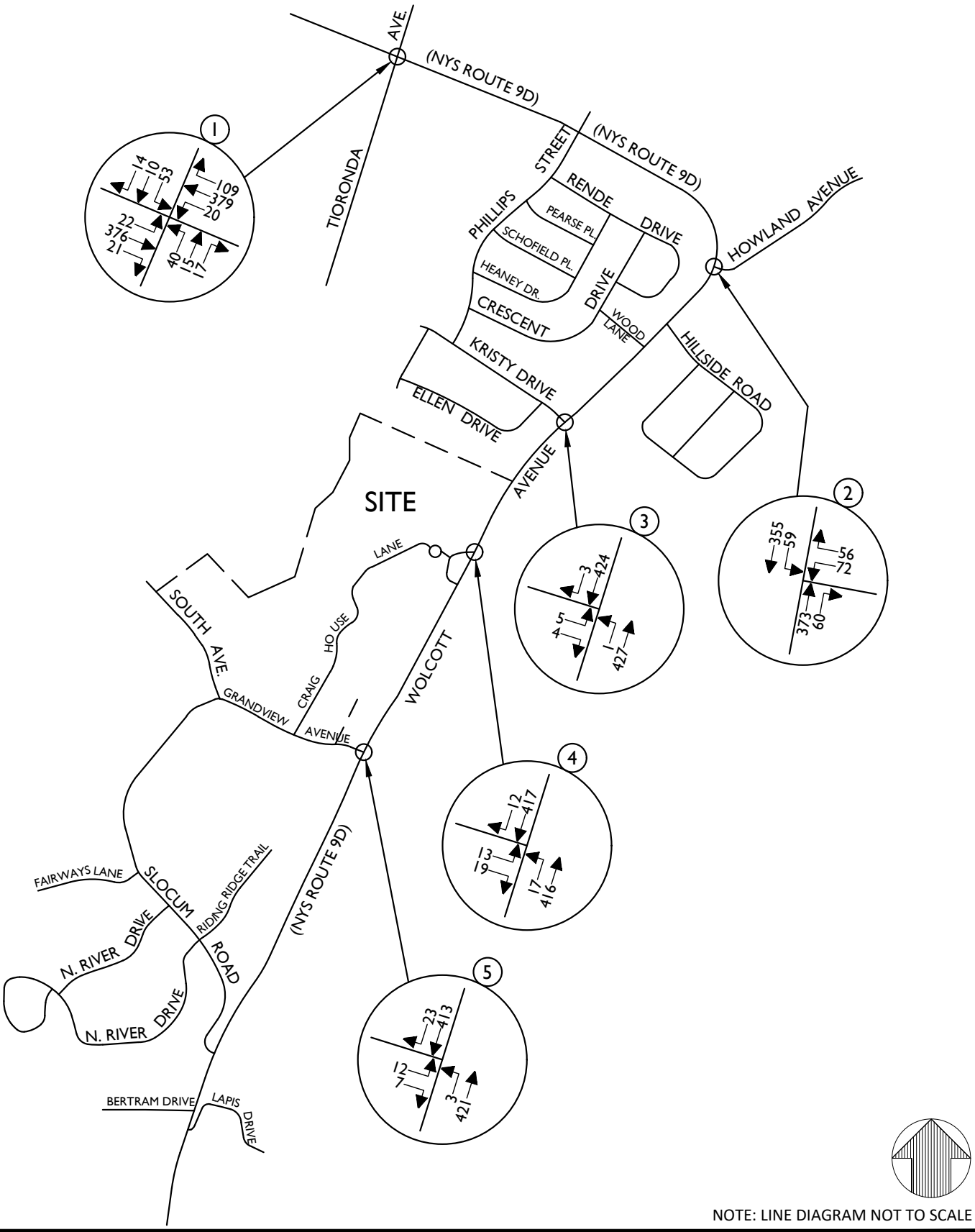
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2025 BUILD TRAFFIC VOLUMES
WEEKDAY PEAK FRIDAY PM HOUR

SHEET NUMBER: 18

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\18 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

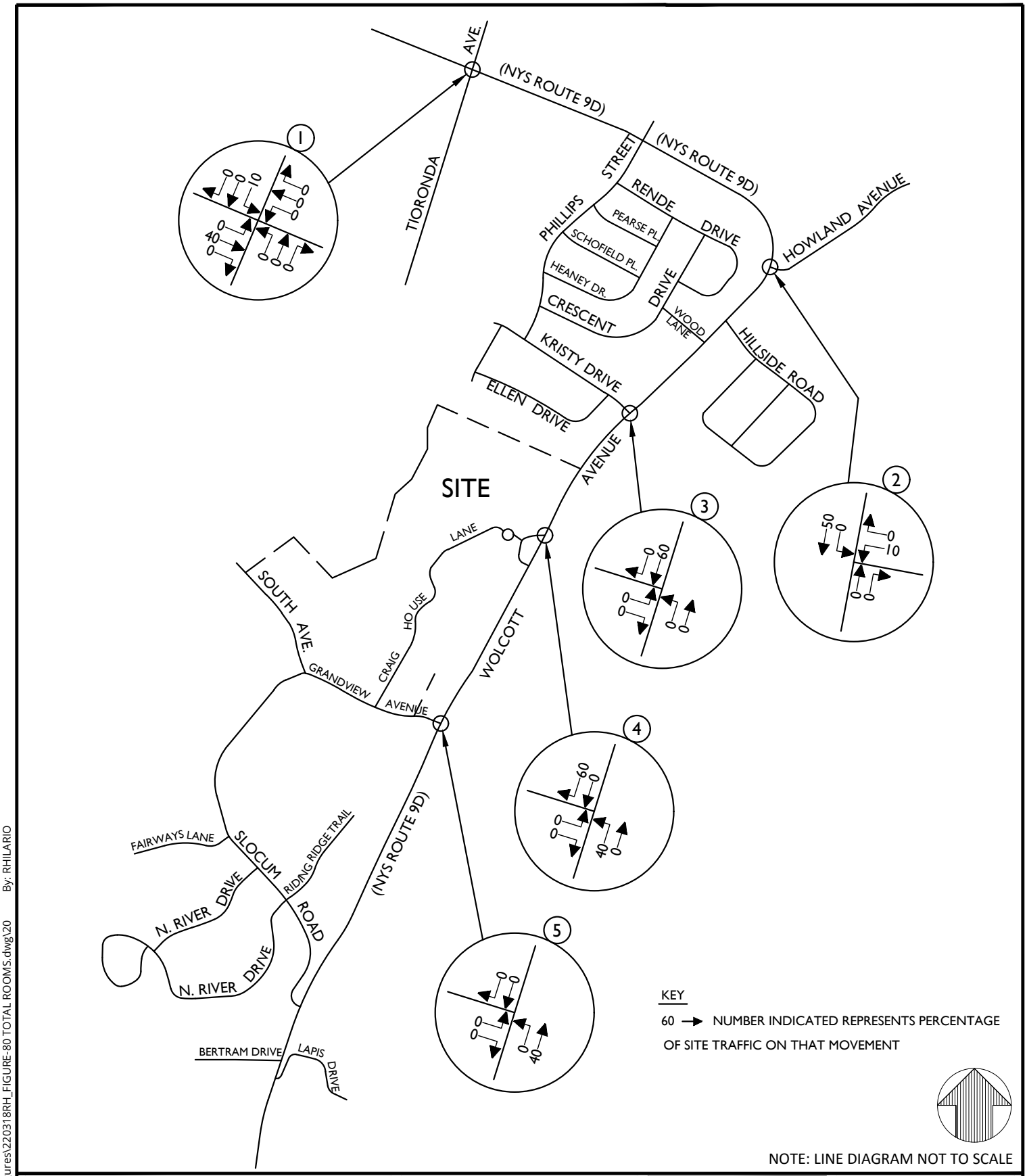
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2025 BUILD TRAFFIC VOLUMES
WEEKEND PEAK SATURDAY HOUR

SHEET NUMBER: 19

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\19 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING
ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

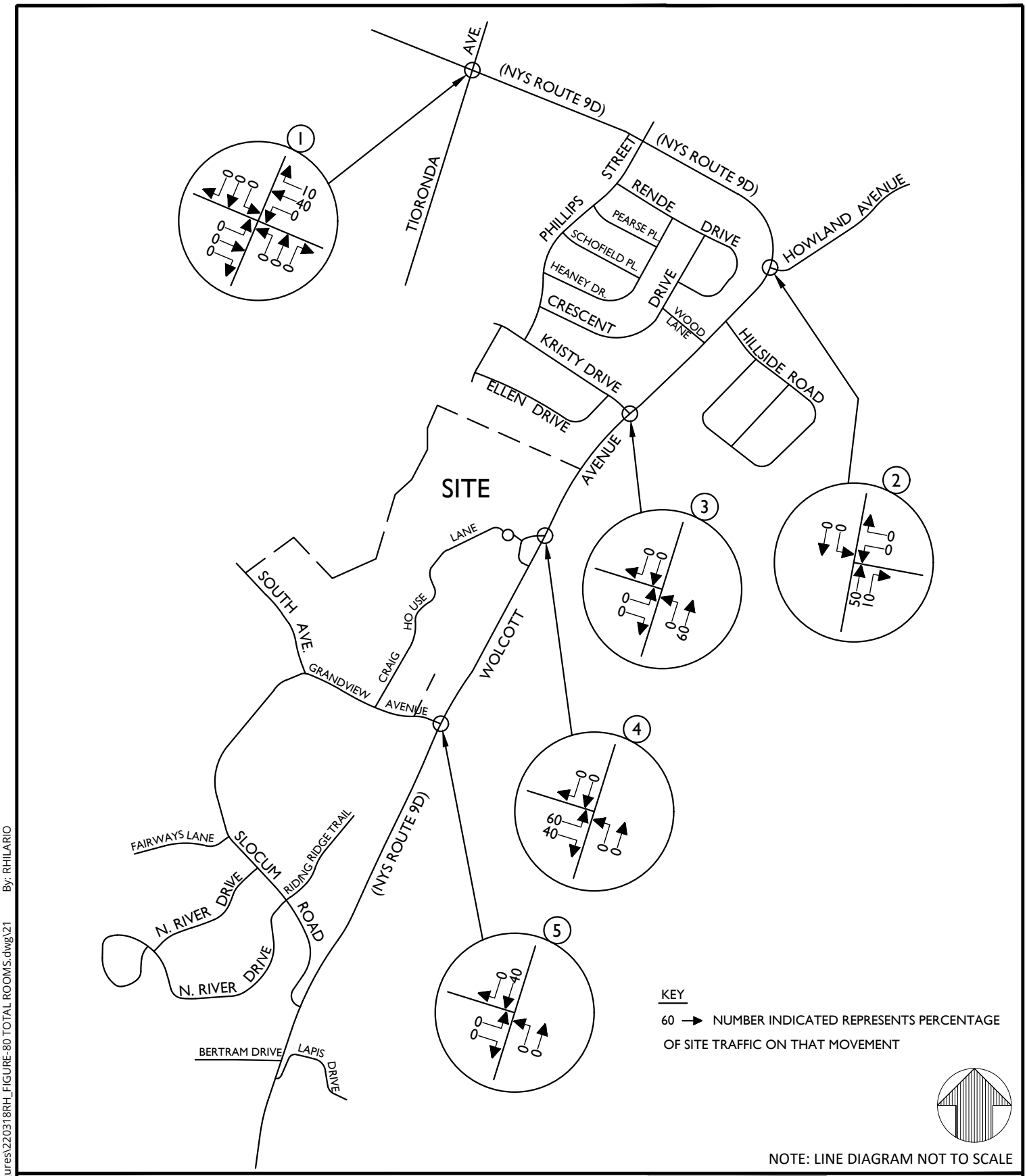
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
ARRIVAL DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)
(EVENT CONDITIONS)

SHEET NUMBER:
20

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\20 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

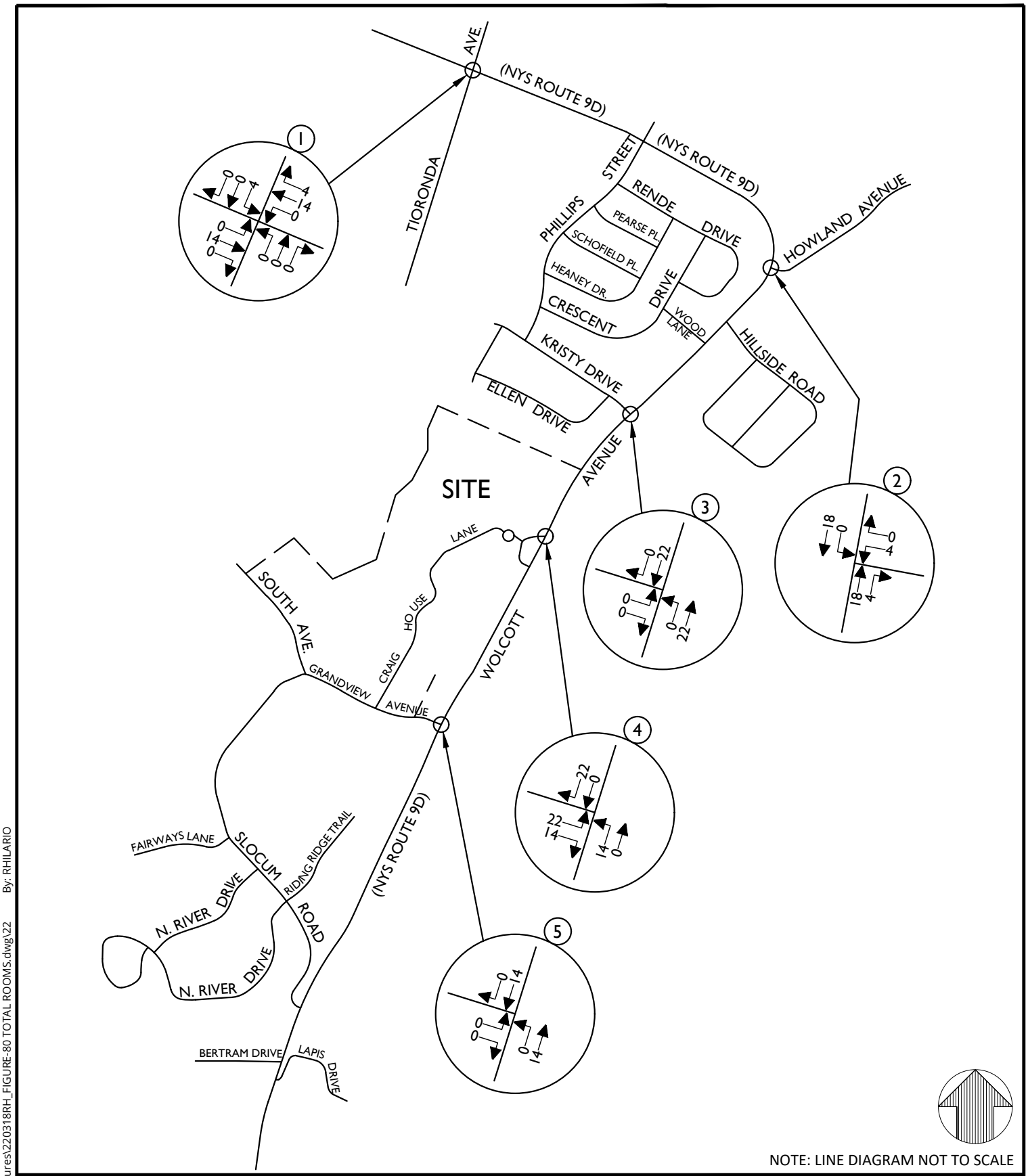
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
DEPARTURE DISTRIBUTION
(ALL VALUES ARE EXPRESSED AS %)
(EVENT CONDITIONS)

SHEET NUMBER: 21

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\21 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

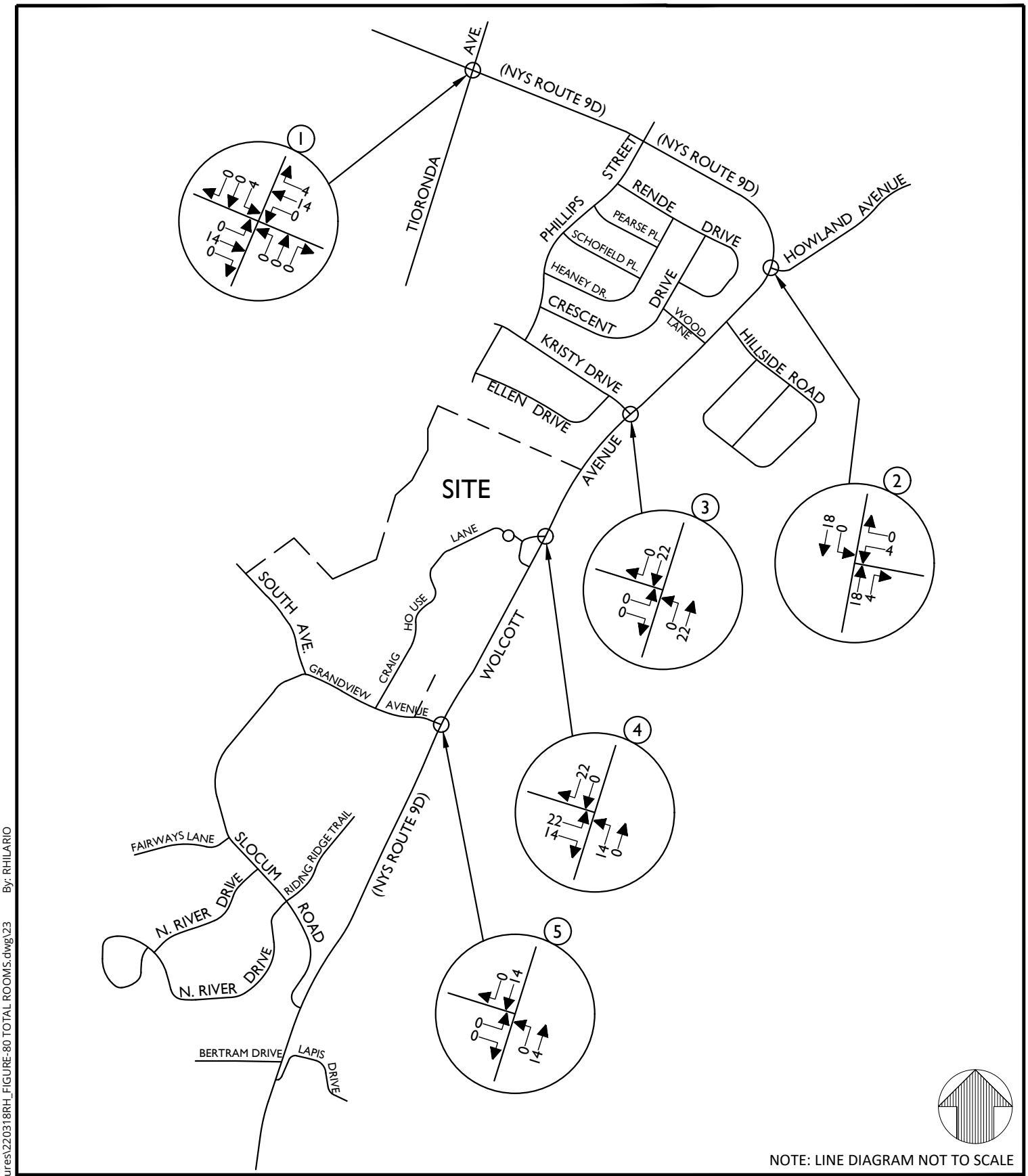
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK AM HOUR
(EVENT CONDITIONS)

SHEET NUMBER: 22

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\22 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

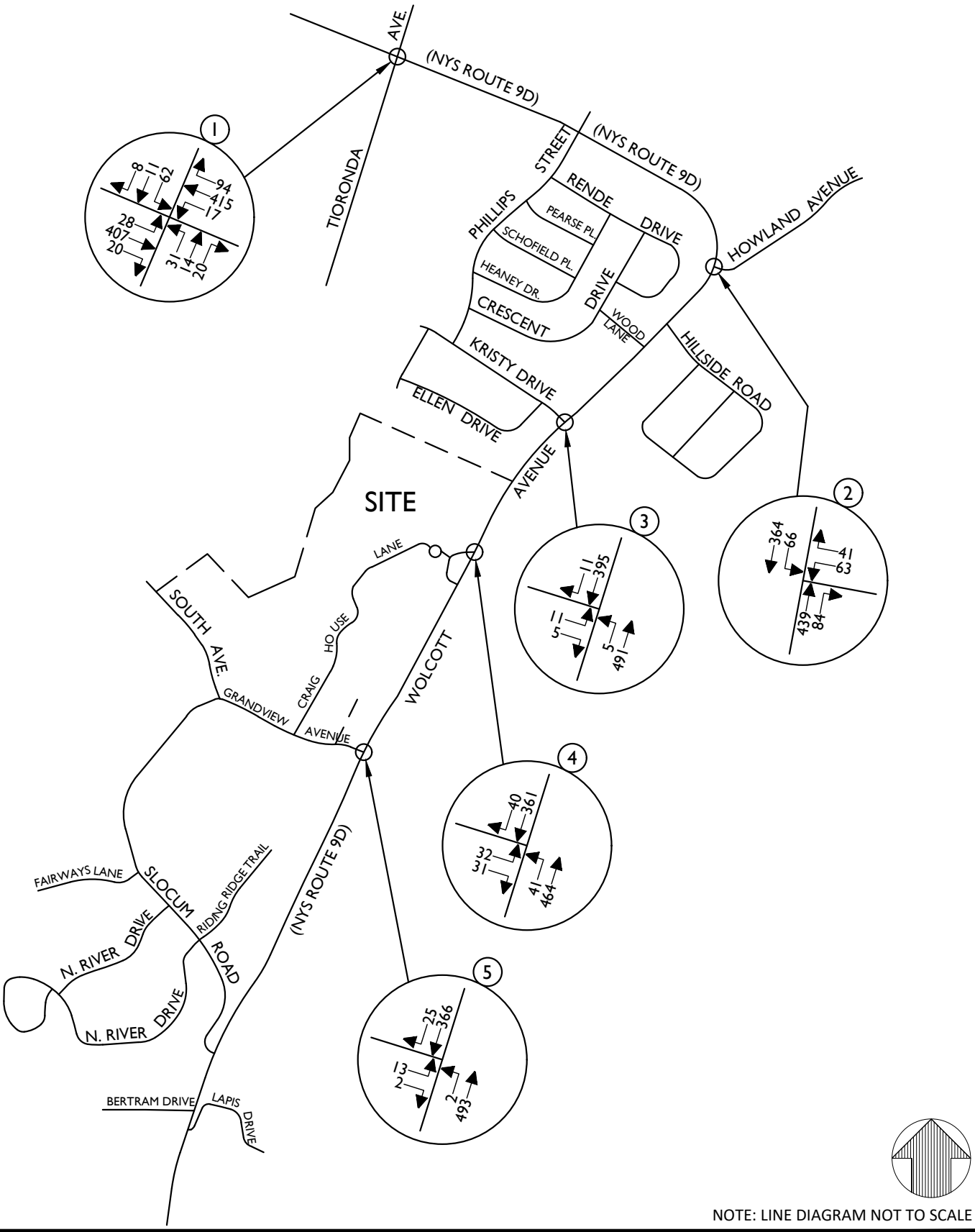
PROJECT NUMBER:	DRAWING NAME:
21007271A	220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
SITE GENERATED TRAFFIC VOLUMES
WEEKDAY PEAK PM HOUR
(EVENT CONDITIONS)

SHEET NUMBER: 23

1190

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\23 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

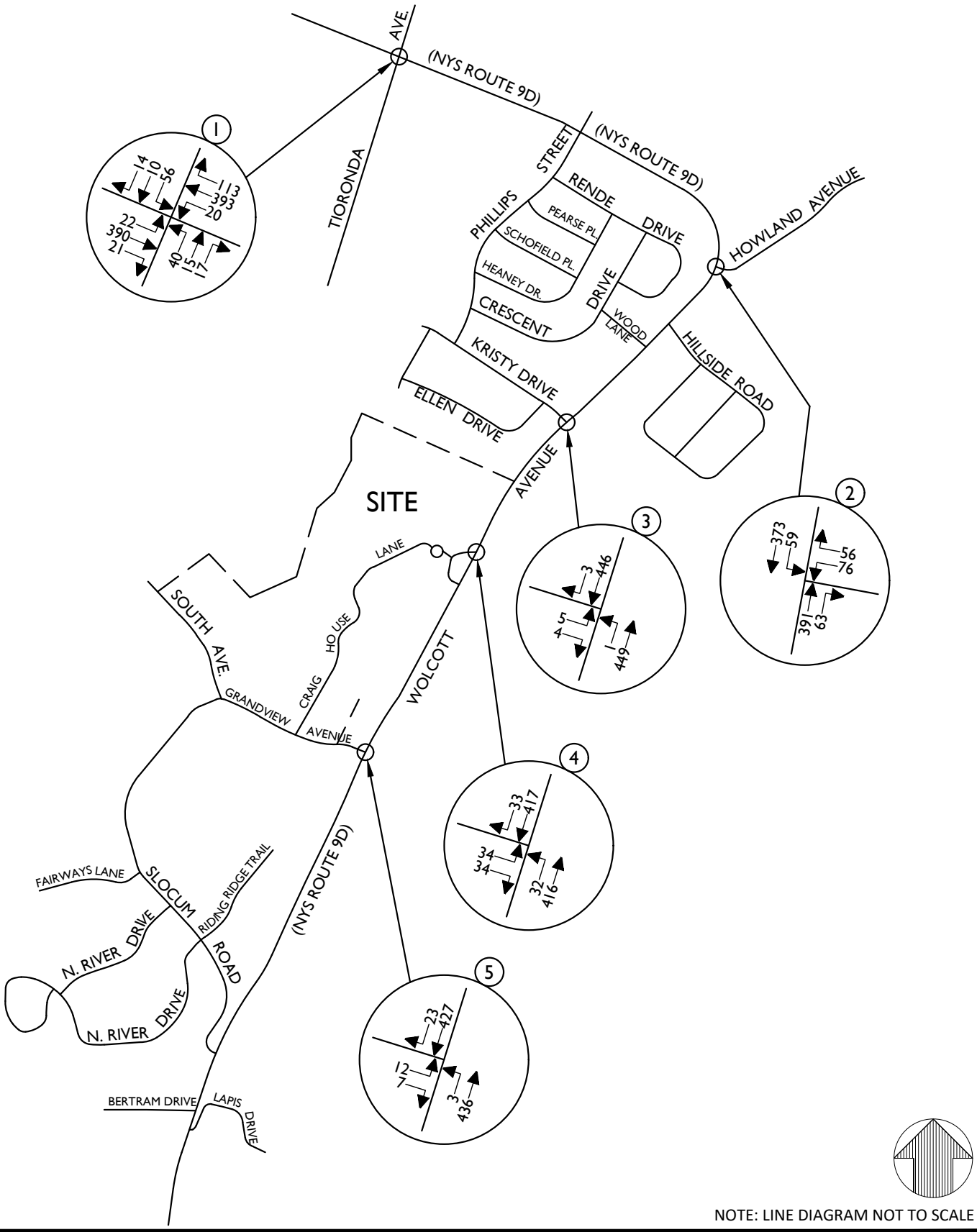
SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE: 2025 BUILD TRAFFIC VOLUMES WEEKDAY PEAK FRIDAY PM HOUR (EVENT CONDITIONS)

SHEET NUMBER: 24

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\24 By: RHILARIO



NOTE: LINE DIAGRAM NOT TO SCALE

Colliers Engineering & Design

www.colliersengineering.com

Doing Business as MASER CONSULTING

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

MIRBEAU SPA

NYS ROUTE 9D
CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue, Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING ENGINEERING & LAND SURVEYING

TRAFFIC IMPACT STUDY

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	3/18/22	R.H.	P.J.G.

PROJECT NUMBER: 21007271A
DRAWING NAME: 220318RH_FIGURE-80 TOTAL ROOMS

SHEET TITLE:
2025 BUILD TRAFFIC VOLUMES
WEEKEND PEAK SATURDAY HOUR
(EVENT CONDITIONS)

SHEET NUMBER: 25

7271A-Mirbeau Spa\Reports\Traffic\Figures\220318RH_FIGURE-80 TOTAL ROOMS.dwg\25 By: RHILARIO

225'
MEDIAN TAPER

86'
LEFT TURN LANE TAPER

100'
LEFT TURN LANE

225'
MEDIAN TAPER

SITE ACCESS

STOP
R1-1
(30" X 30")

NYS ROUTE 9D

PROPERTY LINE

R=25'

R=25'

W2-2
(30" X 30")

W2-2
(30" X 30")

WIDEN ROADWAY TO CONSTRUCT
100' LEFT TURN LANE

LEFT LANE
MUST
TURN LEFT
R3-7
(30" X 30")

LEFT LANE
MUST
TURN LEFT
R3-7
(30" X 30")

30 0 30 60
SCALE : 1" = 30'

N

Colliers
Engineering & Design

www.colliersengineering.com

Copyright © 2022. Colliers Engineering & Design All Rights Reserved. This drawing and all the information contained herein is authorized for use only by the party for whom the services were contracted or to whom it is certified. This drawing may not be copied, reused, disclosed, distributed or relied upon for any other purpose without the express written consent of Colliers Engineering & Design.

Doing Business as MASER CONSULTING

811 PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION

PRELIMINARY

PRELIMINARY CONCEPTUAL ROADWAY IMPROVEMENT PLAN
FOR
MIRBEAU BEACON

WOLCOTT AVENUE
(NYS ROUTE 9D)

CITY OF BEACON
DUTCHESS COUNTY
NEW YORK

Colliers Engineering & Design
WESTCHESTER
400 Columbus Avenue,
Suite 180E
Valhalla, NY 10595
Phone: 914.347.7500
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING
ENGINEERING & LAND SURVEYING

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	03/24/22	J.F.M.	R.G.D.

PROJECT NUMBER:	DRAWING NAME:
21007271A	R-CNPT-WDNG-WEST

SHEET TITLE:
LEFT TURN LANE
CONCEPT PLAN

SHEET NUMBER:
CP-1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

2021\21007271A\Transportation\Concept\Concept Plans\Relocated Site Access\R-CNPT-WDNG-WEST.dwg\R-CNPT-ALT By: RDANDREA

Colliers Engineering & Design

Traffic Impact Study

Appendix B | Tables

Table No. 1
Mirbeau Inn & Spa Rhinebeck Traffic Generation Summary

Time		Entry		Exit		Total
		HTGR	Volume	HTGR	Volume	
Friday December 3, 2021						
6:00 AM	7:00 AM	0.12	6	0.00	0	6
7:00 AM	8:00 AM	0.18	9	0.04	2	11
8:00 AM	9:00 AM	0.48	24	0.08	4	28
9:00 AM	10:00 AM	0.44	22	0.06	3	25
10:00 AM	11:00 AM	0.40	20	0.28	14	34
11:00 AM	12:00 PM	0.44	22	0.26	13	35
12:00 PM	1:00 PM	0.28	14	0.18	9	23
1:00 PM	2:00 PM	0.56	28	0.34	17	45
2:00 PM	3:00 PM	0.38	19	0.24	12	31
3:00 PM	4:00 PM	0.46	23	0.40	20	43
4:00 PM	5:00 PM	0.28	14	0.24	12	26
5:00 PM	6:00 PM	0.38	19	0.22	11	30
6:00 PM	7:00 PM	0.20	10	0.22	11	21
7:00 PM	8:00 PM	0.22	11	0.08	4	15
Saturday December 4, 2021						
6:00 AM	7:00 AM	0.08	4	0.02	1	5
7:00 AM	8:00 AM	0.16	8	0.08	4	12
8:00 AM	9:00 AM	0.22	11	0.12	6	17
9:00 AM	10:00 AM	0.24	12	0.12	6	18
10:00 AM	11:00 AM	0.16	8	0.16	8	16
11:00 AM	12:00 PM	0.30	15	0.24	12	27
12:00 PM	1:00 PM	0.42	21	0.26	13	34
1:00 PM	2:00 PM	0.36	18	0.24	12	30
2:00 PM	3:00 PM	0.26	13	0.26	13	26
3:00 PM	4:00 PM	0.30	15	0.40	20	35
4:00 PM	5:00 PM	0.36	18	0.40	20	38
5:00 PM	6:00 PM	0.00	0	0.04	2	2
6:00 PM	7:00 PM	0.00	0	0.00	0	0
7:00 PM	8:00 PM	0.08	4	0.24	12	16

Table No. 1
Mirbeau Inn & Spa Rhinebeck Traffic Generation Summary

Time		Entry		Exit		Total
		HTGR	Volume	HTGR	Volume	
Sunday December 5, 2021						
6:00 AM	7:00 AM	0.10	5	0.00	0	5
7:00 AM	8:00 AM	0.14	7	0.08	4	11
8:00 AM	9:00 AM	0.22	11	0.08	4	15
9:00 AM	10:00 AM	0.28	14	0.14	7	21
10:00 AM	11:00 AM	0.40	20	0.34	17	37
11:00 AM	12:00 PM	0.38	19	0.52	26	45
12:00 PM	1:00 PM	0.22	11	0.26	13	24
1:00 PM	2:00 PM	0.30	15	0.48	24	39
2:00 PM	3:00 PM	0.34	17	0.34	17	34
3:00 PM	4:00 PM	0.42	21	0.40	20	41
4:00 PM	5:00 PM	0.26	13	0.36	18	31
5:00 PM	6:00 PM	0.10	5	0.22	11	16
6:00 PM	7:00 PM	0.16	8	0.12	6	14
7:00 PM	8:00 PM	0.12	6	0.28	14	20
Monday December 6, 2021						
6:00 AM	7:00 AM	0.10	5	0.00	0	5
7:00 AM	8:00 AM	0.20	10	0.08	4	14
8:00 AM	9:00 AM	0.46	23	0.08	4	27
9:00 AM	10:00 AM	0.60	30	0.14	7	37
10:00 AM	11:00 AM	0.42	21	0.34	17	38
11:00 AM	12:00 PM	0.44	22	0.52	26	48
12:00 PM	1:00 PM	0.42	21	0.26	13	34
1:00 PM	2:00 PM	0.20	10	0.48	24	34
2:00 PM	3:00 PM	0.38	19	0.34	17	36
3:00 PM	4:00 PM	0.36	18	0.40	20	38
4:00 PM	5:00 PM	0.22	11	0.36	18	29
5:00 PM	6:00 PM	0.22	11	0.22	11	22
6:00 PM	7:00 PM	0.32	16	0.12	6	22
7:00 PM	8:00 PM	0.20	10	0.28	14	24

Table No. 1E

Hourly Trip Generation Rates (HTGR) and Site Generated Traffic Volumes Comparison

Mirbeau Rhinebeck Inn & Spa

Mirbeau Rhinebeck	Entry		Exit		Total
	HTGR[1]	Volume	HTGR[1]	Volume	
ITE 310 - Hotel (50 Rooms)					
Peak AM Hour	0.26	13	0.20	10	23
Peak AM Hour Generator	0.34	17	0.32	16	33
Peak PM Hour	0.30	15	0.30	15	30
Peak PM Hour Generator	0.36	18	0.26	13	31
Satuday Peak Hour Generator	0.44	22	0.36	18	40
Sunday Peak Hour Generator	0.26	13	0.30	15	28
ITE 310 - Hotel (50 Occupied Rooms)					
Peak AM Hour	0.42	21	0.32	16	37
Peak AM Hour Generator	0.40	20	0.36	18	38
Peak PM Hour	0.36	18	0.38	19	37
Peak PM Hour Generator	0.56	28	0.42	21	49
Saturday Peak Hour	0.36	18	0.44	22	40
Sunday Peak Hour Generator	0.38	19	0.32	16	35
Mirbeau Rhinebeck (50 Rooms)					
Peak AM Hour	0.60	30	0.14	7	37
Peak AM Hour Generator	0.44	22	0.52	26	48
Peak PM Hour	0.38	19	0.22	11	30
Peak PM Hour Generator	0.56	28	0.34	17	45
Saturday Peak Hour	0.36	18	0.40	20	38
Sunday Peak Hour Generator	0.38	19	0.52	26	45

NOTES:

1) THE HOURLY TRIP GENERATION RATES (HTGR) ARE BASED ON DATA PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) AS CONTAINED IN THE TRIP GENERATION HANDBOOK, 11TH EDITION, 2021. ITE LAND USE CODE - 310 - HOTEL.

Table No. 1P
Hourly Trip Generation Rates (HTGR) and Site Generated Traffic Volumes Comapison
Proposed Mirbeau Beacon

Mirbeau Beacon	Entry		Exit		Total
	HTGR[1]	Volume	HTGR[1]	Volume	
ITE 310 - Hotel (80 Rooms)					
Peak AM Hour	0.26	21	0.20	16	37
Peak AM Hour Generator	0.33	26	0.29	23	49
Peak PM Hour	0.30	24	0.29	23	47
Peak PM Hour Generator	0.35	28	0.26	21	49
Satuday Peak Hour Generator	0.43	34	0.34	27	61
Sunday Peak Hour Generator	0.28	22	0.30	24	46
ITE 310 - Hotel (80 Occupied Rooms)					
Peak AM Hour	0.39	31	0.31	25	56
Peak AM Hour Generator	0.39	31	0.34	27	58
Peak PM Hour	0.35	28	0.38	30	58
Peak PM Hour Generator	0.51	41	0.39	31	72
Saturday Peak Hour	0.35	28	0.44	35	63
Sunday Peak Hour Generator	0.38	30	0.33	26	56
Mirbeau Rhinebeck (80 Rooms)					
Peak AM Hour	0.60	48	0.14	11	59
Peak AM Hour Generator	0.44	35	0.52	42	77
Peak PM Hour	0.38	30	0.22	18	48
Peak PM Hour Generator	0.56	45	0.34	27	72
Saturday Peak Hour	0.36	29	0.40	32	61
Sunday Peak Hour Generator	0.38	30	0.52	42	72

NOTES:

1) THE HOURLY TRIP GENERATION RATES (HTGR) ARE BASED ON DATA PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) AS CONTAINED IN THE TRIP GENERATION HANDBOOK, 11TH EDITION, 2021. ITE LAND USE CODE - 310 - HOTEL.

Table No. 2
Hourly Trip Generation Rates (HTGR) and Analyzed Site Generated Traffic Volumes
Proposed Mirbeau Beacon

Mirbeau Beacon	Entry		Exit		Total
	HTGR[1]	Volume	HTGR[1]	Volume	
Mirbeau Beacon (80 Hotel Rooms)					
Peak PM Hour Generator	0.56	45	0.34	27	72
Saturday Peak Hour	0.36	29	0.40	32	61
Retail Store (500 S.F.)					
Peak PM Hour Generator	2.00	1	4.00	2	3
Saturday Peak Hour	2.00	1	4.00	2	3
Total					
Peak PM Hour Generator	-	46	-	29	75
Saturday Peak Hour	-	30	-	34	64
Events (100 Attendees)					
Peak PM Hour Generator	-	36	-	36	72
Saturday Peak Hour	-	36	-	36	72
Total With Events					
Peak PM Hour Generator	-	82	-	65	147
Saturday Peak Hour	-	66	-	70	136

NOTES:

1) THE HOURLY TRIP GENERATION RATES (HTGR) ARE BASED ON DATA PUBLISHED BY THE INSTITUTE OF TRANSPORTATION ENGINEERS (ITE) AS CONTAINED IN THE TRIP GENERATION HANDBOOK, 11TH EDITION, 2021. ITE LAND USE CODE - 310 - HOTEL.

Table No. 3
Level of Service Summary Table
Weekday Peak Friday PM Hour

				2021 Existing			2025 No-Build			2025 Build			Change in Delay
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	No-Build to Build
1	**NYS Route 9D & Tioronda Avenue**	**Signalized**											
	NYS Route 9D	EB	LTR	0.31	A	3.4	0.35	A	3.8	0.36	A	3.8	0.0
	NYS Route 9D	WB	LTR	0.49	A	5.0	0.55	A	5.9	0.56	A	6.0	0.1
	Tioronda Avenue	NB	LTR	0.14	C	20.9	0.30	C	21.3	0.29	C	21.3	0.0
	Tioronda Avenue	SB	LTR	0.29	C	21.5	0.30	C	21.4	0.32	C	21.4	0.0
		Overall		**-**	**A**	**6.0**	**-**	**A**	**7.0**	**-**	**A**	**7.1**	**0.1**
2	**NYS Route 9D & Howland Avenue**	**Unsignalized**											
	Howland Avenue	WB	LR	0.21	B	14.7	0.25	C	16.2	0.27	C	17.0	0.8
	NYS Route 9D	SB	LT	0.06	A	8.6	0.07	A	8.8	0.07	A	8.9	0.1
3	**NYS Route 9D & Kristy Drive**	**Unsignalized**											
	Kristy Drive	SEB	LR	0.06	C	19.5	0.08	C	22.7	0.09	C	23.8	1.1
	NYS Route 9D	NEB	LT	0.01	A	8.0	0.01	A	8.2	0.01	A	8.2	0.0
4	**NYS Route 9D & Site Access (South)**	**Unsignalized**											
	Site Access (South)	EB	LR	-	-	-	-	-	-	0.08	C	15	-
	NYS Route 9D	NB	LT	-	-	-	-	-	-	0.03	A	8.2	-
5	**NYS Route 9D & Grandview Avenue**	**Unsignalized**											
	Site Access	EB	LR	0.05	C	18.3	0.06	C	20.8	0.07	C	21.7	0.9
	NYS Route 9D	NB	LT	0.00	A	8.0	0.00	A	8.1	0.00	A	8.1	0.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

Table No. 3
Level of Service Summary Table
Weekend Peak Saturday Hour

				2021 Existing			2025 No-Build			2025 Build			Change in Delay
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	No-Build to Build
1	**NYS Route 9D & Tioronda Avenue**	**Signalized**											
	NYS Route 9D	EB	LTR	0.25	A	3.1	0.29	A	3.4	0.30	A	3.4	0.0
	NYS Route 9D	WB	LTR	0.43	A	4.4	0.48	A	5.1	0.49	A	5.2	0.1
	Tioronda Avenue	NB	LTR	0.16	C	21.0	0.29	C	21.4	0.29	C	21.4	0.0
	Tioronda Avenue	SB	LTR	0.27	C	21.5	0.28	C	21.3	0.29	C	21.4	0.1
		Overall		**-**	**A**	**5.7**	**-**	**A**	**6.6**	**-**	**A**	**6.7**	**0.1**
2	**NYS Route 9D & Howland Avenue**	**Unsignalized**											
	Howland Avenue	WB	LR	0.26	B	14.7	0.32	C	17.1	0.34	C	17.7	0.6
	NYS Route 9D	SB	LT	0.04	A	8.4	0.06	A	8.7	0.06	A	8.7	0.0
3	**NYS Route 9D & Kristy Drive**	**Unsignalized**											
	Kristy Drive	SEB	LR	0.04	C	18.3	0.04	C	20.9	0.05	C	21.7	0.8
	NYS Route 9D	NEB	LT	0.00	A	8.2	0.00	A	8.3	0.00	A	8.4	0.1
4	**NYS Route 9D & Site Access (South)**	**Unsignalized**											
	Site Access (South)	EB	LR	-	-	-	-	-	-	0.10	C	15.7	-
	NYS Route 9D	NB	LT	-	-	-	-	-	-	0.02	A	8.4	-
5	**NYS Route 9D & Grandview Avenue**	**Unsignalized**											
	Site Access	EB	LR	0.05	C	16.4	0.07	C	18.7	0.08	C	19.6	0.9
	NYS Route 9D	NB	LT	0.00	A	8.1	0.00	A	8.3	0.00	A	8.3	0.0

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

Table No. 3E
Level of Service Summary Table
Weekday Peak Friday PM Hour
Event Conditions

				2021 Existing			2025 No-Build			2025 Build (Event Conditions)			Change in Delay
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	No-Build to Build
1	**NYS Route 9D & Tioronda Avenue**	**Signalized**											
	NYS Route 9D	EB	LTR	0.31	A	3.4	0.35	A	3.8	0.37	A	3.9	0.1
	NYS Route 9D	WB	LTR	0.49	A	5.0	0.55	A	5.9	0.58	A	6.3	0.4
	Tioronda Avenue	NB	LTR	0.14	C	20.9	0.30	C	21.3	0.29	C	21.3	0.0
	Tioronda Avenue	SB	LTR	0.29	C	21.5	0.30	C	21.4	0.34	C	21.5	0.1
		Overall		**-**	**A**	**6.0**	**-**	**A**	**7.0**	**-**	**A**	**7.3**	**0.3**
2	**NYS Route 9D & Howland Avenue**	**Unsignalized**											
	Howland Avenue	WB	LR	0.21	B	14.7	0.25	C	16.2	0.22	C	16.1	-0.1
	NYS Route 9D	SB	LT	0.06	A	8.6	0.07	A	8.8	0.07	A	8.9	0.1
3	**NYS Route 9D & Kristy Drive**	**Unsignalized**											
	Kristy Drive	SEB	LR	0.06	C	19.5	0.08	C	22.7	0.09	D	25.8	3.1
	NYS Route 9D	NEB	LT	0.01	A	8.0	0.01	A	8.2	0.01	A	8.3	0.1
4	**NYS Route 9D & Site Access (South)**	**Unsignalized**											
	Site Access (South)	EB	LR	-	-	-	-	-	-	0.21	C	18.6	-
	NYS Route 9D	NB	LT	-	-	-	-	-	-	0.04	A	8.4	-
5	**NYS Route 9D & Grandview Avenue**	**Unsignalized**											
	Site Access	EB	LR	0.05	C	18.3	0.06	C	20.8	0.07	C	22.7	1.9
	NYS Route 9D	NB	LT	0.00	A	8.0	0.00	A	8.1	0.00	A	8.2	0.1

NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

Table No. 3E
Level of Service Summary Table
Weekend Peak Saturday Hour
Event Conditions

				2021 Existing			2025 No-Build			2025 Build (Event Conditions)			Change in Delay
				v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	No-Build to Build
1	**NYS Route 9D & Tioronda Avenue**	**Signalized**											
	NYS Route 9D	EB	LTR	0.25	A	3.1	0.29	A	3.4	0.31	A	3.5	0.1
	NYS Route 9D	WB	LTR	0.43	A	4.4	0.48	A	5.1	0.51	A	5.4	0.3
	Tioronda Avenue	NB	LTR	0.16	C	21.0	0.29	C	21.4	0.29	C	21.4	0.0
	Tioronda Avenue	SB	LTR	0.27	C	21.5	0.28	C	21.3	0.30	C	21.4	0.1
		Overall		**-**	**A**	**5.7**	**-**	**A**	**6.6**	**-**	**A**	**6.8**	**0.2**
2	**NYS Route 9D & Howland Avenue**	**Unsignalized**											
	Howland Avenue	WB	LR	0.26	B	14.7	0.32	C	17.1	0.36	C	18.9	1.8
	NYS Route 9D	SB	LT	0.04	A	8.4	0.06	A	8.7	0.07	A	8.8	0.1
3	**NYS Route 9D & Kristy Drive**	**Unsignalized**											
	Kristy Drive	SEB	LR	0.04	C	18.3	0.04	C	20.9	0.05	C	23.3	2.4
	NYS Route 9D	NEB	LT	0.00	A	8.2	0.00	A	8.3	0.00	A	8.5	0.2
4	**NYS Route 9D & Site Access (South)**	**Unsignalized**											
	Site Access (South)	EB	LR	-	-	-	-	-	-	0.24	C	19.7	-
	NYS Route 9D	NB	LT	-	-	-	-	-	-	0.04	A	8.6	-
5	**NYS Route 9D & Grandview Avenue**	**Unsignalized**											
	Site Access	EB	LR	0.05	C	16.4	0.07	C	18.7	0.08	C	20.4	1.7
	NYS Route 9D	NB	LT	0.00	A	8.1	0.00	A	8.3	0.00	A	8.4	0.1

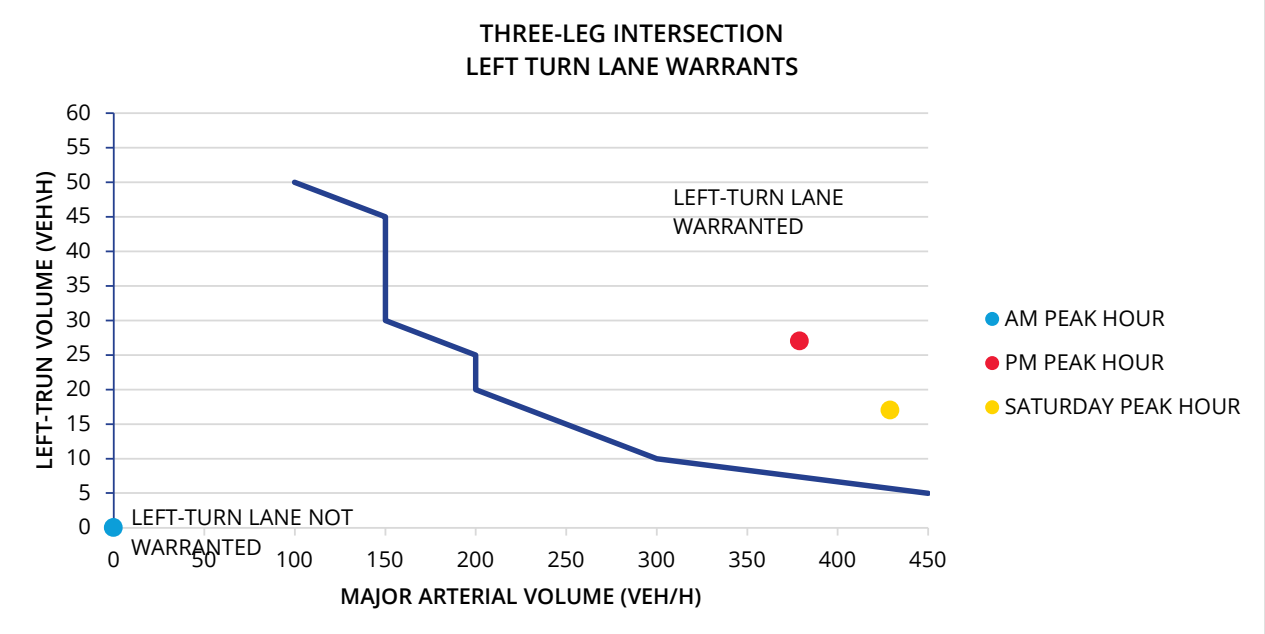
NOTES:

1) THE ABOVE REPRESENTS THE LEVEL OF SERVICE AND VEHICLE DELAY IN SECONDS, C [16.2], FOR EACH KEY APPROACH OF THE UNSIGNALIZED INTERSECTIONS AS WELL AS FOR EACH APPROACH AND THE OVERALL INTERSECTION FOR THE SIGNALIZED INTERSECTIONS. SEE APPENDIX "C" FOR A DESCRIPTION OF THE LEVELS OF SERVICE.

TABLE NO. 4
LEFT TURN LANE WARRANTS ANALYSIS
URBAN ARTERIALS
WOLCOTT ANENUE (NYS ROUTE 9D) AT SITE ACCESS

AASHTO LEFT TURN LANE WARRANT CRITERIA		
LEFT-TURN LANE PEAK HOUR VOLUME (VEH/H)	THREE-LEG INTERSECTION, MAJOR-ROAD VOLUME (VEH/H/LN) THAT WARRANTS A LEFT TURN LANE	FOUR-LEG INTERSECTION, MAJOR-ROAD VOLUME (VEH/H/LN) THAT WARRANTS A LEFT-TURN LANE
5	450	450
5	450	50
10	300	50
15	250	50
20	200	50
25	200	50
30	150	50
35	150	50
40	150	50
45	150	< 50
50+	100	< 50

INTERSECTION VOLUMES THREE-LEG INTERSECTION LEFT TURN LANE WARRANTS		
TIME PERIOD	LEFT TURN VOLUME	MAJOR ROAD OPPOSING TRAFFIC VOLUME
AM PEAK HOUR	0	0
PM PEAK HOUR	27	379
SATURDAY PEAK HOUR	17	429



Colliers Engineering & Design

Traffic Impact Study

Appendix C | Level of Service Standards

Colliers Engineering & Design

Level of Service Standards

Level of Service for Signalized Intersections

Level of Service (LOS) can be characterized for the entire intersection, each intersection approach, and each lane group. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. Delay quantifies the increase in travel time due to traffic signal control. It is also a measure of driver discomfort and fuel consumption. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

- **LOS A** describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
- **LOS B** describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
- **LOS C** describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate.
- **LOS D** describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long.
- **LOS E** describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long.
- **LOS F** describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long.

A lane group can incur a delay less than 80 s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 s/veh represents failure from a delay perspective).

The Level of Service Criteria for signalized intersections are given in Exhibit 19-8 from the *Highway Capacity Manual, 6th Edition* published by the Transportation Research Board.

Exhibit 19-8 LOS by Volume-to-Capacity Ratio

Control Delay (s/veh)	v/c ≤ 1.0	v/c ≥ 1.0
≤10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

For approach-based and intersection wide assessments, LOS is defined solely by control delay.

Level of Service Criteria For Two-Way Stop-Controlled (TWSC) Unsignalized Intersections

Level of Service (LOS) for a two-way stop-controlled (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. LOS is not defined for the intersection as a whole or for major-street approaches.

The Level of Service Criteria for TWSC unsignalized intersections are given in Exhibit 20-2 from the Highway Capacity Manual, 6th Edition published by the Transportation Research Board.

Exhibit 20-2 LOS by Volume-to-Capacity Ratio

Control Delay (s/veh)	v/c ≤ 1.0	v/c ≥ 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

The LOS criteria apply to each lane on a given approach and to each approach on the minor street.
LOS is not calculated for major-street approaches or for the intersection as a whole.

As Exhibit 20-2 notes, LOS F is assigned to the movement if the volume-to-capacity ratio for the movement exceeds 1.0, regardless of the control delay.

The Level of Service Criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections.

Level of Service Criteria For All-Way Stop-Controlled (AWSC) Unsignalized Intersections

The Levels of Service (LOS) for all-way stop-controlled (AWSC) intersections are given in Exhibit 21-8. As the exhibit notes, LOS F is assigned if the volume-to-capacity (v/c) ratio of a lane exceeds 1.0, regardless of the control delay. For assessment of LOS at the approach and intersection levels, LOS is based solely on control delay.

The Level of Service Criteria for AWSC unsignalized intersections are given in Exhibit 21-8 from the *Highway* Capacity *Manual, 6th Edition* published by the Transportation Research Board.

Exhibit 21-8 LOS by Volume-to-Capacity Ratio

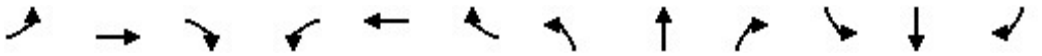
Control Delay (s/veh)	v/c ≤ 1.0	v/c ≥ 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

For approaches and intersection wide assessment, LOS is defined solely by control delay.

Colliers Engineering & Design

Traffic Impact Study

Appendix D | Capacity Analysis

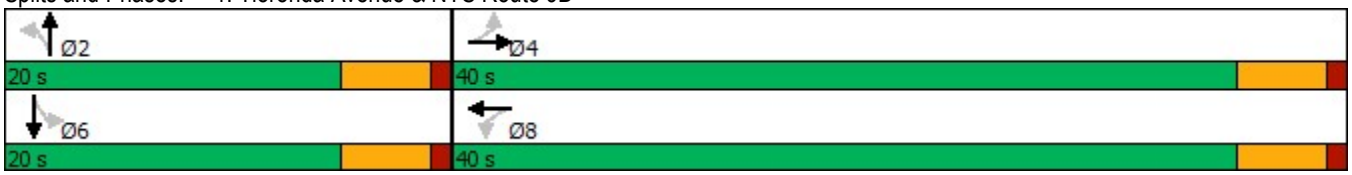


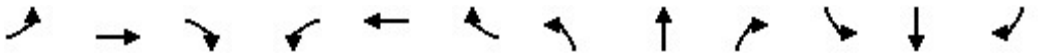
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	350	5	10	360	81	8	10	11	50	8	7
Future Volume (vph)	26	350	5	10	360	81	8	10	11	50	8	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.998			0.976			0.950			0.985	
Flt Protected		0.997			0.999			0.986			0.963	
Satd. Flow (prot)	0	1834	0	0	1662	0	0	1628	0	0	1761	0
Flt Permitted		0.951			0.990			0.901			0.754	
Satd. Flow (perm)	0	1748	0	0	1647	0	0	1484	0	0	1374	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		2			32							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		10	10		17	6		2	2		6
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	4%	3%	2%	2%	3%	3%	25%	2%	2%	2%	2%	2%
Adj. Flow (vph)	32	427	6	12	439	99	10	12	13	61	10	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	465	0	0	550	0	0	35	0	0	80	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.34			0.42			0.16			0.39	
Control Delay		5.0			5.5			21.8			27.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.0			5.5			21.8			27.0	
Queue Length 50th (ft)		53			63			12			29	
Queue Length 95th (ft)		123			149			26			49	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1383			1310			386			357	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.42			0.09			0.22	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 57.7	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	350	5	10	360	81	8	10	11	50	8	7
Future Volume (veh/h)	26	350	5	10	360	81	8	10	11	50	8	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.97		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2115	2130	2145	1582	1567	1567	1317	1725	1658	1870	1870	1870
Adj Flow Rate, veh/h	32	427	6	12	439	99	10	12	13	61	10	9
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	4	3	2	2	3	3	25	2	2	2	2	2
Cap, veh/h	121	1378	19	81	859	190	119	68	56	232	25	16
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	62	1964	26	10	1224	271	270	695	570	1067	258	168
Grp Volume(v), veh/h	465	0	0	550	0	0	35	0	0	80	0	0
Grp Sat Flow(s),veh/h/ln	2053	0	0	1505	0	0	1536	0	0	1493	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	8.5	0.0	0.0	1.0	0.0	0.0	2.4	0.0	0.0
Prop In Lane	0.07		0.01	0.02		0.18	0.29		0.37	0.76		0.11
Lane Grp Cap(c), veh/h	1518	0	0	1130	0	0	243	0	0	273	0	0
V/C Ratio(X)	0.31	0.00	0.00	0.49	0.00	0.00	0.14	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1518	0	0	1130	0	0	538	0	0	561	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.8	0.0	0.0	3.5	0.0	0.0	20.8	0.0	0.0	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.5	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	1.5	0.0	0.0	0.4	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.0	0.0	5.0	0.0	0.0	20.9	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		465			550			35			80	
Approach Delay, s/veh		3.4			5.0			20.9			21.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.9		40.0		9.9		40.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		15.0		35.0		15.0		35.0				
Max Q Clear Time (g_c+I1), s		3.0		6.2		4.4		10.5				
Green Ext Time (p_c), s		0.0		0.6		0.1		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			6.0									
HCM 6th LOS			A									

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	38	371	72	61	295
Future Volume (vph)	51	38	371	72	61	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943		0.978			
Flt Protected	0.972					0.991
Satd. Flow (prot)	1911	0	1738	0	0	1818
Flt Permitted	0.972					0.991
Satd. Flow (perm)	1911	0	1738	0	0	1818
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	3	3		3	3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	3%	2%	2%	2%
Adj. Flow (vph)	57	42	412	80	68	328
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	0	492	0	0	396
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	38	371	72	61	295
Future Vol, veh/h	51	38	371	72	61	295
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	3	2	2	2
Mvmt Flow	57	42	412	80	68	328

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	922	458	0	0	495	0
Stage 1	455	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	5.05	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.05	-	-	-	-	-
Critical Hdwy Stg 2	4.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	424	659	-	-	1069	-
Stage 1	755	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	388	655	-	-	1065	-
Mov Cap-2 Maneuver	388	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	689	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	470	1065	-
HCM Lane V/C Ratio	-	-	0.21	0.064	-
HCM Control Delay (s)	-	-	14.7	8.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	10	5	5	413	316	10
Future Volume (vph)	10	5	5	413	316	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.952				0.996	
Flt Protected	0.969			0.999		
Satd. Flow (prot)	1493	0	0	1695	1708	0
Flt Permitted	0.969			0.999		
Satd. Flow (perm)	1493	0	0	1695	1708	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	2	2	2			2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	50%	2%	4%	4%	2%
Adj. Flow (vph)	11	6	6	459	351	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	465	362	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	10	5	5	413	316	10
Future Vol, veh/h	10	5	5	413	316	10
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	50	2	4	4	2
Mvmt Flow	11	6	6	459	351	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	832	361	364	0	-	0
Stage 1	359	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Critical Hdwy	8.42	7.7	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.75	2.218	-	-	-
Pot Cap-1 Maneuver	214	532	1195	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	212	530	1192	-	-	-
Mov Cap-2 Maneuver	212	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	481	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	19.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1192	-	265	-	-
HCM Lane V/C Ratio	0.005	-	0.063	-	-
HCM Control Delay (s)	8	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	1	1	407	298	23
Future Volume (vph)	11	1	1	407	298	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.990	
Flt Protected	0.956					
Satd. Flow (prot)	1493	0	0	1810	1764	0
Flt Permitted	0.956					
Satd. Flow (perm)	1493	0	0	1810	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	9%	2%	2%	3%	3%	4%
Adj. Flow (vph)	12	1	1	433	317	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	434	341	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	1	1	407	298	23
Future Vol, veh/h	11	1	1	407	298	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	9	2	2	3	3	4
Mvmt Flow	12	1	1	433	317	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	764	329	341	0	-	0
Stage 1	329	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	7.89	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.89	-	-	-	-	-
Critical Hdwy Stg 2	6.89	-	-	-	-	-
Follow-up Hdwy	3.581	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	269	668	1218	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	269	668	1218	-	-	-
Mov Cap-2 Maneuver	269	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	0	0
HCM LOS	C		

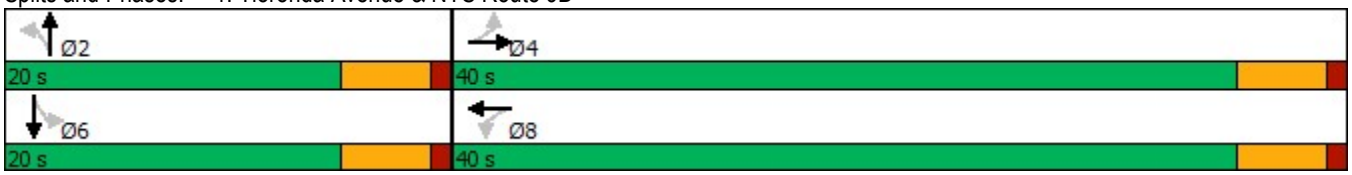
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1218	-	283	-	-
HCM Lane V/C Ratio	0.001	-	0.045	-	-
HCM Control Delay (s)	8	0	18.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

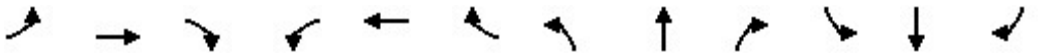
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	337	6	13	338	98	17	11	8	46	7	13
Future Volume (vph)	20	337	6	13	338	98	17	11	8	46	7	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.998			0.970			0.969			0.974	
Flt Protected		0.997			0.999			0.977			0.966	
Satd. Flow (prot)	0	1854	0	0	1664	0	0	1758	0	0	1719	0
Flt Permitted		0.968			0.988			0.827			0.768	
Satd. Flow (perm)	0	1798	0	0	1646	0	0	1482	0	0	1363	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		3			40							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		2	2		17	5		2	2		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%
Adj. Flow (vph)	22	366	7	14	367	107	18	12	9	50	8	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	395	0	0	488	0	0	39	0	0	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.28			0.37			0.19			0.37	
Control Delay		4.4			4.9			22.4			26.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.4			4.9			22.4			26.7	
Queue Length 50th (ft)		40			50			14			26	
Queue Length 95th (ft)		113			146			31			50	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1428			1315			385			354	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.28			0.37			0.10			0.20	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 57.8	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	337	6	13	338	98	17	11	8	46	7	13
Future Volume (veh/h)	20	337	6	13	338	98	17	11	8	46	7	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2145	2145	2145	1582	1582	1582	1658	1725	1658	1841	1870	1870
Adj Flow Rate, veh/h	22	366	7	14	367	107	18	12	9	50	8	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	108	1417	26	84	819	233	153	63	33	213	25	28
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	44	2011	37	14	1162	330	496	674	351	957	266	295
Grp Volume(v), veh/h	395	0	0	488	0	0	39	0	0	72	0	0
Grp Sat Flow(s),veh/h/ln	2092	0	0	1506	0	0	1521	0	0	1518	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	0.0	7.0	0.0	0.0	1.1	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.06		0.02	0.03		0.22	0.46		0.23	0.69		0.19
Lane Grp Cap(c), veh/h	1551	0	0	1136	0	0	249	0	0	266	0	0
V/C Ratio(X)	0.25	0.00	0.00	0.43	0.00	0.00	0.16	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	1551	0	0	1136	0	0	543	0	0	564	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.7	0.0	0.0	3.2	0.0	0.0	20.9	0.0	0.0	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.2	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	0.0	0.0	4.4	0.0	0.0	21.0	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		395			488			39			72	
Approach Delay, s/veh		3.1			4.4			21.0			21.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.7		40.0		9.7		40.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		15.0		35.0		15.0		35.0				
Max Q Clear Time (g_c+I1), s		3.1		5.3		4.1		9.0				
Green Ext Time (p_c), s		0.0		0.4		0.1		0.6				

Intersection Summary												
HCM 6th Ctrl Delay			5.7									
HCM 6th LOS			A									

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	64	52	324	52	35	307
Future Volume (vph)	64	52	324	52	35	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939		0.981			
Flt Protected	0.973					0.995
Satd. Flow (prot)	1938	0	1758	0	0	1826
Flt Permitted	0.973					0.995
Satd. Flow (perm)	1938	0	1758	0	0	1826
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	22	20		22	20	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	58	360	58	39	341
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	418	0	0	380
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	52	324	52	35	307
Future Vol, veh/h	64	52	324	52	35	307
Conflicting Peds, #/hr	22	20	0	22	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	58	360	58	39	341

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	852	431	0	0	440	0
Stage 1	411	-	-	-	-	-
Stage 2	441	-	-	-	-	-
Critical Hdwy	5.02	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.02	-	-	-	-	-
Critical Hdwy Stg 2	4.02	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	460	679	-	-	1120	-
Stage 1	785	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	420	649	-	-	1091	-
Mov Cap-2 Maneuver	420	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	499	1091	-
HCM Lane V/C Ratio	-	-	0.258	0.036	-
HCM Control Delay (s)	-	-	14.7	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	5	4	1	371	368	3
Future Volume (vph)	5	4	1	371	368	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939				0.999	
Flt Protected	0.973					
Satd. Flow (prot)	1725	0	0	1730	1746	0
Flt Permitted	0.973					
Satd. Flow (perm)	1725	0	0	1730	1746	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	5	1	426	423	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	427	426	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	371	368	3
Future Vol, veh/h	5	4	1	371	368	3
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	5	1	426	423	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	859	431	429	0	-	0
Stage 1	428	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	8.42	7.22	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	203	554	1130	-	-	-
Stage 1	518	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	551	1126	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	18.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1126	-	281	-	-
HCM Lane V/C Ratio	0.001	-	0.037	-	-
HCM Control Delay (s)	8.2	0	18.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	6	2	362	351	21
Future Volume (vph)	10	6	2	362	351	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.947				0.992	
Flt Protected	0.970					
Satd. Flow (prot)	1541	0	0	1828	1783	0
Flt Permitted	0.970					
Satd. Flow (perm)	1541	0	0	1828	1783	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	11	7	2	393	382	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	395	405	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

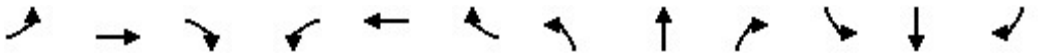
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	6	2	362	351	21
Future Vol, veh/h	10	6	2	362	351	21
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5
Mvmt Flow	11	7	2	393	382	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	793	396	406	0	-	0
Stage 1	395	-	-	-	-	-
Stage 2	398	-	-	-	-	-
Critical Hdwy	7.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.82	-	-	-	-	-
Critical Hdwy Stg 2	6.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	263	605	1153	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	262	604	1152	-	-	-
Mov Cap-2 Maneuver	262	-	-	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	580	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1152	-	333	-	-
HCM Lane V/C Ratio	0.002	-	0.052	-	-
HCM Control Delay (s)	8.1	0	16.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

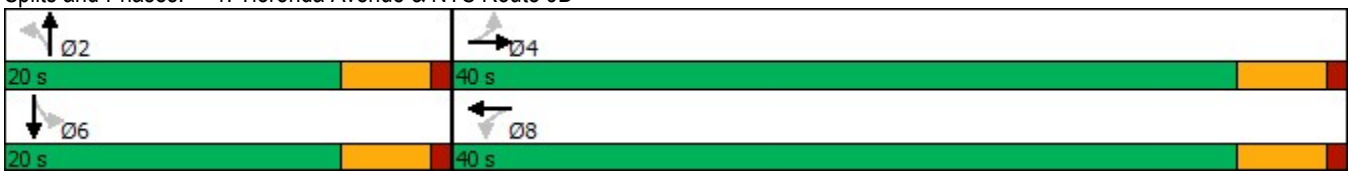


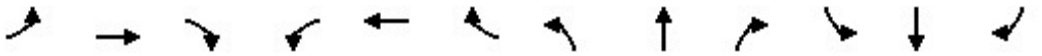
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	383	20	17	395	87	31	14	20	54	11	8
Future Volume (vph)	28	383	20	17	395	87	31	14	20	54	11	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.994			0.977			0.959			0.985	
Flt Protected		0.997			0.998			0.977			0.964	
Satd. Flow (prot)	0	1825	0	0	1663	0	0	1567	0	0	1762	0
Flt Permitted		0.948			0.979			0.848			0.784	
Satd. Flow (perm)	0	1734	0	0	1631	0	0	1353	0	0	1430	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7			30							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		10	10		17	6		2	2		6
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	4%	3%	2%	2%	3%	3%	25%	2%	2%	2%	2%	2%
Adj. Flow (vph)	34	467	24	21	482	106	38	17	24	66	13	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	0	609	0	0	79	0	0	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.41			0.51			0.39			0.41	
Control Delay		6.1			7.1			26.4			26.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.1			7.1			26.4			26.8	
Queue Length 50th (ft)		62			75			24			27	
Queue Length 95th (ft)		142			177			48			53	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1268			1199			351			370	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.51			0.23			0.24	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 58.2	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	383	20	17	395	87	31	14	20	54	11	8
Future Volume (veh/h)	28	383	20	17	395	87	31	14	20	54	11	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2115	2130	2145	1582	1567	1567	1317	1725	1658	1870	1870	1870
Adj Flow Rate, veh/h	34	467	24	21	482	106	38	17	24	66	13	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	4	3	2	2	3	3	25	2	2	2	2	2
Cap, veh/h	118	1308	65	87	844	181	167	50	49	239	35	19
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	60	1883	93	19	1216	260	574	470	456	1071	324	177
Grp Volume(v), veh/h	525	0	0	609	0	0	79	0	0	89	0	0
Grp Sat Flow(s),veh/h/ln	2036	0	0	1495	0	0	1500	0	0	1572	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	0.0	10.3	0.0	0.0	2.3	0.0	0.0	2.4	0.0	0.0
Prop In Lane	0.06		0.05	0.03		0.17	0.48		0.30	0.74		0.11
Lane Grp Cap(c), veh/h	1491	0	0	1113	0	0	266	0	0	292	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.55	0.00	0.00	0.30	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	1491	0	0	1113	0	0	530	0	0	563	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.1	0.0	0.0	3.9	0.0	0.0	21.1	0.0	0.0	21.1	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.9	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	2.0	0.0	0.0	0.8	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.8	0.0	0.0	5.9	0.0	0.0	21.3	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		525			609			79			89	
Approach Delay, s/veh		3.8			5.9			21.3			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.4		40.0		10.4		40.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		15.0		35.0		15.0		35.0				
Max Q Clear Time (g_c+I1), s		4.3		7.1		4.4		12.3				
Green Ext Time (p_c), s		0.1		0.7		0.1		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	41	412	78	66	332
Future Volume (vph)	55	41	412	78	66	332
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.942		0.978			
Flt Protected	0.972					0.992
Satd. Flow (prot)	1910	0	1738	0	0	1820
Flt Permitted	0.972					0.992
Satd. Flow (perm)	1910	0	1738	0	0	1820
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	3	3		3	3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	3%	2%	2%	2%
Adj. Flow (vph)	61	46	458	87	73	369
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	0	545	0	0	442
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	41	412	78	66	332
Future Vol, veh/h	55	41	412	78	66	332
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	3	2	2	2
Mvmt Flow	61	46	458	87	73	369

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1023	508	0	0	548	0
Stage 1	505	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	5.05	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.05	-	-	-	-	-
Critical Hdwy Stg 2	4.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	384	624	-	-	1021	-
Stage 1	730	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	347	620	-	-	1017	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	427	1017	-
HCM Lane V/C Ratio	-	-	0.25	0.072	-
HCM Control Delay (s)	-	-	16.2	8.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1	0.2	-



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	11	5	5	458	355	11
Future Volume (vph)	11	5	5	458	355	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.955				0.996	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1508	0	0	1695	1708	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1508	0	0	1695	1708	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	2	2	2			2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	50%	2%	4%	4%	2%
Adj. Flow (vph)	12	6	6	509	394	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	515	406	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	11	5	5	458	355	11
Future Vol, veh/h	11	5	5	458	355	11
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	50	2	4	4	2
Mvmt Flow	12	6	6	509	394	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	925	404	408	0	-	0
Stage 1	402	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Critical Hdwy	8.42	7.7	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.75	2.218	-	-	-
Pot Cap-1 Maneuver	179	496	1151	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	177	494	1148	-	-	-
Mov Cap-2 Maneuver	177	-	-	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	444	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	22.7	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1148	-	221	-	-
HCM Lane V/C Ratio	0.005	-	0.08	-	-
HCM Control Delay (s)	8.2	0	22.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	1	1	451	335	25
Future Volume (vph)	12	1	1	451	335	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.990	
Flt Protected	0.956					
Satd. Flow (prot)	1493	0	0	1810	1764	0
Flt Permitted	0.956					
Satd. Flow (perm)	1493	0	0	1810	1764	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	9%	2%	2%	3%	3%	4%
Adj. Flow (vph)	13	1	1	480	356	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	481	383	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

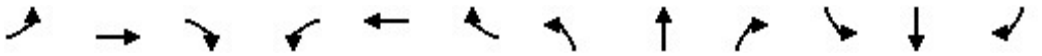
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	1	1	451	335	25
Future Vol, veh/h	12	1	1	451	335	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	9	2	2	3	3	4
Mvmt Flow	13	1	1	480	356	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	852	370	383	0	-	0
Stage 1	370	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Critical Hdwy	7.89	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.89	-	-	-	-	-
Critical Hdwy Stg 2	6.89	-	-	-	-	-
Follow-up Hdwy	3.581	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	230	629	1175	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	230	629	1175	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	503	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1175	-	242	-	-
HCM Lane V/C Ratio	0.001	-	0.057	-	-
HCM Control Delay (s)	8.1	0	20.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

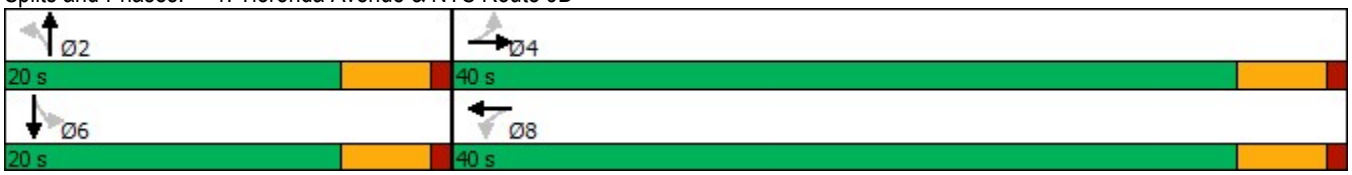


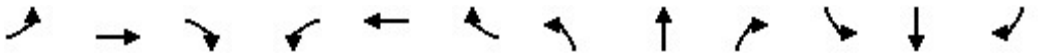
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	370	21	20	372	106	40	15	17	50	10	14
Future Volume (vph)	22	370	21	20	372	106	40	15	17	50	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.993			0.971			0.968			0.975	
Flt Protected		0.997			0.998			0.973			0.967	
Satd. Flow (prot)	0	1843	0	0	1665	0	0	1749	0	0	1724	0
Flt Permitted		0.966			0.978			0.832			0.798	
Satd. Flow (perm)	0	1784	0	0	1631	0	0	1488	0	0	1419	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		8			39							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		2	2		17	5		2	2		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%
Adj. Flow (vph)	24	402	23	22	404	115	43	16	18	54	11	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	449	0	0	541	0	0	77	0	0	80	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.32			0.42			0.35			0.37	
Control Delay		4.8			5.6			24.5			25.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.8			5.6			24.5			25.4	
Queue Length 50th (ft)		48			59			24			25	
Queue Length 95th (ft)		132			172			52			54	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1400			1286			398			380	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.42			0.19			0.21	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 56.1	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	370	21	20	372	106	40	15	17	50	10	14
Future Volume (veh/h)	22	370	21	20	372	106	40	15	17	50	10	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2145	2145	2145	1582	1582	1582	1658	1725	1658	1841	1870	1870
Adj Flow Rate, veh/h	24	402	23	22	404	115	43	16	18	54	11	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	106	1343	74	91	806	222	183	46	36	218	35	31
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	44	1925	106	23	1156	318	693	445	347	952	340	298
Grp Volume(v), veh/h	449	0	0	541	0	0	77	0	0	80	0	0
Grp Sat Flow(s),veh/h/ln	2075	0	0	1498	0	0	1486	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	0.0	8.4	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.05		0.05	0.04		0.21	0.56		0.23	0.67		0.19
Lane Grp Cap(c), veh/h	1524	0	0	1120	0	0	265	0	0	284	0	0
V/C Ratio(X)	0.29	0.00	0.00	0.48	0.00	0.00	0.29	0.00	0.00	0.28	0.00	0.00
Avail Cap(c_a), veh/h	1524	0	0	1120	0	0	533	0	0	566	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.9	0.0	0.0	3.6	0.0	0.0	21.2	0.0	0.0	21.1	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.5	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	1.6	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.0	0.0	5.1	0.0	0.0	21.4	0.0	0.0	21.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		449			541			77			80	
Approach Delay, s/veh		3.4			5.1			21.4			21.3	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.2		40.0		10.2		40.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		15.0		35.0		15.0		35.0				
Max Q Clear Time (g_c+I1), s		4.2		6.1		4.1		10.4				
Green Ext Time (p_c), s		0.1		0.5		0.1		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		6.6
HCM 6th LOS		A

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	69	56	363	56	59	346
Future Volume (vph)	69	56	363	56	59	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.940		0.982			
Flt Protected	0.973					0.993
Satd. Flow (prot)	1940	0	1759	0	0	1822
Flt Permitted	0.973					0.993
Satd. Flow (perm)	1940	0	1759	0	0	1822
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	22	20		22	20	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	77	62	403	62	66	384
Shared Lane Traffic (%)						
Lane Group Flow (vph)	139	0	465	0	0	450
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	56	363	56	59	346
Future Vol, veh/h	69	56	363	56	59	346
Conflicting Peds, #/hr	22	20	0	22	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	62	403	62	66	384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	994	476	0	0	487	0
Stage 1	456	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Critical Hdwy	5.02	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.02	-	-	-	-	-
Critical Hdwy Stg 2	4.02	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	400	646	-	-	1076	-
Stage 1	762	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	352	617	-	-	1048	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.1	0	1.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	436	1048	-
HCM Lane V/C Ratio	-	-	0.319	0.063	-
HCM Control Delay (s)	-	-	17.1	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.2	-



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	5	4	1	413	412	3
Future Volume (vph)	5	4	1	413	412	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939				0.999	
Flt Protected	0.973					
Satd. Flow (prot)	1725	0	0	1730	1746	0
Flt Permitted	0.973					
Satd. Flow (perm)	1725	0	0	1730	1746	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	5	1	475	474	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	476	477	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	413	412	3
Future Vol, veh/h	5	4	1	413	412	3
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	5	1	475	474	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	959	482	480	0	-	0
Stage 1	479	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Critical Hdwy	8.42	7.22	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	167	511	1082	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	166	508	1078	-	-	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	20.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1078	-	237	-	-
HCM Lane V/C Ratio	0.001	-	0.044	-	-
HCM Control Delay (s)	8.3	0	20.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	6	2	404	394	23
Future Volume (vph)	11	6	2	404	394	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.950				0.993	
Flt Protected	0.969					
Satd. Flow (prot)	1544	0	0	1828	1785	0
Flt Permitted	0.969					
Satd. Flow (perm)	1544	0	0	1828	1785	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	12	7	2	439	428	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	0	441	453	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	6	2	404	394	23
Future Vol, veh/h	11	6	2	404	394	23
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5
Mvmt Flow	12	7	2	439	428	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	886	443	454	0	-	0
Stage 1	442	-	-	-	-	-
Stage 2	444	-	-	-	-	-
Critical Hdwy	7.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.82	-	-	-	-	-
Critical Hdwy Stg 2	6.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	223	564	1107	-	-	-
Stage 1	545	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	222	563	1106	-	-	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	543	-	-	-	-	-
Stage 2	543	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1106	-	282	-	-
HCM Lane V/C Ratio	0.002	-	0.066	-	-
HCM Control Delay (s)	8.3	0	18.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

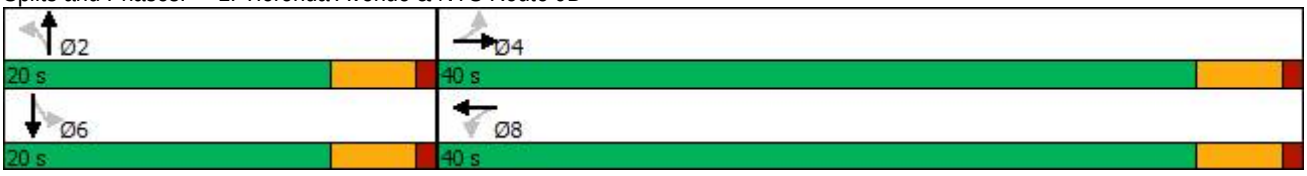
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	392	20	17	401	90	31	14	20	59	11	8
Future Volume (vph)	28	392	20	17	401	90	31	14	20	59	11	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.994			0.976			0.959			0.986	
Flt Protected		0.997			0.998			0.977			0.963	
Satd. Flow (prot)	0	1825	0	0	1661	0	0	1567	0	0	1763	0
Flt Permitted		0.948			0.979			0.847			0.775	
Satd. Flow (perm)	0	1734	0	0	1629	0	0	1351	0	0	1415	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7			31							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		10	10		17	6		2	2		6
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	4%	3%	2%	2%	3%	3%	25%	2%	2%	2%	2%	2%
Adj. Flow (vph)	34	478	24	21	489	110	38	17	24	72	13	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	536	0	0	620	0	0	79	0	0	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.43			0.52			0.38			0.43	
Control Delay		6.3			7.4			25.8			27.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.3			7.4			25.8			27.1	
Queue Length 50th (ft)		65			79			24			29	
Queue Length 95th (ft)		147			182			48			56	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1260			1191			350			367	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.52			0.23			0.26	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 58.1	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	392	20	17	401	90	31	14	20	59	11	8
Future Volume (veh/h)	28	392	20	17	401	90	31	14	20	59	11	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2115	2130	2145	1582	1567	1567	1317	1725	1658	1870	1870	1870
Adj Flow Rate, veh/h	34	478	24	21	489	110	38	17	24	72	13	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	4	3	2	2	3	3	25	2	2	2	2	2
Cap, veh/h	117	1310	63	87	840	184	168	51	49	245	31	18
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	59	1887	91	19	1210	265	578	475	459	1115	287	165
Grp Volume(v), veh/h	536	0	0	620	0	0	79	0	0	95	0	0
Grp Sat Flow(s),veh/h/ln	2037	0	0	1494	0	0	1512	0	0	1566	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	5.2	0.0	0.0	10.7	0.0	0.0	2.3	0.0	0.0	2.6	0.0	0.0
Prop In Lane	0.06		0.04	0.03		0.18	0.48		0.30	0.76		0.11
Lane Grp Cap(c), veh/h	1490	0	0	1111	0	0	268	0	0	294	0	0
V/C Ratio(X)	0.36	0.00	0.00	0.56	0.00	0.00	0.29	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	1490	0	0	1111	0	0	531	0	0	562	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	0.0	0.0	4.0	0.0	0.0	21.1	0.0	0.0	21.2	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	2.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	2.1	0.0	0.0	0.8	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.8	0.0	0.0	6.0	0.0	0.0	21.3	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		536			620			79			95	
Approach Delay, s/veh		3.8			6.0			21.3			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	10.4	40.0	10.4	40.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	4.3	7.2	4.6	12.7
Green Ext Time (p_c), s	0.1	0.7	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	60	41	421	81	66	346
Future Volume (vph)	60	41	421	81	66	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.945		0.978			
Flt Protected	0.971					0.992
Satd. Flow (prot)	1913	0	1738	0	0	1820
Flt Permitted	0.971					0.992
Satd. Flow (perm)	1913	0	1738	0	0	1820
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	3	3		3	3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	3%	2%	2%	2%
Adj. Flow (vph)	67	46	468	90	73	384
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	558	0	0	457
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	41	421	81	66	346
Future Vol, veh/h	60	41	421	81	66	346
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	3	2	2	2
Mvmt Flow	67	46	468	90	73	384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1049	519	0	0	561	0
Stage 1	516	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Critical Hdwy	5.05	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.05	-	-	-	-	-
Critical Hdwy Stg 2	4.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	374	616	-	-	1010	-
Stage 1	725	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	337	612	-	-	1006	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	412	1006	-
HCM Lane V/C Ratio	-	-	0.272	0.073	-
HCM Control Delay (s)	-	-	17	8.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	11	5	5	470	373	11
Future Volume (vph)	11	5	5	470	373	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.955				0.996	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1508	0	0	1695	1708	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1508	0	0	1695	1708	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	2	2	2			2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	50%	2%	4%	4%	2%
Adj. Flow (vph)	12	6	6	522	414	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	528	426	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	11	5	5	470	373	11
Future Vol, veh/h	11	5	5	470	373	11
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	50	2	4	4	2
Mvmt Flow	12	6	6	522	414	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	958	424	428	0	-	0
Stage 1	422	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Critical Hdwy	8.42	7.7	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.75	2.218	-	-	-
Pot Cap-1 Maneuver	168	480	1131	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	166	478	1128	-	-	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	518	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	23.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1128	-	209	-	-
HCM Lane V/C Ratio	0.005	-	0.085	-	-
HCM Control Delay (s)	8.2	0	23.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	16	27	464	361	18
Future Volume (vph)	11	16	27	464	361	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	12
Grade (%)	1%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919				0.994	
Flt Protected	0.980			0.997		
Satd. Flow (prot)	1669	0	0	1773	1717	0
Flt Permitted	0.980			0.997		
Satd. Flow (perm)	1669	0	0	1773	1717	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	263			1447	440	
Travel Time (s)	6.0			32.9	10.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	6%	2%
Adj. Flow (vph)	12	18	30	516	401	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	0	546	421	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.98	1.02	1.05	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	16	27	464	361	18
Future Vol, veh/h	11	16	27	464	361	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-3	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	5	6	2
Mvmt Flow	12	18	30	516	401	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	987	411	421	0	-	0
Stage 1	411	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Critical Hdwy	6.62	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.62	-	-	-	-	-
Critical Hdwy Stg 2	5.62	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	260	633	1138	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	545	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	250	633	1138	-	-	-
Mov Cap-2 Maneuver	250	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	545	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1138	-	390	-	-
HCM Lane V/C Ratio	0.026	-	0.077	-	-
HCM Control Delay (s)	8.2	0	15	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	2	2	478	352	25
Future Volume (vph)	13	2	2	478	352	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.991	
Flt Protected	0.958					
Satd. Flow (prot)	1490	0	0	1810	1766	0
Flt Permitted	0.958					
Satd. Flow (perm)	1490	0	0	1810	1766	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	9%	2%	2%	3%	3%	4%
Adj. Flow (vph)	14	2	2	509	374	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	511	401	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	2	2	478	352	25
Future Vol, veh/h	13	2	2	478	352	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	9	2	2	3	3	4
Mvmt Flow	14	2	2	509	374	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	901	388	401	0	-	0
Stage 1	388	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Critical Hdwy	7.89	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.89	-	-	-	-	-
Critical Hdwy Stg 2	6.89	-	-	-	-	-
Follow-up Hdwy	3.581	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	211	612	1158	-	-	-
Stage 1	577	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	211	612	1158	-	-	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	481	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1158	-	231	-	-
HCM Lane V/C Ratio	0.002	-	0.069	-	-
HCM Control Delay (s)	8.1	0	21.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

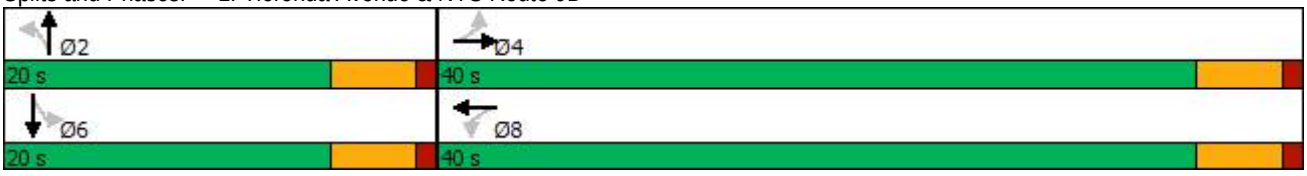
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	376	21	20	379	109	40	15	17	53	10	14
Future Volume (vph)	22	376	21	20	379	109	40	15	17	53	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.993			0.971			0.968			0.976	
Flt Protected		0.997			0.998			0.973			0.967	
Satd. Flow (prot)	0	1843	0	0	1665	0	0	1749	0	0	1725	0
Flt Permitted		0.965			0.978			0.842			0.793	
Satd. Flow (perm)	0	1782	0	0	1631	0	0	1505	0	0	1411	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		8			39							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		2	2		17	5		2	2		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%
Adj. Flow (vph)	24	409	23	22	412	118	43	16	18	58	11	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	456	0	0	552	0	0	77	0	0	84	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.33			0.43			0.34			0.39	
Control Delay		4.9			5.7			24.2			25.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.9			5.7			24.2			25.7	
Queue Length 50th (ft)		50			62			24			26	
Queue Length 95th (ft)		135			178			52			56	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1395			1284			403			377	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.33			0.43			0.19			0.22	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 56.1	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	376	21	20	379	109	40	15	17	53	10	14
Future Volume (veh/h)	22	376	21	20	379	109	40	15	17	53	10	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2145	2145	2145	1582	1582	1582	1658	1725	1658	1841	1870	1870
Adj Flow Rate, veh/h	24	409	23	22	412	118	43	16	18	58	11	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	106	1344	73	91	805	223	184	46	36	223	33	29
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	43	1928	105	23	1154	320	694	449	349	987	315	283
Grp Volume(v), veh/h	456	0	0	552	0	0	77	0	0	84	0	0
Grp Sat Flow(s),veh/h/ln	2076	0	0	1497	0	0	1492	0	0	1584	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.0	8.7	0.0	0.0	2.2	0.0	0.0	2.2	0.0	0.0
Prop In Lane	0.05		0.05	0.04		0.21	0.56		0.23	0.69		0.18
Lane Grp Cap(c), veh/h	1523	0	0	1119	0	0	266	0	0	285	0	0
V/C Ratio(X)	0.30	0.00	0.00	0.49	0.00	0.00	0.29	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1523	0	0	1119	0	0	534	0	0	565	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.9	0.0	0.0	3.6	0.0	0.0	21.2	0.0	0.0	21.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.6	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	1.6	0.0	0.0	0.8	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.4	0.0	0.0	5.2	0.0	0.0	21.4	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		456			552			77			84	
Approach Delay, s/veh		3.4			5.2			21.4			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	10.2	40.0	10.2	40.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	4.2	6.2	4.2	10.7
Green Ext Time (p_c), s	0.1	0.5	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	56	373	60	59	355
Future Volume (vph)	72	56	373	60	59	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.941		0.981			
Flt Protected	0.973					0.993
Satd. Flow (prot)	1942	0	1758	0	0	1822
Flt Permitted	0.973					0.993
Satd. Flow (perm)	1942	0	1758	0	0	1822
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	22	20		22	20	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	80	62	414	67	66	394
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	481	0	0	460
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	72	56	373	60	59	355
Future Vol, veh/h	72	56	373	60	59	355
Conflicting Peds, #/hr	22	20	0	22	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	80	62	414	67	66	394

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1018	490	0	0	503	0
Stage 1	470	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Critical Hdwy	5.02	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.02	-	-	-	-	-
Critical Hdwy Stg 2	4.02	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	391	636	-	-	1061	-
Stage 1	755	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	608	-	-	1033	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	1033	-
HCM Lane V/C Ratio	-	-	0.335	0.063	-
HCM Control Delay (s)	-	-	17.7	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.2	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	5	4	1	427	424	3
Future Volume (vph)	5	4	1	427	424	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939				0.999	
Flt Protected	0.973					
Satd. Flow (prot)	1725	0	0	1730	1746	0
Flt Permitted	0.973					
Satd. Flow (perm)	1725	0	0	1730	1746	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	5	1	491	487	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	492	490	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	427	424	3
Future Vol, veh/h	5	4	1	427	424	3
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	5	1	491	487	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	988	495	493	0	-	0
Stage 1	492	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Critical Hdwy	8.42	7.22	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	158	501	1071	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	157	498	1067	-	-	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	464	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	21.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1067	-	226	-	-
HCM Lane V/C Ratio	0.001	-	0.046	-	-
HCM Control Delay (s)	8.4	0	21.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	19	17	416	417	12
Future Volume (vph)	13	19	17	416	417	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	12
Grade (%)	1%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.920				0.996	
Flt Protected	0.980			0.998		
Satd. Flow (prot)	1671	0	0	1824	1784	0
Flt Permitted	0.980			0.998		
Satd. Flow (perm)	1671	0	0	1824	1784	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	263			1447	440	
Travel Time (s)	6.0			32.9	10.0	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	15	22	20	478	479	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	0	0	498	493	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.98	1.02	1.05	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	19	17	416	417	12
Future Vol, veh/h	13	19	17	416	417	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-3	1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	22	20	478	479	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1004	486	493	0	-	0
Stage 1	486	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.62	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.62	-	-	-	-	-
Critical Hdwy Stg 2	5.62	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	253	573	1071	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	247	573	1071	-	-	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.7	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1071	-	373	-	-
HCM Lane V/C Ratio	0.018	-	0.099	-	-
HCM Control Delay (s)	8.4	0	15.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	7	3	421	413	23
Future Volume (vph)	12	7	3	421	413	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.949				0.993	
Flt Protected	0.970					
Satd. Flow (prot)	1544	0	0	1828	1785	0
Flt Permitted	0.970					
Satd. Flow (perm)	1544	0	0	1828	1785	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	13	8	3	458	449	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	461	474	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	7	3	421	413	23
Future Vol, veh/h	12	7	3	421	413	23
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5
Mvmt Flow	13	8	3	458	449	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	928	464	475	0	-	0
Stage 1	463	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Critical Hdwy	7.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.82	-	-	-	-	-
Critical Hdwy Stg 2	6.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	207	547	1087	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	206	546	1086	-	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	267	-	-
HCM Lane V/C Ratio	0.003	-	0.077	-	-
HCM Control Delay (s)	8.3	0	19.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

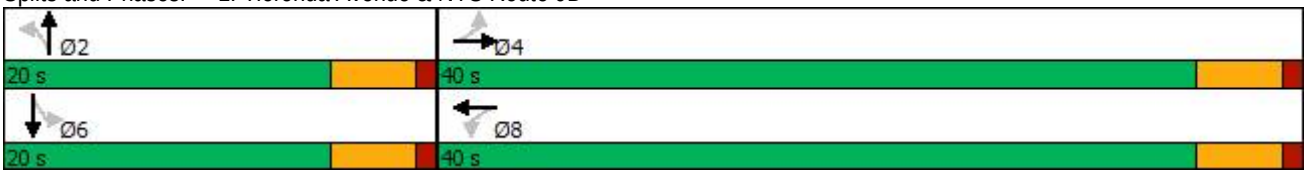
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	407	20	17	415	94	31	14	20	62	11	8
Future Volume (vph)	28	407	20	17	415	94	31	14	20	62	11	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.994			0.976			0.959			0.986	
Flt Protected		0.997			0.998			0.977			0.963	
Satd. Flow (prot)	0	1826	0	0	1661	0	0	1567	0	0	1763	0
Flt Permitted		0.948			0.979			0.846			0.770	
Satd. Flow (perm)	0	1735	0	0	1629	0	0	1349	0	0	1406	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7			31							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		10	10		17	6		2	2		6
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	4%	3%	2%	2%	3%	3%	25%	2%	2%	2%	2%	2%
Adj. Flow (vph)	34	496	24	21	506	115	38	17	24	76	13	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	554	0	0	642	0	0	79	0	0	99	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.44			0.54			0.37			0.45	
Control Delay		6.6			7.8			25.5			27.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.6			7.8			25.5			27.4	
Queue Length 50th (ft)		69			85			24			30	
Queue Length 95th (ft)		153			193			48			58	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1257			1187			350			365	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.44			0.54			0.23			0.27	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 58	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	407	20	17	415	94	31	14	20	62	11	8
Future Volume (veh/h)	28	407	20	17	415	94	31	14	20	62	11	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2115	2130	2145	1582	1567	1567	1317	1725	1658	1870	1870	1870
Adj Flow Rate, veh/h	34	496	24	21	506	115	38	17	24	76	13	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	4	3	2	2	3	3	25	2	2	2	2	2
Cap, veh/h	115	1313	61	87	838	186	168	52	50	249	28	17
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	57	1892	88	18	1208	268	580	477	461	1142	263	158
Grp Volume(v), veh/h	554	0	0	642	0	0	79	0	0	99	0	0
Grp Sat Flow(s),veh/h/ln	2037	0	0	1494	0	0	1519	0	0	1563	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0	11.4	0.0	0.0	2.3	0.0	0.0	2.8	0.0	0.0
Prop In Lane	0.06		0.04	0.03		0.18	0.48		0.30	0.77		0.10
Lane Grp Cap(c), veh/h	1489	0	0	1110	0	0	270	0	0	295	0	0
V/C Ratio(X)	0.37	0.00	0.00	0.58	0.00	0.00	0.29	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1489	0	0	1110	0	0	532	0	0	562	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	0.0	0.0	4.1	0.0	0.0	21.1	0.0	0.0	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	2.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	2.2	0.0	0.0	0.8	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	0.0	0.0	6.3	0.0	0.0	21.3	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		554			642			79			99	
Approach Delay, s/veh		3.9			6.3			21.3			21.5	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	10.4	40.0	10.4	40.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	4.3	7.5	4.8	13.4
Green Ext Time (p_c), s	0.1	0.7	0.2	0.8

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	41	439	84	66	364
Future Volume (vph)	43	41	439	84	66	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.934		0.978			
Flt Protected	0.975					0.992
Satd. Flow (prot)	1903	0	1738	0	0	1820
Flt Permitted	0.975					0.992
Satd. Flow (perm)	1903	0	1738	0	0	1820
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	3	3		3	3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	2%	3%	2%	2%	2%
Adj. Flow (vph)	48	46	488	93	73	404
Shared Lane Traffic (%)						
Lane Group Flow (vph)	94	0	581	0	0	477
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	43	41	439	84	66	364
Future Vol, veh/h	43	41	439	84	66	364
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	2	3	2	2	2
Mvmt Flow	48	46	488	93	73	404

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1091	541	0	0	584	0
Stage 1	538	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Critical Hdwy	5.05	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.05	-	-	-	-	-
Critical Hdwy Stg 2	4.05	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	359	601	-	-	991	-
Stage 1	714	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	323	597	-	-	987	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	416	987	-
HCM Lane V/C Ratio	-	-	0.224	0.074	-
HCM Control Delay (s)	-	-	16.1	8.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	11	5	5	491	395	11
Future Volume (vph)	11	5	5	491	395	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.955				0.996	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1508	0	0	1695	1708	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1508	0	0	1695	1708	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	2	2	2			2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	50%	2%	4%	4%	2%
Adj. Flow (vph)	12	6	6	546	439	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	0	552	451	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	11	5	5	491	395	11
Future Vol, veh/h	11	5	5	491	395	11
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	50	2	4	4	2
Mvmt Flow	12	6	6	546	439	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1007	449	453	0	-	0
Stage 1	447	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	8.42	7.7	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.75	2.218	-	-	-
Pot Cap-1 Maneuver	153	460	1108	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	151	458	1106	-	-	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	498	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	25.8	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1106	-	191	-	-
HCM Lane V/C Ratio	0.005	-	0.093	-	-
HCM Control Delay (s)	8.3	0	25.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	32	31	41	464	361	40
Future Volume (vph)	32	31	41	464	361	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	12
Grade (%)	1%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.934				0.987	
Flt Protected	0.975			0.996		
Satd. Flow (prot)	1688	0	0	1772	1708	0
Flt Permitted	0.975			0.996		
Satd. Flow (perm)	1688	0	0	1772	1708	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	263			1447	440	
Travel Time (s)	6.0			32.9	10.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	5%	6%	2%
Adj. Flow (vph)	36	34	46	516	401	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	0	562	445	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.98	1.02	1.05	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	31	41	464	361	40
Future Vol, veh/h	32	31	41	464	361	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-3	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	5	6	2
Mvmt Flow	36	34	46	516	401	44

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1031	423	445	0	-	0
Stage 1	423	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Critical Hdwy	6.62	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.62	-	-	-	-	-
Critical Hdwy Stg 2	5.62	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	244	623	1115	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	230	623	1115	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1115	-	334	-	-
HCM Lane V/C Ratio	0.041	-	0.21	-	-
HCM Control Delay (s)	8.4	0	18.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	2	2	493	366	25
Future Volume (vph)	13	2	2	493	366	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.983				0.991	
Flt Protected	0.958					
Satd. Flow (prot)	1490	0	0	1810	1766	0
Flt Permitted	0.958					
Satd. Flow (perm)	1490	0	0	1810	1766	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	9%	2%	2%	3%	3%	4%
Adj. Flow (vph)	14	2	2	524	389	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	526	416	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	2	2	493	366	25
Future Vol, veh/h	13	2	2	493	366	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	9	2	2	3	3	4
Mvmt Flow	14	2	2	524	389	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	931	403	416	0	-	0
Stage 1	403	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Critical Hdwy	7.89	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.89	-	-	-	-	-
Critical Hdwy Stg 2	6.89	-	-	-	-	-
Follow-up Hdwy	3.581	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	200	599	1143	-	-	-
Stage 1	564	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	200	599	1143	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1143	-	219	-	-
HCM Lane V/C Ratio	0.002	-	0.073	-	-
HCM Control Delay (s)	8.2	0	22.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

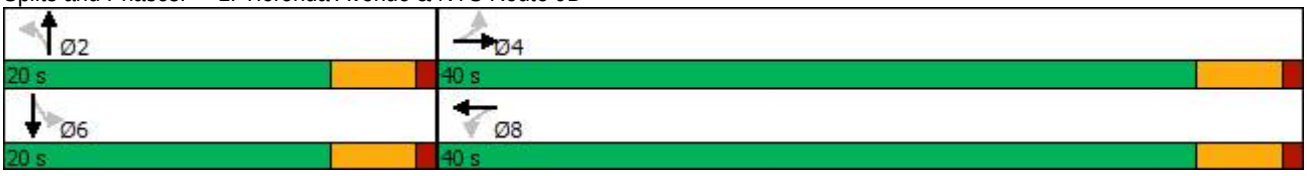
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	390	21	20	393	113	40	15	17	56	10	14
Future Volume (vph)	22	390	21	20	393	113	40	15	17	56	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	11	12	12	13	12	12	12	12
Grade (%)		-7%			7%			6%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			0.99			0.99	
Frt		0.993			0.971			0.968			0.977	
Flt Protected		0.997			0.998			0.973			0.966	
Satd. Flow (prot)	0	1843	0	0	1665	0	0	1749	0	0	1725	0
Flt Permitted		0.965			0.978			0.846			0.792	
Satd. Flow (perm)	0	1783	0	0	1631	0	0	1512	0	0	1411	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)		7			39							
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		820			2162			1011			636	
Travel Time (s)		18.6			49.1			27.6			14.5	
Confl. Peds. (#/hr)	17		2	2		17	5		2	2		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%
Adj. Flow (vph)	24	424	23	22	427	123	43	16	18	61	11	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	471	0	0	572	0	0	77	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.96	1.00	0.96	1.05	1.09	1.05	1.04	1.00	1.04	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	2		1	2	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	6		20	6		20	83		20	83	
Trailing Detector (ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Position(ft)	0	0		0	0		0	-5		0	-5	
Detector 1 Size(ft)	20	6		20	6		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)								43			43	
Detector 2 Size(ft)								40			40	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	40.0	40.0		40.0	40.0		10.0	10.0		10.0	10.0	
Total Split (s)	40.0	40.0		40.0	40.0		20.0	20.0		20.0	20.0	
Total Split (%)	66.7%	66.7%		66.7%	66.7%		33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	35.0	35.0		35.0	35.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	60	60		60	60		10	10		10	10	
v/c Ratio		0.34			0.45			0.33			0.40	
Control Delay		5.1			5.9			24.0			25.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.1			5.9			24.0			25.9	
Queue Length 50th (ft)		52			66			24			27	
Queue Length 95th (ft)		141			189			52			58	
Internal Link Dist (ft)		740			2082			931			556	
Turn Bay Length (ft)												
Base Capacity (vph)		1394			1283			405			377	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.34			0.45			0.19			0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 56.1	
Natural Cycle: 50	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Tioronda Avenue & NYS Route 9D



This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	390	21	20	393	113	40	15	17	56	10	14
Future Volume (veh/h)	22	390	21	20	393	113	40	15	17	56	10	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	2145	2145	2145	1582	1582	1582	1658	1725	1658	1841	1870	1870
Adj Flow Rate, veh/h	24	424	23	22	427	123	43	16	18	61	11	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	4	2	2
Cap, veh/h	104	1347	71	90	804	224	184	47	36	227	31	28
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	42	1933	101	22	1153	322	696	451	350	1012	296	273
Grp Volume(v), veh/h	471	0	0	572	0	0	77	0	0	87	0	0
Grp Sat Flow(s),veh/h/ln	2076	0	0	1497	0	0	1497	0	0	1582	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	9.2	0.0	0.0	2.2	0.0	0.0	2.3	0.0	0.0
Prop In Lane	0.05		0.05	0.04		0.22	0.56		0.23	0.70		0.17
Lane Grp Cap(c), veh/h	1522	0	0	1118	0	0	267	0	0	286	0	0
V/C Ratio(X)	0.31	0.00	0.00	0.51	0.00	0.00	0.29	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	1522	0	0	1118	0	0	534	0	0	565	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.0	0.0	0.0	3.7	0.0	0.0	21.2	0.0	0.0	21.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.7	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	1.8	0.0	0.0	0.8	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.5	0.0	0.0	5.4	0.0	0.0	21.4	0.0	0.0	21.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		471			572			77			87	
Approach Delay, s/veh		3.5			5.4			21.4			21.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	10.2	40.0	10.2	40.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	15.0	35.0	15.0	35.0
Max Q Clear Time (g_c+I1), s	4.2	6.3	4.3	11.2
Green Ext Time (p_c), s	0.1	0.6	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	76	56	391	63	59	373
Future Volume (vph)	76	56	391	63	59	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	12	11	12	12	12
Grade (%)	-7%		1%			3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.943		0.981			
Flt Protected	0.972					0.993
Satd. Flow (prot)	1944	0	1758	0	0	1822
Flt Permitted	0.972					0.993
Satd. Flow (perm)	1944	0	1758	0	0	1822
Link Speed (mph)	30		30			30
Link Distance (ft)	728		1350			591
Travel Time (s)	16.5		30.7			13.4
Confl. Peds. (#/hr)	22	20		22	20	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	84	62	434	70	66	414
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	0	504	0	0	480
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.84	0.96	1.05	1.01	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	76	56	391	63	59	373
Future Vol, veh/h	76	56	391	63	59	373
Conflicting Peds, #/hr	22	20	0	22	20	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	-7	-	1	-	-	3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	62	434	70	66	414

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1059	511	0	0	526	0
Stage 1	491	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Critical Hdwy	5.02	5.52	-	-	4.12	-
Critical Hdwy Stg 1	4.02	-	-	-	-	-
Critical Hdwy Stg 2	4.02	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	375	621	-	-	1041	-
Stage 1	745	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	328	593	-	-	1014	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	634	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	405	1014	-
HCM Lane V/C Ratio	-	-	0.362	0.065	-
HCM Control Delay (s)	-	-	18.9	8.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.2	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	5	4	1	449	446	3
Future Volume (vph)	5	4	1	449	446	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	10	10	12
Grade (%)	10%			1%	-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.939				0.999	
Flt Protected	0.973					
Satd. Flow (prot)	1725	0	0	1730	1746	0
Flt Permitted	0.973					
Satd. Flow (perm)	1725	0	0	1730	1746	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1052			654	1350	
Travel Time (s)	23.9			14.9	30.7	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	6	5	1	516	513	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	517	516	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	14			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.98	1.07	1.01	1.10	1.09	0.99
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.2

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	4	1	449	446	3
Future Vol, veh/h	5	4	1	449	446	3
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	10	-	-	1	-1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	5	1	516	513	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1039	521	519	0	-	0
Stage 1	518	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Critical Hdwy	8.42	7.22	4.12	-	-	-
Critical Hdwy Stg 1	7.42	-	-	-	-	-
Critical Hdwy Stg 2	7.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	143	481	1047	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	478	1044	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	445	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	23.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1044	-	207	-	-
HCM Lane V/C Ratio	0.001	-	0.05	-	-
HCM Control Delay (s)	8.5	0	23.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	34	32	416	417	33
Future Volume (vph)	34	34	32	416	417	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	12
Grade (%)	1%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.990	
Flt Protected	0.976			0.996		
Satd. Flow (prot)	1686	0	0	1820	1774	0
Flt Permitted	0.976			0.996		
Satd. Flow (perm)	1686	0	0	1820	1774	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	263			1447	440	
Travel Time (s)	6.0			32.9	10.0	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	39	39	37	478	479	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	0	0	515	517	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.01	1.01	0.98	1.02	1.05	1.01
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	34	32	416	417	33
Future Vol, veh/h	34	34	32	416	417	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-3	1	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	39	37	478	479	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1050	498	517	0	-	0
Stage 1	498	-	-	-	-	-
Stage 2	552	-	-	-	-	-
Critical Hdwy	6.62	6.32	4.12	-	-	-
Critical Hdwy Stg 1	5.62	-	-	-	-	-
Critical Hdwy Stg 2	5.62	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	237	564	1049	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	226	564	1049	-	-	-
Mov Cap-2 Maneuver	226	-	-	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	559	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.7	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1049	-	323	-	-
HCM Lane V/C Ratio	0.035	-	0.242	-	-
HCM Control Delay (s)	8.6	0	19.7	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	7	3	436	427	23
Future Volume (vph)	12	7	3	436	427	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	11	11	12
Grade (%)	7%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.949				0.993	
Flt Protected	0.970					
Satd. Flow (prot)	1544	0	0	1828	1785	0
Flt Permitted	0.970					
Satd. Flow (perm)	1544	0	0	1828	1785	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	839			832	1447	
Travel Time (s)	19.1			18.9	32.9	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%
Adj. Flow (vph)	13	8	3	474	464	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	0	477	489	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	10			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.14	1.05	0.98	1.02	1.04	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	7	3	436	427	23
Future Vol, veh/h	12	7	3	436	427	23
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	7	-	-	-3	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	5
Mvmt Flow	13	8	3	474	464	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	959	479	490	0	-	0
Stage 1	478	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Critical Hdwy	7.82	6.92	4.12	-	-	-
Critical Hdwy Stg 1	6.82	-	-	-	-	-
Critical Hdwy Stg 2	6.82	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	196	534	1073	-	-	-
Stage 1	518	-	-	-	-	-
Stage 2	516	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	195	533	1072	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1072	-	254	-	-
HCM Lane V/C Ratio	0.003	-	0.081	-	-
HCM Control Delay (s)	8.4	0	20.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

This document was created by an application that isn't licensed to use novaPDF.
Purchase a license to generate PDF files without this notice.

Colliers Engineering & Design

Traffic Impact Study

Appendix E | Traffic Volume Data

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 1-NYS_ROUTE_9D_AT_GRANDVIEW_AVE-FRI_830570_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					DRIVEWAY From East					NYS ROUTE 9D From South					GRANDVIEW AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	3	62	0	0	65	0	0	0	0	0	0	62	1	0	63	0	0	4	0	4	132
02:15 PM	2	49	0	0	51	0	0	0	0	0	0	49	0	0	49	1	0	3	0	4	104
02:30 PM	5	55	0	0	60	0	0	0	0	0	0	76	0	0	76	0	0	2	0	2	138
02:45 PM	9	62	0	0	71	0	0	0	0	0	0	60	0	0	60	1	0	1	0	2	133
Total	19	228	0	0	247	0	0	0	0	0	0	247	1	0	248	2	0	10	0	12	507
03:00 PM	9	65	1	0	75	0	0	0	0	0	0	94	0	0	94	0	0	0	0	0	169
03:15 PM	6	70	0	0	76	0	0	0	0	0	0	89	0	0	89	0	0	3	0	3	168
03:30 PM	6	61	0	0	67	0	0	0	0	0	0	89	0	0	89	0	0	7	0	7	163
03:45 PM	2	39	0	0	41	0	0	0	0	0	0	93	0	0	93	1	0	1	0	2	136
Total	23	235	1	0	259	0	0	0	0	0	0	365	0	0	365	1	0	11	0	12	636
04:00 PM	4	52	0	0	56	0	0	0	0	0	0	103	1	0	104	0	0	2	0	2	162
04:15 PM	4	55	0	0	59	0	0	0	0	0	0	79	1	0	80	1	0	3	0	4	143
04:30 PM	6	54	0	0	60	0	0	0	0	0	0	100	0	0	100	1	0	3	0	4	164
04:45 PM	2	59	0	0	61	0	0	0	0	0	0	90	0	0	90	0	0	3	2	5	156
Total	16	220	0	0	236	0	0	0	0	0	0	372	2	0	374	2	0	11	2	15	625
05:00 PM	4	59	0	0	63	0	0	0	0	0	0	81	1	0	82	0	0	4	0	4	149
05:15 PM	5	51	0	0	56	0	0	0	0	0	0	79	0	0	79	0	0	2	0	2	137
05:30 PM	2	51	0	0	53	0	0	0	0	0	0	72	0	0	72	0	0	3	0	3	128
05:45 PM	6	41	0	0	47	0	0	0	0	0	0	92	0	0	92	1	0	2	0	3	142
Total	17	202	0	0	219	0	0	0	0	0	0	324	1	0	325	1	0	11	0	12	556
Grand Total	75	885	1	0	961	0	0	0	0	0	0	1308	4	0	1312	6	0	43	2	51	2324
Apprch %	7.8	92.1	0.1	0		0	0	0	0		0	99.7	0.3	0		11.8	0	84.3	3.9		
Total %	3.2	38.1	0	0	41.4	0	0	0	0	0	0	56.3	0.2	0	56.5	0.3	0	1.9	0.1	2.2	
Lights	70	869	1	0	940	0	0	0	0	0	0	1274	4	0	1278	6	0	42	0	48	2266
% Lights	93.3	98.2	100	0	97.8	0	0	0	0	0	0	97.4	100	0	97.4	100	0	97.7	0	94.1	97.5
Buses	4	3	0	0	7	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	20
% Buses	5.3	0.3	0	0	0.7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0.9
Trucks	1	13	0	0	14	0	0	0	0	0	0	21	0	0	21	0	0	1	0	1	36
% Trucks	1.3	1.5	0	0	1.5	0	0	0	0	0	0	1.6	0	0	1.6	0	0	2.3	0	2	1.5
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	3.9	0.1

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 1-NYS_ROUTE_9D_AT_GRANDVIEW_AVE-FRI_830570_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 2

	NYS ROUTE 9D From North					DRIVEWAY From East					NYS ROUTE 9D From South					GRANDVIEW AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	9	65	1	0	75	0	0	0	0	0	0	94	0	0	94	0	0	0	0	0	169
03:15 PM	6	70	0	0	76	0	0	0	0	0	0	89	0	0	89	0	0	3	0	3	168
03:30 PM	6	61	0	0	67	0	0	0	0	0	0	89	0	0	89	0	0	7	0	7	163
03:45 PM	2	39	0	0	41	0	0	0	0	0	0	93	0	0	93	1	0	1	0	2	136
Total Volume	23	235	1	0	259	0	0	0	0	0	0	365	0	0	365	1	0	11	0	12	636
% App. Total	8.9	90.7	0.4	0		0	0	0	0		0	100	0	0		8.3	0	91.7	0		
PHF	.639	.839	.250	.000	.852	.000	.000	.000	.000	.000	.000	.971	.000	.000	.971	.250	.000	.393	.000	.429	.941
Lights	22	229	1	0	252	0	0	0	0	0	0	354	0	0	354	1	0	10	0	11	617
% Lights	95.7	97.4	100	0	97.3	0	0	0	0	0	0	97.0	0	0	97.0	100	0	90.9	0	91.7	97.0
Buses	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	9
% Buses	0	1.3	0	0	1.2	0	0	0	0	0	0	1.6	0	0	1.6	0	0	0	0	0	1.4
Trucks	1	3	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	10
% Trucks	4.3	1.3	0	0	1.5	0	0	0	0	0	0	1.4	0	0	1.4	0	0	9.1	0	8.3	1.6
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 1-NYS_ROUTE_9D_AT_GRANDVIEW_AVE-SAT_830572_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					DRIVEWAY From East					NYS ROUTE 9D From South					GRANDVIEW AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:00 PM	7	56	0	0	63	0	0	0	0	0	0	74	1	0	75	0	0	4	1	5	143
12:15 PM	5	55	0	0	60	0	0	1	0	1	0	90	0	0	90	0	0	2	0	2	153
12:30 PM	7	67	0	0	74	0	0	0	1	1	0	77	0	0	77	0	0	5	0	5	157
12:45 PM	5	56	0	0	61	0	0	0	0	0	1	77	2	0	80	2	0	9	0	11	152
Total	24	234	0	0	258	0	0	1	1	2	1	318	3	0	322	2	0	20	1	23	605
01:00 PM	3	75	0	0	78	0	0	0	0	0	0	68	0	0	68	0	0	1	0	1	147
01:15 PM	3	90	0	0	93	0	0	0	0	0	0	77	0	0	77	2	0	1	0	3	173
01:30 PM	3	62	0	0	65	0	0	0	0	0	0	81	0	0	81	1	0	3	1	5	151
01:45 PM	1	72	0	0	73	0	0	0	0	0	0	77	0	0	77	0	0	4	0	4	154
Total	10	299	0	0	309	0	0	0	0	0	0	303	0	0	303	3	0	9	1	13	625
02:00 PM	6	74	0	0	80	0	0	0	0	0	0	80	1	0	81	0	0	6	0	6	167
02:15 PM	10	77	1	0	88	0	0	0	1	1	0	71	0	0	71	0	0	2	0	2	162
02:30 PM	4	53	0	0	57	0	0	0	0	0	0	64	1	0	65	1	0	3	0	4	126
02:45 PM	5	76	1	0	82	0	0	0	0	0	0	87	2	0	89	0	0	4	1	5	176
Total	25	280	2	0	307	0	0	0	1	1	0	302	4	0	306	1	0	15	1	17	631
03:00 PM	6	85	0	0	91	0	0	0	0	0	0	77	0	0	77	1	0	3	0	4	172
03:15 PM	4	74	0	0	78	0	0	1	0	1	0	80	0	0	80	2	0	3	1	6	165
03:30 PM	6	77	0	0	83	0	0	0	0	0	0	85	1	0	86	1	0	1	0	2	171
03:45 PM	5	90	0	0	95	0	0	0	0	0	0	90	1	0	91	2	0	1	0	3	189
Total	21	326	0	0	347	0	0	1	0	1	0	332	2	0	334	6	0	8	1	15	697
04:00 PM	3	71	0	0	74	0	0	0	0	0	0	89	0	0	89	0	0	0	1	1	164
04:15 PM	2	59	0	0	61	0	0	2	0	2	0	71	0	0	71	0	0	2	0	2	136
04:30 PM	8	75	0	0	83	0	0	0	0	0	0	90	0	0	90	0	0	0	0	0	173
04:45 PM	6	68	0	0	74	0	0	0	0	0	0	59	0	0	59	1	0	3	1	5	138
Total	19	273	0	0	292	0	0	2	0	2	0	309	0	0	309	1	0	5	2	8	611
05:00 PM	4	96	0	0	100	0	0	0	0	0	0	59	0	0	59	0	0	2	0	2	161
05:15 PM	5	71	0	0	76	0	0	0	0	0	0	83	0	0	83	0	0	5	0	5	164
05:30 PM	3	76	0	0	79	0	0	0	0	0	0	55	1	0	56	0	0	2	0	2	137
05:45 PM	1	48	0	0	49	0	0	0	0	0	0	68	0	0	68	1	0	4	0	5	122
Total	13	291	0	0	304	0	0	0	0	0	0	265	1	0	266	1	0	13	0	14	584
Grand Total	112	1703	2	0	1817	0	0	4	2	6	1	1829	10	0	1840	14	0	70	6	90	3753
Apprch %	6.2	93.7	0.1	0		0	0	66.7	33.3		0.1	99.4	0.5	0		15.6	0	77.8	6.7		
Total %	3	45.4	0.1	0	48.4	0	0	0.1	0.1	0.2	0	48.7	0.3	0	49	0.4	0	1.9	0.2	2.4	
Lights	108	1689	2	0	1799	0	0	4	0	4	1	1817	10	0	1828	14	0	69	0	83	
% Lights	96.4	99.2	100	0	99	0	0	100	0	66.7	100	99.3	100	0	99.3	100	0	98.6	0	92.2	**1294**

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 1-NYS_ROUTE_9D_AT_GRANDVIEW_AVE-SAT_830572_04-24-2021
Site Code :
Start Date : 4/24/2021

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					DRIVEWAY From East					NYS ROUTE 9D From South					GRANDVIEW AVE From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Buses	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Trucks	4	12	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	1	0	1	29
% Trucks	3.6	0.7	0	0	0.9	0	0	0	0	0	0	0.7	0	0	0.7	0	0	1.4	0	1.1	0.8
Pedestrians	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	6	6	8
% Pedestrians	0	0	0	0	0	0	0	0	100	33.3	0	0	0	0	0	0	0	0	100	6.7	0.2

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 1-NYS_ROUTE_9D_AT_GRANDVIEW_AVE-SAT_830572_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 3

	NYS ROUTE 9D From North					DRIVEWAY From East					NYS ROUTE 9D From South					GRANDVIEW AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	6	85	0	0	91	0	0	0	0	0	0	77	0	0	77	1	0	3	0	4	172
03:15 PM	4	74	0	0	78	0	0	1	0	1	0	80	0	0	80	2	0	3	1	6	165
03:30 PM	6	77	0	0	83	0	0	0	0	0	0	85	1	0	86	1	0	1	0	2	171
03:45 PM	5	90	0	0	95	0	0	0	0	0	0	90	1	0	91	2	0	1	0	3	189
Total Volume	21	326	0	0	347	0	0	1	0	1	0	332	2	0	334	6	0	8	1	15	697
% App. Total	6.1	93.9	0	0		0	0	100	0		0	99.4	0.6	0		40	0	53.3	6.7		
PHF	.875	.906	.000	.000	.913	.000	.000	.250	.000	.250	.000	.922	.500	.000	.918	.750	.000	.667	.250	.625	.922
Lights	20	323	0	0	343	0	0	1	0	1	0	330	2	0	332	6	0	8	0	14	690
% Lights	95.2	99.1	0	0	98.8	0	0	100	0	100	0	99.4	100	0	99.4	100	0	100	0	93.3	99.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	1	3	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
% Trucks	4.8	0.9	0	0	1.2	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0.9
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	6.7	0.1

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 2-NYS_ROUTE_9D_AT_KRISTY_DR-FRI_830573_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					From East					NYS ROUTE 9D From South					KRYSTY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	64	0	0	64	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	124
02:15 PM	1	58	0	0	59	0	0	0	0	0	0	58	1	0	59	0	0	1	0	1	119
02:30 PM	0	62	0	0	62	0	0	0	0	0	0	73	0	0	73	1	0	2	0	3	138
02:45 PM	1	68	0	0	69	0	0	0	0	0	0	65	1	0	66	2	0	3	2	7	142
Total	2	252	0	0	254	0	0	0	0	0	0	256	2	0	258	3	0	6	2	11	523
03:00 PM	0	74	0	0	74	0	0	0	0	0	0	90	1	0	91	0	0	0	0	0	165
03:15 PM	2	83	0	0	85	0	0	0	0	0	0	94	1	0	95	1	0	2	0	3	183
03:30 PM	1	66	0	0	67	0	0	0	0	0	0	101	1	0	102	1	0	1	0	2	171
03:45 PM	2	45	0	0	47	0	0	0	0	0	0	90	1	0	91	0	0	0	0	0	138
Total	5	268	0	0	273	0	0	0	0	0	0	375	4	0	379	2	0	3	0	5	657
04:00 PM	2	56	0	0	58	0	0	0	0	0	0	100	2	0	102	0	0	0	0	0	160
04:15 PM	1	58	0	0	59	0	0	0	0	0	0	89	2	0	91	0	0	2	0	2	152
04:30 PM	1	63	0	0	64	0	0	0	0	0	0	102	0	0	102	0	0	2	0	2	168
04:45 PM	2	62	0	0	64	0	0	0	0	0	0	97	2	0	99	3	0	2	0	5	168
Total	6	239	0	0	245	0	0	0	0	0	0	388	6	0	394	3	0	6	0	9	648
05:00 PM	0	67	0	0	67	0	0	0	0	0	0	83	1	0	84	0	0	2	0	2	153
05:15 PM	2	57	0	0	59	0	0	0	0	0	0	82	0	0	82	0	0	2	0	2	143
05:30 PM	3	57	0	0	60	0	0	0	0	0	0	73	0	0	73	0	0	2	1	3	136
05:45 PM	1	52	0	0	53	0	0	0	0	0	0	101	1	0	102	0	0	0	0	0	155
Total	6	233	0	0	239	0	0	0	0	0	0	339	2	0	341	0	0	6	1	7	587
Grand Total	19	992	0	0	1011	0	0	0	0	0	0	1358	14	0	1372	8	0	21	3	32	2415
Apprch %	1.9	98.1	0	0		0	0	0	0		0	99	1	0		25	0	65.6	9.4		
Total %	0.8	41.1	0	0	41.9	0	0	0	0	0	0	56.2	0.6	0	56.8	0.3	0	0.9	0.1	1.3	
Lights	18	971	0	0	989	0	0	0	0	0	0	1322	14	0	1336	6	0	19	0	25	2350
% Lights	94.7	97.9	0	0	97.8	0	0	0	0	0	0	97.3	100	0	97.4	75	0	90.5	0	78.1	97.3
Buses	0	6	0	0	6	0	0	0	0	0	0	13	0	0	13	2	0	0	0	2	21
% Buses	0	0.6	0	0	0.6	0	0	0	0	0	0	1	0	0	0.9	25	0	0	0	6.2	0.9
Trucks	1	15	0	0	16	0	0	0	0	0	0	23	0	0	23	0	0	2	0	2	41
% Trucks	5.3	1.5	0	0	1.6	0	0	0	0	0	0	1.7	0	0	1.7	0	0	9.5	0	6.2	1.7
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	9.4	0.1

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 2-NYS_ROUTE_9D_AT_KRISTY_DR-FRI_830573_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 2

	NYS ROUTE 9D From North					From East					NYS ROUTE 9D From South					KRYSTY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	1	68	0	0	69	0	0	0	0	0	0	65	1	0	66	2	0	3	2	7	142
03:00 PM	0	74	0	0	74	0	0	0	0	0	0	90	1	0	91	0	0	0	0	0	165
03:15 PM	2	83	0	0	85	0	0	0	0	0	0	94	1	0	95	1	0	2	0	3	183
03:30 PM	1	66	0	0	67	0	0	0	0	0	0	101	1	0	102	1	0	1	0	2	171
Total Volume	4	291	0	0	295	0	0	0	0	0	0	350	4	0	354	4	0	6	2	12	661
% App. Total	1.4	98.6	0	0		0	0	0	0		0	98.9	1.1	0		33.3	0	50	16.7		
PHF	.500	.877	.000	.000	.868	.000	.000	.000	.000	.000	.000	.866	1.00	.000	.868	.500	.000	.500	.250	.429	.903
Lights	4	280	0	0	284	0	0	0	0	0	0	335	4	0	339	2	0	6	0	8	631
% Lights	100	96.2	0	0	96.3	0	0	0	0	0	0	95.7	100	0	95.8	50.0	0	100	0	66.7	95.5
Buses	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	2	0	0	0	2	15
% Buses	0	1.7	0	0	1.7	0	0	0	0	0	0	2.3	0	0	2.3	50.0	0	0	0	16.7	2.3
Trucks	0	6	0	0	6	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13
% Trucks	0	2.1	0	0	2.0	0	0	0	0	0	0	2.0	0	0	2.0	0	0	0	0	0	2.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	16.7	0.3

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 2-NYS_ROUTE_9D_AT_KRISTY_DR-SAT_830574_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					From East					NYS ROUTE 9D From South					KRISTY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:00 PM	3	59	0	0	62	0	0	0	0	0	0	78	1	0	79	1	0	2	2	5	146
12:15 PM	0	68	0	0	68	0	0	0	0	0	0	92	1	0	93	0	0	1	2	3	164
12:30 PM	1	67	0	0	68	0	0	0	0	0	0	82	1	0	83	1	0	1	2	4	155
12:45 PM	3	66	0	0	69	0	0	0	0	0	0	84	1	0	85	2	0	3	0	5	159
Total	7	260	0	0	267	0	0	0	0	0	0	336	4	0	340	4	0	7	6	17	624
01:00 PM	2	77	0	0	79	0	0	0	0	0	0	69	0	0	69	4	0	2	0	6	154
01:15 PM	1	94	0	0	95	0	0	0	0	0	0	81	0	0	81	0	0	0	1	1	177
01:30 PM	0	66	0	0	66	0	0	0	0	0	0	82	2	0	84	0	0	2	1	3	153
01:45 PM	4	74	0	0	78	0	0	0	0	0	0	78	1	0	79	1	0	0	1	2	159
Total	7	311	0	0	318	0	0	0	0	0	0	310	3	0	313	5	0	4	3	12	643
02:00 PM	3	86	0	0	89	0	0	0	0	0	0	90	1	0	91	0	0	3	1	4	184
02:15 PM	2	82	0	0	84	0	0	0	0	0	0	70	3	0	73	5	0	1	2	8	165
02:30 PM	0	65	0	0	65	0	0	0	0	0	0	70	2	0	72	0	0	2	1	3	140
02:45 PM	0	86	0	0	86	0	0	0	0	0	0	97	0	0	97	0	0	0	1	1	184
Total	5	319	0	0	324	0	0	0	0	0	0	327	6	0	333	5	0	6	5	16	673
03:00 PM	1	91	0	0	92	0	0	0	0	0	0	80	0	0	80	1	0	2	2	5	177
03:15 PM	1	78	0	0	79	0	0	0	0	0	0	83	1	0	84	1	0	0	0	1	164
03:30 PM	1	87	0	0	88	0	0	0	0	0	0	87	0	0	87	1	0	1	0	2	177
03:45 PM	0	104	0	0	104	0	0	0	0	0	0	102	0	0	102	1	0	2	1	4	210
Total	3	360	0	0	363	0	0	0	0	0	0	352	1	0	353	4	0	5	3	12	728
04:00 PM	2	71	0	0	73	0	0	0	0	0	0	92	1	0	93	0	0	0	3	3	169
04:15 PM	1	70	0	0	71	0	0	0	0	0	0	71	2	0	73	0	0	0	1	1	145
04:30 PM	4	82	0	0	86	0	0	0	0	0	0	100	0	0	100	0	0	1	2	3	189
04:45 PM	3	77	0	0	80	0	0	0	0	0	0	68	1	0	69	1	0	2	1	4	153
Total	10	300	0	0	310	0	0	0	0	0	0	331	4	0	335	1	0	3	7	11	656
05:00 PM	0	107	0	0	107	0	0	0	0	0	0	62	0	0	62	0	0	2	0	2	171
05:15 PM	2	78	0	0	80	0	0	0	0	0	0	91	0	0	91	0	0	0	0	0	171
05:30 PM	2	72	0	0	74	0	0	0	0	0	0	58	0	0	58	0	0	5	0	5	137
05:45 PM	6	55	0	0	61	0	0	0	0	0	0	76	0	0	76	1	0	2	0	3	140
Total	10	312	0	0	322	0	0	0	0	0	0	287	0	0	287	1	0	9	0	10	619
Grand Total	42	1862	0	0	1904	0	0	0	0	0	0	1943	18	0	1961	20	0	34	24	78	3943
Apprch %	2.2	97.8	0	0		0	0	0	0		0	99.1	0.9	0		25.6	0	43.6	30.8		
Total %	1.1	47.2	0	0	48.3	0	0	0	0	0	0	49.3	0.5	0	49.7	0.5	0	0.9	0.6	2	
Lights	42	1845	0	0	1887	0	0	0	0	0	0	1932	16	0	1948	19	0	34	0	53	
% Lights	100	99.1	0	0	99.1	0	0	0	0	0	0	99.4	88.9	0	99.3	95	0	100	0	67.9	**1299**

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 2-NYS_ROUTE_9D_AT_KRISTY_DR-SAT_830574_04-24-2021
Site Code :
Start Date : 4/24/2021

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					From East					NYS ROUTE 9D From South					KRISTY DR From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Buses	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Buses	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Trucks	0	15	0	0	15	0	0	0	0	0	0	11	2	0	13	1	0	0	0	1	29
% Trucks	0	0.8	0	0	0.8	0	0	0	0	0	0	0.6	11.1	0	0.7	5	0	0	0	1.3	0.7
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	24	24
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	30.8	0.6

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 2-NYS_ROUTE_9D_AT_KRISTY_DR-SAT_830574_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 3

	NYS ROUTE 9D From North					From East					NYS ROUTE 9D From South					KRISTY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	1	91	0	0	92	0	0	0	0	0	0	80	0	0	80	1	0	2	2	5	177
03:15 PM	1	78	0	0	79	0	0	0	0	0	0	83	1	0	84	1	0	0	0	1	164
03:30 PM	1	87	0	0	88	0	0	0	0	0	0	87	0	0	87	1	0	1	0	2	177
03:45 PM	0	104	0	0	104	0	0	0	0	0	0	102	0	0	102	1	0	2	1	4	210
Total Volume	3	360	0	0	363	0	0	0	0	0	0	352	1	0	353	4	0	5	3	12	728
% App. Total	0.8	99.2	0	0		0	0	0	0		0	99.7	0.3	0		33.3	0	41.7	25		
PHF	.750	.865	.000	.000	.873	.000	.000	.000	.000	.000	.000	.863	.250	.000	.865	1.00	.000	.625	.375	.600	.867
Lights	3	356	0	0	359	0	0	0	0	0	0	350	1	0	351	4	0	5	0	9	719
% Lights	100	98.9	0	0	98.9	0	0	0	0	0	0	99.4	100	0	99.4	100	0	100	0	75.0	98.8
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
% Trucks	0	1.1	0	0	1.1	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0.8
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	25.0	0.4

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 3-NYS_ROUTE_9D_AT_HOWLAND_AVE-FRI_830575_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					HOWLAND AVE From East					NYS ROUTE 9D From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	60	8	0	68	3	0	5	0	8	8	52	0	0	60	0	0	0	0	0	136
02:15 PM	0	56	6	0	62	6	0	11	3	20	8	62	0	0	70	0	0	0	0	0	152
02:30 PM	0	52	8	0	60	5	0	9	0	14	14	69	0	0	83	0	0	0	0	0	157
02:45 PM	0	64	6	0	70	9	0	10	0	19	19	57	0	0	76	0	0	0	0	0	165
Total	0	232	28	0	260	23	0	35	3	61	49	240	0	0	289	0	0	0	0	0	610
03:00 PM	0	71	13	0	84	12	0	8	2	22	16	80	0	0	96	0	0	0	0	0	202
03:15 PM	0	72	19	0	91	7	0	14	0	21	13	86	0	0	99	0	0	0	0	0	211
03:30 PM	0	58	8	0	66	3	0	12	1	16	20	77	0	0	97	0	0	0	0	0	179
03:45 PM	0	44	11	0	55	6	0	7	0	13	11	88	0	0	99	0	0	0	0	0	167
Total	0	245	51	0	296	28	0	41	3	72	60	331	0	0	391	0	0	0	0	0	759
04:00 PM	0	49	10	0	59	7	0	7	1	15	21	86	0	0	107	0	0	0	0	0	181
04:15 PM	0	65	7	0	72	14	0	2	3	19	13	72	0	0	85	0	0	0	0	0	176
04:30 PM	0	52	10	0	62	3	0	10	0	13	18	91	0	0	109	0	0	0	0	0	184
04:45 PM	0	57	11	0	68	3	0	9	0	12	14	78	0	0	92	0	0	0	0	0	172
Total	0	223	38	0	261	27	0	28	4	59	66	327	0	0	393	0	0	0	0	0	713
05:00 PM	0	65	9	0	74	2	0	6	2	10	7	83	0	0	90	0	0	0	0	0	174
05:15 PM	0	50	14	0	64	6	0	10	1	17	18	73	0	0	91	0	0	0	0	0	172
05:30 PM	0	52	7	0	59	6	0	8	1	15	12	64	0	0	76	0	0	0	0	0	150
05:45 PM	0	54	12	0	66	7	0	7	0	14	14	86	0	0	100	0	0	0	0	0	180
Total	0	221	42	0	263	21	0	31	4	56	51	306	0	0	357	0	0	0	0	0	676
Grand Total	0	921	159	0	1080	99	0	135	14	248	226	1204	0	0	1430	0	0	0	0	0	2758
Apprch %	0	85.3	14.7	0		39.9	0	54.4	5.6		15.8	84.2	0	0		0	0	0	0		
Total %	0	33.4	5.8	0	39.2	3.6	0	4.9	0.5	9	8.2	43.7	0	0	51.8	0	0	0	0	0	
Lights	0	899	150	0	1049	99	0	133	0	232	219	1171	0	0	1390	0	0	0	0	0	2671
% Lights	0	97.6	94.3	0	97.1	100	0	98.5	0	93.5	96.9	97.3	0	0	97.2	0	0	0	0	0	96.8
Buses	0	5	6	0	11	0	0	1	0	1	5	9	0	0	14	0	0	0	0	0	26
% Buses	0	0.5	3.8	0	1	0	0	0.7	0	0.4	2.2	0.7	0	0	1	0	0	0	0	0	0.9
Trucks	0	17	3	0	20	0	0	1	0	1	2	24	0	0	26	0	0	0	0	0	47
% Trucks	0	1.8	1.9	0	1.9	0	0	0.7	0	0.4	0.9	2	0	0	1.8	0	0	0	0	0	1.7
Pedestrians	0	0	0	0	0	0	0	0	14	14	0	0	0	0	0	0	0	0	0	0	14
% Pedestrians	0	0	0	0	0	0	0	0	100	5.6	0	0	0	0	0	0	0	0	0	0	0.5

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 3-NYS_ROUTE_9D_AT_HOWLAND_AVE-FRI_830575_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 2

	NYS ROUTE 9D From North					HOWLAND AVE From East					NYS ROUTE 9D From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	71	13	0	84	12	0	8	2	22	16	80	0	0	96	0	0	0	0	0	202
03:15 PM	0	72	19	0	91	7	0	14	0	21	13	86	0	0	99	0	0	0	0	0	211
03:30 PM	0	58	8	0	66	3	0	12	1	16	20	77	0	0	97	0	0	0	0	0	179
03:45 PM	0	44	11	0	55	6	0	7	0	13	11	88	0	0	99	0	0	0	0	0	167
Total Volume	0	245	51	0	296	28	0	41	3	72	60	331	0	0	391	0	0	0	0	0	759
% App. Total	0	82.8	17.2	0		38.9	0	56.9	4.2		15.3	84.7	0	0		0	0	0	0		
PHF	.000	.851	.671	.000	.813	.583	.000	.732	.375	.818	.750	.940	.000	.000	.987	.000	.000	.000	.000	.000	.899
Lights	0	240	50	0	290	28	0	39	0	67	57	322	0	0	379	0	0	0	0	0	736
% Lights	0	98.0	98.0	0	98.0	100	0	95.1	0	93.1	95.0	97.3	0	0	96.9	0	0	0	0	0	97.0
Buses	0	1	1	0	2	0	0	1	0	1	3	4	0	0	7	0	0	0	0	0	10
% Buses	0	0.4	2.0	0	0.7	0	0	2.4	0	1.4	5.0	1.2	0	0	1.8	0	0	0	0	0	1.3
Trucks	0	4	0	0	4	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	10
% Trucks	0	1.6	0	0	1.4	0	0	2.4	0	1.4	0	1.5	0	0	1.3	0	0	0	0	0	1.3
Pedestrians	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3
% Pedestrians	0	0	0	0	0	0	0	0	100	4.2	0	0	0	0	0	0	0	0	0	0	0.4

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 3-NYS_ROUTE_9D_AT_HOWLAND_AVE-SAT_830576_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					HOWLAND AVE From East					NYS ROUTE 9D From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:00 PM	0	67	11	0	78	12	0	18	2	32	10	65	0	0	75	0	0	0	0	0	185
12:15 PM	0	60	18	0	78	9	0	19	7	35	16	82	0	0	98	0	0	0	0	0	211
12:30 PM	0	63	18	0	81	3	0	17	10	30	13	68	0	0	81	0	0	0	0	0	192
12:45 PM	0	62	17	0	79	10	0	16	0	26	17	72	0	0	89	0	0	0	0	0	194
Total	0	252	64	0	316	34	0	70	19	123	56	287	0	0	343	0	0	0	0	0	782
01:00 PM	0	73	2	0	75	13	0	12	2	27	8	73	0	0	81	0	0	0	0	0	183
01:15 PM	0	83	8	0	91	10	0	18	6	34	8	72	0	0	80	0	0	0	0	0	205
01:30 PM	0	62	9	0	71	14	0	13	2	29	13	72	0	0	85	0	0	0	0	0	185
01:45 PM	0	65	16	0	81	23	0	21	3	47	10	69	0	0	79	0	0	0	0	0	207
Total	0	283	35	0	318	60	0	64	13	137	39	286	0	0	325	0	0	0	0	0	780
02:00 PM	0	88	11	1	100	5	0	18	2	25	13	81	0	0	94	0	0	0	0	0	219
02:15 PM	0	67	13	0	80	10	0	20	2	32	13	61	0	0	74	0	0	0	0	0	186
02:30 PM	0	59	15	0	74	9	0	15	1	25	12	64	0	0	76	0	0	0	0	0	175
02:45 PM	0	75	16	0	91	2	0	24	12	38	16	87	0	0	103	0	0	0	0	0	232
Total	0	289	55	1	345	26	0	77	17	120	54	293	0	0	347	0	0	0	0	0	812
03:00 PM	0	76	6	0	82	13	0	18	2	33	13	71	0	1	85	0	0	0	0	0	200
03:15 PM	0	72	12	0	84	7	0	12	2	21	13	74	0	1	88	0	0	0	0	0	193
03:30 PM	0	84	6	0	90	10	0	10	4	24	10	72	0	0	82	0	0	0	0	0	196
03:45 PM	0	92	13	0	105	10	0	12	0	22	11	87	0	0	98	0	0	0	0	0	225
Total	0	324	37	0	361	40	0	52	8	100	47	304	0	2	353	0	0	0	0	0	814
04:00 PM	0	68	12	0	80	13	0	8	3	24	13	78	0	0	91	0	0	0	0	0	195
04:15 PM	0	72	11	0	83	6	0	6	6	18	7	67	0	0	74	0	0	0	0	0	175
04:30 PM	0	82	9	2	93	6	0	8	2	16	19	82	0	0	101	0	0	0	0	0	210
04:45 PM	0	63	12	0	75	6	0	20	1	27	10	66	0	0	76	0	0	0	0	0	178
Total	0	285	44	2	331	31	0	42	12	85	49	293	0	0	342	0	0	0	0	0	758
05:00 PM	0	90	11	0	101	8	0	12	5	25	9	66	0	0	75	0	0	0	0	0	201
05:15 PM	0	75	6	0	81	4	0	11	2	17	20	70	0	0	90	0	0	0	0	0	188
05:30 PM	0	66	13	0	79	10	0	13	2	25	12	56	0	0	68	0	0	0	0	0	172
05:45 PM	0	59	8	0	67	8	0	6	1	15	13	69	0	0	82	0	0	0	0	0	164
Total	0	290	38	0	328	30	0	42	10	82	54	261	0	0	315	0	0	0	0	0	725
Grand Total	0	1723	273	3	1999	221	0	347	79	647	299	1724	0	2	2025	0	0	0	0	0	4671
Apprch %	0	86.2	13.7	0.2		34.2	0	53.6	12.2		14.8	85.1	0	0.1		0	0	0	0		
Total %	0	36.9	5.8	0.1	42.8	4.7	0	7.4	1.7	13.9	6.4	36.9	0	0	43.4	0	0	0	0	0	
Lights	0	1707	258	0	1965	219	0	344	0	563	297	1715	0	0	2012	0	0	0	0	0	
% Lights	0	99.1	94.5	0	98.3	99.1	0	99.1	0	87	99.3	99.5	0	0	99.4	0	0	0	0	0	**1304**

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 3-NYS_ROUTE_9D_AT_HOWLAND_AVE-SAT_830576_04-24-2021
Site Code :
Start Date : 4/24/2021

Groups Printed- Lights - Buses - Trucks - Pedestrians

	NYS ROUTE 9D From North					HOWLAND AVE From East					NYS ROUTE 9D From South					From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Buses	0	1	11	0	12	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	14
% Buses	0	0.1	4	0	0.6	0.9	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0.3
Trucks	0	15	4	0	19	0	0	3	0	3	2	9	0	0	11	0	0	0	0	0	33
% Trucks	0	0.9	1.5	0	1	0	0	0.9	0	0.5	0.7	0.5	0	0	0.5	0	0	0	0	0	0.7
Pedestrians	0	0	0	3	3	0	0	0	79	79	0	0	0	2	2	0	0	0	0	0	84
% Pedestrians	0	0	0	100	0.2	0	0	0	100	12.2	0	0	0	100	0.1	0	0	0	0	0	1.8

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 3-NYS_ROUTE_9D_AT_HOWLAND_AVE-SAT_830576_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 3

	NYS ROUTE 9D From North					HOWLAND AVE From East					NYS ROUTE 9D From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	0	75	16	0	91	2	0	24	12	38	16	87	0	0	103	0	0	0	0	0	232
03:00 PM	0	76	6	0	82	13	0	18	2	33	13	71	0	1	85	0	0	0	0	0	200
03:15 PM	0	72	12	0	84	7	0	12	2	21	13	74	0	1	88	0	0	0	0	0	193
03:30 PM	0	84	6	0	90	10	0	10	4	24	10	72	0	0	82	0	0	0	0	0	196
Total Volume	0	307	40	0	347	32	0	64	20	116	52	304	0	2	358	0	0	0	0	0	821
% App. Total	0	88.5	11.5	0		27.6	0	55.2	17.2		14.5	84.9	0	0.6		0	0	0	0		
PHF	.000	.914	.625	.000	.953	.615	.000	.667	.417	.763	.813	.874	.000	.500	.869	.000	.000	.000	.000	.000	.885
Lights	0	305	40	0	345	32	0	63	0	95	52	302	0	0	354	0	0	0	0	0	794
% Lights	0	99.3	100	0	99.4	100	0	98.4	0	81.9	100	99.3	0	0	98.9	0	0	0	0	0	96.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	2	0	0	2	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	5
% Trucks	0	0.7	0	0	0.6	0	0	1.6	0	0.9	0	0.7	0	0	0.6	0	0	0	0	0	0.6
Pedestrians	0	0	0	0	0	0	0	0	20	20	0	0	0	2	2	0	0	0	0	0	22
% Pedestrians	0	0	0	0	0	0	0	0	100	17.2	0	0	0	100	0.6	0	0	0	0	0	2.7

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 4-NYS_ROUTE_9D_AT_TIORONDA_AVE-FRI_830577_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	TIORONDA AVE From North					NYS ROUTE 9D From East					TIORONDA AVE From South					NYS ROUTE 9D From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	2	0	10	3	15	17	46	2	0	65	0	1	2	2	5	2	57	2	4	65	150
02:15 PM	1	2	9	2	14	10	59	2	0	71	0	1	1	0	2	2	57	2	0	61	148
02:30 PM	3	2	12	1	18	28	61	1	0	90	3	1	1	4	9	3	62	1	4	70	187
02:45 PM	4	2	10	2	18	18	73	0	0	91	4	2	2	2	10	1	77	2	2	82	201
Total	10	6	41	8	65	73	239	5	0	317	7	5	6	8	26	8	253	7	10	278	686
03:00 PM	1	2	14	13	30	27	99	7	2	135	5	3	3	5	16	1	98	10	2	111	292
03:15 PM	1	3	13	1	18	24	91	1	0	116	1	1	3	1	6	3	103	9	0	115	255
03:30 PM	1	1	13	1	16	12	97	2	0	111	1	1	0	2	4	0	72	5	2	79	210
03:45 PM	2	2	13	2	19	8	87	0	3	98	1	2	2	0	5	3	59	2	3	67	189
Total	5	8	53	17	83	71	374	10	5	460	8	7	8	8	31	7	332	26	7	372	946
04:00 PM	2	0	10	3	15	8	102	1	0	111	1	1	1	0	3	1	63	1	1	66	195
04:15 PM	4	4	6	6	20	15	87	4	1	107	1	4	2	1	8	3	80	6	1	90	225
04:30 PM	4	4	10	2	20	19	93	3	0	115	8	3	2	0	13	3	68	2	0	73	221
04:45 PM	2	1	16	1	20	22	78	1	0	101	0	2	2	1	5	2	71	6	1	80	206
Total	12	9	42	12	75	64	360	9	1	434	10	10	7	2	29	9	282	15	3	309	847
05:00 PM	4	1	12	1	18	15	84	0	2	101	2	1	0	1	4	0	81	6	0	87	210
05:15 PM	0	2	11	4	17	21	92	2	3	118	1	0	0	2	3	1	73	3	0	77	215
05:30 PM	2	0	17	5	24	14	72	2	0	88	0	1	1	2	4	0	66	5	2	73	189
05:45 PM	1	2	14	6	23	20	92	2	0	114	1	1	2	8	12	1	65	0	5	71	220
Total	7	5	54	16	82	70	340	6	5	421	4	3	3	13	23	2	285	14	7	308	834
Grand Total	34	28	190	53	305	278	1313	30	11	1632	29	25	24	31	109	26	1152	62	27	1267	3313
Apprch %	11.1	9.2	62.3	17.4		17	80.5	1.8	0.7		26.6	22.9	22	28.4		2.1	90.9	4.9	2.1		
Total %	1	0.8	5.7	1.6	9.2	8.4	39.6	0.9	0.3	49.3	0.9	0.8	0.7	0.9	3.3	0.8	34.8	1.9	0.8	38.2	
Lights	34	28	182	0	244	275	1279	28	0	1582	29	24	22	0	75	25	1127	60	0	1212	3113
% Lights	100	100	95.8	0	80	98.9	97.4	93.3	0	96.9	100	96	91.7	0	68.8	96.2	97.8	96.8	0	95.7	94
Buses	0	0	5	0	5	2	11	2	0	15	0	1	0	0	1	0	9	2	0	11	32
% Buses	0	0	2.6	0	1.6	0.7	0.8	6.7	0	0.9	0	4	0	0	0.9	0	0.8	3.2	0	0.9	1
Trucks	0	0	3	0	3	1	23	0	0	24	0	0	2	0	2	1	16	0	0	17	46
% Trucks	0	0	1.6	0	1	0.4	1.8	0	0	1.5	0	0	8.3	0	1.8	3.8	1.4	0	0	1.3	1.4
Pedestrians	0	0	0	53	53	0	0	0	11	11	0	0	0	31	31	0	0	0	27	27	122
% Pedestrians	0	0	0	100	17.4	0	0	0	100	0.7	0	0	0	100	28.4	0	0	0	100	2.1	3.7

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 4-NYS_ROUTE_9D_AT_TIORONDA_AVE-FRI_830577_04-23-2021
Site Code :
Start Date : 4/23/2021
Page No : 2

	TIORONDA AVE From North					NYS ROUTE 9D From East					TIORONDA AVE From South					NYS ROUTE 9D From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	4	2	10	2	18	18	73	0	0	91	4	2	2	2	10	1	77	2	2	82	201
03:00 PM	1	2	14	13	30	27	99	7	2	135	5	3	3	5	16	1	98	10	2	111	292
03:15 PM	1	3	13	1	18	24	91	1	0	116	1	1	3	1	6	3	103	9	0	115	255
03:30 PM	1	1	13	1	16	12	97	2	0	111	1	1	0	2	4	0	72	5	2	79	210
Total Volume	7	8	50	17	82	81	360	10	2	453	11	7	8	10	36	5	350	26	6	387	958
% App. Total	8.5	9.8	61	20.7		17.9	79.5	2.2	0.4		30.6	19.4	22.2	27.8		1.3	90.4	6.7	1.6		
PHF	.438	.667	.893	.327	.683	.750	.909	.357	.250	.839	.550	.583	.667	.500	.563	.417	.850	.650	.750	.841	.820
Lights	7	8	50	0	65	79	349	9	0	437	11	7	6	0	24	5	340	25	0	370	896
% Lights	100	100	100	0	79.3	97.5	96.9	90.0	0	96.5	100	100	75.0	0	66.7	100	97.1	96.2	0	95.6	93.5
Buses	0	0	0	0	0	2	6	1	0	9	0	0	0	0	0	0	6	1	0	7	16
% Buses	0	0	0	0	0	2.5	1.7	10.0	0	2.0	0	0	0	0	0	0	1.7	3.8	0	1.8	1.7
Trucks	0	0	0	0	0	0	5	0	0	5	0	0	2	0	2	0	4	0	0	4	11
% Trucks	0	0	0	0	0	0	1.4	0	0	1.1	0	0	25.0	0	5.6	0	1.1	0	0	1.0	1.1
Pedestrians	0	0	0	17	17	0	0	0	2	2	0	0	0	10	10	0	0	0	6	6	35
% Pedestrians	0	0	0	100	20.7	0	0	0	100	0.4	0	0	0	100	27.8	0	0	0	100	1.6	3.7

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 4-NYS_ROUTE_9D_AT_TIORONDA_AVE-SAT_830578_04-24-2021
Site Code :
Start Date : 4/24/2021
Page No : 1

Groups Printed- Lights - Buses - Trucks - Pedestrians

	TIORONDA AVE From North					NYS ROUTE 9D From East					TIORONDA AVE From South					NYS ROUTE 9D From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:00 PM	1	1	8	8	18	15	82	3	1	101	3	1	0	0	4	8	79	2	1	90	213
12:15 PM	1	0	4	5	10	27	89	4	2	122	1	1	0	0	2	5	87	0	0	92	226
12:30 PM	3	0	5	3	11	29	65	3	0	97	6	2	1	1	10	3	89	4	1	97	215
12:45 PM	4	0	11	2	17	20	86	4	0	110	3	1	2	7	13	2	93	3	8	106	246
Total	9	1	28	18	56	91	322	14	3	430	13	5	3	8	29	18	348	9	10	385	900
01:00 PM	7	2	9	1	19	16	85	3	0	104	2	1	0	3	6	4	68	1	6	79	208
01:15 PM	2	2	15	2	21	13	68	3	0	84	0	5	2	3	10	2	83	2	5	92	207
01:30 PM	1	2	8	7	18	21	79	2	0	102	2	1	0	1	4	0	72	3	0	75	199
01:45 PM	4	2	14	5	25	26	100	4	0	130	2	2	2	1	7	5	75	5	0	85	247
Total	14	8	46	15	83	76	332	12	0	420	6	9	4	8	27	11	298	11	11	331	861
02:00 PM	4	2	9	3	18	30	84	3	0	117	1	4	5	0	10	0	101	8	1	110	255
02:15 PM	2	1	13	4	20	23	78	2	0	103	3	3	2	0	8	0	78	3	2	83	214
02:30 PM	3	2	10	5	20	19	76	4	2	101	2	2	8	1	13	1	83	4	2	90	224
02:45 PM	6	1	16	1	24	27	83	3	0	113	2	1	1	3	7	4	89	5	4	102	246
Total	15	6	48	13	82	99	321	12	2	434	8	10	16	4	38	5	351	20	9	385	939
03:00 PM	6	2	17	2	27	23	65	2	0	90	2	2	4	5	13	3	73	3	5	84	214
03:15 PM	5	0	12	4	21	21	62	0	0	83	3	1	0	0	4	3	84	5	1	93	201
03:30 PM	3	0	11	0	14	30	64	3	0	97	1	1	2	1	5	0	83	1	1	85	201
03:45 PM	4	1	24	9	38	18	82	3	2	105	0	0	2	1	3	2	91	5	5	103	249
Total	18	3	64	15	100	92	273	8	2	375	6	4	8	7	25	8	331	14	12	365	865
04:00 PM	5	1	15	4	25	30	72	3	0	105	6	3	1	1	11	1	81	2	0	84	225
04:15 PM	2	1	10	11	24	20	73	4	0	97	8	0	3	3	14	1	79	1	5	86	221
04:30 PM	4	3	10	3	20	18	76	1	0	95	4	2	2	0	8	2	88	2	4	96	219
04:45 PM	2	1	14	6	23	15	66	3	1	85	4	1	0	3	8	2	63	6	3	74	190
Total	13	6	49	24	92	83	287	11	1	382	22	6	6	7	41	6	311	11	12	340	855
05:00 PM	2	0	15	4	21	8	87	1	0	96	3	1	3	0	7	1	103	1	0	105	229
05:15 PM	0	2	18	5	25	20	69	0	0	89	5	1	1	0	7	3	70	4	2	79	200
05:30 PM	1	3	13	2	19	15	63	0	0	78	3	1	2	0	6	5	64	2	0	71	174
05:45 PM	5	0	14	0	19	20	70	1	0	91	2	0	1	1	4	2	65	3	0	70	184
Total	8	5	60	11	84	63	289	2	0	354	13	3	7	1	24	11	302	10	2	325	787
Grand Total	77	29	295	96	497	504	1824	59	8	2395	68	37	44	35	184	59	1941	75	56	2131	5207
Apprch %	15.5	5.8	59.4	19.3		21	76.2	2.5	0.3		37	20.1	23.9	19		2.8	91.1	3.5	2.6		
Total %	1.5	0.6	5.7	1.8	9.5	9.7	35	1.1	0.2	46	1.3	0.7	0.8	0.7	3.5	1.1	37.3	1.4	1.1	40.9	
Lights	77	29	285	0	391	501	1813	59	0	2373	68	37	44	0	149	58	1924	74	0	2056	
% Lights	100	100	96.6	0	78.7	99.4	99.4	100	0	99.1	100	100	100	0	81	98.3	99.1	98.7	0	96.5	**1309**

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 4-NYS_ROUTE_9D_AT_TIORONDA_AVE-SAT_830578_04-24-2021
Site Code :
Start Date : 4/24/2021

Groups Printed- Lights - Buses - Trucks - Pedestrians

	TIORONDA AVE From North					NYS ROUTE 9D From East					TIORONDA AVE From South					NYS ROUTE 9D From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Buses	0	0	8	0	8	1	1	0	0	2	0	0	0	0	0	0	3	0	0	3	13
% Buses	0	0	2.7	0	1.6	0.2	0.1	0	0	0.1	0	0	0	0	0	0	0.2	0	0	0.1	0.2
Trucks	0	0	2	0	2	2	10	0	0	12	0	0	0	0	0	1	14	1	0	16	30
% Trucks	0	0	0.7	0	0.4	0.4	0.5	0	0	0.5	0	0	0	0	0	1.7	0.7	1.3	0	0.8	0.6
Pedestrians	0	0	0	96	96	0	0	0	8	8	0	0	0	35	35	0	0	0	56	56	195
% Pedestrians	0	0	0	100	19.3	0	0	0	100	0.3	0	0	0	100	19	0	0	0	100	2.6	3.7

Maser Consulting

400 Columbus Avenue, Stuite 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

File Name : 4-NYS_ROUTE_9D_AT_TIORONDA_AVE-SAT_830578_04-24-2021
Site Code :
Start Date : 4/24/2021

	TIORONDA AVE From North					NYS ROUTE 9D From East					TIORONDA AVE From South					NYS ROUTE 9D From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:45 PM																					
01:45 PM	4	2	14	5	25	26	100	4	0	130	2	2	2	1	7	5	75	5	0	85	247
02:00 PM	4	2	9	3	18	30	84	3	0	117	1	4	5	0	10	0	101	8	1	110	255
02:15 PM	2	1	13	4	20	23	78	2	0	103	3	3	2	0	8	0	78	3	2	83	214
02:30 PM	3	2	10	5	20	19	76	4	2	101	2	2	8	1	13	1	83	4	2	90	224
Total Volume	13	7	46	17	83	98	338	13	2	451	8	11	17	2	38	6	337	20	5	368	940
% App. Total	15.7	8.4	55.4	20.5		21.7	74.9	2.9	0.4		21.1	28.9	44.7	5.3		1.6	91.6	5.4	1.4		
PHF	.813	.875	.821	.850	.830	.817	.845	.813	.250	.867	.667	.688	.531	.500	.731	.300	.834	.625	.625	.836	.922
Lights	13	7	44	0	64	97	336	13	0	446	8	11	17	0	36	6	335	19	0	360	906
% Lights	100	100	95.7	0	77.1	99.0	99.4	100	0	98.9	100	100	100	0	94.7	100	99.4	95.0	0	97.8	96.4
Buses	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
% Buses	0	0	4.3	0	2.4	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.3	0.3
Trucks	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	1	1	0	2	5
% Trucks	0	0	0	0	0	1.0	0.6	0	0	0.7	0	0	0	0	0	0	0.3	5.0	0	0.5	0.5
Pedestrians	0	0	0	17	17	0	0	0	2	2	0	0	0	2	2	0	0	0	5	5	26
% Pedestrians	0	0	0	100	20.5	0	0	0	100	0.4	0	0	0	100	5.3	0	0	0	100	1.4	2.8

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering

400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

Start	06-Dec-21		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	*	*	*	*	*	*	20	5	33	15	63	26	39	15
01:00	*	*	*	*	*	*	*	*	10	6	21	9	36	11	22	9
02:00	*	*	*	*	*	*	*	*	8	5	7	5	25	9	13	6
03:00	*	*	*	*	*	*	*	*	7	8	6	7	20	7	11	7
04:00	*	*	*	*	*	*	*	*	8	31	7	10	11	12	9	18
05:00	*	*	*	*	*	*	*	*	32	94	11	41	29	18	24	51
06:00	*	*	*	*	*	*	*	*	87	217	31	53	47	38	55	103
07:00	*	*	*	*	*	*	*	*	166	**278**	44	75	80	71	97	141
08:00	*	*	*	*	*	*	*	*	163	254	95	108	151	79	136	147
09:00	*	*	*	*	*	*	*	*	**185**	162	131	145	186	115	167	141
10:00	*	*	*	*	*	*	*	*	143	166	189	153	277	201	203	173
11:00	*	*	*	*	*	*	*	*	184	189	**209**	**233**	**411**	**230**	**268**	**217**
12:00 PM	*	*	*	*	*	*	*	*	203	197	225	198	**443**	240	290	212
01:00	*	*	*	*	*	*	*	*	190	178	267	190	389	255	282	208
02:00	*	*	*	*	*	*	170	171	241	215	297	225	391	259	275	218
03:00	*	*	*	*	*	*	354	**225**	331	**264**	342	**259**	429	**286**	364	**258**
04:00	*	*	*	*	*	*	**372**	190	**380**	247	**356**	203	430	236	**384**	219
05:00	*	*	*	*	*	*	309	196	315	210	288	165	320	201	308	193
06:00	*	*	*	*	*	*	214	135	256	169	222	147	212	146	226	149
07:00	*	*	*	*	*	*	127	87	183	119	263	99	177	106	188	103
08:00	*	*	*	*	*	*	114	73	112	78	179	81	133	87	134	80
09:00	*	*	*	*	*	*	71	63	92	95	116	69	75	50	88	69
10:00	*	*	*	*	*	*	53	41	83	57	108	58	66	34	78	48
11:00	*	*	*	*	*	*	40	24	63	38	83	64	47	21	58	37
Lane	0	0	0	0	0	0	1824	1205	3462	3282	3530	2612	4448	2738	3719	2822
Day	0		0		0		3029		6744		6142		7186		6541	
AM Peak	-	-	-	-	-	-	-	-	09:00	07:00	11:00	11:00	11:00	11:00	11:00	11:00
Vol.	-	-	-	-	-	-	-	-	185	278	209	233	411	230	268	217
PM Peak	-	-	-	-	-	-	16:00	15:00	16:00	15:00	16:00	15:00	12:00	15:00	16:00	15:00
Vol.	-	-	-	-	-	-	372	225	380	264	356	259	443	286	384	258

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

Start	13-Dec-21		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	33	14	28	4	*	*	*	*	*	*	*	*	*	*	30	9
01:00	11	3	9	3	*	*	*	*	*	*	*	*	*	*	10	3
02:00	4	7	9	3	*	*	*	*	*	*	*	*	*	*	6	5
03:00	15	10	10	7	*	*	*	*	*	*	*	*	*	*	12	8
04:00	14	33	18	42	*	*	*	*	*	*	*	*	*	*	16	38
05:00	43	106	39	117	*	*	*	*	*	*	*	*	*	*	41	112
06:00	125	214	126	262	*	*	*	*	*	*	*	*	*	*	126	238
07:00	237	**318**	291	**324**	*	*	*	*	*	*	*	*	*	*	264	**321**
08:00	**340**	266	**375**	266	*	*	*	*	*	*	*	*	*	*	**358**	266
09:00	296	172	265	170	*	*	*	*	*	*	*	*	*	*	280	171
10:00	232	161	249	169	*	*	*	*	*	*	*	*	*	*	240	165
11:00	284	166	274	183	*	*	*	*	*	*	*	*	*	*	279	174
12:00 PM	286	182	**288**	**198**	*	*	*	*	*	*	*	*	*	*	287	190
01:00	297	183	0	0	*	*	*	*	*	*	*	*	*	*	148	92
02:00	330	224	*	*	*	*	*	*	*	*	*	*	*	*	330	224
03:00	497	**235**	*	*	*	*	*	*	*	*	*	*	*	*	497	**235**
04:00	**561**	226	*	*	*	*	*	*	*	*	*	*	*	*	**561**	226
05:00	503	187	*	*	*	*	*	*	*	*	*	*	*	*	503	187
06:00	301	147	*	*	*	*	*	*	*	*	*	*	*	*	301	147
07:00	191	86	*	*	*	*	*	*	*	*	*	*	*	*	191	86
08:00	137	82	*	*	*	*	*	*	*	*	*	*	*	*	137	82
09:00	92	43	*	*	*	*	*	*	*	*	*	*	*	*	92	43
10:00	67	31	*	*	*	*	*	*	*	*	*	*	*	*	67	31
11:00	36	21	*	*	*	*	*	*	*	*	*	*	*	*	36	21
Lane	4932	3117	1981	1748	0	0	0	0	0	0	0	0	0	0	4812	3074
Day	8049		3729		0		0		0		0		0		7886	
AM Peak	08:00	07:00	08:00	07:00	-	-	-	-	-	-	-	-	-	-	08:00	07:00
Vol.	340	318	375	324	-	-	-	-	-	-	-	-	-	-	358	321
PM Peak	16:00	15:00	12:00	12:00	-	-	-	-	-	-	-	-	-	-	16:00	15:00
Vol.	561	235	288	198	-	-	-	-	-	-	-	-	-	-	561	235

Comb. Total	8049	3729	0	3029	6744	6142	7186	14427
ADT	ADT 6,976	AADT 6,976						

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/09/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	1	126	30	3	10	0	0	0	0	0	0	0	0	0	170
15:00	4	255	68	8	15	4	0	0	0	0	0	0	0	0	354
16:00	5	279	73	1	10	2	1	0	0	0	0	0	0	0	371
17:00	2	259	39	0	9	0	0	0	0	0	0	0	0	0	309
18:00	1	176	27	1	8	0	0	1	0	0	0	0	0	0	214
19:00	0	104	13	0	8	1	0	0	1	0	0	0	0	0	127
20:00	0	100	12	0	2	0	0	0	0	0	0	0	0	0	114
21:00	2	59	9	0	1	0	0	0	0	0	0	0	0	0	71
22:00	0	47	6	0	0	0	0	0	0	0	0	0	0	0	53
23:00	1	36	2	0	1	0	0	0	0	0	0	0	0	0	40
Total	16	1441	279	13	64	7	1	1	1	0	0	0	0	0	1823
Percent	0.9%	79.0%	15.3%	0.7%	3.5%	0.4%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.															
PM Peak	16:00	16:00	16:00	15:00	15:00	15:00	16:00	18:00	19:00						
Vol.	5	279	73	8	15	4	1	1	1						

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/10/21	0	15	3	0	2	0	0	0	0	0	0	0	0	0	20
01:00	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
02:00	0	4	2	0	2	0	0	0	0	0	0	0	0	0	8
03:00	0	4	2	0	1	0	0	0	0	0	0	0	0	0	7
04:00	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
05:00	0	25	4	2	1	0	0	0	0	0	0	0	0	0	32
06:00	0	65	15	2	3	0	0	0	2	0	0	0	0	0	87
07:00	4	116	32	2	9	0	0	0	2	0	0	0	0	0	165
08:00	0	119	34	4	5	0	0	1	0	0	0	0	0	0	163
09:00	2	132	33	0	15	1	0	2	0	0	0	0	0	0	185
10:00	2	109	22	1	9	0	0	0	0	0	0	0	0	0	143
11:00	0	137	37	0	8	0	1	1	0	0	0	0	0	0	184
12 PM	1	154	32	4	10	1	0	1	0	0	0	0	0	0	203
13:00	1	143	30	1	7	4	1	1	0	1	0	0	1	0	190
14:00	0	192	41	1	6	1	0	0	0	0	0	0	0	0	241
15:00	2	250	53	8	12	4	0	1	1	0	0	0	0	0	331
16:00	4	291	71	0	12	1	0	0	0	0	0	0	0	0	379
17:00	3	258	37	0	12	2	0	2	1	0	0	0	0	0	315
18:00	3	221	25	0	7	0	0	0	0	0	0	0	0	0	256
19:00	0	162	18	1	2	0	0	0	0	0	0	0	0	0	183
20:00	0	96	14	0	2	0	0	0	0	0	0	0	0	0	112
21:00	0	79	10	0	3	0	0	0	0	0	0	0	0	0	92
22:00	0	71	11	0	1	0	0	0	0	0	0	0	0	0	83
23:00	0	53	10	0	0	0	0	0	0	0	0	0	0	0	63
Total	22	2710	539	26	130	14	2	9	6	1	0	0	1	0	3460
Percent	0.6%	78.3%	15.6%	0.8%	3.8%	0.4%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	11:00	08:00	09:00	09:00	11:00	09:00	06:00						
Vol.	4	137	37	4	15	1	1	2	2						
PM Peak	16:00	16:00	16:00	15:00	15:00	13:00	13:00	17:00	15:00	13:00			13:00		
Vol.	4	291	71	8	12	4	1	2	1	1			1		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/11/21	0	30	3	0	0	0	0	0	0	0	0	0	0	0	33
01:00	0	20	1	0	0	0	0	0	0	0	0	0	0	0	21
02:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
04:00	0	6	0	0	1	0	0	0	0	0	0	0	0	0	7
05:00	0	6	3	2	0	0	0	0	0	0	0	0	0	0	11
06:00	0	25	4	0	1	0	0	0	1	0	0	0	0	0	31
07:00	1	34	5	0	4	0	0	0	0	0	0	0	0	0	44
08:00	0	74	12	1	5	1	0	0	2	0	0	0	0	0	95
09:00	0	103	23	1	2	2	0	0	0	0	0	0	0	0	131
10:00	0	155	25	0	6	0	0	2	0	1	0	0	0	0	189
11:00	2	183	21	0	3	0	0	0	0	0	0	0	0	0	209
12 PM	9	185	23	0	6	1	1	0	0	0	0	0	0	0	225
13:00	29	167	61	0	8	0	0	0	0	0	0	0	0	0	265
14:00	35	185	55	0	4	16	0	0	0	0	0	0	0	0	295
15:00	79	169	69	1	4	18	0	0	0	0	0	0	0	0	340
16:00	88	157	84	1	2	21	0	0	0	1	0	0	0	0	354
17:00	74	126	74	0	2	11	0	0	0	1	0	0	0	0	288
18:00	59	105	50	0	1	7	0	0	0	0	0	0	0	0	222
19:00	70	133	50	1	3	6	1	0	0	0	0	0	0	0	264
20:00	49	89	34	0	1	6	0	0	0	0	0	0	0	0	179
21:00	32	58	22	0	1	3	0	0	0	0	0	0	0	0	116
22:00	22	61	20	0	1	4	0	0	0	0	0	0	0	0	108
23:00	20	43	15	0	0	4	0	0	0	0	0	0	0	0	82
Total	569	2125	655	7	56	100	2	2	3	3	0	0	0	0	3522
Percent	16.2%	60.3%	18.6%	0.2%	1.6%	2.8%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	10:00	05:00	10:00	09:00		10:00	08:00	10:00					
Vol.	2	183	25	2	6	2		2	2	1					
PM Peak	16:00	12:00	16:00	15:00	13:00	16:00	12:00			16:00					
Vol.	88	185	84	1	8	21	1			1					

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/12/21	12	35	14	0	0	2	0	0	0	0	0	0	0	0	63
01:00	8	18	9	0	1	0	0	0	0	0	0	0	0	0	36
02:00	7	9	7	0	0	2	0	0	0	0	0	0	0	0	25
03:00	3	13	4	0	0	0	0	0	0	0	0	0	0	0	20
04:00	2	6	2	0	0	0	0	0	0	0	0	0	0	0	10
05:00	5	18	6	0	0	0	0	0	0	0	0	0	0	0	29
06:00	13	22	10	2	0	0	0	0	0	0	0	0	0	0	47
07:00	14	50	11	0	0	5	0	0	0	0	0	0	0	0	80
08:00	30	81	31	0	1	7	0	0	0	1	0	0	0	0	151
09:00	52	73	52	0	3	5	0	0	0	0	0	0	0	0	185
10:00	76	121	72	0	2	5	0	0	0	0	0	0	0	0	276
11:00	124	163	106	1	5	13	0	0	0	0	0	0	0	0	412
12 PM	128	192	108	1	2	13	0	0	0	0	0	0	0	0	444
13:00	116	150	111	0	4	6	0	1	0	0	0	0	0	0	388
14:00	112	160	101	0	2	12	0	0	1	1	0	0	0	0	389
15:00	111	189	109	0	4	14	0	1	0	0	0	0	0	0	428
16:00	116	196	111	1	1	4	0	0	0	0	0	0	0	0	429
17:00	101	129	82	0	4	3	0	0	0	0	0	0	0	0	319
18:00	51	103	49	0	1	8	0	0	0	0	0	0	0	0	212
19:00	38	95	39	0	2	3	0	0	0	0	0	0	0	0	177
20:00	30	72	27	0	2	2	0	0	0	0	0	0	0	0	133
21:00	16	40	16	0	1	2	0	0	0	0	0	0	0	0	75
22:00	16	29	18	0	0	3	0	0	0	0	0	0	0	0	66
23:00	7	31	8	0	0	1	0	0	0	0	0	0	0	0	47
Total	1188	1995	1103	5	35	110	0	2	1	2	0	0	0	0	4441
Percent	26.8%	44.9%	24.8%	0.1%	0.8%	2.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	11:00	06:00	11:00	11:00				08:00					
Vol.	124	163	106	2	5	13				1					
PM Peak	12:00	16:00	13:00	12:00	13:00	15:00		13:00	14:00	14:00					
Vol.	128	196	111	1	4	14		1	1	1					

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/13/21	4	22	5	0	0	2	0	0	0	0	0	0	0	0	33
01:00	1	8	1	0	0	1	0	0	0	0	0	0	0	0	11
02:00	0	3	0	0	0	1	0	0	0	0	0	0	0	0	4
03:00	4	5	6	0	0	0	0	0	0	0	0	0	0	0	15
04:00	2	8	1	1	1	0	0	0	0	0	0	0	0	0	13
05:00	6	24	7	2	1	3	0	0	0	0	0	0	0	0	43
06:00	31	55	33	1	1	3	0	0	1	0	0	0	0	0	125
07:00	73	83	69	5	2	4	0	0	0	0	0	0	0	0	236
08:00	80	154	75	7	11	11	0	1	1	0	0	0	1	0	341
09:00	63	154	65	1	5	5	1	1	0	0	0	0	0	0	295
10:00	51	113	57	1	3	6	0	0	0	0	0	0	0	0	231
11:00	67	132	66	1	9	10	0	1	0	0	0	0	0	0	286
12 PM	68	132	71	0	6	7	0	0	0	0	0	0	0	0	284
13:00	71	133	70	1	6	15	0	0	1	0	0	0	0	0	297
14:00	85	142	89	1	4	5	1	0	1	1	0	0	0	0	329
15:00	123	212	127	5	8	20	0	1	1	0	0	0	0	0	497
16:00	153	233	149	2	8	14	1	0	0	0	0	0	1	0	561
17:00	133	222	127	1	6	14	1	0	0	0	0	0	0	0	504
18:00	81	137	74	0	3	5	0	0	0	1	0	0	0	0	301
19:00	45	107	35	0	1	3	0	0	0	0	0	0	0	0	191
20:00	32	68	33	0	1	3	0	0	0	0	0	0	0	0	137
21:00	15	58	17	0	0	1	0	0	0	1	0	0	0	0	92
22:00	12	43	11	0	0	0	0	0	0	0	0	0	0	0	66
23:00	6	19	9	0	1	0	0	0	0	0	0	0	0	0	35
Total	1206	2267	1197	29	77	133	4	4	5	3	0	0	2	0	4927
Percent	24.5%	46.0%	24.3%	0.6%	1.6%	2.7%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	09:00	08:00	06:00				08:00		
Vol.	80	154	75	7	11	11	1	1	1				1		
PM Peak	16:00	16:00	16:00	15:00	15:00	15:00	14:00	15:00	13:00	14:00			16:00		
Vol.	153	233	149	5	8	20	1	1	1	1			1		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/14/21	4	17	6	0	0	0	0	0	0	0	0	0	0	0	27
01:00	1	7	1	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	7	0	0	1	1	0	0	0	0	0	0	0	0	9
03:00	1	4	1	0	2	1	0	0	0	0	0	0	0	0	9
04:00	4	10	4	0	0	0	0	0	0	0	0	0	0	0	18
05:00	8	19	7	2	1	2	0	0	0	0	0	0	0	0	39
06:00	36	55	28	1	4	2	0	0	0	0	0	0	0	0	126
07:00	83	117	74	5	5	8	0	0	0	0	0	0	0	0	292
08:00	88	169	95	3	12	7	0	0	1	0	0	0	0	0	375
09:00	51	132	60	0	12	8	1	0	0	0	0	0	0	0	264
10:00	59	103	62	2	8	10	2	0	0	1	0	0	0	0	247
11:00	71	124	69	2	5	3	0	1	0	0	0	0	0	0	275
12 PM	69	128	70	1	5	11	2	0	0	0	0	0	0	0	286
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	475	892	477	16	55	53	5	1	1	1	0	0	0	0	1976
Percent	24.0%	45.1%	24.1%	0.8%	2.8%	2.7%	0.3%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	07:00	08:00	10:00	10:00	11:00	08:00	10:00					
Vol.	88	169	95	5	12	10	2	1	1	1					
PM Peak	12:00	12:00	12:00	12:00	12:00	12:00	12:00								
Vol.	69	128	70	1	5	11	2								
Grand Total	3476	11430	4250	96	417	417	14	19	17	10	0	0	3	0	20149
Percent	17.3%	56.7%	21.1%	0.5%	2.1%	2.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/09/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	2	122	36	3	8	0	0	0	0	0	0	0	0	0	171
15:00	6	159	36	4	19	0	0	1	0	0	0	0	0	0	225
16:00	6	139	33	1	8	2	0	0	0	0	0	0	0	0	189
17:00	2	165	25	0	4	0	0	0	0	0	0	0	0	0	196
18:00	1	113	14	0	6	0	0	0	1	0	0	0	0	0	135
19:00	1	78	7	0	1	0	0	0	0	0	0	0	0	0	87
20:00	0	66	6	0	1	0	0	0	0	0	0	0	0	0	73
21:00	2	50	11	0	0	0	0	0	0	0	0	0	0	0	63
22:00	0	36	4	0	1	0	0	0	0	0	0	0	0	0	41
23:00	1	20	2	0	1	0	0	0	0	0	0	0	0	0	24
Total	21	948	174	8	49	2	0	1	1	0	0	0	0	0	1204
Percent	1.7%	78.7%	14.5%	0.7%	4.1%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.															
PM Peak Vol.	15:00 6	17:00 165	14:00 36	15:00 4	15:00 19	16:00 2		15:00 1	18:00 1						

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/10/21	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
03:00	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
04:00	0	24	5	1	1	0	0	0	0	0	0	0	0	0	31
05:00	0	68	19	1	6	0	0	0	0	0	0	0	0	0	94
06:00	0	166	39	1	9	0	0	0	2	0	0	0	0	0	217
07:00	1	220	46	3	6	0	0	0	2	0	0	0	0	0	278
08:00	0	204	39	4	5	0	0	1	0	0	0	0	0	0	253
09:00	3	117	30	0	10	1	1	0	0	0	0	0	0	0	162
10:00	2	123	31	1	7	0	1	0	0	0	0	0	0	0	165
11:00	0	134	28	3	19	0	1	1	2	1	0	0	0	0	189
12 PM	2	152	22	2	16	0	0	2	0	1	0	0	0	0	197
13:00	2	140	23	0	11	1	0	0	1	0	0	0	0	0	178
14:00	0	158	42	4	8	2	0	0	1	0	0	0	0	0	215
15:00	7	201	44	4	7	0	0	1	0	0	0	0	0	0	264
16:00	4	200	30	1	9	3	0	0	0	0	0	0	0	0	247
17:00	5	172	27	0	6	0	0	0	0	0	0	0	0	0	210
18:00	2	140	26	0	1	0	0	0	0	0	0	0	0	0	169
19:00	1	90	26	0	2	0	0	0	0	0	0	0	0	0	119
20:00	0	71	7	0	0	0	0	0	0	0	0	0	0	0	78
21:00	0	82	10	0	3	0	0	0	0	0	0	0	0	0	95
22:00	0	51	5	0	1	0	0	0	0	0	0	0	0	0	57
23:00	0	36	1	0	1	0	0	0	0	0	0	0	0	0	38
Total	29	2566	505	25	130	7	3	5	8	2	0	0	0	0	3280
Percent	0.9%	78.2%	15.4%	0.8%	4.0%	0.2%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	07:00	08:00	11:00	09:00	09:00	08:00	06:00	11:00					
Vol.	3	220	46	4	19	1	1	1	2	1					
PM Peak	15:00	15:00	15:00	14:00	12:00	16:00		12:00	13:00	12:00					
Vol.	7	201	44	4	16	3		2	1	1					

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/11/21	0	14	1	0	0	0	0	0	0	0	0	0	0	0	15
01:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	8	1	0	1	0	0	0	0	0	0	0	0	0	10
05:00	0	31	8	1	1	0	0	0	0	0	0	0	0	0	41
06:00	0	45	3	1	3	0	0	0	1	0	0	0	0	0	53
07:00	0	53	17	0	3	1	0	0	1	0	0	0	0	0	75
08:00	0	85	21	0	2	0	0	0	0	0	0	0	0	0	108
09:00	2	108	19	1	11	1	0	1	1	1	0	0	0	0	145
10:00	0	134	17	0	1	0	0	0	0	0	0	0	0	0	152
11:00	1	192	31	1	6	2	0	0	0	0	0	0	0	0	233
12 PM	1	155	34	0	8	0	0	0	0	0	0	0	0	0	198
13:00	3	136	31	1	17	1	0	1	0	0	0	0	0	0	190
14:00	3	192	22	0	8	0	0	0	0	0	0	0	0	0	225
15:00	7	222	21	0	7	0	0	1	1	0	0	0	0	0	259
16:00	6	168	21	0	4	3	0	0	0	0	0	0	0	0	202
17:00	4	144	14	0	2	0	0	0	0	0	0	0	0	0	164
18:00	3	127	13	0	3	0	0	0	0	0	0	0	0	0	146
19:00	1	86	9	0	3	0	0	0	0	0	0	0	0	0	99
20:00	2	68	10	0	0	0	0	0	0	0	0	0	0	0	80
21:00	1	62	5	0	1	0	0	0	0	0	0	0	0	0	69
22:00	0	52	5	0	1	0	0	0	0	0	0	0	0	0	58
23:00	1	56	4	0	2	1	0	0	0	0	0	0	0	0	64
Total	35	2154	312	5	84	9	0	3	4	1	0	0	0	0	2607
Percent	1.3%	82.6%	12.0%	0.2%	3.2%	0.3%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	11:00	05:00	09:00	11:00		09:00	06:00	09:00					
Vol.	2	192	31	1	11	2		1	1	1					
PM Peak	15:00	15:00	12:00	13:00	13:00	16:00		13:00	15:00						
Vol.	7	222	34	1	17	3		1	1						

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE
& SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/12/21	0	22	3	0	0	0	0	0	0	0	0	0	0	0	25
01:00	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	9	3	0	0	0	0	0	0	0	0	0	0	0	12
05:00	0	15	2	0	1	0	0	0	0	0	0	0	0	0	18
06:00	0	33	4	0	1	0	0	0	0	0	0	0	0	0	38
07:00	2	59	8	0	1	0	0	0	1	0	0	0	0	0	71
08:00	1	69	7	0	2	0	0	0	0	0	0	0	0	0	79
09:00	1	101	12	0	0	1	0	0	0	0	0	0	0	0	115
10:00	1	174	23	1	1	0	0	0	0	0	0	0	0	0	200
11:00	5	195	27	0	3	0	0	0	0	0	0	0	0	0	230
12 PM	4	204	26	0	4	2	0	0	0	0	0	0	0	0	240
13:00	9	219	24	0	2	0	0	0	1	0	0	0	0	0	255
14:00	3	215	38	0	3	0	0	0	0	0	0	0	0	0	259
15:00	10	238	32	1	5	0	0	0	0	0	0	0	0	0	286
16:00	4	202	25	1	2	1	0	1	0	0	0	0	0	0	236
17:00	2	178	20	0	1	0	0	0	0	0	0	0	0	0	201
18:00	3	125	17	0	0	0	0	0	0	0	0	0	0	0	145
19:00	1	89	11	0	3	1	0	0	1	0	0	0	0	0	106
20:00	2	78	7	0	0	0	0	0	0	0	0	0	0	0	87
21:00	0	43	6	0	1	0	0	0	0	0	0	0	0	0	50
22:00	1	28	5	0	0	0	0	0	0	0	0	0	0	0	34
23:00	0	17	1	0	2	0	0	0	0	0	0	0	0	0	20
Total	49	2337	303	3	32	5	0	1	3	0	0	0	0	0	2733
Percent	1.8%	85.5%	11.1%	0.1%	1.2%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	11:00	10:00	11:00	09:00			07:00						
Vol.	5	195	27	1	3	1			1						
PM Peak	15:00	15:00	14:00	15:00	15:00	12:00		16:00	13:00						
Vol.	10	238	38	1	5	2		1	1						

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/13/21	1	11	0	0	1	0	0	0	0	0	0	0	0	0	13
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	7	1	0	2	0	0	0	0	0	0	0	0	0	10
04:00	0	27	3	2	1	0	0	0	0	0	0	0	0	0	33
05:00	1	78	24	0	3	0	0	0	0	0	0	0	0	0	106
06:00	2	166	41	2	3	0	0	0	0	0	0	0	0	0	214
07:00	7	240	46	5	13	1	1	2	2	0	1	0	0	0	318
08:00	7	204	37	3	7	3	0	4	0	0	0	0	0	0	265
09:00	3	122	33	1	10	0	0	1	1	0	0	0	0	0	171
10:00	1	123	24	1	10	1	0	0	0	0	0	0	0	0	160
11:00	5	127	21	2	8	1	0	2	0	0	0	0	0	0	166
12 PM	3	134	32	0	11	0	0	1	1	0	0	0	0	0	182
13:00	5	132	35	0	9	1	1	0	0	0	0	0	0	0	183
14:00	4	169	35	4	9	1	0	1	0	0	0	0	0	0	223
15:00	6	171	41	3	8	2	0	1	1	0	0	0	0	0	233
16:00	11	167	35	0	9	2	0	1	0	0	0	0	0	0	225
17:00	3	154	26	0	2	2	0	0	0	0	0	0	0	0	187
18:00	2	128	15	0	1	0	0	0	0	0	0	0	0	0	146
19:00	1	75	9	0	1	0	0	0	0	0	0	0	0	0	86
20:00	3	73	4	0	2	0	0	0	0	0	0	0	0	0	82
21:00	0	38	4	0	0	0	0	0	0	0	0	0	0	0	42
22:00	0	28	3	0	0	0	0	0	0	0	0	0	0	0	31
23:00	0	15	4	0	2	0	0	0	0	0	0	0	0	0	21
Total	65	2397	475	23	112	14	2	13	5	0	1	0	0	0	3107
Percent	2.1%	77.1%	15.3%	0.7%	3.6%	0.5%	0.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	07:00	07:00	07:00	08:00	07:00	08:00	07:00		07:00				
Vol.	7	240	46	5	13	3	1	4	2		1				
PM Peak	16:00	15:00	15:00	14:00	12:00	15:00	13:00	12:00	12:00						
Vol.	11	171	41	4	11	2	1	1	1						

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12/14/21	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
04:00	0	34	6	1	1	0	0	0	0	0	0	0	0	0	42
05:00	1	85	27	1	3	0	0	0	0	0	0	0	0	0	117
06:00	3	210	43	2	1	1	0	1	0	0	0	0	0	0	261
07:00	2	252	51	3	11	2	0	1	2	0	0	0	0	0	324
08:00	6	193	46	4	10	6	0	1	0	0	0	0	0	0	266
09:00	1	128	29	2	8	0	0	1	0	0	0	0	0	0	169
10:00	3	123	32	2	7	1	0	1	0	0	0	0	0	0	169
11:00	2	142	30	2	4	1	1	0	0	0	0	0	0	0	182
12 PM	5	144	33	2	13	0	0	1	0	0	0	0	0	0	198
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	23	1325	298	19	59	11	1	6	2	0	0	0	0	0	1744
Percent	1.3%	76.0%	17.1%	1.1%	3.4%	0.6%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	08:00	07:00	08:00	11:00	06:00	07:00						
Vol.	6	252	51	4	11	6	1	1	2						
PM Peak	12:00	12:00	12:00	12:00	12:00			12:00							
Vol.	5	144	33	2	13			1							
Grand Total	222	11727	2067	83	466	48	6	29	23	3	1	0	0	0	14675
Percent	1.5%	79.9%	14.1%	0.6%	3.2%	0.3%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering

400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/09/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	5	**1**	0	6	41	65	37	12	3	0	0	0	0	0	170	43	47
15:00	5	1	0	5	64	135	**99**	**38**	1	**3**	**1**	**2**	0	0	354	44	48
16:00	**11**	0	**1**	3	**87**	**165**	79	24	2	0	0	0	0	0	**372**	43	46
17:00	4	0	0	0	58	121	83	36	6	1	0	0	0	0	309	44	48
18:00	3	0	0	**11**	29	69	68	24	**10**	0	0	0	0	0	214	45	49
19:00	0	0	0	2	15	43	44	20	3	0	0	0	0	0	127	45	49
20:00	1	0	0	2	14	28	37	24	7	1	0	0	0	0	114	48	51
21:00	1	0	0	1	8	19	26	12	2	2	0	0	0	0	71	47	51
22:00	0	0	0	2	3	18	19	7	1	3	0	0	0	0	53	47	55
23:00	1	0	1	1	6	6	9	9	4	3	0	0	0	0	40	51	56
Total	31	2	2	33	325	669	501	206	39	13	1	2	0	0	1824		
Percent	1.7%	0.1%	0.1%	1.8%	17.8%	36.7%	27.5%	11.3%	2.1%	0.7%	0.1%	0.1%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	16:00 11	14:00 1	16:00 1	18:00 11	16:00 87	16:00 165	15:00 99	15:00 38	18:00 10	15:00 3	15:00 1	15:00 2			16:00 372		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering

400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/10/21	0	0	0	0	1	1	7	6	1	2	**1**	**1**	0	0	20	57	65
01:00	0	0	0	0	1	0	2	5	1	1	0	0	0	0	10	52	57
02:00	0	0	0	0	1	0	3	2	2	0	0	0	0	0	8	52	53
03:00	0	**1**	0	0	0	4	1	1	0	0	0	0	0	0	7	44	48
04:00	0	0	0	0	2	3	1	0	2	0	0	0	0	0	8	52	54
05:00	0	0	0	0	0	16	8	5	1	1	1	0	0	0	32	48	57
06:00	0	0	1	1	27	30	18	6	3	0	1	0	0	0	87	44	49
07:00	**8**	0	0	**4**	32	59	43	16	1	1	0	0	**2**	0	166	44	48
08:00	1	1	0	3	25	48	42	**33**	6	**3**	0	0	0	**1**	163	47	50
09:00	3	0	**2**	3	29	**65**	46	30	5	2	0	0	0	0	**185**	46	49
10:00	0	0	0	2	23	54	45	15	3	1	0	0	0	0	143	44	48
11:00	0	0	0	4	**35**	61	**49**	25	**10**	0	0	0	0	0	184	46	50
12 PM	1	**1**	0	**7**	21	86	58	27	1	1	0	0	0	0	203	44	48
13:00	4	1	0	5	52	52	43	24	**9**	0	0	0	0	0	190	45	49
14:00	3	0	0	2	43	89	69	32	3	0	0	0	0	0	241	44	48
15:00	4	0	**1**	3	51	145	94	27	6	0	0	0	0	0	331	44	48
16:00	**10**	0	0	2	**70**	**166**	84	44	4	0	0	0	0	0	**380**	44	48
17:00	4	0	0	0	39	124	95	**47**	5	0	0	0	0	**1**	315	45	48
18:00	0	0	0	2	27	87	**104**	28	8	0	0	0	0	0	256	44	49
19:00	0	0	0	2	26	56	69	27	3	0	0	0	0	0	183	45	48
20:00	1	0	0	2	11	30	45	20	3	0	0	0	0	0	112	46	49
21:00	0	0	0	4	7	27	31	16	5	1	**1**	0	0	0	92	47	52
22:00	0	0	0	2	6	28	19	21	1	**4**	1	0	0	1	83	48	56
23:00	0	0	0	0	3	14	20	19	6	1	0	0	0	0	63	49	53
Total	39	4	4	48	532	1245	996	476	89	18	5	1	2	3	3462		
Percent	1.1%	0.1%	0.1%	1.4%	15.4%	36.0%	28.8%	13.7%	2.6%	0.5%	0.1%	0.0%	0.1%	0.1%			
AM Peak	07:00	03:00	09:00	07:00	11:00	09:00	11:00	08:00	11:00	08:00	00:00	00:00	07:00	08:00	09:00		
Vol.	8	1	2	4	35	65	49	33	10	3	1	1	2	1	185		
PM Peak	16:00	12:00	15:00	12:00	16:00	16:00	18:00	17:00	13:00	22:00	21:00			17:00	16:00		
Vol.	10	1	1	7	70	166	104	47	9	4	1			1	380		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/11/21	0	0	0	0	2	17	4	5	4	1	0	0	0	0	33	50	54
01:00	0	0	0	0	2	5	8	4	2	0	0	0	0	0	21	48	52
02:00	0	0	0	0	1	0	2	2	1	1	0	0	0	0	7	54	58
03:00	0	0	0	0	0	2	1	2	0	1	0	0	0	0	6	55	58
04:00	0	0	0	0	1	4	1	0	0	0	0	**1**	0	0	7	44	68
05:00	0	0	0	1	2	3	1	1	3	0	0	0	0	0	11	52	54
06:00	0	0	0	0	8	7	12	2	1	1	0	0	0	0	31	44	52
07:00	1	0	0	0	5	6	18	11	0	**3**	0	0	0	0	44	48	56
08:00	0	0	0	1	16	35	23	12	**8**	0	0	0	0	0	95	47	52
09:00	0	0	0	6	31	49	35	8	2	0	0	0	0	0	131	43	47
10:00	3	0	0	**7**	30	64	**53**	**22**	8	2	0	0	0	0	189	45	50
11:00	**7**	0	0	5	**56**	**76**	42	19	4	0	0	0	0	0	**209**	44	48
12 PM	15	0	1	5	39	75	63	23	4	0	0	0	0	0	225	44	48
13:00	39	0	0	4	30	81	59	**42**	**11**	1	0	0	0	0	267	46	49
14:00	40	2	**4**	21	66	75	66	20	3	0	0	0	0	0	297	43	47
15:00	47	**3**	2	**27**	75	97	64	21	4	1	0	0	0	**1**	342	43	47
16:00	47	1	4	22	**96**	**108**	57	17	2	0	**1**	0	0	1	**356**	42	45
17:00	25	0	1	16	44	100	**83**	18	0	0	1	0	0	0	288	43	46
18:00	27	0	1	9	42	47	65	20	11	0	0	0	0	0	222	44	49
19:00	**58**	0	0	18	38	76	43	23	6	0	0	0	0	1	263	43	48
20:00	30	0	0	15	36	46	38	11	3	0	0	0	0	0	179	43	47
21:00	21	1	0	8	13	32	25	10	4	**2**	0	0	0	0	116	44	50
22:00	18	0	0	10	17	31	24	5	3	0	0	0	0	0	108	43	47
23:00	11	1	1	5	16	21	19	9	0	0	0	0	0	0	83	44	47
Total	389	8	14	180	666	1057	806	307	84	13	2	1	0	3	3530		
Percent	11.0%	0.2%	0.4%	5.1%	18.9%	29.9%	22.8%	8.7%	2.4%	0.4%	0.1%	0.0%	0.0%	0.1%			
AM Peak	11:00			10:00	11:00	11:00	10:00	10:00	08:00	07:00		04:00			11:00		
Vol.	7			7	56	76	53	22	8	3		1			209		
PM Peak	19:00	15:00	14:00	15:00	16:00	16:00	17:00	13:00	13:00	21:00	16:00			15:00	16:00		
Vol.	58	3	4	27	96	108	83	42	11	2	1			1	356		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/12/21	8	0	0	0	7	16	20	8	2	1	**1**	0	0	0	63	46	52
01:00	3	0	0	0	2	8	11	10	0	2	0	0	0	0	36	48	55
02:00	3	1	0	0	4	6	8	3	0	0	0	0	0	0	25	44	47
03:00	3	0	0	1	1	6	1	4	3	0	1	0	0	0	20	51	60
04:00	2	0	0	0	3	2	2	1	0	1	0	0	0	0	11	46	57
05:00	4	0	0	2	3	4	4	7	1	2	1	**1**	0	0	29	53	62
06:00	9	0	0	2	9	17	6	3	0	1	0	0	0	0	47	42	47
07:00	12	1	**2**	4	8	16	29	2	1	**5**	0	0	0	0	80	44	56
08:00	18	0	2	8	35	41	20	23	3	0	0	0	0	1	151	45	49
09:00	28	**2**	0	5	38	52	43	13	5	0	0	0	0	0	186	43	48
10:00	38	0	1	15	41	67	69	**37**	**9**	0	0	0	0	0	277	45	49
11:00	**62**	0	2	**20**	**71**	**111**	**104**	35	3	1	0	0	0	**2**	**411**	43	47
12 PM	**61**	1	2	26	84	114	**125**	24	5	0	0	0	0	**1**	**443**	43	46
13:00	50	1	**6**	17	67	109	104	**30**	5	0	0	0	0	0	389	43	47
14:00	45	0	0	23	77	115	103	25	3	0	0	0	0	0	391	43	46
15:00	44	1	5	**35**	93	114	101	30	3	0	**1**	**1**	0	1	429	43	47
16:00	42	0	0	29	**107**	**157**	77	15	2	0	1	0	0	0	430	41	44
17:00	36	0	3	19	63	114	66	14	5	0	0	0	0	0	320	42	46
18:00	24	**2**	0	7	44	72	36	22	5	0	0	0	0	0	212	44	48
19:00	22	0	2	12	33	45	41	19	3	0	0	0	0	0	177	44	48
20:00	16	0	1	13	25	23	37	9	4	**5**	0	0	0	0	133	44	52
21:00	5	0	0	3	14	20	16	12	1	3	0	0	0	1	75	47	51
22:00	5	0	0	3	7	22	15	9	2	3	0	0	0	0	66	47	54
23:00	3	0	0	2	3	9	14	4	**9**	3	0	0	0	0	47	52	56
Total	543	9	26	246	839	1260	1052	359	74	27	5	2	0	6	4448		
Percent	12.2%	0.2%	0.6%	5.5%	18.9%	28.3%	23.7%	8.1%	1.7%	0.6%	0.1%	0.0%	0.0%	0.1%			
AM Peak	11:00	09:00	07:00	11:00	11:00	11:00	11:00	10:00	10:00	07:00	00:00	05:00		11:00	11:00		
Vol.	62	2	2	20	71	111	104	37	9	5	1	1		2	411		
PM Peak	12:00	18:00	13:00	15:00	16:00	16:00	12:00	13:00	23:00	20:00	15:00	15:00		12:00	12:00		
Vol.	61	2	6	35	107	157	125	30	9	5	1	1		1	443		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering

400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/13/21	3	0	0	1	3	6	12	4	2	1	**1**	0	0	0	33	48	56
01:00	1	0	0	0	1	1	4	1	2	1	0	0	0	0	11	53	57
02:00	0	0	1	1	1	0	0	1	0	0	0	0	0	0	4	47	49
03:00	0	0	0	0	3	4	6	1	0	1	0	0	0	0	15	44	56
04:00	2	0	0	0	5	4	2	0	1	0	0	0	0	0	14	42	51
05:00	0	0	0	5	11	8	11	1	1	**6**	0	0	0	0	43	52	58
06:00	20	0	2	11	28	37	18	4	3	2	0	0	0	0	125	42	48
07:00	44	3	2	12	44	86	28	11	**5**	2	0	0	0	0	237	41	47
08:00	51	**4**	3	**27**	**81**	82	**65**	**24**	1	2	0	0	0	0	**340**	43	47
09:00	41	1	**4**	22	59	**102**	50	12	4	0	0	0	0	**1**	296	42	45
10:00	31	1	0	16	44	85	36	14	4	0	1	0	0	0	232	42	47
11:00	**52**	0	2	12	65	72	59	19	2	1	0	0	0	0	284	43	47
12 PM	43	1	1	10	56	85	61	24	5	0	0	0	0	0	286	43	48
13:00	38	2	0	20	57	108	40	24	**7**	1	0	0	0	0	297	43	48
14:00	46	**3**	**2**	19	68	75	93	23	0	1	0	0	0	0	330	43	46
15:00	75	2	2	29	128	136	97	**26**	2	0	0	0	0	0	497	42	45
16:00	**82**	3	1	**43**	**138**	**177**	89	20	5	1	0	0	0	**2**	**561**	41	44
17:00	56	2	2	27	117	173	**103**	20	2	0	0	**1**	0	0	503	42	44
18:00	32	0	2	16	75	75	78	14	7	2	0	0	0	0	301	43	47
19:00	23	0	0	11	39	48	47	21	2	0	0	0	0	0	191	44	48
20:00	18	0	0	9	23	40	30	15	1	1	0	0	0	0	137	44	48
21:00	10	0	0	3	15	27	13	17	6	1	0	0	0	0	92	47	51
22:00	8	0	0	1	7	9	23	8	7	**3**	**1**	0	0	0	67	50	56
23:00	2	0	0	3	4	11	7	5	3	1	0	0	0	0	36	48	53
Total	678	22	24	298	1072	1451	972	309	72	27	3	1	0	3	4932		
Percent	13.7%	0.4%	0.5%	6.0%	21.7%	29.4%	19.7%	6.3%	1.5%	0.5%	0.1%	0.0%	0.0%	0.1%			
AM Peak	11:00	08:00	09:00	08:00	08:00	09:00	08:00	08:00	07:00	05:00	00:00			09:00	08:00		
Vol.	52	4	4	27	81	102	65	24	5	6	1			1	340		
PM Peak	16:00	14:00	14:00	16:00	16:00	16:00	17:00	15:00	13:00	22:00	22:00	17:00		16:00	16:00		
Vol.	82	3	2	43	138	177	103	26	7	3	1	1		2	561		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

NB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/14/21	2	0	0	0	4	3	9	4	4	**2**	0	0	0	0	28	52	56
01:00	0	0	0	0	2	1	1	2	3	0	0	0	0	0	9	52	54
02:00	1	0	0	0	2	1	3	1	1	0	0	0	0	0	9	48	52
03:00	2	0	0	0	3	4	0	0	1	0	0	0	0	0	10	39	52
04:00	3	0	0	2	2	4	5	2	0	0	0	0	0	0	18	44	47
05:00	4	0	0	4	10	9	8	1	2	1	0	0	0	0	39	43	52
06:00	19	0	1	14	43	27	15	4	1	1	0	**1**	0	0	126	41	45
07:00	65	0	5	15	69	69	35	**26**	**6**	1	0	0	0	0	291	43	48
08:00	**67**	**2**	**7**	19	**85**	**105**	**68**	15	6	0	0	0	0	**1**	**375**	42	45
09:00	44	0	3	17	53	72	59	17	0	0	0	0	0	0	265	43	46
10:00	44	2	2	11	50	80	33	23	2	1	0	1	0	0	249	43	48
11:00	49	1	0	**20**	49	101	47	7	0	0	0	0	0	0	274	41	44
12 PM	**42**	0	0	**14**	**67**	**87**	**61**	**14**	**1**	0	0	**1**	**1**	0	**288**	42	45
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	342	5	18	116	439	563	344	116	27	6	0	3	1	1	1981		
Percent	17.3%	0.3%	0.9%	5.9%	22.2%	28.4%	17.4%	5.9%	1.4%	0.3%	0.0%	0.2%	0.1%	0.1%			
AM Peak	08:00	08:00	08:00	11:00	08:00	08:00	08:00	07:00	07:00	00:00		06:00		08:00	08:00		
Vol.	67	2	7	20	85	105	68	26	6	2		1		1	375		
PM Peak	12:00			12:00	12:00	12:00	12:00	12:00	12:00			12:00	12:00		12:00		
Vol.	42			14	67	87	61	14	1			1	1		288		
Grand Total	2022	50	88	921	3873	6245	4671	1773	385	104	16	10	3	16	20177		
Percent	10.0%	0.2%	0.4%	4.6%	19.2%	31.0%	23.2%	8.8%	1.9%	0.5%	0.1%	0.0%	0.0%	0.1%			

15th Percentile :	29 MPH
50th Percentile :	37 MPH
85th Percentile :	44 MPH
95th Percentile :	48 MPH

Statistics

10 MPH Pace Speed :	36-45 MPH
Number in Pace :	10916
Percent in Pace :	54.1%
Number of Vehicles > 55 MPH :	149
Percent of Vehicles > 55 MPH :	0.7%
Mean Speed(Average) :	36 MPH

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/09/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	**10**	**1**	**3**	**12**	28	54	46	17	0	0	0	0	0	0	171	44	47
15:00	7	0	0	4	24	**83**	**67**	**31**	**8**	0	0	**1**	0	0	**225**	46	49
16:00	10	0	1	4	30	65	60	18	2	0	0	0	0	0	190	44	47
17:00	4	0	0	2	**35**	74	59	17	3	**2**	0	0	0	0	196	44	48
18:00	0	0	0	2	19	52	40	15	4	1	**1**	0	**1**	0	135	45	50
19:00	1	0	1	0	9	29	33	10	4	0	0	0	0	0	87	45	49
20:00	3	0	0	3	8	32	19	6	2	0	0	0	0	0	73	44	48
21:00	0	0	0	0	13	21	17	8	4	0	0	0	0	0	63	46	51
22:00	0	0	0	0	4	11	17	5	3	1	0	0	0	0	41	47	53
23:00	0	0	0	1	4	4	10	5	0	0	0	0	0	0	24	46	48
Total	35	1	5	28	174	425	368	132	30	4	1	1	1	0	1205		
Percent	2.9%	0.1%	0.4%	2.3%	14.4%	35.3%	30.5%	11.0%	2.5%	0.3%	0.1%	0.1%	0.1%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	14:00 10	14:00 1	14:00 3	14:00 12	17:00 35	15:00 83	15:00 67	15:00 31	15:00 8	17:00 2	18:00 1	15:00 1	18:00 1		15:00 225		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/10/21	0	0	0	0	0	1	3	1	0	0	0	0	0	0	5	46	48
01:00	0	0	0	0	0	3	2	0	0	1	0	0	0	0	6	55	58
02:00	0	**2**	0	0	1	1	0	1	0	0	0	0	0	0	5	46	48
03:00	0	0	0	1	3	0	2	0	1	1	0	0	0	0	8	53	57
04:00	0	0	1	0	5	7	7	7	3	1	0	0	0	0	31	49	54
05:00	0	0	0	0	15	27	22	15	**11**	**3**	0	**1**	0	0	94	50	54
06:00	0	0	0	4	28	84	70	22	6	2	**1**	0	0	0	217	44	49
07:00	**4**	1	**5**	2	**47**	**100**	85	29	5	0	0	0	0	0	**278**	44	48
08:00	1	0	0	2	30	66	**111**	**34**	10	0	0	0	0	0	254	45	49
09:00	1	0	1	2	6	63	57	28	2	2	0	0	0	0	162	46	49
10:00	2	0	2	5	27	46	48	33	2	1	0	0	0	0	166	46	49
11:00	1	0	0	**7**	34	56	63	20	7	1	0	0	0	0	189	44	49
12 PM	3	**1**	0	0	42	75	53	20	3	0	0	0	0	0	197	44	48
13:00	3	0	**1**	2	19	59	61	21	12	0	0	0	0	0	178	46	51
14:00	4	0	0	2	31	70	77	22	6	**3**	0	0	0	0	215	44	49
15:00	**10**	0	1	2	**47**	**87**	**82**	22	**13**	0	0	0	0	0	**264**	44	49
16:00	5	0	1	**7**	42	85	79	**24**	4	0	0	0	0	0	247	44	48
17:00	7	0	1	4	42	81	56	16	2	1	0	0	0	0	210	43	47
18:00	4	0	0	2	36	44	58	18	5	1	**1**	0	0	0	169	44	49
19:00	1	0	0	1	18	48	31	15	3	1	1	0	0	0	119	45	49
20:00	1	0	0	2	13	24	21	15	2	0	0	0	0	0	78	46	49
21:00	0	0	0	0	8	40	33	11	2	0	1	0	0	0	95	44	49
22:00	0	0	0	1	8	16	20	10	1	1	0	0	0	0	57	46	49
23:00	0	0	0	0	7	9	14	7	1	0	0	0	0	0	38	46	49
Total	47	4	13	46	509	1092	1055	391	101	19	4	1	0	0	3282		
Percent	1.4%	0.1%	0.4%	1.4%	15.5%	33.3%	32.1%	11.9%	3.1%	0.6%	0.1%	0.0%	0.0%	0.0%			
AM Peak	07:00	02:00	07:00	11:00	07:00	07:00	08:00	08:00	05:00	05:00	06:00	05:00			07:00		
Vol.	4	2	5	7	47	100	111	34	11	3	1	1			278		
PM Peak	15:00	12:00	13:00	16:00	15:00	15:00	15:00	16:00	15:00	14:00	18:00				15:00		
Vol.	10	1	1	7	47	87	82	24	13	3	1				264		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/11/21	0	0	0	0	4	2	3	5	1	0	0	0	0	0	15	48	51
01:00	0	0	0	0	0	3	3	3	0	0	0	0	0	0	9	47	49
02:00	0	0	0	0	0	0	3	2	0	0	0	0	0	0	5	48	49
03:00	0	0	0	1	2	1	2	0	0	0	0	0	**1**	0	7	44	73
04:00	0	0	0	0	3	2	2	1	2	0	0	0	0	0	10	51	53
05:00	0	0	0	0	5	9	15	7	3	**1**	**1**	0	0	0	41	49	54
06:00	0	0	**1**	0	8	13	16	11	3	1	0	0	0	0	53	48	52
07:00	1	0	0	0	14	17	24	17	1	1	0	0	0	0	75	47	49
08:00	0	0	0	1	13	37	35	19	3	0	0	0	0	0	108	46	49
09:00	**6**	0	1	1	12	39	53	**30**	3	0	0	0	0	0	145	46	49
10:00	2	0	0	**6**	20	47	49	23	**6**	0	0	0	0	0	153	46	49
11:00	4	0	0	4	**48**	**69**	**74**	28	5	1	0	0	0	0	**233**	44	48
12 PM	6	0	0	0	23	54	**74**	33	7	**1**	0	0	0	0	198	46	49
13:00	7	0	0	3	17	44	66	**41**	**11**	1	0	0	0	0	190	47	51
14:00	19	0	**3**	6	27	79	66	20	5	0	0	0	0	0	225	44	48
15:00	24	**1**	2	**13**	**56**	**85**	63	14	1	0	0	0	0	0	**259**	43	45
16:00	**26**	0	2	3	40	73	43	12	3	1	0	0	0	0	203	43	47
17:00	13	1	1	1	22	59	51	15	1	1	0	0	0	0	165	44	47
18:00	13	0	0	3	42	47	34	7	1	0	0	0	0	0	147	42	45
19:00	9	0	0	5	37	33	9	6	0	0	0	0	0	0	99	40	45
20:00	13	0	0	5	21	24	16	2	0	0	0	0	0	0	81	41	44
21:00	6	0	1	9	10	17	19	6	1	0	0	0	0	0	69	44	47
22:00	3	0	0	1	17	24	10	3	0	0	0	0	0	0	58	42	45
23:00	7	0	0	2	7	22	14	10	2	0	0	0	0	0	64	46	49
Total	159	2	11	64	448	800	744	315	59	8	1	0	1	0	2612		
Percent	6.1%	0.1%	0.4%	2.5%	17.2%	30.6%	28.5%	12.1%	2.3%	0.3%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00		06:00	10:00	11:00	11:00	11:00	09:00	10:00	05:00	05:00		03:00		11:00		
Vol.	6		1	6	48	69	74	30	6	1	1		1		233		
PM Peak	16:00	15:00	14:00	15:00	15:00	15:00	12:00	13:00	13:00	12:00					15:00		
Vol.	26	1	3	13	56	85	74	41	11	1					259		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/12/21	2	0	0	0	4	5	7	7	0	1	0	0	0	0	26	47	49
01:00	0	0	0	2	0	3	4	0	2	0	0	0	0	0	11	50	53
02:00	2	0	**1**	1	0	1	4	0	0	0	0	0	0	0	9	43	44
03:00	2	0	0	0	1	0	3	1	0	0	0	0	0	0	7	44	48
04:00	0	0	0	0	4	4	4	0	0	0	0	0	0	0	12	42	44
05:00	0	0	0	0	1	2	5	6	2	1	0	**1**	0	0	18	53	65
06:00	0	0	0	0	3	9	17	7	1	1	0	0	0	0	38	47	50
07:00	5	0	0	4	8	19	14	14	**6**	0	0	0	**1**	0	71	48	52
08:00	9	0	0	1	12	19	23	14	1	0	0	0	0	0	79	46	48
09:00	9	0	1	4	12	23	37	**23**	4	2	0	0	0	0	115	47	50
10:00	12	0	0	2	19	63	**75**	21	6	**3**	0	0	0	0	201	44	49
11:00	**23**	0	1	**5**	**29**	**75**	72	19	6	0	0	0	0	0	**230**	44	48
12 PM	25	**1**	0	3	24	57	86	33	7	**3**	0	**1**	0	0	240	46	49
13:00	9	1	1	3	37	57	**91**	**41**	**10**	2	**3**	0	0	0	255	47	51
14:00	17	1	0	**8**	26	84	89	29	4	0	1	0	0	0	259	44	48
15:00	**26**	0	1	6	**42**	**94**	86	25	4	0	2	0	0	0	**286**	44	48
16:00	15	0	0	5	25	78	80	31	2	0	0	0	0	0	236	44	48
17:00	7	0	0	3	39	79	51	17	3	2	0	0	0	0	201	44	48
18:00	8	0	1	1	21	54	45	12	4	0	0	0	0	0	146	44	48
19:00	5	0	0	5	29	36	25	5	1	0	0	0	0	0	106	43	45
20:00	6	0	**2**	4	10	19	35	9	1	0	1	0	0	0	87	44	48
21:00	4	0	0	1	7	16	13	9	0	0	0	0	0	0	50	45	48
22:00	3	0	0	1	1	11	9	5	3	0	1	0	0	0	34	48	53
23:00	2	0	0	0	1	6	3	5	4	0	0	0	0	0	21	51	53
Total	191	3	8	59	355	814	878	333	71	15	8	2	1	0	2738		
Percent	7.0%	0.1%	0.3%	2.2%	13.0%	29.7%	32.1%	12.2%	2.6%	0.5%	0.3%	0.1%	0.0%	0.0%			
AM Peak	11:00		02:00	11:00	11:00	11:00	10:00	09:00	07:00	10:00		05:00	07:00		11:00		
Vol.	23		1	5	29	75	75	23	6	3		1	1		230		
PM Peak	15:00	12:00	20:00	14:00	15:00	15:00	13:00	13:00	13:00	12:00	13:00	12:00			15:00		
Vol.	26	1	2	8	42	94	91	41	10	3	3	1			286		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering

400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/13/21	2	**1**	0	0	2	5	2	2	0	0	0	0	0	0	14	44	48
01:00	1	0	0	0	0	1	0	1	0	0	0	0	0	0	3	47	49
02:00	0	0	0	0	1	3	3	0	0	0	0	0	0	0	7	43	44
03:00	0	0	0	0	2	5	1	0	1	1	0	0	0	0	10	52	57
04:00	0	0	1	1	10	9	6	2	2	2	0	0	0	0	33	47	55
05:00	4	0	0	2	16	30	32	12	7	**3**	0	0	0	0	106	47	53
06:00	6	0	0	**7**	47	70	55	25	2	2	0	0	0	0	214	44	48
07:00	19	0	0	6	**52**	**114**	**103**	18	5	0	**1**	0	0	0	**318**	43	47
08:00	**32**	1	0	1	30	68	87	**38**	**9**	0	0	0	0	0	266	45	49
09:00	11	1	0	1	33	52	55	16	2	1	0	0	0	0	172	44	48
10:00	12	0	0	2	25	53	49	15	4	1	0	0	0	0	161	44	48
11:00	17	1	**2**	3	22	46	57	13	3	2	0	0	0	0	166	44	48
12 PM	14	0	0	2	22	52	64	26	2	0	0	0	0	0	182	45	48
13:00	24	**1**	1	4	9	49	56	**31**	**5**	1	**2**	0	0	0	183	46	49
14:00	11	0	**2**	2	24	**92**	76	15	2	0	0	0	0	0	224	43	46
15:00	**39**	0	2	**13**	22	51	**81**	22	4	0	0	**1**	0	0	**235**	44	48
16:00	32	0	1	5	24	92	55	11	4	**2**	0	0	0	0	226	43	47
17:00	20	0	0	2	**31**	58	52	19	4	1	0	0	0	0	187	44	48
18:00	11	0	0	6	30	52	34	10	3	1	0	0	0	0	147	43	48
19:00	4	0	0	1	20	31	20	8	1	1	0	0	0	0	86	44	48
20:00	7	0	0	5	16	20	22	7	3	2	0	0	0	0	82	44	51
21:00	2	0	0	1	4	15	14	5	2	0	0	0	0	0	43	45	49
22:00	0	0	0	0	3	10	6	10	0	2	0	0	0	0	31	48	56
23:00	0	0	0	2	3	4	4	3	3	2	0	0	0	0	21	53	57
Total	268	5	9	66	448	982	934	309	68	24	3	1	0	0	3117		
Percent	8.6%	0.2%	0.3%	2.1%	14.4%	31.5%	30.0%	9.9%	2.2%	0.8%	0.1%	0.0%	0.0%	0.0%			
AM Peak	08:00	00:00	11:00	06:00	07:00	07:00	07:00	08:00	08:00	05:00	07:00				07:00		
Vol.	32	1	2	7	52	114	103	38	9	3	1				318		
PM Peak	15:00	13:00	14:00	15:00	17:00	14:00	15:00	13:00	13:00	16:00	13:00	15:00			15:00		
Vol.	39	1	2	13	31	92	81	31	5	2	2	1			235		

Project: MIRBEAU BEACON
Location: BEACON, NY
Job No. 21007271A

Colliers Engineering
400 Columbus Avenue, Ste 180 E
Valhalla, NY 10595

Customer Loyalty through Client Satisfaction

Site Code: 21007271 1010
Station ID:
ROUTE 9D (NORTH OF CRAIG HOUSE LANE & SOUTH OF KRISTY DRIVE)
Latitude: 0' 0.0000 Undefined

SB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
12/14/21	0	0	0	0	1	0	0	3	0	0	0	0	0	0	4	49	49
01:00	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3	42	44
02:00	0	0	0	0	0	1	1	0	1	0	0	0	0	0	3	52	54
03:00	2	0	0	1	1	1	2	0	0	0	0	0	0	0	7	42	44
04:00	0	0	0	1	8	15	8	6	4	0	0	0	0	0	42	48	52
05:00	4	0	0	0	28	33	33	11	6	2	0	0	0	0	117	45	51
06:00	8	0	0	9	**64**	98	50	24	6	**3**	0	0	0	0	262	44	49
07:00	15	0	0	**11**	62	**108**	**90**	29	**9**	0	0	0	0	0	**324**	44	48
08:00	**21**	**1**	**1**	0	39	86	59	**49**	8	1	**1**	0	0	0	266	46	49
09:00	13	1	0	1	22	54	55	20	3	1	0	0	0	0	170	44	48
10:00	16	0	0	6	28	64	38	12	5	0	0	0	0	0	169	43	48
11:00	11	0	0	0	19	70	59	19	5	0	0	0	0	0	183	44	48
12 PM	**14**	**1**	0	**2**	**23**	**50**	**71**	**32**	**2**	**3**	0	0	0	0	**198**	46	49
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	104	3	1	31	296	581	467	205	49	10	1	0	0	0	1748		
Percent	5.9%	0.2%	0.1%	1.8%	16.9%	33.2%	26.7%	11.7%	2.8%	0.6%	0.1%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	07:00	06:00	07:00	07:00	08:00	07:00	06:00	08:00				07:00		
Vol.	21	1	1	11	64	108	90	49	9	3	1				324		
PM Peak	12:00	12:00		12:00	12:00	12:00	12:00	12:00	12:00	12:00					12:00		
Vol.	14	1		2	23	50	71	32	2	3					198		
Grand Total	804	18	47	294	2230	4694	4446	1685	378	80	18	5	3	0	14702		
Percent	5.5%	0.1%	0.3%	2.0%	15.2%	31.9%	30.2%	11.5%	2.6%	0.5%	0.1%	0.0%	0.0%	0.0%			

	15th Percentile :	32 MPH
	50th Percentile :	39 MPH
	85th Percentile :	44 MPH
	95th Percentile :	49 MPH

Statistics		
	10 MPH Pace Speed :	36-45 MPH
	Number in Pace :	9140
	Percent in Pace :	62.2%
	Number of Vehicles > 55 MPH :	106
	Percent of Vehicles > 55 MPH :	0.7%
	Mean Speed(Average) :	39 MPH

NYSDOT VOLUME DATA SUMMARY

ROADWAY: NYS ROUTE 9D
SEGMENT: FROM PUTNAM/ DUTCH CO LINE - CHESTER TO CITY OF BEACON
LOCATION: 102' S OF CORIS LANE
START DATE OF COUNT: Tuesday, April 19, 2016
NYSDOT COUNT STATION: 820632
FUNCTIONAL CLASS: 16 - URBAN MINOR ARTERIAL
FACTOR GROUP: 30
SEASONAL FACTOR: 1.052

TIME PERIOD		DIRECTIONAL VOLUMES		TOTAL VOLUME
START	FINISH	NORTHBOUND	SOUTHBOUND	
12:00 AM	1:00 AM	26	12	38
1:00 AM	2:00 AM	18	8	26
2:00 AM	3:00 AM	10	6	16
3:00 AM	4:00 AM	5	9	14
4:00 AM	5:00 AM	8	43	51
5:00 AM	6:00 AM	14	160	174
6:00 AM	7:00 AM	48	279	327
7:00 AM	8:00 AM	107	292	399
8:00 AM	9:00 AM	137	236	373
9:00 AM	10:00 AM	109	175	284
10:00 AM	11:00 AM	102	143	245
11:00 AM	12:00 PM	118	131	249
12:00 PM	1:00 PM	119	120	239
1:00 PM	2:00 PM	146	134	280
2:00 PM	3:00 PM	170	144	314
3:00 PM	4:00 PM	269	158	427
4:00 PM	5:00 PM	369	174	543
5:00 PM	6:00 PM	405	164	569
6:00 PM	7:00 PM	241	117	358
7:00 PM	8:00 PM	168	84	252
8:00 PM	9:00 PM	145	78	223
9:00 PM	10:00 PM	96	55	151
10:00 PM	11:00 PM	64	48	112
11:00 PM	12:00 AM	43	21	64
AVERAGE WEEKDAY DAILY TRAFFIC		**2937**	**2791**	**5728**
	AADT	**2792**	**2653**	**5445**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT CLASSIFICATION DATA SUMMARY

ROADWAY: NYS ROUTE 9D
SEGMENT: FROM PUTNAM/ DUTCH CO LINE - CHESTER TO CITY OF BEACON
LOCATION: 102' S OF CORIS LANE
START DATE OF COUNT: Tuesday, April 19, 2016
NYSDOT COUNT STATION: 820632
FUNCTIONAL CLASS: 16 - URBAN MINOR ARTERIAL
FACTOR GROUP: 30

VEHICLE CLASS	DIRECTIONAL VOLUMES		TOTAL VEHICLES	TOTAL AXLES
	NORTHBOUND	SOUTHBOUND		
F1	17	21	38	76
F2	2563	2368	4931	9862
F3	289	314	603	1206
F4	11	9	20	50
F5	41	58	99	198
F6	5	5	10	30
F7	0	0	0	0
F8	4	3	7	25
F9	6	2	8	40
F10	0	0	0	0
F11	0	0	0	0
F12	0	0	0	0
F13	0	0	0	0
AVERAGE WEEKDAY TOTAL	**2936**	**2780**	**5716**	**11487**

	NORTHBOUND	SOUTHBOUND	TOTAL
% HEAVY VEHICLES (F4 - F13)	12%	14%	13%
% TRUCKS & BUSES (F3 - F13)	2%	3%	3%
% F3 - F7	2%	3%	2%
% F8 - F13	0%	0%	0%
% F1	1%	1%	1%
% F2	87%	85%	86%
% F3	10%	11%	11%
% F4	0%	0%	0%
% F5 - F7	2%	2%	2%

VEHICLE CLASSIFICATION CODES:

- **F1** MOTORCYCLES
- **F2** AUTOS (INCLUDING THOSE HAULING TRAILERS)
- **F3** 2 AXLE, 4-TIRE PICKUPS, VANS, MOTORHOMES (INCLUDING THOSE HAULING TRAILERS)
- **F4** BUSES
- **F5** 2 AXLE, 6-TIRE SINGLE UNIT TRUCKS
- **F6** 3 AXLE SINGLE UNIT TRUCKS
- **F7** 4 OR MORE AXLE SINGLE UNIT TRUCKS
- **F8** 4 OR LESS AXLE VEHICLES, ONE UNIT IS A TRUCK
- **F9** 5 AXLE DOUBLE UNIT VEHICLES, ONE UNIT IS A TRUCK
- **F10** 6 OR MORE AXLE DOUBLE UNIT VEHICLES, ONE UNIT IS A TRUCK
- **F11** 5 OR LESS AXLE MULTI-UNIT TRUCKS
- **F12** 6 AXLE MULTI UNIT TRUCKS
- **F13** 7 OR MORE AXLE MULTI-UNIT TRUCKS

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT SPEED DATA SUMMARY

ROADWAY: NYS ROUTE 9D
SEGMENT: FROM PUTNAM/ DUTCH CO LINE - CHESTER TO CITY OF BEACON
LOCATION: 102' S OF CORIS LANE
START DATE OF COUNT: Tuesday, April 19, 2016
NYSDOT COUNT STATION: 820632
FUNCTIONAL CLASS: 16 - URBAN MINOR ARTERIAL
POSTED SPEED LIMIT: 55
FACTOR GROUP: 30

SPEEDS (MPH)	DIRECTIONAL VOLUMES		TOTAL VOLUME
	NORTHBOUND	SOUTHBOUND	
0 - 20.0	2	4	6
20.1 - 25.0	0	7	7
25.1 - 30.0	4	5	9
30.1 - 35.0	16	10	26
35.1 - 40.0	85	36	121
40.1 - 45.0	428	220	648
45.1 - 50.0	1087	750	1837
50.1 - 55.0	942	980	1922
55.1 - 60.0	302	570	872
60.1 - 65.0	55	163	218
65.1 - 70.0	18	25	43
70.1 - 75.0	1	8	9
75.1 - 80.0	0	1	1
80.1+	0	0	0
UNCLASSIFIED	0	0	0
AVERAGE SPEED (MPH)	**49**	**51**	**50**
50TH PERCENTILE SPEED (MPH)	**49**	**52**	**51**
85TH PERCENTILE SPEED (MPH)	**55**	**58**	**57**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT VOLUME DATA SUMMARY

ROADWAY: NYS ROUTE 9D
SEGMENT: FROM CITY OF BEACON - TELLER AVENUE
LOCATION: 380' S OF GRANDVIEW AVE
START DATE OF COUNT: Tuesday, April 19, 2016
NYSDOT COUNT STATION: 820306
FUNCTIONAL CLASS: 16 - URBAN MINOR ARTERIAL
FACTOR GROUP: 30
SEASONAL FACTOR: 1.052

TIME PERIOD		DIRECTIONAL VOLUMES		TOTAL VOLUME
START	FINISH	NORTHBOUND	SOUTHBOUND	
12:00 AM	1:00 AM	26	16	42
1:00 AM	2:00 AM	18	10	28
2:00 AM	3:00 AM	11	8	19
3:00 AM	4:00 AM	7	9	16
4:00 AM	5:00 AM	15	42	57
5:00 AM	6:00 AM	24	154	178
6:00 AM	7:00 AM	69	268	337
7:00 AM	8:00 AM	151	284	435
8:00 AM	9:00 AM	180	242	422
9:00 AM	10:00 AM	147	198	345
10:00 AM	11:00 AM	138	157	295
11:00 AM	12:00 PM	142	152	294
12:00 PM	1:00 PM	141	144	285
1:00 PM	2:00 PM	172	146	318
2:00 PM	3:00 PM	194	168	362
3:00 PM	4:00 PM	284	200	484
4:00 PM	5:00 PM	376	222	598
5:00 PM	6:00 PM	390	211	601
6:00 PM	7:00 PM	278	152	430
7:00 PM	8:00 PM	182	110	292
8:00 PM	9:00 PM	152	114	266
9:00 PM	10:00 PM	106	76	182
10:00 PM	11:00 PM	66	64	130
11:00 PM	12:00 AM	44	30	74
AVERAGE WEEKDAY DAILY TRAFFIC		**3313**	**3177**	**6490**
	AADT	**3149**	**3020**	**6169**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT CLASSIFICATION DATA SUMMARY

ROADWAY: NYS ROUTE 9D
SEGMENT: FROM CITY OF BEACON - TELLER AVENUE
LOCATION: 380' S OF GRANDVIEW AVE
START DATE OF COUNT: Tuesday, April 19, 2016
NYSDOT COUNT STATION: 820306
FUNCTIONAL CLASS: 16 - URBAN MINOR ARTERIAL
FACTOR GROUP: 30

VEHICLE CLASS	DIRECTIONAL VOLUMES		TOTAL VEHICLES	TOTAL AXLES
	NORTHBOUND	SOUTHBOUND		
F1	20	19	39	78
F2	2796	2760	5556	11112
F3	385	337	722	1444
F4	19	10	29	73
F5	71	45	116	232
F6	7	6	13	39
F7	0	0	0	0
F8	4	2	6	21
F9	4	2	6	30
F10	0	0	0	0
F11	0	0	0	0
F12	0	0	0	0
F13	0	0	0	0
AVERAGE WEEKDAY TOTAL	**3306**	**3181**	**6487**	**13029**

	NORTHBOUND	SOUTHBOUND	TOTAL
% HEAVY VEHICLES (F4 - F13)	15%	13%	14%
% TRUCKS & BUSES (F3 - F13)	3%	2%	3%
% F3 - F7	3%	2%	2%
% F8 - F13	0%	0%	0%
% F1	1%	1%	1%
% F2	85%	87%	86%
% F3	12%	11%	11%
% F4	1%	0%	0%
% F5 - F7	2%	2%	2%

VEHICLE CLASSIFICATION CODES:

- **F1** MOTORCYCLES
- **F2** AUTOS (INCLUDING THOSE HAULING TRAILERS)
- **F3** 2 AXLE, 4-TIRE PICKUPS, VANS, MOTORHOMES (INCLUDING THOSE HAULING TRAILERS)
- **F4** BUSES
- **F5** 2 AXLE, 6-TIRE SINGLE UNIT TRUCKS
- **F6** 3 AXLE SINGLE UNIT TRUCKS
- **F7** 4 OR MORE AXLE SINGLE UNIT TRUCKS
- **F8** 4 OR LESS AXLE VEHICLES, ONE UNIT IS A TRUCK
- **F9** 5 AXLE DOUBLE UNIT VEHICLES, ONE UNIT IS A TRUCK
- **F10** 6 OR MORE AXLE DOUBLE UNIT VEHICLES, ONE UNIT IS A TRUCK
- **F11** 5 OR LESS AXLE MULTI-UNIT TRUCKS
- **F12** 6 AXLE MULTI UNIT TRUCKS
- **F13** 7 OR MORE AXLE MULTI-UNIT TRUCKS

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT SPEED DATA SUMMARY

ROADWAY: NYS ROUTE 9D
SEGMENT: FROM CITY OF BEACON - TELLER AVENUE
LOCATION: 380' S OF GRANDVIEW AVE
START DATE OF COUNT: Tuesday, April 19, 2016
NYSDOT COUNT STATION: 820306
FUNCTIONAL CLASS: 16 - URBAN MINOR ARTERIAL
POSTED SPEED LIMIT: 30
FACTOR GROUP: 30

SPEEDS (MPH)	DIRECTIONAL VOLUMES		TOTAL VOLUME
	NORTHBOUND	SOUTHBOUND	
0 - 20.0	0	2	2
20.1 - 25.0	3	4	7
25.1 - 30.0	38	15	53
30.1 - 35.0	277	265	542
35.1 - 40.0	793	920	1713
40.1 - 45.0	1084	1290	2374
45.1 - 50.0	783	552	1335
50.1 - 55.0	285	113	398
55.1 - 60.0	44	18	62
60.1 - 65.0	4	2	6
65.1 - 70.0	1	0	1
70.1 - 75.0	0	0	0
75.1 - 80.0	0	0	0
80.1+	0	0	0
UNCLASSIFIED	0	0	0
AVERAGE SPEED (MPH)	**42**	**41**	**41**
50TH PERCENTILE SPEED (MPH)	**43**	**42**	**42**
85TH PERCENTILE SPEED (MPH)	**49**	**47**	**48**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

Colliers Engineering & Design

NYSDOT VOLUME DATA SUMMARY

ROADWAY: HOWLAND AVENUE
SEGMENT: FROM WOLCOTT AVE - E. MAIN ST.
LOCATION: 15' N OF CHIUSANO DR
START DATE OF COUNT: Monday, May 13, 2019
NYSDOT COUNT STATION: 825220
FUNCTIONAL CLASS: 19 - URBAN LOCAL ROAD
FACTOR GROUP: 30
SEASONAL FACTOR: 1.089

TIME PERIOD		DIRECTIONAL VOLUMES		TOTAL VOLUME
START	FINISH	NORTHBOUND	SOUTHBOUND	
12:00 AM	1:00 AM	4	2	6
1:00 AM	2:00 AM	2	2	4
2:00 AM	3:00 AM	2	0	2
3:00 AM	4:00 AM	3	4	7
4:00 AM	5:00 AM	8	19	27
5:00 AM	6:00 AM	60	56	116
6:00 AM	7:00 AM	72	56	128
7:00 AM	8:00 AM	60	55	115
8:00 AM	9:00 AM	69	47	116
9:00 AM	10:00 AM	58	41	99
10:00 AM	11:00 AM	49	49	98
11:00 AM	12:00 PM	62	53	115
12:00 PM	1:00 PM	53	52	105
1:00 PM	2:00 PM	54	55	109
2:00 PM	3:00 PM	72	62	134
3:00 PM	4:00 PM	106	82	188
4:00 PM	5:00 PM	133	70	203
5:00 PM	6:00 PM	129	58	187
6:00 PM	7:00 PM	91	48	139
7:00 PM	8:00 PM	48	38	86
8:00 PM	9:00 PM	30	43	73
9:00 PM	10:00 PM	16	13	29
10:00 PM	11:00 PM	15	12	27
11:00 PM	12:00 AM	8	6	14
AVERAGE WEEKDAY DAILY TRAFFIC		**1204**	**923**	**2127**
	AADT	**1106**	**848**	**1954**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

Colliers Engineering & Design

NYSDOT VOLUME DATA SUMMARY

ROADWAY: SLOCUM ROAD
SEGMENT: FROM RT 9D - BEACON C/L
LOCATION: 150 FEET NW OF CR40
START DATE OF COUNT: Monday, June 08, 2015
NYSDOT COUNT STATION: 821101
FUNCTIONAL CLASS: 19 - URBAN LOCAL ROAD
FACTOR GROUP: 30
SEASONAL FACTOR: 1.1

TIME PERIOD		DIRECTIONAL VOLUMES		TOTAL VOLUME
START	FINISH	NORTHBOUND	SOUTHBOUND	
12:00 AM	1:00 AM	0	0	0
1:00 AM	2:00 AM	1	0	1
2:00 AM	3:00 AM	0	0	0
3:00 AM	4:00 AM	0	0	0
4:00 AM	5:00 AM	1	3	4
5:00 AM	6:00 AM	6	12	18
6:00 AM	7:00 AM	24	28	52
7:00 AM	8:00 AM	15	17	32
8:00 AM	9:00 AM	20	20	40
9:00 AM	10:00 AM	15	14	29
10:00 AM	11:00 AM	14	12	26
11:00 AM	12:00 PM	14	12	26
12:00 PM	1:00 PM	16	12	28
1:00 PM	2:00 PM	9	9	18
2:00 PM	3:00 PM	20	16	36
3:00 PM	4:00 PM	21	15	36
4:00 PM	5:00 PM	16	9	25
5:00 PM	6:00 PM	23	12	35
6:00 PM	7:00 PM	22	12	34
7:00 PM	8:00 PM	14	8	22
8:00 PM	9:00 PM	9	4	13
9:00 PM	10:00 PM	8	2	10
10:00 PM	11:00 PM	3	1	4
11:00 PM	12:00 AM	2	0	2
AVERAGE WEEKDAY DAILY TRAFFIC		**273**	**218**	**491**
	AADT	**248**	**198**	**446**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT CLASSIFICATION DATA SUMMARY

ROADWAY: SLOCUM ROAD
SEGMENT: FROM RT 9D - BEACON C/L
LOCATION: 150 FEET NW OF CR40
START DATE OF COUNT: Monday, June 08, 2015
NYSDOT COUNT STATION: 821101
FUNCTIONAL CLASS: 19 - URBAN LOCAL ROAD
FACTOR GROUP: 30

VEHICLE CLASS	DIRECTIONAL VOLUMES		TOTAL VEHICLES	TOTAL AXLES
	NORTHBOUND	SOUTHBOUND		
F1	0	0	0	0
F2	140	181	321	642
F3	10	12	22	44
F4	1	0	1	3
F5	1	5	6	12
F6	0	1	1	3
F7	0	0	0	0
F8	0	0	0	0
F9	0	0	0	0
F10	0	0	0	0
F11	0	0	0	0
F12	0	0	0	0
F13	0	0	0	0
AVERAGE WEEKDAY TOTAL	**152**	**199**	**351**	**704**

	NORTHBOUND	SOUTHBOUND	TOTAL
% HEAVY VEHICLES (F4 - F13)	8%	9%	9%
% TRUCKS & BUSES (F3 - F13)	1%	3%	2%
% F3 - F7	1%	3%	2%
% F8 - F13	0%	0%	0%
% F1	0%	0%	0%
% F2	92%	91%	91%
% F3	7%	6%	6%
% F4	1%	0%	0%
% F5 - F7	1%	3%	2%

VEHICLE CLASSIFICATION CODES:

- **F1** MOTORCYCLES
- **F2** AUTOS (INCLUDING THOSE HAULING TRAILERS)
- **F3** 2 AXLE, 4-TIRE PICKUPS, VANS, MOTORHOMES (INCLUDING THOSE HAULING TRAILERS)
- **F4** BUSES
- **F5** 2 AXLE, 6-TIRE SINGLE UNIT TRUCKS
- **F6** 3 AXLE SINGLE UNIT TRUCKS
- **F7** 4 OR MORE AXLE SINGLE UNIT TRUCKS
- **F8** 4 OR LESS AXLE VEHICLES, ONE UNIT IS A TRUCK
- **F9** 5 AXLE DOUBLE UNIT VEHICLES, ONE UNIT IS A TRUCK
- **F10** 6 OR MORE AXLE DOUBLE UNIT VEHICLES, ONE UNIT IS A TRUCK
- **F11** 5 OR LESS AXLE MULTI-UNIT TRUCKS
- **F12** 6 AXLE MULTI UNIT TRUCKS
- **F13** 7 OR MORE AXLE MULTI-UNIT TRUCKS

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

NYSDOT SPEED DATA SUMMARY

ROADWAY: SLOCUM ROAD
SEGMENT: FROM RT 9D - BEACON C/L
LOCATION: 150 FEET NW OF CR40
START DATE OF COUNT: Monday, June 08, 2015
NYSDOT COUNT STATION: 821101
FUNCTIONAL CLASS: 19 - URBAN LOCAL ROAD
POSTED SPEED LIMIT: 30
FACTOR GROUP: 30

SPEEDS (MPH)	DIRECTIONAL VOLUMES		TOTAL VOLUME
	NORTHBOUND	SOUTHBOUND	
0 - 20.0	30	34	64
20.1 - 25.0	72	90	162
25.1 - 30.0	51	68	119
30.1 - 35.0	3	6	9
35.1 - 40.0	0	0	0
40.1 - 45.0	0	0	0
45.1 - 50.0	0	0	0
50.1 - 55.0	0	0	0
55.1 - 60.0	0	0	0
60.1 - 65.0	0	0	0
65.1 - 70.0	0	0	0
70.1 - 75.0	0	0	0
75.1 - 80.0	0	0	0
80.1+	0	0	0
UNCLASSIFIED	0	0	0
AVERAGE SPEED (MPH)	**21**	**22**	**21**
50TH PERCENTILE SPEED (MPH)	**23**	**24**	**24**
85TH PERCENTILE SPEED (MPH)	**28**	**28**	**28**

NOTES:

1) DATA SOURCE: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) TRAFFIC DATA VIEWER AVERAGE WEEKDAY VOLUMES

Colliers Engineering & Design

Traffic Impact Study

Appendix F | Public Transportation Data

System Map

ROUTE LIST

- A — Poughkeepsie Transit Hub to Fishkill / Walmart & Dutchess Mall
- B — Poughkeepsie Transit Hub to Beacon
- C — Poughkeepsie Transit Hub to Tivoli
- D — Poughkeepsie Transit Hub to Wassaic
- E — Poughkeepsie Transit Hub to Pawling
- F — Beacon to Hopewell Junction
- G — Beacon Free Loop
- H — College Connection Shuttle
- J — Northside Shuttle
- K — Southside Shuttle
- L — Main Street Shuttle
- M — Eastside Shuttle
- P — Westside Shuttle
- PRL — Poughkeepsie RailLink
- NHRL — New Hamburg RailLink

LEGEND

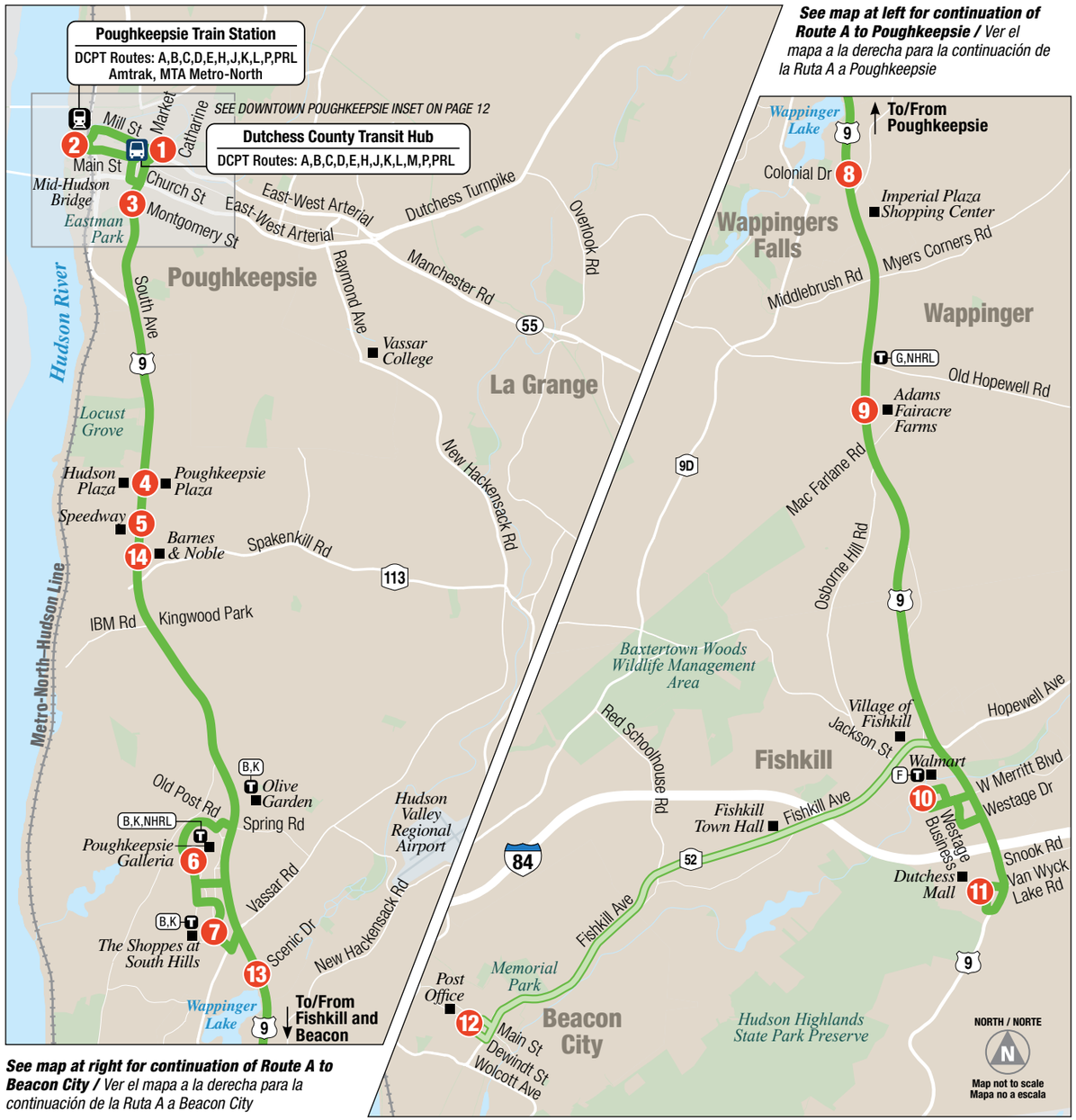
- Bus Route / Ruta de Autobús
- Transfer Point / Punto de Traslado
- Connecting Routes / Rutas que conectan (A,B,C)
- Transit Hub / Centro de Traslado
- Train Station / Centro de Traslado
- Point of Interest / Punto de Interés
- Hospital / Hospital

© 2019, Duchess County Public Transit
Design by Smartmaps, Inc., Knoxville, TN

Tivoli Free Library · Monument Hill · Village of Tivoli Hall · TIVOLI · RED HOOK · Cruger Island Rd · Budds Corners Rd · Bard College · Annandale Rd · RED HOOK VILLAGE · Market St · Village of Red Hook Hall · Red Hook Public Library · Broadway · Hudson River · Museum of Rhinebeck History · Stone Church Rd · Northern Dutchess Hospital · Rhinecliff · Starr Library · Village of Rhinebeck Hall · Town of Rhinebeck Hall · Astor Services for Children & Families · RHINEBECK VILLAGE · RHINEBECK · Haggerty Hill Rd · Staatsburg · ULSTER COUNTY · N Cross Rd · S Cross Rd · Anderson Center for Autism · Albany Post Rd · HYDE PARK · Town of Hyde Park Hall · Hyde Park Free Library · Mill Rd · E Market St · Violet Ave · Haviland · Franklin D. Roosevelt Presidential Library · Stop & Shop · St Andrews Rd · W Dorsey Ln · Cottage Rd · Fairview · Fulton St · North Rd · Salt Point Turnpike · Dutchess Community College · Midhudson Regional Hospital · Poughkeepsie Train Station · Mid-Hudson Bridge · DOWNTOWN POUGHKEEPSIE (See Inset Page 12) · Arlington · Overlook · Commerce St · LaGrange Association Library · LAGRANGE · Manchester Rd · Dutchess Turnpike · Taconic State Parkway · Skidmore Rd · Freedom Plains · Tops Market · Town of LaGrange Hall · E Noxon Rd · Jon J Wagner Way · UNION VALE · DOVER · Metro-North–Harlem Line · Dover Plains Library · Pleasant Ridge Rd · Harlem Valley-Wingdale Train Station · Cousins Cafe · Big W's · Dover Plains Train Station · Tinker Town Rd · Taconic Developmental Services · Bretti Ln · Chestnut Ridge Rd · Oak Summit Rd · Eastern Dutchess Government Center · Franklin Ave · Village of Millbrook Hall · Millbrook Free Library · Town of Washington Hall · MILLBROOK VILLAGE · WASHINGTON · AMENIA · Wassaic Train Station · Tenmile River Train Station · Sharon Turnpike · Washington Hollow Plaza · DUTCHESS COUNTY · Pleasant Valley · Pleasant Valley Library · Town of Pleasant Valley Hall · Salt Point · Haviland · Hudson Plaza · Speedway · Poughkeepsie Plaza · Barnes & Noble · Spackenkill Rd · Titusville · Red Oaks Mill · IBM Rd · Spackenkill · Crown Heights · Olive Garden · Vassar Rd · Poughkeepsie Galleria · Lowes · Hudson Valley Regional Airport · The Shoppes at South Hills · Imperial Plaza Shopping Center · Myers Corners · WAPPINGERS FALLS VILLAGE · Myers Corner · WAPPINGER · All Angels Hill Rd · New Hamburg Train Station · New Hamburg Rd · Old Hopewell · NHRL · Town of Wappinger Hall · Adams Fairacre Farms · ORANGE COUNTY · Metro-North–Hudson Line · Hillside Lake · Unity St · Unity Plaza · Town of East Fishkill Hall · EAST FISHKILL · GlobalFoundries · Brinckerhoff · ShopRite · Village of Fishkill Hall · Hopewell Ave · W Merritt Blvd · Merritt Park · Fishkill Town Hall · Ramada by Wyndham · Walmart · Dutchess Marketplace · Fishkill Ave · FISHKILL · VA Medical Center · Castle Point · Dutchess Stadium · City of Beacon Hall · Beacon Train Station · BEACON CITY · Main St · Wolcott Ave · Post Office · Howland Public Library · Hudson River · Freedom Plains · Town of Beekman Hall · Beekman Library · Clove Valley Rd · Pleasant Ridge Rd · Hall Dr · BEEKMAN · Old Route 55 · Appalachian Trail Train Station · Pawling Train Station · Town of Pawling Hall · Coulter Ave · Kings Apts · Village of Pawling Hall · PAWLING VILLAGE · PAWLING · Akindale Rd · Hannaford Supermarket · COLUMBIA COUNTY · PINE PLAINS · NORTH EAST · MILAN · STANFORD · CLINTON · PUTNAM COUNTY

Route A: Poughkeepsie Transit Hub to Fishkill / Walmart & Dutchess Mall

Please see map on page 14 / Favor ver el mapa en la página 14



MONDAY–FRIDAY / LUNES–VIERNES

SOUTHBOUND: Poughkeepsie to Fishkill (Beacon on last trip) / HACIA EL SUR: Poughkeepsie a Fishkill (Beacon en el último viaje)

	Stop #	1	3	6	9	10	15	16	27	44	33	34	35
		Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**	South Ave/Market St & Montgomery St **POUGHKEEPSIE**	Route 9 S & Hudson Plaza **POUGHKEEPSIE**	Route 9 S & Speedway **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	The Shoppes at South Hills **POUGHKEEPSIE**	Route 9 S & Colonial Drive **WAPPINGERS FALLS**	Route 9 S (across from Adams) **WAPPINGERS**	Fishkill Walmart **FISHKILL**	Dutchess Mall **FISHKILL**	Beacon Post Office **BEACON**
AM		6:00	6:05	6:09	6:13	6:14	—	—	6:25	6:33	6:44	6:53	—
		6:45	—	—	—	— EXPRESS —		—	—	—	7:30	—	—
		7:00	7:05	7:09	7:13	7:14	—	—	7:25	7:33	7:44	7:53	—
		9:00	9:05	9:09	9:13	9:14	9:24	9:27	—	—	—	—	—
		9:15	9:20	9:24	9:28	9:29	9:39	9:42	9:47	9:55	10:06	10:15	—
		10:00	10:05	10:09	10:13	10:14	10:24	10:27	10:32	10:40	10:51	11:00	—
		11:17	11:22	11:26	11:30	11:31	11:41	11:44	11:49	11:57	**12:08**	**12:17**	—
PM		**1:00**	**1:05**	**1:09**	**1:13**	**1:14**	**1:24**	**1:27**	**1:32**	**1:40**	**1:51**	**2:00**	—
		2:50	**2:55**	**2:59**	**3:03**	**3:04**	**3:14**	**3:17**	**3:22**	**3:30**	**3:41**	**3:50**	—
		4:30	**4:35**	**4:39**	**4:43**	**4:44**	**4:54**	**4:57**	**5:02**	**5:10**	**5:21**	**5:30**	—
		5:30	**5:35**	**5:39**	**5:43**	**5:44**	**5:54**	**5:57**	**6:02**	**6:10**	**6:21**	**6:30**	—
		7:00	**7:05**	**7:09**	**7:13**	**7:14**	**7:24**	**7:27**	**7:32**	**7:40**	**7:51**	**8:00**	—
		8:30	**8:35**	**8:39**	**8:43**	**8:44**	**8:54**	**8:57**	**9:02**	**9:10**	**9:21**	**9:30**	—
		9:30	**9:35**	**9:39**	**9:43**	**9:44**	**9:54**	**9:57**	**10:02**	**10:10**	**10:21**	**10:30**	**10:45**

NORTHBOUND: Fishkill (Beacon on last trip) to Poughkeepsie / HACIA EL NORTE: Fishkill (Beacon en el último viaje) a Poughkeepsie

	Stop #	35	34	33	45	42	16	15	21	22	25	1	3
		Beacon Post Office **BEACON**	Dutchess Mall **FISHKILL**	Fishkill Walmart **FISHKILL**	Route 9 N & Adams Fairacre Farms **WAPPINGERS**	Route 9 N & Scenic Drive **WAPPINGERS FALLS**	The Shoppes at South Hills **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	Route 9 N & Barnes & Noble **POUGHKEEPSIE**	Route 9 N & Poughkeepsie Plaza **POUGHKEEPSIE**	South Ave/Market St & Montgomery St **POUGHKEEPSIE**	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**
AM		—	7:15	7:23	7:31	7:41	—	—	7:52	7:53	7:57	8:01	8:07
		—	8:00	8:08	8:16	8:26	—	—	8:37	8:38	8:42	8:46	—
		—	—	—	—	—	9:27	9:30	9:37	9:38	9:42	9:46	—
		—	10:17	10:25	10:33	10:43	10:47	10:51	11:05	11:06	11:13	11:17	11:22
		—	11:00	11:08	11:16	11:26	11:30	11:31	11:38	11:39	11:43	11:47	11:53
PM		—	**1:00**	**1:08**	**1:16**	**1:26**	**1:30**	**1:31**	**1:38**	**1:39**	**1:43**	**1:47**	—
		—	**2:00**	**2:08**	**2:16**	**2:26**	**2:30**	**2:31**	**2:38**	**2:39**	**2:43**	**2:47**	—
		—	—	**3:20**	**3:28**	**3:38**	**3:42**	**3:45**	**3:55**	**3:56**	**4:01**	**4:05**	—
		—	**4:00**	**4:08**	**4:16**	**4:26**	**4:30**	**4:31**	**4:38**	**4:39**	**4:43**	**4:47**	**4:53**
		—	**5:45**	**5:53**	**6:01**	**6:11**	**6:15**	**6:16**	**6:23**	**6:24**	**6:28**	**6:32**	**6:38**
		—	**6:45**	**5:53**	**7:01**	**7:11**	**7:15**	**7:16**	**7:23**	**7:24**	**7:28**	**7:32**	**7:38**
		—	**8:30**	**8:38**	**8:46**	**8:56**	**9:00**	**9:01**	**9:08**	**9:09**	**9:13**	**9:17**	**9:23**
		—	**10:00**	**10:08**	**10:16**	**10:26**	**10:30**	**10:31**	**10:38**	**10:39**	**10:43**	**10:47**	**10:53**
		10:45	**11:00**	**11:08**	**11:16**	**11:26**	**11:30**	**11:31**	**11:38**	**11:39**	**11:43**	**11:47**	**11:53**

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.

Route A: Poughkeepsie Transit Hub to Fishkill / Walmart & Dutchess Mall

Please see map on page 14 / Favor ver el mapa en la página 14

SATURDAY / SABADO

SOUTHBOUND: Poughkeepsie to Fishkill & Beacon / HACIA EL SUR: Poughkeepsie a Fishkill y Beacon

Stop #	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**	South Ave/Market St Montgomery St **POUGHKEEPSIE**	Route 9 S & Hudson Plaza **POUGHKEEPSIE**	Route 9 S & Speedway **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	The Shoppes at South Hills **POUGHKEEPSIE**	Route 9 S & Colonial Drive **WAPPINGERS FALLS**	Route 9 S (across from Adams) **WAPPINGERS**	Fishkill Walmart **FISHKILL**	Dutchess Mall **FISHKILL**	Beacon Post Office **BEACON**
	1	2	3	4	5	6	7	8	9	10	11	12
	1	3	6	9	10	15	16	27	44	33	34	35
AM	6:00	6:05	6:09	6:13	6:14	—	—	6:25	6:33	6:44	6:53	—
AM	7:00	7:05	7:09	7:13	7:14	—	—	7:25	7:33	7:44	7:53	—
AM	9:15	9:20	9:24	9:28	9:29	9:39	9:42	9:47	9:55	10:06	10:15	—
AM	10:00	10:05	10:09	10:13	10:14	10:24	10:27	10:32	10:40	10:51	—	11:15
AM	11:17	11:22	11:26	11:30	11:31	11:41	11:44	11:49	11:57	**12:08**	**12:17**	—
PM	—	—	—	—	—	**12:35**	**12:38**	**12:43**	**12:51**	**1:02**	**1:11**	—
PM	**2:50**	**2:55**	**2:59**	**3:03**	**3:04**	**3:14**	**3:17**	**3:22**	**3:30**	**3:41**	**3:50**	—
PM	**4:30**	**4:35**	**4:39**	**4:43**	**4:44**	**4:54**	**4:57**	**5:02**	**5:10**	**5:21**	**5:30**	—
PM	**5:30**	**5:35**	**5:39**	**5:43**	**5:44**	**5:54**	**5:57**	**6:02**	**6:10**	**6:21**	**6:30**	—
PM	**7:00**	**7:05**	**7:09**	**7:13**	**7:14**	**7:24**	**7:27**	**7:32**	**7:40**	**7:51**	**8:00**	—
PM	**8:30**	**8:35**	**8:39**	**8:43**	**8:44**	**8:54**	**8:57**	**9:02**	**9:10**	**9:21**	**9:30**	—
PM	**9:30**	**9:35**	**9:39**	**9:43**	**9:44**	**9:54**	**9:57**	**10:02**	**10:10**	**10:21**	**10:30**	**10:45**

NORTHBOUND: Beacon & Fishkill to Poughkeepsie / HACIA EL NORTE: Beacon y Fishkill a Poughkeepsie

Stop #	Beacon Post Office **BEACON**	Dutchess Mall **FISHKILL**	Fishkill Walmart **FISHKILL**	Route 9 N & Adams Fairacre Farms **WAPPINGERS**	Route 9 N & Scenic Drive **WAPPINGERS FALLS**	The Shoppes at South Hills **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	Route 9 N & Barnes & Noble **POUGHKEEPSIE**	Route 9 N & Poughkeepsie Plaza **POUGHKEEPSIE**	South Ave/Market St & Montgomery St **POUGHKEEPSIE**	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**
	12	11	10	9	13	7	6	14	4	3	1	2
	35	34	33	45	42	16	15	21	22	25	1	3
AM	—	7:15	7:23	7:31	7:41	—	—	7:52	7:52	7:57	8:01	8:07
AM	—	8:00	8:08	8:16	8:26	—	—	8:37	8:37	8:42	8:46	8:52
AM	—	10:17	10:25	10:33	10:43	10:47	10:51	11:05	11:06	11:13	11:17	—
AM	—	—	**12:00**	**12:08**	**12:16**	**12:20**	**12:21**	—	—	—	—	—
PM	—	**1:00**	**1:08**	**1:16**	**1:26**	**1:30**	**1:31**	**1:38**	**1:38**	**1:43**	**1:47**	—
PM	—	**2:00**	**2:08**	**2:16**	**2:26**	**2:30**	**2:31**	**2:38**	**2:38**	**2:43**	**2:47**	**2:53**
PM	—	**4:00**	**4:08**	**4:16**	**4:26**	**4:30**	**4:31**	**4:38**	**4:38**	**4:43**	**4:47**	**4:53**
PM	—	**5:45**	**5:53**	**6:01**	**6:11**	**6:15**	**6:16**	**6:23**	**6:23**	**6:28**	**6:32**	**6:38**
PM	—	**6:45**	**6:53**	**7:01**	**7:11**	**7:15**	**7:16**	**7:23**	**7:23**	**7:28**	**7:32**	**7:38**
PM	—	**8:30**	**8:38**	**8:46**	**8:56**	**9:00**	**9:01**	**9:08**	**9:08**	**9:13**	**9:17**	**9:23**
PM	—	**10:00**	**10:08**	**10:16**	**10:26**	**10:30**	**10:30**	**10:38**	**10:38**	**10:43**	**10:47**	**10:53**
PM	**10:45**	**11:00**	**11:08**	**11:16**	**11:26**	**11:30**	**11:31**	**11:38**	**11:38**	**11:43**	**11:47**	**11:53**

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.

SUNDAY / DOMINGO

SOUTHBOUND: Poughkeepsie to Fishkill / HACIA EL SUR: Poughkeepsie a Fishkill

Stop #	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**	South Ave/Market St Montgomery St **POUGHKEEPSIE**	Route 9 S & Hudson Plaza **POUGHKEEPSIE**	Route 9 S & Speedway **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	The Shoppes at South Hills **POUGHKEEPSIE**	Route 9 S & Colonial Drive **WAPPINGERS FALLS**	Route 9 S (across from Adams) **WAPPINGERS**	Fishkill Walmart **FISHKILL**	Dutchess Mall **FISHKILL**
	1	2	3	4	5	6	7	8	9	10	11
	1	3	6	9	10	15	16	27	44	33	34
AM	10:15	10:21	10:25	10:31	10:32	10:41	10:47	10:53	10:59	11:07	11:15
PM	**12:30**	**12:36**	**12:40**	**12:46**	**12:47**	**12:56**	**1:02**	**1:08**	**1:14**	**1:22**	**1:30**
PM	**2:45**	**2:51**	**2:55**	**3:01**	**3:02**	**3:11**	**3:17**	**3:23**	**3:29**	**3:37**	**3:45**
PM	**5:30**	**5:36**	**5:40**	**5:46**	**5:47**	**5:56**	**6:02**	**6:08**	**6:14**	**6:22**	**6:30**

NORTHBOUND: Fishkill to Poughkeepsie / HACIA EL NORTE: Fishkill a Poughkeepsie

Stop #	Dutchess Mall **FISHKILL**	Fishkill Walmart **FISHKILL**	Route 9 N & Adams Fairacre Farms **WAPPINGERS**	Route 9 N & Scenic Drive **WAPPINGERS FALLS**	The Shoppes at South Hills **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	Route 9 N & Barnes & Noble **POUGHKEEPSIE**	Route 9 N & Poughkeepsie Plaza **POUGHKEEPSIE**	South Ave/Market St & Montgomery St **POUGHKEEPSIE**	Dutchess County Transit Hub **POUGHKEEPSIE**
	11	10	9	13	7	6	14	4	3	1
	34	33	45	42	16	15	21	22	2	1
AM	11:20	11:26	11:36	11:44	11:51	11:56	**12:07**	**12:08**	**12:15**	**12:19**
PM	**1:35**	**1:41**	**1:51**	**1:59**	**2:06**	**2:11**	**2:22**	**2:23**	**2:30**	**2:34**
PM	**3:50**	**3:56**	**4:06**	**4:14**	**4:21**	**4:26**	**4:37**	**4:38**	**4:45**	**4:49**
PM	**6:35**	**6:41**	**6:51**	**6:59**	**7:06**	**7:11**	**7:22**	**7:23**	**7:30**	**7:34**

Route B: Poughkeepsie Transit Hub to Beacon

Please see map on page 18 / Favor ver el mapa en la página 18



MONDAY–FRIDAY / LUNES–VIERNES

SOUTHBOUND: Poughkeepsie to Beacon / HACIA EL SUR: Poughkeepsie a Beacon

Stop #		1 Dutchess County Transit Hub POUGHKEEPSIE	2 Poughkeepsie Train Station POUGHKEEPSIE	3 South Ave/Market St Montgomery St POUGHKEEPSIE	4 Route 9 S & Hudson Plaza POUGHKEEPSIE	5 Route 9 S & Speedway POUGHKEEPSIE	6 Galleria Food Court POUGHKEEPSIE	7 The Shoppes at South Hills POUGHKEEPSIE	8 Mesier Park (Southbound) WAPPINGERS FALLS	9 Route 9D S & Chelsea Ridge Apts WAPPINGER	10 Castle Point FISHKILL	11 Route 9D (across from Dutchess Stadium) BEACON	12 Main St & Cliff St BEACON	13 Beacon Post Office BEACON
		1	3	6	9	10	15	16	50	55	56	57	71	35
AM		5:30	5:35	5:39	5:43	5:44	—	—	5:57	6:07	6:15	6:17	6:20	6:22
		6:30	6:35	6:39	6:43	6:44	—	—	6:57	7:07	7:15	7:17	7:20	7:22
		7:45	7:50	7:54	7:58	7:59	8:09	8:12	8:19	8:29	8:37	8:39	8:42	8:44
		8:45	8:50	8:54	8:58	8:59	9:09	9:12	9:19	9:29	9:37	9:39	9:42	9:44
		10:45	10:50	10:54	10:58	10:59	11:09	11:12	11:19	11:29	11:37 *	11:39	11:42	11:44
PM		**12:00**	**12:05**	**12:09**	**12:13**	**12:14**	**12:25**	**12:28**	**12:34**	**12:44**	**12:52 ***	**12:54**	**12:57**	**12:59**
		1:00	**1:05**	**1:09**	**1:13**	**1:14**	**1:25**	**1:28**	**1:34**	**1:44**	**1:52**	**1:54**	**1:57**	**1:59**
		2:00	**2:05**	**2:09**	**2:13**	**2:14**	**2:25**	**2:28**	**2:34**	**2:44**	**2:52**	**2:54**	**2:57**	**2:59**
		3:30	**3:35**	**3:39**	**3:43**	**3:44**	**3:55**	**3:58**	**4:04**	**4:14**	**4:22**	**4:24**	**4:27**	**4:29**
		5:15	**5:20**	**5:24**	**5:28**	**5:29**	**5:40**	**5:43**	**5:49**	**5:59**	—	**6:04**	**6:07**	**6:09**
		6:00	**6:05**	**6:09**	**6:13**	**6:14**	**6:25**	**6:28**	**6:34**	**6:44**	**6:52 ***	**6:54**	**6:57**	**6:59**
		8:00	**8:05**	**8:09**	**8:13**	**8:14**	**8:25**	**8:28**	**8:34**	**8:44**	**8:52 ***	**8:54**	**8:57**	**8:59**

*** Demand service only stops /** El servicio de demanda se detiene

NORTHBOUND: Beacon to Poughkeepsie / HACIA EL NORTE: Beacon a Poughkeepsie

Stop #		13 Beacon Post Office BEACON	14 Route 9D & Main St BEACON	15 Route 9D N & Chelsea Rd FISHKILL	8 Route 9D & Spring St (Mesier Park) WAPPINGER	7 The Shoppes at South Hills POUGHKEEPSIE	6 Galleria Food Court POUGHKEEPSIE	5 Route 9 N & Barnes & Noble POUGHKEEPSIE	4 Route 9 N & Poughkeepsie Plaza POUGHKEEPSIE	3 South Ave/Market St Montgomery St POUGHKEEPSIE	1 Dutchess County Transit Hub POUGHKEEPSIE	2 Poughkeepsie Train Station POUGHKEEPSIE
		35	59	64	68	16	15	21	22	25	1	3
AM		6:45	6:50	7:01	7:10	—	—	7:24	7:25	7:31	7:36	7:42
		7:45	7:50	8:01	8:10	—	—	8:24	8:25	8:31	8:36	8:42
		9:00	9:05	9:16	9:25	9:31	9:36	9:45	9:46	9:52	9:57	10:03
		10:00	10:05	10:16	10:25	10:31	10:36	10:45	10:46	10:52	10:57	11:03
PM		**12:00**	**12:05**	**12:16**	**12:25**	**12:31**	**12:36**	**12:45**	**12:46**	**12:52**	**12:57**	**1:05**
		1:00	**1:05**	**1:16**	**1:25**	**1:31**	**1:36**	**1:45**	**1:46**	**1:52**	**1:57**	**2:03**
		2:00	**2:05**	**2:16**	**2:25**	**2:31**	**2:36**	**2:45**	**2:46**	**2:52**	**2:57**	**3:03**
		3:00	**3:05**	**3:16**	**3:25**	**3:31**	**3:36**	**3:45**	**3:46**	**3:52**	**3:57**	**4:03**
		4:30	**4:35**	**4:46**	**4:55**	**5:01**	**5:06**	**5:15**	**5:16**	**5:22**	**5:27**	**5:33**
		6:20	**6:25**	**6:36**	**6:45**	**6:51**	**6:56**	**7:05**	**7:06**	**7:12**	**7:17**	**7:23**
		7:00	**7:05**	**7:16**	**7:25**	**7:31**	**7:36**	**7:45**	**7:46**	**7:52**	**7:57**	**8:03**
		9:00	**9:05**	**9:16**	**9:25**	**9:31**	**9:36**	**9:45**	**9:46**	**9:52**	**9:57**	**10:03**

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.

Route B: Poughkeepsie Transit Hub to Beacon

Please see map on page 20 / Favor ver el mapa en la página 20



See map at left for continuation of Route B to Poughkeepsie / *Ver el mapa a la derecha para la continuación de la Ruta B a Poughkeepsie*

See map at right for continuation of Route B to Beacon City / *Ver el mapa a la derecha para la continuación de la Ruta B a Beacon City*

SATURDAY / SABADO

SOUTHBOUND: Poughkeepsie to Beacon / HACIA EL SUR: Poughkeepsie a Beacon

Stop #	1	2	3	4	5	6	7	8	9	10	11	12	13
	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**	South Ave/Market St Montgomery St **POUGHKEEPSIE**	Route 9 S & Hudson Plaza **POUGHKEEPSIE**	Route 9 S & Speedway **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	The Shoppes at South Hills **POUGHKEEPSIE**	Mesier Park (Southbound) **WAPPINGERS FALLS**	Route 9D S & Chelsea Ridge Apts **WAPPINGER**	Castle Point **FISHKILL**	Route 9D (across from Dutchess Stadium) **BEACON**	Main St & Cliff St **BEACON**	Beacon Post Office (Arrives) **BEACON**
	1	3	6	9	10	15	16	50	55	56	57	71	35
AM	5:30	5:35	5:39	5:43	5:44	—	—	5:57	6:07	6:15*	6:17	6:20	6:22
AM	6:30	6:35	6:39	6:43	6:44	—	—	6:57	7:07	7:15*	7:17	7:20	7:22
AM	7:45	7:50	7:54	7:58	7:59	8:09	8:12	8:19	8:29	8:37*	8:39	8:42	8:44
AM	—	—	—	—	—	9:25	9:28	9:34	9:43	9:48*	9:50	9:53	9:55
AM	10:45	10:50	10:54	10:58	10:59	11:09	11:12	11:19	11:29	11:37*	11:39	11:42	11:44
PM	**12:00**	**12:05**	**12:09**	**12:13**	**12:14**	**12:25**	**12:28**	**12:34**	**12:44**	**12:52***	**12:54**	**12:57**	**12:59**
PM	**1:00**	**1:05**	**1:09**	**1:13**	**1:14**	**1:25**	**1:28**	**1:34**	**1:44**	**1:52***	**1:54**	**1:57**	**1:59**
PM	**2:00**	**2:05**	**2:09**	**2:13**	**2:14**	**2:25**	**2:28**	**2:34**	**2:44**	**2:52***	**2:54**	**2:57**	**2:59**
PM	**3:30**	**3:35**	**3:39**	**3:43**	**3:44**	**3:55**	**3:58**	**4:04**	**4:14**	**4:22***	**4:24**	**4:27**	**4:29**
PM	**5:15**	**5:20**	**5:24**	**5:28**	**5:29**	**5:40**	**5:43**	**5:49**	**5:59**	—	**6:04**	**6:07**	**6:09**
PM	—	—	—	—	—	**6:06**	**6:09**	**6:15**	**6:25**	**6:33***	**6:35**	**6:38**	**6:40**
PM	**8:00**	**8:05**	**8:09**	**8:13**	**8:14**	**8:25**	**8:28**	**8:34**	**8:44**	**8:52***	**8:54**	**8:57**	**8:59**

*** Demand service only stops /** El servicio de demanda se detiene

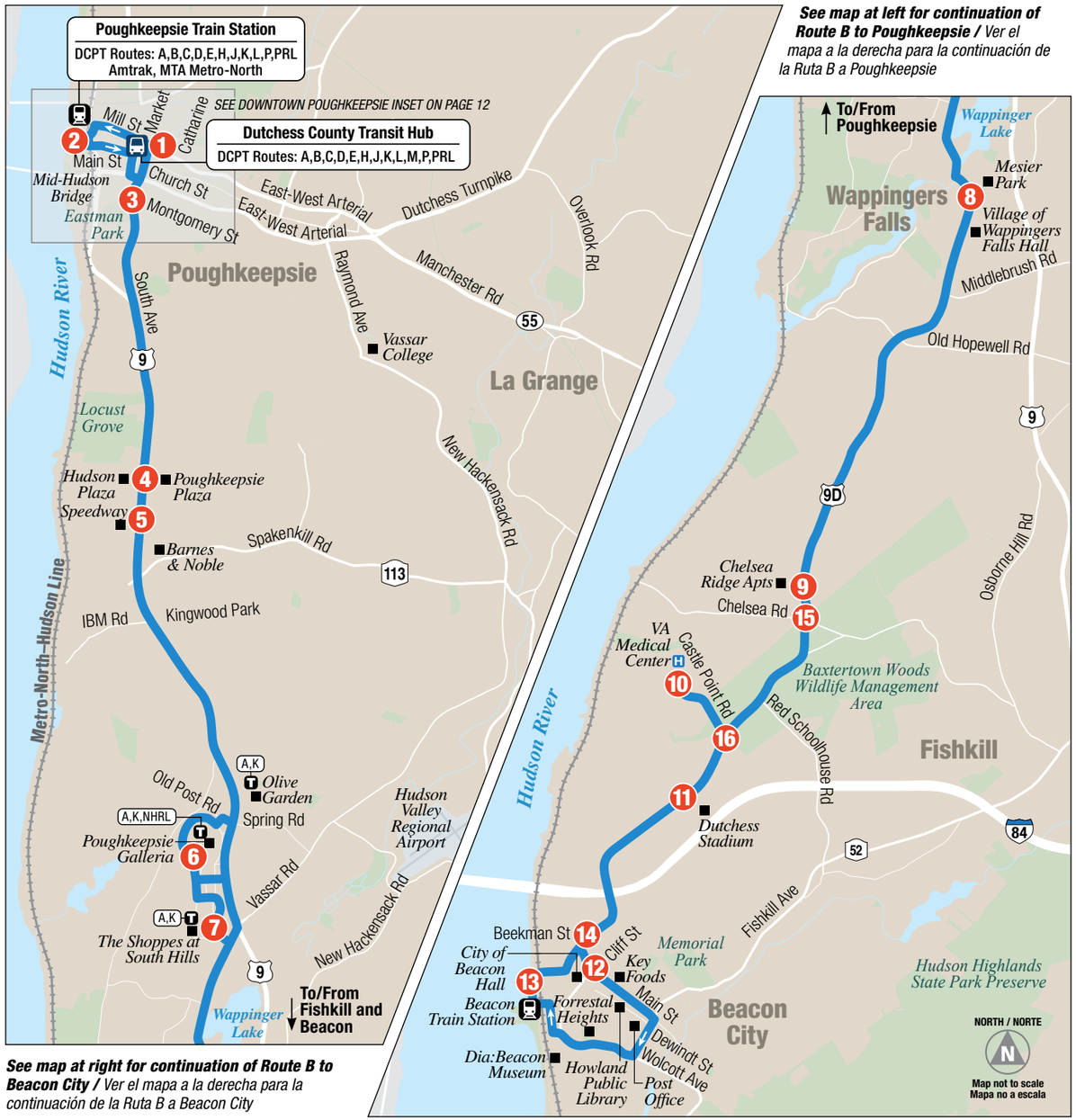
NORTHBOUND: Beacon to Poughkeepsie / HACIA EL NORTE: Beacon a Poughkeepsie

Stop #	13	14	15	8	7	6	5	4	3	1	2
	Beacon Post Office **BEACON**	Route 9D & Main St **BEACON**	Route 9D N & Chelsea Rd **FISHKILL**	Route 9D & Spring St (Mesier Park) **WAPPINGER**	The Shoppes at South Hills **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	Route 9 N & Barnes & Noble **POUGHKEEPSIE**	Route 9 N & Poughkeepsie Plaza **POUGHKEEPSIE**	South Ave/Market St Montgomery St **POUGHKEEPSIE**	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**
	35	59	64	68	16	15	21	22	25	1	3
AM	6:45	6:50	7:01	7:10	—	—	7:24	7:25	7:31	7:36	7:42
AM	8:45	8:50	9:01	9:10	9:16	9:21	—	—	—	—	—
AM	9:00	9:05	9:16	9:25	9:31	9:36	9:45	9:46	9:52	9:57	10:03
AM	10:00	10:05	10:16	10:25	10:31	10:36	10:45	10:46	10:52	10:57	11:03
PM	**12:00**	**12:05**	**12:16**	**12:25**	**12:31**	**12:36**	**12:45**	**12:46**	**12:52**	**12:57**	**1:05**
PM	**1:00**	**1:05**	**1:16**	**1:25**	**1:31**	**1:36**	**1:45**	**1:46**	**1:52**	**1:57**	**2:03**
PM	**2:00**	**2:05**	**2:16**	**2:25**	**2:31**	**2:36**	**2:45**	**2:46**	**2:52**	**2:57**	—
PM	**3:00**	**3:05**	**3:16**	**3:25**	**3:31**	**3:36**	**3:45**	**3:46**	**3:52**	**3:57**	**4:03**
PM	**5:30**	**5:35**	**5:46**	**5:55**	**6:01**	**6:06**	—	—	—	—	—
PM	**6:20**	**6:25**	**6:36**	**6:45**	**6:51**	**6:56**	**7:05**	**7:06**	**7:12**	**7:17**	**7:23**
PM	**7:00**	**7:05**	**7:16**	**7:25**	**7:31**	**7:36**	**7:45**	**7:46**	**7:52**	**7:57**	—
PM	**9:00**	**9:05**	**9:16**	**9:25**	**9:31**	**9:36**	**9:45**	**9:46**	**9:52**	**9:57**	**10:03**

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.

Route B: Poughkeepsie Transit Hub to Beacon

Please see map on page 22 / Favor ver el mapa en la página 22



SUNDAY / DOMINGO

SOUTHBOUND: Poughkeepsie to Beacon / HACIA EL SUR: Poughkeepsie a Beacon

Stop #	1	2	3	4	5	6	7	8	9	10	11	12
	Dutchess County Transit Hub **POUGHKEEPSIE**	Poughkeepsie Train Station **POUGHKEEPSIE**	South Ave/Market St Montgomery St **POUGHKEEPSIE**	Route 9 S & Hudson Plaza **POUGHKEEPSIE**	Route 9 S & Speedway **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	The Shoppes at South Hills **POUGHKEEPSIE**	Route 9D & Mesier Park **WAPPINGERS FALLS**	Route 9D & Chelsea Ridge Apts **WAPPINGER**	Castle Point VA Hospital **FISHKILL**	Route 9D S (across from Dutchess Stadium) **BEACON**	Main St & Cliff St **BEACON**	Beacon Train Station (Arrives) **BEACON**
	1	3	6	9	10	15	16	54	55	56	57	71	201
AM	9:15	9:20	9:24	9:30	9:31	9:40	9:46	9:53	9:57	10:01	10:03	10:09	10:14
	11:45	11:50	11:54	**12:00**	**12:01**	**12:10**	**12:16**	**12:23**	**12:27**	**12:31**	**12:33**	**12:39**	**12:44**
PM	**2:15**	**2:20**	**2:24**	**2:30**	**2:31**	**2:40**	**2:46**	**2:53**	**2:57**	**3:01**	**3:03**	**3:09**	**3:14**
	4:45	**4:50**	**4:54**	**5:00**	**5:01**	**5:10**	**5:16**	**5:23**	**5:27**	**5:31**	**5:33**	**5:39**	**5:44**

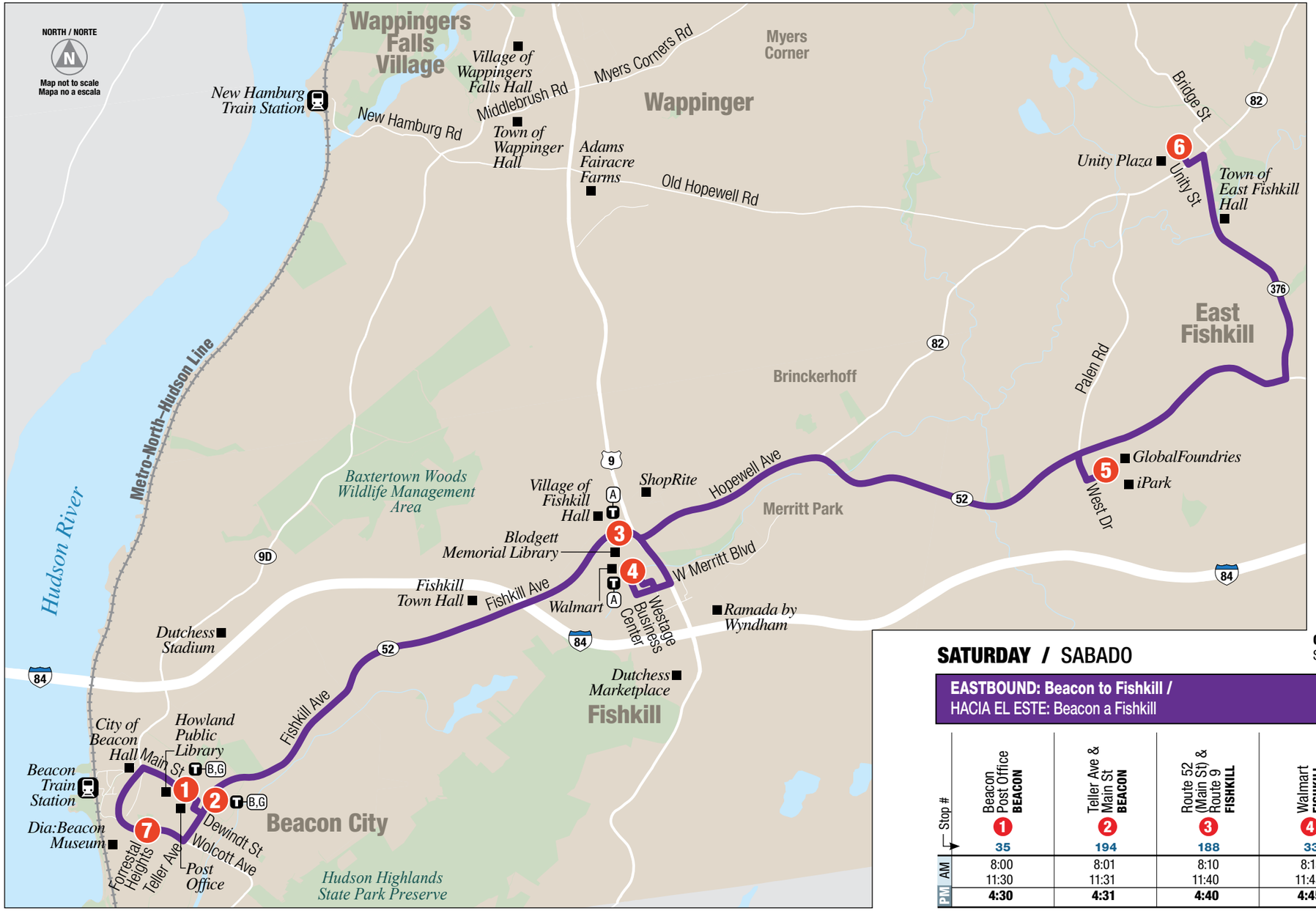
NORTHBOUND: Beacon to Poughkeepsie / HACIA EL NORTE: Beacon a Poughkeepsie

Stop #	13	14	11	16	15	8	7	6	5	4	3	1
	Beacon Train Station (Departs) **BEACON**	Route 9D & Beekman St **BEACON**	Route 9D N & Dutchess Stadium **BEACON**	Route 9D N (across from Castle Point VA entrance) **FISHKILL**	Route 9D N & Chelsea Rd **FISHKILL**	Route 9D & Spring St (across from Mesier Park) **WAPPINGER**	The Shoppes at South Hills **POUGHKEEPSIE**	Galleria Food Court **POUGHKEEPSIE**	Route 9 N & Barnes & Noble **POUGHKEEPSIE**	Route 9 N & Poughkeepsie Plaza **POUGHKEEPSIE**	South Ave/Market St Montgomery St **POUGHKEEPSIE**	Dutchess County Transit Hub **POUGHKEEPSIE**
	201	70	62	-	64	68	16	15	21	22	25	1
AM	10:17	10:22	10:28	10:31	10:34	10:43	10:51	10:56	11:07	11:08	11:15	11:19
	12:47	**12:52**	**12:58**	**1:01**	**1:04**	**1:13**	**1:21**	**1:26**	**1:37**	**1:38**	**1:45**	**1:49**
PM	**3:17**	**3:22**	**3:28**	**3:31**	**3:34**	**3:43**	**3:51**	**3:56**	**4:07**	**4:08**	**4:15**	**4:19**
	5:47	**5:52**	**5:58**	**6:01**	**6:04**	**6:13**	**6:21**	**6:26**	**6:37**	**6:38**	**6:45**	**6:49**

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.

Route F: Beacon to Hopewell Junction

Please see map on page 34 & 35 / Favor ver el mapa en la página 34 y 35



MONDAY–FRIDAY / LUNES–VIERNES

EASTBOUND: Beacon to Hopewell Junction /
HACIA EL ESTE: Beacon a Hopewell Junction

Stop #	Beacon Post Office BEACON 1	Teller Ave & Main St BEACON 2	Route 52 (Main St) & Route 9 FISHKILL 3	Walmart FISHKILL 4	iPark EAST FISHKILL 5	Unity Plaza HOPEWELL JUNCTION 6
	35	194	188	33	186	185
AM	8:00	8:01	8:10	8:15	8:25	8:30
	10:00	10:01	10:10	10:15	10:25	10:30
	11:45	11:46	11:55	**12:00**	—	—
	1:00	**1:01**	**1:10**	**1:15**	**1:25**	**1:30**
PM	—	—	—	**1:45**	**1:55**	**2:00**
	3:05	**3:06**	**3:15**	**3:20**	—	—

WESTBOUND: Hopewell Junction to Beacon /
HACIA EL OESTE: Hopewell Junction a Beacon

Stop #	Unity Plaza HOPEWELL JUNCTION 6	iPark EAST FISHKILL 5	Walmart FISHKILL 4	Route 52 (Main St) & Church St FISHKILL 3	Beacon Post Office BEACON 1
	185	186	33	192	35
AM	—	—	7:30	7:35	8:00
	9:15	9:20	9:30	9:35	10:00
	10:45	10:50	11:00	11:05	11:30
	—	—	**12:30**	**12:35**	**1:00**
PM	**1:30**	**1:35**	**1:45**	—	—
	2:20	**2:25**	**2:35**	**2:40**	**3:05**

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.

SATURDAY / SABADO

EASTBOUND: Beacon to Fishkill /
HACIA EL ESTE: Beacon a Fishkill

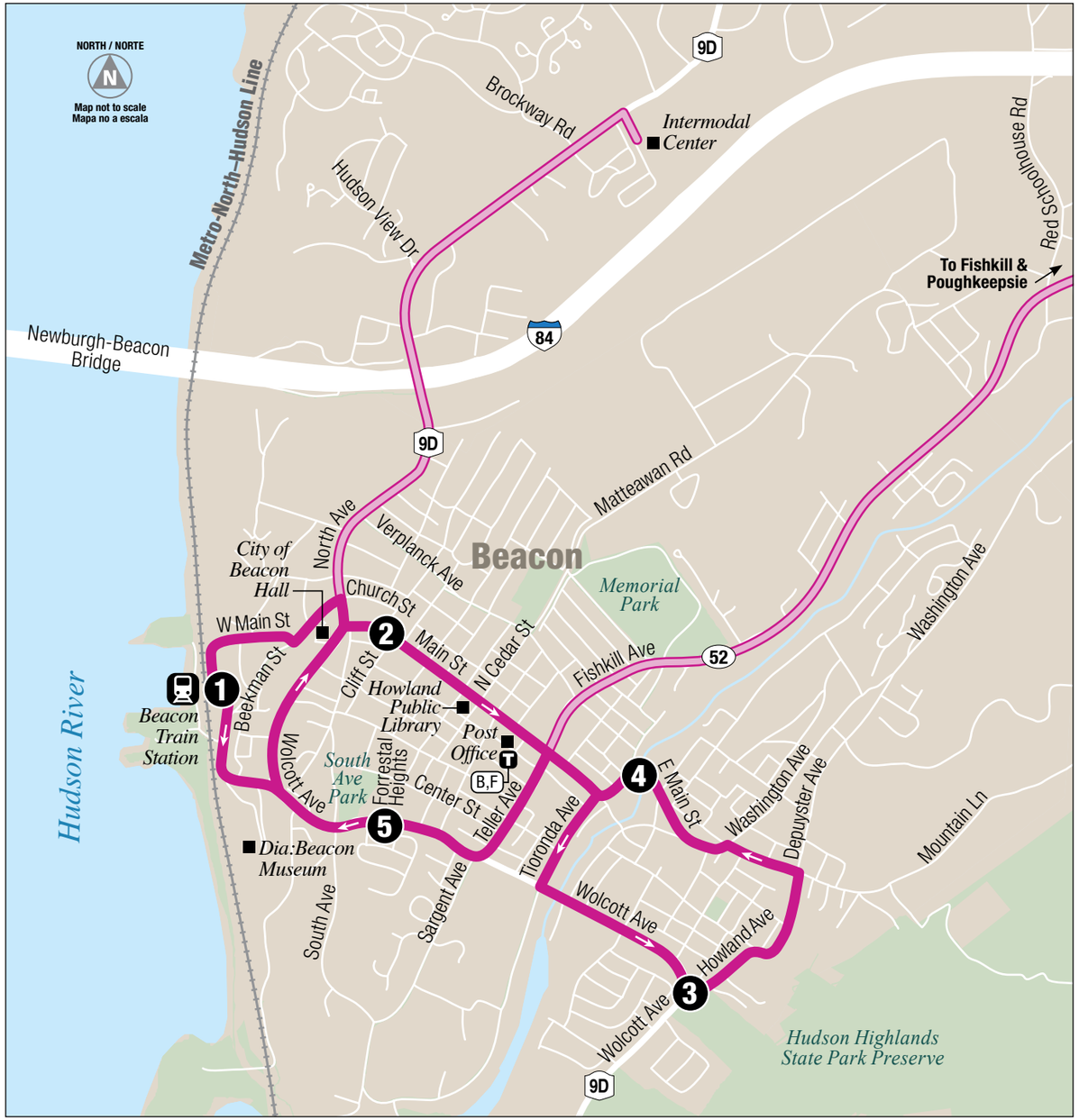
Stop #	Beacon Post Office BEACON 1	Teller Ave & Main St BEACON 2	Route 52 (Main St) & Route 9 FISHKILL 3	Walmart FISHKILL 4
	35	194	188	33
AM	8:00	8:01	8:10	8:15
	11:30	11:31	11:40	11:45
PM	**4:30**	**4:31**	**4:40**	**4:45**

WESTBOUND: Fishkill to Beacon /
HACIA EL OESTE: Fishkill a Beacon

Stop #	Walmart FISHKILL 4	Route 52 (Main St) & Church St FISHKILL 3	Fishkill Ave & Main St BEACON 2	Forrestal Heights BEACON 7	Beacon Post Office BEACON 1
	33	192	193	70	35
AM	8:15	8:19	8:26	8:29	8:30
	11:00	11:04	11:11	11:14	11:15
PM	**5:00**	**5:04**	**5:11**	**5:14**	**5:15**

Route G: Beacon Free Loop

Please see map on page 36 / Favor ver el mapa en la página 36



MONDAY–SATURDAY / LUNES–SABADO

Beacon Free Loop

Stop #	Beacon Train Station (Departs) BEACON ❶ 201	Main St & Cliff St BEACON ❷ 71	Route 9D (Wolcott Ave) & Howland Ave BEACON ❸ 212	East Main St & Main St BEACON ❹ 205	Forrestal Heights BEACON ❺ 70	Beacon Train Station (Arrives) BEACON ❶ 201
AM	6:00*	6:06	6:12	6:16	6:21	6:25
AM	6:26	6:32	6:38	6:42	6:47	6:51
AM	6:52	6:58	7:04	7:08	7:13	7:17
AM	7:20	7:26	7:32	7:36	7:41	7:45
AM	7:48	7:54	8:00	8:04	8:09	8:13
AM	8:40	8:46	8:55	8:59	9:04	9:08
AM	9:15	9:21	9:25	9:29	9:34	9:38
AM	10:25	10:31	10:37	10:41	10:46	10:50
AM	10:50	10:56	11:02	11:06	11:11	11:15
AM	11:18	11:24	11:30	11:34	11:39	11:43
AM	11:45	11:51	11:57	**12:01**	**12:06**	**12:10**
PM	**12:10****	**12:16**	**12:22**	**12:26**	**12:31**	**12:35**
PM	**12:30***	**12:36**	**12:44**	**12:48**	**12:53**	**12:57**
PM	**1:10**	**1:16**	**1:24**	**1:28**	**1:33**	**1:37**
PM	**1:40**	**1:46**	**1:54**	**1:58**	**2:03**	**2:07**
PM	**2:10**	**2:16**	**2:24**	**2:28**	**2:33**	**2:37**
PM	**3:35**	**3:41**	**3:51**	**3:55**	**4:00**	**4:04**
PM	**4:15**	**4:21**	**4:29**	**4:33**	**4:38**	**4:42**
PM	**4:42**	**4:48**	**4:54**	**4:58**	**5:03**	**5:07**
PM	**5:15**	**5:21**	**5:27**	**5:31**	**5:36**	**5:40**
PM	**5:42**	**5:48**	**5:54**	**5:58**	**6:03**	**6:07**
PM	**6:27**	**6:33**	**6:39**	**6:43**	**6:48**	**6:52**
PM	**7:00**	**7:06**	**7:13**	**7:17**	**7:22**	**7:26**
PM	**7:30**	**7:36**	**7:43**	**7:47**	**7:52**	**7:56**
PM	**7:56**	**8:02**	**8:09**	**8:13**	**8:18**	**8:22**
PM	**8:22**	**8:28**	**8:35**	**8:39**	**8:44**	**8:48**
PM	**8:48****	**8:54**	**9:01**	**9:05**	**9:10**	**9:14**

*** The 6:00 am and 12:30 pm trips depart the Intermodal Center at 5:22 am and 12:13 pm respectively. /** Los viajes de las 6:00 am y 12:30 pm salen de Intermodal Center a las 5:22 y 12:13 respectivamente.

**** The 12:10 pm and 8:48 pm trips will return to Poughkeepsie via Route 9 North and Vassar Road. /** Los viajes de las 12:10 pm y 8:48 pm regresarán a Poughkeepsie via Route 9 North y Vassar Road.

Only key points along the route are listed. Read the timetable from left to right. /
Solo se enumeran las paradas claves a lo largo de la ruta. Lee el horario de izquierda a derecha.



Photo by Janelle Felder

Colliers Engineering & Design

Colliers Engineering & Design is a trusted provider of multi-discipline engineering, design and consulting services providing customized solutions for public and private clients through a network of offices nationwide.

For a full listing of our office locations, please visit colliersengineering.com

1 877 627 3772

Civil/Site • Traffic/Transportation • Governmental • Survey/Geospatial
Infrastructure • Geotechnical/Environmental • Telecommunications • Utilities/Energy

John Clarke Planning and Design jclarkeplandesign@gmail.com
845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **Mirbeau Howland Estate Site Plan and Special Permit**

I have reviewed the following:

- Cover letter from BNR, Attorneys at Law, dated March 29, 2022;
- Project Narrative from Arrowstreet, dated March 29, 2022;
- Full EAF parts 1 and 2, dated March 29, 2022;
- Special Permit Application, dated March 29, 2022;
- 5-sheet design graphics with Route 9D section by Arrowstreet, dated March 29, 2022;
- Threatened and Endangered Species Habitat Suitability Assessment Report by Ecological Solutions, dated March 25, 2022;
- Traffic Impact Study by Colliers Engineering and Design, dated March 28, 2022, and
- 18-sheet Plan set by Arrowstreet, LRC Group, and Hudson Land Design, dated March 29, 2022.

Proposal

The applicant is proposing to convert the Howland Estate into a 75-room hotel with additions to the renovated Mansion, spa, 110-seat restaurant, five cottages, and an event space. Future phases will include restoration of the former school and south gatehouse, a farm and farm store, recreational uses, and subdivision of 6.5 acres for rental cottages. The 64.39-acre site is in the R1-80 zoning district and in the Historic District and Landmark Overlay (HDLO) zone.

Comments and Recommendations

1. Certain commercial uses are allowed by Special Permit in the HDLO under Section 223-24.7 as an incentive for the preservation of historic structures, including “hotel and hotel-related accessory uses and structures with adequate screening of any new structures from surrounding public street views.” The proposed hotel/spa structure along the Route 9D side of the site appears to have sufficient landscape screening to avoid detracting from the historic views of the estate.

2. The parking lots to the east and south of the hotel/spa addition can be adequately screened from the street, especially because of the lower elevations. However, the lots between the spa entrance and Dr. Bennet House will be visible from Route 9D and are in line with the primary public views of the historic Mansion. One of the Special Permit conditions in Section 223-24.7D considers the impacts of parking on the landscape and setting of the structure. This parking should be eliminated or relocated to more hidden-away areas.

3. Important historic views to and from the Mansion should be protected or enhanced. A view analysis should be provided for the main entrance view to and from Route 9D and the long view towards the south and how it may be affected by the location of the five proposed cottages.

4. The required parking for all the combined uses is 213 spaces, but the proposed layout provides 272 spaces. Since many of the restaurant, spa, and event patrons will also be hotel guests, the applicant should reduce the number of spaces to avoid overparking the historic site. The Code offers a shared parking deduction under Section 223-26C(6) or waiver under Section 223-26E.

5. The parking surrounding the large clump of legacy trees in the north meadow could instead be screened from Mansion views behind the trees. The ADA parking for the Mansion also seems located too far from the front door, so perhaps it could be moved towards the north corner of the building, near the crosswalk to the large parking lots.

6. A connection from the Route 9D sidewalk to the site's sidewalk system should be provided and a crosswalk to the park across the street should be considered.

7. The applicant and Board should consider the possibilities of a walkway along the South Avenue and Grand View Avenue frontages and a future trail along the Fishkill Creek.

8. Because of the significant landscape history of this site, a survey should be completed of individually planted legacy trees. All major trees over 6 inches in diameter that are to be removed should be identified by species and size.

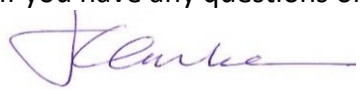
9. For the Lighting Plan, the specifications should provide a Color Rendering Index in the 80 - 100 range. The bollard lights show a different hood shape on sheets 13 and 14.

10. Additional elements to be completed include building floor plans and elevations with heights, materials and colors provided, a description how deliveries and trash will be handled, more specific landscaping plan with species and sizes identified, and an archeological analysis for new development areas.

11. Any new additions to the historic buildings or exterior construction must meet the standards in Chapter 134, Historic Preservation, and will require a Certificate of Appropriateness.

12. For a SEQR determination of significance, the Board should decide how much detail should be provided for the farm complex, subdivided rental cottages, and recreational facilities to be completed in future phases.

If you have any questions or need additional information, please feel free to contact me.



John Clarke, Beacon Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Ed Kellogg, Project Representative

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal
Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal
John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 8, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: Mirbeau of Beacon, LLC
City of Beacon
Tax Map No. 6054-13-001258

Dear Mr. Gunn:

My office has received the following in regard to the above application:

- Cover letter from BNR Attorneys at Law, dated March 29, 2022.
- Project Narrative from Arrowstreet, dated March 29, 2022.
- Application for Special Use Permit dated March 29, 2022.
- Full EAF Parts 1 and 2, dated March 29, 2022.
- Report titled "Threatened and Endangered Species Habitat Suitability Assessment Report – Mirbeau Inn & Spa Site", dated March 25, 2022, as prepared by Ecological Solutions.
- 5 sheet aerial design plans, dated March 29, 2022, as prepared by Arrowstreet.
- Traffic Impact Study, dated March 28, 2022, as prepared by Colliers Engineering & Design.
- Report titled "Preliminary Stormwater Pollution Prevention Plan for Mirbeau Beacon Inn & Spa", dated March 29, 2022, as prepared by Hudson Land Design.
- Plan set titled "Mirbeau Beacon Inn & Spa", dated March 29, 2022, and consisting of Sheets 1 of 18 through 18, as prepared by Hudson Land Design, Arrowstreet, and LRC Group.

As the project plans design plans are still in a preliminary concept state, we will keep are comments general format, until such time as more full detailed drawings are provided. Based upon our review of the above referenced documents and plans, we offer the following comments:

General Comments:

1. The project will require Dutchess County Department of Health approval for the proposed private water system.

2. The project will require NYSDOT review and approval for the proposed access locations out to NYS Route 9D and proposed utility connections.

3. Profiles shall be provided for the proposed water distribution system, sewer collection system, and storm water collection system. The utilities on the plans should be stationed so that they can be coordinated with the profiles.

4. The sewer information shown along South Avenue is based upon information from a 1989 plat. The sewer system along the lower portion of South Avenue was replaced at with a new 30" diameter sewer line when the South Avenue utility bridge was installed, along with a new 12" ductile iron water line being installed along the length of South Avenue up to Grandview. A sewer study may be required for the additional flows proposed to the South Interceptor Sewer Line to which the project is proposed to connect to.

5. Is the proposed sewer collection system within South Avenue to be dedicated to the City of Beacon or remain private? If it is to remain private, it would be preferred to have the sewer collection system stay within the Mirabeau parcel until the point of tie-in. If this system is to be dedicated to the City of Beacon it will require Dutchess County Department of Health approval for a sewer extension.

6. Engineering reports for the water system and sewer collection system should be prepared and submitted.

7. The plans shall be updated to include all traffic signage proposed on the site.

8. The SWPPP is in a very preliminary development phase and therefore has not been fully reviewed due to information missing from the report. As infiltration systems will be used on the site, the Project Engineer shall schedule a joint site inspection with the City Engineer's office for soil testing at these locations.

This completes our review at this time. Further comments may be forth coming based upon future submissions. **A written response letter addressing each of the above comments should be provided with the next submission.** If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,

LANC & TULLY, P.C.

John Russo, P.E.

Cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1 is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Mirbeau Inn & Spa Beacon		
Project Location (describe, and attach a general location map): 7 Craig House Lane, Beacon NY 12508		
Brief Description of Proposed Action (include purpose or need): Adaptive re-use of an existing estate for a proposed 75-room hotel with accessory uses including a spa, fine dining restaurant, event facilities, estate-like gardens, water features and site amenities. The project consists of renovation and expansion of an existing mansion to accommodate amenities associated with the spa, and a restaurant. There will be a number of grotto hotel rooms within the mansion, and the remainder of the hotel rooms will be located in a newly constructed Spa Château building which includes the spa at garden level. Other site improvements include restoration of an existing gate house located in the northeast portion of the site and the former Tioranda School located in the southwest portion of the site. A 6.5 acre parcel will be subdivided from the parent parcel for future rental lodging. Future site improvements include renovation of a gate house located in the southern portion of the property along South Street and a resort farm with lavender fields. Please see attached project narrative for additional information.		
Name of Applicant/Sponsor: Mirbeau of Beacon, LLC	Telephone: 315-217-4164 E-Mail: jdalpos@mirbeau.com	
Address: 433 Broadway, Suite 203		
City/PO: Saratoga Springs	State: NY	Zip Code: 12866
Project Contact (if not same as sponsor; give name and title/role): Edward Kellogg	Telephone: 845-516-7357 E-Mail: ekellogg@mirbeau.com	
Address: 46 West Market Street		
City/PO: Rhinebeck	State: NY	Zip Code: 12572
Property Owner (if not same as sponsor): Same	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	City of Beacon Planning Board - Site plan, Special Use Permit and Certificate of Appropriateness.	3/29/2022
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Building Department - Building Permit	
e. County agencies ☑Yes ☐No	DCDBCH approval for water and sewer; DC Planning GML 239m referral	4/12/2022 - Initial SEQR Circulation
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDOT - Interested Agency; NYSDEC SPDES GP-0-020-001 for Construction Activities	4/12/2022 - initial SEQR Circulation
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☑Yes ☐No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☑Yes ☐No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

Remediaton Sites:546031 Site is located near the Hudson River. The remediation site identified as 546031 is the Hudson River State Superfund for removal of PCBs.

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
R1-80 (One -Family, 80,000 square feet dwelling), Historic District and Landmark Overlay Zone

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? City of Beacon School Distrcit

b. What police or other public protection forces serve the project site?
City of Beacon Police Department

c. Which fire protection and emergency medical services serve the project site?
City of Beacon Fire Department

d. What parks serve the project site?
Mount Beacon; Hudson Highlands State Park; Madam Brett Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Commercial - Hotel, Spa & Restaurant

b. a. Total acreage of the site of the proposed action? +/- 64.39 acres
b. Total acreage to be physically disturbed? acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? +/- 66.59 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % Units:

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
For future rental units
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? 2
iv. Minimum and maximum proposed lot sizes? Minimum 6.5 acres Maximum 57.89

e. Will the proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: months
ii. If Yes:
- Total number of phases anticipated 4
- Anticipated commencement date of phase 1 (including demolition) June month 2024 year
- Anticipated completion date of final phase Dec month 2029 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 36'-4" height; 85' width; and 311' length

iii. Approximate extent of building space to be heated or cooled: 104,722 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑Yes ☐No

If Yes,

i. Purpose of the impoundment: Stormwater Management and Aesthetic Water Feature

ii. If a water impoundment, the principal source of the water: ☑ Ground water ☐ Surface water streams ☑Other specify: Groundwater for aesthetic water feature and stormwater runoff for stormwater management

iii. If other than water, identify the type of impounded/contained liquids and their source. N/A

iv. Approximate size of the proposed impoundment. Volume: 0.3 million gallons; surface area: 0.3 acres

v. Dimensions of the proposed dam or impounding structure: 3 ft height; 60 ft length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): Earth fill for water feature and proposed bioretention areas

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☑Yes ☐No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i. What is the purpose of the excavation or dredging? Removal of existing hospital wing

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards):
- Over what duration of time? 1 month

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.
General building debris to be crushed re-used on site.

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☑No
If yes, describe.

v. What is the total area to be dredged or excavated? 0.5 acres For building demo only.

vi. What is the maximum area to be worked at any one time? 5 acres

vii. What would be the maximum depth of excavation or dredging? 4-5 feet

viii. Will the excavation require blasting? ☐Yes ☑No

ix. Summarize site reclamation goals and plan:
To be used on-site as subbase material.

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No
If Yes, describe:

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑Yes ☐No
If Yes:

i. Total anticipated water usage/demand per day: 16,380 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑Yes ☐No
If Yes:

- Name of district or service area: City of Beacon Water District
- Does the existing public water supply have capacity to serve the proposal? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No
- Do existing lines serve the project site? ☑Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☑No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☑No
If, Yes:

- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑Yes ☐No
If Yes:

i. Total anticipated liquid waste generation per day: 16,380 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Sanitary wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑Yes ☐No
If Yes:

- Name of wastewater treatment plant to be used: City of Beacon Wastewater Treatment Plant
- Name of district: City of Beacon Sewer District
- Does the existing wastewater treatment plant have capacity to serve the project? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No

- Do existing sewer lines serve the project site? ☑Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☑Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

N/A

vi. Describe any plans or designs to capture, recycle or reuse liquid waste:

None

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 0.91 acres (impervious surface) Reflects additional impervious. Total post development impervious is 4.37 ac.

_____ Square feet or 64.35 acres (parcel size)

ii. Describe types of new point sources. New point sources created from proposed stormwater outfalls on the site. All outfalls discharge to the Fishkill Creek through existing on-site drainage conveyance ditches as preconditions.

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

On-site stormwater management facilities prior to discharge to on-site drainage ditches into on-site wetlands which overflow to the Fishkill Creek

- If to surface waters, identify receiving water bodies or wetlands:

Fishkill Creek

- Will stormwater runoff flow to adjacent properties? ☑Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Delivery vehicles

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Potential concrete slab crushing

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Normal boilers appropriate for use within the Spa building and hotel wing. No on-site power generation or processing is proposed.

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☑ Evening ☑Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): N/A

iii. Parking spaces: Existing 37 Proposed 272 Net increase/decrease +235

iv. Does the proposed action include any shared use parking? ☑Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:
The proposed project utilizes existing curb cuts and internal circulation roads and parking areas with minor modifications.

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☑Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☑Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☑Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):
Central Hudson Gas & Electric; Geothermal closed system

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:
- Monday - Friday: 7 am to 5 pm
- Saturday: 7 am to 5 pm
- Sunday: N/A
- Holidays: N/A/

ii. During Operations:
- Monday - Friday: 7 am - 10 pm
- Saturday: 7 am - 11 pm
- Sunday: 7 am - 11 pm
- Holidays: 7 am - 11 pm

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Heavy equipment and other construction operations.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe:

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

12' high light poles will be provided at parking areas and internal roadways, along with bollard lighting at walking paths and building mounted fixtures at buildings. All site lighting will be Dark Sky compliant.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe:

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

Lawn Maintenance

ii. Will the proposed action use Integrated Pest Management Practices? ☑ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 60 cubic yards ~~tons~~ per week (unit of time)
- Operation : 30 cubic yards ~~tons~~ per week (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Re-use of materials wherever possible
- Operation: Recyclable materials will be separated from refuse and recycled.

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Open top containers will be used for disposal of construction debris to be hauled off-site to a licensed landfill.
- Operation: Enclosed trash receptacles & recycle bins provided with a contracted sanitation company.

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☑ Forest ☐ Agriculture ☑ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	3.46	4.37	+ 0.91
• Forested	23.86	23.59	- 0.27
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	27.08	26.27	- 0.81
• Agricultural (includes active orchards, field, greenhouse etc.)	0.00	0.00	0.00
• Surface water features (lakes, ponds, streams, rivers, etc.)	3.66	3.83	+ 0.17
• Wetlands (freshwater or tidal)	6.29	6.29	0.00
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: Meadows, grasslands and brushlands includes landscaping and lawns			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☑ Yes ☐ No

If Yes,

i. Identify Facilities:

Sargent Elementary School

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): 9416681; 9800433; 9813516 & 9415355*

☑ Yes – Environmental Site Remediation database — Provide DEC ID number(s): 546031 Hudson River PCB Cleanup

☐ Neither database

*Indicates 4 on-site spill incidents associated with a petroleum tank. All incidents were closed by the NYSDEC. Follow up soil testing was conducted in February of 2022 as part of a Phase I ESA. No hydrocarbons were identified.

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): C314117, 314044, 546031

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

C314117 - 555 South Avenue - Ongoing monitoring

314044 - Tuck Industries, Tioranda Ave. - Delisted in 2003

546031 - Hudson River PCB - On going, current status - no action

v. Is the project site subject to an institutional control limiting property uses? ☐Yes ☑No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐Yes ☐No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 1.5 to greater than 6.7 feet

b. Are there bedrock outcroppings on the project site? ☑Yes ☐No
If Yes, what proportion of the site is comprised of bedrock outcroppings? <1 %

c. Predominant soil type(s) present on project site:

Hoosic	31 %
Dutchess Cardigan	22 %
Nassau Cardigan	23 %

d. What is the average depth to the water table on the project site? Average: 0 to > 6.7 feet

e. Drainage status of project site soils:

☑ Well Drained:	32 % of site
☑ Moderately Well Drained:	33 % of site
☑ Poorly Drained	31 % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	46 % of site
☑ 10-15%:	14 % of site
☑ 15% or greater:	40 % of site

g. Are there any unique geologic features on the project site? ☐Yes ☑No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑Yes ☐No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑Yes ☐No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑Yes ☐No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 862-237 Classification C
- Lakes or Ponds: Name 862-241 Classification C
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑Yes ☐No

If yes, name of impaired water body/bodies and basis for listing as impaired:
Name - Pollutants - Uses:Hudson River (Class B) – Priority Organics – Fish Consumption

i. Is the project site in a designated Floodway? ☑Yes ☐No

j. Is the project site in the 100-year Floodplain? ☑Yes ☐No

k. Is the project site in the 500-year Floodplain? ☑Yes ☐No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑Yes ☐No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
White Tail Deer, Groundhog
Raccoon
Squirrel

n. Does the project site contain a designated significant natural community? ☑ Yes ☐ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): Oak-Tulip Tree Forest, Brackish Tidal Marsh, Brackish Intertidal Mudflats, Appalachian Oak-Hickory Forest
ii. Source(s) of description or evaluation: Provided by NYSDEC EAF Mapper
iii. Extent of community/habitat: All listed communities are not present on site.
- Currently: 2768.0, 14.72, 10.37, 2334.0 acres
- Following completion of project as proposed: Same acres
- Gain or loss (indicate + or -): 0 acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No
If Yes:
i. Species and listing (endangered or threatened): Atlantic Sturgeon, Timber Rattlesnake, Spongy-Leaved Arrowhead, Bald Eagle, Pied-billed Grebe, Shortnose Sturgeon
A Threatened and Endangered Species Habitat Suitability Assessment study has been conducted by Ecological Solutions for the site. A report dated March 25, 2022 indicates that there will be no impact to the listed species.

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No
If Yes:
i. Species and listing:

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use:

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number:

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No
i. If Yes: acreage(s) on project site?
ii. Source(s) of soil rating(s):

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent:

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name:
ii. Basis for designation:
iii. Designating agency and date:

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☑ Historic Building or District

ii. Name: Eligible property:Tioronda-Craig House, Eligible property:White House, Eligible property:Gymnasium/Nature Center, Eli...

iii. Brief description of attributes on which listing is based:

Historical use of Howland Estate.

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☑ Yes ☐ No

If Yes:

i. Describe possible resource(s): Historic and Prehistoric

ii. Basis for identification: Phase I Archaeological Study

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Hudson River & Hudson Highlands State Park

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): State Park

iii. Distance between project and resource: 1 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation:

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

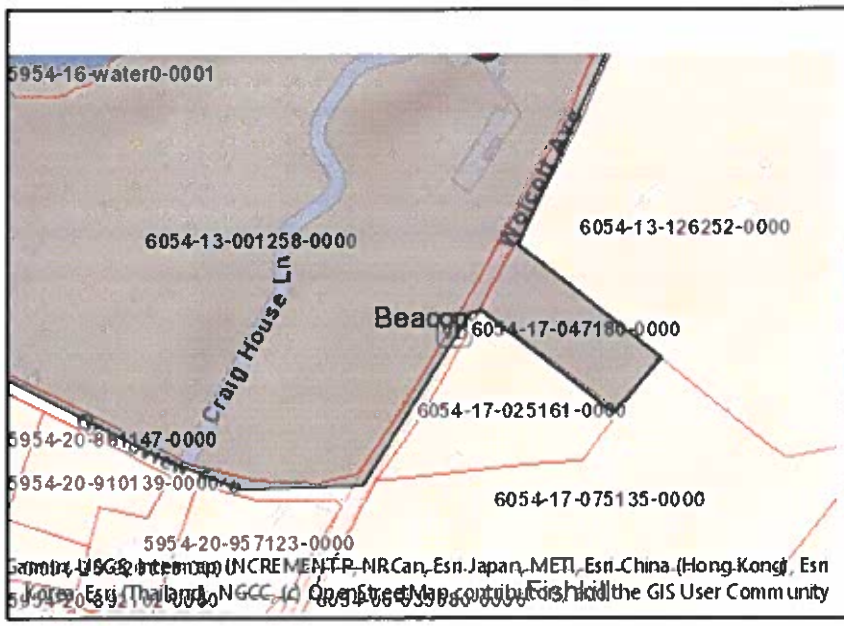
Applicant/Sponsor Name: Winbrayof Beacon LLC Date: 3/29/22

Signature: Edward A. Miller Title: Partner

PRINT FORM

EAF Mapper Summary Report

Monday, March 7, 2022 10:49 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	Yes
B.i.ii [Local Waterfront Revitalization Area]	Yes
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:546031
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	546031
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	C314117, 314044, 546031
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	862-237
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Lake/Pond Name]	862-241

E.2.h.iv [Surface Water Features - Lake/Pond Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	Yes
E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Hudson River (Class B) – Priority Organics – Fish Consumption
E.2.i. [Floodway]	Yes
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	Yes
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
E.2.n. [Natural Communities]	Yes
E.2.n.i [Natural Communities - Name]	Oak-Tulip Tree Forest, Brackish Tidal Marsh, Brackish Intertidal Mudflats, Appalachian Oak-Hickory Forest
E.2.n.i [Natural Communities - Acres]	2768.0, 14.72, 10.37, 2334.0
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Atlantic Sturgeon, Timber Rattlesnake, Spongy-Leaved Arrowhead, Bald Eagle, Pied-billed Grebe, Shortnose Sturgeon
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Yes - Digital mapping data for archaeological site boundaries are not available. Refer to EAF Workbook.
E.3.e.ii [National or State Register of Historic Places or State Eligible Sites - Name]	Eligible property:Tioronda-Craig House, Eligible property:White House, Eligible property:Gymnasium/Nature Center, Eligible property:Infirmary, Eligible property:Stover Theater, Eligible property:TIORONDA GATEHOUSE, Eligible property:TIORONDA GATE HOUSE II, Eligible property:TIORONDA GREENHOUSE, Eligible property:Keller Memorial Club House, Eligible property:CROSSROAD CRAIG HOUSE HOSPITAL SANITARIUM, Eligible property:One-story Brick Carriage House, Eligible property:Craig House Guest House, Eligible property:WALZ RESIDENCE, Eligible property:Tuck Industries (DEMOLISHED 2005), Eligible property:TIORONDA SCHOOL, Eligible property:Library (former), Eligible property:Caretaker's Residence, Eligible property:Shed, Eligible property:Pavilion, Eligible property:Comfort Station, Eligible property:Office-Studio-Shop Bldg, Eligible property:Workshop, Eligible property:Chapel, Eligible property:Cabin 44, Eligible property:Cabin 45, Eligible property:Cabin 42, Tioronda Bridge
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Agency Use Only [If applicable]

Project : Mirbeau Beacon

Date :

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land
Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1)
If "Yes", answer questions a - j. If "No", move on to Section 2.

☐ NO ☑ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☑	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☑	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☑	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☑	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☑	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☑	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☑	☐
h. Other impacts: _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☐ NO ☑ YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☑	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☑	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☑	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☑	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☑	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☑	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☑	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☑	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☑	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☑	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☑	☐

l. Other impacts: _____		☐	☐

4. Impact on groundwater
The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☐NO ☑YES
If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☑	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☑	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☑	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☑	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☑	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☑	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☑	☐
h. Other impacts: _____		☐	☐

5. Impact on Flooding
The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☐NO ☑YES
If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☑	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☑	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☑	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☑	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☑	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☑	☐

g. Other impacts: _____ _____		☐	☐

6. Impacts on Air
The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D.2.h, D.2.g) ☑NO ☐YES
If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____ _____		☐	☐

7. Impact on Plants and Animals
The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑NO ☐YES
If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☐	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☐	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☐	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☐	☐
j. Other impacts: _____ _____		☐	☐

8. Impact on Agricultural Resources
The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑NO ☐YES
If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, E1b	☐	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☐	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☐	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	E1 a, E1b	☐	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☐	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☐	☐
h. Other impacts: _____		☐	☐

9. Impact on Aesthetic Resources
The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.) ☑ NO ☐ YES
If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☐ ☐	☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☐ ☐	☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____		☐	☐

10. Impact on Historic and Archeological Resources
The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.) ☐ NO ☑ YES
If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places.	E3e	☑	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☑	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☑	☐

d. Other impacts: _____		☐	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan.
(See Part 1. C.2.c, E.1.c., E.2.q.)
If "Yes", answer questions a - e. If "No", go to Section 12.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: _____		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)
If "Yes", answer questions a - c. If "No", go to Section 13.

☑ NO ☐ YES

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____		☐	☐

13. Impact on Transportation
The proposed action may result in a change to existing transportation systems. ☐ NO ☑ YES
(See Part 1. D.2.j)
If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☑	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☑	☐
c. The proposed action will degrade existing transit access.	D2j	☑	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☑	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☑	☐
f. Other impacts: _____		☐	☐

14. Impact on Energy
The proposed action may cause an increase in the use of any form of energy. ☐ NO ☑ YES
(See Part 1. D.2.k)
If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☑	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☑	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☑	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: _____		☐	☐

15. Impact on Noise, Odor, and Light
The proposed action may result in an increase in noise, odors, or outdoor lighting. ☐ NO ☑ YES
(See Part 1. D.2.m., n., and o.)
If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☑	☐
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☐	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health
The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES
If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may occur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, E1b	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

City of Beacon Planning Board Agenda
04/12/2022

Title:

Review application for Special Use Permit and Site Plan Approval, accessory apartment, 18 North Walnut Street, submitted by Brian Donnelly and Scott Ramsey

ATTACHMENTS

18 North Walnut Street Application.pdf

18 North Walnut Street Site Plan.pdf

18 North Walnut Street EAF.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

1388

APPLICATION FOR SPECIAL USE PERMIT

Submit to Planning Board Secretary, One Municipal Plaza, Suite One, Beacon, New York 12508

IDENTIFICATION OF APPLICANT

Name: BRIAN DONNELLY & SCOTT RAMSBY

Address: 18 N. WALNUT ST
BEACON, NY 12508

Signature: [signature]

Date: 03.23.22

Phone: (917) 476-0518 & (646) 772-5871

(For Official Use Only)	Date	Initials
Application & Fee Rec'd	3-23-22	RG
Initial Review	4-12-2022	
PB Public Hearing		
Sent to City Council		
City Council Workshop		
City Council Public Hearing		
City Council Approve/Disapprove		

IDENTIFICATION OF REPRESENTATIVE / DESIGN PRFESSIONAL

Name: JUSTIN KACUR @ HIGHLANDS ARCH.

Address: 3212 ROUTE 9
COLD SPRING, NY 10516

Phone: (845) 809-5976

Fax: —

Email address: JKACUR@HIGHLANDSARCHITECTURE.COM

IDENTIFICATION OF SUBJECT PROPERTY:

Property Address: 18 N. WALNUT ST BEACON, NY 12508

Tax Map Designation: Section 5954 Block 28 Lot(s) 912934

Land Area: 6500 SQ FT / 0.15 ACRES Zoning District(s) R1-5

DESCRIPTION OF PROPOSED DEVELOPMENT:

Proposed Use: ACCESSORY APARTMENT BUILD

Gross Non-Residential Floor Space: Existing N/A Proposed N/A

TOTAL: N/A

Dwelling Units (by type): Existing SINGLE FAMILY 1,160 SQ.FT. Proposed ACCESSORY APT. 448 SQFT.

TOTAL: 1,160 (HOUSE) + 448 (NON ACCESSORY) = 1,608

ITEMS TO ACCOMPANY THIS APPLICATION

a. Five (5) **folded** copies and One (1) digital copy of a site location sketch showing the location of the subject property and the proposed development with respect to neighboring properties and developments.

b. Five (5) **folded** copies and One (1) digital copy of the proposed site development plan, consisting of sheets, showing the required information as set forth on the back of this form and other such information as deemed necessary by the City Council or the Planning Board to determine and provide for the property enforcement of the Zoning Ordinance.

c. Five (5) **folded** copies and One (1) digital copy of any additional sketches, renderings or other information submitted.

d. An application fee, payable to the City of Beacon, computed per the attached fee schedule.

INFORMATION TO BE SHOWN ON SITE LOCATION SKETCH

a. Property lines, zoning district boundaries and special district boundaries affecting all adjoining strets and properties, including properties located on the opposite sides of adjoining streets.
b. Any reservations, easements or other areas of public or special use which affect the subject property.
c. Section, block and lot numbers written on the subject property and all adjoining properties, including the names of the record owners of such adjoining properties.

INFORMATION TO BE SHOWN ON THE SITE DEVELOPMENT PLAN

a. Title of development, date and revision dates if any, north point, scale, name and address of record owner of property, and of the licensed engineer, architect, landscape architect, or surveyor preparing the site plan.
b. Existing and proposed contours at a maximum vertical interval of two (2) feet.
c. Location and identification of natural features including rock outcrops, wooded areas, single trees with a caliper of six (6) or more inches measured four (4) feet above existing grade, water bodies, water courses, wetlands, soil types, etc.
d. Location and dimensions of all existing and proposed buildings, retaining walls, fences, septic fields, etc.
e. Finished floor level elevations and heights of all existing and proposed buildings.
f. Location, design, elevations, and pavement and curbing specifications, including pavement markings, of all existing and proposed sidewalks, and parking and truck loading areas, including access and egress drives thereto.
g. Existing pavement and elevations of abutting streets, and proposed modifications.
h. Location, type and design of all existing and proposed storm drainage facilities, including computation of present and estimated future runoff of the entire tributary watershed, at a maximum density permitted under existing zoning, based on a 100 year storm.
i. Location and design of all existing and proposed water supply and sewage disposal facilities.
j. Location of all existing and proposed power and telephone lines and equipment, including that located within the adjoining street right-of-way. All such lines and equipment must be installed underground.
k. Estimate of earth work, including type and quantities of material to be imported to or removed from the site.
l. Detailed landscape plan, including the type, size, and location of materials to be used.
m. Location, size, type, power, direction, shielding, and hours of operation of all existing and proposed lighting facilities.
n. Location, size, type, and design of all existing and proposed business and directional signs.
o. Written dimensions shall be used wherever possible.
p. Signature and seal of licensed professional preparing the plan shall appear on each sheet.
q. Statement of approval, in blank, as follows:

Approved by Resolution of the Beacon Planning Board
on the _____ day of _____, 20_____
subject to all conditions as stated therein

_____ _____
Chairman, City Planning Board **Date**

1390

APPLICATION PROCESSING RESTRICTION LAW

Affidavit of Property Owner

Property Owner: BRIAN DONNELLY & SCOTT RAMSEY

If owned by a corporation, partnership or organization, please list names of persons holding over 5% interest.

N/A

List all properties in the City of Beacon that you hold a 5% interest in:

18 N. WALNUT ST BEACON, NY 12508

Applicant Address: 18 N WALNUT ST BEACON, NY 12508

Project Address: 18 N. WALNUT ST BEACON, NY 12508

Project Tax Grid # 5954 - 28 - 912934

Type of Application ACCESSORY APARTMENT / SPECIAL USE PERMIT

Please note that the property owner is the applicant. "Applicant" is defined as any individual who owns at least five percent (5%) interest in a corporation or partnership or other business.

I, BRIAN DONNELLY & SCOTT RAMSEY, the undersigned owner of the above referenced property, hereby affirm that I have reviewed my records and verify that the following information is true.

1. No violations are pending for ANY parcel owned by me situated within the City of Beacon ✓
2. Violations are pending on a parcel or parcels owned by me situated within the City of Beacon
3. ALL tax payments due to the City of Beacon are current ✓
4. Tax delinquencies exist on a parcel or parcels owned by me within the City of Beacon
5. Special Assessments are outstanding on a parcel or parcels owned by me in the City of Beacon
6. ALL Special Assessments due to the City of Beacon on any parcel owned by me are current ✓

Brian McDonnelly

Signature of Owner

Title if owner is corporation

Office Use Only:	NO	YES	Initial
Applicant has violations pending for ANY parcel owned within the City of Beacon (Building Dept.)	✓		EL
ALL taxes are current for properties in the City of Beacon are current (Tax Dept.)		X	ST
ALL Special Assessments. i.e. water, sewer, fines, etc. are current (Water Billing)		X	EV

1391

CITY OF BEACON
1 Municipal Plaza, Beacon, NY
Telephone (845) 838-5000 · http://cityofbeacon.org/

INDIVIDUAL DISCLOSURE FORM

(This form must accompany every land use application and every application for a building permit or certificate of occupancy submitted by any person(s))

Disclosure of the names and addresses of all persons) filing a land-use application with the City is required pursuant to Section 223-62 of the City Code of the City of Beacon. Applicants shall submit supplemental sheets for any additional information that does not fit within the below sections, identifying the Section being supplemented.

SECTION A

Name of Applicant: SCOTT FITZGERALD RAMSEY AND BRIAN MICHAEL DONNELLY

Address of Applicant: 18 N. WALNUT ST. BEACON, NY 12508

Telephone Contact Information: SR: (646)772-5871 BD: (917) 476-0578

SECTION B. List all owners of record of the subject property or any part thereof.

Name	Residence or Business Address	Telephone Number	Date and Manner title was acquired	Date and place where the deed or document of conveyance was recorded or filed.
SCOTT F. RAMSEY BRIAN M. DONNELLY	18 N. WALNUT ST BEACON NY 12508	646.772.5871, 917.476.0578	06.08.2018 PURCHASED	R.J. RAIMONDA, ATTORNEY 621 ROUTE 52 BEACON, NY 12508

SECTION B. Is any owner of record an officer, elected or appointed, or employee of the City of Beacon or related, by marriage or otherwise, to a City Council member, planning board member, zoning board of appeals member or employee of the City of Beacon ?

☐ **YES** ☑ **NO**

If yes, list every Board, Department, Office, agency or other position with the City of Beacon with which a party has a position, unpaid or paid, or relationship and identify the agency, title, and date of hire.

Agency	Title	Date of Hire, Date Elected, or Date Appointed	Position or Nature of Relationship

SECTION C. If the applicant is a contract vendee, a duplicate original or photocopy of the full and complete contract of purchase, including all riders, modification and amendments thereto, shall be submitted with the application.

SECTION D. Have the present owners entered into a contract for the sale of all or any part of the subject property and, if in the affirmative, please provide a duplicate original or photocopy of the fully and complete contract of sale, including all riders, modifications and amendments thereto.

☐ **YES** ☑ **NO**

I, SCOTT RAMSEY BRIAN DENNEHY being first duly sworn, according to law, deposes and says that the statements made herein are true, accurate, and complete.

(Print) SCOTT RAMSEY, BRIAN DENNEHY

(Signature) + Brian McDonnelly

1393

617.20
Appendix B
Short Environmental Assessment Form

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

BUILD OF ACCESSORY APARTMENT / BRIAN DUNNEVY & SCOTT RAMSEY

Name of Action or Project:

BUILD OF ACCESSORY APARTMENT

Project Location (describe, and attach a location map):

18 N. WALNUT ST BEACON, NY 12508

Brief Description of Proposed Action:

BUILD OF ACCESSORY APARTMENT
ON A RESIDENTIAL LOT FOR RESIDENTIAL USE
FOR USE BY MOTHER

Name of Applicant or Sponsor:	Telephone: (917) 476-0518 & (646) 772-5811
BRIAN DUNNEVY & SCOTT RAMSEY	E-Mail: BMHD.NYC@GMAIL.COM SCOTT@SCOTTRAMSEY.NET

Address:

18 N. WALNUT ST

City/PO:	State:	Zip Code:
BEACON	NY	12508

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	✓	
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: SPECIAL USE PERMIT FROM BEACON BUILDINGS		✓

3.a. Total acreage of the site of the proposed action? 0.15 acres
b. Total acreage to be physically disturbed? 0.01 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.15 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☑ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____
☐ Parkland

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size:	✓	
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	✓	
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	✓	

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: BRIAN DONNELLY & SCOTT RAMSEY Date: 03.23.22

Signature: [signature] & [signature]

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	✓	
2. Will the proposed action result in a change in the use or intensity of use of land?	✓	
3. Will the proposed action impair the character or quality of the existing community?		
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?		
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?		
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?		
7. Will the proposed action impact existing: a. public / private water supplies?		
b. public / private wastewater treatment utilities?		
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?		
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?		

1395

CITY OF BEACON
SITE PLAN SPECIFICATION FORM

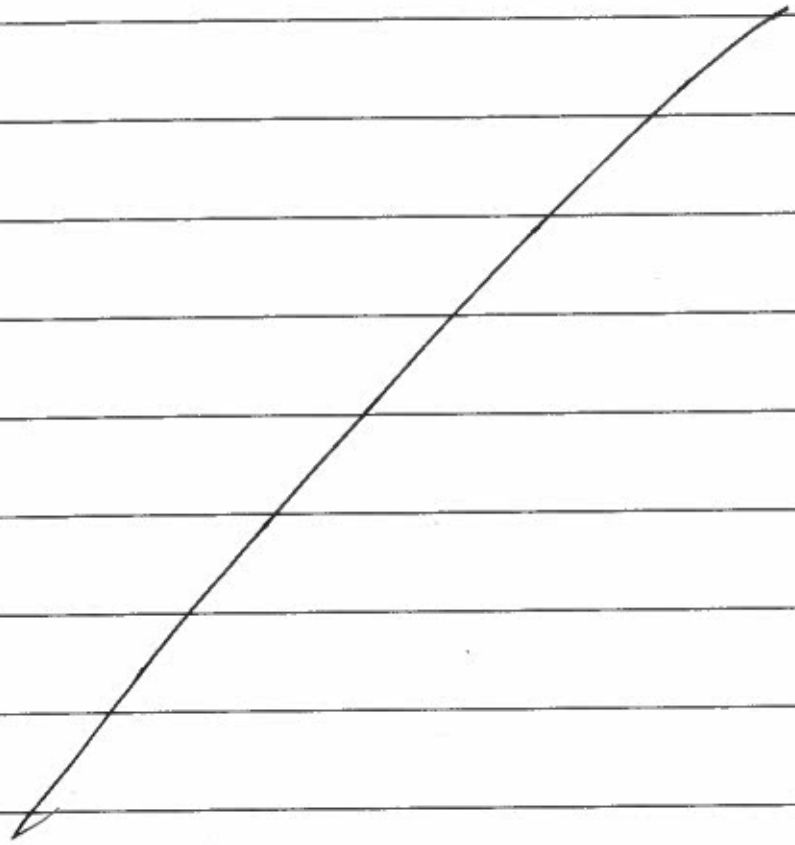
Name of Application: SCOTT RAMSEY & BRIAN DONNOLLY RESIDENTIAL ACCESSORY APARTMENT

PLEASE INDICATE WHETHER THE SITE PLAN DRAWINGS SHOW THE SUBJECT INFORMATION BY PLACING A CHECK MARK IN THE APPROPRIATE BOXES BELOW.	YES	NO
The site plan shall be clearly marked "Site Plan", it shall be prepared by a legally certified individual or firm, such as a Registered Architect or Professional Engineer, and it shall contain the following information:	✓	
LEGAL DATA		
Name and address of the owner of record.	✓	
Name and address of the applicant (if other than the owner).	✓	
Name and address of person, firm or organization preparing the plan.	✓	
Date, north arrow, and written and graphic scale.	✓	
NATURAL FEATURES		
Existing contours with intervals of two (2) feet, referred to a datum satisfactory to the Planning Board.	✓	
Approximate boundaries of any areas subject to flooding or stormwater overflows.	✓	
Location of existing watercourses, wetlands, wooded areas, rock outcrops, isolated trees with a diameter of eight (8) inches or more measured three (3) feet above the base of the trunk, and any other significant existing natural features.	✓	
EXISTING STRUCTURES, UTILITIES, ETC.		
Outlines of all structures and the location of all uses not requiring structures. Paved areas, sidewalks, and vehicular access between the site and public streets.	✓	
Locations, dimensions, grades, and flow direction of any existing sewers, culverts, water lines, as well as other underground and above ground utilities within and adjacent to the property.	✓	
Other existing development, including fences, retaining walls, landscaping, and screening.	✓	
Sufficient description or information to define precisely the boundaries of the property.	✓	
The owners of all adjoining lands as shown on the latest tax records.	✓	
The locations, names, and existing widths of adjacent streets and curb lines.	✓	
Location, width, and purpose of all existing and proposed easements, setbacks, reservations, and areas dedicated to private or public use within or adjacent to the properties.	✓	

1396

PROPOSED DEVELOPMENT	YES	NO
The location, use and design of proposed buildings or structural improvements.	✓	
The location and design of all uses not requiring structures, such as outdoor storage (if permitted), and off-street parking and unloading areas.	✓	
Any proposed division of buildings into units of separate occupancy.	✓	
The location, direction, power, and time of use for any proposed outdoor lighting.	✓	
The location and plans for any outdoor signs.	✓	
The location, arrangement, size(s) and materials of proposed means of ingress and egress, including sidewalks, driveways, or other paved areas.	✓	
Proposed screening and other landscaping including a planting plan and schedule prepared by a qualified individual or firm.	✓	
The location, sizes and connection of all proposed water lines, valves, and hydrants and all storm drainage and sewer lines, culverts, drains, etc.	✓	
Proposed easements, deed restrictions, or covenants and a notation of any areas to be dedicated to the City.	✓	
Any contemplated public improvements on or adjoining the property.	✓	
Any proposed new grades, indicating clearly how such grades will meet existing grades of adjacent properties or the street.	✓	
Elevations of all proposed principal or accessory structures.	✓	
Any proposed fences or retaining walls.	✓	
MISCELLANEOUS	✓	
A location map showing the applicant's entire property and adjacent properties and streets, at a convenient scale.	✓	
Erosion and sedimentation control measures.	✓	
A schedule indicating how the proposal complies with all pertinent zoning standards, including parking and loading requirements.	✓	
An indication of proposed hours of operation.	✓	
If the site plan only indicates a first stage, a supplementary plan shall indicate ultimate development.	✓	

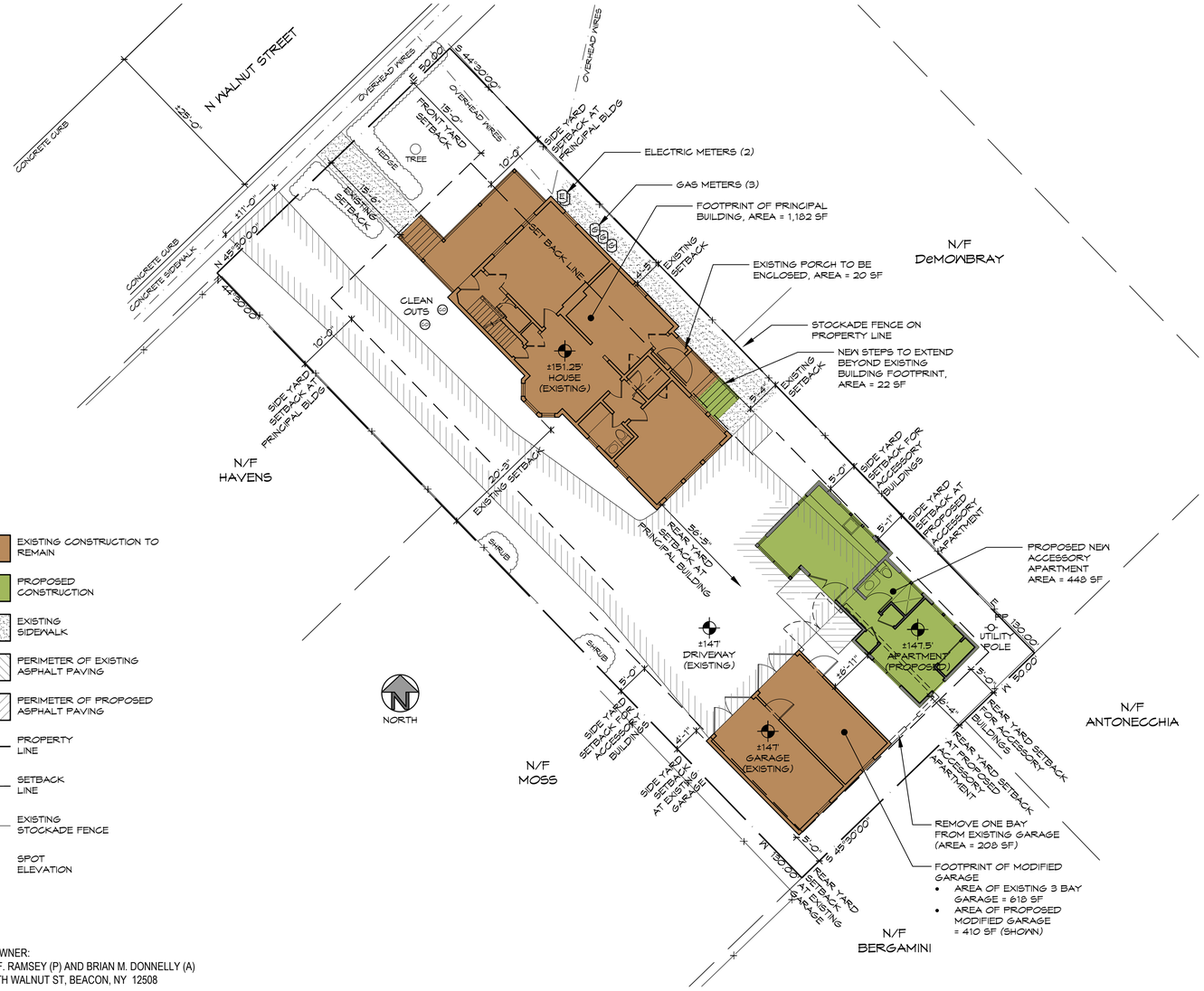
For all items marked "NO" above, please explain below why the required information has not been provided:



Applicant/Sponsor Name: SCOTT RAMSEY & BRIAN DONNELLY

Signature:

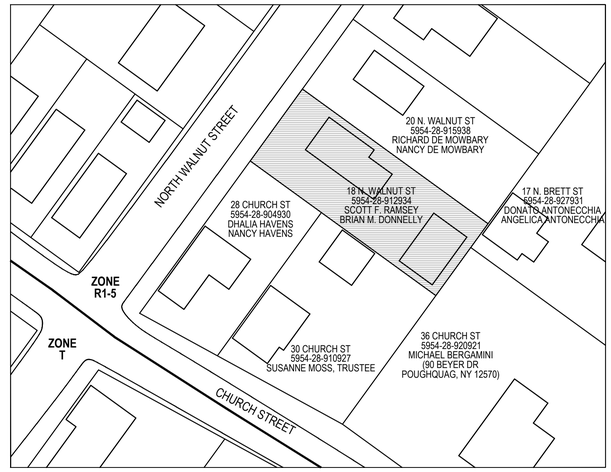
Date: 03.23.22



1 SP-1 — SITE PLAN
1" = 10'-0"

LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- PROPOSED CONSTRUCTION
- EXISTING SIDEWALK
- PERIMETER OF EXISTING ASPHALT PAVING
- PERIMETER OF PROPOSED ASPHALT PAVING
- PROPERTY LINE
- SETBACK LINE
- EXISTING STOCKADE FENCE
- SPOT ELEVATION



2 SP-1 — LOCATION PLAN
1" = 40'-0"

PROPERTY OWNER:
SCOTT F. RAMSEY (P) AND BRIAN M. DONNELLY (A)
18 NORTH WALNUT ST, BEACON, NY 12508

PARTIAL MAP INFORMATION OBTAINED FROM SURVEY COMPLETED BY:
ROBERT F. OICLE, PLS
946 ROUTE 376, UNIT 10, WAPPINGERS FALLS, NY 12590
845-293-0831
DATED MARCH 20, 2021

STATEMENT OF APPROVAL

APPROVED BY RESOLUTION OF THE BEACON PLANNING BOARD
ON THE _____ DAY OF _____, 20____
SUBJECT TO ALL CONDITIONS AS STATED THEREIN

_____ _____
CHAIRMAN, CITY PLANNING BOARD DATE

ZONING INFORMATION

CITY OF BEACON
DUTCHESS COUNTY, NY
ZONE: R1-5 (ZONING MAP DATE 7/13/2020)

18 NORTH WALNUT STREET, 12508
LOT AREA = 0.149 ACRES (6,500 SQUARE FEET)

SECTION: 5954
BLOCK: 28
LOT: 912934

EXISTING HOUSE FOOTPRINT = 1,160 SF
EXISTING GARAGE FOOTPRINT = 618 SF

PROPOSED HOUSE FOOTPRINT = 1,182 SF
PROPOSED GARAGE FOOTPRINT = 410 SF
PROPOSED ACCESSORY APARTMENT FOOTPRINT = 448 SF

LOT AND PRINCIPAL BUILDING

	LOT AREA	MIN. LOT PER UNIT	MIN. LOT WIDTH	MIN. LOT DEPTH	MIN. FRONT YARD SETBACK	MIN. SIDE YARD SETBACK	MIN. REAR YARD SETBACK	MIN DISTANCE BTWN BLDGS ON LOT	MAX. HEIGHT MAIN BLDG	MAX. % BLDG COVERAGE	MAX. # OF UNITS PER BLDG	MIN. OPEN SPACE	OFF STREET PARKING SPACES
ORDINANCE REQUIREMENT:	5,000 SF, MIN	5,000 S.F.	50'-0"	100'-0"	15'-0"	10'-0"	20'-0"	NR	2.5 ST / 35'-0"	30%	1	NR	2 / DWELLING UNIT
EXISTING:	6,500 SF		50'-0"	130'-0"	15'-6"	4'-5"	56'-5"	NA	2 ST / 26'-7"	27.4% a	NC	NR	4
PROPOSED:	NC		NC	NC	NC	NC	NC	NA	NC / NC	31.4% b	NC	NR	4 d

ACCESSORY BUILDINGS

	MIN. FRONT YARD SETBACK c	MIN. SIDE YARD SETBACK	MIN. REAR YARD SETBACK	STRUCTURE HEIGHT	MAX CUMULATIVE SF FOR ALL ACCESSORY BLDGS	MAX SF FOR EACH ACCESSORY BLDG (BASED ON FOOTPRINT OF PRINCIPAL BLDG)	MAX # OF SHEDS
ORDINANCE REQUIREMENT:	NA	5'-0"	5'-0"	-	750 SF	40%	1
EXISTING GARAGE:	NA	4'-1"	5'-0"	9'-4"	618 SF	464 SF	0
MODIFIED GARAGE:	NA	NC	NC	NC	858 SF	473 SF	0
PROPOSED ACCESSORY APARTMENT:	NA	5'-0"	6'-4"	11'-8"		473 SF	0

NA - NOT APPLICABLE
NC - NO CHANGE
NR - NO REQUIREMENT
X - NOT PERMITTED

a - [EXISTING HOUSE + GARAGE FOOTPRINTS] / LOT AREA
b - [PROPOSED HOUSE + GARAGE + APARTMENT FOOTPRINTS] / LOT AREA
c - ACCESSORY BUILDINGS NOT PERMITTED IN FRONT YARDS
d - FOUR (4) PARKING SPACES REQUIRED FOR PROPOSED SINGLE-FAMILY RESIDENCE WITH ACCESSORY APARTMENT

PLANNING NOTES:

1. CURRENT OWNERS HAVE CONVERTED THE RESIDENCE FROM A TWO-FAMILY RESIDENCE TO SINGLE-FAMILY RESIDENCE. UTILITY METERS ON THE EAST EXTERIOR WALL SERVED THE HOUSE AND FORMER APARTMENT ON THE HOME'S SECOND FLOOR.
2. SITE IS HAS NO OUTSTANDING NATURAL CHARACTERISTICS. TREE IN FRONT YARD TO REMAIN. HEDGES IN FRONT YARD AND ALONG DRIVEWAY TO REMAIN.
3. CURB CUT TO REMAIN AS-IS. NO WORK IN STREET OR SIDEWALK IS ANTICIPATED.
4. ROOF DRAINS FOR PROPOSED ACCESSORY APARTMENT SHALL BE RUN UNDERGROUND AND CONNECTED TO CITY STORM SEWER SYSTEM.
5. ALL NEW WATER AND SEWER LINES SHALL BE RUN BETWEEN THE EXISTING RESIDENCE TO THE ACCESSORY APARTMENT. FINAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONSTRUCTION CONTRACTOR AND PROPERTY OWNER.
6. ALL NEW POWER AND TELEPHONE LINES SHALL BE RUN UNDERGROUND. NEW LINES SHALL RUN FROM THE EXISTING RESIDENCE TO THE ACCESSORY BUILDINGS. FINAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONSTRUCTION CONTRACTOR AND PROPERTY OWNER.
7. PROPOSED ACCESSORY APARTMENT SHALL BE SLAB-ON-GRADE CONSTRUCTION. MINIMAL EXCAVATION SHALL BE REQUIRED.
8. EXISTING LANDSCAPING TO BE MAINTAINED. NO NEW LANDSCAPING IS PROPOSED.

© HIGHLANDS ARCHITECTURE 2022

HIGHLANDS ARCHITECTURE pllc
3212 ROUTE 9
COLD SPRING, NY 10516
845.809.5976 OFFICE
highlandsarchitecture.com

ALTERATIONS TO EXISTING:
RAMSEY - DONNELLY RESIDENCE
18 NORTH WALNUT STREET
BEACON, NY 12508

PLANNING BOARD REVIEW

SITE PLAN AND DATA TABLES

SP-1

DATE: 22 MARCH 2022
REVISIONS:
REVISIONS:
REVISIONS:
DRAWN BY: EN
PROJECT NUMBER: 2108

1399

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the project sponsor to verify that the information contained in Part 1 is accurate and complete.

A. Project and Sponsor Information.

Name of Action or Project: BUILD OF ACCESSORY APARTMENT		
Project Location (describe, and attach a general location map): 18 N. WALNUT ST BEACON, NY 12508		
Brief Description of Proposed Action (include purpose or need): BUILD OF ACCESSORY APARTMENT ON A RESIDENTIAL LOT FOR RESIDENTIAL USE FOR USE BY MOTHER.		
Name of Applicant/Sponsor: BRIAN DENNEHY & SCOTT RAMSEY	Telephone: (917) 476-0578 (646) 772-5871 E-Mail: BMHD.NYC@GMAIL.COM SCOTT@SCOTTRAMSEY.NET	
Address: 18 N. WALNUT ST		
City/PO: BEACON	State: NY	Zip Code: 12508
Project Contact (if not same as sponsor; give name and title/role): SAME	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

N/A

B. Government Approvals Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	**If Yes: Identify Agency and Approval(s) Required**	**Application Date (Actual or projected)**
a. City Council, Town Board, or Village Board of Trustees ☐ Yes ☐ No		
b. City, Town or Village Planning Board or Commission ☐ Yes ☐ No		
c. City Council, Town or Village Zoning Board of Appeals ☐ Yes ☐ No		
d. Other local agencies ☐ Yes ☐ No		
e. County agencies ☐ Yes ☐ No		
f. Regional agencies ☐ Yes ☐ No		
g. State agencies ☐ Yes ☐ No		
h. Federal agencies ☐ Yes ☐ No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐ Yes ☐ No

If Yes,

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐ Yes ☐ No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐ Yes ☐ No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐ Yes ☑ No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐ Yes ☑ No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐ Yes ☑ No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐ Yes ☑ No

If Yes, identify the plan(s):

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐ Yes ☑ No

If Yes, identify the plan(s):

1400

1401

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
R1-5

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site?

C.4. Existing community services.

a. In what school district is the project site located? BOCES

b. What police or other public protection forces serve the project site?
BOCES

c. Which fire protection and emergency medical services serve the project site?
BOCES

d. What parks serve the project site?
BOCES

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
RESIDENTIAL

b. a. Total acreage of the site of the proposed action? 0.15 acres
b. Total acreage to be physically disturbed? 0.01 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.15 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % Units: +448 SQ. FT.

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed?
iv. Minimum and maximum proposed lot sizes? Minimum Maximum

e. Will proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 3 months
ii. If Yes:
- Total number of phases anticipated
- Anticipated commencement date of phase 1 (including demolition) month year
- Anticipated completion date of final phase month year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:

f. Does the project include new residential uses? ☑ Yes ☐ No
If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases	SINGLE FAMILY W/ACCESSORY APARTMENT			

g. Does the proposed action include new non-residential construction (including expansions)? ☐ Yes ☑ No
If Yes,
i. Total number of structures _____
ii. Dimensions (in feet) of largest proposed structure: _____ height; _____ width; and _____ length
iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No
If Yes,
i. Purpose of the impoundment: _____
ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify: _____
iii. If other than water, identify the type of impounded/contained liquids and their source. _____
iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres
v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length
vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete): _____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No
If Yes:
i. What is the purpose of the excavation or dredging? _____
ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?
- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them. _____
iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☑ No
If yes, describe. _____
v. What is the total area to be dredged or excavated? _____ acres
vi. What is the maximum area to be worked at any one time? _____ acres
vii. What would be the maximum depth of excavation or dredging? _____ feet
viii. Will the excavation require blasting? ☐ Yes ☑ No
ix. Summarize site reclamation goals and plan: _____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No
If Yes:
i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

1403

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No
If Yes, describe:

iv. Will proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☐ Yes ☑ No
If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:

- Name of district or service area: BOSCAWEN
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No
- Do existing lines serve the project site? ☑ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☐ Yes ☑ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No
If Yes:

- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐ Yes ☑ No
If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑ Yes ☐ No
If Yes:

- Name of wastewater treatment plant to be used: BOSCAWEN
- Name of district: BOSCAWEN
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

- Do existing sewer lines serve the project? ☑ Yes ☐ No
- Will line extension within an existing district be necessary to serve the project? ☐ Yes ☑ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐ Yes ☑ No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge, or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐ Yes ☑ No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)
_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐ Yes ☑ No

iv. Does proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐ Yes ☑ No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐ Yes ☑ No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐ Yes ☑ No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐ Yes ☑ No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

1404

1405

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐ Yes ☑ No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐ Yes ☑ No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐ Yes ☑ No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐ Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of semi-trailer truck trips/day: _____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐ Yes ☑ No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☑ Yes ☐ No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☑ Yes ☐ No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐ Yes ☑ No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑ Yes ☐ No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

iii. Will the proposed action require a new, or an upgrade to, an existing substation? ☐ Yes ☑ No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

ii. Will proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe:

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

ACCESSORY APARTMENT BASIC SAFETY ILLUMINATION E.G. FRONT DOOR

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe:

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products (185 gallons in above ground storage or any amount in underground storage)? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally describe proposed storage facilities:

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction:
- Operation:

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction:
- Operation:

1407

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☑ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

NONE CREATED

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces			
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No
i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No
If Yes,
i. Identify Facilities:

_____
_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No
If Yes:
i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____
iii. Provide date and summarize results of last inspection:

_____
_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No
If Yes:
i. Has the facility been formally closed? ☐ Yes ☑ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____
_____

iii. Describe any development constraints due to the prior solid waste activities: _____
_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____
_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☑ No

- ☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____
- ☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____
- ☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____
_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No
If yes, provide DEC ID number(s): _____
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____
_____

1409

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? UNKNOWN feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site: RESIDENTIAL SOIL 100 %
_____ %
_____ %

d. What is the average depth to the water table on the project site? Average: UNKNOWN feet

e. Drainage status of project site soils: ☑ Well Drained: _____ % of site
☐ Moderately Well Drained: _____ % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes: ☑ 0-10%: _____ % of site
☐ 10-15%: _____ % of site
☐ 15% or greater: _____ % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☑ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100 year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500 year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No

i. If Yes: acreage(s) on project site? _____

ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

1411

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on, or has been nominated by the NYS Board of Historic Preservation for inclusion on, the State or National Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within 5 miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: HUDSON RIVER

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): HIKING

iii. Distance between project and resource: ~ .3 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☑ Yes ☐ No

If Yes:

i. Identify the name of the river and its designation: HUDSON RIVER

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☑ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name BRIAN DONNELLY & SCOTT RAMSEY Date 03.23.22

Signature _____ Title OWNERS

John Clarke Planning and Design jclarkeplandesign@gmail.com
845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **18 North Walnut Street, Site Plan and Special Permit for Accessory Apartment**

I have reviewed the March 23, 2022 Special Permit Application, March 23, 2022 Full EAF Part 1, and a Site Plan sheet, dated March 22, 2022.

Proposal
The applicant is proposing the partial demolition of an existing garage and construction of a 448 square foot accessory apartment in the back yard of a single-family house in the R1-5 district.

Comments and Recommendations

1. An accessory apartment on an existing lot is a Type II action under SEQRA, so no EAF is necessary.

2. For the Zoning Information table:

    a. The parking requirement is two spaces for the house and one space for the accessory unit and the proposed accessory apartment should be listed in the table as 448 square feet.

    b. The Maximum Cumulative Square Footage for All Accessory Buildings in the R1-5 district is 720 square feet, not 750 square feet. The proposed 858 square foot total would need an area variance from the Zoning Board of Appeals.

    c. No building coverage requirement is listed for the R1-5 district, so a variance is not needed.

3. The fence noted along the northern property line has been removed. A replacement privacy fence should be considered along the property line near the proposed accessory apartment.

4. The plans should include a note confirming that the proposal will comply with the specific accessory apartment provision in Section 223-24.1, including that the existing house will remain a single-family home and that the property owner will occupy one of the dwelling units on the lot.

5. The plans should include four elevations of the new building with materials and colors labeled.

If you have any questions or need additional information, please feel free to contact me.

John Clarke, Beacon Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Justin Kacur, Highlands Architecture

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal
Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal
John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 8, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: 18 North Walnut
Accessory Apartment
Tax No. 5954-28-912934
City of Beacon

Dear Mr. Gunn:

My office has received the following in regard to the above application:

- Application for Special Use Permit for Accessory Apartment.
- Full Environmental Assessment Form
- Plan titled "Ramsey-Donnelly Residence – Site Plan", dated March 22, 2022, as prepared by Highland Architecture.

The proposed project is located in the R1-5 Zone and entails the construction of a 448 square foot apartment on the rear side of the lot behind the existing residence. Based upon our review of the submitted documents and plans, we offer the following comments:

General Comments:

1. The plan shall be revised to show the location of the existing water and sewer services that service the existing residence, along with showing how the apartment will be serviced with water and sewer.

We have no further engineering comments at this time. Further comments may be provided based on future submissions. **A written response letter addressing each of the above comments should be provided with the next submission.** If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,
LANC & TULLY, P.C.

John Russo, P.E.

cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

City of Beacon Planning Board Agenda
04/12/2022

Title:

Review application for Subdivision Approval, 2-lot residential, 146 Verplanck Avenue, submitted by James Petty

ATTACHMENTS

146 Verplanck Avenue Subdivision Application.pdf

146 Verplanck Avenue Cover Letter.pdf

146 Verplanck Avenue I & I Report.pdf

146 Verplanck Avenue Sheet 1 Cover Sheet.pdf

146 Verplanck Avenue Sheet 2 Existing Conditions.pdf

146 Verplanck Avenue Sheet 3 Subdivision Plat.pdf

146 Verplanck Avenue Sheet 4 Subdivision Plan.pdf

146 Verplanck Avenue Sheet 5 Construction Details.pdf

146 Verplanck Avenue Sheet 6 Construction Details.pdf

146 Verplanck Avenue Short EAF.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

APPLICATION FOR SUBDIVISION APPROVAL

Submit to Planning Board Secretary, One Municipal Plaza, Suite One, Beacon, New York 12508

IDENTIFICATION OF APPLICANT

Name: James Petty

Address: 146 Verplanck Avenue
Beacon, NY 12508

Signature: [signature]

Date: 3/22/22

Phone: (646) 883-9708

(For Official Use Only)

	Date	Initials
Preliminary Application Rec'd		
Application Fee:		
Public Hearing		
Preliminary Plat Approved:		
Final Plat Approved:		
Recreation Fee:		
Performance Bond:		

IDENTIFICATION OF REPRESENTATIVE / DESIGN PRFESSIONAL

Name: Daniel G. Koehler, P.E.

Address: 174 Main Street, Beacon, NY 12508

Phone: (845) 440-6926

Fax: (845) 440-6637

Email address: DKoehler@HudsonLandDesign.com

IDENTIFICATION OF SUBJECT PROPERTY:

Subdivision name or identifying title:

Petty Subdivision

Street which property abuts: Verplanck Avenue

Current Tax Map Designation: Section 6054 Block 21 Lot(s) 028928

Property ~~(does)~~ (does not) connect directly into a (State) (County) highway.

Land in subdivision ~~(is)~~ (is not) within 500 feet of a Municipal boundary.

Total area of property is 0.27 acres

ITEMS TO ACCOMPANY THIS APPLICATION

a. One electronic and five (5) **folded** copies of a subdivision plat showing the location of the subject property and the proposed development with respect to neighboring properties and developments.

b. An application fee, payable to the City of Beacon, computed per the attached fee schedule.

c. An initial escrow amount, payable to the City of Beacon, as set forth in the attached fee schedule.

APPLICATION FEES

Site Plan	**Residential** $500 + $250 per dwelling unit **Commercial** $500 + $250 per 1,000 s.f.
Special Use Permit	**Residential** $500 + $250 per dwelling unit **Commercial** $500 + $250 per 1,000 s.f.
Subdivision	$ 750 for 2-4 lots + $100 per lot $1,000 for 5 or more lots + $300 per lot
Zoning Board of Appeals	Use Variance $500 Area Variance $250 Interpretation $250

ESCROW FEES

ALL SUBDIVISIONS, AND RESIDENTIAL SITE PLAN AND SUP APPLICATIONS

No. of Lots or Dwelling Units	Initial Deposit	Depleted to	Replenishment
1-5 (including lot-line realignment)	$ 2,500	$ 1,000	Current bills + $1,000
6-15	$ 7,500	$ 2,500	Current bills + $1,000
Over 15	$ 15,000	$ 5,000	Current bills + $5,000

NON-RESIDENTIAL SITE PLAN AND SUP APPLICATIONS

	Initial Deposit	Depleted to	Replenishment
Existing Buildings/Change of Use with no site development	$ 1,500	$ 1,000	Current bills + $500
Up to 3,000 s.f. gross floor area	$ 2,500	$ 1,000	Current bills + $1,000
3,000 to 10,000 s.f. gross floor area	$ 2,500 + $0.50 per sq.ft. over 3,000	$ 2,500	Current bills + $2,500
Over 10,000 s.f. gross floor area	$ 7,500 + $0.50 per sq.ft. over 10,000	$ 2,500	Current bills + $2,500

ZONING

* *if required by Chairman*	Initial Deposit	Depleted to	Replenishment
Use Variance*	$ 1,000	$500	Current bills + $500
Area Variance*	$ 1,000	$500	Current bills + $500
Interpretation*	$ 1,000	$500	Current bills + $500

ARCHITECTURAL REVIEW OR CERTIFICATE OF APPROPRIATENESS ***(if not currently before PB)***

* *if required by Chairman*	Initial Deposit	Depleted to	Replenishment
Single Family House*	$500	$250	Current bills + $250
All others*	$500	$250	Current bills + $250

APPLICATION PROCESSING RESTRICTION LAW

Affidavit of Property Owner

Property Owner: James Petty

If owned by a corporation, partnership or organization, please list names of persons holding over 5% interest.

List all properties in the City of Beacon that you hold a 5% interest in:

Applicant Address: 146 Verplanck Avenue, Beacon NY 12508

Project Address: 146 Verplanck Avenue, Beacon NY 12508

Project Tax Grid # 6054-21-028928

Type of Application Subdivision for existing property

Please note that the property owner is the applicant. "Applicant" is defined as any individual who owns at least five percent (5%) interest in a corporation or partnership or other business.

I, James Petty, the undersigned owner of the above referenced property, hereby affirm that I have reviewed my records and verify that the following information is true.

1. No violations are pending for ANY parcel owned by me situated within the City of Beacon X
2. Violations are pending on a parcel or parcels owned by me situated within the City of Beacon
3. ALL tax payments due to the City of Beacon are current X
4. Tax delinquencies exist on a parcel or parcels owned by me within the City of Beacon
5. Special Assessments are outstanding on a parcel or parcels owned by me in the City of Beacon
6. ALL Special Assessments due to the City of Beacon on any parcel owned by me are current X

Signature of Owner

Title if owner is corporation

Office Use Only:	NO	YES	Initial
Applicant has violations pending for ANY parcel owned within the City of Beacon (Building Dept.)	___	___	_____
ALL taxes are current for properties in the City of Beacon are current (Tax Dept.)	___	___	_____
ALL Special Assessments, i.e. water, sewer, fines, etc. are current (Water Billing)	___	___	_____

CITY OF BEACON
PRELIMINARY SUBDIVISION PLAT
AND CONSTRUCTION PLANS SPECIFICATION FORM

Name of Application: Petty Subdivision

PRELIMINARY SUBDIVISION PLAT	**YES**	**NO**
The preliminary plat shall be clearly marked "Preliminary Plat", shall be drawn to a convenient scale but not less than 1" = 100', and shall contain the following information:	X	
Proposed subdivision name or identifying title, name, and address of property owner and subdivider (if other than owner), name and address of the surveyor and/or engineer preparing the plan, scale, approximate true North point, and date.	X	
The approximate location and dimensions of all property lines, the total acreage of the proposed subdivision, the location of any zoning, special district or municipal boundary lines affecting the subdivision, and the names of owners of record of properties adjoining and directly across the street from proposed subdivision.	X	
The location of all existing structures and pertinent features, including railroads, water bodies, water courses, wetlands, rock outcroppings, wooded areas, major trees, and stone walls, that may influence the design of the subdivision, plus accurate topography at a vertical contour interval of not more than two (2) feet. The topographic data shall be determined by field survey unless the Planning Board specifically waives this requirement and/or permits the substitution of topographic information obtained from other sources determined satisfactory for the particular case.	X	
The location and status of existing streets or private roads, easements and rights-of-way (if any), proposals for the layout of new streets or private roads (including widths and approximate curve radii) and any proposed easements, rights-of-way and/or reservations.	X	
The names of existing streets or private roads and proposed names for new streets or private roads.	X	
The proposed arrangement of lots, including identifying numbers and approximate area and dimensions of each.	X	
Location, size and nature of any area proposed to be reserved for park purposes.		X
A site location sketch, at a scale of one inch equals 400 feet, showing the general situation within 1,000 feet of the applicant's property with respect to surrounding properties, streets and private roads.	X	
Where the preliminary plat includes only a portion of an applicant's contiguous holding, the applicant shall also indicate, on a sketch at a scale of not less than one inch equals 200 feet, the probable future street or private road system, lot arrangement and location of park and other reservations for the remaining portion of the tract. Such sketch shall be for the purpose of guiding the Planning Board in reviewing the proposed preliminary plat and shall include topographic data with a vertical contour interval of not more than five feet plus any other information determined necessary by the Planning Board.		X
Such additional information as may be required by Chapter 195 – Subdivision of Land; Chapter 223 – Zoning; or the Planning Board.	X	

PRELIMINARY CONSTRUCTION PLANS	YES	NO
The preliminary construction plans shall be drawn at the same scale as the preliminary plat and shall include the following information:		
Location and sizes of any existing water, sewer storm drainage and other utility lines and structures within and nearby the proposed subdivision.	X	
The proposed system for the provision of water supply and fire protection facilities, sewage disposal, stormwater drainage, and other utility services.	X	
Proposed street or private road profiles and cross-sections showing the approximate grade of proposed streets or private roads, the relationship of existing to proposed grades, and the proposed grades, and the proposed vertical curvature along the center line of all new streets or private roads.		X
Location of all existing and proposed monuments and other subdivision improvements.	X	
Such additional information as may be required by this chapter, the Zoning chapter, or the Planning Board.	X	

CITY OF BEACON
FINAL SUBDIVISION PLAT
AND CONSTRUCTION PLANS SPECIFICATION FORM

Name of Application: Petty Subdivision

FINAL SUBDIVISION PLAT	**YES**	**NO**
The final subdivision plat shall be drawn clearly and legibly on transparent tracing cloth with black waterproof ink, at a scale no smaller than one inch equals 100 feet but preferably at a scale of one inch equals 50 feet. The sheet size shall not exceed 36 inches by 48 inches. If the size of proposed subdivision required a drawing larger than this, two or more sheets may be submitted, with match lines clearly indicated, and an index map shall be prepared on the same size sheet.	X	
The final plat shall contain the following information:		
Proposed subdivision name or identifying title, name, and address of owner of record and of subdivider (if other than owner), certification and seal of the registered engineer or licensed land surveyor who prepared the plat, names of the owners of record of adjoining properties and of properties directly across the street or private road, graphic scale, approximate true North point, and date.	X	
The location and dimensions of all boundary lines of the proposed subdivision, and all existing and proposed streets, private roads, lot lines, easements and rights-of-way, with sufficient data to readily determine the location, bearing and length of all such lines and to reproduce such lines upon the ground.	X	
The names of all existing and proposed streets and private roads.	X	
The locations of all water bodies and watercourses.		X
The location of all existing buildings, including identification of all buildings to be removed as a condition of plat approval.	X	
The total acreage included in the entire subdivision, and the identification number and acreage of all lots and land reservations within the proposed subdivision.	X	
Location of all existing and proposed monuments.	X	
A site location map, at a scale of one inch equals 400 feet, showing the location of the subject property with respect to neighboring properties, streets and private roads.	X	
Notations explaining any drainage, sight slope, street widening, park area or other reservations or easements, including any self-imposed restrictions or covenants.		X
Endorsement of approval by the Dutchess County Health Department.	X	
Plan for the provisional delivery of mail, as approved by the local postmaster.	X	
Endorsement of the owner as follows: "Approved for filing: _____ _____" Owner Date	X	

FINAL SUBDIVISION PLAT *(continued)*	**YES**	**NO**
Form for endorsement by Planning Board Chairman as follows: "Approved by Resolution of the Planning Board of the City of Beacon, New York, on the _____ day of _____, 20_____, subject to All requirements and conditions of said Resolution. Any change, erasure, modification or revision of this plat, as approved, shall void this approval. Signed this _____ day of _____, 20_____, by _____, Chairman _____, Secretary In absence of the Chairman or Secretary, the Acting Chairman or Acting Secretary Respectively may sign in this place.	X	
Such additional information as may be required by Chapter 195 – Subdivision of Land; Chapter 223 – Zoning; or the Planning Board.	X	
Stormwater pollution prevention plan. A stormwater pollution prevention plan consistent with the requirements of Chapter 190 and with the terms of preliminary plan approval shall be required for final subdivision plat approval. The SWPPP shall meet the performance and design criteria and standards in Chapter 190, Article II. The approved final subdivision plat shall be consistent with the provisions of Chapter 190.		X

FINAL CONSTRUCTION PLANS	**YES**	**NO**
Final construction plans and profiles shall be prepared for all proposed streets, private roads and other required improvements. Plans shall be drawn at the same scale as the final plat and on the same size sheets, but not on the same sheets. The following information shall be shown:		
Plans and profiles showing the location and a typical cross-section of street and/or private road pavements including curbs and gutters, sidewalks, manholes and catch basins; the location of street or private road trees, lighting and signs; the location, size and invert elevations of existing and proposed sanitary sewers, stormwater drains and fire hydrants; the location and size of all water, gas or other underground utilities or structures; and the location and design of any other required improvements.		X
Profiles showing existing and proposed elevations along the center line of all streets and private roads. Where a proposed street or private road intersects an existing street or private road, the elevation along the center line of the existing street or private road within 100 feet of intersection, shall be shown. All elevations must be referred to established U.S. Government of approved local benchmarks, where they exist within ½ mile of the boundary of the subdivision.		X
The Planning Board may require, where steep slopes exist, cross-sections showing existing and proposed elevations of all new streets and private roads every 100 feet at five points on a line at right angles to the center line of the street or private road, said elevation points to be at the center line of the street or private road, each property line, and points 30 feet inside each property line.		X
Location, size, elevation and other appropriate description of any existing facilities which will be connected to proposed facilities and utilities within the subdivision.	X	

FINAL CONSTRUCTION PLANS ***(continued)***		
Where the design of the subdivision requires the regarding of land, the regarding of land, the regraded contours shall be shown along with estimates of the quantity of material to be added or removed and the proposed measures to be implemented by the subdivider to rehabilitate the disturbed area or areas.	X	
Title of all sheets, name, address, signature and seal of licensed engineer preparing the construction plans, the date prepared, including revisions dates if any, approximate true North point, scale, and consecutive numbering as sheet _____ of _____.	X	
A notation of approval, on all sheets as follows "Approved by: _____ _____ Owner Date and _____ _____ Planning Board Chairman Date"	X	
Such additional information as may be required by Chapter 195 – Subdivision of Land; Chapter 223 – Zoning; or the Planning Board.	X	

For all items marked "NO" above, please explain below why the required information has not been provided:

All items marked "No" are not applicable to this particular application

Applicant/Sponsor Name: Daniel G. Koehler, P.E., Engineer for Applicant

Signature: _____

Date: March 21, 2022

FOR OFFICE USE ONLY
Application #

CITY OF BEACON
1 Municipal Plaza, Beacon, NY
Telephone (845) 838-5000 • http://cityofbeacon.org/

INDIVIDUAL DISCLOSURE FORM

(This form must accompany every land use application and every application for a building permit or certificate of occupancy submitted by any person(s))

Disclosure of the names and addresses of all persons) filing a land-use application with the City is required pursuant to Section 223-62 of the City Code of the City of Beacon. Applicants shall submit supplemental sheets for any additional information that does not fit within the below sections, identifying the Section being supplemented.

SECTION A

Name of Applicant: James Petty

Address of Applicant: 146 Verplanck Avenue, Beacon NY 12508

Telephone Contact Information: (646) 883-9708

SECTION B. List all owners of record of the subject property or any part thereof.

Name	Residence or Business Address	Telephone Number	Date and Manner title was acquired	Date and place where the deed or document of conveyance was recorded or filed.
James Petty	146 Verplanck Ave. ,Beacon NY 12508	(646) 883-9708	July 3, 2019 Sale of property	7/9/2019 Dutches County Clerk Office
Julia Louise Onorato	146 Verplanck Ave. ,Beacon NY 12508	(646) 883-9708	July 3, 2019 Sale of property	7/9/2019 Dutches County Clerk Office

SECTION B. Is any owner of record an officer, elected or appointed, or employee of the City of Beacon or related, by marriage or otherwise, to a City Council member, planning board member, zoning board of appeals member or employee of the City of Beacon ?

☐ **YES** ☒ **NO**

If yes, list every Board, Department, Office, agency or other position with the City of Beacon with which a party has a position, unpaid or paid, or relationship and identify the agency, title, and date of hire.

Agency	Title	Date of Hire, Date Elected, or Date Appointed	Position or Nature of Relationship

SECTION C. If the applicant is a contract vendee, a duplicate original or photocopy of the full and complete contract of purchase, including all riders, modification and amendments thereto, shall be submitted with the application.

SECTION D. Have the present owners entered into a contract for the sale of all or any part of the subject property and, if in the affirmative, please provide a duplicate original or photocopy of the fully and complete contract of sale, including all riders, modifications and amendments thereto.

☐ **YES** ☒ **NO**

I, James Petty being first duly sworn, according to law, deposes and says that the statements made herein are true, accurate, and complete.

(Print) James Petty

(Signature) _____

HUDSON LAND DESIGN

Civil & Environmental Engineering Consultants
174 Main Street, Beacon, New York 12508 (Main Office and Mailing Address)
13 Chambers Street, Newburgh, New York 12550 (Satellite Office)
Phone: 845-440-6926 Fax: 845-440-6637
www.HudsonLandDesign.com

March 29, 2022

Mr. John Gunn, Chairman, & Members of the City of Beacon Planning Board
1 Municipal Center
Beacon, NY 12508

Re: Petty Subdivision (146 Verplanck Avenue)
Tax ID: 6054-21-028928 (±0.271 Acres Total)
City of Beacon, New York

Dear Chairman Gunn & Members of the Planning Board:

On behalf of the Applicant for the above referenced project, Hudson Land Design (HLD) has enclosed the following materials for the Planning Board's consideration at your next available regularly scheduled meeting:

- Application for Subdivision Approval (5 copies);
- Application for Processing Restriction Law (5 copies);
- Preliminary Subdivision Plat and Plan Set – 6 Sheets (5 copies);
- A Short Environmental Assessment Form (5 copies);
- Infiltration and Inflow Investigation Report (5 copies)
- Copy of the above noted items on CD; and
- Two checks for application and escrow fees in the amount of $950 and $2,500, respectively.

The owner/applicant is seeking to subdivide the existing lot into two lots. The existing lot is developed with a single-family house and a concrete driveway. The subdivision component creates two usable lots, one consisting of the existing single-family residence, and on the second lot, the owner/applicant wishes to build an additional single-family home with ingress and egress via its own independent driveway, and all required utility connections to municipal services.

We look forward to further discussing the design details of the project with you and your Board members and will seek to schedule a SEQR public hearing following our discussion.

Should you have any questions or require additional information, please feel free to call me at 845-440-6926.

Sincerely,



Daniel G. Koehler, P.E
Principal

cc: James Petty & Julia Louise Onorato (via email)
Robert V. Oswald, L.S., Project Surveyor (via email)
Michael A. Bodendorf, P.E. (HLD File)

HUDSON LAND DESIGN

Civil & Environmental Engineering Consultants
174 Main Street, Beacon, New York 12508 (Main Office and Mailing Address)
13 Chambers Street, Newburgh, New York 12550 (Satellite Office)
Phone: 845-440-6926 Fax: 845-440-6637
www.HudsonLandDesign.com

March 28, 2022

Mr. John Gunn, Chairman, & Members of the City of Beacon Planning Board
1 Municipal Center
Beacon, NY 12508

Re: Infiltration and Inflow Investigation
Petty Subdivision
Tax ID: 6054-21-028928 (±0.271 Acres Total)
City of Beacon, New York

Dear Chairman Gunn & Members of the Planning Board,

Hudson Land Design (HLD) has completed an infiltration and inflow investigation at the above referenced parcel as required by the City of Beacon. The investigation was conducted on March 22, 2022 at the existing residence located at 146 Verplanck Avenue in the City of Beacon, which consists of a two-story framed building.

The first phase of the study consisted of an exterior inspection of the building to determine the location of roof leader discharge points. The existing two-story building on site has 3 sets of gutters, 2 which run along the building's north and south sides, and 1 gutter runs along the western (street facing) side of the house's front porch.

The gutters which run along the north and south sides of the building collect the rainwater intercepted by the second-floor roof and appear to transport it easterly towards the back end of the residence. On the back side of the residence (away from Verplanck Avenue) the north and south gutters' roof leaders discharge onto a first-floor slanted roof and then along an overhang roof. Neither the first-floor roof nor the overhang roof have any gutters or roof leaders, and the water appears to just drop off the overhang onto the ground at the back end of the residence (no roof leader that lead to or into the ground). Please see pictures below for reference.

View of the second-floor gutters along the residence's south side as seen from southeast of the building.



View of the second-floor gutters along the residence's north side near the building's northeast corner.



View of the first-floor roof and overhang on the back of the building. No gutters are present on the overhang or first-floor roof.



The third set of gutters present on the building was a gutter running along the street facing side of the residence's front porch. The gutter appears to collect the rainwater that exclusively falls onto the porch's roof and get directed/discharged to a roof leader by the porch's southwest corner. The roof leader discharges onto the ground/lawn on the porch's southeast corner. Please see the picture provided for reference.

View of the residence's front porch and roof leader outlet (by the porch's southwest corner).



The second phase of the study consisted of interior inspection of the building to determine if there are any illicit connections to the building sewer line from sump pumps, floor drains and the like. HLD personnel were able to observe sections of interior sanitary sewer plumbing to the point where the sanitary sewer lines within the house converged into what is believed to be the raw invert outlet for the residence. The raw invert outlet was located near the residence's southeast corner on the basement level. After inspecting the lines going into the outlet, it appears that no other connections except for sanitary sewage are connected to any of the lines. The raw invert outlet goes directly down into the ground of the basement and is presumed to then direct southwest towards the existing sewer lines on Verplanck Avenue. Please see the pictures below for reference.

View of the sewer lines as they lead to the raw invert outlet.



View of the raw invert outlet connection near the basement's southeastern corner.



A sump pump was observed along the basement's northwest corner near the house's circuit breaker box. The pump's forcemain is routed through the building's north foundation wall and appears to discharge to the lawn just north of the lot's concrete driveway. No other forcemain pipes were found and no other indications that the sump pump was connected to a sanitary sewer system was found. Please see pictures for reference.

View of the sump pump by the basement's northwest corner.



View of the sump pump's discharge point north of the residence and the concrete driveway on site.



HLD did not find any illicit connections from the building located at 146 Verplanck Avenue to the City of Beacon's sanitary sewer collection system.

Should you have any questions, please feel free to call me at 845-440-6926.

Sincerely,

Daniel G. Koehler, P.E.

cc: James Petty & Julia Louise Onorato (via email)
Michael A. Bodendorf, P.E. (HLD file)

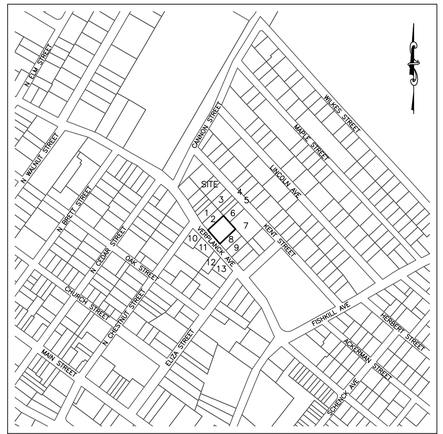
PETTY SUBDIVISION

RESIDENTIAL SUBDIVISION

146 VERPLANCK AVE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

PARCEL INFORMATION:
TAX ID: 6054-21-028928
TOTAL LOT AREA: ±0.27 ACRES
ZONING DISTRICT: R1-5

PROJECT INFORMATION:	
PARCEL OWNER:	JAMES PETTY, 146 VERPLANCK AVENUE, BEACON NY 12508
PROJECT ENGINEER:	HUDSON LAND DESIGN P.C., 174 MAIN STREET, BEACON NY 12508
PARCEL LOCATION:	146 VERPLANCK AVENUE, BEACON NY 12508
TAX PARCEL ID:	6054-21-028928
PARCEL AREA:	±0.27-ACRES
WATER SUPPLY:	PROPOSED MUNICIPAL
SEWAGE DISPOSAL:	PROPOSED MUNICIPAL



SITE LOCATION MAP SCALE: 1" = 400'

ADJOINING OWNERS (WITHIN 100 FEET):
PARCEL: OWNER & ADDRESS
1. JOSE GALLEGO, 134 VERPPLANCK AVE, BEACON NY 12508
2. CAROLINE TURNER, 158 MINUTEMAN RD, RIDGEFIELD CT 06877
3. RICHARD BONANNO, 64 KENT STREET, BEACON NY 12508
4. AMPARO TAMAYO, PO BOX 321, BEACON NY 12508
5. DI BANO INC., 121 OLD CASTLE POINT ROAD, WAPPINGERS FALLS NY 12590
6. CYNTHIA KONZEN, 52 KENT STREET, BEACON NY 12508
7. ROBERT LEITNER, 5601 HIGHWAY A1A, VERO BEACH FL 32763
8. JOHN LEINUNG, 150 VERPLANCK AVE, BEACON NY 12508
9. KIMBERLY BLANCHARD, 156 VERPLANCK AVE, BEACON NY 12508
10. JACKLYN FAUST INTERIORS LLC., 99 DUTCHESS TER, BEACON NY 12508
11. LEONARD ROMANELLI, 151 VERPLANCK AVE, BEACON NY 12508
12. DOROTHY AUGUST, 155 VERPLANCK AVE, BEACON NY 12508
13. BENIGNO ECHEVARRIA, 161 VERPLANCK AVE, BEACON NY 12508

PROJECT ENGINEER:
HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN STREET
BEACON, NEW YORK 12508
PH: 845-440-6926
F: 845-440-6637

OWNER/APPLICANT:
JAMES PETTY
146 VERPLANCK AVENUE
BEACON, NEW YORK 12508
PH: 646-883-9708

PROJECT SURVEYOR:
ROBERT V. OSWALD, L.S.
175 WALSH ROAD
LAGRANGEVILLE, NEW YORK 12540
PH: 845-226-1315

DRAWING INDEX:
SHEET 1: COVER SHEET (CV-1)
SHEET 2: EXISTING CONDITIONS & REMOVALS PLAN (XC-1)
SHEET 3: SUBDIVISION PLAT (PT-1)
SHEET 4: SUBDIVISION PLAN (SP-1)
SHEET 5: CONSTRUCTION DETAILS (CD-1)
SHEET 6: CONSTRUCTION DETAILS (CD-2)

OWNER'S CONSENT:
THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ _____
JAMES PETTY DATE

DCDOH STANDARD NOTE:

FOR PERMISSION TO FILE
THIS PLAN DOES NOT CONSTITUTE A REALTY SUBDIVISION AS DEFINED BY ARTICLE XI, TITLE II, SECTION 1115 OF THE PUBLIC HEALTH LAW OF THE STATE OF NEW YORK, AND ARTICLE XI OF THE DUTCHESS COUNTY SANITARY CODE. PERMISSION IS HEREBY GRANTED FOR THE FILING OF THIS MAP WITH THE CLERK OF DUTCHESS COUNTY. APPROVAL FOR ARRANGEMENTS FOR WATER SUPPLY AND/OR SEWAGE DISPOSAL IS NEITHER SOUGHT NOR GRANTED.

_____ _____
AUTHORIZED REPRESENTATIVE OF THE COMMISSIONER OF HEALTH DATE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: DGK			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

Dig Safely. New York Call 811 before you dig

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

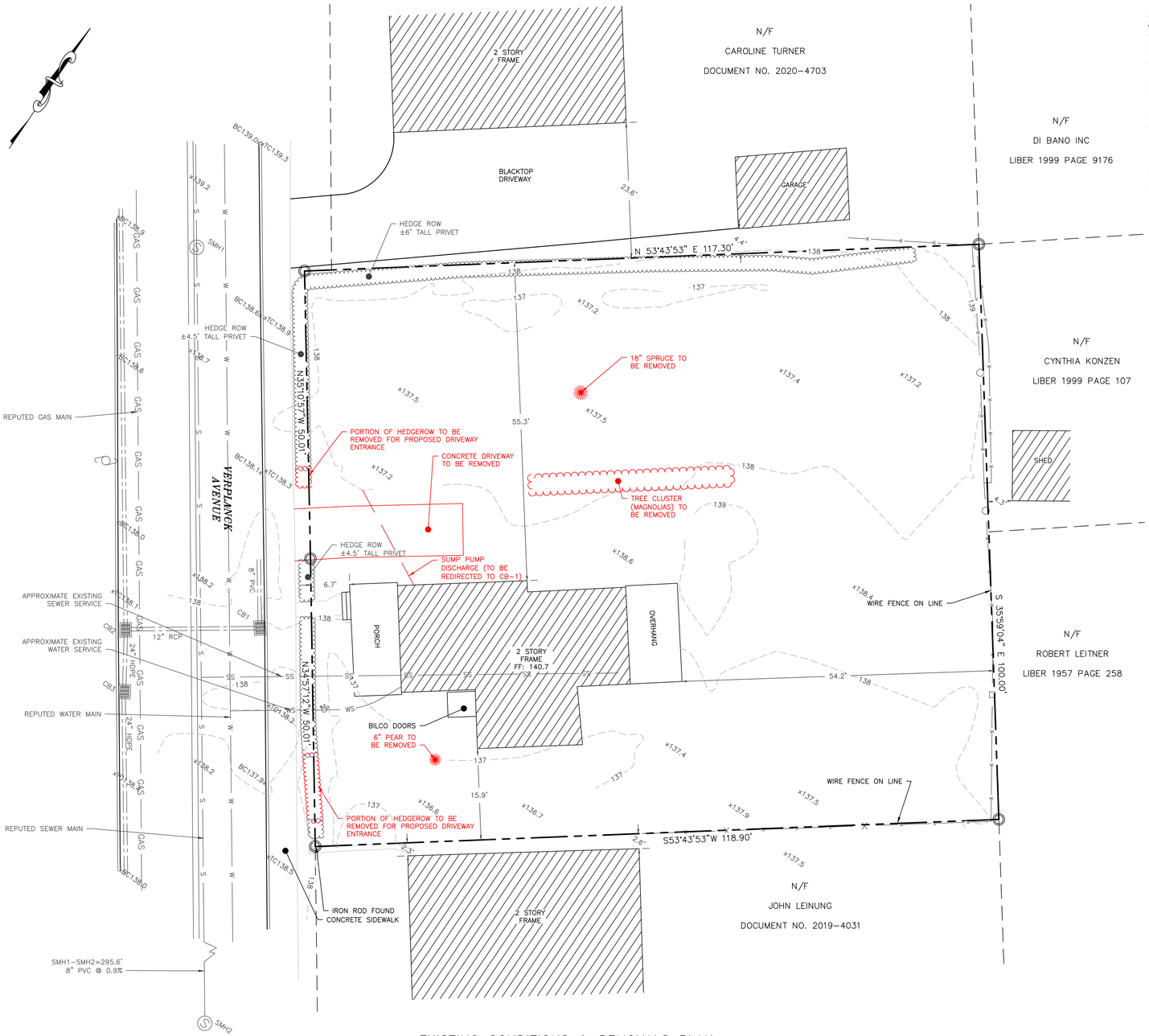
COVER SHEET

PETTY SUBDIVISION
REVISION TO FILED MAP NO. 208

146 VERPLANCK AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-21-028928

JOB #:	2022:004
DATE:	3/29/2022
SCALE:	AS SHOWN
TITLE:	CV-1
SHEET:	1 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER SHUT OFF VALVE
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN
- EXISTING GAS MAIN

KEY

CB1
RIM=137.9'
INV I=136.1'
INV O=135.6'

CB2
RIM=137.7'
INV I=133.9'
INV I=135.3'
INV O=133.7'

CB3
RIM=137.8'
INV I=133.6'
INV O=133.8'

SMH1
RIM=138.9'
INV I=132.7'
INV O=132.6'

SMH2
RIM=138.9'
INV I=129.8'
INV O=129.7'

SURVEY REFERENCE:

1. "MAP OF SURVEY FOR THE LANDS OF JAMES PETTY" DATED FEBRUARY 16, 2022 AS PREPARED BY ROBERT V. OSWALD LS. (845) 226-6436.

SURVEY NOTES:

1. BEING THE SAME PARCELS AS DESCRIBED IN THE LIBER DOCUMENT NUMBER 2019-4044 AND SUBJECT TO RESTRICTIONS AND CONDITIONS THEREIN.
2. TOGETHER WITH ANY RIGHT, TITLE OR INTEREST IN AND TO THE CENTER OF THE PUBLIC ROADS SHOWN HEREON.
3. BEING LOT NO. 41 & 42 AS SHOWN ON FILED MAP NO. 208.
4. UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYORS SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
5. ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.
6. CERTIFICATION INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATIONS SHALL RUN ONLY TO THE PERSONS FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
7. THIS SURVEY IS SUBJECT TO ANY FINDINGS OF A TITLE SEARCH.
8. SUBSURFACE STRUCTURES AND UTILITIES WHICH WERE NOT VISIBLE AT THE TIME OF THE SURVEY HAVE NOT BEEN SHOWN.
9. © ALL RIGHTS RESERVED. COPYING OR REPRODUCTION OF THIS PLAN OR ANY PORTION THEREOF PROHIBITED WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER / SURVEYOR.

EXISTING CONDITIONS & REMOVALS PLAN

SCALE: 1" = 10'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

I HEREBY CERTIFY THAT THE SURVEY SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY COMPLETED ON FEBRUARY 16, 2022.

BY: _____
Robert V. Oswald , L.L.S. N.Y. State Lic. no. 50031

OWNER'S CONSENT:

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ _____
JAMES PETTY DATE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: DGK			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

Dig Safely. New York Call 811 before you dig

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

PRELIMINARY SUBDIVISION PLAT

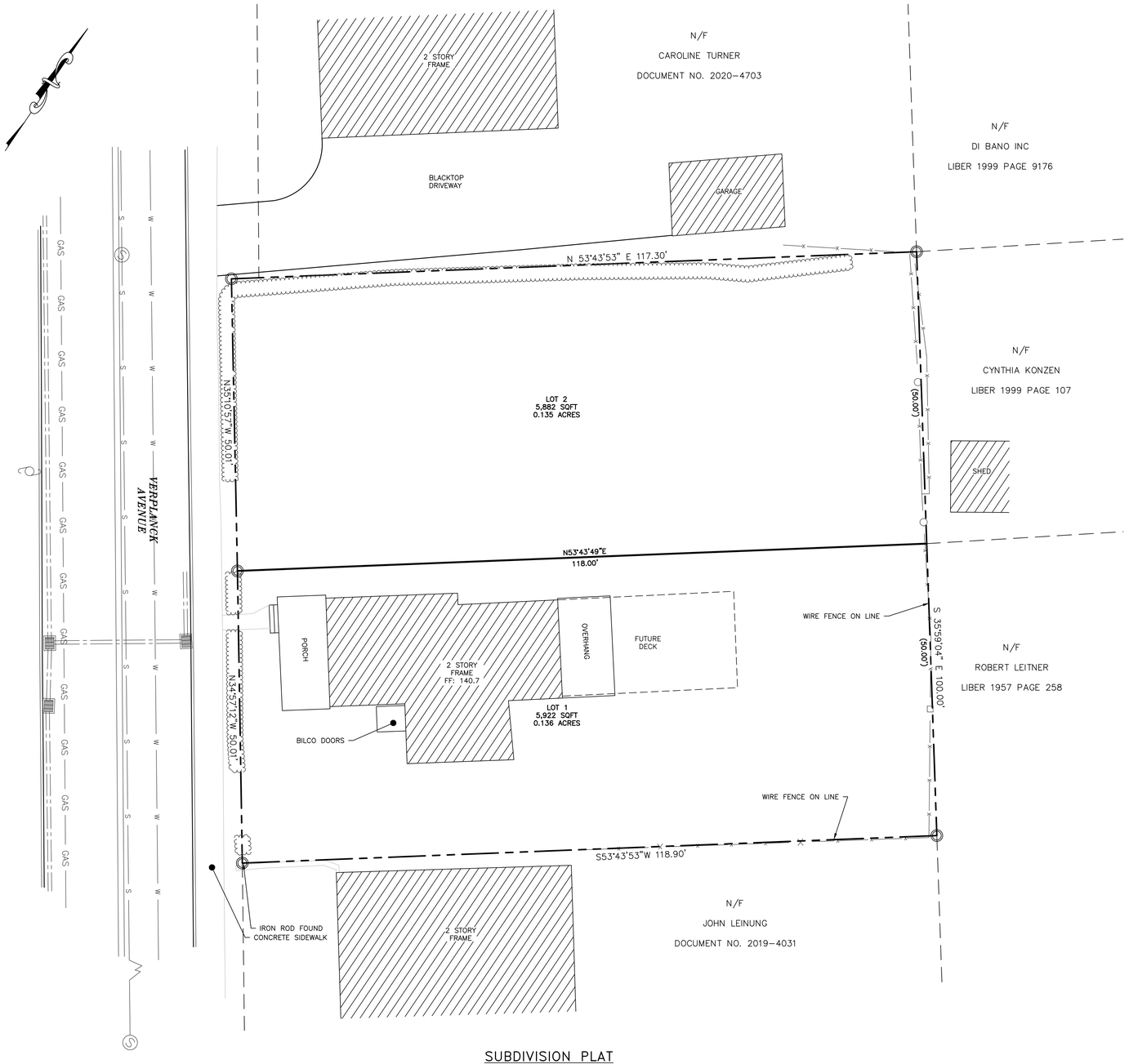
PETTY SUBDIVISION

REVISION TO FILED MAP NO. 208

146 VERPLANCK AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-21-028928

JOB #:	2022:004
DATE:	3/29/2022
SCALE:	1" = 10'
TITLE:	XC-1
SHEET:	2 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



LEGEND:

EXISTING PROPERTY LINE
ADJOINING PROPERTY LINE
PROPOSED PROPERTY LINE

SCHEDULE OF REGULATIONS (R1-5 ZONING DISTRICT) AND LOT CONFORMANCE TABLE:

PARAMETER	REQUIREMENT	LOT #1	LOT #2
LOT AREA:	5,000 SQUARE FEET MIN.	5,922 S.F.	5,882 S.F.
LOT WIDTH:	50 FEET MINIMUM	50.0 FEET	50.0 FEET
LOT DEPTH:	100 FEET MINIMUM	118.0 FEET	117.3 FEET

SURVEY REFERENCE:

1. "MAP OF SURVEY FOR THE LANDS OF JAMES PETTY" DATED FEBRUARY 16, 2022 AS PREPARED BY ROBERT V. OSWALD L.S. (845) 226-6436.

SURVEY NOTES:

1. BEING THE SAME PARCELS AS DESCRIBED IN THE LIBER DOCUMENT NUMBER 2019-4044 AND SUBJECT TO RESTRICTIONS AND CONDITIONS THEREIN.
2. TOGETHER WITH ANY RIGHT, TITLE OR INTEREST IN AND TO THE CENTER OF THE PUBLIC ROADS SHOWN HEREON.
3. BEING LOT NO. 41 & 42 AS SHOWN ON FILED MAP NO. 208.
4. UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYORS SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
5. ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.
6. CERTIFICATION INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATIONS SHALL RUN ONLY TO THE PERSONS FOR WHOM THE SURVEY IS PREPARED, AND ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON, AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
7. THIS SURVEY IS SUBJECT TO ANY FINDINGS OF A TITLE SEARCH.
8. SUBSURFACE STRUCTURES AND UTILITIES WHICH WERE NOT VISIBLE AT THE TIME OF THE SURVEY HAVE NOT BEEN SHOWN.
9. © ALL RIGHTS RESERVED. COPYING OR REPRODUCTION OF THIS PLAN OR ANY PORTION THEREOF PROHIBITED WITHOUT THE WRITTEN PERMISSION OF THE DESIGN ENGINEER / SURVEYOR.

TOTAL PARCEL AREA:

±11,804 S.F. OR ± 0.27 ACRE

TAX MAP REFERENCE:

CITY OF BEACON 6054-21-028928

FLOOD BOUNDARY:

SUBJECT PARCEL IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANGE FLOODPLAIN) PER PANEL 36027C0464E DATED MAY 2, 2012.

WETLAND NOTE:

NO NYSDEC OR FEDERAL WETLANDS WERE FOUND ONSITE.

SUBDIVISION PLAT

SCALE: 1" = 10'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

I HEREBY CERTIFY THAT THE SURVEY SHOWN HEREON IS BASED ON AN ACTUAL FIELD SURVEY COMPLETED ON FEBRUARY 16, 2022.

BY: _____
Robert V. Oswald , L.L.S. *N.Y. State Lic. no. 50031*

OWNER'S CONSENT:

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ _____
JAMES PETTY DATE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____ BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: DGK			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

Dig Safely. New York. Call 811 before you dig

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

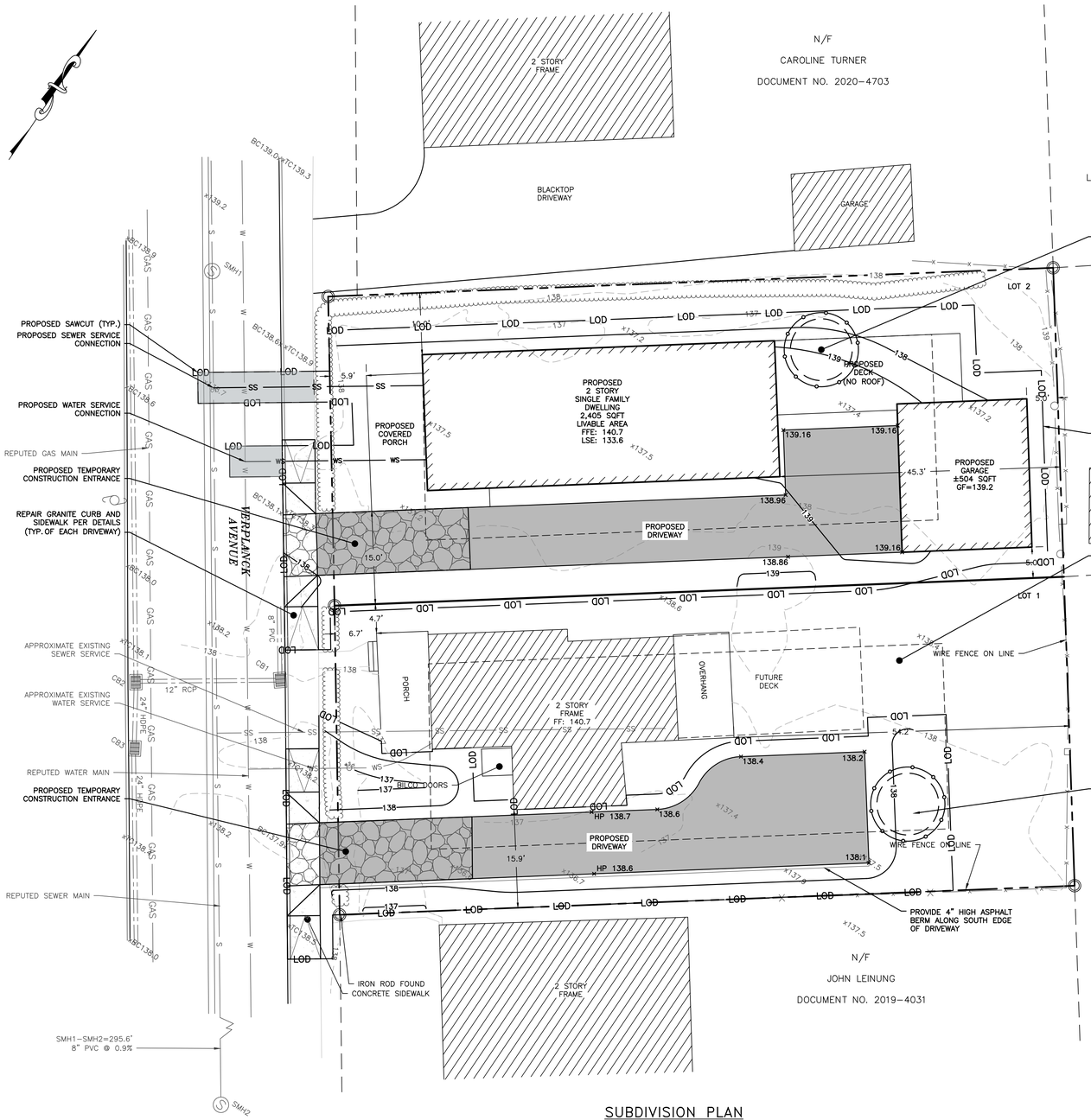
EXISTING CONDITIONS & REMOVALS PLAN

PETTY SUBDIVISION
REVISION TO FILED MAP NO. 208

146 VERPLANCK AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-21-028928

JOB #:	2022:004
DATE:	3/29/2022
SCALE:	1" = 10'
TITLE:	PT-1
SHEET:	3 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



SUBDIVISION PLAN
SCALE: 1" = 10'

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

LEGEND:

- EXISTING PROPERTY LINE
- ADJOINING PROPERTY LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OVER HEAD WIRE
- EXISTING UTILITY POLE
- EXISTING SEWER SERVICE LINE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER CLEAN OUT
- EXISTING WATER LINE
- EXISTING WATER SERVICE LINE
- EXISTING WELL
- EXISTING HYDRANT
- EXISTING WATER SHUT OFF VALVE
- EXISTING WATER VALVE
- EXISTING STORM WATER LINE
- EXISTING CATCH BASIN
- EXISTING GAS MAIN
- PROPOSED PROPERTY LINE
- PROPOSED SET BACK LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED EASEMENT
- PROPOSED TREE LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER SERVICE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEAN OUT
- PROPOSED SDS LATERAL
- PROPOSED SDS SOLID LINE
- PROPOSED STORM WATER LINE
- PROPOSED ROOF LEADER LINE
- PROPOSED ROOF LEADER
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE LINE
- PROPOSED WELL
- PROPOSED HYDRANT
- PROPOSED WATER SHUT OFF VALVE
- PROPOSED WATER VALVE
- PROPOSED SILT FENCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED CATCH BASIN INLET PROTECTION
- PROPOSED CONSTRUCTION ENTRANCE

KEY

CB1
RIM=137.9'
INV I=136.1'
INV O=135.6'

CB2
RIM=137.7'
INV I=133.9'
INV I=135.3'
INV O=133.7'

CB3
RIM=137.8'
INV I=133.6'
INV O=133.8'

SMH1
RIM=138.9'
INV I=132.7'
INV O=132.6'

SMH2
RIM=138.9'
INV I=129.8'
INV O=129.7'

SCHEDULE OF REGULATIONS (R1-5 ZONING DISTRICT) AND LOT CONFORMANCE TABLE:

PARAMETER	REQUIREMENT	LOT #1	LOT #2
LOT AREA:	5,000 SQUARE FEET MIN.	5,922 S.F.	5,882 S.F.
LOT WIDTH:	50 FEET MINIMUM	50.0 FEET	50.0 FEET
LOT DEPTH:	100 FEET MINIMUM	118.0 FEET	177.3 FEET
YARD SETBACKS (RESIDENTIAL USE):			
FRONT YARD:	15 FEET MINIMUM	6.7 FEET*	5.9 FEET*
SIDE YARD:	10 FEET MINIMUM	4.7 FEET**	10.0 FEET
REAR YARD:	20 FEET MINIMUM	54.2 FEET	45.3 FEET
MAX. BUILDING HEIGHT:	MAX 35 FEET, 2.5 STORIES	<35 FEET	<35 FEET
DWELLING UNITS PER LOT:	MAX 1	1	1

* PER §223-13(B), THE FRONT YARD SETBACK IS TO THE COVERED PORCH. THE PROPOSED COVERED PORCH FRONT YARD IS CONSISTENT WITH THE EXISTING ALIGNMENT OF BUILDINGS WITHIN 250' PER §223-13(K), SO NO VARIANCE IS REQUIRED.

** 4.7 FEET PROVIDED WHERE 10 FEET IS REQUIRED, THEREFORE REQUIRING RELIEF OF 5.3 FEET. AN APPLICATION TO THE ZONING BOARD OF APPEALS IS REQUIRED, REQUESTING STATED RELIEF.

SITE SPECIFIC NOTES:

1. THE CONTRACTOR SHALL PERFORM A UTILITIES CALL-OUT PRIOR TO CONSTRUCTION TO VERIFY ALL UNDERGROUND UTILITY LOCATIONS BY CONTACTING UFPO @ 1-800-962-7962. SPECIFIC ATTENTION SHALL BE PAID TO THE LOCATIONS OF THE GAS (IF APPLICABLE), WATER AND SEWER MAINS WITH RESPECT TO THE PROPOSED LOCATIONS FOR THE SERVICE LINES.
2. THE CONTRACTOR SHALL CONTACT THE CITY OF BEACON WATER AND SEWER DEPARTMENTS TO SCHEDULE A PRE-CONSTRUCTION MEETING TO ENSURE THAT THE ARRANGEMENTS FOR WATER SUPPLY AND SEWAGE DISPOSAL ARE COMMENCED IN ACCORDANCE WITH THE APPROVED PLANS AND AMENDMENTS THERETO AND GENERALLY ACCEPTED STANDARDS.
3. THE PROPOSED LOT SHALL BE SERVED BY THE CITY OF BEACON MUNICIPAL WATER AND SEWER SERVICES.
4. THE WATER SERVICE LINE AND METER SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF BEACON WATER DEPARTMENT REQUIREMENTS.
5. THE WATER SERVICE LINE SHALL BE 3/4"ø K-COPPER.
6. THE SEWER SERVICE LINE SHALL BE 4"ø SDR 35 PVC PIPE WITH PITCH AS SHOWN ON THE PLAN (MINIMUM OF ¼" PER FOOT SHALL BE MAINTAINED).
7. A ROAD OPENING PERMIT SHALL BE REQUIRED FOR THE INSTALLATION OF THE PROPOSED WATER AND SEWER SERVICES FOR THE NEW LOT. STREET CLOSURE FOR WATER AND SEWER SERVICE CONNECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF BEACON REQUIREMENTS.
8. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. THE PROPOSED DRIVEWAY SHALL HAVE A STABILIZED CONSTRUCTION ENTRANCE.
9. ROOF LEADER CONNECTIONS TO BE MINIMUM 4"ø PVC OR HDPE @ 2.0% MIN.
10. SUMP PUMP TO BE PROVIDED FOR FOOTING DRAIN, IF NECESSARY. THE TYPE OF PUMP AND METHODS USED TO ENSURE PROPER DRAINAGE SHALL BE ACCEPTABLE TO THE CITY OF BEACON BUILDING DEPARTMENT.
11. THE DRIVEWAY SIGHT DISTANCE MEETS OR EXCEEDS COMPLIANCE WITH THE CITY OF BEACON'S 192-9(B) CODE AND THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS. THE STATE UTILIZES THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) GUIDELINES FOR INTERSECTION SIGHT DISTANCES. FOR ROADS WITH A SPEED LIMIT OF 30 MPH, AASHTO DESIGN TABLES CALL FOR A SIGHT DISTANCE OF 290 FEET TO THE LEFT AND 335 FEET TO THE RIGHT. THE MEASURED SIGHT DISTANCE IS AS FOLLOWS:
    LOT 1: SLSD LEFT = ±667 FEET (ASSUMED TO INTERSECTION OF VERPLANCK AND FISHKILL AVE)
    SLSD RIGHT = ±544 FEET
    STOPPING SIGHT DISTANCE (SSD) WAS OBSERVED TO BE WELL IN EXCESS OF THE REQUIRED 200 FEET
    LOT 2: SLSD LEFT = ±717 FEET (ASSUMED TO INTERSECTION OF VERPLANCK AND FISHKILL AVE
    SLSD RIGHT = ±495 FEET
    STOPPING SIGHT DISTANCE (SSD) WAS OBSERVED TO BE WELL IN EXCESS OF THE REQUIRED 200 FEET WHEN APPROACHING THE PROPOSED DRIVEWAY FOR LOT 2 FROM LEFT.
12. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND INVERTS OF ALL CATCH BASINS, STORM SEWER LINES, SANITARY MANHOLES, SEWER LINES, WATERLINES, AND UNDERGROUND UTILITY LINES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOT ASSUME THAT ALL LOCATIONS AS SHOWN ON THE PLAN ARE CORRECT. INVESTIGATIVE TEST PITS MAY BE REQUIRED TO VERIFY LOCATIONS.
13. THE SUMP PUMP IN THE BASEMENT OF LOT 1 DISCHARGES TO THE SURFACE AND SHALL BE REDIRECTED PER SHEET XC-1 TO THE STORM SEWER SYSTEM.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL PERFORM A UTILITIES CALL-OUT PRIOR TO CONSTRUCTION TO VERIFY ALL UNDERGROUND UTILITY LOCATIONS BY CONTACTING UFPO @ 1-800-962-7962.
2. WATER, SEWER AND STORM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS. ALL OTHER UTILITIES (TELEPHONE, ELECTRIC, GAS, CABLE, ETC.) SHALL BE INCORPORATED FOLLOWING SITE PLAN APPROVAL. ALL SUCH UTILITY DESIGNS SHALL BE DEVELOPED IN COOPERATION WITH THE RESPECTIVE UTILITY COMPANIES.
3. THE CONTRACTOR SHALL FIELD VERIFY THE SIZE, LOCATION, DEPTH AND CONDITION OF ALL UTILITIES AND REPORT ANY DISCREPANCIES TO THE ENGINEER. THE CONTRACTOR SHALL NOT ASSUME THAT ALL LOCATIONS AS SHOWN ON THE PLAN ARE CORRECT.
4. THE CONTRACTOR SHALL CONSTRUCT ALL IMPROVEMENTS AS SHOWN ON PLANS. ANY FIELD CONDITIONS THAT MAY RESULT IN A VARIATION FROM THE PLAN SET SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IN WRITING. VARIATIONS FROM THE PLAN WITHOUT APPROVAL FROM THE ENGINEER WILL BE CONSIDERED DEFICIENT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ON-SITE OR OFF-SITE DAMAGES TO VEGETATION OR PROPERTY CAUSED BY HIS OPERATIONS. SUCH DAMAGES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS COST TO THE SATISFACTION OF THE ENGINEER, PROPERTY OWNER OR AGENCY HAVING JURISDICTION.
6. THE CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
7. THE CONTRACTOR SHALL KEEP THE SITE IN A CLEAN AND ORDERLY MANNER.
8. THE CONTRACTOR SHALL NOT INTERRUPT EXISTING ACCESS OR OPERATIONS FOR THE REMAINDER OF THE SITE.

UTILITY NOTES:

1. ALL WATER & SEWER CONNECTIONS SHALL COMPLY WITH CITY WATER AND SEWER DISTRICT REQUIREMENTS.
2. THE PROPOSED BUILDING SHALL BE SET AT SUCH ELEVATION TO ENSURE GRAVITY FLOW FROM THE RAW SEWER LINE TO THE POINT OF CONNECTION WITH THE EXISTING SEWER MAIN, WHILE MAINTAINING PROPER EARTH COVER ABOVE ALL PIPING.
3. NO CELLAR, ROOF, OR FOOTING DRAINS SHALL BE DISCHARGED INTO THE SANITARY SEWER SYSTEM.

OWNER'S CONSENT:

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ _____
JAMES PETTY DATE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

DRAWN BY: CMB				CHECKED BY: DGK			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

Dig Safely. New York Call 811 before you dig

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

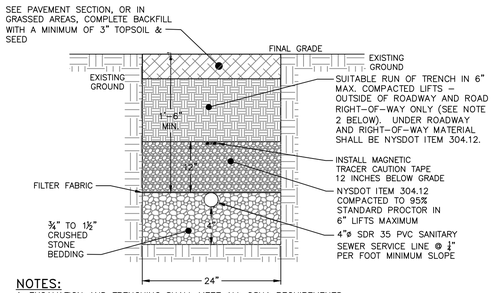
SUBDIVISION PLAN

PETTY SUBDIVISION
REVISION TO FILED MAP NO. 208

146 VERPLANCK AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-21-028928

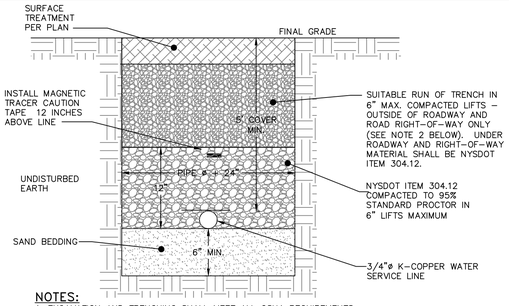
JOB #:	2022:004
DATE:	3/29/2022
SCALE:	1" = 10'
TITLE:	SP-1
SHEET:	4 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW



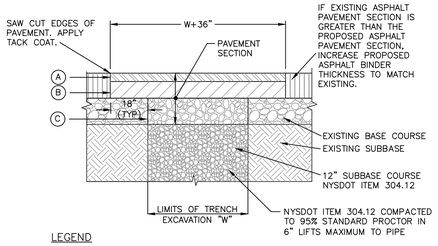
NOTES:
1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.

SANITARY SEWER SERVICE LINE TRENCH DETAIL
NOT TO SCALE



NOTES:
1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, ENLOGATED PARTICLES, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. IN AREAS WHERE 5' COVER REQUIREMENT CANNOT BE MET, THE CONTRACTOR SHALL PROVIDE PIPE INSULATION TO PREVENT FREEZING.
4. IF WATER SERVICE AND SEWER SERVICE LINE CROSSINGS ARE NEEDED, PROVIDE 18" OF VERTICAL SEPARATION

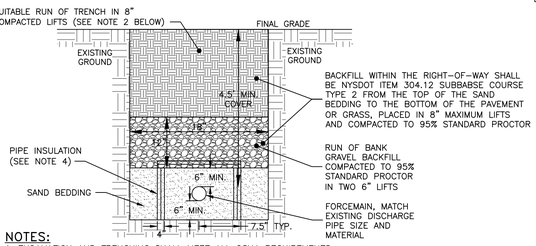
WATER SERVICE LINE TRENCH DETAIL
NOT TO SCALE



LEGEND
- (A) 1.5" ASPHALT CONCRETE TOP COURSE– NYSDOT TYPE F1
- (B) 3.0" ASPHALT CONCRETE BINDER COURSE– NYSDOT TYPE F9
- (C) 3.0" ASPHALT BASE COURSE– NYSDOT TYPE F9

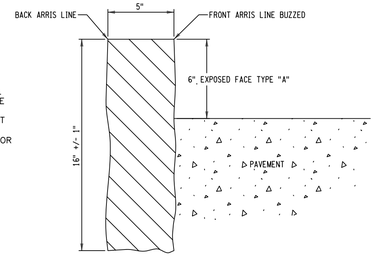
NOTES:
1. SAW CUT MIN. 18" BEYOND EXCAVATION WITH SMOOTH EDGES. 18" JOINT BETWEEN EXISTING AND NEW TOP COURSE TO BE MILLED. JOINT TO BE SEALED WITH POLYMER MODIFIED SEALER.
2. FURNISH, PLACE, AND COMPACT SUBBASE.
3. TACK COAT IN ACCORDANCE WITH NYSDOT STANDARD SPEC.
4. FURNISH AND PLACE ASPHALT CONCRETE PAVEMENT AS SPECIFIED.

PAVEMENT RESTORATION DETAIL
NOT TO SCALE



NOTES:
1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. CONTRACTOR TO VERIFY ALL PIPE CROSSINGS PRIOR TO CONSTRUCTION (E.G., WATER SERVICES, SEWER SERVICES, GAS LINES, ETC.).
4. WHERE MINIMUM 4.5' COVER REQUIREMENT CANNOT BE MET, PROVIDE PIPE INSULATION BOARD CERTIFOAM 40 OR APPROVED EQUAL, CLOSED CELL EXTRUDED POLYSTYRENE FOAM MEETING ASTM C578 TYPE VI WITH MINIMUM 40 PSI COMPRESSIVE STRENGTH PER ASTM D1621, 0.1% MAXIMUM WATER ABSORPTION PER ASTM C272. PROVIDE TWO 2" THICK BOARDS, OVERLAP ALL INSULATION BOARD JOINTS.

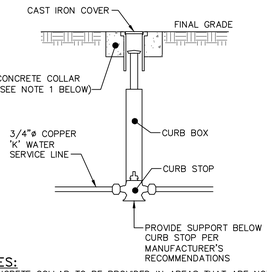
SUMP PUMP FORCEMAIN TRENCH DETAIL
NOT TO SCALE



TYPE "A" CURB
SAWED, HAMMERED OR THERMAL FINISH TOP, QUARRY SPLIT FACE

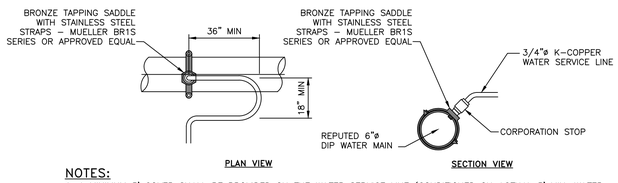
NOTES:
1. AS MARKED IN THE DETAILS ABOVE, THE FRONT ARRIS LINE FOR VERTICAL-FACED AND NEAR-VERTICAL STONE AND GRANITE CURBS SHALL BE BUZZED TO REMOVE A MINIMUM OF ⅛ INCH; MAXIMUM OF ⅜ INCH ALL ALONG THE EXPOSED EDGE.

GRANITE CURB DETAILS
NOT TO SCALE



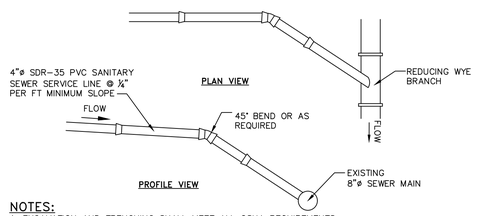
NOTES:
1. CONCRETE COLLAR TO BE PROVIDED IN AREAS THAT ARE NOT PAVED. THE COLLAR SHALL BE 6" FROM THE COVER AND SHALL EXTEND 6" BELOW FINAL GRADE.
2. CURB STOP TO BE COMPRESSION TYPE BY MUELLER.
3. AREA AROUND CURB BOX TO BE BACKFILLED WITH GRAVELLY MATERIAL.

WATER SHUT-OFF VALVE DETAIL
NOT TO SCALE



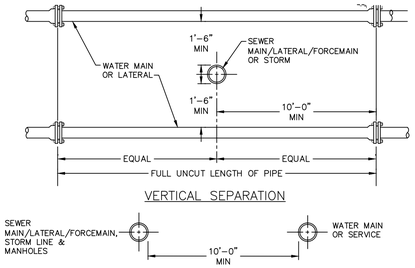
NOTES:
1. A MINIMUM 5' COVER SHALL BE PROVIDED ON THE WATER SERVICE LINE (CONDITIONED ON ACTUAL 5' MIN. WATER MAIN DEPTH).
2. CORPORATION STOP TO BE COMPRESSION TYPE BY MUELLER.
3. WATER SERVICE LINE TO HAVE A 'GOOSENECK' NEAR CORPORATION STOP.
4. CORPORATION STOP TO BE INSTALLED IN THE UPPER HALF OF THE WATER MAIN AT AN ANGLE OF APPROXIMATELY 45° FROM HORIZONTAL.
5. THE CONTRACTOR SHALL INSTALL A FULL BODIED STAINLESS STEEL TAPPING SLEEVE AT THE PROPOSED WATER SERVICE LOCATION.

WATER SERVICE CONNECTION DETAIL
NOT TO SCALE



NOTES:
1. EXCAVATION AND TRENCHING SHALL MEET ALL OSHA REQUIREMENTS.
2. SUITABLE RUN OF TRENCH SHALL NOT INCLUDE FROZEN MATERIALS, DEBRIS, ORGANIC MATERIALS, LARGE STONES OR OTHER UNSUITABLE MATERIALS. IF THE RUN OF TRENCH MATERIAL IS FOUND TO BE UNSUITABLE, A SUITABLE BACKFILL MATERIAL SHALL BE IMPORTED AND USED.
3. TAPPING SADDLE FOR CONNECTION OF THE PROPOSED SERVICE LINE TO THE EXISTING SEWER MAIN TO BE A 4" PREDCO HUB TAP SADDLE – MODEL #HTS4/E.

SANITARY SEWER SERVICE CONNECTION DETAIL
NOT TO SCALE

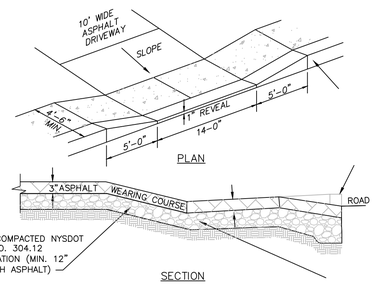


VERTICAL SEPARATION

HORIZONTAL SEPARATION

NOTE:
1. NO DEVIATION IN THE SEPARATION REQUIREMENTS WILL BE PERMITTED WITHOUT THE EXPRESS APPROVAL OF THE DUTCHESS COUNTY DEPARTMENT OF HEALTH AND THE CITY OF BEACON. CONCRETE ENCASEMENT OF WATERLINE OR OFFSETTING OF WATERLINE SHALL BE REQUIRED WHERE SEPARATION DISTANCES CANNOT BE MAINTAINED.

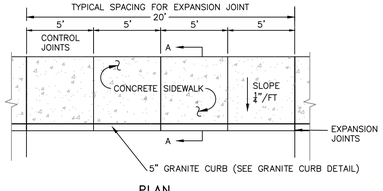
WATER LINE SEPARATION DETAIL
NOT TO SCALE



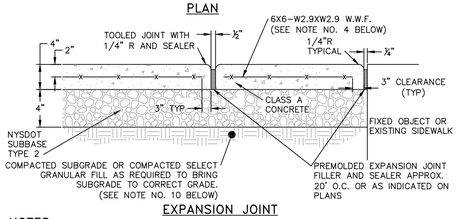
SECTION

NOTE:
1. RESEED AND STABILIZE GRASS AREAS AFTER ASPHALT AND CONCRETE INSTALLATION.

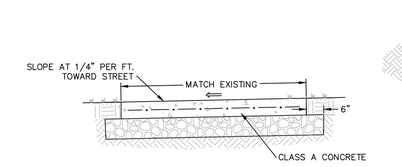
LOT 1 & 2 DRIVEWAY ENTRANCE DETAIL
NOT TO SCALE



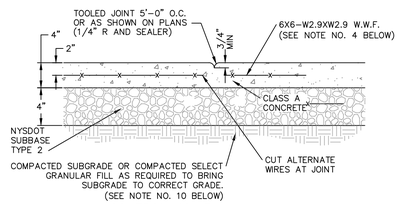
PLAN



EXPANSION JOINT



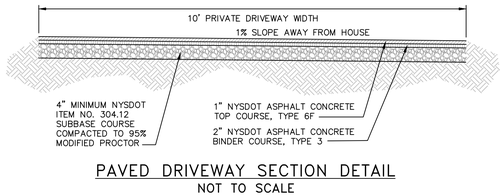
SECTION A–A



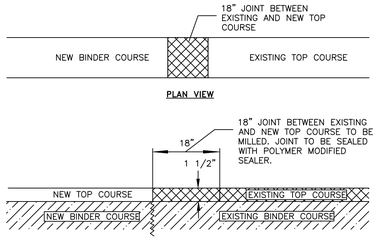
CONTROL JOINT

NOTES:
1. MATERIAL AND METHODS OF CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST REVISION.
2. ALL CONCRETE SHALL BE 4,000 PSI CLASS A CONCRETE. CONCRETE MATERIALS, PLACEMENT, AND CONSTRUCTION SHALL CONFORM WITH SECTION 500 OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
4. REINFORCING STEEL FOR CONCRETE SHALL CONFORM WITH SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND AS SPECIFICALLY CALLED OUT IN THE DRAWINGS.
5. ALL EXPOSED SURFACED SHALL HAVE A BROOM TEXTURED FINISH.
6. EXPANSION JOINTS SHALL BE LOCATED A MAXIMUM OF 20' ON CENTER, OR AS INDICATED ON PLANS.
7. JOINTS SHALL NOT BE SAW CUT.
8. EXPOSED CONCRETE SURFACES SHALL BE TREATED WITH "SUREBOND"/"SAFEBOND" SB-7000 INTENSIFIER BRIGHT PROTECTOR AND SIDEWALK SEALER, OR EQUAL. RATE AND METHOD OF APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.
9. SUBBASE MATERIAL SHALL CONFORM WITH SECTION 304 OF THE ABOVE REFERENCED NYSDOT STANDARD.
10. WHERE IT IS NECESSARY TO PLACE FILL FOR PURPOSE OF BRINGING THE SUBGRADE ELEVATION UP TO A SPECIFIED GRADE, THE FILL MATERIAL PLACED SHALL BE IN CONFORMATION WITH SECTION 203-EXCAVATION AND EMBANKMENT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
11. ALL WORK SHALL CONFORM WITH SECTION 608-SIDEWALK, DRIVEWAYS, AND BICYCLE PATHS OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
12. CONCRETE SHALL BE SEALED WITH A SALT RESISTANT SEALER.

CONCRETE SIDEWALK DETAIL
NOT TO SCALE



PAVED DRIVEWAY SECTION DETAIL
NOT TO SCALE



NOTES:
1. 3" BINDER COURSE AND 1½" TOP COURSE TO BE USED FOR RESTORATION OF PAVEMENT WITHIN CITY ROADS.
2. EXCAVATIONS ARE TO BE SAW CUT SMOOTH, ALL EDGES TACK COATED, AND ALL SEAMS SEALED WITH A HOT POLYMER MODIFIED CRACK SEALANT.

PAVEMENT RESTORATION DETAIL
NOT TO SCALE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE _____ DAY OF _____, 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20_____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

OWNER'S CONSENT:
THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ JAMES PETTY

_____ DATE

DRAWN BY: CMB				CHECKED BY: DGK			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

Dig Safely. New York. Call 811 before you dig

SEAL

HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

CONSTRUCTION DETAILS

PETTY SUBDIVISION
REVISION TO FILED MAP NO. 208

146 VERPLANCK AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-21-028928

JOB #:	2022:004
DATE:	3/29/2022
SCALE:	AS SHOWN
TITLE:	CD-1
SHEET:	5 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES EMPLOYED DURING THE CONSTRUCTION PROCESS SHALL BE INSPECTED BY THE CONTRACTOR IN ACCORDANCE WITH THE MAINTENANCE SCHEDULE. ALL EROSION CONTROL STRUCTURES SHALL BE REPAIRED AND MAINTAINED AS NECESSARY BY THE CONTRACTOR.
2. ALL STORMWATER MANAGEMENT STRUCTURES (E.G. CATCH BASINS) SHALL BE REGULARLY INSPECTED FOR SEDIMENT ACCUMULATIONS. CATCH BASINS SHALL BE CLEANED WHEN SEDIMENT DEPTH REACHES A MAXIMUM OF ONE-HALF THE AVAILABLE SUMP DEPTH.
3. ALL EROSION CONTROL INSTALLATION AND MAINTENANCE MEASURES SHALL MEET THE REQUIREMENTS OF THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
4. ANY PILE OF POTENTIALLY EROSIVE MATERIAL TEMPORARILY STOCKPILED ON THE SITE DURING THE CONSTRUCTION PROCESS SHALL BE LOCATED IN AN AREA AWAY FROM STORM DRAINAGE AND SHALL BE PROPERLY PROTECTED FROM EROSION BY A SURROUNDING SILT FENCE.
5. PERMANENT SEEDED AREAS FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH DETAIL AND SPECIFICATIONS ON THIS PLAN.
6. AREAS UNDERGOING CLEARING OR GRADING AND WHERE WORK IS DELAYED OR COMPLETED AND WILL NOT BE REDISTURBED FOR A PERIOD OF 21 DAYS OR MORE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATIVE COVER WITHIN 14 DAYS.
7. ON-SITE DUST CONTROL SHALL BE ACCOMPLISHED BY STANDARD METHODS OF LIGHTLY WATERING ALL EXPOSED SOIL AND RAPIDLY STABILIZING THE REGRADED AREAS WITH TOPSOIL, LOAM AND/OR SEEDING.
8. THE CITY ENGINEER AND PROJECT ENGINEER SHALL BE NOTIFIED NO LESS THAN 48 HOURS PRIOR TO THE START OF ANY SITE WORK, AND BY SUCH NOTIFICATION, SHALL BE PROVIDED WITH THE NAME AND TELEPHONE NUMBER OF THE GENERAL CONTRACTOR RESPONSIBLE FOR SUCH WORK.
9. THE CITY AND/OR ITS REPRESENTATIVES MAY INSPECT EROSION AND SEDIMENT CONTROL PRACTICES ON THE SITE DURING CONSTRUCTION AND RECOMMEND THAT THE CONTRACTOR INSTALL ADDITIONAL EROSION CONTROL MEASURES IF DEEMED NECESSARY TO PROTECT ANY UNDISTURBED AREAS OF THE SITE. ANY SUCH REQUESTS SHALL BE MADE DIRECTLY TO THE CONTRACTOR AND QUALIFIED PROFESSIONAL AND FOLLOWED UP WITH A WRITTEN NOTIFICATION TO THE DEVELOPER. IN ADDITION, THE PROJECT ENGINEER SHALL BE CONSULTED ON ANY SPECIAL ADDITIONS OR DELETIONS OF EROSION CONTROL MEASURES WARRANTED BY CHANGING FIELD CONDITIONS.
10. IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONSTRUCT A DEWATERING PIT IN ACCORDANCE WITH NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL TO FILTER WATER FOR PUMPING TO A SUITABLE LOCATION.
11. WHEN ALL DISTURBED AREAS ARE STABLE, ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED.

INSPECTION SCHEDULE & MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES

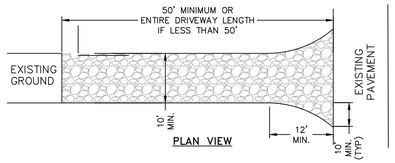
PERMANENT AND TEMPORARY VEGETATION:
INSPECT ALL AREAS THAT HAVE RECEIVED VEGETATION EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. ALL AREAS DAMAGED BY EROSION OR WHERE SEED HAS NOT ESTABLISHED SHALL BE REPAIRED AND RESTABILIZED IMMEDIATELY.

STABILIZED CONSTRUCTION ENTRANCE:
INSPECT THE ENTRANCE PAD EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. CHECK FOR MUD, SEDIMENT BUILD-UP AND PAD INTEGRITY. MAKE DAILY INSPECTIONS DURING WET WEATHER. REGRADE PAD AS NEEDED FOR RUNOFF CONTROL. WASH AND REPLACE STONE AS NEEDED. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING CARRIED OFF SITE BY VEHICLES. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. REMOVE TEMPORARY CONSTRUCTION ENTRANCE AS SOON AS THEY ARE NO LONGER NEEDED TO PROVIDE ACCESS TO THE SITE AS DIRECTED BY PROJECT ENGINEER.

SILT FENCE:
INSPECT FOR DAMAGE EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE FENCE BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO ONE-QUARTER THE HEIGHT OF THE FENCE. IF FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF FENCE IMMEDIATELY.

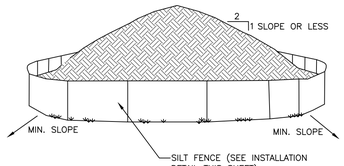
SOIL STOCKPILE:
INSPECT SEDIMENT CONTROL BARRIERS (SILT FENCE) AND VEGETATION FOR DAMAGE EVERY SEVEN DAYS AND AFTER EVERY STORM EVENT WITH RAINFALL THAT EQUALS OR EXCEEDS 0.5 INCH. MAKE ALL REPAIRS IMMEDIATELY. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE SEDIMENT CONTROL BARRIER BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO ONE-QUARTER THE HEIGHT OF THE SEDIMENT CONTROL BARRIER. IF SEDIMENT CONTROL BARRIER TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF SEDIMENT CONTROL BARRIER IMMEDIATELY. REVEGETATE DISTURBED AREA TO STABILIZE SOIL STOCKPILE. REMOVE THE SEDIMENT CONTROL BARRIER WHEN THE SOIL STOCKPILE HAS BEEN REMOVED.

DUST CONTROL:
SCHEDULE CONSTRUCTION OPERATIONS TO MINIMIZE THE AMOUNT OF DISTURBED AREAS AT ANY ONE TIME DURING THE COURSE OF WORKS. APPLY TEMPORARY SOIL STABILIZATION PRACTICES SUCH AS MULCHING, SEEDING, AND SPRAYING (WATER). STRUCTURAL MEASURES (MULCH, SEEDING) SHALL BE INSTALLED IN DISTURBED AREAS BEFORE SIGNIFICANT BLOWING PROBLEMS DEVELOP. WATER SHALL BE SPRAYED AS NEEDED. REPEAT AS NEEDED, BUT AVOID EXCESSIVE SPRAYING, WHICH COULD CREATE RUNOFF AND EROSION PROBLEMS.



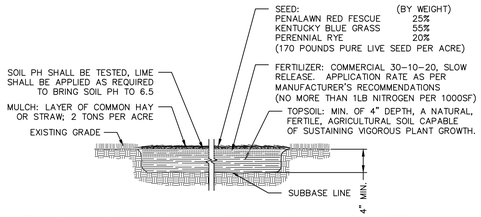
NOTES:
1. STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. THICKNESS - NOT LESS THAN SIX (6) INCHES.
3. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
4. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
6. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
7. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
8. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

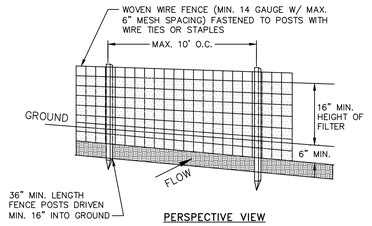


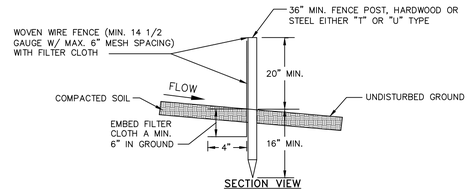
NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.

TEMPORARY SOIL STOCKPILE DETAIL
NOT TO SCALE



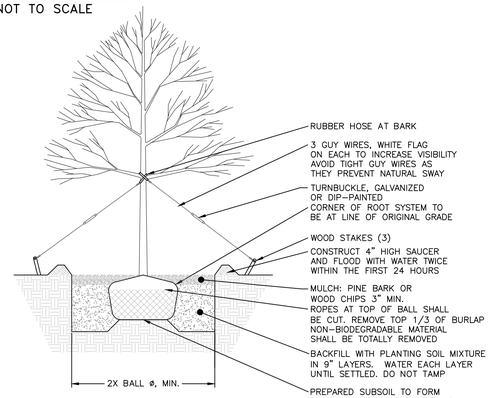
TOPSOIL SEED, FERTILIZER AND MULCH DETAIL
NOT TO SCALE





NOTES:
1. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
3. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUAL.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL
NOT TO SCALE



NOTES:
1. PROPOSED TREES TO BE RED MAPLE. REFER TO SHEET 2 PLANS FOR LOCATIONS.

TREE PLANTING DETAIL
NOT TO SCALE

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON, NEW YORK, ON THE

_____ DAY OF _____ 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20____, BY

_____ CHAIRMAN

_____ SECRETARY

IN ABSENCE OF THE CHAIRMAN OR SECRETARY, THE ACTING CHAIRMAN OR ACTING SECRETARY RESPECTIVELY MAY SIGN IN THIS PLACE.

OWNER'S CONSENT:
THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT HE IS FAMILIAR WITH THIS MAP, ITS CONTENTS AND ITS LEGENDS AND HEREBY CONSENTS TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON.

_____ _____
JAMES PETTY DATE

DRAWN BY: CMB				CHECKED BY: DGK			
REVISIONS:				REVISIONS:			
NO.	DATE	DESCRIPTION	BY	NO.	DATE	DESCRIPTION	BY

Dig Safely. New York Call 811 before you dig

SEAL

HUDSON LAND DESIGN
HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN ST., BEACON, NEW YORK 12508
13 CHAMBERS ST., NEWBURGH, NEW YORK 12550
PH: 845-440-6926
F: 845-440-6637

CONSTRUCTION DETAILS

PETTY SUBDIVISION
REVISION TO FILED MAP NO. 208
146 VERPLANCK AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-21-028928

JOB #:	2022:004
DATE:	3/29/2022
SCALE:	AS SHOWN
TITLE:	CD-2
SHEET:	6 OF 6

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209.2 OF THE NEW YORK EDUCATION LAW

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:

Petty Subdivision

Project Location (describe, and attach a location map):

146 Verplanck Avenue, Beacon NY 12508

Brief Description of Proposed Action:

The owner for the property (Mr. James Petty) wishes to subdivide the current lot at 146 Verplanck Avenue, Beacon NY 12508 into two (2) parcels. The current property is a developed lot with one (1) single-family residence and driveway along the lot's southern portion. The proposed subdivision will divide the property into a southern lot (henceforth to be known as Lot 1) and northern lot (henceforth to be known as Lot 2). Lot 1 will retain the existing residence while Lot 2 will be developed through the building of a new single-family residence. New driveways will serve each lot for access (to Verplanck Avenue), and the residence on Lot 2 will will require new connections to the City of Beacon's water and sewer services.

Name of Applicant or Sponsor:	Telephone: (646) 883-9708
James Petty	E-Mail: james@postscriptstudio.com

Address:

146 Verplanck Avenue

City/PO:	State:	Zip Code:
Beacon	New York	12508

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: City of Beacon Planning Board- Subdivision Approval	☐	☑

3. a. Total acreage of the site of the proposed action? 0.271 acres
   b. Total acreage to be physically disturbed? +/- 0.181 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.271 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☑ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☐ Residential (suburban)
   ☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		
If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements?		
If the proposed action will exceed requirements, describe design features and technologies: _____ _____	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply?		
If No, describe method for providing potable water: _____ _____	☐	☑

	NO	YES
11. Will the proposed action connect to existing wastewater utilities?		
If No, describe method for providing wastewater treatment: _____ _____	☐	☑

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐	☑

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☑ Urban ☐ Suburban

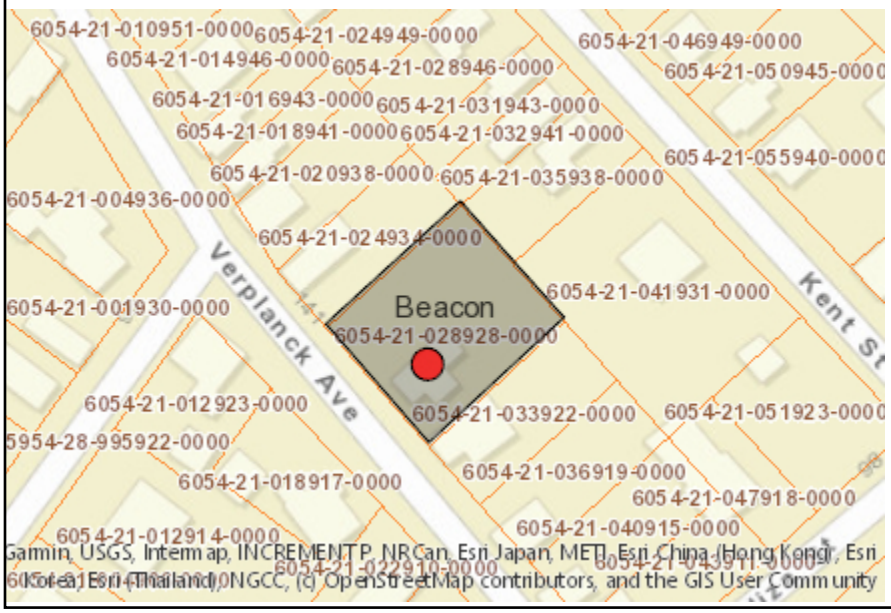
	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered? Indiana Bat	☐	☑
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	☐	☑
a. Will storm water discharges flow to adjacent properties?	☐	☑
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: Excess stormwater flow will be redirected towards the existing stormwater control structures (catch basins) on Verplanck Avenue		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: The site is located within 2,000 feet of NYSDEC remediation sites B00130- Classification C (Completed), and C314118- Classification N (No Further Action at This Time). Please see attached Remediation Database Reports for sites listed	☐	☑

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Daniel G. Koehler, P.E. Date: 3/28/2022

Signature: _____ Title: Engineer for Applicant

PRINT FORM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	No
Part 1 / Question 15 [Threatened or Endangered Animal]	Yes
Part 1 / Question 15 [Threatened or Endangered Animal - Name]	Indiana Bat
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	Yes

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Brunetto Cheese
Site Code: B00130
Program: Environmental Restoration Program
Classification: C
EPA ID Number:

Location

DEC Region: 3
Address: 33 North Cedar Street
City: Beacon (c) Zip: 12508-
County: Dutchess
Latitude: 41.50738511
Longitude: -73.96901823
Site Type:
Estimated Size: 1.4 Acres

Site Owner(s) and Operator(s)

Site Description

The City of Beacon¿s State assistance application for the Brunetto Cheese Site Environmental Restoration Project was approved by NYSDEC on February 18, 1999. The former Brunetto Cheese Facility is a 1.43 acre property located at 33 North Cedar Street in the City of Beacon, Dutchess County. The buildings that previously occupied the site were historically used for milk processing, including cheese production up until the early 1990s. The site area is serviced by municipal water and sewer service. Cleanup of the Brunetto Cheese site began in 1998 when the City contracted to have the onsite buildings demolished. This activity led to the discovery and subsequent removal, by the City, of five underground storage tanks between July and September 1998 (NYSDEC Spill No. 98-04-

763 was assigned to the site). The tanks ranged in capacity from 750 gallons to 10,000 gallons and contained fuel oil or gasoline which was found to be leaking into the surrounding soils. Following removal of the tanks, 1,327 tons of petroleum-contaminated soil were stockpiled onsite. This soil was removed from the site in September 1999 for thermal treatment. Post-excavation samples and visual observations indicated additional contaminated areas with free product present. Further excavation of these areas commenced in February 2000 as an element of the Site Investigation (SI). An additional 942 tons of petroleum-impacted soil were removed and sent offsite for thermal treatment. Based on the results of the SI, previous investigations, and the Interim Remedial Measures (contaminated soil removals) conducted at the site, a ¿no further action¿ remedy was the selected alternative for the site as detailed in the October 2000 Record of Decision. Development of this property began in 2004. In late August 2004, while excavating the property for a foundation for a new home, contaminated soils were uncovered in the southeastern portion of the property. The DEC was notified and a DEC spill contractor, was called out to address the contamination. A total of 278 tons of contaminated soil was excavated, stockpiled on-site, and taken offsite for proper treatment/ disposal. All post-excavation samples were below soil cleanup goals for unrestricted use (TAGM 4046).

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type

Site Environmental Assessment

This property was contaminated with fuel oil and gasoline which was found to be leaking into the surrounding soils from the former on-site underground storage tanks. All tanks and contaminated soils have been removed from the site.

Site Health Assessment

No complete exposure pathways currently exist at this site.

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Document Repository

Site-related documents are available for review through the DECInfo Locator on line at DECInfoLocator

Administrative Information

Site Name: Churchill Mills
Site Code: C314118
Program: Brownfield Cleanup Program
Classification: N *
EPA ID Number:

Location

DEC Region: 3
Address: 1 East Main Street
City: Beacon Zip: 12508
County: Dutchess
Latitude: 41.502233333
Longitude: -73.9628
Site Type:
Estimated Size: 3.36 Acres

Site Owner(s) and Operator(s)

Current Owner Name: EAST MAIN MILLS, LLC
Current Owner(s) Address: 18 EAST 22ND STREET
NEW YORK,NY, 10010

Site Document Repository

Name: HOWLAND PUBLIC LIBRARY
Address: 313 MAIN STREET
BEACON,NY 12508

Site Description

The Church Hill Mills Site is +/- 3.36 acres, made up of 4 parcels and is located in the City of Beacon, Dutchess County. The site is bounded by Tioranda Avenue to the northeast, East Main Street to the north, the Fishkill Creek to the east and south, and Churchill Street to the southwest. The site is

currently vacant and has previously been utilized in part for various industrial uses including hat manufacturing, aluminum anodizing, woodworking and auto parts salvaging. Contaminants which are known or suspected to affect the soil, groundwater, sedimement and/or soil gases include petroleum, SVOCs, metals and PCBs. The BCP application was approved in 2007. The remedial investigation work plan was approved in December 2007. After two schedule extensions, the Volunteer has terminated the BCA without implementing the investigation work plan.

Site Environmental Assessment

Contaminants which are known or suspected to affect the soil, groundwater, sedimement and/or soil gases are petroleum, SVOCs, metals and PCBs.

---

* **Class N Sites:** "DEC offers this information with the caution that the amount of information provided for Class N sites is highly variable, not necessarily based on any DEC investigation, sometimes of unknown origin, and sometimes is many years old. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

John Clarke Planning and Design jclarkeplandesign@gmail.com
845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **146 Verplanck Avenue Subdivision**

I have reviewed the March 29, 2022 cover letter from Hudson Land Design, March 22, 2022 Subdivision Application, March 28, 2022 Short EAF Part 1, and a 6-sheet Subdivision Plan set, dated March 29, 2022.

Proposal
The applicant is proposing to subdivide a 0.27-arcre parcel with one existing house into two lots for the construction of an additional house. Parcel 1 would have 5,922 square feet and Parcel 2 would contain 5,882 square feet. The parcel is in the R1-5 zoning district.

Comments and Recommendations

1. The titles for sheets 2 and 3 have been reversed.

2. The Sheet 4 Schedule of Regulations table should correct the Lot 2 lot depth.

3. The proposed subdivision leaves Lot 1 with a 4.7-foot side yard, where 10 feet is required. The applicant will need an area variance. The Board should provide a recommendation to the ZBA.

4. The Board and applicant should consider including two canopy trees near the street frontage to replace the two 6-inch+ trees to be removed on the lot and to provide additional environmental and traffic calming benefits. Sheet 6 has a tree planting detail and refers to new red maple trees on Sheet 2, but no street tree locations are shown.

5. The Sheet 4 Lot 2 layout for would make it very difficult to back out of the garage. Areas to turn around without the need to back out of the driveway onto Verplanck Avenue would be preferred.

6. A note should be placed on the plan that the remaining hedges along the frontage will be maintained at no more than 3.5 feet for sight visibility.

If you have any questions or need additional information, please feel free to contact me.

John Clarke, Beacon Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Daniel G. Koehler, P.E., Project Engineer

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal
Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal
John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 8, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: 146 Verplanck – 2 Lot Subdivision
Tax No. 6054-21-028928
City of Beacon

Dear Mr. Gunn:

My office has received the following in regard to the above 2-lot subdivision application:

- Cover letter dated March 29, 2022, as submitted by Hudson Land Design.
- Application for Subdivision Approval.
- Short Environmental Assessment Form dated March 28, 2022.
- Infiltration and Inflow (I&I) Investigation report for the project site dated March 28, 2022, as prepared by Hudson Land Design.
- Plan set titled "Petty Subdivision", dated March 29, 2022, consisting of Sheets 1 through 6 of 6, as prepared by Hudson Land Design.

The proposed project entails the subdivision of a 0.27± acre parcel located at 146 Verplanck Avenue into 2 lots, with proposed Lot 1 being 0.136± acres (5,922 square feet) in size with an existing single-family residence, and proposed Lot 2 being 0.135± acres (5,882 square feet) in size to allow for the construction of an additional single-family residence. The project is located in the R1-5 Zone. Based on our review of the above plans, we would like to offer the following comments:

General Comments:

1. The title on Sheet 2 of 6 should be revised to read "Existing Conditions & Removal Plan".

2. The title on Sheet 3 of 6 should be revised to read "Subdivision Plat".

3. The applicant has had an Infiltration and Inflow (I&I) study conducted of the existing site and premises, and based upon the findings, there is no I&I entering the City's sanitary sewer system from the current site.

Existing Conditions & Demolition Plan (Sheet 2 of 6):

1. The plan shall be updated to reflect the sidewalk that is to be removed to allow for the installation of the new driveway curb cuts, along with the portion to be removed for the existing driveway that is being removed and the installation of the sump pump discharge into CB-1 in front of the project site.

2. The pipe invert information for SMH-1 and SMH-2 shall be provided on the plans.

3. CB-1 in front of the project shows an 8" PVC pipe running to the north-west. The plan should identify where this line runs to.

4. The plan shall be updated to note the size of the watermain within Verplanck Avenue.

Subdivision Plat (Sheet 3 of 6):

1. The "Future Deck" should be removed from the plat, as the plat is for the approval of the subdivision of land and should not be construed as to an approval for a future deck on Lot 1.

Subdivision Plan (Sheet 4 of 6):

1. The "Lot Depth" for Lot 2 in the Bulk Table located in the upper right corner of the plan shall be corrected to reflect the actual lot depth.

2. Roof leaders for the new residence should be shown and where they will discharge to. If additional roof leaders are to be added to the existing residence, then they shall also be shown and where they will discharge to.

3. The location of the curb stop for the new water service to Lot 2 shall be shown on the plan.

4. The location of the sewer cleanout for the sewer service to Lot 2 shall be shown on the plan.

5. The leader for the "Limit of Disturbance" shall be re-directed to the LOD line.

6. The leader for the "Soil Stockpile" for Lot 1 shall be redirected to the actual stockpile location.

7. The plan shall show how drainage will be handled between the homes and adjacent neighbors, and in the back yards, to prevent standing water from stormwater runoff.

8. The plan shall show the connection of the sump pump from Lot 1 to CB-1 in front of the project, as called out on Sheet 2 of 6.

9. It does not appear that there is sufficient maneuvering room for a vehicle entering or exiting the proposed garage on Lot 2. The plan shall demonstrate that a vehicle can safely enter and backout of the garage without impacting the proposed residence.

10. The "Covered Porch" on Lot 2 shall be clearly shown. This should also include the steps to access the porch.

11. It is unclear as to why the "Future Deck" is shown on Lot 1. It should not be misconstrued that the approval of this project is in any means approving the future deck or its location on Lot 1.

Construction Details (Sheet 5 of 6):

1. The sanitary sewer service connection details shall be revised to reflect a tapping saddle connection to the existing sewer line.

2. The "Pavement Restoration" detail located on the bottom of the sheet should be removed, as the "Pavement Restoration Detail" located at the top of the sheet is the proper detail that should be used in this location.

3. The "Granite Curb" detail shall be expanded upon as to what the bedding for the granite curb shall be and how it is installed. If any new granite curb is to be used for the project, it shall match that of the existing granite curb located along this stretch of the road.

This completes our review at this time. Further comments may be provided based on future submissions. **A written response letter addressing each of the above comments should be provided with the next submission.** If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,

LANC & TULLY, P.C.

John Russo, P.E.

cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

City of Beacon Planning Board Agenda
04/12/2022

Title:

Review application for Special Use Permit and Site Plan Approval, indoor and outdoor event space, 4 Hanna Lane, submitted by Jason Hughes

ATTACHMENTS

4 Hanna Lane SUP Application.pdf

4 Hanna Lane Architect Cover Letter.pdf

4 Hanna Lane Sheet 1 Site Plan.pdf

4 Hanna Lane Sheet 2 Existing Conditions Plan.pdf

4 Hanna Lane Sheet 3 Lighting Plan.pdf

4 Hanna Lane Sheet 4 Building Plan.pdf

Planner Review Letter.pdf

Engineer Review Letter.pdf

APPLICATION FOR SPECIAL USE PERMIT

Submit to Planning Board Secretary, One Municipal Plaza, Suite One, Beacon, New York 12508

IDENTIFICATION OF APPLICANT

Name: Jason Hughes

Address: 4 Hanna Lane

Beacon, NY 12508

Signature: _____

Date: March 29, 2022

Phone: 518-221-8101

(For Official Use Only)

	Date	Initials
Application & Fee Rec'd		
Initial Review		
PB Public Hearing		
Sent to City Council		
City Council Workshop		
City Council Public Hearing		
City Council Approve/Disapprove		

IDENTIFICATION OF REPRESENTATIVE / DESIGN PRFESSIONAL

Name: Aryeh Siegel Architect

Address: 84 Mason Circle

Beacon, NY 12508

Phone: 845-838-2490

Fax: 845-838-2657

Email address: ajs@ajsarch.com

IDENTIFICATION OF SUBJECT PROPERTY:

Property Address: 4 Hanna Lane

Tax Map Designation: Section 6054 Block 30 Lot(s) 183889

Land Area: 0.84 acres

Zoning District(s) LI

DESCRIPTION OF PROPOSED DEVELOPMENT:

Proposed Use: Indoor and Outdoor Event Spaces

Gross Non-Residential Floor Space: Existing 5,686 Proposed 0

TOTAL: 5,686

Dwelling Units (by type): Existing 0 Proposed 0

TOTAL: 0

ITEMS TO ACCOMPANY THIS APPLICATION

a. Five (5) **folded** copies and One (1) digital copy of a site location sketch showing the location of the subject property and the proposed development with respect to neighboring properties and developments.

b. Five (5) **folded** copies and One (1) digital copy of the proposed site development plan, consisting of sheets, showing the required information as set forth on the back of this form and other such information as deemed necessary by the City Council or the Planning Board to determine and provide for the property enforcement of the Zoning Ordinance.

c. Five (5) **folded** copies and One (1) digital copy of additional sketches, renderings or other information.

d. An application fee, payable to the City of Beacon, computed per the attached fee schedule.

e. An initial escrow amount, payable to the City of Beacon, as set forth in the attached fee schedule.

INFORMATION TO BE SHOWN ON SITE LOCATION SKETCH

a. Property lines, zoning district boundaries and special district boundaries affecting all adjoining strets and properties, including properties located on the opposite sides of adjoining streets.
b. Any reservations, easements or other areas of public or special use which affect the subject property.
c. Section, block and lot numbers written on the subject property and all adjoining properties, including the names of the record owners of such adjoining properties.

INFORMATION TO BE SHOWN ON THE SITE DEVELOPMENT PLAN

a. Title of development, date and revision dates if any, north point, scale, name and address of record owner of property, and of the licensed engineer, architect, landscape architect, or surveyor preparing the site plan.
b. Existing and proposed contours at a maximum vertical interval of two (2) feet.
c. Location and identification of natural features including rock outcrops, wooded areas, single trees with a caliper of six (6) or more inches measured four (4) feet above existing grade, water bodies, water courses, wetlands, soil types, etc.
d. Location and dimensions of all existing and proposed buildings, retaining walls, fences, septic fields, etc.
e. Finished floor level elevations and heights of all existing and proposed buildings.
f. Location, design, elevations, and pavement and curbing specifications, including pavement markings, of all existing and proposed sidewalks, and parking and truck loading areas, including access and egress drives thereto.
g. Existing pavement and elevations of abutting streets, and proposed modifications.
h. Location, type and design of all existing and proposed storm drainage facilities, including computation of present and estimated future runoff of the entire tributary watershed, at a maximum density permitted under existing zoning, based on a 100 year storm.
i. Location and design of all existing and proposed water supply and sewage disposal facilities.
j. Location of all existing and proposed power and telephone lines and equipment, including that located within the adjoining street right-of-way. All such lines and equipment must be installed underground.
k. Estimate of earth work, including type and quantities of material to be imported to or removed from the site.
l. Detailed landscape plan, including the type, size, and location of materials to be used.
m. Location, size, type, power, direction, shielding, and hours of operation of all existing and proposed lighting facilities.
n. Location, size, type, and design of all existing and proposed business and directional signs.
o. Written dimensions shall be used wherever possible.
p. Signature and seal of licensed professional preparing the plan shall appear on each sheet.
q. Statement of approval, in blank, as follows:

Approved by Resolution of the Beacon Planning Board
on the _____ day of _____, 20_____
subject to all conditions as stated therein

_____ _____
Chairman, City Planning Board **Date**

APPLICATION FEES

Site Plan	**Residential $500 + $250 per dwelling unit** **Commercial $500 + $250 per 1,000 s.f.**
Special Use Permit	**Residential $500 + $250 per dwelling unit** **Commercial $500 + $250 per 1,000 s.f.**
Subdivision	**$ 750 for 2-4 lots + $100 per lot** **$1,000 for 5 or more lots + $300 per lot**
Zoning Board of Appeals	**Use Variance $500** **Area Variance $250** **Interpretation $250**

ESCROW FEES

ALL SUBDIVISIONS, AND RESIDENTIAL SITE PLAN AND SUP APPLICATIONS

No. of Lots or Dwelling Units	Initial Deposit	Depleted to	Replenishment
1-5 (including lot-line realignment)	$ 2,500	$ 1,000	Current bills + $1,000
6-15	$ 7,500	$ 2,500	Current bills + $1,000
Over 15	$ 15,000	$ 5,000	Current bills + $5,000

NON-RESIDENTIAL SITE PLAN AND SUP APPLICATIONS

	Initial Deposit	Depleted to	Replenishment
Existing Buildings/Change of Use with no site development	$ 1,500	$ 1,000	Current bills + $500
Up to 3,000 s.f. gross floor area	$ 2,500	$ 1,000	Current bills + $1,000
3,000 to 10,000 s.f. gross floor area	$ 2,500 + $0.50 per sq.ft. over 3,000	$ 2,500	Current bills + $2,500
Over 10,000 s.f. gross floor area	$ 7,500 + $0.50 per sq.ft. over 10,000	$ 2,500	Current bills + $2,500

ZONING

* *if required by Chairman*	Initial Deposit	Depleted to	Replenishment
Use Variance*	$ 1,000	$500	Current bills + $500
Area Variance*	$ 1,000	$500	Current bills + $500
Interpretation*	$ 1,000	$500	Current bills + $500

ARCHITECTURAL REVIEW OR CERTIFICATE OF APPROPRIATENESS ***(if not currently before PB)***

* *if required by Chairman*	Initial Deposit	Depleted to	Replenishment
Single Family House*	$500	$250	Current bills + $250
All others*	$500	$250	Current bills + $250

APPLICATION PROCESSING RESTRICTION LAW

Affidavit of Property Owner

Property Owner: EJC III, LLC, Jason Hughes as Member of the LLC

If owned by a corporation, partnership or organization, please list names of persons holding over 5% interest.

Jason Hughes - 50%

Carley Franklin-Hughes - 50%

List all properties in the City of Beacon that you hold a 5% interest in:

4 Hanna Lane, 12 Hanna Lane, 16 Hanna Lane - Through 3 separate LLCs, Carley and I own these th adjacent properties

Applicant Address: 4 Hanna Lane, Beacon NY 12508

Project Address: 4 Hanna Lane

Project Tax Grid # 6054-30-183889

Type of Application Special Use Permit

Please note that the property owner is the applicant. "Applicant" is defined as any individual who owns at least five percent (5%) interest in a corporation or partnership or other business.

I, Jason Hughes, the undersigned owner of the above referenced property, hereby affirm that I have reviewed my records and verify that the following information is true.

1. No violations are pending for ANY parcel owned by me situated within the City of Beacon ☒ X
2. Violations are pending on a parcel or parcels owned by me situated within the City of Beacon ☐
3. ALL tax payments due to the City of Beacon are current ☒ X
4. Tax delinquencies exist on a parcel or parcels owned by me within the City of Beacon ☐
5. Special Assessments are outstanding on a parcel or parcels owned by me in the City of Beacon ☐
6. ALL Special Assessments due to the City of Beacon on any parcel owned by me are current ☒ X

Signature of Owner

Member of the LLC

Title if owner is corporation

Office Use Only:	NO	YES	Initial
Applicant has violations pending for ANY parcel owned within the City of Beacon (Building Dept.)	___	___	_____
ALL taxes are current for properties in the City of Beacon are current (Tax Dept.)	___	___	_____
ALL Special Assessments, i.e. water, sewer, fines, etc. are current (Water Billing)	___	___	_____

CITY OF BEACON
SITE PLAN SPECIFICATION FORM

Name of Application: The Yard - Event Space

PLEASE INDICATE WHETHER THE SITE PLAN DRAWINGS SHOW THE SUBJECT INFORMATION BY PLACING A CHECK MARK IN THE APPROPRIATE BOXES BELOW.

	YES	NO
The site plan shall be clearly marked "Site Plan", it shall be prepared by a legally certified individual of firm, such as a Registered Architect or Professional Engineer, and it shall contain the following information:	✔	
LEGAL DATA		
Name and address of the owner of record.	✔	
Name and address of the applicant (if other than the owner).	✔	
Name and address of person, firm or organization preparing the plan.	✔	
Date, north arrow, and written and graphic scale.		
NATURAL FEATURES		
Existing contours with intervals of two (2) feet, referred to a datum satisfactory to the Planning Board.		✔
Approximate boundaries of any areas subject to flooding or stormwater overflows.		✔
Location of existing watercourses, wetlands, wooded areas, rock outcrops, isolated trees with a diameter of eight (8) inches or more measured three (3) feet above the base of the trunk, and any other significant existing natural features.	✔	
EXISTING STRUCTURES, UTILITIES, ETC.		
Outlines of all structures and the location of all uses not requiring structures. Paved areas, sidewalks, and vehicular access between the site and public streets.	✔	
Locations, dimensions, grades, and flow direction of any existing sewers, culverts, water lines, as well as other underground and above ground utilities within and adjacent to the property.	✔	
Other existing development, including fences, retaining walls, landscaping, and screening.	✔	
Sufficient description or information to define precisely the boundaries of the property.	✔	
The owners of all adjoining lands as shown on the latest tax records.	✔	
The locations, names, and existing widths of adjacent streets and curb lines.	✔	
Location, width, and purpose of all existing and proposed easements, setbacks, reservations, and areas dedicated to private or public use within or adjacent to the properties.	✔	

PROPOSED DEVELOPMENT	YES	NO
The location, use and design of proposed buildings or structural improvements.	✔	
The location and design of all uses not requiring structures, such as outdoor storage (if permitted), and off-street parking and unloading areas.	✔	
Any proposed division of buildings into units of separate occupancy.	✔	
The location, direction, power, and time of use for any proposed outdoor lighting.	✔	
The location and plans for any outdoor signs.		✔
The location, arrangement, size(s) and materials of proposed means of ingress and egress, including sidewalks, driveways, or other paved areas.	✔	
Proposed screening and other landscaping including a planting plan and schedule prepared by a qualified individual or firm.		✔
The location, sizes and connection of all proposed water lines, valves, and hydrants and all storm drainage and sewer lines, culverts, drains, etc.		✔
Proposed easements, deed restrictions, or covenants and a notation of any areas to be dedicated to the City.		✔
Any contemplated public improvements on or adjoining the property.		✔
Any proposed new grades, indicating clearly how such grades will meet existing grades of adjacent properties or the street.		✔
Elevations of all proposed principal or accessory structures.	✔	
Any proposed fences or retaining walls.	✔	
MISCELLANEOUS		
A location map showing the applicant's entire property and adjacent properties and streets, at a convenient scale.	✔	
Erosion and sedimentation control measures.		✔
A schedule indicating how the proposal complies with all pertinent zoning standards, including parking and loading requirements.	✔	
An indication of proposed hours of operation.	✔	
If the site plan only indicates a first stage, a supplementary plan shall indicate ultimate development.		✔

For all items marked "NO" above, please explain below why the required information has not been provided:

Items marked no are not applicable.

This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

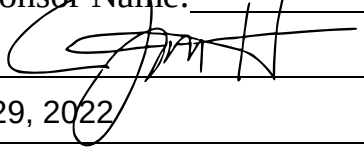
This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

This is not a new development, but rather a repurposing of an existing space and structure.

Applicant/Sponsor Name: Jason Hughes

Signature: 

Date: March 29, 2022

FOR OFFICE USE ONLY
Application #

CITY OF BEACON
1 Municipal Plaza, Beacon, NY
Telephone (845) 838-5000 • http://cityofbeacon.org/

ENTITY DISCLOSURE FORM

(This form must accompany every land use application and every application for a building permit or certificate of occupancy submitted by any entity)

Disclosure of the names and addresses of all persons or entities owning any interest or controlling position of any Limited Liability Company, Partnership, Limited Partnership, Joint Venture, Corporation or other business entity (hereinafter referred to as the "Entity") filing a land-use application with the City is required pursuant to Section 223-61.4 of the City Code of the City of Beacon. If any Member of the Entity is not a natural person, then the names and addresses as well as all other information sought herein must be supplied about the non-natural person member of that Entity, including names, addresses and Formation filing documents. Applicants shall submit supplemental sheets for any additional information that does not fit within the below sections, identifying the Section being supplemented.

SECTION A.

IF AFFIANT IS A PARTNERSHIP, JOINT VENTURE OR OTHER BUSINESS ENTITY, EXCEPT A CORPORATION:

Name of Entity	Address of Entity
Place where such business entity was created	Official Registrar's or Clerk's office where the documents and papers creating entity were filed
Date such business entity or partnership was created	Telephone Contact Information

IF AFFIANT IS A CORPORATION:

Name of Entity EJC III, LLC	Telephone Contact Information 518-221-8101
Principal Place of Business of Entity 4 Hanna Lane, Beacon	Place and Date of incorporation 03/25/2013, Dutchess County
Method of Incorporation Articles of Organization, Domestic LLC	Official place where the documents and papers of incorporation were filed NYS DOS Div of Corps & State Records, Albany

SECTION B. List all persons, officers, limited or general partners, directors, members, shareholders, managers, and any others with any interest, mortgage, encumbrance or other interest (recorded or unrecorded) in or with the above referenced Entity. List all persons to whom corporate stock has been pledged, mortgaged or encumbered and with whom any agreement has been made to pledge, mortgage or encumber said stock. Use a supplemental sheet to list additional persons.

Name	Resident Address	Resident Telephone Number	Nature and Extent of Interest
Jason Hughes	5 Channingville Rd New Hamburg NY 125	518-221-8101	50% Owner, Membe
Carley Franklin-Hughe	5 Channingville Rd New Hamburg NY 125	646-418-7047	50% Owner, Membe

SECTION C. List all owners of record of the subject property or any part thereof.

Name	Residence or Business Address	Telephone Number	Date and Manner title was acquired	Date and place where the deed or document of conveyance was recorded or filed.
EJC III, LLC (Members as in S	4 Hanna Lane Beacon, NY 12508	518-221-8101	4/17/13, Purchas	Deed Book 2201 Page 2110

SECTION D. Is any owner, of record or otherwise, an officer, director, stockholder, agent or employee of any person listed in Section B-C?

☐ **YES** ■ **NO**

Name	Employer	Position

SECTION E. Is any party identified in Sections A- C an officer, elected or appointed, or employee of the City of Beacon or related, by marriage or otherwise, to a City Council member, planning board member, zoning board of appeals member or employee of the City of Beacon ?

☐ **YES** ■ **NO**

If yes, list every Board, Department, Office, agency or other position with the City of Beacon with which a party has a position, unpaid or paid, or relationship and identify the agency, title, and date of hire.

Agency	**Title**	**Date of Hire, Date Elected, or Date Appointed**	**Position or Nature of Relationship**

SECTION F. Was any person referred to in Sections A-D known by any other name within five (5) years preceding the date of the application?

☐ **YES** ■ **NO**

Current Name	**Other Names**

SECTION G. List the names and addresses of each person, business entity, partnership and corporation in the chain of title of the subject premises for the five (5) years next preceding the date of the application.

Name	**Address**
EJC III, LLC	4 Hanna Lane, Beacon NY 12508

SECTION H. If the applicant is not a record owner of the subject property, describe the applicant's interest in the subject property and the relationship the applicant has to the record owner(s) of the subject property.

_____

_____

_____

_____

SECTION I. If the applicant is a contract vendee, a duplicate original or photocopy of the full and complete contract of purchase, including all riders, modification and amendments thereto, shall be submitted with the application. Any sensitive or confidential information may be redacted from the contract prior to production.

SECTION J.

1. Where the record owner or contract vendee is a corporation, the following additional information shall be submitted**:**

Name of the Corporation	Telephone Contact Information
Principal Business Address	Place and Date of Incorporation
Method of Incorporation	Official place where the documents and papers of incorporation were filed

2. Please provide the following information for every incorporator, officer, director and shareholder of the corporation.

Name	**Residence or business address**	**Telephone number**

3. Have any shares of the stock of the corporation or of any stockholder been pledged, mortgaged or encumbered?

☐ **YES** ☐ **NO**

If so, please list the name and address of each person having, holding, owning or claiming any such interest.

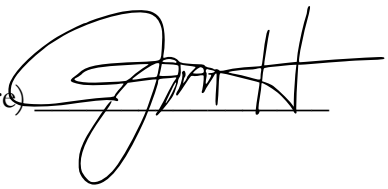
Name	**Address**

SECTION K. Have the present owners entered into a contract for the sale of all or any part of the subject property and, if in the affirmative, please provide a duplicate original or photocopy of the fully and complete contract of sale, including all riders, modifications and amendments thereto.

☐ **YES** ■ **NO**

I, Jason Hughes being first duly sworn, according to law, deposes and says that I am (Title) Member, an active and qualified member of the EJC III, LLC, a business duly authorized by law to do business in the State of New York, and that the statements made herein are true, accurate, and complete.

(Print) Jason Hughes

(Signature) 

City of Beacon
New York

Certificate of Inspection Application

Parcel Address Hanna Lane **Tax ID Number** 6054-30-183889

Property Owners Information:

Name Jason Hughes

Mailing Address 4 Hanna Lane, Beacon NY 12508

Business Phone # _____ Home Phone # _____

Cell Phone # 518-221-8101 E-mail Address Jason@Lnjtech.com

Signature of Owner

For office use only:

	Connected to sanitary sewer	Disconnected	Waiver Requested	Waiver Approved
Roof Leaders	_____	_____	_____	_____
Sump Pump	_____	_____	_____	_____
Yard drain	_____	_____	_____	_____
Other (describe)	_____	_____	_____	_____

Signature of Inspector

Inspection Date _____

Expiration Date _____

FEE: $50.00

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. **The applicant or project sponsor is responsible for the completion of Part 1.** Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:
The Yard - Event Space

Project Location (describe, and attach a location map):
Hanna Lane, Beacon, NY

Brief Description of Proposed Action:
Special Use Permit application for conversion of existing building to assembly use for an Event Space, as well as for use of the existing outdoor space for events.

Name of Applicant or Sponsor:	Telephone: 518-221-8101
Jason Hughes, as Member of EJC III, LLC (Owner) and Member of LNJ, LLC (Operator)	E-Mail: Jason@Lnjtech.com

Address:
4 Hanna Lane

City/PO:	State:	Zip Code:
Beacon	NY	12508

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: City Council - Special Use Permit, Building Department - Building Permit, Planning Board - Site Plan Approval	☐	☑

3. a. Total acreage of the site of the proposed action? 0.84 acres
   b. Total acreage to be physically disturbed? 0 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0.84 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☑ Urban ☐ Rural (non-agriculture) ☑ Industrial ☐ Commercial ☐ Residential (suburban)
   ☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		
If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☐	☑
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☐	☑

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements?		
If the proposed action will exceed requirements, describe design features and technologies: _____ _____	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply?		
If No, describe method for providing potable water: _____ _____	☐	☑

	NO	YES
11. Will the proposed action connect to existing wastewater utilities?		
If No, describe method for providing wastewater treatment: _____ _____	☐	☑

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☐	☑
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐	☑

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☑ Urban ☐ Suburban

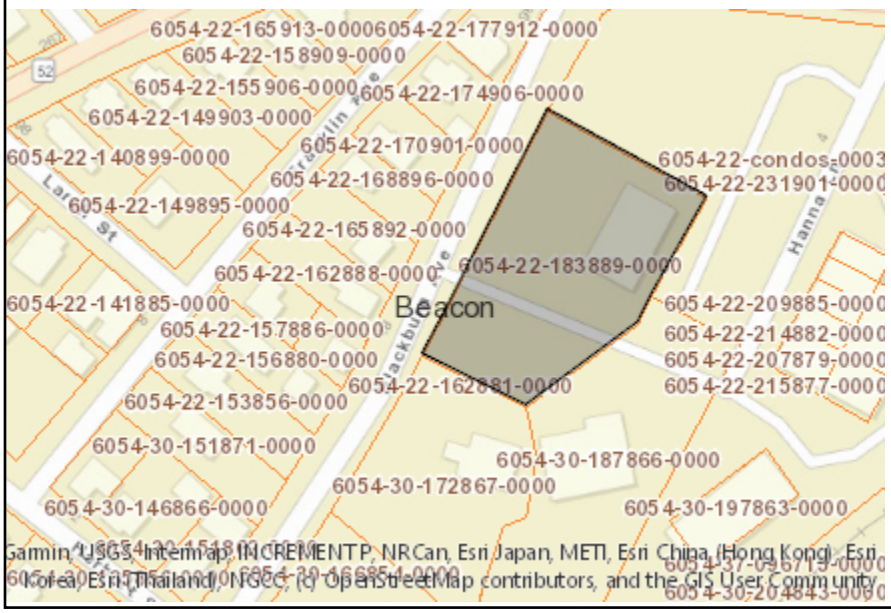
	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered? Indiana Bat	☐	☑
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☑	☐
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: Drainage will run to existing storm drain system. No new impervious surfaces are proposed.		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☐	☑

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: Jason Hughes Date: 3/29/2022

Signature _____ Title: Member of the LLCs

PRINT FORM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	Yes
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	Yes
Part 1 / Question 15 [Threatened or Endangered Animal - Name]	Indiana Bat
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	Yes

ARYEH SIEGEL
ARCHITECT

Etha Grogan
Planning Board Secretary
City of Beacon
One Municipal Plaza
Beacon, NY 12508

Re: **The Yard – 4 Hanna Lane**
Special Use Permit Application

March 29, 2022

Dear Etha,

Please find enclosed:

- (5) sets of Sheets 1 through 4
- Signed Special Use Permit application form
- Entity Disclosure Form
- Short EAF
- I & I Form
- Check for application fee and escrow
- CD-ROM

Thank you. Please let me know if you have any questions.

Sincerely,

Aryeh Siegel
Aryeh Siegel, Architect

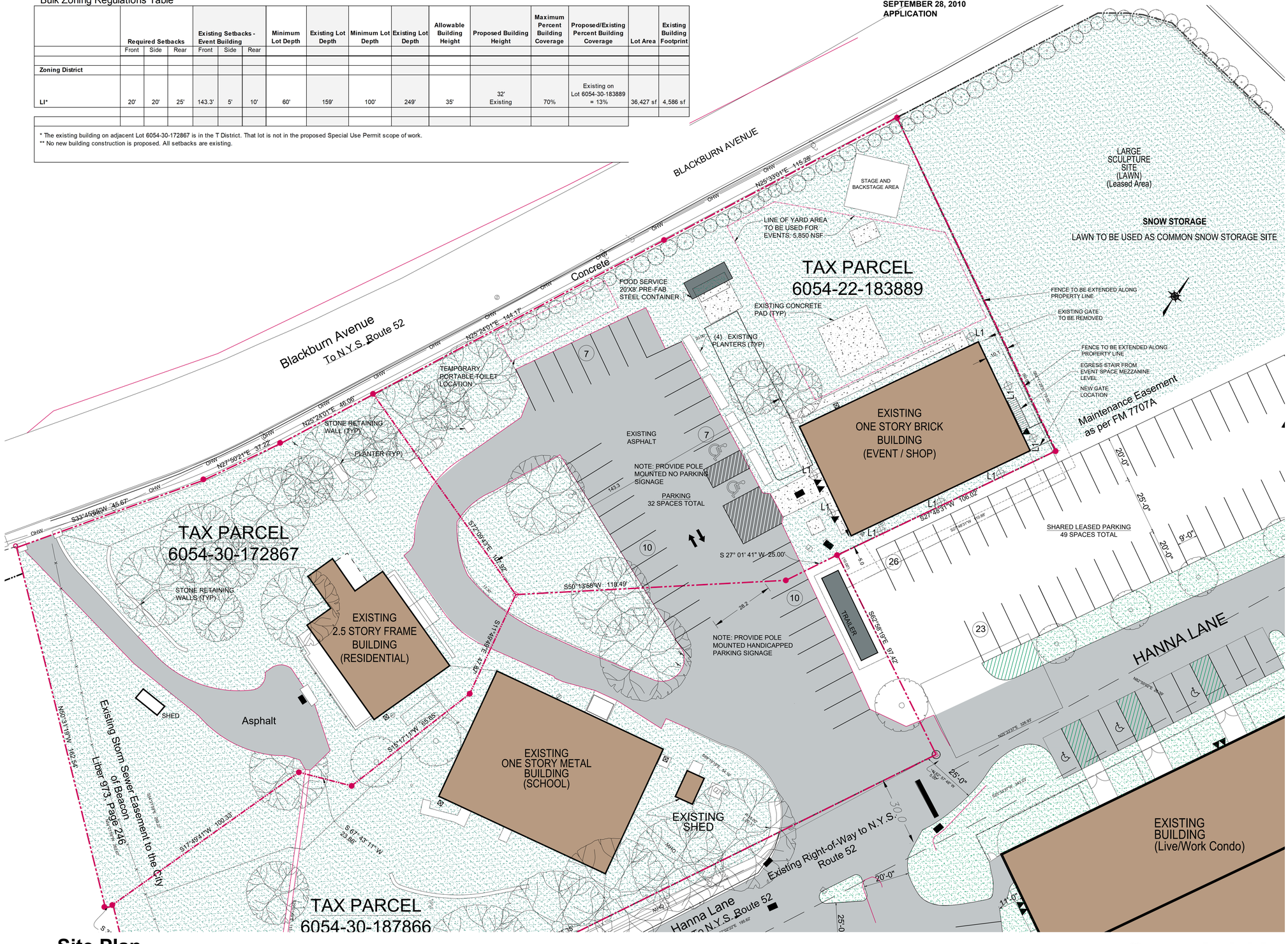
84 Mason Circle
Beacon, New York 12508
ajs@ajsarch.com
www.ajsarch.com
Tel 845 838 2490
Fax 845 838 2657

Bulk Zoning Regulations Table

	Required Setbacks			Existing Setbacks - Event Building			Minimum Lot Depth	Existing Lot Depth	Minimum Lot Depth	Existing Lot Depth	Allowable Building Height	Proposed Building Height	Maximum Percent Building Coverage	Proposed/Existing Percent Building Coverage	Lot Area	Existing Building Footprint
	Front	Side	Rear	Front	Side	Rear										
Zoning District																
LI*	20'	20'	25'	143.3'	5'	10'	60'	159'	100'	249'	35'	32' Existing	70%	Existing on Lot 6054-30-183889 = 13%	36,427 sf	4,586 sf

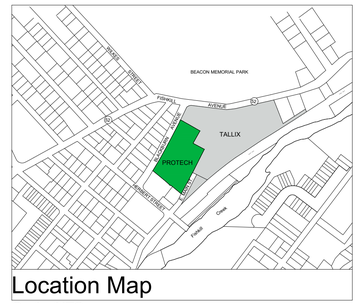
* The existing building on adjacent Lot 6054-30-172867 is in the T District. That lot is not in the proposed Special Use Permit scope of work.
** No new building construction is proposed. All setbacks are existing.

AREA OF WORK FOR SEPTEMBER 28, 2010 APPLICATION



Site Plan

Scale: 1" = 20'



Location Map

Scale: NTS

Zoning Summary

Zoning District:	LI (Light Industrial)
Tax Map No.:	6054-30-183889
Lot Area:	36,427 sf (0.84 acres)
Building Footprint:	4,586 sf (Existing Building)
Historical Overlay District:	No
Parking Overlay District:	No
Existing Use:	Shop
Proposed Use:	Mixed-Use: Shop & Event Space

Parking & Loading

Event Space Building Main Floor *1 space for each 4 seats or pew spaces or, in places or, in places without seats, 1 space for each 100 square feet of floor space used for public assembly*	120 Seats	30 spaces
Event Space Building Mezzanine *1 space for each 4 seats or pew spaces or, in places or, in places without seats, 1 space for each 100 square feet of floor space used for public assembly*	1,060 nsf	11 spaces Note that the mezzanine is a non-simultaneous use with the Main Floor event use
Outside Event Area *1 space for each 200 square feet*	5,850 sf	To be determined
Total Required Parking Spaces		***30 + Outdoor***
Total Proposed Parking Spaces		**83 spaces proposed See Note 1 below**

Notes:

1. There are 34 parking spaces proposed on the property controlled by the Applicant. There are 49 parking spaces available to the applicant on a shared basis with the adjacent property owner as required by the capacity of proposed events, for a total of 83 parking spaces. The Applicant will provide documentation, acceptable to the City of Beacon, demonstrating the proposed shared use and availability of the proposed shared spaces
2. The Event Space Building mezzanine space will not be used at the same time as the Event Space Building Main Floor. Therefore, the maximum required number of parking spaces for the Event Space Building is 30 spaces, based on the Main Floor.
3. Hours of operation vary according to proposed events
4. No signage is proposed as part of this application
5. Landscaping is existing, and no additional landscaping is proposed as part of this application

REVISIONS:			
NO.	DATE	DESCRIPTION	BY

Index of Drawings

Sheet 1 of 4	Site Plan
Sheet 2 of 4	Existing Conditions & Demolition Plan
Sheet 3 of 4	Lighting Plan
Sheet 4 of 4	Floor Plans

Special Use Permit Application

Sheet 1 of X - Site Plan

Owner:
EJC III, LLC
4 Hanna Lane
Beacon, NY 12508

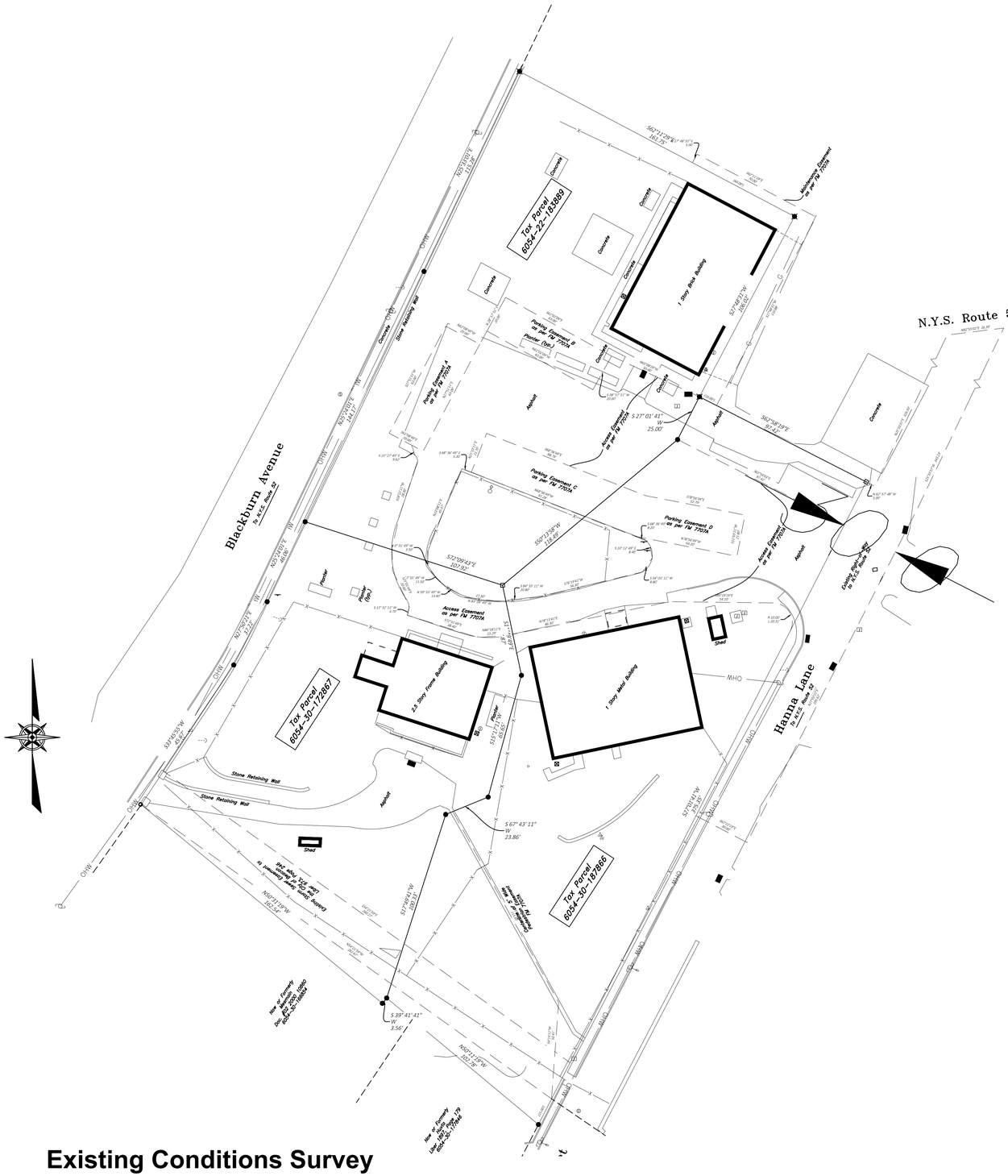
Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

Surveyor:
MJ Engineering And Land Surveying, P.C
1533 Crescent Road
Clifton Park, NY 12065

The Yard - Event Space

Beacon, New York
March 29, 2022

REVISIONS:			
NO.	DATE	DESCRIPTION	BY



Existing Conditions Survey

Scale: 1" = 30'



Overall Site Plan (For Reference Only)

Scale: 1" = 80'

Special Use Permit Application

Sheet 2 of X - Existing Conditions Plan

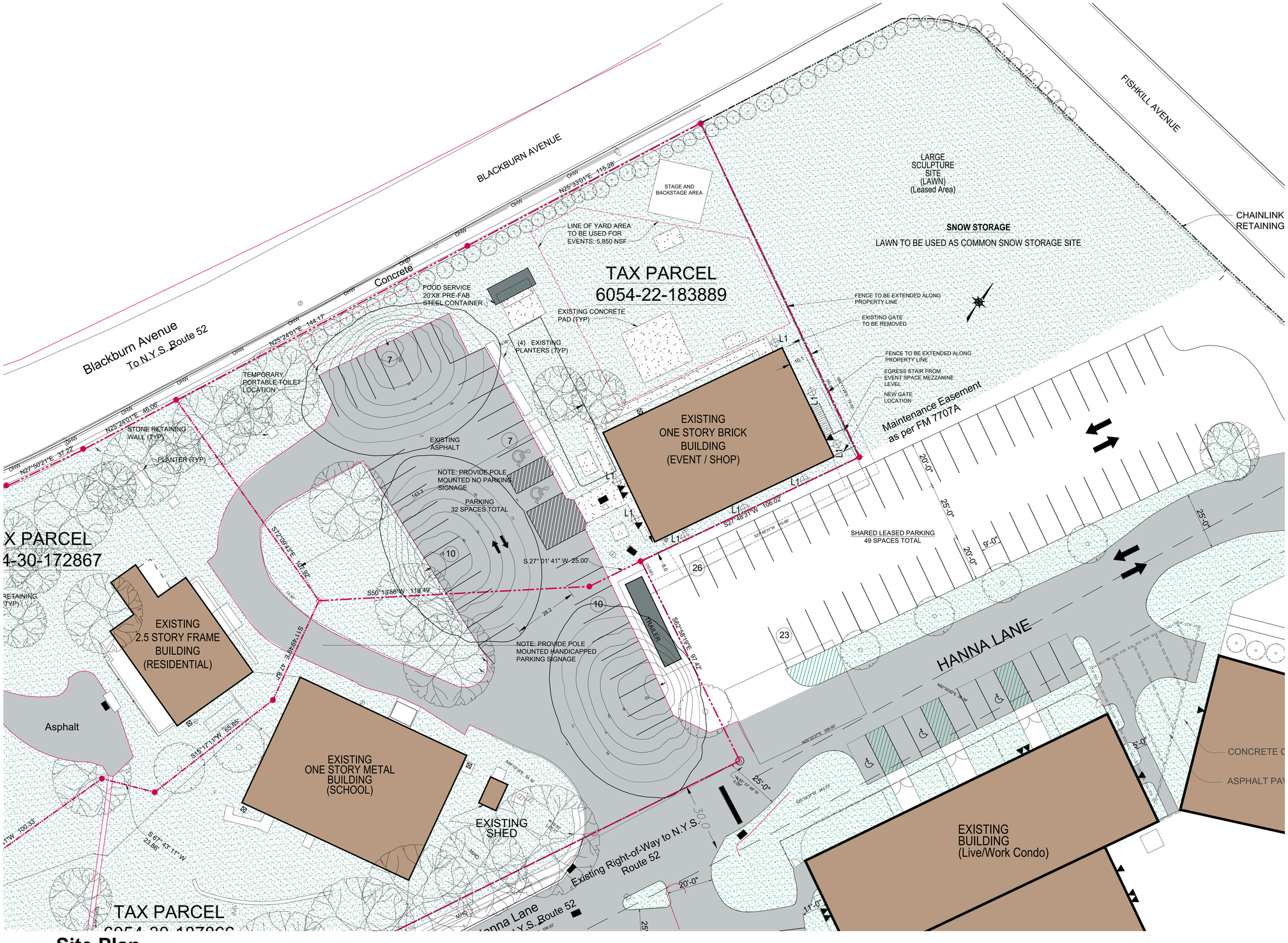
Owner:
EJC III, LLC
4 Hanna Lane
Beacon, NY 12508

Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

Surveyor:
MJ Engineering And Land Surveying, P.C
1533 Crescent Road
Clifton Park, NY 12065

The Yard - Event Space

Beacon, New York
March 29, 2022


BLACKBURN AVENUE
Blackburn Avenue
To N.Y.S. Route 52
FISHKILL AVENUE
LARGE SCULPTURE SITE (LAWN) (Leased Area)
STAGE AND BACKSTAGE AREA
LINE OF YARD AREA TO BE USED FOR EVENTS: 5,850 NSF
TAX PARCEL
6054-22-183889
SNOW STORAGE
LAWN TO BE USED AS COMMON SNOW STORAGE SITE
CHAINLINK RETAINING
FOOD SERVICE 20'X8' PRE-FAB STEEL CONTAINER
EXISTING CONCRETE PAD (TYP)
(4) EXISTING PLANTERS (TYP)
FENCE TO BE EXTENDED ALONG PROPERTY LINE
EXISTING GATE TO BE REMOVED
FENCE TO BE EXTENDED ALONG PROPERTY LINE
EGRESS STAIR FROM EVENT SPACE MEZZANINE LEVEL
NEW GATE LOCATION
TEMPORARY PORTABLE TOILET LOCATION
STONE RETAINING WALL (TYP)
PLANTER (TYP)
EXISTING ASPHALT
EXISTING ONE STORY BRICK BUILDING (EVENT / SHOP)
Maintenance Easement as per FM 7707A
NOTE: PROVIDE POLE MOUNTED NO PARKING SIGNAGE
PARKING 32 SPACES TOTAL
SHARED LEASED PARKING 49 SPACES TOTAL
S 27° 01' 41" W 25.00'
S50° 13'58"W 118.49'
NOTE: PROVIDE POLE MOUNTED HANDICAPPED PARKING SIGNAGE
KRAMER
S62°58'19"E 97.42'
HANNA LANE
EXISTING 2.5 STORY FRAME BUILDING (RESIDENTIAL)
EXISTING ONE STORY METAL BUILDING (SCHOOL)
EXISTING SHED
Asphalt
EXISTING BUILDING (Live/Work Condo)
Existing Right-of-Way to N.Y.S. Route 52
Hanna Lane
N.Y.S.Route 52
CONCRETE
ASPHALT PAV
X PARCEL
4-30-172867
TAX PARCEL
6054-30-197806
RETAINING (TYP)
N27°50'21"E 37.22'
N25°24'01"E 46.06'
N25°24'01"E 144.17'
N25°33'01"E 115.28'
S17°09'43"E 11.19'
S17°49'56"E 47.58'
S15°17'17"W 55.65'
S67°43'11"W 23.98'
S21°48'31"W 106.02'
N62°58'19"W 98.50'
N25°33'01"E 30.00'
S62°58'19"E 34.50'
S67°58'19"E 44.00'
N62°58'19"W 34.50'
N25°33'01"E 30.00'
S62°58'19"E 97.42

REVISIONS:			
NO.	DATE	DESCRIPTION	BY

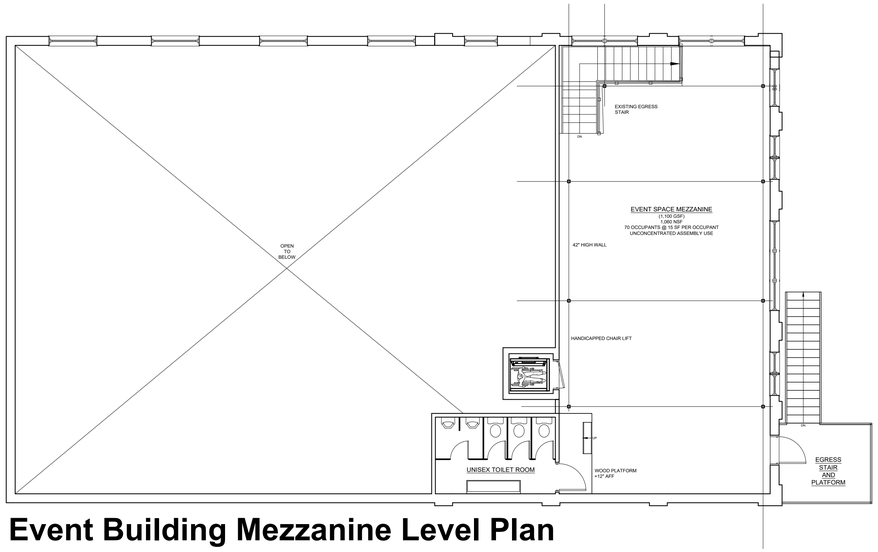






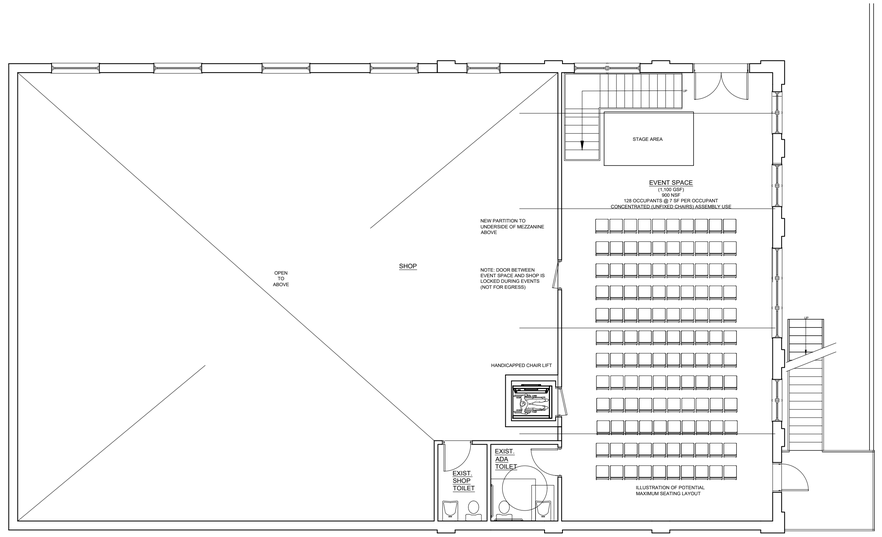
Shipping Container Food Service Examples

FOOD SERVICE CONTAINER TO BE CUSTOM FABRICATED FROM A 20' LONG SHIPPING CONTAINER ACCORDING TO OWNER'S REQUIREMENTS. THE ABOVE IMAGES ARE EXAMPLES ONLY, TO EXPLAIN THE PROPOSED CONCEPT. DESIGN IS SUBJECT TO OWNER REQUIREMENTS



Event Building Mezzanine Level Plan

Scale: $\frac{1}{8}$" = 1'-0"



Event Building Main Level Plan

Scale: $\frac{1}{8}$" = 1'-0"

Special Use Permit Application

Sheet 4 of 4 - Building Plans

Owner:
EJC III, LLC
4 Hanna Lane
Beacon, NY 12508

Architect:
Aryeh Siegel, Architect
84 Mason Circle
Beacon, New York 12508

Surveyor:
MJ Engineering And Land Surveying, P.C
1533 Crescent Road
Clifton Park, NY 12065

The Yard - Event Space

Beacon, New York
March 29, 2022

John Clarke Planning and Design jclarkeplandesign@gmail.com
845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: April 7, 2022
Re: **4 Hanna Lane, The Yard Event Space Site Plan**

I have reviewed the Special Permit Application, Short EAF Part 1, and a 4-sheet Special Permit Application set, all dated March 29, 2022.

Proposal
The applicant is proposing to convert an existing building to an indoor and outdoor event space. The 0.84-acre parcel is in the Light Industrial (LI) district.

Comments and Recommendations

1. The Building Inspector has confirmed that this application does not need a Special Permit, only Site Plan approval.

2. The Application and Short EAF checklist do not provide sufficient information on the proposed uses, including what types of events, how often, what hours, and what potential noise impacts are to be expected. The EAF also identifies issues that need additional documentation, such as an increase in traffic and remediation of hazardous waste. The applicant should provide a complete project narrative or Full EAF with attachments.

3. Any new buildings or site features should be represented in a detail, including the stage, food service container, fence, and gate.

4. The shop building is existing non-conforming, but any new buildings must comply with the district's setback requirements or seek an area variance.

5. The required parking will be determined once more information is provided on the proposed use. Parking on adjacent properties will need formal agreements acceptable to the City.

6. For the long lot along Hanna Lane:

    a. The spaces should be striped at 18 feet long with a 24-foot aisle. Any surplus asphalt can be used as a walkway to the building.

    b. There does not appear to be any sidewalk connection between this parking lot and the building entrance.

    c. The northern end of the lot should be landscaped to provide screening from Fishkill Avenue.

    d. If to be used in the evening, the lot will need additional lighting.

7. The lighting fixtures are not labeled properly. Color temperatures and Color Rendering Index should also be provided to meet the requirements in Section 223-14B.

If you have any questions or need more information, please feel free to contact me.

John Clarke, Beacon City Planning Consultant

c: Dave Buckley, Building Inspector
Jennifer L. Gray, Esq., City Attorney
Arthur R. Tully, P.E., City Engineer
John Russo, P.E., City Engineer
Aryeh Siegel, Project Architect

LANC & TULLY
ENGINEERING AND SURVEYING, P.C.

John J. O'Rourke, P.E., Principal
David E. Higgins, P.E., Principal
John Queenan, P.E., Principal

Rodney C. Knowlton, L.S., Principal
Jerry A. Woods, L.S., Principal

John D. Russo, P.E., Principal
John Lanc, P.E., L.S.
Arthur R. Tully, P.E.

April 8, 2022

Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

RE: 4 Hanna Lane – Special Use Permit
Tax No. 6054-30-183889
City of Beacon

Dear Mr. Gunn:

My office has received the following in regard to a Special Use Permit for 4 Hanna Lane:

- Special Use Permit Application.
- Short Environmental Assessment Form, dated March 29, 2022.
- Plan set titled "Special Use Permit Application – The Yard Event Space", dated March 29, 2022, consisting of 4 sheets, as prepared by Aryeh Siegel, Architect.

The proposed project entails the re-use of an existing building on Hanna Lane for assembly of indoor and outdoor events. The site is located in the LI Zone. Based on our review of the above plans, we would like to offer the following comments:

General Comments:

1. A project narrative should be provided to the Planning Board to further explain what types of indoor and outdoor events are to be held at the site, days of operation, hours of operations and/or events, the food trailer, etc, to allow for a clearer picture as to what is being proposed for the site.

2. Additional information shall be provided to the Planning Board as to how traffic will be handled entering and exiting the site for events. The plans shall also note what will be the main access for vehicles entering the site for events.

3. Does the existing building have a fire sprinkler system within it? If so, it should be noted on the plans. If not, the applicant should discuss further with the City's Building Department as to whether a sprinkler system will be required for the assembly areas in accordance with NYS Building Code. If a system is currently not present, a large water service line may be need for the project, and therefore would have to be shown on the plans.

4. The applicant's consultant should conduct an Inflow & Infiltration study of the existing site and building and provide certification to the City of Beacon that the site currently has no illegal cross-connections between the existing site and the City's sanitary sewer system. Possible cross-connections that should be looked at would be roof-leaders, sump pumps, existing site drains, etc. If any cross-connections are found, a report should be submitted as to the findings, the volume of I&I being introduced into the sanitary sewer collection system, and the proposed remediation for the cross-connection(s) found. The plans should also clearly show the proposed remediation as outlined in the report. A note should also be added to the plans granting the City of Beacon Building Department access to verify where the existing roof leaders and sump pump(s), if present, drain to.

5. The sheet numbering on the plans shall be corrected, as it currently states Sheet 1 of X.

Site Plan (Sheet 1 of 4):

1. The plan shall show the full extent of the parking area on the easterly side of the site to be used, along with how the site is accessed from the neighboring road system.

2. The Parking Calculation table shall be updated to take into account the parking requirements for the other parcels at the site that currently share the parking on site.

3. What is the trailer to the easterly side of the building proposed for? Plan should clearly label what this trailer is for.

4. The sidewalk on the right front side of the building should be extended out to the parking lot to allow for patrons to have a safe and maintainable access to the entrance.

5. The plan shall clearly show all proposed and existing traffic signage for the site.

Existing Conditions Plan (Sheet 2 of 4):

1. A dimension and associated dimension lines are not at the proper scale and shall be corrected so that plan is clearly legible.

2. The "Overall Site Plan" should be provided at a larger scale so that it is legible.

Lighting Plan (Sheet 3 of 4):

1. The lighting plan shall ensure that illumination is provided along the path of travel for exit discharge from each exit to the public way in accordance with Section 1008.2.3. of the 2020 NYS Fire Code.

2. The lighting shown in the parking lot on the front of the building existing or proposed. If existing, it should be labeled as such. If proposed, it should be labeled as such along with what lighting fixture is to be installed at these locations.

3. Additional construction details shall be provided for the pole mounted lighting proposed on site. It should include the size of the base, bury depth of the base, pole size, etc.

This completes our review at this time. Further comments may be provided based on future submissions. **A written response letter addressing each of the above comments should be provided with the next submission.** If you have any questions, or require any additional information, please do not hesitate to contact our office.

Very truly,

LANC & TULLY, P.C.

John Russo, P.E.

cc: John Clarke, Planner
Jennifer Gray, Esq.
David Buckley, Building Inspector

City of Beacon Planning Board Agenda
04/12/2022

Title:

Zoning Board of Appeals - April meeting

ATTACHMENTS

April Agenda.pdf

CITY OF BEACON
ONE MUNICIPAL PLAZA - SUITE 1
BEACON, NEW YORK 12508

Phone (845) 838-5002 Fax (845) 838-5026

The Zoning Board of Appeals will meet on **Tuesday, April 19, 2022** in the Municipal Center courtroom, located at One Municipal Plaza, Beacon, New York. A training work session will take place at 7:00 PM and the regular meeting and public hearings will begin immediately thereafter, but not later than 7:30 PM.

1. Continue public hearing on REVISED application submitted by Michael Isabell, 866 Wolcott Avenue, Tax Grid No. 30-6054-45-071581-00, R1-10 Zoning District, to construct an accessory structure (2 car garage) which requires relief from Section 223-17(E) for a 786 sq. ft. accessory structure *(403 sq. ft. maximum permitted)*

Miscellaneous Business

1. 1113 Wolcott Avenue – SEQRA review

City of Beacon Planning Board Agenda
04/12/2022

Title:

Consider request for one 90-day extension of Subdivision Approval, 14 Green Street, submitted by Thomas Rigney

ATTACHMENTS

14 Green Street Extension Request.pdf

Engineering and
Land Surveying, P.C.

1533 Crescent Road
Clifton Park, NY 12065
Phone: 518.371.0799
mjelspc@mjels.com
mjels.com

March 15, 2022

Ms. Grogan
Assistant to the City Administrator
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

Rigney Subdivision
14 Green Street
Tax No. 6054-47-282572

Dear MS. Grogan

We are respectfully request to be placed on the April 12, 2022, Planning Board Agenda for an Extension of Final Approval.

If you have any comments, questions, or need additional information, please do not hesitate to contact this office at (518) 371-0799 ext. 431.

Sincerely,

Dennis Lynch, P.E.
Managing Engineer

City of Beacon Planning Board Agenda
04/12/2022

Title:

Consider request for one 90-day extension of Subdivision Approval, 52 Dennings Avenue, submitted by Angel Ingham

ATTACHMENTS

52 Dennings Avenue Extension Request.pdf

CUDDY +FEDER LLP

300 Westage Business Center, Suite 380
Fishkill, New York 12524
T 845 896 2229
F 845 896 3672
cuddyfeder.com

Taylor M. Palmer
tpalmer@cuddyfeder.com

February 22, 2022

BY E-MAIL (egrogan@beaconny.gov)

Hon. John Gunn, Chairman
& Members of the Planning Board
City of Beacon
One Municipal Plaza
Beacon, New York 12508

Re: 52 Dennings Residential Subdivision
Request for Extension of Subdivision Approval Resolution
Premises: 52 Dennings Avenue, Beacon, New York (Tax ID: 5954-50-687603)

Dear Chairman Gunn and Planning Board Members:

In connection with the proposal by Angela Ingham (the "Applicant") to subdivide the existing one (1) lot found at the above-referenced Premises into two (2) lots, we are writing to request a 90-day extension of the September 14, 2021 Preliminary & Final Subdivision Plat Approval Resolution (the "Approval Resolution").[1] This request is timely, as 180 days (six (6) months) have not elapsed since the date of the adopted Approval Resolution.

The Applicant has been diligently coordinating with the project's consultants in prosecuting the conditions in the Approval Resolution. Over the course of the last several months, the Applicant and the Planning Board's Attorney have corresponded regarding the contents of the Access and Utility Easement Agreement (the "Easement"), and a final draft of the Easement has recently been submitted to the Planning Board's Attorney for the City's further review. Furthermore, the Approval Resolution was conditioned on the Applicant getting approval from the Planning Board's Attorney and Engineering Consultant regarding how the referenced Easement is illustrated on the relevant Subdivision Map prior to signing of the Subdivision Map. This was also submitted to the City for the City's review. The Applicant has satisfied nearly all of the approval conditions, and once the above-referenced signoffs are received, the Applicant will proceed with obtaining all required signatures on the Subdivision Map for filing the Subdivision Map and recording the Easement.

Given the particular circumstances noted above, we respectfully submit this formal request for one (1) 90-day extension of the Approval Resolution, thus extending to June 11, 2022 the date by which the Applicant must satisfy the remaining conditions set forth in the Approval Resolution in order for the Final Subdivision Plat to be signed by the Chairman of the Planning Board. This Board has the authority to grant the requested extension pursuant to City of Beacon Code Section 195-14(D).

[1] A copy of the September 14, 2021 Approval is attached to this letter as **Exhibit A**.

We respectfully request that you please place this matter on the Planning Board's March 8, 2022 Agenda for consideration of the Applicant's request for one (1) 90-day extension.

Thank you in advance for your consideration in this matter.

Very truly yours,

Taylor M. Palmer

Enclosure
cc: Jennifer L. Gray, Esq. – Planning Board Attorney
Michael A. Morgante, P.E. – Arden Consulting

City of Beacon Planning Board Agenda
04/12/2022

Title:

Single Family House - Shea Lane

ATTACHMENTS

Shea Lane Site Plan & Elevations.pdf

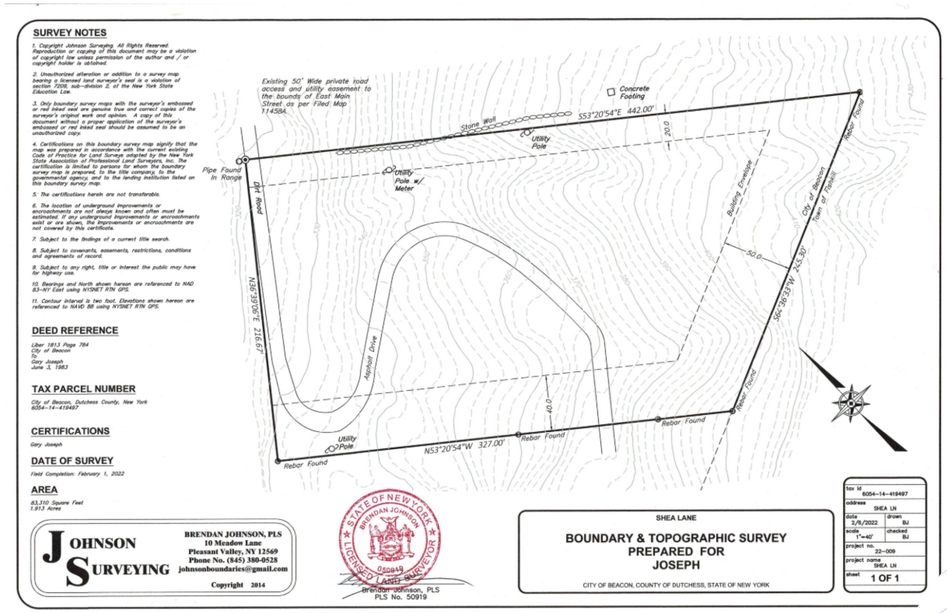
Shea Lane Application.pdf

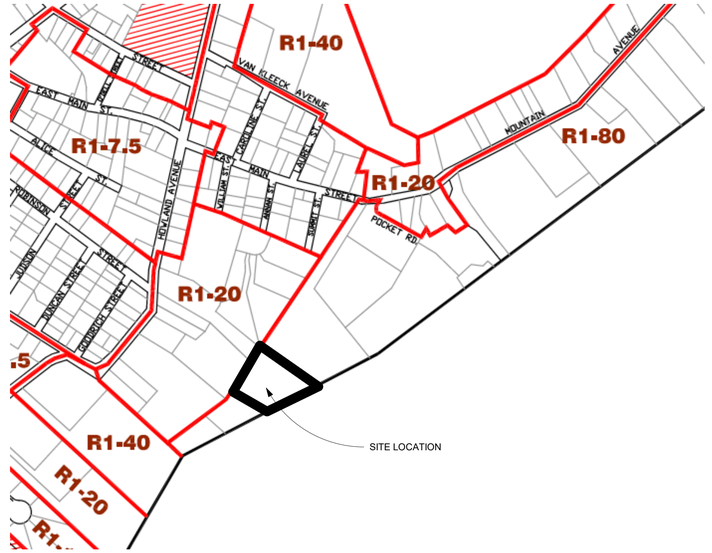
SHEA LANE, BEACON, NY

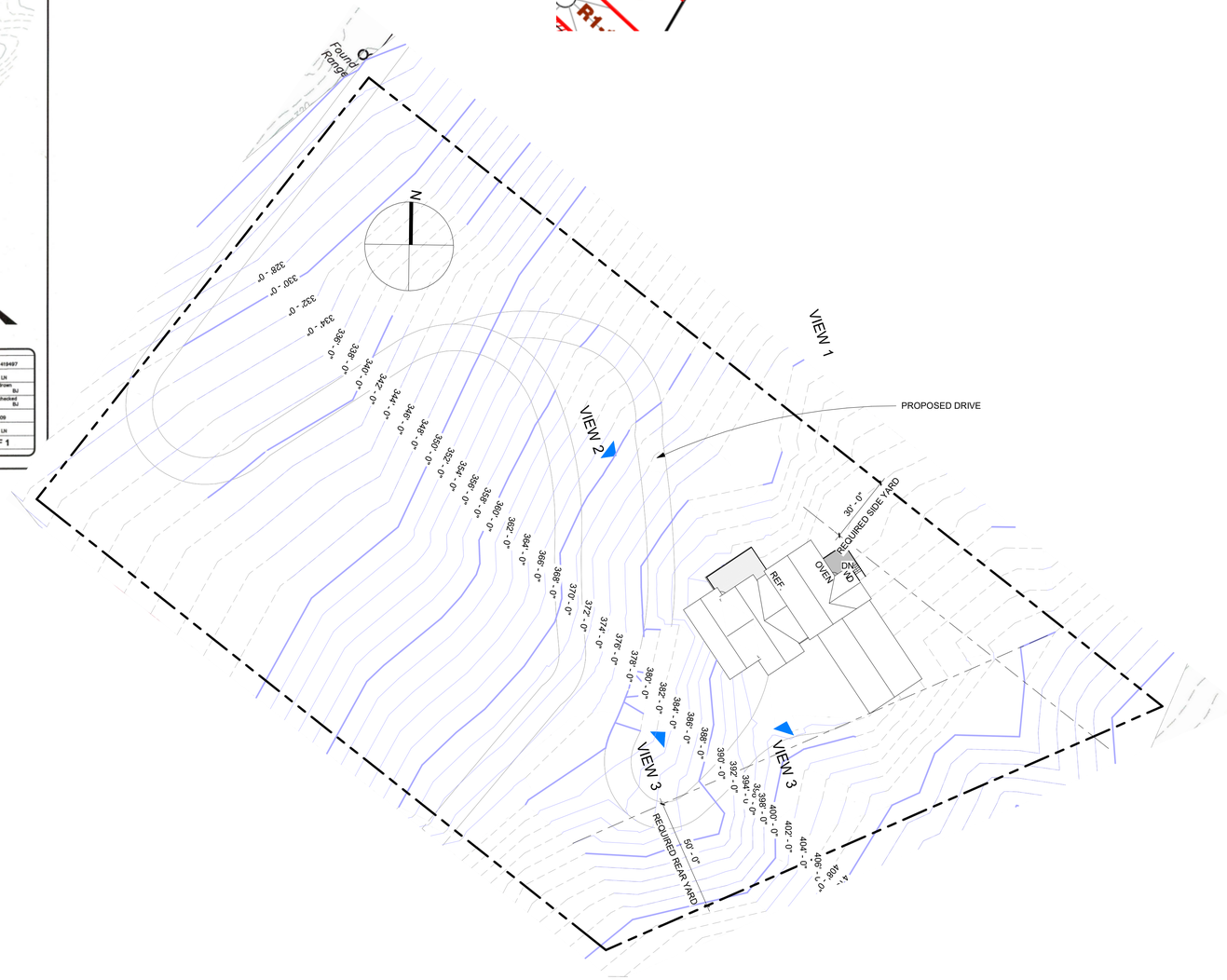
NEW HOUSE

OWNER:
GARY JOSEPH

ARCHITECT:
BERG + MOSS ARCHITECTS, PC
THE BEACON BUILDING
473 MAIN STREET, SUITE 1
BEACON, NEW YORK 12508







PROJECT DESCRIPTION:

LOCATION:	SHEA LA
PARCEL NUMBER:	6054-14-419497
LOT AREA:	83,310 S.F.
ZONING DISTRICT:	R-1/ 80 SINGLE FAMILY RESIDENTIAL
EXISTING USE:	VACANT
PROPOSED USE:	R-SINGLE-FAMILY

Berg+Moss Architects
BMA
BERG + MOSS ARCHITECTS PC
THE BEACON BUILDING
427 MAIN STREET No. 104
BEACON, NY 12508
T: 845 831 1318
INFO@BERGMOSS.COM

© 2014 Berg + Moss Architects, PC

No.	Description	Date
1	ARC Review	3/24/22

THESE CAD FILES MAY NOT BE USED, DUPLICATED, MODIFIED OR CHANGED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF BERG + FLYNN ARCHITECTURE PC. THE USER AND ITS AGENTS WILL BE LIABLE FOR ANY UNAUTHORIZED USE, DUPLICATION, MODIFICATION OR CHANGE.

NEW HOUSE ON SHEA LANE

BEACON, NEW YORK

DRAWING TITLE
SITE PLAN

DRAWING NO.
G-003

SEAL & SIGNATURE

DATE: 1.25.22
SCALE: 1" = 30'-0"
DWG BY: Author
CHK BY: Checker



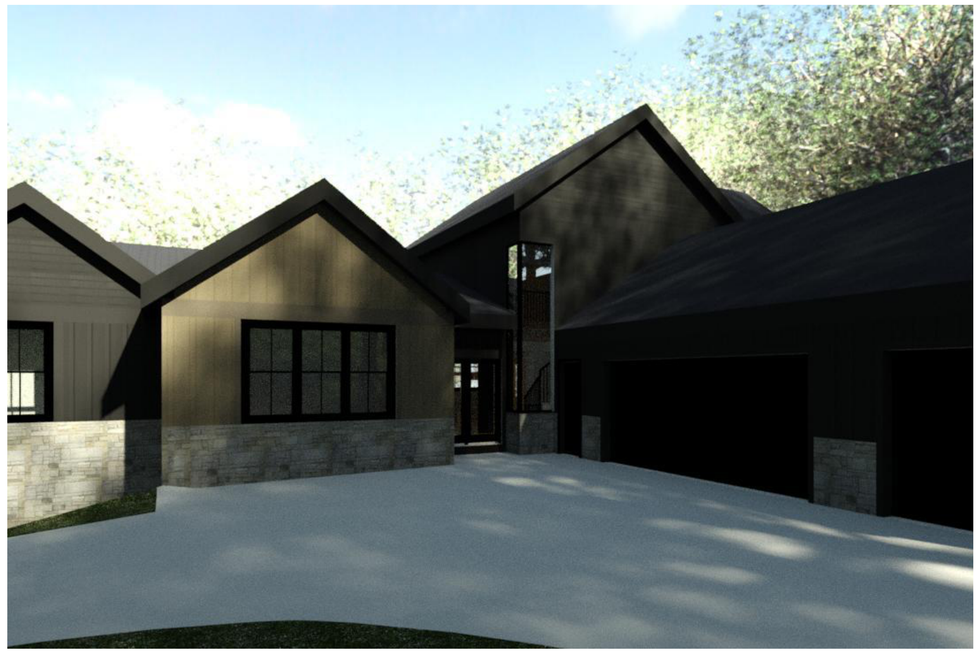
VIEW FROM BELOW 1
12" = 1'-0"



VIEW UP SOUTH 2
12" = 1'-0"



DRIVE TO ENTRANCE 3
12" = 1'-0"



ENTRY 4
12" = 1'-0"

Berg+Moss Architects
BMA

BERG + MOSS ARCHITECTS PC
THE BEACON BUILDING
427 MAIN STREET No. 104
BEACON, NY 12508
T: 845 831 1318
INFO@BERGMOSS.COM

c 2014 Berg + Moss Architects, PC

No.	Description	Date
1	ARC Review	3/24/22

THESE CAD FILES MAY NOT BE USED, DUPLICATED, MODIFIED OR CHANGED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF BERG + FLYNN ARCHITECTURE PC. THE USER AND ITS AGENTS WILL BE LIABLE FOR ANY UNAUTHORIZED USE, DUPLICATION, MODIFICATION OR CHANGE.

NEW HOUSE ON SHEA LANE

BEACON, NEW YORK

DRAWING TITLE
PERSPECTIVES

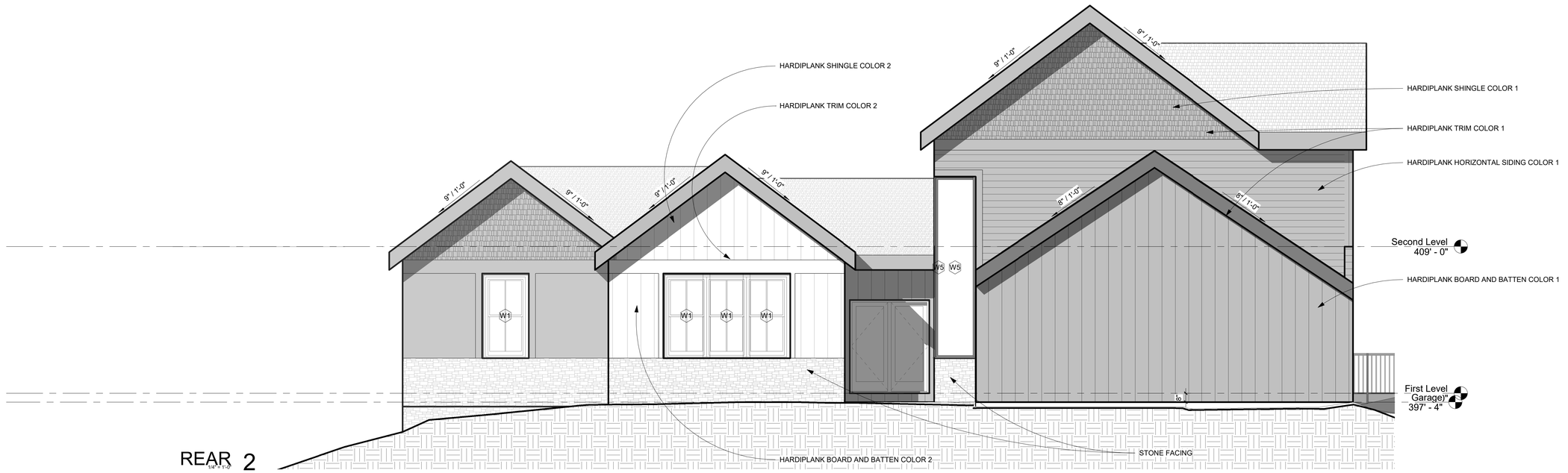
DRAWING NO.
X-102.00

SEAL & SIGNATURE

DATE: 1.25.22
SCALE: 12" = 1'-0"
DWG BY: Author
CHK BY: arc



Elevation FRONT 1
1/4" = 1'-0"



REAR 2
1/4" = 1'-0"

WINDOW/ DOORS

COLOR 1

COLOR 2





STONE

BERG + MOSS ARCHITECTS PC
THE BEACON BUILDING
427 MAIN STREET No. 104
BEACON, NY 12508
T: 845 831 1318
INFO@BERGMOSS.COM

c 2014 Berg + Moss Architects, PC

No.	Description	Date
1	ARC Review	3/24/22

THESE CAD FILES MAY NOT BE USED, DUPLICATED, MODIFIED OR CHANGED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF BERG + FLYNN ARCHITECTURE PC. THE USER AND ITS AGENTS WILL BE LIABLE FOR ANY UNAUTHORIZED USE, DUPLICATION, MODIFICATION OR CHANGE.

NEW HOUSE ON SHEA LANE

BEACON, NEW YORK

DRAWING TITLE

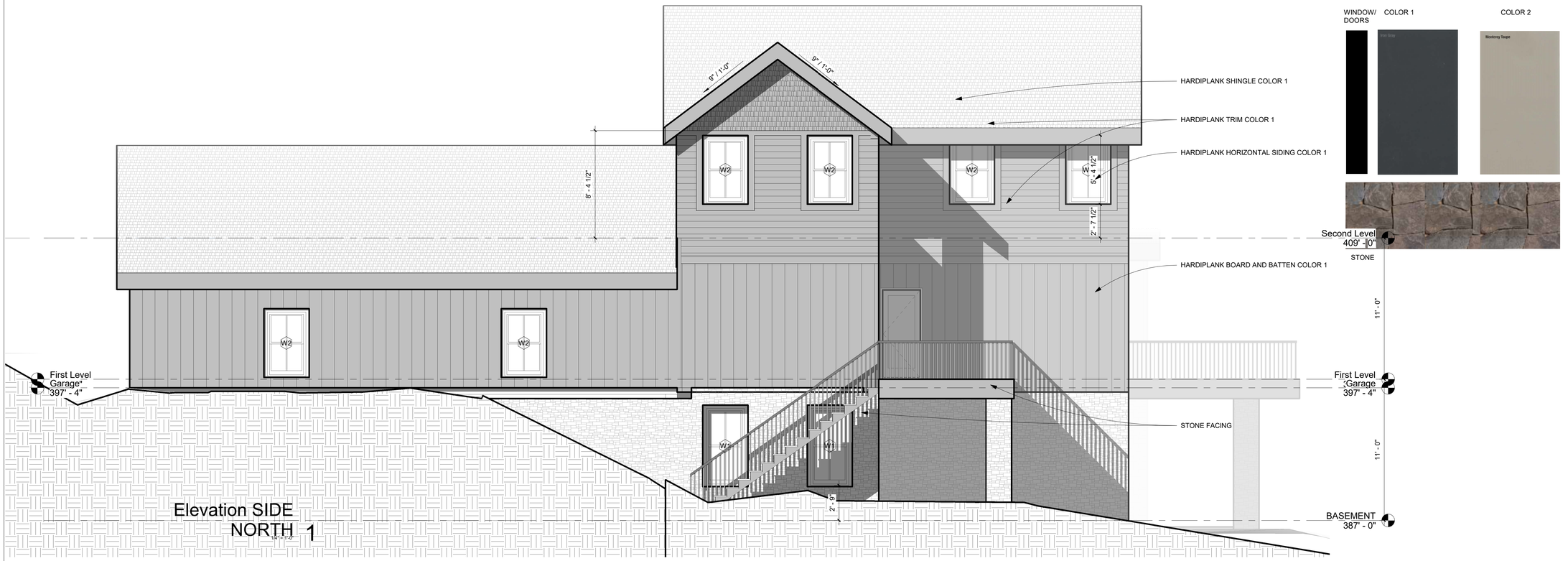
FRONT AND REAR ELEVATIONS

DRAWING NO.

A-400.00

SEAL & SIGNATURE

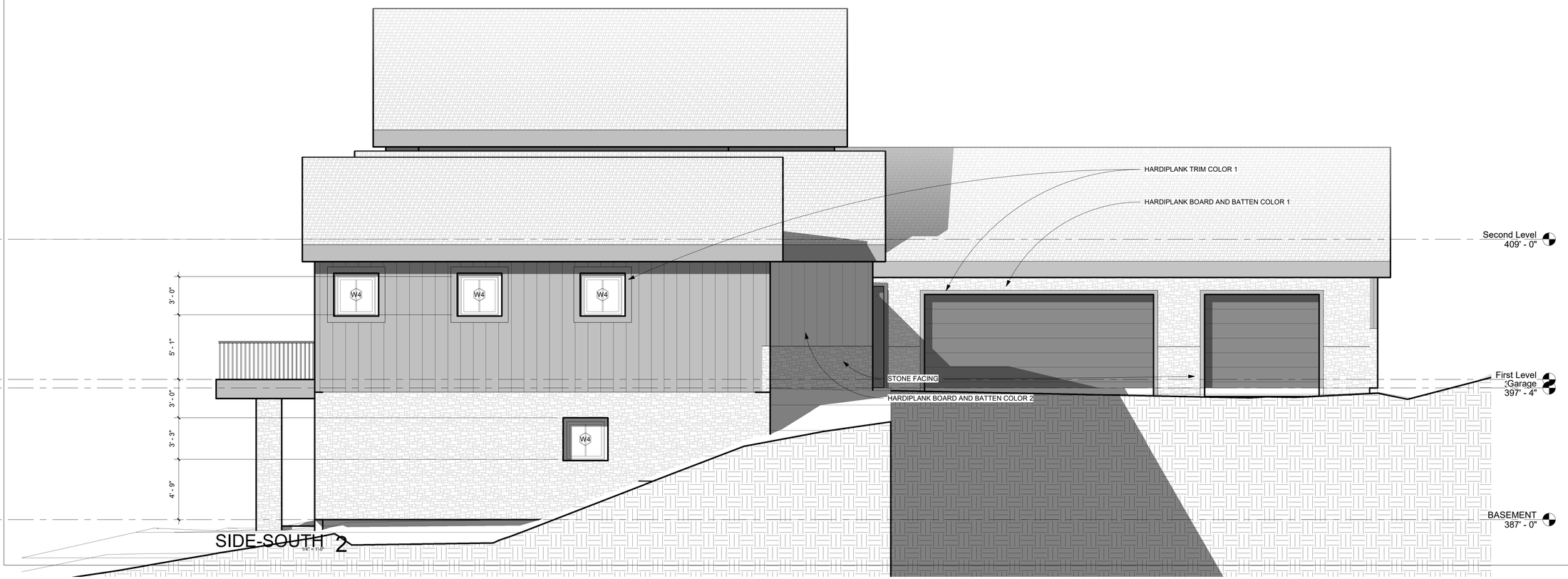
DATE: 1.25.22
SCALE: As indicated
DWG BY: Author
CHK BY: Checker



WINDOW/ DOORS

COLOR 1

COLOR 2



Berg+Moss Architects
BMA

BERG + MOSS ARCHITECTS PC
THE BEACON BUILDING
427 MAIN STREET No. 104
BEACON, NY 12508
T: 845 831 1318
INFO@BERGMOSS.COM

c 2014 Berg + Moss Architects, PC

No.	Description	Date
1	ARC Review	3/24/22

THESE CAD FILES MAY NOT BE USED, DUPLICATED, MODIFIED OR CHANGED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF BERG + FLYNN ARCHITECTURE PC. THE USER AND ITS AGENTS WILL BE LIABLE FOR ANY UNAUTHORIZED USE, DUPLICATION, MODIFICATION OR CHANGE.

NEW HOUSE ON SHEA LANE

BEACON, NEW YORK

DRAWING TITLE
SIDE ELEVATIONS

DRAWING NO.
A-401.00

SEAL & SIGNATURE

DATE: 1.25.22
SCALE: As indicated
DWG BY: -
CHK BY: -

1495

ARCHITECTURAL REVIEW BOARD APPLICATION

Date: 3/25/22

Project Address: Shea Lane

Project Architect/Engineer: Berg Moss Architects

Owner/Builder: Gary Joseph

Contact Phone No.: (845) 831-1318

Approval Requested: _____Certificate of Appropriateness ___x___New Single Family House

Color/Materials:

Siding: Hardiplank Board and batten, horiz siding and shingle, Monery Taupe and Iron Gray

Roofing: Certainteed Landmarked Asphalt Shingle, Cobble Stone Gray

Windows: Color: Black Type: Double Hung

Trim: Hardiplank , Monery Taupe and Iron Gray

Garage Door: Black

Stone/Brick: Delgato Fieldstone" Mosaic"

J Joseph

Signature of Owner

FOR OFFICE USE ONLY:

The Architectural Review Board has reviewed the plans submitted for approval for the project listed above and has determined:

Plan Denied _____
(Date)

Plan Approved _____
(Date)

Subject to the following:

_____

_____

FEE: $100.00

City of Beacon Planning Board Agenda
04/12/2022

Title:

Certificate of Appropriateness - 473 Main Street; signage

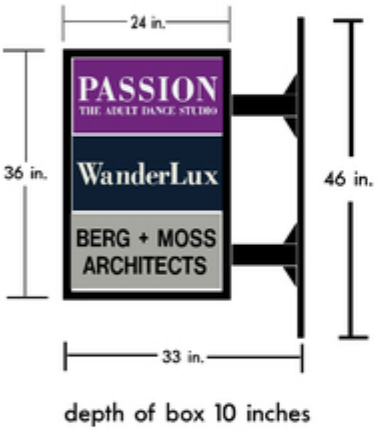
ATTACHMENTS

473 Main Street Sign.JPG

473 Main Street Application.pdf

473 Main Street Elevation.JPG

473 Main Street Sign 2.PDF



depth of box 10 inches



10.5 ft. to sign bottom

1497

1498

ARCHITECTURAL REVIEW BOARD APPLICATION

Date: February 22, 2022

Project Address: 473 Main Street, Suite 4, Beacon, NY 12508

Project Architect/Engineer: Superior Signs, Hopewell Junction, NY
Chris Palazzo
845-227-5928

Owner/Builder: 473 Main Street Beacon LLC

Contact Phone No.: 845-831-1318

Approval Requested: ✓ Certificate of Appropriateness _____ New Single Family House

Color/Materials:

~~Siding~~ Sign: Internally illominated sign representing 3 businesses: Berg + Moss Architects Wanderlux Passion - The Adult Dance Studio

Roofing: _____

Windows: Color: _____

Trim: _____

Garage Door: _____

Stone/Brick: _____

Calli Rothberg
Signature of Owner
Passion - The Adult Dance Studio

FOR OFFICE USE ONLY:

The Architectural Review Board has reviewed the plans submitted for approval for the project listed above and has determined:

Plan Denied _____
(Date)

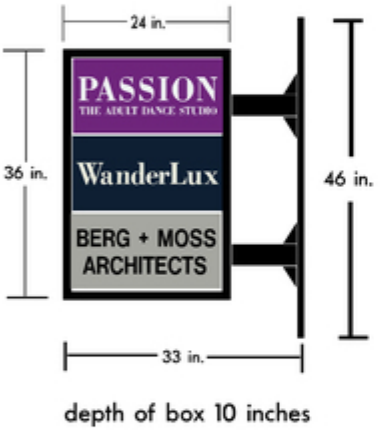
Plan Approved _____
(Date)

Subject to the following:

_____

_____

FEE: $100.00

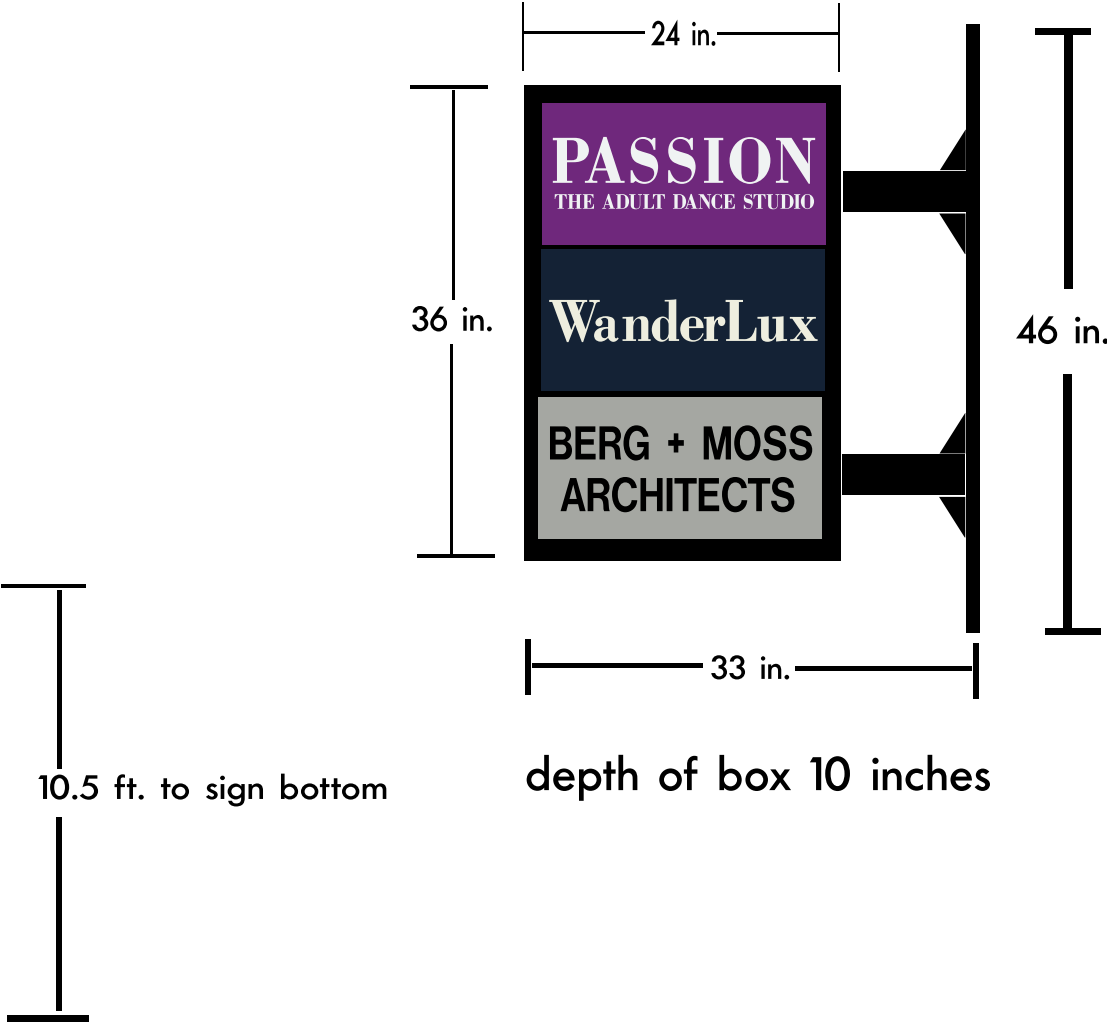


depth of box 10 inches



10.5 ft. to sign bottom

1499


24 in.
36 in.
PASSION
THE ADULT DANCE STUDIO
WanderLux
BERG + MOSS
ARCHITECTS
46 in.
33 in.
10.5 ft. to sign bottom
depth of box 10 inches

City of Beacon Planning Board Agenda
04/12/2022

Title:

416-420 Main Street; Sign for Central Green Space

ATTACHMENTS

416-420 Main Street Green Space Sign April.pdf

CUDDY +FEDER LLP

445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
T 914 761 1300
F 914 761 5372
cuddyfeder.com

Taylor M. Palmer, Esq.
tpalmer@cuddyfeder.com

March 29, 2022

VIA E-MAIL
AND HAND DELIVERY
Hon. John Gunn
And Members of the Planning Board
City of Beacon
1 Municipal Plaza
Beacon, New York 12508

Re: Central Public Green Space Sign – Supplemental Submission
Application for Special Use Permit, Subdivision (Lot Line Change) & Site Plan Approvals
Premises: 416-420 Main Street, Beacon, New York
Tax Parcel IDs: (6054-29-056780 & 6054-29-056774)

Dear Chairman Gunn and Members of the Planning Board:

On behalf of 416 Main Street Beacon, LLC and 420 Main Street, LLC, D/B/A 420 Main St. Beacon, LLC (collectively, the "Applicant"), the owners of the above-referenced Premises, we respectfully submit this letter and the referenced enclosures in furtherance of the Applicant's proposed "welcome" signage for the Central Public Green Space (the "Welcome Sign").

Following the Applicant's appearance at the Planning Board's March 8th meeting Agenda, the Applicant's Architect, Aryeh Seigel, further refined and enlarged the proposed Welcome Sign to incorporate the comments from the Planning Board and its consultants. For the benefit of this Board in considering the updated Welcome Sign, enclosed please find an updated Site Plan sheet entitled "Welcome Sign – Concept Design", prepared by Aryeh Siegel, Architect, dated March 29, 2022.

ENLARGED WELCOME SIGN TO CENTRAL PUBLIC GREEN SPACE:

As is more fully detailed in the enclosed updated Site Plan, the Applicant has made the following changes to the Welcome Sign:

1) The size of the sign panel was enlarged from 11" x 17" to 18" x 30";
2) The height of the sign was increased so that the height of the top of the sign is at 36", which is raised from 24" as previously proposed;
3) The detail of the support post changed to a steel detail with back-to-back corten steel angles with bolted connections, which relates to some of the detailing on the building;

4) While the shape of the proposed Welcome Sign is generally the same, it now has rounded corners instead of full half-round sides. This allows for the text to larger and more legible;

5) The text is painted on the sign panel instead of being cut-out for improved legibility. It would also be possible to apply individual 3D laser-cut letters; and

6) The sign still provides the message conditioned in the Planning Board's approval, which states: "Welcome – Open to the Public Dawn to Dusk".

As noted above, in support of this request, please find enclosed five (5) copies of this letter and the updated Site Plan entitled "Welcome Sign – Concept Design", prepared by Aryeh Siegel, Architect, dated March 29, 2022.

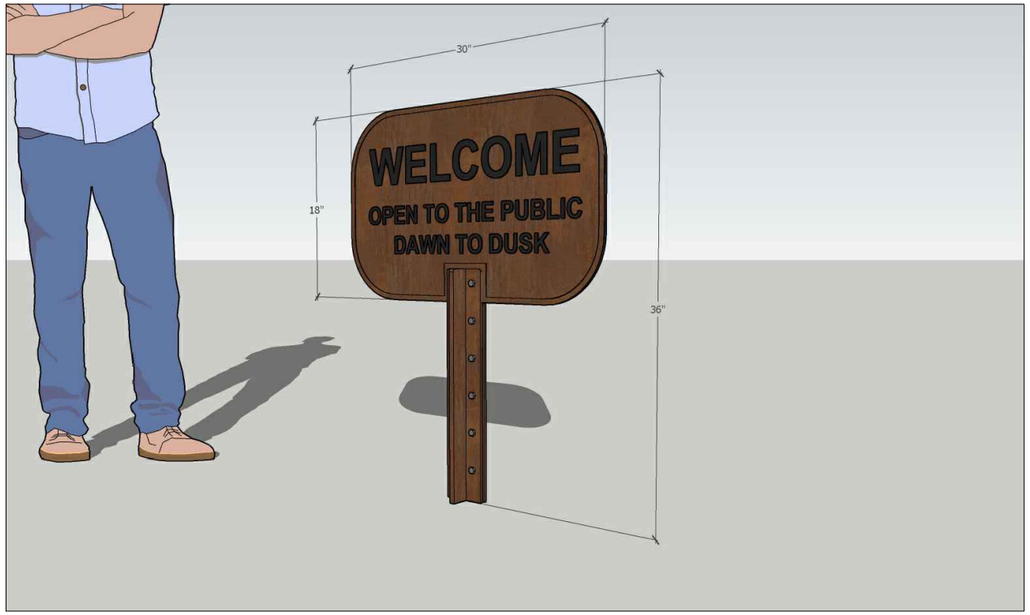
The Applicant looks forward to appearing at this Board's April 12, 2022 meeting Agenda for its continued review of the enlarged Welcome Sign for the Central Public Green Space. In the meantime, should the Planning Board or City Staff have any questions or comments with regard to the foregoing, please do not hesitate to contact me.

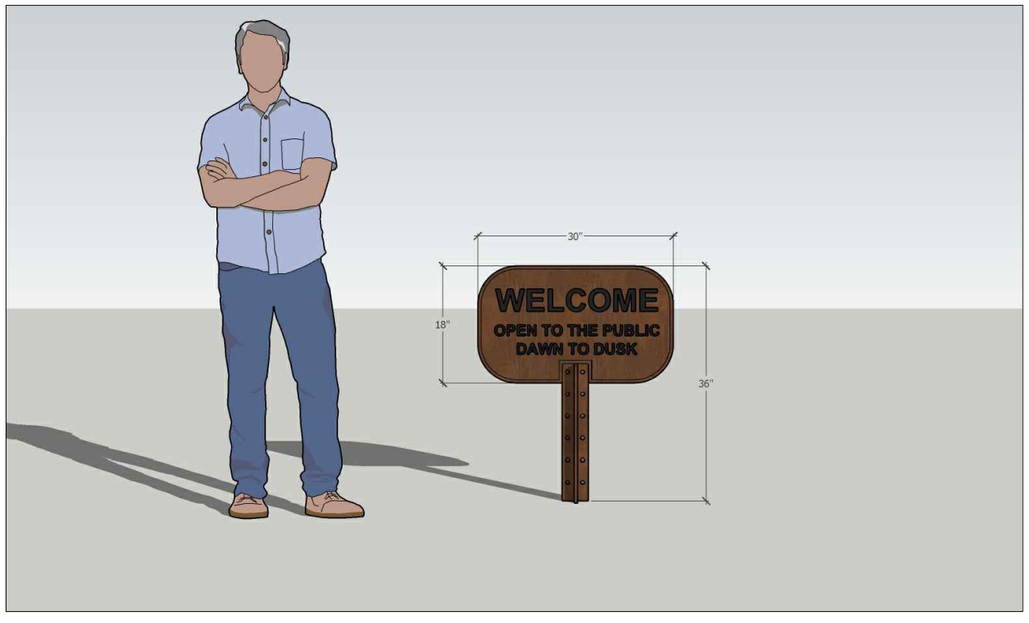
Very truly yours,

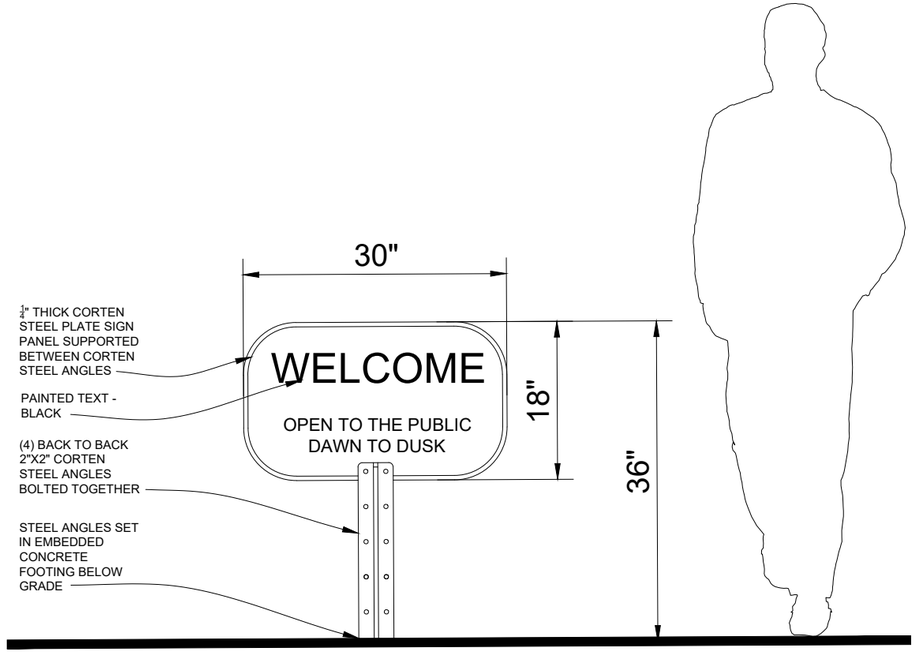
Taylor M. Palmer

Enclosures

Cc: Jennifer L. Gray, Esq.
John Clarke Planning and Design
Lanc & Tully Engineering and Surveying, P.C.
Aryeh J. Seigel Architect







Welcome Sign - Concept Design

416 Main Street

Beacon, NY
March 29, 2022
Aryeh Siegel Architect