COURTROOM
1 MUNICIPAL PLAZA
BEACON, NY 12508

Len Warner
Karen Quiana
Kevin Byrne
Donna Francis
J. Randall Williams
David Jensen
Chair John Gunn

September 12, 2023
7:00 PM
Planning Board Agenda

Regular Meeting

1. Approval of July 11, 2023, minutes
2. Approval of August 8, 2023, minutes
3. Continue review of application for Site Plan Approval and Subdivision (lot merger) Approval, Mixed-Use Commercial and Residential, 152-158 Fishkill Ave, submitted by 152-158 Fishkill LLC.
4. Continue review of application for Site Plan Approval and Special Use Permit, personal wireless service facility, 375 Washington Avenue, submitted by Verizon Wireless of the East, LP (dba Verizon Wireless) Â Adjourned to October 11, 2023, at the request of the applicant.

Miscellaneous Business

Architectural Review

1. Certificate of Appropriateness - 7 High Street; Facade

City of Beacon Planning Board Agenda
09/12/2023

Title:

Approval of July 11, 2023, minutes

ATTACHMENTS

City of Beacon Planning Board Agenda
09/12/2023

Title:

Approval of August 8, 2023, minutes

ATTACHMENTS

City of Beacon Planning Board Agenda
09/12/2023

Title:

Continue review of application for Site Plan Approval and Subdivision (lot merger) Approval, Mixed-Use Commercial and Residential, 152-158 Fishkill Ave, submitted by 152-158 Fishkill LLC.

ATTACHMENTS

152-158 Fishkill PB 9.12.23 Supplemental Planning Board Submission - Cover Letter.pdf

152-158 Fishkill PB 9.12.23 Exhibit A - Response Letter prepared by Arden Consulting Engineers dated August 28, 2023.pdf

152-158 Fishkill PB 9.12.23 Architectural Drawings dated August 25, 2023.pdf

152-158 Fishkill PB 9.12.23 Revised Site Plan Drawings dated August 15, 2023.pdf

152-158 Fishkill PB 9.12.23 Retaining Wall Design dated August 28, 2023.pdf

152-158 Fishkill PB 9.12.23 Updated Subdivision Play-Lot Line Consolidation Plan dated August 16, 2023.pdf

152-158 Fishkill PB 9.12.23 Final SWPPP Report 2023-08-15.pdf

152-158 Fishkill PB 9.12.23 - Test Pit Inspection Report dated August 25, 2023.pdf

Lanc Tully 152-158 Fishkill 09-08-23 eng review.pdf

152-158 Fishkill Ave - Site Plan and Subdivision Approval Resolution (4883-6464-7290.2).pdf

John Clarke PB 152-158 Fishkill Av 9.8.23.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

August 29, 2023

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

Re: Application for Subdivision (Lot Merger) and Site Plan Approval
Supplemental Submission – Residential and Office Mixed-Use Development
Premises: 152-158 Fishkill Avenue, Beacon, New York
Tax Parcel IDs: 6054-29-042814 & 6054-29-041801

Dear Chairman Gunn and Members of the Planning Board:

On behalf of 152-158 Fishkill LLC (the "Applicant"), the owner of the above-referenced Premises, we respectfully submit this letter and the referenced enclosures in furtherance of the Applicant's request for Subdivision (Lot Merger) and Site Plan Approval (the "Application"). This supplemental submission provides minor project updates in response to comments from the Board and the public at the August 8, 2023 public hearing, as well as in response to comments from the Board's consultants.

UPDATES TO PROJECT TO ADDRESS COMMENTS FROM THE BOARD AND ITS CONSULTANTS, AS WELL AS FROM THE PUBLIC:

As this Board is aware, at its July 11, 2023 meeting, the Board adopted a Negative Declaration in accordance with the State Environmental Quality Review Act ("SEQRA"), finding that the Project will not have any potentially significant adverse environmental impacts. On July 18, 2023, the City's Zoning Board of Appeals ("ZBA") issued an Area Variance permitting retaining walls up to 15.4 feet. Subsequently, on July 21, 2023, the Applicant's team met with this Board's Architectural Review Board Sub-Committee to further discuss the design. On August 8, 2023 the Planning Board opened and closed the public hearing regarding the Application.

As is more fully detailed in the enclosed revised Site Plan Drawings and Renderings, the Applicant made following minor modifications to the proposal in response to comments from the Board and its Architectural Review Board Sub-Committee, as well as from the Board's Consultants and members of the public:

- The entrance driveway width has been reduced to the maximum extent practicable while providing for safe maneuvering together with enhanced/improved landscaping;
- The parking aisles have been reduced;
- ADA-accessible parking spaces have been made level to the sidewalk; and

- The design detail of the retaining wall has been provided.

All of these updates, along with others articulated in the Response Letter enclosed at **Exhibit A**, illustrate that the comments from the Board's Consultants have been addressed. Moreover, soil test pits have shown that there is adequate depth for a retaining wall.

Additionally, in response to public comments received at the August 8, 2023 public hearing, an orthoimagery sheet has been provided in the revised Site Plan Drawings showing the proposed improvements in relation to residences across the street. Following comments from the Board and its Consultants, as well as from the public, the Landscaping Plan has also been updated. More landscaping has been added to the beds flanking the driveway entrance to the Premises (utilizing Grey Birch and Ironwood trees, to avoid sightline obstacles). A bench has been added at the northeast corner of the building. An additional terrace was added to the bottom of the retaining wall, with more landscaping included (including Red Oak and Grey Birch trees, perennials, and shrubs). This addition will provide for color in all four seasons, as well as benefiting birds and pollinators throughout the year while mitigating the urban heat effect.

As requested at the August 8, 2023 Planning Board public hearing, the north and south end walls have been revised to reflect gable end vocabulary. A full gable end wall was achieved on the north end wall to both create a more appealing aesthetic as well as to screen mechanical equipment from vehicle traffic heading south on Fishkill Avenue. The south elevation incorporates a gable end on the east of the façade adjacent to the flat parapet vocabulary at the west side to allow for southern views from the roof top amenity space that is located on the south end of the roof level. The gable end walls have been introduced as architectural projections, however the main roof volumes do not extend to the top of the gable form. This allows for the top of the roof to be constructed to allow for mechanical equipment to sit within a cavity of the roof form.

CONCLUSION & INDEX OF ENCLOSURES:

In support of this Application, we respectfully submit five (5) copies of the following Exhibits:

Exhibit A: Response Letter to John Clarke Planning and Desing's August 8, 2023 and Lanc & Tully's July 5, 2023 Comment Letters, prepared by Arden Consulting Engineers, PLLC and dated August 28, 2023.

Exhibit B: Test Pit Inspection Report, prepared by Kevin L. Patton, P.E. and dated August 25, 2023.

Also enclosed are five (5) copies of the Revised Site Plan Drawings, prepared by Arden Consulting Engineers, PLLC, last revised August 27, 2023 comprising the following sheets:

- Sheet 1 of 18: Title Sheet;
- Sheet 2 of 18: Exhibit Conditions Map;
- Sheet 3 of 18: Demolition Plan;

- Sheet 4 of 18: Site Plan;
- Sheet 5 of 18: Grading & Utility Plan;
- Sheet 6 of 18: Vehicle Turning Diagrams;
- Sheet 7 of 18: Lighting Plan;
- Sheet 8 of 18: Lighting Details;
- Sheet 9 of 18: Landscaping Plan;
- Sheet 10 of 18: Landscaping Details;
- Sheet 11 of 18: Erosion and Sediment Control Plan;
- Sheet 12 of 18: Orthoimagery;
- Sheet 13 of 18: Site Construction Details 1;
- Sheet 14 of 18: Site Construction Details 2;
- Sheet 15 of 18: Water Supply & Sewage Disposal Details;
- Sheet 16 of 18: Stormwater Construction Details 01;
- Sheet 17 of 18: Stormwater Construction Details 02; and
- Sheet 18 of 18: Construction Specifications.

Enclosed are also five (5) copies of the Updated Subdivision Plat-Lot Line Consolidation Plan, prepared by Heritage Land Surveying, P.C., dated August 16, 2023.

Moreover, enclosed are five (5) copies of the updated Architectural Drawings and Renderings, prepared by Nexus Creative Architecture, Planning, Design, last revised August 25, 2023, comprising the following sheets:

- SK0 - Conceptual Rendered Site Plan;
- SK1 - Conceptual First Floor Plan;
- SK2 - Conceptual Second Floor Plan;
- SK3 - Conceptual Half Story Floor Plan;
- SK4 - Conceptual Roof Terrace Plan;
- SK5 - Conceptual East and West Elevation;
- SK6 - Conceptual North and South Elevation;
- SK7 - Conceptual 3D Renderings;
- SK8 - Conceptual 3D Renderings and Materials;
- SK9 - Conceptual Streetscape Diagrams; and
- SK10 - Average Natural Grade and Building Height.

You will also find enclosed five (5) copies of the Retaining Wall Design, prepared by Kevin L. Patton P.E., and dated August 28, 2023; and five (5) copies of the Stormwater Pollution Prevention Plan, prepared by Arden Consulting Engineers, PLLC and last revised August 15, 2023.

The Applicant respectfully submits that the Project satisfies the applicable Site Plan and Subdivision review criteria established under the Zoning Code, and the Planning Board should consider granting these approvals.

The Applicant looks forward to appearing at the Board's September 12, 2023 regular meeting Agenda to answer any additional questions that the Board may have at that time. In the meantime, should this 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., City Attorney
John Clarke Planning and Design
Lanc & Tully, P.C.
Nexus Creative Architecture, Design, Planning
Arden Consulting Engineers, PLLC
Colliers Engineering & Design, P.C.
Maximilian R. Mahalek, Esq.

August 28, 2023

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

Re: Proposed Site Plan and 2 Lot Merger
152-158 Fishkill Avenue
City of Beacon, NY
SBL: 6054-29-042814 & 041801

Written Responses to Planning Board Consultant Comments

Dear Chairman Gunn & Planning Board Members:

We are providing this response letter on behalf of the Applicant, 152-158 Fishkill LLC, in order to address the latest comments in both John Clarke Planning and Design's August 8, 2023 and Lanc & Tully's July 5, 2023 letters.

John Clarke Comment Letter

Comments and Recommendations

1. The applicant is requesting a shared parking deduction under Section 223-26C(6) and the possible land-banking of parking spaces under Section 223-26E. The Site Plan shows 53 spaces, but an additional land-banking request appears reasonable. If additional land-banking is granted, I suggest that the parking lot spaces nearest Fishkill Avenue be the first considered.
   Response: Comment Noted.

2. On the Site Plan, both ADA parking aisles should be level to the sidewalk.
   Response: The ADA parking spaces have been relocated. A curb ramp is proposed in these areas to provide access to the sidewalk.

3. The parking aisles are wider than necessary in certain areas, as shown on the Sheet 6 truck turning diagrams. A sizeable landscaping island should be provided in front of the terraced retaining walls and the small island west of the six central parking spaces could be larger.
   Response: The parking aisles have been further reduced. A landscaped island has been added in front of the terraced retaining walls and in the island west of the six central parking spaces.

4. The entrance driveway still appears overly wide, 52 feet wide at the middle of the sidewalk. This could be narrowed to about 44 feet, based on the turning diagrams.
   Response: This has been reduced to the maximum extent possible with this latest submission. There should be some extra room to provide a small factor of safety when turning, especially for emergency vehicles.

5. The 4-foot fence on the retaining walls should be indicated on the plans and shown in a detail.
   Response: A 4-foot fence has been shown for the retaining walls and in the retaining wall plans and details.

6. At its July 21 meeting, the Architectural Review Subcommittee provided comments on the revised building design and referred the design back to the full Board. The submitted architectural plans reflect most if not all the Subcommittee comments.
   Response: Comment noted.

Lanc & Tully Comment Letter

Boundary & Topographic Survey:

1. The existing utilities shown along Fishkill Avenue shall be labeled as to their size and pipe material. The applicant's consultant notes that they are obtaining this information and will provide it in a future submission.
   Response: This information is now shown on the plans.

Subdivision Plat-Lot Line Consolidation Plan:

1. In accordance with Section 195-29(B)(1) of the City Code, the plan shall include the name and address of the owner of record and of subdivider (if other than owner). Applicant notes that this will be provided with a future submission.
   Response: This information is now shown on the plan.

General Comments:

1. The Project requiers a variance for the proposed retaining wall, as it exceeds the maximum 6-foot height as allowed by Section 223-13, Paragraph G(1), of the City Code. Applicant notes that an Area Variance will be sought from the Zoning Board of Appeals.
   Response: Comment Noted and the variance has been received.

2. The project requires a total of 63 parking spaces but is currently only achieving a total of 53 spaces on the site. Section 223-26(C)(6) of the City Code allows the Planning Board to approve the joint use of parking spaces by two or more establishments on the same lot, when properly demonstrated, in turn allowing the Planning Board to reduce the total number of parking stalls to be constructed for the project. Colliers Engineering has completed a Shared Parking Analysis for the proposed project in which they have concluded that 51 spaces would be sufficient enough to service the entire project. If the City's Traffic Engineer confers with this, then the Planning Board may wish to consider granting a waiver for 10 parking spaces since 53 of the required 63 spaces have been provided on the site.
   Response: Comment Noted.

3. The plans shall be updated to reflect the size and pipe material of the existing utilities located within Fishkill Avenue, now that they have been shown on the plans. *The applicant's consultant notes that they are in the process of obtaining this information and it will be provided with a future submission.*

Response: This information is now shown on the plans.

4. As there is significant cut proposed in the north-east corner of the parcel based upon the 17-foot-high retaining wall, we would recommend that soil borings or test pits be excavated in this area to determine if any rock exists in this area, and at what depth. *The applicant notes that recent stormwater test results yielded a depth of approximately 4' prior to encountering rock ledge in this vicinity.* The plans shall be updated to reflect where test pits were excavated, along with the depth-to- rock at that location. We further recommend that additional testing be conducted to determine the depth-to-rock along the north and north-east side of the project, and to allow for the quantification of rock that is to be removed. *Applicant's consultant notes that this information is forth coming.*
Response: Soil test pits were dug, and it appears that there is adequate depth of soil for a retaining wall. A geotechnical report has been included with this submission.

5. As the retaining walls exceed 4-feet in height, the retaining walls shall be designed by a licensed engineer in the State of New York. Design drawings of the wall(s), along with the calculations for the wall design, shall be submitted for review. It is recommended that the type of wall to be used be considered at this time, as the walls are located at the property lines and/or in close proximity. Applicant notes that this will be provided with a future submission.
Response: A retaining wall design has been provided that is designed by a licensed geotechnical engineer in the State of New York.

6. Construction details for the type of retaining wall to be constructed on the site shall be provided on the plans. As the retaining wall is being constructed on or directly adjacent to the property line on the south side of the property, a temporary construction easement may be required to allow for the proper construction of the wall base and wall itself. This should be further investigated by the applicant's engineer.
Response : A retaining wall design with construction details has been provided for review. The drilled shafts should be small enough and shallow enough to use a drill mounted on a large excavator, without needing a crane. This approach will work whether the subgrade is soil or rock, or both. It does not appear that a temporary construction easement is required based on the design.

7. The engineer shall verify with the fire engineer that the 4" water service line will be of sufficient size for the proposed project. *The applicant's consultant notes that they are awaiting a response from the Building Department regarding this matter*. We would recommend that the applicant's consultant discuss the required size of the line with the mechanical engineer and fire suppression firm used for the project.
Response: Hydrant flow test data has been provided by the City of Beacon Water Department and included as an attachment to this response letter. The flow test was conducted near Teller Avenue and Main Street which is near the subject project. There is a residual pressure of 72 psi at a flow of 773 gpm which appears to be adequate for the proposed project. The water service line has been upgraded to a 6" D.I.P. to provide greater fire flow capacity.

Sheet 2 of 17 (Existing Conditions):

1. The overhead lines running from Fishkill Avenue to the utility pole on the right side of the project continue to run in an easterly direction to additional utility poles located to the east, with service lines running from these poles to the neighboring parcels to the south. The plans shall be updated to reflect the poles to the east, as well as the continuation of the overhead lines and service lines to the neighboring buildings.
   Response: The missing overhead lines and poles have been added to the plans.

2. As the utility poles mentioned in the comment above have a Central Hudson tag on each of them, the applicant and applicant's consultants shall further investigate as to whether a utility easement exists for these poles and power lines. It is further recommended that Central Hudson be contacted to verify if an easement exists or not. If an easement does exist, it shall be shown on the plans.
   Response: Central Hudson has been contacted and has responded that they do not have any easements in this location.

Sheet 3 of 17 (Demolition Plan):

1. The plan does not reflect the existing utility pole on the south side of the site to be removed, Sheet 4 of 17 shows the area of the pole to be a parking stall for the proposed project. If the pole cannot be removed or relocated, based upon comments above for Sheet 2 of 17, then the proposed parking stall on Sheet 4 of 17 would need to be removed, in turn further reducing the number of proposed parking stalls on site to service the project.
   Response: The existing utility pole on the south side of the site is now noted to be removed. The existing utility pole in this area is now shown to be relocated and an additional utility pole is now proposed as well.

Sheet 4 of 17 (Site Plan) :

1. As there is minimal area for snow storage in comparison to the amount of impervious area to be cleared of snow, notes shall be added to the plans that stockpiled snow shall be removed from the site within 24-hours after a snow event to ensure that the required parking for the site is not impacted by stockpiled of snow in parking stalls.
   Response: A snow removal note has been added to sheet four of the plan set.

Sheet 5 of 17 (Grading Plan):

1. The plan shall be labeled "Grading & Utility Plan".
   Response: This has been revised accordingly.

2. The plan shall note the 4" water service line into the building to be ductile iron. It should be noted that Note No. 27 on Sheet 14 of 17 states that the water service line is to be 6". The plans and notes shall be coordinated.
   Response: the plan now notes a six-inch water service line that is ductile iron which will serve the building. This new water service line size now is coordinated with note #27 on sheet 15.

Sheet 14 of 17 (Water & Sewer Details):

1. The water service and sanitary sewer service details shall be revised to reflect the use of NYSDOT Item No. 304.12 (Type 2 - Item 4) for backfill. The details shall also note that the restoration of the pavement shall match the thickness of the existing pavement plus the thickness of the concrete under the roadway.
   Response: These details have been revised accordingly.

Stormwater Management Plan Comments:

1. Section 2.0.2 on Page 5 of the report refers to a boundary & topographic survey completed by Heritage Land Surveying, but Sheet 1 of the plans refers to a boundary & topographic survey completed by CV Associates. The report should be consistent with the plans.
   Response: The SWPPP report and Sheet 1 of the plans now have a consistent survey reference.

2. Section 2.0.3 on Page 6 shall be expanded upon to further discuss the soil testing conducted on site, the soils on site, as well as the ability of the soils to infiltrate stormwater at the site.
   Response: A description of the soil testing has been provided in this section of the report.

3. Section 4.0.2 on Page 9 of the report has a listing of 5 notes at the top of the page but note 4 is blank. If a note was intended to be added, it should be included, or the number of the notes renumbered.
   Response: This number is not required and has been removed. The notes have been renumbered accordingly.

4. The "Concrete and Grout" paragraph under Section 4.0.4 on Page 11 shall include a note about having a concrete/grout washout area on site.
   Response: A concrete/grout washout area on site has been added accordingly.

5. A stormwater maintenance and easement agreement shall be prepared and submitted for review by the Planning Board Attorney and our office.
   Response: Stormwater maintenance and easement agreement has been provided in Appendix E.

Please do not hesitate to contact us if there are any questions or concerns.

Sincerely,

Arden Consulting Engineers, PLLC

Michael A. Morgante, P.E.

Hydrant Flow Test 403 Main St 3-4-21

City of Beacon Fire Department – Fire Flow Test Data

General Hydrant Information:

Hydrant #:_____ Nearest Street #: Teller Street: Main

Shutoff location:_____ Shutoff size:_____

District: E1 E2 (circle) Hydrant Color:_____ Elevation:_____ No. of turns to open:_____

Hydrant Make: Mueller Hydrant Model:_____ Year: 1971 Steamer Size:_____

Barrel Size:_____ Length:_____ Installed By:_____

Main ID#:_____ Type: _____ Size: 2 1/2 Branch ID#:_____ Type:_____ Size:_____

Next Inspect. Date:	_____
Inspection Cycle:	_____
Next Test Date:	_____
Test Cycle:	_____

Flow Test Information: Date Tested: 3/4/21 Time: 4:50 AM Minutes to conduct test:_____

Purpose of test: Flow Test Tester'(s): AI George Joseph

Flow Test Measurements: Static Pressure: 85 PSI Residual Pressure: 72 PSI Pitot Pressure: 20 PSI

Inside diameter of outlet: _____ Coefficient of Discharge:_____ Outlet Diameter:_____ in. Flow During Test: 773 gpm

Calculated Pressure's (to be calculated on FD Software): 0 psi =_____gpm 20 psi = _____gpm

Inspection Record: Date Tested:_____ Time:_____ Minutes to conduct test:_____

Problem:_____ ☐Inspected ☐Painted ☐Flushed ☐Serviced ☐Repaired

*General Notes:*_____

Sketch



1 SITE PLAN
1" = 10'-0"

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Central Studio 100 White Plains Road Tarrytown, New York 10591
914-740-4774 | imagine@nexuscreative.design

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Date Issued:
- 02.27.23 INITIAL P.B. SUBMISSION
- 07.25.23 PB SUBMISSION
- 08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL ARCHITECTURAL SITE PLAN

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: 1" = 10'-0"
0 10 20 30

Date: 08.09.23

Project No: 21-18

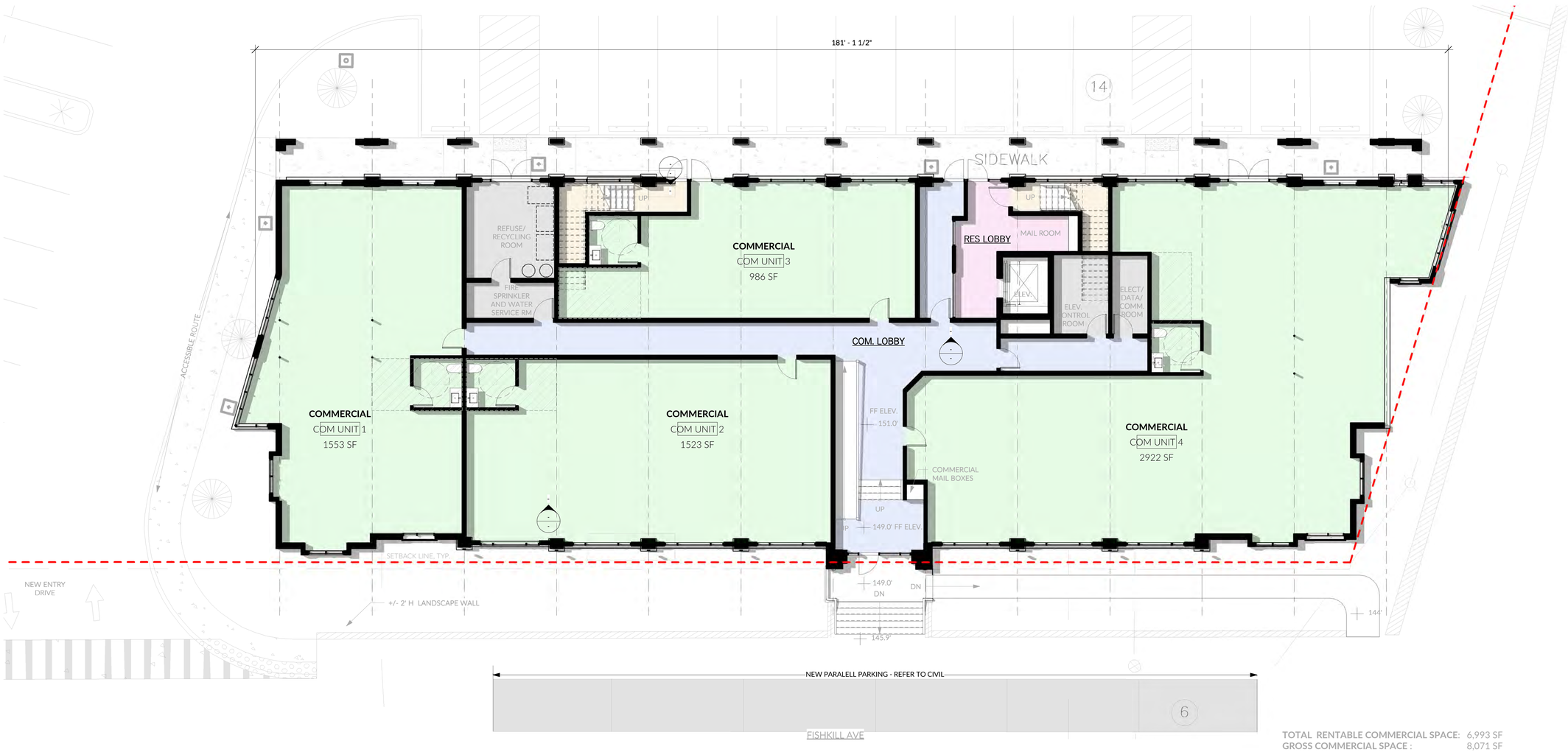
Drawing By: KG/LH/MD

Checked By: JT

Seal: REGISTERED ARCHITECT JACQUELYN ANNE THOMAS 036224 STATE OF NEW YORK

Drawing No: SK0

sheet 1 of 11



1 FIRST FLOOR PLAN
1/8" = 1'-0"

TOTAL RENTABLE COMMERCIAL SPACE: 6,993 SF
GROSS COMMERCIAL SPACE : 8,071 SF
GROSS FLOOR AREA: 9,494 SF

COMMERCIAL SPACE
UTILITY ROUGH AREA

FLOORS	GROSS AREA	NET AREA
1ST FL	9,494 SF	9,270 SF
2ND FL	10,418 SF	10,195 SF
HALF STORY	8, 391 SF	8,162 SF
NOTE: THE NET AREA IS THE HEATED / COOLED AREA.		

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Date Issued:
02.27.23 INITIAL P.B. SUBMISSION
03.30.23 P.B. SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL FIRST FLOOR PLAN

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: 1/8" = 1'-0"
0 8 16 24

Date: 08.09.23
Project No: 21-18
Drawing By: KG/LH/MD
Checked By: JT

Seal: REGISTERED ARCHITECT JUDITH ANNE TITTEL 036224 STATE OF NEW YORK

Drawing No: SK1
sheet 2 of 11



2 BR: 1 (2 ROOMS)
2 BR+: 1 (2 ROOMS + STUDY)
1 BR: 8 (8 ROOMS)

1 SECOND FLOOR
1/8" = 1'-0"

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Date Issued:
02.27.23 INITIAL P.B. SUBMISSION
03.30.23 P.B. SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL SECOND FLOOR PLAN

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: **1/8" = 1'-0"**

0 8 16 24

Date: **08.09.23**

Project No: **21-18**

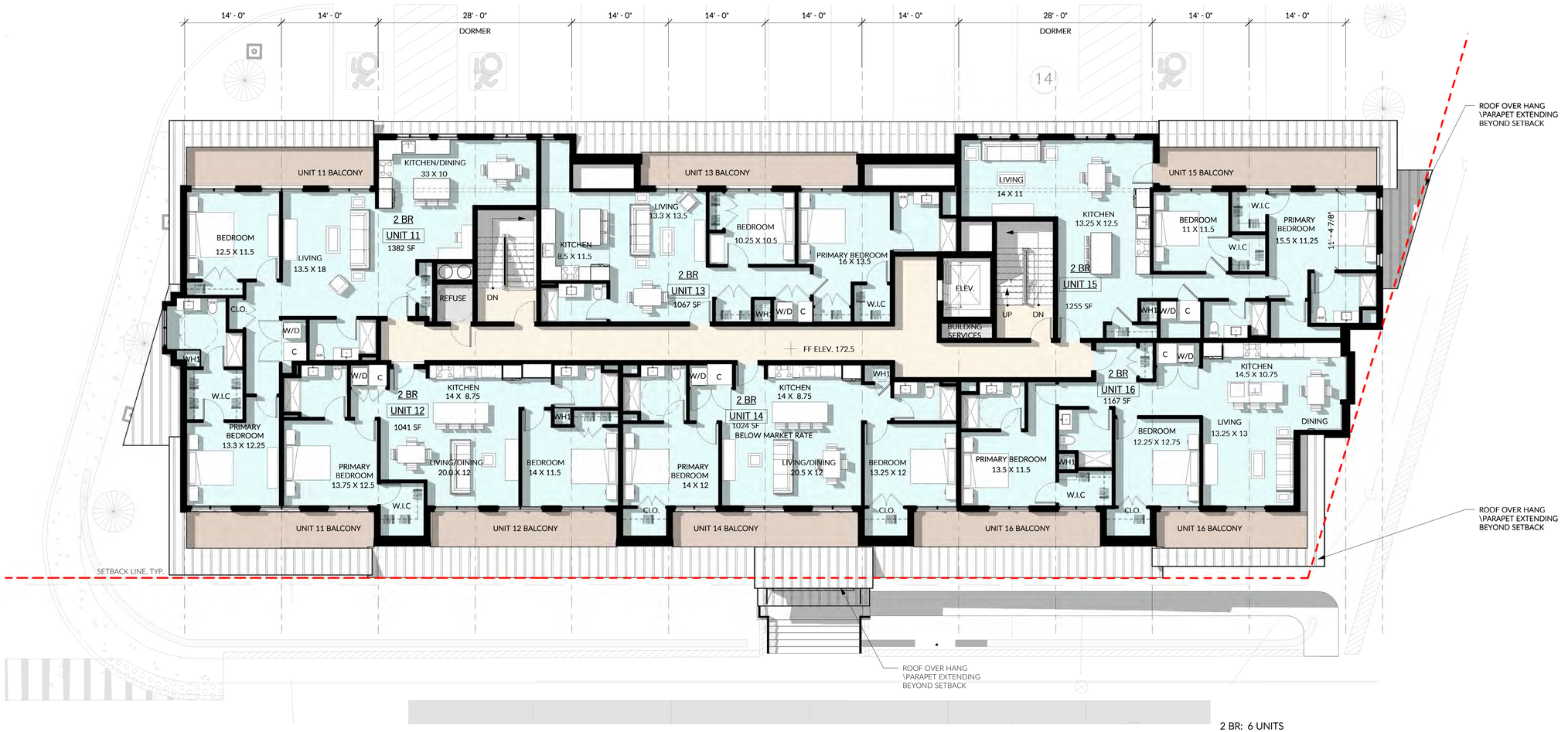
Drawing By: **KG/LH/MD**

Checked By: **JT**

Seal: REGISTERED ARCHITECT JUDITH ANNE THOMAS 036224 STATE OF NEW YORK

Drawing No: **SK2**

sheet 3 of 11



2 BR: 6 UNITS

1 HALF STORY
1/8" = 1'-0"

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Date Issued:
02.27.23 INITIAL P.B. SUBMISSION
03.30.23 P.B. SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL HALF STORY
FLOOR PLAN

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

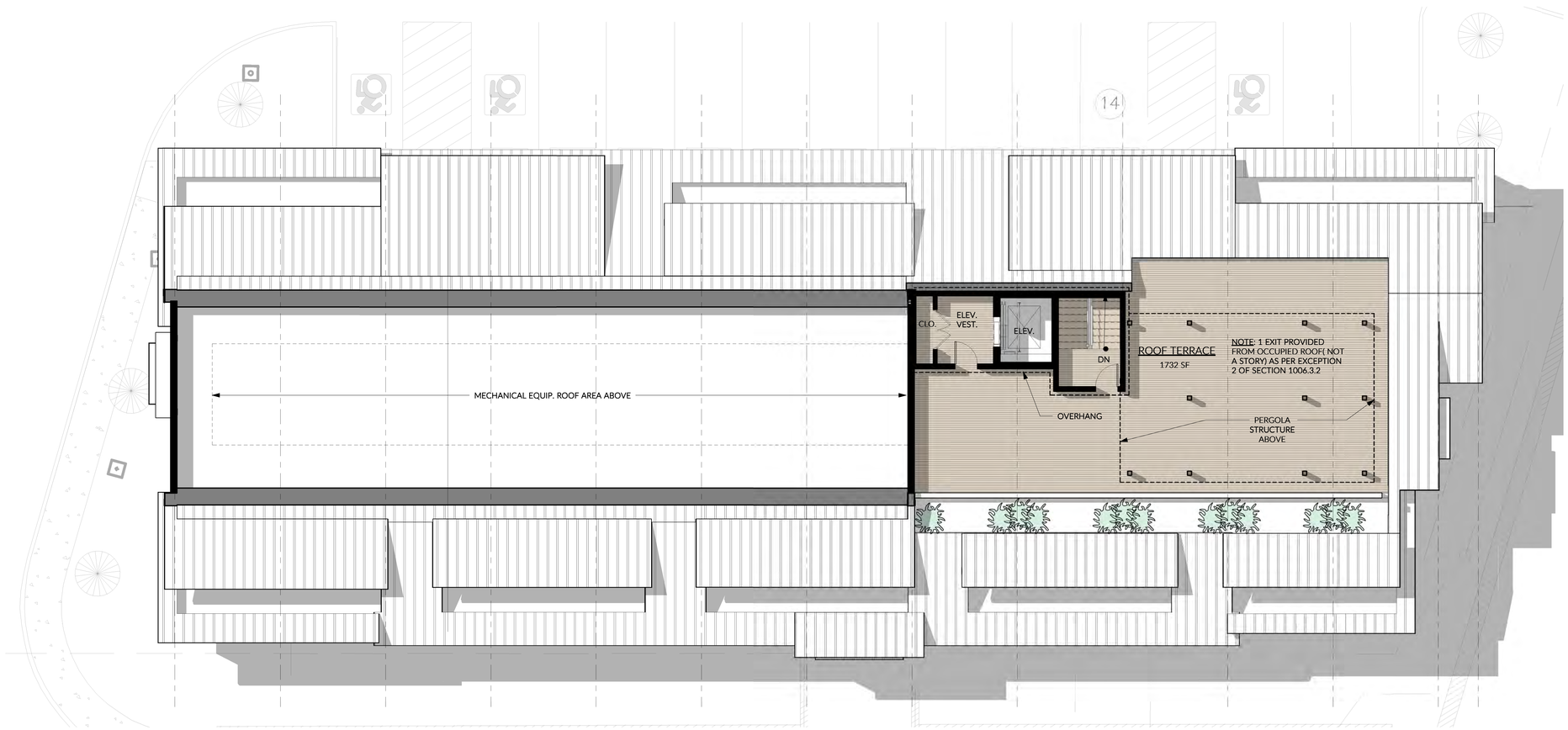
Scale: 1/8" = 1'-0"
0 8 16 24

Date: 08.09.23
Project No: 21-18
Drawing By: KG/LH/MD
Checked By: JT

Seal: REGISTERED ARCHITECT JOCELYN ANNE TYLER 036224 STATE OF NEW YORK

Drawing No: SK3

sheet 4 of 11



1 ROOF TERRACE
1/8" = 1'-0"

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Architecture Planning Design
a collaborative network alliance
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Date Issued:

08.25.23 PB SUBMISSION

Project Title:

152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:

CONCEPTUAL ROOF TERRACE PLAN

Owner:

152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: 1/8" = 1'-0"

0 8 16 24

Date: **08.09.23**

Project No: **21-18**

Drawing By: **KG/LH/MD**

Checked By: **JT**

Seal:



Drawing No: **SK4**

sheet 5 of 11



2 WEST ELEVATION (FISHKILL AVE)
1/8" = 1'-0"



4 EAST ELEVATION
1/8" = 1'-0"

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Date Issued:
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07.25.23 PB SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL EAST AND WEST ELEVATIONS

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: 1/8" = 1'-0"
0 8 16 24

Date:
08.09.23

Project No:
21-18

Drawing By:
KG/LH/MD

Checked By:
JT

Seal:
REGISTERED ARCHITECT
JACQUELYN ANNE TAYLOR
036224
STATE OF NEW YORK

Drawing No:
SK5

sheet 6 of 11



1 SOUTH ELEVATION
1/8" = 1'-0"



2 NORTH ELEVATION
1/8" = 1'-0"

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07.25.23 PB SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL NORTH AND SOUTH ELEVATIONS

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: 1/8" = 1'-0"
0 8 16 24

Date: 08.09.23
Project No: 21-18
Drawing By: KG/LH/MD
Checked By: JT

Seal: REGISTERED ARCHITECT JASMIN ANNE THEY 036224 STATE OF NEW YORK

Drawing No: SK6

sheet 7 of 11



FRONT 3D VIEW 1



FRONT 3D VIEW 2



RENDERINGS ARE FOR RETAINING WALL HEIGHT RELATIONSHIP ONLY AND ARE NOT INTENDED TO PORTRAY PRECISE COLORS/SIZE FOR VEGETATION. COLORS/SIZES OF VEGETATION ARE APPROXIMATE AND INTENDED FOR CONTEXT ONLY.

RETAINING WALL VIEW 1



RENDERINGS ARE FOR RETAINING WALL HEIGHT RELATIONSHIP ONLY AND ARE NOT INTENDED TO PORTRAY PRECISE COLORS/SIZE FOR VEGETATION. COLORS/SIZES OF VEGETATION ARE APPROXIMATE AND INTENDED FOR CONTEXT ONLY.

RETAINING WALL VIEW 2

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07.25.23 PB SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL 3D RENDERINGS

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale:

Date: 08.09.23
Project No: 21-18
Drawing By: KG/LH/MD
Checked By: JT

Seal: REGISTERED ARCHITECT JACQUELYN ANNE TAYLOR 036224 STATE OF NEW YORK

Drawing No: SK7

sheet 8 of 11



REAR 3D VIEW



TERRACE 3D VIEW

MATERIAL PALETTE:



METAL STANDING SEAM ROOF
PAC-CLAD MIDNIGHT BRONZE



OLD CHICAGO BRICK



FIBER CEMENT SIDING
TRESPA - PURA NFC - PU14 FRENCH WALNUT



FIBER CEMENT PANELS
TRESPA - METEAON LUMEN - PUL9000 METROPOLIS BLACK

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Date Issued:
02.27.23 INITIAL P.B. SUBMISSION
07.25.23 PB SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
CONCEPTUAL 3D RENDERINGS & MATERIALS

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale:

Date:
08.09.23

Project No:
21-18

Drawing By:
KG/LH/MD

Checked By:
JT

Seal:
REGISTERED ARCHITECT
JACQUELYN ANNE THIELE
036224
STATE OF NEW YORK

Drawing No:
SK8

sheet 9 of 11



EXISTING



PROPOSED

1 STREETSCAPE
1" = 20'-0"

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Date Issued:
- 02.27.23 INITIAL P.B. SUBMISSION
- 07.25.23 PB SUBMISSION
- 08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
STREETSCAPE DIAGRAMS

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

Scale: 1" = 20'-0"
0 20 40 60

Date: 08.09.23

Project No: 21-18

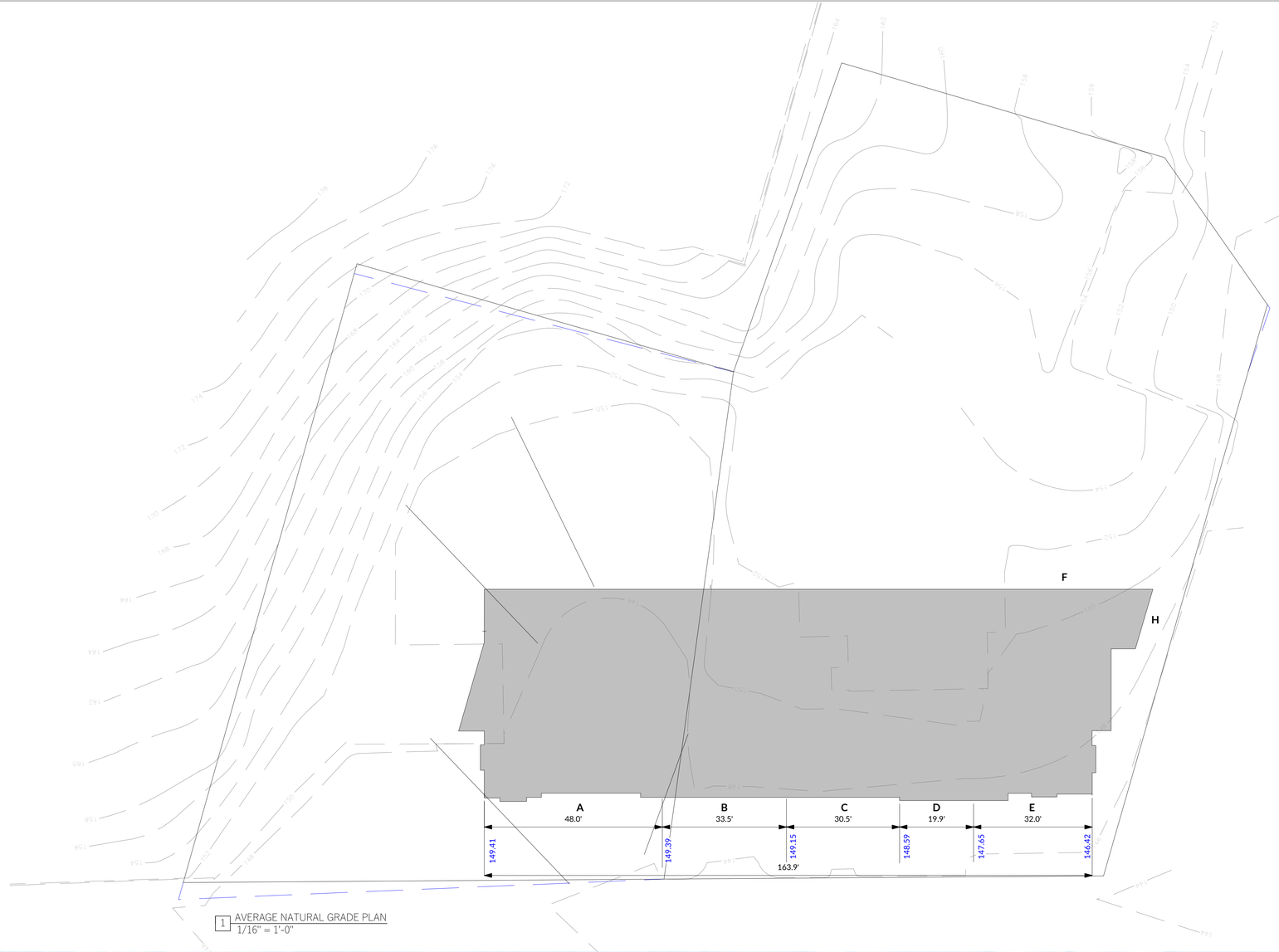
Drawing By: KG/LH/MD

Checked By: JT

Seal: REGISTERED ARCHITECT JACLYN ANNE THOMPSON 036224 STATE OF NEW YORK

Drawing No: SK9

sheet 10 of 11



1 AVERAGE NATURAL GRADE PLAN
1/16" = 1'-0"



2 SITE SECTION
1/8" = 1'-0"

HEIGHT OF BUILDING
The vertical distance from the average established grade in front of the lot or **from the average natural grade at the building line, whichever is higher**, to the level of the highest point of the roof, if the roof is flat, or to the mean level between the eaves and the highest point of the roof, if the roof is of any other type. When a lot fronts on two or more streets of different levels, the lower street, or the average elevation of the lot with regard to the abutting streets, may be taken as the base for measuring the height of the building.

AVERAGE NAUTRAL GRADE CALCULATION:

SECTION	AVERAGE GRADE	TOTAL
A	149.60 x 48.00'	7,171.20
B	149.27' x 33.50'	5,000.55
C	148.87' x 30.50'	4,540.54
D	148.12' x 17.00'	2,517.39
E	147.06' x 32.00'	4,705.28
SUB TOTAL	163.90'	24,365.16

TOTAL	163.90'	24,365.16
AVERAGE GRADE: 24,365.16 /163.90' = 148.66'		

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Date Issued:
07.25.23 PB SUBMISSION
08.25.23 PB SUBMISSION

Project Title:
152-158 FISHKILL AVENUE
BEACON, NY 12508

Drawing Title:
AVERAGE NATURAL GRADE & BUILDING HEIGHT

Owner:
152-158 FISHKILL AVENUE LLC
316 MAIN STREET, SUITE 6
POUGHKEEPSIE, NY 12601

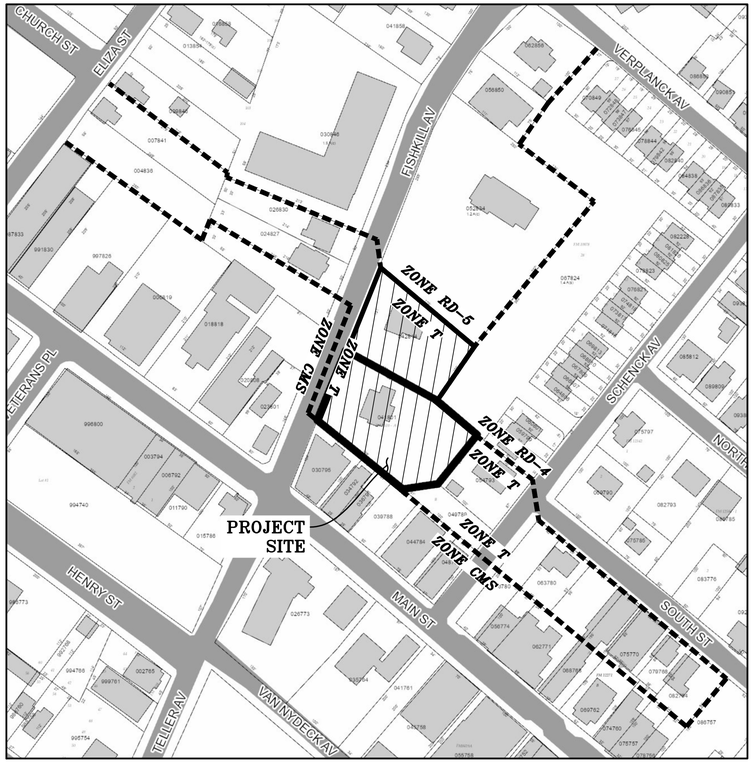
Scale: **As indicated**

Date: **08.09.23**
Project No: **21-18**
Drawing By: **KG/LH/MD**
Checked By: **JT**

Seal: REGISTERED ARCHITECT JACQUELYN ANNE TAYLOR 036224 STATE OF NEW YORK

Drawing No:
SK10
sheet 11 of 11

SITE PLAN & LOT MERGER FOR
152–158 FISHKILL AVENUE
CITY OF BEACON, DUTCHESS COUNTY, NY.



LOCATION MAP
SCALE: 1"=100'
SOURCE: DUTCHESS COUNTY GIS

TAX MAP NUMBER

SECTION: 6054
BLOCK: 29
LOT: 041801, 042814

DEED REFERENCE

LIBER: 22017
PAGE: 3012

TOTAL TRACT AREA

LOT 041801: 25,881± S.F. 0.59± ACRES
LOT 042814: 18,004± S.F. 0.41± ACRES

OWNER & APPLICANT

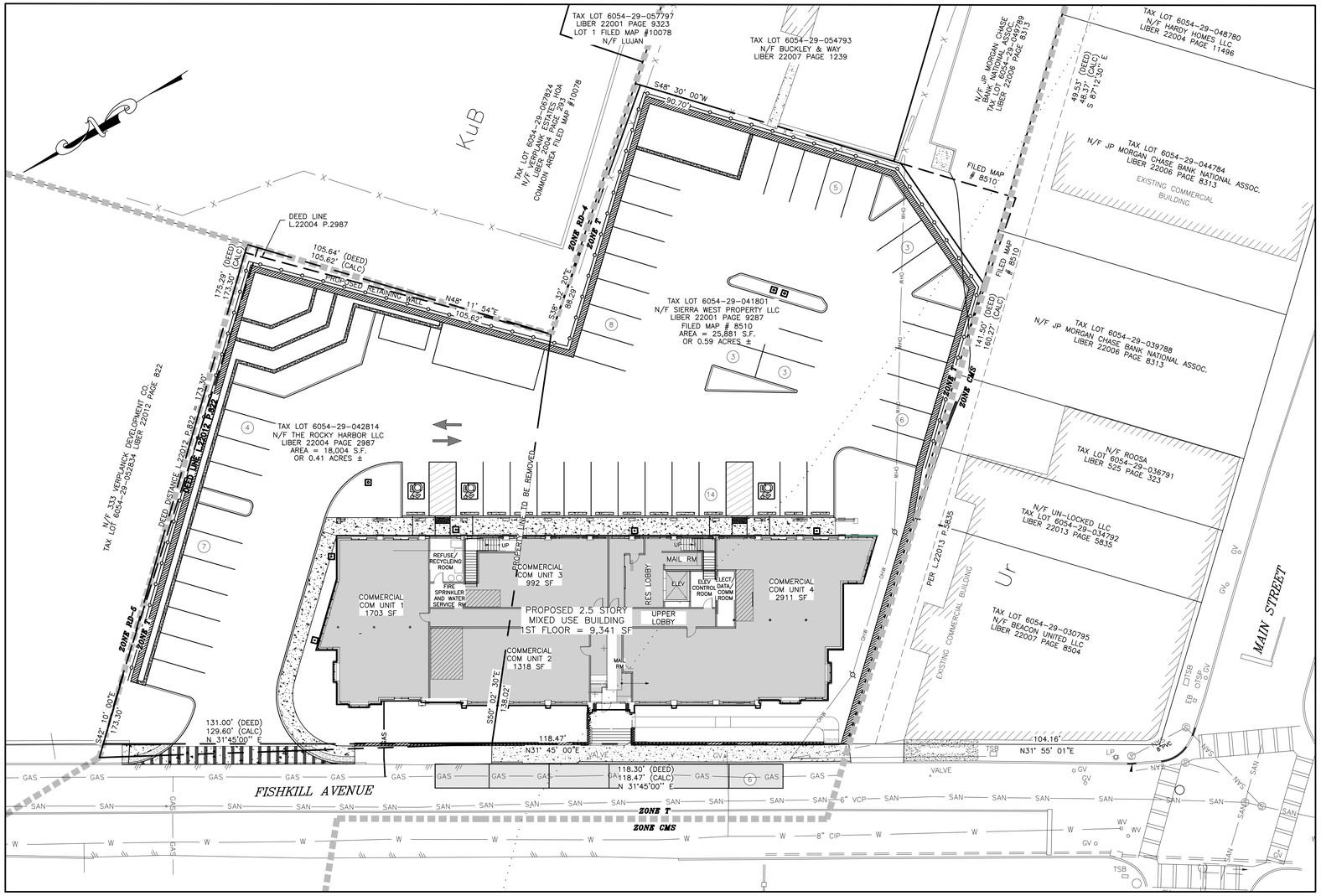
152–158 FISHKILL AVENUE, LLC
316 MAIN STREET
STE 6
POUGHKEEPSIE, NY 12601

REFERENCES:

1. BOUNDARY, TOPOGRAPHIC & UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM A SURVEY ENTITLED "BOUNDARY & TOPOGRAPHIC SURVEY" PREPARED BY HERITAGE LAND SURVEYING, P.C., L.S., P.C., DATED MARCH 09, 2023.
2. PROPOSED UTILITY INFORMATION ON FISHKILL AVENUE HAS BEEN TAKEN FROM A PLAN ENTITLED "RESURFACING, RESTORATION AND REHABILITATION – TELLER AVENUE AND FISHKILL AVENUE, PREPARED BY WSP AND DATED JANUARY 2023.

DRAWING LIST

Sheet Number	Sheet Title	ORIGINAL DATE / LAST REVISED DATE
01 OF 18	TITLE SHEET	02-27-2023/08-15-2023
02 OF 18	EXISTING CONDITIONS MAP	02-27-2023/08-15-2023
03 OF 18	DEMOLITION PLAN	02-27-2023/08-15-2023
04 OF 18	SITE PLAN	02-27-2023/08-15-2023
05 OF 18	GRADING & UTILITY PLAN	02-27-2023/08-15-2023
06 OF 18	VEHICLE TURNING DIAGRAMS	05-30-2023/08-15-2023
07 OF 18	LIGHTING PLAN	05-30-2023/08-15-2023
08 OF 18	LIGHTING DETAILS	05-30-2023/08-15-2023
09 OF 18	LANDSCAPING PLAN	05-30-2023/08-25-2023
10 OF 18	LANDSCAPING DETAILS	05-30-2023/08-25-2023
11 OF 18	EROSION AND SEDIMENT CONTROL PLAN	05-30-2023/08-15-2023
12 OF 18	ORTHOIMAGERY	08-15-2023
13 OF 18	SITE CONSTRUCTION DETAILS 1	05-30-2023/08-15-2023
14 OF 18	SITE CONSTRUCTION DETAILS 2	05-30-2023/08-15-2023
15 OF 18	WATER SUPPLY & SEWAGE DISPOSAL DETAILS	05-30-2023/08-15-2023
16 OF 18	STORMWATER CONSTRUCTION DETAILS 01	06-21-2023/08-15-2023
17 OF 18	STORMWATER CONSTRUCTION DETAILS 02	06-21-2023/08-15-2023
18 OF 18	CONSTRUCTION SPECIFICATIONS	05-30-2023/08-15-2023



TITLE SHEET
SCALE: 1"=20'

SCALE
20 0 10 20 40
SCALE FEET

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OWNER'S CONSENT NOTE:
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SIGNATURE OF OWNER(S) DATE

REVISION	BY	DATE	DESCRIPTION
4.	MM	08-15-23	PER PB COMMENTS
3.	MM	06-21-23	PER PB COMMENTS
2.	MM	05-22-23	PER PB COMMENTS
1.	MM	04-21-23	PER PB COMMENTS

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MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

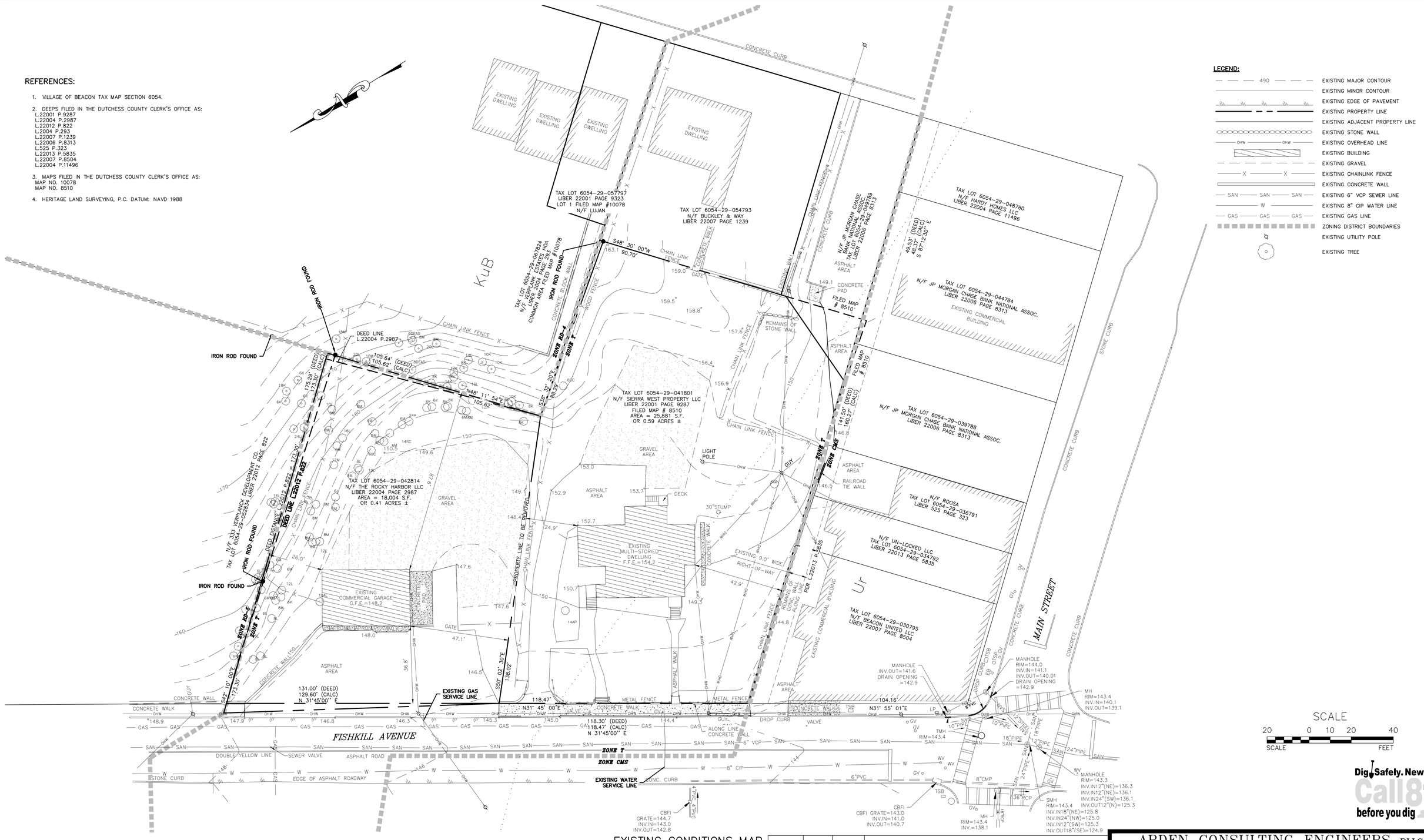
SITE PLAN & LOT MERGER FOR
152–158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

TITLE SHEET

JOB#: 17-001
SCALE: AS NOTED
DATE: 02-27-23
DRAWN: MM
CHECKED: MM
SHEET NO. 01 of 18

REFERENCES:

1. VILLAGE OF BEACON TAX MAP SECTION 6054.
2. DEEPS FILED IN THE DUTCHESS COUNTY CLERK'S OFFICE AS:
   L.22001 P.9287
   L.22004 P.2987
   L.22012 P.822
   L.2004 P.293
   L.22007 P.1239
   L.22006 P.8313
   L.525 P.323
   L.22013 P.5835
   L.22007 P.8504
   L.22004 P.11496
3. MAPS FILED IN THE DUTCHESS COUNTY CLERK'S OFFICE AS:
   MAP NO. 10078
   MAP NO. 8510
4. HERITAGE LAND SURVEYING, P.C. DATUM: NAVD 1988



LEGEND:

- 490 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- OHW — OHW — EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- X — X — EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- SAN — SAN — SAN — EXISTING 6" VCP SEWER LINE
- W — EXISTING 8" CIP WATER LINE
- GAS — GAS — GAS — EXISTING GAS LINE
- ZONING DISTRICT BOUNDARIES
- EXISTING UTILITY POLE
- EXISTING TREE

SCALE
20 0 10 20 40
SCALE FEET

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EXISTING CONDITIONS MAP
SCALE: 1"=20'

REVISION	BY	DATE	DESCRIPTION
4.	MM	08-15-23	PER PB COMMENTS
3.	MM	06-21-23	PER PB COMMENTS
2.	MM	05-22-23	PER PB COMMENTS
1.	MM	04-21-23	PER PB COMMENTS

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MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR
152–158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

EXISTING CONDITIONS MAP

JOB#:	17-001
SCALE:	AS NOTED
DATE:	02-27-23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	02 of 18



LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- EXISTING 6" VCP SEWER LINE
- EXISTING 8" CIP WATER LINE
- EXISTING GAS LINE
- ZONING DISTRICT BOUNDARIES
- EXISTING UTILITY POLE
- EXISTING TREE TO BE REMOVED

NOTES:

- REPRESENTS INFORMATION TAKEN FROM FISHKILL AVENUE REHABILITATION PROJECT. CONTRACT NO. D017347 AND D017290 – 01/24/2023.

CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS ASSOCIATED WITH THE FISHKILL AVENUE REHABILITATION PROJECT

DEMOLITION PLAN

SCALE: 1"=20'

REVISION	BY	DATE	DESCRIPTION
4.	MM	08-15-23	PER PB COMMENTS
3.	MM	06-21-23	PER PB COMMENTS
2.	MM	05-22-23	PER PB COMMENTS
1.	MM	04-21-23	PER PB COMMENTS

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MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR

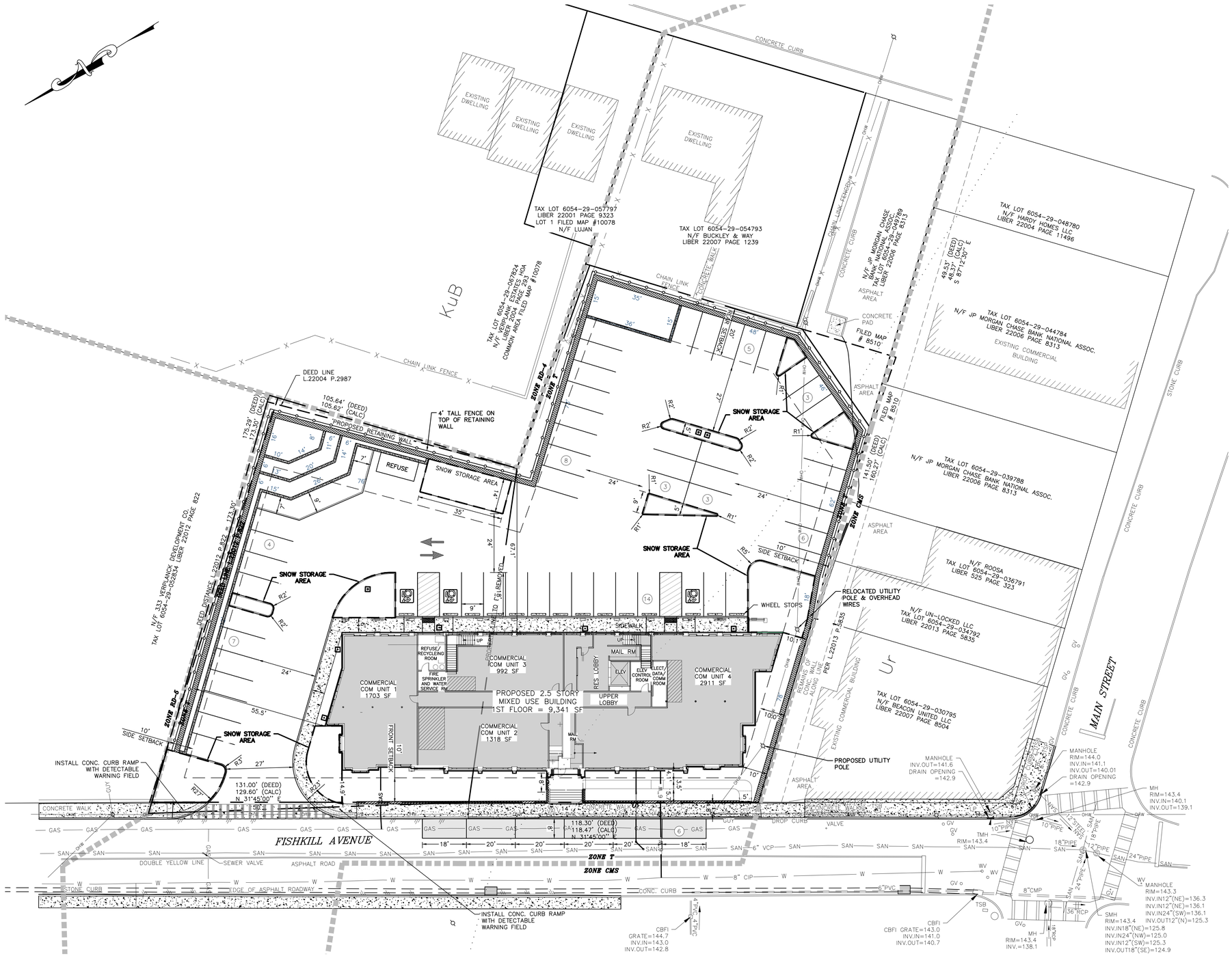
152-158 FISHKILL AVENUE

CITY OF BEACON – DUTCHESS COUNTY, N.Y.

DEMOLITION PLAN

JOB#:	17-001
SCALE:	AS NOTED
DATE:	02-27-23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	03 of 18

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SITE PLAN

SCALE: 1"=20'

TABLE OF ZONING REQUIREMENTS:

T ZONING DISTRICT

BULK TABLE: (MINIMUMS)		PROPOSED:	
LOT AREA:	5,000 SF	LOT AREA:	43,885 SF
LOT AREA PER DWELLING UNIT:	2,000 SF [i]	LOT AREA PER DWELLING UNIT:	2,742.81 SF
LOT WIDTH:	50'	LOT WIDTH:	249'
LOT DEPTH:	100'	LOT DEPTH:	204'
FRONT YARD:	10'	FRONT YARD:	14.4'
SIDE YARD:	10'	SIDE YARD:	10.6'
TOTAL SIDE YARD:	20'	TOTAL SIDE YARD:	65.6'
REAR YARD:	20'	REAR YARD:	67.1'
BULK TABLE: (MAXIMUMS)		**BULK TABLE: (MAXIMUMS)**	
BUILDING HEIGHT	2.5 STORIES/35'	BUILDING HEIGHT	2.5 STORIES/34.51'
MAXIMUM NUMBER OF UNITS:	21	MAXIMUM NUMBER OF UNITS:	16
RETAINING WALL:	6'	RETAINING WALL:	15.4'*
BUILDING COVERAGE:	40%	BUILDING COVERAGE:	21.2%

* VARIANCE IS REQUIRED TO PERMIT A 15.4' TALL RETAINING WALL IN THE WEST SIDE YARD (WITH FOUR FOOT FENCE ON TOP OF RETAINING WALL).

ZONING NOTES:

[i] ONE-HALF THE MINIMUM LOT SIZE AREA PER DWELLING UNIT AS THE LEAST RESTRICTIVE ADJOINING RESIDENTIAL DISTRICT.

RD-4 ZONING DISTRICT IS THE LEAST RESTRICTIVE LOT SIZE AREA PER DWELLING UNIT.
RD-4 MINIMUM LOT SIZE AREA PER UNIT=4,000 SF
½ RD-4 MINIMUM LOT SIZE AREA PER UNIT=2,000 SF
43,885 SF / 2,000 SF PER UNIT = 21 UNITS

BUILDING COVERAGE CALCULATION:

BUILDING FOOTPRINT AREA = 9,341 SF
TOTAL LOT AREA = 43,885 SF

(9,341/43,885) X 100 = 21.2%

PARKING REQUIREMENTS:

MULTIFAMILY DWELLING AND/OR APARTMENT OR ARTIST LIVE/WORK SPACE:
1 SPACE FOR EACH DWELLING UNIT, PLUS ½ SPACE FOR EACH BEDROOM,
PLUS ½ SPACE FOR EACH LIVE/WORK SPACE CONTAINING RETAIL AREA.

16 UNITS x 1 SPACE/UNIT = 16 SPACES
24 BEDROOMS x 0.25 SPACE/BEDROOM = 6 SPACES

OFFICE FOR BUSINESS OR PROFESSIONAL USE (OTHER THAN ACCESSORY TO RESIDENTIAL USE):
[AMENDED 6-21-1999 BY L.L. NO. 14-1999]
1 SPACE FOR EACH 200 SQUARE FEET OF GROSS FLOOR AREA, EXCLUDING UTILITY AREAS.

GROSS OFFICE SPACE EXCLUDING UTILITY AREAS = 8,071 SF
8,071 SF / 1 SPACE/200 SF = 41 SPACES

63 TOTAL OFF-STREET PARKING SPACES ARE REQUIRED
53 OFF-STREET PARKING SPACES ARE PROVIDED
6 ON-STREET PARKING SPACES ARE PROVIDED ALONG THE FRONTAGE
SHARED PARKING DEDUCTION REQUIRED UNDER SECTION 223-26 C(6)
THERE IS POTENTIAL FOR LAND-BANKING OF 10 ADDITIONAL PARKING SPACES UNDER SECTION 223-26E.

SEWAGE FLOW:

24 BEDROOMS X 110 GPD/BEDROOM	=	2,640 GPD
50 EMPLOYEES @ 15 GPD/EMPLOYEE	=	750 GPD
TOTAL	=	3,390 GPD

SNOW REMOVAL NOTE:

STOCKPILED SNOW SHALL BE REMOVED FROM THE SITE WITHIN 24-HOURS AFTER A SNOW EVENT TO ENSURE THAT REQUIRED PARKING IS NOT IMPACTED BY STOCKPILED SNOW IN PARKING STALLS.

LEGEND:

- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- EXISTING 6" VCP SEWER LINE
- EXISTING 8" CIP WATER LINE
- EXISTING GAS LINE
- ZONING DISTRICT BOUNDARIES
- EXISTING UTILITY POLE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED SIDEWALK
- PROPOSED REFUSE AREA
- PROPOSED SETBACK
- PROPOSED WALL
- PROPOSED TERRACED WALL
- PROPOSED FENCE
- PROPOSED LIGHTING

SCALE
20 0 10 20 40
SCALE FEET

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REVISION	BY	DATE	DESCRIPTION
4.	MM	08-15-23	PER PB COMMENTS
3.	MM	06-21-23	PER PB COMMENTS
2.	MM	05-22-23	PER PB COMMENTS
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TEL: (845) 782-8114 FAX: (845) 782-2946
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MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

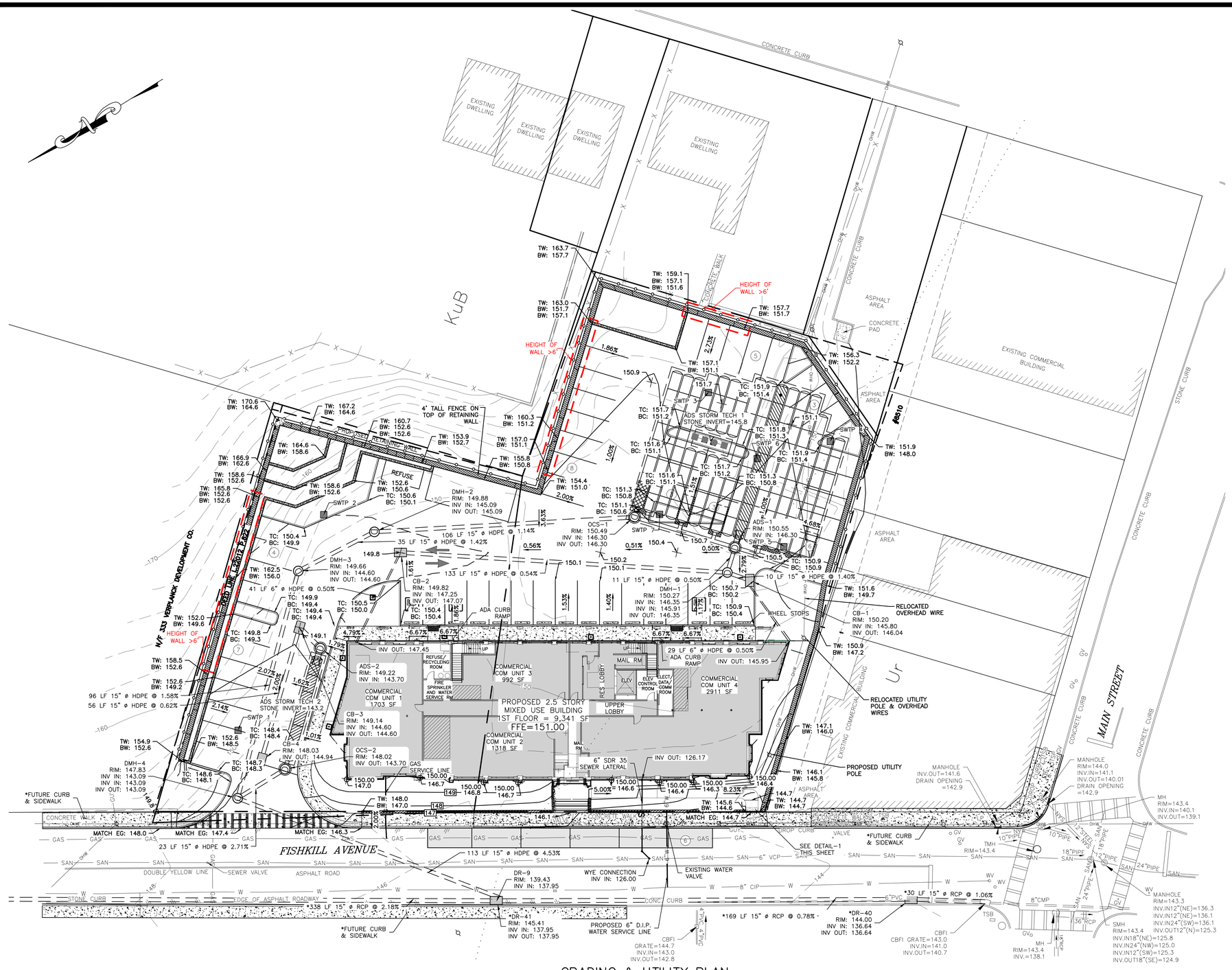
SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON - DUTCHESS COUNTY, N.Y.

SITE PLAN

JOB#: 17-001
SCALE: AS NOTED
DATE: 02-27-23
DRAWN: MM
CHECKED: MM
SHEET NO. 04 of 18

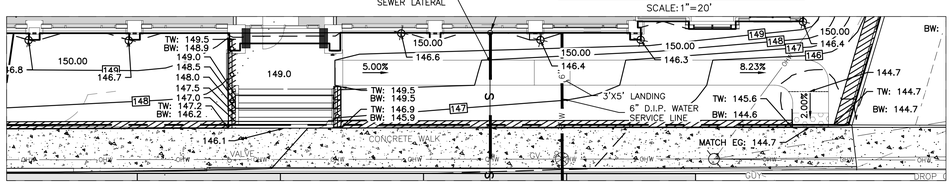
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GRADING & UTILITY PLAN

SCALE: 1"=20'



DETAIL – 1

SCALE: 1"=10'

LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- EXISTING UTILITY POLE
- EXISTING 6" VCP SEWER LINE
- EXISTING 8" CIP WATER LINE
- EXISTING GAS LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED SIDEWALK
- PROPOSED REFUSE AREA
- PROPOSED SETBACK
- PROPOSED WALL
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- PROPOSED FENCE
- PROPOSED 6" D.I.P. WATER SERVICE LINE
- PROPOSED 6" SDR 35 SEWER LATERAL
- PROPOSED LIGHTING

NOTES:

* REPRESENTS INFORMATION TAKEN FROM FISHKILL AVENUE REHABILITATION PROJECT. CONTRACT NO. D017347 AND D017290 – 01/24/2023.

CONTRACTOR TO FIELD VERIFY ALL LOCATIONS AND ELEVATIONS ASSOCIATED WITH THE FISHKILL AVENUE REHABILITATION PROJECT

STORMWATER TEST PITS:

CONDUCTED BY ARDEN CONSULTING ENGINEERS, PLLC 3/6/2023

PIT #	DEPTH	DESCRIPTION
SWTP1	0"–10"	DARK BROWN TOPSOIL
	10"–38"	YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
	38"–120"	TAN GRAVELLY SANDY LOAM W/SILT
SWTP2	0"–15"	DARK BROWN TOPSOIL
	15"–48"	YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
		ROCK LEDGE @ 48"

STORMWATER TEST PITS:

CONDUCTED BY ARDEN CONSULTING ENGINEERS, PLLC 6/21/2023
WITNESSED BY JOHN RUSSO, P.E.

PIT #	DEPTH	DESCRIPTION
SWTP3	0"–4"	DARK BROWN TOPSOIL
	4"–13"	YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
SWTP4	0"–6"	TOPSOIL
	4"–4"	CLEAN FILL w/ SOME BRICKS & CONCRETE
	4'–7'	SILTY LOAM w/FINE SAND & GRAVEL
SWTP5	0"–4"	PARKING LOT GRAVEL
	4"–11'	YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
SWTP6	0"–4"	TOPSOIL
	4"–11'	YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE & ROCK FILL
SWTP7	0"–4"	TOPSOIL
	4"–11'	SANDY GRAVELLY LOAM

INFILTRATION TESTS:

CONDUCTED BY ARDEN CONSULTING ENGINEERS, PLLC 6/21/2023
TESTING CONDUCTED WITH A 4" DIA. PVC PIPE, L=30"
WITNESSED BY JOHN RUSSO, P.E.

INFILTRATION TEST #3: 14"/HR

INFILTRATION TEST #4: 12"/HR

INFILTRATION TEST #5: 2"/HR

INFILTRATION TEST #6: 4"/HR

INFILTRATION TEST #7: 4"/HR

SCALE
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SCALE FEET

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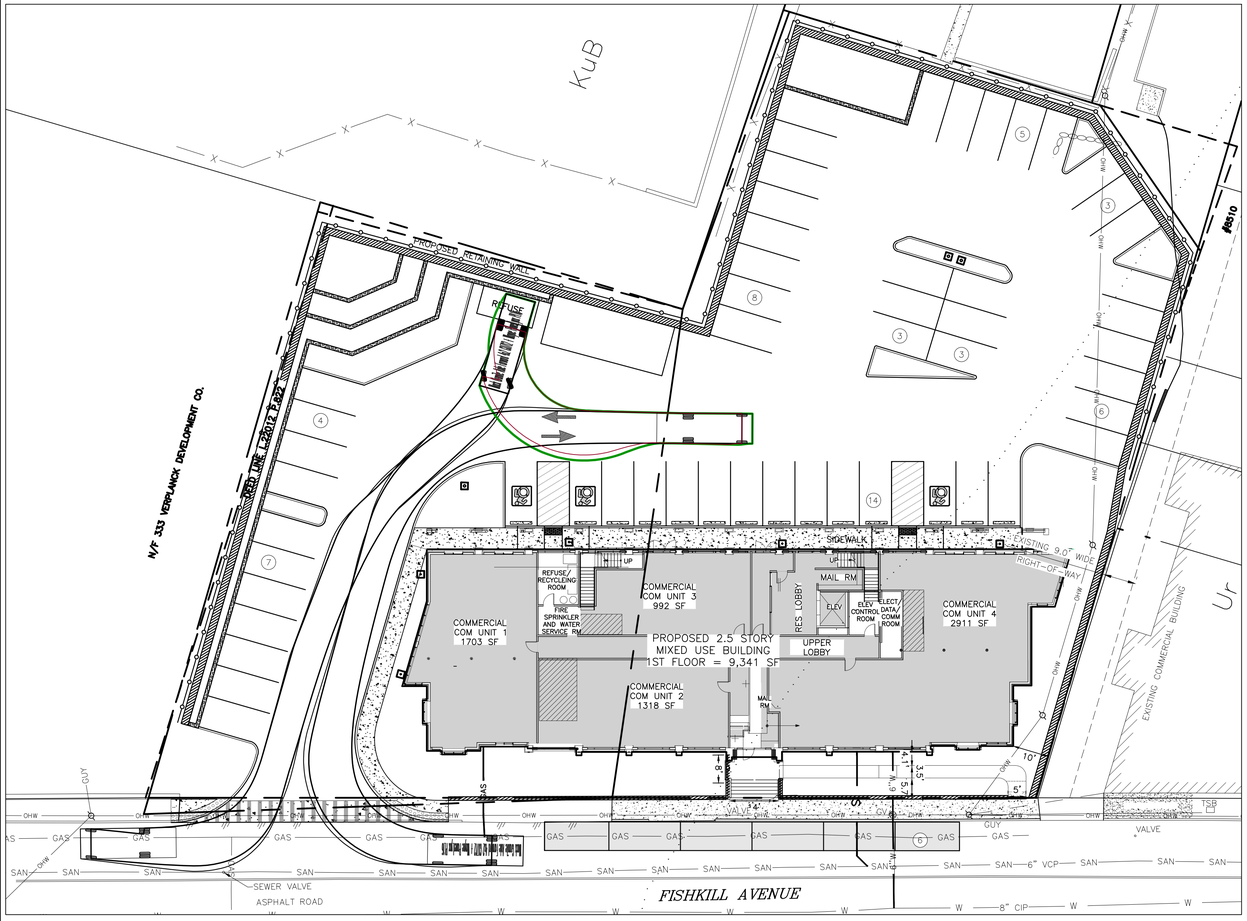
SITE PLAN & LOT MERGER FOR

152–158 FISHKILL AVENUE

CITY OF BEACON – DUTCHESS COUNTY, N.Y.

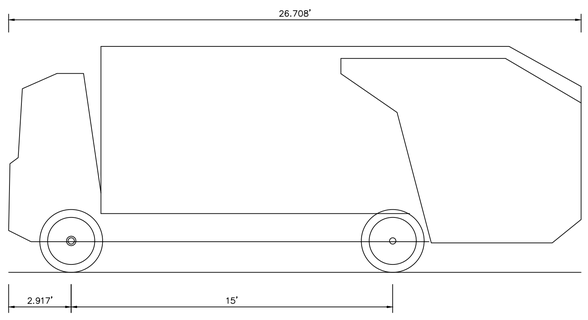
GRADING & UTILITY PLAN

JOB#:	17–001
SCALE:	AS NOTED
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DRAWN:	MM
CHECKED:	MM
SHEET NO.	05 of 18



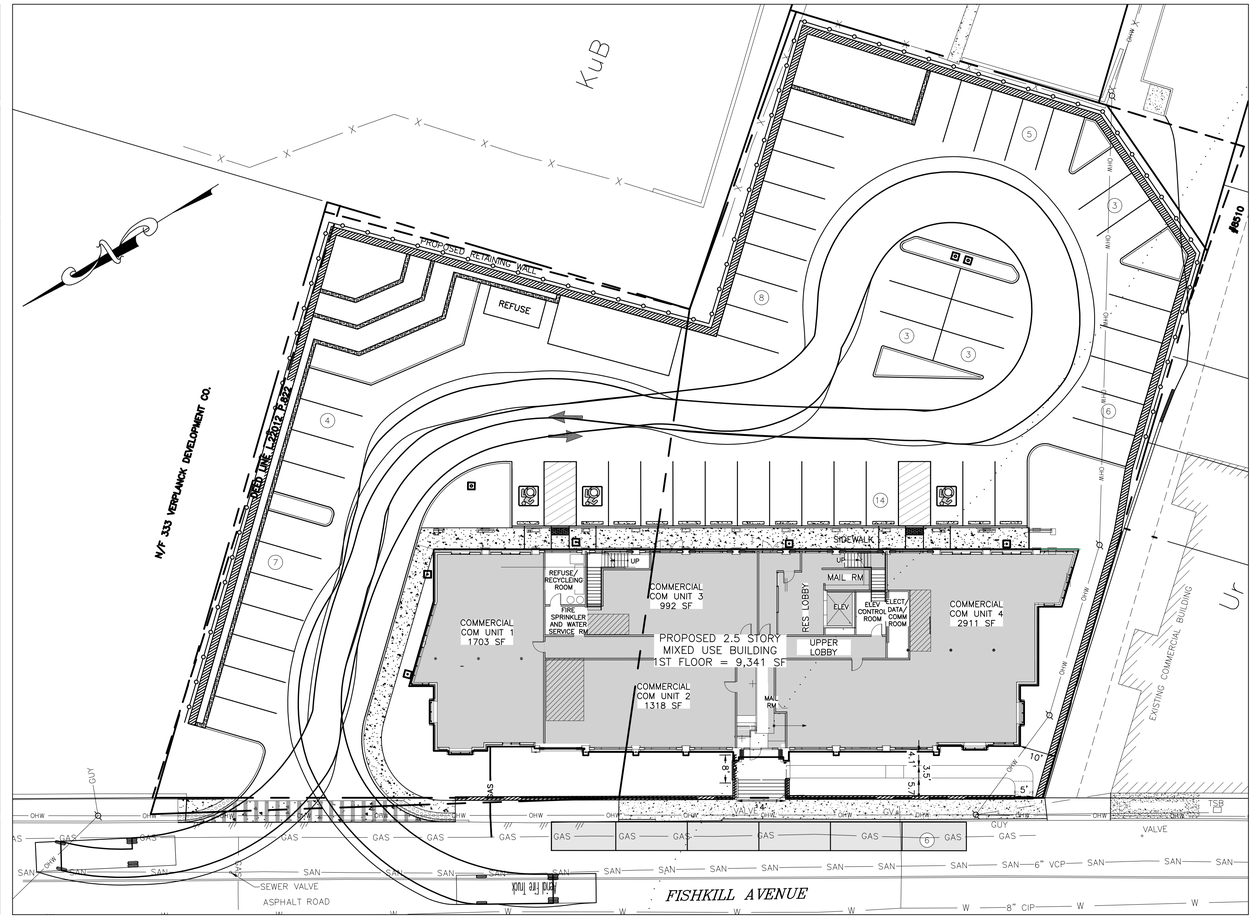
GARBAGE TRUCK TURNING DIAGRAM

SCALE: 1"=20'



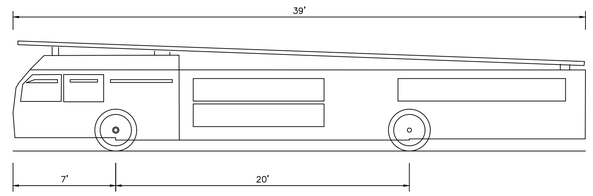
MACK GRANITE AXLE FORWARD 4X2 GU712 + WAYNE POWERLYNX PL16

OVERALL LENGTH	26.708	FT
OVERALL WIDTH	8.375	FT
OVERALL BODY HEIGHT	10.546	FT
MIN BODY GROUND CLEARANCE	1.376	FT
TRACK WIDTH	8.375	FT
LOCK-TO-LOCK TIME	6.000	S
CURB TO CURB TURNING RADIUS	29.300	FT



FIRE TRUCK TURNING DIAGRAMS

SCALE: 1"=20'



AERIAL FIRE TRUCK

OVERALL LENGTH	39.000	FT
OVERALL WIDTH	8.167	FT
OVERALL BODY HEIGHT	7.500	FT
MIN BODY GROUND CLEARANCE	0.750	FT
TRACK WIDTH	8.167	FT
LOCK-TO-LOCK TIME	5.000	S
MAX WHEEL ANGLE	45.00°	

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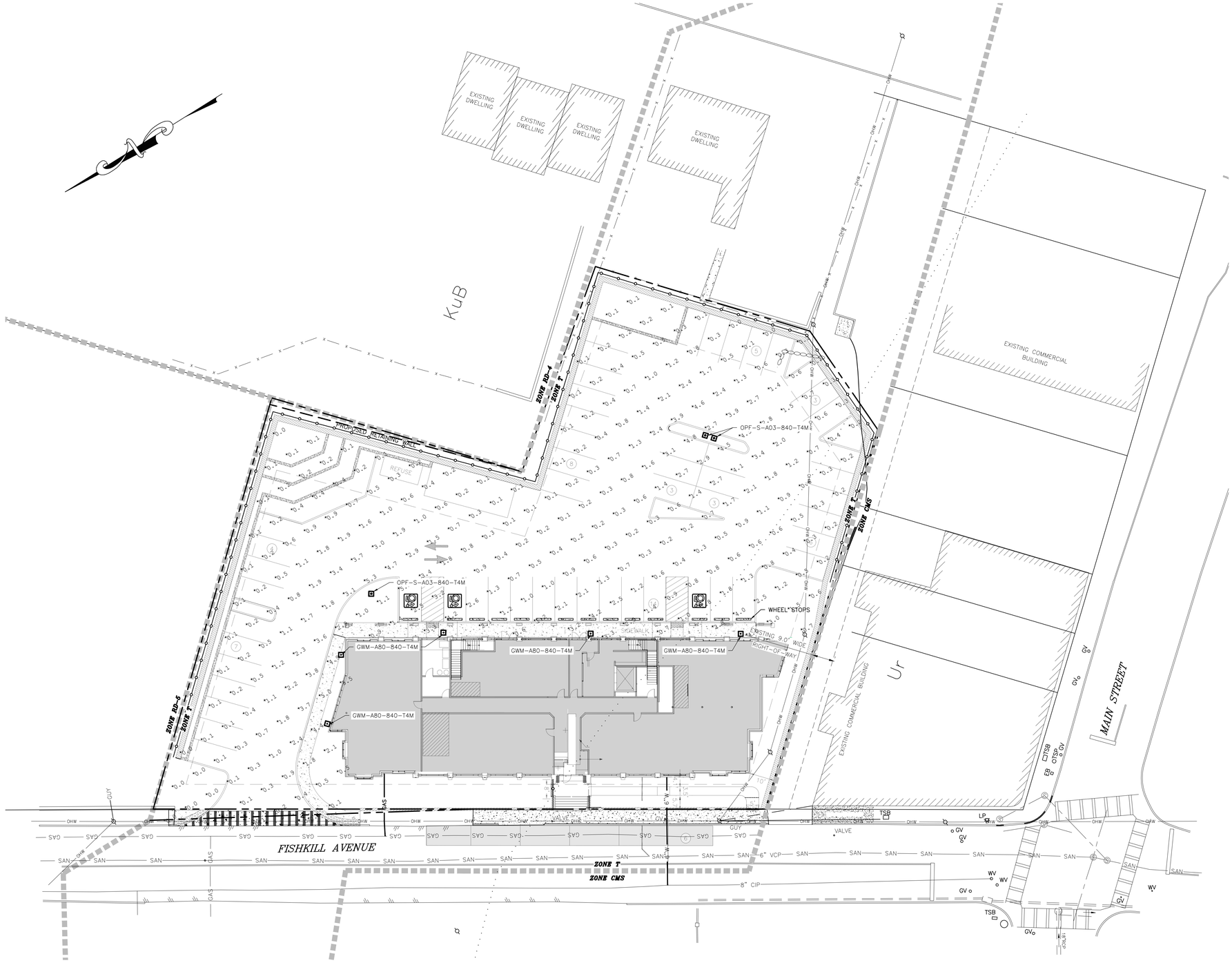
SITE PLAN & LOT MERGER FOR

152-158 FISHKILL AVENUE

CITY OF BEACON – DUTCHESS COUNTY, N.Y.

VEHICLE TURNING DIAGRAMS

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CHECKED:	MM
SHEET NO.	## of 18



SITE LIGHTING PHOTOMETRIC PLAN

SCALE: 1"=20'

LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- EXISTING UTILITY POLE
- EXISTING 6" VCP SEWER LINE
- EXISTING 8" CIP WATER LINE
- EXISTING GAS LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED SIDEWALK
- PROPOSED REFUSE AREA
- PROPOSED SETBACK
- PROPOSED WALL
- PROPOSED FENCE
- PROPOSED 6" D.I.P. WATER SERVICE LINE
- PROPOSED 6" SDR 35 SEWER LATERAL
- PROPOSED LIGHTING

LUMINAIRE SCHEDULE			
SYMBOL	QTY	LABEL	DESCRIPTION
	5	SW1 @ 12FT	GWM-A08-840-T4M
	3	S1 @ 15FT	OPF-S-A03-840-T4M

CALCULATION SUMMARY					
LABEL	CALCTYPE	UNITS	AVG	MAX	MIN
SURFACE	ILLUMINANCE	FC	1.15	5.3	0.0

CALCULATION AND LAYOUT NOTES

1. CALCULATIONS ARE THE EXPECTED MAINTAINED ILLUMINATION
2. CALCULATIONS ARE MEASURED AT GRADE
3. SURFACE REFLECTANCE IS 20%
4. MOUNTING HEIGHTS: TYPE S1 – 15FT, TYPE SW1 – 12FT
5. THIS LIGHTING DESIGN IS BASED ON INFORMATION SUPPLIED BY OTHERS TO LIGHTING UNLIMITED. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE

6. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.

7. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

THIS LAYOUT MAY NOT MEET TITLE 24 OR LOCAL ENERGY REQUIREMENTS. IF THIS LAYOUT NEEDS TO BE TITLE 24 COMPLIANT OR MEET OTHER ENERGY REQUIREMENTS, PLEASE CONSULT FACTORY WITH SPECIFIC DETAILS REGARDING PROJECT REQUIREMENTS SO THAT REVISIONS MAY BE MADE TO

THIS LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRES MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

SCALE
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SITE PLAN & LOT MERGER FOR

152-158 FISHKILL AVENUE

CITY OF BEACON – DUTCHESS COUNTY, N.Y.

LIGHTING PLAN

JOB#: 17-001
SCALE: AS NOTED
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GARDCO by signify

Wall Mount

GeoForm

GWM LED wall sconce



Gardco GeoForm wedge medium LED wall sconce features a geometric wedge shape that will complement a range of architectural styles. GeoForm wedge medium features specialized, highly efficient precision plus optics which balance low glare with excellent performance. Type 2, 3 and 4 optical distributions are available. Emergency battery backup option provides path-of-egress illumination, and multiple control options further enhance energy savings.

Project:
Location:
Cat.No:
Type:
Lamps: Qty:
Notes:

Ordering guide

example: GWM-A07-840-T3M-UNV-FAWS-DG

Luminaire	Configuration (nom. lumens)	Color Temperature	Distribution	Voltage	Dimming Controls[1]	Options (electrical, mechanical, etc)	Emergency	Finish
GWM GeoForm Wedge Medium	**A06** 2,500 lumens **A07** 4,000 lumens **A08** 6,000 lumens **A09** 6,000 lumens **A10**[2] 7,500 lumens **A11**[2] 8,500 lumens **A12**[2] 9,500 lumens **A13**[2] 11,000 lumens **A14**[2] 12,500 lumens	**830** 80CRI 3000K **840** 80CRI 4000K **740** 70CRI 4000K **750** 70CRI 5000K	**T2M** Type 2 **T3M** Type 3 **T4M** Type 4	**120** 120V **208** 208V **240** 240V **277** 277V **UNV** 120-277V (50/60Hz) **347** 347V **480** 480V **HVU** 347-480V (50/60Hz)	**none** Leave blank (10kV/4A dimming driver standard) **DLEA** Dimming Leads Externally Accessible (controls by others) **DUCC**[3] Dual Circuit Control **FAWS** Field Adjustable Wattage Selector **MW3D**[3,4] Microwave motion sensor factory set at 30% dimming **DynaDimmer: Automatic Profile Dimming** Only offered with A08-A13 **CS5O**[1,4] Security 50% dimming, 7 hours **CM5O**[1,4] Median 50% dimming, 8 hours **CS3O**[1,4] Safety 30% dimming, 7 hours **CM3O**[1,4] Median 30% dimming, 8 hours	**none** Leave blank (10kV/4A standard) **SP2** Surge protector 20kV/10kA (option) **FS1** Single fuse (120, 277, or 347VAC) **FS2** Double fuse (208V, 240V, or 480V) **FS3** Double fuse Canadian double pull (208V, 240V, or 480V) **PCB**[5] Photocontrol Button	**none** Leave blank **EC**[6] Emergency battery pack, cold rated (-20°to to 40°C). 120 or 277V only.	**Textured** **BK** Black **WH** White **BZ** Bronze **DG** Dark Grey **MG** Medium Grey **Customer specified** **RAL** Specify optional color or RAL. (ex: OO-LGP or OC-RAL7024) **CC** Custom Color (must supply color chip, requires factory quote)

1. Emergency Battery Pack not available.
2. Only one option can be selected from Dimming Controls column.
3. Not available in 480V.
4. Only available in 120- 277V or UNV.
5. Only available in 120-277, must specify voltage.
6. 120-277V only. Luminaire must be ordered with DLEA option if using WAP.
7. DUCC only available with A06, A07, A08, A09.
8. Available with 120V or 277V only.

Luminaire Accessories (order separately)

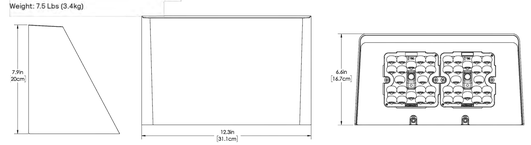
GF-WS-BK Wall Mounted Box for surface conduit, painted black

GWM GeoForm wedge medium

Wall sconce

Dimensions

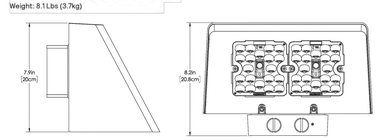
GWM Wedge
Standard
Weight: 7.5 Lbs (3.4kg)



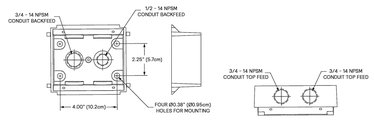
Accessory details

Surface mount conduit box (GF-WS-BK)

GWM Wedge with surface conduit wall mount box
Weight: 8.1 Lbs (3.7kg)



GF-WS-BK Details



GARDCO by signify

Site and Area

OptiForm

OPF-S Small



Gardco OptiForm site and area luminaires are available in three sizes: small, medium and large. Featuring the latest in LED technology, OptiForm achieves up to 180 lumens per watt. Eleven optical distributions are available, suitable for a range of outdoor lighting applications. OptForm features a unique mounting system with a two-piece housing for hassle-free installation. Mounting options include a standard arm, mast arm, and wall mount bracket. Service Tag is a standard feature with every OptiForm luminaire, providing maintenance or upgrade assistance throughout the life of the product.

Project:
Location:
Cat.No:
Type:
Lamps: Qty:
Notes:

Ordering guide

example: OPF-S-A01-140-T4M-AR1-240-BL50-L3-TR7-EM-BZ

Luminaire	Area Configuration (nom. lumens)	Color Temperature	Distribution	Mounting	Voltage
OPF-S OptiForm Small Area Light	**A01** 6,500 lumens **A02** 9,000 lumens **A03** 11,500 lumens **A04** 14,000 lumens **A05** 16,500 lumens **A06** 19,000 lumens **A07** 20,000 lumens **Precision Plus Configurations (nom. lumens)** **P01** 2,500 lumens **P02** 4,000 lumens **P03** 6,500 lumens **P04** 9,000 lumens **P05** 11,500 lumens **P06** 14,000 lumens **P07** 16,500 lumens **P08** 19,000 lumens **P09** 22,000 lumens	**827**[1] 80CRI 2700K **830** 80CRI 3000K **840** 80CRI 4000K **727**[1] 70CRI 2700K **730** 70CRI 3000K **740** 70CRI 4000K **750** 70CRI 5000K	**AFR** Autofront row **T2M** Type 2 medium **T3M** Type 3 medium **T4M** Type 4 medium **T4W** Type 4 wide **T5M** Type 5 medium **T5N** Type 5 narrow **T5W** Type 5 wide **LCL** LED corner optic left **LCR** LED corner optic right **BLC** Back light control **2RL** Type 2 rotated left 90° **2RR** Type 2 rotated right 270° **3RL** Type 3 rotated left 90° **3RR** Type 3 rotated right 270°	**AR3**[9] Arm mount (standard) **MAR**[9] Mast arm **WAL** Wall mount **MOS**[9] Mounting ordered separately	**120** 120V **208** 208V **240** 240V **277** 277V **347** 347V **480** 480V **UNV** 120-277V **HVU** 347-480V

Dimming Controls	Sensing	Options (electrical, mechanical, etc)	Emergency (0-40°C)	Finish
none 0-10V dimming driver standard **DLEA**[2] Dimming leads externally accessible (controls by others) **FAWS**[2,4] Field adjustable wattage selector **SRDB**[2,4,10,11] SR driver connected to 2-hole socket (D4i) **OMSR**[2] Outdoor multi-sensor **Bi-level Functionality** **BLS0**[7] Bi-level with motion sensor **Wireless Controls** **WIAP**[2] Outdoor Interact, Integral **DynaDimmer: Automatic Profile Dimming** **CS5O**[5,8,9] Security 50% dimming, 7 hours **CM5O**[5,8,9] Median 50% dimming, 8 hours **CS3O**[5,8,9] Security 30% dimming, 7 hours **CM3O**[5,8,9] Median 30% dimming, 8 hours	**L2** PIR sensor, #2 lens **LW** Low (8' mounting height) sensor, white color housing **LB** Low (8' mounting height) sensor, black color housing	**None** Surge protector 10kV/10kA standard **SP2**[2] Surge protector 20kV/10kA (option) **FS1**[2] Single fuse (120, 277, or 347VAC) **FS2**[2] Double fuse (208, 240, or 480V) **PCB**[5,10] Photocontrol button **TR5** NEMA Twist-lock 5-pin receptacle **TR7**[2] NEMA Twist-lock 7-pin receptacle	**EM**[2] Emergency Battery Pack	**Standard textured finish** **BK** Black **WH** White **BZ** Bronze **DG** Dark Gray **MG** Medium Grey **Customer specified** **CC** Special optional color or RAL; consult factory **SC** Special color (must supply color chip, requires factory quote)

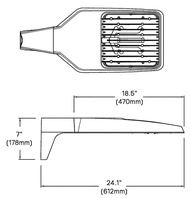
Footnotes 1-8 (hover here to view or see last page of spec sheet)
Footnotes 9-15 (hover here to view or see last page of spec sheet)

OPF-S OptiForm small

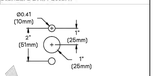
Site & area luminaire

Dimensions

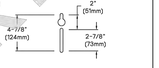
OptiForm Standard Arm
Weight: 11 lb (5.0 kg)
EPA: 0.2 ft² (0.018 m²)



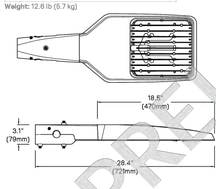
Standard Drill Pattern



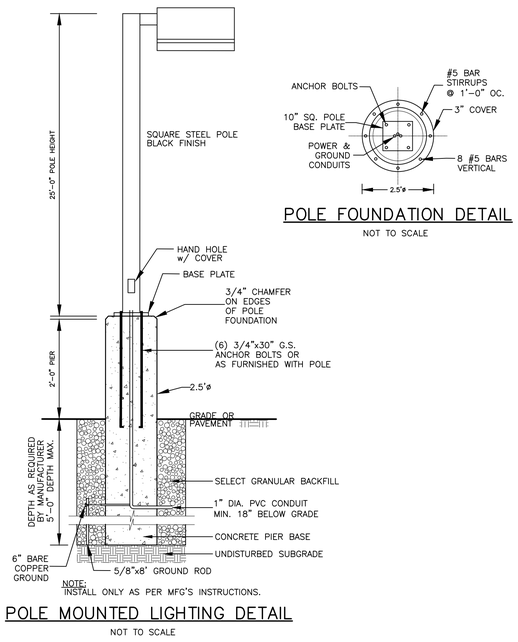
Standard Arm Mounting Hole Pattern



OptiForm Mast Arm
Weight: 12.6 lb (5.7 kg)



PRELIMINARY



POLE MOUNTED LIGHTING DETAIL

NOT TO SCALE

POLE FOUNDATION DETAIL

NOT TO SCALE

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REVISION	BY	DATE	DESCRIPTION
2.	MM	08-15-23	PER PB COMMENTS
1.	MM	06-21-23	PER PB COMMENTS

THIS SHEET IS NOT VALID WITHOUT ALL OF THE SHEETS THAT COMPRISE THE SET

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ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114 FAX: (845) 782-2946
WWW.ARDENCONSULTING.NET

STATE OF NEW YORK · MICHAEL A. MORGANTE · LICENSED PROFESSIONAL ENGINEER · 078577

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR

152-158 FISHKILL AVENUE

CITY OF BEACON - DUTCHESS COUNTY, N.Y.

LIGHTING DETAILS

JOB#: 17-001
SCALE: AS NOTED
DATE: 05-30-23
DRAWN: MM
CHECKED: MM
SHEET NO. 08 of 18

Dig Safely. New York Call 811 before you dig



TREES
- T–Bp, Betula populifolia
- T–Qr, Quercus rubra
- T–Ar, Acer rubrum
- T–Vp, Viburnum prunifolium
- T–Cc, Carpinus caroliniana

SHRUBS
- S–RA, Rhus aromatica
- S–Fg, Fothergilla gardenii
- S–Iv, Ilex verticillata
- S–Cc, Cornus sericea

VINES
- V–Pq, Parthenocissus quinquefolia

HERBACEOUS
- H–EP, Erigeron pulchellus
- H–Ae, Aster ericoides
- H–Ps, Phlox stolonifera
- H–Ac, Aquilegia canadensis
- H–Gm, Geranium maculatum

GRASSES
- G–Ss, Schizachyrium scoparium
- G–Es, Erigrostis spectabilis
- MEADOW MIX

FERNS
- F–Pa, Polystichum acrostichoides

BOULDER

SYMBOL	TYPE	BOTANICAL NAME	COMMON NAME	Size	Units	Planting Time
T-Ar	Tree	Acer rubrum	Red Maple	3'	6	Spr/Aut
T-Bp	Tree	Betula populifolia	Grey Birch Single Stem	5-6'	28	Spr/Aut
T-Cc	Tree	Carpinus caroliniana	Ironwood	6-7'	6	Spr/Aut
T-Qr	Tree	Quercus rubra	Red Oak	3"	3	Spr/Aut
S-Cs	Shrub	Cornus sericea	Red Twig Dogwood	3 gal	5	Spr/Aut
S-Di	Shrub	Fothergilla gardenia	Dwarf Fothergilla	3 gal	17	Spr/Aut
S-Iv	Shrub	Ilex verticillata	Winterberry (need male and female)	5 gal	8	Spr/Aut
S-Ra	Shrub	Rhus aromatica	Aromatic Sumac Lo Gro	3 gal	40	Spr/Aut
V-Pq	Vine	Parthenocissus quinquefolia	Virginia Creeper	1 gal	37	Spr/Aut
H-Ae	Herb	Aster ericoides	Heath Aster	plugs	132	Spr/Sum/Early Aut
H-Ac	Herb	Aquilegia canadensis	Columbine	pint	47	Spr/Sum/Early Aut
H-Ct	Herb	Coreopsis tinctoria	Plains Coreopsis	seed	tbd	Spr/Sum/Early Aut
H-Gm	Herb	Geranium maculatum	Geranium	pint	54	Spr/Sum/Early Aut
H-Ep	Herb	Erigeron pulchellus	Robin's Plantain	pint	205	Spr/Sum/Early Aut
H-Ps	Herb	Phlox stolonifera	Creeping Phlox	plugs	225	Spr/Sum/Early Aut
G-Es	Grass	Erogrostis spectabilis	Purple Lovegrass	gal	tbd	Spr/Sum/Early Aut
G-Ss	Grass + Herb	Schizachyrium scoparium+ Native Meadow Mix	Little Bluestem +Native Meadow Mix	gal+ seed	tbd	Spr/Sum/Early Aut
F-Pa	Fern	Polystichum acrostichoides	Christmas Fern	gal	78	Spr/Aut


1 *Polystichum acrostichoides*
Christmas Fern


2 *Eragrostis spectabilis*
Purple Lovegrass


3 *Schizachyrium scoparium*
Little Blue Stem


4 *Aquilegia canadensis*
Columbine


5 *Aster*
Heath Aster


6 *Erigeron pulchellus*
Robin's Plantain


7 *Geranium maculatum*
Wild Geranium


8 *Phlox stolonifera*
Creeping Phlox


9 *Sedum ternatum*
Stonecrop Sedum


10 *Sysyrhinchium angustifolium*
Blue Eyed Grass

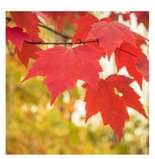

11 *Aronia melanocarpa*
Black Chokeberry


12 *Cornus sericea*
Red Twigged Dogwood


13 *Fothergilla gardenia*
Dwarf Fothergilla


14 *Ilex verticillate*
Winterberry


15 *Rhus aromatica*
Fragrant Sumac


16 *Acer rubrum*
Red Maple

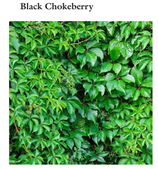

17 *Betula populifolia*
Grey Birch


18 *Carpinus caroliniana*
Ironwood


19 *Cercis cabadensis*
Redbud


20 *Quercus rubra*
Red Oak


21 *Viburnum prunifolium*
Blackhaw


22 *Parthenocissus quinquefolia*
Virginia Creeper

Beacon, New York
914 645 8039
Landscape Restorations

Landscape Plan
August 25, 2023

152-158 Fishkill Avenue
City of Beacon, Dutchess County, New York

FERNS

1 *Polystichum acrostichoides* **Christmas Fern**

GRASSES

2 *Eragrostis spectabilis* **Purple Lovegrass**

3 *Schizachyrium scoparium* **Little Blue Stem**

HERBACEOUS

4 *Aquilegia canadensis* **Columbine**

5 *Aster Heath* **Aster**

6 *Erigeron pulchellus* **Robin's Plantain**

7 *Geranium maculatum* **Wild Geranium**

8 *Phlox stolonifera* **Creeping Phlox**

9 *Sedum ternatum* **Stonecrop Sedum**

10 *Sysyrhinchium angustifolium* **Blue Eyed Grass**

SHRUBS

11 *Aronia melanocarpa* **Black Chokeberry**

12 *Cornus sericea* **Red Twigged Dogwood**

13 *Fothergilla gardenia* **Dwarf Fothergilla**

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15 *Rhus aromatica* **Fragrant Sumac**

TREES

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17 *Betula populifolia* **Grey Birch**

18 *Carpinus caroliniana* **Ironwood**

19 *Cercis cabadensis* **Redbud**

20 *Quercus rubra* **Red Oak**

21 *Viburnum prunifolium* **Blackhaw**

VINES

22 *Parthenocissus quinquefolia* **Virginia Creeper**




1 *Polystichum acrostichoides*
Christmas Fern


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Purple Lovegrass

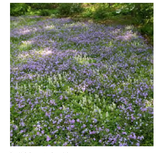

3 *Schizachyrium scoparium*
Little Blue Stem


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Columbine


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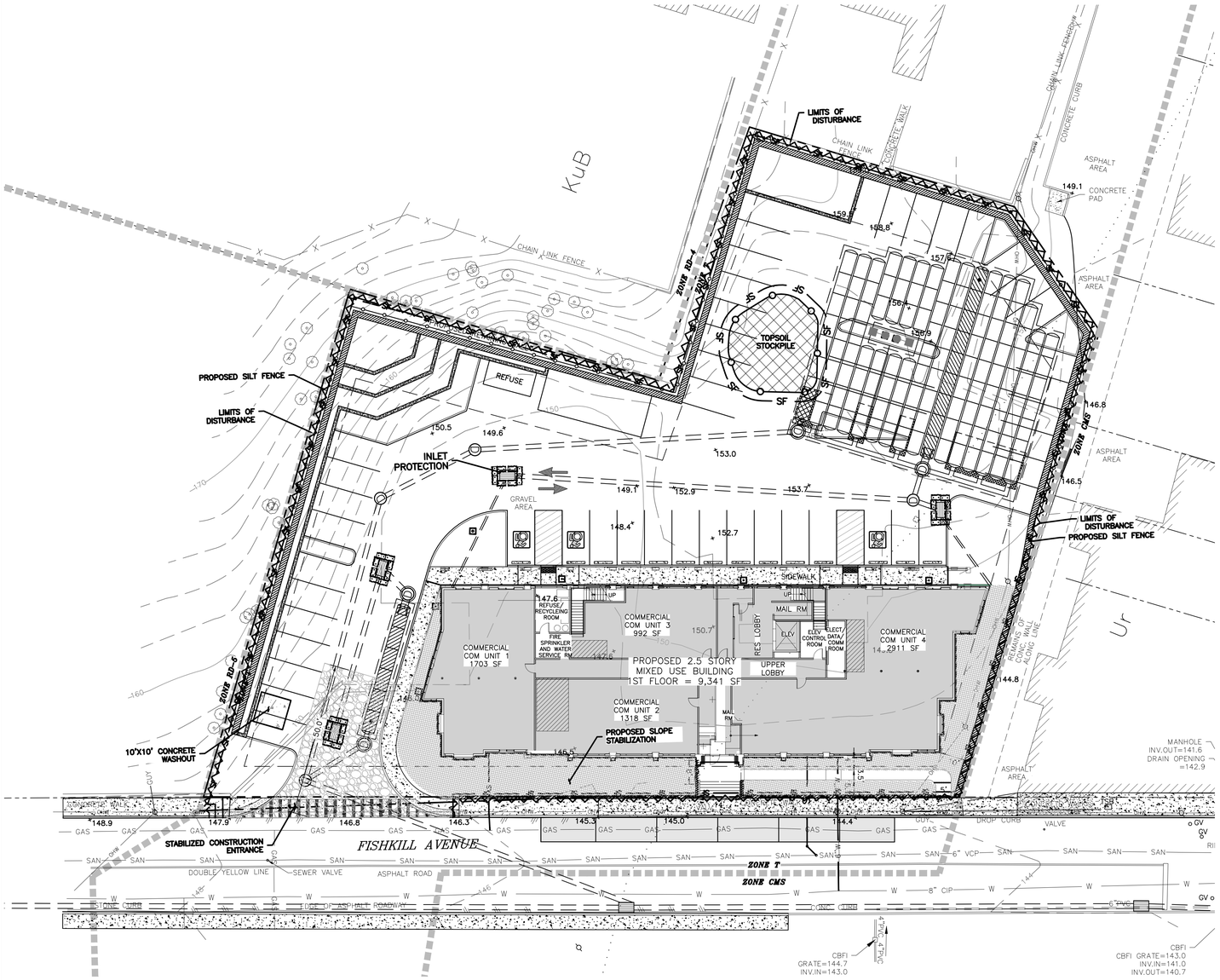

21 *Viburnum prunifolium*
Blackhaw


22 *Parthenocissus quinquefolia*
Virginia Creeper

Beacon, New York
914 645 8039
Landscape Restorations

Landscape Diagram
August 25, 2023

152-158 Fishkill Avenue
City of Beacon, Dutchess County, New York



EROSION AND SEDIMENT CONTROL PLAN

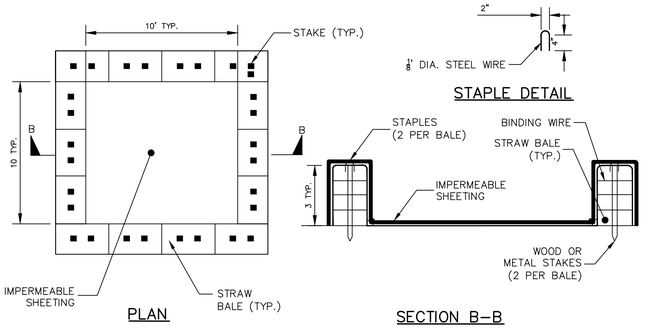
SCALE: 1"=20'

NOTE:

CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

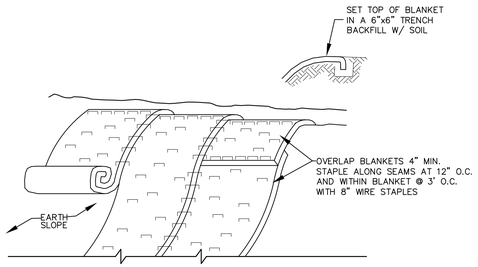
CONSTRUCTION SPECIFICATIONS

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SCUDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER. USE 10 MIL OR THICKER UV RESISTANT. IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (EG., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS. WHOLE OR BROKEN UP. FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.



CONCRETE WASHOUT AREA WITH STRAW BALES

NOT TO SCALE

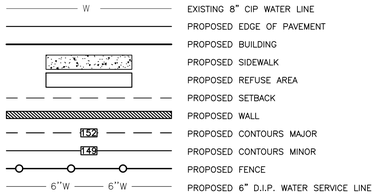


SLOPE STABILIZATION DETAIL

NOT TO SCALE

NOTES:

1. STABILIZE PREPARED EARTHEN SLOPE WITH A BIODEGRADABLE NATURAL FIBER NETTING APPROVED TYPES ARE AS FOLLOWS:
   - C350 –NORTH AMERICAN GREEN #1-800-772-2040
   - ECOCOIR 9000– EASTERN PRODUCTS, INC. #1-201-234-5050
   - ERO-MAT V125C– EROSION CONTROL TECH. #1-800-245-0551
   - ALL SLOPE RESTORATION TO GET 4" TOPSOIL
2. SEED SLOPE PRIOR TO INSTALLING EROSION CONTROL NETTING.
3. AFTER NETTING IS INSTALLED, PLANT GROUND-COVER, TREES & FORSYTHIA THROUGH SLITS CUT IN FABRIC.



STABILIZED CONSTRUCTION ENTRANCE

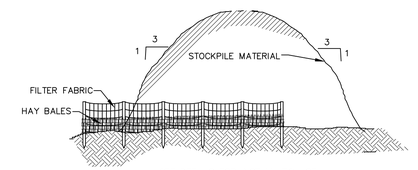
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT 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 OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. 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 A 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.

LEGEND:

- EXISTING MAJOR CONTOUR (149)
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE (OHW)
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE (X)
- EXISTING CONCRETE WALL
- EXISTING UTILITY POLE
- EXISTING 6" VCP SEWER LINE (SAN)
- EXISTING 8" CIP WATER LINE (W)
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED SIDEWALK
- PROPOSED REFUSE AREA
- PROPOSED SETBACK
- PROPOSED WALL
- PROPOSED CONTOURS MAJOR (152)
- PROPOSED CONTOURS MINOR (149)
- PROPOSED FENCE
- PROPOSED 6" D.I.P. WATER SERVICE LINE (6"W)
- PROPOSED 6" SDR 35 SEWER LATERAL (S)
- PROPOSED LIGHTING
- PROPOSED SILT FENCE (SF)
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED SLOPE STABILIZATION
- STABILIZED CONSTRUCTION ENTRANCE
- BALES OF HAY OR STRAW (2'x2'x4')



SEE DETAILS FOR INSTALLATION OF FILTER FABRIC & HAY BALES

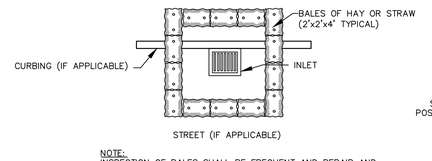
TYPICAL STOCKPILE DETAIL

NOT TO SCALE

SCALE

20 0 10 20 40

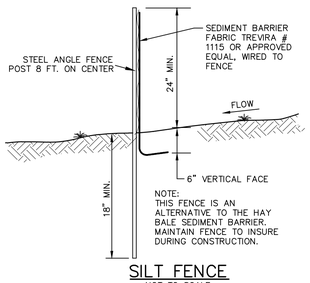
SCALE FEET



NOTE:
INSPECTION OF BALES SHALL BE FREQUENT AND REPAIR AND REPLACEMENT SHALL BE MADE PROMPTLY AS NECESSARY.

INLET PROTECTION DETAIL

NOT TO SCALE



NOTE:
THIS FENCE IS AN ALTERNATIVE TO THE HAY BALE SEDIMENT BARRIER. MAINTAIN FENCE TO INSURE DURING CONSTRUCTION.

SILT FENCE

NOT TO SCALE

SLOPE STABLIZATION, SEEDING METHOD & MULCHING

SLOPES OR 4:1 OR GREATER (HORIZONTAL : VERTICAL)

SLOPES SHALL BE HYDROSEEDED WITH THE MIXTURES AND RATES INDICATED IN THE PERMANENT SEEDING MIXTURE SCHEDULE. STRAW OR HAY MULCH SHALL BE APPLIED AT A RATE OF 2,000 LBS./ACRE. STRAW OR HAY MULCH SHALL BE ANCHORED WITH BIOD-Mesh60 NETTING AS MANUFACTURED BY RoLANKA INTERNATIONAL OR APPROVED EQUIVALENT. NETTING TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

GENTLE SLOPE AND FLAT AREAS

AREA SHALL BE SEEDED BY HYDROSEEDING OR BRODCASTING WITH THE MIXTURES AND RATES INDICATED ON THE PERMANENT SEEDING MIXTURE SCHEDULE. HYDROSEEDED AREAS SHALL BE MULCHED WITH A WOOD FIBER MULCH APPLIED AT A RATE OF 500 LBS./ACRE. BROADCAST AREAS SHAL BE MULCHED WITH HAY OR STRAW AT A RATE OF 2,000 LBS./ACRE. AREAS SEEDED BY BROADCASTING SHALL BE LIGHTLY RAKED AND PACED PRIOR TO PLACING MULCH.

AREAS REMAINING DISTURBED FOR 14 DAYS OR MORE SHALL BE STABLIZED AS FOLLOWS:

SCARIFY SOILS IF COMPACTED, LIME TO pH OF 6.0 IF REQUIRED, FERTILIZE WITH 600 LBS./ACRE. 5-10-10 FERTILIZER IF REQUIRED. SEED WITH SPECIES AND RATE SHOWN BELOW. MULCH WITH HAY OR STRAW AT A RATE OF 2,000 LBS./ACRE. ANCHOR MULCH WITH NETTING OF WOOD FIBER OR JUTE IF STEEP SLOPE OR HIGH POTENTIAL FOR EROSION.

SPECIES	APPLICATION RATE
RYEGRASS (ANNUAL OR PERENNIAL) (USE WINTER RYE IF SEEDING IN OCT./NOV.)	30 LBS./ACRE (0.7 LBS./1,000 SF)

LIMITS OF DISTURBANCE:

LIMITS OF DISTURBANCE= 0.95 ACRES
A NYSDEC SWPPP IS NOT REQUIRED SINCE LESS THAN 1 ACRE OF SOIL DISTURBANCE IS PROPOSED.

REVISION	BY	DATE	DESCRIPTION
2.	MM	08-15-23	PER PB COMMENTS
1.	MM	06-21-23	PER PB COMMENTS

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P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114 FAX: (845) 782-2946
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STATE OF NEW YORK · MICHAEL A. MORGANTE · LICENSED PROFESSIONAL ENGINEER · 078577

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR

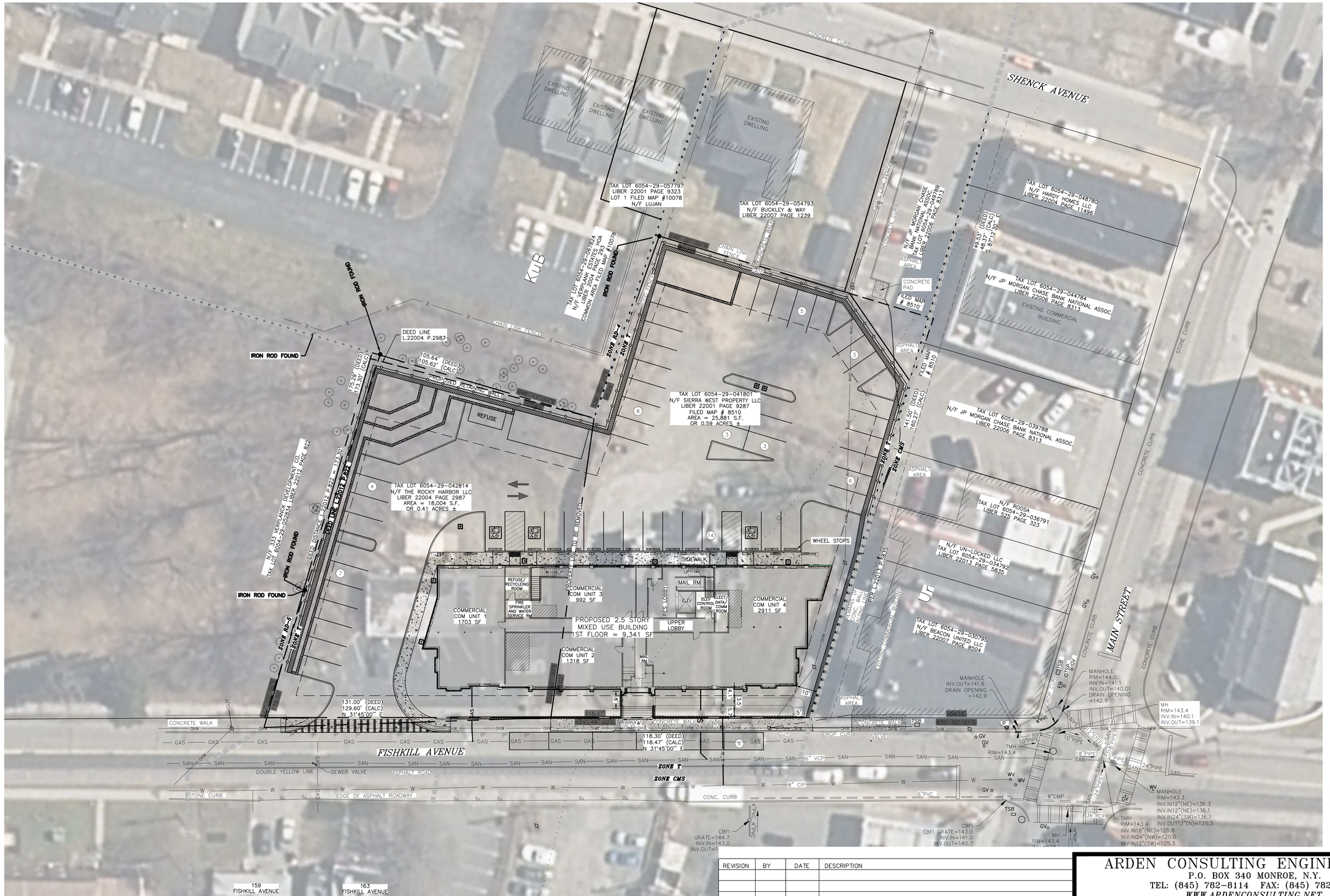
152-158 FISHKILL AVENUE

CITY OF BEACON – DUTCHESS COUNTY, N.Y.

EROSION AND SEDIMENT CONTROL PLAN

JOB#:	17-001
SCALE:	AS NOTED
DATE:	05-30-23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	11 of 18

Dig Safely. New York Call811 before you dig



ORTHOIMAGERY
SCALE: 1"=20'

SCALE
20 0 10 20 40
SCALE FEET

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Call 811
before you dig

REVISION	BY	DATE	DESCRIPTION

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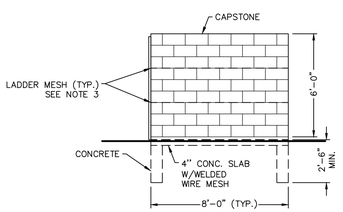
SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

ORTHOIMAGERY

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SHEET NO.	12 of 18

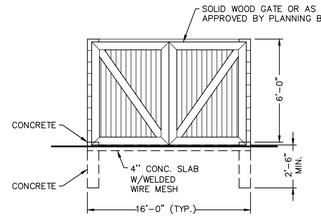
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ENCLOSED SIDES

NOT TO SCALE



PICK-UP ENTRANCE

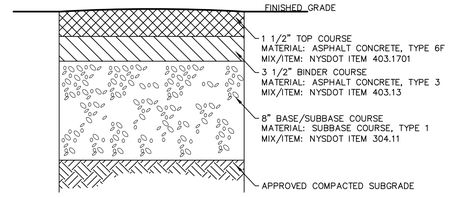
NOT TO SCALE

NOTES:

1. REFUSE ENCLOSURE TO BE CONSTRUCTED OF 8" SOLID TEXTURED MASONRY BLOCK WITH FACADE TO MATCH PROPOSED BUILDING OR AS APPROVED BY PLANNING BOARD.
2. CONCRETE SLAB TO HAVE 2" RAISED LIP AROUND THREE SIDES.
3. LADDER MESH REINFORCEMENT EVERY EVERY THIRD VERTICAL ROW (24" O.C.TYP.) OR AS RECOMMENDED BY THE MANUFACTURER.

DUMPSTER ENCLOSURE DETAIL

NOT TO SCALE

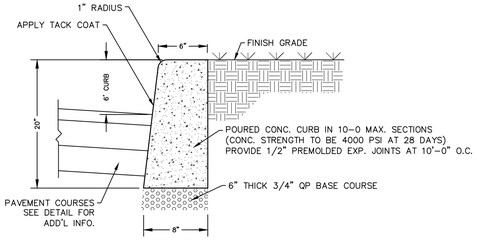


NOTES:

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, LATEST EDITION, AND ALL ADDENDA THERETO.
2. SUBBASE MATERIAL SHALL CONFORM WITH SECTION 304 – SUBBASE COURSE OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS.
3. HOT MIX ASPHALT (HMA) PAVEMENT SHALL CONFORM WITH SECTION 400 HOT MIX ASPHALT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS AND THE TYPE CALLED OUT IN THESE DRAWINGS. ALTHOUGH SECTION 400 IN ITS ENTIRETY IS REFERENCED, THE HOT MIX ASPHALT (HMA) FAVEMENT(S) SPECIFIED FOR TL-LIS CONTRACT SHALL BE AS SPECIFIED UNDER SECTION 402-HOT MIX ASPHALT (HMA) PAVEMENTS.
4. TACK COAT SPECIFIED OR CALLED OUT IN THESE DRAWINGS OR REQUIRED BY THE REFERENCED SFECIFICATIONS SHALL CONFORM WITH SECTION 407-TACK COAT OF THE ABOVE REFERENCED NYSDOT STANDARD SPECIFICATIONS.
5. 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.
6. THICKNESS INDICATED REFER TO COMPACTED MEASURE.

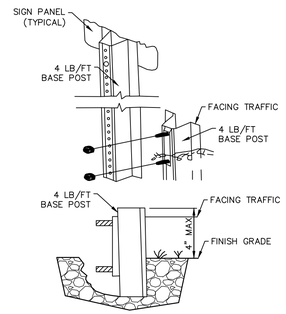
TYPICAL ASPHALT DETAIL FOR PARKING AREAS

NOT TO SCALE



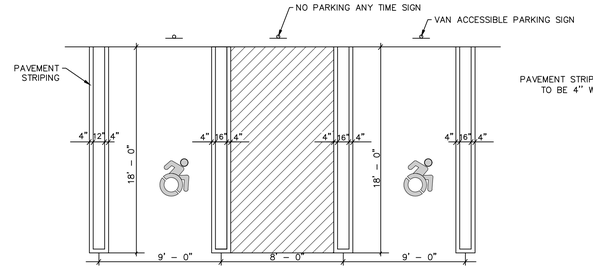
STANDARD CONCRETE CURB DETAIL

NOT TO SCALE



ANCHOR POST ASSEMBLY SIGN SUPPORTS

NOT TO SCALE

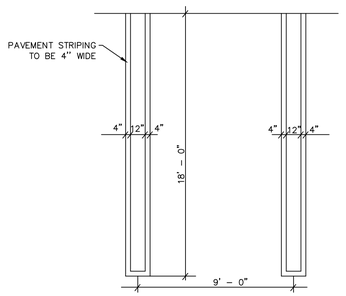


ACCESSIBLE PARKING SPACE & STRIPING DETAIL

NOT TO SCALE

NOTES:

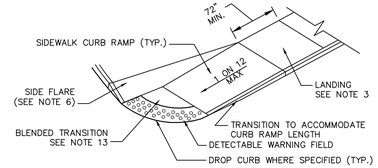
1. ALL SLOPES WITHIN THE HANDICAP PARKING AND LOADING AREAS SHALL BE 1:50 OR LESS.
2. ALL RUNNING SLOPES LEADING TO ACCESSIBLE PARKING SHALL NOT EXCEED 1:20.
3. ACCESSIBLE AISLE STRIPING SPACED 2' O.C. AT A 45° ANGLE.
4. UTILIZE BLUE & WHITE EPOXY RESIN DYNAMIC SYMBOL OF ACCESSIBILITY.
5. STRIPED LOADING AND UNLOADING AREA: 60" MIN. OR 96" MIN. FOR VANS.



PARKING LOT STRIPING DETAIL

NOT TO SCALE

NOTE: ALL PARKING AREAS TO BE RESTRIPED YEARLY OR AS REQUIRED



SIDEWALK CURB RAMP

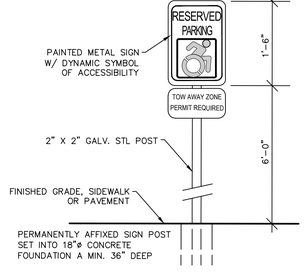
NOT TO SCALE

GENERAL NOTES:

1. THE PUBLIC SIDEWALK CURB RAMP STANDARDS DEPICTED HERE MAY NOT BE APPROPRIATE FOR ALL LOCATIONS. FIELD CONDITIONS AT INDIVIDUAL LOCATIONS MAY REQUIRE SPECIFIC DESIGNS. DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF THIS SHEET TO THE MAXIMUM EXTENT FEASIBLE ON ALTERATION PROJECTS AND WHEN STRUCTURALLY PRACTICABLE ON NEW CONSTRUCTION PROJECTS AS REQUIRED BY THE AMERICAN'S WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES.
2. THERE SHALL BE A LANDING AT THE TOP OF EACH CURB RAMP. THERE SHALL BE A LANDING AT THE TOP AND AT THE BOTTOM OF EACH PARALLEL AND PARALLEL/PERPENDICULAR RAMP.
3. LANDINGS SHALL HAVE A MINIMUM CLEAR DIMENSION OF A 60" BY 60" SQUARE. THE MAXIMUM CROSS SLOPE AT LANDINGS IS 2 PERCENT IN ANY DIRECTION. LANDINGS MAY OVERLAP WITH ADJACENT LANDINGS OR A SINGLE LANDING LANDINGS MAY OVERLAP WITH CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
4. CROSS SLOPES. THE MAXIMUM CROSS SLOPE OF CURB RAMPS SHALL BE 2 PERCENT. CURB RAMP SURFACES SHALL GENERALLY LIE IN CONTINUOUS PLANES WITH MINIMUM OF SURFACE WARP.
5. THE RUNNING GRADE OF CURB RAMPS SHOULD BE AS FLAT AS PRACTICABLE. THE MAXIMUM RUNNING GRADE OF ANY PORTION OF ANY CURB RAMP SHALL BE 1:12 (8.3%). CURB RAMPS ARE NOT REQUIRED TO BE LONGER THAN 15'.
6. CURB RAMP LOCATED WHERE PEDESTRIANS MAY WALK ACROSS THE CURB RAMP SHALL HAVE FLARED SIDES. THE LENGTH OF FLARES SHALL BE AT LEAST TEN (10) TIMES THE CURB HEIGHT, MEASURED ALONG THE CURB LINE. WHEN INFEASIBLE OR IMPRACTICABLE TO PROVIDE A LANDING THAT IS AT LEAST 60" WIDE (MEASURED ROM THE TOP OF THE RAMP TO THE BACK OF THE SIDEWALK), THE LENGTH OF FLARES SHALL BE TWELVE (12) TIMES THE CURB HEIGHT MEASURED ALONG THE CURB LINE.
7. THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING GROOVES.
8. RAMP TRANSITIONS BETWEEN WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4" MAX.).
9. COORDINATE ALL TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD. DRAINAGE GRATES AND UTILITY ACCESS COVERS ARE NOT ALLOWED IN RAMP WALKING SURFACES OR LANDINGS.
10. WHERE FEASIBLE, E.G, WHERE R.O.W. WIDTH PROVIDES SUFFICIENT SPACE TO INSTALL SIDEWALKS SET BACK FROM THE CURBS, RAMP TYPES 2A AND 3A SHOULD BE INSTALLED AS THE SEPARATION PROVIDE BETWEEN SIDEWALK AND CURB OR TRAVEL WAY MAKE FOR AS GREATER PEDESTRIAN SAFETY AND COMFORT.
11. AT MARKED CROSSINGS, THE FULL WIDTH OF THE RAMP SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS. THE SIDES OF THE RAMPS (THE FLARES) NEED NOT BE WITHIN THE WIDTH OF THE MARKINGS.
12. DETAILS ILLUSTRATE THAT DETECTABLE GROOVES ARE REQUIRED. SEE THE CURRENT DETECTABLE WARNING STANDARD SHEET FOR SPECIFIC DETECTABLE WARNING REQUIREMENTS. DETAILS DO NOT SHOW DROPPED CURBS AT BOTTOMS OF CURB RAMPS. DROP CURBS MAY BE SPECIFIED.
13. SLOPES ON BLENDED TRANSITIONS SHALL NOT BE STEEPER THAN 2% (1 ON 50) IN ANY DIRECTION.

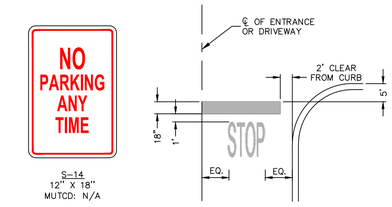
STOP SIGN AND POSTS SPECIFICATIONS ARE AS FOLLOWS:

STOP SIGN: 30" X 30"; 3M OR EQUAL; HI DENSITY PRISMATIC GRADE
BASS POST: LENGTH 3'-6"; HOT DIPPED GALVANIZED; 4LB/FT STRENGTH (SHORT POST PROJECTION ABOVE FINISH GRADE IS TO BE NOT MORE THAN 4".)
SIGN POST: LENGTH 10'-0"; HOT DIPPED GALVANIZED; 4 LB/FT STRENGTH ATTACHED TO BASE POST IS (2) 3'-0" X 3" WIDE; RED HI DENSITY PRISMATIC GRADE
SIGN BOLTS: HOT DIPPED GALVANIZED GRADE 5
BREAKAWAY BOLTS: ALUMINUM.



ACCESSIBLE PARKING SIGN

NOT TO SCALE



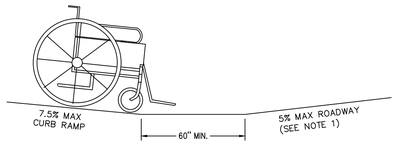
S-14
12" X 18"
MUTCD: N/A

SIGNS

NOT TO SCALE

STOP BAR DETAIL

NOT TO SCALE

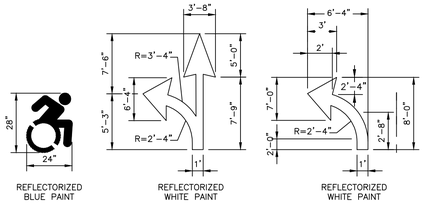


NOTES:

TO AVOID WHEEL CHAIR FOOTREST STRIKING PAVEMENT, PROVIDE 24" LEVEL STRIP (1:50) MAX. IN DIRECTION OF PEDESTRIAN TRAVEL) IF ALGEBRAIC DIFFERENCE BETWEEN CURB RAMP SLOPE & ROADWAY CROSS SLOPE EXCEEDS 11%.

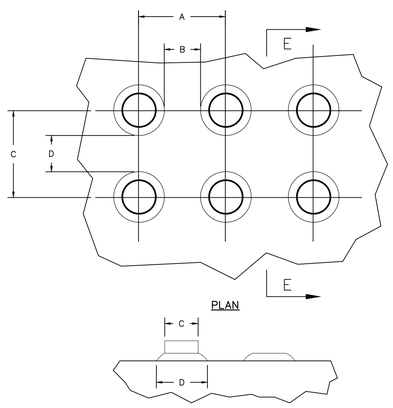
COUNTER SLOPE CONDITIONS

NOT TO SCALE



PAVEMENT STRIPING MARKING DETAIL

NOT TO SCALE



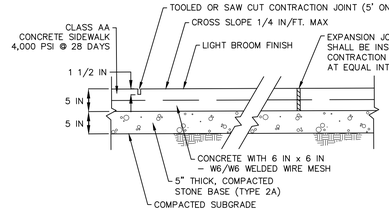
DETECTABLE WARNING SURFACE (DWS) TRUNCATED DOME DETAILS

NOT TO SCALE

NOTES:

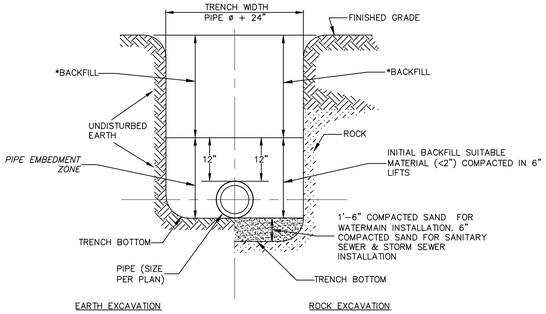
1. TRUNCATED DOME PATTERN.
2. ROWS OF TRUNCATED DOMES ALIGNED PERPENDICULAR TO THE GRADE BREAK BETWEEN THE CURB RAMP/LANDING AND THE STREET.
3. FULL WIDTH OF CURB RAMP/LANDING CONNECTION TO THE STREET.
4. DEPTH: 24-INCH MINIMUM.
5. INSTALLED AT BACK OF CURB.
6. CONTRASTS WITH BACKGROUND (LIGHT-ON-DARK OR DARK-ON-LIGHT).

TRUNCATED DOME DIMENSIONS		
DIM.	MIN. (IN)	MAX. (IN)
A	1.6"	2.4"
B	0.65"	1.5"
C	50% – 65% OF D DIM.	
D	0.9"	1.4"



TYPICAL SIDEWALK SECTION

NOT TO SCALE



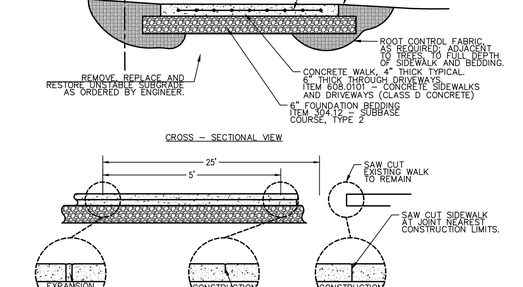
* BACKFILL TO BE COMPACTED IN 8" LIFTS WITH NO STONES OVER 8" IN ANY DIMENSION.

TRENCH CROSS SECTION

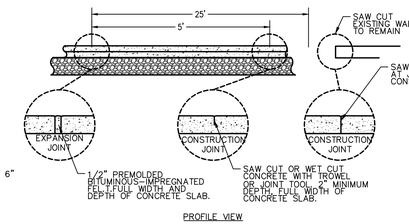
NOT TO SCALE

NOTES:

1. TRENCHES IN PAVED AREAS SHALL UTILIZE THE PAVEMENT REPLACEMENT DETAIL FOUND ON THIS SHEET.
2. FULL DEPTH ROB GRAVEL OR ITEM 4 COMPACTED TO 95% MODIFIED PROCTOR UNDER PAVED AREAS.



CROSS – SECTIONAL VIEW



PROFILE VIEW

NOTES:

1. THE GRAVEL OR STONE BASE SHALL BE PLACED ON A WELL GRADED AND COMPACTED SUBGRADE. THE GRAVEL OR STONE BASE SHALL BE THOROUGHLY COMPACTED.
2. ALL EXPOSED SURFACES SHALL BE BROOMED AND EDGES FINISHED WITH A 1/4" RADIUS EDGING TOOL. THE FINISHED CONCRETE SURFACE SHALL BE TREATED WITH A CLEAR, NON YELLOWING CURING COMPOUND.
3. NO CONCRETE SHALL BE PLACED BEFORE APRIL 20TH, OR AFTER OCTOBER 31ST. NO CONCRETE SHALL BE PLACED UNLESS THE AMBIENT AIR AND BASE MATERIAL SURFACE TEMPERATURE IS ABOVE 40 DEGREES.
4. ALL WORK SHALL CONFORM TO NYSDOT SPECIFICATIONS.
5. ALL WORK SHALL CONFORM TO ADA REQUIREMENTS.

SIDEWALK RESTORATION DETAIL

NOT TO SCALE

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Call 811
before you dig

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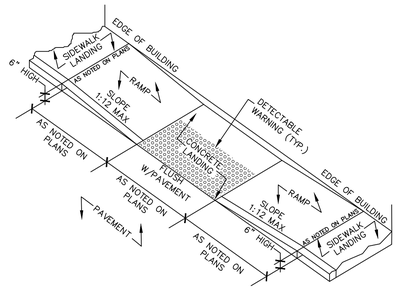
STATE OF NEW YORK
MICHAEL A. MORGANTE
LICENSED PROFESSIONAL ENGINEER
078577

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

SITE CONSTRUCTION DETAILS 1

JOB#:	17-001
SCALE:	AS NOTED
DATE:	05-30-23
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SHEET NO.	13 of 18



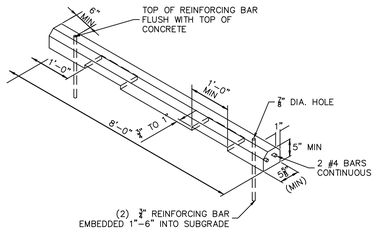
NOTES:
1. ALL CROSS-SLOPES SHALL BE 1:50 OR LESS.
2. ALL RUNNING SLOPES LEADING TO ACCESSIBLE LANDING SHALL NOT EXCEED 1:20.
3. SIDEWALK LANDINGS SHALL BE 5'x5' MIN.
4. ENTRANCE TO BUILDING SHALL HAVE A 5'x5' CLEAR AREA WHEN DOORS ARE OPEN.
5. DETECTABLE WARNING STRIP TO CONTRAST VISUALLY WITH ADJOINING SURFACES EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT.

THE CONTRACTOR IS REQUIRED TO CONFORM TO THE AMERICANS WITH DISABILITIES ACT (ADA) DETAILS, SPECIFICATIONS, AND STANDARDS WHICH MAY SUPERCEDE THE DETAILS SHOWN.

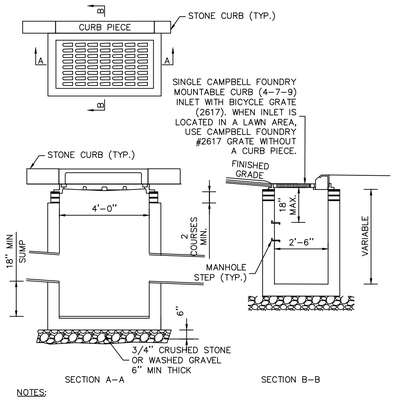
IN-LINE ACCESSIBLE RAMP
NOT TO SCALE

SITE ACCESSIBILITY NOTES:

1. REFER TO SITE PLAN FOR EXACT LOCATION OF HANDICAP PARKING, WALKWAYS AND RAMPS.
2. ALL WALKWAYS, RAMPS, AND HANDICAP PARKING SIGNAGE, ETC. SHALL MEET APPROVED AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LOCAL ACCESSIBILITY CODE.
3. ONE OUT OF EVERY EIGHT (8) ACCESSIBLE PARKING SPACES, BUT NOT LESS THAN ONE, IS REQUIRED TO BE VAN ACCESSIBLE.
4. ALL CONCRETE ACCESSIBLE RAMPS (3000 PSI) SURFACES SHALL HAVE TRUNCATED DOMES PER ADA STANDARDS AND LOCAL ACCESSIBILITY CODE.
5. ALL CONCRETE ACCESSIBLE RAMPS SHALL BE COLOR IMPREGNATED TO PROVIDE VISUAL CONTRAST (DARK TO LIGHT) WITH ADJOINING CONCRETE SURFACES (MINIMUM 70% COLOR CONTRAST).
6. THE MATERIAL USED TO PROVIDE COLOR CONTRAST IN CONCRETE ACCESSIBLE RAMPS SHALL BE AN INTEGRAL (PERMANENT) PART OF THE CONCRETE AND SHALL NOT BE PAINTED ON OR CAPABLE OF FADING OR WEARING OFF.
7. FINISHED GRADES OF PAVEMENT IN HC PARKING AND ACCESSIBILITY AISLE SHALL NOT EXCEED 1:50 SLOPE IN ANY DIRECTION.

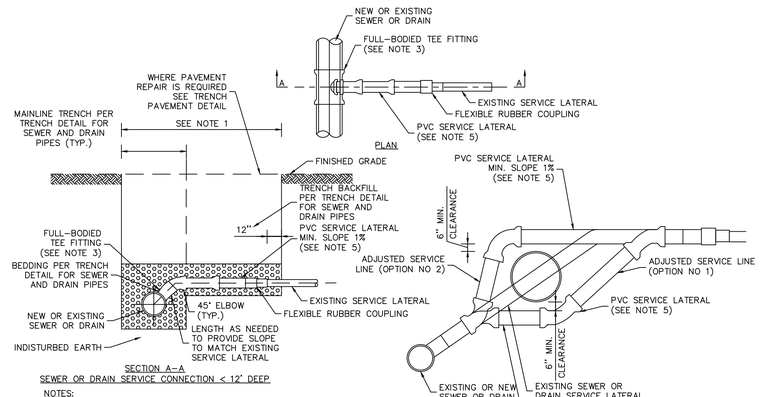


CONCRETE AUTO WHEEL STOP
NOT TO SCALE



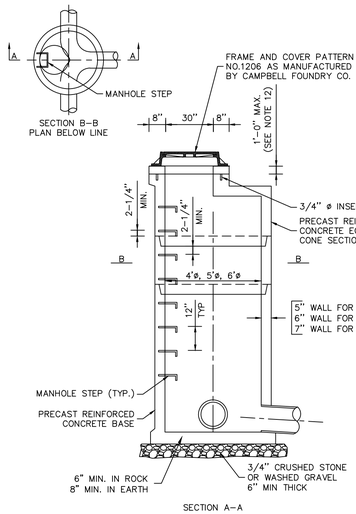
NOTES:
1. THE CONTRACTOR SHALL SUBMIT SHOP DWGS. FOR EACH STRUCTURE FOR THE ENGINEERS APPROVAL PRIOR TO FABRICATION.
2. STRUCTURE SHALL BE CERTIFIED AS CONFORMING TO ASTM-C913 LATEST REVISION.
3. STEPS NOT REQUIRED FOR STRUCTURES LESS THAN 4' DEEP.
4. FOR STRUCTURES WITH PIPE DIAMETERS EXCEEDING MAXIMUMS, PROVIDE CONCRETE SLAB AS NOTED.
5. STRUCTURAL DESIGN (WALL AND SLAB THICKNESS AND ALL REINFORCING) BY PRECASTER AND SHALL MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SUPPORT HS-20 LOADING AS REQUIRED.

CATCH BASIN
NOT TO SCALE



NOTES:
1. REPLACE EXISTING SERVICE LATERAL TO EXTENT REQUIRED.
2. EXCAVATE AND REMOVE EXISTING LATERAL AS REQUIRED TO ALLOW RECONSTRUCTIONS.
3. FOR SEWER AND DRAIN SERVICE CONNECTIONS TO MAINLINE 18" IN DIAMETER OR GREATER AN INSERTS TEE OR EQUAL MY BE USED.
4. FOR SERVICE CONNECTIONS > 12' DEEP FROM INVERT OF MAINLINE PIPE TO FINISHED GRADE, SEE CHIMNEY DETAIL.
5. SEWER AND DRAIN LATERALS SHALL BE SIZE TO FIT ANTICIPATED FLOWS BUT SHALL NOT LESS THAN 6" FOR SEWER SERVICES AND 8" FOR DRAIN SERVICES .

ROOF LEADER CONNECTION
NOT TO SCALE



STORM MANHOLE
NOT TO SCALE

STORM MANHOLE NOTES:

1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF DIAMETER OF THE SEWER.
2. THE SHELF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
3. TYPE 'B' MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS.
4. FOR MANHOLES HAVING 5' DIA. AND 6' DIA. BASE, REDUCTION IN DIA. TO 4' SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL WHERE DEPTH IS SUFFICIENT.
5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONE SECTION WITH 2-3/4" DIA. BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 180° ON BOLT CIRCLE.
6. ALL CONCRETE SHALL BE 4000 PSI MINIMUM
7. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE TWO COATS OF BITUMINOUS COATING. KOPPERS 300M PENNOXY TAR 32-8-4, OR APPROVED EQUAL.
8. INSTALL 2 LAYERS OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTION & UNDER FRAME.
9. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C478.
10. STEPS TO ALUMINUM ALLOY WITH DEPRESSED TREAD. STEEL REINFORCED POLYPROPYLENE MANHOLE STEP)
11. 4' DIA. MANHOLE – 8" TO 15" PIPES.
    5' DIA. MANHOLE – 16" TO 27" PIPES.
    6' DIA. MANHOLE – 30" TO 48" PIPES.
12. WHEN TWO OR MORE GRADE ADJUSTMENT RING ARE USED, A WATERTIGHT PVC CONNECTOR SHALL BE INSTALLED BETWEEN THE FRAME AND THE CONE. CONNECTOR BFA ANTI – FLOATING BY A – LOK PRODUCTS INC. OR APPROVED EQUAL.
13. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER'S APPROVAL.
14. SOIL CONDITIONS BELOW STRUCTURE DEEMED UNSUITABLE BY THE FIELD ENGINEER SHALL BE EXCAVATED TO A SUITABLE MATERIAL OR A MAXIMUM OF TWO ADDITIONAL FEET AND BACKFILLED WITH 3/4" CLEAN CRUSHED STONE.

PIPE SIZE RANGE	WIDTH (I.D.)
8" TO 15" PIPES	4'-0"ø
16" TO 27" PIPES	5'-0"ø
30" TO 48" PIPES	6'-0"ø
60" PIPES	7'-0"ø

Dig Safely. New York Call811 before you dig

WARNING- IT IS A VIOLATION OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2, FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATIONAL LAW, SECTION 7209.2

ONLY MAPS WITH EMBOSSED SEALS ARE GENUINE COPIES OF THE ORIGINAL WORK AND OPINION. MAPS NOT BEARING EMBOSSED SEALS SHOULD NOT BE RELIED UPON SINCE OTHER THAN EMBOSSED-SEAL COPIES MAY CONTAIN UNAUTHORIZED AND UNDETECTABLE MODIFICATIONS, DELETIONS, ADDITIONS AND CHANGES.

REVISION	BY	DATE	DESCRIPTION
4.	MM	08-15-23	PER PB COMMENTS
3.	MM	06-21-23	PER PB COMMENTS
2.	MM	06-21-23	PER PB COMMENTS
1.	MM	06-21-23	PER PB COMMENTS

THIS SHEET IS NOT VALID WITHOUT ALL OF THE SHEETS THAT COMPRISE THE SET

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ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114 FAX: (845) 782-2946
WWW.ARDENCONSULTING.NET

STATE OF NEW YORK · MICHAEL A. MORGANTE · LICENSED PROFESSIONAL ENGINEER · 078577

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

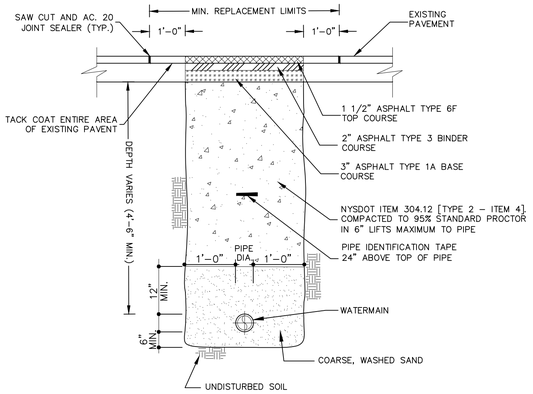
SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

SITE CONSTRUCTION DETAILS 2

JOB#: 17-001
SCALE: AS NOTED
DATE: 05-30-23
DRAWN: MM
CHECKED: MM
SHEET NO. 14 of 18

WATER NOTES

1. ALL WATER SYSTEM INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF BEACON, THE ORANGE COUNTY DEPARTMENT OF HEALTH, THE LATEST AWWA STANDARDS, AND "RECOMMENDED STANDARDS FOR WATER WORKS" (2007-GLUMB)
2. DISINFECTION AND TESTING SHALL BE IN ACCORDANCE WITH AWWA C651.
3. PRESSURE AND LEAKAGE TESTING SHALL BE IN ACCORDANCE WITH AWWA C600.\P 6. SUPPLIERS RECORDS INDICATE ADEQUATE PRESSURE AND CAPACITY IS AVAILABLE.
4. ALL ELEVATIONS BASED ON TOPOGRAPHICAL INFORMATION PREPARED BY CLEARPOINT SERVICES, LLC.
5. AVAILABLE INFORMATION AS TO THE LOCATION OF EXISTING SUBSTRUCTURES AND UTILITIES HAS BEEN COLLECTED FROM VARIOUS SOURCES THE RESULTS OF SUCH INVESTIGATIONS, AS MAY BE SHOWN ON THE CONTRACT DRAWINGS, ARE NOT GUARANTEED AS TO ACCURACY, ALL EXISTING UTILITIES ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED TO VERIFY TRUE AND EXACT LOCATIONS OF UNDERGROUND LINES.
6. ALL PROFILES INDICATE APPROXIMATE GROUND PROFILES.
7. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES, AND DIG SAFELY NEW YORK (1-800-962-7962), A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION, AND SHALL COMPLY WITH ALL CURRENT MARKOUT REQUIREMENTS OF DIG SAFELY NEW YORK.
8. EXCAVATIONS OR TRENCHING WITHIN CLOSE PROXIMITY TO UNDERGROUND FACILITIES OR UTILITY POLES WILL REQUIRE PROTECTION TO PREVENT DAMAGE OR INTERRUPTION OF SERVICE TO UNDERGROUND FACILITIES. THE COST TO PROVIDE THIS PROTECTION WILL BE BORNE BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT EXISTING THRUST BLOCKS WHICH ARE RESTRAINING EXISTING UTILITIES. EXISTING THRUST BLOCKS SHALL NOT BE UNDERMINED.
10. ALL TRENCH LINES SHALL BE CUT OR MILLED.
11. THE CONTRACTOR SHALL COMPLY WITH ALL ROAD OPENING REQUIREMENTS AND ORDINANCES OF THE GOVERNING AGENCY.
12. RESTORATION, INCLUDING THE REMOVAL OF EXCESS EXCAVATED MATERIAL AND PLACEMENT OF TEMPORARY PAVEMENT, SHALL BE PERFORMED AND COMPLETED ON A DAILY BASIS. ALL ROADS SHALL BE PASSABLE TO VEHICULAR TRAFFIC AT THE END OF EACH WORK DAY.
13. ALL TRENCHES SHALL BE BACKFILLED WITHOUT DELAY. OPEN TRENCHES SHALL BE KEPT TO A MINIMUM. OPEN TRENCHES SHALL BE STEEL PLATED. UPON BACKFILLING THE CONTRACTOR SHALL BROOM SWEEP STREETS, USE APPROPRIATE METHODS TO CONTROL DUST AND HOSE DOWN THE PAVEMENT TO KEEP SURFACE CLEAN.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL EXCESS EXCAVATED MATERIAL TO AN OFF-SITE LOCATION.
15. THE CONTRACTOR SHALL FURNISH AND INSTALL CORPORATIONS WHEREVER NECESSARY FOR PRESSURE TESTING AND DISINFECTING THE WATER MAIN. CORPORATIONS SHALL BE 3/4" FOR MAINS SMALLER THAN 16" AND 1" FOR MAINS 16" AND LARGER. THE CONTRACTOR SHALL INSTALL AS MANY CORPORATIONS AS ARE REQUIRED FOR PROPER TESTING, FLUSHING, AIR BLEEDING AND DISINFECTION.
16. TO MAINTAIN THE HORIZONTAL AND VERTICAL ALIGNMENT SHOWN ON THE PLANS, PIPE JOINTS MAY BE DEFLECTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, UNLESS THE SPECIFICATIONS INDICATE A MORE STRINGENT REQUIREMENT. IF NECESSARY, EITHER TO MAINTAIN THE ALIGNMENT SHOWN OR TO ADJUST THE ALIGNMENT TO MEET ACTUAL FIELD CONDITIONS, ADDITIONAL FITTINGS SHALL BE INSTALLED AS REQUIRED.
17. ALL STATIONING SHOWN ON PLANS IS APPROXIMATE.
18. ALL CONSTRUCTION ACTIVITIES ARE TO BE CONFINED TO THE PUBLIC RIGHT-OF-WAY OR TO THE LIMITS DEPICTED ON THE CONTRACT DRAWINGS.
19. THE WATER MAIN SHALL BE INSTALLED WITH A MINIMUM OF FOUR AND ONE HALF (4.5) FEET OF COVER. ANY DEVIATION FROM THIS WILL REQUIRE AUTHORIZATION FROM THE CITY OF BEACON ENGINEER.
20. THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO PRESERVE EXISTING CURB AND MINIMIZE THE LENGTH OF CURBING THAT MUST BE REPLACED.
21. THE CONTRACTOR IS CAUTIONED THAT ALL SANITARY LATERALS AND UTILITY SERVICES HAVE NOT BEEN LOCATED. WHEN THE CONTRACTOR ENCOUNTERS AN OBSTRUCTION AND CANNOT ADJUST THE ALIGNMENT USING ALLOWABLE JOINT DEFLECTION, THE CONTRACTOR SHALL REFER TO THE WATER MAIN DETAIL SHEETS. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROMPT REPAIR OF DAMAGED UTILITIES, AND SHALL RESTORE THE SITES AS NEATLY AS POSSIBLE TO THEIR ORIGINAL CONDITION.
22. THE CONTRACTOR SHALL PROTECT ALL STRUCTURES, ROADS, PIPELINES, TREES, SHRUBBERY, GRASS AREAS, ETC. DURING THE PROGRESS OF THE WORK AND SHALL REMOVE DAILY FROM THE SITE ALL DEBRIS AND UNUSED MATERIALS. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL RESTORE THE SITES AS NEATLY AS POSSIBLE TO THEIR ORIGINAL CONDITION.
23. ALL SIDEWALK AREAS SHALL BE PASSABLE AND BROOM SWEPT AT THE END OF EACH WORK DAY.
24. DURING FLUSHING AND PRESSURE TESTING OF THE MAIN, THE CITY OF BEACON SHALL OPERATE ALL VALVES.
25. REFER TO DETAIL SHEET FOR STANDARD DETAILS.
26. THE CITY OF BEACON WATER SYSTEM OPERATOR IS TO BE PROVIDED WITH A MINIMUM OF TWO BUSINESS DAYS NOTICE PRIOR TO TAPPING INTO THE MUNICIPAL WATER MAIN. NO WORK REGARDING THE TAP IS PERMITTED TO COMMENCE UNTIL PERMISSION HAS BEEN RECEIVED FROM THE WATER SYSTEM OPERATOR.
27. THE 6" SERVICE LINE IS NOT TO BE BROUGHT LIVE UNTIL PRESSURE TESTING AND DISINFECTION, WITNESSED BY THE CITY OF BEACON WATER SYSTEM OPERATOR AND/OR CITY ENGINEER, HAS BEEN PERFORMED AND PASSING RESULTS, CERTIFIED BY THE OWNER'S ENGINEER, HAVE BEEN SUBMITTED TO THE WATER SYSTEM OPERATOR, CITY ENGINEER AND BUILDING INSPECTOR.



TYPICAL WATER SERVICE INSTALLATION/RESTORATION DETAIL IN CITY STREET

NOT TO SCALE

NOTE:
1. PAVEMENT AND SUBBASE MATERIAL (INCLUDING THE THICKNESS OF THE CONCRETE UNDER THE ROADWAY) SHALL AT A MINIMUM, MATCH THE EXISTING TYPES AND THICKNESSES FOUND WITHIN ANY CITY, COUNTY OR STATE HIGHWAY, WHICHEVER IS GREATER.

WATERMAIN JOINT RESTRAINT SCHEDULE									
NOMINAL PIPE SIZE (IN)	BURY DEPTH (FT)	INTERNAL PRESSURE (PSI)	SOIL DESIGNATION	LAYING CONDITION (*)	RESTRAINED LENGTH (FT) = L (**) DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
6	4.5	150	SAND SILT	5	38	17	7	4	2
8	4.5	150	SAND SILT	5	50	21	16	5	3

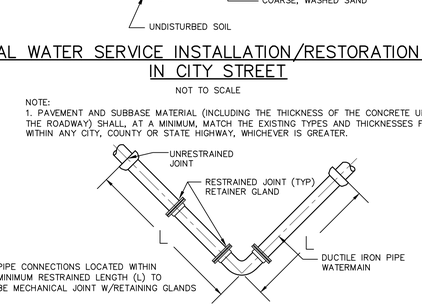
(*) LAYING CONDITION TYPE AS DESCRIBED IN STANDARD ANSI/AWWA C150/A21.50
(**) RESTRAINED LENGTH AS PER "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE", LATEST EDITION , DUCTILE IRON PIPE RESEARCH ASSOCIATION

WATER JOINT RESTRAINT DETAIL

NOT TO SCALE

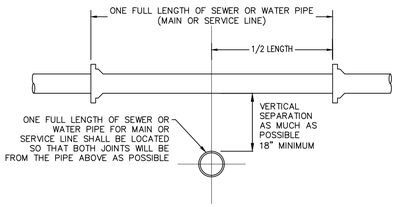
WET TAP DETAIL

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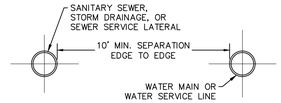
CLEANOUT DETAIL

NOT TO SCALE



WATER & SEWER CROSSING DETAIL

NOT TO SCALE



WATER & SEWER HORIZONTAL SEPARATION

NOT TO SCALE

SEWER & WATER SEPARATION NOTES

1. WHEN IT IS IMPOSSIBLE TO MAINTAIN PROPER HORIZONTAL OR VERTICAL SEPARATION AS SHOWN, THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO THE WATER MAIN, AND SHALL BE PRESSURE TESTED TO ASSURE WATERTIGHTNESS PRIOR TO BACKFILLING.

2. A FULL LENGTH OF BOTH PIPES CROSSING MUST BE CENTERED AT THE CROSSING.

3. BEDDING MATERIAL SHALL BE INCREASED TO 12" BELOW THE LENGTH OF WATER MAIN PIPE FOR 10' ON EITHER SIDE OF THE CROSSING.

4. TWO LAYERS OF CAUTION TRACER TAPE SHALL BE PLACED 18" MINIMUM ABOVE STORM SEWER MAINS.

NOTES

1. SEPARATION DISTANCE BETWEEN WATER MAINS AND STORM/SEWER MAINS SHALL BE 10' HORIZONTAL AND 18" AT CROSSINGS. THESE SEPARATION DISTANCES MUST BE MAINTAINED UNLESS SPECIFICALLY SHOWN AND INDICATED OTHERWISE ON THE PLANS. THE PREFERRED CROSSING OPTION IS FOR THE WATER MAIN TO BE CONSTRUCTED ABOVE STORM/SEWER MAINS.

2. SEWER MAIN INCLUDES SEWER LATERALS AND STORM DRAIN.

3. WATER MAIN INCLUDES WATER SERVICE LATERALS.

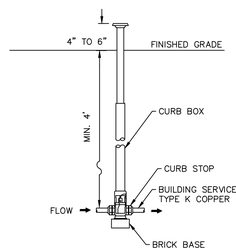
4. DEFLECT WATER MAIN IN AN ARC BENEATH THE SEWER/STORM LINE. DO NOT USE FITTINGS TO DEFLECT THE WATER MAIN.

WATER OVER SEWER SEPARATION NOTES

1. FULL LENGTH OF BOTH PIPES CROSSING MUST BE CENTERED AT THE CROSSING SO THAT PIPE JOINTS WILL BE AS FAR FROM EACH OTHER AS POSSIBLE (10' MIN.).

2. CONTRACTOR SHALL PROVIDE STRUCTURAL SUPPORT FOR EXISTING WATER MAIN OVER THE ENTIRE TRENCH WIDTH TO PREVENT DAMAGE TO THE WATER MAIN.

3. WATER TIGHT JOINTS WHERE WATERLINES ARE CROSSED ABOVE OR BELOW.



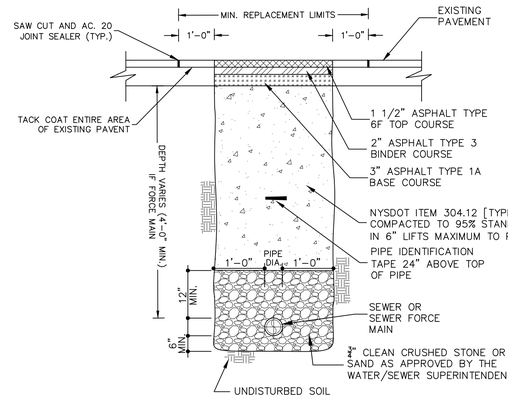
NOTES:
CURB STOP TO BE MUELLER H15200, OR EQUAL
CURB BOX TO BE MUELLER H10306 WITH ROD, OR EQUAL

CURB STOP DETAIL

NOT TO SCALE

SEWER NOTES:

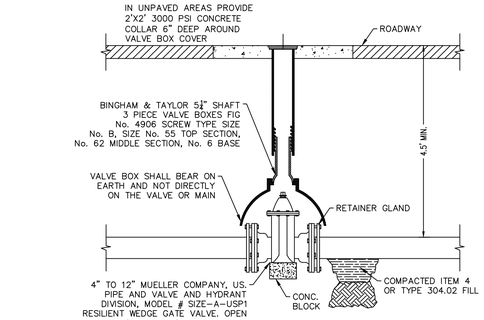
1. UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE, THEIR ACCURACY OR COMPLETENESS ARE NOT GUARANTEED BY THE ENGINEER. MARK OUTS FROM UTILITY COMPANIES AND FIELD CONFIRMATION BY CONTRACTOR I\MUST BE MADE PRIOR TO CONSTRUCTION SO THAT DISTURBANCE OR DISRUPTION TO THESE UTILITIES MAY BE AVOIDED. ALL EXISTING UTILITIES ARE TO BE COORDINATED WITH THE APPROPRIATE UTILITY FOR CONNECTION/DISCONNECTION WHERE NECESSARY.
2. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND DEPTH OF THE EXISTING UTILITY TO WHICH THE CONNECTION IS BEING MADE BEFORE LAYING PIPE, CONDUIT, ETC. DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER, IN CASES WHERE THE CONSTRUCTION OF ITEMS MEET EXISTING STRUCTURES, SUCH AS CURB, PAVEMENT, SIDEWALK, UTILITIES, ETC. THE CONTRACTOR OR SURVEYOR STAKING SUCH ITEMS SHALL VERIFY THE ELEVATION LOCATION OF THE EXISTING FEATURE PRIOR TO CONSTRUCTION. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN CONDUCTING EXCAVA1ONS TO ESTABLISH LOCATIONS AND DEPTHS OF EXISTING UNDERGROUND UTILITIES, FACILITIES AND STRUCTURES. THE CONTRACTOR SHALL HAND EXCAVATE WHERE APPROPRIATE.
4. SANITARY SEWER SHALL BE SEPARATED FROM THE WATER MAINS BY A DISTANCE OF AT LEAST 10 FEET HORIZONTALLY OR 18 INCHES VERTICALLY IF HORIZONTAL SEPARATION IS NOT POSSIBLE.
5. ALL SANITARY SEWER PIPE LENGTHS SHOWN ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
6. ALL EQUIPMENT, MATERIALS, ETC. SHALL BE CONFINED TO THE PUBLIC RIGHTS OF WAY OR CITY OF BEACON EASEMENTS. NO ENCROACHMENT ONTO ADJACENT PROPERTIES IS PERMITTED.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION SITE SAFETY. ALL SAFETY PRECAUTIONS MUST BE UNDERTAKEN AND MAINTAINED AS REQUIRED BY LOCAL, STATE AND FEDERAL CODES.
8. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING COMPLIANCE WITH THE NYSDEC AND CITY OF BEACON REGULATIONS REGARDING STORM WATER POLLUTION PREVENTION.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC (MPT WHEN WORKING ON OR NEAR PUBLIC ROADS. MPT MEASURES MUST BE COORDINATED WITH THE APPROPRIATE HIGHWAY OFFICIALS (TOWN, CITY, AND NYSDOT) HAVING JURISDICTION OVER EACH PARTICULAR ROADWAY.
10. IN THE EVENT THAT THE CONTRACTOR OR ITS SUBCONTRACTORS DAMAGE ANY EXISTING UTILITY, FACILITY OR
11. STRUCTURE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THE DAMAGED PROPERTY AND CITY OF BEACON.
12. ALL STRUCTURES AND SURFACES DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ITS PRE-CONSTRUCTION OR BETTER CONDITION.
13. THE CONTRACTOR SHALL REVIEW THE SITE CONDITIONS WITH RESPECT TO DRAINAGE AND GENERAL SOIL CONDITIONS IN THE AREA AND PLAN ITS WORK IN SUCH A MANNER TO WORK EFFICIENTLY AND SAFELY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE CONTROL OF SURFACE AND GROUNDWATER IN THE CONSTRUCTION AREA.
14. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR STAGING AREAS FOR MATERIALS ANDEQUIPMENT. THE CONTRACTOR SHALL ARRANGE FOR A SUITABLE AREA FOR THE STORAGE AND DISPOSAL OF EXCESS EXCAVATED SOIL MATERIALS. THE CONTRACTOR IS RESPONSIBLE FOR ANY PERMITS AND FEES ASSOCIATED WITH THE PROPER DISPOSAL OF SOIL AND OTHER MATERIALS FROM THE PROJECT.
15. THE MORE STRICT OF ANY REQUIREMENT, CODE, RULE, REGULATION AND LAW ESTABLISHED BY THE CITY OF BEACON OR OTHER GOVERNMENTAL AGENCY, INCLUDING BUT NOT LIMITED TO THE NEW YORK STATE DEPARTMENT OF HEALTH, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, UNITED STATES ARMY CORP OF ENGINEERS, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND NEW YORK STATE DEPARTMENT OF LABOR FOR SANITARY SEWER SIZE, SLOPE, ALIGNMENT, MATERIALS OF CONSTRUCTION AND APPURTENANCES AND METHODS FOR EXCAVATING, PIPE PLACEMENT, JOINTING, TESTING AND TRENCH BACKFILLING SHALL BE COMPLIED WITH DURING ALL PHASES OF CONSTRUCTION.
16. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS THAT ARE APPROVED BY THE CITY OF BEACON. ANY DEVIATION FROM THE APPROVED PLANS AND/OR SPECIFICATIONS SHALL REQUIRE REVIEW AND APPROVAL BY THE CITY OF BEACON. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE PROJECT ENGINEER AND THE CITY OF BEACON OF ANY PLANNED DEVIATION(S) FROM THE APPROVED PLANS AND/OR SPECIFICATIONS.
17. FITTINGS SHALL BE STANDARD LENGTH.
18. PIPE JOINTS SHALL BE STANDARD LENGTH.
19. CONNECTION TO EXISTING SANITARY MANHOLE SHALL BE CORE BORED FOR A KOR-N-SEAL.



TYPICAL SEWER MAIN INSTALLATION/RESTORATION DETAIL IN CITY STREET

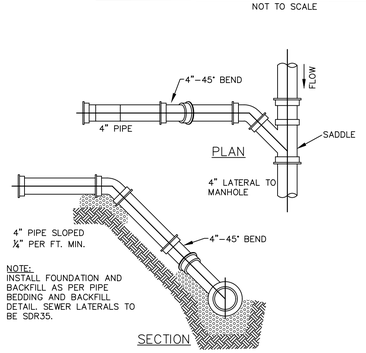
NOT TO SCALE

NOTE:
1. PAVEMENT AND SUBBASE MATERIAL (INCLUDING THE THICKNESS OF THE CONCRETE UNDER THE ROADWAY) SHALL AT A MINIMUM, MATCH THE EXISTING TYPES AND THICKNESSES FOUND WITHIN ANY CITY, COUNTY OR STATE HIGHWAY, WHICHEVER IS GREATER.



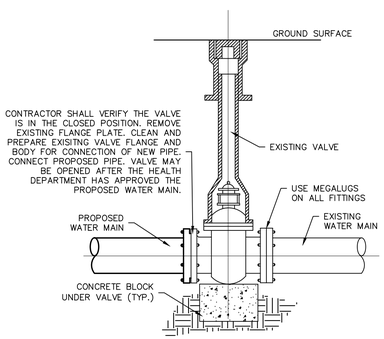
IN-LINE GATE VALVE INSTALLATION DETAIL

NOT TO SCALE



SANITARY SEWER WYE DETAIL

NOT TO SCALE



CONNECTION TO EXISTING WATER MAIN

NOT TO SCALE

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2.	MM	08-15-23	PER PB COMMENTS
1.	MM	06-21-23	PER PB COMMENTS

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P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114 FAX: (845) 782-2946
WWW.ARDENCONSULTING.NET

STATE OF NEW YORK · MICHAEL A. MORGANTE · 078577 · LICENSED PROFESSIONAL ENGINEER

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON - DUTCHESS COUNTY, N.Y.

WATER SUPPLY & SEWAGE DISPOSAL DETAILS

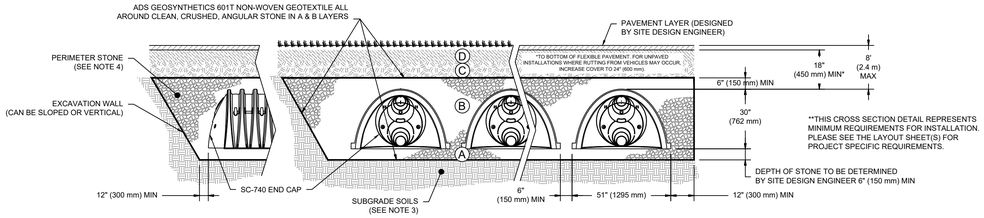
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

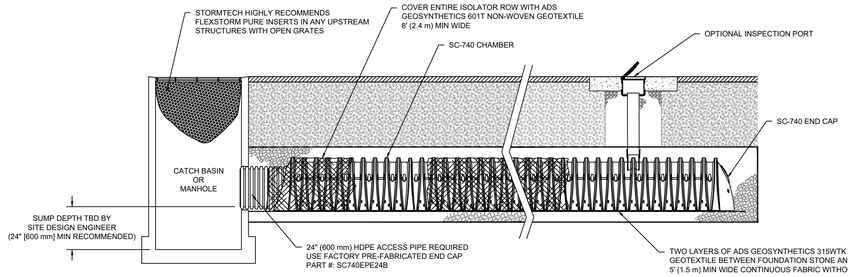
MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	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, "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/FT/%, 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 ISOLATOR ROW DETAIL
NTS

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.

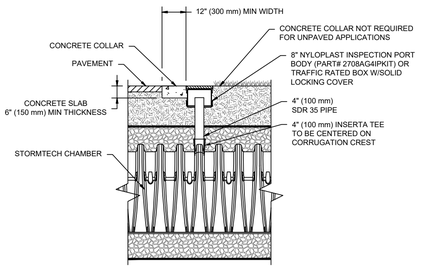
STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

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.

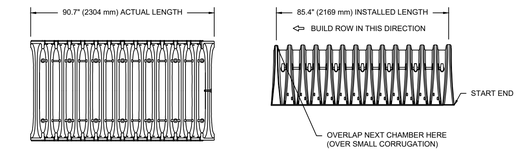


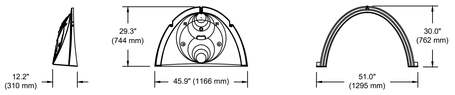
NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION CREST.

4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)
NTS

SC-740 TECHNICAL SPECIFICATION

NTS

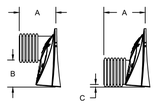




NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



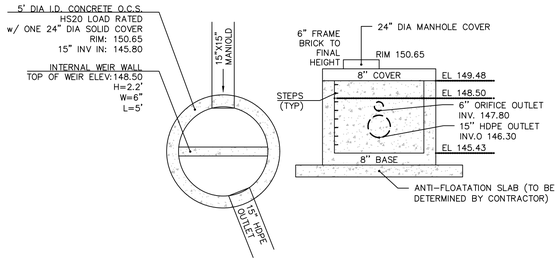
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

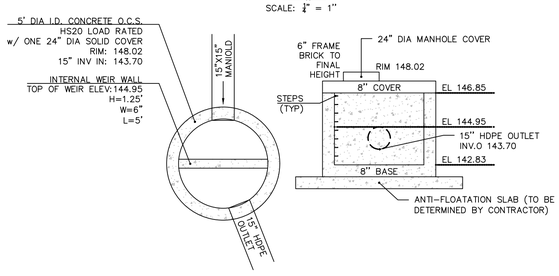
ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL



OUTLET STRUCTURE ELEVATIONS
OS#1
SCALE: 1/4" = 1"



OUTLET STRUCTURE ELEVATIONS
OS#2
SCALE: 1/4" = 1"

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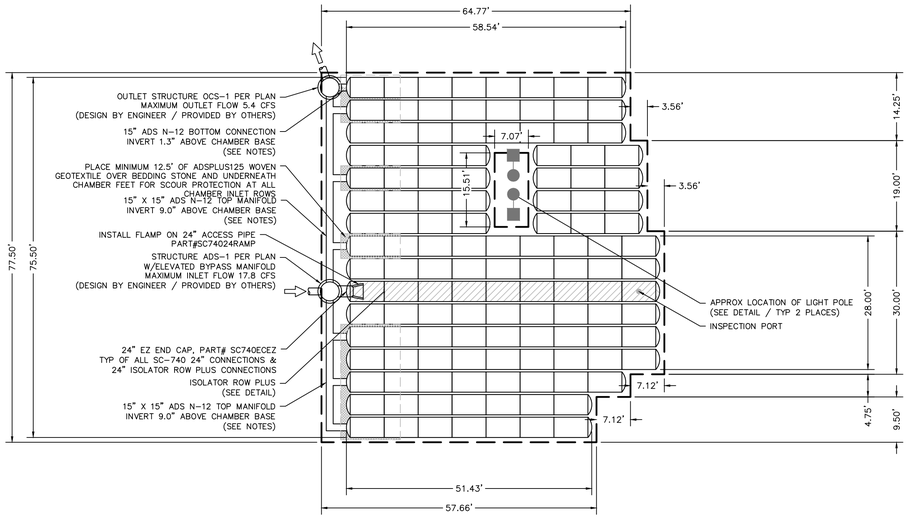
SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

STORMWATER CONSTRUCTION DETAILS 01

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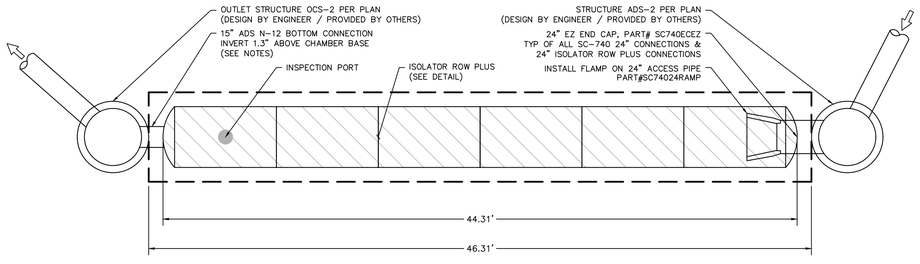
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ADS STORMTECH 1 SC-740 CHAMBER SYSTEM

NOT TO SCALE



ADS STORMTECH 2 SC-740 CHAMBER SYSTEM

NOT TO SCALE

SC-740 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. 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.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-740 SYSTEM

1. STORMTECH SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

   USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

   CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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REVISION	BY	DATE	DESCRIPTION
1.	MM	08-15-23	PER PB COMMENTS

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ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114 FAX: (845) 782-2946
WWW.ARDENCONSULTING.NET

STATE OF NEW YORK · MICHAEL A. MORGANTE · 078577 · LICENSED PROFESSIONAL ENGINEER

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR
152-158 FISHKILL AVENUE
CITY OF BEACON - DUTCHESS COUNTY, N.Y.

STORMWATER CONSTRUCTION DETAILS
02

JOB#:	17-001
SCALE:	AS NOTED
DATE:	06-21-23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	17 of 18

EXISTING CONDITIONS & SURVEY NOTES:

1. SURVEYED WITHOUT THE BENEFIT OF A TITLE SEARCH. SUBJECT TO COVENANTS, EASEMENTS, RESTRICTIONS, CONDITIONS AND AGREEMENTS OF RECORD.
2. CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR PROFESSIONAL LAND SURVEYORS AS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATIONS SHALL RUN ONLY TO THE PERSON SO NOTED.
3. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS. THEIR SUCCESSORS AND/OR ASSIGNS, OR SUBSEQUENT OWNERS.
4. SUBSURFACE STRUCTURES NOT VISIBLE OR READILY APPARENT ARE NOT SHOWN AND THEIR LOCATION AND EXTENT ARE NOT CERTIFIED. THE LOCATION OF UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT ALWAYS KNOWN AND OFTEN MUST BE ESTIMATED. IF ANY UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS EXIST OR ARE SHOWN, THE IMPROVEMENTS OR ENCROACHMENTS ARE NOT COVERED BY THIS CERTIFICATE.
5. THE CONTRACTOR SHALL COMPLY WITH NEW YORK STATE INDUSTRIAL CODE RULE 753 – 48 HOURS PRIOR TO DIGGING CALL DIGSAFELY NEW YORK 1–800–962–7962 TO HAVE PUBLIC UTILITY LOCATIONS PAINTED.
6. ONLY TITLE SURVEYS BEARING THE MAKERS EMBOSSED SEAL SHOULD BE RELIED UPON SINCE OTHER THAN EMBOSSED–SEAL COPIES MAY CONTAIN UNAUTHORIZED AND UNDETECTABLE MODIFICATIONS, DELETIONS. ADDITIONS. AND CHANGES.
7. BOUNDARY LINES SHOWN HEREON ARE APPROXIMATE AND ARE SUBJECT TO WHATEVER STATE OF FACTS THAT AN ACCURATE BOUNDARY SURVEY MAY REVEAL.

GRADING NOTES:

1. PRIOR TO SITE DISTURBANCE, CONTRACTOR TO INSTALL EROSION & SEDIMENT CONTROL MEASURES.
2. IF ROCK IS ENCOUNTERED DURING CONSTRUCTION & REMOVAL BY BLASTING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. ALL BLASTING OPERATIONS WILL ADHERE TO NEW YORK STATE AND LOCAL AUTHORITY ORDINANCES GOVERNING THE USE OF EXPLOSIVES. THE STATE REGULATIONS ARE CONTAINED IN 12 NYCRR 39 AND INDUSTRIAL CODE RULE 753. PRIOR TO ANY BLASTING ACTIVITIES A FULL SUBMITTAL SHALL BE MADE TO THE BUILDING INSPECTOR INDICATING THE EXTENTS OF BLASTING, METHODS OF PRE–BLASTING SURVEYS, METHODS OF SEISMIC MONITORING, PROTECTIVE MEASURES FOR ADJOINING PARCELS, CERTIFICATIONS OF THE BLASTING CONTRACTOR, AS WELL AS ANY OTHER INFORMATION DEEMED NECESSARY BY THE BUILDING INSPECTOR AT THE TIME OF SUBMISSION. NO BLASTING ACTIVITIES ARE TO BE PERFORMED UNTIL SUCH TIME AS A WRITTEN APPROVAL TO COMMENCE WORK HAS BEEN RECEIVED FROM THE BUILDING INSPECTOR.
4. STRIP ALL TOPSOIL PRIOR TO COMMENCING EARTHWORK OPERATIONS. TOPSOIL MAY BE STORED AND REUSED IN LAWN AND PLANTING AREAS ONLY. TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION THAT ARE TO REMAIN GREEN.
5. BOX ALL TREES AND HOUSE ALL SHRUBS AND HEDGES BEFORE PLACING EARTH AGAINST OR NEAR THEM. ORNAMENTAL TREES, SHRUBS AND HEDGES WHICH MUST BE REMOVED DURING CONSTRUCTION SHALL BE HEALED IN AND RE–PLANTED IN AS GOOD A CONDITION AS THEY WERE BEFORE THEIR REMOVAL. ANY DAMAGED TREES. SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. ALL EARTHWORK SHALL BE SMOOTHLY AND EVENLY BLENDED INTO EXISTING CONDITIONS. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE BOUNDARIES OF ANY EASEMENT OR PROPERTY LINE.
7. REMOVE ALL VEGETATION, TREES, STUMPS, GRASSES, ORGANIC SOILS, DEBRIS AND DELETERIOUS MATERIALS WITHIN THE AREAS SLATED FOR CONSTRUCTION.
8. IF PREVIOUSLY UNKNOWN CULTURAL ARCHEOLOGICAL, OR HISTORIC REMAINS OR ARTIFACTS ARE DISCOVERED IN THE COURSE OF CONSTRUCTION OF THIS PROJECT, THE PROJECT SPONSORS SHALL SUSPEND CONSTRUCTION OPERATIONS IN THE PERTINENT AREA AND SHALL NOTIFY THE PROJECT ENGINEER.

DEMOLITION NOTES:

1. REFER TO REQUIREMENTS OUTLINED IN THE EROSION & SEDIMENT CONTROL PLANS & NOTES PRIOR TO COMMENCEMENT OF WORK.
2. EXISTING STRUCTURES ARE TO BE REMOVED PRIOR TO CONSTRUCTION OF NEW IMPROVEMENTS.
3. BUILDING(S)/STRUCTURE(S) TO BE DEMOLISHED ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE NOT TO BE DEMOLISHED AS PART OF THIS WORK. PRIOR TO DEMOLISHING ANY BUILDINGS/STRUCTURES, THE CONTRACTOR SHALL PERFORM A PRE–DEMOLITION SURVEY IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS GOVERNING THE DISPOSAL OF SOLID WASTE. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS BY THE AUTHORITY HAVING JURISDICTION.
4. CONFORM TO APPLICABLE CODE FOR DEMOLITION OF STRUCTURES, SAFETY OF ADJACENT STRUCTURES, DUST CONTROL RUNOFF CONTROL, AND HAULING, DISPOSAL AND STORAGE OF DEBRIS.
5. PROVIDE, ERECT, AND MAINTAIN TEMPORARY BARRIERS AND SECURITY DEVICES.
6. MAINTAIN EXISTING UTILITIES TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OPERATING FACILITIES. EXCEPT WHEN AUTHORIZED IN WRITING BY OWNER AND AUTHORITIES HAVING JURISDICTION.
7. NOTIFY ADJACENT OWNERS OF WORK THAT MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE, OR DISRUPTION. COORDINATE WITH OWNER.
8. PREVENT MOVEMENT OR SETTLEMENT OF ADJACENT STRUCTURES. PROVIDE BRACING AND SHORING.
9. LOCATE AND IDENTIFY ALL EXISTING UTILITIES WITHIN THE CONSTRUCTION AREA. DISCONNECT AND SEAL OR CAP OFF UTILITY SERVICES THAT WILL BE AFFECTED BY THIS PROJECT. NOTIFY AFFECTED UTILITY COMPANIES BEFORE STARTING WORK AND COMPLY WITH THEIR REQUIREMENTS. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED.
10. DEMOLISH AND REMOVE COMPONENTS IN AN ORDERLY AND CAREFUL MANNER.
11. PROTECT EXISTING FEATURES THAT ARE NOT TO BE DEMOLISHED.
12. CONDUCT OPERATIONS WITH MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE ACCESSES.
13. MAINTAIN EGRESS AND ACCESS AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ROADWAYS, OR SIDEWALKS WITHOUT PERMITS. COORDINATE WITH AUTHORITY HAVING JURISDICTION.
14. CEASE OPERATIONS IMMEDIATELY IF ADJACENT STRUCTURES APPEAR TO BE IN DANGER. NOTIFY AUTHORITY HAVING JURISDICTION.
15. ROUGH GRADE AND COMPACT AREAS AFFECTED BY DEMOLITION TO MAINTAIN SITE GRADES AND CONTOURS.
16. FIELD VERIFY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED ON DEMOLITION PLAN TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.
17. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH SELECTIVE DEMOLITION OPERATIONS.
18. CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA.
19. USE WATER MIST, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS TO LIMIT THE SPREAD OF DUST AND DIRT. COMPLY WITH GOVERNING ENVIRONMENTAL PROTECTION REGULATIONS. DO NOT USE WATER WHEN IT MAY DAMAGE EXISTING CONSTRUCTION, SUCH AS CAUSING ICING, FLOODING, AND TRANSPORTING POLLUTANTS.
20. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
21. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF SELECTIVE DEMOLITION.
22. PROMPTLY DISPOSE OF DEMOLISHED MATERIALS. ALL DEBRIS RESULTING FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF OFF–SITE AT A FACILITY APPROVED TO RECEIVE THE DEBRIS. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON–SITE. DO NOT BURN DEMOLISHED MATERIALS ON–SITE.

GENERAL CONSTRUCTION:

1. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
2. ALL PAVEMENT RESTORATION SHALL MEET AND MATCH EXISTING GRADES.
3. ALL SAWCUT LINES SHALL BE PARALLEL AND CURVILINEAR TO EXISTING OR PROPOSED CURBING AND SHALL BE A CONSTANT DISTANCE OF 18" MIN AWAY.
4. ALL ARCHITECTURE IS SUBJECT TO PLANNING BOARD & BUILDING DEPARTMENT REVIEW.
5. NOTIFY ENGINEER 48 HOURS PRIOR TO INITIALIZATION OF ANY WORK ON SITE.
6. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT PRIOR REVIEW FROM THE ENGINEER.
7. CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AND MAINTAINING ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING CONSTRUCTION.
8. CONTRACTOR IS RESPONSIBLE FOR PROPERLY & SAFELY MAINTAINING AREA BETWEEN ALL ADJOINING PROPERTIES.
9. NO WORK, STORAGE OR TRESPASS SHALL BE PERMITTED BEYOND THE SITE PROPERTY LINES OR PUBLIC RIGHT–OF–WAY.
10. ALL EXISTING LAWN AREA, CURBING, PAVING, SIDEWALKS, CULVERTS OR OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED BY TRENCHING OR EXCAVATION OPERATIONS SHALL BE REPLACED OR REPAIRED TO A CONDITION EQUAL TO EXISTING, AS DESCRIBED IN CONTRACT DOCUMENTS OR AS ORDERED BY ENGINEER (AOBE). MAILBOXES, SIGN POSTS, ETC. SHALL BE PROTECTED OR REMOVED AND REPLACED EXACTLY AS THEY WERE BEFORE BEING DISTURBED. REMOVE AND REPLACE AFFECTED CURBING AND SIDEWALK TO NEAREST JOINT. REMOVE PAVEMENT AND REPLACE TO SAW CUT LINE, SAW CUT IN STRAIGHT LINE TO POINT NEEDED TO BLEND GRADE, REMOVE LAWN AND REPLACE TO MINIMUM LIMIT OF EXCAVATION.
11. NO SITE PREPARATION OR CONSTRUCTION SHALL COMMENCE UNTIL ALL REQUIRED PERMITTING AND APPROVALS HAVE BEEN OBTAINED.
12. MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:
    A. THE MOST RECENT NEW YORK STATE DEPARTMENT OF TRANSPORTATION " STANDARD SPECIFICATIONS", AS SUPPLEMENTED.
    B. CURRENT PREVAILING MUNICIPAL, COUNTY, AND/OR STATE AGENCY SPECIFICATIONS, STANDARDS, CONDITIONS, AND REQUIREMENTS.
    C. CURRENT PREVAILING UTILITY COMPANY/AUTHORITY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
    D. CURRENT MANUFACTURER SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.

PAVING:

1. NO VEHICULAR TRAFFIC OF ANY SORT SHALL BE PERMITTED ON THE SURFACE OF SUBBASE COURSE MATERIAL ONCE IT HAS BEEN FINE GRADED, COMPACTED, AND READY FOR PAVING. SUBBASE MATERIAL SO PREPARED FOR PAVING SHALL BE PAVED WITHIN THREE DAYS OF PREPARATION.
2. SUBBASE MATERIAL AND THE VARIOUS ASPHALT CONCRETE MATERIALS CALLED FOR IN THESE DRAWINGS SHALL CONFORM WITH THE REFERENCED SECTION OF THE MOST RECENT NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS. CONSTRUCTION SHALL BE AS FURTHER SET FORTH IN THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
3. ALL ASPHALT CONCRETE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE–OFF USING A SELF–PROPELLED PAVING MACHINE WITH VIBRATING SCREED. PLACEMENT IN INACCESSIBLE AND SMALL AREAS MAY BE BY HAND.
4. PROVIDE JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAYS WORK.
5. TACK COAT MEANS SPECIFIED OR CALLED OUT ON THE DRAWINGS OR REQUIRED BY THE REFERENCED SPECIFICATION SHALL CONFORM WITH THE FOLLOWING:
    A. TACK COAT SHALL MEET THE MATERIAL REQUIREMENTS OF 702–90 ASPHALT EMULSION FOR TACK COAT OF THE MOST RECENT NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SHALL BE APPLIED IN ACCORDANCE WITH SECTION 407 — TACK COAT SHALL BE IN ACCORDANCE WITH THOSE SPECIFICATIONS AND AS OTHERWISE PROVIDED FOR IN THESE DRAWINGS.
    B. REMOVE LOOSE AND FOREIGN MATERIAL FROM ASPHALT SURFACE BEFORE PAVING NEXT COURSE. USE POWER BROOMS, BLOWERS OR HAND BROOM.
    C. APPLY TACK COAT TO ASPHALT PAVEMENT SURFACES & SURFACES OF CURBS, GUTTERS, MANHOLES, AND OTHER STRUCTURES PROJECTING INTO OR ABUTTING PAVEMENT. DRY TO A "TACKY" CONSISTENCY BEFORE PAVING.
    D. TACK COAT ENTIRE VERTICAL SURFACE OF ABUTTING EXISTING PAVEMENT.
6. AFTER COMPLETION OF PAVING AND SURFACING OPERATIONS, CLEAN SURFACES OF EXCESS OR SPILLED ASPHALT, GRAVEL OR STONE MATERIALS TO THE SATISFACTION OF THE ENGINEER.
7. ALL CURBING SHALL BE CONCRETE.

STRIPING:

1. STRIPE PAVEMENT AS INDICATED ON THE PLANS AND/OR IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.
2. COLOR: DRIVE LANE DIVIDERS–WHITE OR AOBE NO PARKING ZONE WARNINGS–WHITE OR AOBE PARKING DIVIDERS–WHITE OR AOBE WALKING LINES–WHITE OR AOBE HANDICAP PARKING LINES & SYMBOL–BLUE.

SITE PLAN MAP NOTES:

1. NO BUILDING PERMIT FOR A BUILDING SUBJECT TO SITE PLAN APPROVAL SHALL BE ISSUED BY THE BUILDING INSPECTOR EXCEPT UPON AUTHORIZATION OF AND IN CONFORMITY WITH THE SITE PLAN APPROVED BY THE PLANNING BOARD.
2. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

UTILITY PLAN NOTES:

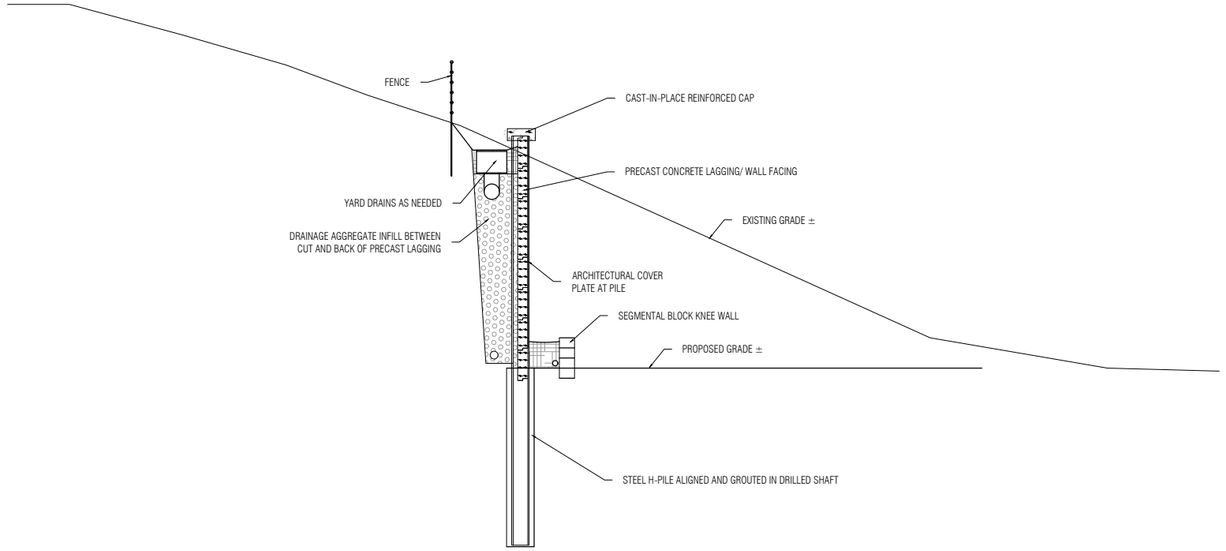
1. ALL UNDERGROUND UTILITIES ARE SHOWN IN THEIR RELATIVE POSITION AND ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY THEIR ACTUAL LOCATION IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. ANY CONDITION ENCOUNTERED IN THE FIELD DIFFERING FROM THOSE SHOWN HEREON, SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION IS TO PROCEED.
3. SEWER MAINS IN RELATION TO WATER MAINS: WHERE POSSIBLE, SEWERS SHALL BE LAID AT LEAST 10 (TEN) FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. VERTICAL SEPARATION SHALL BE MAINTAINED TO PROVIDE 18 (EIGHTEEN) INCHES BETWEEN TOP OF SEWER AND BOTTOM OF THE WATER MAIN AT UTILITY CROSSINGS. WHEN NOT POSSIBLE TO OBTAIN THE PROPER VERTICAL SEPARATION, SEWER PIPE SHALL BE PRESSURE RATED AND TESTED @ 150psi, 10 (TEN) FEET ON EACH SIDE OF THE WATER MAIN BEING CROSSED.
4. ALL PROPOSED UTILITIES SHALL BE COORDINATED WITH BUILDING PLANS FOR ANY CONNECTIONS.
5. ALL STORM SEWER SHALL BE SMOOTH INTERIOR HDPE UNLESS OTHERWISE SPECIFIED.
6. ALL GRAVITY SANITARY SEWER SHALL BE SDR 35 PVC, CONFORMING TO ASTM SPECIFICATION D–3034.MINIMUM PIPE STIFFNESS (F/Y) AT 5% DEFLECTION SHALL BE 46 PSI WHEN TESTED IN ACCORDANCE WITH ASTM SPECIFICATION D–2412. ALL JOINTS AND CONNECTIONS SHALL BE MADE WATERTIGHT.
7. CONTRACTOR TO VERIFY STATUS OF ALL UTILITY SERVICES PRIOR TO INTERRUPTION.
8. EXPLORATORY EXCAVATIONS SHALL BE PERFORMED BY THE CONTRACTOR AT ALL UTILITY CONNECTION LOCATIONS AND AS NEEDED TO VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING WORK.
9. BEFORE CONSTRUCTING LINES TO CONNECT TO EXISTING UTILITIES, VERIFY EXISTING UTILITY INVERTS AND NOTIFY THE ENGINEER IF ANY VARIATION FROM THE PLAN IS REQUIRED.
10. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE FOR THE DURATION OF THE WORK.
11. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS AND ASSOCIATED CONDITIONS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING UTILITY TRENCHES AND EXCAVATIONS AND FOR THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF THE WORK.
13. ALL PROPOSED UTILITIES SHALL TERMINATE 5 FEET FROM ANY PROPOSED BUILDING FACE. CONTRACTOR TO COORDINATE WITH BUILDING PLANS FOR ANY CONNECTIONS.
14. A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER SHALL INSPECT THE SANITARY FACILITIES (WATER DISTRIBUTION, ANY WATER TREATMENT, AND SEWAGE FACILITIES) AT THE TIME OF CONSTRUCTION. PRIOR TO OCCUPANCY OF THE DWELLING(S) OR BUILDING(S), THE ENGINEER SHALL CERTIFY TO THE THE LOCAL CODE ENFORCEMENT OFFICER THAT THE FACILITIES HAVE BEEN INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS.
16. TELEPHONE, ELECTRIC, AND GAS LINES SHALL BE INSTALLED UNDERGROUND. CROSSINGS OF PROPOSED PAVEMENTS SHALL BE INSTALLED PRIOR TO THE CONSTRUCTION OF PAVEMENT TOP COURSE.

GENERAL NOTES:

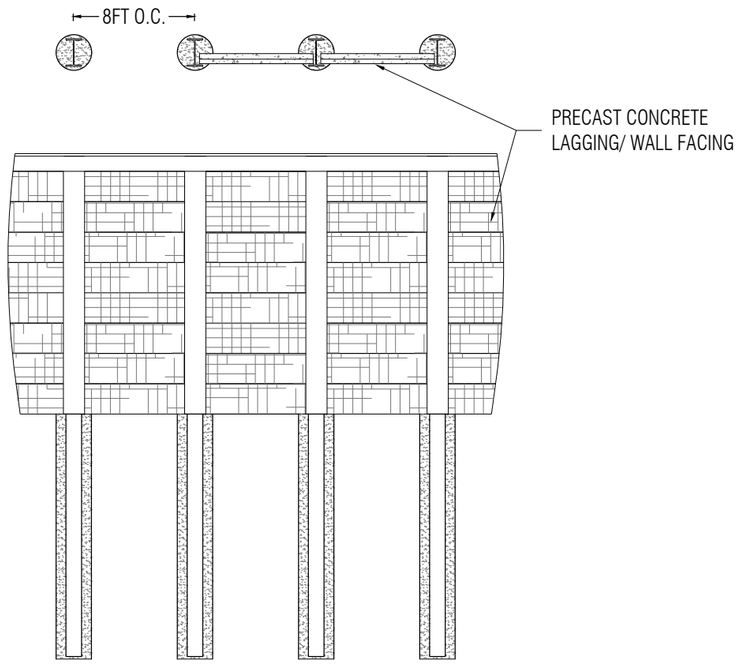
1. UNDERGROUND FACILITIES AND STRUCTURES SHOWN HEREON WERE TAKEN FROM DATA OBTAINED FROM PREVIOUS MAPS AND RECORD DRAWINGS. ALL ABOVE GROUND STRUCTURES AND SURFACE FEATURES SHOWN HEREON ARE THE RESULT OF A FIELD SURVEY UNLESS OTHERWISE NOTED. THERE MAY BE OTHER UNDERGROUND UTILITIES, THE EXISTENCE OF WHICH ARE NOT KNOWN OR CERTIFIED BY THE UNDERSIGNED. SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES MUST BE VERIFIED BY THE APPROPRIATE AUTHORITIES. THE UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION MUST BE NOTIFIED PRIOR TO CONDUCTING TEST BORINGS, EXCAVATION AND CONSTRUCTION.
2. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA. EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES, EXISTING STRUCTURE LOCATIONS AND OTHER EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE FOR FURTHER RESOLUTION. SUCH CONDITIONS COULD RENDER THE DESIGNS HEREON INAPPROPRIATE OR INEFFECTIVE.
4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT OTHER CONTRACTORS MAY BE WORKING IN THE AREA ON OTHER CONSTRUCTION AT THE SAME TIME THAT WORK IS PERFORMED UNDER THIS CONTRACT. THE CONTRACTOR SHALL BE AWARE OF THE NATURE AND EXTENT OF THIS OTHER WORK AND SHALL SCHEDULE AND CONDUCT HIS OWN OPERATION SO THAT THERE WILL BE NO CONFLICT IN OPERATIONS.
5. SINCE THIS PROJECT INVOLVES CONSTRUCTION WITHIN AN ACTIVE ROADWAY, IT IS IMPERATIVE THAT THE CONSTRUCTION BE CARRIED FORTH IN SUCH A MANNER AS TO INSURE THAT PROPER TRAFFIC FLOW IS MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE MAINTENANCE AND PROTECTION OF TRAFFIC IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND STANDARD SPECIFICATIONS.
6. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS AND SHALL BE RESPONSIBLE FOR FIELD FIT FINISH AND QUALITY OF WORK AND MATERIALS USED IN THE CONSTRUCTION. NO ALLOWANCE SHALL BE MADE ON BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLECT ON HIS PART.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT AND RESTORATION OF ALL NATURAL AND MANMADE FEATURES WHETHER SHOWN ON THE PLANS OR ENCOUNTERED IN THE FIELD. IT IS THE INTENTION OF THE PLANS TO SHOW ONLY MAJOR FEATURES TO BE PROTECTED, RESTORED OR REPLACED.
8. PROTECTION AND RESTORATION OF PROPERTY SHALL BE IN ACCORDANCE WITH THE NYSDOT STANDARD SPECIFICATIONS.
9. TOPSOIL SHALL BE PLACED AND AREAS SHALL BE SEEDED AS SOON AS FINAL GRADES ARE ESTABLISHED ON PERMANENT SLOPES. SLOPES SHALL ALSO BE MULCHED.
10. THE CONTRACTOR SHALL CONTACT ALL THE APPROPRIATE PARTIES WITH JURISDICTION OVER THE UTILITIES ENTERING ON OR NEAR THE PROJECT AREA PRIOR TO INITIATION OF CONSTRUCTION ACTIVITIES AND PROVIDE THOSE AGENCIES 72 HOURS NOTIFICATION.
11. THE CONTRACTOR SHALL VERIFY THE LOCATION OF AND 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, IN SO FAR AS THEY MAY BE ENDANGERED BY HIS 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 NOT SHOWN ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION TO UTILITY SERVICES.
12. IF TEMPORARY UTILITY SERVICES ARE REQUIRED, THE CONTRACTOR SHALL SEE TO IT THAT THEY ARE PROVIDED, AT NO ADDITIONAL COST TO THE OWNER, AND IT SHALL BE HIS RESPONSIBILITY TO MAINTAIN SUCH TEMPORARY FACILITIES FOR THE DURATION OF THE PROJECT AS NECESSARY
13. ALL EPOXY PAVEMENT MARKINGS AND ALL SIGNS SHALL BE IN CONFORMANCE WITH THE NYSDOT MUTCD.
14. ALL SIGNING WILL BE IN ACCORDANCE WITH THE NATIONAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES WITH NYS SUPPLEMENT, MOST RECENT VERSION.
15. PRIOR TO LEAVING THE WORK SITE EACH DAY, THE CONTRACTOR SHALL REMOVE OR PROTECT ANY PART OF THE WORK SITE THAT IS CONSIDERED HAZARDOUS TO THE TRAVELING PUBLIC, BY THE MUNICIPAL ENGINEER OR POLICE DEPARTMENT.
16. DURING ALL CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL MAINTAIN ACCESS TO EACH ADJACENT SITE. IF CONDITIONS REQUIRE THAT ACCESS BE TEMPORARILY CLOSED, THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 24 HOURS IN ADVANCE. ALL ACCESS DRIVES WILL BE OPEN FOR SAFE USE AT THE END OF EACH WORK DAY.
17. AREAS DISTURBED NOT RECEIVING PAVEMENT OR CONCRETE SHALL BE TOPSOILED, SEEDED. AND MULCHED IN ACCORDANCE WITH SPECIFICATIONS ON ATTACHED SHEETS.
21. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SAFETY, INCLUDING PROVISION OF ALL APPROPRIATE SAFETY DEVICES AND TRAINING REQUIRED.
22. ARDEN CONSULTING ENGINEERS, PLLC WILL REVIEW AND APPROVE OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWING, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND/OR METHODS, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ARDEN CONSULTING ENGINEERS, PLLC SHOP DRAWING REVIEW SHALL BE CONDUCTED WITH REASONABLE PROMPTNESS WHILE ALLOWING SUFFICIENT TIME TO PERMIT ADEQUATE REVIEW. REVIEW OF A SPECIFIC ITEM SHALL NOT INDICATE THAT ARDEN CONSULTING ENGINEERS, PLLC HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. ARDEN CONSULTING ENGINEERS, PLLC WILL NOT BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS NOT BROUGHT TO ITS ATTENTION, IN WRITING, BY THE CONTRACTOR. ARDEN CONSULTING ENGINEERS, PLLC WILL NOT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OF CORRELATED ITEMS NOT RECEIVED.
23. NEITHER THE PROFESSIONAL ACTIVITIES OF ARDEN CONSULTING ENGINEERS, PLLC, NOR THE PRESENCE OF ARDEN CONSULTING ENGINEERS, PLLC OR ITS EMPLOYEES AND SUB–CONSULTANTS AT A CONSTRUCTION/PROJECT SITE, SHALL RELIEVE THE GENERAL CONTRACTOR OF HIS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. ARDEN CONSULTING ENGINEERS, PLLC AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PROGRAMS OR PROCEDURES. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY, ARDEN CONSULTING ENGINEERS, PLLC SHALL BE INDEMNIFIED BY THE GENERAL CONTRACTOR AND SHALL BE NAMED AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE.
24. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE DESIGN ENGINEER AND MUNICIPAL BUILDING DEPARTMENT AND/OR MUNICIPAL ENGINEER FOR SUCH DEVIATIONS, CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK DONE WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENAL TIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE OWNER, ENGINEER, AND MUNICIPALITY HARMLESS FROM ALL SUCH COSTS RELATED TO SAME.
28. THESE NOTES SHALL APPLY TO ALL SHEETS IN THIS SET.

LAYOUT:

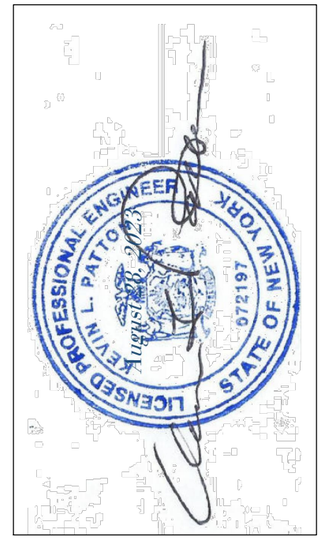
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED–UP AS BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS–BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND THE ENGINEER AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADDITIONS TO THE SATISFACTION OF THE OWNER OR THE ENGINEER BEFORE UTILITIES WILL BE ACCEPTED.
2. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY MONUMENTATION. ANY MONUMETATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
3. THE ENGINEER SHALL



WALL, TYPICAL SECTION



WALL, TYPICAL PLAN VIEW AND ELEVATION



IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW, SEC. 7209, SUB. 2, FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER IN ANY WAY, ANY PLANS, SPECIFICATIONS, PLATS OR REPORTS TO WHICH THE SEAL OF A PROFESSIONAL ENGINEER OR LAND SURVEYOR HAS BEEN AFFIXED.

KEVIN L. PATTON, P.E.
36 PATTON ROAD
NEWBURGH, NY 12550
845 275-7732
PATTONGEOTECH.COM

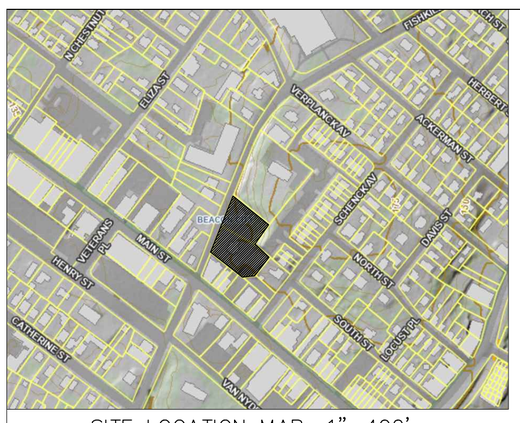
152-158 FISHKILL AVENUE

BEACON, DUTCHESS COUNTY, N.Y.

SOLDIER PILE WALL - TYPICAL DETAILS

PROJECT NUMBER
23310

REV.	DATE	BY
0	8/28/2023	KLP



SITE LOCATION MAP: 1"=400'

REFERENCES:

1. CITY OF BEACON TAX MAP SECTION 6054
2. DEEDS FILED IN THE DUTCHESS COUNTY CLERK'S OFFICE AS:
   L.22001 P.9287
   L.22004 P.2987
   L.22012 P.822
   L.2004 P.293
   L.22007 P.1239
   L.22006 P.8313
   L.525 P.323
   L.22013 P.5835
   L.22007 P.8504
   L.22004 P.11496
3. MAPS FILED IN THE DUTCHESS COUNTY CLERK'S OFFICE AS:
   MAP No. 10078
   MAP No. 8510

SURVEY REFERENCE:

SURVEY PREPARED BY HERITAGE LAND SURVEYING, P.C. DATED 11/28/2016 AND LAST REVISED ON 4/25/2017.

TOTAL PARCEL AREA:

43,885 SQUARE FEET OR 1.01 ACRES±

TAX MAP REFERENCE:

6054-29-042814 & 041801

FLOOD BOUNDARY:

FEMA FLOOD BOUNDARY MAP 36027C0464E EFFECTIVE DATE OF 5/2/2012

WETLANDS NOTE:

NO NYSDEC OR FEDERAL WETLANDS WERE FOUND ONSITE.

SUBDIVISION NOTE:

PROPOSED LOT LINE TO BE REMOVED TO COMBINE TAX LOTS INTO ONE LOT.

OWNER & APPLICANT:

152-158 FISHKILL AVENUE, LLC
316 MAIN STREET
POUGHKEEPSIE, NY 12601

TABLE OF ZONING REQUIREMENTS:

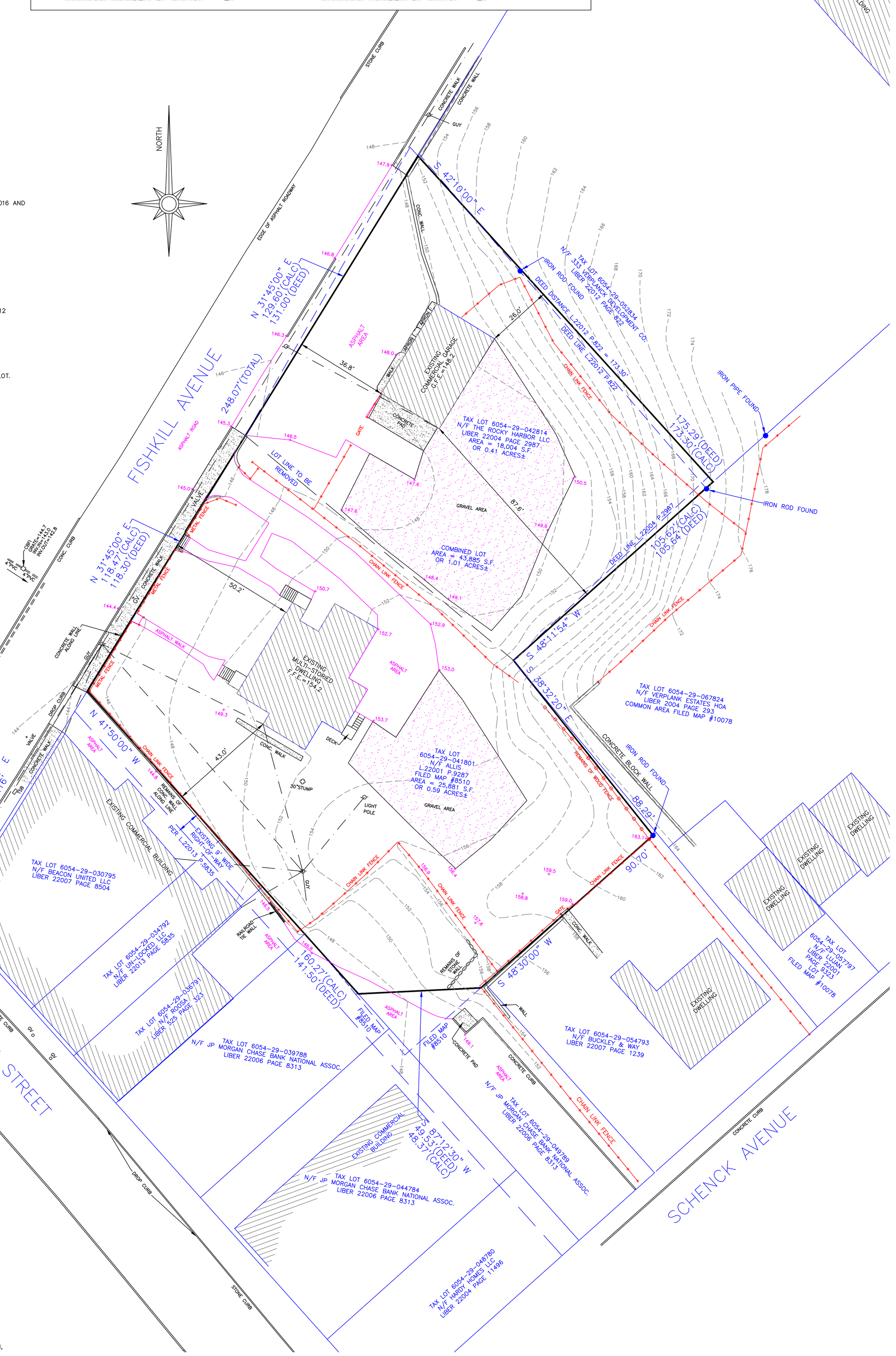
T ZONING DISTRICT

BULK TABLE: (MINIMUMS)		PROPOSED:	
LOT AREA:	5,000 SF	LOT AREA:	43,885 SF
LOT AREA PER DWELLING UNIT[1]:	2,000 SF	LOT AREA PER DWELLING UNIT:	2,000 SF
LOT WIDTH:	50'	LOT WIDTH:	249'
LOT DEPTH:	100'	LOT DEPTH:	204'
FRONT YARD:	10'	FRONT YARD:	12.5'
SIDE YARD:	10'	SIDE YARD:	10'
TOTAL SIDE YARD:	20'	TOTAL SIDE YARD:	65.5'
REAR YARD[d,e]:	20'	REAR YARD:	69.1'
BULK TABLE: (MAXIMUMS)		**BULK TABLE: (MAXIMUMS)**	
BUILDING HEIGHT	2.5 STORIES/35'	BUILDING HEIGHT	2.5 STORIES/33'-11"
MAXIMUM NUMBER OF UNITS:	21	MAXIMUM NUMBER OF UNITS:	21

LEGEND

- DENOTES EXISTING UTILITY POLE
- DENOTES EXISTING OVERHEAD WIRES
- DENOTES EXISTING STONE WALL
- GV — DENOTES EXISTING GAS VALVE
- 144.6+ — DENOTES EXISTING SPOT GRADE
- 144 — DENOTES EXISTING CONTOUR LINE

EXISTING BUILDING



APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE CITY OF BEACON,

ON THE _____ DAY OF _____ , 20_____

SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION, ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT,

SIGNED THIS _____ DAY OF _____ , 20 _____ BY

_____ CHAIRMAN

_____ SECRETARY

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

0 1 2 3
ORIGINAL SIZE IN INCHES

REVISED: 8/16/23

STATE OF NEW YORK · DARREN J STRIDIRON · 050487 · LICENSED LAND SURVEYOR

I HEREBY CERTIFY THAT:
THIS MAP OR PLAT IS BASED UPON THE FIELD NOTES OF THE SURVEY AND OTHER REFERENCES SHOWN.
ALL RECORDED EASEMENTS OR RIGHTS-OF-WAY AS SHOWN IN THE TITLE REPORT AND OTHER REFERENCES ARE SHOWN.
ALL OBSERVABLE EVIDENCE OF EASEMENTS ON THE GROUND ARE SHOWN.
ALL OBSERVABLE, ABOVE GROUND EVIDENCE OF BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS ARE SHOWN.

UNAUTHORIZED ALTERATION TO A MAP BEARING A LICENSED PROFESSIONAL LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
THIS CERTIFICATION IS NOT AN EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, IT IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF, BASED ON EXISTING FIELD EVIDENCE AND DOCUMENTARY EVIDENCE AVAILABLE.
CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
PLAN PREPARED PURSUANT TO SECTION 7208m OF THE NEW YORK STATE EDUCATION LAW.
SUBJECT TO THE FINDINGS OF AN UP-TO-DATE TITLE SEARCH.

Darren Stridiron
DARREN J. STRIDIRON, PROFESSIONAL LAND SURVEYOR
NEW YORK STATE LICENSE No. 050487

DATUM: NAVD 1988

HERITAGE LAND SURVEYING, P.C.
155 PRESSLER ROAD, WALLKILL, NEW YORK 12589
TEL (845)234-2310, FAX (845)566-1416, e-mail: heritagesurvey@hotmail.com

SUBDIVISION PLAT-LOT LINE CONSOLIDATION

152 & 158 FISHKILL AVENUE
LOCATED AT
TAX LOTS 6054-29-041801 & 042814
CITY OF BEACON
COUNTY OF DUTCHESS, NEW YORK

Date	Work Order	Drawing No.	SHEET
3/09/23	2023-015	PLAT	1/1
Scale 1"= 20'			

SITE PLAN & LOT MERGE
FOR 152-158 FISHKILL AVENUE
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

STORMWATER POLLUTION PREVENTION PLAN

PREPARED FOR:

-152-158 FISHKILL AVENUE, LLC
-CITY OF BEACON

June 23, 2023

Revised: August 15, 2023

PREPARED BY:

ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340
MONROE, N.Y. 10949
TEL: 845-782-8114
FAX: 845-782-2946
EMAIL: mam@ardenconsulting.net
PROJECT: 17-001



Michael A. Morgante
N.Y.S.P.E. License # 78577

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APPENDIX B – PRE & POST DEVELOMENT MAPS , EROSION & SEDIMENT CONTROL PLANS, & HYDROCAD MODEL

APPENDIX C – OPERATION, MAINTENANCE & MANAGEMENT INSPECTION CHECKLISTS FOR E&SC AND STORMWATER FACILITIES

APPENDIX D – CONSTRUCTION WASTE MANAGEMENT PLAN

APPENDIX E – STORMWATER MAINTANCE AGREEMENTS

1. INTRODUCTION

1.0.1 Project Description

The site is located on 152-158 Fishkill Avenue, in the City of Beacon, Dutchess County, New York. Geographically, the site is located one block from the intersection of Fishkill Avenue and Main Street. The tax map designation for the parcel is Section 6054, Block 29, Lot 042814 and Section 6054, Block 29, Lot 041801.

The portion of the site that is proposed for development is characterized by a western sloping topography that descends from the easterly portion of the site. Topography on the site reflects the local surrounding topography. The highest elevations are found in the easterly portion of the site, with an elevation of approximately 172.0. The lowest elevation in the western portion of the site is elevation 145.0. The soils on the Property were identified using the soil classifications of the USDA Soil Conservation Service (SCS)and the Soil Survey of Dutchess County, New York. The site is underlain primarily by Knickerbocker (KuB) and Urban land (Ur). The distribution of the soil types on the site is shown on the attached Pre & Post Development Maps.

The project consists of a mixed use office and residential building that will be served by municipal water and sewer. There will also be parking, driveway and refuse locations. Stormwater facilities are also proposed to attenuate post-development stormwater flows and provide water quality treatment.

1.0.2 Existing Drainage Patterns

Generally, the pre-development site conditions are best described as existing impervious surfaces associated with the current multi-family residential use, grass lawns and a small amount of wooded area.

The pre-development site runoff within the watershed drains to the design point located in the central western portion of the site along Fishkill Avenue. One watershed has been shown on the attached Pre-Development Analysis Map. The first 67 feet of runoff within the watershed is classified as sheet flow while the remaining distance the runoff travels has been classified as shallow concentrated flow.

1.0.3 Proposed Drainage Patterns

The proposed development was divided into two major watersheds as shown on the Post Development Analysis Map. Most of the proposed impervious surface associated with the project will drain into the proposed stormwater management facilities and recharge the local groundwater.

2. STORMWATER MANAGEMENT

2.0.1 General

The applicant has provided this stormwater report as part of the SEQRA process for the City of Beacon. Implementation of the proposed action results in an increase of approximately 0.80 acres of impervious surface. In general, increased imperviousness can change the volume and rate of runoff as well as the amount of suspended or dissolved substances entering local streams along with runoff. In some cases, a change in the quantity of impervious surface can change the distribution of water in each area, affecting local water bodies, wetlands and associated fauna and flora.

The development of the site will create an increase in runoff volume and the potential for pollutant loading. However, the project design includes measures to reduce the level of pollutants in post-development runoff. This will be achieved using an infiltration practice combined with isolator chambers to separate solids from the runoff. The post development runoff will be captured, treated, recharged, and attenuated.

2.0.2 Stormwater Quantity

A drainage analysis has been performed and a drainage report has been prepared to analyze the impact of stormwater runoff at the major Design Point on the property. This report is intended to address the drainage impacts as they only relate to the portions of the site where new construction is proposed. The impacts of the proposed development on existing drainage patterns were evaluated for both the pre and post development conditions, and areas where stormwater treatment, attenuation and recharge are provided have been analyzed.

Information and data to prepare this report was obtained from the following sources:

- Boundary & topographic information from a survey entitled "BOUNDARY & TOPOGRAPHIC SURVEY" prepared by Heritage Land Surveying, P.C., dated March 9, 2023.
- Site Plan Map as prepared by Arden Consulting Engineers
- The site soil information from Dutchess County Soil Conservation Service
- Site evaluations as carried out by personnel of Arden Consulting Engineers

The Soil Conservation Service TR-55 method was used to determine the pre-development and post-development runoff rates at the various design points identified on the property, which is illustrated on the attached drawings entitled Pre Development Stormwater Analysis and Post Development Stormwater Analysis.

The drainage summary shown on the following tables outline the runoff rates & volumes from the 1-, 10- and 100-year storm events in the pre-development without retention, and post-development with retention conditions, using a Type III storm distribution. The 24-hour rainfall values used for each storm occurrence are as follows:

1 year storm = 2.7 in.
10-year storm = 4.75 in.
100-year storm = 9.00 in.

Detail sheets for the engineered drainage system have been provided within the project site drawings. The Pre and Post Development Analysis Plan(s) have been prepared to illustrate existing drainage areas and how their configuration would change following construction on the site.

It is the overall goal of the stormwater management plan to provide proper drainage control on a quantity and quality basis. The plan has been prepared so there will be no negative effect on downstream properties with respect to quantity and quality issues.

Following the identification of the design points, analysis of the site runoff characteristics was performed. The hydrologic characteristics of the pre-development site conditions were modeled using HydroCAD computer software. The model analyzes watershed conditions and provides hydrograph generation and routing based on the Natural Resources Conservation Service (NRCS) Technical Release 55 (TR-55) procedures. These procedures consider the land cover and use on site, the underlying soils, the general topography and local rainfall distribution to model stormwater runoff volumes and flow rates resulting from the site.

As discussed earlier, the maximum future impervious surface on the site will increase and this increase will result in less infiltration and groundwater recharge and an increase in the rate and volume of runoff reaching the design points. The hydrologic characteristics of the post-development site conditions were modeled using HydroCAD, similar to the analysis for pre-development conditions. This model incorporated the proposed construction as found in the Project Description and drainage patterns resulting primarily from the construction of the proposed building and parking area.

2.0.3 Increase in Stormwater Runoff Rates

In general, development creates impervious surfaces and can also result in wooded areas that are cleared and replaced by lawn. This increases downstream stormwater runoff rates and volumes when attenuation of stormwater flows is not provided on-site.

The difference in the pre- & post-development rate of runoff is attenuated by the proposed ADS Stormtech Chambers, and the post-construction runoff rate from the site will be less than the pre-construction condition.

Extensive soil was conducted within the area of the proposed ADS Tormtech Chambers to determine the suitability of the soils to infiltrate stormwater on the site. Infiltration testing ranged from 2" per hour to 14" per hour. A conservative value of 2" per hour was chosen to model the exfiltration rate within the HydroCAD model which satisfies the minimum DEC infiltration rate requirement of 0.5" per hour. The general soil profile consisted of a gravelly silty sand to sandy gravelly loam which further confirms the suitability of the soil for infiltration practices.

Tables 1 & 2 that follow summarize the pre versus post development HydroCad modeling results for the design points noted below where runoff leaves the site.

Table 1
Pre-vs. Post-Development Runoff Rates (cfs)

Storm Frequency	Design Point Pre	**Design Point Post**
1 year	0.10	**0.09**
10 year	1.20	**0.77**
100 year	4.81	**2.03**

3. STORMWATER QUALITY

3.1.1 Impervious Surfaces

As described above, the watersheds have been analyzed for the purpose of pre & post-development conditions. The impervious cover used in these calculations represents the land use as described and shown on the project plans.

The proposed ADS Stormtech Chambers will provide Water Quality Volume and Runoff Reduction Volume although the project is not subject to NYSDEC SWPPP requirements.

Without the use of stormwater quality management practices, the proposed development would result in an increase in the loadings of various chemical constituents to the receiving waters, potentially impairing the quality of those waters.

Runoff from impervious surfaces related to roadways and parking lots poses a potential increase in road and vehicle-related contaminants in the stormwater diverted to treatment basin. These include hydrocarbons derived primarily from crankcase oil drippings and un-combusted exhaust hydrocarbons. Furthermore, roadway runoff typically contains detectable levels of heavy and trace metal contaminants such as lead, zinc, copper, chromium, and nickel. These types of potential impacts require appropriate mitigation measures to limit impacts to existing water quality.

The stormwater management system for the proposed site is based on design criteria required to meet applicable standards through the incorporation of pretreatment chambers prior to conveyance into the

subsurface retention/recharge facility. This report and the attached plans demonstrate that adequate area and conditions are available for the proper reduction of stormwater runoff volume and treatment of stormwater runoff. The stormwater will be conveyed to the stormwater facilities for pretreatment and ultimate recharge to groundwater.

3.1.2 Sources of Pollutants

There are several potential pollutants and their sources to be considered during site design. Nutrients, sediment, bacteria, and various other components can potentially contribute to the reduction of water quality and impacts to downstream receiving waters and habitat for water dependent species.

Many of these constituents, i.e., nitrogen, phosphorus, bacteria, and others, are expected to be accounted for in the capture and treatment of the water quality volume. If the runoff from a 90% storm event from impervious surfaces is treated, the water quality goals of the State are met. A primary source of nutrients, i.e., the use of fertilizers, is discussed below.

Sediments are typically associated with runoff from un-stabilized sites or are the result of erosion in watercourses that cannot handle the velocity of stormwater flows. They can also result from the sanding of impervious surfaces during winter storm events. Un-stabilized sediments can be transported via storm flows to receiving wetlands and watercourses, altering the soil-water-air interface in wetlands, and burying established vegetation. The current proposal will utilize sedimentation basins for pretreatment. Stormwater flow is then conveyed to infiltration basins for retention/recharge to achieve water quality goals.

Trash and debris can be a nuisance associated with any site development. The stormwater flows will enter grated catch basins to minimize trash and debris entering the facility. Well maintained sites that receive approval and are monitored on a regular basis are not typically the source of significant amounts of trash and debris.

3.1.3 De-icing Materials

The Applicant proposes the use of salt as the primary winter road safety agent on proposed parking lot and sidewalks. Due to the potential for accumulation of sand in the stormwater management system, which will significantly reduce its ability to operate properly, traction sand is not a feasible alternative. Salt application rates will be dictated by the need to provide safe traveling conditions for the public and emergency vehicles, and by access drive and parking lot conditions. The application of salt will be minimized to the extent necessary to ensure that public safety is not compromised.

3.1.4 Design Guidance

The Applicant proposes Stormtach SC-740 Chamber to provide water quality and quantity attenuation . The paragraphs below discuss the design guidance requirements associated with this technology.

<u>Stormtech SC-740 Chambers</u>

The StormTech subsurface chamber that allows the storage of large volumes of stormwater at reasonably shallow depths. The calculations shown in the Appendix include the volume within the chambers and stone voids (StormTech assumes a porosity of 40%). The systems were designed to treat the increase in impervious surface associated with the proposed development.

The chambers are hydraulically connected via the stone that is placed between all the chambers so that as each unit/row fills with runoff, the adjacent unit/row fills also. To provide pretreatment, the

StormTech SC-740 Isolator Row has been proposed and is depicted as the hatched row in the project drawings. The isolator row is a single chamber row, wrapped in non-woven geo-synthetic fabric which filters out sediment, oils, and other impurities typically found in the runoff of initial stages of a rain event. ADS recommends that inspection ports only serve a purpose if they are installed on Isolator Rows, since the system is designed such that the majority of sediment should be trapped and stored in the Isolator Row until regular maintenance is performed. Since non-Isolator Rows do not experience sedimentation, there is no need for inspection ports.

This stormwater management system will provide water quality treatment and control peak discharges by providing storage for attenuation of the 1, 10, and 100-year storms.

4. EROSION & SEDIMENT CONTROL

4.0.1 General

An Erosion and Sediment Control Plan has been developed for the project. This plan has been provided as part of the project drawings and will be available at the project site during the time of construction. The plan will also comply with current regulations, including construction sequence, both short- and long-term maintenance of facilities, storage of materials and temporary and permanent structures.

The following temporary and permanent erosion control practices are proposed for use during construction and for long-term protection:

A. Stabilized Construction Entrance:

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, sidewalk, or parking area. The purpose of stabilized construction entrance is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets. Stabilized construction entrances will be placed as shown on the Erosion and Sediment Control Plans.

B. Siltation Fence:

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil. The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment loads. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used (approximately one year). Silt fence will be placed as shown on the Erosion and Sediment Control Plans.

C. Storm Drain Inlet Protection:

A temporary, somewhat permeable barrier, installed around inlets in the form of a fence, berm, or excavation around an opening, trapping water and thereby reducing the sediment content of sediment laden water by settling. The purpose is to prevent heavily sediment laden water from entering a storm drain system through inlets. Inlet protection will only be used in road areas before pavement is placed. Locations of inlet protection are shown on the Erosion and Sediment Control Plans.

D. Slope Stabilization Matting

Matting made synthetic or natural fibers that is placed on steep slopes to allow newly planted vegetation to take root and protect the slope from erosion before vegetation is fully established. Locations of slope stabilization matting are shown on the Erosion and Sediment Control Plans.

4.0.2 Implementation Schedule & Maintenance

A. Schedule

As part of the development of the Erosion and Sediment Control Plans for the project, preparation of construction sequencing was completed to ensure water quality discharges are maintained during construction. The following construction schedule for implementing stormwater management during construction is proposed. Please refer to the project drawings for specific sequencing and scheduling.
General Notes:

1. The owner or operator shall have a qualified inspector conduct at least one (1) site inspection every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed.

2. 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.

3. Temporary Stabilization means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats.

4. Final Stabilization means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

4.0.3 Construction Sequence:

1. Pre-construction meeting: Before construction activities an evaluation of the site will be performed with the site contractor, City personnel and the site design engineer to discuss general construction procedures and sequencing.

2. Protect existing buffers: Place erosion control devices (silt fencing, diversion berms, etc.) upstream of any existing watercourse within or outside of construction areas, prior to the start of any construction.

3. Construction entrances/siltation controls: A temporary construction entrance will be installed at the site entrances as shown on the project drawings. In addition, any other siltation control devices, as shown on the erosion control plan are to be installed adjacent to the temporary entrance and staging area.

4. Construction of temporary sediment traps/basins: Construction of the temporary sediment traps prior to the start of any major earthwork movement or site construction.

5. Strip topsoil: Topsoil will be stripped and stockpiled for later reuse.

6. Land grading: Bulk soil grading will commence. At this time, temporary stockpile areas should be utilized.

7. Retaining walls: Begin construction of on-site retaining walls. Walls to be installed concurrently with land grading.

8. Construction of buildings and driveway grading and subbase will begin upon completion of grading.

9. Utility installation: Install sanitary sewer, water, and stormwater. Inlet protection will be installed at all stormwater catch basins.

10. Stormwater installation: Install infiltration stormwater facilities when all contributing areas have been stabilized. Protect areas during and after construction until pavement is installed.

11. Pavement construction: Construct paved driveways, parking and access roads.

12. Upon completion of grading and retaining walls, construction of buildings and walkways will commence.

13. Landscaping and final stabilization: All open areas to be stabilized with topsoil and seeded as per the seeding schedule specified on the erosion and sediment control plans. Removal of all temporary measures, flushing/cleaning of all catch basins and pipe, and removal and disposal of all trapped sediment on site shall be completed.

14. Final site inspection and certification: At the end of construction a site evaluation of the site will be performed with the site contractor, City personnel, and the site engineer to ensure that all stormwater facilities were constructed as per the design plans and that the site has been stabilized.

Please refer to the Erosion and Sediment Control Plans within the project drawings for construction notes and seeding schedule for disturbance and final stabilization.

4.0.4 Pollution Prevention Measures:

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that conforms to all applicable Federal and State regulations that does not cause contamination of stormwater. Good housekeeping and preventive measures will be taken to ensure that the site will be kept clean, well-organized, and free of debris. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

<u>Vehicles, construction equipment, and/or petroleum product storage/dispensing:</u>

1. All vehicles, equipment, and petroleum product storage/dispensing areas will be observed regularly during site observations to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.

2. On-site fueling tanks and petroleum product storage containers shall include secondary containment.

3. Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.

4. To perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.

5. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident. Contaminated soil shall be removed from site and disposed of in accordance with all current Federal and State Regulations.

Chemical storage:

1. Any chemicals stored in the construction areas will conform to the appropriate manufacturer's recommendations and or the appropriate State/Federal Regulations. All chemicals shall have cover, containment, and protection provided on site, per all Federal and NYSDEC regulations.

2. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application procedures and rates shall be followed.

Demolition:

1. Dust released from demolished sidewalks, buildings, structures or on-site grading operations will be controlled using Dust Control measures as specified in the N.Y.S. Erosion and Sediment Control Specification Manual.

2. Storm drain inlets vulnerable to stormwater discharge carrying dust, soil, or debris will be protected using Storm Drain Inlet Protection.

3. Process water and slurry resulting from saw cutting and surfacing operations will be prevented from entering the waters of the State by implementing Saw cutting and Surfacing Pollution Prevention measures.

Concrete and grout:

1. Process water and slurry resulting from concrete work will be prevented from entering bodies of water by implementing Concrete Handling Measures that will consist of a concrete/grout washout area on the site.

Sanitary wastewater:

1. Portable sanitation facilities will be firmly secured, regularly maintained, and emptied when necessary.

Solid Waste:

1. Solid waste will be stored in secure, clearly marked containers.

Litter/Trash:

1. Litter and Trash shall be cleaned and disposed of in secure clearly marked dumpsters or trash receptacles.

2. Site is to be cleaned daily of debris and debris shall be disposed of daily.

Other:

Other BMPs will be administered as necessary to address any other additional pollutant sources on site.

4.0.5 OPERATION & MAINTENANCE (CONSTRUCTION/LONG-TERM)

The Contractor will be responsible for the maintenance and operation of all site related stormwater management facilities during construction and the property owner will be responsible for long-term maintenance and operation. A Stormwater Management Agreement can be found in Appendix G.

1. Construction and long-term maintenance shall be carried out in accordance with the following notes:

    a. Roadway Pavements: Roadway pavements shall be swept on a regular basis to remove accumulated sediment. Collected sediment shall be removed, which will not allow the reentrance of silt into the storm water drainage system.

    b. Catch Basins: Catch basins shall be flushed and cleaned of any collected sediment within the bottom of the basin approximately every 4-5 years. Collected sediment shall be removed, which will not allow the reentrance of silt into the storm water drainage system.

    c. Vegetative Stabilization:

        (1) All vegetative planting on areas that have been disturbed and are finish graded shall be inspected monthly during the first growing season and annually thereafter. Planting (or seeding) shall be maintained in viable conditions to stabilize the soil and to prevent soil erosion. Restore all site planting and/or seeding which has been damaged to a viable condition.

        (2) If vegetative stabilization has been damaged from storm water erosion, correct upstream conditions that caused the erosion. Check dams may be required in drainage ways and stone outfall aprons may be required to be repaired on storm water outfall sites.

    d. Temporary erosion and sediment control maintenance:

        (1) All erosion and sediment control practices will be checked for stability and operation following every runoff-producing rainfall, but in no case less than once every week. Any needed repairs will be made immediately to maintain all practices as designed and installed for the appropriate phase of the project.

        (2) Sediment will be removed from the sediment trap and inlet protection device when storage capacity has been approximately 50% filled.

5. SUMMARY

5.0.1 General

Drainage from the proposed impervious surfaces will be collected by sheet and pipe flow and conveyed to the stormwater management facility. The Soil Conservation Service TR-55 method has been utilized to evaluate the changes in stormwater runoff volume because of development of the site. The storm drainage system has been designed to collect and convey stormwater in a manner that would provide no increase in stormwater runoff rates downstream from the property. On-site retention and recharge of stormwater is necessary and has been provided to mitigate the increases in stormwater runoff rates and pollutants that would otherwise impact downstream conditions.

The construction activity on the site will therefore not alter existing drainage patterns. The proposed erosion and sediment practices will prevent the erosion and sediment deposits to downstream properties.

APPENDIX A



Map Scale: 1:483 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

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 19, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 21, 2022—Oct 27, 2022

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
KuB	Knickerbocker-Urban land complex, undulating	0.5	77.4%
Ur	Urban land	0.2	22.6%
Totals for Area of Interest		**0.7**	**100.0%**

Table 8: Soil hydrologic groups for New York soils.

HG = hydrologic group. For soils with a hydrologic group that consists of more than one letter (e.g. "A/B", "B/C", "C/D"), its hydrologic group is determined by the presence or absence of adequate artificial drainage. If the field is artificially drained the hydrologic group moves to the first of the two classes. If the field is inadequately drained or not drained at all, the second of the two classes is assigned.

Soil Type	HG
Acton	C
Adams	A
Adirondack	D
Adjidaumo	D
Adrian	A/D
Agawam	B
Albia	C
Albrights	C
Alden	D
Allagash	B
Allard	B
Allendale	D
Allis	D
Alluvial Land	C
Almond	C
Alps	C
Altmar	B
Alton	A
Amboy	C
Amenia	B
Angola	C
Appleton	C
Arkport	B
Armagh	D
Arnot	C/D
Ashville	D
Atherton	B
Atkins	D
Atsion	C
Au Gres	B
Aurelie	D
Aurora	C

Soil Type	HG
Barbour	B
Barcelona	C
Barre	D
Bash	C
Basher	B
Bath	C
Becket	C
Becraft	B
Belgrade	B
Benson	D
Berkshire	B
Bernardston	C
Berrien	C
Berryland	B
Beseman	A
Bice	B
Biddeford	D
Birdsall	D
Blasdell	A
Bombay	B
Bonaparte	A
Bono	D
Boots	A
Borosaprists	A/D
Boynton	D
Braceville	C
Brayton	C
Bridge-hampton	B
Bridport	D
Briggs	A
Brinkerton	D

Soil Type	HG
Broadalbin	C
Brockport	D
Brookfield	B
Buckland	C
Bucksport	D
Budd	B
Burdett	C
Burnham	D
Busti	C
Buxton	C
Cambria	D
Cambridge	C
Camillus	B
Camroden	C
Canaan	C
Canaan-Rock Outcrop	C
Canadice	D
Canandaigua	D
Canaseraga	C
Canastota	C
Caneadea	D
Canfield	C
Canton	B
Carbondale	A
Carlisle	A/D
Carrollton	C
Carver	A
Carver-Plymouth	A
Castile	B
Cathro	A

Soil Type	HG
Cathro-Greenwood	A
Cattaraugus	C
Cavode	C
Cayuga	C
Cazenovia	B
Ceresco	B
Chadakoin	B
Chagrin	B
Champlain	A
Charles	C
Charlton	B
Chatfield (E)	B
Chatfield (WE)	B
Chaumont	D
Chautauqua	C
Cheektowaga	D
Chenango	A
Cheshire	B
Chippeny	D
Chippewa	D
Churchville	D
Cicero	C
Clarkson	B
Claverack	C
Clymer	B
Cohoctah	B
Collamer	C
Colonie	A
Colosse	A
Colrain	A
Colton	A

Soil Type	HG
Colwood	D
Conesus	B
Conotton	A
Constable	A
Cook	D
Copake	B
Cornish	C
Cosad	C
Cossayuna	C
Covert	A
Coveytown	C
Covington	D
Crary	C
Croghan	B
Culvers	C
Dalbo	C
Dalton	C
Danley	C
Dannemora	D
Darien	C
Dawson	A
Deerfield	B
Deford	A
Dekalb	A
Depeyster	C
Deposit	B
Derb	C
Dixmont	C
Dorval	A
Dover	B
Duane	B
Dunkirk	B
Dutchess	B
Duxbury	A
Edwards	B
Eel	B
Eelweir	C
Elka	C
Ellery	D
Elmridge	C
Elmwood	C
Elnora	B

Soil Type	HG
Empeyville	C
Enfield	B
Ensley	B
Erie	C
Ernest	C
Essex	C
Fahey	B
Farmington	C
Farnham	C
Fernlake	A
Flackville	C
Fonda	D
Franklinville	B
Fredon	C
Freetown	D
Fremont	C
Frenchtown	D
Frewsburg	C
Fryeburg	B
Fulton	D
Gage	D
Galen	B
Galestown	A
Galoo	C
Galoo-Rock Outcrop	C
Galway	B
Genesee	B
Georgia	C
Getzville	D
Gilpen	C
Gilpin	C
Glebe	C
Glebe-Saddleback	C
Glendora	A/D
Glenfield	B
Gloucester	A
Glover	D
Gougeville	A
Granby	A/D
Grattan	A

Soil Type	HG
Greene	C
Greenwood	A
Grenville	B
Gretor	C
Groton	A
Groveton	A
Guff	D
Guffin	D
Gulf	B
Hadley	B
Haights	B
Haights-Gulf	B
Hailesboro	C
Halcott	C/D
Halsey	C/D
Hamlin	B
Hamplain	B
Hannawa	D
Hartland	B
Haven	B
Hawksnest	C/D
Hempstead	B
Henrietta	B
Herkimer	B
Hermon	A
Hero	B
Heuvelton	C
Hilton	B
Hinckley	A
Hinesburg	C
Hogansburg	B
Hogback	C
Hogback-Ricker	C
Holderton	B
Hollis	C
Holly	C/D
Holyoke	C
Holyoke-Rock Outcrop	C
Homer	B
Honeoye	B

Soil Type	HG
Hoosic	A
Hornell	D
Hornellsville	D
Houghtonville	C
Houghtonville-Rawson	C
Houseville	C
Howard	A
Hudson	C
Hulberton	C
Ilion	D
Insula	B
Ipswich	D
Ira	C
Ischua	B
Ivory	C
Jebavy	A
Joliet	D
Junius	C
Kalurah	B
Kanona	D
Kars	A
Kearsarge	B
Kendaia	C
Kibbie	B
Kingsbury	D
Kinzua	B
Knicker-bocker	A
Lackawanna	C
Lagross	A
Lagross-Haights	A
Lairdsville	D
Lakemont	D
Lakewood	A
Lamson	B/D
Lanesboro	C
Langford	C
Lansing	B
Leck Kill	B
Leicester	C

Soil Type	HG
Leon	C
Lewbath	C
Lewbeach	C
Leyden	C
Lima	B
Limerick	C
Linden	B
Linlithgo	B
Livingston	D
Lobdell	B
Lockport	D
Lorain	D
Lordstown	C
Lovewell	B
Lowville	B
Loxley	A
Lucas	C
Ludlow	C
Lupton	A
Lyman	C
Lyman-Becket-Berkshire	C
Lyme	C
Lyons	D
Machias	B
Macomber	C
Macomber-Taconic	C
Madalin	D
Madawaska	B
Madrid	B
Malone	C
Manahawkin	D
Mandy	C
Manheim	C
Manhoning	D
Manlius	C
Mansfield	D
Maplecrest	B
Marcy	D
Mardin	C

Soil Type	HG
Marilla	C
Markey	A/D
Marlow	C
Martisco	B
Massena	C
Matoon	D
Matunuck	D
Medihemists	A/D
Medina	B
Medomak	D
Melrose	C
Menlo	D
Mentor	B
Merrimac	A
Middlebrook	C
Middlebrook-Mongaup	C
Middlebury	B
Millis	C
Millsite	C
Mineola	A
Miner	D
Mino	C
Minoa	C
Mohawk	B
Moira	C
Monadnock	B
Monarda	D
Mongaup	C
Montauk	C
Mooers	B
Morocco	C
Morris	C
Mosherville	C
Muck	D
Muck-Peat	D
Mundal	C
Mundalite	C
Mundalite-Rawsonville	C
Munson	D
Munuscong	B

Soil Type	HG
Muskego	A/C
Muskellunge	D
Napoleon	A
Napoli	C
Nassau	C
Naumburg	C
Nehasne	B
Nellis	B
Neversink	D
Newfane	B
Newstead	C
Newton	A/D
Niagara	C
Nicholville	C
Ninigret	B
Norchip	D
Norwell	C
Norwich	D
Nunda	C
Oakville	A
Occum	B
Odessa	D
Ogdensburg	C
Olean	B
Ondawa	B
Oneida	C
Onoville	C
Ontario	B
Onteora	C
Ontusia	C
Oquaga	C
Oramel	C
Organic	A/D
Orpark	C
Orwell	D
Ossipee	D
Otego	B
Otisville	A
Ottawa	A
Ovid	C
Palatine	B
Palms	A/D

Soil Type	HG
Palmyra	B
Panton	D
Papakating	D
Parishville	C
Parsippany	D
Patchin	D
Pawcatuck	D
Pawling	B
Paxton	C
Peacham	D
Peat	A/D
Peat-Muck	A/D
Peru	C
Petoskey	A
Phelps	B
Philo	B
Pillsbury	C
Pinckney	C
Pipestone	B
Pittsfield	B
Pittstown	C
Plainbo	A
Plainfield	A
Plessis	D
Plymouth	A
Podunk	B
Poland	B
Pompton	B
Pootatuck	B
Pope	B
Potsdam	C
Poygan	D
Punsit	C
Pyrities	B
Quetico	D
Quetico-Rock Outcrop	D
Raquette	B
Rawsonville	C
Rawsonville-Beseman-Rayne	C
	B

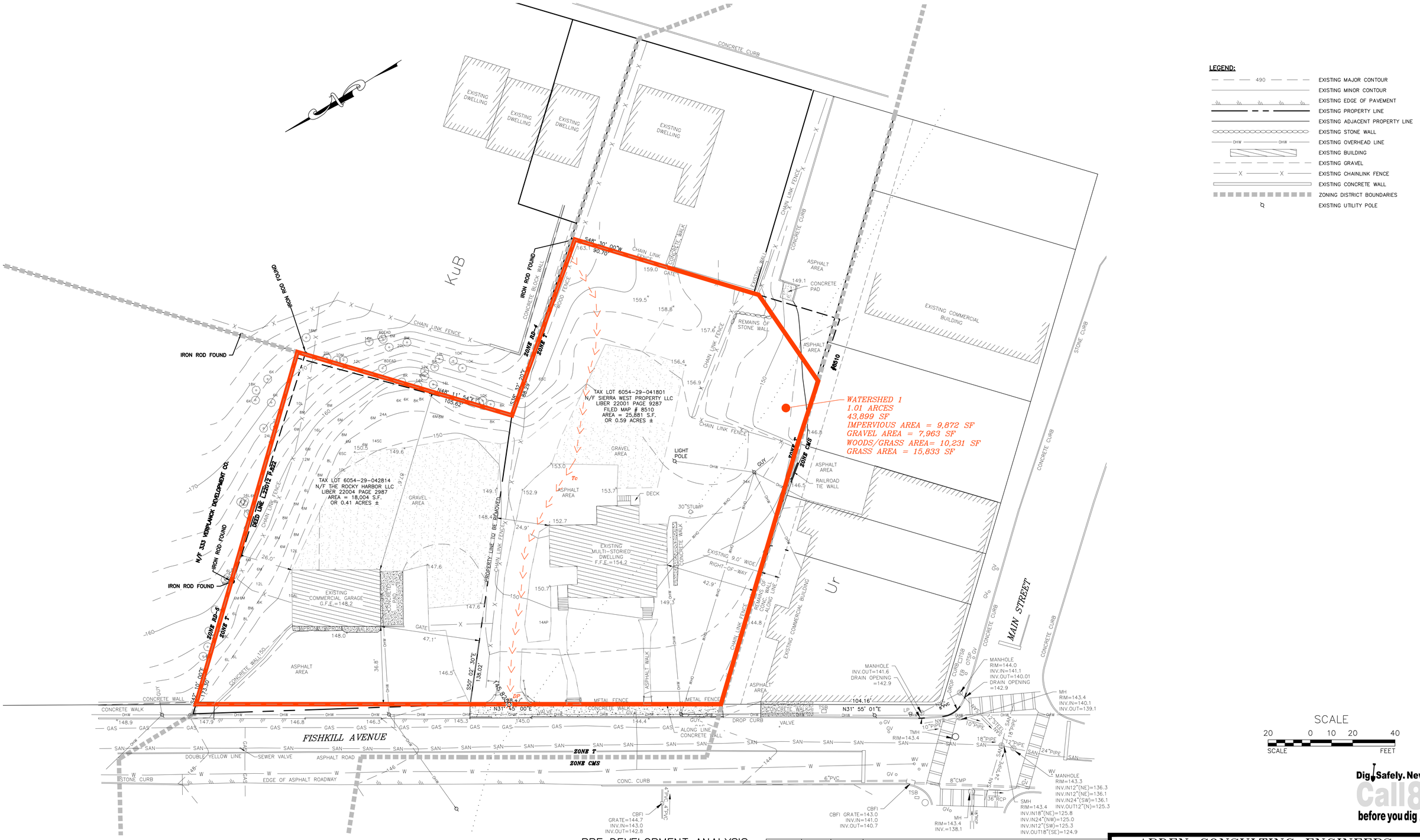
Soil Type	HG
Raynham	C
Raypol	C
Red Hook	C
Redwater	B
Remsen	D
Retsof	C
Rexford	C
Rhinebeck	D
Ricker	A
Ricker-Lyman	A
Ridgebury	C
Rifle	A
Riga	D
Rippowam	C
Riverhead	B
Rockaway	C
Romulus	D
Ross	B
Roundabout	C
Rumney	C
Runeberg	C
Ruse	D
Rushford	B
Saco	D
Salamanca	B
Salmon	B
Saprists	A/D
Saugatuck	C
Scantic	D
Scarboro	D
Schoharie	C
Schroon	B
Schuyler	B
Scio	B
Scituate	B
Scriba	C
Searsport	D
Shaker	C
Shoreham	D

Soil Type	HG
Sisk	C
Skerry	C
Sloan	B
Sodus	C
Somerset	C
St Johns	D
Staatsburg	C
Stafford	C
Steamburg	B
Stetson	B
Stissing	C
Stockbridge	C
Stockholm	C
Stowe	B
Sudbury	B
Suffield	B
Summerville	D
Sun	D
Sunapee	B
Suncook	A
Suny	D
Surplus	C
Surplus-Sisk	C
Sutton	B
Swanton	C
Swartswood	C
Swormville	C
Taconic	C
Taconic-Macomber	C
Tawas	A
Teel	B
Tioga	B
Toledo	D
Tonawanda	D
Tor	D
Torull	D
Towerville	B
Trestle	B

Soil Type	HG
Trout River	A
Troy	C
Trumbull	D
Tughill	D
Tuller	D
Tunbridge	C
Tunbridge-Adirondack	C
Tunkhannock	A
Turin	C
Tuscarora	C
Unadilla	B
Valois	B
Varick	D
Varysburg	B
Venango	C
Vergennes	C
Vly	C
Volusia	C
Waddington	A
Wainola	B
Wakeland	C
Wakeville	B
Wallace	B
Wallington	C
Wallkill	C
Walpole	C
Walton	C
Wampsville	B
Wappinger	B
Wareham	C
Warners	C
Wassaic	B
Watchaug	B
Waumbeck	B
Wayland	C/D
Weaver	C
Wegatchie	D
Wellsboro	C

Soil Type	HG
Wenonah	C
Westbury	B
Westland	C
Wethersfield	C
Wharton	C
Whately	D
Whippany	C
Whitelaw	B
Whitman	D
Wilbraham	C
Willdin	C
Willette	A
Williamson	C
Willowemoc	C
Wilmington	D
Wilpoint	D
Windsor	A
Winooski	B
Wolcottsburg	D
Wonsqueak	D
Woodbridge	C
Woodlawn	B
Woodstock	D
Woodstock-Rock Outcrop	D
Wooster	C
Woostern	C
Woostern-Bath-Valois	C
Worden	C
Worth	C
Wurtsboro	C
Wyalusing	D
Yalesville	C
Yorkshire	C

APPENDIX B



LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- ZONING DISTRICT BOUNDARIES
- EXISTING UTILITY POLE

SCALE
20 0 10 20 40
SCALE FEET

Dig Safely. New York
Call 811 before you dig

PRE DEVELOPMENT ANALYSIS

SCALE: 1"=20'

REVISION	BY	DATE	DESCRIPTION

THIS SHEET IS NOT VALID WITHOUT ALL OF THE SHEETS THAT COMPRISE THE SET

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ARDEN CONSULTING ENGINEERS, PLLC
P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782-8114 FAX: (845) 782-2946
WWW.ARDENCONSULTING.NET

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MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

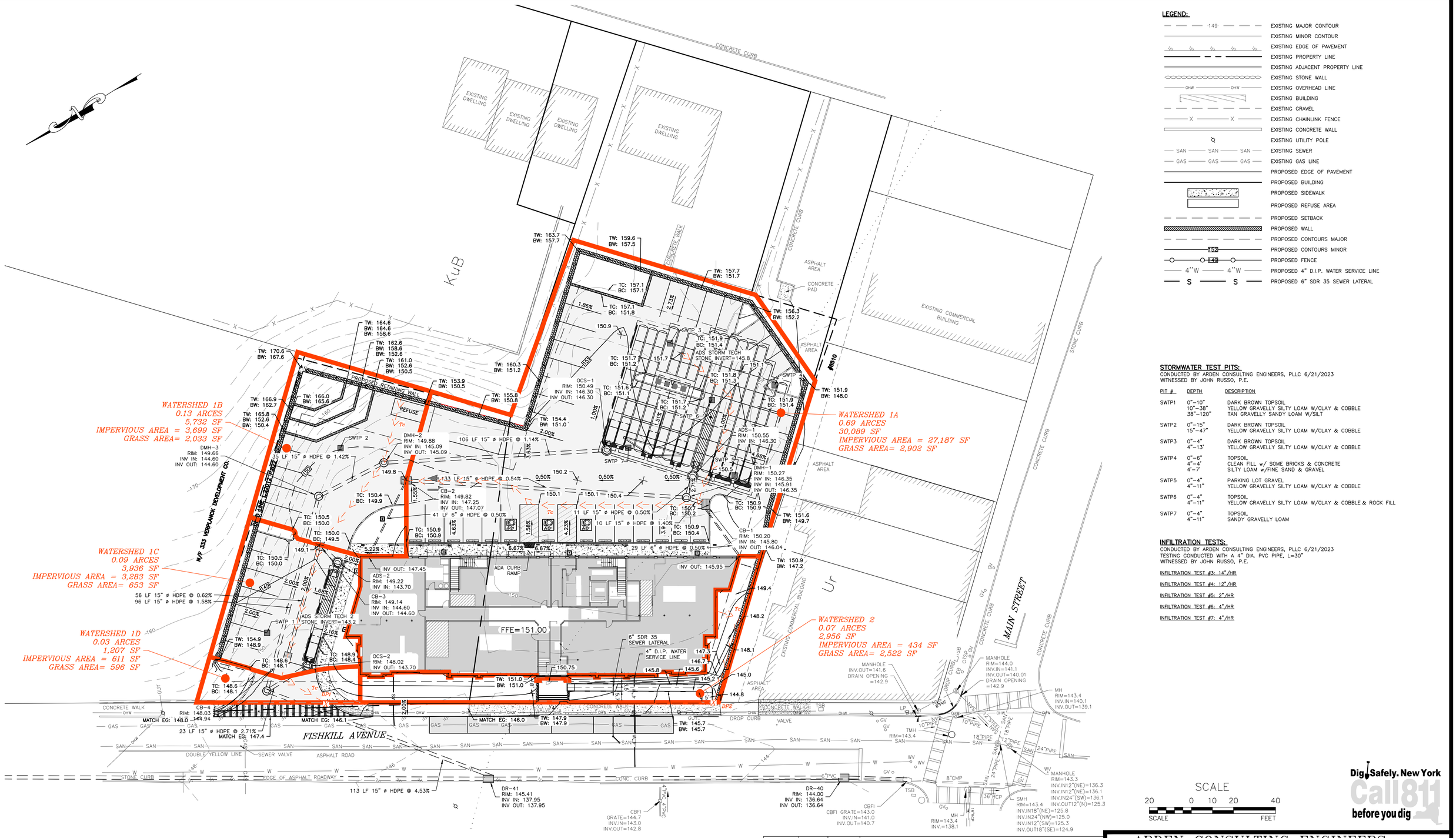
SITE PLAN & LOT MERGER FOR

152–158 FISHKILL AVENUE

CITY OF BEACON – DUTCHESS COUNTY, N.Y.

PRE DEVELOPMENT ANALYSIS

JOB#:	17-001
SCALE:	AS NOTED
DATE:	06-23-23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	01 of 02



POST DEVELOPMENT ANALYSIS

SCALE: 1"=20'

LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE
- EXISTING CONCRETE WALL
- EXISTING UTILITY POLE
- EXISTING SEWER
- EXISTING GAS LINE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED SIDEWALK
- PROPOSED REFUSE AREA
- PROPOSED SETBACK
- PROPOSED WALL
- PROPOSED CONTOURS MAJOR
- PROPOSED CONTOURS MINOR
- PROPOSED FENCE
- PROPOSED 4" D.I.P. WATER SERVICE LINE
- PROPOSED 6" SDR 35 SEWER LATERAL

STORMWATER TEST PITS:

CONDUCTED BY ARDEN CONSULTING ENGINEERS, PLLC 6/21/2023
WITNESSED BY JOHN RUSSO, P.E.

PIT #	DEPTH	DESCRIPTION
SWTP1	0"–10" 10"–38" 38"–120"	DARK BROWN TOPSOIL YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE TAN GRAVELLY SANDY LOAM W/SILT
SWTP2	0"–15" 15"–47"	DARK BROWN TOPSOIL YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
SWTP3	0"–4" 4"–13"	DARK BROWN TOPSOIL YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
SWTP4	0"–6" 4"–4' 4'–7'	TOPSOIL CLEAN FILL w/ SOME BRICKS & CONCRETE SILTY LOAM w/FINE SAND & GRAVEL
SWTP5	0"–4" 4"–11"	PARKING LOT GRAVEL YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE
SWTP6	0"–4" 4"–11"	TOPSOIL YELLOW GRAVELLY SILTY LOAM W/CLAY & COBBLE & ROCK FILL
SWTP7	0"–4" 4"–11"	TOPSOIL SANDY GRAVELLY LOAM

INFILTRATION TESTS:

CONDUCTED BY ARDEN CONSULTING ENGINEERS, PLLC 6/21/2023
TESTING CONDUCTED WITH A 4" DIA. PVC PIPE, L=30"
WITNESSED BY JOHN RUSSO, P.E.

INFILTRATION TEST #3: 14"/HR

INFILTRATION TEST #4: 12"/HR

INFILTRATION TEST #5: 2"/HR

INFILTRATION TEST #6: 4"/HR

INFILTRATION TEST #7: 4"/HR

SCALE
20 0 10 20 40
SCALE FEET

Dig Safely. New York
Call 811 before you dig

REVISION	BY	DATE	DESCRIPTION

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P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782–8114 FAX: (845) 782–2946
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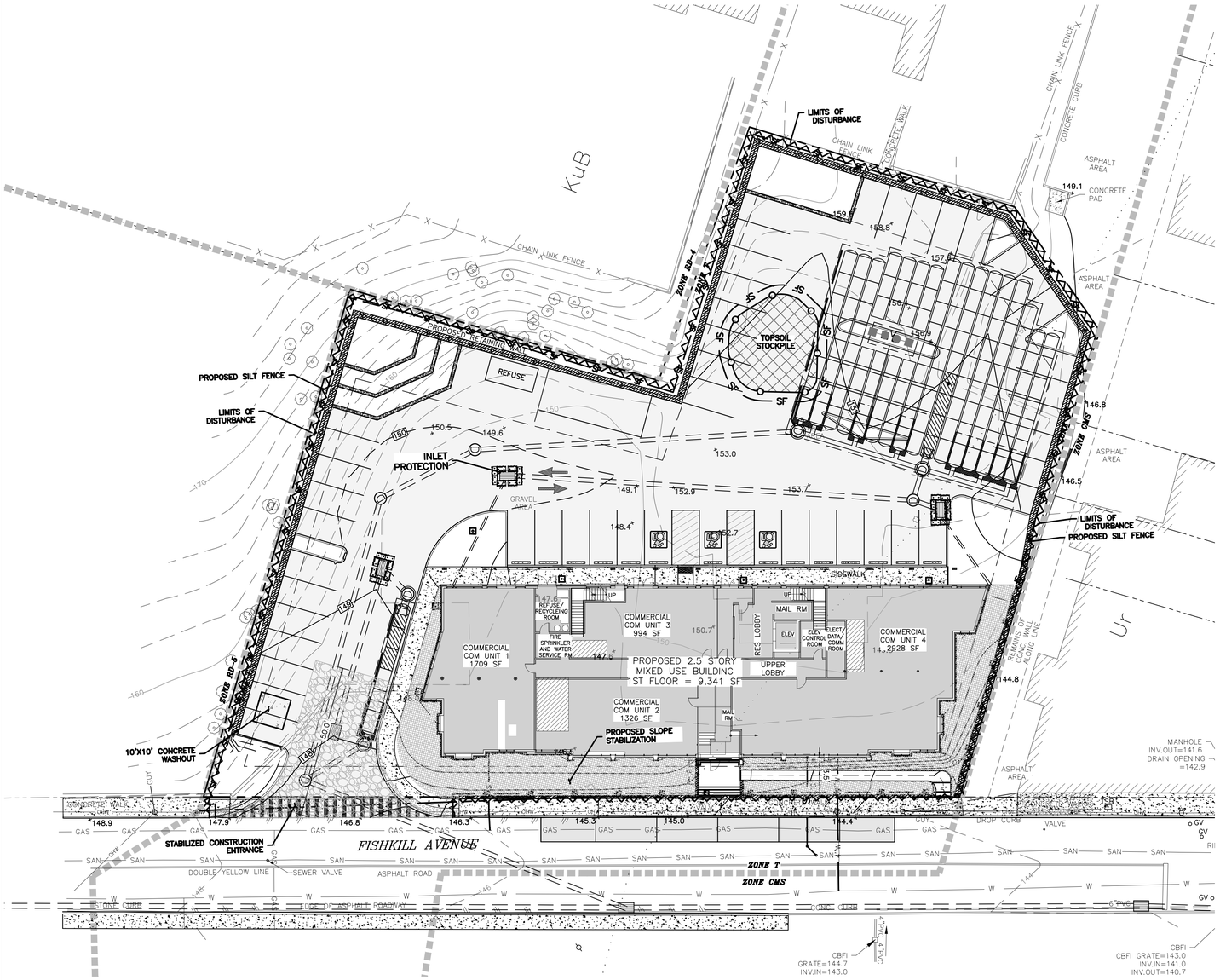
STATE OF NEW YORK · MICHAEL A. MORGANTE · 078577 · LICENSED PROFESSIONAL ENGINEER

MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR
152–158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

POST DEVELOPMENT ANALYSIS

JOB#:	17–001
SCALE:	AS NOTED
DATE:	06–23–23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	02 of 02



EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=20'

NOTE:

CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

CONSTRUCTION SPECIFICATIONS

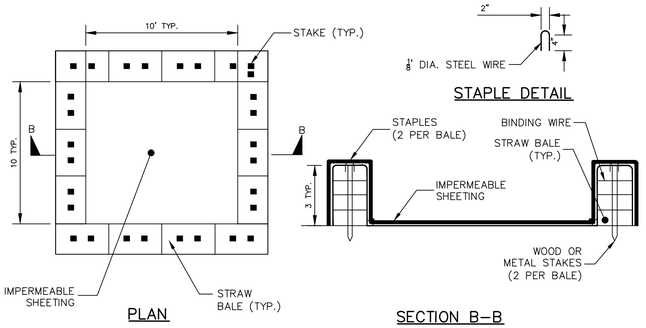
1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.

2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SCUDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.

3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER. USE 10 MIL OR THICKER UV RESISTANT. IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.

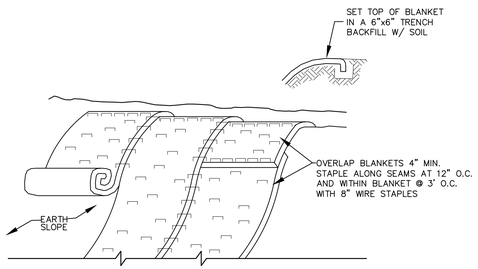
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.

5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (EG., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS. WHOLE OR BROKEN UP. FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.



CONCRETE WASHOUT AREA WITH STRAW BALES

NOT TO SCALE

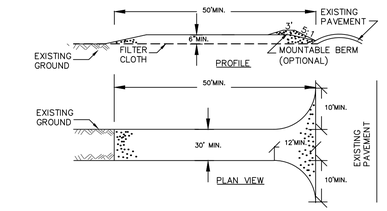


SLOPE STABILIZATION DETAIL

NOT TO SCALE

NOTES:

1. STABILIZE PREPARED EARTHEN SLOPE WITH A BIODEGRADABLE NATURAL FIBER NETTING APPROVED TYPES ARE AS FOLLOWS:
   - C350 –NORTH AMERICAN GREEN #1–800–772–2040
   - ECOCOIR 9000– EASTERN PRODUCTS, INC. #1–201–234–5050
   - ERO–MAT V125C– EROSION CONTROL TECH. #1–800–245–0551
   - ALL SLOPE RESTORATION TO GET 4" TOPSOIL
2. SEED SLOPE PRIOR TO INSTALLING EROSION CONTROL NETTING.
3. AFTER NETTING IS INSTALLED, PLANT GROUND–COVER, TREES & FORSYTHIA THROUGH SLITS CUT IN FABRIC.



STABILIZED CONSTRUCTION ENTRANCE

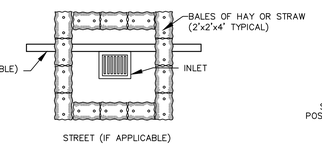
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT 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 OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. 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 A 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.

LEGEND:

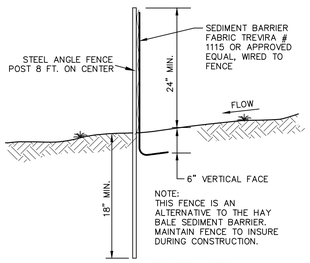
- EXISTING MAJOR CONTOUR (149)
- EXISTING MINOR CONTOUR
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING STONE WALL
- EXISTING OVERHEAD LINE (OHW)
- EXISTING BUILDING
- EXISTING GRAVEL
- EXISTING CHAINLINK FENCE (X)
- EXISTING CONCRETE WALL
- EXISTING UTILITY POLE
- PROPOSED EDGE OF PAVEMENT
- PROPOSED BUILDING
- PROPOSED SIDEWALK
- PROPOSED REFUSE AREA
- PROPOSED SETBACK
- PROPOSED WALL
- PROPOSED CONTOURS MAJOR (152)
- PROPOSED CONTOURS MINOR (149)
- PROPOSED FENCE
- PROPOSED 4" D.I.P. WATER SERVICE LINE (4"W)
- PROPOSED 6" SDR 35 SEWER LATERAL
- PROPOSED LIGHTING
- PROPOSED SILT FENCE (SF)
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED SLOPE STABILIZATION
- STABILIZED CONSTRUCTION ENTRANCE
- BALES OF HAY OR STRAW (2'x2'x4')



NOTE:
INSPECTION OF BALES SHALL BE FREQUENT AND REPAIR AND REPLACEMENT SHALL BE MADE PROMPTLY AS NECESSARY.

INLET PROTECTION DETAIL

NOT TO SCALE



NOTE:
THIS FENCE IS AN ALTERNATIVE TO THE HAY BALE SEDIMENT BARRIER. MAINTAIN FENCE TO INSURE DURING CONSTRUCTION.

SILT FENCE

NOT TO SCALE

SLOPE STABLIZATION, SEEDING METHOD & MULCHING

SLOPES OR 4:1 OR GREATER (HORIZONTAL : VERTICAL)

SLOPES SHALL BE HYDROSEEDED WITH THE MIXTURES AND RATES INDICATED IN THE PERMANENT SEEDING MIXTURE SCHEDULE. STRAW OR HAY MULCH SHALL BE APPLIED AT A RATE OF 2,000 LBS./ACRE. STRAW OR HAY MULCH SHALL BE ANCHORED WITH BioD–Mesh60 NETTING AS MANUFACTURED BY RoLANKA INTERNATIONAL OR APPROVED EQUIVALENT. NETTING TO BE INSTALLED PER MANUFACTURER SPECIFICATIONS.

GENTLE SLOPE AND FLAT AREAS

AREA SHALL BE SEEDED BY HYDROSEEDING OR BRODCASTING WITH THE MIXTURES AND RATES INDICATED ON THE PERMANENT SEEDING MIXTURE SCHEDULE. HYDROSEEDED AREAS SHALL BE MULCHED WITH A WOOD FIBER MULCH APPLIED AT A RATE OF 500 LBS./ACRE. BROADCAST AREAS SHAL BE MULCHED WITH HAY OR STRAW AT A RATE OF 2,000 LBS./ACRE. AREAS SEEDED BY BROADCASTING SHALL BE LIGHTLY RAKED AND PACED PRIOR TO PLACING MULCH.

AREAS REMAINING DISTURBED FOR 14 DAYS OR MORE SHALL BE STABLIZED AS FOLLOWS:

SCARIFY SOILS IF COMPACTED, LIME TO pH OF 6.0 IF REQUIRED, FERTILIZE WITH 600 LBS./ACRE. 5–10–10 FERTILIZER IF REQUIRED. SEED WITH SPECIES AND RATE SHOWN BELOW. MULCH WITH HAY OR STRAW AT A RATE OF 2,000 LBS./ACRE. ANCHOR MULCH WITH NETTING OF WOOD FIBER OR JUTE IF STEEP SLOPE OR HIGH POTENTIAL FOR EROSION.

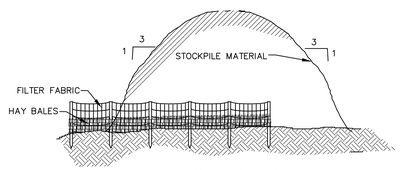
SPECIES	APPLICATION RATE
RYEGRASS (ANNUAL OR PERENNIAL) (USE WINTER RYE IF SEEDING IN OCT./NOV.)	30 LBS./ACRE (0.7 LBS./1,000 SF)

CONSTRUCTION NOTES:

1. ALL WETLAND BOUNDARIES AND LIMITS OF DISTURBANCE SHALL BE CLEARLY MARKED BY A LICENSED LAND SURVEYOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

LIMITS OF DISTURBANCE:

LIMITS OF DISTURBANCE= 0.95 ACRES
A NYSDEC SWPPP IS NOT REQUIRED SINCE LESS THAN 1 ACRE OF SOIL DISTURBANCE IS PROPOSED.



SEE DETAILS FOR INSTALLATION OF FILTER FABRIC & HAY BALES

TYPICAL STOCKPILE DETAIL

NOT TO SCALE

SCALE
20 0 10 20 40
SCALE FEET

Dig Safely. New York Call811 before you dig

REVISION	BY	DATE	DESCRIPTION
1.	MM	06–21–23	PER PB COMMENTS

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P.O. BOX 340 MONROE, N.Y.
TEL: (845) 782–8114 FAX: (845) 782–2946
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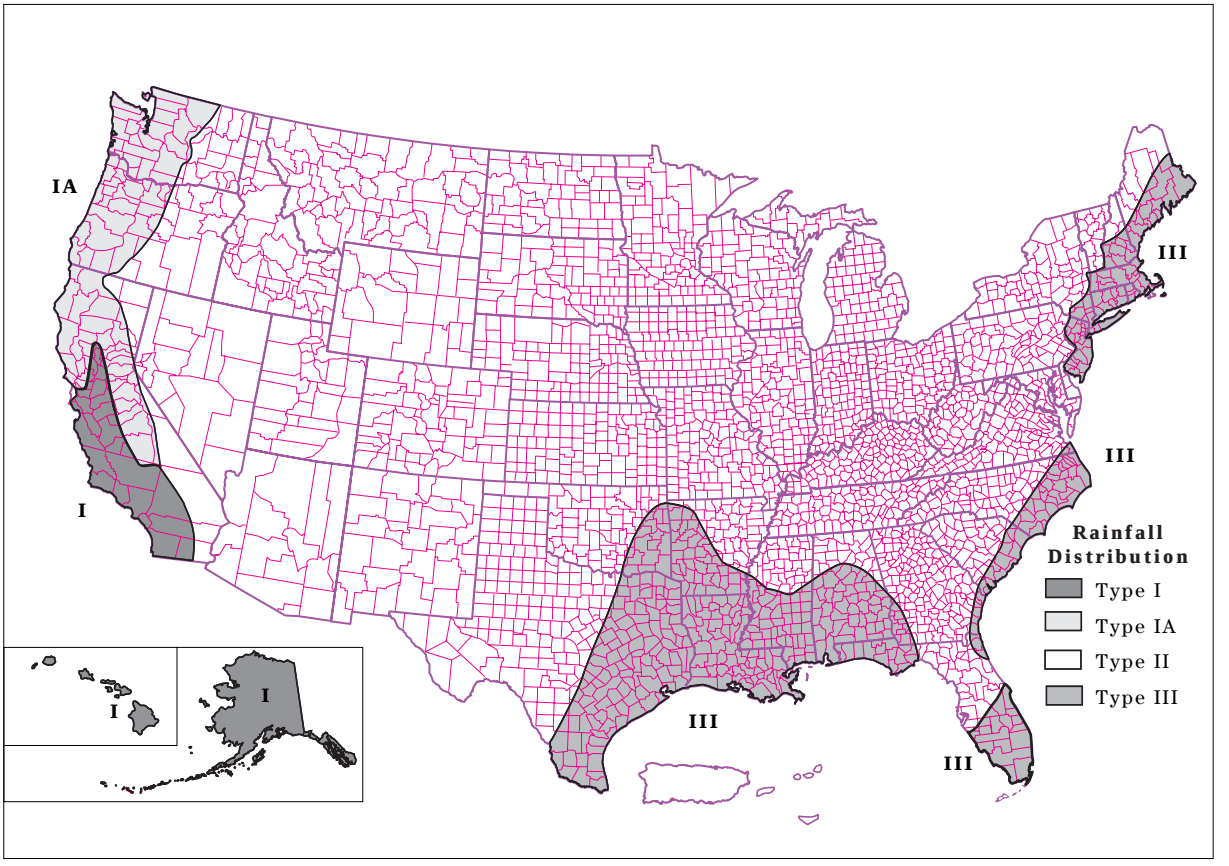
MICHAEL A. MORGANTE, P.E.
LIC. NO. 78577

SITE PLAN & LOT MERGER FOR
152–158 FISHKILL AVENUE
CITY OF BEACON – DUTCHESS COUNTY, N.Y.

EROSION AND SEDIMENT CONTROL PLAN

JOB#:	17–001
SCALE:	AS NOTED
DATE:	06–23–23
DRAWN:	MM
CHECKED:	MM
SHEET NO.	11 of 17

Figure B-2 Approximate geographic boundaries for NRCS (SCS) rainfall distributions



Rainfall data sources

This section lists the most current 24-hour rainfall data published by the National Weather Service (NWS) for various parts of the country. Because NWS Technical Paper 40 (TP-40) is out of print, the 24-hour rainfall maps for areas east of the 105th meridian are included here as figures B-3 through B-8. For the area generally west of the 105th meridian, TP-40 has been superseded by NOAA Atlas 2, the Precipitation-Frequency Atlas of the Western United States, published by the National Ocean and Atmospheric Administration.

East of 105th meridian

Hershfield, D.M. 1961. Rainfall frequency atlas of the United States for durations from 30 minutes to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 40. Washington, DC. 155 p.

West of 105th meridian

Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-frequency atlas of the Western United States. Vol. I Montana; Vol. II, Wyoming; Vol III, Colorado; Vol. IV, New Mexico; Vol V, Idaho; Vol. VI, Utah; Vol. VII, Nevada; Vol. VIII, Arizona; Vol. IX, Washington; Vol. X, Oregon; Vol. XI, California. U.S. Dept. of Commerce, National Weather Service, NOAA Atlas 2. Silver Spring, MD.

Alaska

Miller, John F. 1963. Probable maximum precipitation and rainfall-frequency data for Alaska for areas to 400 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. of Commerce, Weather Bur. Tech. Pap. No. 47. Washington, DC. 69 p.

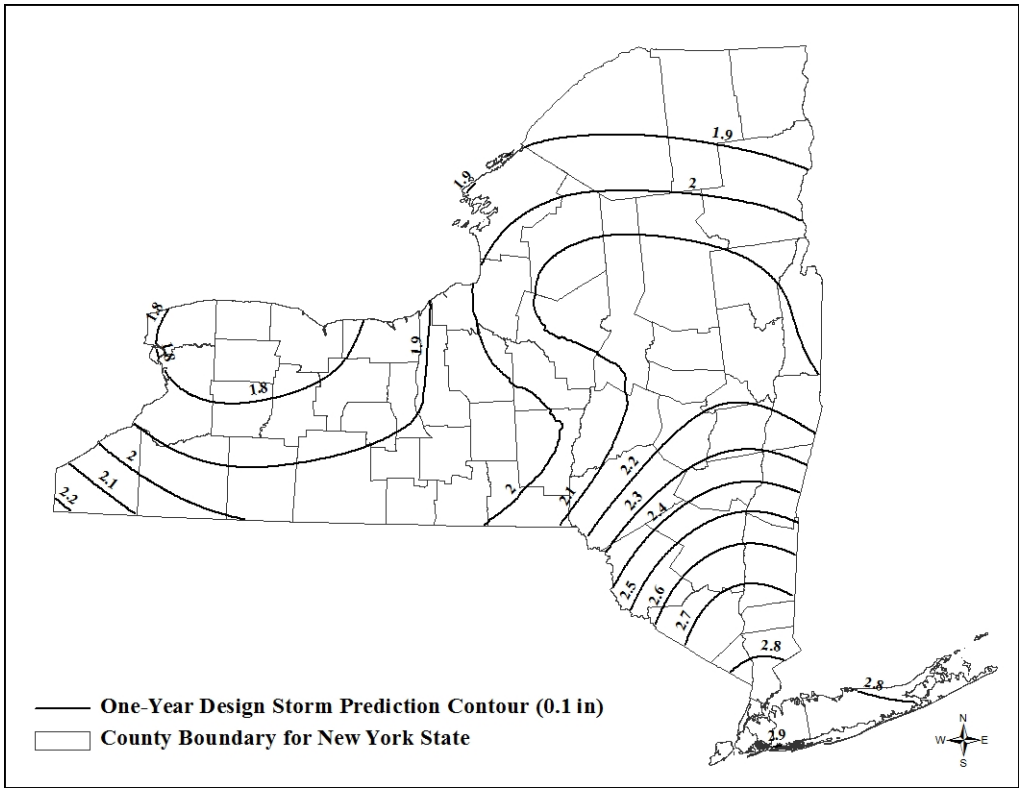
Hawaii

Weather Bureau. 1962. Rainfall-frequency atlas of the Hawaiian Islands for areas to 200 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 43. Washington, DC. 60 p.

Puerto Rico and Virgin Islands

Weather Bureau. 1961. Generalized estimates of probable maximum precipitation and rainfall-frequency data for Puerto Rico and Virgin Islands for areas to 400 square miles, durations to 24 hours, and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 42. Washington, DC. 94 P.

Figure 4.2: One-Year Design Storm in New York State (NYSDEC, 2013)



Section 4.5 Overbank Flood Control Criteria (Q_p)

The primary purpose of the overbank flood control sizing criterion is to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development (i.e., flow events that exceed the bankfull capacity of the channel, and therefore must spill over into the floodplain).

Overbank control requires storage to attenuate the post development 10-year, 24-hour peak discharge rate (Q_p) to predevelopment rates.

The overbank flood control requirement (Q_p) does not apply in certain conditions, including:

- The site discharges directly tidal waters or fifth order (fifth downstream) or larger streams. Refer to Section 4.3 for instructions.
- A downstream analysis reveals that overbank control is not needed (see section 4.10).

Basis for Design of Overbank Flood Control

When addressing the overbank flooding design criteria, the following represent the minimum basis for design:

- TR-55 and TR-20 (or approved equivalent) will be used to determine peak discharge rates.

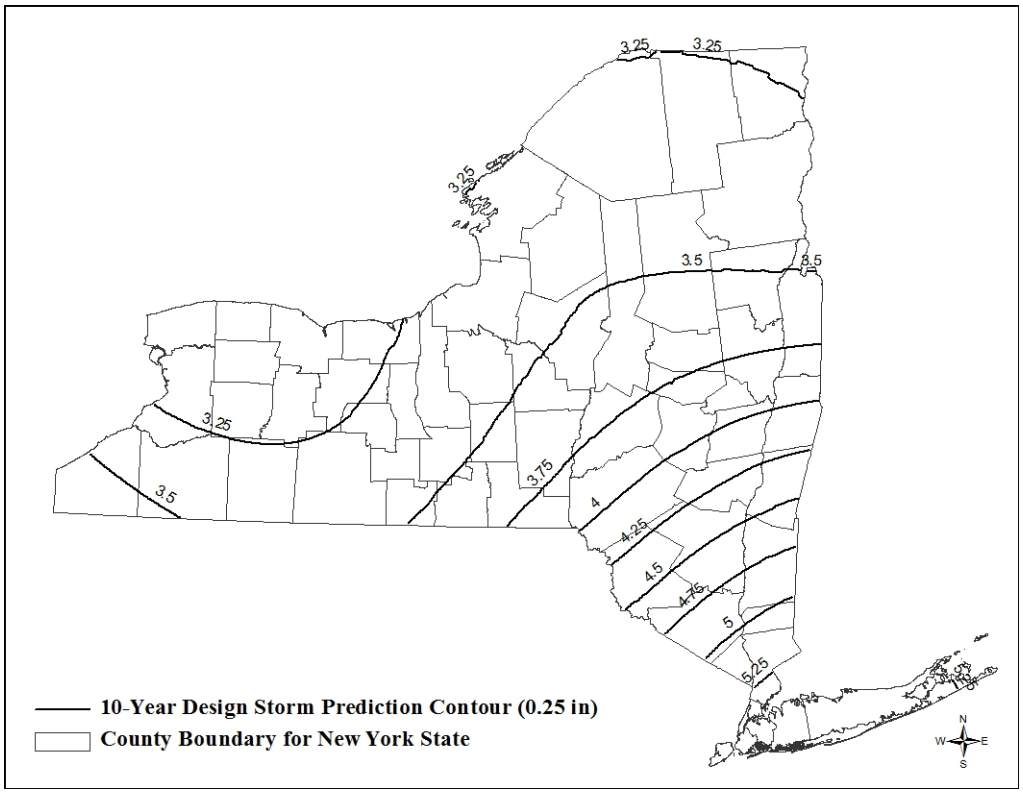
- When the predevelopment land use is agriculture, the curve number for the pre-developed condition shall be “taken as meadow”.

- Off-site areas should be modeled as "present condition" for the 10-year storm event.

- Figure 4.3 indicates the depth of rainfall (24 hour) associated with the 10-year storm event throughout the State of New York.

- The length of overland flow used in t_c calculations is limited to no more than 150 feet for predevelopment conditions and 100 feet for post development conditions. On areas of extremely flat terrain (<1% average slope), this maximum distance is extended to 250 feet for predevelopment conditions and 150 feet for post development conditions.

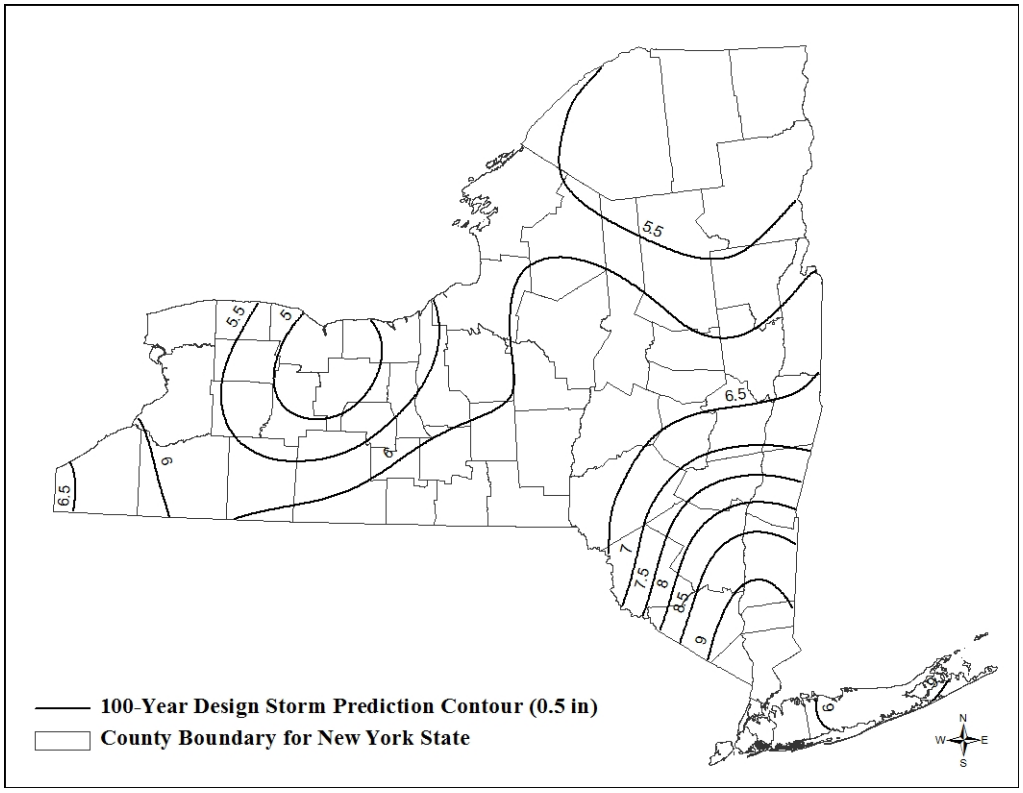
Figure 4.3: Ten-Year Design Storm in New York State (NYSDEC, 2013)



- When determining the storage required to reduce 100-year flood peaks, model off-site areas under current conditions.

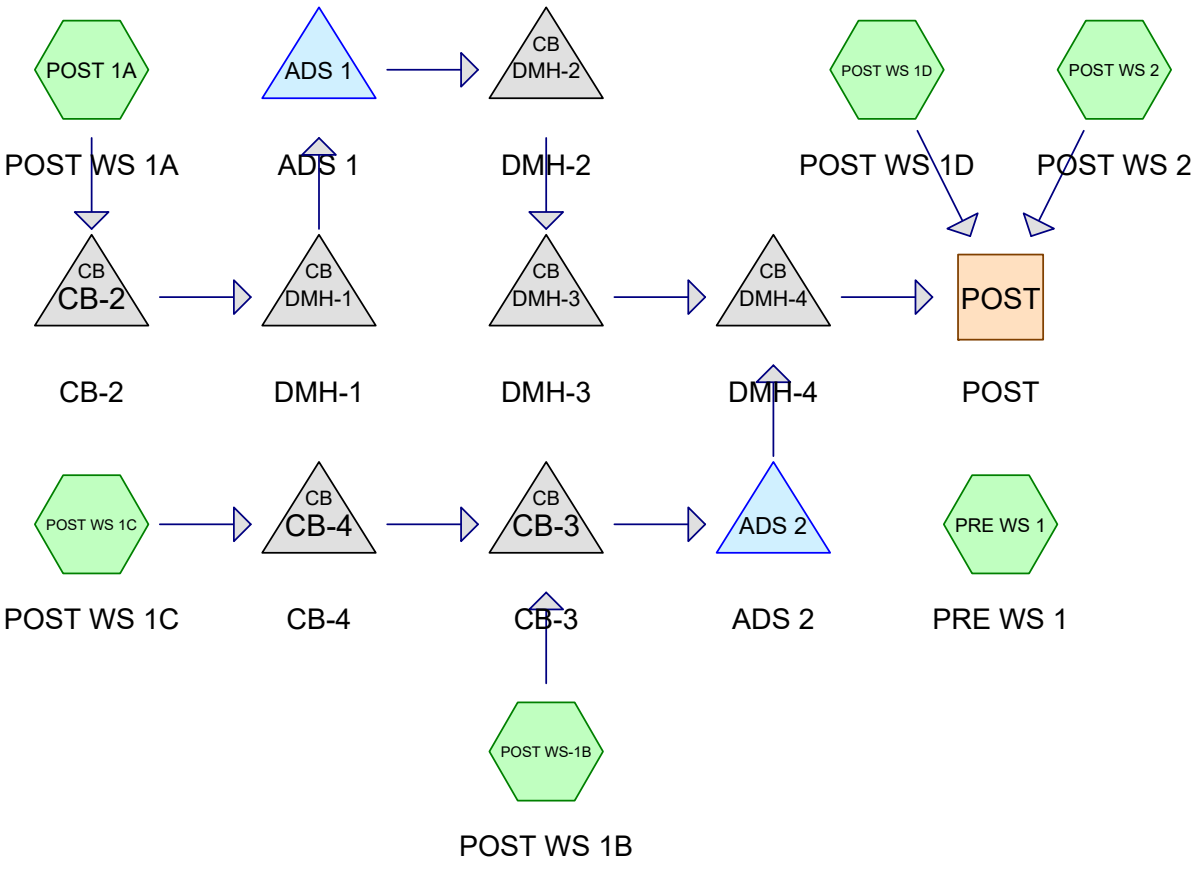
- When determining storage required to safely pass the 100-year flood, model off-site areas under ultimate conditions.

Figure 4.4: One Hundred-Year Design Storm in New York State (NYSDEC, 2013)



Section 4.7 Alternative Method

New development causes changes to runoff volume, flow rates, timing of runoff and, most importantly, habitat destruction and degradation of the physical and chemical quality of the receiving waterbody. Traditionally, event based design storms are used for evaluation of hydrology and sizing of stormwater management practices. With an increasing need for assessment of the long term effects of development and maintenance of pre-development hydrology, the necessity of continuous simulation modeling as an effective tool for analysis and evaluation of flow-duration, downstream quality, quantity, biological, and hydro-habitat sustainability has been acknowledged.



Subcat Reach Pond Link

Routing Diagram for BEACON LIGHT PRE & POST 23-06-25 A2ZCE
Prepared by Arden Consulting Engineers PLLC, Printed 6/26/2023
HydroCAD® 10.20-2g s/n 04164 © 2022 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.363	49	50-75% Grass cover, Fair, HSG A (PRE WS 1)
0.200	39	>75% Grass cover, Good, HSG A (POST 1A, POST WS 1C, POST WS 1D, POST WS 2, POST WS-1B)
0.183	96	Gravel surface, HSG A (PRE WS 1)
0.808	98	Paved parking, HSG A (POST 1A, POST WS 1C, POST WS 1D, POST WS 2, POST WS-1B)
0.227	98	Unconnected roofs, HSG A (PRE WS 1)
0.235	32	Woods/grass comb., Good, HSG A (PRE WS 1)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
2.016	HSG A	POST 1A, POST WS 1C, POST WS 1D, POST WS 2, POST WS-1B, PRE WS 1
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.363	0.000	0.000	0.000	0.000	0.363	50-75% Grass cover, Fair	PRE WS 1
0.200	0.000	0.000	0.000	0.000	0.200	>75% Grass cover, Good	POST 1A, POST WS 1C, POST WS 1D, POST WS 2, POST WS-1B
0.183	0.000	0.000	0.000	0.000	0.183	Gravel surface	PRE WS 1
0.808	0.000	0.000	0.000	0.000	0.808	Paved parking	POST 1A, POST WS 1C, POST WS 1D, POST WS 2, POST WS-1B
0.227	0.000	0.000	0.000	0.000	0.227	Unconnected roofs	PRE WS 1
0.235	0.000	0.000	0.000	0.000	0.235	Woods/grass comb., Good	PRE WS 1

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	ADS 1	146.30	145.09	105.0	0.0115	0.013	0.0	15.0	0.0
2	ADS 2	143.70	137.95	85.0	0.0676	0.013	0.0	15.0	0.0
3	CB-2	147.07	145.91	133.0	0.0087	0.012	0.0	15.0	0.0
4	CB-3	144.60	143.70	12.0	0.0750	0.012	0.0	15.0	0.0
5	CB-4	144.94	144.60	69.0	0.0049	0.012	0.0	15.0	0.0
6	DMH-1	145.91	145.80	11.0	0.0100	0.012	0.0	15.0	0.0
7	DMH-2	145.09	144.60	34.8	0.0141	0.012	0.0	15.0	0.0
8	DMH-3	144.60	143.09	96.0	0.0157	0.012	0.0	15.0	0.0
9	DMH-4	143.09	137.95	113.0	0.0455	0.012	0.0	18.0	0.0

Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1A: POST WS 1A Runoff Area=30,089 sf 90.36% Impervious Runoff Depth>1.88"
Flow Length=229' Tc=6.0 min CN=92 Runoff=1.50 cfs 0.108 af

Subcatchment POST WS 1C: POST WS 1C Runoff Area=3,936 sf 83.41% Impervious Runoff Depth>1.55"
Flow Length=69' Slope=0.0200 '/' Tc=6.0 min CN=88 Runoff=0.16 cfs 0.012 af

Subcatchment POST WS 1D: POST WS 1D Runoff Area=1,207 sf 50.62% Impervious Runoff Depth>0.51"
Flow Length=16' Slope=0.0225 '/' Tc=6.0 min CN=69 Runoff=0.01 cfs 0.001 af

Subcatchment POST WS 2: POST WS 2 Runoff Area=2,956 sf 14.68% Impervious Runoff Depth>0.02"
Flow Length=52' Slope=0.1000 '/' Tc=6.0 min CN=48 Runoff=0.00 cfs 0.000 af

Subcatchment POST WS-1B: POST WS 1B Runoff Area=5,732 sf 64.53% Impervious Runoff Depth>0.87"
Flow Length=55' Slope=0.0127 '/' Tc=6.0 min CN=77 Runoff=0.13 cfs 0.010 af

Subcatchment PRE WS 1: PRE WS 1 Runoff Area=43,899 sf 22.49% Impervious Runoff Depth>0.23"
Flow Length=307' Tc=6.0 min UI Adjusted CN=60 Runoff=0.10 cfs 0.019 af

Reach POST: POST Inflow=0.09 cfs 0.003 af
Outflow=0.09 cfs 0.003 af

Pond ADS 1: ADS 1 Peak Elev=146.41' Storage=1,379 cf Inflow=1.50 cfs 0.108 af
Discarded=0.24 cfs 0.108 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.108 af

Pond ADS 2: ADS 2 Peak Elev=144.98' Storage=318 cf Inflow=0.29 cfs 0.021 af
Discarded=0.02 cfs 0.019 af Primary=0.08 cfs 0.002 af Outflow=0.10 cfs 0.021 af

Pond CB-2: CB-2 Peak Elev=147.68' Inflow=1.50 cfs 0.108 af
15.0" Round Culvert n=0.012 L=133.0' S=0.0087 '/' Outflow=1.50 cfs 0.108 af

Pond CB-3: CB-3 Peak Elev=144.99' Inflow=0.29 cfs 0.021 af
15.0" Round Culvert n=0.012 L=12.0' S=0.0750 '/' Outflow=0.29 cfs 0.021 af

Pond CB-4: CB-4 Peak Elev=145.16' Inflow=0.16 cfs 0.012 af
15.0" Round Culvert n=0.012 L=69.0' S=0.0049 '/' Outflow=0.16 cfs 0.012 af

Pond DMH-1: DMH-1 Peak Elev=146.59' Inflow=1.50 cfs 0.108 af
15.0" Round Culvert n=0.012 L=11.0' S=0.0100 '/' Outflow=1.50 cfs 0.108 af

Pond DMH-2: DMH-2 Peak Elev=145.09' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=34.8' S=0.0141 '/' Outflow=0.00 cfs 0.000 af

Pond DMH-3: DMH-3 Peak Elev=144.60' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=96.0' S=0.0157 '/' Outflow=0.00 cfs 0.000 af

Pond DMH-4: DMH-4 Peak Elev=143.21' Inflow=0.08 cfs 0.002 af
18.0" Round Culvert n=0.012 L=113.0' S=0.0455 '/' Outflow=0.08 cfs 0.002 af

Summary for Subcatchment POST 1A: POST WS 1A

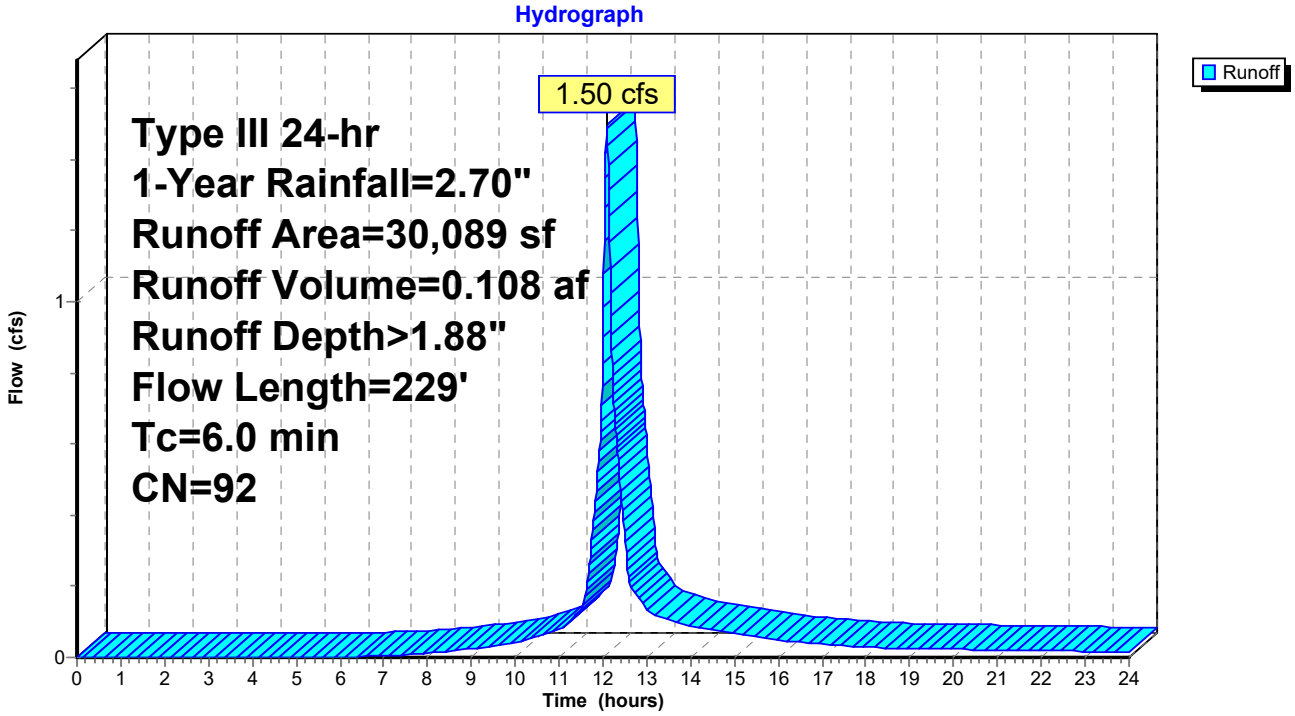
Runoff = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af, Depth> 1.88"
Routed to Pond CB-2 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
27,187	98	Paved parking, HSG A
2,902	39	>75% Grass cover, Good, HSG A
30,089	92	Weighted Average
2,902		9.64% Pervious Area
27,187		90.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.01		**Sheet Flow, Parking lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
1.5	129	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	229	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST 1A: POST WS 1A



Summary for Subcatchment POST WS 1C: POST WS 1C

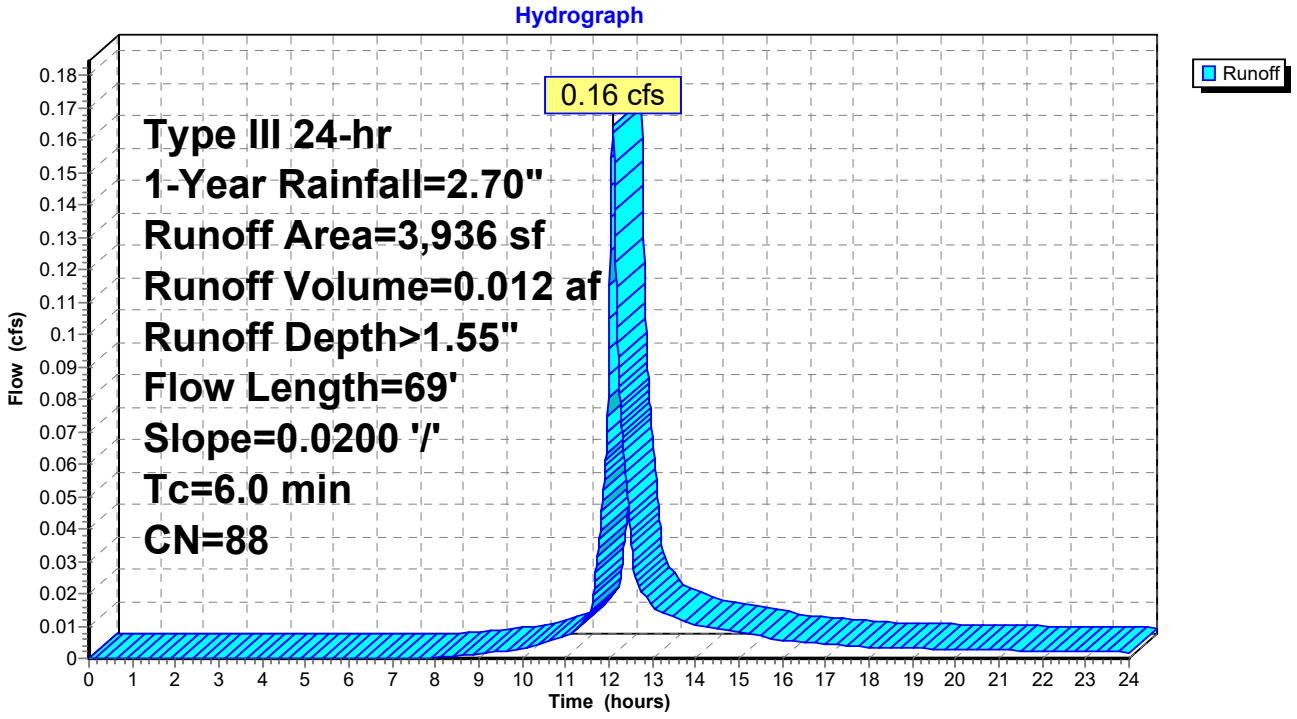
Runoff = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 1.55"
Routed to Pond CB-4 : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
3,283	98	Paved parking, HSG A
653	39	>75% Grass cover, Good, HSG A
3,936	88	Weighted Average
653		16.59% Pervious Area
3,283		83.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	69	0.0200	1.24		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	69	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1C: POST WS 1C



Summary for Subcatchment POST WS 1D: POST WS 1D

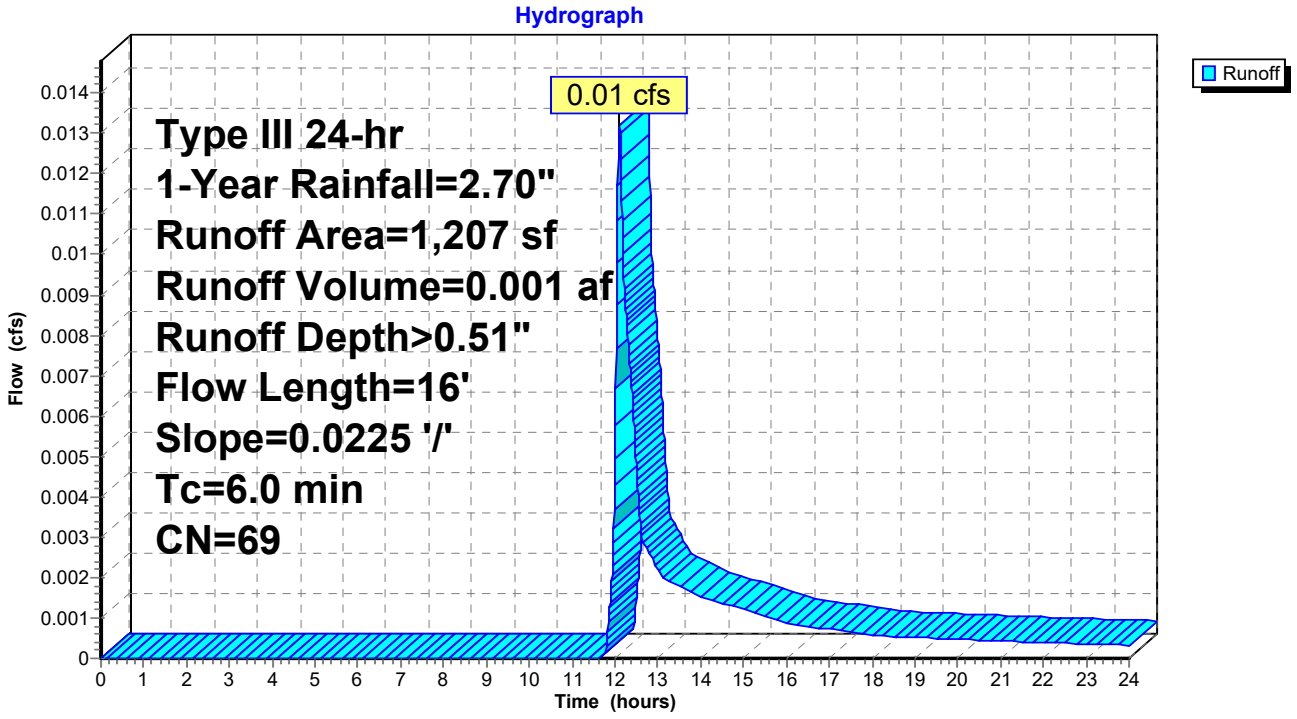
Runoff = 0.01 cfs @ 12.11 hrs, Volume= 0.001 af, Depth> 0.51"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
611	98	Paved parking, HSG A
596	39	>75% Grass cover, Good, HSG A
1,207	69	Weighted Average
596		49.38% Pervious Area
611		50.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0225	0.97		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	16	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1D: POST WS 1D



Summary for Subcatchment POST WS 2: POST WS 2

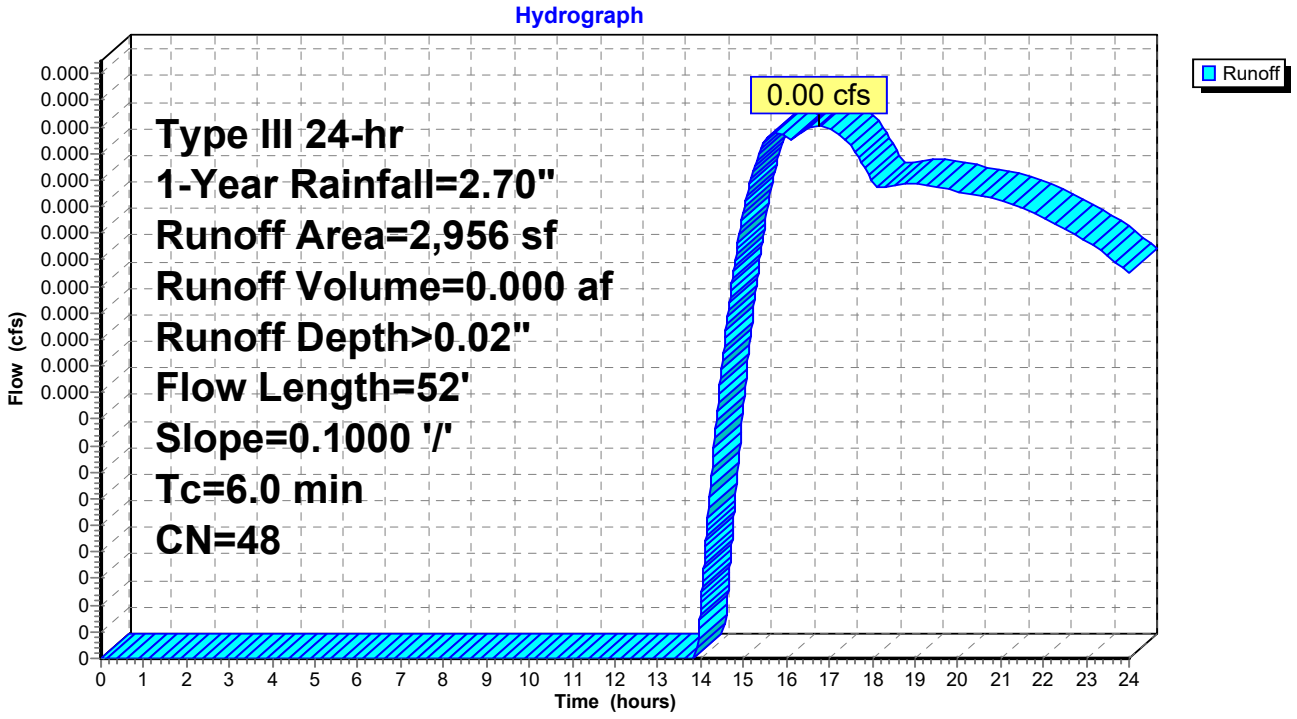
Runoff = 0.00 cfs @ 16.74 hrs, Volume= 0.000 af, Depth> 0.02"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
434	98	Paved parking, HSG A
2,522	39	>75% Grass cover, Good, HSG A
2,956	48	Weighted Average
2,522		85.32% Pervious Area
434		14.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	52	0.1000	0.19		**Sheet Flow, Sheet Flow to Fishkill Ave.** Grass: Dense n= 0.240 P2= 3.00"
4.6	52	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 2: POST WS 2



Summary for Subcatchment POST WS-1B: POST WS 1B

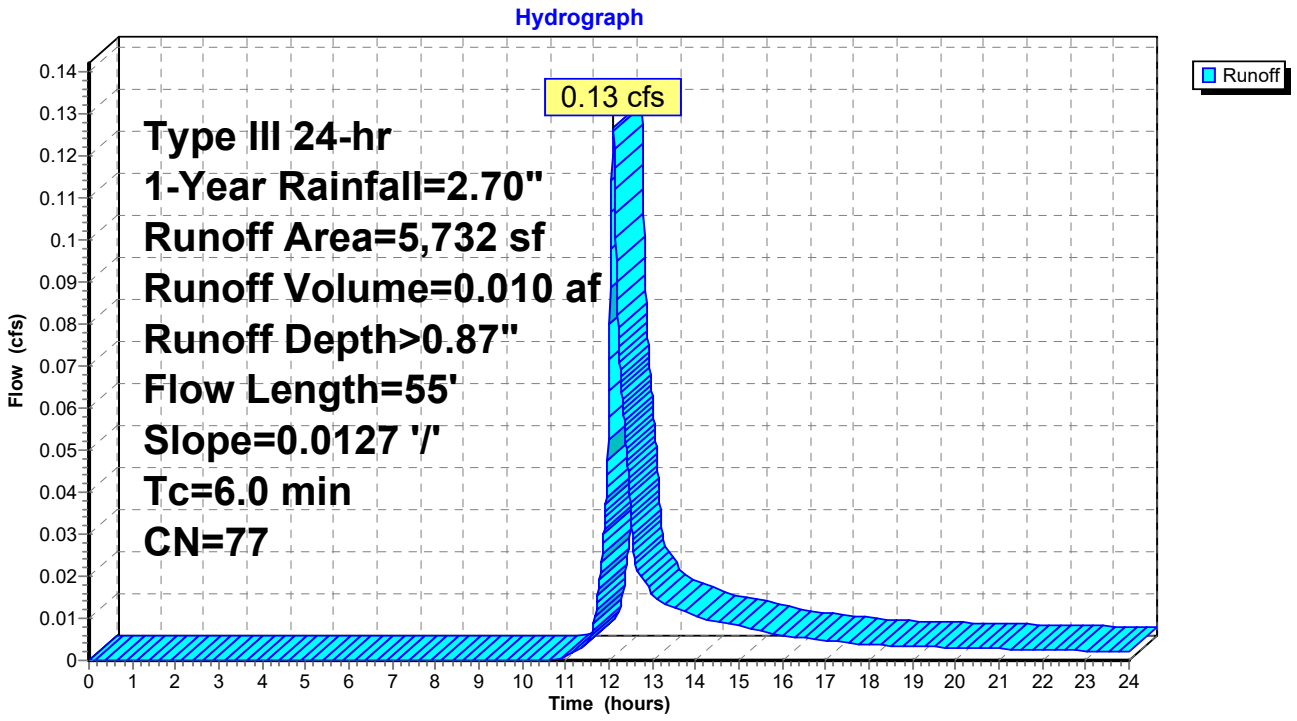
Runoff = 0.13 cfs @ 12.10 hrs, Volume= 0.010 af, Depth> 0.87"
Routed to Pond CB-3 : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Description
3,699	98	Paved parking, HSG A
2,033	39	>75% Grass cover, Good, HSG A
5,732	77	Weighted Average
2,033		35.47% Pervious Area
3,699		64.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	55	0.0127	0.99		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	55	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS-1B: POST WS 1B



Summary for Subcatchment PRE WS 1: PRE WS 1

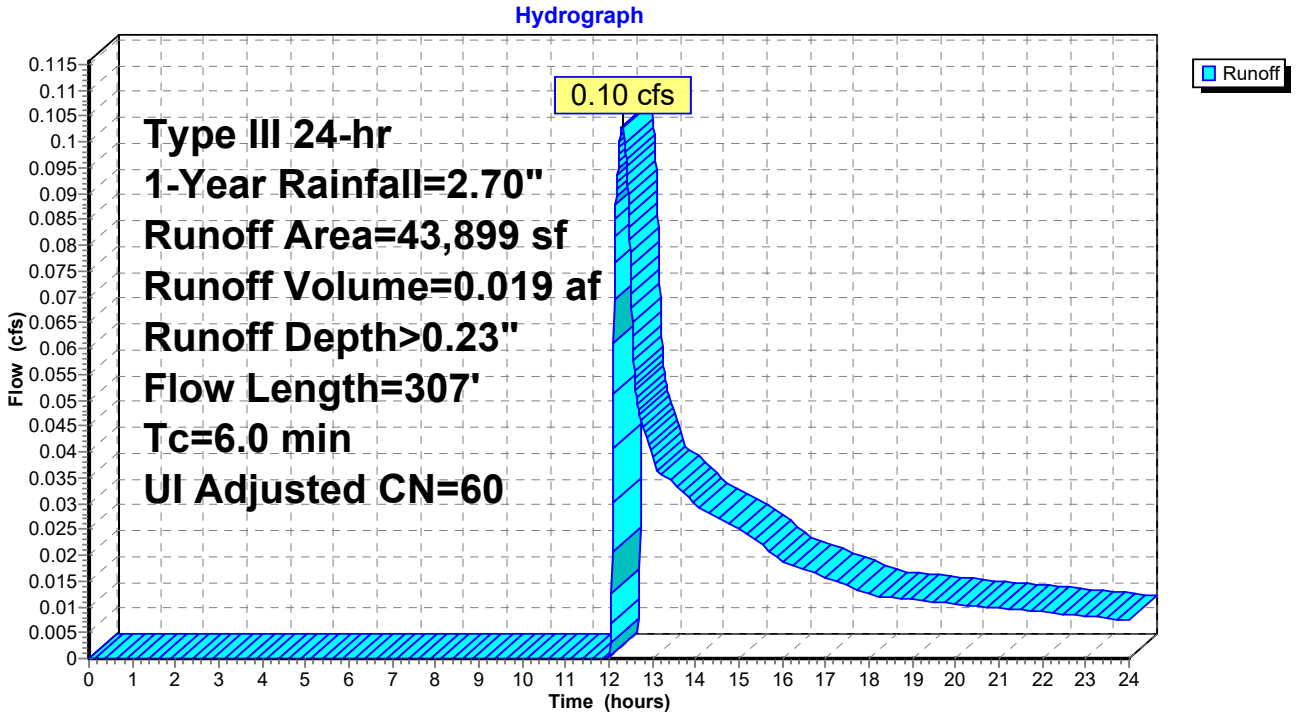
Runoff = 0.10 cfs @ 12.31 hrs, Volume= 0.019 af, Depth> 0.23"
Routed to nonexistent node PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-Year Rainfall=2.70"

Area (sf)	CN	Adj	Description
9,872	98		Unconnected roofs, HSG A
7,963	96		Gravel surface, HSG A
15,833	49		50-75% Grass cover, Fair, HSG A
10,231	32		Woods/grass comb., Good, HSG A
43,899	65	60	Weighted Average, UI Adjusted
34,027			77.51% Pervious Area
9,872			22.49% Impervious Area
9,872			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	67	0.1480	0.34		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.00"
0.5	120	0.0620	4.01		**Shallow Concentrated Flow, Shallow Flow** Unpaved Kv= 16.1 fps
0.4	120	0.0600	4.97		**Shallow Concentrated Flow, Driveway** Paved Kv= 20.3 fps
4.2	307	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE WS 1: PRE WS 1

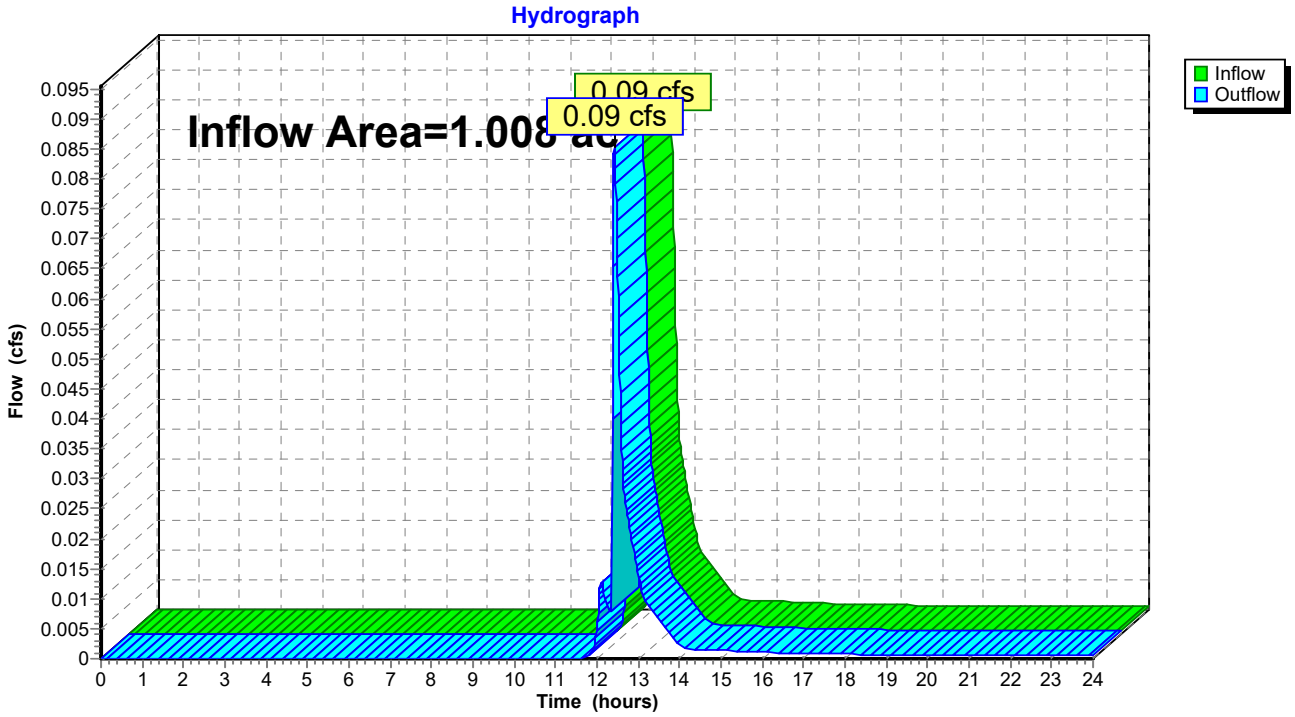


Summary for Reach POST: POST

Inflow Area = 1.008 ac, 80.18% Impervious, Inflow Depth > 0.04" for 1-Year event
Inflow = 0.09 cfs @ 12.42 hrs, Volume= 0.003 af
Outflow = 0.09 cfs @ 12.42 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach POST: POST



Summary for Pond ADS 1: ADS 1

Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 1.88" for 1-Year event
Inflow = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af
Outflow = 0.24 cfs @ 12.57 hrs, Volume= 0.108 af, Atten= 84%, Lag= 29.0 min
Discarded = 0.24 cfs @ 12.57 hrs, Volume= 0.108 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-2 : DMH-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 146.41' @ 12.57 hrs Surf.Area= 4,695 sf Storage= 1,379 cf
Flood Elev= 148.80' Surf.Area= 4,695 sf Storage= 9,162 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 36.6 min (840.0 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.80'	4,220 cf	**77.50'W x 60.58'L x 3.50'H Field A** 16,431 cf Overall - 5,880 cf Embedded = 10,551 cf x 40.0% Voids
#2A	146.30'	5,880 cf	**ADS_StormTech SC-740 +Cap** x 128 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 128 Chambers in 16 Rows
		10,101 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	146.30'	**15.0" Round Culvert** L= 105.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 146.30' / 145.09' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	148.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	147.80'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#4	Discarded	145.80'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.24 cfs @ 12.57 hrs HW=146.41' (Free Discharge)
└**4=Exfiltration** (Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.80' TW=145.09' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  ├**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond ADS 1: ADS 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

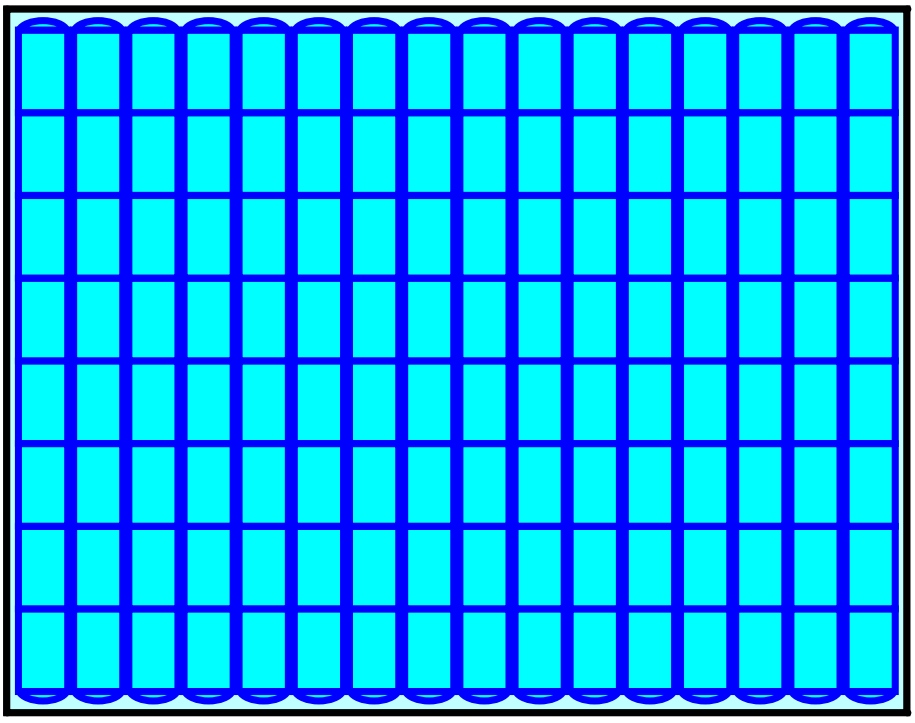
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

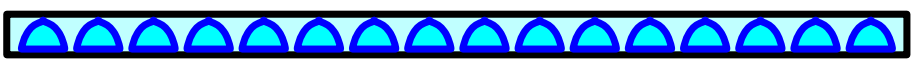
128 Chambers x 45.9 cf = 5,880.3 cf Chamber Storage

16,431.4 cf Field - 5,880.3 cf Chambers = 10,551.1 cf Stone x 40.0% Voids = 4,220.4 cf Stone Storage

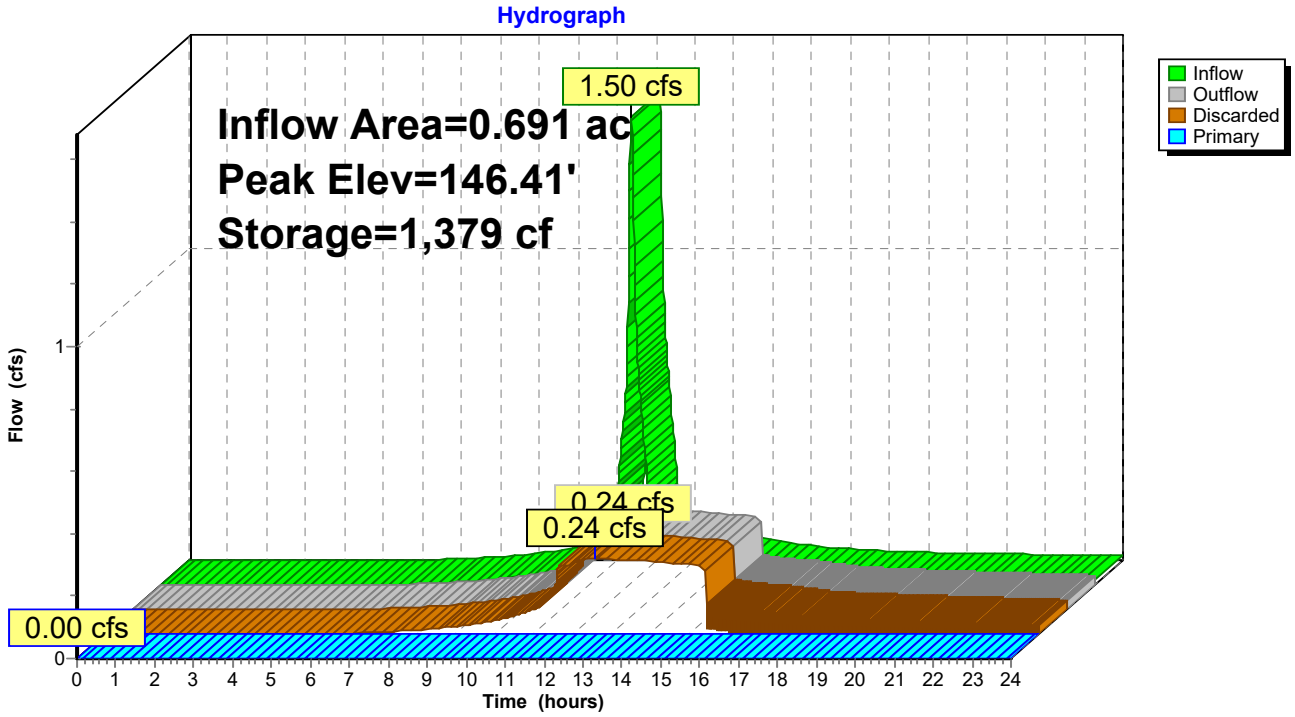
Chamber Storage + Stone Storage = 10,100.8 cf = 0.232 af
Overall Storage Efficiency = 61.5%
Overall System Size = 60.58' x 77.50' x 3.50'

128 Chambers
608.6 cy Field
390.8 cy Stone

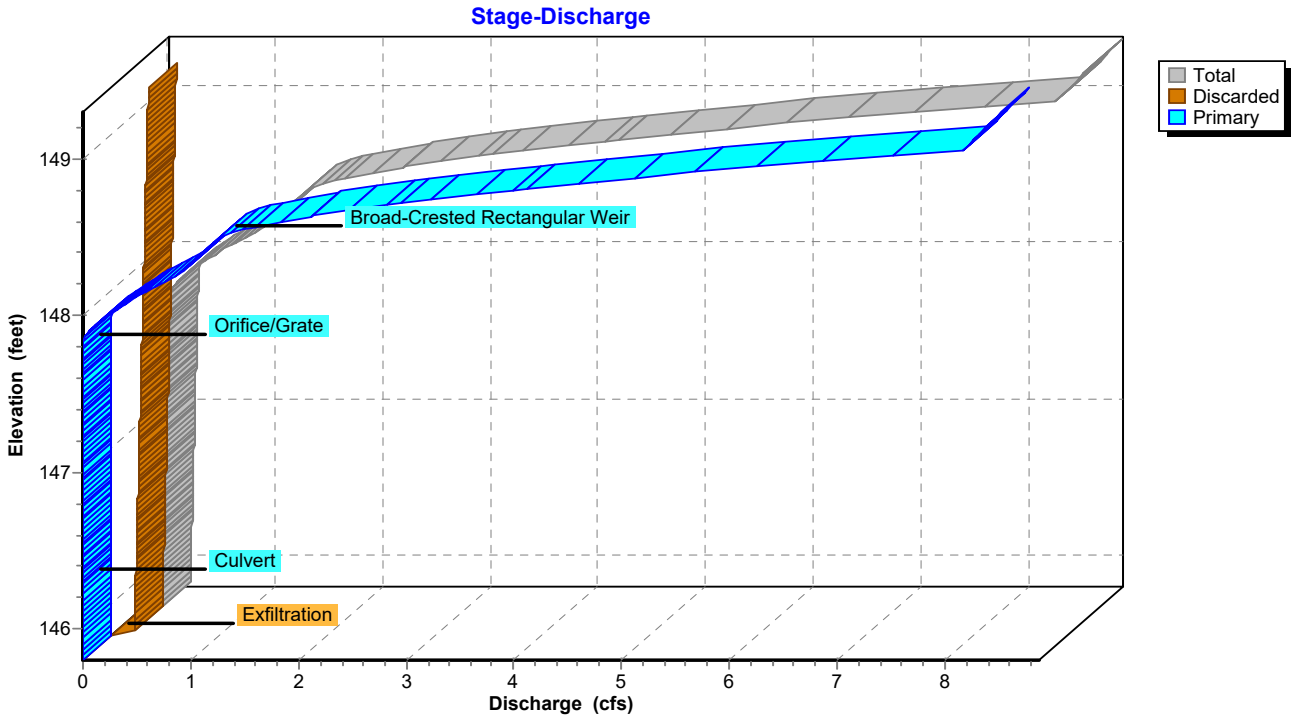




Pond ADS 1: ADS 1



Pond ADS 1: ADS 1



Summary for Pond ADS 2: ADS 2

Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 1.15" for 1-Year event
Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.10 cfs @ 12.42 hrs, Volume= 0.021 af, Atten= 66%, Lag= 19.7 min
Discarded = 0.02 cfs @ 12.42 hrs, Volume= 0.019 af
Primary = 0.08 cfs @ 12.42 hrs, Volume= 0.002 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 144.98' @ 12.42 hrs Surf.Area= 290 sf Storage= 318 cf
Flood Elev= 146.20' Surf.Area= 290 sf Storage= 513 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 145.4 min (984.9 - 839.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.20'	295 cf	**6.25'W x 46.34'L x 3.50'H Field A** 1,014 cf Overall - 276 cf Embedded = 738 cf x 40.0% Voids
#2A	143.70'	276 cf	**ADS_StormTech SC-740 +Cap** x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		571 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.70'	**15.0" Round Culvert** L= 85.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.70' / 137.95' S= 0.0676 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	144.95'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	143.20'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.02 cfs @ 12.42 hrs HW=144.98' (Free Discharge)
↑—**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.08 cfs @ 12.42 hrs HW=144.98' TW=143.21' (Dynamic Tailwater)
↑—**1=Culvert** (Passes 0.08 cfs of 4.79 cfs potential flow)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.08 cfs @ 0.50 fps)

Pond ADS 2: ADS 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

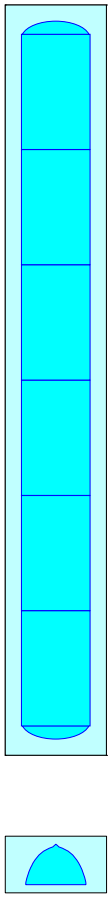
6 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 44.34' Row Length +12.0" End Stone x 2 = 46.34' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

6 Chambers x 45.9 cf = 275.6 cf Chamber Storage

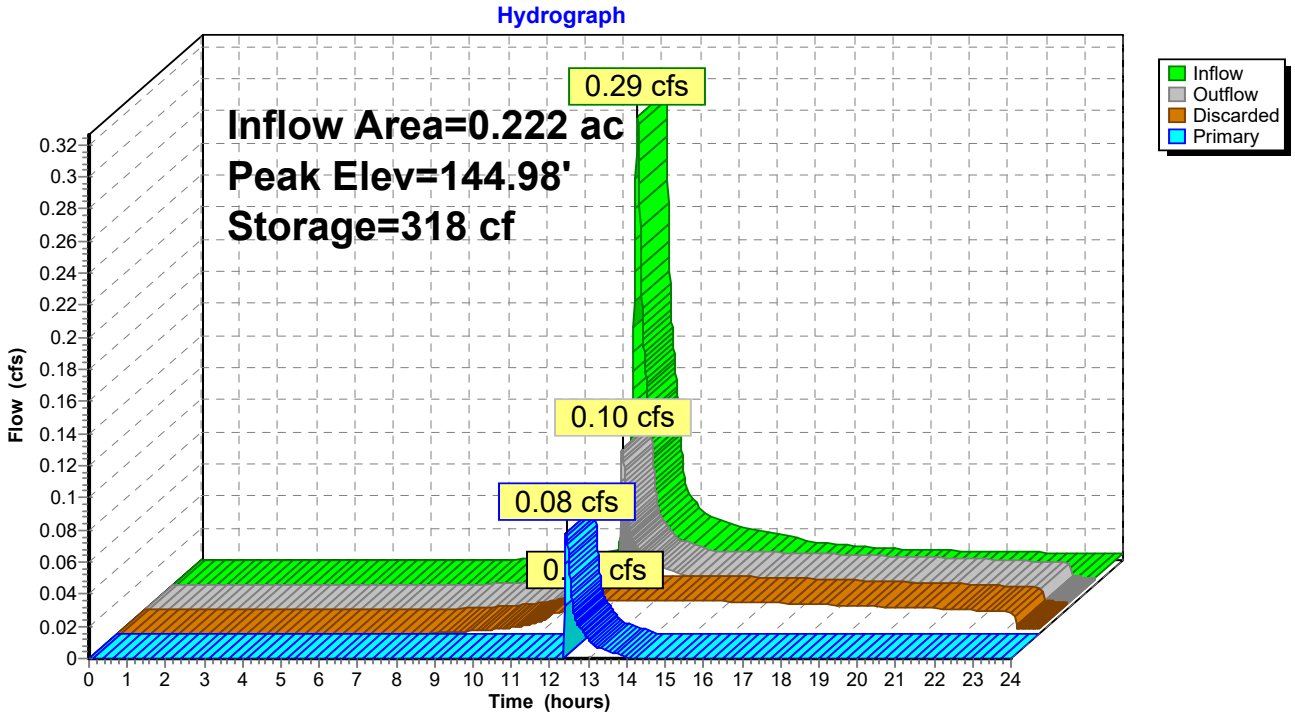
1,013.6 cf Field - 275.6 cf Chambers = 738.0 cf Stone x 40.0% Voids = 295.2 cf Stone Storage

Chamber Storage + Stone Storage = 570.8 cf = 0.013 af
Overall Storage Efficiency = 56.3%
Overall System Size = 46.34' x 6.25' x 3.50'

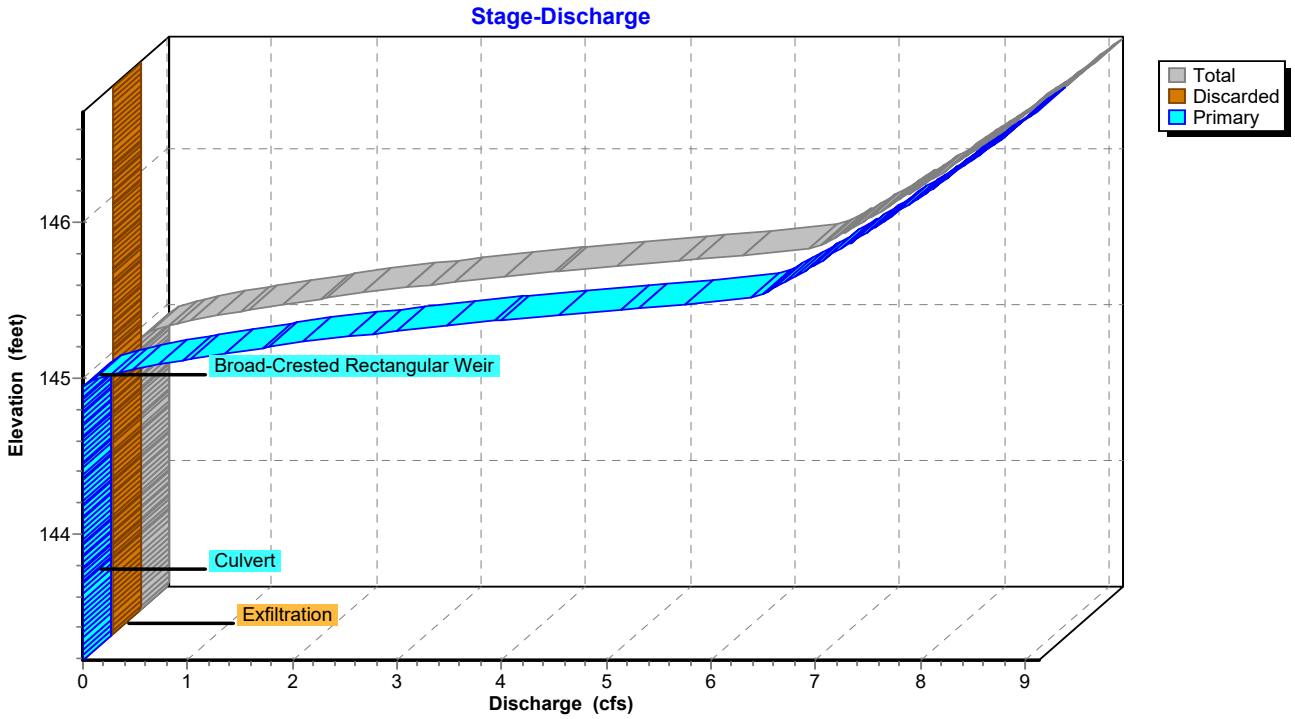
6 Chambers
37.5 cy Field
27.3 cy Stone



Pond ADS 2: ADS 2



Pond ADS 2: ADS 2



Summary for Pond CB-2: CB-2

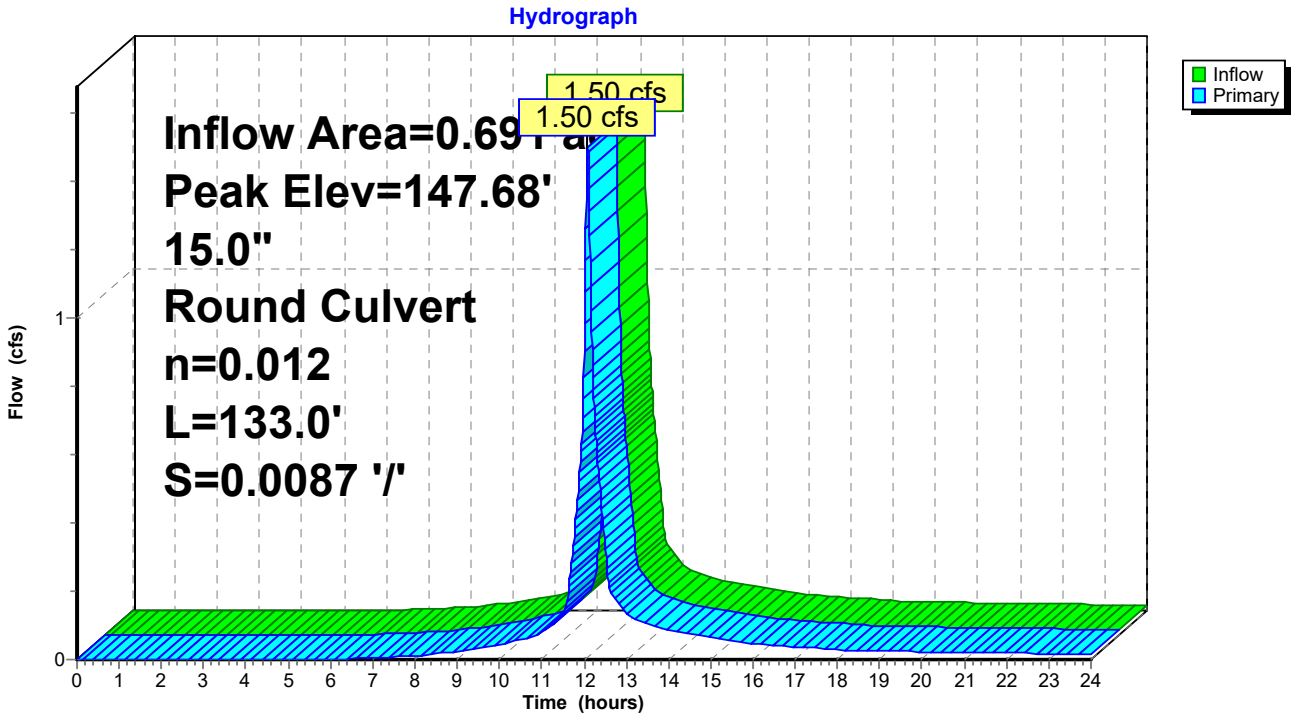
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 1.88" for 1-Year event
Inflow = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af
Outflow = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min
Primary = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af
Routed to Pond DMH-1 : DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 147.68' @ 12.09 hrs
Flood Elev= 149.80'

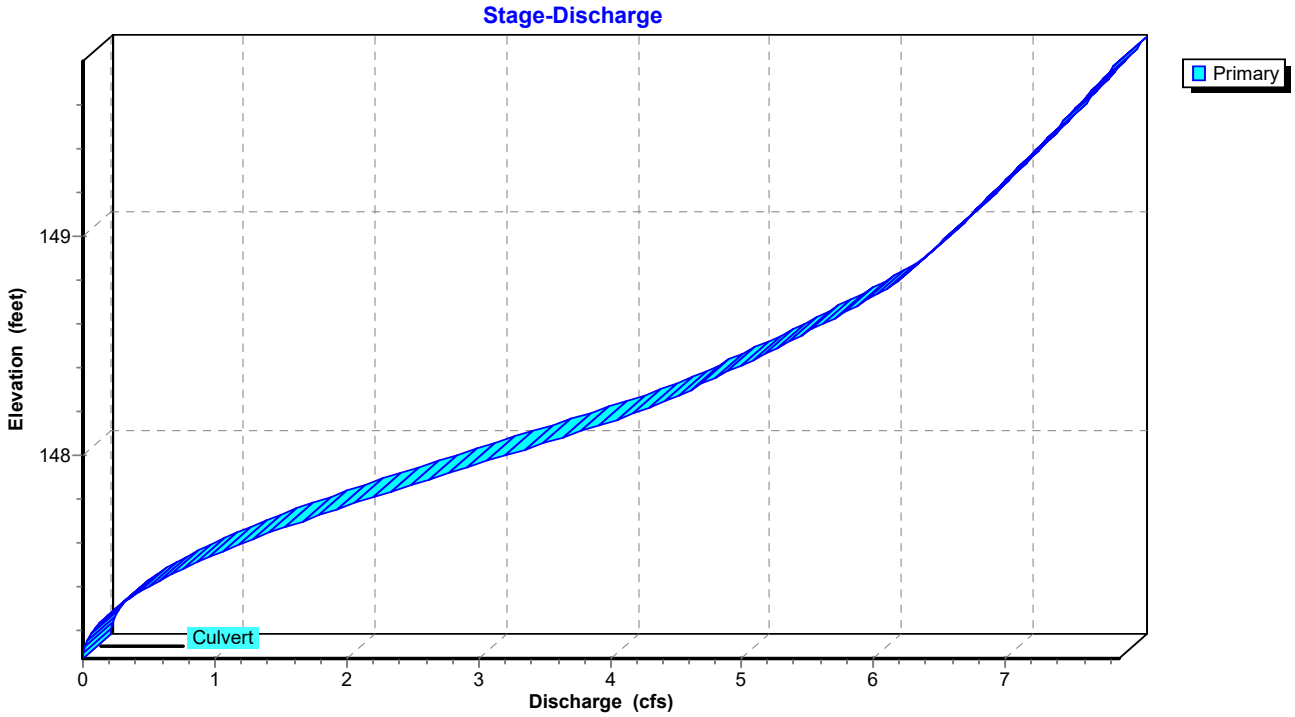
Device	Routing	Invert	Outlet Devices
#1	Primary	147.07'	**15.0" Round Culvert** L= 133.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 147.07' / 145.91' S= 0.0087 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.50 cfs @ 12.09 hrs HW=147.68' TW=146.59' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.50 cfs @ 3.72 fps)

Pond CB-2: CB-2



Pond CB-2: CB-2


Stage-Discharge
Primary
Elevation (feet)
149
148
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

Summary for Pond CB-3: CB-3

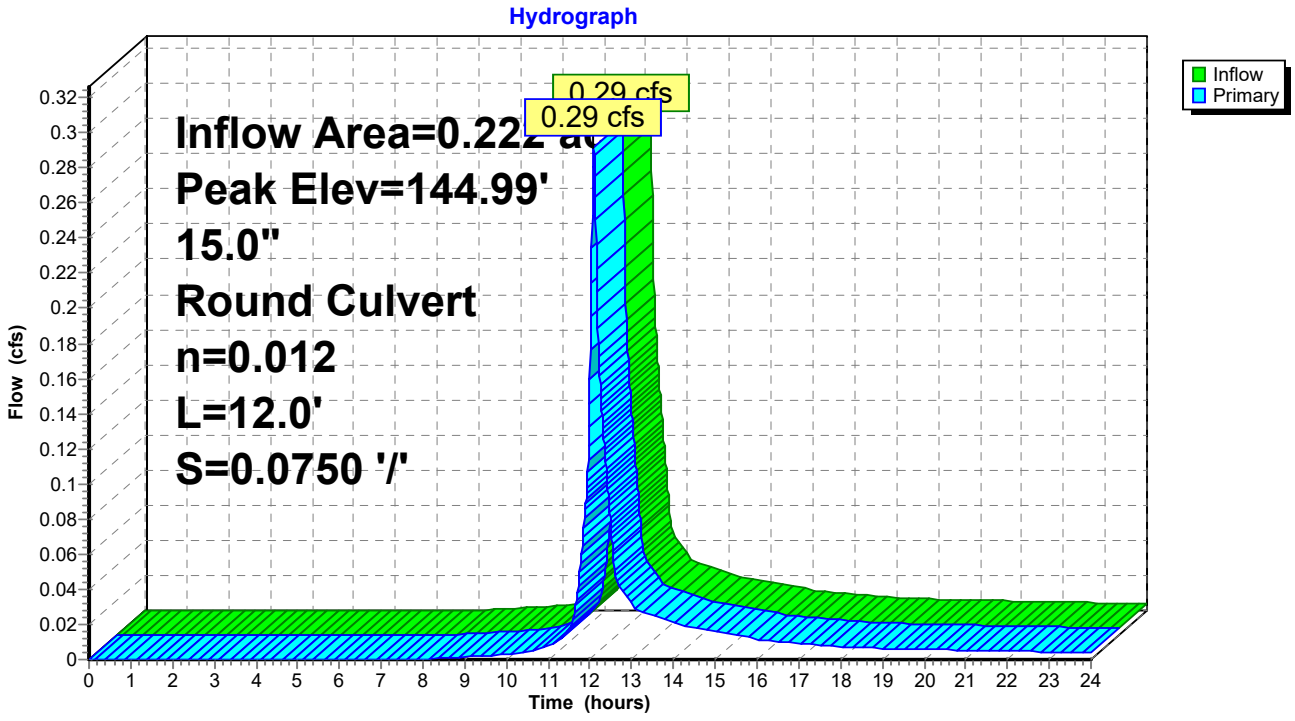
Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 1.15" for 1-Year event
Inflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Primary = 0.29 cfs @ 12.09 hrs, Volume= 0.021 af
Routed to Pond ADS 2 : ADS 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 144.99' @ 12.41 hrs
Flood Elev= 149.14'

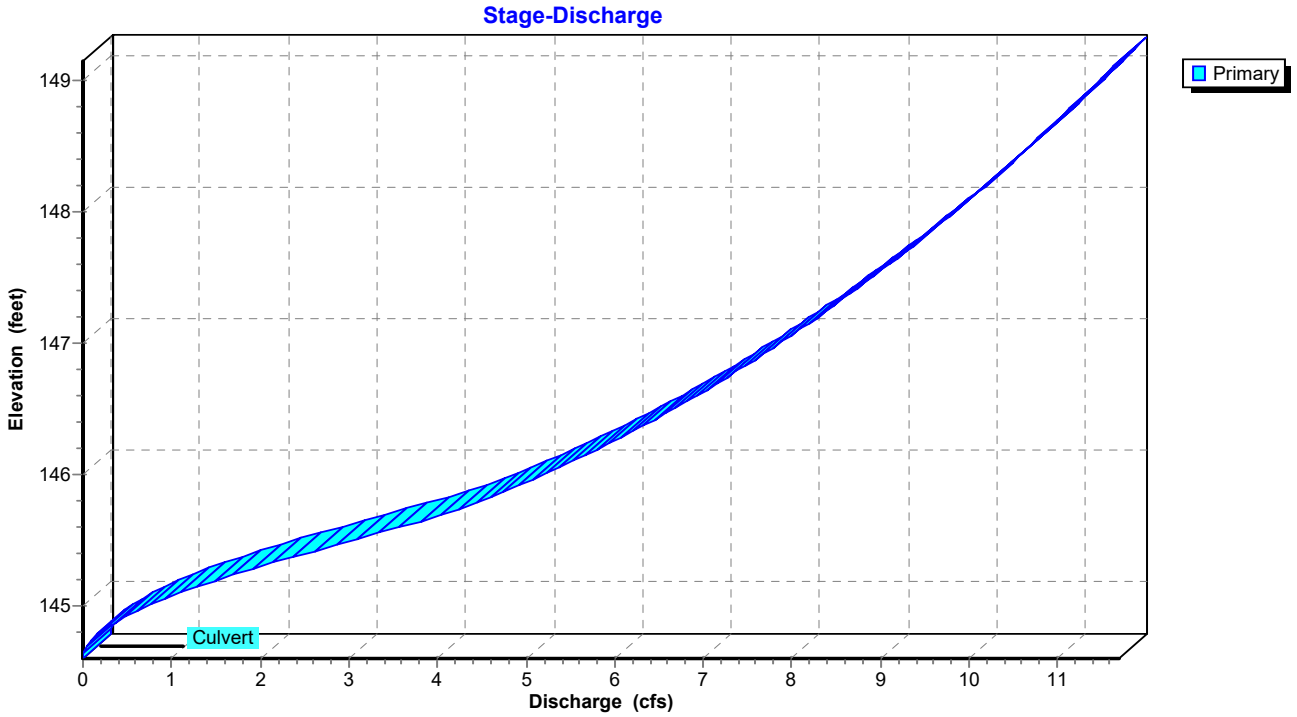
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 12.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.70' S= 0.0750 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.29 cfs @ 12.09 hrs HW=144.85' TW=144.15' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.29 cfs @ 1.69 fps)

Pond CB-3: CB-3



Pond CB-3: CB-3


Stage-Discharge
Primary
Elevation (feet)
149
148
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
9
10
11
Discharge (cfs)

Summary for Pond CB-4: CB-4

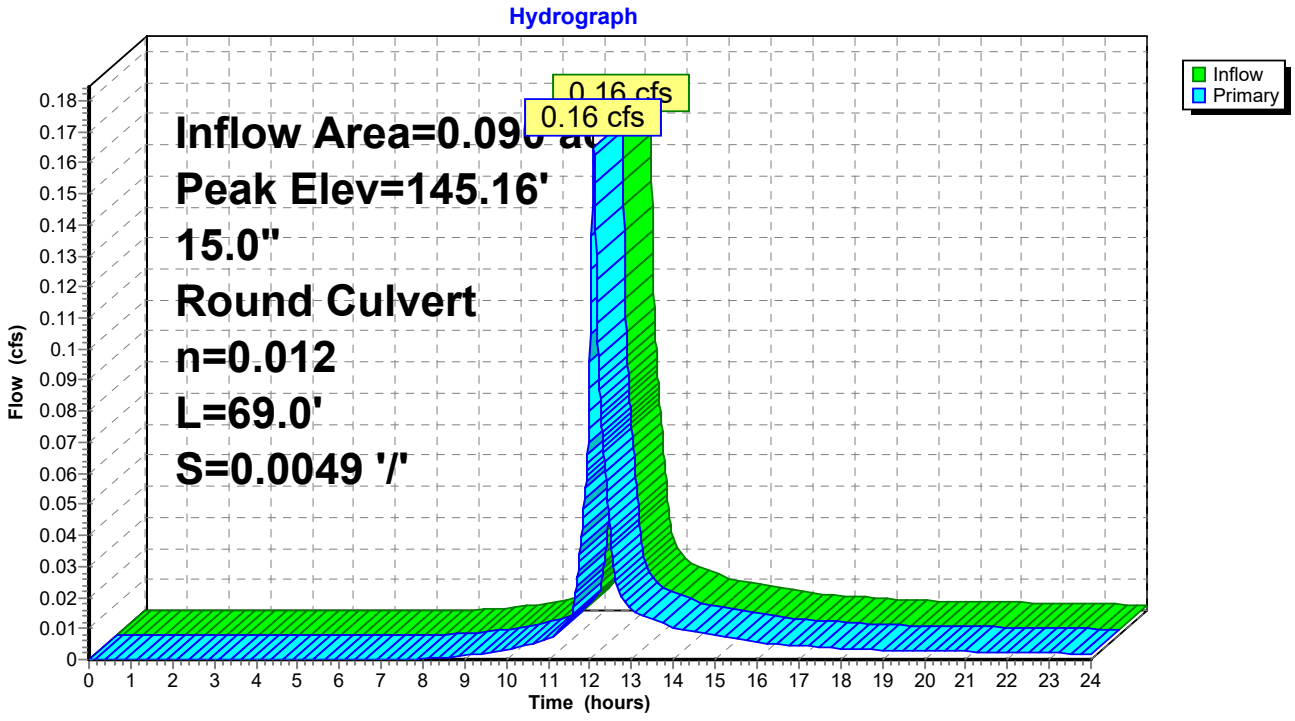
Inflow Area = 0.090 ac, 83.41% Impervious, Inflow Depth > 1.55" for 1-Year event
Inflow = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af
Outflow = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 12.09 hrs, Volume= 0.012 af
Routed to Pond CB-3 : CB-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.16' @ 12.09 hrs
Flood Elev= 147.76'

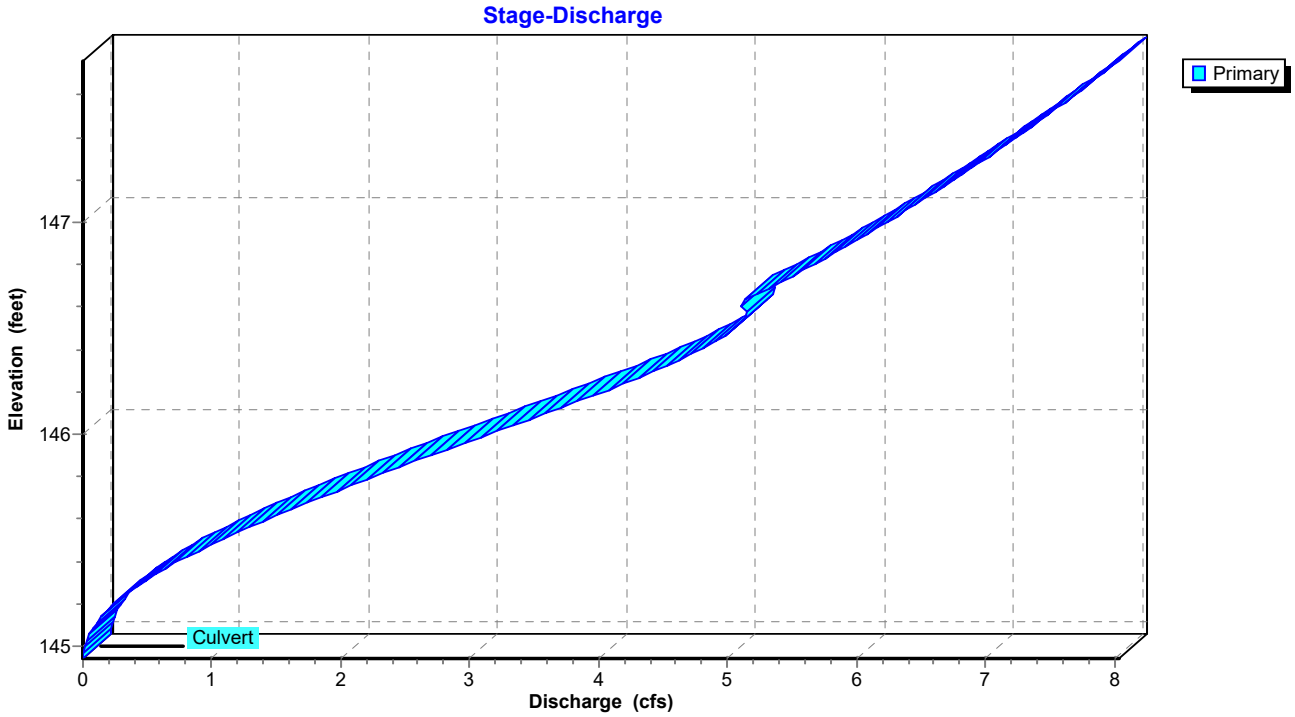
Device	Routing	Invert	Outlet Devices
#1	Primary	144.94'	**15.0" Round Culvert** L= 69.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.94' / 144.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.16 cfs @ 12.09 hrs HW=145.16' TW=144.85' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.16 cfs @ 1.67 fps)

Pond CB-4: CB-4



Pond CB-4: CB-4


Stage-Discharge
Primary
Elevation (feet)
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

Summary for Pond DMH-1: DMH-1

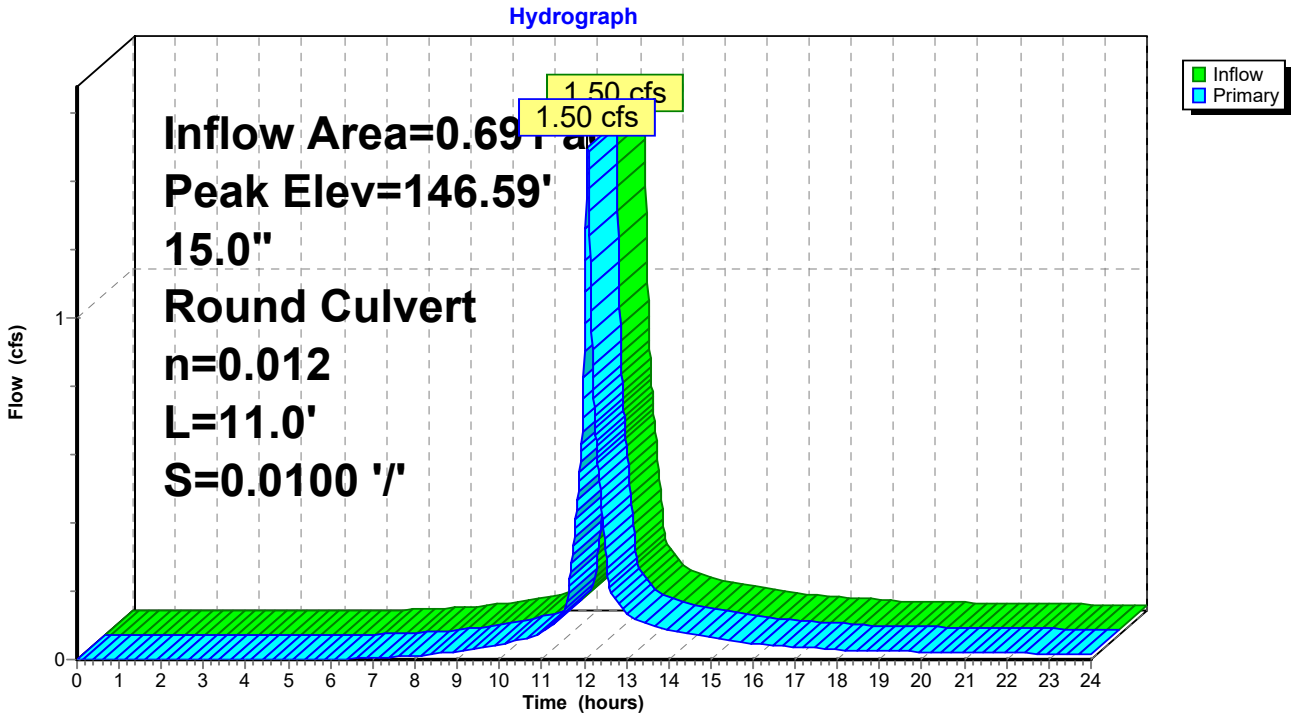
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 1.88" for 1-Year event
Inflow = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af
Outflow = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min
Primary = 1.50 cfs @ 12.09 hrs, Volume= 0.108 af
Routed to Pond ADS 1 : ADS 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 146.59' @ 12.09 hrs
Flood Elev= 150.35'

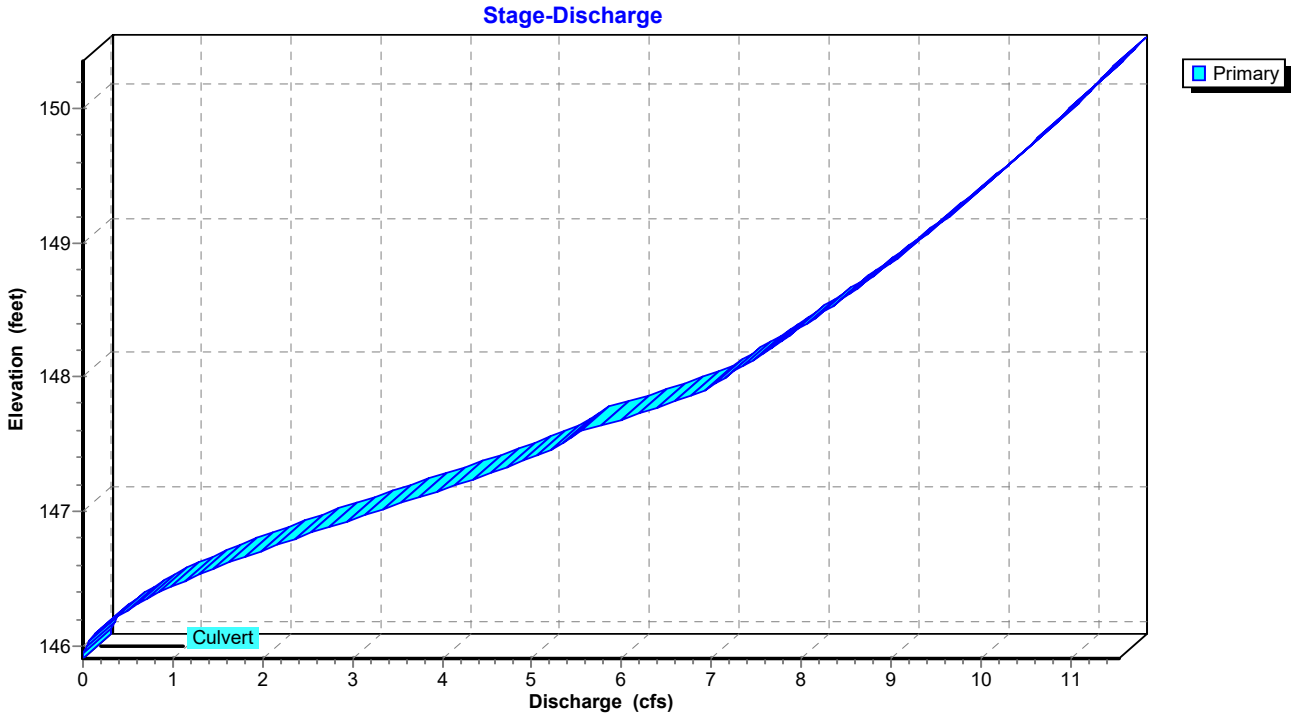
Device	Routing	Invert	Outlet Devices
#1	Primary	145.91'	**15.0" Round Culvert** L= 11.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.91' / 145.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.50 cfs @ 12.09 hrs HW=146.59' TW=146.13' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.50 cfs @ 3.19 fps)

Pond DMH-1: DMH-1



Pond DMH-1: DMH-1



Summary for Pond DMH-2: DMH-2

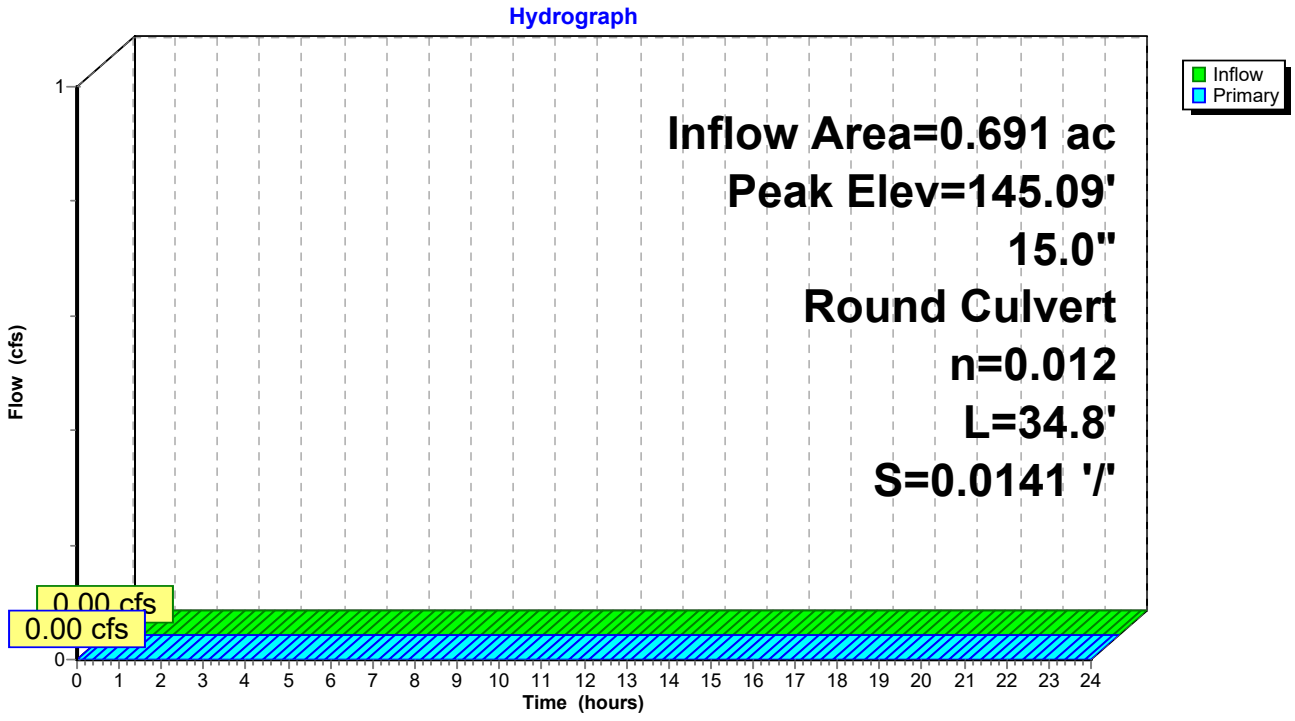
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-3 : DMH-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.09' @ 0.00 hrs
Flood Elev= 149.88'

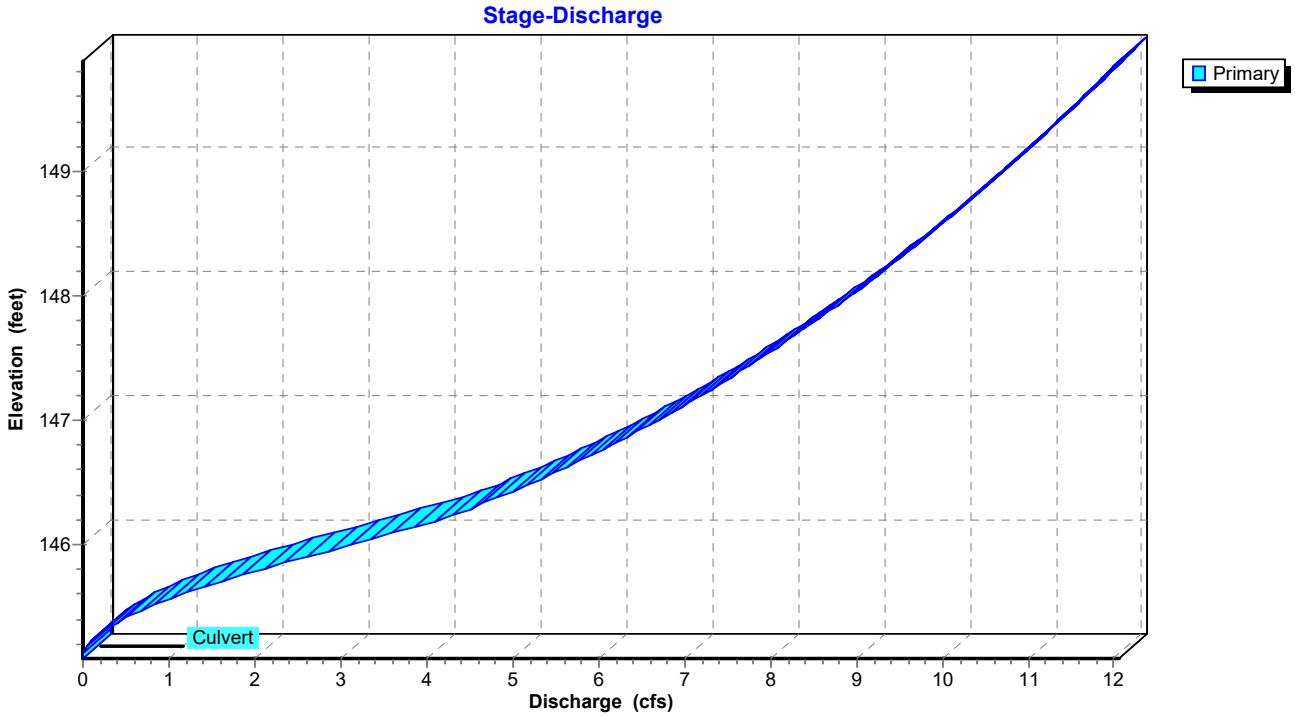
Device	Routing	Invert	Outlet Devices
#1	Primary	145.09'	**15.0" Round Culvert** L= 34.8' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.09' / 144.60' S= 0.0141 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.09' TW=144.60' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-2: DMH-2



Pond DMH-2: DMH-2



Summary for Pond DMH-3: DMH-3

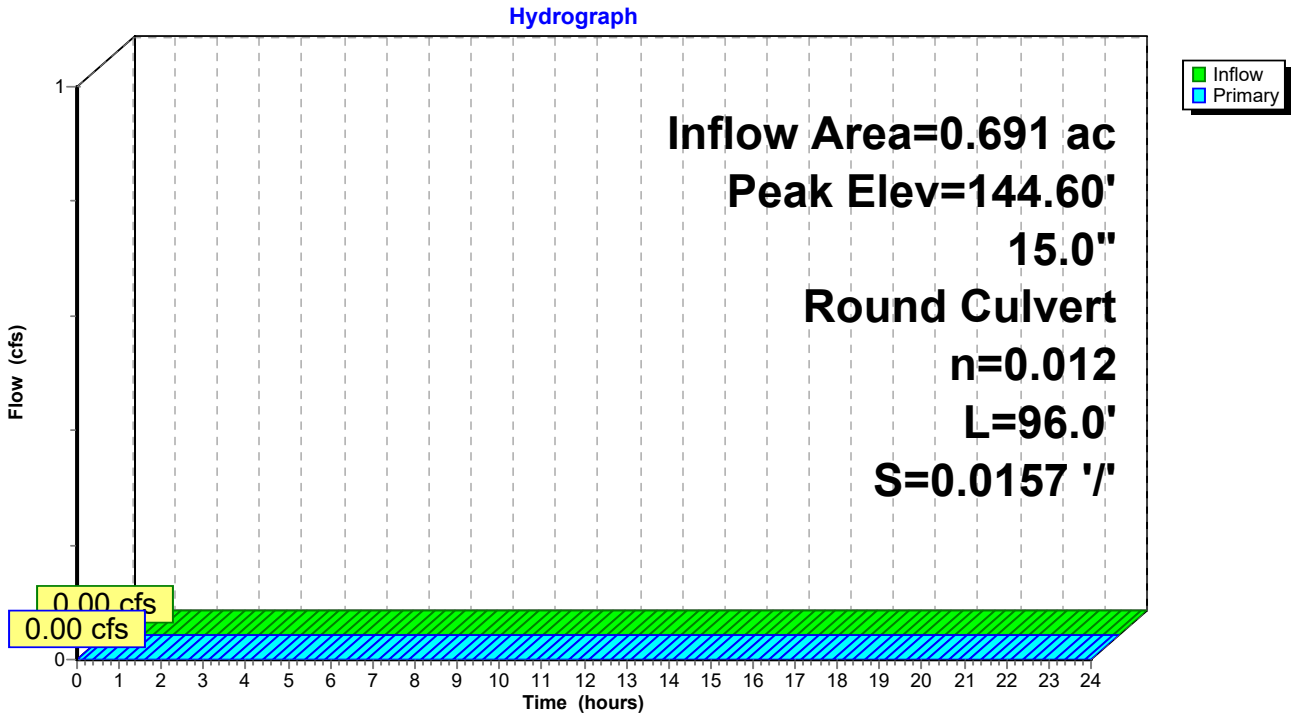
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 144.60' @ 0.00 hrs
Flood Elev= 149.87'

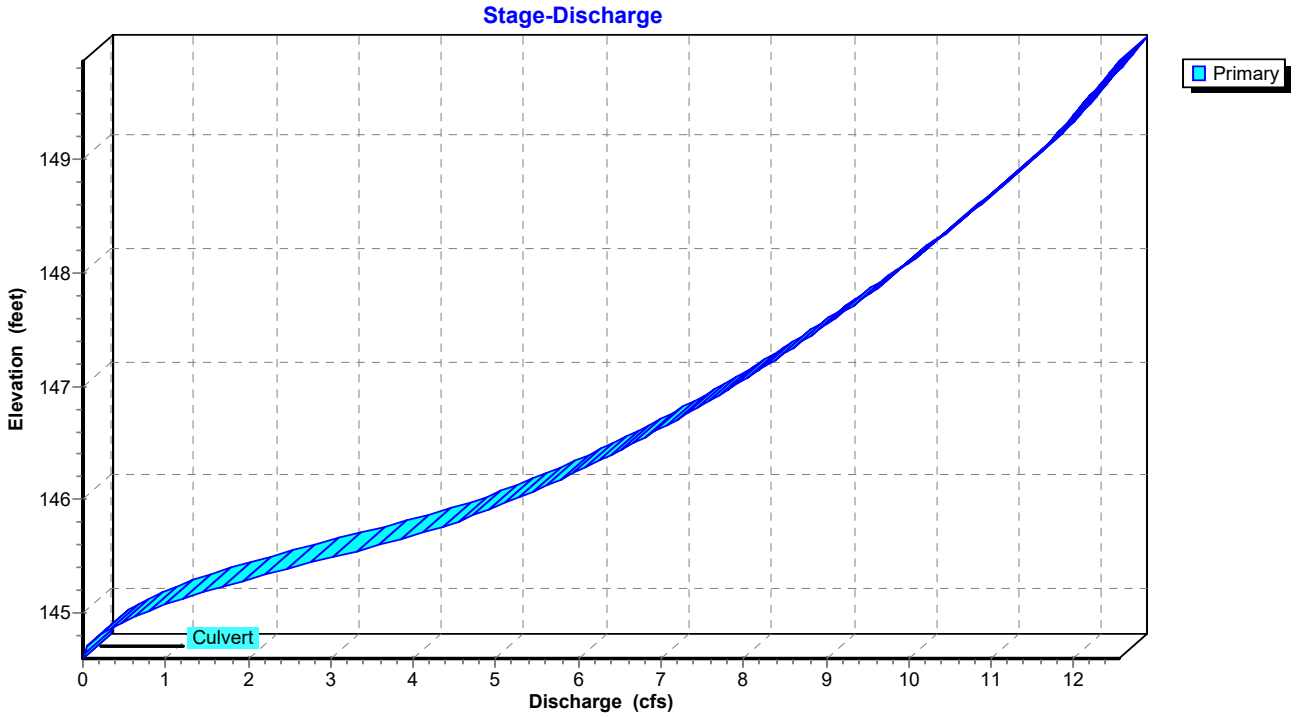
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.09' S= 0.0157 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.60' TW=143.09' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-3: DMH-3



Pond DMH-3: DMH-3



Summary for Pond DMH-4: DMH-4

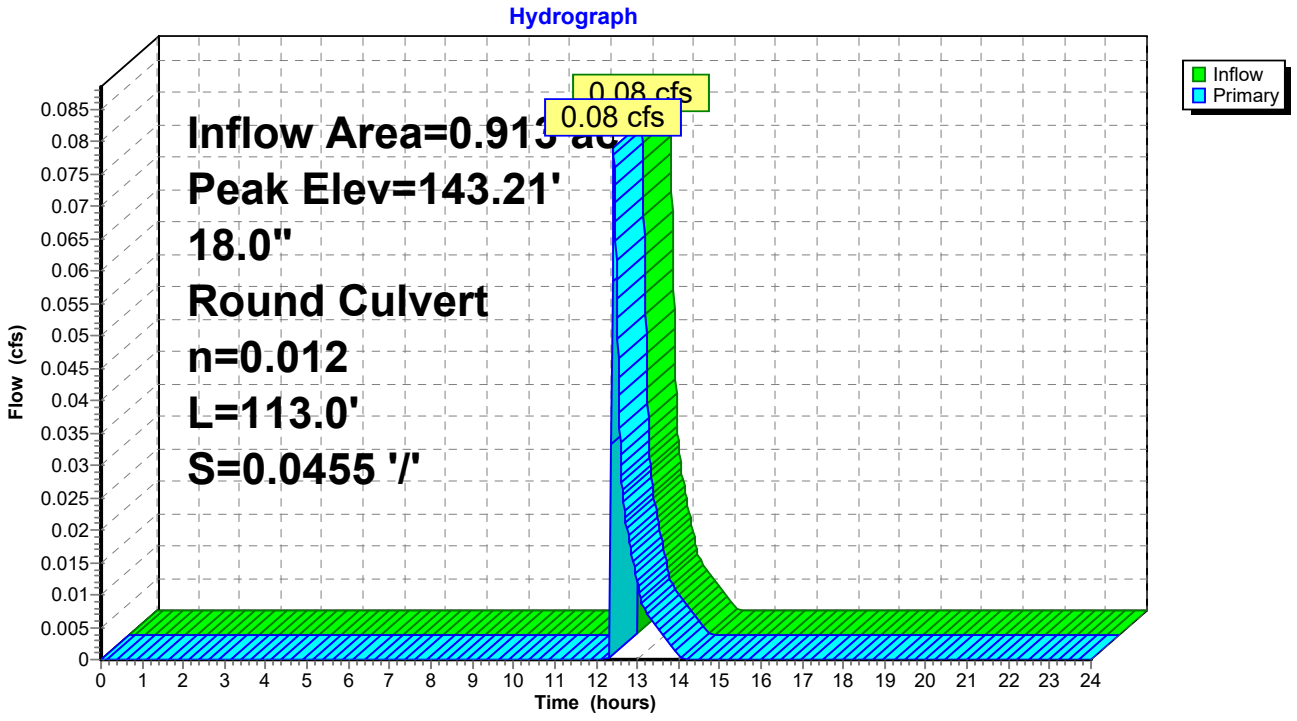
Inflow Area = 0.913 ac, 85.94% Impervious, Inflow Depth = 0.03" for 1-Year event
Inflow = 0.08 cfs @ 12.42 hrs, Volume= 0.002 af
Outflow = 0.08 cfs @ 12.42 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Primary = 0.08 cfs @ 12.42 hrs, Volume= 0.002 af
Routed to Reach POST : POST

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 143.21' @ 12.42 hrs
Flood Elev= 149.87'

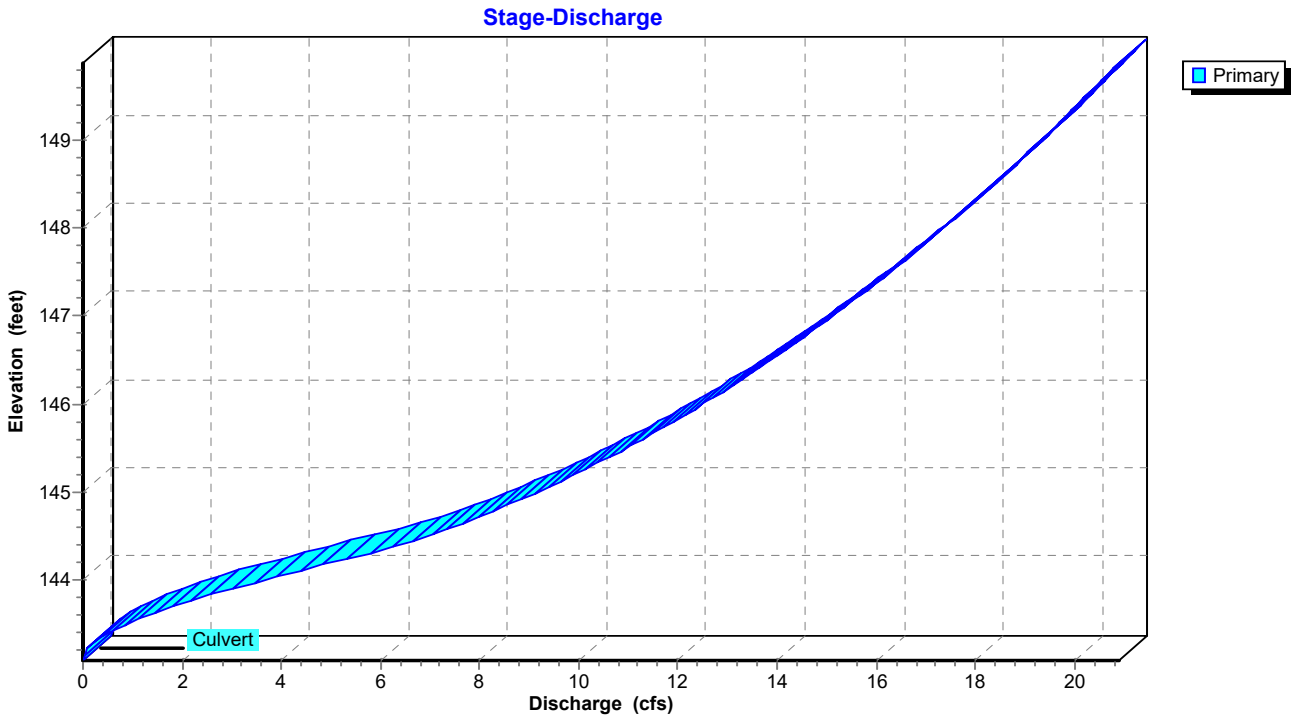
Device	Routing	Invert	Outlet Devices
#1	Primary	143.09'	**18.0" Round Culvert** L= 113.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.09' / 137.95' S= 0.0455 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.08 cfs @ 12.42 hrs HW=143.21' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.08 cfs @ 1.18 fps)

Pond DMH-4: DMH-4



Pond DMH-4: DMH-4



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1A: POST WS 1A Runoff Area=30,089 sf 90.36% Impervious Runoff Depth>3.84"
Flow Length=229' Tc=6.0 min CN=92 Runoff=2.97 cfs 0.221 af

Subcatchment POST WS 1C: POST WS 1C Runoff Area=3,936 sf 83.41% Impervious Runoff Depth>3.43"
Flow Length=69' Slope=0.0200 '/' Tc=6.0 min CN=88 Runoff=0.36 cfs 0.026 af

Subcatchment POST WS 1D: POST WS 1D Runoff Area=1,207 sf 50.62% Impervious Runoff Depth>1.78"
Flow Length=16' Slope=0.0225 '/' Tc=6.0 min CN=69 Runoff=0.06 cfs 0.004 af

Subcatchment POST WS 2: POST WS 2 Runoff Area=2,956 sf 14.68% Impervious Runoff Depth>0.50"
Flow Length=52' Slope=0.1000 '/' Tc=6.0 min CN=48 Runoff=0.02 cfs 0.003 af

Subcatchment POST WS-1B: POST WS 1B Runoff Area=5,732 sf 64.53% Impervious Runoff Depth>2.41"
Flow Length=55' Slope=0.0127 '/' Tc=6.0 min CN=77 Runoff=0.37 cfs 0.026 af

Subcatchment PRE WS 1: PRE WS 1 Runoff Area=43,899 sf 22.49% Impervious Runoff Depth>1.16"
Flow Length=307' Tc=6.0 min UI Adjusted CN=60 Runoff=1.20 cfs 0.097 af

Reach POST: POST Inflow=0.77 cfs 0.032 af
Outflow=0.77 cfs 0.032 af

Pond ADS 1: ADS 1 Peak Elev=147.01' Storage=3,666 cf Inflow=2.97 cfs 0.221 af
Discarded=0.26 cfs 0.221 af Primary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.221 af

Pond ADS 2: ADS 2 Peak Elev=145.09' Storage=338 cf Inflow=0.73 cfs 0.052 af
Discarded=0.02 cfs 0.024 af Primary=0.70 cfs 0.025 af Outflow=0.73 cfs 0.049 af

Pond CB-2: CB-2 Peak Elev=148.00' Inflow=2.97 cfs 0.221 af
15.0" Round Culvert n=0.012 L=133.0' S=0.0087 '/' Outflow=2.97 cfs 0.221 af

Pond CB-3: CB-3 Peak Elev=145.19' Inflow=0.73 cfs 0.052 af
15.0" Round Culvert n=0.012 L=12.0' S=0.0750 '/' Outflow=0.73 cfs 0.052 af

Pond CB-4: CB-4 Peak Elev=145.35' Inflow=0.36 cfs 0.026 af
15.0" Round Culvert n=0.012 L=69.0' S=0.0049 '/' Outflow=0.36 cfs 0.026 af

Pond DMH-1: DMH-1 Peak Elev=147.01' Inflow=2.97 cfs 0.221 af
15.0" Round Culvert n=0.012 L=11.0' S=0.0100 '/' Outflow=2.97 cfs 0.221 af

Pond DMH-2: DMH-2 Peak Elev=145.09' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=34.8' S=0.0141 '/' Outflow=0.00 cfs 0.000 af

Pond DMH-3: DMH-3 Peak Elev=144.60' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=96.0' S=0.0157 '/' Outflow=0.00 cfs 0.000 af

Pond DMH-4: DMH-4 Peak Elev=143.46' Inflow=0.70 cfs 0.025 af
18.0" Round Culvert n=0.012 L=113.0' S=0.0455 '/' Outflow=0.70 cfs 0.025 af

Summary for Subcatchment POST 1A: POST WS 1A

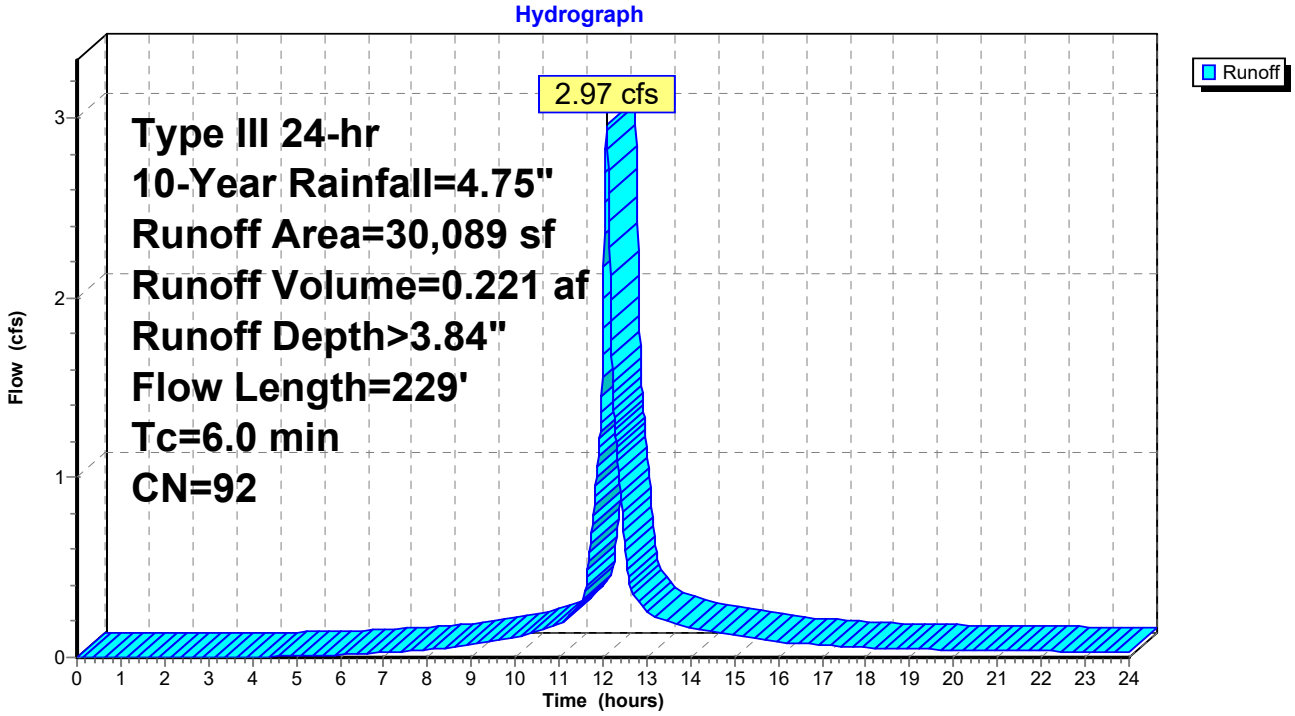
Runoff = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af, Depth> 3.84"
Routed to Pond CB-2 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.75"

Area (sf)	CN	Description
27,187	98	Paved parking, HSG A
2,902	39	>75% Grass cover, Good, HSG A
30,089	92	Weighted Average
2,902		9.64% Pervious Area
27,187		90.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.01		**Sheet Flow, Parking lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
1.5	129	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	229	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST 1A: POST WS 1A



Summary for Subcatchment POST WS 1C: POST WS 1C

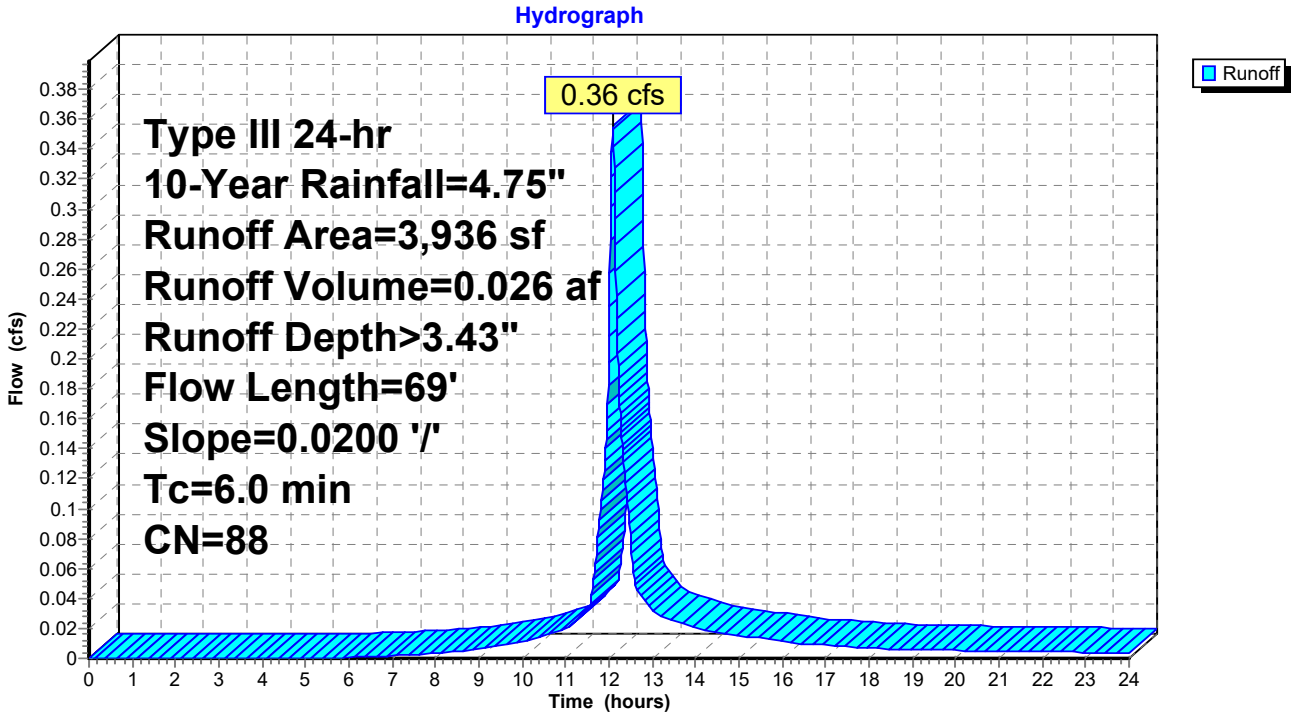
Runoff = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 3.43"
Routed to Pond CB-4 : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.75"

Area (sf)	CN	Description
3,283	98	Paved parking, HSG A
653	39	>75% Grass cover, Good, HSG A
3,936	88	Weighted Average
653		16.59% Pervious Area
3,283		83.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	69	0.0200	1.24		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	69	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1C: POST WS 1C



Summary for Subcatchment POST WS 1D: POST WS 1D

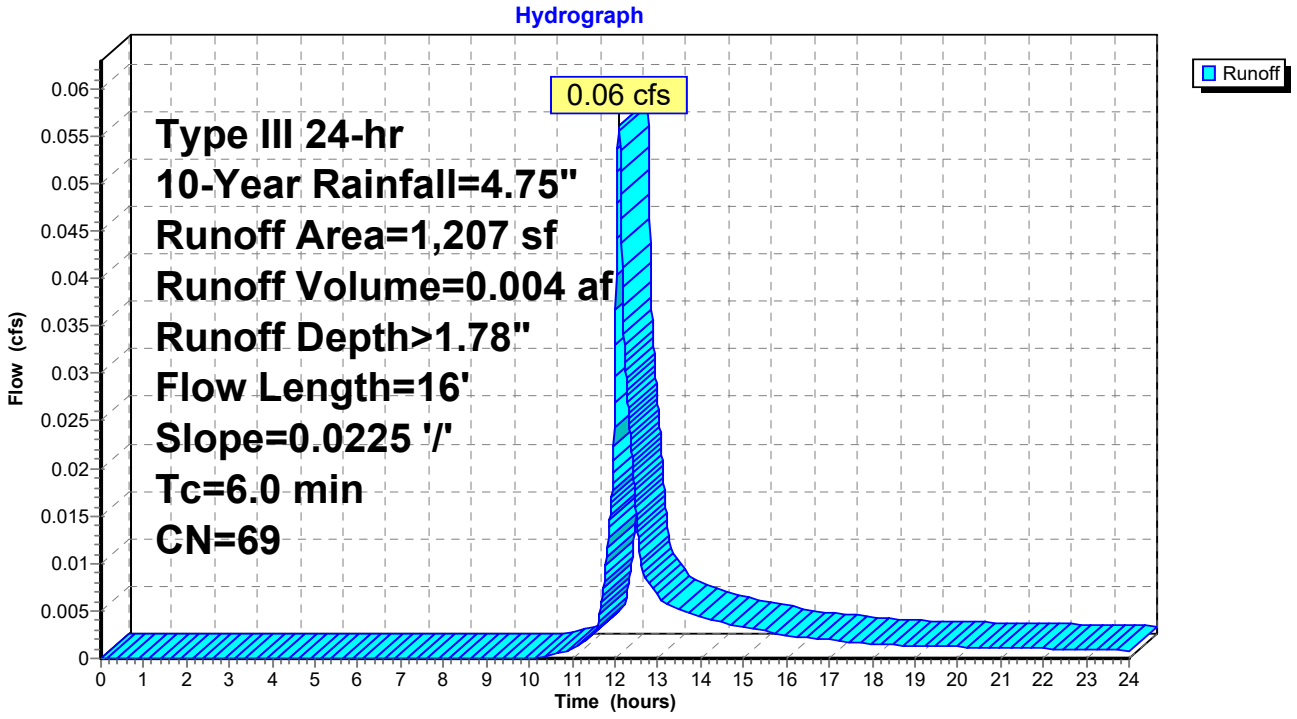
Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 1.78"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.75"

Area (sf)	CN	Description
611	98	Paved parking, HSG A
596	39	>75% Grass cover, Good, HSG A
1,207	69	Weighted Average
596		49.38% Pervious Area
611		50.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0225	0.97		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	16	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1D: POST WS 1D



Summary for Subcatchment POST WS 2: POST WS 2

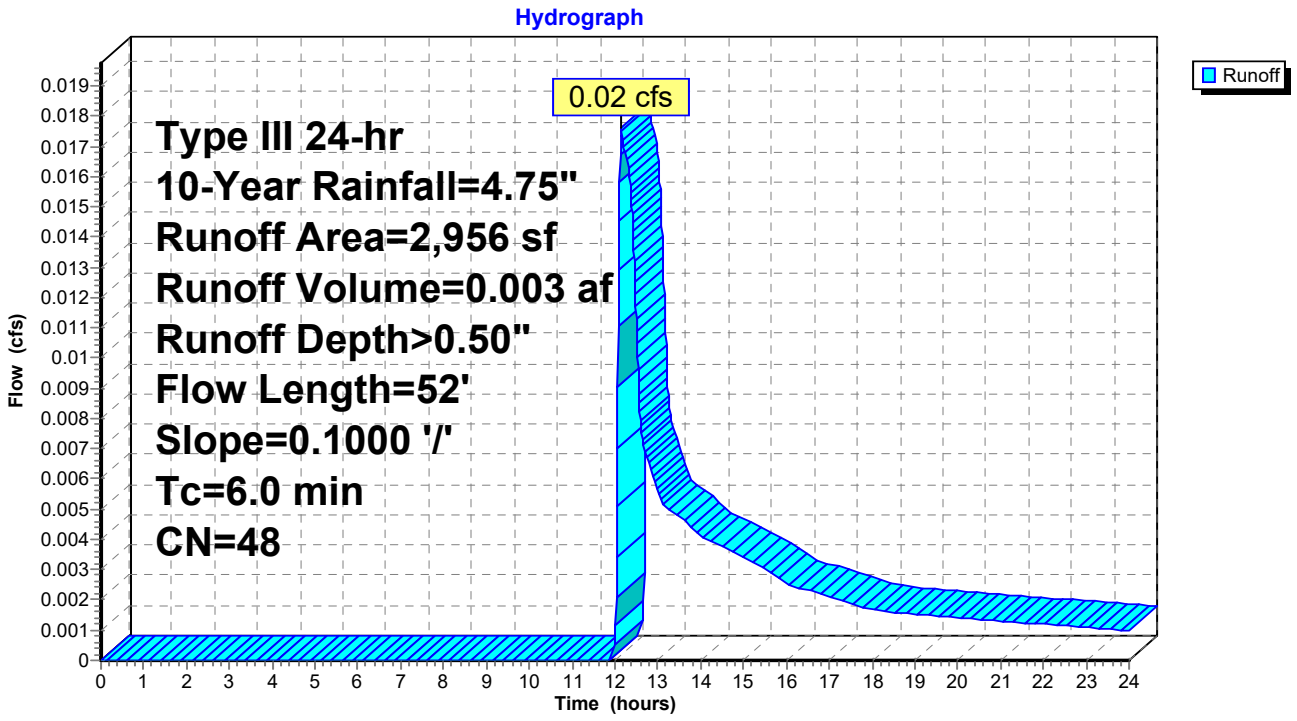
Runoff = 0.02 cfs @ 12.15 hrs, Volume= 0.003 af, Depth> 0.50"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.75"

Area (sf)	CN	Description
434	98	Paved parking, HSG A
2,522	39	>75% Grass cover, Good, HSG A
2,956	48	Weighted Average
2,522		85.32% Pervious Area
434		14.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	52	0.1000	0.19		**Sheet Flow, Sheet Flow to Fishkill Ave.** Grass: Dense n= 0.240 P2= 3.00"
4.6	52	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 2: POST WS 2



Summary for Subcatchment POST WS-1B: POST WS 1B

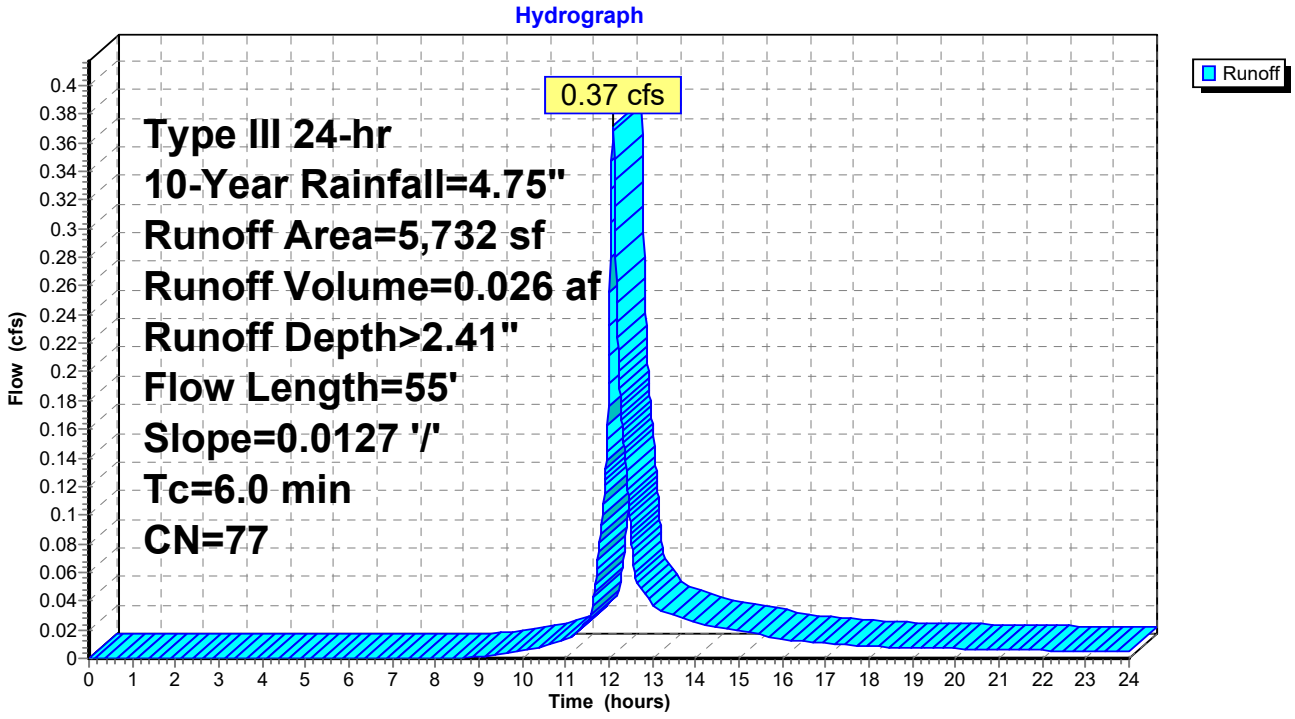
Runoff = 0.37 cfs @ 12.09 hrs, Volume= 0.026 af, Depth> 2.41"
Routed to Pond CB-3 : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.75"

Area (sf)	CN	Description
3,699	98	Paved parking, HSG A
2,033	39	>75% Grass cover, Good, HSG A
5,732	77	Weighted Average
2,033		35.47% Pervious Area
3,699		64.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	55	0.0127	0.99		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	55	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS-1B: POST WS 1B



Summary for Subcatchment PRE WS 1: PRE WS 1

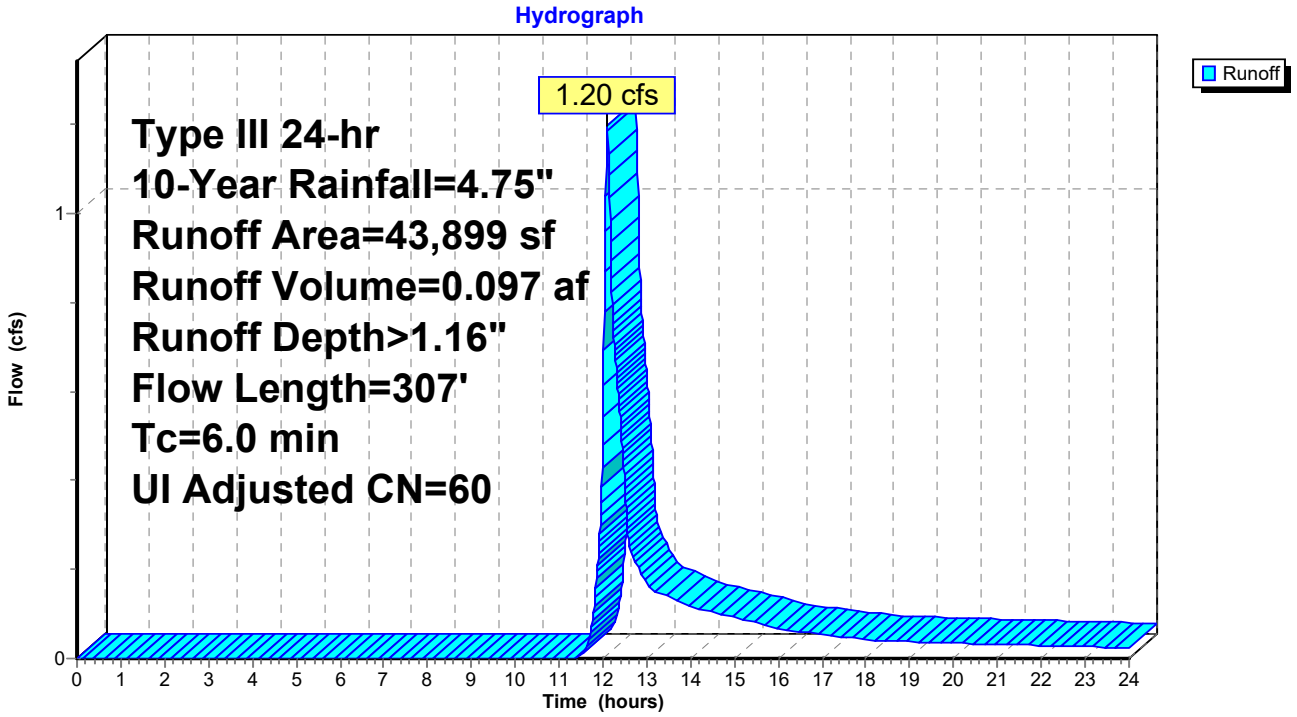
Runoff = 1.20 cfs @ 12.10 hrs, Volume= 0.097 af, Depth> 1.16"
Routed to nonexistent node PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=4.75"

Area (sf)	CN	Adj	Description
9,872	98		Unconnected roofs, HSG A
7,963	96		Gravel surface, HSG A
15,833	49		50-75% Grass cover, Fair, HSG A
10,231	32		Woods/grass comb., Good, HSG A
43,899	65	60	Weighted Average, UI Adjusted
34,027			77.51% Pervious Area
9,872			22.49% Impervious Area
9,872			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	67	0.1480	0.34		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.00"
0.5	120	0.0620	4.01		**Shallow Concentrated Flow, Shallow Flow** Unpaved Kv= 16.1 fps
0.4	120	0.0600	4.97		**Shallow Concentrated Flow, Driveway** Paved Kv= 20.3 fps
4.2	307	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE WS 1: PRE WS 1

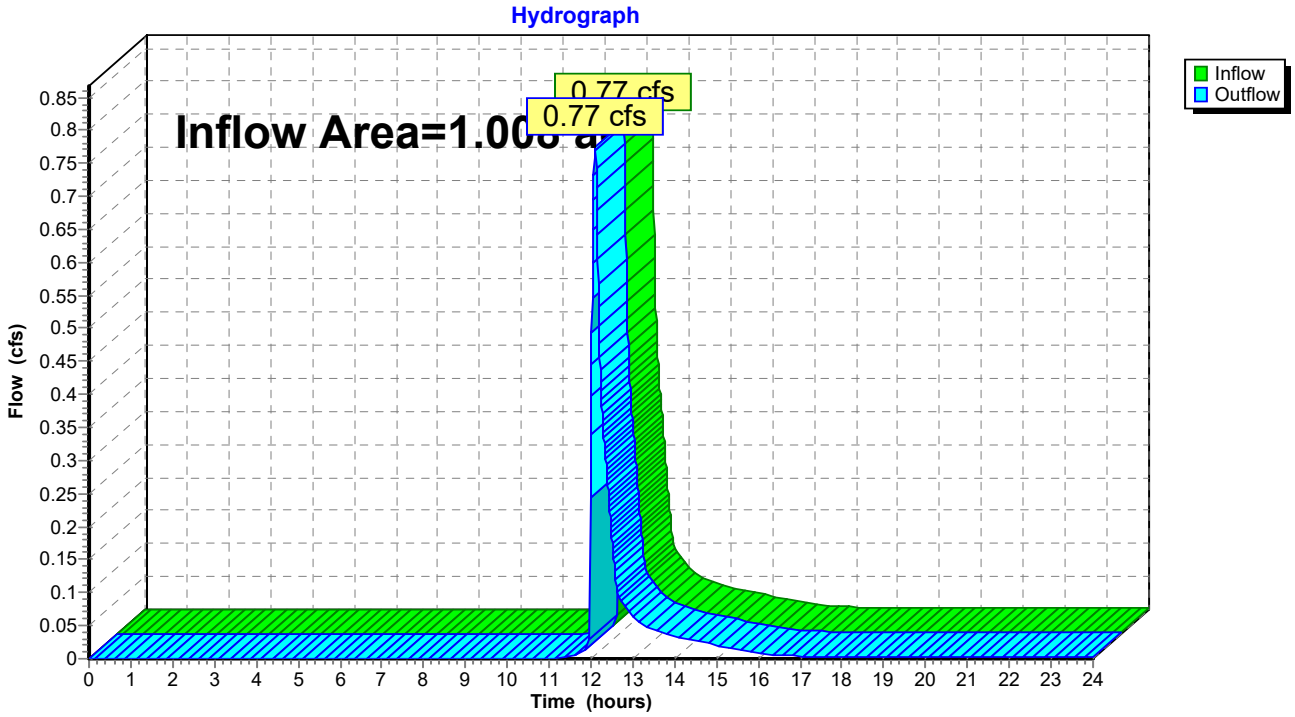


Summary for Reach POST: POST

Inflow Area = 1.008 ac, 80.18% Impervious, Inflow Depth > 0.38" for 10-Year event
Inflow = 0.77 cfs @ 12.10 hrs, Volume= 0.032 af
Outflow = 0.77 cfs @ 12.10 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach POST: POST



Summary for Pond ADS 1: ADS 1

Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 3.84" for 10-Year event
Inflow = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af
Outflow = 0.26 cfs @ 12.98 hrs, Volume= 0.221 af, Atten= 91%, Lag= 54.0 min
Discarded = 0.26 cfs @ 12.98 hrs, Volume= 0.221 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-2 : DMH-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 147.01' @ 12.98 hrs Surf.Area= 4,695 sf Storage= 3,666 cf
Flood Elev= 148.80' Surf.Area= 4,695 sf Storage= 9,162 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 110.8 min (894.5 - 783.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.80'	4,220 cf	**77.50'W x 60.58'L x 3.50'H Field A** 16,431 cf Overall - 5,880 cf Embedded = 10,551 cf x 40.0% Voids
#2A	146.30'	5,880 cf	**ADS_StormTech SC-740 +Cap** x 128 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 128 Chambers in 16 Rows
		10,101 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	146.30'	**15.0" Round Culvert** L= 105.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 146.30' / 145.09' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	148.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	147.80'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#4	Discarded	145.80'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.26 cfs @ 12.98 hrs HW=147.01' (Free Discharge)
└**4=Exfiltration** (Controls 0.26 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.80' TW=145.09' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  └**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond ADS 1: ADS 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

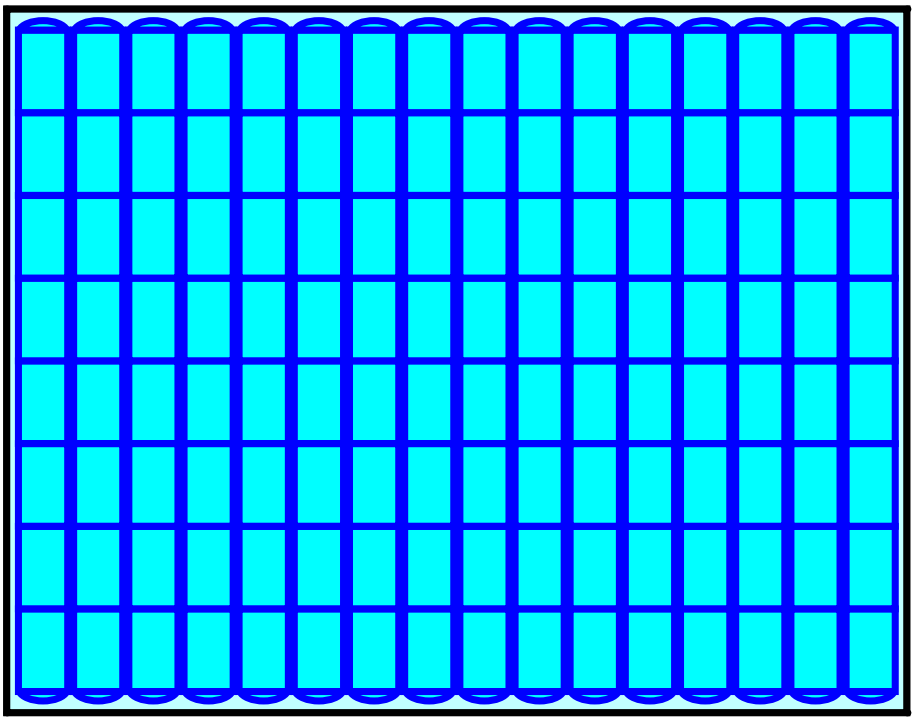
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

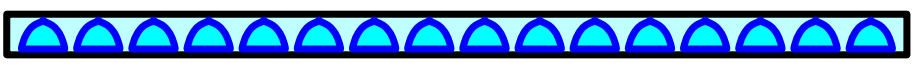
128 Chambers x 45.9 cf = 5,880.3 cf Chamber Storage

16,431.4 cf Field - 5,880.3 cf Chambers = 10,551.1 cf Stone x 40.0% Voids = 4,220.4 cf Stone Storage

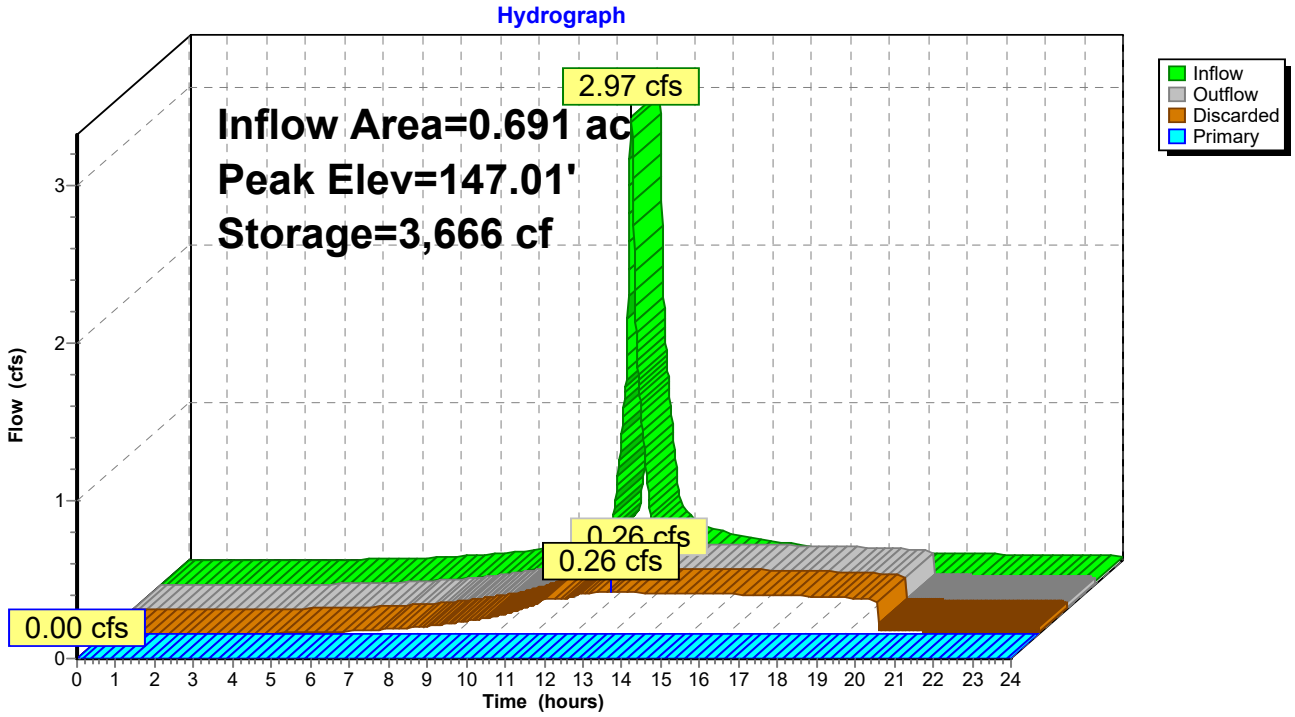
Chamber Storage + Stone Storage = 10,100.8 cf = 0.232 af
Overall Storage Efficiency = 61.5%
Overall System Size = 60.58' x 77.50' x 3.50'

128 Chambers
608.6 cy Field
390.8 cy Stone

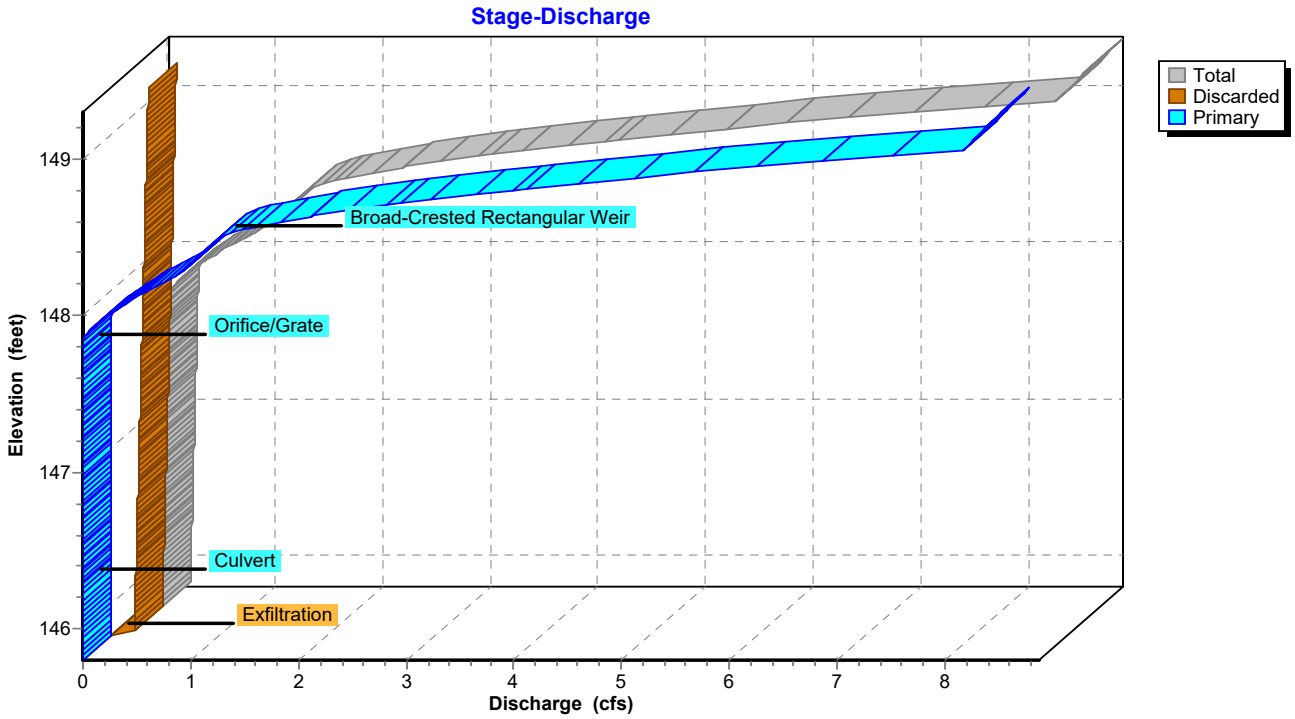




Pond ADS 1: ADS 1



Pond ADS 1: ADS 1



Summary for Pond ADS 2: ADS 2

Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 2.83" for 10-Year event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.73 cfs @ 12.09 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.02 cfs @ 12.09 hrs, Volume= 0.024 af
Primary = 0.70 cfs @ 12.09 hrs, Volume= 0.025 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.09' @ 12.09 hrs Surf.Area= 290 sf Storage= 338 cf
Flood Elev= 146.20' Surf.Area= 290 sf Storage= 513 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 54.8 min (870.2 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.20'	295 cf	**6.25'W x 46.34'L x 3.50'H Field A** 1,014 cf Overall - 276 cf Embedded = 738 cf x 40.0% Voids
#2A	143.70'	276 cf	**ADS_StormTech SC-740 +Cap** x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		571 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.70'	**15.0" Round Culvert** L= 85.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.70' / 137.95' S= 0.0676 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	144.95'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	143.20'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.02 cfs @ 12.09 hrs HW=145.09' (Free Discharge)
↑└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.70 cfs @ 12.09 hrs HW=145.09' TW=143.46' (Dynamic Tailwater)
↑└**1=Culvert** (Passes 0.70 cfs of 5.16 cfs potential flow)
↑└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.70 cfs @ 1.03 fps)

Pond ADS 2: ADS 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

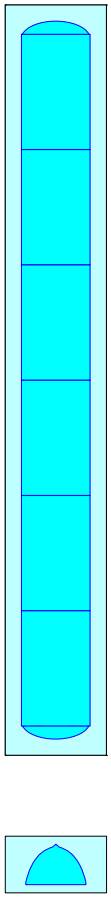
6 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 44.34' Row Length +12.0" End Stone x 2 = 46.34' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

6 Chambers x 45.9 cf = 275.6 cf Chamber Storage

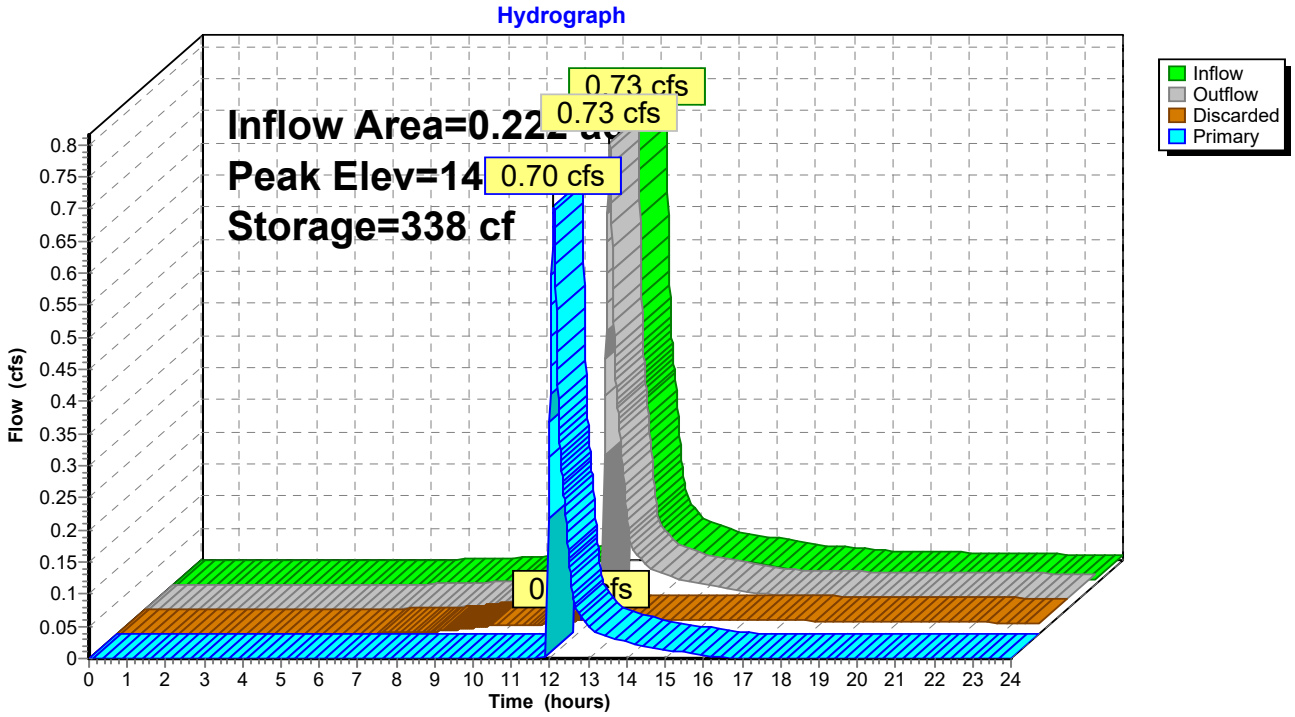
1,013.6 cf Field - 275.6 cf Chambers = 738.0 cf Stone x 40.0% Voids = 295.2 cf Stone Storage

Chamber Storage + Stone Storage = 570.8 cf = 0.013 af
Overall Storage Efficiency = 56.3%
Overall System Size = 46.34' x 6.25' x 3.50'

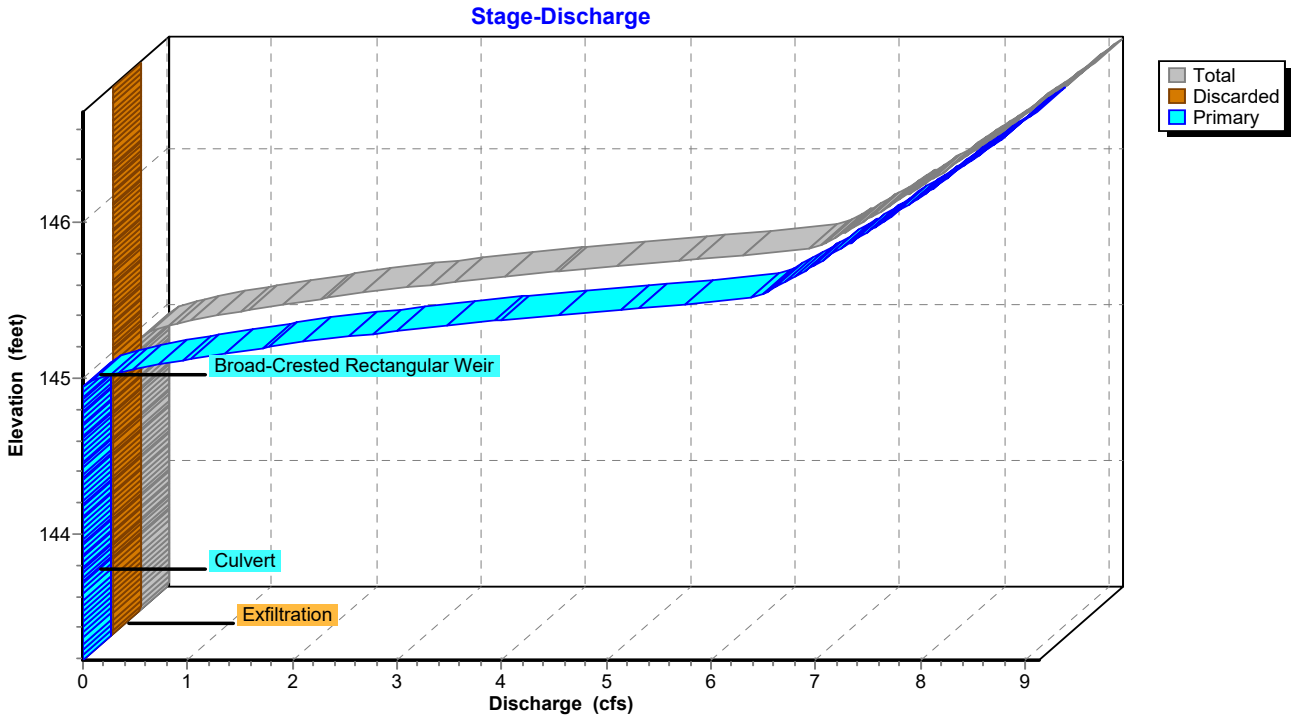
6 Chambers
37.5 cy Field
27.3 cy Stone



Pond ADS 2: ADS 2



Pond ADS 2: ADS 2



Summary for Pond CB-2: CB-2

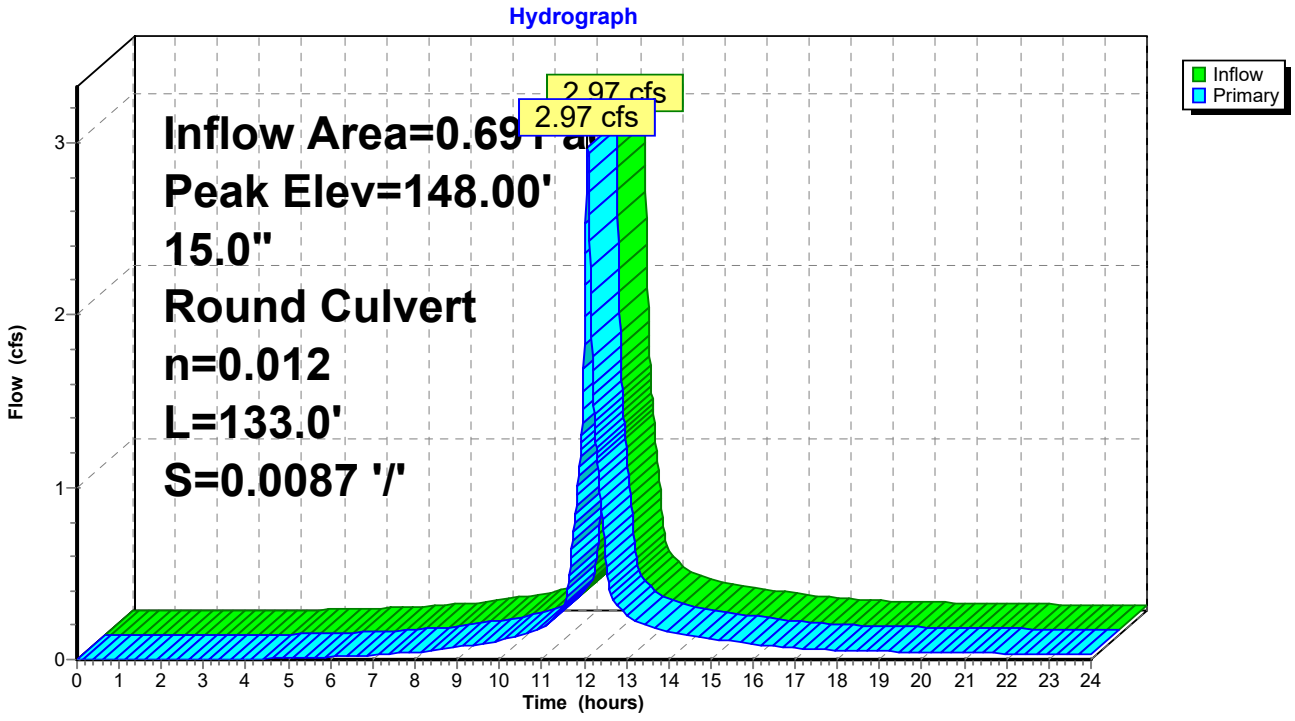
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 3.84" for 10-Year event
Inflow = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af
Outflow = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min
Primary = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af
Routed to Pond DMH-1 : DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 148.00' @ 12.08 hrs
Flood Elev= 149.80'

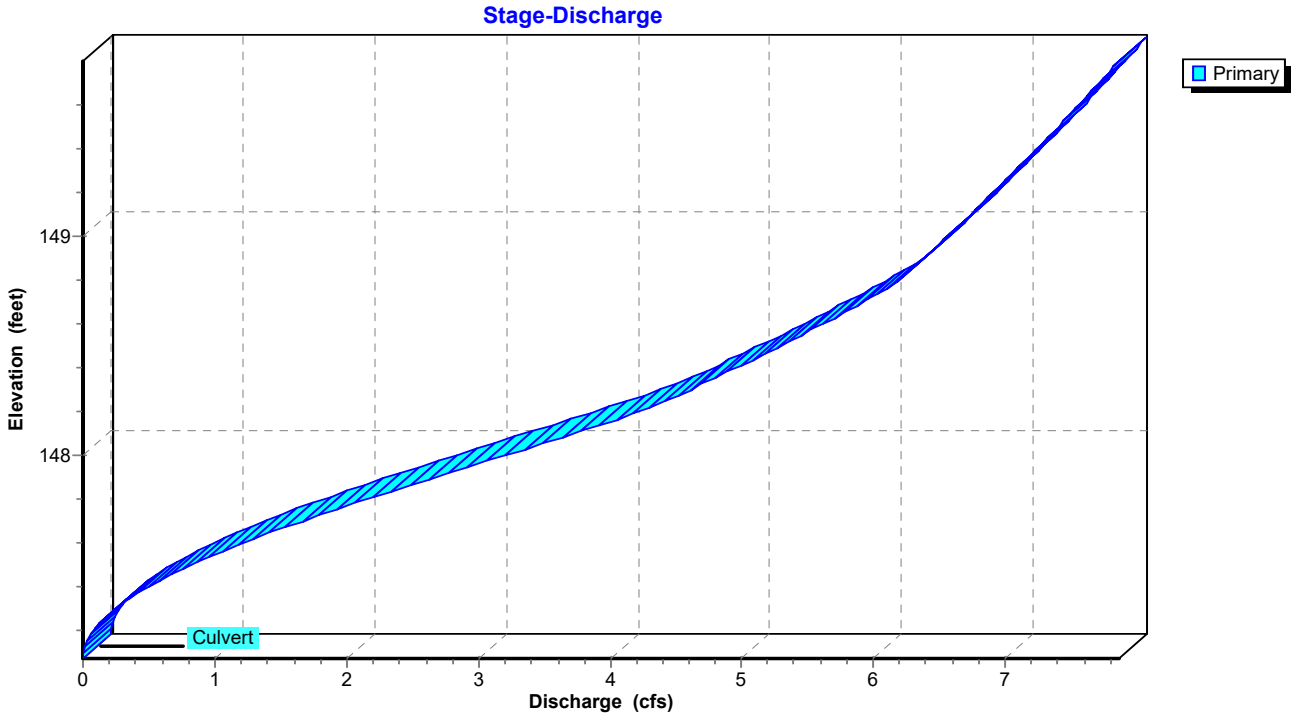
Device	Routing	Invert	Outlet Devices
#1	Primary	147.07'	**15.0" Round Culvert** L= 133.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 147.07' / 145.91' S= 0.0087 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.96 cfs @ 12.08 hrs HW=148.00' TW=146.94' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.96 cfs @ 4.19 fps)

Pond CB-2: CB-2



Pond CB-2: CB-2


Stage-Discharge
Primary
149
148
Elevation (feet)
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

Summary for Pond CB-3: CB-3

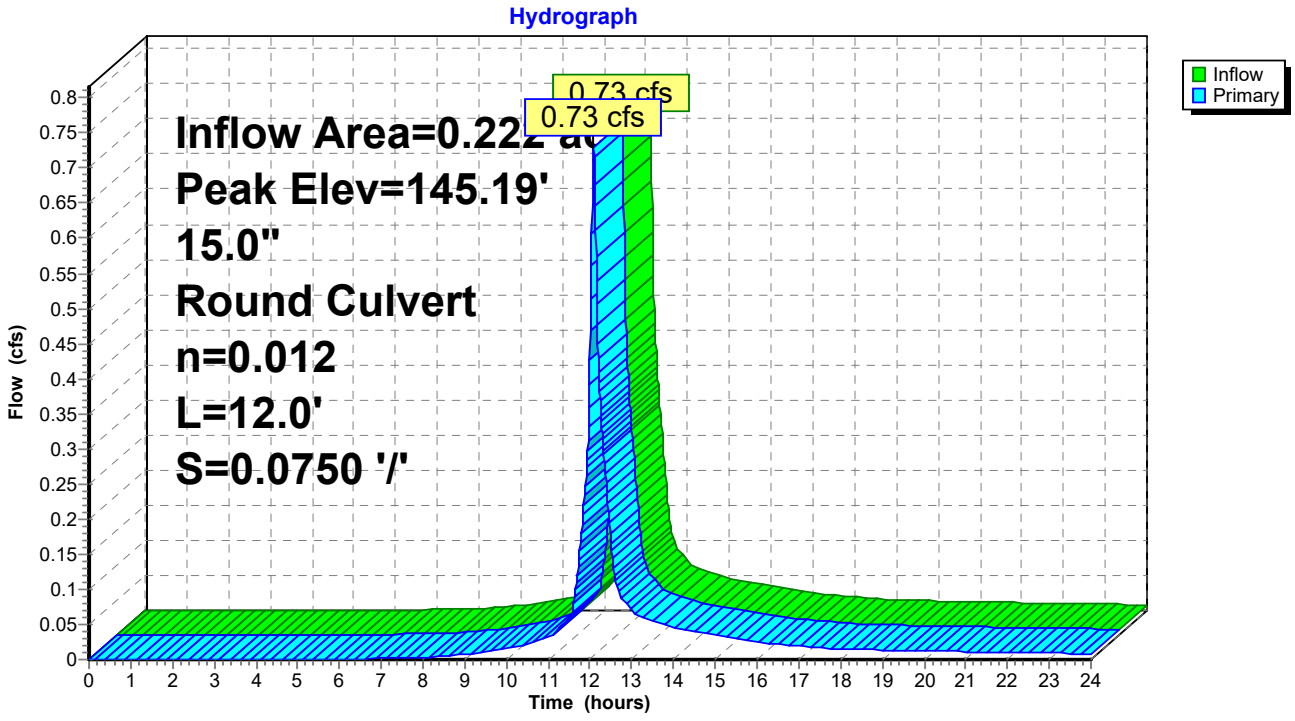
Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 2.83" for 10-Year event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.73 cfs @ 12.09 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Primary = 0.73 cfs @ 12.09 hrs, Volume= 0.052 af
Routed to Pond ADS 2 : ADS 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.19' @ 12.09 hrs
Flood Elev= 149.14'

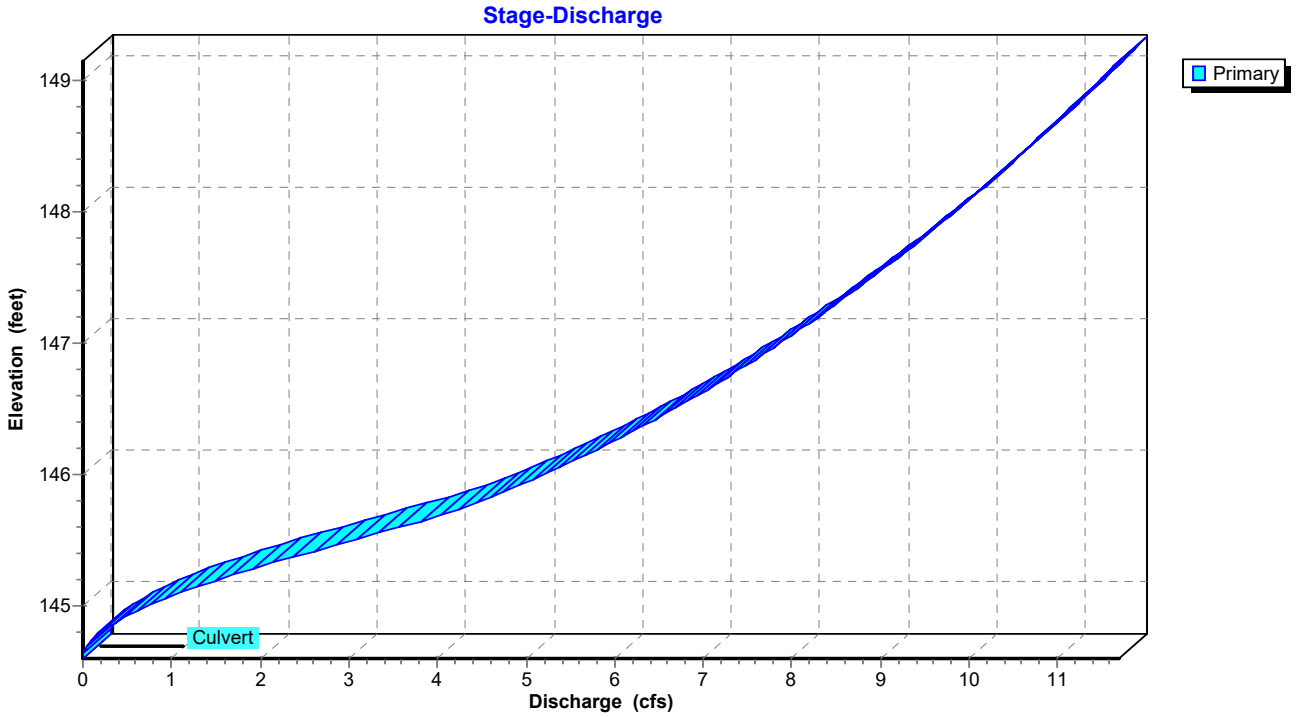
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 12.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.70' S= 0.0750 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.73 cfs @ 12.09 hrs HW=145.19' TW=145.09' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.73 cfs @ 1.88 fps)

Pond CB-3: CB-3



Pond CB-3: CB-3


Stage-Discharge
Primary
Elevation (feet)
149
148
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
9
10
11
Discharge (cfs)

Summary for Pond CB-4: CB-4

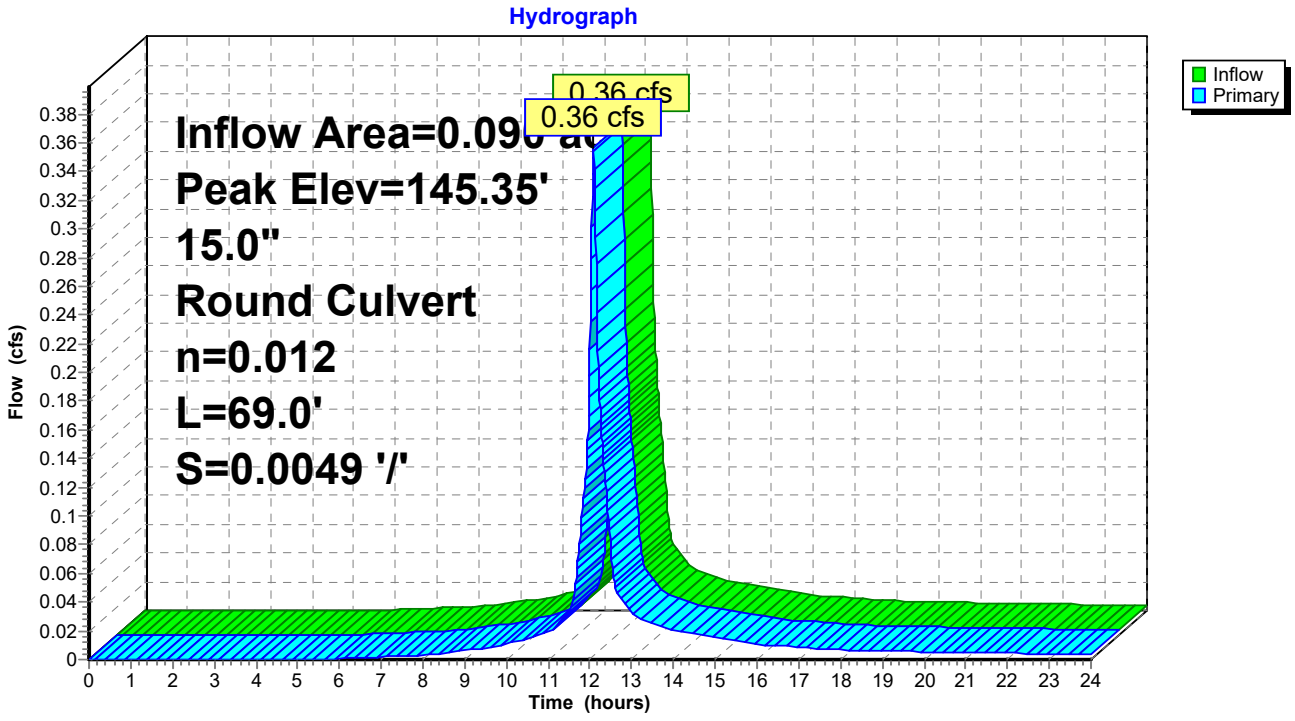
Inflow Area = 0.090 ac, 83.41% Impervious, Inflow Depth > 3.43" for 10-Year event
Inflow = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af
Outflow = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min
Primary = 0.36 cfs @ 12.09 hrs, Volume= 0.026 af
Routed to Pond CB-3 : CB-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.35' @ 12.09 hrs
Flood Elev= 147.76'

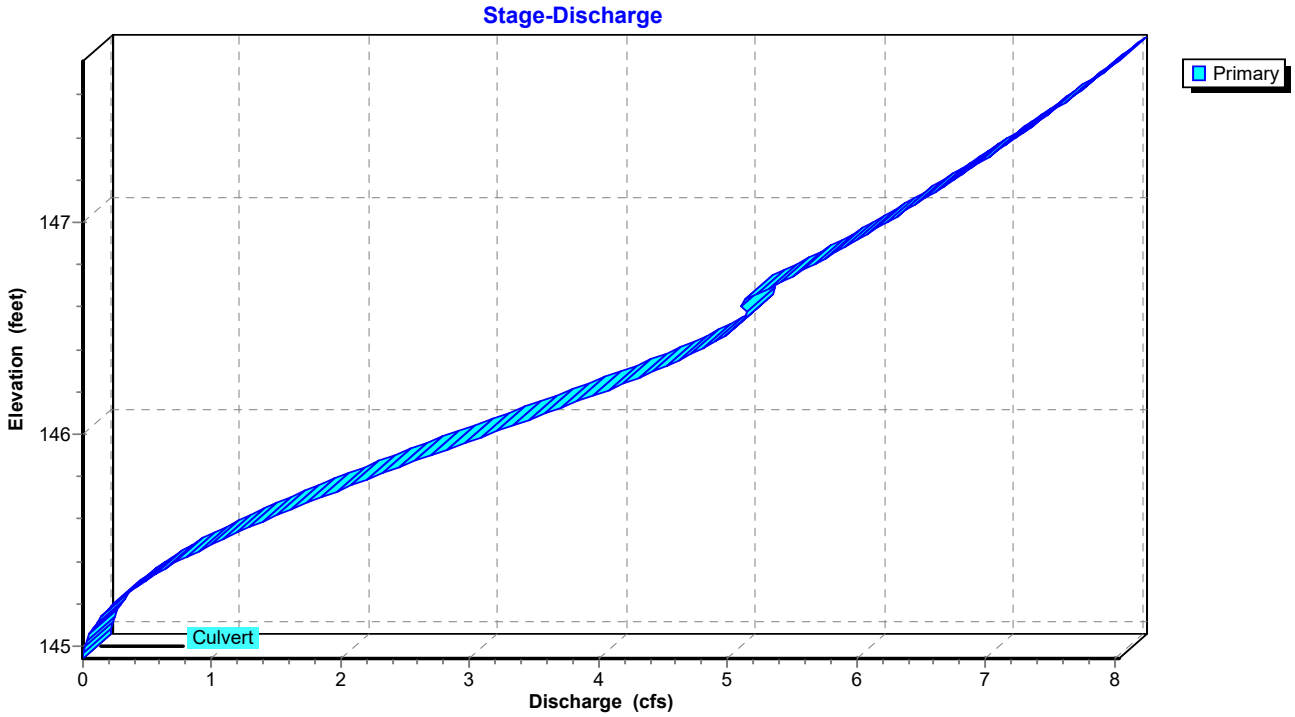
Device	Routing	Invert	Outlet Devices
#1	Primary	144.94'	**15.0" Round Culvert** L= 69.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.94' / 144.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.36 cfs @ 12.09 hrs HW=145.35' TW=145.19' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.36 cfs @ 1.53 fps)

Pond CB-4: CB-4



Pond CB-4: CB-4


Stage-Discharge
Primary
Elevation (feet)
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

Summary for Pond DMH-1: DMH-1

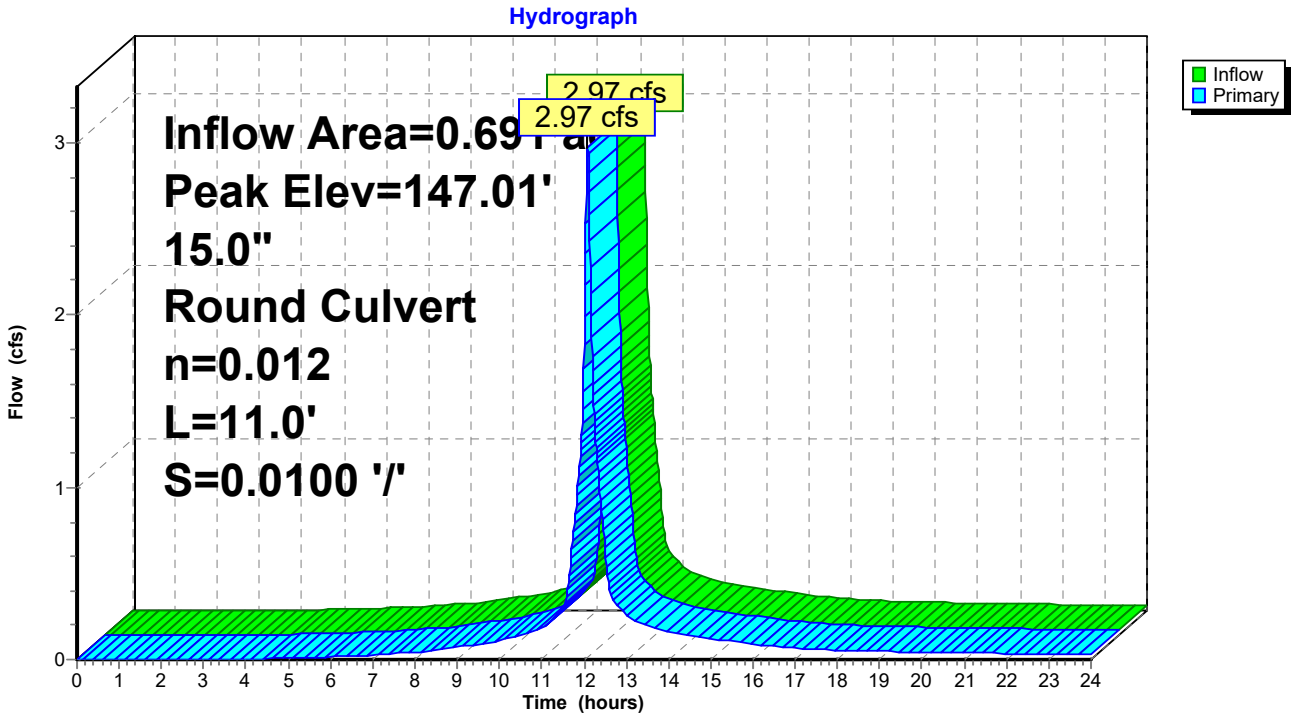
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 3.84" for 10-Year event
Inflow = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af
Outflow = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af, Atten= 0%, Lag= 0.0 min
Primary = 2.97 cfs @ 12.08 hrs, Volume= 0.221 af
Routed to Pond ADS 1 : ADS 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 147.01' @ 12.97 hrs
Flood Elev= 150.35'

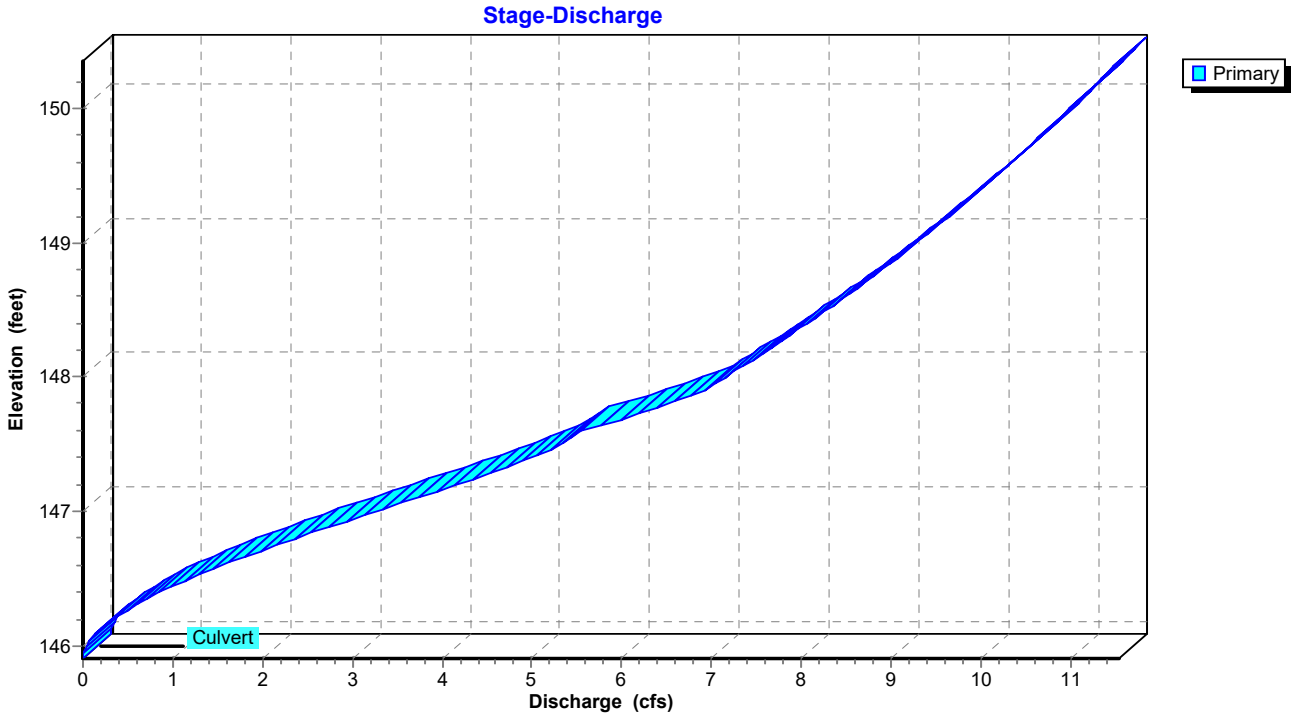
Device	Routing	Invert	Outlet Devices
#1	Primary	145.91'	**15.0" Round Culvert** L= 11.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.91' / 145.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.96 cfs @ 12.08 hrs HW=146.94' TW=146.50' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.96 cfs @ 3.74 fps)

Pond DMH-1: DMH-1



Pond DMH-1: DMH-1



Summary for Pond DMH-2: DMH-2

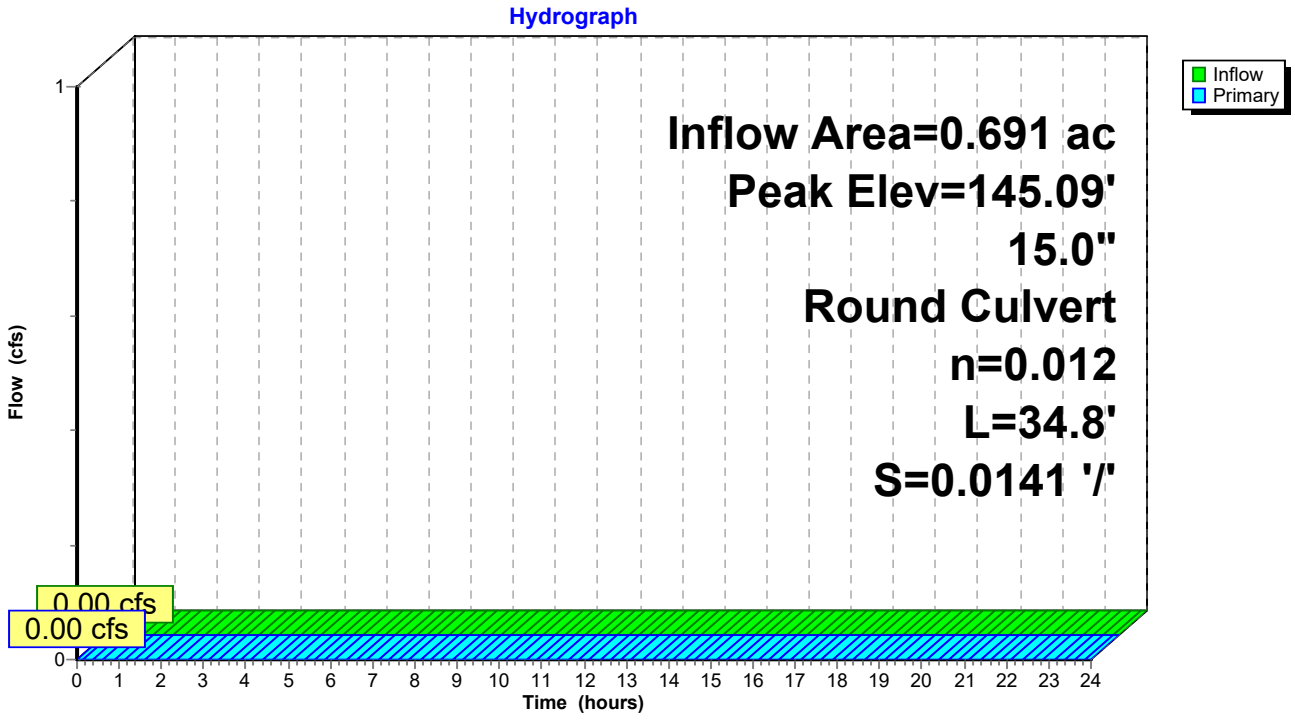
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-3 : DMH-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.09' @ 0.00 hrs
Flood Elev= 149.88'

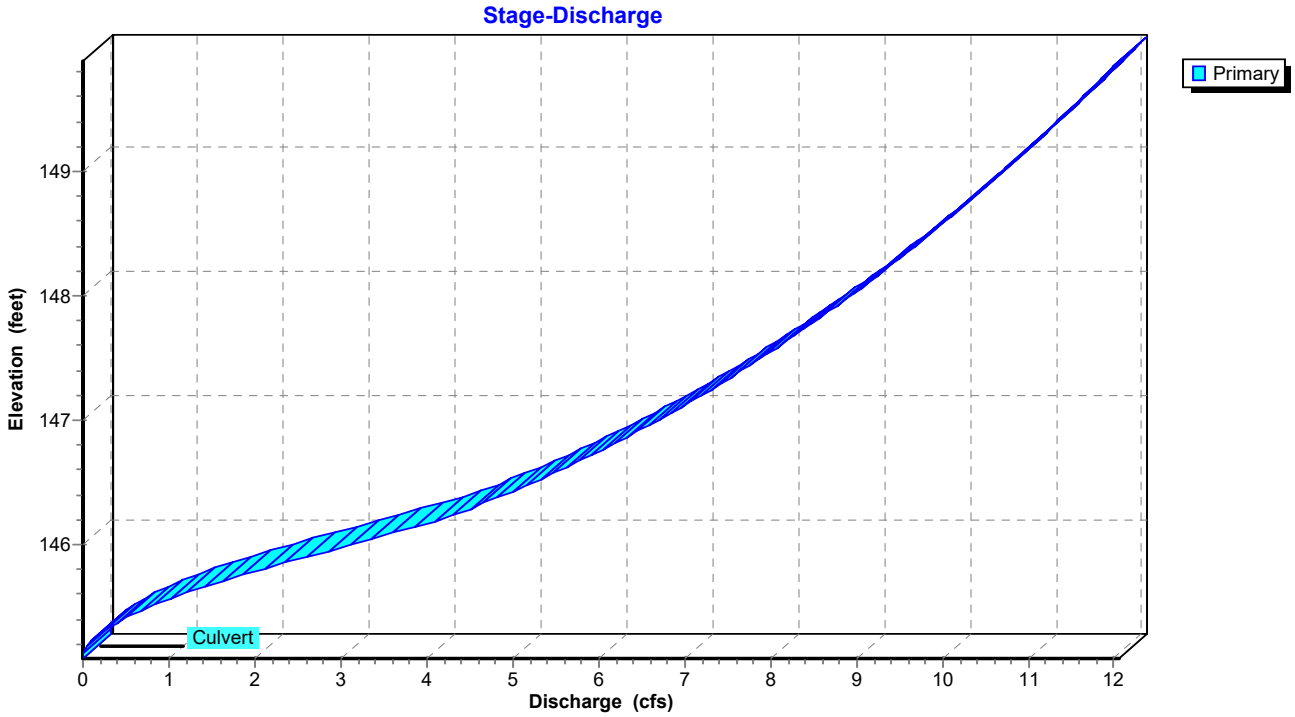
Device	Routing	Invert	Outlet Devices
#1	Primary	145.09'	**15.0" Round Culvert** L= 34.8' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.09' / 144.60' S= 0.0141 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.09' TW=144.60' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-2: DMH-2



Pond DMH-2: DMH-2



Summary for Pond DMH-3: DMH-3

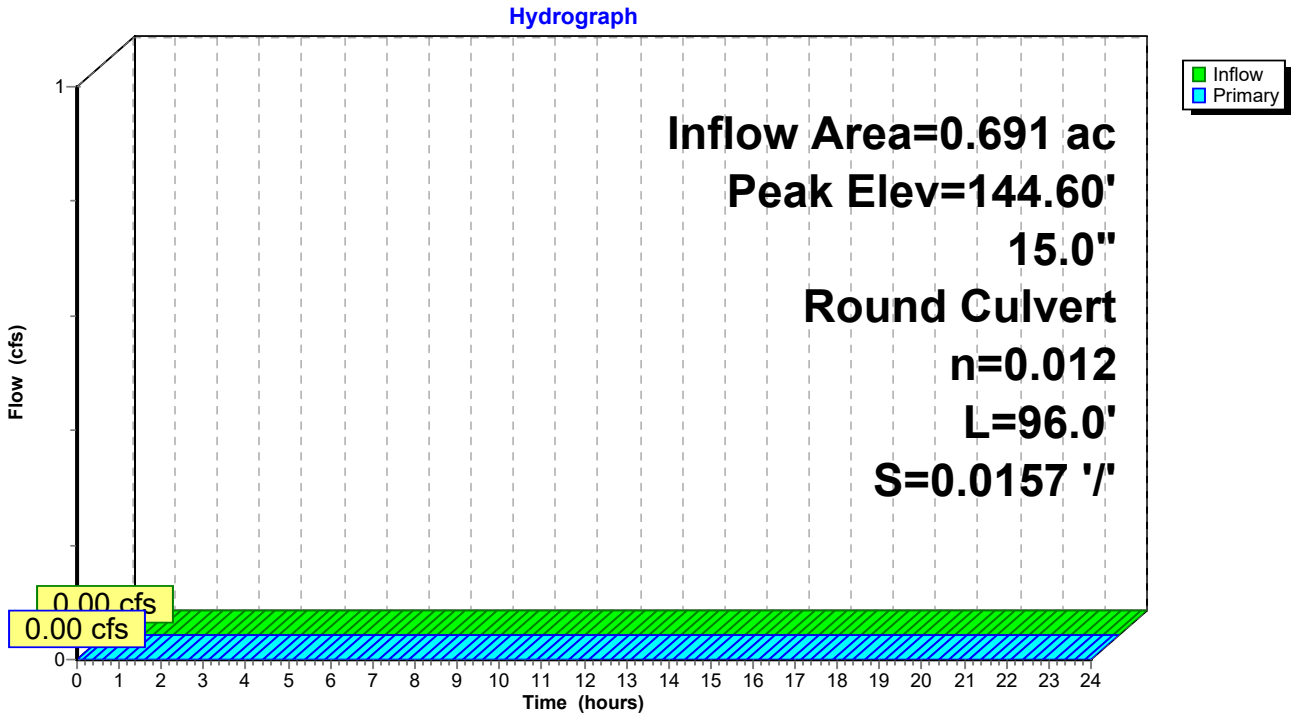
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 144.60' @ 0.00 hrs
Flood Elev= 149.87'

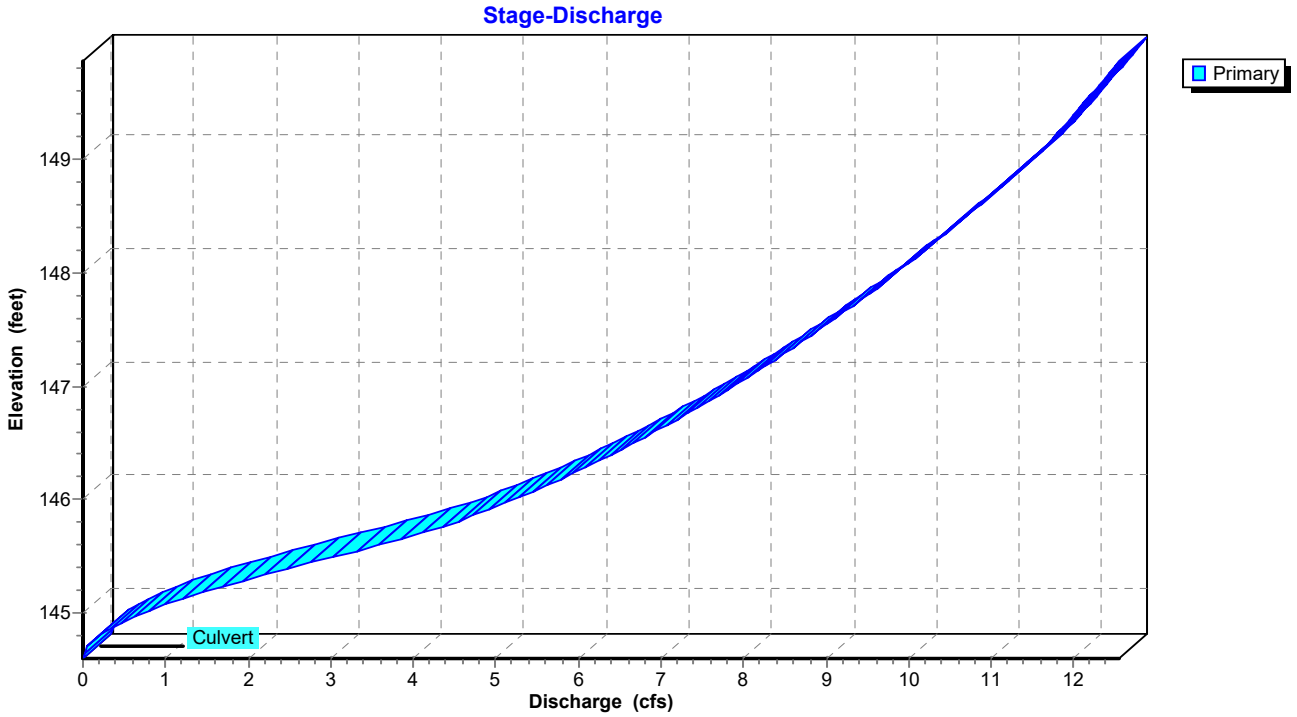
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.09' S= 0.0157 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.60' TW=143.09' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-3: DMH-3



Pond DMH-3: DMH-3



Summary for Pond DMH-4: DMH-4

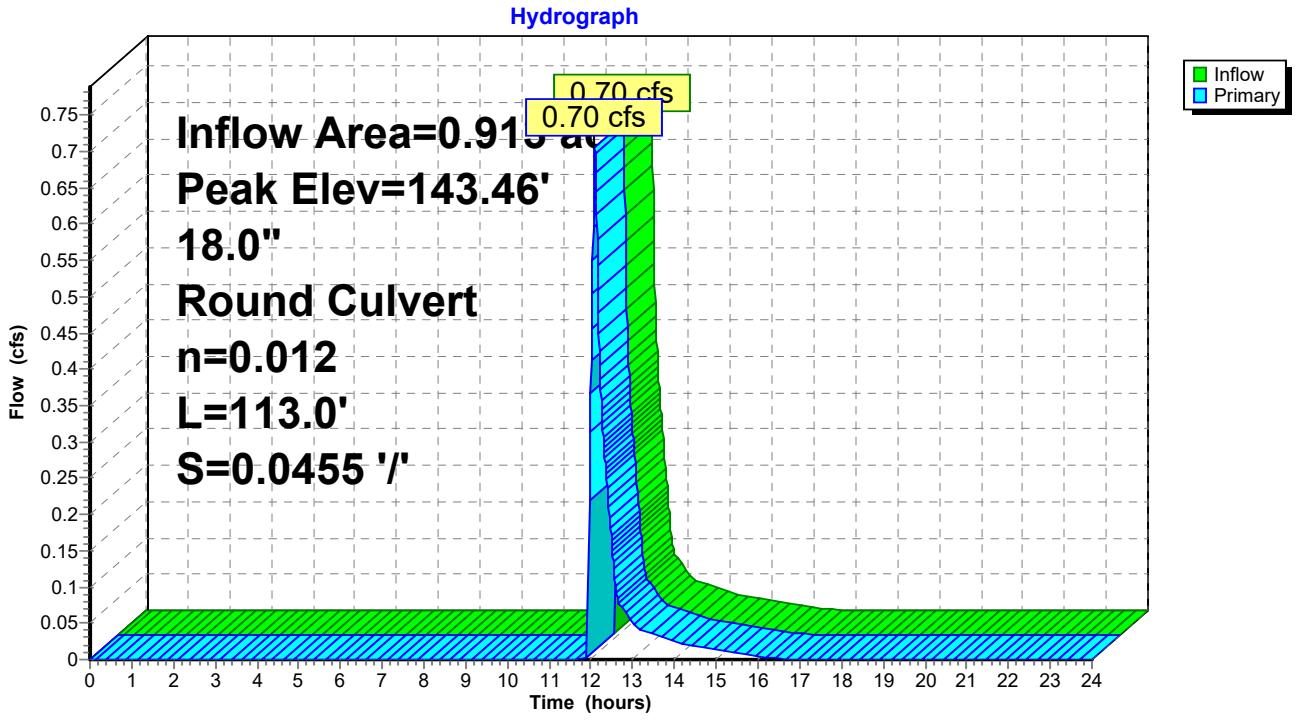
Inflow Area = 0.913 ac, 85.94% Impervious, Inflow Depth = 0.33" for 10-Year event
Inflow = 0.70 cfs @ 12.09 hrs, Volume= 0.025 af
Outflow = 0.70 cfs @ 12.09 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.09 hrs, Volume= 0.025 af
Routed to Reach POST : POST

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 143.46' @ 12.09 hrs
Flood Elev= 149.87'

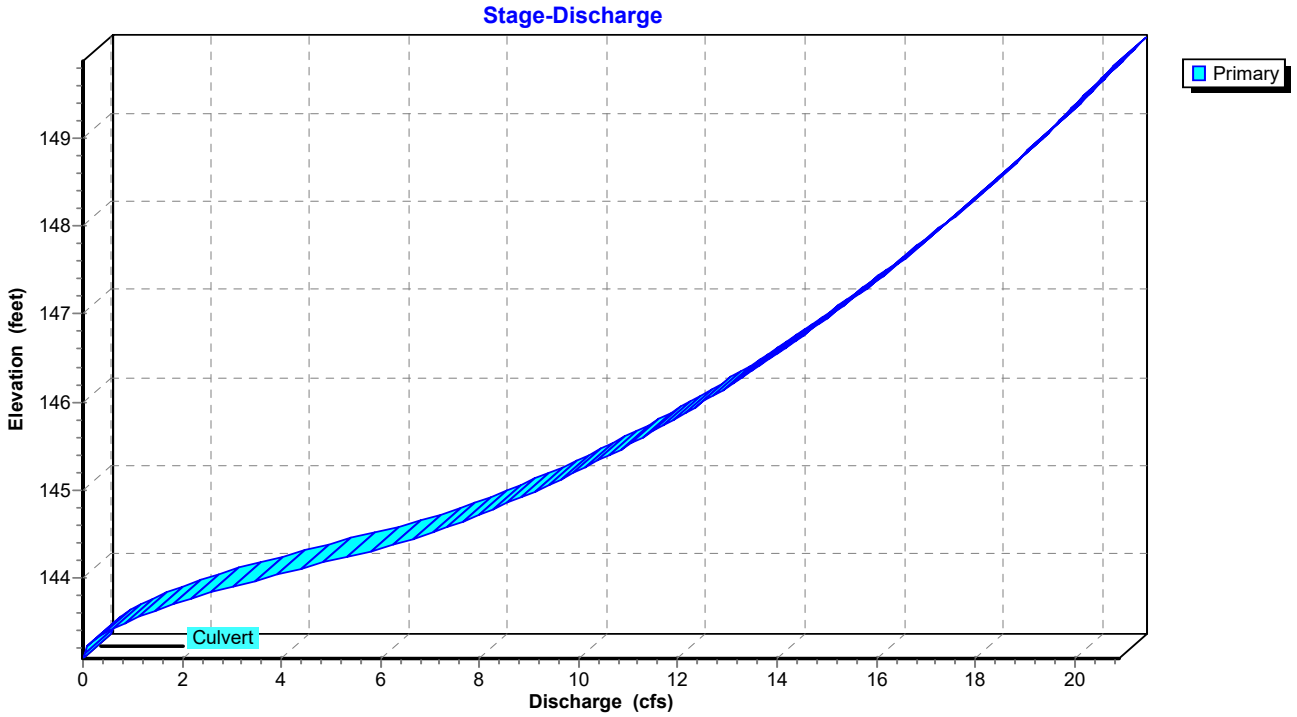
Device	Routing	Invert	Outlet Devices
#1	Primary	143.09'	**18.0" Round Culvert** L= 113.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.09' / 137.95' S= 0.0455 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.70 cfs @ 12.09 hrs HW=143.46' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.70 cfs @ 2.07 fps)

Pond DMH-4: DMH-4



Pond DMH-4: DMH-4



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1A: POST WS 1A Runoff Area=30,089 sf 90.36% Impervious Runoff Depth>0.72"
Flow Length=229' Tc=6.0 min CN=92 Runoff=0.58 cfs 0.041 af

Subcatchment POST WS 1C: POST WS 1C Runoff Area=3,936 sf 83.41% Impervious Runoff Depth>0.51"
Flow Length=69' Slope=0.0200 '/' Tc=6.0 min CN=88 Runoff=0.05 cfs 0.004 af

Subcatchment POST WS 1D: POST WS 1D Runoff Area=1,207 sf 50.62% Impervious Runoff Depth>0.05"
Flow Length=16' Slope=0.0225 '/' Tc=6.0 min CN=69 Runoff=0.00 cfs 0.000 af

Subcatchment POST WS 2: POST WS 2 Runoff Area=2,956 sf 14.68% Impervious Runoff Depth=0.00"
Flow Length=52' Slope=0.1000 '/' Tc=6.0 min CN=48 Runoff=0.00 cfs 0.000 af

Subcatchment POST WS-1B: POST WS 1B Runoff Area=5,732 sf 64.53% Impervious Runoff Depth>0.17"
Flow Length=55' Slope=0.0127 '/' Tc=6.0 min CN=77 Runoff=0.01 cfs 0.002 af

Subcatchment PRE WS 1: PRE WS 1 Runoff Area=43,899 sf 22.49% Impervious Runoff Depth>0.00"
Flow Length=307' Tc=6.0 min UI Adjusted CN=60 Runoff=0.00 cfs 0.000 af

Reach POST: POST Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond ADS 1: ADS 1 Peak Elev=145.92' Storage=227 cf Inflow=0.58 cfs 0.041 af
Discarded=0.22 cfs 0.041 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.041 af

Pond ADS 2: ADS 2 Peak Elev=143.64' Storage=51 cf Inflow=0.07 cfs 0.006 af
Discarded=0.02 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.006 af

Pond CB-2: CB-2 Peak Elev=147.43' Inflow=0.58 cfs 0.041 af
15.0" Round Culvert n=0.012 L=133.0' S=0.0087 '/' Outflow=0.58 cfs 0.041 af

Pond CB-3: CB-3 Peak Elev=144.72' Inflow=0.07 cfs 0.006 af
15.0" Round Culvert n=0.012 L=12.0' S=0.0750 '/' Outflow=0.07 cfs 0.006 af

Pond CB-4: CB-4 Peak Elev=145.06' Inflow=0.05 cfs 0.004 af
15.0" Round Culvert n=0.012 L=69.0' S=0.0049 '/' Outflow=0.05 cfs 0.004 af

Pond DMH-1: DMH-1 Peak Elev=146.30' Inflow=0.58 cfs 0.041 af
15.0" Round Culvert n=0.012 L=11.0' S=0.0100 '/' Outflow=0.58 cfs 0.041 af

Pond DMH-2: DMH-2 Peak Elev=145.09' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=34.8' S=0.0141 '/' Outflow=0.00 cfs 0.000 af

Pond DMH-3: DMH-3 Peak Elev=144.60' Inflow=0.00 cfs 0.000 af
15.0" Round Culvert n=0.012 L=96.0' S=0.0157 '/' Outflow=0.00 cfs 0.000 af

Pond DMH-4: DMH-4 Peak Elev=143.09' Inflow=0.00 cfs 0.000 af
18.0" Round Culvert n=0.012 L=113.0' S=0.0455 '/' Outflow=0.00 cfs 0.000 af

Summary for Subcatchment POST 1A: POST WS 1A

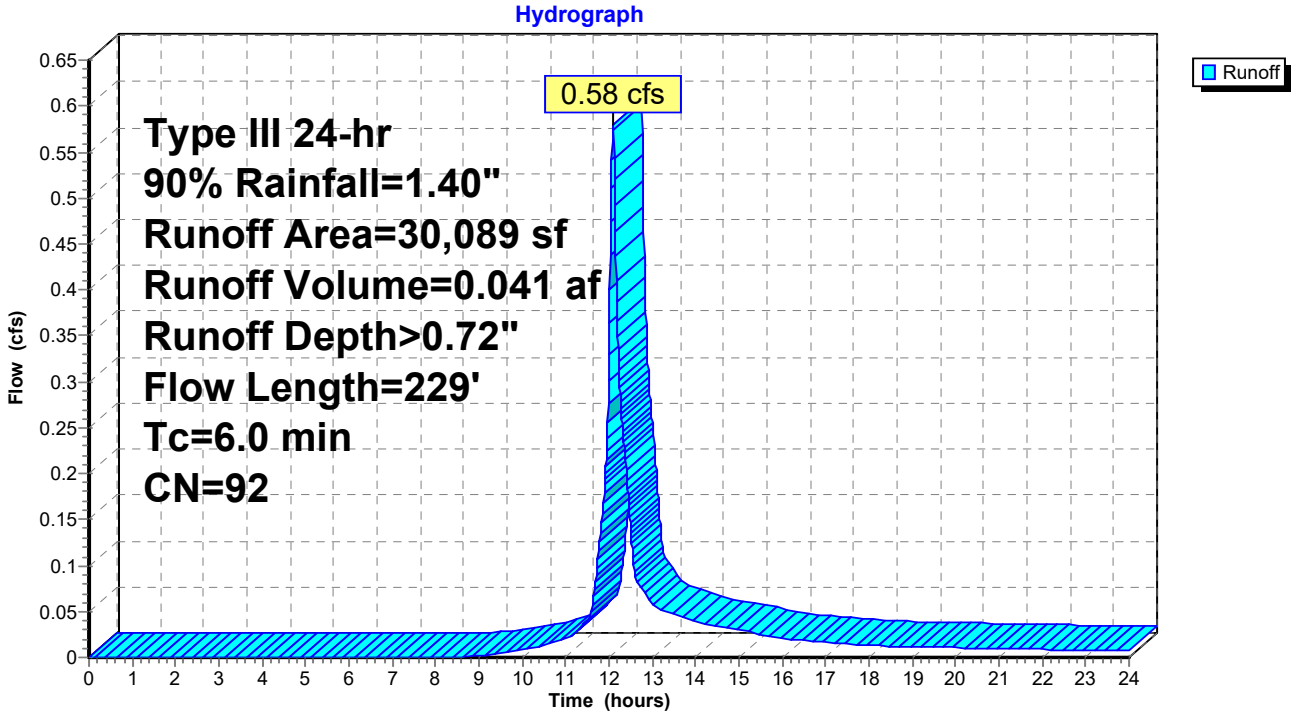
Runoff = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af, Depth> 0.72"
Routed to Pond CB-2 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 90% Rainfall=1.40"

Area (sf)	CN	Description
27,187	98	Paved parking, HSG A
2,902	39	>75% Grass cover, Good, HSG A
30,089	92	Weighted Average
2,902		9.64% Pervious Area
27,187		90.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.01		**Sheet Flow, Parking lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
1.5	129	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	229	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST 1A: POST WS 1A



Summary for Subcatchment POST WS 1C: POST WS 1C

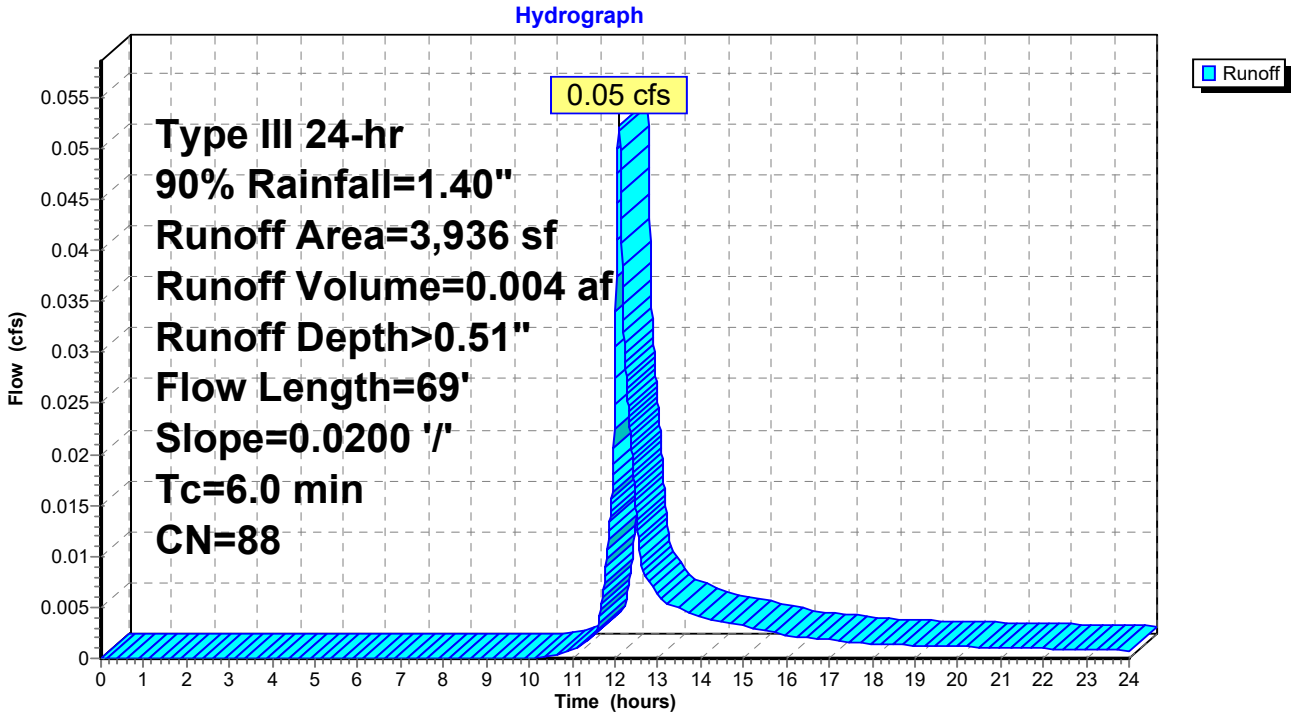
Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth> 0.51"
Routed to Pond CB-4 : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 90% Rainfall=1.40"

Area (sf)	CN	Description
3,283	98	Paved parking, HSG A
653	39	>75% Grass cover, Good, HSG A
3,936	88	Weighted Average
653		16.59% Pervious Area
3,283		83.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	69	0.0200	1.24		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	69	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1C: POST WS 1C



Summary for Subcatchment POST WS 1D: POST WS 1D

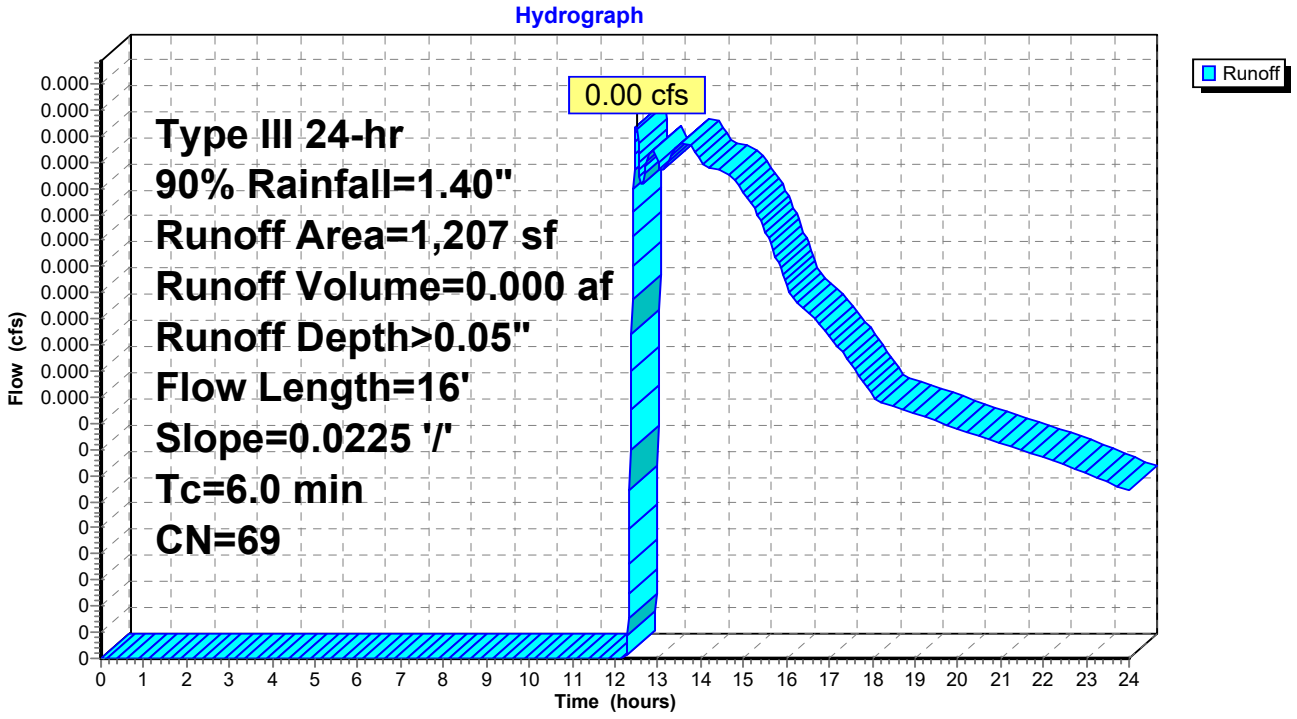
Runoff = 0.00 cfs @ 12.50 hrs, Volume= 0.000 af, Depth> 0.05"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 90% Rainfall=1.40"

Area (sf)	CN	Description
611	98	Paved parking, HSG A
596	39	>75% Grass cover, Good, HSG A
1,207	69	Weighted Average
596		49.38% Pervious Area
611		50.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0225	0.97		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	16	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1D: POST WS 1D



Summary for Subcatchment POST WS 2: POST WS 2

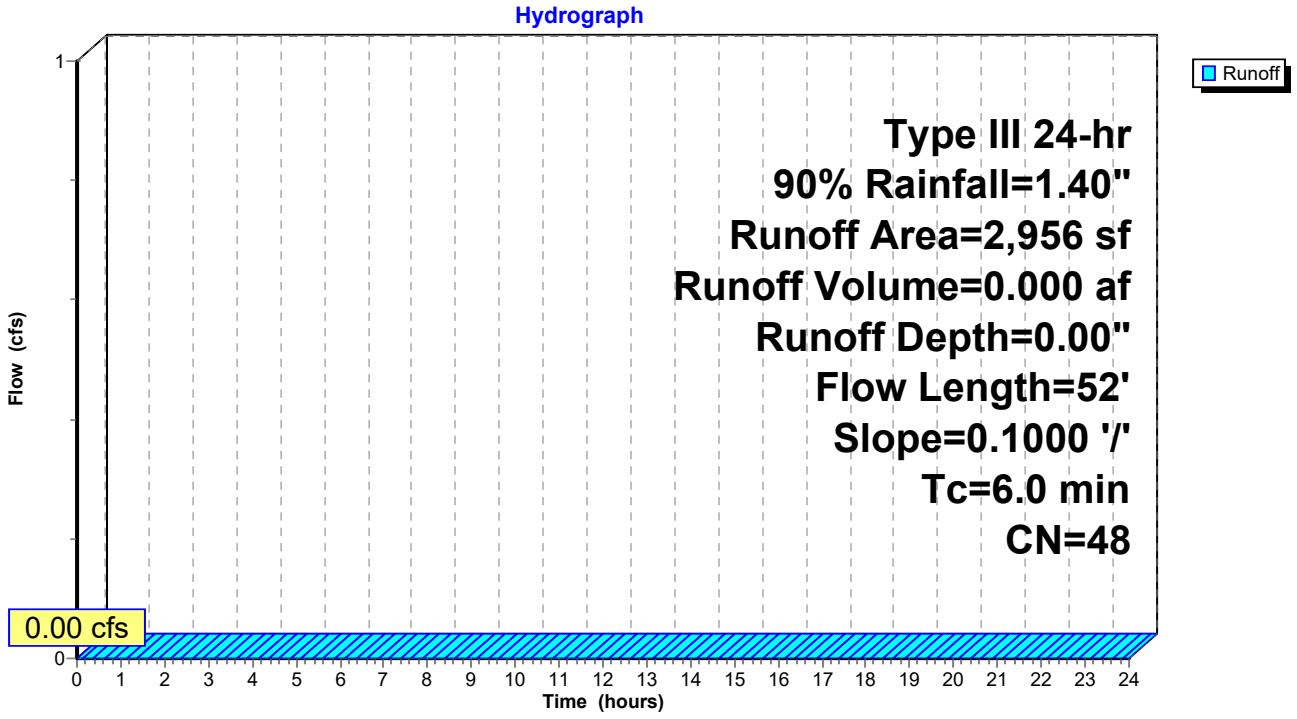
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 90% Rainfall=1.40"

Area (sf)	CN	Description
434	98	Paved parking, HSG A
2,522	39	>75% Grass cover, Good, HSG A
2,956	48	Weighted Average
2,522		85.32% Pervious Area
434		14.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	52	0.1000	0.19		**Sheet Flow, Sheet Flow to Fishkill Ave.** Grass: Dense n= 0.240 P2= 3.00"
4.6	52	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 2: POST WS 2



Summary for Subcatchment POST WS-1B: POST WS 1B

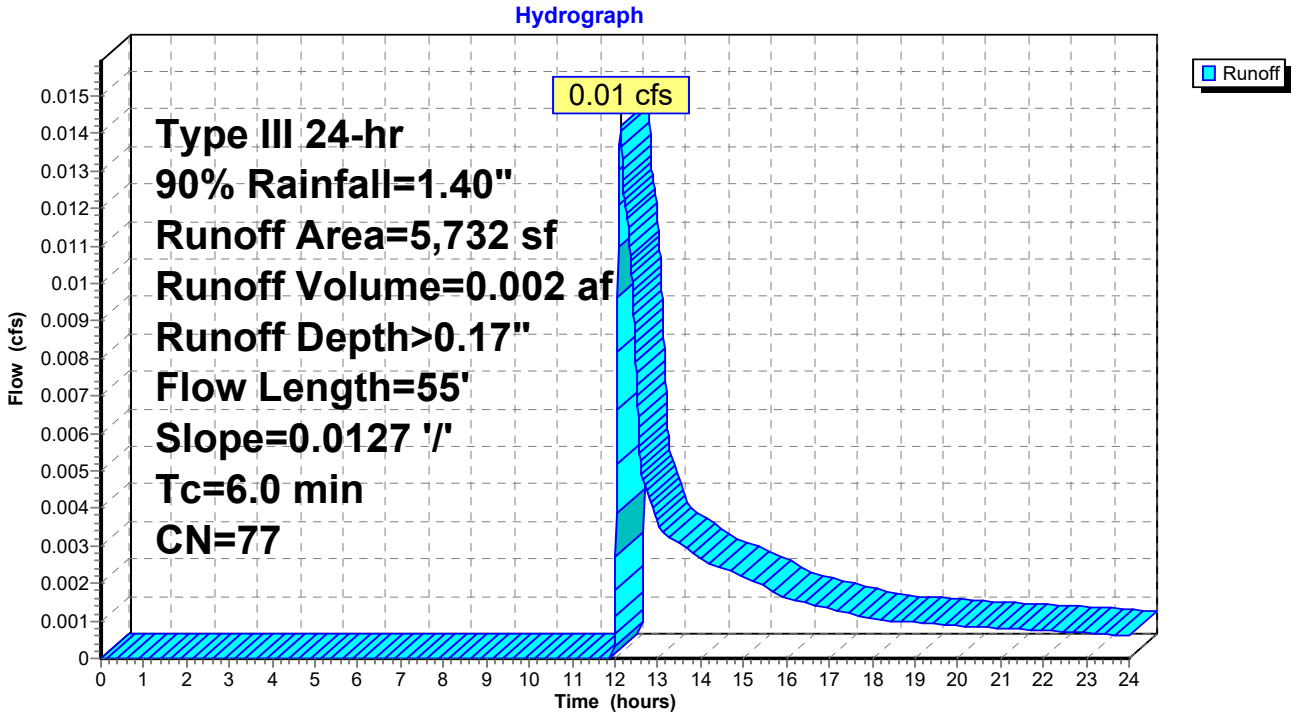
Runoff = 0.01 cfs @ 12.13 hrs, Volume= 0.002 af, Depth> 0.17"
Routed to Pond CB-3 : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 90% Rainfall=1.40"

Area (sf)	CN	Description
3,699	98	Paved parking, HSG A
2,033	39	>75% Grass cover, Good, HSG A
5,732	77	Weighted Average
2,033		35.47% Pervious Area
3,699		64.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	55	0.0127	0.99		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	55	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS-1B: POST WS 1B



Summary for Subcatchment PRE WS 1: PRE WS 1

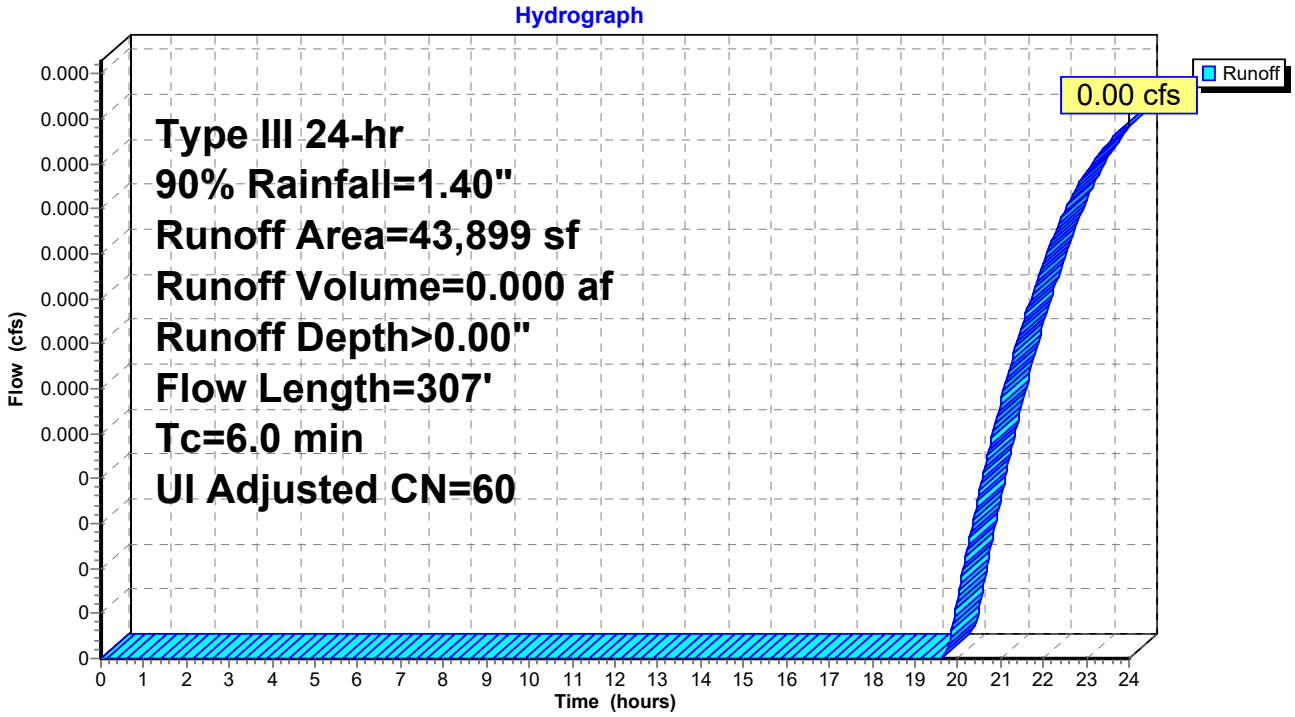
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth> 0.00"
Routed to nonexistent node PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 90% Rainfall=1.40"

Area (sf)	CN	Adj	Description
9,872	98		Unconnected roofs, HSG A
7,963	96		Gravel surface, HSG A
15,833	49		50-75% Grass cover, Fair, HSG A
10,231	32		Woods/grass comb., Good, HSG A
43,899	65	60	Weighted Average, UI Adjusted
34,027			77.51% Pervious Area
9,872			22.49% Impervious Area
9,872			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	67	0.1480	0.34		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.00"
0.5	120	0.0620	4.01		**Shallow Concentrated Flow, Shallow Flow** Unpaved Kv= 16.1 fps
0.4	120	0.0600	4.97		**Shallow Concentrated Flow, Driveway** Paved Kv= 20.3 fps
4.2	307	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE WS 1: PRE WS 1

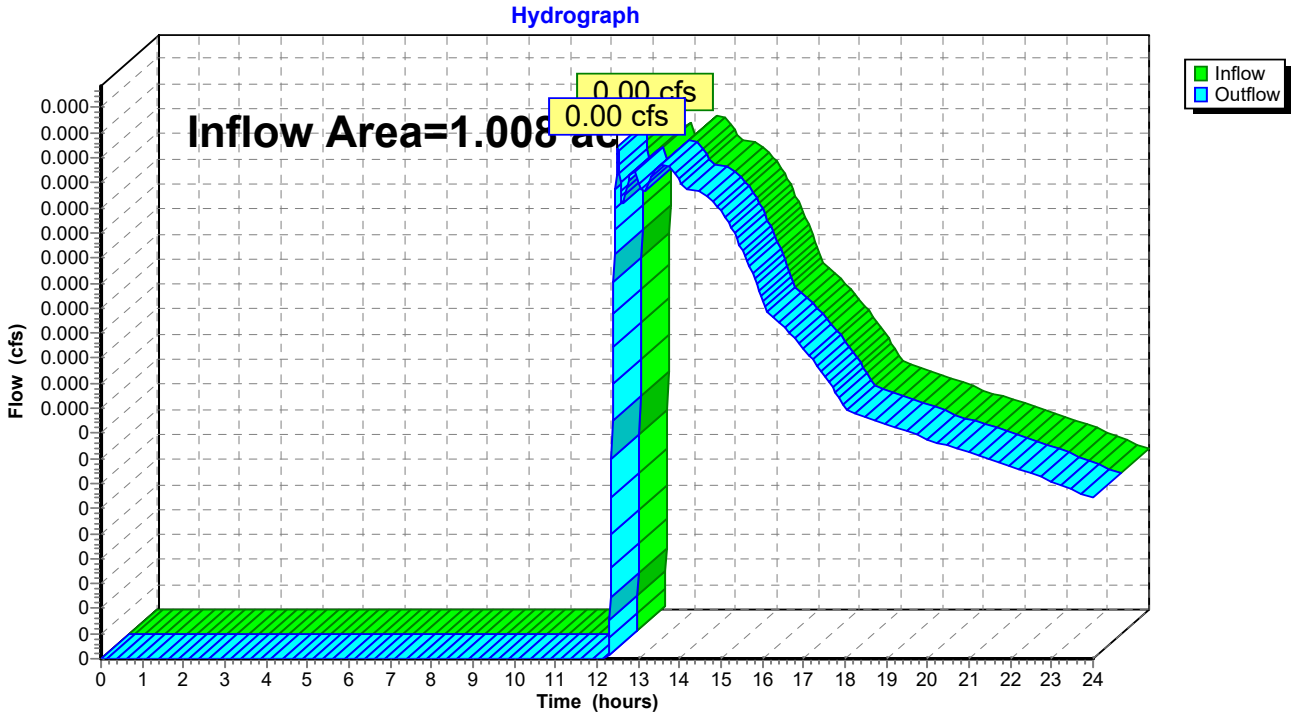


Summary for Reach POST: POST

Inflow Area = 1.008 ac, 80.18% Impervious, Inflow Depth > 0.00" for 90% event
Inflow = 0.00 cfs @ 12.50 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 12.50 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach POST: POST



Summary for Pond ADS 1: ADS 1

Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 0.72" for 90% event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
Outflow = 0.22 cfs @ 12.36 hrs, Volume= 0.041 af, Atten= 62%, Lag= 16.4 min
Discarded = 0.22 cfs @ 12.36 hrs, Volume= 0.041 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-2 : DMH-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.92' @ 12.36 hrs Surf.Area= 4,695 sf Storage= 227 cf
Flood Elev= 148.80' Surf.Area= 4,695 sf Storage= 9,162 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 4.5 min (835.3 - 830.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.80'	4,220 cf	**77.50'W x 60.58'L x 3.50'H Field A** 16,431 cf Overall - 5,880 cf Embedded = 10,551 cf x 40.0% Voids
#2A	146.30'	5,880 cf	**ADS_StormTech SC-740 +Cap** x 128 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 128 Chambers in 16 Rows
		10,101 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	146.30'	**15.0" Round Culvert** L= 105.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 146.30' / 145.09' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	148.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	147.80'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#4	Discarded	145.80'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.22 cfs @ 12.36 hrs HW=145.92' (Free Discharge)
└**4=Exfiltration** (Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.80' TW=145.09' (Dynamic Tailwater)
└**1=Culvert** (Controls 0.00 cfs)
  └**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond ADS 1: ADS 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

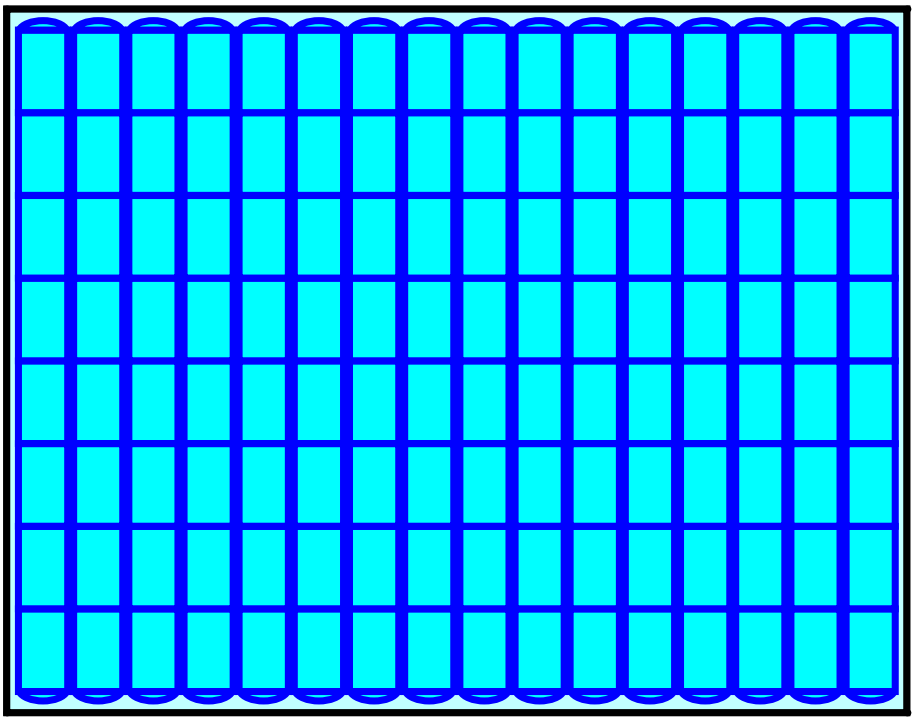
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

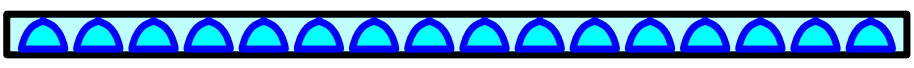
128 Chambers x 45.9 cf = 5,880.3 cf Chamber Storage

16,431.4 cf Field - 5,880.3 cf Chambers = 10,551.1 cf Stone x 40.0% Voids = 4,220.4 cf Stone Storage

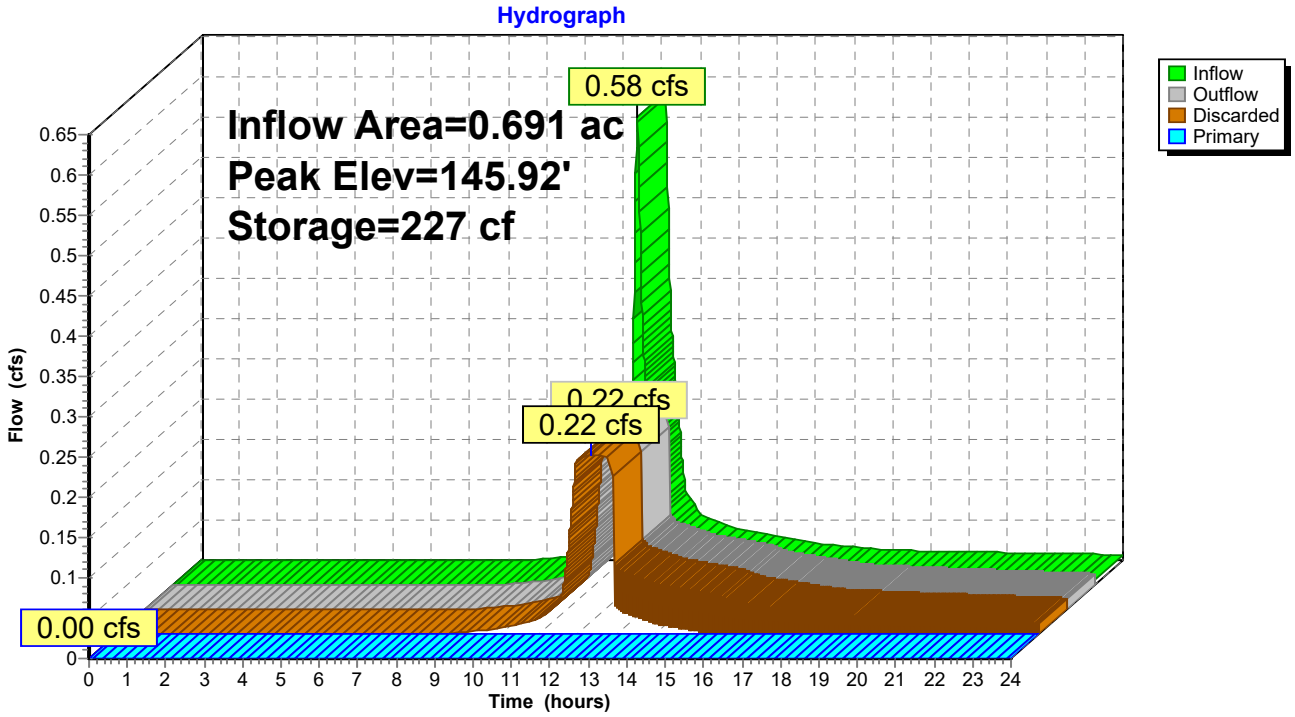
Chamber Storage + Stone Storage = 10,100.8 cf = 0.232 af
Overall Storage Efficiency = 61.5%
Overall System Size = 60.58' x 77.50' x 3.50'

128 Chambers
608.6 cy Field
390.8 cy Stone

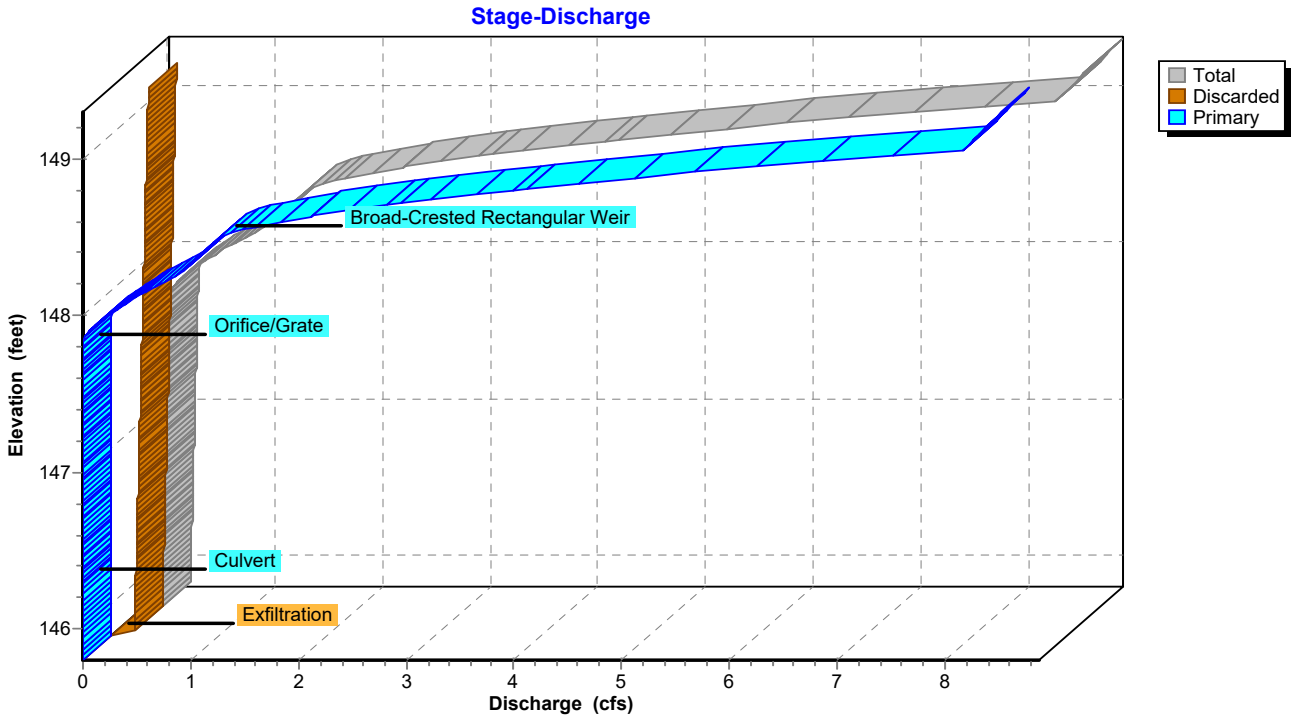




Pond ADS 1: ADS 1



Pond ADS 1: ADS 1



Summary for Pond ADS 2: ADS 2

Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 0.31" for 90% event
Inflow = 0.07 cfs @ 12.10 hrs, Volume= 0.006 af
Outflow = 0.02 cfs @ 12.58 hrs, Volume= 0.006 af, Atten= 77%, Lag= 28.8 min
Discarded = 0.02 cfs @ 12.58 hrs, Volume= 0.006 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 143.64' @ 12.58 hrs Surf.Area= 290 sf Storage= 51 cf
Flood Elev= 146.20' Surf.Area= 290 sf Storage= 513 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 20.5 min (896.9 - 876.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.20'	295 cf	**6.25'W x 46.34'L x 3.50'H Field A** 1,014 cf Overall - 276 cf Embedded = 738 cf x 40.0% Voids
#2A	143.70'	276 cf	**ADS_StormTech SC-740 +Cap** x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		571 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.70'	**15.0" Round Culvert** L= 85.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.70' / 137.95' S= 0.0676 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	144.95'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	143.20'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.02 cfs @ 12.58 hrs HW=143.64' (Free Discharge)
↑└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.20' TW=143.09' (Dynamic Tailwater)
↑└**1=Culvert** (Controls 0.00 cfs)
↑└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond ADS 2: ADS 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

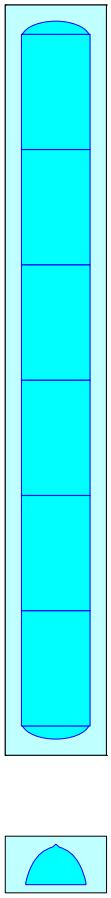
6 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 44.34' Row Length +12.0" End Stone x 2 = 46.34' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

6 Chambers x 45.9 cf = 275.6 cf Chamber Storage

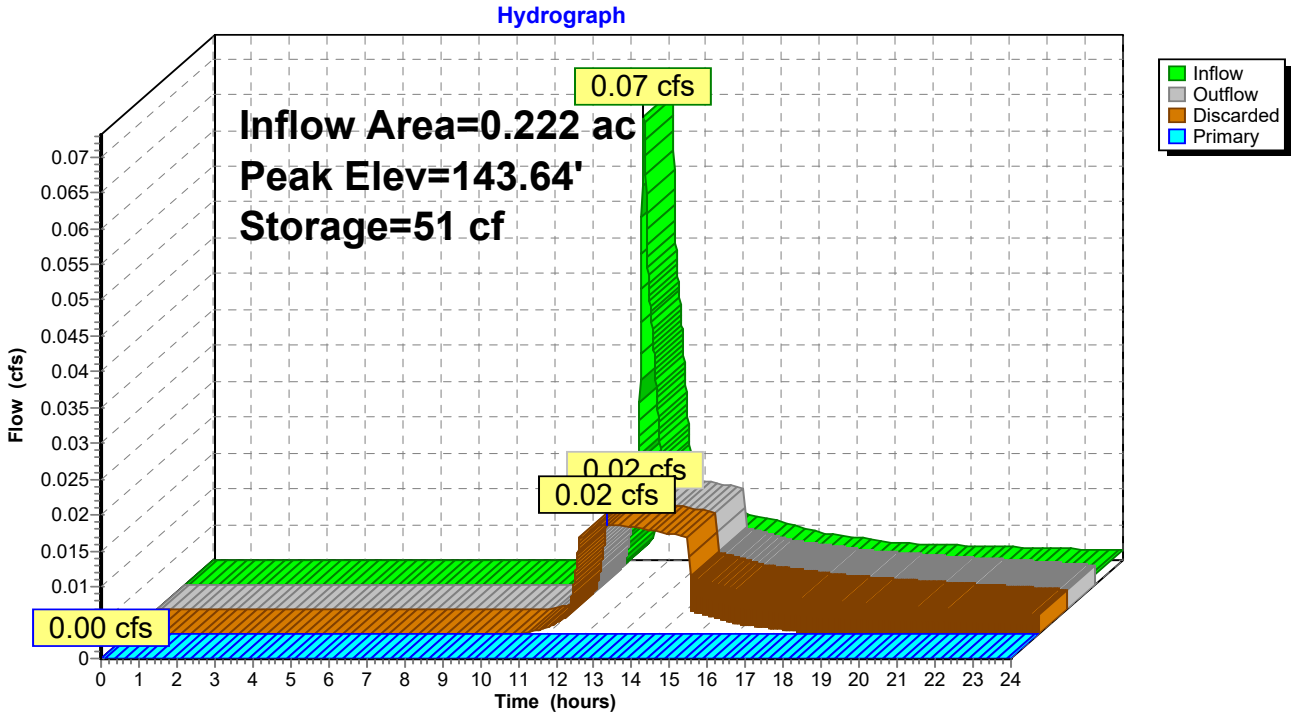
1,013.6 cf Field - 275.6 cf Chambers = 738.0 cf Stone x 40.0% Voids = 295.2 cf Stone Storage

Chamber Storage + Stone Storage = 570.8 cf = 0.013 af
Overall Storage Efficiency = 56.3%
Overall System Size = 46.34' x 6.25' x 3.50'

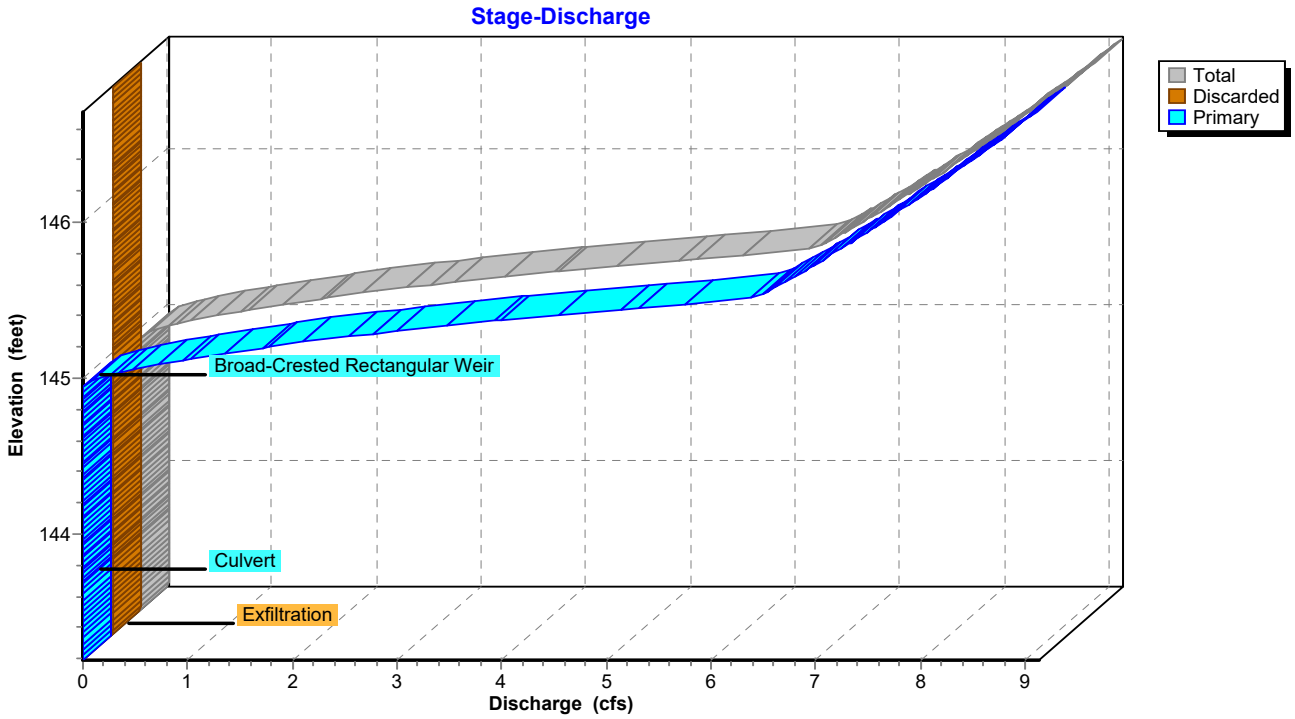
6 Chambers
37.5 cy Field
27.3 cy Stone



Pond ADS 2: ADS 2



Pond ADS 2: ADS 2



Summary for Pond CB-2: CB-2

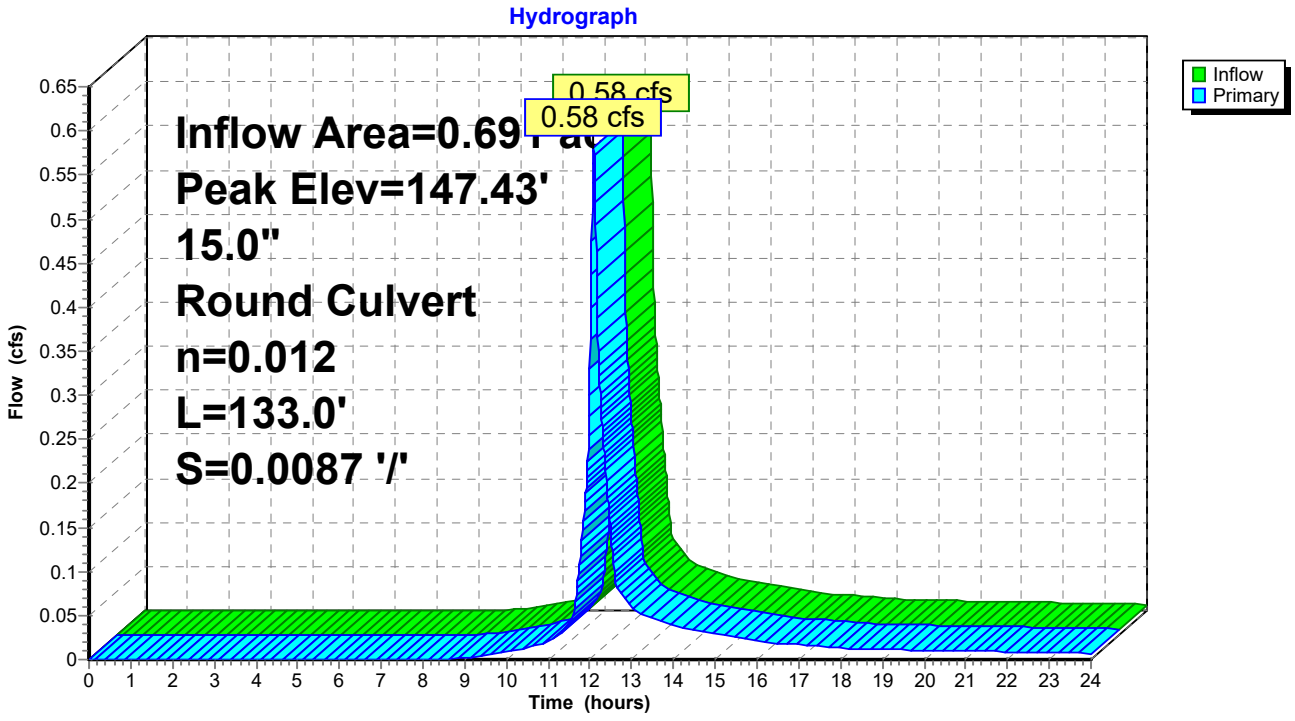
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 0.72" for 90% event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
Outflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
Routed to Pond DMH-1 : DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 147.43' @ 12.09 hrs
Flood Elev= 149.80'

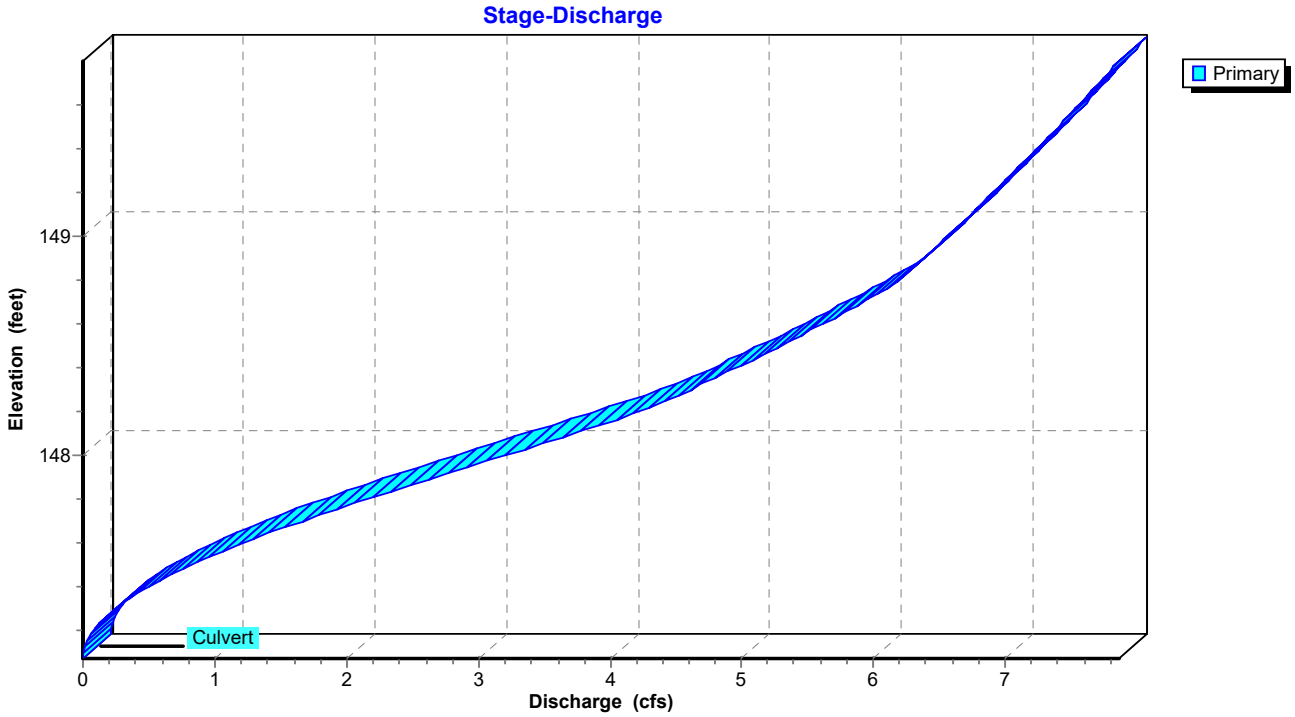
Device	Routing	Invert	Outlet Devices
#1	Primary	147.07'	**15.0" Round Culvert** L= 133.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 147.07' / 145.91' S= 0.0087 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.58 cfs @ 12.09 hrs HW=147.43' TW=146.30' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.58 cfs @ 3.02 fps)

Pond CB-2: CB-2



Pond CB-2: CB-2


Stage-Discharge
Primary
Elevation (feet)
149
148
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

Summary for Pond CB-3: CB-3

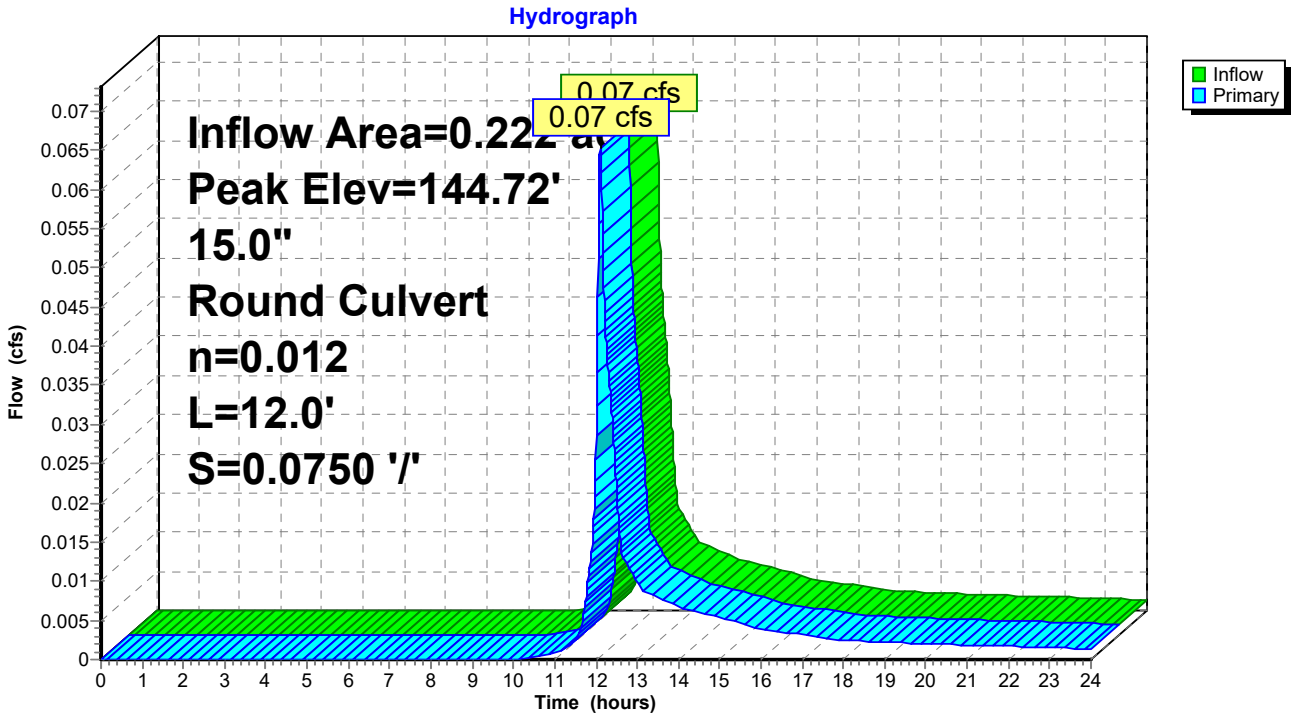
Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 0.31" for 90% event
Inflow = 0.07 cfs @ 12.10 hrs, Volume= 0.006 af
Outflow = 0.07 cfs @ 12.10 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 12.10 hrs, Volume= 0.006 af
Routed to Pond ADS 2 : ADS 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 144.72' @ 12.10 hrs
Flood Elev= 149.14'

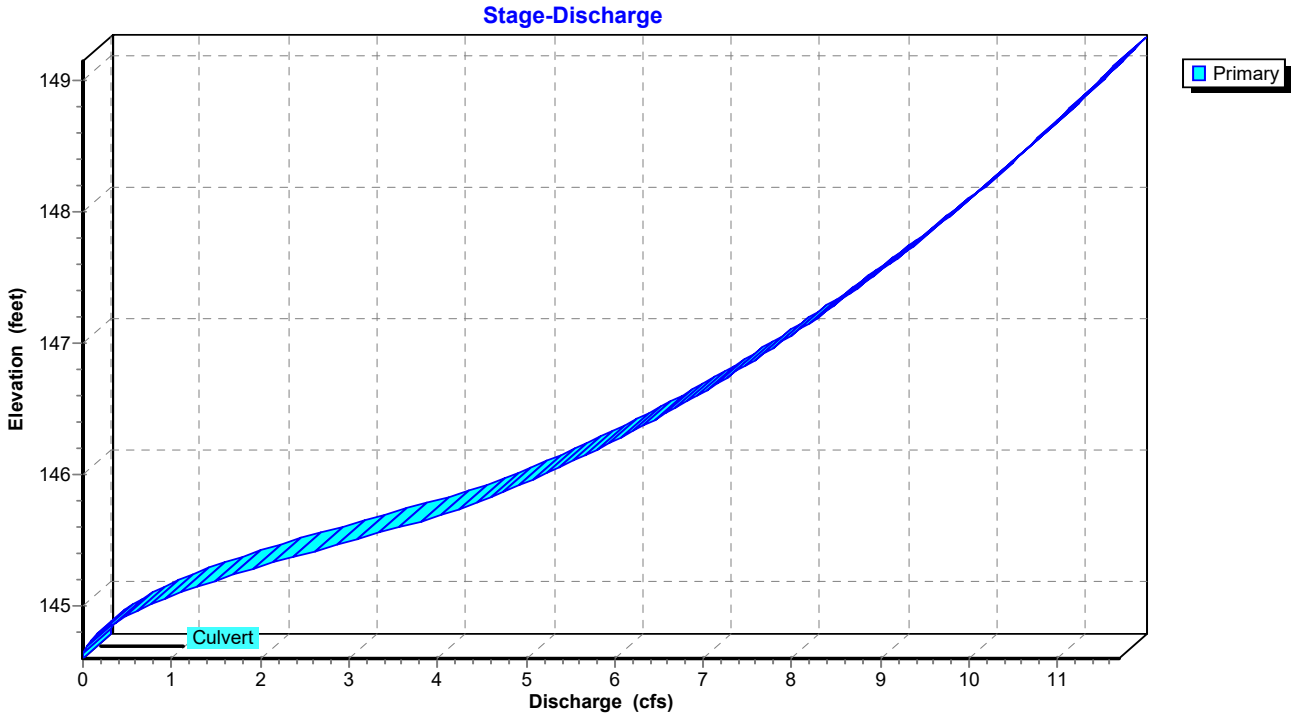
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 12.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.70' S= 0.0750 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.07 cfs @ 12.10 hrs HW=144.71' TW=143.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.07 cfs @ 1.15 fps)

Pond CB-3: CB-3



Pond CB-3: CB-3


Stage-Discharge
Primary
Elevation (feet)
149
148
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
9
10
11
Discharge (cfs)

Summary for Pond CB-4: CB-4

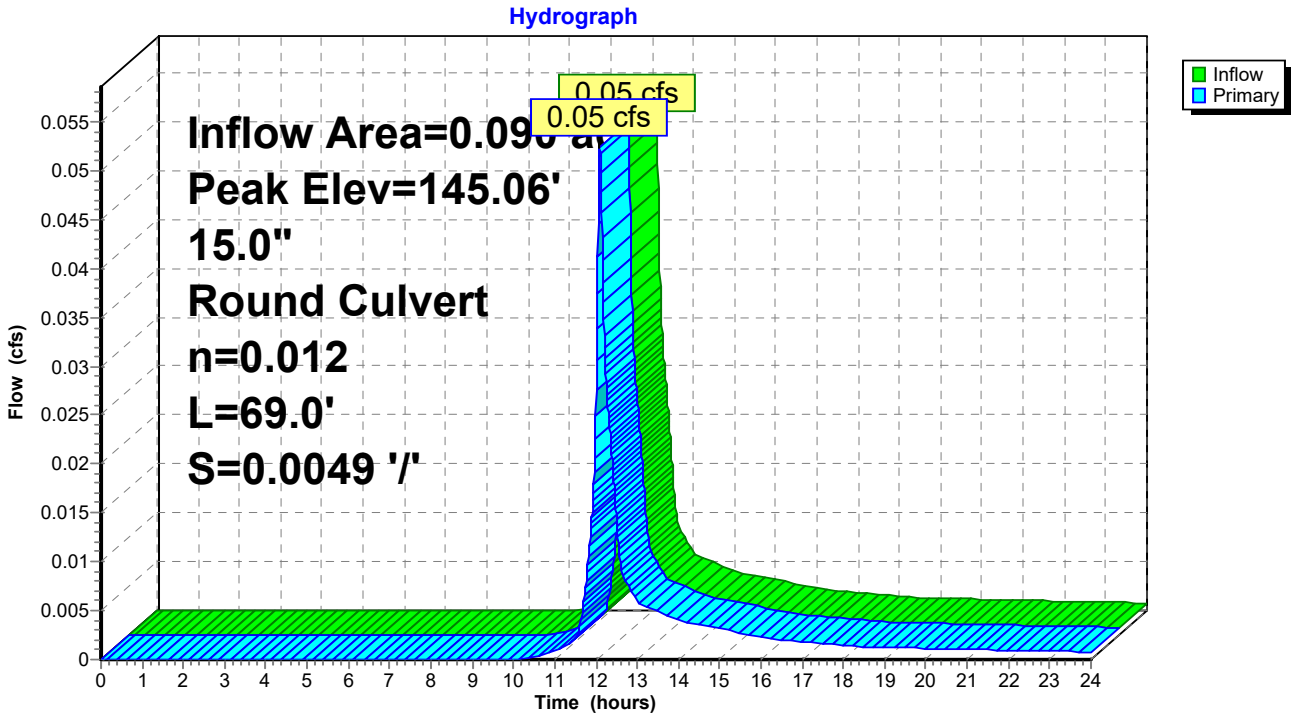
Inflow Area = 0.090 ac, 83.41% Impervious, Inflow Depth > 0.51" for 90% event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af
Outflow = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af
Routed to Pond CB-3 : CB-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.06' @ 12.09 hrs
Flood Elev= 147.76'

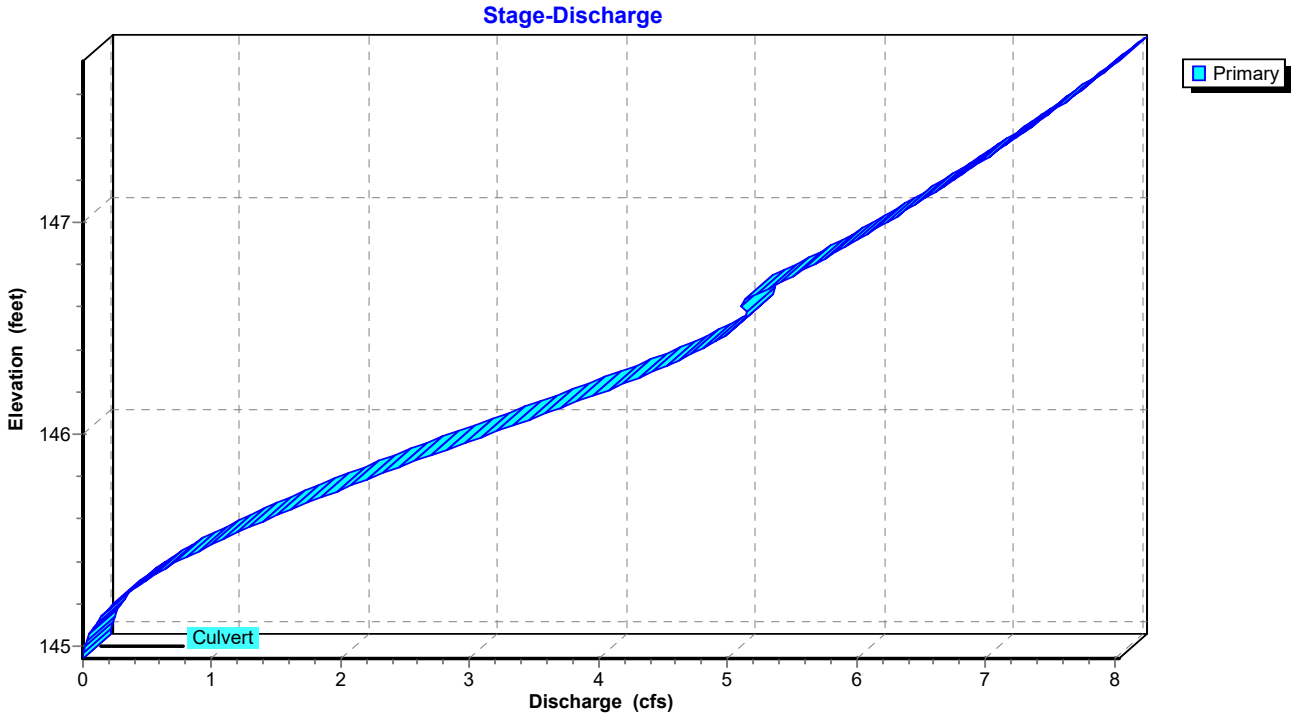
Device	Routing	Invert	Outlet Devices
#1	Primary	144.94'	**15.0" Round Culvert** L= 69.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.94' / 144.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.05 cfs @ 12.09 hrs HW=145.06' TW=144.71' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.05 cfs @ 1.27 fps)

Pond CB-4: CB-4



Pond CB-4: CB-4


Stage-Discharge
Primary
Elevation (feet)
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

Summary for Pond DMH-1: DMH-1

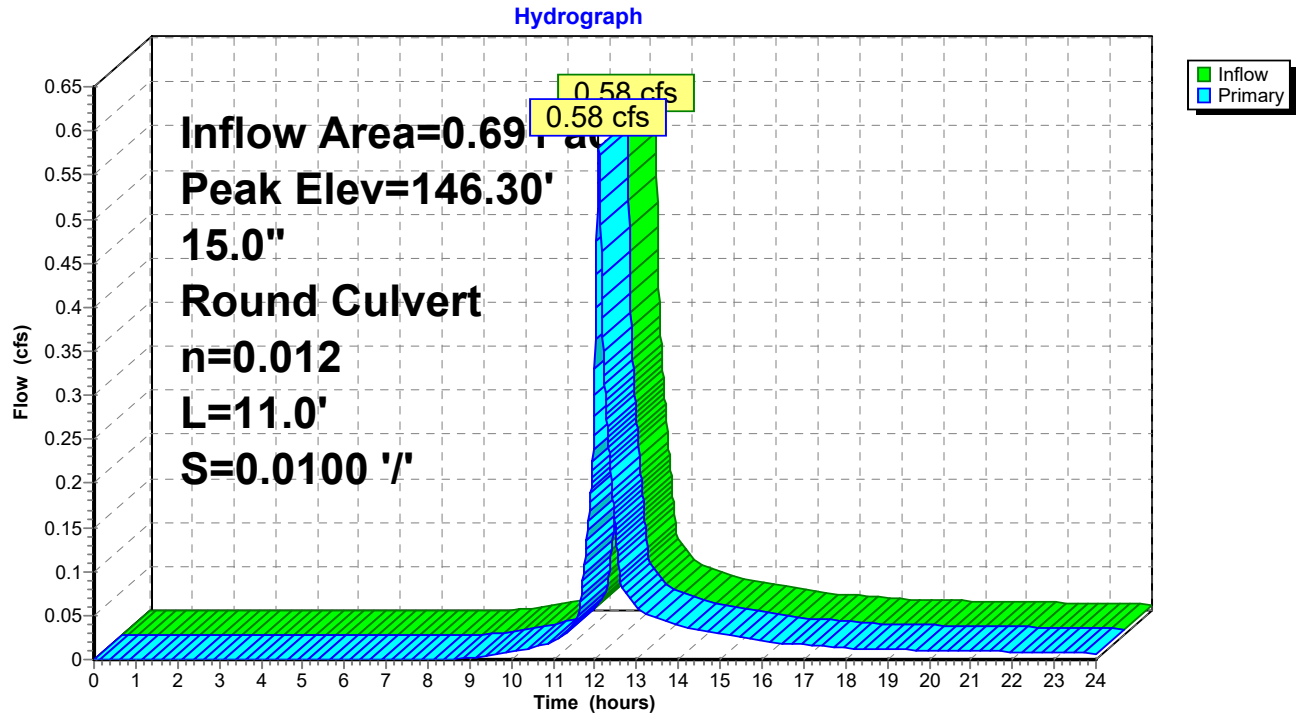
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 0.72" for 90% event
Inflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
Outflow = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
Primary = 0.58 cfs @ 12.09 hrs, Volume= 0.041 af
Routed to Pond ADS 1 : ADS 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 146.30' @ 12.09 hrs
Flood Elev= 150.35'

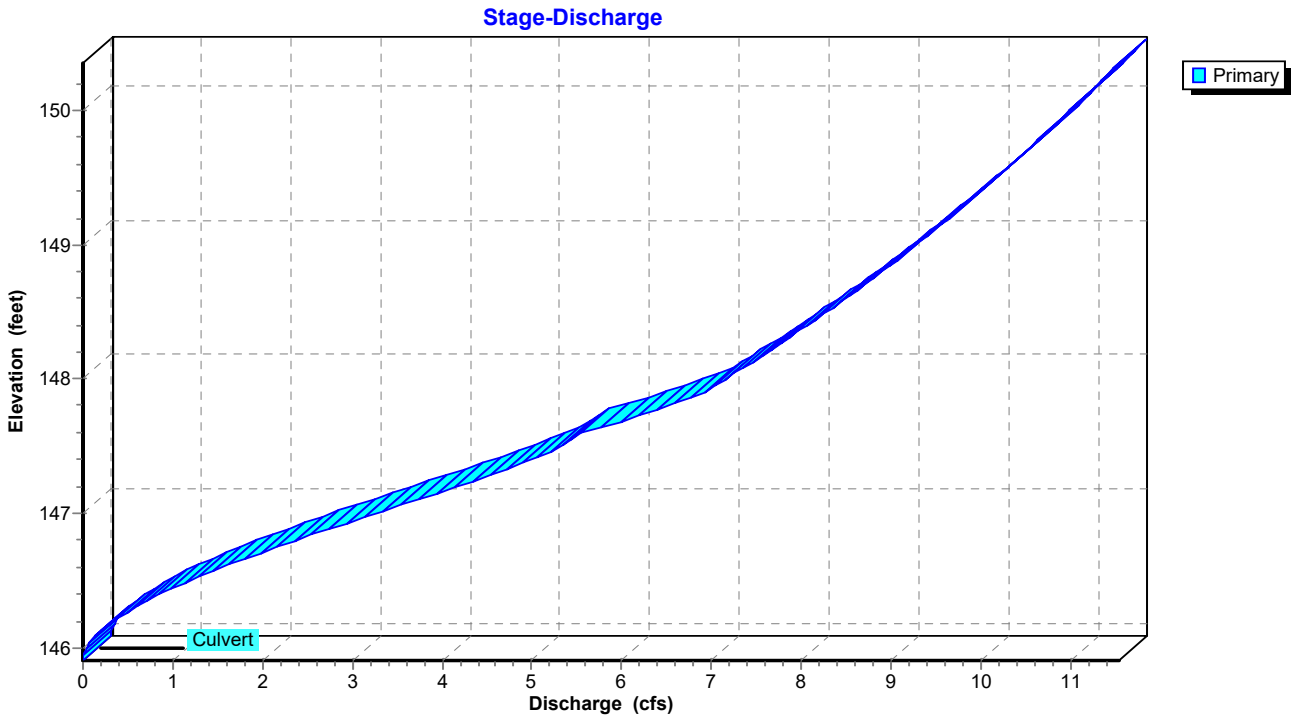
Device	Routing	Invert	Outlet Devices
#1	Primary	145.91'	**15.0" Round Culvert** L= 11.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.91' / 145.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.58 cfs @ 12.09 hrs HW=146.30' TW=145.85' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.58 cfs @ 2.61 fps)

Pond DMH-1: DMH-1



Pond DMH-1: DMH-1



Summary for Pond DMH-2: DMH-2

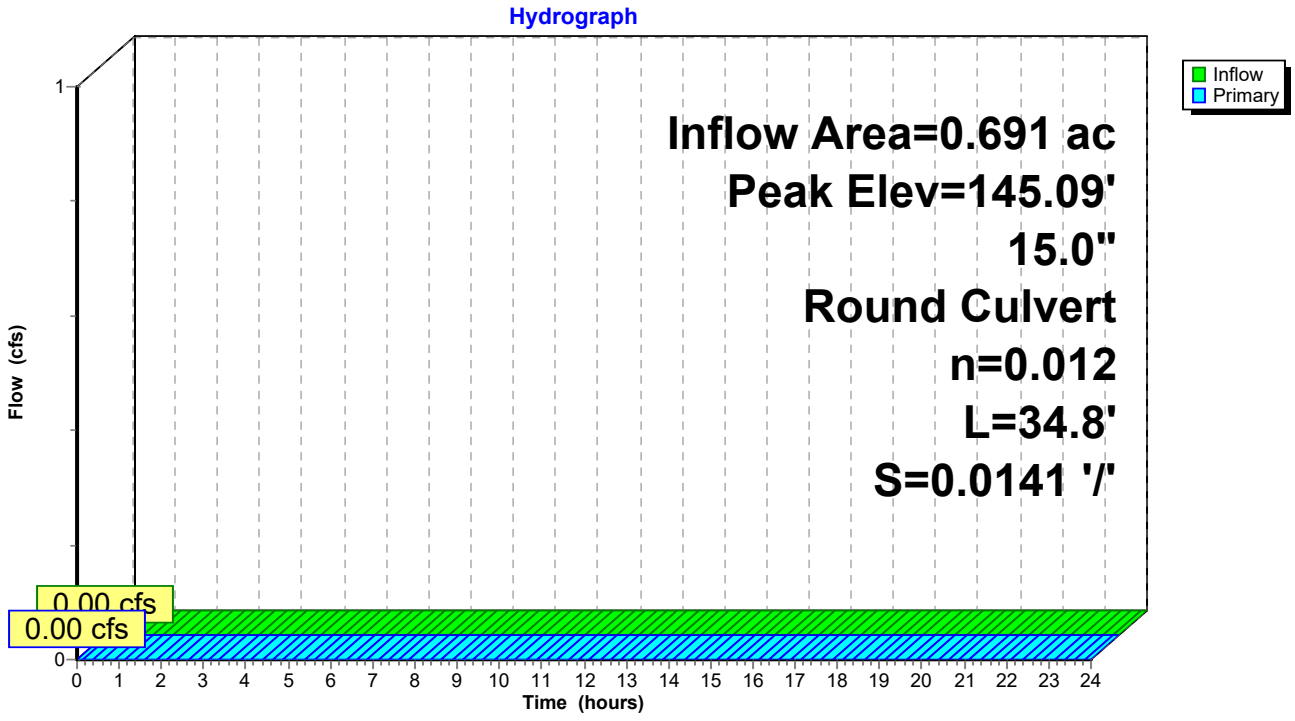
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 0.00" for 90% event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-3 : DMH-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.09' @ 0.00 hrs
Flood Elev= 149.88'

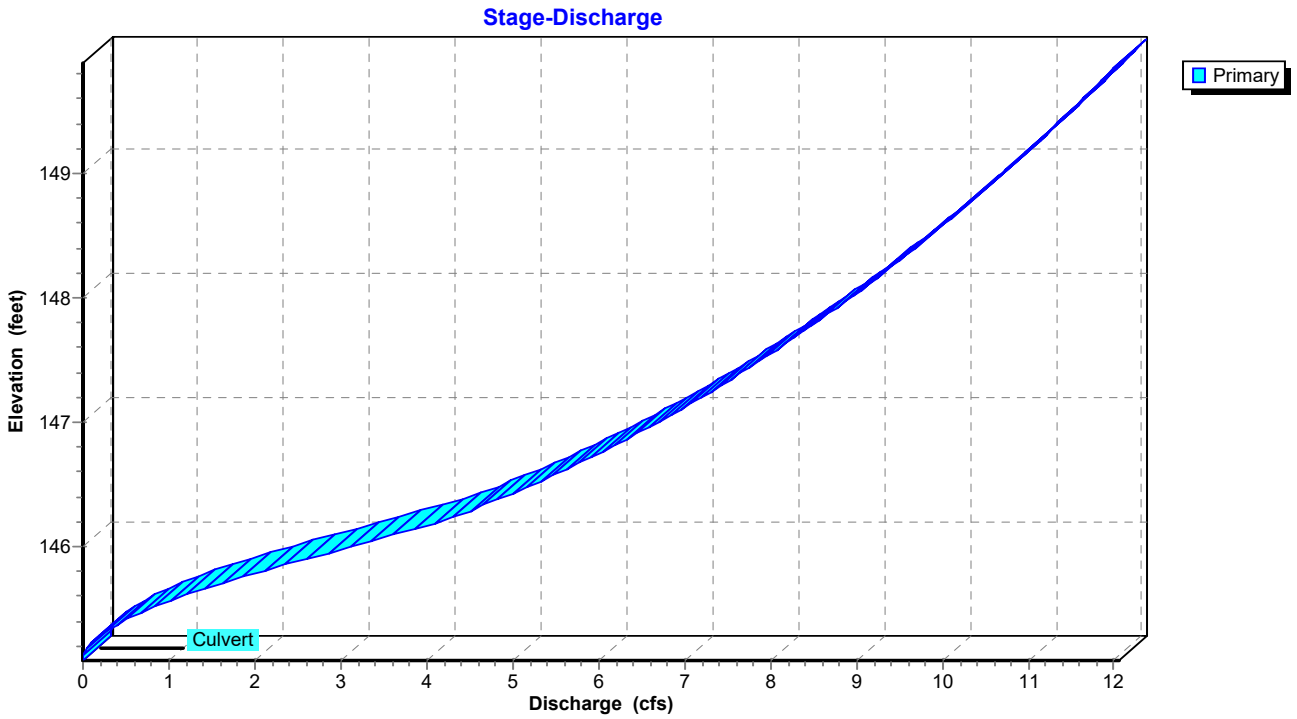
Device	Routing	Invert	Outlet Devices
#1	Primary	145.09'	**15.0" Round Culvert** L= 34.8' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.09' / 144.60' S= 0.0141 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=145.09' TW=144.60' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-2: DMH-2



Pond DMH-2: DMH-2



Summary for Pond DMH-3: DMH-3

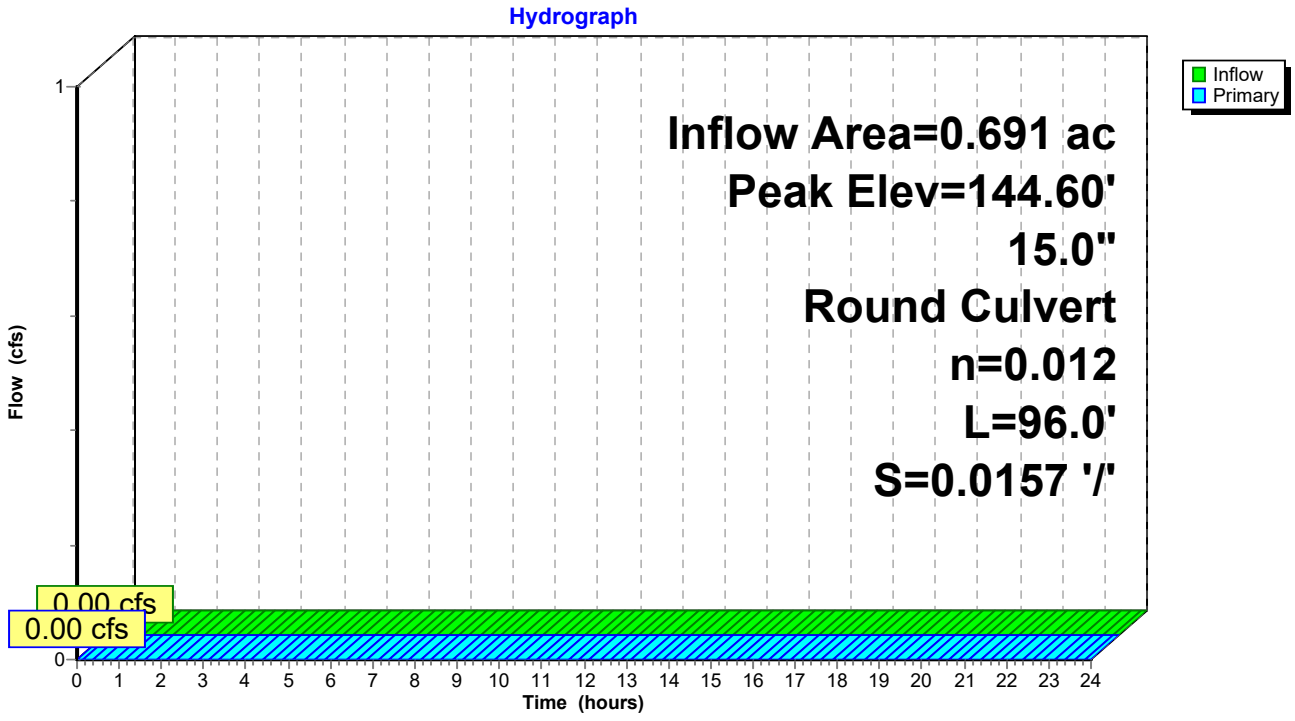
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 0.00" for 90% event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 144.60' @ 0.00 hrs
Flood Elev= 149.87'

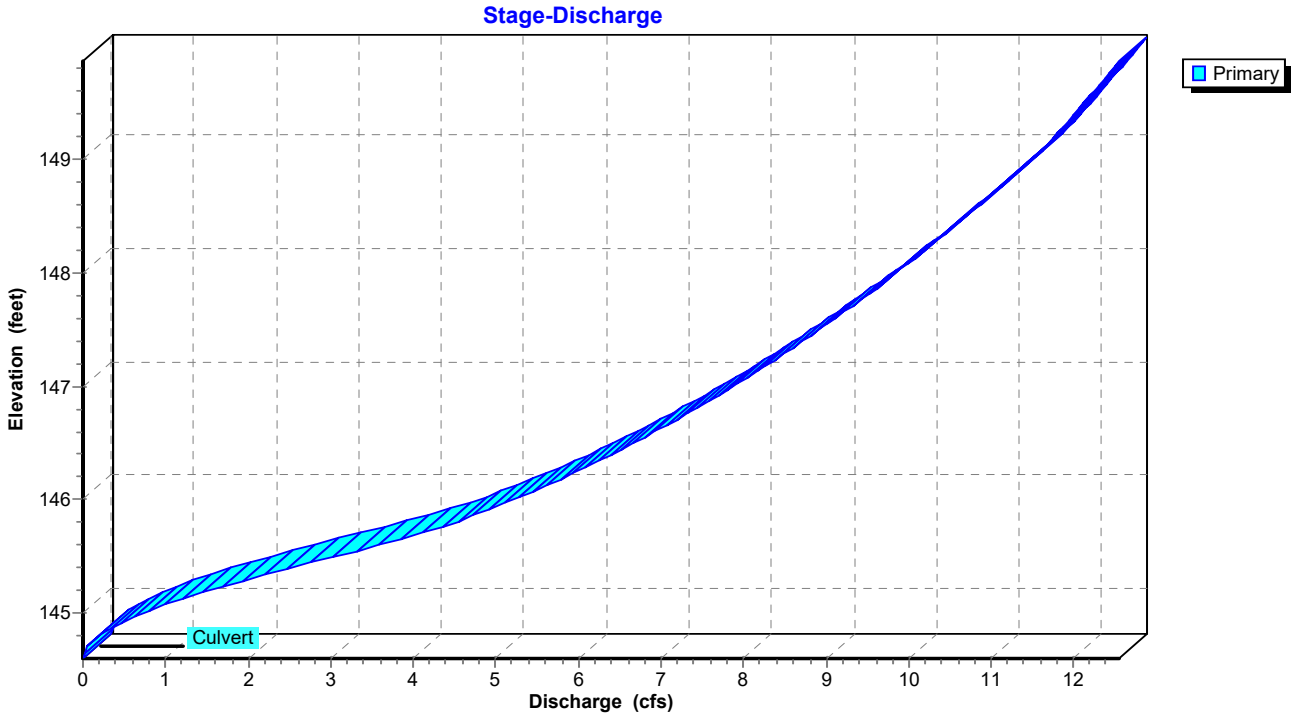
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.09' S= 0.0157 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=144.60' TW=143.09' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-3: DMH-3



Pond DMH-3: DMH-3



Summary for Pond DMH-4: DMH-4

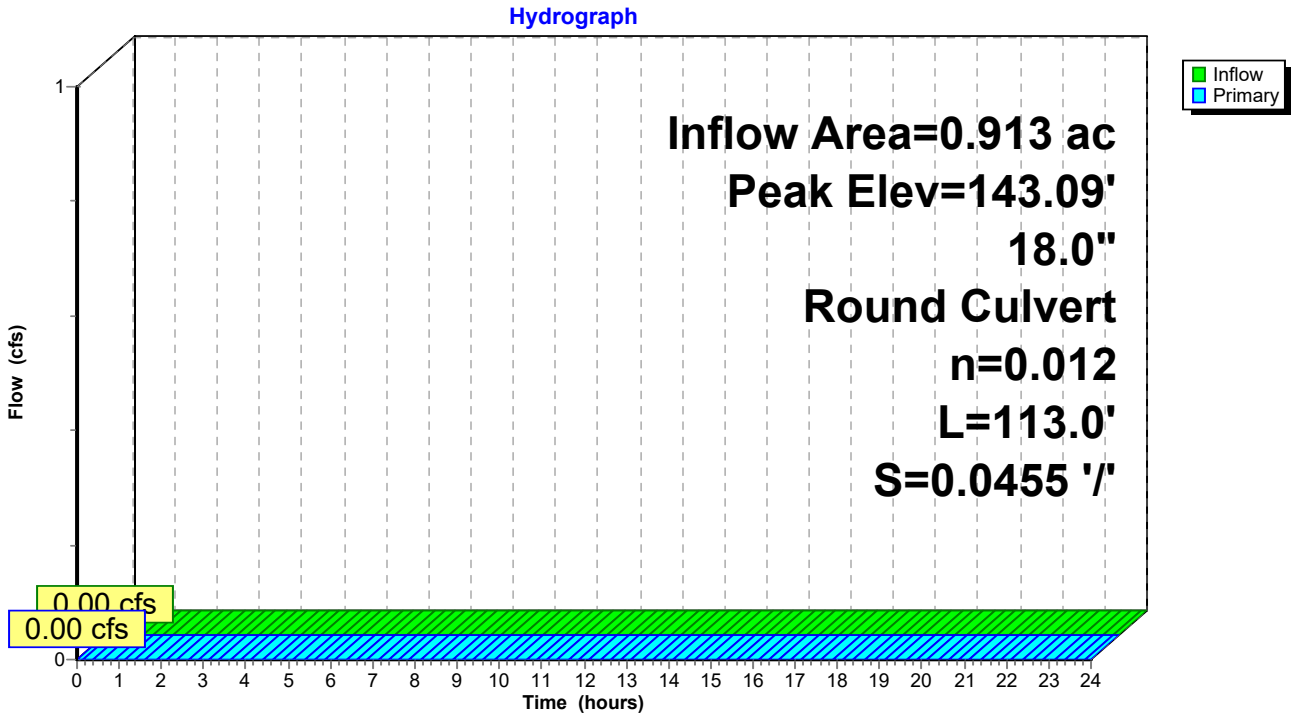
Inflow Area = 0.913 ac, 85.94% Impervious, Inflow Depth = 0.00" for 90% event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach POST : POST

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 143.09' @ 0.00 hrs
Flood Elev= 149.87'

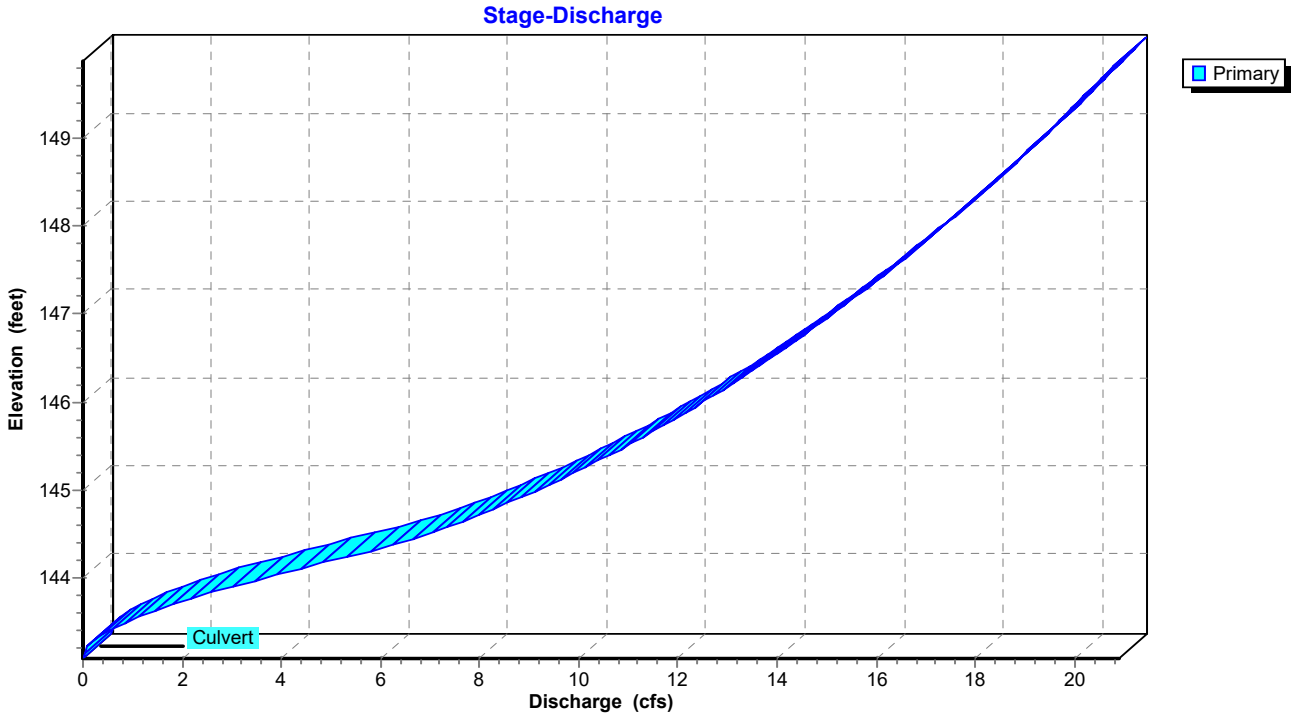
Device	Routing	Invert	Outlet Devices
#1	Primary	143.09'	**18.0" Round Culvert** L= 113.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.09' / 137.95' S= 0.0455 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=143.09' TW=0.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Pond DMH-4: DMH-4



Pond DMH-4: DMH-4



Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment POST 1A: POST WS 1A Runoff Area=30,089 sf 90.36% Impervious Runoff Depth>8.03"
Flow Length=229' Tc=6.0 min CN=92 Runoff=5.94 cfs 0.462 af

Subcatchment POST WS 1C: POST WS 1C Runoff Area=3,936 sf 83.41% Impervious Runoff Depth>7.54"
Flow Length=69' Slope=0.0200 '/' Tc=6.0 min CN=88 Runoff=0.75 cfs 0.057 af

Subcatchment POST WS 1D: POST WS 1D Runoff Area=1,207 sf 50.62% Impervious Runoff Depth>5.21"
Flow Length=16' Slope=0.0225 '/' Tc=6.0 min CN=69 Runoff=0.17 cfs 0.012 af

Subcatchment POST WS 2: POST WS 2 Runoff Area=2,956 sf 14.68% Impervious Runoff Depth>2.64"
Flow Length=52' Slope=0.1000 '/' Tc=6.0 min CN=48 Runoff=0.19 cfs 0.015 af

Subcatchment POST WS-1B: POST WS 1B Runoff Area=5,732 sf 64.53% Impervious Runoff Depth>6.19"
Flow Length=55' Slope=0.0127 '/' Tc=6.0 min CN=77 Runoff=0.94 cfs 0.068 af

Subcatchment PRE WS 1: PRE WS 1 Runoff Area=43,899 sf 22.49% Impervious Runoff Depth>4.10"
Flow Length=307' Tc=6.0 min UI Adjusted CN=60 Runoff=4.81 cfs 0.344 af

Reach POST: POST Inflow=2.03 cfs 0.185 af
Outflow=2.03 cfs 0.185 af

Pond ADS 1: ADS 1 Peak Elev=148.29' Storage=7,973 cf Inflow=5.94 cfs 0.462 af
Discarded=0.31 cfs 0.365 af Primary=0.93 cfs 0.069 af Outflow=1.24 cfs 0.433 af

Pond ADS 2: ADS 2 Peak Elev=145.19' Storage=357 cf Inflow=1.70 cfs 0.125 af
Discarded=0.02 cfs 0.029 af Primary=1.67 cfs 0.089 af Outflow=1.69 cfs 0.118 af

Pond CB-2: CB-2 Peak Elev=149.87' Inflow=5.94 cfs 0.462 af
15.0" Round Culvert n=0.012 L=133.0' S=0.0087 '/' Outflow=5.94 cfs 0.462 af

Pond CB-3: CB-3 Peak Elev=145.41' Inflow=1.70 cfs 0.125 af
15.0" Round Culvert n=0.012 L=12.0' S=0.0750 '/' Outflow=1.70 cfs 0.125 af

Pond CB-4: CB-4 Peak Elev=145.57' Inflow=0.75 cfs 0.057 af
15.0" Round Culvert n=0.012 L=69.0' S=0.0049 '/' Outflow=0.75 cfs 0.057 af

Pond DMH-1: DMH-1 Peak Elev=148.40' Inflow=5.94 cfs 0.462 af
15.0" Round Culvert n=0.012 L=11.0' S=0.0100 '/' Outflow=5.94 cfs 0.462 af

Pond DMH-2: DMH-2 Peak Elev=145.55' Inflow=0.93 cfs 0.069 af
15.0" Round Culvert n=0.012 L=34.8' S=0.0141 '/' Outflow=0.93 cfs 0.069 af

Pond DMH-3: DMH-3 Peak Elev=145.06' Inflow=0.93 cfs 0.069 af
15.0" Round Culvert n=0.012 L=96.0' S=0.0157 '/' Outflow=0.93 cfs 0.069 af

Pond DMH-4: DMH-4 Peak Elev=143.68' Inflow=1.67 cfs 0.158 af
18.0" Round Culvert n=0.012 L=113.0' S=0.0455 '/' Outflow=1.67 cfs 0.158 af

Summary for Subcatchment POST 1A: POST WS 1A

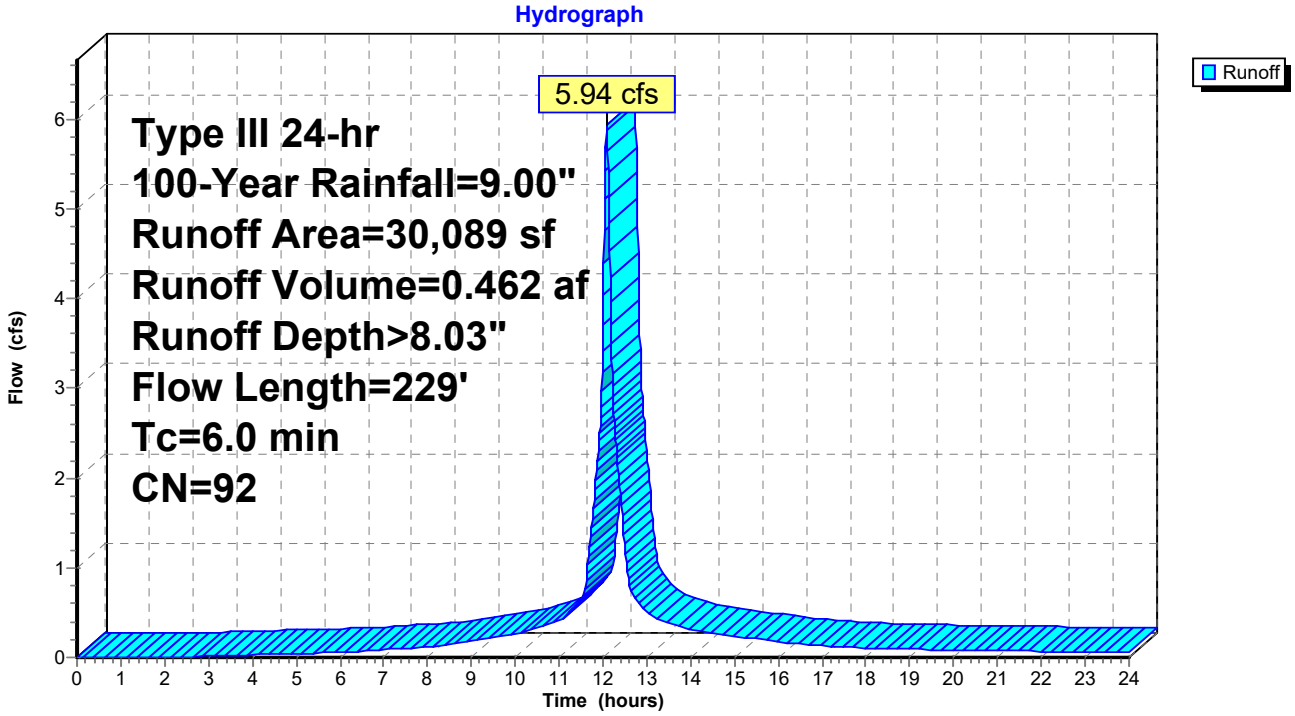
Runoff = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af, Depth> 8.03"
Routed to Pond CB-2 : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (sf)	CN	Description
27,187	98	Paved parking, HSG A
2,902	39	>75% Grass cover, Good, HSG A
30,089	92	Weighted Average
2,902		9.64% Pervious Area
27,187		90.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	1.01		**Sheet Flow, Parking lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
1.5	129	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.2	229	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST 1A: POST WS 1A



Summary for Subcatchment POST WS 1C: POST WS 1C

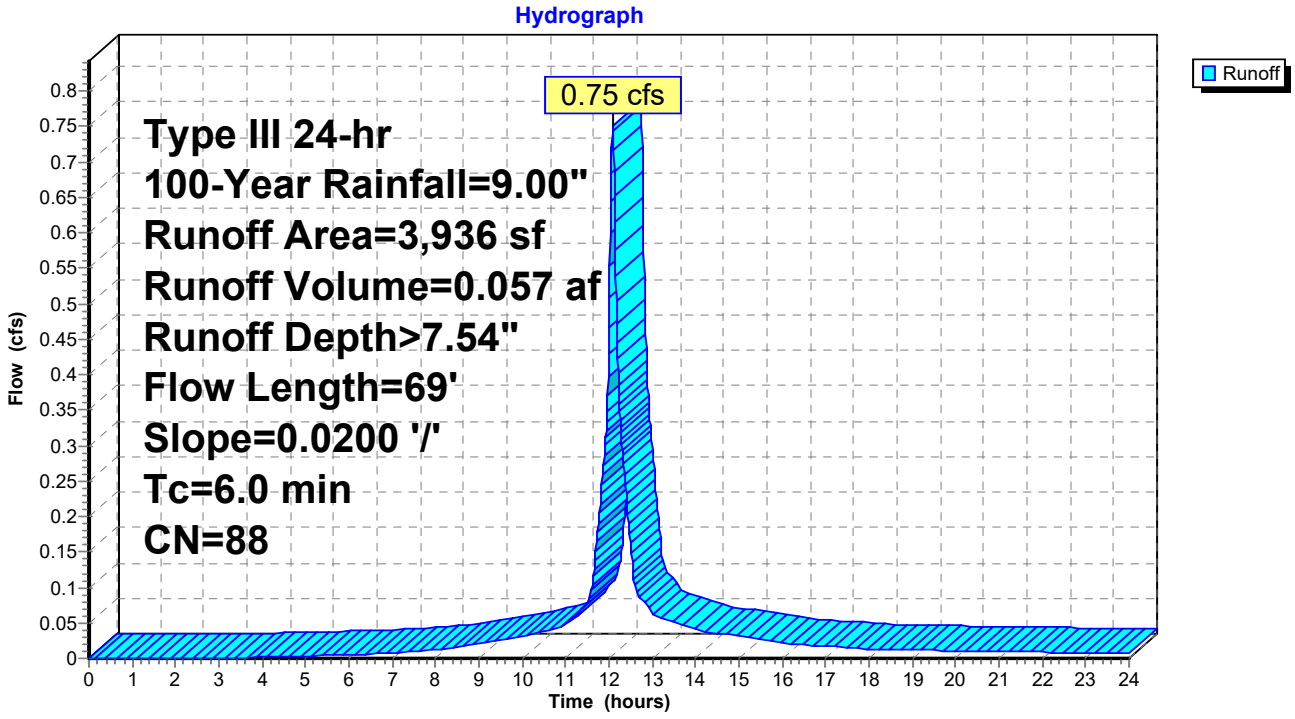
Runoff = 0.75 cfs @ 12.08 hrs, Volume= 0.057 af, Depth> 7.54"
Routed to Pond CB-4 : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (sf)	CN	Description
3,283	98	Paved parking, HSG A
653	39	>75% Grass cover, Good, HSG A
3,936	88	Weighted Average
653		16.59% Pervious Area
3,283		83.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	69	0.0200	1.24		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	69	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1C: POST WS 1C



Summary for Subcatchment POST WS 1D: POST WS 1D

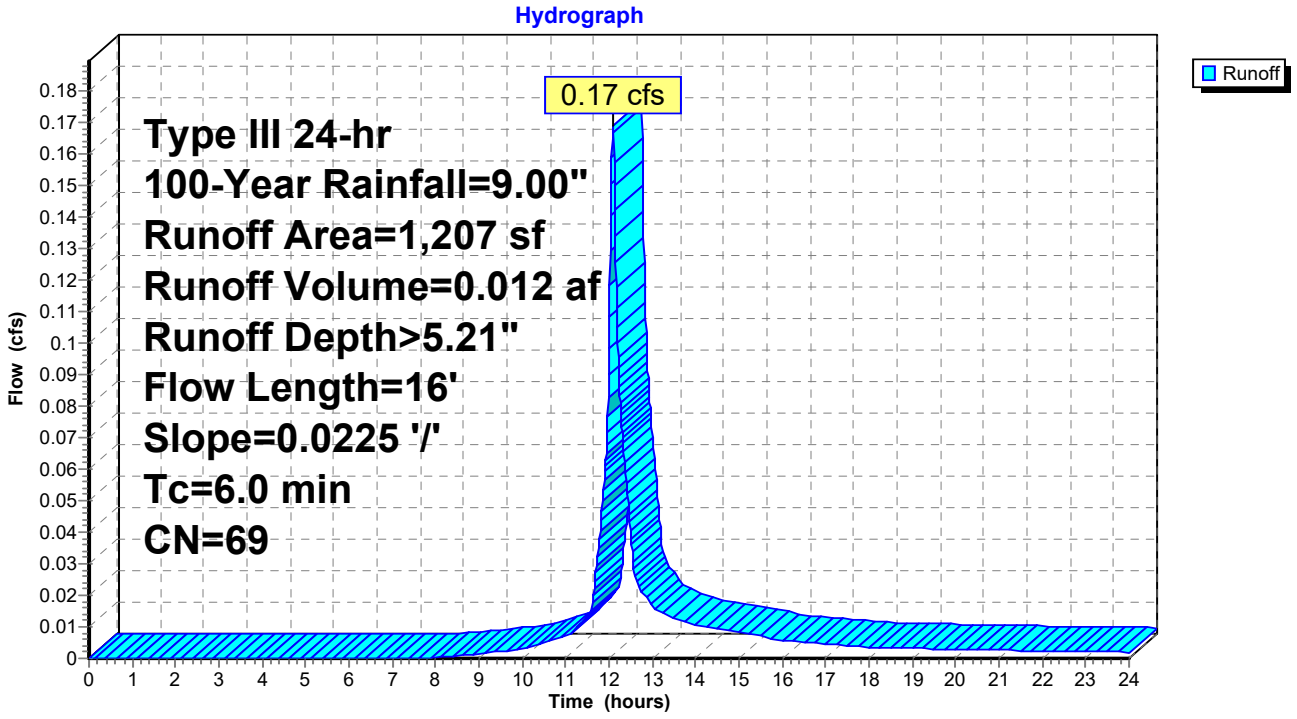
Runoff = 0.17 cfs @ 12.09 hrs, Volume= 0.012 af, Depth> 5.21"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (sf)	CN	Description
611	98	Paved parking, HSG A
596	39	>75% Grass cover, Good, HSG A
1,207	69	Weighted Average
596		49.38% Pervious Area
611		50.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	16	0.0225	0.97		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.3	16	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 1D: POST WS 1D



Summary for Subcatchment POST WS 2: POST WS 2

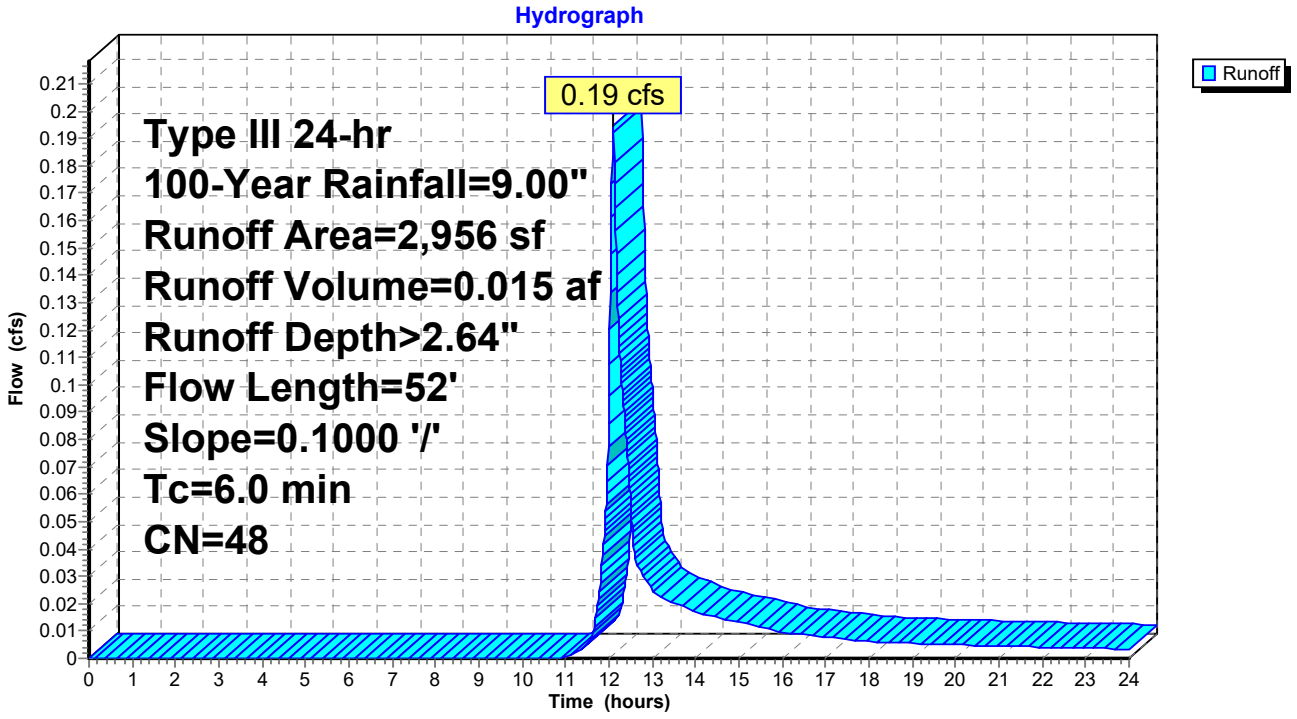
Runoff = 0.19 cfs @ 12.10 hrs, Volume= 0.015 af, Depth> 2.64"
Routed to Reach POST : POST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (sf)	CN	Description
434	98	Paved parking, HSG A
2,522	39	>75% Grass cover, Good, HSG A
2,956	48	Weighted Average
2,522		85.32% Pervious Area
434		14.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	52	0.1000	0.19		**Sheet Flow, Sheet Flow to Fishkill Ave.** Grass: Dense n= 0.240 P2= 3.00"
4.6	52	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS 2: POST WS 2



Summary for Subcatchment POST WS-1B: POST WS 1B

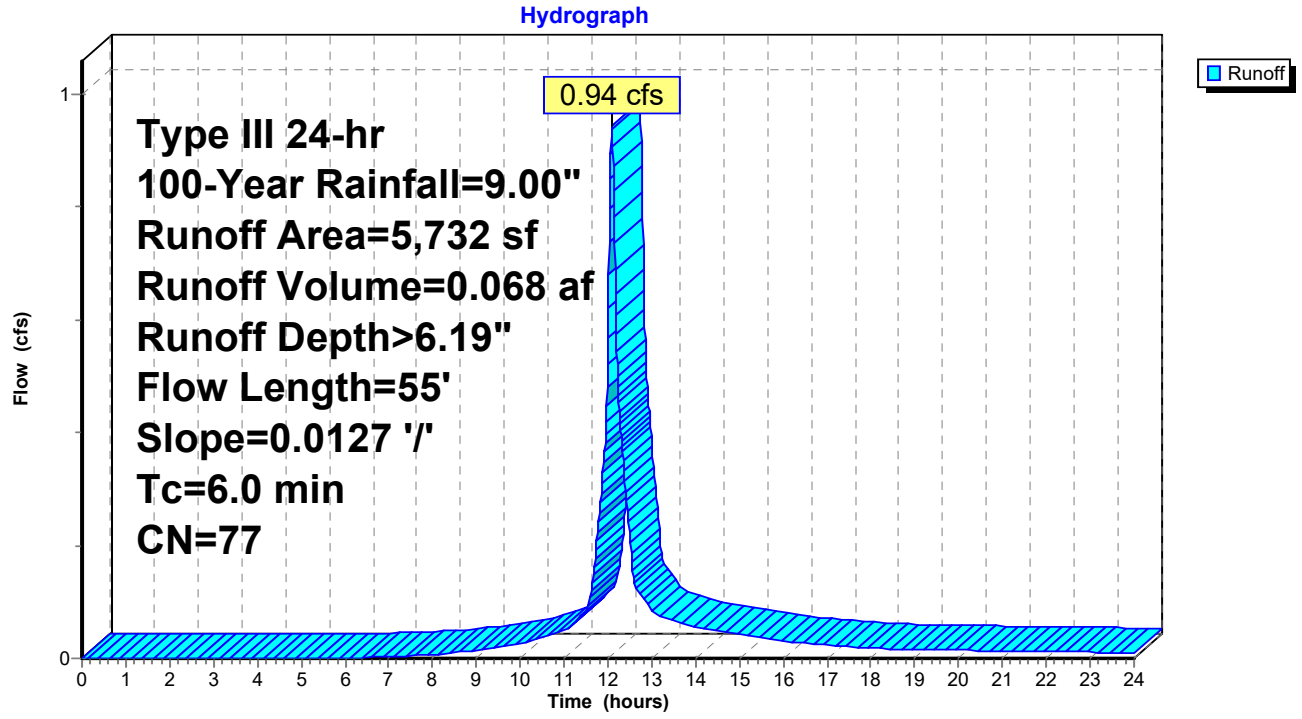
Runoff = 0.94 cfs @ 12.09 hrs, Volume= 0.068 af, Depth> 6.19"
Routed to Pond CB-3 : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (sf)	CN	Description
3,699	98	Paved parking, HSG A
2,033	39	>75% Grass cover, Good, HSG A
5,732	77	Weighted Average
2,033		35.47% Pervious Area
3,699		64.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	55	0.0127	0.99		**Sheet Flow, Parking Lot to CB** Smooth surfaces n= 0.011 P2= 3.00"
0.9	55	Total, Increased to minimum Tc = 6.0 min			

Subcatchment POST WS-1B: POST WS 1B



Summary for Subcatchment PRE WS 1: PRE WS 1

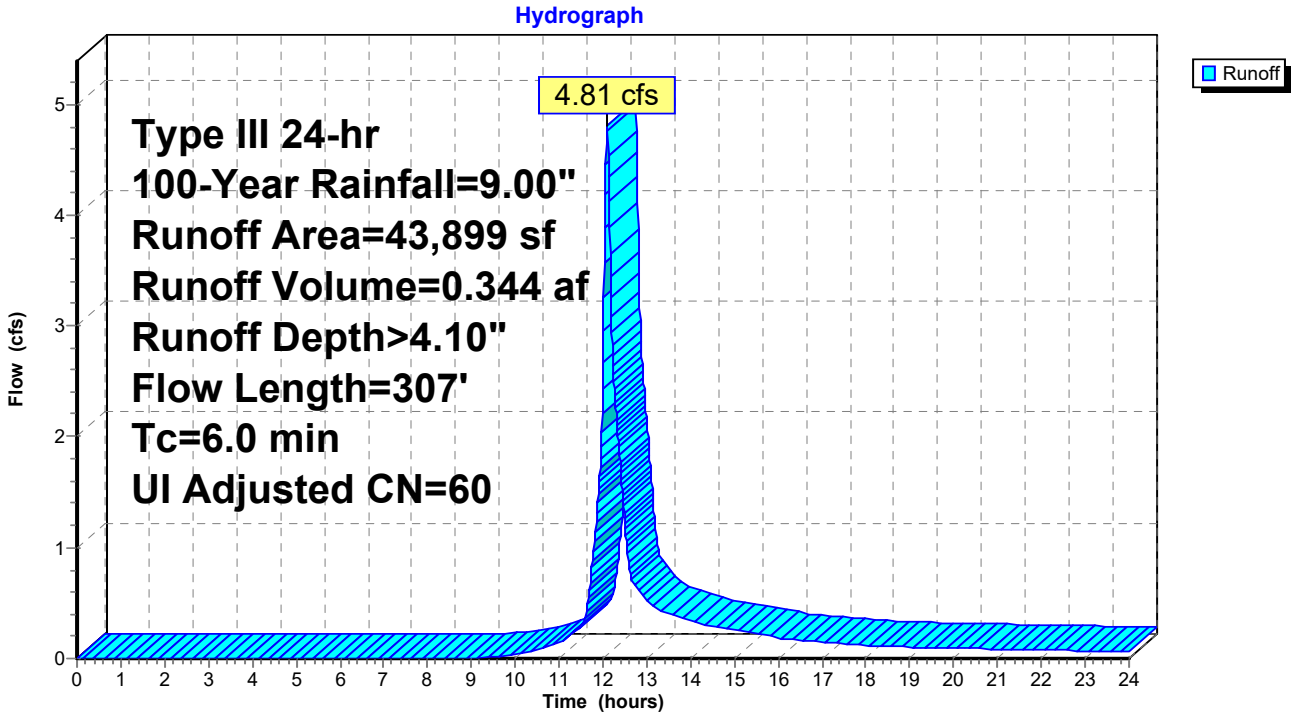
Runoff = 4.81 cfs @ 12.09 hrs, Volume= 0.344 af, Depth> 4.10"
Routed to nonexistent node PRE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.00"

Area (sf)	CN	Adj	Description
9,872	98		Unconnected roofs, HSG A
7,963	96		Gravel surface, HSG A
15,833	49		50-75% Grass cover, Fair, HSG A
10,231	32		Woods/grass comb., Good, HSG A
43,899	65	60	Weighted Average, UI Adjusted
34,027			77.51% Pervious Area
9,872			22.49% Impervious Area
9,872			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	67	0.1480	0.34		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 3.00"
0.5	120	0.0620	4.01		**Shallow Concentrated Flow, Shallow Flow** Unpaved Kv= 16.1 fps
0.4	120	0.0600	4.97		**Shallow Concentrated Flow, Driveway** Paved Kv= 20.3 fps
4.2	307	Total, Increased to minimum Tc = 6.0 min			

Subcatchment PRE WS 1: PRE WS 1

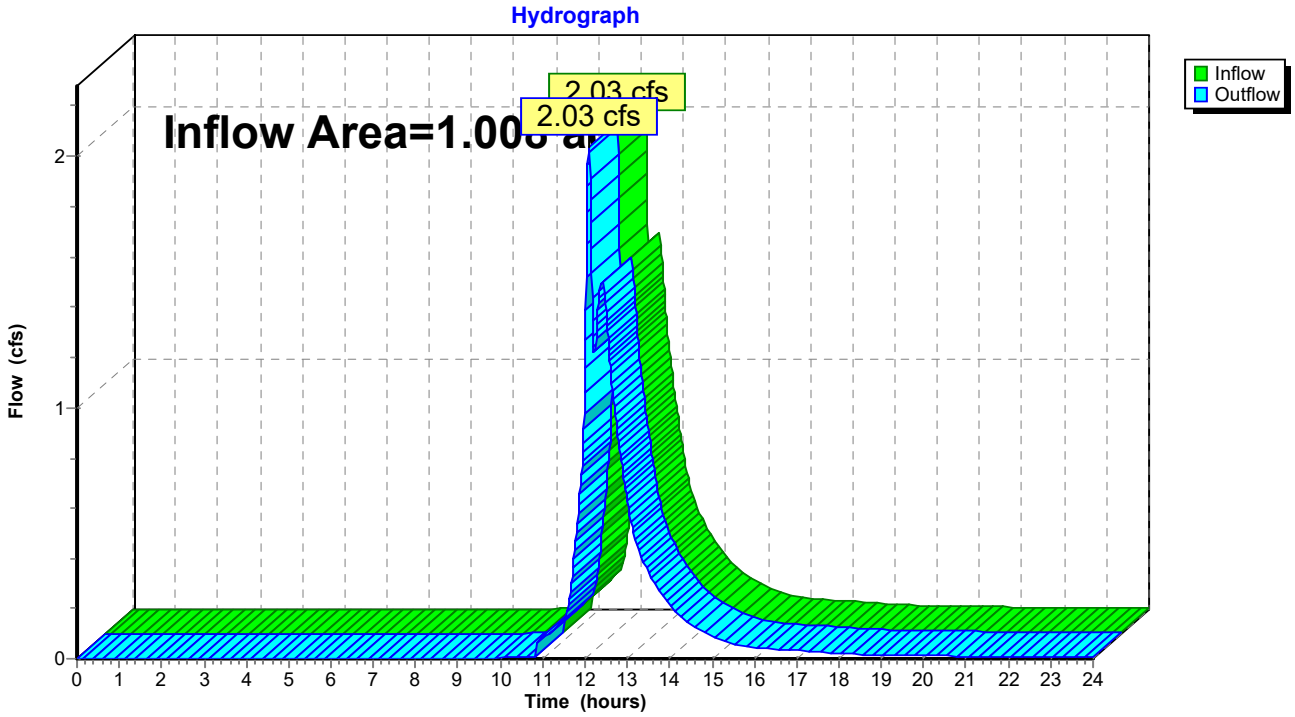


Summary for Reach POST: POST

Inflow Area = 1.008 ac, 80.18% Impervious, Inflow Depth > 2.20" for 100-Year event
Inflow = 2.03 cfs @ 12.09 hrs, Volume= 0.185 af
Outflow = 2.03 cfs @ 12.09 hrs, Volume= 0.185 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3

Reach POST: POST



Summary for Pond ADS 1: ADS 1

Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 8.03" for 100-Year event
Inflow = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af
Outflow = 1.24 cfs @ 12.50 hrs, Volume= 0.433 af, Atten= 79%, Lag= 24.9 min
Discarded = 0.31 cfs @ 12.50 hrs, Volume= 0.365 af
Primary = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af
Routed to Pond DMH-2 : DMH-2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 148.29' @ 12.50 hrs Surf.Area= 4,695 sf Storage= 7,973 cf
Flood Elev= 148.80' Surf.Area= 4,695 sf Storage= 9,162 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 145.9 min (911.4 - 765.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	145.80'	4,220 cf	**77.50'W x 60.58'L x 3.50'H Field A** 16,431 cf Overall - 5,880 cf Embedded = 10,551 cf x 40.0% Voids
#2A	146.30'	5,880 cf	**ADS_StormTech SC-740 +Cap** x 128 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 128 Chambers in 16 Rows
		10,101 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	146.30'	**15.0" Round Culvert** L= 105.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 146.30' / 145.09' S= 0.0115 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	148.50'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Device 1	147.80'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#4	Discarded	145.80'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.31 cfs @ 12.50 hrs HW=148.29' (Free Discharge)
└**4=Exfiltration** (Controls 0.31 cfs)

Primary OutFlow Max=0.93 cfs @ 12.50 hrs HW=148.29' TW=145.55' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.93 cfs of 6.90 cfs potential flow)
├**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Orifice/Grate** (Orifice Controls 0.93 cfs @ 2.38 fps)

Pond ADS 1: ADS 1 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

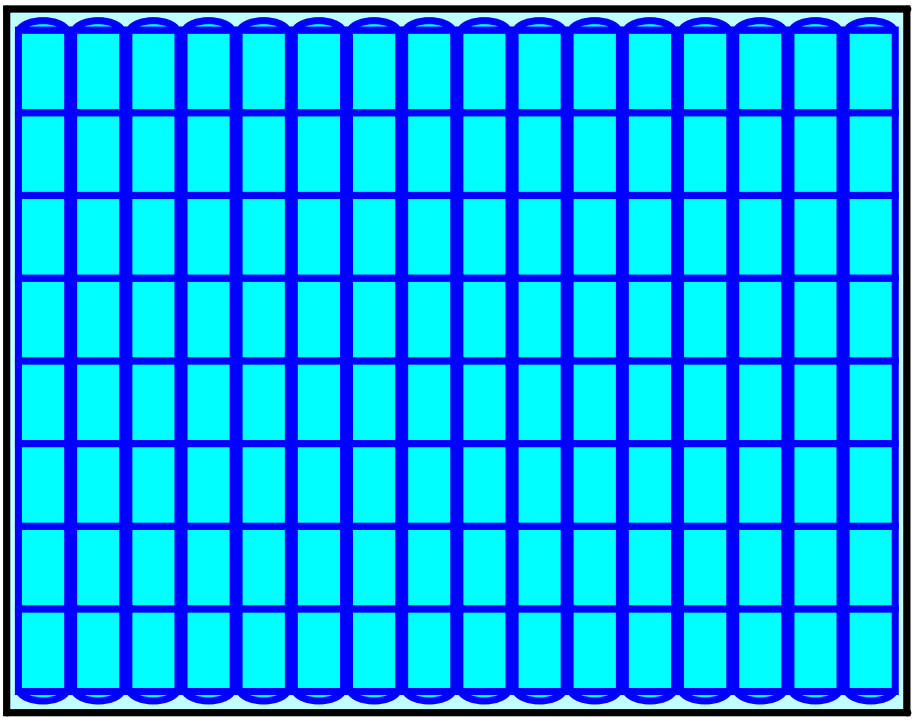
8 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 58.58' Row Length +12.0" End Stone x 2 = 60.58' Base Length
16 Rows x 51.0" Wide + 6.0" Spacing x 15 + 12.0" Side Stone x 2 = 77.50' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

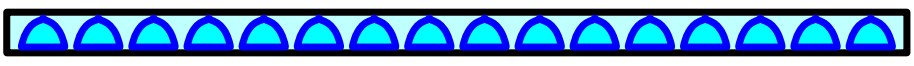
128 Chambers x 45.9 cf = 5,880.3 cf Chamber Storage

16,431.4 cf Field - 5,880.3 cf Chambers = 10,551.1 cf Stone x 40.0% Voids = 4,220.4 cf Stone Storage

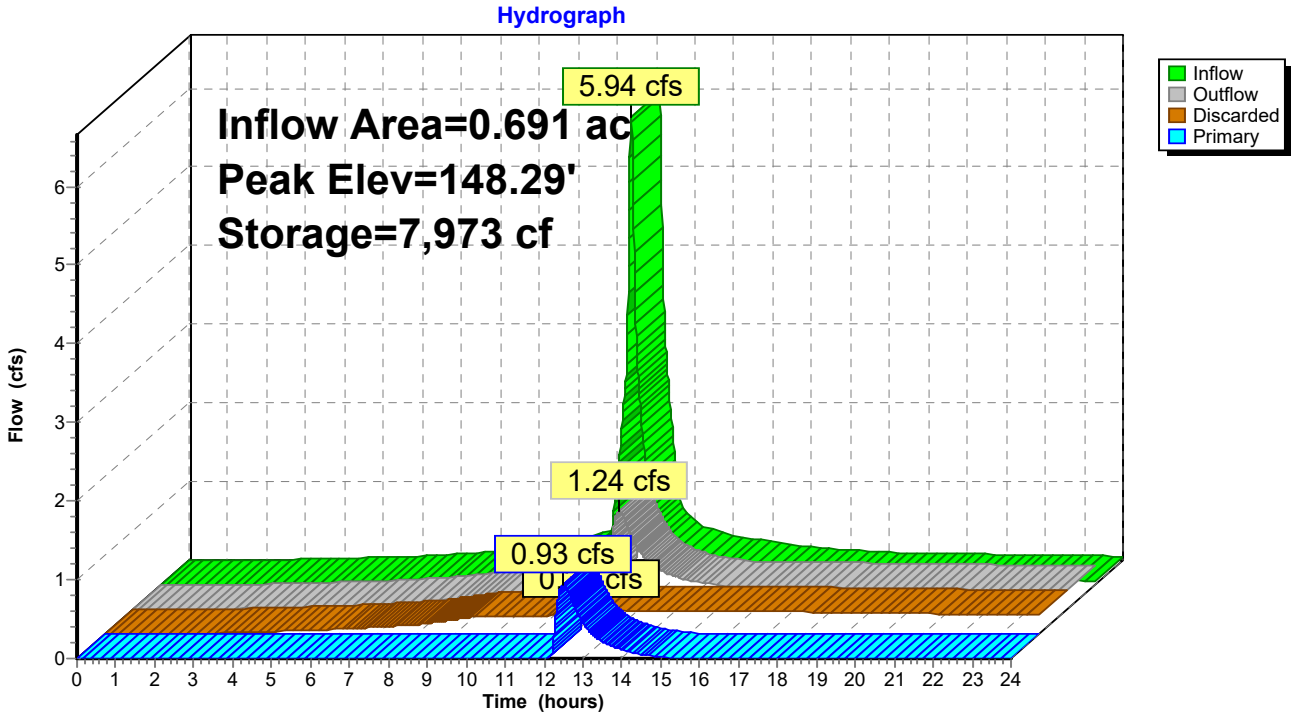
Chamber Storage + Stone Storage = 10,100.8 cf = 0.232 af
Overall Storage Efficiency = 61.5%
Overall System Size = 60.58' x 77.50' x 3.50'

128 Chambers
608.6 cy Field
390.8 cy Stone

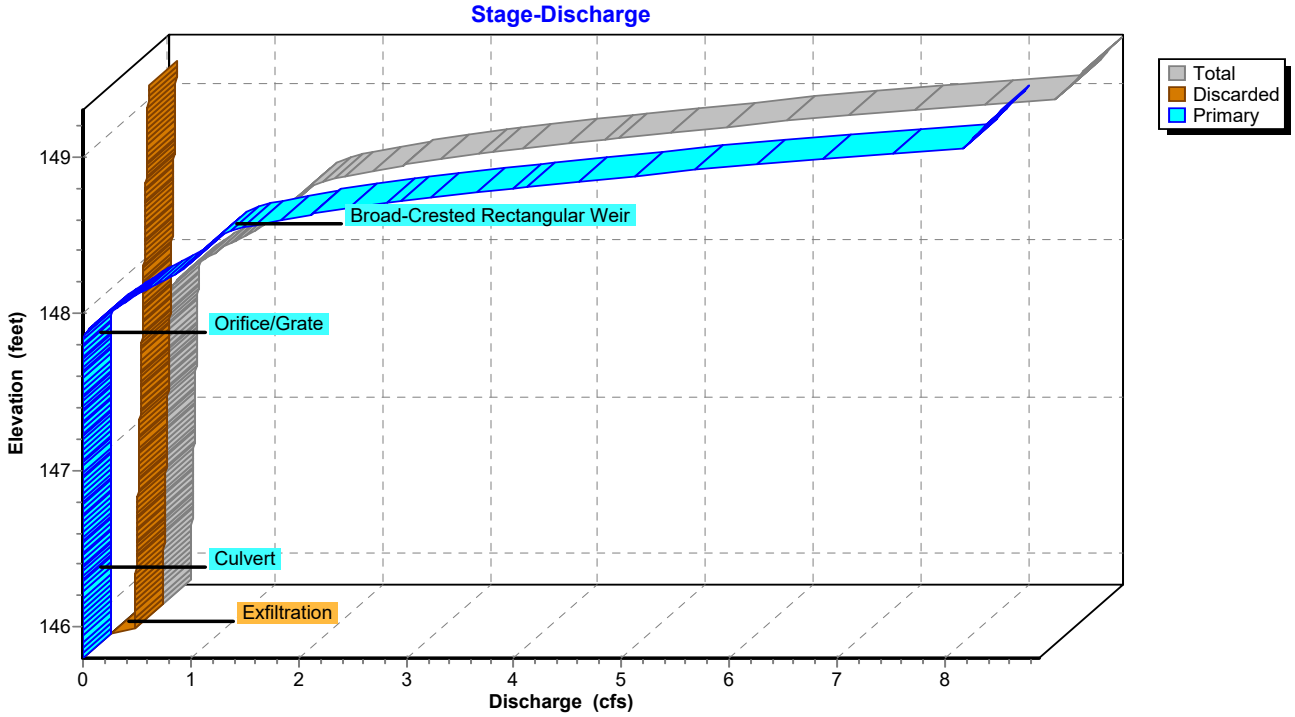




Pond ADS 1: ADS 1



Pond ADS 1: ADS 1



Summary for Pond ADS 2: ADS 2

Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 6.74" for 100-Year event
Inflow = 1.70 cfs @ 12.09 hrs, Volume= 0.125 af
Outflow = 1.69 cfs @ 12.09 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.3 min
Discarded = 0.02 cfs @ 12.09 hrs, Volume= 0.029 af
Primary = 1.67 cfs @ 12.09 hrs, Volume= 0.089 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.19' @ 12.09 hrs Surf.Area= 290 sf Storage= 357 cf
Flood Elev= 146.20' Surf.Area= 290 sf Storage= 513 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 14.6 min (807.0 - 792.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	143.20'	295 cf	**6.25'W x 46.34'L x 3.50'H Field A** 1,014 cf Overall - 276 cf Embedded = 738 cf x 40.0% Voids
#2A	143.70'	276 cf	**ADS_StormTech SC-740 +Cap** x 6 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		571 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	143.70'	**15.0" Round Culvert** L= 85.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.70' / 137.95' S= 0.0676 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	144.95'	**5.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	143.20'	**2.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 140.00'

Discarded OutFlow Max=0.02 cfs @ 12.09 hrs HW=145.19' (Free Discharge)
↑└**3=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=1.67 cfs @ 12.09 hrs HW=145.19' TW=143.68' (Dynamic Tailwater)
↑└**1=Culvert** (Passes 1.67 cfs of 5.50 cfs potential flow)
↑└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.67 cfs @ 1.39 fps)

Pond ADS 2: ADS 2 - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

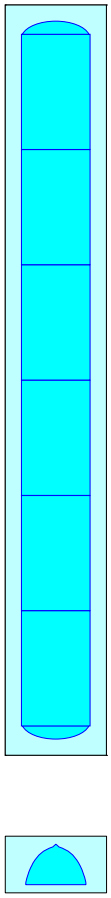
6 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 44.34' Row Length +12.0" End Stone x 2 = 46.34' Base Length
1 Rows x 51.0" Wide + 12.0" Side Stone x 2 = 6.25' Base Width
6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

6 Chambers x 45.9 cf = 275.6 cf Chamber Storage

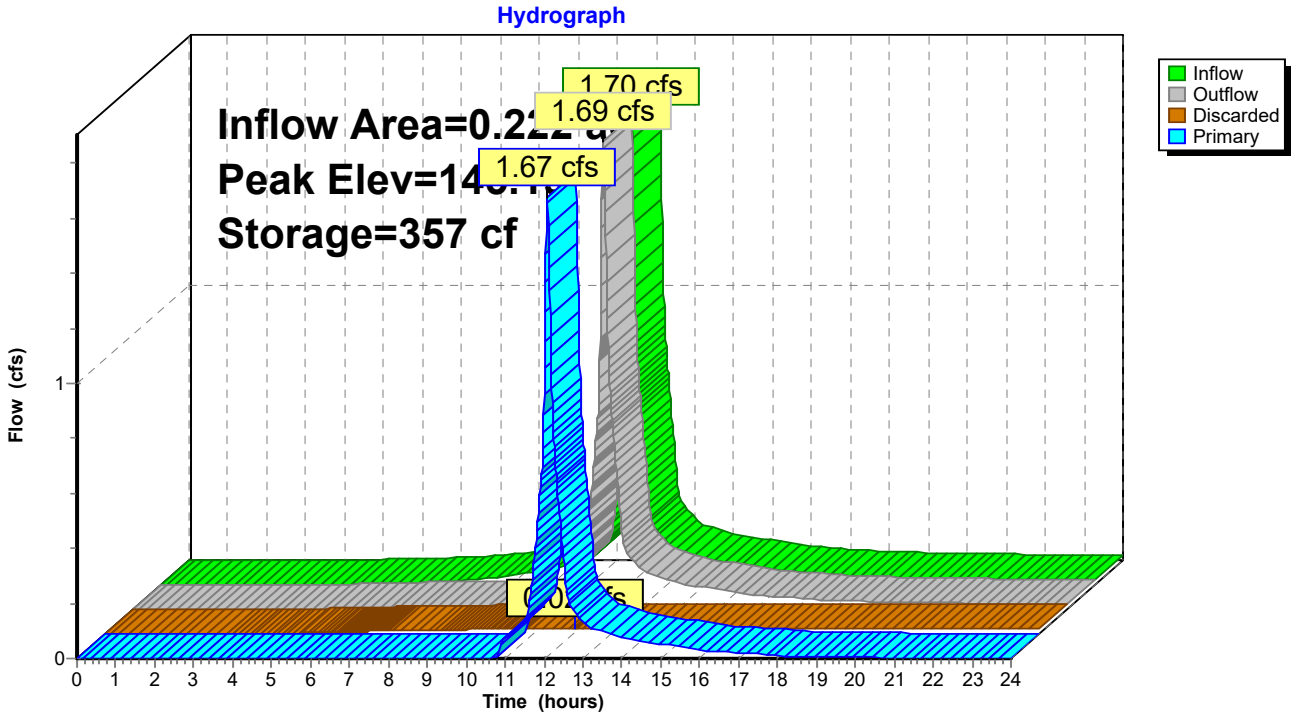
1,013.6 cf Field - 275.6 cf Chambers = 738.0 cf Stone x 40.0% Voids = 295.2 cf Stone Storage

Chamber Storage + Stone Storage = 570.8 cf = 0.013 af
Overall Storage Efficiency = 56.3%
Overall System Size = 46.34' x 6.25' x 3.50'

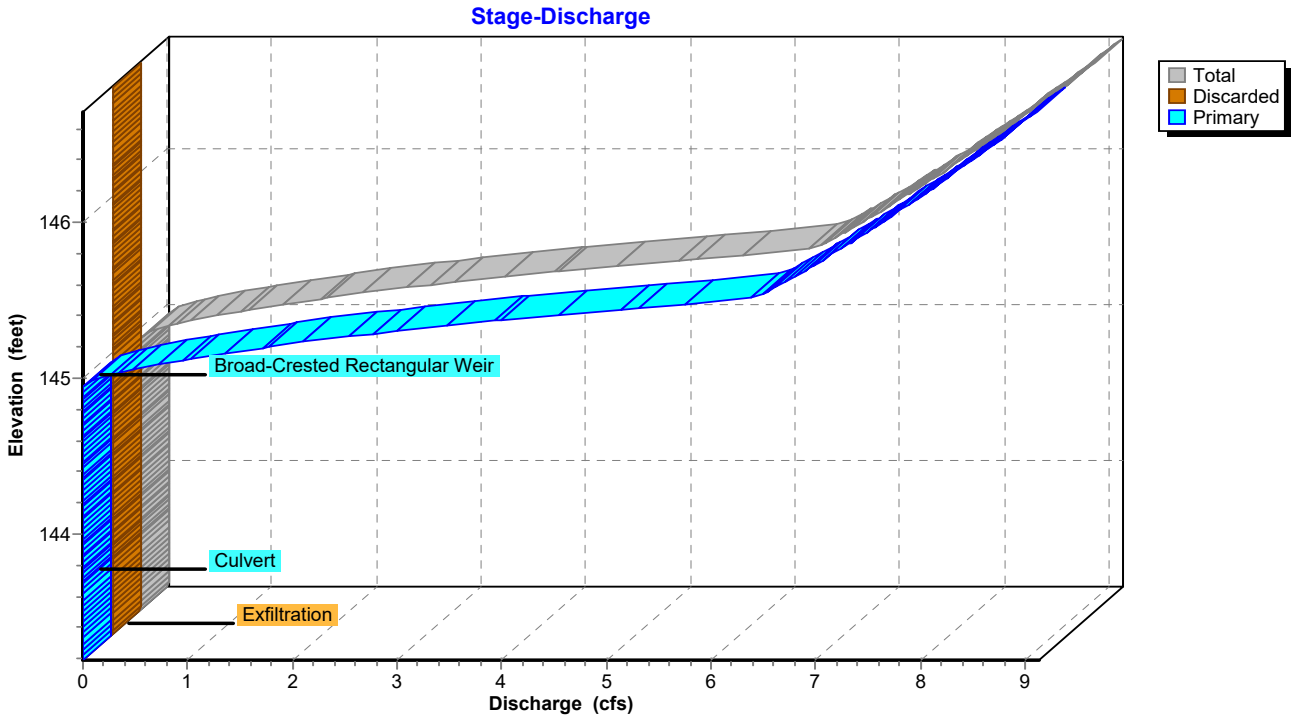
6 Chambers
37.5 cy Field
27.3 cy Stone



Pond ADS 2: ADS 2



Pond ADS 2: ADS 2



Summary for Pond CB-2: CB-2

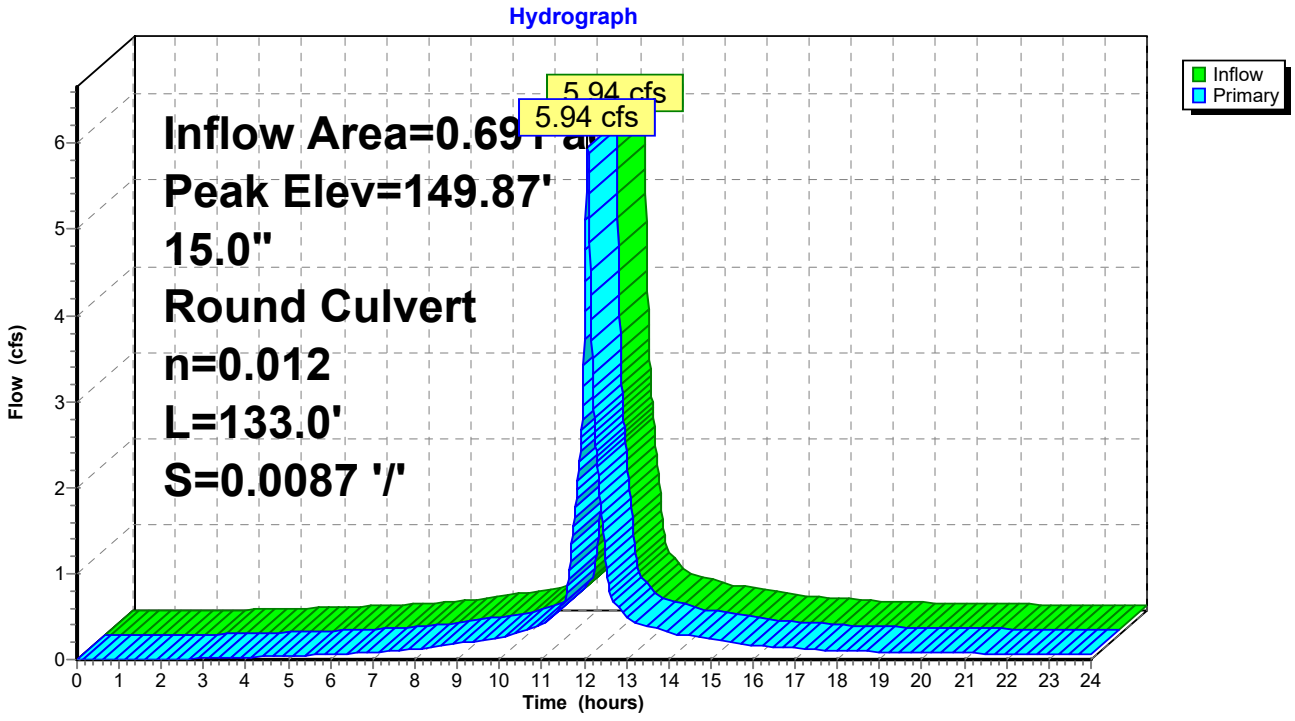
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 8.03" for 100-Year event
Inflow = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af
Outflow = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af, Atten= 0%, Lag= 0.0 min
Primary = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af
Routed to Pond DMH-1 : DMH-1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 149.87' @ 12.09 hrs
Flood Elev= 149.80'

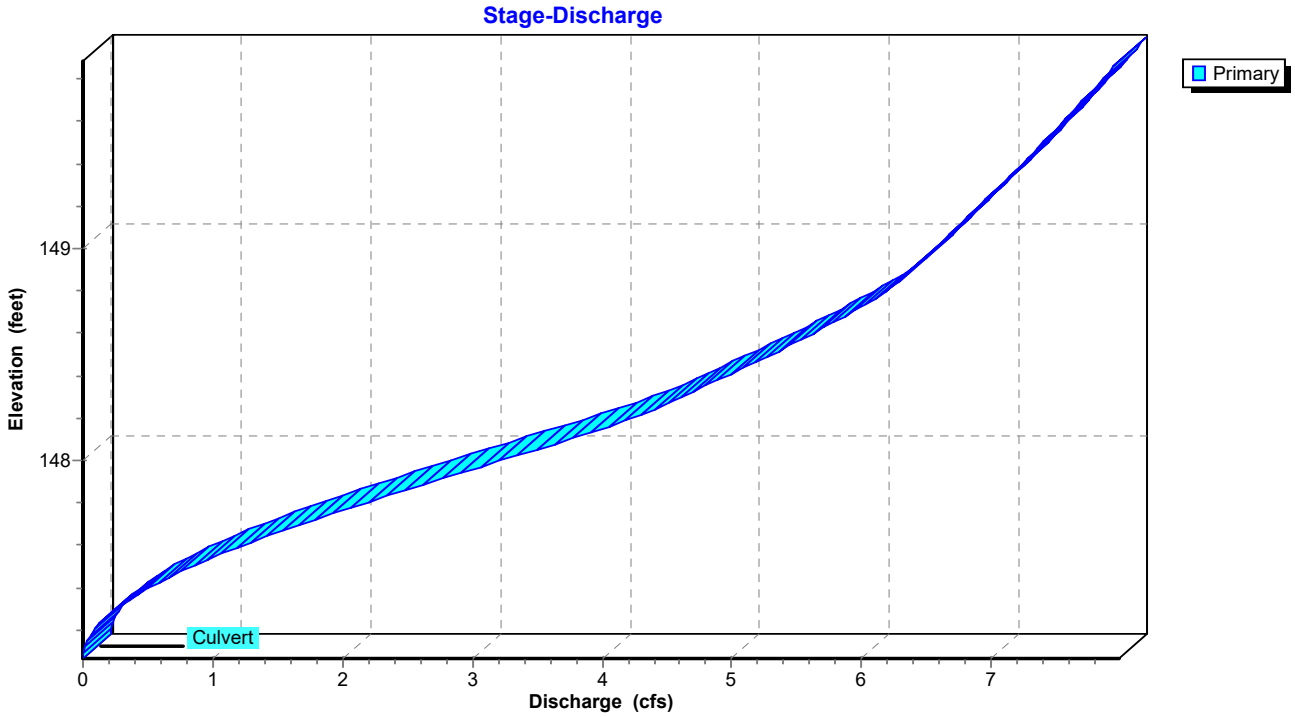
Device	Routing	Invert	Outlet Devices
#1	Primary	147.07'	**15.0" Round Culvert** L= 133.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 147.07' / 145.91' S= 0.0087 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.93 cfs @ 12.08 hrs HW=149.84' TW=148.34' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.93 cfs @ 4.83 fps)

Pond CB-2: CB-2



Pond CB-2: CB-2


Stage-Discharge
Primary
Elevation (feet)
149
148
Culvert
0
1
2
3
4
5
6
7
Discharge (cfs)

Summary for Pond CB-3: CB-3

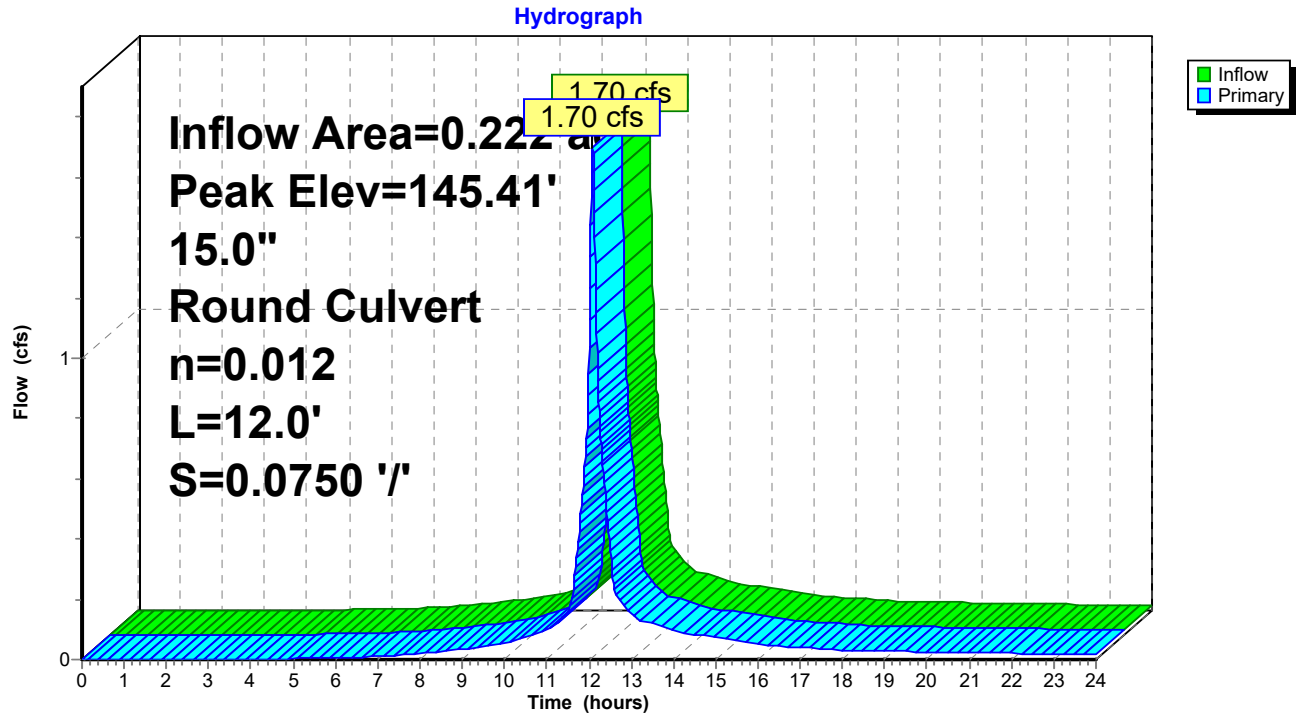
Inflow Area = 0.222 ac, 72.22% Impervious, Inflow Depth > 6.74" for 100-Year event
Inflow = 1.70 cfs @ 12.09 hrs, Volume= 0.125 af
Outflow = 1.70 cfs @ 12.09 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min
Primary = 1.70 cfs @ 12.09 hrs, Volume= 0.125 af
Routed to Pond ADS 2 : ADS 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.41' @ 12.09 hrs
Flood Elev= 149.14'

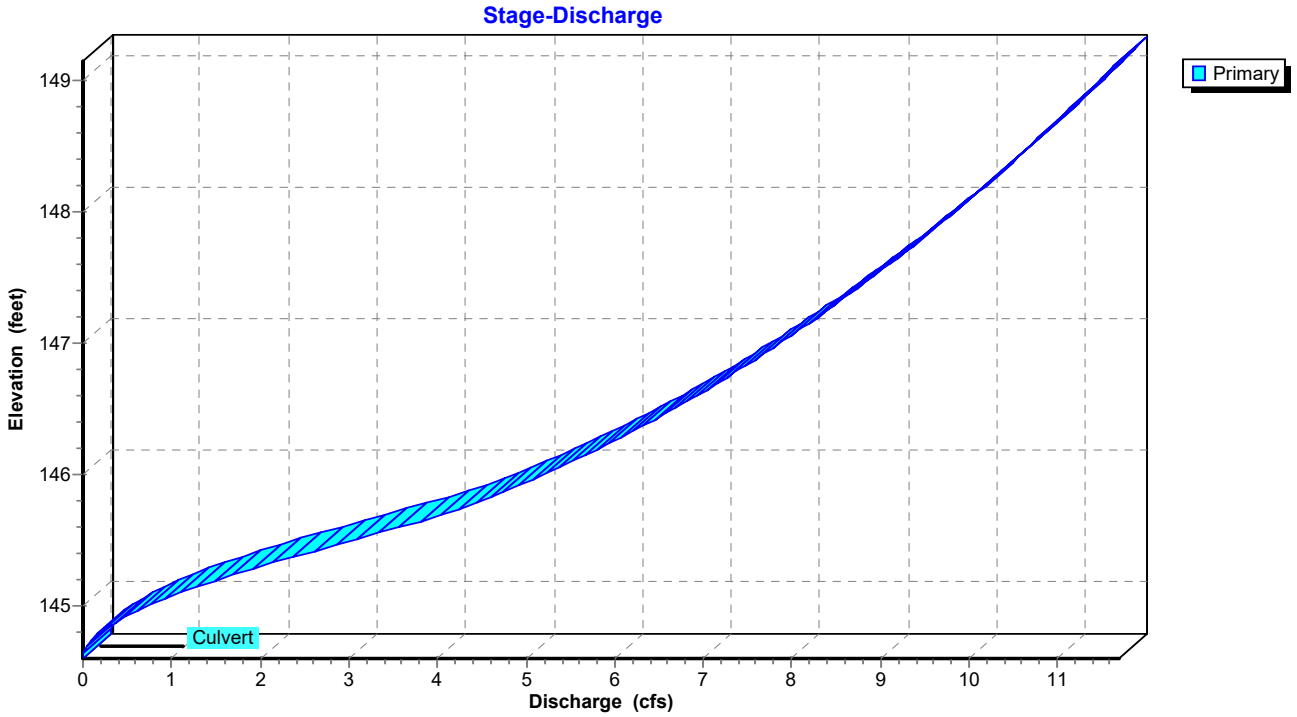
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 12.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.70' S= 0.0750 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.69 cfs @ 12.09 hrs HW=145.41' TW=145.19' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.69 cfs @ 2.86 fps)

Pond CB-3: CB-3



Pond CB-3: CB-3


Stage-Discharge
Primary
Elevation (feet)
149
148
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
9
10
11
Discharge (cfs)

Summary for Pond CB-4: CB-4

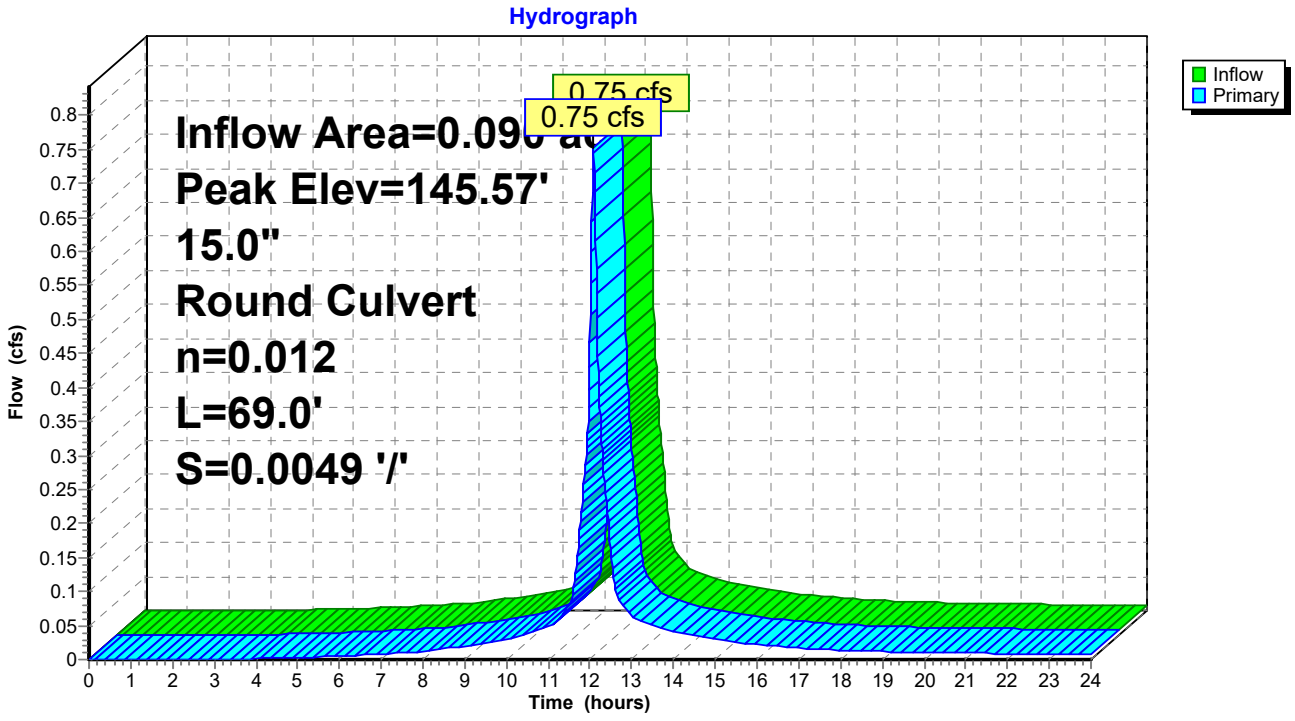
Inflow Area = 0.090 ac, 83.41% Impervious, Inflow Depth > 7.54" for 100-Year event
Inflow = 0.75 cfs @ 12.08 hrs, Volume= 0.057 af
Outflow = 0.75 cfs @ 12.08 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Primary = 0.75 cfs @ 12.08 hrs, Volume= 0.057 af
Routed to Pond CB-3 : CB-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.57' @ 12.09 hrs
Flood Elev= 147.76'

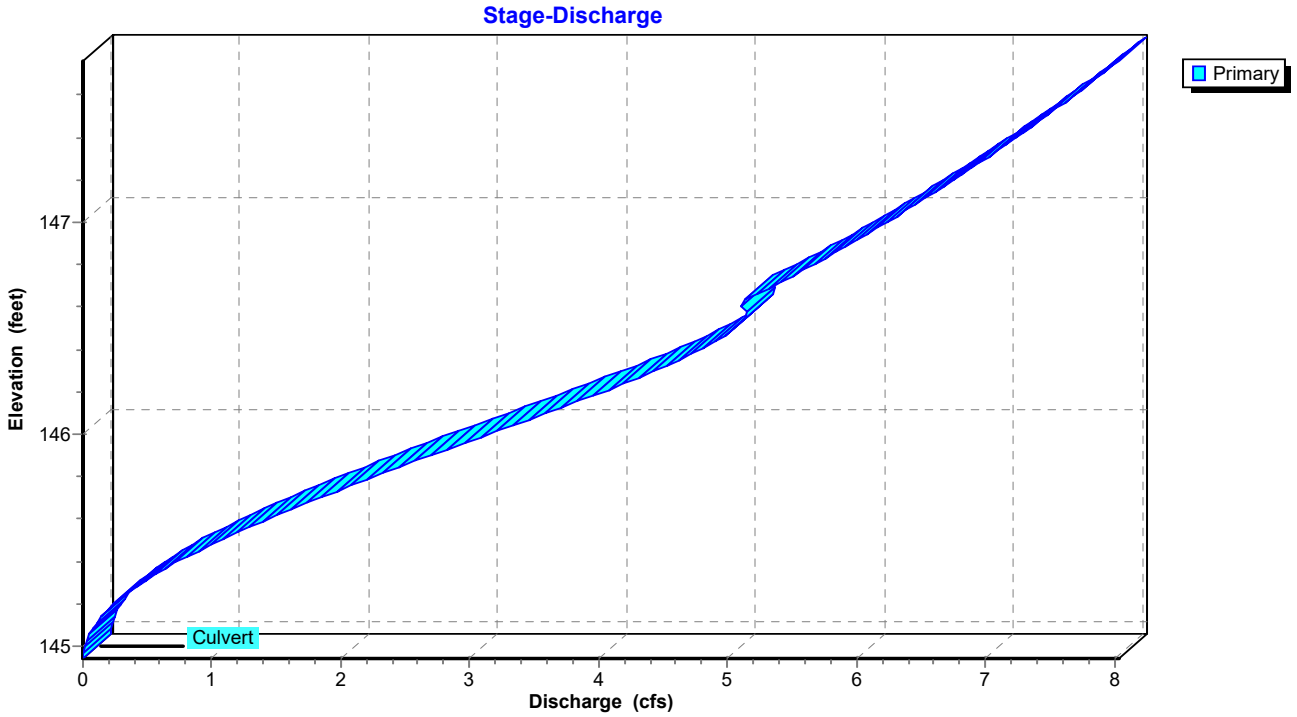
Device	Routing	Invert	Outlet Devices
#1	Primary	144.94'	**15.0" Round Culvert** L= 69.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.94' / 144.60' S= 0.0049 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.75 cfs @ 12.08 hrs HW=145.57' TW=145.41' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.75 cfs @ 1.77 fps)

Pond CB-4: CB-4



Pond CB-4: CB-4


Stage-Discharge
Primary
Elevation (feet)
147
146
145
Culvert
0
1
2
3
4
5
6
7
8
Discharge (cfs)

Summary for Pond DMH-1: DMH-1

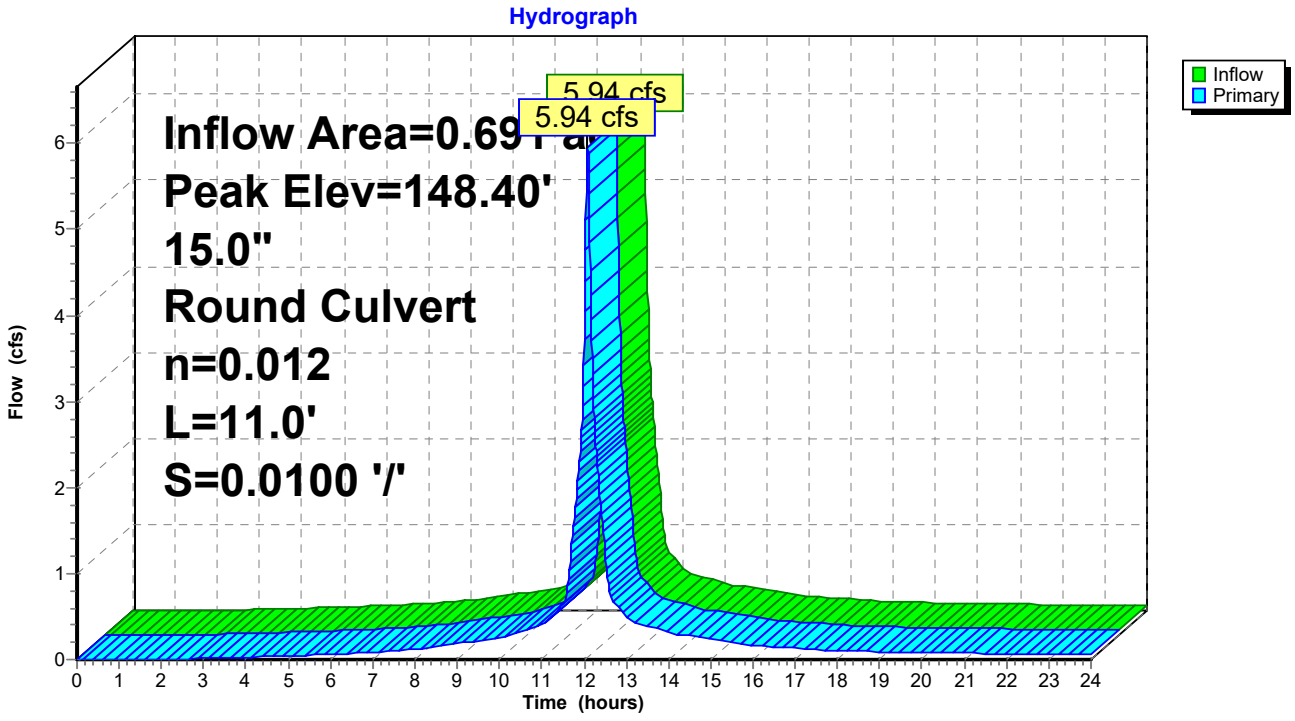
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth > 8.03" for 100-Year event
Inflow = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af
Outflow = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af, Atten= 0%, Lag= 0.0 min
Primary = 5.94 cfs @ 12.08 hrs, Volume= 0.462 af
Routed to Pond ADS 1 : ADS 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 148.40' @ 12.10 hrs
Flood Elev= 150.35'

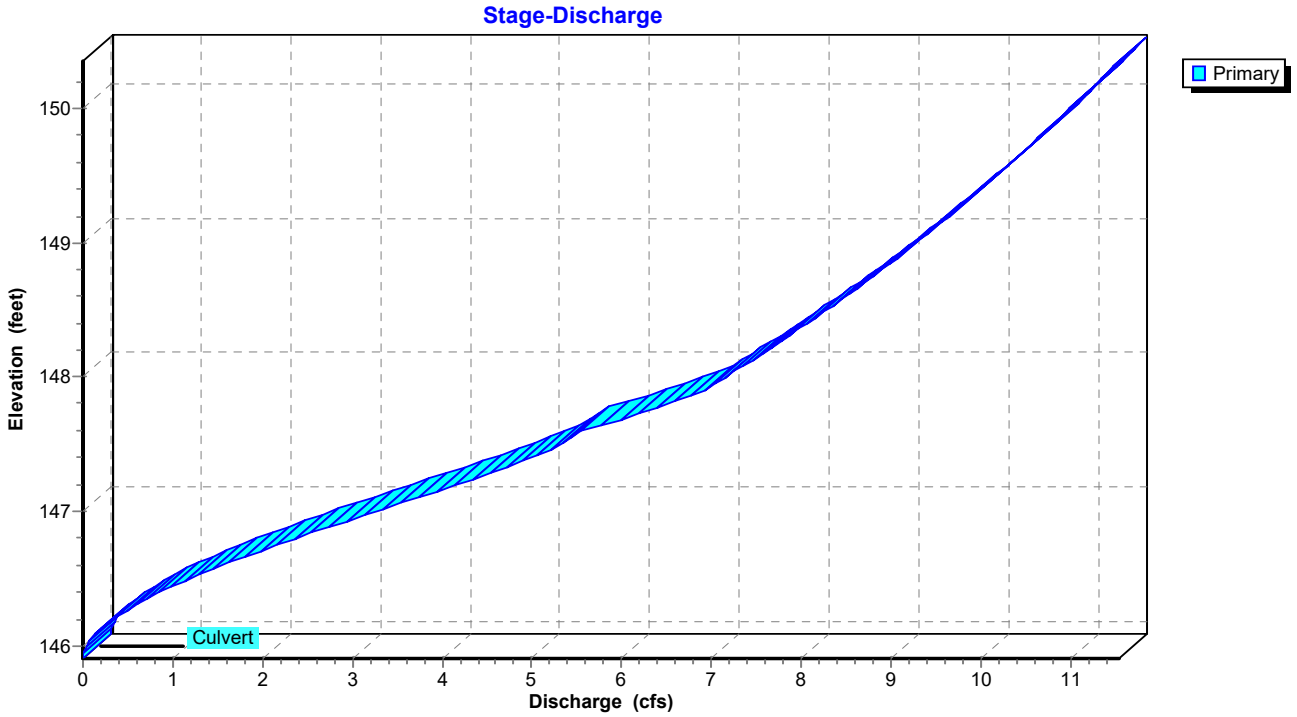
Device	Routing	Invert	Outlet Devices
#1	Primary	145.91'	**15.0" Round Culvert** L= 11.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.91' / 145.80' S= 0.0100 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.93 cfs @ 12.08 hrs HW=148.34' TW=147.33' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.93 cfs @ 4.83 fps)

Pond DMH-1: DMH-1



Pond DMH-1: DMH-1



Summary for Pond DMH-2: DMH-2

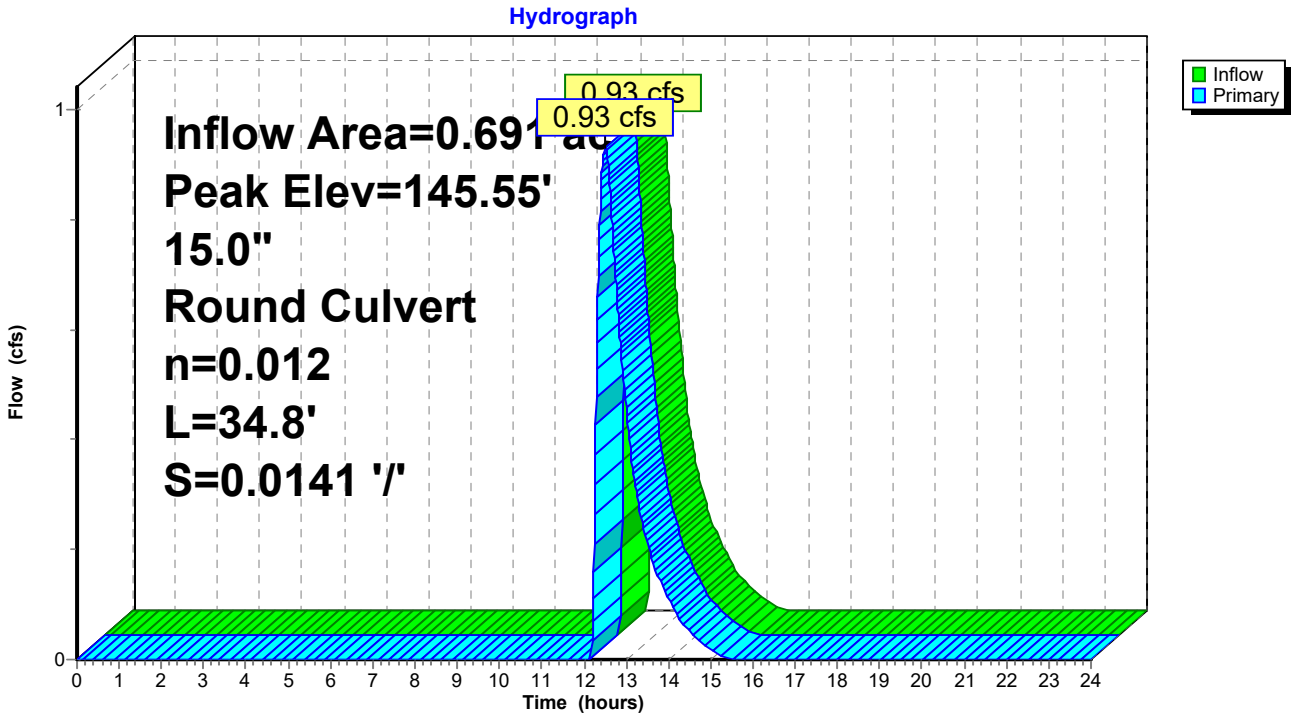
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 1.20" for 100-Year event
Inflow = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af
Outflow = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af
Routed to Pond DMH-3 : DMH-3

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.55' @ 12.50 hrs
Flood Elev= 149.88'

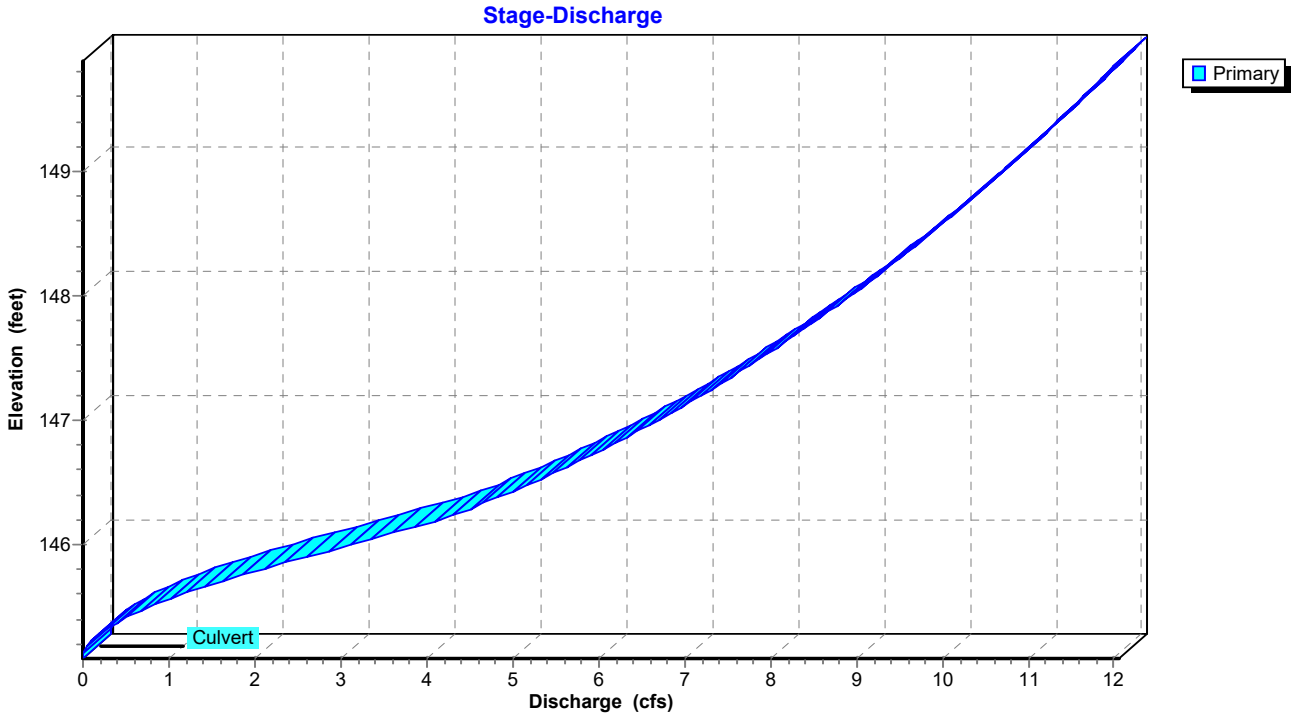
Device	Routing	Invert	Outlet Devices
#1	Primary	145.09'	**15.0" Round Culvert** L= 34.8' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 145.09' / 144.60' S= 0.0141 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.93 cfs @ 12.50 hrs HW=145.55' TW=145.06' (Dynamic Tailwater)
1=Culvert (Outlet Controls 0.93 cfs @ 3.39 fps)

Pond DMH-2: DMH-2



Pond DMH-2: DMH-2



Summary for Pond DMH-3: DMH-3

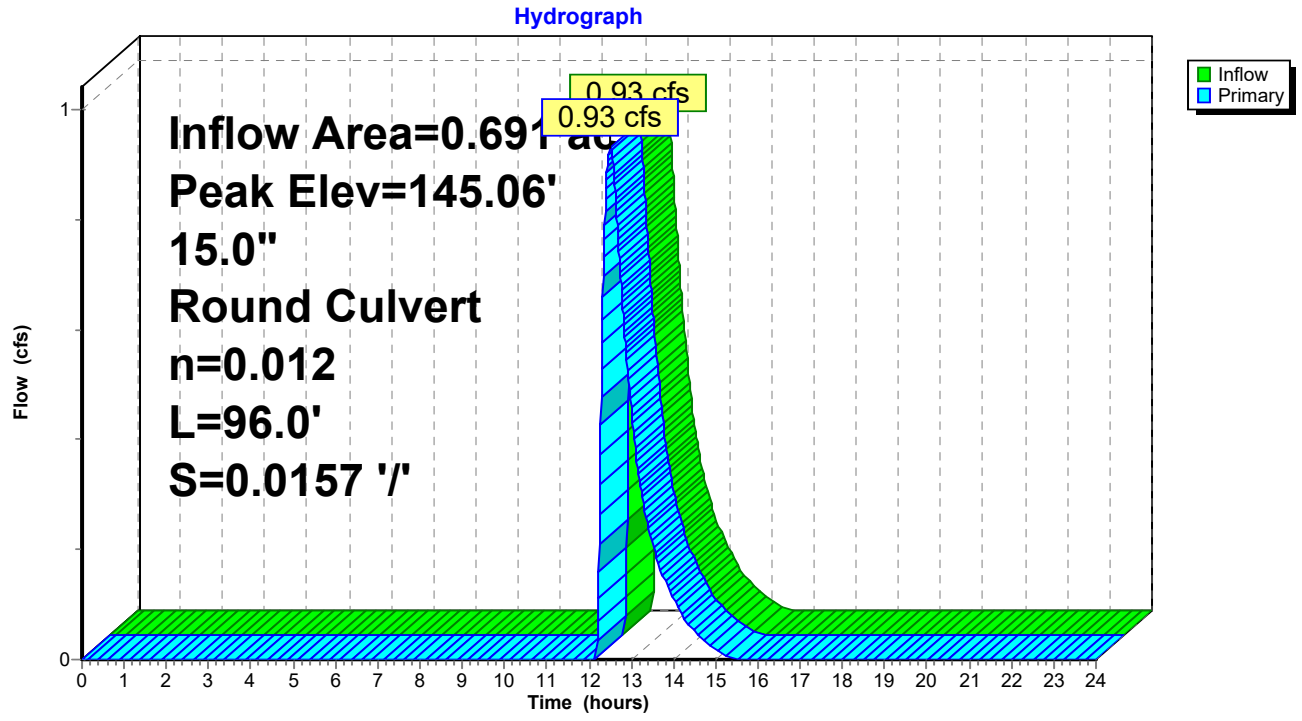
Inflow Area = 0.691 ac, 90.36% Impervious, Inflow Depth = 1.20" for 100-Year event
Inflow = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af
Outflow = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min
Primary = 0.93 cfs @ 12.50 hrs, Volume= 0.069 af
Routed to Pond DMH-4 : DMH-4

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 145.06' @ 12.50 hrs
Flood Elev= 149.87'

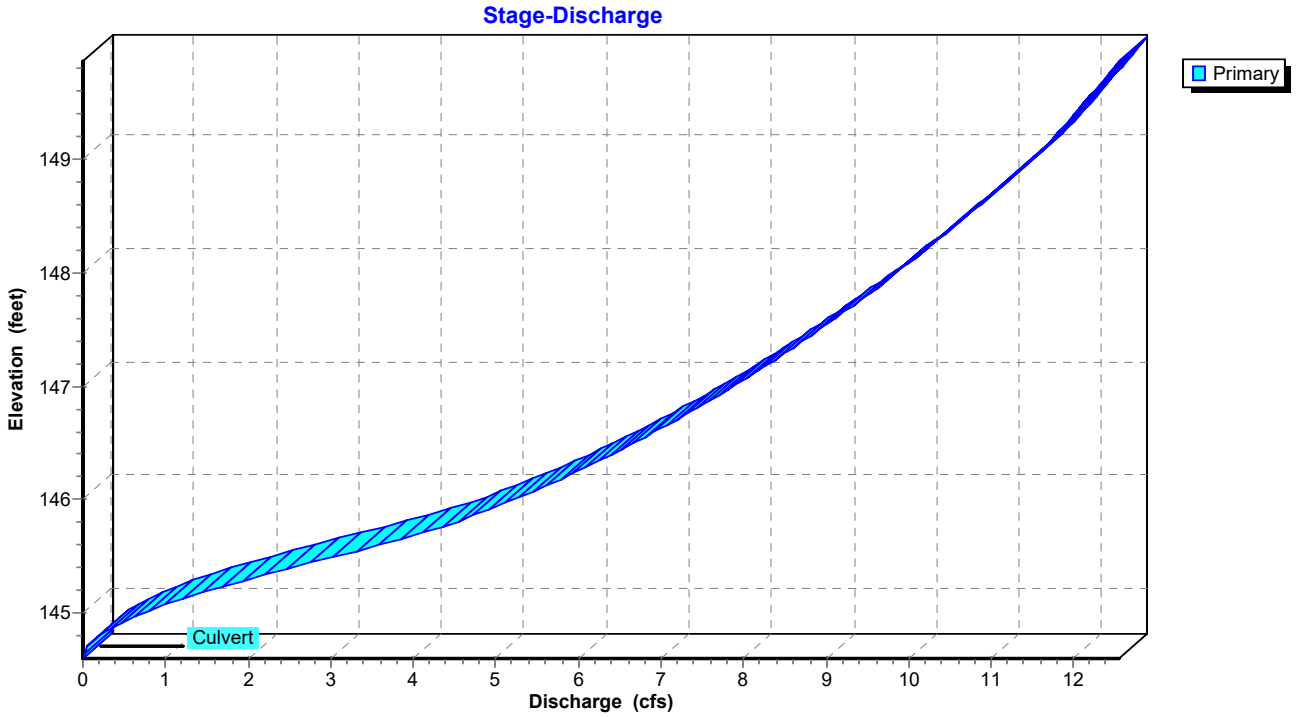
Device	Routing	Invert	Outlet Devices
#1	Primary	144.60'	**15.0" Round Culvert** L= 96.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 144.60' / 143.09' S= 0.0157 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.93 cfs @ 12.50 hrs HW=145.06' TW=143.60' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.93 cfs @ 2.30 fps)

Pond DMH-3: DMH-3



Pond DMH-3: DMH-3



Summary for Pond DMH-4: DMH-4

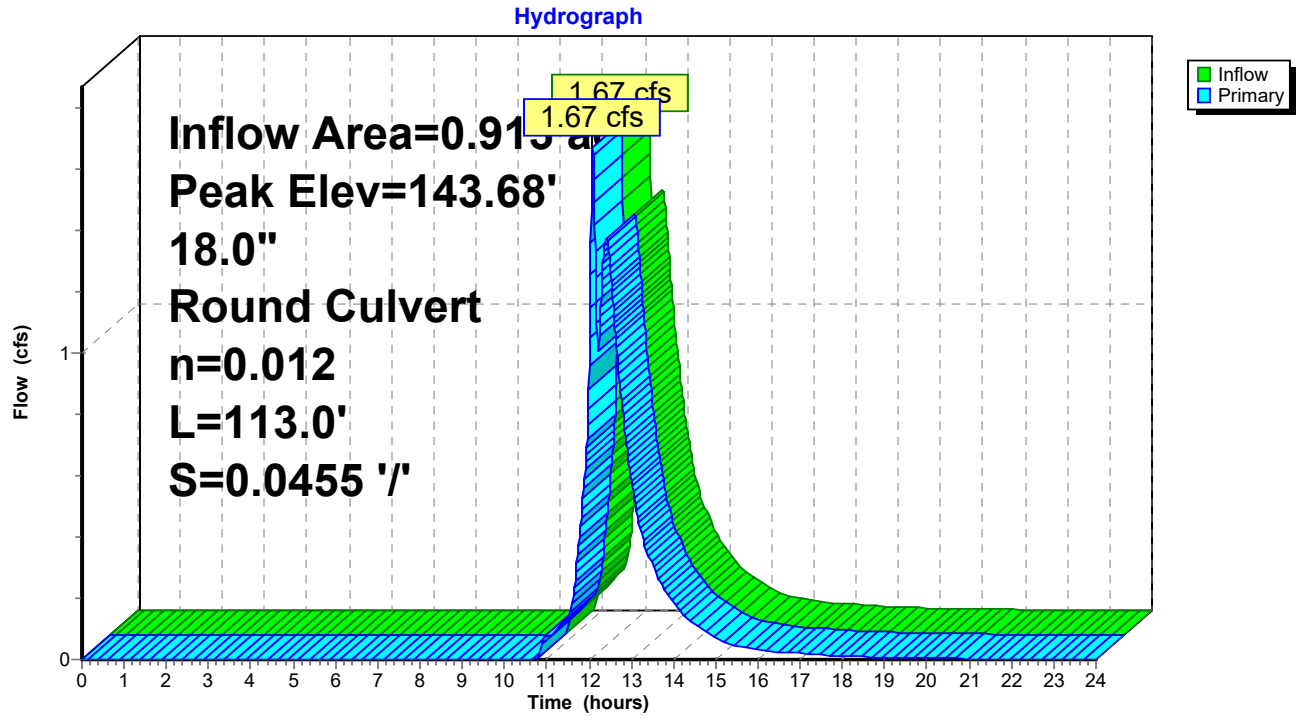
Inflow Area = 0.913 ac, 85.94% Impervious, Inflow Depth = 2.08" for 100-Year event
Inflow = 1.67 cfs @ 12.09 hrs, Volume= 0.158 af
Outflow = 1.67 cfs @ 12.09 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Primary = 1.67 cfs @ 12.09 hrs, Volume= 0.158 af
Routed to Reach POST : POST

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 143.68' @ 12.09 hrs
Flood Elev= 149.87'

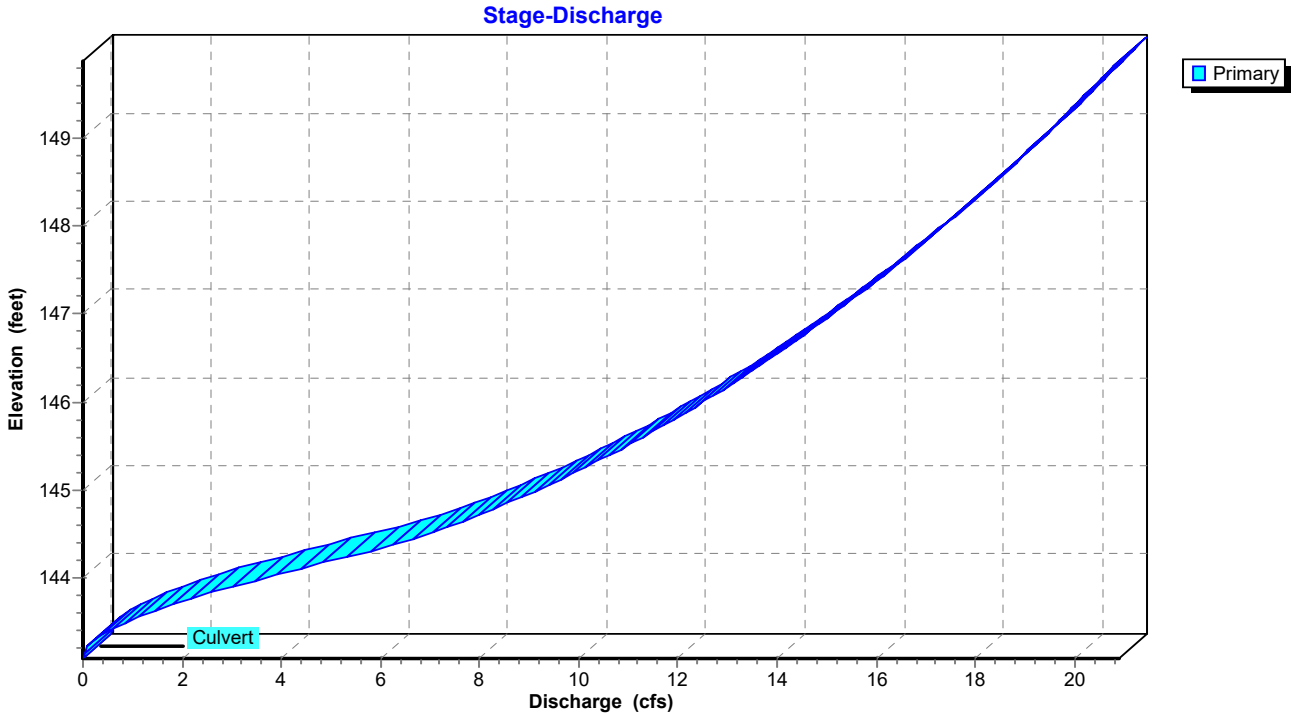
Device	Routing	Invert	Outlet Devices
#1	Primary	143.09'	**18.0" Round Culvert** L= 113.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 143.09' / 137.95' S= 0.0455 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=1.67 cfs @ 12.09 hrs HW=143.68' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.67 cfs @ 2.61 fps)

Pond DMH-4: DMH-4



Pond DMH-4: DMH-4



APPENDIX C

ATTACHMENT 1

Construction Stormwater Compliance Inspection Report

Project Name and Location:	Date:	Page 1 of 2
	Permit # (if any): **NYR**	
Municipality: County:	Entry Time:	Exit Time:
On-site Representative(s) and contact information:	Weather Conditions:	
Name and Address of SPDES Permittee/Title/Phone/Fax Numbers: Contacted: Yes ☐ No ☐		

INSPECTION CHECKLIST

SPDES Authority

	Yes	No	N/A		Law, rule or permit citation
1.	☐	☐	☐	Is a copy of the NOI posted at the construction site for public viewing?	
2.	☐	☐	☐	Is an up-to-date copy of the signed SWPPP retained at the construction site?	
3.	☐	☐	☐	Is a copy of the SPDES General Permit retained at the construction site?	

SWPPP Content

	Yes	No	N/A		Law, rule or permit citation
4.	☐	☐	☐	Does the SWPPP describe and identify the erosion & sediment control measures to be employed?	
5.	☐	☐	☐	Does the SWPPP provide a maintenance schedule for the erosion & sediment control measures?	
6.	☐	☐	☐	Does the SWPPP describe and identify the post-construction SW control measures to be employed?	
7.	☐	☐	☐	Does the SWPPP identify the contractor(s) and subcontractor(s) responsible for each measure?	
8.	☐	☐	☐	Does the SWPPP include all the necessary 'CONTRACTOR CERTIFICATION' statements?	
9.	☐	☐	☐	Is the SWPPP signed/certified by the permittee?	

Recordkeeping

	Yes	No	N/A		Law, rule or permit citation
10.	☐	☐	☐	Are inspections performed as required by the permit (every 7 days and after ½" rain event)?	
11.	☐	☐	☐	Are the site inspections performed by a qualified professional?	
12.	☐	☐	☐	Are all required reports properly signed/certified?	
13.	☐	☐	☐	Does the SWPPP include copies of the monthly/quarterly written summaries of compliance status?	

Visual Observations

	Yes	No	N/A		Law, rule or permit citation
14.	☐	☐	☐	Are all erosion and sediment control measures installed/constructed?	
15.	☐	☐	☐	Are all erosion and sediment control measures maintained properly?	
16.	☐	☐	☐	Have all disturbances of 5 acres or more been approved prior to the disturbance?	
17.	☐	☐	☐	Are stabilization measures initiated in inactive areas?	
18.	☐	☐	☐	Are permanent stormwater control measures implemented?	
19.	☐	☐	☐	Was there a discharge into the receiving water on the day of inspection?	
20.	☐	☐	☐	Are receiving waters free of there evidence of turbidity, sedimentation, or oil ? (If no , complete Page 2)	

Overall Inspection Rating: ❑ Satisfactory ❑ Marginal ❑ Unsatisfactory	
Name/Agency of Lead Inspector:	**Signature of Lead Inspector:**
Names/Agencies of Other Inspectors:	

Water Quality Observations

Describe the discharge(s) [source(s), impact on receiving water(s), etc.] _____

_____

_____

_____

_____

Describe the quality of the receiving water(s) both upstream and downstream of the discharge_____

_____

_____

_____

_____

Describe any other water quality standards or permit violations _____

_____

_____

Additional Comments:_____

_____

_____

_____

_____

APPENDIX D

CONSTRUCTION WASTE MANAGEMENT & SPILL PREVENTION PLAN

At the commencement of construction, land clearing materials will be collected and stored on-site for re-use. Construction debris such as cardboard, concrete, metal, wood and similar garbage will be collected in dumpsters and disposed of properly. An open top container will be on site during construction. The contractor will be responsible for organizing and placing containers on site and timely removal/replacement when containers are filled to capacity.

On-site storage of fuel chemicals shall be equipped with a spill kit. The contractor must provide secondary containment for storing any hazardous chemicals on site.

All equipment stored on site shall be inspected daily by the contractor for any oil or lubricant spills or leaks. Any leaks shall be repaired immediately. In addition, all equipment must be closely inspected prior to working in the Village R.O.W.

The contractor shall clean all spills immediately and shall report all spills to the New York State Department of Environmental Conservation.

This plan will be displayed in the construction jobsite trailer at all times.

APPENDIX E

City of Beacon
Stormwater Management Facility Easement and Maintenance Agreement

THIS AGREEMENT is made this ____ day of _____ 2023 by and between the City of Beacon, having an address at 152-158 Fishkill, Beacon, NY 12508 ("Municipality" or "City") and _____ a New York limited liability company (or individual or corporation) having an address at _____ (the "Facility Owner").

WHEREAS, the Facility Owner is the owner of certain real property in the City of Beacon, County of Orange, State of New York, consisting of approximately _____ acres more particularly described in Schedule "A" annexed hereto and made a part hereof (the "Property"); and with a street address of _____ and further known as S-B-L ____-____-____; and further known as the _____ commercial site plan; and

WHEREAS, the project plans were approved by the City of Beacon Planning Board on _____, 2022 with various conditions; and

WHEREAS, the Municipality and the Facility Owner have to enter into an agreement to provide for the long-term maintenance and continuation of stormwater control measures and facilities approved by the Municipality for the below named project; and

WHEREAS, the Municipality and the Facility Owner desire that the stormwater control measures and facilities be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components.

NOW, THEREFORE, the Municipality and the Facility Owner agree as follows:

1. This agreement binds the Municipality and the Facility Owner, its successors and assigns to the maintenance provisions depicted in the approved project plans and described in the Stormwater Pollution Prevention Plan (SWPPP) which are on file with the Municipality's Stormwater Management Officer and where the operation and maintenance requirements are clearly set forth. The Facility Owner shall remain solely responsible for operation and maintenance in perpetuity and the City assumes no operation, maintenance, control or responsibility in respect thereof.

2. The Facility Owner shall install, maintain, clean, repair, replace and continue the stormwater control measures depicted on the approved project plans for the Facility on and about the Property, as necessary to ensure optimum performance of the measures and in accordance with the approved design specifications. The stormwater control measures are identified in the Stormwater Pollution Prevention Plan (SWPPP) approved by the Municipality and shall be in accord with the project plans approved by the Planning Board.

3. The Facility Owner shall be responsible for all expenses, costs and professional fees related to the installation and perpetual maintenance of the stormwater control measures and shall promptly comply with any future regulatory requirements as applicable and shall indemnify and hold the Municipality harmless from all actions, proceedings, including regulatory proceedings, including the Citys reasonable professional fees related thereto, and for all claims, damages, injuries and fines relative to the stormwater control measures and facilities.

4. The Facility Owner shall provide for the periodic inspection of the stormwater control measures, not less than once every 2 years, to determine the condition and integrity of the measures. Such inspection shall be performed by a Professional Engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Municipality within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the stormwater control measures. The Facility Owner shall undertake necessary maintenance, repairs and replacement of the stormwater control measures pursuant to the SWPPP or at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.

5. The Facility Owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality. The obligations of the Facility Owner under paragraphs 2, 3 and 4 of this Agreement shall toll upon the completion of the establishment of a drainage district of the Municipality and the acceptance of the dedication of the stormwater control measures by the Municipality. Notwithstanding, the Municipality shall have no obligation to establish any such drainage district nor accept ownership of any of the stormwater control measures.

6. This agreement shall be recorded in the Office of the County Clerk, County of Orange at the expense of the Facility owner and shall be referenced in any offering plan and/or prospectus, lease, contract of sale or future transfer, however, the failure to so reference shall not affect the validity of this Agreement. All rights, title and privileges herein granted, including all benefits and burdens, shall run with the land and shall be binding upon and inure to the benefit of the parties hereto, their respective heirs, executors, administrators, successors, assigns and legal representatives.

7. If ever the Municipality determines that the Facility Owner has failed to construct or maintain the stormwater control measures and facilities in accordance with the project plans or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and facilities and is hereby authorized by the owner to assess the expenses thereof as a lien against the property to be collected in the same fashion as other municipal taxes. In lieu thereof, the Facility Owner shall reimburse the Municipality for all actual costs and expenses, incurred in enforcing this Agreement and curing a violation.

8. At any time after a violation of this Agreement is alleged by the Municipality, the owner, at the sole discretion of the Municipality, shall post security in an amount and in a form acceptable to the Municipality to ensure the owner's future performance and maintenance of the stormwater control measures.

9. The Facility Owner hereby grants to the City, its authorized agents, contractors and employees, a permanent easement which runs with the land to enter upon the Property at reasonable times to inspect the stormwater control measures whenever the City deems necessary to ensure that the facility is maintained in proper working condition to meet design standards, and to undertake such steps as the City deems reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures. The Facility Owner hereby releases and shall hold the City harmless from any damages as a result of such entry and work. It is expressly understood and agreed that the City is under no obligation to construct or routinely maintain or repair the stormwater control facilities, and in no event shall this agreement be construed to impose any such obligation on the City.

10. The Facility Owner shall complete the site work within one (1) year of the issuance of permits for the site work, and conduct all site disturbance work in accordance with the approved SWPPP and in compliance with the approved project plans. In the event that the Facility Owner fails to complete the site work within one (1) year of the issuance of permits for the site work or fails to maintain/repair the facilities, the Municipality, upon giving twenty (20) days written notice to the Facility Owner, and a demand to complete, perform and correct by a date certain, and upon default of said Facility Owner, the Municipality shall have the right to complete the site work and/or to maintain/repair the facilities and to take such steps as it deems appropriate to either complete the site work or to stabilize and restore the site and/or to maintain/repair the facilities, and to recover its cost per paragraph 7 above. The time required to notice may be reduced to that deemed practicable and reasonable upon recommendation of the Engineer for the City and upon the engineer's certification that an emergency condition exists which requires action to be undertaken immediately and does not allow time to give notice to the Facility Owner and an opportunity to correct in the manner specified above.

11. The governing bodies of the parties hereto have authorized the respective signatories to this Agreement.

IN WITNESS WHEREOF, the parties have duly executed this agreement as of the day and year first above written.

CITY OF BEACON

By: _____
Lee Kyriacou, Mayor

NAME OF RECORD OWNER:

By: _____
[Print name]

STATE OF NEW YORK:)
) SS.
COUNTY OF ORANGE:)

On the ___ day of _____, in the year 2023 before me, the undersigned, personally appeared _____ personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK:)
) SS.
COUNTY OF ORANGE:)

On the ___ day of _____, in the year 2023 before me, the undersigned, personally appeared LEE KYRIACOU personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

CATCH BASIN INSPECTION FORM

Job No: _____ **Town:** _____ **Inspector:** _____ **Date:** _____

Catch Basin I.D.	_____	**Final Discharge from Structure?** Yes ☐ No ☐ **If Yes, Discharge to Outfall No:** _____	
Catch Basin Label:	**Stencil** ☐ **Ground Insert** ☐	**Sign** ☐ **None** ☐ **Other** _____	
Basin Material :	Concrete ☐ Corrygated metal ☐ Stone ☐ Brick ☐ Other: _____ ☐	**Catch basin Condition :**	Good ☐ Poor ☐ Fair ☐ Crumbling ☐
Pipe Material:	Concrete ☐ HDPE ☐ PVC ☐ Clay Tile ☐ Other: _____	**Pipe Measurements:**	Inlet Dia. (in) d= _____ Outlet Dia.(in) D= _____

Required Maintenance / Problems (Check all that apply):

☐ Tree Work Required
☐ New Grate is Required
☐ Pipe is Blocked
☐ Frame Maintenance is Required
☐ Remove Accumulated Sediment
☐ Pipe Maintenance is Required
☐ Basin Undermined or Bypassed
☐ Cannot Remove Cover
☐ Ditch Work
☐ Corrosion at Structure
☐ Erosion Around Structure
☐ Remove Trash & Debris
☐ Need Cement Around Grate
Other: _____

Catch Basin Grate Type:	**Sediment Buildup Depth:**	**More than 50% full?**	**Description of Flow:**	**Street Name/ Structure Location:**
Bar ☐ Cascade: ☐ Other: _____ Properly Aligned : Yes ☐ No ☐	0-6 (in): _____ 6-12(in): _____ 12-18(in): _____ 18-24(in): _____ 24+ (in): _____	Yes ☐ No ☐	Heavy ☐ Moderate ☐ Slight ☐ Trickling ☐	

***If the outlet is submerged check yes and indicate approximate height of water above the Outlet invert.** H above invert (in): _	Yes ☐	No ☐

☐ **Flow** ☐ **Standing Water (check one or both)**	**Observations:**		**Circle those present:**
	Color:		Foam Sanitary Waste Orange Staining Excessive sediment Other: _____
	Odor:		Oil Sheen Bacterial Sheen Floatables Pet Waste Optical Enhancers
Weather Conditions:	Dry > 24 hours ☐	Wet ☐	
Sample of Screenings Collected for Analysis? Yes ☐ No ☐			
Amount of sediment removed:			
Comment:			

StormTech®
Detention • Retention • Water Quality
An ADS company

Isolator® Row PLUS O&M Manual







*THE MOST **ADVANCED** NAME IN WATER MANAGEMENT SOLUTIONS®*

ADS®

THE ISOLATOR® ROW PLUS

INTRODUCTION

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row PLUS is a technique to inexpensively enhance Total Suspended Solids (TSS) and Total Phosphorus (TP) removal with easy access for inspection and maintenance.

THE ISOLATOR ROW PLUS

The Isolator Row PLUS is a row of StormTech chambers, either SC-160, 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 PLUS 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 PLUS protecting the storage areas of the adjacent stone and chambers from sediment accumulation.

ADS geotextile fabric is placed between the stone and the Isolator Row PLUS chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains 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 SC-160, DC-780, MC-3500 or MC-4500 models as these chambers do not have perforated side walls.

The Isolator Row PLUS is designed to capture the "first flush" runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole not only provides access to the Isolator Row PLUS but includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row PLUS bypass through a manifold to the other chambers. This is achieved with either an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row PLUS row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row PLUS. After Stormwater flows through the Isolator Row PLUS and into the rest of the StormTech chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

The Isolator Row FLAMP™ (patent pending) is a flared end ramp apparatus that is attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance over time by enhancing outflow of solid debris that would otherwise collect at an end of the chamber. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row PLUS may be part of a treatment train system. 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 PLUS is recommended by StormTech as an effective means to minimize maintenance requirements and maintenance costs.

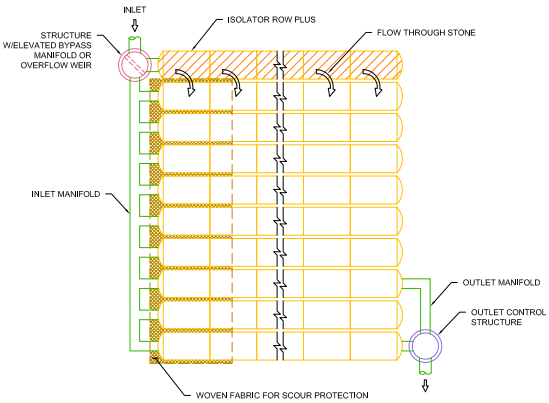
Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row PLUS.



Looking down the Isolator Row PLUS from the manhole opening, ADS PLUS Fabric is shown between the chamber and stone base.



StormTech Isolator Row PLUS with Overflow Spillway (not to scale)





ISOLATOR ROW PLUS INSPECTION/MAINTENANCE

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 PLUS 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 PLUS 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 PLUS, clean-out should be performed.

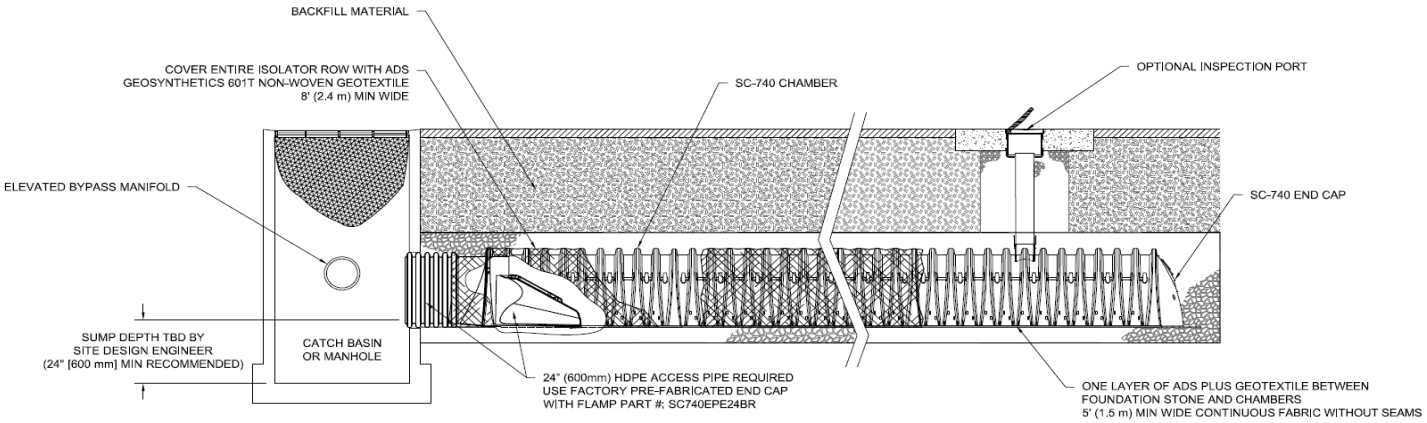
MAINTENANCE

The Isolator Row PLUS 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.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row PLUS 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. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. Most JetVac reels have 400 feet of hose allowing maintenance of an Isolator Row PLUS up to 50 chambers long. **The JetVac process shall only be performed on StormTech Isolator Row PLUS that have ADS PLUS Fabric (as specified by StormTech) over their angular base stone.**

StormTech Isolator Row PLUS (not to scale)

Note: Non-woven fabric is only required over the inlet pipe connection into the end cap for SC-160LP, DC-780, MC-3500 and MC-4500 chamber models and is not required over the entire Isolator Row PLUS.



ISOLATOR ROW PLUS STEP BY STEP MAINTENANCE PROCEDURES

STEP 1

Inspect Isolator Row PLUS 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 Row PLUS
   i. Remove cover from manhole at upstream end of Isolator Row PLUS
   ii. Using a flashlight, inspect down Isolator Row PLUS 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.

STEP 2

Clean out Isolator Row PLUS using the JetVac process.

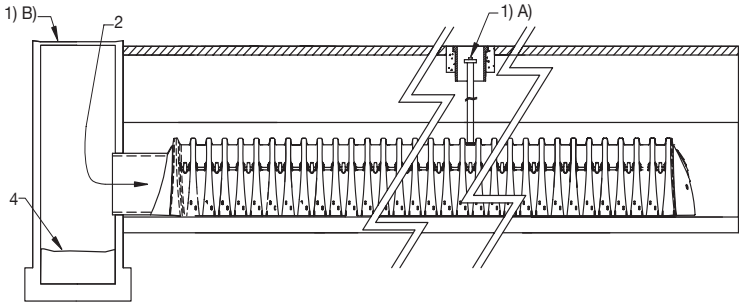
A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
B) Apply multiple passes of JetVac until backflush water is clean
C) Vacuum manhole sump as required

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)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row PLUS, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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StormTech Detention • Retention • Water Quality
An ADS company

Advanced Drainage Systems, Inc.
4640 Trueman Blvd., Hilliard, OH 43026
1-800-821-6710 www.ads-pipe.com

APPENDIX H

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents
   a. Preamble to Site Assessment and Inspections
   b. Operator's Certification
   c. Qualified Professional's Credentials & Certification
   d. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections
   a. Directions
   b. Modification to the SWPPP

III. Monthly Summary Reports

IV. Monitoring, Reporting, and Three-Month Status Reports
   a. Operator's Compliance Response Form

Properly completing forms such as those contained in Appendix H meet the inspection requirement of NYS-DEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

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 professional[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.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). 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. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional 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 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

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. Operators Certification

"I certify under penalty of law that this document and all attachments 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 the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

c. Qualified Professional's Credentials & 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 following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

d. 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 Entrance

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. Perimeter 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? _____

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 Professional (print name) **Qualified Professional 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?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] 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 and debris 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.

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.

2. Level 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

Runoff Control Practices (continued)

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. Stabilized Construction Entrance
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?

2. Silt Fence
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)

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated 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.

Sediment accumulation ___% of design capacity.

4. 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 accumulation is ___% of design capacity.

5. 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 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.
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:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments 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 the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

_____ _____

Signature of Permittee or Duly Authorized Representative Name of Permittee or Duly Authorized Representative Date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

KEVIN L. PATTON, P.E.
36 PATTON ROAD
NEWBURGH, N.Y. 12550
845 275-7732 PATTONGEOTECH.COM

CLIENT:	Arden Consulting Engineers, PLLC PO Box 340 Monroe, NY 10940	PROJECT: Project No. Date:	152-158 Fishkill Avenue Beacon, N.Y. 23310 August 25, 2023

TEST PIT INSPECTION REPORT

PROJECT DESCRIPTION

Test pits were excavated to investigate the area of the proposed retaining wall along the north side and the north part of the east side of the project site. The existing north slope is to be cut back approximately twenty to thirty feet in this area. The wall will have a maximum height of approximately thirteen feet, near the east end of the north side, while the section on the east side will reach a height of about nine feet; there will also be a knee-wall about thirty inches high just in front of these wall sections. The final grade in the proposed parking area near the wall will be at about 149.5 to 150.0 feet elevation, approximately the same as the existing elevation in the dirt parking lot behind the auto repair shop.

The Surficial Geologic Map of New York State (N.Y. State Museum, 1989,) indicates that the site is in a broad area of glacial till. The USDA Soil Survey indicates that the native topsoil types in the project area are Knickerbocker fine sandy loam and Dutchess-Cardigan complex soils. Dutchess and Cardigan soils typically form over deposits of glacial till composed of silty sand with little to some gravel, trace to few small flat stones (channers.) Knickerbocker soils typically form over glacial outwash or deltaic deposits composed of stratified fine-graded sand with traces to some silt, trace to little gravel. The site is in the edge of an area mapped as 'urban land,' at the base of a small hill which rises to the northeast and which is mapped as Knickerbocker fine sandy loam. The hill has the form of a kame, a stratified ice-contact deposit, and the mapped soil type is consistent with that type of deposit.

The local bedrock is thinly-layered gray siltstone, shale and sandstone of the Ordovician-age Austin Glen formation, changing to the similar and related Mount Merino formation immediately to the east.

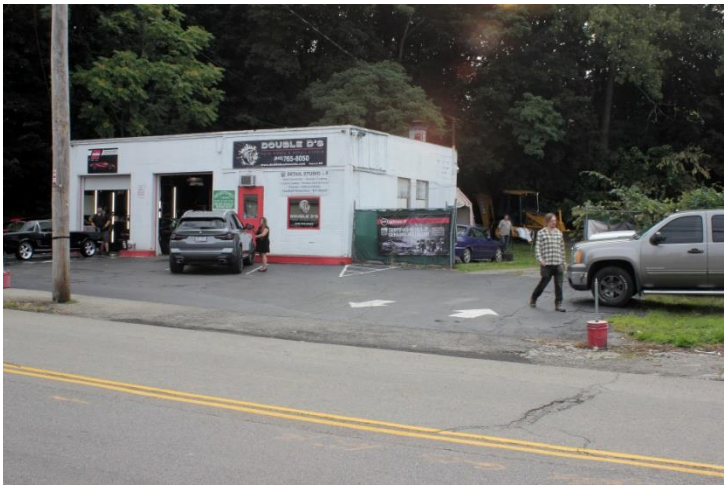


PHOTO 1. General view of the north part of the project area, facing east.

SOIL INVESTIGATION AND TEST RESULTS

Three test pits were excavated on August 23, 2023, using a backhoe. The subsurface investigation was supervised and witnessed Warren Patton, working under my direction. I inspected the soils in the test pits TP1 and TP2 and observed some of the excavation work. Soils were observed and sampled, and tests were performed using a Hand Penetrometer to measure the bearing resistance of the soil.

Test pit TP1 was excavated near the base of the existing east slope, approximately on the line of the proposed wall. On the north side of the site, test pits TP2 and TP3 were excavated into the bottom of the existing slope, approximately fifteen to twenty feet in front of the proposed wall; these test pits could not be excavated closer to the proposed north wall, due to the steep slope, densely covered with small trees. The following general conditions were observed in the test pits.

Test Pit	TP1	TP2	TP3
Approximate Elevation	155	155	154
Refusal Depth	8 ft	8 ft	4 ft
Refusal Elevation	147	147	150
Bottom Condition	Hard till	Probable bedrock	Hard till
Groundwater	7.5 ft, seeping	None	None

The project plans also indicate that bedrock was encountered at approximately four feet depth, elevation 148 feet, in stormwater test pit SWTP2, close to test pit TP2. The plans show six other stormwater test pits which were excavated across the site to depths of seven to thirteen feet without encountering rock.



PHOTO 2. The backhoe at test pit TP2. All photos were taken on August 23, 2023.

Subsurface Profile and Summary of Soil Conditions

The observed subsurface conditions are described in the test pit logs. The project area appears to have been cut back into the toe of a natural hillside, leaving a steep cut slope along the north and northeast property lines. The test pits encountered a few inches of topsoil and disturbed soil with minor debris, over native colluvial soils which probably formed originally as till, but that have been re-worked by erosion and soil creep. The colluvium consisted of medium-dense to somewhat loose sand and gravel with little silt, and

gravelly sand with little silty clay. At depths of three to six feet the soil changed to glacial till, which was dense, quickly changing to very dense or hard. The till was composed of silty gravelly sand, sandy clay and silty clayey sand.

Probable bedrock was encountered at approximately 147 feet elevation in test pit TP2, indicated by sparking and scraping of the teeth of the backhoe bucket in the bottom of the hole.

Groundwater was encountered just above the hard till in the bottom of test pit TP1, and very moist soils were present in the bottom of test pit TP2.



PHOTO 3. Steep, wooded conditions on the slope along the north side of the site.

Please see the attached reports for additional information.

August 25, 2023

LICENSED PROFESSIONAL ENGINEER
KEVIN L. PATTON
072197
STATE OF NEW YORK

Prepared by Kevin L. Patton, P.E.

Attachments:

- Soil Technical Notes
- Test Pit Location Plan
- Test Pit Logs
- Bedrock Geologic Map
- Surficial Geologic Map
- USDA Soil Survey Data

KEVIN L. PATTON, P.E.
36 PATTON ROAD
NEWBURGH, N.Y. 12550
845 275-7732 PATTONGEOTECH.COM

Soil Technical Notes:
Soil Classifications, Descriptions and Properties

The USCS (Unified Soil Classification System) was used to classify the soils in this report. The USCS is described in ASTM D2487 (laboratory test method) and D2488 (visual-manual method.) The USCS classification gives a 'Group Symbol' and 'Group Name' based on particle size distribution (gradation,) clay properties (Atterberg Limits) and basic composition (mineral or organic.)

USCS Soil Classes

Soils with less than 5% passing the #200 sieve:

GW, GP, SW, SP – Well-graded gravel, Poorly-graded gravel, Well-graded sand, Poorly-graded sand.

Soils with 12% to 50% passing the #200 sieve:

GC, GM, GC-GM, SC, SM, SC-SM – Clayey gravel, Silty gravel, Silty clayey gravel, Clayey sand, Silty sand, Silty clayey sand.

Soils with 5% to 12% passing the #200 sieve use a dual symbol, such as SW-SC (Clayey well-graded sand.)

Soils with more than 50% passing the #200 sieve:

CL-ML, ML, CL, MH, CH, OL, OH – Silty clay, Silt, Lean clay, Elastic silt, Fat clay, Organic silt, Organic clay.

Highly organic soils:

PT – Peat.

The soil group name is modified with the term 'with sand' or 'with gravel' added if the soil contains more than 15% of these materials; clays and silts with 30% or more plus-#200 material are described as 'sandy' or 'gravelly' (whichever is predominate.) Examples – GM, Silty gravel with sand; CL, Gravelly lean clay.

Particle size

>12" (300mm)	Boulders
12" to 3" (300-75mm)	Cobbles
3" to #4 (75-4.75mm)	Gravel
#4 to #200 (4.75-0.075mm)	Sand
<#200 (0.075mm)	Silt & Clay

Organic Soils

Highly organic soils such as peat are visually classified. Partly organic soils, with a mix of organic and mineral matter, are classified visually and by Atterberg Limits tests.

Moisture Content

Moisture is visually estimated and samples are usually tested. Soil moisture capacity varies with texture and compaction.

Typical examples:
GW, moist at 3%, saturated at 9%
SP, moist at 6%, saturated at 20%.
CL, moist at 12%, saturated at 33%.

Fine- and Coarse-grained Soils

The USCS classification applies to the material smaller than the 3-inch sieve.

'Fine-Grained Soils' (silts and clays) have more than 50% passing the #200 sieve and are classified by their Atterberg Limits.

'Coarse-Grained Soils' (sands and gravels) have less than 50% passing the #200 sieve. When more than 50% of the plus-200 material is retained on the #4 sieve the general soil type is gravel, and if more than 50% is finer than the #4 sieve, it is sand.

Clean coarse-grained soils are classified as well-graded (Classes GW, SW) or poorly-graded (GP, SP.) Well-graded soils have a wider range of sizes and are typically more stable. Poorly-graded soils are usually more permeable.

Atterberg Limits

Test is performed on the clay, silt and fine sand fraction of the soil:
Liquid Limit (LL) – moisture content (%) at which soil becomes very soft.
Plastic Limit (PL) – moisture content at which soil crumbles.
Plasticity Index (PI) = LL minus PL

Higher PI values may indicate reduced permeability and increased drying shrinkage.

LL > 50 indicates soil with a higher potential to shrink and swell due to changing moisture content.

Silts have lower PI values, and behave like very fine sand; most silts also contain some clay. Behavior of clays is partly controlled by electrochemical forces and varies among the several clay minerals.

Color

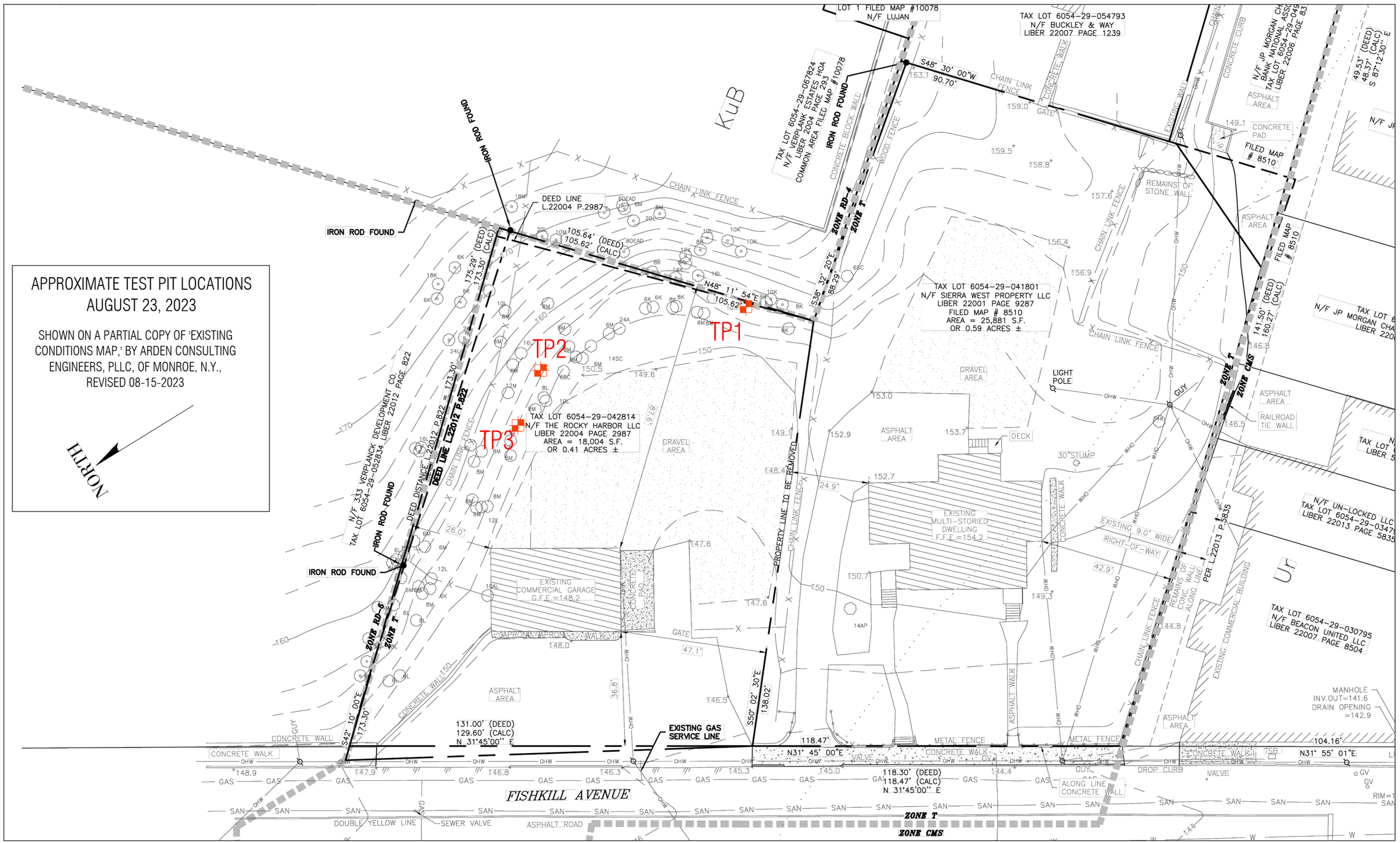
Soil color sometimes indicates groundwater conditions, with subdued colors below the water table and mottled (mixed) colors in the zone of seasonal water table fluctuation. Color changes tend to be more prominent in fine-grained soils.

Relative Quantities

Estimated percentages in descriptions:
<5% - Trace
5-10% - Traces
10-25% - Little
25-35% - Some
'And' - Approx. equal amounts
'Few' - <10% (cobbles and boulders)

USDA Soil Classification

USDA classifications are based on the relative amounts of sand, silt and clay in the soil fraction passing the #10 (2mm) sieve. 'Gravelly' indicates more than 15% of #10 to 3" size. 'Channery' indicates 15 to 35% thin flat pieces up to 6" long.



KEVIN L. PATTON, P.E.
36 PATTON ROAD
NEWBURGH, NY 12550
845 275-7732
PATTONGEOTECH.COM

152-158 FISHKILL AVENUE
BEACON, DUTCHESS COUNTY, N.Y.
TEST PIT LOCATIONS

PROJECT NUMBER

REV.	DATE	BY
0	8/25/2023	KLP

KEVIN L. PATTON, P.E.
36 PATTON ROAD
NEWBURGH, NY 12550
PATTONGEOTECH.COM 845 275-7732

CLIENT:	Arden Consulting Engineers, PLLC		
PROJECT:	152-158 Fishkill Ave, Beacon, NY		
DATE:	8/23/2023	Project No.:	23310
WEATHER:	Clear, 75°		

TEST PIT LOG

EXCAVATING COMPANY:		LOCATION:	DD Auto, Approx. 22 ft N from SE corner of lot	**TEST PIT NUMBER**	**TP1**
OPERATOR:					
EQUIPMENT:	Deere 410G Backhoe	ELEVATION:	155+/-		
INSPECTOR:	Warren Paatton	WATER DEPTH:	7.5 ft after 1 hour		

Depth	USCS Class	Description	Notes
0-2'	SM	Topsoil- Brown Sandy loam. Some roots. Moist.	
2-6'	SM	Brown sand with little silt, little gravel. Small roots to 4ft depth, then trace fine roots. Cohesionless. Moist.	
6-7.5'	SM	Till-Sand with little silt, some gravel, trace fine roots. Slightly cohesive. Olive brown, fine brown mottling. Wet. Water at 7.5'	
7.5-8'	CL	Till- Clay with some sand, trace gravel. Pale yellowish brown with fine stains on joints. Very dense. Moist.	PEN 16ksf
8'	-	Refusal in hard till	

PEN: Hand penetrometer resistance, kips per square foot.



KEVIN L. PATTON, P.E.
36 PATTON ROAD
NEWBURGH, NY 12550
PATTONGEOTECH.COM 845 275-7732

CLIENT:	Arden Consulting Engineers, PLLC		
PROJECT:	152-158 Fishkill Ave, Beacon, NY		
DATE:	8/23/2023	Project No.:	23310
WEATHER:	Clear, 75°		

TEST PIT LOG

EXCAVATING COMPANY:		LOCATION:	DD Auto, +/-57 ft E from rear of bldg, bottom of slope	**TEST PIT NUMBER**	**TP2**
OPERATOR:					
EQUIPMENT:	Deere 410G Backhoe	ELEVATION:	155+/-		
INSPECTOR:	Warren Paatton	WATER DEPTH:			

Depth	USCS Class	Description	Notes
0-1'	ML	Topsoil. Dark brown silt	
1-3'	SC-SM	Sand with some silty clay, little gravel, trace fine roots. Pale yellowish brown. Moist.	PEN 9ksf
3-5'	GM	Gravel and sand with little silt, trace fine roots. Slightly cohesive. Pale yellowish brown. Moist.	
5-8'	SC-SM	Till- Fine-graded sand and silty clay with little gravel. Olive brown. Very dense. Very moist.	PEN 16ksf
8'		Refusal. Probable bedrock	

PEN: Hand penetrometer resistance, kips per square foot.



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TEST PIT LOG

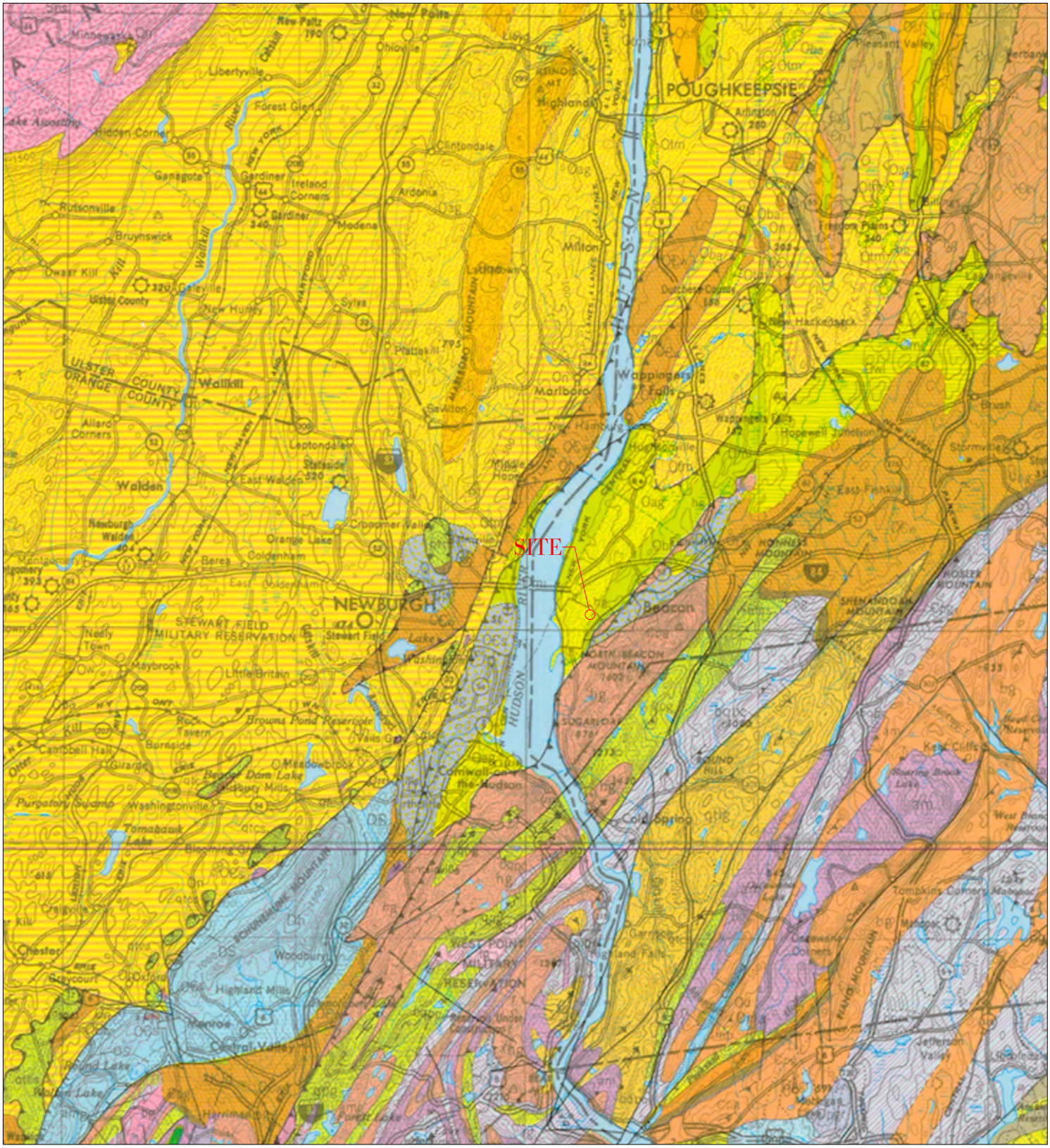
EXCAVATING COMPANY:		LOCATION:	DD Auto, +/-39 ft E from rear of bldg, bottom of slope	**TEST PIT NUMBER**	**TP3**
OPERATOR:					
EQUIPMENT:	Deere 410G Backhoe	ELEVATION:	154+/-		
INSPECTOR:	Warren Paatton	WATER DEPTH:			

Depth	USCS Class	Description	Notes
0-1.5'	SM	Topsoil. Brown sandy loam. Moist.	
1.5-3'	GM	Gravel and sand with little silt. Brown. Moist.	
3-4'	CL	Till- Clay with some sand, traces gravel. Pale yellowish brown, faint mottling. Hard. Slightly moist.	PEN 24ksf
4'		Refusal in hard till	

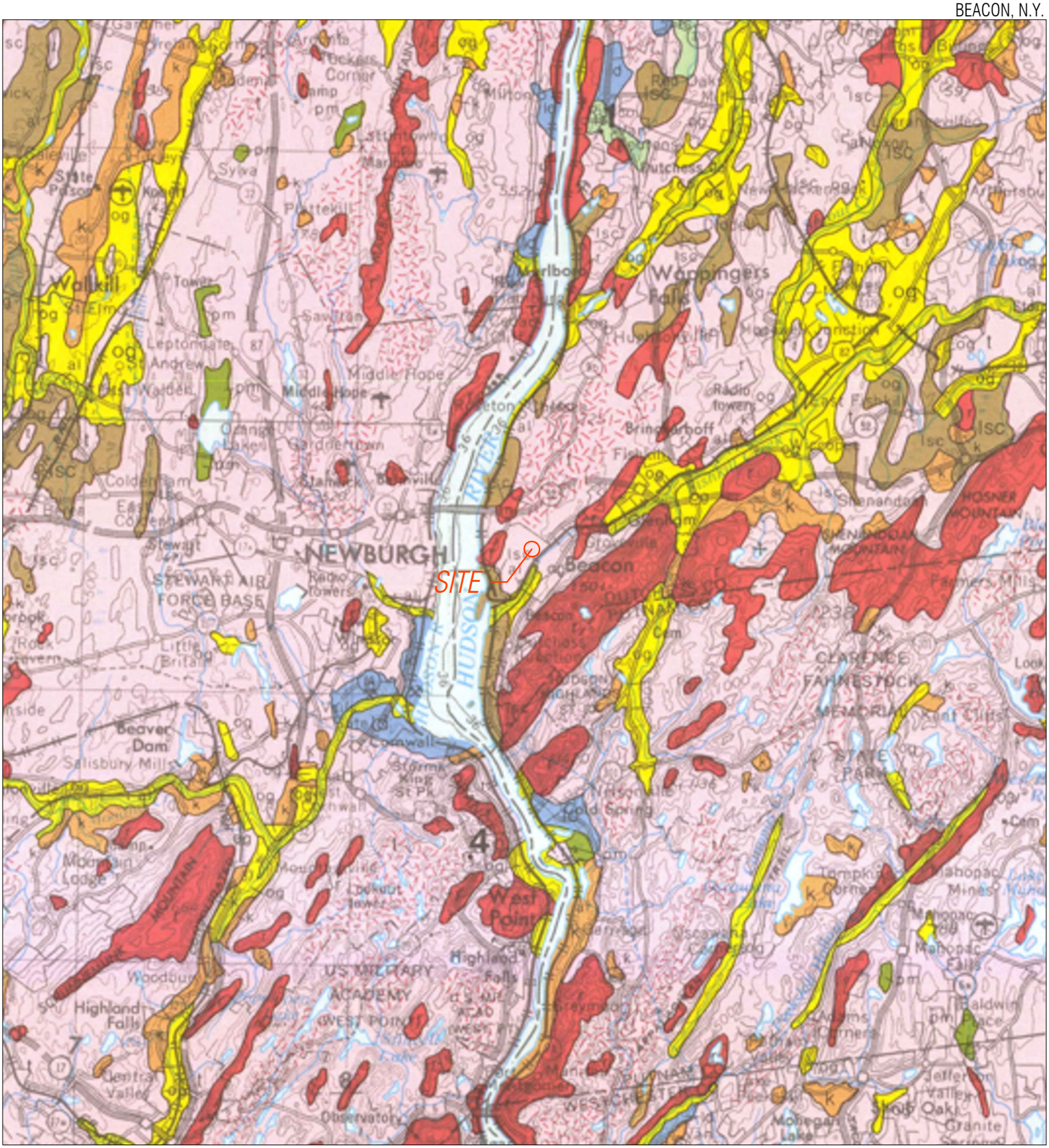
PEN: Hand penetrometer resistance, kips per square foot.



BEDROCK GEOLOGIC MAP



Approximate location of the project site, shown on part of the Bedrock Geologic Map of New York (1970.) The site is in an area of Ordovician-age sedimentary bedrock consisting mostly of gray siltstone, shale and greywacke sandstone. The bedrock at the site is shown as Austin Glen Formation (mottled green, symbol Oag,) bounded to the east and west by the related Mount Merino Formation, which is older, with a similar composition (symbol Omi.) The site is near the east edge of a syncline formed in this bedrock, with the beds folded down toward a central axis aligned southwest-to-northeast, generally along the alignment of Route 9D. This bedrock has was thrust-faulted into place during the Taconic Orogeny, with the edge of the thrust-fault indicated by the saw-tooth line running southwest from Hughsonville and through Newburgh, with a parallel thrust-fault just to the west. Similarly, the bedrock to the southeast has been over-thrust onto the Mt. Merino bedrock on a line running through Hopewell Junction and Fishkill. The local faults are not seismically active.



Approximate location of the project site, shown on a partial copy of the Surficial Geologic Map of New York (N.Y. State Museum, 1989.) Most of the local soil is glacial till, shown in pink with the symbol 't,' and there are large areas where bedrock is exposed or is very shallow,indicated by red. A red stipple pattern indicates areas where till is generally very shallow over bedrock. Glacial outwash in the valley of the Fishkill Creek is indicated by yellow. Glacial lake deposits are indicated by brown and gray colors, brown for clayey deposits and blue for sandy deltaic features.

EXPLANATION

al — **Recent deposits**
Generally confined to floodplains within a valley,
oxidized, non-calcareous, fine sand to gravel,
in larger valleys may be overlain by silt,
subject to frequent flooding, thickness 1–10 meters.

alf — **Alluvial fan**
Fan shaped accumulations,
poorly stratified silt, sand and boulders,
at the foot of steep slopes,
generally permeable.

b — **Beach**
Sand and gravel deposit at marine shoreline,
thickness variable.

bi — **Barrier island**
Sand and gravel deposit as barrier island,
south shore of Long Island,
may have associated dunes,
thickness variable.

pm — **Swamp deposits**
Peat-muck, organic silt and sand in poorly drained areas,
un-oxidized,
may be overlying marl and lake silts,
potential land instability,
thickness generally 2-20 meters.

ld — **Lacustrine delta**
Coarse to fine gravel and sand,
stratified, generally well sorted,
deposited at a lake shoreline,
thickness variable (3-15 meters).

lsc — **Lacustrine silt and clay**
Generally laminated silt and clay,
deposited in proglacial lakes,
generally calcareous,
potential land instability,
thickness variable (up to 100 meters).

ls — **Lacustrine sand**
Sand deposits associated with large bodies of water,
generally a near-shore deposit or near a sand source,
well sorted, stratified,
generally quartz sand,
thickness variable (2-20 meters).

og — **Outwash sand and gravel**
Coarse to fine gravel with sand,
proglacial fluvial deposition,
well rounded and stratified,
generally finer texture away from ice border,
thickness variable (2-20 meters).

fg — **Fluvial sand and gravel**
Deposits of sand and gravel,
occasional laterally continuous lenses of silt,
deposition farther from glacier,
age uncertain.

k — **Kame deposits**
Includes kames, eskers, kame terraces, kame deltas,
coarse to fine gravel and/or sand,
deposition adjacent to ice,
lateral variability in sorting, coarseness and thickness,
locally firmly cemented with calcareous cement,
thickness variable (10-30 meters).

km — **Kame moraine**
Variable texture (size and sorting) from boulders to sand,
deposition at an ice margin during deglaciation,
positive constructional relief,
locally cemented with calcareous cement,
thickness variable (10-30 meters).

tm — **Till moraine**
More variably sorted than till,
generally more permeable than till,
deposition adjacent to ice,
more variably drained,
may include ablation till,
thickness variable (10-30 meters).

t — **Till**
Variable texture (e.g. clay, silt-clay, boulder clay),
usually poorly sorted diamict,
deposition beneath glacier ice,
relatively impermeable (loamy matrix),
variable clast content — ranging from abundant well-rounded
diverse lithologies in valley tills to relatively
angular, more limited lithologies in upland tills,
tends to be sandy in areas underlain by gneiss or sandstone,
potential land instability on steep slopes,
thickness variable (1-50 meters).

af — **Artificial fill**

r — **Bedrock**
Exposed or generally within 1 meter of surface.

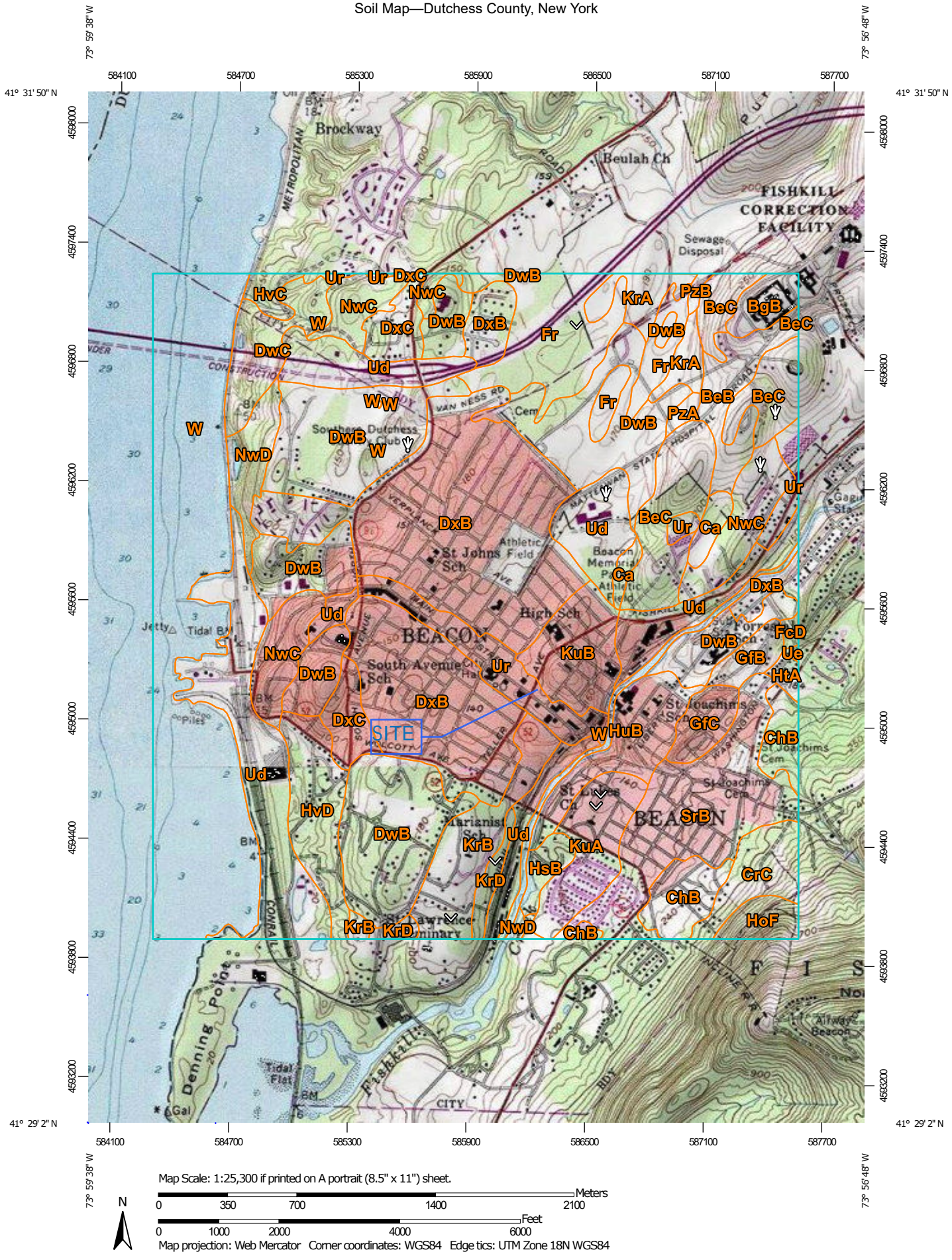
Bedrock stipple overprint
Bedrock may be within 1-3 meters of surface,
may sporadically crop out,
variable mantle of rock debris and glacial till.

MAP SYMBOLS

Contact

.3 Dated radiocarbon locality

MAP KEY
NEW YORK STATE SURFICIAL GEOLOGIC MAP



Map Scale: 1:25,300 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 350 700 1400 2100

Feet: 0 1000 2000 4000 6000

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

Background

- Topographic Map

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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 19, Sep 10, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeB	Bernardston silt loam, 3 to 8 percent slopes	44.1	1.6%
BeC	Bernardston silt loam, 8 to 15 percent slopes	107.3	4.0%
BgB	Bernardston-Urban land complex, 3 to 8 percent slopes	18.9	0.7%
Ca	Canandaigua silt loam, neutral substratum	16.5	0.6%
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	52.3	1.9%
CrC	Charlton-Chatfield complex, rolling, rocky	37.0	1.4%
DwB	Dutchess-Cardigan complex, undulating, rocky	395.9	14.6%
DwC	Dutchess-Cardigan complex, rolling, rocky	46.4	1.7%
DxB	Dutchess-Cardigan-Urban land complex, undulating, rocky	432.2	15.9%
DxC	Dutchess-Cardigan-Urban land complex, rolling, rocky	44.9	1.7%
FcD	Farmington-Galway complex, hilly, very rocky	3.0	0.1%
Fr	Fredon silt loam	110.4	4.1%
GfB	Galway-Farmington complex, undulating, rocky	16.7	0.6%
GfC	Galway-Farmington complex, rolling, rocky	22.0	0.8%
HoF	Hollis-Chatfield-Rock outcrop complex, very steep	17.9	0.7%
HsA	Hoosic gravelly loam, nearly level	1.6	0.1%
HsB	Hoosic gravelly loam, undulating	14.2	0.5%
HtA	Hoosic channery loam, fan, 0 to 3 percent slopes	5.7	0.2%
HuB	Hoosic-Urban land complex, undulating	55.4	2.0%
HvC	Hudson and Vergennes soils, 8 to 15 percent slopes	10.2	0.4%
HvD	Hudson and Vergennes soils, hilly	57.9	2.1%
KrA	Knickerbocker fine sandy loam, nearly level	34.4	1.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KrB	Knickerbocker fine sandy loam, undulating	67.7	2.5%
KrD	Knickerbocker fine sandy loam, hilly	15.4	0.6%
KuA	Knickerbocker-Urban land complex, nearly level	56.2	2.1%
KuB	Knickerbocker-Urban land complex, undulating	54.6	2.0%
NwC	Nassau-Cardigan complex, rolling, very rocky	102.8	3.8%
NwD	Nassau-Cardigan complex, hilly, very rocky	31.5	1.2%
PzA	Punsit silt loam, 0 to 3 percent slopes	4.6	0.2%
PzB	Punsit silt loam, 3 to 8 percent slopes	2.9	0.1%
SrB	Stockbridge-Urban land complex, 3 to 8 percent slopes	131.6	4.9%
Ud	Udorthents, smoothed	277.3	10.2%
Ue	Udorthents, wet substratum	1.0	0.0%
Ur	Urban land	71.1	2.6%
W	Water	349.2	12.9%
Totals for Area of Interest		**2,711.3**	**100.0%**

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

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.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

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.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Dutchess County, New York														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
DxB—Dutchess-Cardigan-Urban land complex, undulating, rocky														
Dutchess	30	B	0-8	Silt loam	ML	A-4	0- 0- 0	0- 8- 15	95-98-100	90-93-95	80-88-95	55-70-85	15-24-33	NP-2 -4
			8-28	Silt loam, channery silt loam, gravelly loam	GM, ML, SM	A-4	0- 0- 0	0- 0- 20	70-92-95	65-90-95	55-80-95	40-70-85	15-24-33	NP-2 -4
			28-86	Channery silt loam, very channery fine sandy loam, very gravelly sandy loam	GM, ML, SM	A-1-b, A-4, A-2-4	0- 0- 0	5-15- 25	55-68-80	50-63-75	30-53-75	15-40-65	15-20-25	NP-2 -4
Cardigan	25	C	0-8	Channery silt loam	ML, SM	A-4	0- 0- 0	0- 3- 5	80-88-95	70-83-95	60-68-75	35-53-70	15-24-33	NP-3 -5
			8-20	Silt loam, channery silt loam, channery loam	ML, SM	A-4	0- 0- 0	0- 5- 10	80-88-95	70-83-95	60-68-75	35-53-70	15-24-33	NP-3 -5
			20-30	Silt loam, loam, channery silt loam	ML, SM	A-1, A-4, A-2	0- 0- 0	0- 5- 10	80-88-95	60-75-90	40-58-75	20-45-70	15-24-33	NP-3 -5
			30-34	Unweathered bedrock	—	—	0- 0- 0	0- 0- 0	—	—	—	—	—	—
Urban land	20		0-6	Variable	—	—	0- 0- 0	0- 0- 0	—	—	—	—	—	—

Engineering Properties–Dutchess County, New York														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
KuB—Knickerbocker-Urban land complex, undulating														
Knickerbocker	40	A	0-10	Fine sandy loam	ML, SM	A-2, A-1-b, A-4	0- 0- 0	0- 0- 0	75-88-100	75-88-100	40-63-85	20-38-55	—	NP
			10-19	Fine sandy loam, sandy loam	ML, SM	A-2, A-1-b, A-4	0- 0- 0	0- 0- 0	75-88-100	75-88-100	40-63-85	20-38-55	—	NP
			19-30	Loamy fine sand, loamy sand	SP-SM, SM	A-2, A-1-b, A-2-4	0- 0- 0	0- 0- 0	75-88-100	75-88-100	40-58-75	10-20-30	—	NP
			30-72	Loamy fine sand, loamy sand, sand	SP-SM, SM	A-1, A-3, A-2-4	0- 0- 0	0- 0- 0	75-88-100	75-88-100	40-58-75	5-10- 15	—	NP
Urban land	35		0-6	Variable	—	—	0- 0- 0	0- 0- 0	—	—	—	—	—	—

Data Source Information

Soil Survey Area: Dutchess County, New York
Survey Area Data: Version 19, Sep 10, 2022

LANC & TULLY
Engineering and Surveying, P.C.

September 8, 2023

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

RE: 152-158 Fishkill Ave.
Mixed-Use Building
Tax No. 6054-29-042814 & 041801
City of Beacon

Dear Mr. Gunn:

My office has received the following regarding a mixed-use building to be located at 152-158 Fishkill Avenue:

- Correspondence dated August 29, 2023, from Cuddy & Feder.
- Response correspondence from Arden Consulting Engineers, dated August 28, 2023.
- Geotechnical Test Pit Inspection Report, dated August 25, 2023, as prepared by Kevin Patton, P.E.
- Report titled "Site Plan & Lot Merge for 152-158 Fishkill Avenue – Stormwater Pollution Prevention Plan", with the latest revision date of August 15, 2023, as prepared by Arden Consulting Engineers.
- Plan titled Subdivision Plat-Lot Line Consolidation – 152 & 158 Fishkill Avenue", with the latest revision date of August 16, 2023, as prepared by Heritage Land Surveying, P.C.
- Plan titled "152-158 Fishkill Avenue – Soldier Pile Wall – Typical Details", dated August 28, 2023, as prepared by Kevin Patton, P.E.
- Architectural rendering and floor plans, consisting of Sheets 1 of 11 through 11 of 11, with the latest revision date of August 25, 2023, as prepared by Nexus Architecture, Planning & Design.
- Plans titled "Site Plan & Lot Merger for 152-158 Fishkill Avenue", consisting of Sheets 1 of 18 through 18 of 18, all having the latest revision date of August 15, 2023, as prepared by Arden Consulting Engineers.

The proposed project entails the demolition of the existing structures located at 152 and 158 Fishkill Avenue; the merging of the two parcels into a single parcel; and the construction of a mixed-use building consisting of 6,957 square feet of commercial space on the first floor and 16 residential units on the 2nd and 3rd floors, consisting of 8 one-bedroom units and 8 two-bedroom units. The applicant is also proposing roof-top terrace in the southern corner of the building. The project site, with the lots merged, has an area of 1.01± acres and is located in the T (Transitional) Zone. The proposed uses, commercial and residential, are permitted uses within the T Zone. The applicant received a variance on July 18, 2023, permitting the proposed retaining walls up to 15.4 feet in height.

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

Subdivision Plat-Lot Line Consolidation Plan:

1. The Bulk Table information provided on the plan should match that as present on Sheet 4 of 18 of the plan set.

General Comments:

1. Sheet numbering of Sheets 6 and 7 shall be corrected, as they are currently noted as sheets ## of 18.

2. The two landscape plans provided in the plan set shall have sheet numbering added to the plans.

3. The project requires a total of 63 parking spaces but is currently only achieving a total of 53 spaces on the site. Section 223-26(C)(6) of the City Code allows the Planning Board to approve the joint use of parking spaces by two or more establishments on the same lot, when properly demonstrated, in turn allowing the Planning Board to reduce the total number of parking stalls to be constructed for the project. Colliers Engineering has completed a Shared Parking Analysis for the proposed project in which they have concluded that 51 spaces would be sufficient enough to service the entire project. If the City's Traffic Engineer confers with this, then the Planning Board may wish to consider granting a waiver for 10 parking spaces since 53 of the required 63 spaces have been provided on the site.

4. Although the utilities along Fishkill Avenue have been shown on the plans, the sizes of the piping shall be verified, as the sizes listed do not match the pipe sizes per City mapping, especially at the sewer manholes shown at the intersection of Fishkill Avenue and Main Street. The sewer line is noted as a 6" VCP pipe at one location, but then noted as an 18" pipe entering into the manhole. It should also be noted that the "sewer valve" noted along the sewer main on Fishkill Avenue should be revised to read "sewer lamphole".

5. As the retaining walls exceed 4-feet in height, the retaining walls shall be designed by a licensed engineer in the State of New York. Design drawings of the wall(s), along with the calculations for the wall design, shall be submitted for review. All design information and construction details for the proposed retaining wall system shall be provided on the plans and made part of the overall plan set. Based upon the Soldier Pile Wall detail provided, it appears that there will be more than one type of retaining wall system on site. It should be further noted that a full design of the wall shall be provided which clearly notes the required depth for the steel piles, how changes in direction of the soldier wall are handled, provide specifications for the drainage aggregate behind the proposed walls, notes the size and material of the footing drain line behind the walls, show where the drainage lines behind the walls run to, etc.

6. The "Grading & Utility" (Sheet 5 of 18) plan should be split into two (2) separate sheets, as the plan as currently presented is to cluttered with information to clearly follow.

7. Utility profiles shall be provided for the proposed storm drainage line proposed to cross Fishkill Avenue and well as the 6" water service line.

8. Construction details for the fencing proposed atop the retaining walls shall be provided on the plan. This should include the type of fence, height of the fence, and other information pertinent to the construction of the fencing atop the wall.

9. The applicant will need NYSDOT approval for the proposed installation of utilities and work within Fishkill Avenue.

Sheet 4 of 18 (Site Plan):

1. The plan shall be updated to include the installation of a stop sign and stop bar along the exit lane from the site.

2. The plan shall be updated to show the location of all other traffic control signs to be installed (No Parking, ADA signs, etc.).

Sheet 5 of 18 (Grading Plan):

1. The drainage swale and drainage structures and piping proposed above the retaining wall system, as indicated in the Soldier Pile plan should be reflected on this plan. The plan shall also show where all of the drainage piping behind the walls shall connect to.

2. The plan shall be updated to reflect a wet-tap for the proposed 6" water service line proposed for the building.

3. The plan notes an existing water valve along the proposed location of the new 6" water service line, but also notes this valve to be a gas valve. This valve shall be verified as to what utility it is connected to.

4. The proposed storm drainage line shown on the north side of Fishkill Avenue should be noted on the plans as to be installed by others as part of the Teller & Fishkill Avenue Improvement project.

5. The lot line running through the building should be removed, as it will no longer exist.

Sheet 6 of 18 (Vehicle Turning Diagrams):

1. Based upon the turning diagrams presented for the fire truck and garbage truck, we believe that the width of the entrance could be reduced further from the 27 feet that is currently proposed as shown on Sheet 4 of 18. We would recommend that the reduction of this entrance occur on the north side to enlarge the landscaped green area on this side, which in turn would further reduce visibility of vehicles parked along the north side of the project.

Sheet 7 of 18 (Lighting Plan):

1. The plan shall be revised to include lighting at the entrance of the building and along the accessible ramp along Fishkill Avenue.

Sheet 15 of 18 (Water & Sewer Details):

1. The applicant's consultant shall verify with the City of Beacon Water & Sewer Department as to the type of saddle to be used for the sewer and water connections to the existing mains, and updated the plans accordingly.

Stormwater Management Plan (SWPPP) Comments:

1. A copy of the stormwater maintenance easement agreement provided in Appendix "E" of the SWPPP shall be forwarded to the City's Planning Board Attorney for review.

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.
Bruce Flower, Building Inspector

RESOLUTION

PLANNING BOARD
BEACON, NEW YORK

PRELIMINARY & FINAL SUBDIVISION PLAT APPROVAL AND SITE PLAN APPROVAL FOR 152 AND 158 FISHKILL AVENUE

Parcel No. 6054-29-041801 (152 Fishkill Avenue)
Parcel No. 6054-29-042814 (158 Fishkill Avenue)

WHEREAS, the City of Beacon Planning Board received applications for Site Plan and Subdivision Plat (lot merger) Approvals from 152-158 Fishkill LLC (the "Applicant") for the construction of a 2 ½ story mixed-use building consisting of approximately 6,957 square feet of commercial areas on the first floor and a total of 16 residential units (8 1-bedroom units and 8 2-bedroom units), including two (2) Below Market Rate units, with associated off-street parking on a combined parcel consisting of 43,885 square feet, (the "Project" or "Proposed Action"), located at 152 Fishkill Avenue (Parcel ID No. 6054-29-041801) and 158 Fishkill Avenue (Parcel ID No. 6054-29-042814) within the Transitional (T) Zoning District (the "Property"); and

WHEREAS, the Applicant is proposing to remove two (2) exiting buildings, as well as any accessory structures and impervious surfaces thereto, and merge both lots into a single parcel, with a combined area of 43,885 square feet or approximately 1.01 acres; and

WHEREAS, the Applicant reduced the originally proposed grade changes between Fishkill Avenue sidewalk and revised the proposed first floor and the elevations so that the proposed building height does not exceed what is permitted under the City of Beacon Code; and

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

WHEREAS, the Planning Board is the approval authority for the Site Plan pursuant to the City of Beacon Code §223-25; and

WHEREAS, the application consists of application forms, correspondence, Full Environmental Assessment Form, as well as professional studies and reports submitted to the Planning Board; and

WHEREAS, the Project is shown on a (i) subdivision plat entitled "Subdivision Plat – Lot Line Consolidation Plan," dated August 16, 2023, prepared by Heritage Land Surveying, P.C., (ii) plan set entitled "Site Plan & Lot Merger for 152-158 Fishkill Avenue" dated February 27, 2023, last revised August 27, 2023, sheets 1 to 18, as prepared by Arden Consulting Engineers, PLLC, Monroe, NY, and (iii) architectural drawings entitled "Architectural Site

Plan" dated February 27, 2023, last revised August 25, 2023, as prepared by Nexus Creative Architecture Planning Design, D.P.C., Tarrytown, NY, as follows:

"Site Plan & Lot Merger for 152-158 Fishkill Avenue" dated February 27, 2023, last revised August 27, 2023, sheets 1 to 18, as prepared by Arden Consulting Engineers, PLLC, Monroe, NY:

Sheet	Title
1 of 18	*Title Sheet*
2 of 18	*Existing Conditions Map*
3 of 18	*Demolition Plan*
4 of 18	*Site Plan*
5 of 18	*Grading & Utility Plan*
6 of 18	*Vehicle Turning Diagrams*
7 of 18	*Lighting Plan*
8 of 18	*Lighting Details*
9 of 18	*Landscaping Plan*
10 of 18	*Landscaping Details*
11 of 18	*Erosion and Sediment Control Plan*
12 of 18	*Orthoimagery*
13 of 18	*Site Construction Details 1*
14 of 18	*Site Construction Details 2*
15 of 18	*Water Supply and Sewage Disposal Details*
16 of 18	*Stormwater Construction Details 01*
17 of 18	*Stormwater Construction Details 02*
18 of 18	*Construction Specifications*

"Architectural Site Plan" dated February 27, 2023, last revised August 25, 2023, as prepared by Nexus Creative Architecture Planning Design, D.P.C., Terrytown, NY:

1 of 11	*SK0 – Conceptual Rendered Site Plan*
2 of 11	*SK1 – Conceptual First Floor Plan*
3 of 11	*SK2 – Conceptual Second Floor Plan*
4 of 11	*SK3 – Conceptual Half Story Floor Plan*
5 of 11	*SK4 – Conceptual Roof Terrance Plan*
6 of 11	*SK5 – Conceptual East and West Elevation*
7 of 11	*SK6 – Conceptual North and South Elevation*
8 of 11	*SK7 – Conceptual 3D Renderings*
9 of 11	*SK8 – Conceptual 3D Renderings and Materials*
10 of 11	*SK9 – Conceptual Streetscape Diagrams*
11 of 11	*SK10 – Average Natural Grade and Building Height*

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

WHEREAS, the Planning Board reviewed the application at its meetings on March 28, 2023, April 11, 2023, May 9, 2023, June 13, 2023, July 11, 2023, August 8, 2023, and September 12, 2023; and

WHEREAS, the Planning Board referred the Project to the City of Beacon Architectural Review Board Subcommittee, which discussed the proposed design with the Applicant's Project Architects and Landscape Designers at its April 28, 2023 and July 21, 2023 meetings, and the Subcommittee thereafter provided its Recommendations and Reports to the Applicant and members of the Planning Board in advance of the Planning Board meetings on May 9, 2023 and August 8, 2023; and

WHEREAS, on July 11, 2023, after circulating its Notice of Intent to Declare Lead Agency and receiving no objections, and after taking a "hard look" at each of the relevant areas of environmental concern through review of the FEAF and all associated materials prepared in connection with the Proposed Action the Planning Board, as Lead Agency, adopted a Negative Declaration pursuant to SEQRA finding that the Proposed Action will not result in any significant adverse environmental impacts; and

WHEREAS, after referral from the Planning Board, on July 18, 2023 the City of Beacon Zoning Board of Appeals granted the Applicant's request for variances from Beacon City Code § 223-13.G(G) to allow for a maximum proposed retaining wall height ranging from seven-and-a-half feet (7.5') to fifteen and four-tenths feet (15.4') in height in the area of the parking lot located north of the newly proposed building and two (2) segment to the east of the proposed structure; and

WHEREAS, a total of sixty-three (63) off-street parking spaces are required under Beacon City Code § 223-26.F and the Applicant has proposed a total of fifty-three (53) off-street parking spaces and six (6) on-street parking spaces along the frontage of Fishkill Avenue; and

WHEREAS, Beacon City Code § 223-26.C(6) authorizes the Planning Board to approve the joint use, or shared use, of parking spaces by two or more uses on the same lot or on contiguous lots, the total capacity of which is less than the spaces required for each, provided the Board finds that the number of parking spaces provided will substantially meet the intent of the Zoning Code by reason of variation in the probable time and maximum use and provided that such approval shall be automatically terminated upon a change of use at the Property; and

WHEREAS, the Applicant submitted a Shared Parking Analysis, prepared by Colliers Engineering & Design, dated March 8, 2023, last revised April 23, 2023, which provides in relevant part that the parking needs of the residential units and commercial units are varied from each other in terms of the probable time and maximum use, and fifty-three (53) off-street parking spaces is sufficient for the proposed uses, to which the City's Traffic Consultant opined that the proposed number of off-street parking spaces is expected to accommodate the parking demand of the Proposed Action; and

WHEREAS, on August 8, 2023, the Planning Board opened and closed a duly noticed public hearing on the Site Plan and Subdivision (lot merger) application, at which time all those interested were given an opportunity to be heard; and

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

NOW THEREFORE BE IT RESOLVED, in accordance with the Beacon City Code § 223-26.C(6), the Planning Board hereby finds that the joint use of the off-street parking spaces by the proposed residential and commercial uses will substantially meet the intention of the of Beacon Zoning Code based upon the Shared Parking Analysis provided by reason of variation in the probable time of peak demand and therefore, the Applicant may provide for fifty-three (53) off-street parking spaces for joint use of the residential and commercial uses on the condition that the Planning Board's approval of such joint use shall automatically terminate upon a change of use at the Property; and

BE IT FURTHER RESOLVED, the Planning Board hereby grants Preliminary Subdivision Plat (lot merger) Approval for the Project, as shown on the application materials referenced above.

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

BE IT FURTHER RESOLVED, the Planning Board hereby grants Final Subdivision Plat (lot merger) and Site Plan Approval, as shown on the application materials referenced above, subject to the follow conditions and modifications 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 and 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 form the appropriate agencies for the Project, and shall meet all conditions contained in such approvals, as required therein.

3. The comments contained in the City Planner's letter to the Planning Board dated September 8, 2023, and all comments in any subsequent letter(s) issued shall be fulfilled to the satisfaction of the City Planner.

4. The comments contained in the City Engineer's letter to the Planning Board dated September 8, 2023, and all comments in any subsequent letter(s) issued shall be fulfilled to the satisfaction of the City Engineer.

5. The Applicant shall submit in a form acceptable to the City Attorney, a Stormwater Control Facility Maintenance Agreement and Easement for signature of the City Administrator which shall be recorded by the Applicant in the Dutchess County Clerk's Office simultaneously with the Subdivision Plat.

When the above conditions have been satisfied, six (6) sets of the above references plans, revised as per the conditions above, shall be submitted for enforcement 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. Prior to the issuance of the Building Permit, the following conditions shall be fulfilled:

1. Pursuant to City of Beacon Code Section 223-41.10.A, the Applicant shall submit plans which indicate the location of each of the BMR unit to be provided which shows a mix of unit types in the same proportion as all other units in the development to the satisfaction of the Building Inspector.

C. 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 for each of the 12 new residential units (16 proposed units minus 4 existing residential units). The Planning Board hereby requires that, prior to the issuance of the Certificate of Occupancy for each unit, the Applicant shall pay a Recreation Fee 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 Chapter 223. Such units designated as Affordable Workforce Housing shall remain affordable in accordance with Article IVB of Chapter 223 of the City of Beacon Zoning Law for a minimum of fifty (50) years from the date of issuance of the initial certificate of occupancy for rental units and/or date of the original sale for owner-occupied units. 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. 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.

4. 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 Applicants within thirty (30) days of each notification by the City that such fees are due. If such fees are not paid within the thirty (30) day period, and an extension therefore has not been granted by the City, this Resolution shall be rendered null and void.

5. Prior to the issuance of a building permit, pursuant to the City Code § 195-15, the Applicant shall a file a performance bond with the City of Beacon to guarantee the satisfactory construction, installation, and completion of any required improvements within the City right-of-way in an amount acceptable to the City Engineer based on review of a cost estimate to be prepared by the Applicant.

6. Prior to the issuance of a building permit, pursuant to the City Code § 195-16.E, the Applicant shall establish an escrow with the City of Beacon for the inspection of the improvements in the amount acceptable to the City Engineer based on review of a cost estimate to be prepared by the Applicant's professional engineer, which amount shall be equivalent of 6% of the amount of the estimated construction cost.

7. Prior to the issuance of a building permit, pursuant to City Code 190-13, the Applicant shall establish an escrow for stormwater inspections by the City Engineer on behalf of the City of Beacon.

8. If rock removal, if encountered, shall be done by mechanical means on weekdays (excluding State holiday) between the hours of 8 a.m. and 4 p.m. No rock processing is permitted on-site. No blasting shall be permitted without the prior written approval from the City of Beacon Building Department after preparation of a blasting plan. Any blasting required shall be performed in accordance with all applicable local, state, and federal laws, regulations, and standards.

9. 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.

DRAFT

10. As used herein, the term "Applicant" shall include 152-158 Fishkill LLC, and their successors and assigns, and where applicable, their agents, contractors and employees.

11. 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.

12. The approvals granted by this Resolution do not supersede the authority of any other entity.

13. Pursuant to City of Beacon Code § 195-14.D, 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. The Applicant must return for approval from the Planning Board if any changes to the endorsed plans and/or this Resolution of approval are subsequently desired other than changes determined to be field changes by the Building Inspector or City Engineer. 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: September 12, 2023
Beacon, New York

_____ _____, 2023
John Gunn, Chairman Date
City of Beacon

Motion by _____, seconded by _____:

Kevin Byrne	Voting	Leonard Warner	Voting
Donna Francis	Voting	J. Randall Williams	Voting
David Jensen	Voting	John Gunn, Chairman	Voting
Karen Quiana	Voting		

Resolution: Approved / Denied

DRAFT

John Clarke Planning and Design jclarkeplandesign@gmail.com
845.797.4152

To: John Gunn, Chair, and the City of Beacon Planning Board
Date: September 8, 2023
Re: **152-158 Fishkill Avenue Site Plan and Subdivision**

I have reviewed the following documents:

- Cover letter from Cuddy+Feder, dated August 29, 2023;
- Response letter from Arden Consulting Engineers, dated August 28, 2023;
- Subdivision Plat by Heritage Land Surveying, dated March 9, 2023;
- 11-sheet architectural set by Nexus Architecture, dated August 25, 2023; and
- 18-sheet Site Plan set by Arden Consulting Engineers, dated August 15, 2023, including sheets 9 and 10 by Landscape Restorations, dated August 25, 2023.

Proposal

The applicant is proposing to construct a 2½-story, mixed-use building in the Transitional (T) district, including first floor office space and 16 apartments. Two adjoining lots with 43,885 total square feet will be merged through the subdivision approval process.

Comments and Recommendations

1. The applicant is requesting a shared parking deduction under Section 223-26 C(6), showing 53 spaces. The Planning Board should decide whether an additional number of land-banked spaces under Section 223-26 E is reasonable. If land-banking is granted, I suggest that the parking lot spaces nearest Fishkill Avenue be the first considered.

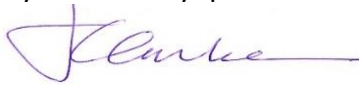
2. The applicant should explain the new position of the ADA parking spaces on the site. Typically, ADA spaces need to be located for the shortest and safest accessible route of travel to the accessible building entrance.

3. The fence at top of the retaining walls should be represented in a detail on the plan set with height, materials, and design shown.

4. For the Subdivision Plat's Table of Zoning Requirements, all the numbers should match the similar table and the building setback measurements shown on Sheet 4 of the Site Plan set.

5. At its July 21 meeting, the Architectural Review Subcommittee provided comments on the revised building design and referred the final design back to the full Board.

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



John Clarke, Beacon Planning Consultant

c: Bruce Flower, Building Inspector
Jennifer L. Gray, Esq., City Attorney
John Russo, P.E., City Engineer
Taylor Palmer, Esq., Project Attorney
Michael A. Morgante, P.E., Project Engineer

City of Beacon Planning Board Agenda
09/12/2023

Title:

Continue review of application for Site Plan Approval and Special Use Permit, personal wireless service facility, 375 Washington Avenue, submitted by Verizon Wireless of the East, LP (dba Verizon Wireless)

Adjourned to October 11, 2023, at the request of the applicant.

ATTACHMENTS

Verizon 375 Washington PB 8.12.23 ResponseToComments_20230822.pdf

Verizon 375 Washington PB 8.12.23 TectonicVRE_20230727.pdf

Verizon 375 Washington PB 8.12.23 ENC - RF Zoning 08142023.pdf

Young / Sommer LLC

ATTORNEYS AT LAW

EXECUTIVE WOODS, FIVE PALISADES DRIVE, ALBANY, NY 12205
Phone: 518-438-9907 • Fax: 518-438-9914

www.youngsommer.com

Writer's Telephone Extension: 258
solson@youngsommer.com

August 22, 2023

Via Federal Express
Planning Board
City of Beacon
One Municipal Plaza
Suite One
Beacon NY 12508

Re: Application of Verizon Wireless for a Personal Wireless Service Facility at 375 Washington Avenue (SBL 6055-04-+713005)

Dear Chairman Gunn and Members of the Planning Board:

Enclosed are fifteen (15) copies of the following documents with respect to the above-referenced application:

1. Redacted copy of Land Lease Agreement between The Fairview Cemetery Association and Verizon Wireless;
2. Tectonic Engineering letter dated August 18, 2023 in response to the comments of John Clarke Planning and Design;
3. Tectonic Engineering letter dated August 18, 2023 in response to the comments of Lanc & Tully P.C.; and
4. The revised site plans last dated August 18, 2023.

Very truly yours,

Scott P. Olson

Encl.
cc: Jackie Bartolotta, Tectonic (via email, w/ encl.)

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

SITE NAME: Hedgewood
MDG ID: 5000349173
ATTY/DATE: Y/S March 29, 2023

LAND LEASE AGREEMENT

This Land Lease Agreement (the "Agreement") made this _____ day of Apr 28, 2023, 2023, between **The Fairview Cemetery Association**, with its principal offices located at 375 Washington Avenue, Beacon, New York 12508, hereinafter designated LESSOR and **Verizon Wireless of the East LP d/b/a Verizon Wireless** with its principal offices at One Verizon Way, Mail Stop 4AW100, Basking Ridge, New Jersey 07920, hereinafter designated LESSEE. LESSOR and LESSEE are at times collectively referred to hereinafter as the "Parties" or individually as the "Party."

WITNESSETH

In consideration of the mutual covenants contained herein and intending to be legally bound hereby, the Parties hereto agree as follows:

1. GRANT. In accordance with this Agreement, LESSOR hereby grants to LESSEE the right to install, maintain and operate communications equipment ("Use") upon the Premises (as hereinafter defined), which are a part of that real property owned, leased or controlled by LESSOR at 375 Washington Avenue, City of Beacon, Dutchess County, New York, Tax Map No. 6055-04-713005 (the "Property"). The Property is legally described on Exhibit "A" attached hereto and made a part hereof. The Premises are a portion of the Property and are approximately 10,000 square feet and are shown in detail on Exhibit "B" attached hereto and made a part hereof. LESSEE may survey the Premises. Upon completion, the survey shall replace Exhibit "B" in its entirety.

2. INITIAL TERM. This Agreement shall be effective as of the date of execution by both Parties ("Effective Date"). The initial term of the Agreement shall be for 5 years beginning on the Commencement Date (as hereinafter defined). The "Commencement Date" shall be the earlier of: (i) the first day of the month after LESSEE begins installation of LESSEE's communications equipment; (ii) eighteen months from the date of full execution of this Agreement. The parties agree to acknowledge the Commencement Date in writing.

3. EXTENSIONS.

(a) This Agreement shall automatically be extended for four (4) additional five (5) year terms unless LESSEE terminates it at the end of the then current term by giving LESSOR written notice of the intent to terminate at least three (3) months prior to the end of the then current term. The initial term and all extensions shall be collectively referred to herein as the "Term".

(b) EXTENSION RENTALS. The annual rental for each such five (5) year extension term shall be equal to one hundred two percent (102%) of the annual rental payable with respect to the prior year.

4. RENTAL.

(a) Rental payments shall begin on the Commencement Date and be due at a total annual rental of _____ to be paid in equal monthly installments on the first day of the month, in advance, to LESSOR at PO Box 157, Glenham, New York 12527 or to such other person, firm, or place as LESSOR may, from time to time, designate in writing at least 30 days in advance of any rental payment date by notice given in accordance with Paragraph 20 below. LESEE shall pay LESSOR, within ninety (90)

days of full execution of this Agreement, a one-time signing bonus, as additional rent, in the sum of $6,000.00. LESSOR and LESSEE acknowledge and agree that the initial rental payment and signing bonus may not be delivered by LESSEE until at least 90 days after the Commencement Date. Upon agreement of the Parties, LESSEE may pay rent by electronic funds transfer and in such event, LESSOR agrees to provide to LESSEE bank routing information for such purpose upon request of LESSEE.

(b) For any party to whom rental payments are to be made, LESSOR or any successor in interest of LESSOR hereby agrees to provide to LESSEE (i) a completed, current version of Internal Revenue Service Form W-9, or equivalent; (ii) complete and fully executed state and local withholding forms if required; and (iii) other documentation to verify LESSOR's or such other party's right to receive rental as is reasonably requested by LESSEE. Rental shall accrue in accordance with this Agreement, but LESSEE may not deliver rental payments for up to 90 days after the requested documentation has been received by LESSEE.

5. ACCESS. LESSEE shall have the non-exclusive right of ingress and egress from a public right-of-way, 7 days a week, 24 hours a day, over the Property to and from the Premises for the purpose of installation, operation and maintenance of LESSEE's communications equipment over or along a 30+/- foot wide right-of-way ("Easement"), which shall be depicted on Exhibit "B". LESSEE may use the Easement for the installation, operation and maintenance of wires, cables, conduits and pipes for all necessary electrical, telephone, fiber and other similar support services. In the event it is necessary, LESSOR agrees to grant LESSEE or the provider the right to install such services on, through, over and/or under the Property, provided the location of such services shall be reasonably approved by LESSOR. Notwithstanding anything to the contrary, the Premises shall include such additional space sufficient for LESSEE's radio frequency signage and/or barricades as are necessary to ensure LESSEE's compliance with Laws (as defined in Paragraph 27).

6. CONDITION OF PROPERTY.

(a) LESSOR shall deliver the Premises to LESSEE in a condition ready for LESSEE's Use and clean and free of debris. LESSOR represents and warrants to LESSEE that as of the Effective Date, the Premises is (a) in compliance with all Laws; and (b) in compliance with all EH&S Laws (as defined in Paragraph 24).

(b) In no event shall funerals, ceremonies, the sale of graves, crypts, niches or other burial places, the burial of remains or cremains, the installation of markers or memorials, visits to burial places, maintenance of Cemetery grounds, or any activity falling within the normal operation of the Cemetery, be deemed to adversely affect or interfere with LESSEE's improvements, the operation of LESSEE, or the rights of LESSEE under this Agreement. LESSEE acknowledges that LESSOR does not regularly plow, shovel, or otherwise remove snow or ice from the access road or from any other path to the Premises, and LESSEE agrees that in no event shall any failure by LESSOR to plow, shovel, or otherwise remove snow or ice be deemed to adversely affect or interfere with LESSEE's use of the Premises, the operation of LESSEE, or the rights of LESSEE under this Agreement, or constitute a breach by LESSOR of any provision of this Agreement. The maintenance and repair, including snow or ice removal from any and all such access roads or paths to the Premises or consisting of the Premises, shall remain the sole responsibility of LESSEE, provided that LESSEE's obligations to remove snow or ice shall be related solely to its access to the Premises.

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7. IMPROVEMENTS.

(a) The communications equipment including, without limitation, the tower structure, antennas, conduits, fencing and other screening, and other improvements shall be at LESSEE's expense and installation shall be at the discretion and option of LESSEE. LESSEE shall have the right to replace, repair, add or otherwise modify its communications equipment, tower structure, antennas, conduits, fencing and other screening, or other improvements or any portion thereof and the frequencies over which the communications equipment operates, whether or not any of the communications equipment, antennas, conduits or other improvements are listed on any exhibit.

(b) LESSEE and any assignee, successor-in-interest, or sub-tenant agrees that all improvements, including any modifications, changes or alterations, permitted under this Agreement will be installed, constructed, maintained, and operated in a manner that properly reflects the nature of the Cemetery as a dignified and respectful place of burial. Without limiting the generality of the preceding sentence: (i) to the extent permitted by the utility company that serves the Property, all electric lines, transmission cables, and other similar facilities, excluding transformers and other utility appurtenances that are typically installed above ground, shall be installed underground by LESSEE, or any assignee, successor-in-interest, or sub-tenant within the Cemetery and in such location as shall be reasonably approved by LESSOR in writing; and (ii) LESSEE and any assignee, successor-in-interest, or sub-tenant of LESSEE shall use their best efforts to minimize interference with funerals, ceremonies, burials, installation of markers or memorials, visits to burial places, maintenance of Cemetery grounds, and other normal operations of the Cemetery. LESSEE must schedule the initial construction with LESSOR.

8. GOVERNMENT APPROVALS. LESSEE's Use is contingent upon LESSEE obtaining all of the certificates, permits and other approvals (collectively the "Government Approvals") that may be required by any Federal, State or Local authorities (collectively, the "Government Entities") as well as a satisfactory soil boring test, environmental studies, or any other due diligence LESSEE chooses that will permit LESSEE's Use. LESSOR shall cooperate with LESSEE in its effort to obtain such approvals and shall take no action which would adversely affect the status of the Property with respect to LESSEE's Use.

9. TERMINATION. LESSEE may, unless otherwise stated, immediately terminate this Agreement upon written notice to LESSOR in the event that (i) any applications for such Government Approvals should be finally rejected; (ii) any Government Approval issued to LESSEE is canceled, expires, lapses or is otherwise withdrawn or terminated by any Government Entity; (iii) LESSEE determines that such Government Approvals may not be obtained in a timely manner; (iv) LESSEE determines any structural analysis is unsatisfactory; (v) LESSEE, in its sole discretion, determines the Use of the Premises is obsolete or unnecessary; (vii) with 3 months prior notice to LESSOR, upon the annual anniversary of the Commencement Date; or (viii) at any time before the Commencement Date for any reason or no reason in LESSEE's sole discretion.

10. INDEMNIFICATION. Subject to Paragraph 11, each Party and/or any successor and/or assignees thereof, shall indemnify and hold harmless the other Party, and/or any successors and/or assignees thereof, against (i) any and all claims of liability or loss from personal injury or property damage resulting from or arising out of the negligence or willful misconduct of the indemnifying Party, its employees, contractors or agents, except to the extent such claims or damages may be due to or caused by the negligence or willful misconduct of the other Party, or its employees, contractors or agents, and (ii) reasonable attorney's fees, expense, and defense costs incurred by the indemnified Party. Where a claim is the result of the concurrent acts of the Parties, each Party shall be liable under this Paragraph 10 to the

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extent of its fault or liability therefor. The indemnified Party will provide the indemnifying Party with prompt, written notice of any claim that is subject to the indemnification obligations in Paragraph 10. The indemnified Party will cooperate appropriately with the indemnifying Party in connection with the indemnifying Party's defense of such claim. The indemnifying Party shall defend any indemnified Party, at the indemnified Party's request, against any claim with counsel reasonably satisfactory to the indemnified Party. The indemnifying Party shall not settle or compromise any such claim or consent to the entry of any judgment without the prior written consent of each indemnified Party and without an unconditional release of all claims by each claimant or plaintiff in favor of each indemnified Party. All indemnification obligations shall survive the termination or expiration of this Agreement.

11. INSURANCE. The Parties agree that LESSEE at its own cost and expense, will maintain commercial general liability insurance with limits of .J for bodily injury (including death) and property damage each occurrence. LESSOR at its own cost and expense will maintain commercial general liability insurance with a per occurrence limit and a) aggregate limit. The Parties agree to include the other Party as an additional insured as their interests may appear under this Agreement. The Parties hereby waive and release any and all rights of action for negligence against the other which may hereafter arise on account of damage to the Premises or the Property, resulting from any fire, or other casualty which is insurable under "Causes of Loss – Special Form" property damage insurance or for the kind covered by standard fire insurance policies with extended coverage, regardless of whether or not, or in what amounts, such insurance is now or hereafter carried by the Parties, even if any such fire or other casualty shall have been caused by the fault or negligence of the other Party. These waivers and releases shall apply between the Parties and they shall also apply to any claims under or through either Party as a result of any asserted right of subrogation. All such policies of insurance obtained by either Party concerning the Premises or the Property shall waive the insurer's right of subrogation against the other Party.

12. LIMITATION OF LIABILITY. Except for indemnification pursuant to Paragraphs 10 and 24, a violation of Paragraph 29, or a violation of law, neither Party shall be liable to the other, or any of their respective agents, representatives, or employees for any lost revenue, lost profits, diminution in value of business, loss of technology, rights or services, loss of data, or interruption or loss of use of service, incidental, punitive, indirect, special, trebled, enhanced or consequential damages, even if advised of the possibility of such damages, whether such damages are claimed for breach of contract, tort (including negligence), strict liability or otherwise, unless applicable law forbids a waiver of such damages.

13. INTERFERENCE.

(a) LESSEE agrees that LESSEE will not cause interference that is measurable in accordance with industry standards to LESSOR's equipment. LESSOR agrees that LESSOR and other occupants of the Property will not cause interference that is measurable in accordance with industry standards to the then existing equipment of LESSEE.

(b) Without limiting any other rights or remedies, if interference occurs and continues for a period in excess of 48 hours following notice to the interfering party via telephone to LESSEE'S Network Operations Center at (800-621-2622) or to LESSOR at (845-831-5401) the interfering party shall or shall require any other user to reduce power or cease operations of the interfering equipment until the interference is cured.

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(c) The Parties acknowledge that there will not be an adequate remedy at law for noncompliance with the provisions of this Paragraph and therefore the Parties shall have the right to equitable remedies such as, without limitation, injunctive relief and specific performance.

14. REMOVAL AT END OF TERM. Upon expiration or within 90 days of earlier termination, LESSEE shall remove LESSEE's Communications Equipment (except footings) and restore the Premises to its original condition, reasonable wear and tear and casualty damage excepted. LESSOR agrees and acknowledges that the communications equipment shall remain the personal property of LESSEE and LESSEE shall have the right to remove the same at any time during the Term, whether or not said items are considered fixtures and attachments to real property under applicable laws. If such time for removal causes LESSEE to remain on the Premises after termination of the Agreement, LESSEE shall pay rent in accordance with Paragraph 15.

15. HOLDOVER. If LESSEE holds over after the expiration or earlier termination of the Term, then this Agreement shall continue on a month-to-month basis at the then existing monthly rental rate or the existing monthly pro-rata basis if based upon a longer payment term, until the removal of the communications equipment is completed.

16. RIGHT OF FIRST REFUSAL. If at any time after the Effective Date, LESSOR receives an offer or letter of intent from any person or entity that is in the business of owning, managing or operating communications facilities or is in the business of acquiring landlord interests in agreements relating to communications facilities, to purchase fee title, an easement, a lease, a license, or any other interest in the Premises or any portion thereof or to acquire any interest in this Agreement, or an option for any of the foregoing, LESSOR shall provide written notice to LESSEE of said offer ("LESSOR's Notice"). LESSOR's Notice shall include the prospective buyer's name, the purchase price being offered, any other consideration being offered, the other terms and conditions of the offer, a description of the portion of and interest in the Premises and/or this Agreement which will be conveyed in the proposed transaction, and a copy of any letters of intent or form agreements presented to LESSOR by the third-party offeror. LESSEE shall have the right of first refusal to meet any bona fide offer of sale or transfer on the terms and conditions of such offer or by effectuating a transaction with substantially equivalent financial terms. If LESSEE fails to provide written notice to LESSOR that LESSEE intends to meet such bona fide offer within 30 days after receipt of LESSOR's Notice, LESSOR may proceed with the proposed transaction in accordance with the terms and conditions of such third-party offer, in which event this Agreement shall continue in full force and effect and the right of first refusal described in this Paragraph shall survive any such conveyance to a third party. If LESSEE provides LESSOR with notice of LESSEE's intention to meet the third party offer within 60 days after receipt of LESSOR's Notice, then if LESSOR's Notice describes a transaction involving greater space than the Premises, LESSEE may elect to proceed with a transaction covering only the Premises and the purchase price shall be pro-rated on a square footage basis. Further, LESSOR acknowledges and agrees that if LESSEE exercises this right of first refusal, LESSEE may require a reasonable period of time to conduct due diligence and effectuate the closing of a transaction on substantially equivalent financial terms of the third-party offer. LESSEE may elect to amend this Agreement to effectuate the proposed financial terms of the third party offer rather than acquiring fee simple title or an easement interest in the Premises. For purposes of this Paragraph, any transfer, bequest, or devise of LESSOR's interest in the Property as a result of the death of LESSOR, whether by will or intestate succession, or any conveyance to LESSOR's family members by direct conveyance or by conveyance to a trust for the benefit of family members shall not be considered a sale for which LESSEE has any right of first refusal.

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17. RIGHTS UPON SALE. Should LESSOR, at any time during the Term, decide (i) to sell or otherwise transfer all or any part of the Property, or (ii) to grant to a third party by easement or other legal instrument an interest in and to any portion of the Premises, such sale, transfer, or grant of an easement or interest therein shall be under and subject to this Agreement and any such purchaser or transferee shall recognize LESSEE's rights hereunder. In the event that LESSOR completes any such sale, transfer, or grant described in this Paragraph without executing an assignment of the Agreement whereby the third party agrees in writing to assume all obligations of LESSOR under this Agreement, then LESSOR shall not be released from its obligations to LESSEE under this Agreement, and LESSEE shall have the right to look to LESSOR and the third party for the full performance of the Agreement.

18. LESSOR'S TITLE.

(a) LESSOR covenants that LESSEE, on paying the rent and performing the covenants herein, shall peaceably and quietly have, hold and enjoy the Premises. LESSOR represents and warrants to LESSEE as of the Effective Date and covenants during the Term that LESSOR has full authority to enter into and execute this Agreement and that there are no liens, judgments, covenants, easement, restrictions or other impediments of title that will adversely affect LESSEE's Use.

(b) LESSEE acknowledges that LESSOR is a public cemetery corporation and that the Property is used as a public cemetery and that LESSOR and the Cemetery are subject to the provisions of Article 15 of the Not-for-Profit Corporations Law and the regulations promulgated thereunder (including, but not limited to, 19 NYCRR § 201.16) and to the New York State Cemetery Board.

19. ASSIGNMENT.

(a) Without any approval or consent of the other Party, this Agreement may be sold, assigned or transferred by either Party to (i) any entity in which the Party directly or indirectly holds an equity or similar interest; (ii) any entity which directly or indirectly holds an equity or similar interest in the Party; or (iii) any entity directly or indirectly under common control with the Party. LESSEE may assign this Agreement to any entity which acquires all or substantially all of LESSEE's assets in the market defined by the FCC in which the Property is located by reason of a merger, acquisition or other business reorganization without approval or consent of LESSOR. As to other parties, this Agreement may not be sold, assigned or transferred without the written consent of the other Party, which such consent will not be unreasonably withheld, delayed or conditioned. No change of stock ownership, partnership interest or control of LESSEE or transfer upon partnership or corporate dissolution of either Party shall constitute an assignment hereunder. LESSEE may sublet the Premises in LESSEE's sole discretion.

(b) LESSEE may, in its sole discretion, sublet, license or otherwise allow the use of all or any part of the Premises without any prior approval or consent of the LESSOR, upon the payment of per month per additional tower user beyond LESSEE, payable by such sublessee, licensee or other user (hereinafter, a "user") directly to LESSOR. LESSEE shall notify LESSOR of any and all fully executed sublease agreements, which notice shall include the following: (i) the contact information of the sublessee; and (ii) the commencement date of the sublease.

(i) Notwithstanding any other provision of this Agreement: (1) no additional payment shall be due to LESSOR where such sublease, license or other use is required, ordered or negotiated as a condition of approval by or with any governmental authority having jurisdiction over LESSEE or the Premises, for

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governmental, emergency services or other public service use; and (2) LESSEE shall not be required to obtain approval from the LESSOR for such use.

(ii) LESSEE shall have the sole right to determine whether it will sublet, license or otherwise allow the use of any portion of the Premises or whether it will sublet, license or enter into any other usage agreement with any specific user. LESSEE shall have no liability of any nature to LESSOR for failure to sublet, license or otherwise allow the user of all or any part of the Premises to any or all potential user(s).

(iii) LESSEE shall not be responsible to LESSOR for the collection or payment of rents by any user to LESSOR hereunder and shall have no liability to LESSOR in the event of failure of payment by any such user.

(iv) Any user agreement that is entered into by LESSEE shall be subject to the provisions of this Agreement and shall be binding upon the successors, assigns, heirs and legal representatives of the respective Parties hereto. LESSEE shall have the right to require, in its sole discretion, that any such user(s) enter into a three-party agreement with LESSOR and LESSEE to confirm the direct payment obligation to LESSOR hereunder, document LESSOR's consent to said agreement and otherwise memorialize said user's agreement to all terms and conditions of this Agreement.

(v) It is understood and agreed by the Parties that the additional payment hereunder shall only apply if LESSEE is able to accommodate all of the third-party user's facilities within the Premises. If LESSEE is unable to accommodate any or part of said user's facilities within the Premises, then LESSOR may enter into an agreement with the user for a portion of the property that said user requires to locate its facilities. In this event, LESSEE shall receive 100% of the rental for that portion of the facilities that are located within the limits of the Premises and LESSOR shall receive 100% of the rental, negotiated by the LESSOR and said user, for the portion of user's facilities that are located on the property outside LESSEE's Premises.

20. NOTICES. Except for notices permitted via telephone in accordance with Paragraph 13, all notices hereunder must be in writing and shall be deemed validly given if sent by certified mail, return receipt requested or by commercial courier, provided the courier's regular business is delivery service and provided further that it guarantees delivery to the addressee by the end of the next business day following the courier's receipt from the sender, addressed as follows (or any other address that the Party to be notified may have designated to the sender by like notice):

LESSOR: The Fairview Cemetery Association
PO Box 157
Glenham, New York 12527

And Dylan Harris Esq.
Lewis & Greer PC
510 Haight Avenue

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Poughkeepsie, New York 12603

LESSEE: Verizon Wireless of the East LP
d/b/a Verizon Wireless
180 Washington Valley Road
Bedminster, New Jersey 07921
Attention: Network Real Estate

Notice shall be effective upon actual receipt or refusal as shown on the receipt obtained pursuant to the foregoing.

21. SUBORDINATION AND NON-DISTURBANCE. Within 15 days of the Effective Date, LESSOR shall obtain a Non Disturbance Agreement (as defined below) from existing mortgagee(s), ground lessors and master lessors, if any, of the Property. At LESSOR's option, this Agreement shall be subordinate to any future master lease, ground lease, mortgage, deed of trust or other security interest (a "Mortgage") by LESSOR which from time to time may encumber all or part of the Property; provided, however, as a condition precedent to LESSEE being required to subordinate its interest in this Agreement to any future Mortgage covering the Property, LESSOR shall obtain for LESSEE's benefit a non-disturbance and attornment agreement for LESSEE's benefit in the form reasonably satisfactory to LESSEE, and containing the terms described below (the "Non Disturbance Agreement"), and shall recognize LESSEE's rights under this Agreement. The Non Disturbance Agreement shall include the encumbering party's ("Lender's") agreement that, if Lender or its successor in interest or any purchaser of Lender's or its successor's interest (a "Purchaser") acquires an ownership interest in the Property, Lender or such successor in interest or Purchaser will honor all of the terms of the Agreement. Such Non Disturbance Agreement must be binding on all of Lender's participants in the subject loan (if any) and on all successors and assigns of Lender and/or its participants and on all Purchasers. In return for such Non Disturbance Agreement, LESSEE will execute an agreement for Lender's benefit in which LESSEE (1) confirms that the Agreement is subordinate to the Mortgage or other real property interest in favor of Lender, (2) agrees to attorn to Lender if Lender becomes the owner of the Property and (3) agrees to accept a cure by Lender of any of LESSOR's defaults, provided such cure is completed within the deadline applicable to LESSOR. In the event LESSOR defaults in the payment and/or other performance of any mortgage or other real property interest encumbering the Property, LESSEE, may, at its sole option and without obligation, cure or correct LESSOR's default and upon doing so, LESSEE shall be subrogated to any and all rights, titles, liens and equities of the holders of such mortgage or other real property interest and LESSEE shall be entitled to deduct and setoff against all rents that may otherwise become due under this Agreement the sums paid by LESSEE to cure or correct such defaults.

22. DEFAULT. It is a "Default" if (i) either Party fails to comply with this Agreement and does not remedy the failure within 30 days after written notice by the other Party or, if the failure cannot reasonably be remedied in such time, if the failing Party does not commence a remedy within the allotted 30 days and diligently pursue the cure to completion within 90 days after the initial written notice, or (ii) LESSOR fails to comply with this Agreement and the failure interferes with LESSEE's Use and LESSOR does not remedy the failure within 5 days after written notice from LESSEE or, if the failure cannot reasonably be remedied in such time, if LESSOR does not commence a remedy within the allotted 5 days and diligently pursue the cure to completion within 15 days after the initial written notice. The cure periods set forth in

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this Paragraph 22 do not extend the period of time in which either Party has to cure interference pursuant to Paragraph 13 of this Agreement.

23. REMEDIES. In the event of a Default, without limiting the non-defaulting Party in the exercise of any right or remedy which the non-defaulting Party may have by reason of such default, the non-defaulting Party may terminate this Agreement and/or pursue any remedy now or hereafter available to the non-defaulting Party under the Laws or judicial decisions of the state in which the Property is located. Further, upon a Default, the non-defaulting Party may at its option (but without obligation to do so), perform the defaulting Party's duty or obligation. The costs and expenses of any such performance by the non-defaulting Party shall be due and payable by the defaulting Party upon invoice therefor. If LESSEE undertakes any such performance on LESSOR's behalf and LESSOR does not pay LESSEE the full amount within 30 days of its receipt of an invoice setting forth the amount due, LESSEE may offset the full amount due against all fees due and owing to LESSOR under this Agreement until the full amount is fully reimbursed to LESSEE. However, notwithstanding the foregoing, LESSOR shall not by virtue of any activity arising out of its operations as a cemetery association be liable for any costs or expenses set forth herein.

24. ENVIRONMENTAL. LESSEE shall conduct its business in compliance with all applicable laws governing the protection of the environment or employee health and safety ("EH&S Laws"). LESSEE shall indemnify and hold harmless the LESSOR from claims to the extent resulting from LESSEE's violation of any applicable EH&S Laws or to the extent that LESSEE causes a release of any regulated substance to the environment. LESSOR shall indemnify and hold harmless LESSEE from all claims resulting from the violation of any applicable EH&S Laws or a release of any regulated substance to the environment except to the extent resulting from the activities of LESSEE. The Parties recognize that LESSEE is only leasing a small portion of the Property and that LESSEE shall not be responsible for any environmental condition or issue except to the extent resulting from LESSEE's specific activities and responsibilities. In the event that LESSEE encounters any hazardous substances that do not result from its activities, LESSEE may relocate its facilities to avoid such hazardous substances to a mutually agreeable location or, if LESSEE desires to remove at its own cost all or some the hazardous substances or materials (such as soil) containing those hazardous substances, LESSOR agrees to sign any necessary waste manifest associated with the removal, transportation and/or disposal of such substances.

25. CASUALTY. If a fire or other casualty damages the Property or the Premises and impairs LESSEE's Use, rent shall abate until LESSEE'S Use is restored. If LESSEE's Use is not restored within 45 days, LESSEE may terminate this Agreement.

26. CONDEMNATION. If a condemnation of any portion of the Property or Premises impairs LESSEE's Use, LESSEE may terminate this Agreement. LESSEE may on its own behalf make a claim in any condemnation proceeding involving the Premises for losses related to LESSEE's communications equipment, relocation costs and, specifically excluding loss of LESSEE's leasehold interest, any other damages LESSEE may incur as a result of any such condemnation.

27. APPLICABLE LAWS.

(a) During the Term, LESSOR shall maintain the Property in compliance with all applicable laws, EH&S Laws, rules, regulations, ordinances, directives, covenants, easements, consent decrees, zoning and land use regulations, and restrictions of record, permits, building codes, and the requirements of any applicable fire insurance underwriter or rating bureau, now in effect or which may hereafter come into effect (including, without limitation, the Americans with Disabilities Act and laws

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regulating hazardous substances) (collectively "Laws"). LESSEE shall, in respect to the condition of the Premises and at LESSEE's sole cost and expense, comply with (i) all Laws relating solely to LESSEE's specific and unique nature of use of the Premises; and (ii) all building codes requiring modifications to the Premises due to the improvements being made by LESSEE in the Premises. It shall be LESSOR's obligation to comply with all Laws relating to the Property, without regard to specific use (including, without limitation, modifications required to enable LESSEE to obtain all necessary building permits).

(b) 1506-E of the Not-for-Profit Corporation Law. It is the intent of the parties hereto to comply in all respects with Section 1506-E of the Not-for-Profit Corporation Law of the State of New York. To that end, the parties agree as follows:

1. Board Approval. This agreement shall not be effective unless approved by the Board of the Fairview Cemetery Association. The minutes of the meeting of the Board approving this lease are attached as Exhibit C.

2. Bond to be posted. To cover the estimated cost of the removal of the structure to be erected herein, at the end of the term, Lessee has posted a bond in the sum of)0 which is attached hereto as Exhibit D.

3. Visual Buffer. In order to establish a visual buffer around the installation to be made herein, the Lessee will erect a fence and plantings in accordance with the landscaping plan annexed hereto as Exhibit E.

4. Notice. A notice shall be posted a minimum of ten (10) days prior to submission of the application to the Cemetery Board at each corner of the demised property which such notice shall provide information written in plain English concerning the proposed lease and, if the proposed lease includes construction of new structures or buildings, such notice shall include a drawing, which shall be an accurate rendition of the proposed construction. In addition, such notices shall state the telephone number and address where comments may be received and the last date on which such comments will be accepted, which shall be no earlier than sixty days following the date the notices are posted. See Notice attached hereto as Exhibit F.

28. TAXES.

(a) LESSOR shall invoice and LESSEE shall pay any applicable transaction tax (including sales, use, gross receipts, or excise tax) imposed on the LESSEE and required to be collected by the LESSOR based on any service, rental space, or equipment provided by the LESSOR to the LESSEE. LESSEE shall pay all personal property taxes, fees, assessments, or other taxes and charges imposed by any Government Entity that are imposed on the LESSEE and required to be paid by the LESSEE that are directly attributable to the LESSEE's equipment or LESSEE's use and occupancy of the Premises. Payment shall be made by LESSEE within 60 days after presentation of a receipted bill and/or assessment notice which is the basis for such taxes or charges. LESSOR shall pay all ad valorem, personal property, real estate, sales and use taxes, fees, assessments or other taxes or charges that are attributable to LESSOR's Property or any portion thereof imposed by any Government Entity. Lessee will make every effort to have the demised Premises identified as a separate parcel for assessment purposes with all property taxes paid directly to the Town, County and School District as may be required.

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(b) LESSEE shall have the right, at its sole option and at its sole cost and expense, to appeal, challenge or seek modification of any tax assessment or billing for which LESSEE is wholly or partly responsible for payment. LESSOR shall reasonably cooperate with LESSEE at LESSEE's expense in filing, prosecuting and perfecting any appeal or challenge to taxes as set forth in the preceding sentence, including but not limited to, executing any consent, appeal or other similar document. In the event that as a result of any appeal or challenge by LESSEE, there is a reduction, credit or repayment received by the LESSOR for any taxes previously paid by LESSEE, LESSOR agrees to promptly reimburse to LESSEE the amount of said reduction, credit or repayment. In the event that LESSEE does not have the standing rights to pursue a good faith and reasonable dispute of any taxes under this paragraph, LESSOR will pursue such dispute at LESSEE's sole cost and expense upon written request of LESSEE.

29. NON-DISCLOSURE. The Parties agree this Agreement and any information exchanged between the Parties regarding the Agreement are confidential. The Parties agree not to provide copies of this Agreement or any other confidential information to any third party without the prior written consent of the other or as required by law. If a disclosure is required by law, prior to disclosure, the Party shall notify the other Party and cooperate to take lawful steps to resist, narrow, or eliminate the need for that disclosure.

30. MOST FAVORED LESSEE. LESSOR represents and warrants that the rent, benefits and terms and conditions granted to LESSEE by LESSOR hereunder are now and shall be, during the Term, no less favorable than the rent, benefits and terms and conditions for substantially the same or similar tenancies or licenses granted by LESSOR to other parties. If at any time during the Term LESSOR shall offer more favorable rent, benefits or terms and conditions for substantially the same or similar tenancies or licenses as those granted hereunder, then LESSOR shall, within 30 days after the effective date of such offering, notify LESSEE of such fact and offer LESSEE the more favorable offering. If LESSEE chooses, the parties shall then enter into an amendment that shall be effective retroactively to the effective date of the more favorable offering, and shall provide the same rent, benefits or terms and conditions to LESSEE. LESSEE shall have the right to decline to accept the offering. LESSOR's compliance with this requirement shall be subject, at LESSEE's option, to independent verification. This provision shall not apply to any rentals entered into by the LESSOR for Cemetery purposes.

31. MISCELLANEOUS.

(a) This Agreement contains all agreements, promises and understandings between the LESSOR and the LESSEE regarding this transaction, and no oral agreement, promises or understandings shall be binding upon either the LESSOR or the LESSEE in any dispute, controversy or proceeding. This Agreement may not be amended or varied except in a writing signed by all Parties. This Agreement shall extend to and bind the heirs, personal representatives, successors and assigns hereto. The failure of either party to insist upon strict performance of any of the terms or conditions of this Agreement or to exercise any of its rights hereunder shall not waive such rights and such party shall have the right to enforce such rights at any time. The performance of this Agreement shall be governed, interpreted, construed and regulated by the laws of the state in which the Premises is located without reference to its choice of law rules. Except as expressly set forth in this Agreement, nothing in this Agreement shall grant, suggest or imply any authority for one Party to use the name, trademarks, service marks or trade names of the other for any purpose whatsoever. LESSOR agrees to execute a Memorandum of this Agreement, which LESSEE may record with the appropriate recording officer. The provisions of the Agreement relating to indemnification from one Party to the other Party shall survive any termination or expiration of this Agreement.

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(b) LESSEE shall pay all costs of constructing LESSEE's improvements, any modifications, additions or alterations thereto, and any other improvement constructed by LESSEE in full and when due, and shall not permit or suffer the filing of any mortgages, leasehold mortgages, financing statement, mechanic's lien, or other lien of any kind or description. If any such mortgage, leasehold mortgage, financing statement, mechanic's lien or other lien is filed, LESSEE shall promptly satisfy same and cause same to be discharged and satisfied of record.

IN WITNESS WHEREOF, the Parties hereto have set their hands and affixed their respective seals the day and year first above written.

LESSOR: The Fairview Cemetery Association

By: Rose Story

Name: Rose Story

Its: President

Date: 3/31/23

LESSEE: Verizon Wireless of the East LP d/b/a Verizon Wireless

By Cellco Partnership, its General Partner

By: DocuSigned by: Rommel Angeles CB0404E9DCBB429...

Name: Rommel Angeles

Its: Director - Network Engineering

Date: Apr 28, 2023

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EXHIBIT "A"

DESCRIPTION OF PROPERTY

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enjoy the said premises. Third That the said premises are free from encumbrances. Fourth that the party of the first part will execute or procure any further necessary assurance of the title to said premises. Fifth that the party of the first part will forever warrant the title to said premises.

In witness whereof the said party of the first part has hereunto set his hand and seal the day and year first above written.

Sealed and Delivered In presence of C. B. Herrick — Thos. R. Fox (SS)

State of New York } ss:
County of Dutchess }

On this ninth day of October in the year One thousand eight hundred and ninety four before me personally Came Thomas R. Fox Known to me and to me known to be the individual described in and who executed the foregoing Instrument and acknowledged that he executed the same.

John F. Ringwood
Notary Public.

Recorded Oct. 13. 1894 @ 10.16 a. M.

James Emans, Clerk

L. 276. P. 463

This Indenture made the Eight day of September in the year Eighteen hundred and ninety four Between Henry G. Wolcott and Julia H. his wife of the Town of Fishkill County of Dutchess State of New York parties of the first part and The Fairview Cemetery Association of Matteawan Dutchess County New York party of the second part. Witnesseth that the said parties of the first part in consideration of Eleven Thousand two Hundred and seventy two 50/100 Dollars lawful money of the United States paid by the party of the second part do hereby grant and release unto the said party of the second part its successors and assigns forever

All that tract piece or parcel of land situate in the Town of Fishkill aforesaid and bounded and described as follows: Beginning at a post set on the easterly side of the road leading from Matteawan to Glenham

DEED

276/463

(1)

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

Depot and running thence with other lands of party of the first part south forty six degrees thirty five minutes east seven hundred Eighty seven (787) feet to a post thence south fourteen degrees ten minutes west five hundred seventy (570) feet to a hickory tree marked thence south fifty Eight degrees forty Eight minutes west three hundred forty three (343) feet to an angle in the wall thence south twenty four degrees thirty four minutes west One hundred fifty seven (157) feet to corner of walls thence south fifty degrees twenty seven minutes east two hundred thirty four (234) feet to lands of Mrs. P. A. Brinckerhoff thence with said Mrs. Brinckerhoff's land north seventy one degrees thirty five minutes east nine hundred seventy five (975) feet to lands of Hilton & others thence with said Hilton's land north six ten degrees six minutes east fifteen hundred & seventy two (1672) feet to lands of John McFarlin thence with said McFarlins land north Eighty four degrees twelve minutes west seven hundred (700) feet thence north four degrees fifty minutes east six hundred & Eighty (680) feet thence north forty six degrees thirty minutes west forty Eight (48) feet to the easterly side of the road aforesaid thence with the easterly side of said road south westerly fourteen hundred ninety two (1492) feet to the place of Beginning. Containing fifty & 104/1000 Acres of land

Together with the appurtenances and all the estate and rights of the parties of the first part in and to said premises. To Have and To Hold the above granted premises unto the said party of the second part its successors and assigns forever. And the said Henry G. Wolcott one of the parties of the first part does covenant with said party of the second part as follows: First: That the parties of the first part are seized of the said premises in fee simple and have good right to convey the same. Second That the party of the second part shall quietly enjoy the said premises. Third that the said premises are free from encumbrances. Fourth That the parties of the first part will execute or procure any further necessary assurance of the title to said premises. Fifth that said Henry G. Wolcott one of the parties of the first part will forever warrant the title to said premises.

In witness whereof the said parties of the first part have hereunto set their hands and seals the day and year first above written

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

Sealed and Delivered
In presence of
James L. Meyer

Henry L. Wolcott (SEAL)
Julia H. Wolcott (SEAL)

State of New York } ss:
County of Dutchess } On this 1st day of September in the year one thousand eight hundred and ninety four before me personally came Henry L. Wolcott and Julia H. Wolcott his wife known to me and to me known to be the individuals described in and who executed the within Instrument and severally acknowledged that they executed the same.

James L. Meyer
Notary Public.

Recorded Oct. 15. 1894 @ 8 a. m.

James Emmans
Clerk

This Indenture made the 16th day of October One Thousand Eight hundred and ninety four Between S. H. Brown Administrator de Bonis Non &c. of John Rockefeller deceased of the first part and Fred S. Lyke of the second part Witnesseth whereas the said party of the first part on the 11th day of January One thousand Eight hundred and ninety two recovered a judgment in the Surrogate's Court of Dutchess County on a decree bearing date Janry 11th 1892 in favor of the estate of John Rockefeller against Catharine Rockefeller for $764.48. Now this Indenture Witnesseth that the said party of the first part in consideration of two Dollars to him duly paid has sold and by these presents does assign transfer and set over unto the said party of the second part and his assigns the said judgment and all sum and sums of money that may be had or obtained by means thereof or in any proceedings to be had thereupon. And the said party of the first part doth hereby constitute and appoint the said party of the second part and his assigns his true and lawful attorney irrevo

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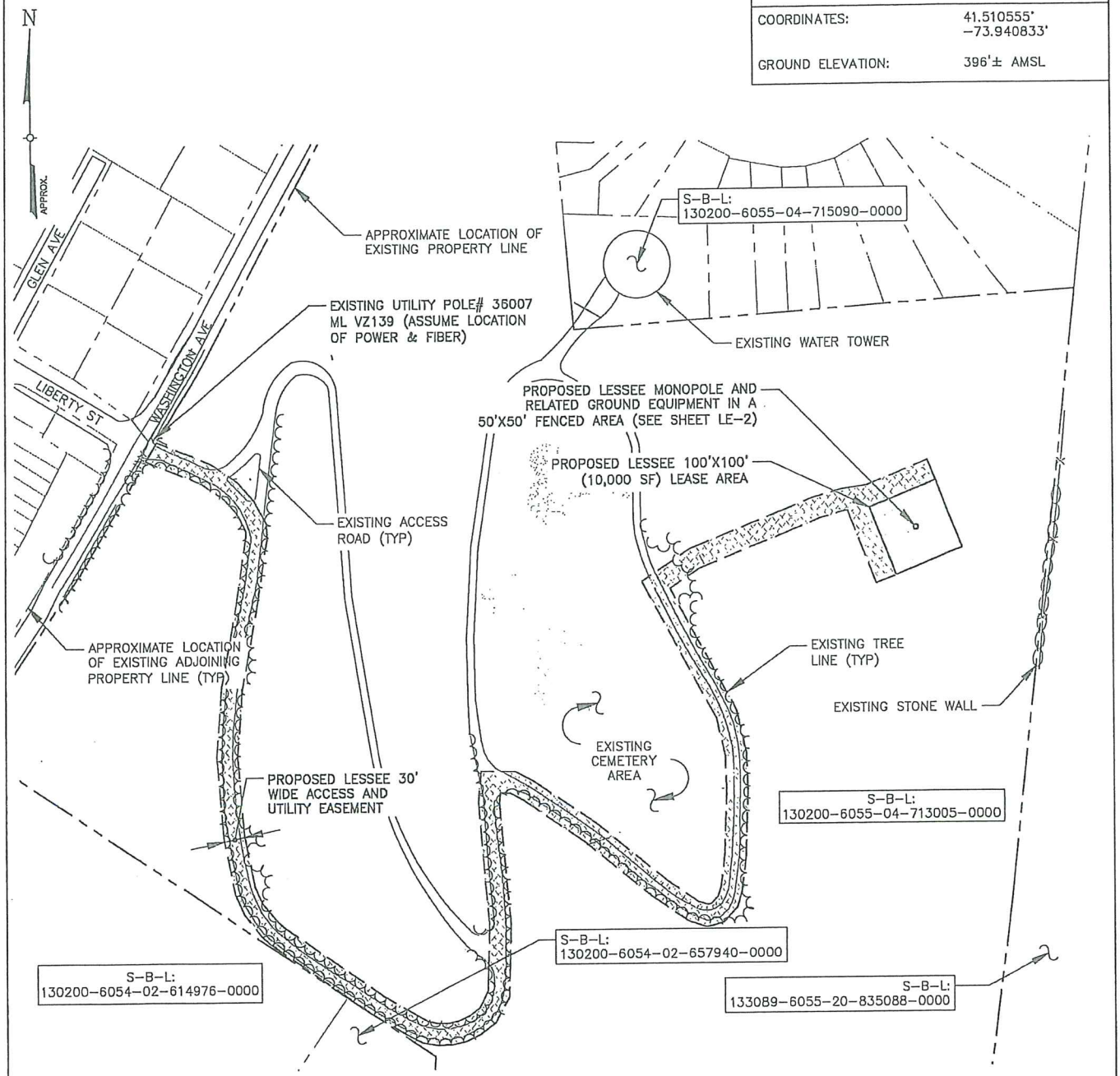
EXHIBIT "B"

SITE PLAN OF THE PREMISES is a portion of the property located at 375 Washington Avenue, City of Beacon, Dutchess County, New York

Tax Map No. 6055-04-713005

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

SITE INFORMATION	
COORDINATES:	41.510555° −73.940833°
GROUND ELEVATION:	396'± AMSL



NOTE
1. THIS DRAWING IS FOR OPTION, LEASE, LICENSE AND PERMITTING PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION.
2. FINAL UTILITY EASEMENT LOCATION WILL BE DETERMINED BY THE UTILITY COMPANY.

1 / LE-1 PROPERTY PLAN

SCALE: 1" = 200'

0 1

ORIGINAL SIZE IN INCHES

Tectonic
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Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.
Project Contact Info
36 British American Blvd.
Suite 101
Latham, NY 12110
Phone: (518) 783-1630
(800) 829-6531
www.tectonicengineering.com

HEDGEWOOD – LEASE EXHIBIT

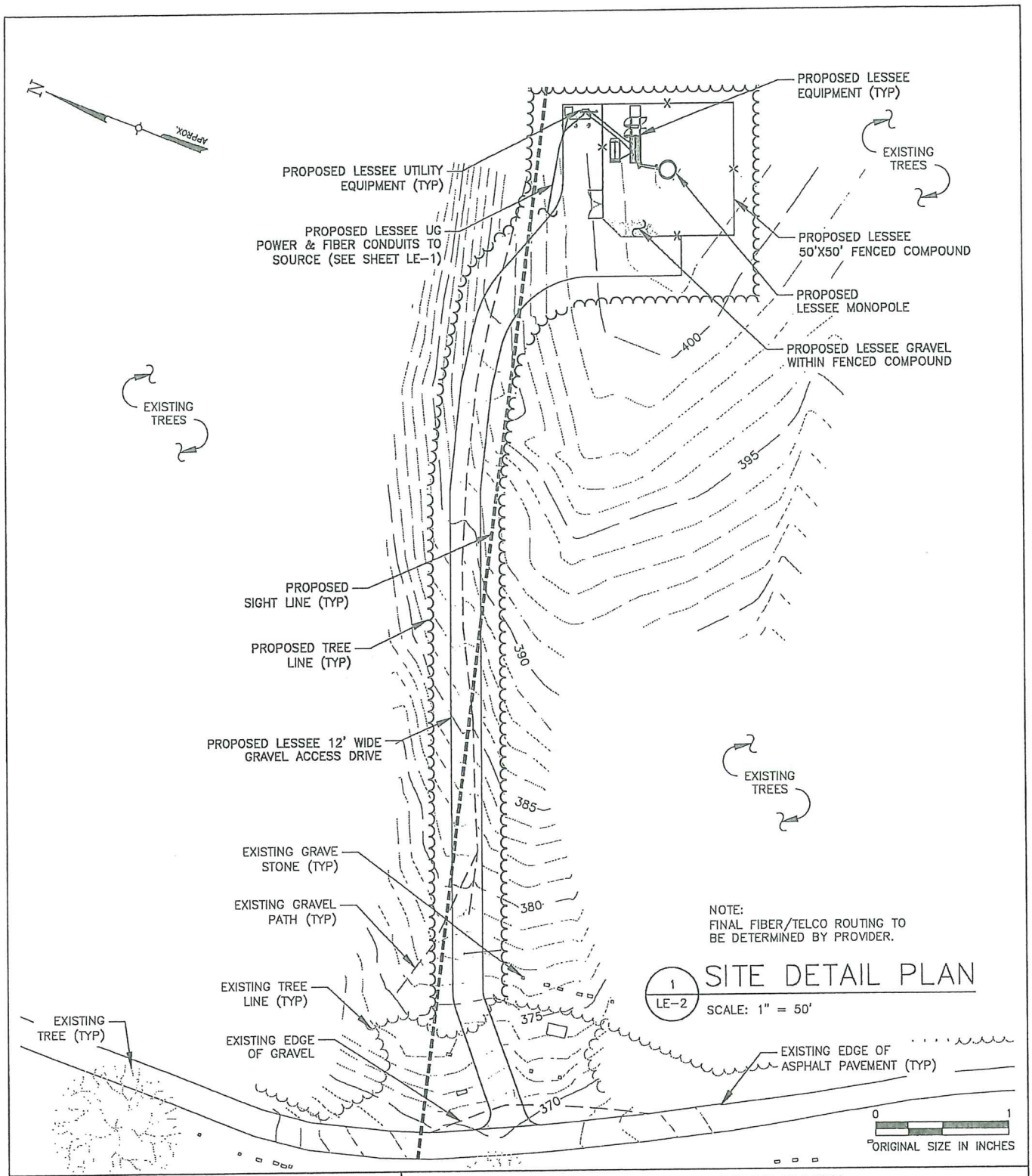
PROJECT # 20161509174 – LOCATION CODE # 432847

375 WASHINGTON AVE – CITY OF BEACON – DUTCHESS COUNTY, NY 12508

CELLCO PARTNERSHIP,
(LESSEE)
1275 JOHN STREET, SUITE 100, WEST HENRIETTA, NY 14586

TEC WO: 11272.005	ISSUED BY: JF	DATE: 9/16/22	SCALE: AS NOTED	SHEET: LE-1	REV: 1

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544



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HEDGEWOOD – LEASE EXHIBIT

PROJECT # 20161509174 – LOCATION CODE # 432847

375 WASHINGTON AVE – CITY OF BEACON – DUTCHESS COUNTY, NY 12508

CELLCO PARTNERSHIP,
(LESSEE)
1275 JOHN STREET, SUITE 100, WEST HENRIETTA, NY 14586

TEC WO: 11272.005	ISSUED BY: JF	DATE: 9/16/22	SCALE: AS NOTED	SHEET: LE-2	REV: 1

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

EXHIBIT "C"

FAIRVIEW CEMETERY ASSOCIATION BOARD MEETING MINUTES

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

Fairview Cemetery Association
June 8, 2022

In attendance: Rose Story, Roger Story, Martha Murphy, Roger Bogardus, Marian (Vikki) Ventresca

Financial report was given by Martha Murphy and accepted as read.

President Rose Story discussed the offer made by Verizon for the lease of property 100 x 100. We were offered a $5,000 sign on bonus and max rent of $1,600 a month. A 2% rent escalation once a year. They also would pay $300/mo for every carrier that collocates on the tower. Excludes municipal antennas by the City of Beacon. After a brief discussion by members present it was put to a vote. It was decided to accept their offer by a unanimous vote. Rose stated we would need to get a lawyer.

With no other business meeting was ajourned.

Respectfully
Marian (Vikki) Ventresca
Secretary

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

EXHIBIT "D"

REMOVAL BOND

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

Leah Juenger
Client Representative

Marsh USA Inc.
800 Market Street
Suite 1800
St. Louis, MO 63101
314-342-2439
Leah.Juenger@marsh.com
www.marsh.com

MARSH

September 8, 2022

Darchelle Turner
Verizon Wireless
4 Centerock Road
West Nyack, NY 10994

Subject: New Bond

Principal: Verizon Wireless of the East LP
Obligee: The Faireview Cemetery Association
Bond Description: Removal
Bond Amount:
Bond Number: 107676717
Surety Name: Travelers Casualty and Surety Company of America

Dear Darchelle:

In response to the request dated 09/07/2022, I am pleased to enclose the above-referenced bond document that is based on the information we received with the request.

Prior to filing with The Faireview Cemetery Association the following items need to be completed:

1. Signed by authorized officer
2. Officer's name and title inserted below signature
3. Corporate seal affixed (if applicable)

As always, the bond document should be re-checked for accuracy before filing with The Faireview Cemetery Association.

If you have any questions, please feel free to contact me. Thank you for allowing Marsh to service your surety needs.

Sincerely,

Leah Juenger
Client Representative

Enclosure

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

TOWER / STRUCTURE / ANTENNA/ EQUIPMENT REMOVAL BOND

Bond #107676717

Site Name: Hedgewood
Site Location: 375 Washington Avenue, Beacon, NY 12508
Verizon Project #: 20161509174
Verizon Tower Location Code: 432847

KNOW ALL MEN BY THESE PRESENTS, THAT, **Verizon Wireless of the East LP, One Verizon Way, Basking Ridge, NJ, 07920**, as Principal, and **Travelers Casualty and Surety Company of America** a corporation duly organized under the laws of the State of **Connecticut**, as Surety, are held and firmly bound unto **The Faireview Cemetery Association, P.O. Box 157, Glenham, NY 12527**, as Obligee, in the sum of) lawful money of the United States, for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents, the liability of the Surety being limited to the penal sum of this bond regardless of the number of years the bond is in effect.

WHEREAS the Principal has entered into a written agreement with the property owner for the placement of a tower(s), structure(s), antenna(s), and/or equipment furnishing telephone, television or other electronic media service, which agreement sets forth the terms and conditions which govern the use of such tower(s), structure(s), antenna(s), and/or equipment and which agreement is hereby specifically referred to and made part hereof, and

WHEREAS, the Obligee requires the submission of a bond guaranteeing the maintenance, replacement, removal or relocation of said tower(s), structure(s), antenna(s), and/or equipment.

NOW THEREFORE, the condition of this obligation is such, that if the above bounden Principal shall perform in accordance with the aforesaid ordinance and/or agreement, and indemnify the Obligee against all loss caused by Principal's breach of any ordinance or agreement relating to maintenance, replacement, removal or relocation of a tower(s), structure(s), antenna(s), and/or equipment, then this obligation shall be void, otherwise to remain in full force and effect unless cancelled as set forth below.

THIS BOND may be cancelled by Surety by giving thirty (30) days written notice to the Obligee by certified mail. Such cancellation shall not affect any liability the Surety may have or incurred under this bond prior to the effective date of the termination. Provided that no action, suit or proceeding shall be maintained against the Surety on this bond unless action is brought within twelve (12) months of the cancellation date of this bond.

THIS BOND signed, sealed, dated on the **8th** day of **September, 2022**. This bond is effective the **12th** day of **September, 2022**.

Verizon Wireless of the East LP
Principal

By:_____

Travelers Casualty and Surety Company of America
Surety

By:_____
Leah L. Juenger, Attorney-In-Fact

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

State of Missouri
County of St. Charles } ss:

On this 8th day of September, 2022, before me, a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared

Leah L. Juenger

known to me to be Attorney-in-Fact of Travelers Casualty and Surety Company of America the corporation described in and that executed the within and foregoing instrument, and known to me to be the person who executed the said instrument in behalf of the said corporation, and he duly acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year stated in this certificate above.

My Commission Expires July 21, 2024

Debra C. Schneider Notary Public

DEBRA C. SCHNEIDER
Notary Public - Notary Seal
State of Missouri
Commissioned for St. Charles County
My Commission Expires: July 21, 2024
Commission Number: 12419088

DocuSign Envelope ID: 268840C9-8111-4D72-80B4-0E165769D544

TRAVELERS

Travelers Casualty and Surety Company of America
Travelers Casualty and Surety Company
St. Paul Fire and Marine Insurance Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That Travelers Casualty and Surety Company of America, Travelers Casualty and Surety Company, and St. Paul Fire and Marine Insurance Company are corporations duly organized under the laws of the State of Connecticut (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Leah L. Juenger of St. Louis, Missouri, their true and lawful Attorney(s)-In-Fact to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed, and their corporate seals to be hereto affixed, this **21st** day of **April, 2021.**

HARTFORD, CONN.

State of Connecticut

By: _____
Robert L. Raney, Senior Vice President

City of Hartford ss.

On this the **21st** day of **April, 2021,** before me personally appeared **Robert L. Raney,** who acknowledged himself to be the Senior Vice President of each of the Companies, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of said Companies by himself as a duly authorized officer.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission expires the **30th** day of **June, 2026**

NOTARY PUBLIC CONNECTICUT

_____
Anna P. Nowik, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of each of the Companies, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-In-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-In-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, **Kevin E. Hughes,** the undersigned, Assistant Secretary of each of the Companies, do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which remains in full force and effect.

Dated this 8th day of September, 2022.

HARTFORD, CONN.

_____
Kevin E. Hughes, Assistant Secretary

To verify the authenticity of this Power of Attorney, please call us at 1-800-421-3880.
Please refer to the above-named Attorney(s)-In-Fact and the details of the bond to which this Power of Attorney is attached.

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

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

August 18, 2023

RE: Verizon Wireless Tower "Fairview Cemetery"
Verizon Wireless Site Name: Hedgewood
Tax ID: 130200-6055-04-713005
375 Washington Avenue, City of Beacon, New York

Dear Mr Gunn:

This letter is provided in response to the comments raised in the May 8, 2023 memorandum prepared by Mr. John Clarke, with John Clarke Planning and Design. We offer the following responses on behalf of the applicant, Verizon Wireless:

1. The project narratives and Site Plan sheets do not include any detailed description of existing site conditions, leading to the following questions:

   (a) Is this the best location off the cemetery driveway to avoid impacts on current grave sites?

   RESPONSE: Yes. The driveway follows an existing trail that is in a clearing flanked by grave sites on both sides. Our survey has located all grave sites in the vicinity of the driveway and there are no conflicts. The persons managing the cemetery have also approved the location of the new driveway.

   (b) What are the typical diameter and number of trees to be removed for the access drive and equipment compound, and can any large specimen trees be avoided?

   RESPONSE: Sheet C-1B has been updated to show individual trees 6" caliper and greater throughout the project area. The tree locations and sizes were obtained via field survey. The driveway design follows the existing trail which is the ideal location with respect to topography and tree preservation.

Project Contact Info

36 British American Boulevard, Suite 101 | Latham, NY 12110
518.783.1630 Tel | 518.783.1544 Fax

tectonicengineering.com
Equal Opportunity Employer

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(c) What are the tree heights in the area to determine how exposed the monopole will be?

RESPONSE: The existing trees near the tower are in the 60-70 foot range. However, this is only one of several factors which affect visibility of the monopole. The most important factor is vegetation, topography, and structures in the near-field of a point of view toward the tower. As you can see in the visual resource evaluation report, the 2-mile study area is heavily developed, and outside the developed areas is blanketed by woods. This results in the tower being visible from only a few vantage points throughout the viewshed.

2. Section 223-26.4D(10) requires a visual impact assessment based on appropriate modeling, photographic simulation, or other techniques. Photo-simulations from key public visibility points should be included in the application.

   RESPONSE: The balloon fly was completed on July 17, 2023 and the corresponding visual resource evaluation report with photosimulations is included in this resubmittal package.

3. Section 223-26.4L outlines possible visual mitigations measures. What stealth design, color treatment, or other methods will minimize visual impacts?

   RESPONSE: Based on the limited visibility of the tower, visual mitigation has not been investigated for this application. We look forward to receiving feedback from the Planning Board on the visual assessment report.

4. The proposed outdoor lighting must comply with Section 223-14B with fill cut-off, down-lit fixtures.

   RESPONSE: The proposed light fixture is in compliance with the City Code. We have added additional notes and photometrics to Sheet C-4B of the site plans.

Should you have any questions, please do not hesitate to contact the undersigned at (518) 783-1630.

Sincerely,
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.



Steven M. Matthews, PE
Managing Director – Engineering

Tectonic
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Mr. John Gunn
Beacon Planning Board Chair
City of Beacon
1 Municipal Plaza
Beacon, New York 12508

August 18, 2023

RE: Verizon Wireless Tower "Fairview Cemetery"
Verizon Wireless Site Name: Hedgewood
Tax ID: 130200-6055-04-713005
375 Washington Avenue, City of Beacon, New York

Dear Mr Gunn:

This letter is provided in response to the comments raised in the May 4, 2023 memorandum prepared by Mr. John Russo, P.E. with Lanc & Tully, P.C. We offer the following responses on behalf of the applicant, Verizon Wireless:

1. Section 223-26.4, paragraph D(10), of the city of Beacon Zoning Code states that the applicant shall prepare "A visual impact assessment of the proposed wireless telecommunications services facility based upon appropriate modeling, photographic simulation and other pertinent analytical techniques as required by the Planning Board." It is recommended that the applicant prepare visual sightline profiles from various vantage points as determined by the Planning Board, as well as visual renderings from those vantage points.

   RESPONSE: The balloon fly was completed on July 17, 2023 and the corresponding visual resource evaluation report with photosimulations is included in this resubmittal package.

2. In accordance with Section 223-26.4, paragraph D(12), a copy of the lease agreement with the property owner shall be provided to the Planning Board.

   RESPONSE: A copy of the lease agreement is provided in this resubmittal package.

3. The plans should note the varying diameter of the monopole at various heights along its length.

   RESPONSE: Monopole diameters are noted in the site plan drawings on Sheet C-3.

4. The plans shall state the proposed color of the monopole tower.

   RESPONSE: A note stating the tower will have a galvanized steel finish (gray in color) is shown on Sheet C-3.

Project Contact Info

36 British American Boulevard, Suite 101 | Latham, NY 12110
518.783.1630 Tel | 518.783.1544 Fax

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5. The proposed silt fencing along the gravel drive for the project, as shown on Sheet C-1B, should be shifted so that the trenching for the underground utilities is located within the area captured by the silt fence. At present the plans show the silt fencing to run atop or to the inside of this area to be trenched.

   RESPONSE: The silt fencing has been corrected as requested. See Sheet C-1B.

6. As shown on Sheet C-1A, the underground utilities will be crossing the paved drives within the Fairview Cemetery at 4 locations. The plans shall include construction details for the restoration of the pavement.

   RESPONSE: Pavement restoration for utility trenching is shown on Detail 3 of Sheet C-4C.

7. The proposed underground utilities to be run along the access drives from and to Washington Avenue shall be installed outside of any drainage swales so as to allow for continued proper maintenance of the drainage on the site. A note shall be added to the plans in regard to this.

   RESPONSE: Based on our site inspection and survey, there are no drainage swales along the sides of the access roads where utility trenching is to occur.

8. Sheet C-4B contains a proposed lighting detail. Note No. 2 for this detail states "Light shall be used by Verizon Wireless technicians during emergency maintenance operations". Note No. 3. states "Light shall be provided with a shut off dial timer." It is unclear as to why the light needs a shut-off dial timer if it is only to be used by technicians during emergency maintenance operations. This should be clarified further.

   RESPONSE: The note on Sheet C-4B has been updated. In short, the dial timer is a fail safe that will shut off when the timer expires. This feature is implemented to eliminate the possibility of the technician forgetting to shut the light off when the leave the site, which would keep the light running for weeks or months until the next time a technician visits the site.

Should you have any questions, please do not hesitate to contact the undersigned at (518) 783-1630.

Sincerely,
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.



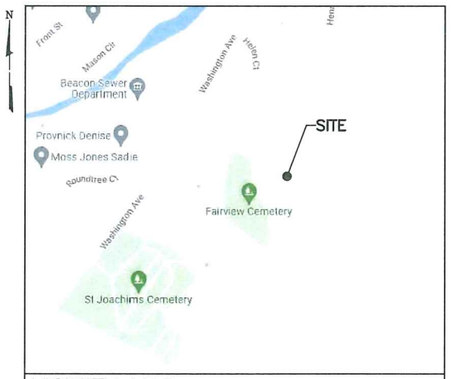
Steven M. Matthews, PE
Director of Engineering

VERIZON WIRELESS OF THE EAST LP,
d/b/a

verizon

SITE NAME:
HEDGEWOOD

RE PROJECT NUMBER: 20161509174
LOCATION CODE: 432847



VICINITY MAP

DIRECTIONS

DIRECTIONS TO SITE: FROM NORTH GREENBUSH, GET ON I-90 W FROM US-4 S AND NY-43 W, FOLLOW FOR ±3.2 MILES. MERGE ONTO I-90 W, FOLLOW FOR ±1.2 MILES. TAKE EXIT 6A TO MERGE ONTO I-787 S TOWARD ALBANY, FOLLOW FOR ±3.4 MILES. USE THE RIGHT 2 LANES TO TAKE EXIT 1 TO MERGE ONTO I-87 S, FOLLOW FOR ±83.0 MILES. TAKE EXIT 17 TOWARD I-84/NY-300/NY-17K/SCRANTON/NEWBURGH, FOLLOW FOR ±0.7 MILES. KEEP LEFT TO CONTINUE TOWARD I-84 E, FOLLOW FOR ±0.1 MILE. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-84 E/DANBURY AND MERGE ONTO I-84 E, FOLLOW FOR ±8.2 MILES. TAKE EXIT 44 FOR NY-52 TOWARD FISHKILL/BEACON, FOLLOW FOR ±0.1 MILE. TURN RIGHT ONTO NY-52, FOLLOW FOR ±0.2 MILES. TURN LEFT ONTO OLD GLENHAM RD, FOLLOW FOR ±0.9 MILES. TURN LEFT ONTO MAPLE ST, FOLLOW FOR ±0.1 MILE. CONTINUE ONTO WASHINGTON AVE, FOLLOW FOR ±0.8 MILES. TURN LEFT AT LIBERTY ST, FOLLOW FOR ±0.2 MILES. SITE WILL BE ON THE LEFT.

SITE ADDRESS:	375 WASHINGTON AVE BEACON, NY 12508
MUNICIPALITY:	CITY OF BEACON
COUNTY:	DUTCHESS
TAX MAP NUMBER:	130200-6055-04-713005-0000
ZONING DISTRICT:	R1-120 ONE FAMILY HISTORIC DISTRICT AND LAND MARK OVERLAY ZONE
STRUCTURE COORDINATES:	41.510545° -73.940514°
GROUND ELEVATION:	402.1'± AMSL
PROPERTY OWNER:	FAIRVIEW CEMENTARY ASSN P.O. BOX 157 GLENHAM, NY 12527
APPLICANT:	VERIZON WIRELESS 1275 JOHN STREET, SUITE 100 WEST HENRIETTA, NY 14586
CONTACT PERSON:	KATHY POMPONIO
CONTACT PHONE:	(585) 321-5435

PROJECT SUMMARY

PROJECT DESCRIPTION

THE PROPOSED WORK CONSISTS OF INSTALLING CELLULAR ANTENNAS AND RELATED EQUIPMENT ON A PROPOSED MONOPOLE AND THE INSTALLATION OF EQUIPMENT AT GRADE WITHIN A PROPOSED FENCED COMPOUND. PROJECT INCLUDES THE CONSTRUCTION OF A NEW GRAVEL ACCESS DRIVEWAY AND UNDERGROUND POWER AND FIBER UTILITIES TO SERVICE THE FACILITY.

SHT. NO.	DESCRIPTION	REV NO	REVISION DATE
T-1	TITLE SHEET	2	8/18/23
AD-1	ADJOINERS PLAN	2	8/18/23
AD-2	ADJOINERS LIST	2	8/18/23
AD-3	ADJOINERS LIST	2	8/18/23
SB-1	SETBACK PLAN	2	8/18/23
C-1A	OVERALL SITE PLAN	2	8/18/23
C-1B	GRADING & EROSION CONTROL PLAN	2	8/18/23
C-2	SITE DETAIL PLAN	2	8/18/23
C-3	ELEVATION & ORIENTATION PLAN	2	8/18/23
C-4A	SITE DETAILS	2	8/18/23
C-4B	SITE DETAILS	2	8/18/23
C-4C	SITE DETAILS	2	8/18/23
C-5	EQUIPMENT ELEVATIONS	2	8/18/23

SHEET INDEX

THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL ITEMS OF CONCERN HAVE BEEN ADDRESSED AND EACH OF THE DRAWINGS HAS BEEN REVISED AND ISSUED "FOR CONSTRUCTION".

Before You Dig, Drill Or Blast!

UDIG-NY

UNDERGROUND FACILITIES PROTECTIVE ORGANIZATION

CALL US TOLL FREE 811 OR 1-800-962-7962

NY industrial code rule 753 requires no less than two working days notice, but not more than ten days notice

UDIGNY - NEW YORK

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED FOR 22"x34" FULL SIZE AND 11"x17" HALF SIZE. OTHER SIZED VERSIONS ARE NOT PRINTED TO THE SCALE SHOWN. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

verizon
1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.
Project Contact Info
38 British American Blvd. Phone: (518) 783-1630
Suite 101 (800) 839-8331
Latham, NY 12110 www.tectonicengineering.com

WORK ORDER NUMBER	DRAWN BY
11272.005	MQ

NO.	DATE	ISSUE
0	11/7/22	FOR REGULATORY
1	4/11/23	FOR ZONING
2	8/18/23	PER TOWN COMMENTS

RELEASED BY | DATE



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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION

HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS

375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE

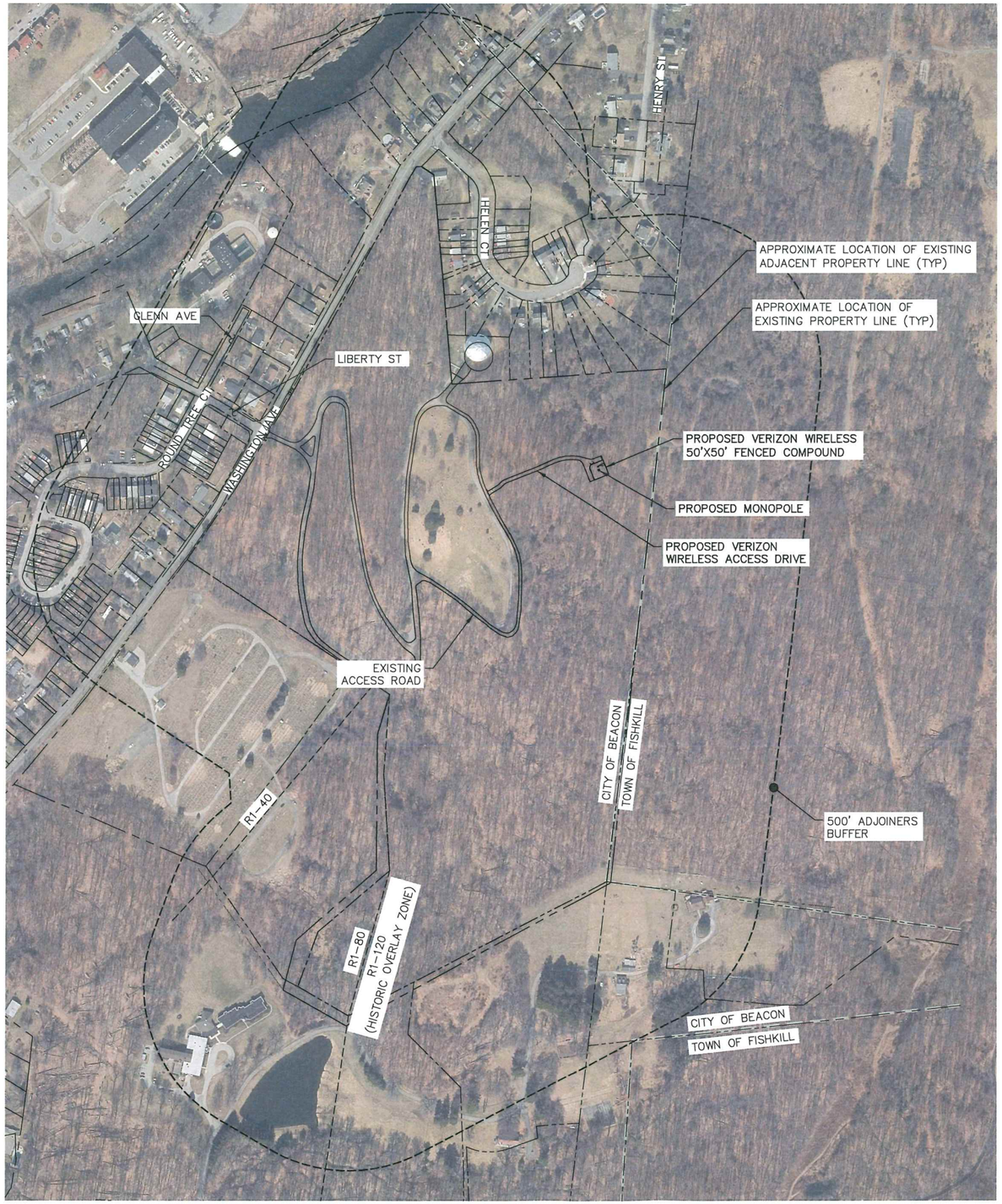
TITLE SHEET

SHEET NUMBER

T-1

N

GRID



1 / AD-1 ADJOINERS PLAN

SCALE: 1" = 400' (11x17 SIZE)
1" = 200' (22x34 SIZE)

NOTE:

THE PROPERTY LINES HEREON ARE APPROXIMATE BASED ON GIS DATA AND ARE FOR ORIENTATION PURPOSES ONLY. THEY DO NOT REPRESENT A PROPERTY/BOUNDARY DECISION BY A LAND SURVEYOR.

verizon
1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

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RELEASED BY | DATE

STATE OF NEW YORK
STEVEN M. MATTEWS
LICENSED PROFESSIONAL ENGINEER
087507

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0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE
ADJOINERS PLAN

SHEET NUMBER
AD-1

Rubin J. Rivera
25 Helen Ct
Beacon, NY 12508
For Property:13020006055004739127000

Jesse A. Friedlander
3 Lisa Ln
Monticello, NY 12701
For Property:13020006055008160606600000

Jessie J. Williams
476 Liberty St
Beacon, NY 12508
For Property:13020006055008161908600000

Jason A. Pultz
509 Washington Ave
Beacon, NY 12508
For Property:13020006055004720177000

Lorraine Browne
34 Helen Ct
Beacon, NY 12508
For Property:13020006055004729101000

Adrienne Z. Haynes
59 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008156902200000

Gina Canen
63 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008156701800000

Edwin Gonzalez
226 Henry St
Md Beacon, NY 12508
For Property:13308900605500207511510000

Michael Wolfe
37 Millholland Dr
Fishkill, NY 12524
For Property:13308900605400007908250000

David DeLuca
508 Washington Ave
Beacon, NY 12508
For Property:13020006055004697187000

Charles G. Bentley
84 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157706060000

Leon Richard Stevens
218 Henry St
Beacon, NY 12508
For Property:13308900605500207501760000

Michael Nurik
37 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157504100000

James M. Ruyack
518 Washington Ave
Beacon, NY 12508
For Property:13308900605500197072010000

Archdiocese of New York
1011 First Ave
New York, NY 10022
For Property:13020006054000266985500000

Church Of St Joachim
61 Leonard St
Beacon, NY 12508
For Property:13020006054000265794000000

Joseph P. Gentile
27 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008159404300000

Jacqueline Palmer Allen
18 Helen Ct
Beacon, NY 12508
For Property:13020006055004707127000

W Edward Robinson
29 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008159204300000

Stacy M. Bernstein
57 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157002400000

Ralph E. Johnson, III
231 Henry St
Md Beacon, NY 12508
For Property:13308900605500207691380000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020006054000259680800000

Carl F. Rubing
46 Helen Ct
Beacon, NY 12508
For Property:13020006055004765111000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020006055004715090000

Michele A. Bulson, Trustee
388 Washington Ave
Beacon, NY 12508
For Property:13020006055008161604500000

Andrew Wilson
17 Helen Ct
Beacon, NY 12508
For Property:13020006055004722130000

Gregory Harrison
40 Helen Ct
Beacon, NY 12508
For Property:13020006055004745102000

City Of Beacon
1 Municipal Ctr
Beacon, NY 12508
For Property:13020006055004662193000

Doreena M. Robinson
17 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008160404500000

Marlene J. McNeil
15 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008161705200000

Peter Skorewicz
23 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008159804400000

Rafael Torres
350 Washington Ave
Beacon, NY 12508
For Property:13020006055008158803000000

Jevina S. Lackhan
11 Helen Ct
Beacon, NY 12508
For Property:13020006055004722138000000

Fairview Cemetery Assn
PO Box 157
Glenham, NY 12527
For Property:13020006055004713005000000

Robert J. Werlau, Jr
39 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157704100000

George E. Moffitt, LT
1 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008162406500000

Edward Mandigo
374 Washington Ave
Beacon, NY 12508
For Property:13020006055008160603100000

Michael E. Campbell
26 Helen Ct
Beacon, NY 12508
For Property:13020006055004710111000

Mohamed Zakria
11 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008161905600000

Hilaria Moran deHernandez
23 Helen Ct
Beacon, NY 12508
For Property:13020006055004737126000000

Faith D. Cole
1 Glen Ave
Beacon, NY 12508
For Property:13020006055008263308800000

Mario Rodriguez
41 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157904000000

Diane Antezzo Bernardo
92 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008156101200000

Vincent V. Sheeley
336 Washington Ave
Beacon, NY 12508
For Property:13020006054002557593000000

Glendale Dev Estates HOA
54 Helen Ct
Beacon, NY 12508
For Property:13020006055004733140000000

Annagjid Paulin
PO Box 504
Castle Point, NY 12511
For Property:13020006055004761120000000

Kenneth Bolton
51 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157203000000

Li-Chu Chien
33 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157104300000

Aline Morris
15 Helen Ct
Beacon, NY 12508
For Property:13020006055004722132000000

Stella E. Heady
478 Washington Ave
Beacon, NY 12508
For Property:13020006055004671160000000

Evelyn Provnick, LT
473 Liberty St
Beacon, NY 12508
For Property:13020006055008160740000000

Vanessa Frets
31 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008158904300000

Beverly B. Sarich
8 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008160306200000

Metra Homeowner Assoc
49 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008158507000000

Shannon Kathleen Murphy
162 Hiddenbrooke Dr
Beacon, NY 12508
For Property:13020006054000286987600000

Nina Kalach
11701 Park Ln #B2J
Kew Gardens, NY 11418
For Property:13020006055008157504000000

Vincent V. Sheeley
336 Washington Ave
Beacon, NY 12508
For Property:13020006054002558199300000

Gabriella Szentimrey
400 Washington Ave
Beacon, NY 12508
For Property:13020006055008264208300000

Glendale Dev Estates HOA
54 Helen Ct
Beacon, NY 12508
For Property:13020006055004702119000000

Vincent V. Sheeley
336 Washington Ave
Beacon, NY 12508
For Property:13020006054002558299500000

Angelina T. Falzone
12 Helen Ct
Beacon, NY 12508
For Property:13020006055004705135000000

Vincent V. Sheeley
336 Washington Ave
Beacon, NY 12508
For Property:13020006054002558598800000

Jenna Gottlieb
38 Helen Ct
Beacon, NY 12508
For Property:13020006055004738101000000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020006055004619119000000

Charlie Hayes
450 Washington Ave
Beacon, NY 12508
For Property:13020006055008265315600000

Felix A. Class
86 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008157800700000

Carole J. Pelaia
7 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008162106000000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020006055004656145000000

Gerardo Montoya
502 Washington Ave
Beacon, NY 12508
For Property:13020006055004693179000000

Hung P. Truong
61 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008156802000000

Edwin Gonzalez
226 Henry St
Md Beacon, NY 12508
For Property:13020006055004742155000000

James M. Ruyack
518 Washington Ave
Beacon, NY 12508
For Property:13020006055004705197000000

Vincent V. Sheeley
336 Washington Ave
Beacon, NY 12508
For Property:13020006054002557398000000

Charles M. Murphy
45 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008158303800000

Mohammed- Ismail-S Mohammed-Fakir
12 Monarch Dr
Hopewell Junction, NY 12533
For Property:13020006055008158006000000

Christopher Ryan Gebert
27 Helen Ct
Beacon, NY 12508
For Property:13020006055004744112900000

Metra Homeowner Assoc
49 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008161904900000

Mariana P. Garzon
19 Helen Ct
Beacon, NY 12508
For Property:13020006055004721120000000

Stephen P. Marzovilla
13 Roundtree Ct
Beacon, NY 12508
For Property:13020006055008161805400000

Whitney Garritt
354 Washington Ave
Beacon, NY 12508
For Property:13020006055008159208800000

James Van Buren
171 Hiddenbrook Dr
Beacon, NY 12508
For Property:13020006054002507897000000

Chevron U S A Inc
PO Box 285
Houston, TX 77001
For Property:13308900605500208350880000

Joseph M. Lampe
42 Helen Ct
Beacon, NY 12508
For Property:13020006055004750104000000

Thomas M. Dunderdale
366 Washington Ave
Beacon, NY 12508
For Property:13020006055008160021000000

verizon

1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

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Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.
Project Contact Info
36 British American Blvd. Phone: (518) 783-1630
Suite 101 (800) 829-8531
Latham, NY 12110 www.tectonicengineering.com

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STATE OF NEW YORK
STEPHEN M. MATTINA
087507
LICENSED PROFESSIONAL ENGINEER

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ORIGINAL SIZE IN INCHES

SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE
ADJOINERS LIST

SHEET NUMBER
AD-2

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020000605500815950830000

Metra Homeowner Assoc
49 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816240690000

Carl E. Lucy, LT
487 Washington Ave
Beacon, NY 12508
For Property:13020000605500847021520000

Fulton Avenue Realty
47 Fulton Ave
Beacon, NY 12508
For Property:13020000605500826391100000

Jared W. Rutherford
35 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815730420000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020000605500470814000000

Dominque Lake
918 Ramble Run Rd
Baltimore, MD 21220
For Property:13020000605500816640640000

Thomas Dunderdale
358 Washington Ave
Beacon, NY 12508
For Property:13020000605500815930160000

Patricia E. Kreger
65 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815660160000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020000605500826310650000

William Ferro
47 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815850370000

Christal Rodriguez
490 Washington Ave
Beacon, NY 12508
For Property:13020000605500846891750000

Yolanda Smith
55 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815700260000

City Of Beacon
1 Municipal Plz
Beacon, NY 12508
For Property:13020000605500816110890000

Metra Homeowner Assoc
49 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815900310000

Erica C. Guerrido
21 Helen Ct
Beacon, NY 12508
For Property:13020000605500047341230000

Ashik Ramkalawon
44 Helen Ct
Beacon, NY 12508
For Property:13020000605500047581050000

Adam Brown
525 Washington Ave
Beacon, NY 12508
For Property:13020000605500816020610000

Edward J. Pavone
480 Washington Ave
Beacon, NY 12508
For Property:13020000605500046831690000

Fred J. Holmes
21 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816000440000

Joseph Lavetsky
32 Helen Ct
Beacon, NY 12508
For Property:13020000605500047241010000

Steven P. Stanulewich
505 Washington Ave
Beacon, NY 12508
For Property:13020000605500047141700000

Anthony J. Spillane
5 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816220610000

Hyacinth Alleyne
2 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816070680000

Rachel Jane Lockett
380 Washington Ave
Beacon, NY 12508
For Property:13020000605500816130400000

Judy Carrasquillo
53 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815710270000

Lisa C. Hasbrouck
24 Helen Ct
Beacon, NY 12508
For Property:13020000605500470911400000

Joseph J. Gentile
16 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815790590000

Liliana Rodriguez, Trustee
378 Washington Ave
Beacon, NY 12508
For Property:13020000605500816100350000

Thomas L'Heureux
515 Washington Ave
Beacon, NY 12508
For Property:13308900605500197261880000

Gloria E. Hall
486 Liberty St
Beacon, NY 12508
For Property:13020000605500826360750000

Glendale Dev Estates HOA
54 Helen Ct
Beacon, NY 12508
For Property:13020000605500047181080000

Regina Martinez
19 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816020440000

Diwakar Sahai
Vandenburgh Pl 160B
Troy, NY 12180
For Property:13020000605500047041230000

Daniel M. Wilenchik
90 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815800110000

St Joachims Church
61 Leonard St
Beacon, NY 12508
For Property:13020000605400026149760000

Sandra Leggett Grant
3 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816230630000

Leon R. Stevens
218 Henry St
Beacon, NY 12508
For Property:13020000605500047281720000

Mario Capparelli
402 Washington Ave
Beacon, NY 12508
For Property:13020000605500826470920000

Chastity Beato
88 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815790090000

Fulton Avenue Realty
47 Fulton Ave
Beacon, NY 12508
For Property:13020000605500826481010000

Karel Murray
304 Lincoln Ave E
Mt Vernon, NY 10553
For Property:13020000605500047071170000

Ju Ping Tu
55 Park Ave Apt 10E
New York, NY 10016
For Property:13020000605500815760590000

Brittany L. McIntyre
9 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816200580000

Timothy P. Smith
43 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815810390000

Carmen Vazqueztell
14 Helen Ct
Beacon, NY 12508
For Property:13020000605500047051320000

Robert W. McKeon, LT
477 Liberty St
Beacon, NY 12508
For Property:13020000605500816120720000

Matthew Schleifer
522 Washington Ave
Beacon, NY 12508
For Property:13308900605500197152080000

Daniel T. Aloisi
13 Helen Ct
Beacon, NY 12508
For Property:13020000605500047221340000

Hazel Rountree
25 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815960430000

Zbigniew Waksmundski
80 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500815730020000

Andres Rivera
2 Glen Ave
Beacon, NY 12508
For Property:13020000605500826380970000

Terrence R. Stanulwich
36 Helen Ct
Beacon, NY 12508
For Property:13020000605500047331010000

Margaret M. Scianna
472 Liberty St
Beacon, NY 12508
For Property:13020000605500816070930000

Timothy W. Kimmel
5 Forest View Dr
Hopewell Junction, NY 12533
For Property:13020000605500826280800000

Nancy Gilliland
370 Washington Ave
Beacon, NY 12508
For Property:13020000605500816030260000

Mario Negron
16 Helen Ct
Beacon, NY 12508
For Property:13020000605500047061290000

Ralph E. Johnson, III
231 Henry St
Beacon, NY 12508
For Property:13020000605500047661290000

446 Washington Avenue LLC
1158 North Ave
Beacon, NY 12508
For Property:13020000605500826561070000

Emily Tomasi
516 Washington Ave
Beacon, NY 12508
For Property:13020000605500047031930000

Pamela B. Drew
12 Roundtree Ct
Beacon, NY 12508
For Property:13020000605500816010590000

Robert R. Pendley
28 Helen Ct
Beacon, NY 12508
For Property:13020000605500047131090000

Michael Wolfe
200 Mountain Ln
Beacon, NY 12508
For Property:13020000605400027448130000

Navienne J. Dunkley
50 Helen Ct
Beacon, NY 12508
For Property:13020000605500047581260000

Stephanie Martin
29 Helen Ct
Beacon, NY 12508
For Property:13020000605500047441310000

verizon

1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

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087507
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CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE

ADJOINERS LIST

SHEET NUMBER

AD-3



1 SB-1 SETBACK PLAN
SCALE: 1" = 300' (11x17 SIZE)
1" = 150' (22x34 SIZE)

NOTE:

1. THE PROPERTY LINES HEREON ARE APPROXIMATE BASED ON GIS DATA AND ARE FOR ORIENTATION PURPOSES ONLY. THEY DO NOT REPRESENT A PROPERTY/BOUNDARY DECISION BY A LAND SURVEYOR.

BULK REQUIREMENTS

CITY OF BEACON
ZONING DISTRICT: R1-120 – 1 FAMILY RESIDENTIAL
HISTORIC DISTRICT AND LANDMARK OVERLAY ZONE

	REQUIRED	EXISTING	PROPOSED
MINIMUM YARDS (TOWER)			
FRONT:	124 FT	–	992 FT
SIDE:	124 FT	–	311 FT
REAR:	124 FT	–	185 FT
MINIMUM YARDS (COMPOUND)			
FRONT:	75 FT	–	961 FT
SIDE:	50 FT	–	280 FT
REAR:	75 FT	–	151 FT
MAXIMUM TOWER HEIGHT:	150'	–	124 FT

verizon
1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.
Project Contact Info
36 British American Blvd. Phone: (518) 783-1630
Suite 101 (800) 828-8531
Latham, NY 12110 www.tectonicengineering.com

WORK ORDER NUMBER	DRAWN BY
11272.005	MQ

NO.	DATE	ISSUE
0	11/7/22	FOR REGULATORY
1	4/11/23	FOR ZONING
2	8/18/23	PER TOWN COMMENTS

RELEASED BY | DATE

STATE OF NEW YORK
STEVEN M. MATTHEWS
087507
LICENSED PROFESSIONAL ENGINEER

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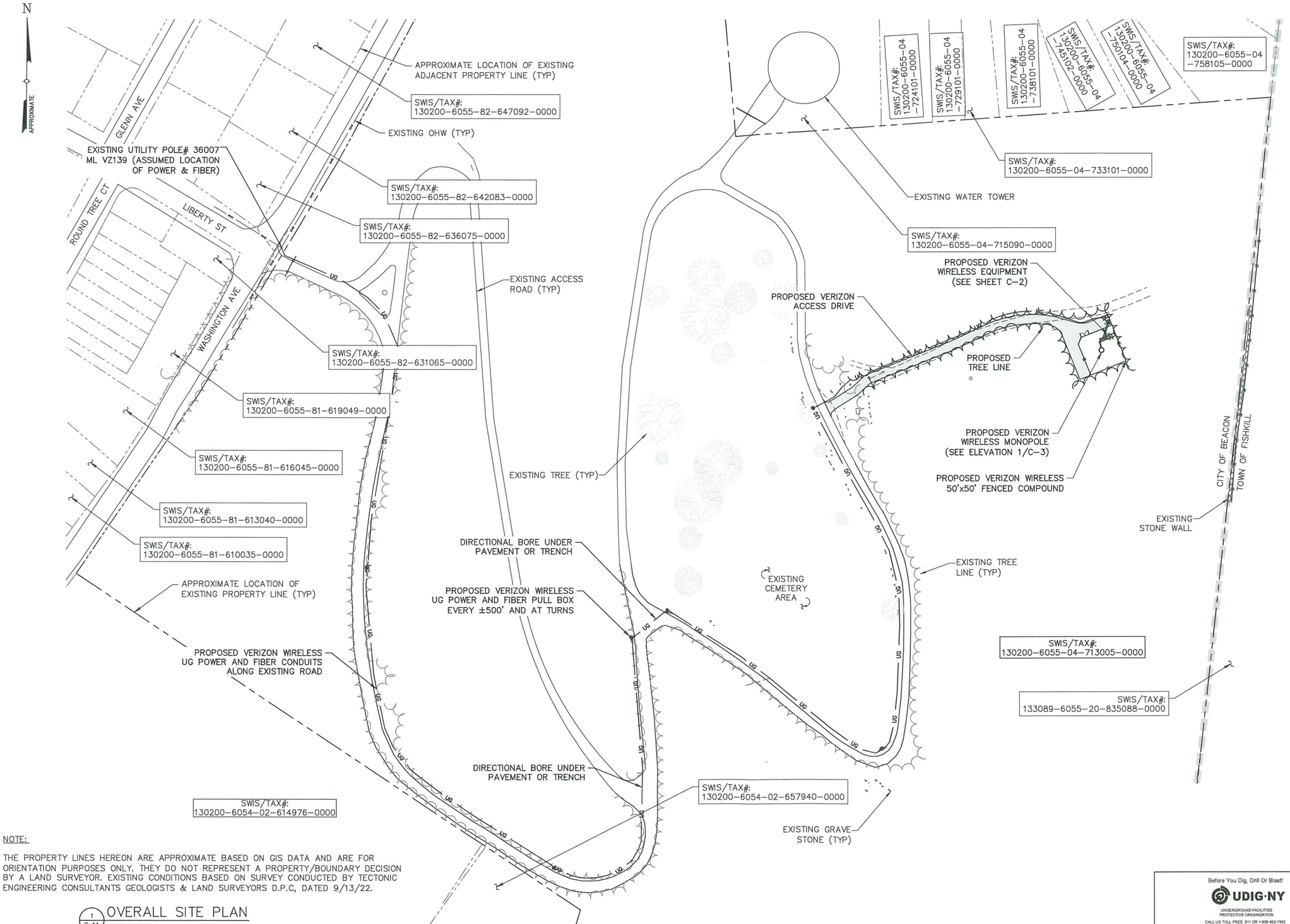
0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE
SETBACK PLAN

SHEET NUMBER
SB-1



NOTE:

THE PROPERTY LINES HEREON ARE APPROXIMATE BASED ON GIS DATA AND ARE FOR ORIENTATION PURPOSES ONLY. THEY DO NOT REPRESENT A PROPERTY/BOUNDARY DECISION BY A LAND SURVEYOR. EXISTING CONDITIONS BASED ON SURVEY CONDUCTED BY TECTONIC ENGINEERING CONSULTANTS GEOLOGISTS & LAND SURVEYORS D.P.C, DATED 9/13/22.

1 / C-1A OVERALL SITE PLAN

SCALE: 1" = 120' (11x17 SIZE)
1" = 60' (22x34 SIZE)

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UDIG-NY
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NY industrial code rule 753 requires no less than two working days notice, but not more than ten days notice.
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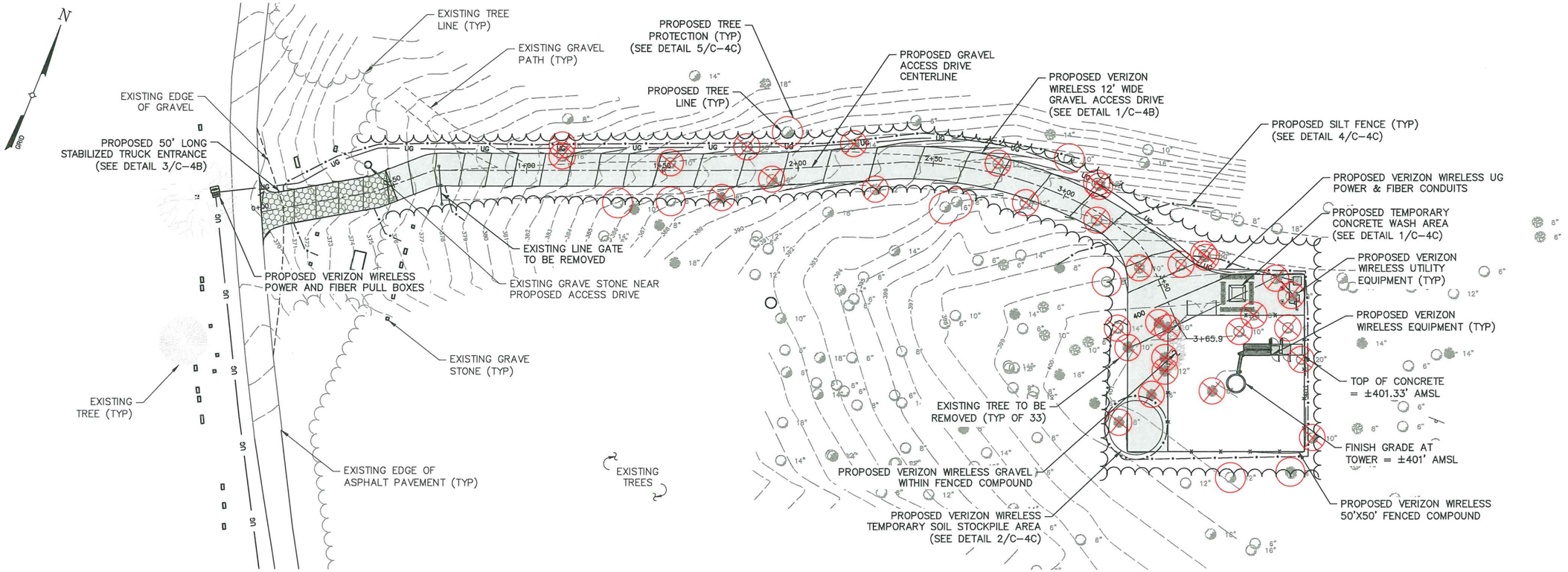
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SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

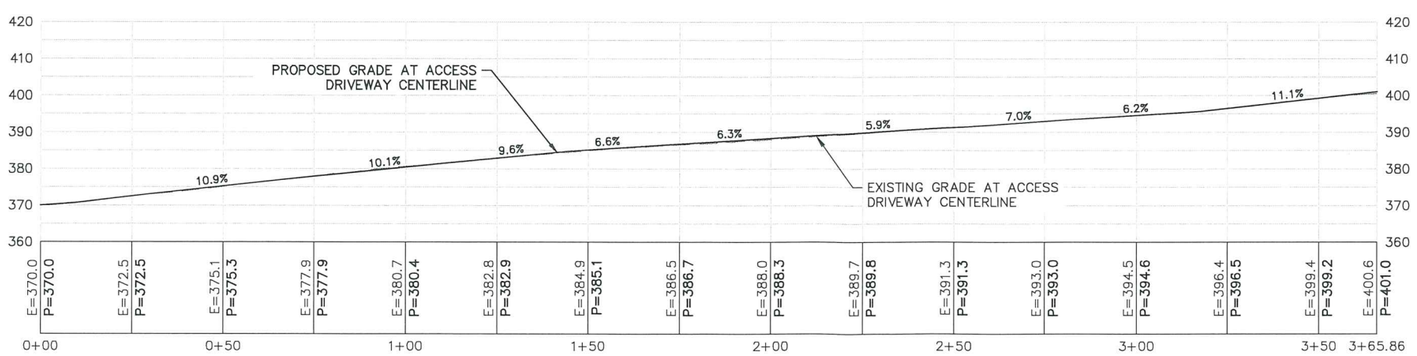
SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
C-1A



1 C-1B DRIVEWAY PLAN VIEW

SCALE: 1" = 40' (11x17 SIZE)
1" = 20' (22x34 SIZE)



2 C-1B DRIVEWAY PROFILE VIEW

SCALE: 1" = 40' (11x17 SIZE)
1" = 20' (22x34 SIZE)

ACCESS DRIVEWAY LENGTH = 366'±

UNDERGROUND UTILITY LENGTH = 2682'±

AREA OF DISTURBANCE = 9,515 SF ± (0.22 ACRES)

verizon

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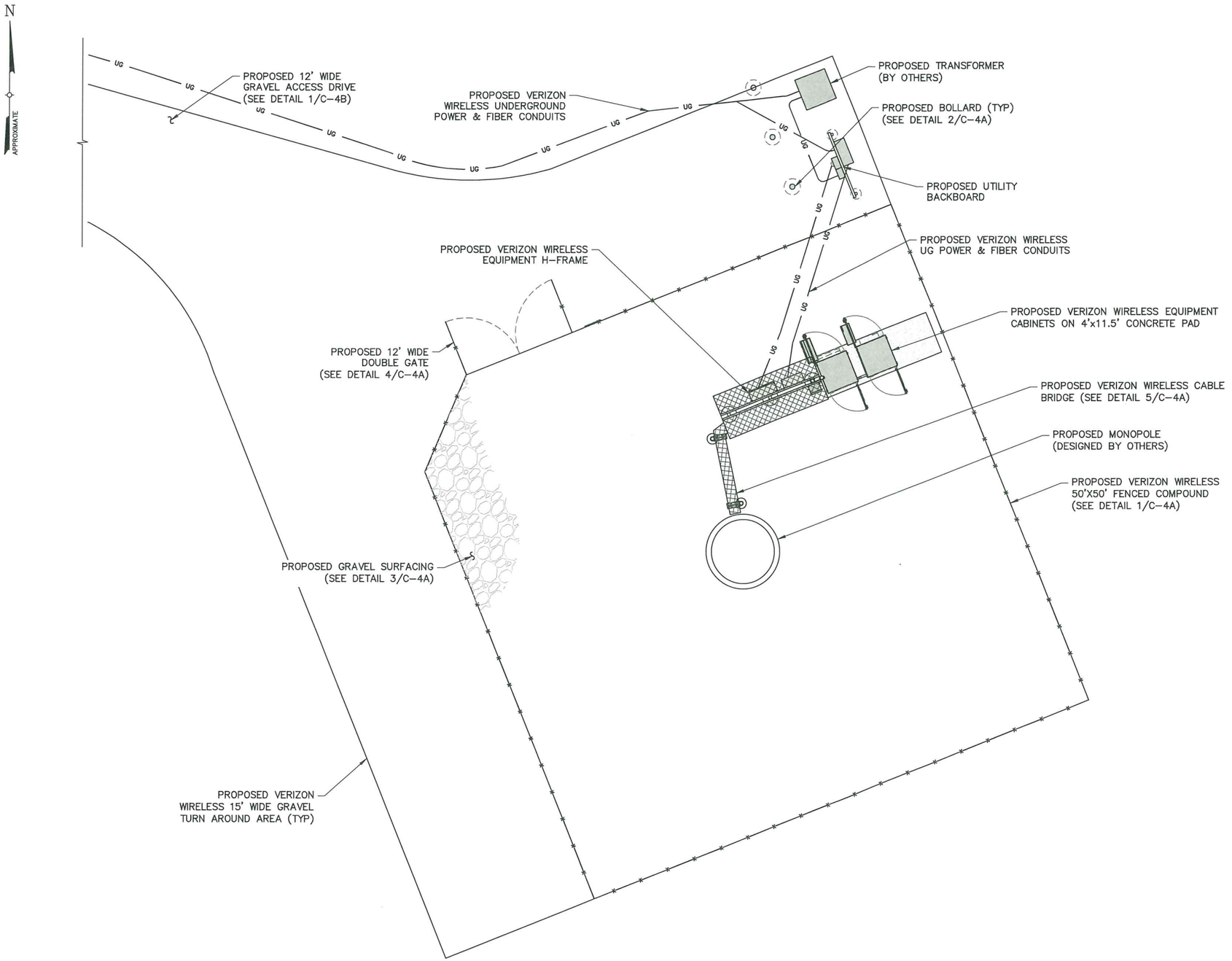
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SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE
GRADING & EROSION CONTROL PLAN

SHEET NUMBER
C-1B



1 C-2 SITE DETAIL PLAN

SCALE: 1" = 10' (11x17 SIZE)
1" = 5' (22x34 SIZE)

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LC: 432847

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CITY OF BEACON
DUTCHESS COUNTY
NY 12508

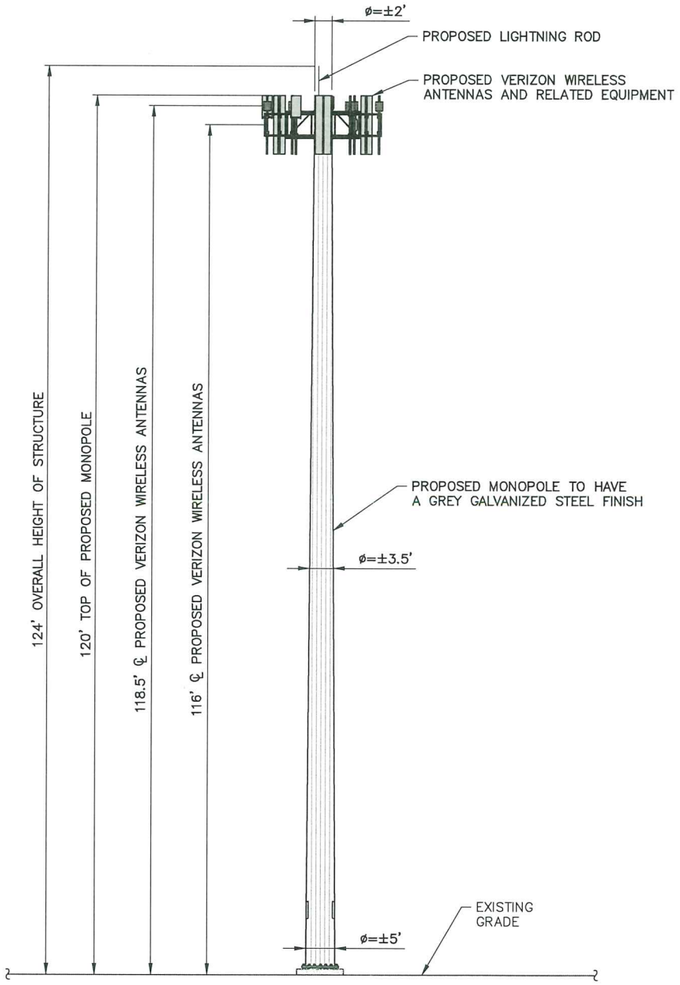
SHEET TITLE

SITE DETAIL PLAN

SHEET NUMBER

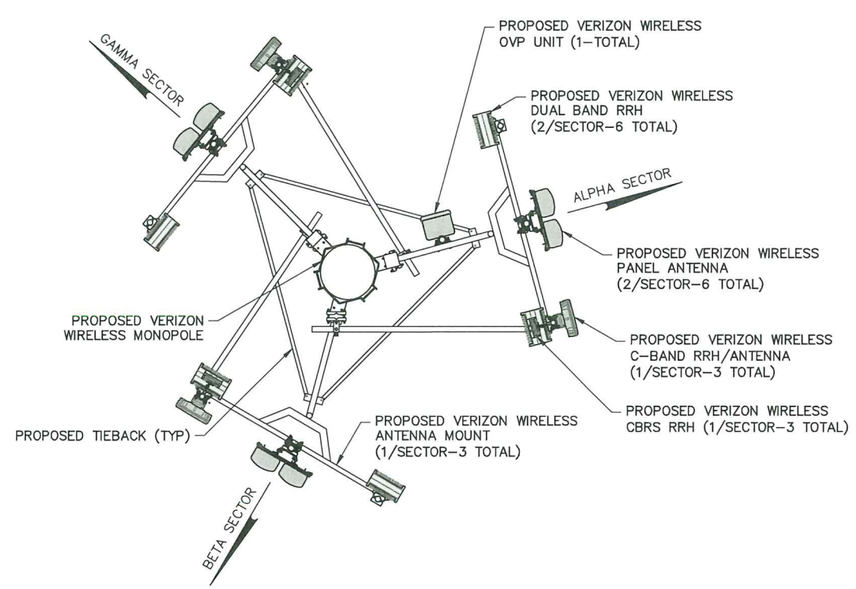
C-2

NOTE: TOWER SHALL HAVE A GALVANIZED STEEL FINISH, GREY IN COLOR.



NOTE: FINAL TOWER DESIGN, DETAILS, AND DIMENSIONS SHALL BE PROVIDED AS PART OF THE BUILDING PERMIT APPLICATION.

1 / C-3 ELEVATION
SCALE: 1" = 20' (11x17 SIZE)
1" = 10' (22x34 SIZE)



2 / C-3 ANTENNA ORIENTATION
SCALE: 3/4" = 1'-0" (11x17 SIZE)
3/8" = 1'-0" (22x34 SIZE)

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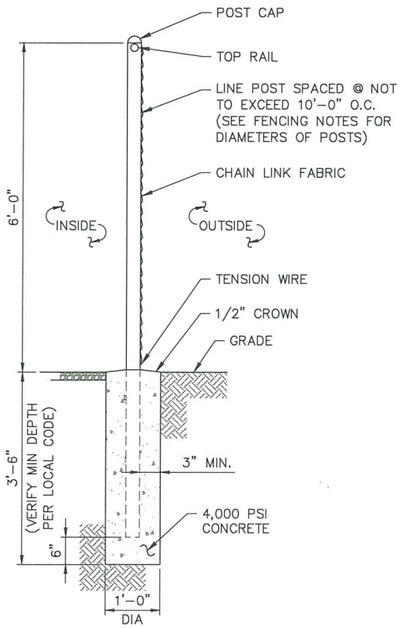
0 1 2 3
ORIGINAL SIZE IN INCHES

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RE PN: 20161509174
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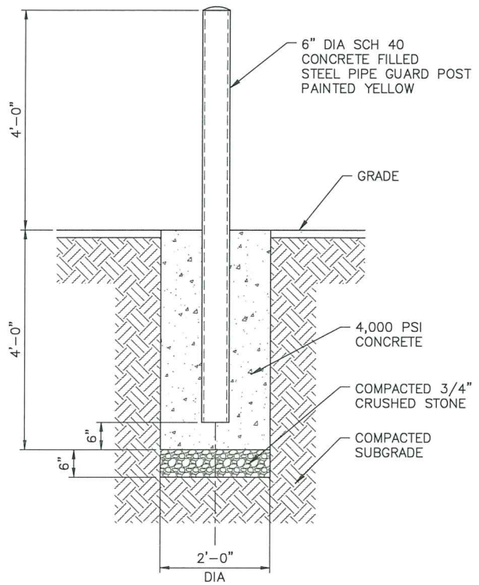
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NY 12508

SHEET TITLE
ELEVATION &
ORIENTATION PLAN

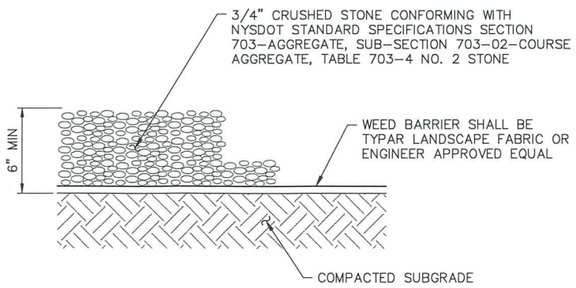
SHEET NUMBER
C-3



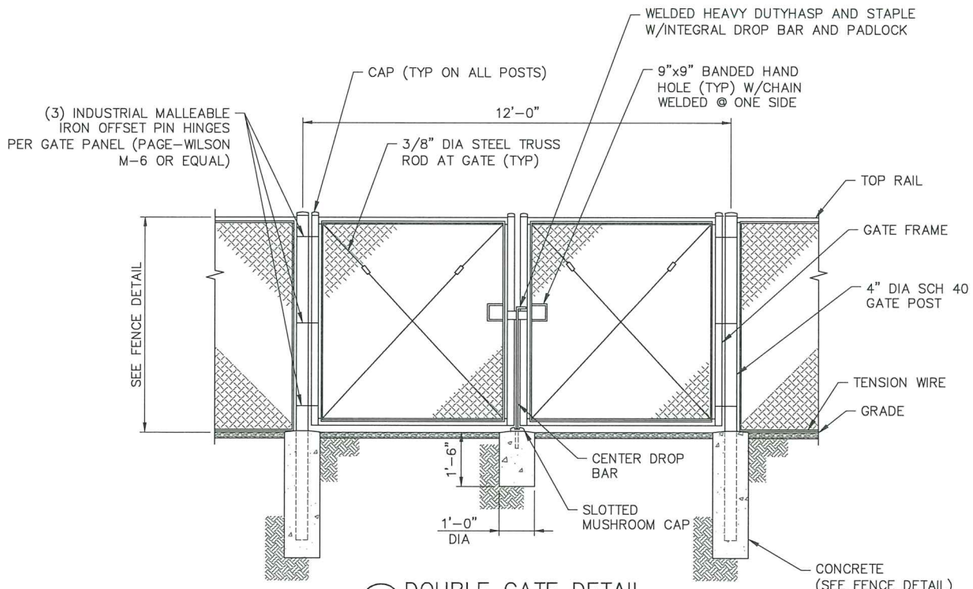
1 C-4A **FENCE DETAIL**
SCALE: 3/8" = 1'-0" (11x17 SIZE)
3/4" = 1'-0" (22x34 SIZE)



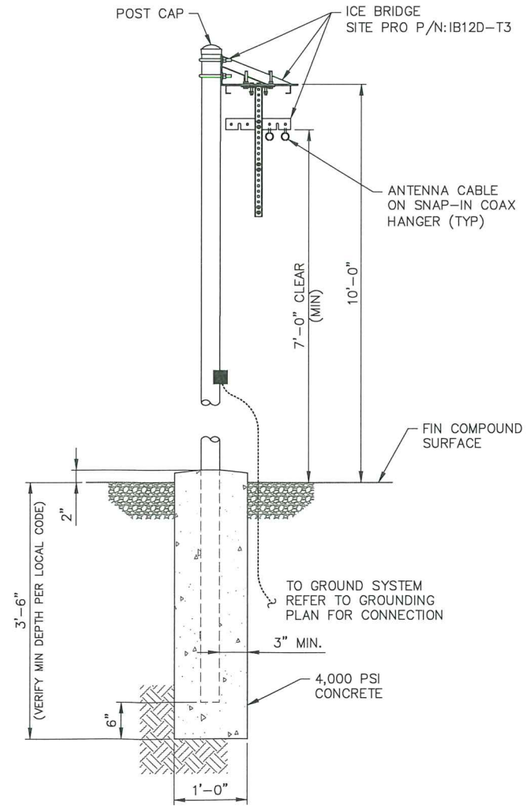
2 C-4A **BOLLARD DETAIL**
SCALE: 3/8" = 1'-0" (11x17 SIZE)
3/4" = 1'-0" (22x34 SIZE)



3 C-4A **GRAVEL SURFACING TREATMENT**
SCALE: 1/2" = 1'-0" (11x17 SIZE)
1 1/2" = 1'-0" (22x34 SIZE)



4 C-4A **DOUBLE GATE DETAIL**
SCALE: 1/4" = 1'-0" (11x17 SIZE)
1/2" = 1'-0" (22x34 SIZE)



5 C-4A **CABLE BRIDGE DETAIL**
SCALE: 1/2" = 1'-0" (11x17 SIZE)
1" = 1'-0" (22x34 SIZE)

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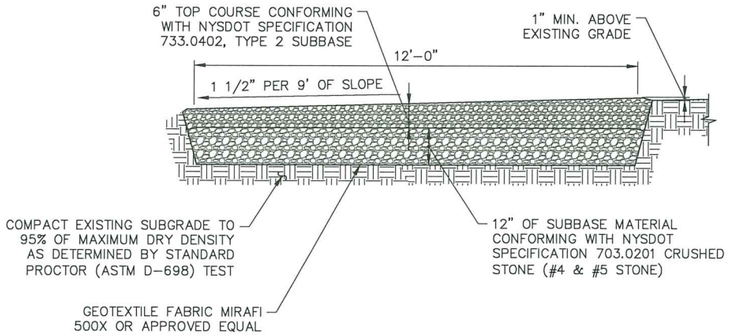
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SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
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CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE
SITE DETAILS

SHEET NUMBER
C-4A

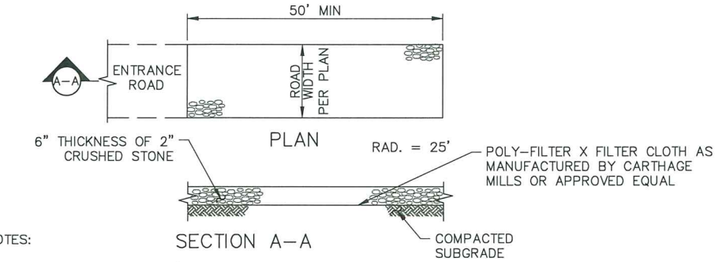


EARTH WORK SUBGRADE COMPACTION & SELECT GRANULAR FILL

1. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING & GRUBBING THE CONSTRUCTION SITE AND ROADWAY AREAS. THE CONTRACTOR SHALL COMPLY WITH THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT, AS PREPARED FOR THIS SITE, WHEN NECESSARY, FOR SITE WORK PREPARATION, & FOUNDATION WORK. AS A MINIMUM THE TOP 3" OF GRADE SHALL BE REMOVED, THE EXPOSED SUBGRADE COMPACTED AND GEOTEXTILE FABRIC INSTALLED AS REQUIRED FOR UNSTABLE SOIL CONDITION.
2. ALL SELECT GRANULAR FILL SHALL BE COMPACTED TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED PROCTOR TEST (ASTM D-1557) AND WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
3. CONTRACTOR TO ASSURE THAT EXISTING DRAINAGE PATTERNS ARE MAINTAINED.

1 / C-4B GRAVEL DRIVE CROSS SECTION
SCALE: 3/8" = 1'-0" (11x17 SIZE)
3/4" = 1'-0" (22x34 SIZE)

3 / C-4B LIGHTING PLAN
SCALE: NTS



NOTES:

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET
3. THICKNESS - NOT LESS THAN SIX INCHES
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
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 SHALL 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 MEASURES 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. IF ACCUMULATED SOIL DOES NOT COME OFF BY WAY OF STABILIZED CONSTRUCTION ENTRANCE, THE CONTRACTOR SHALL KNOCK OFF ACCUMULATED SOIL BY MANUAL METHODS UPSLOPE OF A SILT FENCE BARRIER.
9. SEDIMENT TRAPPING - SILT FENCE BARRIER SHALL BE INSTALLED DOWN SLOPE OF CONSTRUCTION ENTRANCE TO CATCH ANY SEDIMENT THAT COULD POTENTIALLY FALL OFF OF CONSTRUCTION EQUIPMENT AND/OR VEHICLES.
10. PERIODIC INSPECTIONS AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

3 / C-4B STABILIZED CONSTRUCTION ENTRANCE
SCALE: NTS

LITHONIA LIGHTING

Catalog Number	
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE — The OLFL provides years of maintenance-free general illumination for residential or commercial outdoor applications such as yards, driveways, patios, loading areas and warehouses.

CONSTRUCTION — Rugged cast aluminum, corrosion-resistant housing in bronze finish. Tempered glass lens is fully gasketed to protect LEDs and keep out moisture, dirt and bugs. 120V driver operates at 60 Hz, 0.23 amps, 25 watts. Rated for outdoor installations, -40°C minimum ambient.

OPTICS — High-performance LEDs produce 1900 lumens and maintain 70% of light output at 50,000 hours of service. (LED lifespan based on IESNA LM-80-08 results and calculated per IESNA TM-21-11 methodology.) Precision optics and reflector for maximum light output. See Lighting Facts Labels for specific fixture performances.

INSTALLATION — Mounts easily to existing junction box on wall or under eave. Adjustable head allows precise illumination.

LISTINGS — UL Listed to US and Canadian safety standards for wet locations. ENERGY STAR® certified product.

WARRANTY — 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

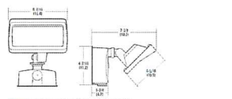
Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Outdoor General Purpose

OLFL

LED FLOODLIGHT



All dimensions are inches (centimeters) unless otherwise indicated.

ORDERING INFORMATION	All configurations of this product are considered "standard" and have short lead times.		Example: OLFL 14 PE BZ	
OLFL	14		PE	BZ
Series	Model / Color temperature (CCT)*	Voltage	Control	Finish
OLFL	14 4000K	(blank) 120V	SHUT OFF DIAL TIMER INSTALLED BY VERIZON WIRELESS CONTRACTOR	BZ Bronze

Notes
1. Nominal Correlated Color Temperature (CCT) per ANSI C78.377-2008.

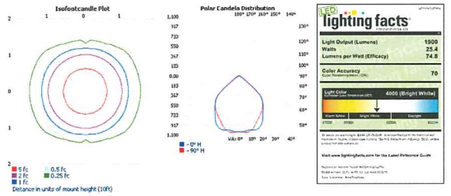
DECORATIVE INDOOR & OUTDOOR — OLFL 14

OLFL LED Floodlight

PHOTOMETRIC DIAGRAMS

To see complete photometric reports or download .ies files for this product, visit the OLFL home page on www.Lithonia.com. Tested in accordance with IESNA LM82'9 and LM2'80 standards. Actual wattage may differ by +/- 8% when operating between 120V +/- 10%.

OLFL 14



NOTES:

1. LIGHT SHALL BE EQUIPPED WITH A DOWN-SHIELD TO LIMIT THE LIGHT FIELD TO THE EQUIPMENT AREA ONLY.
2. LIGHT SHALL ONLY BE USED BY VERIZON WIRELESS TECHNICIANS DURING EMERGENCY MAINTENANCE OPERATIONS
3. LIGHT SHALL BE PROVIDED WITH A SHUT OFF DIAL TIMER. THIS IS A FAIL SAFE SO THE LIGHT AUTOMATICALLY SHUTS OFF WHEN THE TIME RUNS OUT IN THE EVENT THE TECHNICIAN FORGETS TO TURN THE LIGHT OFF WHEN THEY LEAVE THE SITE.
4. PHOTO TEMPERATURE SHALL BE 4000K.

LITHONIA LIGHTING — OLFL 14

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4 / C-4B PROPOSED LIGHT SPECIFICATIONS
SCALE: NTS

verizon
1275 JOHN STREET, SUITE 100
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2	8/18/23	PER TOWN COMMENTS

RELEASED BY	DATE

STATE OF NEW YORK · STEVEN M. MATTEWS · 087507 · LICENSED PROFESSIONAL ENGINEER

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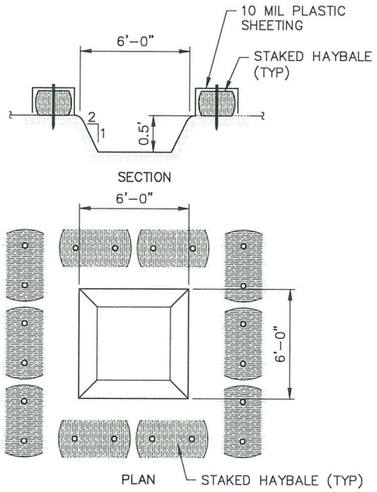
0 1 2 3
ORIGINAL SIZE IN INCHES

SITE INFORMATION
HEDGEWOOD
RE PN: 20161509174
LC: 432847

SITE ADDRESS
375 WASHINGTON AVE
CITY OF BEACON
DUTCHESS COUNTY
NY 12508

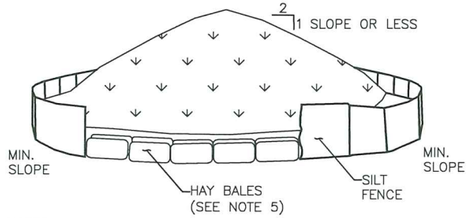
SHEET TITLE
SITE DETAILS

SHEET NUMBER
C-4B



1 C-4C TEMPORARY CONCRETE WASH

SCALE: NTS

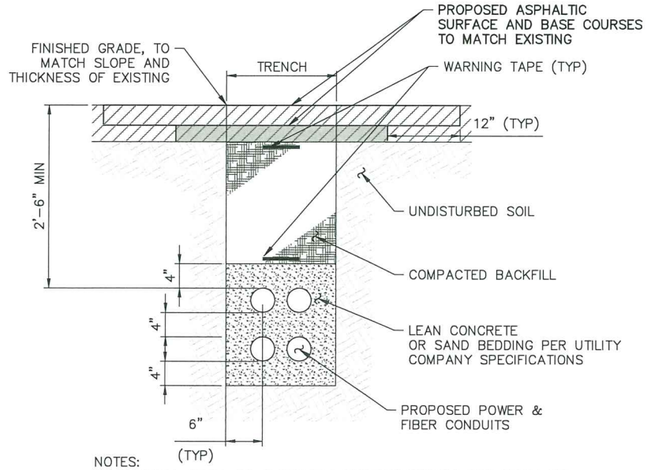


NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.
5. HAYBALES TO BE USED WHERE STOCKPILES ARE LOCATED ON PAVED AREAS.

2 C-4C TEMPORARY SOIL STOCKPILE DETAIL

SCALE: NTS

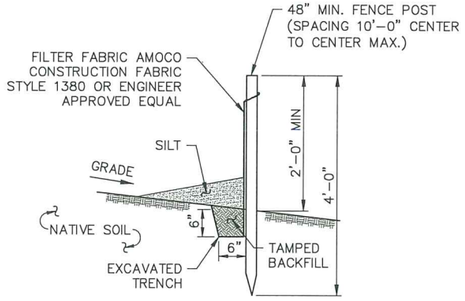


NOTES:

1. BACKFILL SHALL BE CLEAN FILL WITHOUT STONES AND SHALL BE THOROUGHLY COMPACTED IN 12" LAYERS BY TAMPING OR APPROVED EQUAL METHOD. NO BELLYING OF TRENCH SHALL BE ALLOWED.
2. SCH 40 PVC CONDUIT SHALL BE USED BELOW GRADE.
3. SCH 80 PVC CONDUIT SHALL BE USED UNDER ROADWAY.

3 C-4C MAIN ELECTRIC/FIBER UTILITY TRENCH DETAIL

SCALE: 1/2" = 1'-0" (11x17 SIZE)
1" = 1'-0" (22x34 SIZE)

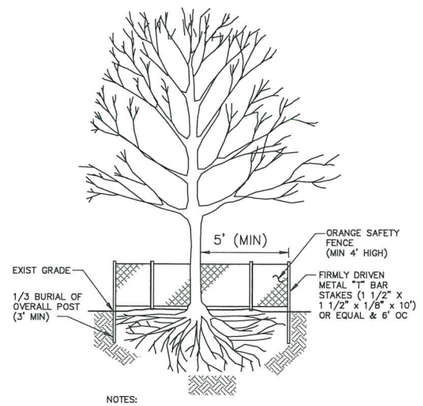


NOTES:

1. SILT FENCE SHALL BE MAINTAINED IN PLACE DURING CONSTRUCTION AND SOIL STABILIZATION PERIOD.
2. CONTRACTOR SHALL CONSTRUCT SILT FENCE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
3. EXCAVATE TRENCH 6" WIDE X 6" DEEP. BURY BOTTOM 12" OF FABRIC AND TAMP IN PLACE.
4. WHEN FENCE IS NO LONGER NEEDED, THE ACCUMULATED SILT, ALL THE POSTS AND FABRIC SHALL BE REMOVED AND TRENCH BACK FILLED WITH TOPSOIL AND SEEDED.

4 C-4C SILT FENCE DETAIL

SCALE: NTS



NOTES:

1. BARRIER PREVENTS COMPACTION OF SOIL AROUND ROOTS BY CONSTRUCTION EQUIPMENT.
2. REMOVE ALL FENCING AND STAKES IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION.
3. OPTIONAL: 2"x6" WOOD FRAMING BUILT AS SQUARE AROUND TREE.

5 C-4C TREE PROTECTION DETAIL

SCALE: NONE

verizon

1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C.
Project Contact Info
36 British American Blvd. Suite 101
Latham, NY 12110
Phone: (518) 783-1630
(800) 829-8531
www.tectonicengineering.com

WORK ORDER NUMBER	DRAWN BY
11272.005	MQ

NO.	DATE	ISSUE
0	11/7/22	FOR REGULATORY
1	4/11/23	FOR ZONING
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LC: 432847

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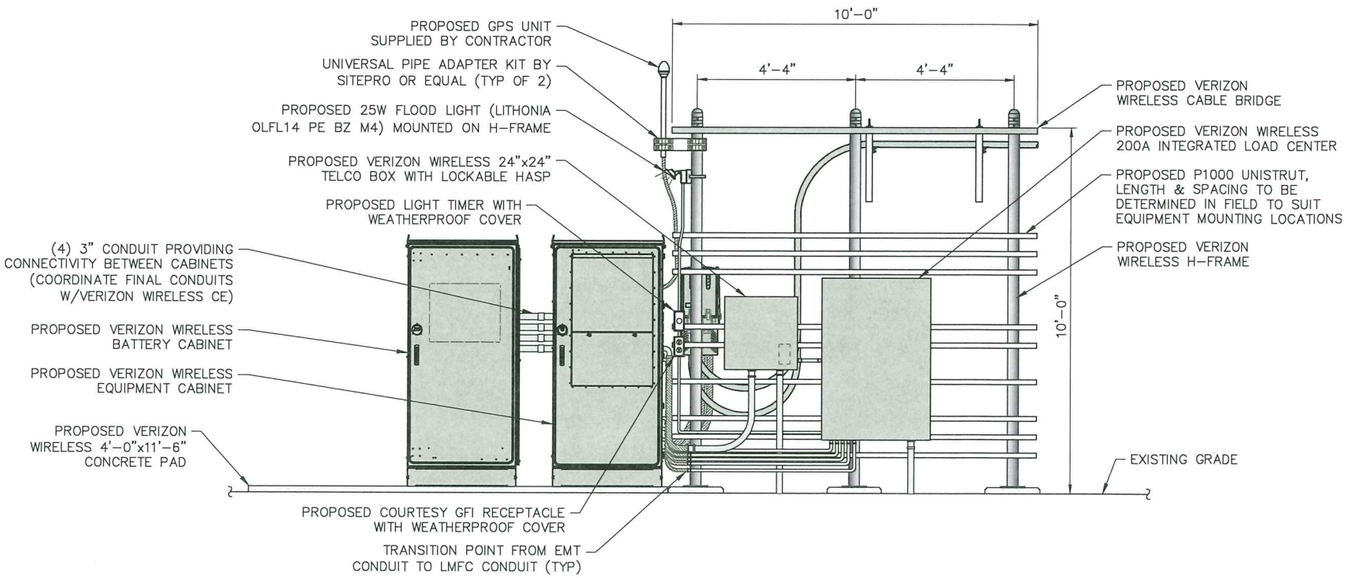
375 WASHINGTON AVE
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DUTCHESS COUNTY
NY 12508

SHEET TITLE

SITE DETAILS

SHEET NUMBER

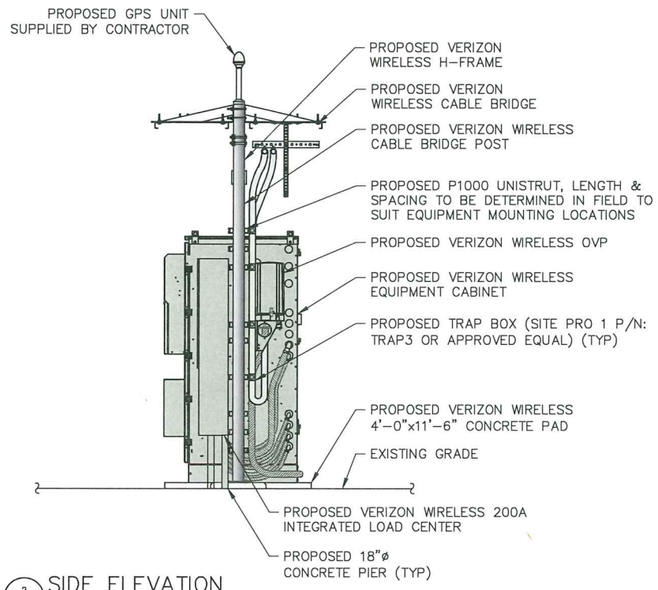
C-4C



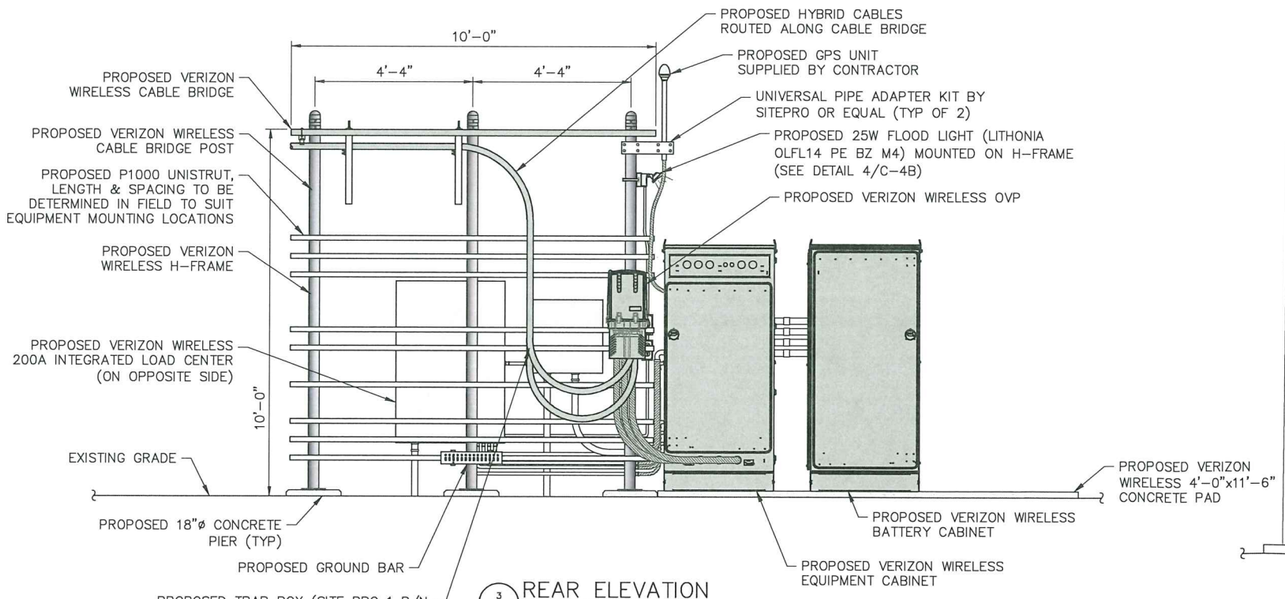
LEGEND

	EMT CONDUIT
	LMFC CONDUIT

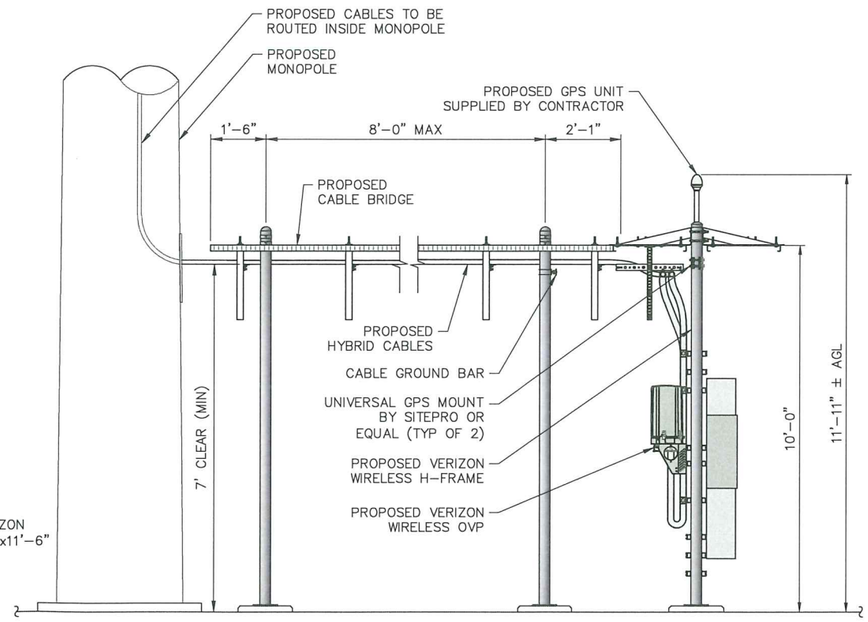
1 / C-5 FRONT ELEVATION
SCALE: 1/4" = 1'-0" (11x17 SIZE)
1/2" = 1'-0" (22x34 SIZE)



2 / C-5 SIDE ELEVATION
SCALE: 1/4" = 1'-0" (11x17 SIZE)
1/2" = 1'-0" (22x34 SIZE)



3 / C-5 REAR ELEVATION
SCALE: 1/4" = 1'-0" (11x17 SIZE)
1/2" = 1'-0" (22x34 SIZE)



4 / C-5 EQUIPMENT ELEVATION
SCALE: 1/4" = 1'-0" (11x17 SIZE)
1/2" = 1'-0" (22x34 SIZE)

verizon
1275 JOHN STREET, SUITE 100
WEST HENRIETTA, NY 14586

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CITY OF BEACON
DUTCHESS COUNTY
NY 12508

SHEET TITLE
EQUIPMENT ELEVATIONS

SHEET NUMBER
C-5

Young / Sommer LLC

ATTORNEYS AT LAW

EXECUTIVE WOODS, FIVE PALISADES DRIVE, ALBANY, NY 12205
Phone: 518-438-9907 • Fax: 518-438-9914

www.youngsommer.com

RECEIVED 8/11/23 MP

Writer's Telephone Extension: 258
solson@youngsommer.com

August 10, 2023

Via Federal Express
Planning Board
City of Beacon
One Municipal Plaza
Suite One
Beacon NY 12508

Re: Application of Verizon Wireless for a Personal Wireless Service Facility at 375 Washington Avenue (SBL 6055-04-+713005)

Dear Board Members:

Enclosed are fifteen (15) copies of the completed Visual Resource Evaluation prepared by Tectonic Engineering dated July 25, 2023 for the above-referenced application.

Please place this matter on the agenda for the September 12, 2023 Planning Board meeting.

Very truly yours,

Scott P. Olson

Encl.

VISUAL RESOURCE EVALUATION

PROPOSED 120' TALL TELECOMMUNICATIONS STRUCTURE

Hedgewood
375 Washington Avenue
City of Beacon
Dutchess County, New York 12508

Submitted by:



1275 John Street, Suite 90
West Henrietta, NY 14586

Prepared by:



70 Pleasant Hill Road
Mountainville, New York 10953
845-534-5959
845-534-5999 FAX

July 25, 2023

VISUAL RESOURCE EVALUATION

Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C. (Tectonic), was contracted by Verizon Wireless, to conduct a "Visual Resource Evaluation" to determine which areas within the City of Beacon and the surrounding areas will contain views of the proposed 120 foot tall (124 overall height) wireless telecommunications structure.

Setting:

The proposed site is located at 375 Washington Avenue, in the City of Beacon, Dutchess County, New York 12508. The surrounding land use is predominantly wooded/undeveloped land with scattered residential, commercial and industrial development. Within the study area the topography ranges in elevation from approximately sea level to 1,620' +/- Above Mean Sea Level. The predominant forest trees are mixed deciduous and coniferous, with an estimated height of 60 to 70 feet. The field study for this visual resource evaluation was conducted in the middle of the summer season during leaf on conditions.

Methodology:

On July 17, 2023, Tectonic conducted a field investigation for the purpose of evaluating the viewshed associated with the proposed installation of the 120-foot tall monopole tower (structure). The structure will have a total height of 124-feet above ground level (AGL) with the addition of the lighting rod. Conditions were clear**,** approximately 75°-85°, with wind speeds of approximately 0-7 mph in the morning. The study area consisted of a two (2) mile radius from the project site. The two (2) mile radius generally consists of wooded/undeveloped areas, residential properties, commercial properties, and recreational properties. Creating a viewshed greater than a two (2) mile radius is generally unwarranted. Due to the fact that objects tend to appear smaller the farther they are from the viewer, in this case, the structure would appear very small, if visible at all, from a distance of more than two (2) miles.

The methodology utilized during this field investigation is referred to as a "balloon test." The height of the proposed structure was simulated by floating a three (3) foot diameter, helium-filled weather balloon at 120 feet AGL. The 120-foot height was utilized during the balloon test as this is the proposed height of the structure.

Prior to being on site, desktop-level review viewshed maps for a two (2) mile radius from the proposed tower location were computer generated utilizing the ArcGIS Desktop/ArcMap program, digital elevation data, and land cover data. The digital elevation data was provided by New York State via the digital elevation models (DEMs) produced cooperatively between the United States Geological Service and New York State's Department of Environmental Conservation. The DEM represents topography only data, without buildings, structures, or other development on the elevation model. As such, the Multi-Resolution Land Characteristics (MRLC) land cover data, cooperatively compiled by federal agencies, was utilized to provide approximate land cover data information; this data set was up to date as of 2019. This land cover data provides information associated with various types of development densities and vegetation, including types of forests, woody wetlands, and shrublands. The land cover data associated with the approximate locations of primarily deciduous forests, evergreen forests, mixed forests, and woody wetlands, as well as both medium and heavy development areas within the study area were extracted from this comprehensive land data source into a raster form. Once extracted, an estimate was created for the height of the trees within these areas. This extracted forest cover location data along with the estimated tree and building height elevations were then added onto a copy of the topographic only DEM

in order to represent forested/developed areas within the study area, creating a DEM that represents the topography, developed, and vegetated areas within the study area.

Next, the tower location was generated within ArcGIS Desktop with the proposed tower elevations, in a format that could be utilized by ArcGIS Desktop in order to run the Spatial Analyst "Viewshed" tool to evaluate surface areas within the two-mile study area where the tower could potentially be seen by observers within the study area. This tool takes into consideration the average height of a person above the ground surface at the observer locations when looking towards the proposed tower location, and makes note where something, either topography, development, or vegetation, will be blocking the tower from sight by the person standing at that location. This process is run twice – once for topography only and once for the combined topography, development, and vegetation. This method ensures that areas "blocked by topography" are differentiated from areas "blocked by vegetation". Areas "blocked by topography" are places where the tower will be blocked from view to an observer due to intervening topography, such as hills, mountains, or other features. Areas "blocked by vegetation" are areas where the tower will potentially not be visible to an observer due to vegetated land cover or developed with structures. Colors are used to differentiate between areas from which the structure will be visible (White/No color) and areas from which a view of the structure will be blocked by topography (Red) or vegetation/development (Yellow). These computer-generated maps were created in order to provide the best- and worse-case scenarios the different heights would have on visibility within the two (2) mile study area.

Tectonic traveled the study area along publicly accessible roadways to confirm the potential visibility of the structure based on the computer-generated viewshed map. Areas delineated as "blocked by topography" and "blocked by vegetation" were confirmed by viewing the site from public roadways within a two (2) mile radius. It was found that the topography only computer-generated viewshed map was correct and accurate within the areas surveyed, and that the balloon was in fact not visible from areas indicated to be blocked by topography. The combined computer-generated and in-field review of the viewshed analysis resulted in the discovery that the proposed structure would be visible from only a select few locations within the two (2) mile radius, represented on the attached Combined Viewshed Map. Photograph locations are shown on the Photographic Log Map. The in-field review noted the visibility of the structure will be limited to the surrounding area where vegetation has been cleared along Henry Street, Pine View Road, Matteawan Road, Fishkill Avenue, and Saint Joachim's Cemetery.

Photographs were taken from various vantage points within the study area to document the actual view towards the proposed structure, as well as the general character of the viewshed. Each photograph attached includes a brief description of the location and orientation from which it was taken, and the photo number corresponds to the key number on the attached photograph log map.

Process:

Photographs of the weather balloon from the viewpoints noted were taken with a Nikon D3200 using a 18-55mm length lens set to ±33mm, a focal length equivalent to 50mm on a full frame camera. A full frame camera with a 50mm lens has traditionally been accepted as the best focal length to mimic the view as observed from the human eye. A three (3) foot diameter red helium filled balloon was floated to a height of 120 feet.

In order to analyze the potential visual impacts of the proposed structure, Tectonic took photographs of the balloons from locations within the search area for the purpose of preparing simulations of the

proposed structure. Photographs for which there is a corresponding simulated view (#3, 6, 25, 27, and 36) of the proposed structure were produced by first creating a 3-dimensional (3D) structure based on the proposed design plans and scaling, then mimicking the site conditions and view looking towards the proposed site where the marker balloon was set to a height of 120' AGL. This 3D structure was then rendered to produce a digital image of the proposed structure to scale and at the proposed perspective. The digital images of the field photograph and rendered image were then merged and scaled through the use of the image editing software, "Krita", an open-source Adobe Photoshop alternative. During this process, the rendered structure's height and width is checked against the known height and width by scaling the similar type structure using measurements obtained from the marker balloon. The similar type structure used has an antenna array that spans eight (8) feet high and eight (8) feet wide. By measuring the balloon diameter of three (3) foot, one can determine the proper scaling of the antenna array by multiplying the balloon height and width by a factor of 2.6667, or by 266.67%. The image and structure are then composited together and the image exported, producing the final digital image.

We note that the simulations provided are artistic renderings of views from chosen locations and should not be interpreted to be the actual view of the tower following construction. While we utilize best efforts to simulate the view of the proposed tower from a particular location, some variance between the simulations, manufacturer products, and final installed towers is to be expected.

Conclusion:

The Viewshed Analysis Map presents a conservative delineation of the viewshed within the study area and along public roadways and public parks. The photo simulations have been prepared per the methodology described above and provide a general depiction of the appearance of the structure from the photographed viewpoints.

Sincerely,
TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C.

By:

Dina Peoples
GIS Specialist

Reviewed By:

Lori A. Bart
Environmental Project Manager

N
W E
S

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Legend

- Proposed Tower Location
- Tower Location (1 mile buffer)

Topographic Viewshed

- Not Visible due to Topography
- Potentially Visible

Field Vegetative Viewshed

- Not Visible due to Vegetation
- Potentially Visible/Not Publicly Accessible

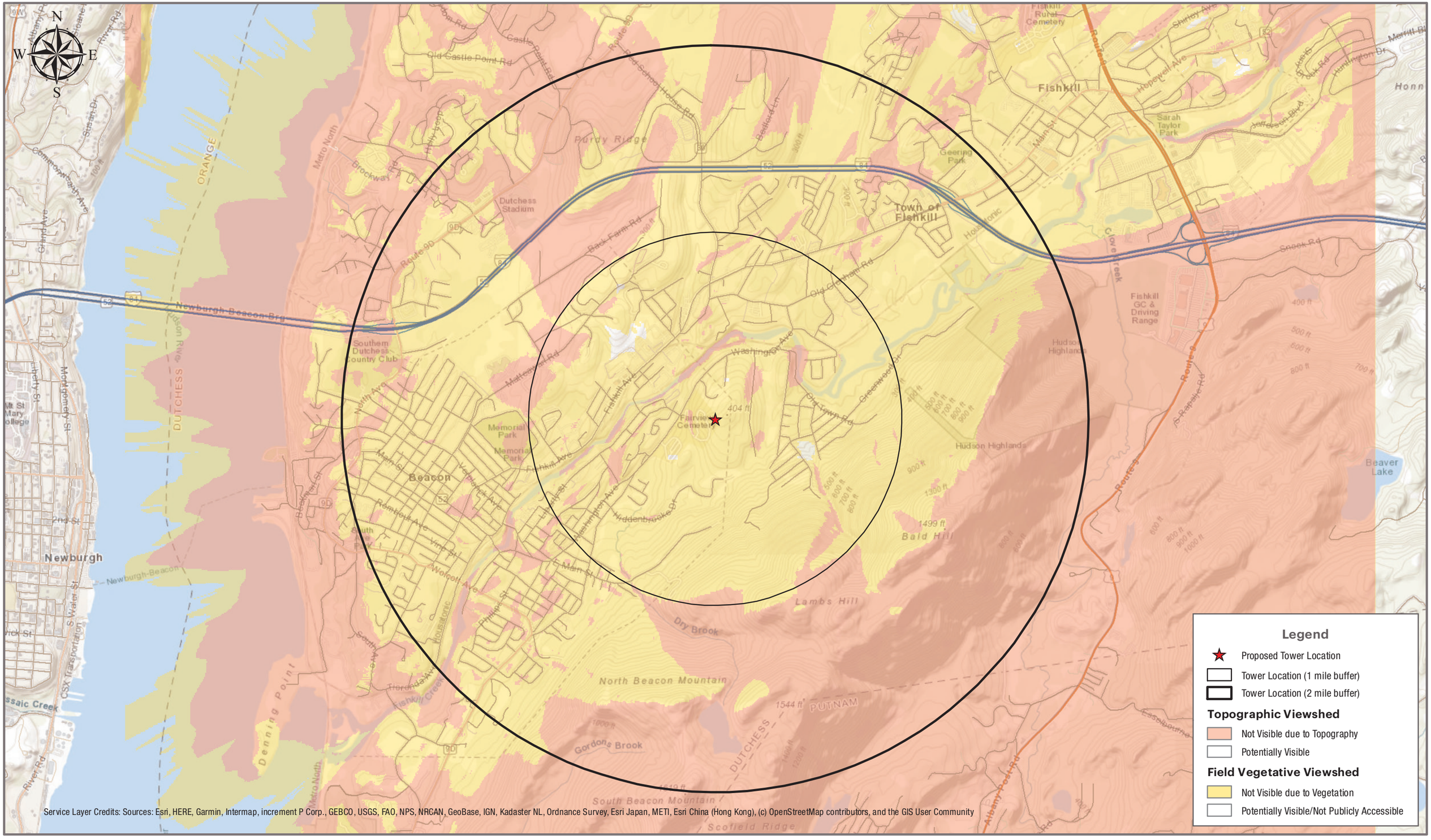
Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

120ft Tower Viewshed
Field Conditions Update for
Publicly Accessible Areas

Hedgewood
375 Washington Ave.
Beacon, NY 12508

0 0.125 0.25 0.5 Miles

Combined
Viewshed Map
11272.005



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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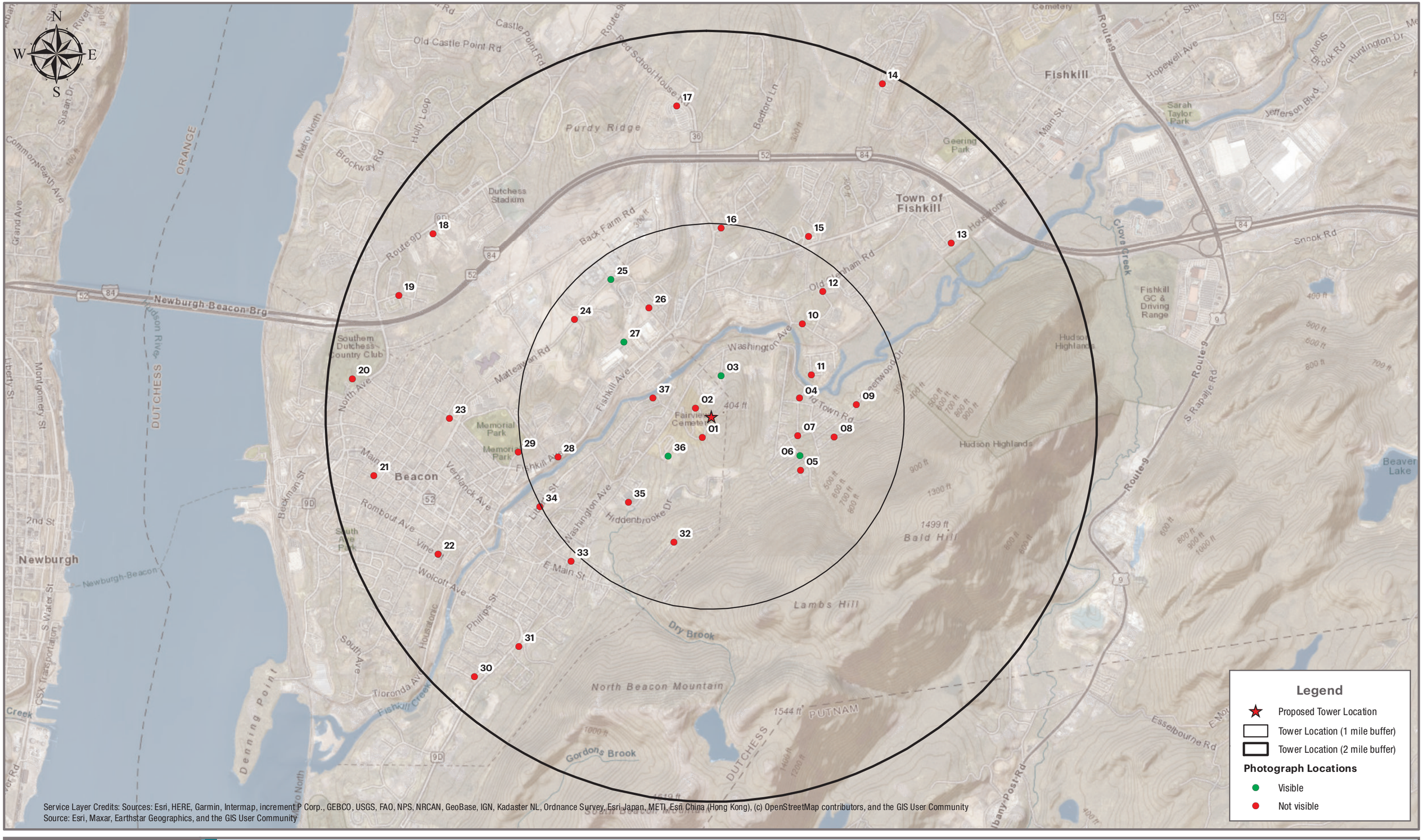
120ft Tower Viewshed
Field Conditions Update for
Publicly Accessible Areas

Hedgewood
375 Washington Ave.
Beacon, NY 12508

0 0.25 0.5 1 Miles

Combined
Viewshed Map

11272.005



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Legend

- Proposed Tower Location
- Tower Location (1 mile buffer)
- Tower Location (2 mile buffer)

Photograph Locations

- Visible
- Not visible

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120ft Tower

Hedgewood
375 Washington Ave.
Beacon, NY 12508

0 0.25 0.5 1 Miles

Photograph Log Map
11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from S end of Fairview Cemetery.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.11 miles.

P-1

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from N end of Fairview Cemetery.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.09 miles.

P-2

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking south from Henry Street.
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is ±0.21 miles.

P-3

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking south from Henry Street.
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is ±0.21 miles.

S-3

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from Brookside Rd.
Proposed installation will not be visible from this location.

P-4

Distance from the photographic location to the proposed installation is ±0.47 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northwest from Granview Rd.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.54 miles.

P-5

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northwest from Pineview Rd.
Proposed installation will be visible from this location.

P-6

Distance from the photographic location to the proposed installation is ±0.50 miles.

11272.005



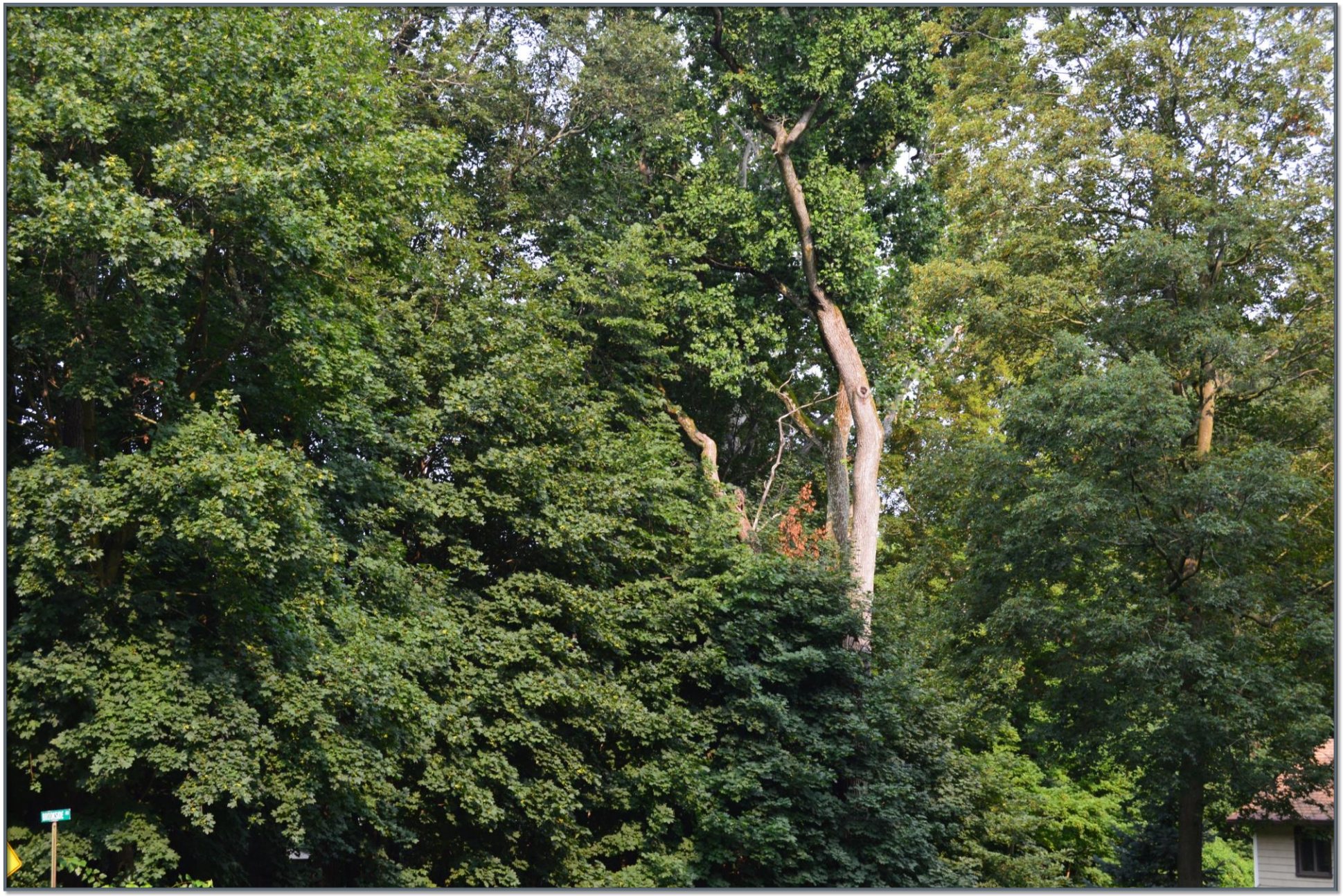
Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northwest from Pineview Rd.
Proposed installation will be visible from this location.

S-6

Distance from the photographic location to the proposed installation is ±0.50 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking west from Willow Rd.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.46 miles.

P-7

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking west from Fairview Rd.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.65 miles.

P-8



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking west from Greenwood Dr.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.76 miles.

P-9

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from Petticoat Lane.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.67 miles.

P-10

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from Birch Drive.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.56 miles.

P-11

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from Chase Drive.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.87 miles.

P-12

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from the intersection of Van Steuben & Kip Dr.
Proposed installation will not be visible from this location.

P-13

Distance from the photographic location to the proposed installation is ±0.56 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from Ridge Rd.
Proposed installation will not be visible from this location.

P-14

Distance from the photographic location to the proposed installation is ±1.94 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southwest from 100.7 WHUD parking lot.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.06 miles.

P-15



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking south from McGrath Blvd.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.98 miles.

P-16

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking south from Downstate Correctional Facility Entrance.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.62 miles.

P-17



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from Vellano Dr.
Proposed installation will not be visible from this location.

P-18

Distance from the photographic location to the proposed installation is ±1.73 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from Dogwood Lane.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.74 miles.

P-19

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from intersection of N Ave & Talbot Ave.
Proposed installation will not be visible from this location.

P-20

Distance from the photographic location to the proposed installation is ±1.87 miles.



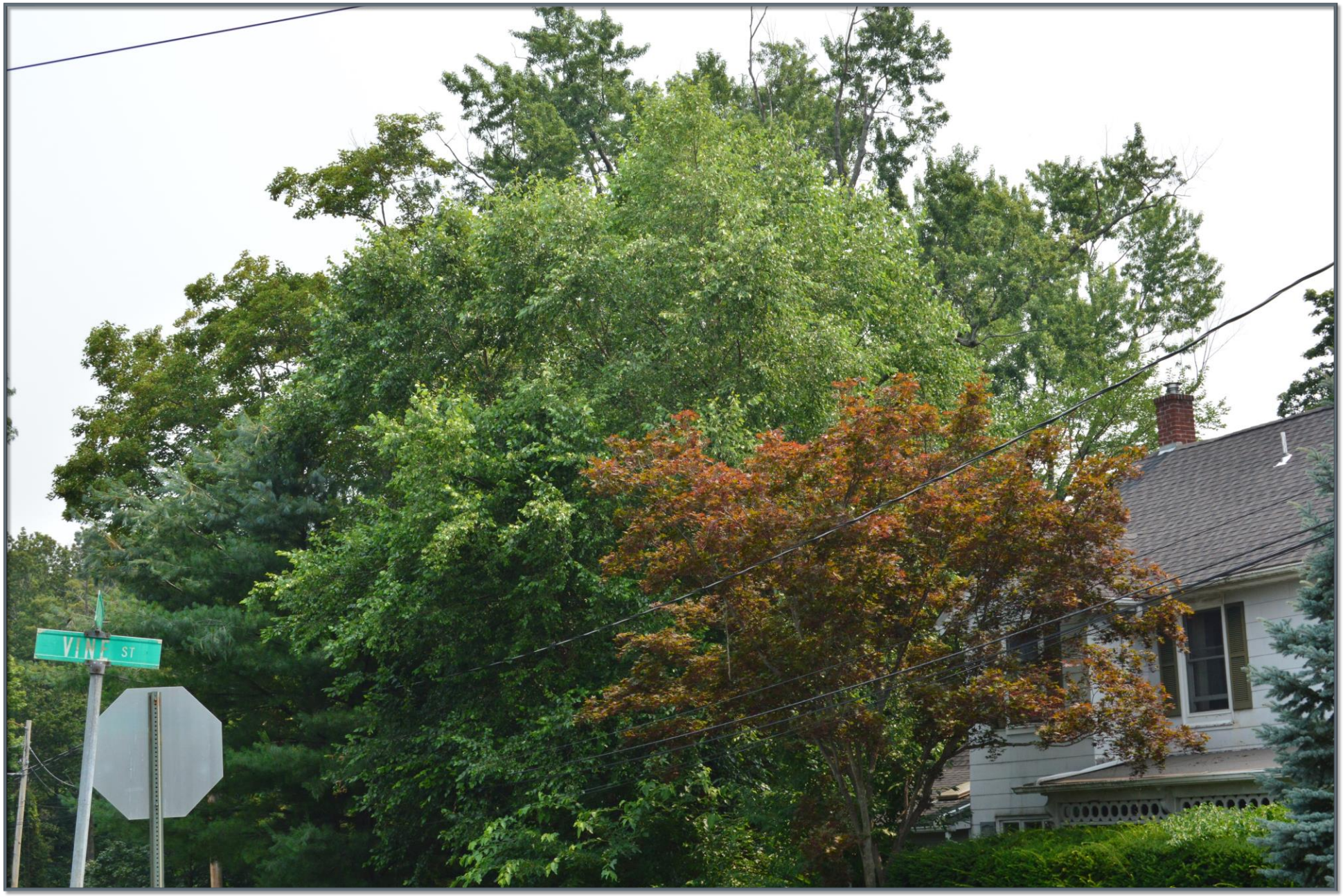
Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from DeWindt St.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.78 miles.

P-21

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from intersection of Vine & John St.
Proposed installation will not be visible from this location.

P-22

Distance from the photographic location to the proposed installation is ±1.59 miles.



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from Wilkes St.
Proposed installation will not be visible from this location.

P-23

Distance from the photographic location to the proposed installation is ±1.36 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

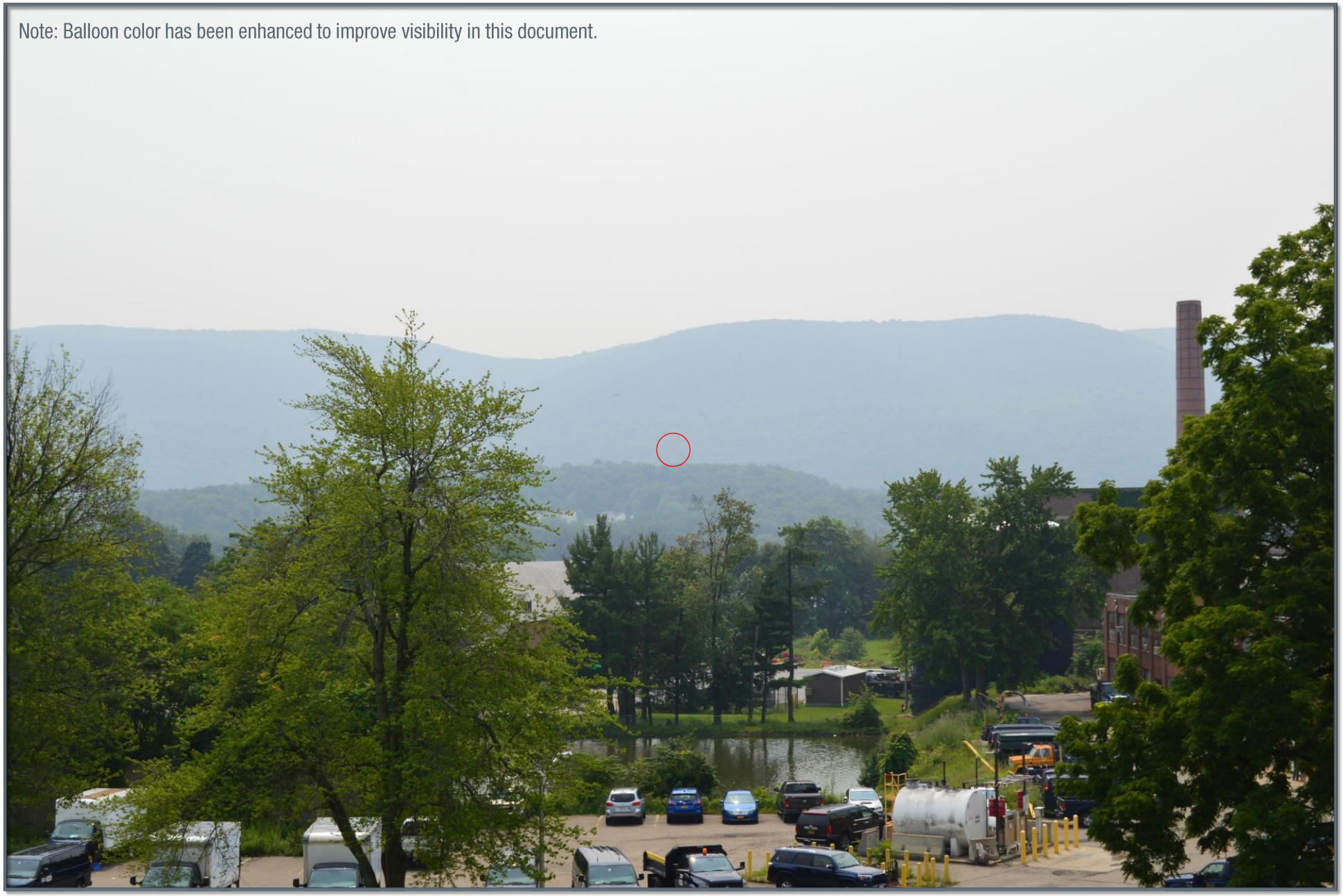
Looking southeast from intersection of Matteawan Rd & Deer Run.
Proposed installation will not be visible from this location.

P-24

Distance from the photographic location to the proposed installation is ±0.87 miles.

11272.005

Note: Balloon color has been enhanced to improve visibility in this document.



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from Matteawan Rd.
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is ±0.88 miles.

P-25



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from Matteawan Rd.
Proposed installation will be visible from this location.

S-25

Distance from the photographic location to the proposed installation is ±0.88 miles.

11272.005



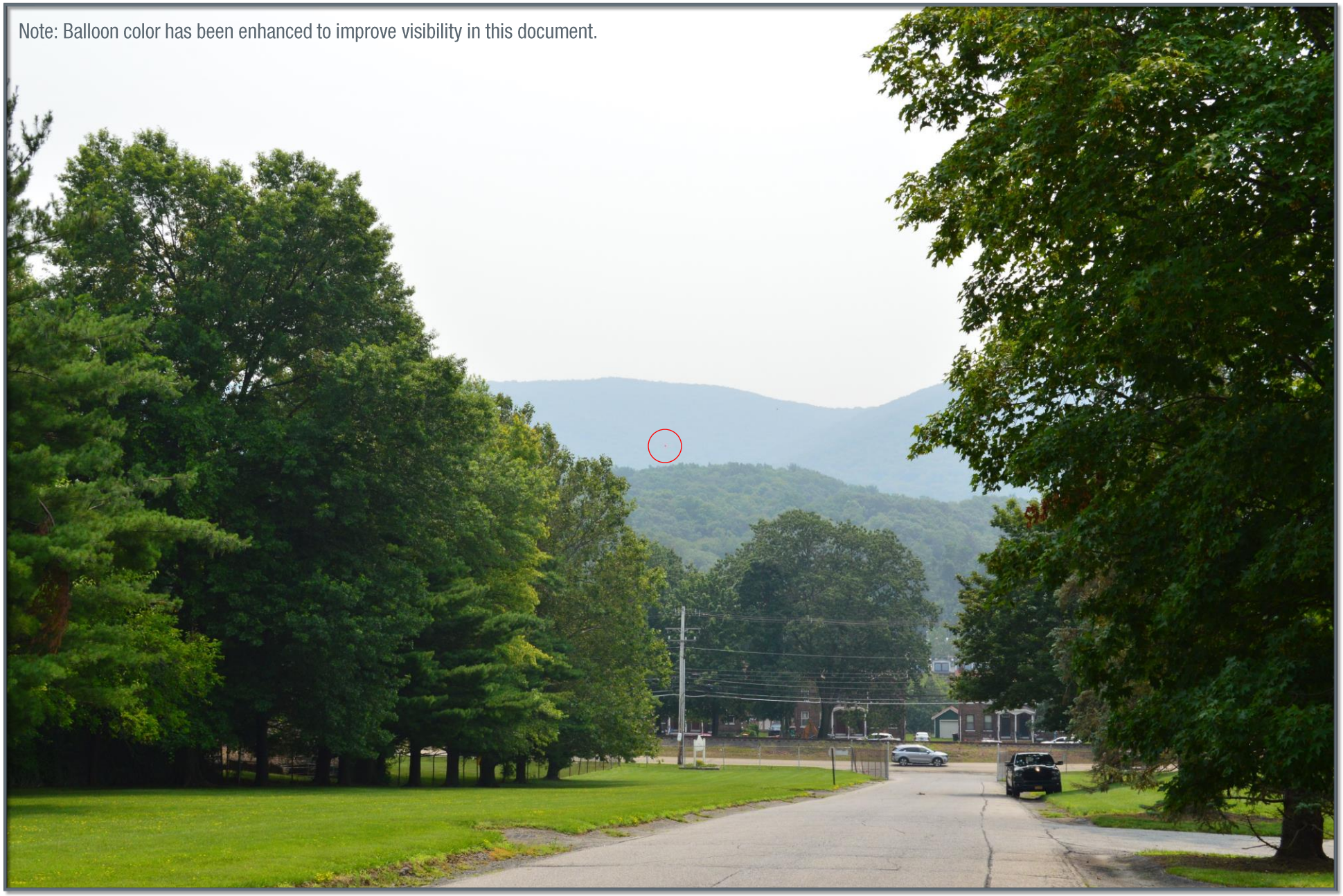
Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from intersection of Prospect St & Stewart Ave.
Proposed installation will not be visible from this location.

P-26

Distance from the photographic location to the proposed installation is ±0.65 miles.

Note: Balloon color has been enhanced to improve visibility in this document.



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from Chemprene Inc Entrance.
Proposed installation will be visible from this location.

P-27

Distance from the photographic location to the proposed installation is ±0.59 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking southeast from Chemprene Inc Entrance.
Proposed installation will be visible from this location.

S-27

Distance from the photographic location to the proposed installation is ±0.59 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from Fishkill Ave, near Hedgewood Home.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.82 miles.

P-28

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from Robert Cahill Dr.
Proposed installation will not be visible from this location.

P-29

Distance from the photographic location to the proposed installation is ±1.02 miles.



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from Ellen Dr.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.82 miles.

P-30



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from Mountain Beacon parking entrance.
Proposed installation will not be visible from this location.

P-31

Distance from the photographic location to the proposed installation is ±1.56 miles.

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking north from Mountain Lane.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.68 miles.

P-32



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from Falcner St.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.025miles.

P-33

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from Liberty St.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±1.00 miles.

P-34

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from Jessen Pl.
Proposed installation will not be visible from this location.

Distance from the photographic location to the proposed installation is ±0.62 miles.

P-35



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from St. Joachim's Cemetery.
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is ±0.30 miles.

P-36

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking northeast from St. Joachim's Cemetery.
Proposed installation will be visible from this location.

Distance from the photographic location to the proposed installation is ±0.30 miles.

S-36

11272.005



Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Looking east from Beacon Water Department parking lot.
Proposed installation will not be visible from this location.

P-37

Distance from the photographic location to the proposed installation is ±0.32 miles.

11272.005

Young / Sommer LLC

ATTORNEYS AT LAW

EXECUTIVE WOODS, FIVE PALISADES DRIVE, ALBANY, NY 12205
Phone: 518-438-9907 • Fax: 518-438-9914

www.youngsommer.com

RECEIVED 8/30/23 NP

Writer's Telephone Extension: 258
solson@youngsommer.com

August 29, 2023

Via E-mail and Federal Express
Planning Board
City of Beacon
One Municipal Plaza
Suite One
Beacon NY 12508

Re: Application of Verizon Wireless for a Personal Wireless Service Facility at 375 Washington Avenue (SBL 6055-04-+713005)

Dear Members of the Planning Board:

Enclosed are fifteen (15) copies of the supplemental Engineering Necessity Case prepared by Verizon Wireless' RF Engineer in response to Mr. Johnson's July 10, 2023 letter report for the above-referenced application.

Please place this matter on the agenda for the September 12, 2023 Planning Board meeting.

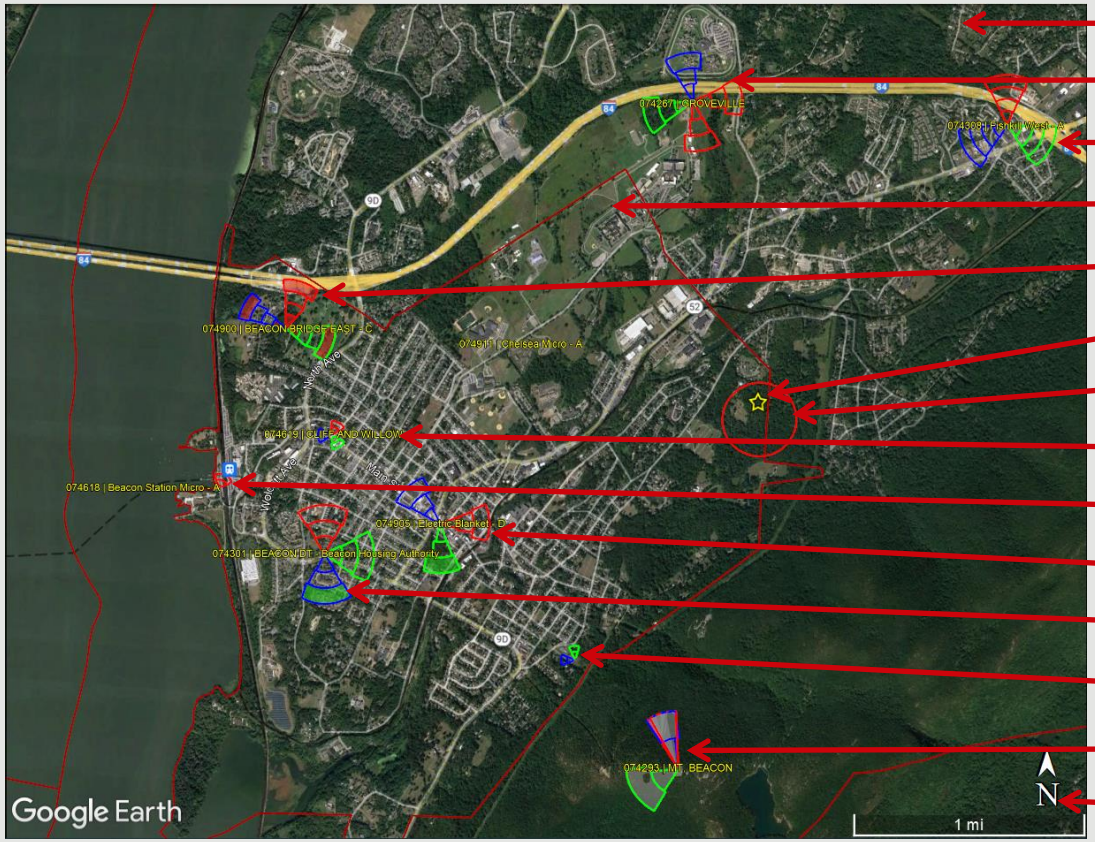
Very truly yours,

Scott P. Olson

Encl.

Verizon Wireless Communications Facility

Engineering Necessity Case – "Hedgewood"



- Town of FISHKILL
- Groveville Site
- FISHKILL WEST Site
- City of Beacon
- Beacon Bridge East Site
- Project location (Hedgewood)
- Hedgewood Search Area
- CLIFF AND WILLOW Site
- Beacon Station Micro Site
- Electric Blanket Site
- BEACON DT Site
- Howland Micro Site
- Mt. Beacon Site (off-air)
- Town of Philipstown

Prepared by: Brendan Hennessy

Project: The project is the installation and operation of a new wireless telecommunications tower facility site in the City of Beacon(the "Project Facility").

verizon

Introduction

The purpose of this subsequent analysis is to summarize and communicate the technical radio frequency (RF) information used in the justification of this new site.

Coverage and/or capacity deficiencies are the two main drivers that prompt the need for a new wireless communications facility/site. All sites provide a mixture of both capacity and coverage for the benefit of the end user.

Coverage can be defined as the existence of signal of usable strength and quality in an area, including but not limited to in-vehicles or in-buildings.

The need for improved coverage is identified by RF Engineers that are responsible for developing and maintaining the network. RF Engineers utilize both theoretical and empirical data sets (propagation maps and real world coverage measurements). Historically, coverage improvements have been the primary justification of new sites.

Capacity can be defined as the amount of traffic (voice and data) a given site can process before significant performance degradation occurs.

When traffic volume exceeds the capacity limits of a site serving a given area, network reliability and user experience degrades. Ultimately this prevents customers from making/receiving calls, applications cease functioning, internet connections time out and data speeds fail. This critical condition is more important than just a simple nuisance for some users. Degradation of network reliability and user experience can affect emergency responders and to persons in a real emergency situation can literally mean life or death.

Project Need Overview

The targeted service improvement area, located in the northeastern portion of the City of Beacon is currently served by one site. This site is overloaded requiring capacity relief. Additionally the target area is subject to significant terrain challenges for RF (signal) propagation. This terrain combined with area foliage and long distance prevent effective propagation of Verizon's RF signals into this area compounding the capacity issue with areas of variable coverage creating significant gaps in coverage.

The serving site is **GROVEVILLE,** located in the Town of Fishkill, is approximately one and a half miles north (of the project location) situated on an existing tower located off **Kirby Town Road.** While this site provides weak/variable coverage in portions of the target area, it does so from a terrain and distance challenged position making the site not capable of efficiently or effectively providing adequate coverage or capacity.

Available (mid band AWS) carriers at this and other area sites are not capable of effectively serving/offloading the project area due to inherent propagation losses from distance, challenging terrain and in building coverage losses negatively impacting mid band coverage and capacity offload capabilities. There are other Verizon sites in this general area but due to distance and terrain they also do not provide any significant overlapping coverage in the area in question that could allow for increased capacity and improved coverage from other sources.

The primary objectives for this project are to increase capacity and improve coverage throughout the northeastern portion of the City of Beacon , more specifically portions of Washington Ave, Route 52, Liberty St, Old Town Road, Greenwood Dr, Hiddenbrook Dr, Mountain Ln, as well neighboring residential and commercial areas along and near these roads. In order to offload capacity from GROVEVILLE site, a new dominant server must be created. This new dominant coverage will effectively offload the existing overloaded site as well as provide improved coverage where significant gaps exist today.

Following the search for co-locatable structures to resolve the aforementioned challenges and finding none available, Verizon proposes to attach the necessary antenna(s) to a new 120' monopole tower to be located at 375 Washington Avenue, City of Beacon, NY 12508. Verizon's antennas will utilize 116' for the ACL (Antenna Center Line) with a top of antenna height of 120'. This solution will provide the necessary coverage and capacity improvements needed.

Wireless LTE (Voice and Data) Growth

Wireless smart city solutions are being used to track available parking and minimize pollution and wasted time.

These same solutions are being used to track pedestrian and bike traffic to help planning and minimize accidents.

Smart, wireless connected lighting enables cities to control lighting remotely, saving energy and reducing energy costs by 20%.

4G technology is utilized to track and plan vehicle deliveries to minimize travel, maximize efficiency, and minimize carbon footprint.

4G technology is also used to monitor building power usage down to the circuit level remotely, preventing energy waste and supporting predictive maintenance on machines and equipment.

Wireless sensors placed in shipments are being used to track temperature-sensitive medications, equipment, and food. This is important for preventing the spread of food-borne diseases that kill 3,000 Americans each year.

Source: Verizon Innovation Center, February. 2018

Wireless is a critical component in schools and for today's students.

20,000 learning apps are available for iPads. 72% of iTunes top selling educational apps are designed for preschoolers and elementary students.

600+ school districts replaced text books with tablets in classrooms.

77% of parents think tablets are beneficial to kids.

74% of school administrators feel digital content increases student engagement.

70% of teens use cellphones to help with homework.

Source: CTIA's Infographics Today's Wireless Family, October, 2017



The average North American smartphone user will consume 48 GB of data per month in 2023, up from just 5.2 GB per month in 2016 and 7.1 GB per month in 2017 .[1]



Of American homes are wireless only.[2]



In North America, the average household has 13 connected devices with smartphones outnumbering tablets 6 to 1.[3]

1. Ericsson Mobility Report, November 2017
2. CDC's 2018 Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, January-July, 2018
3. IHS Market Connected Device Market Monitor: Q1 2016 , June 7, 2016

A wireless network is like a highway system…



US, mobile data traffic was 1.3 Exabytes per month in 2016, the equivalent of 334 million DVDs each month or 3,687 million text messages each second **according to** Cisco VNI Mobile Forecast Highlights, 2016-2021,Feb 2017

verizon

Wireless facilities and property values.

Cell service in and around the home has emerged as a critical factor in home-buying decisions.



National studies demonstrate that most home buyers value good cell service over many other factors including the proximity of schools when purchasing a home.

75% More than 75% of prospective home buyers said a good cellular connection was important to them.[1]

83% The same study showed that 83% of Millennials (those born between 1982 and 2004) said cell service was the most important fact in purchasing a home.

90% 90% of U.S. households use wireless service. Citizens need access to 911 and reverse 911 and wireless may be their only connection.[2]

1. RootMetrics/Money, The Surprising Thing Home Buyers Care About More than Schools, June 2, 2015
2. CTIA, June 2015



With over 80% of 9-1-1 calls now coming from cell phones…[1]

240 million 911 calls are made annually. In many areas, 80% or more are from wireless devices. [1]

1. National Emergency Number Association, Enhancing 9-1-1 Operations With Automated Abandoned Ca & Location Accuracy (Motorola Solutions) (August 23, 2018)

Explanation of Wireless Capacity

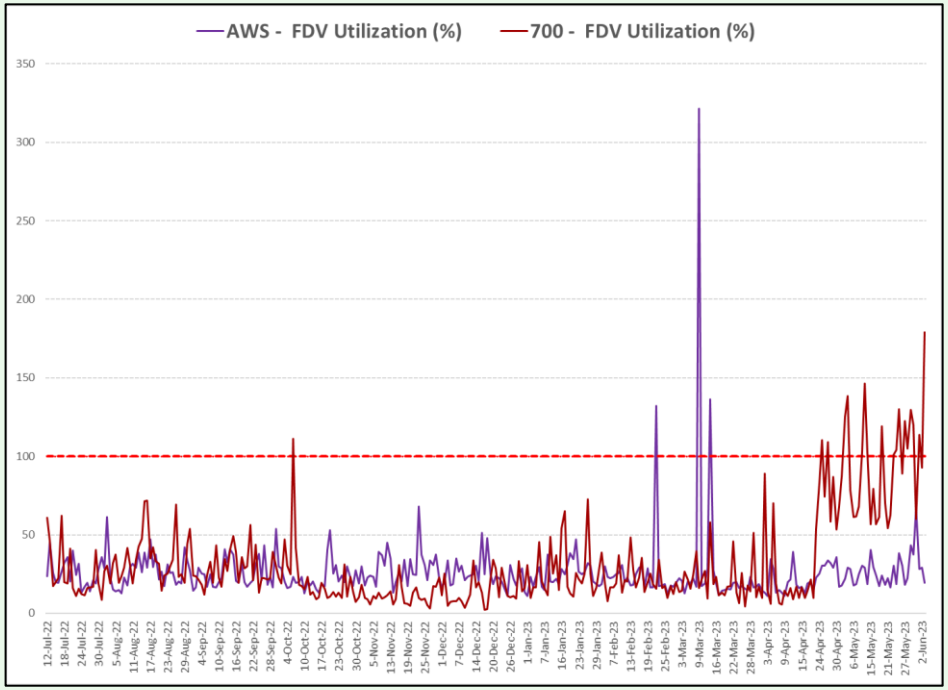


Capacity in this analysis is evaluated with up to three metrics further explained below. These metrics assist in determining actual usage for a given site as well as are used to project when a site is expected to run out of capacity (i.e. reach a point of exhaustion where it can no longer process the volume of voice and data requested by local wireless devices, thus no longer providing adequate service).

- Forward Data Volume ("**FDV**"), is a measurement of usage (data throughput) on a particular site over a given period of time.
- Average Schedule Eligible User ("**ASEU**"), is a measurement of the loading of the control channels and systems of a given site.
- Average Active Connections ("**AvgAC**") is a measurement of the number of devices actively connected to a site in any given time slot.

Verizon Wireless uses proprietary algorithms developed by a task force of engineers and computer programmers to monitor each site in the network and accurately project and identify when sites will approach their capacity limits. Using a rolling two-year window for projected exhaustion dates allows enough time, in most cases, to develop and activate a new site. It is critical that these capacity approaching sectors are identified early and the process gets started and completed in time for new solutions (sites) to be on air before network issues impact the customers.

Capacity Utilization
FDV (GROVEVILLE Delta)



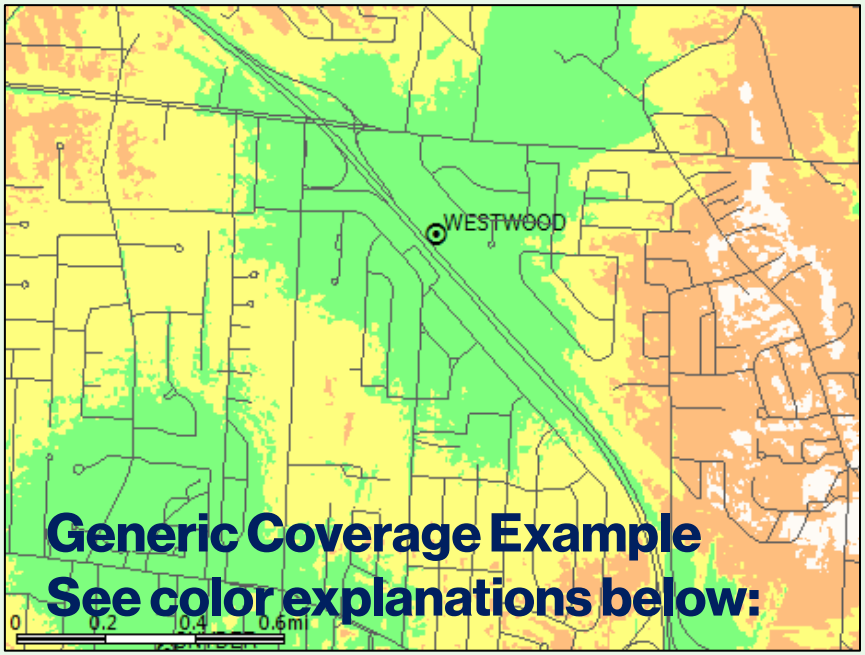
Summary: This graph shows FDV (**F**orward **D**ata **V**olume) which is a measurement of the customer data usage that this sector currently serves. As this limit is approached, data rates slow to unacceptable levels, potentially causing unreliable service for Verizon Wireless customers.

The purple line represents the daily max busy hour 700MHz utilization and the dark red line is daily max busy hour AWS utilization on the **Delta** sector of the **GROVEVILLE** site. The red dashed line is the limit where the sector reaches exhaustion and service starts to significantly degrade. The point in time where we see the purple or dark red lines reach or exceed the red dashed line is when service quickly degrades as usage continues to increase.

Detail: The existing **GROVEVILLE Delta** sector shown above has exceeded its capability of supporting FDV requirements as shown by the purple line exceeding the max utilization threshold (red dashed line). FDV is one of up to three metrics used in this presentation to evaluate capacity capability in this area. This graph also reveals the inability of the AWS carrier (dark red line) to provide the necessary capacity offload for the low band carrier due to differences in RF propagation characteristics. The solution is network densification.

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Explanation of Wireless Coverage



Generic Coverage Example
See color explanations below:

Coverage is best shown via coverage maps. RF engineers use computer simulation tools that take into account terrain, vegetation, building types, and site specifics to model the RF environment. This model is used to simulate the real world network and assist engineers to evaluate the impact of a proposed site (along with industry experience and other tools).

Many Verizon Wireless sites provide 3G CDMA at 850 MHz and 4G LTE at 700 MHz. As capacity requirements increase, higher frequency PCS (1900 MHz) and AWS (2100 MHz) carriers are added. In some mountaintop situations the mid band (higher frequency) AWS and PCS carriers are not fully effective due to excessive distance from the user population.

Coverage provided by a given site is affected by the frequencies used. Lower frequencies propagate further distances, and are less attenuated by clutter than higher frequencies. To provide similar coverage levels at higher frequencies, a denser network of sites is required (network densification).

Note the affect of clutter on the predicted coverage footprint above

**Dark Green >/= -75dBm RSRP, typically serves dense urban areas as well as areas of substantial construction (colleges, hospitals, dense multi family etc.)
Green >/= -85dBm RSRP, typically serves suburban single family residential and light commercial buildings
Yellow >/= -95dBm RSRP, typically serves most rural/suburban-residential and in car applications
Orange >/= -105dBm RSRP, rural highway coverage, subject to variable conditions including fading and seasonality gaps
White = <-105dBm RSRP, variable to no reliable coverage gap area

More detailed, site-specific coverage slides are later in the presentation
*Signal strength requirements vary as dictated by specific market conditions
** Not displayed in example map, layer not used in all site justifications

verizon

Explanation of this Search Area



Hedgewood Search Area

A **Search Area** is the geographical area within which a new site is targeted to solve a coverage or capacity deficiency. Three of the factors taken into consideration when defining a search area are topography, user density, and the existing network.

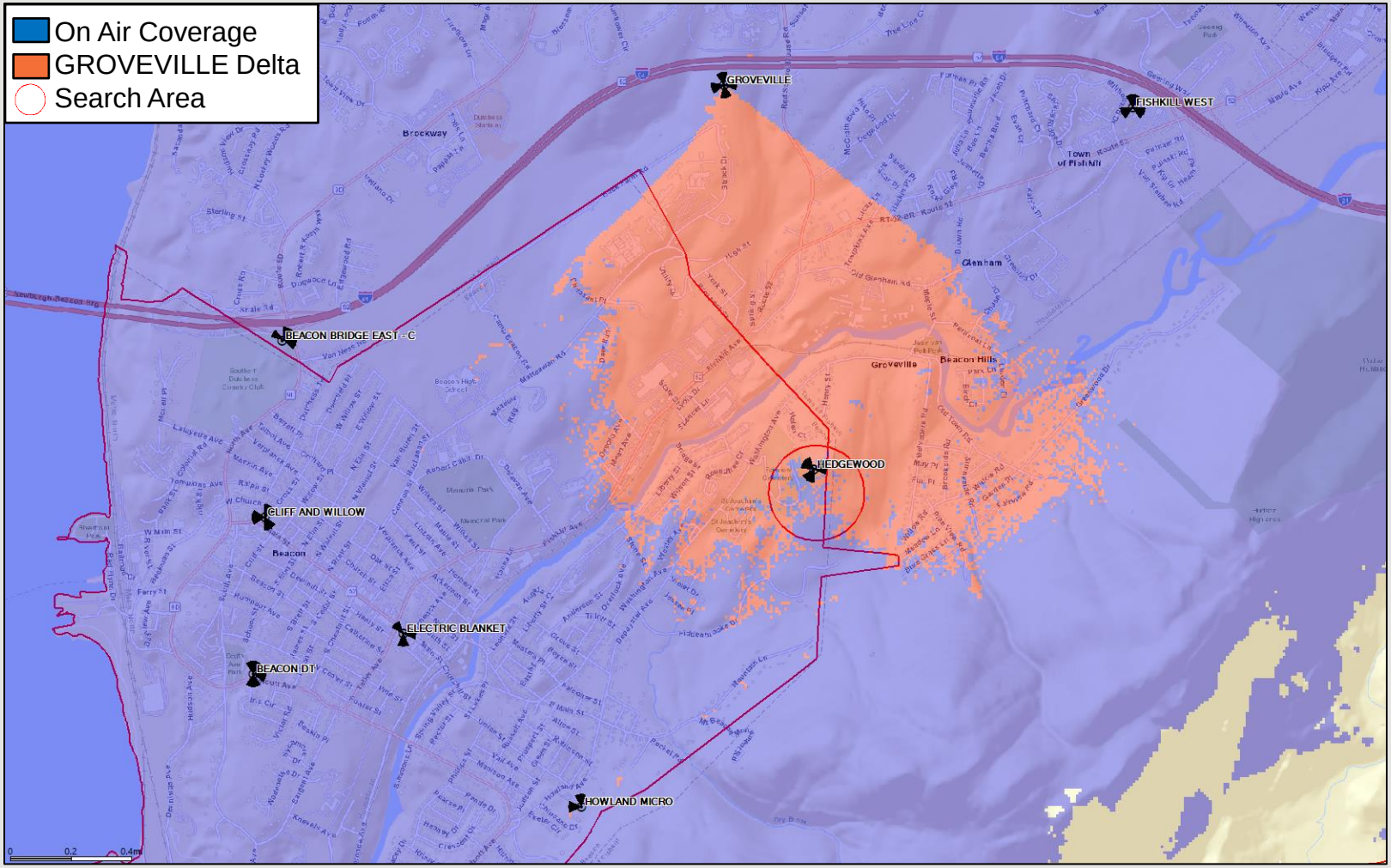
- **Topography** must be considered to minimize the obstacles between the proposed site and the target coverage area. For example, a site at the bottom of a ridge will not be able to cover the other side from a certain height.
- In general, the farther from a site the **User Population** is, the weaker the RF conditions are and the worse their experience is likely to be. These distant users also have an increased impact on the serving site's capacity. In the case of a multi sector site, centralized proximity is essential to allow users to be evenly distributed and allow efficient utilization of the site's resources.
- The existing **Network Conditions** also guide the design of a new site. Sites placed too close together create interference due to overlap and are an inefficient use of resources. Sites that are too tall or not properly integrated with existing sites cause interference and degrade service for existing users.
- Existing co-locatable structures inside the search area as well as within a reasonable distance of the search area are submitted by site acquisition and reviewed by RF Engineering. If possible, RF will make use of existing or nearby structures before proposing to build new towers.

To resolve the coverage and capacity deficiencies previously detailed, Verizon Wireless is seeking to add one new cell facility within this area to improve wireless service capacity and coverage. By offloading traffic from **GROVEVILLE Delta** with the proposed site, adequate and reliable service will be restored. The new **Hedgewood** site will provide dominant and dedicated signal to the identified portions of the City of Beacon. This helps to improve not only the **Hedgewood** project area but will also indirectly result with significant improvements in the northeastern portion of the City of Beacon.

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Existing 700MHz Best Server -105dBm RSRP

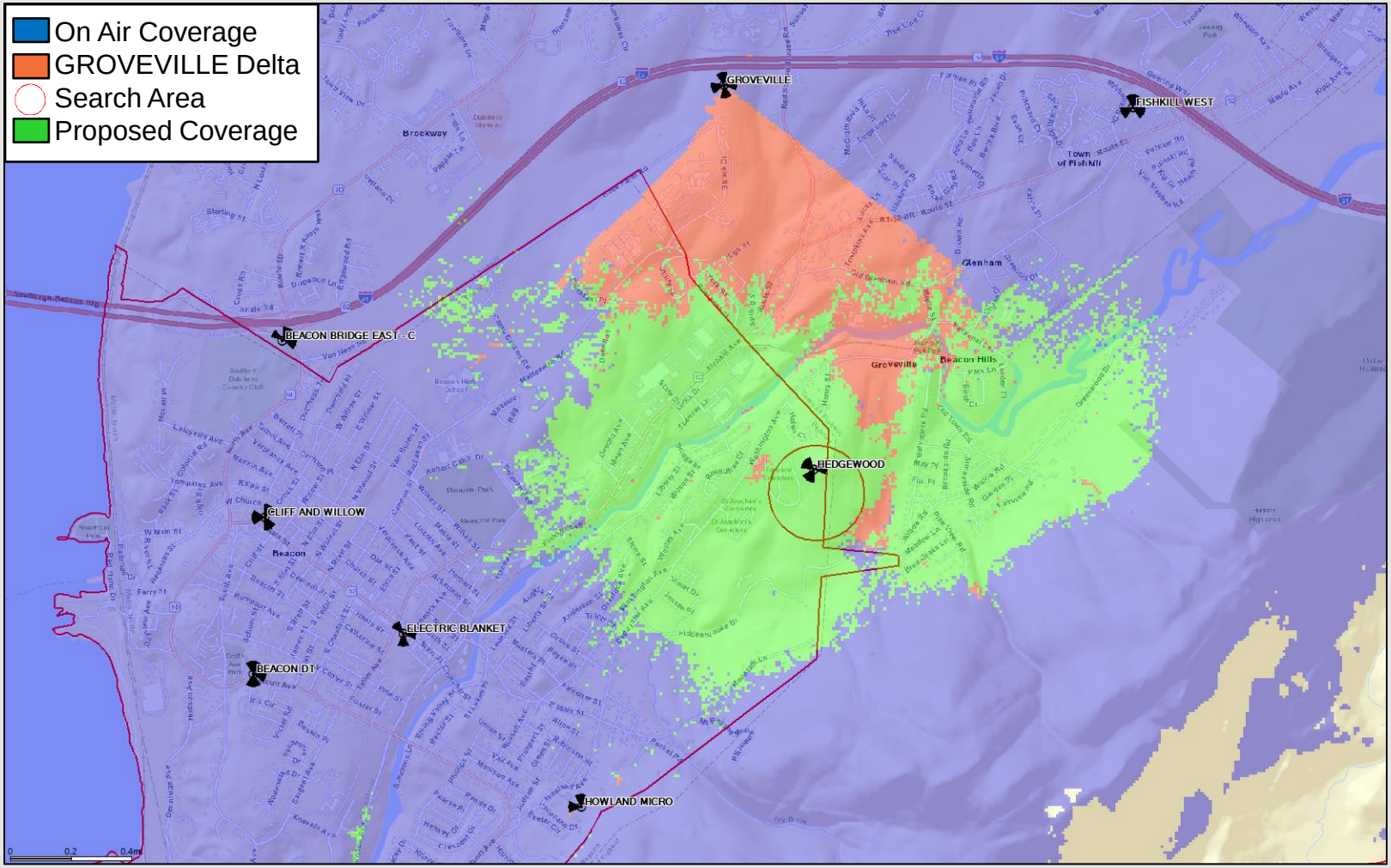
Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the area offloaded by the new sites dominant signal area.



The map above represents existing low band coverage from existing sites, with the sites in need of capacity offload detailed in the legend above. Blue coverage is from other on air sites.

Proposed 700MHz Best Server -105dBm RSRP

Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the area offloaded by the new sites dominant signal area.

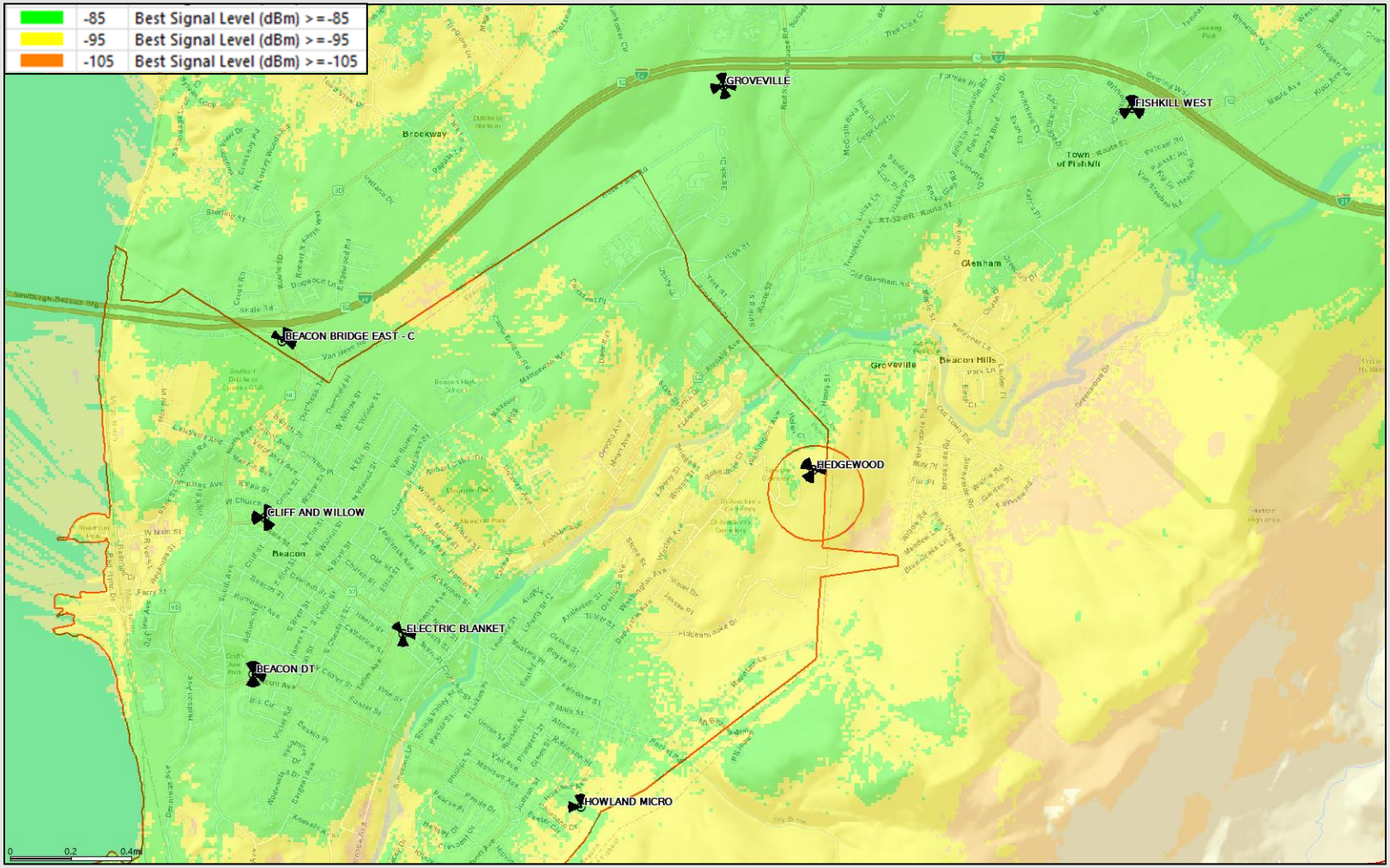


The map above adds the low band footprint of the proposed Hedgewood site in green. The green best server footprint provides improved coverage and capacity throughout the identified significant gap area. This will help to resolve the coverage and capacity issues impacting the GROVEVILLE Delta sector.

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Existing 700MHz Coverage

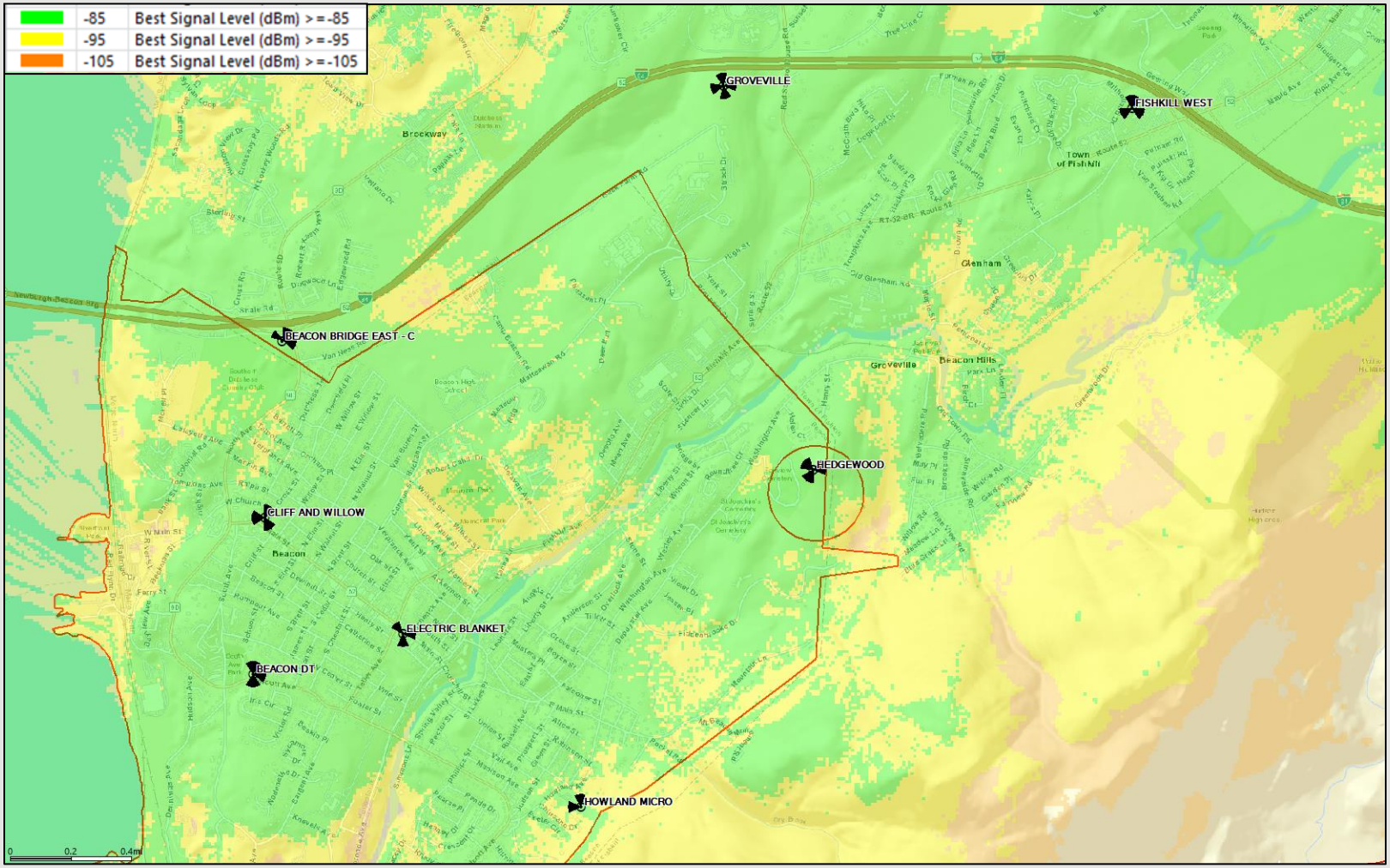
This coverage map shows how weak the RF conditions are in and around the Hedgewood site area.
Refer to slide 7 for further explanation of these color thresholds



The map above represents existing low band signal strength coverage from existing sites.

Proposed 700MHz Coverage

This coverage map shows how improved the RF conditions will be in and around the Hedgewood site area.
Refer to slide 7 for further explanation of these color thresholds

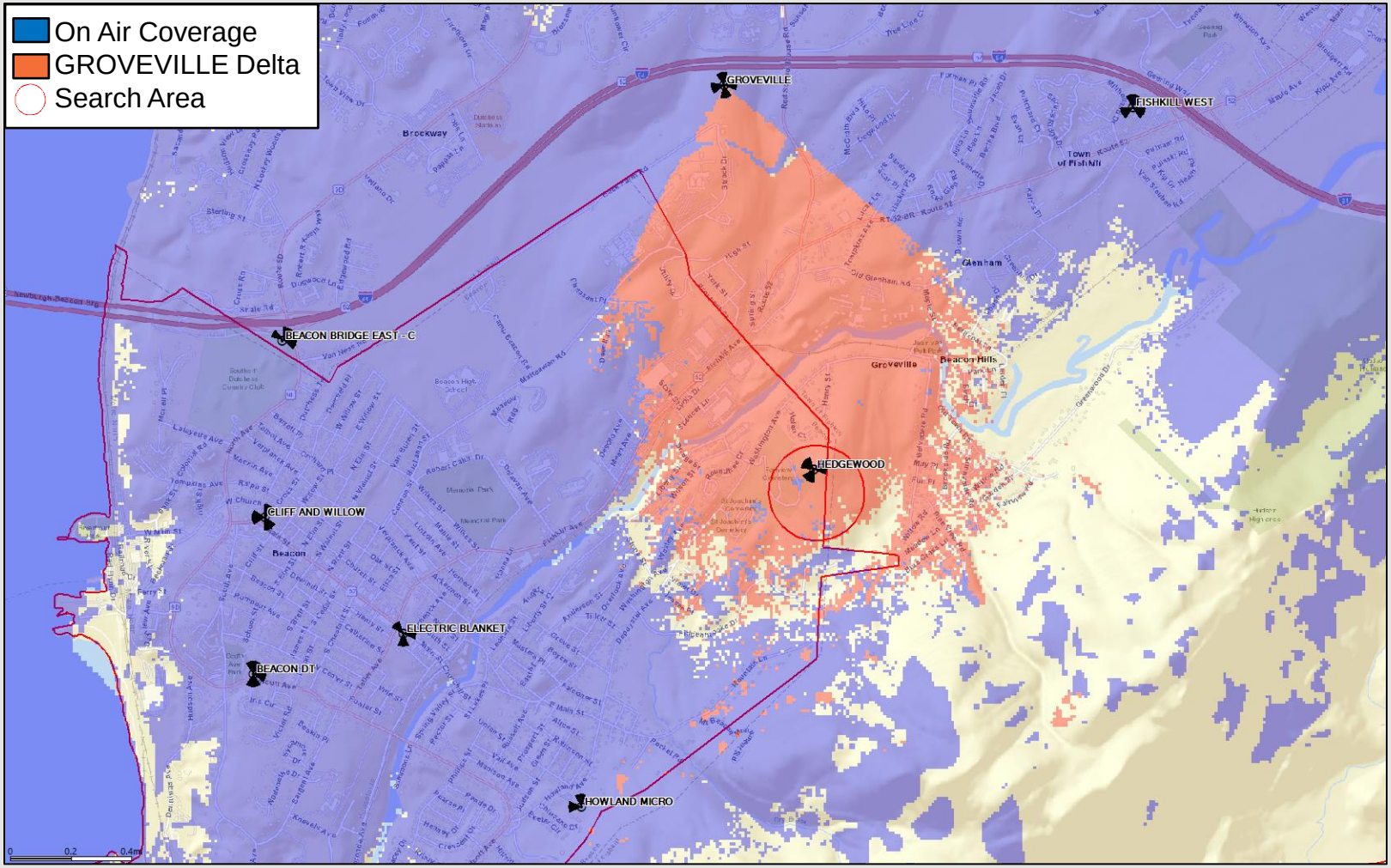


The map above adds the low band footprint of the proposed **Hedgewood** site. The significantly improved signal strength corresponds to improved coverage and capacity throughout the identified significant gap area. This will help to resolve the coverage and capacity issues impacting the GROVEVILLE Delta sector.

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Existing 2100MHz Best Server -105dBm RSRP

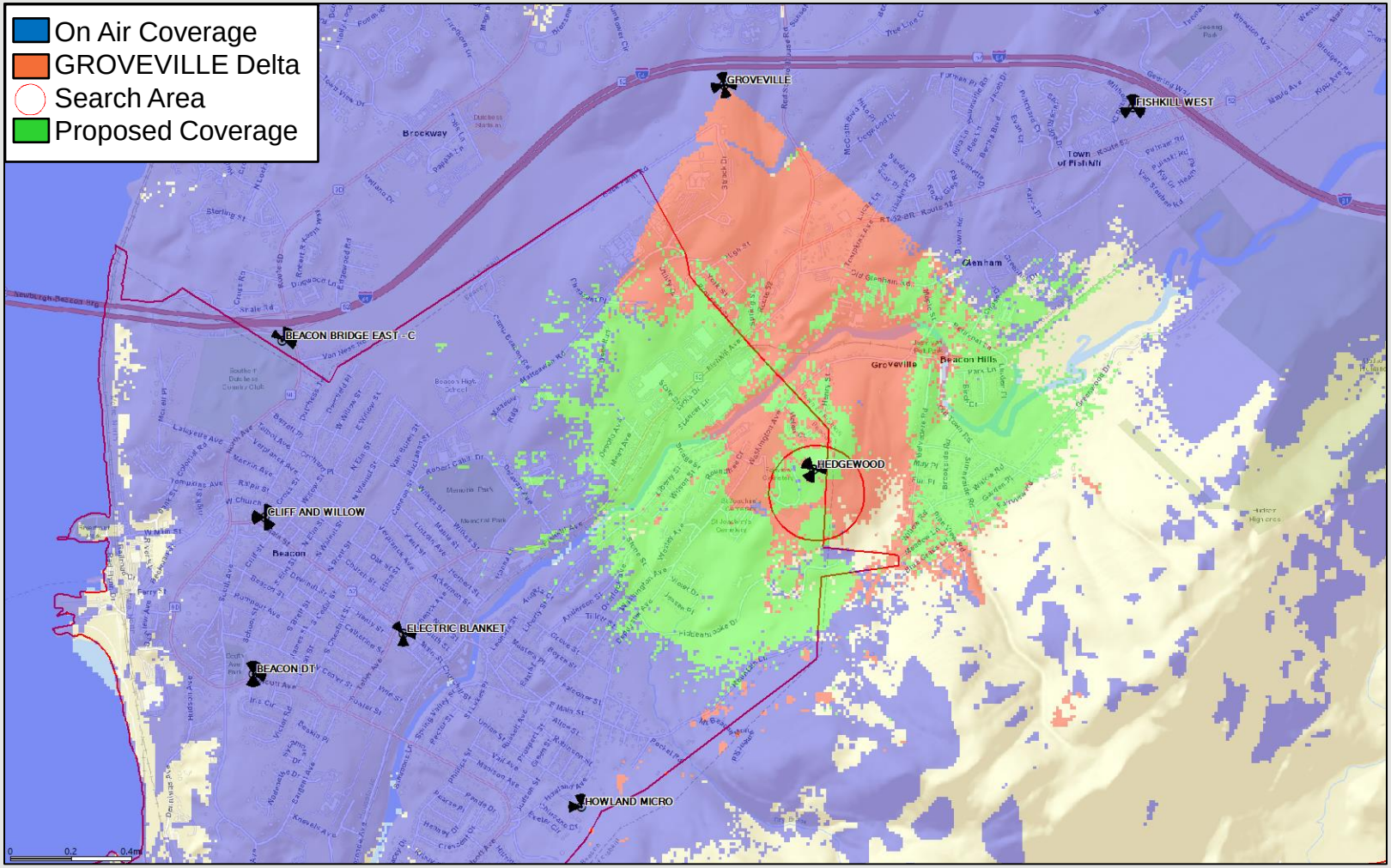
Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the area offloaded by the new sites dominant signal area.



The map above represents mid band coverage from existing sites, with the sites in need of capacity offload detailed in the legend above. Blue coverage is from other on air sites.

Proposed 2100MHz Best Server -105dBm RSRP

Best Server plots depict the actual footprint of each sector in question at one threshold so the viewer can accurately evaluate the area offloaded by the new sites dominant signal area.

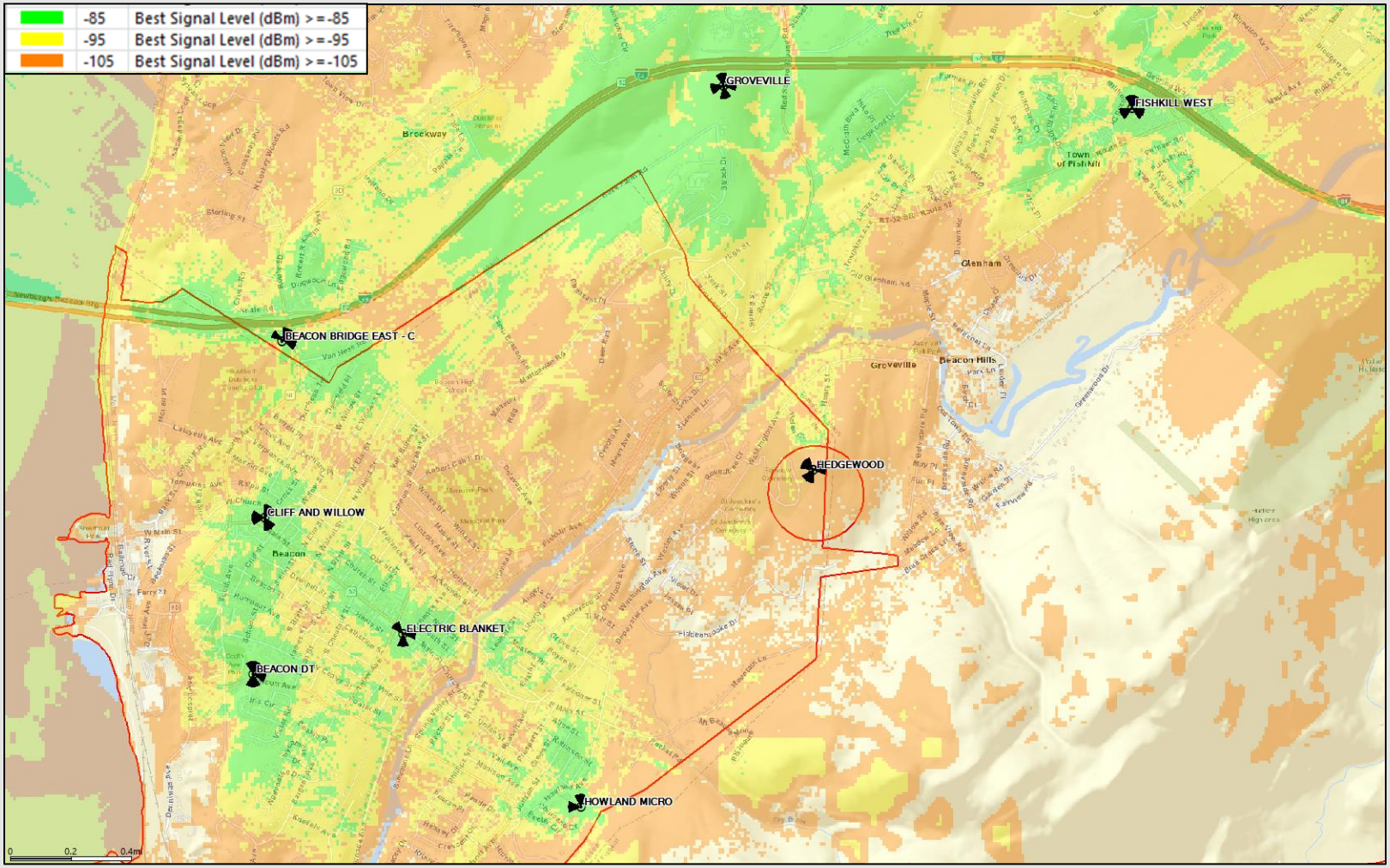


The map above adds the mid band footprint of the proposed Hedgewood site in green. The green best server footprint provides improved coverage and capacity throughout the identified significant gap area.

verizon

Existing 2100MHz Coverage

This coverage map shows the RF conditions in and around the Hedgewood site area.
Refer to slide 7 for further explanation of these color thresholds

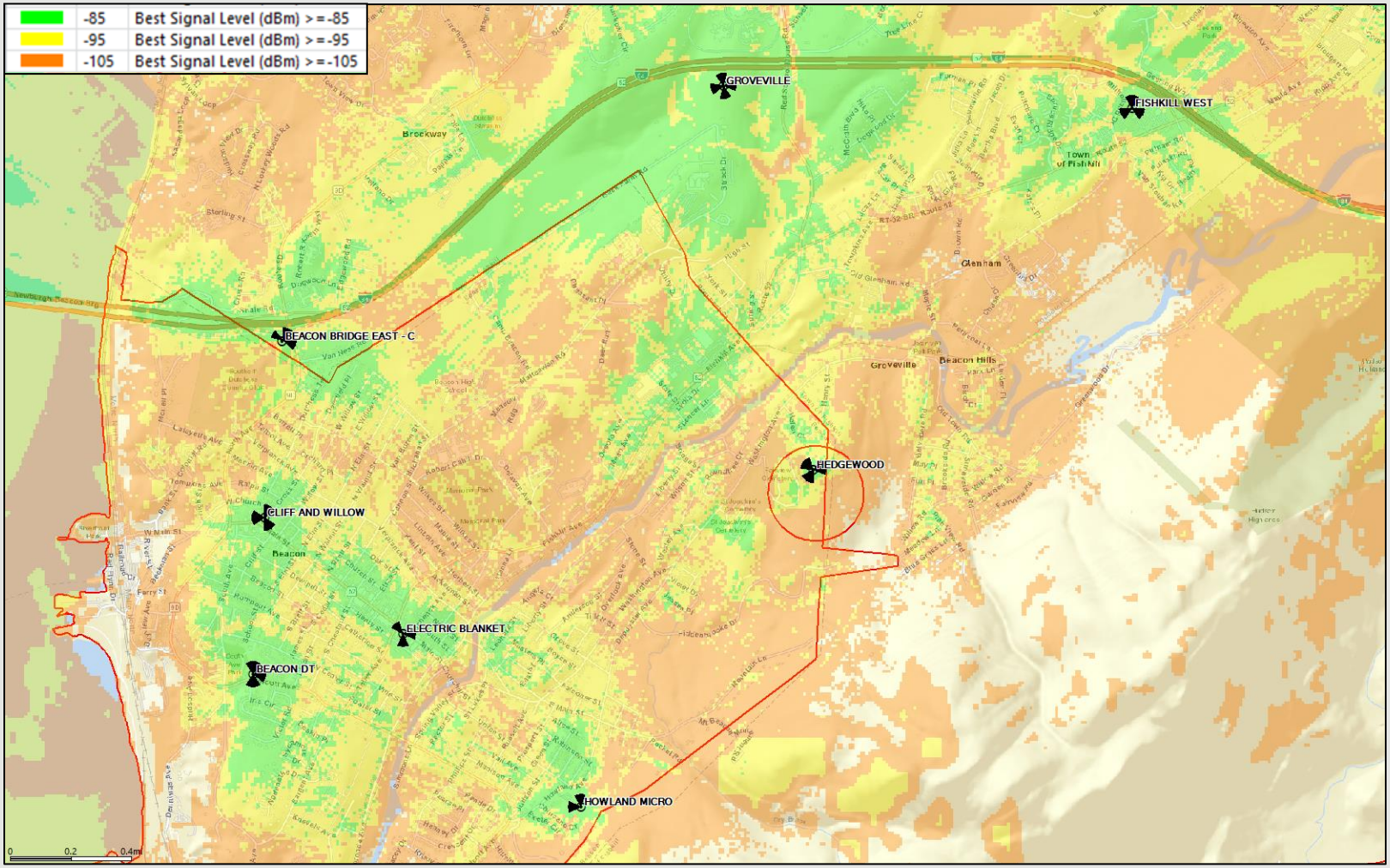


The map above represents mid band coverage from existing sites. This 2100MHz signal is very weak throughout the project area. Additional mid band network densification is required to resolve these conditions.

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Proposed 2100MHz Coverage

This coverage map shows how improved the RF conditions will be in and around the Hedgewood site area.
Refer to slide 7 for further explanation of these color thresholds



The map above adds the mid band footprint of the proposed **Hedgewood** site. The improved signal strength corresponds to improved coverage and capacity throughout the identified significant gap area.

verizon

Midband coverage plots at alternate heights (Minimum Height Justification)

Mid band coverage is critical in the effort to balance capacity (utilization) and allow for “contained” low band sites. If adequate and reliable signal strength from mid band is not present the mobile will attach to low band only. The current low band frequencies, however, due to limits in bandwidth represent only approximately seven percent (7%) of the available bandwidth licenses by Verizon Wireless, the remaining ninety three percent (93%) of bandwidth is available from the mid-band frequencies. Too many users in this RF condition will overburden low band and cause a site to become capacity exhausted requiring additional network densification. Network densification is achieved by adding mid-band frequencies at a new dominant server/site. Areas of higher utilization are of particular importance in evaluating mid band height needs. Mid band spectrum on macro sites has proven to be a very capable resource and also includes C-Band. These frequencies roughly in the 1.9-3.8GHz range are needed throughout the Hedgewood project area to relieve existing network capacity issues.

Current wireless networks continue to rely on “line of sight” technology to provide service to existing customers, the critical component necessary to service customers is establishing the proper height of the antennas to ensure that the antennas can see the service areas. As relative antenna height is increased or decreased, area (RF) clutter is either overcome allowing a site to propagate as needed or becomes obstructed causing gaps in service. The following slides display existing on-air mid band coverage + Hedgewood Site at identified Antenna centerline (ACL).

Criterion for the 'focus' areas

There are always different types of areas around a site.

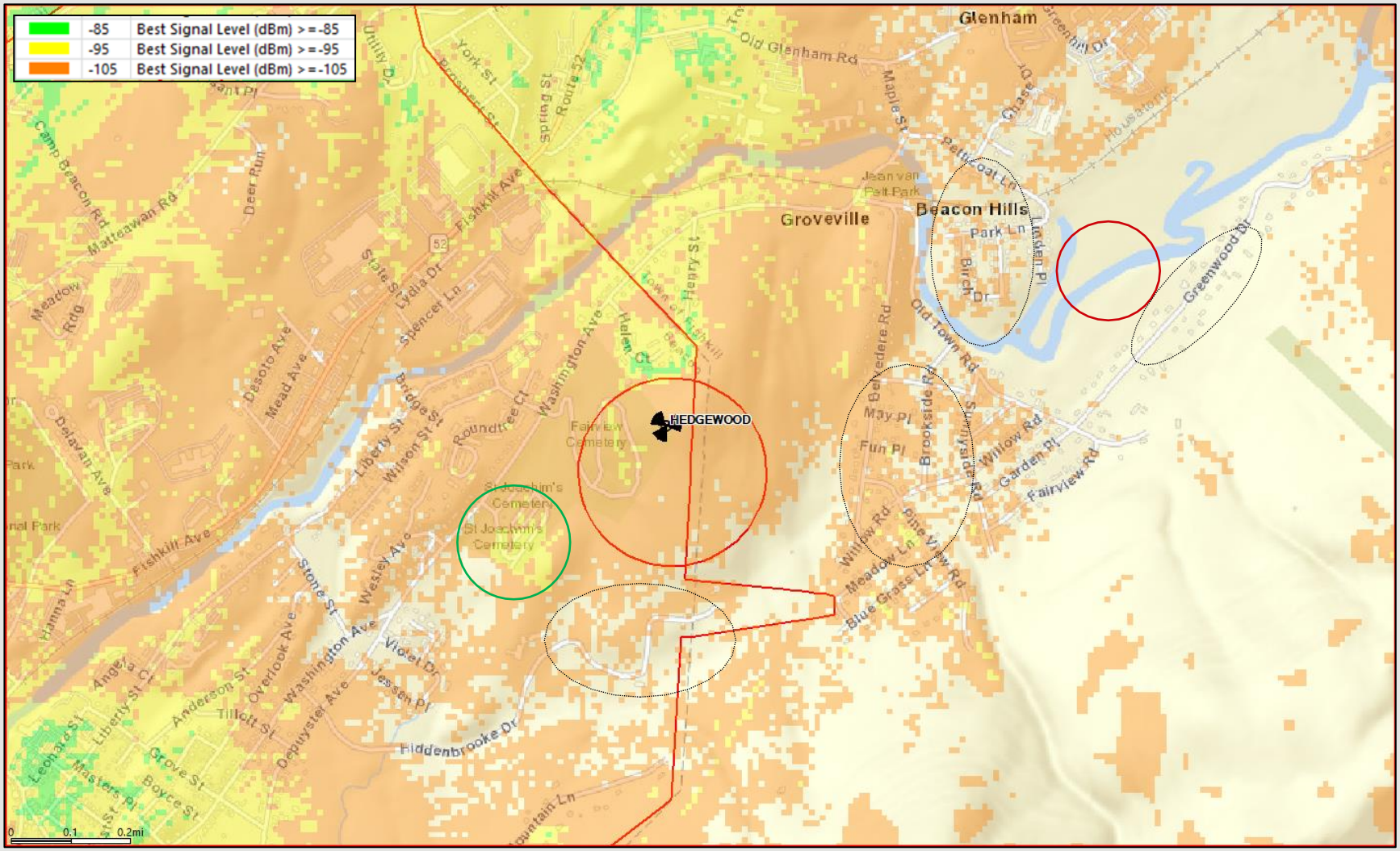
1. Areas with no potential traffic/customer are not considered in minimum height analysis even if Mid-band Coverage fades or is completely lost with the tower height reduction. For example, area in red circle on accompanying propagation maps.

2. Potential traffic (residential/commercial areas and roads) areas, which are close to the site are also not considered as reduction in tower height does not affect these areas significantly. For example, area in green circle on the following propagations.

3. Potential traffic areas, which are not very close to the project location or are located in a challenging terrain and there will be dramatic changes in mid-band coverage when the tower height is altered, are only considered in minimum height evaluation. All such areas are shown with the help of black circles on the following propagations.

Height Justification (Mid-Band Coverage 2100MHz)

Zoomed in + increased signal strength granularity

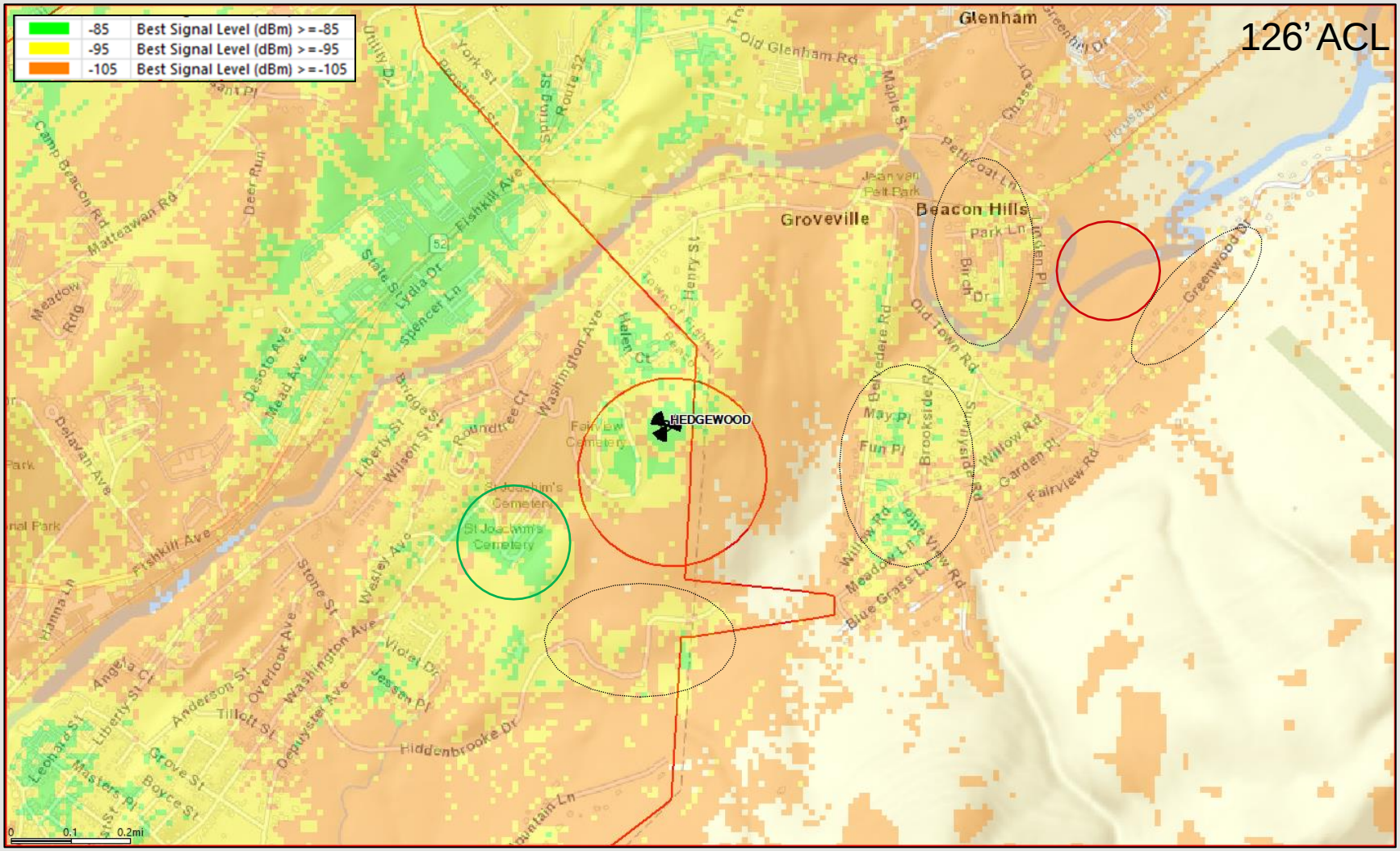


The map above represents mid band coverage from existing sites. Areas encircled are focus areas for purposes of establishing minimum height justification.

verizon

Height Justification (Mid-Band Coverage 2100MHz)

Zoomed in + increased signal strength granularity

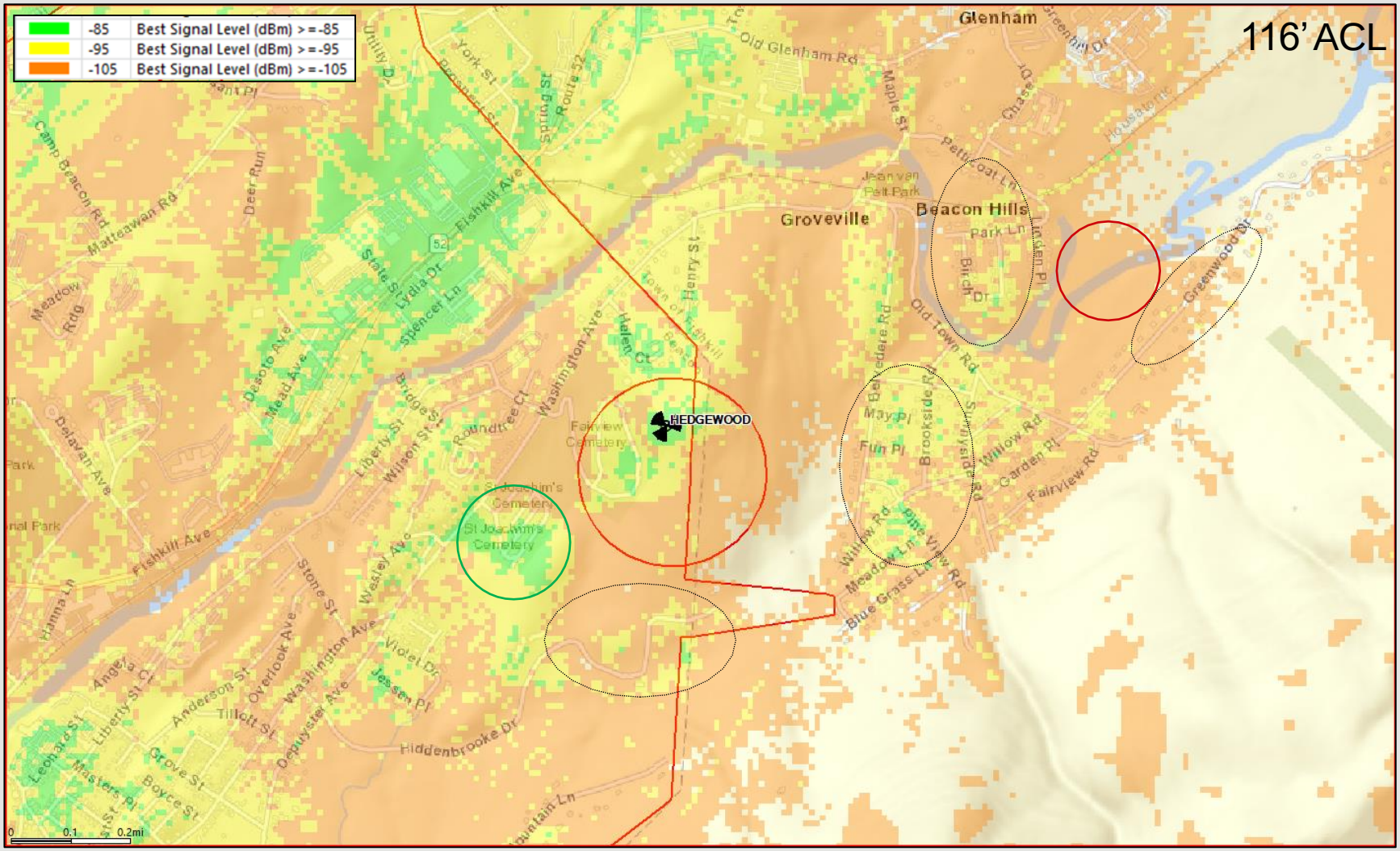


The map above represents mid band coverage from existing sites + Hedgewood WT site at 126' Antenna Centerline (ACL) which is 10ft higher than the proposed ACL(116'). The purpose of adding mid band coverage plot at higher ACL is to show that a higher ACL will certainly result in improve mid band coverage but the improvement is not significant enough to raise the antenna by another 10ft.

verizon

Height Justification (Mid-Band Coverage 2100MHz)

Zoomed in + increased signal strength granularity

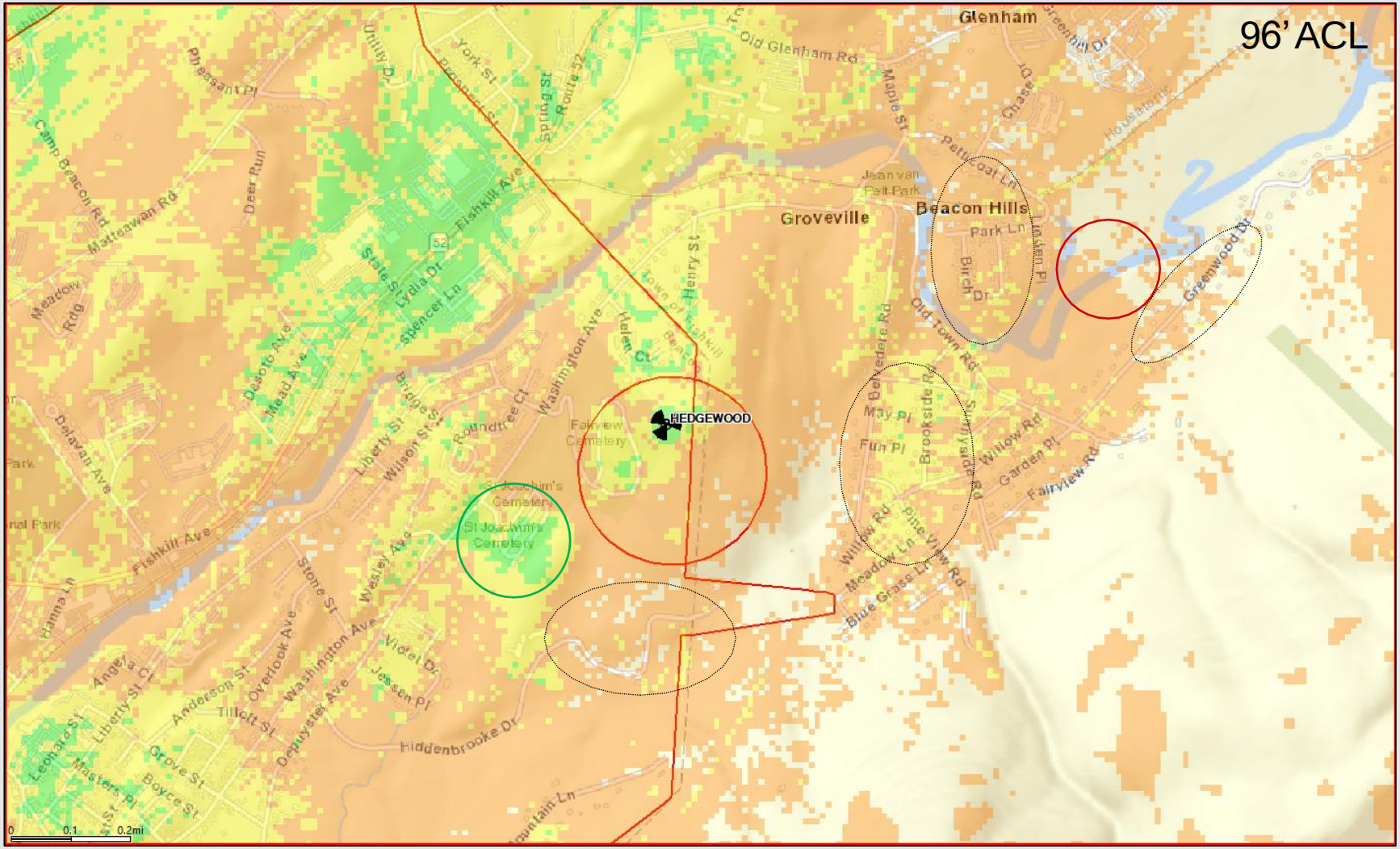


The map above represents mid band coverage from existing sites + Hedgewood WT site at 116'ACL. Midband footprint reduced at the proposed height but It can be seen that our focus areas will still have some mid band coverage.

verizon

Height Justification (Mid-Band Coverage 2100MHz)

Zoomed in + increased signal strength granularity

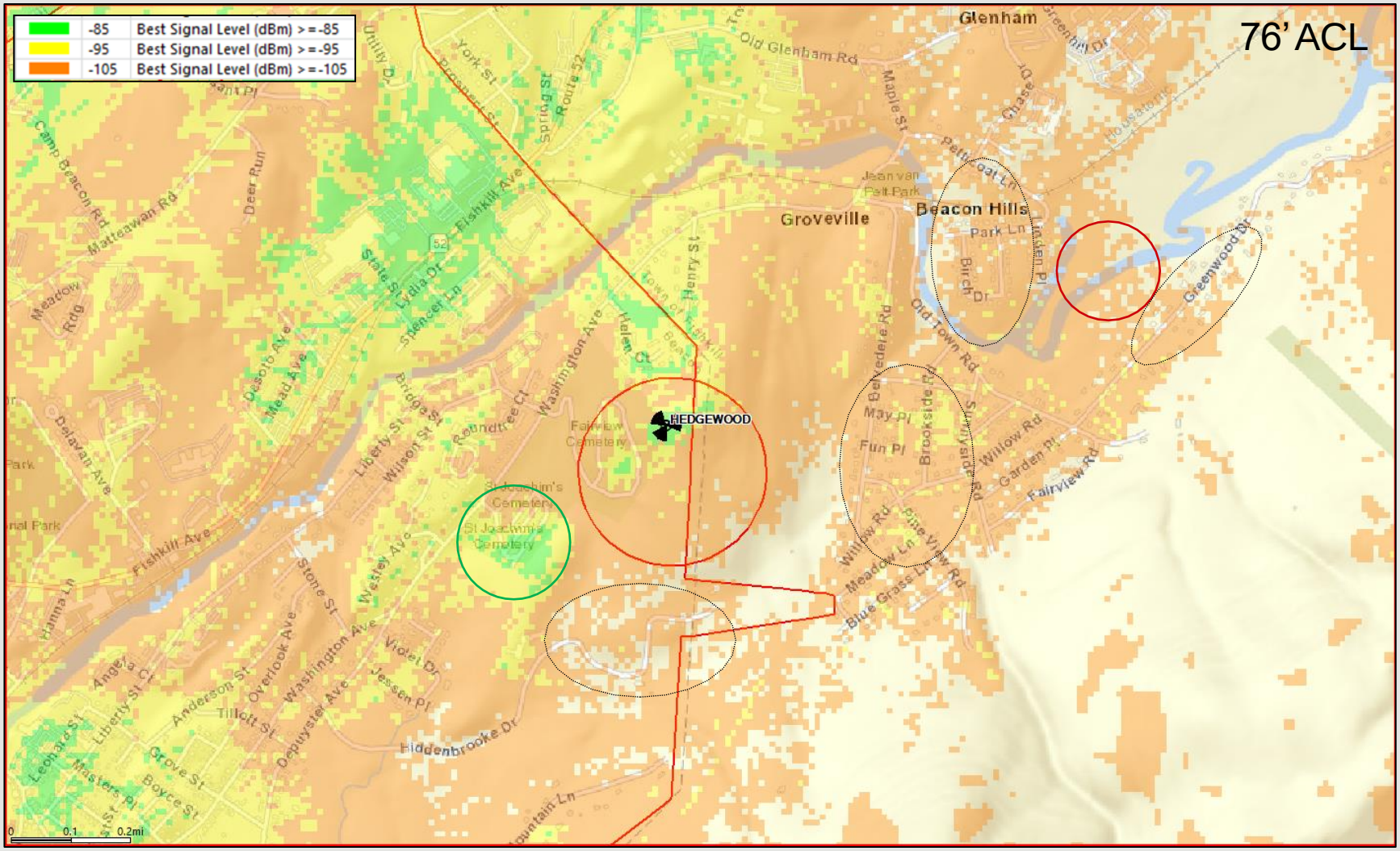


The map above represents mid band coverage from existing sites + Hedgewood site at 96'ACL. Midband footprint significantly reduced at 96'ACL and our focus areas will have either tier 4 outdoor coverage (-95dBm to -105dBm, which means no indoor midband coverage) or no midband coverage at all.

verizon

Height Justification (Mid-Band Coverage 2100MHz)

Zoomed in + increased signal strength granularity



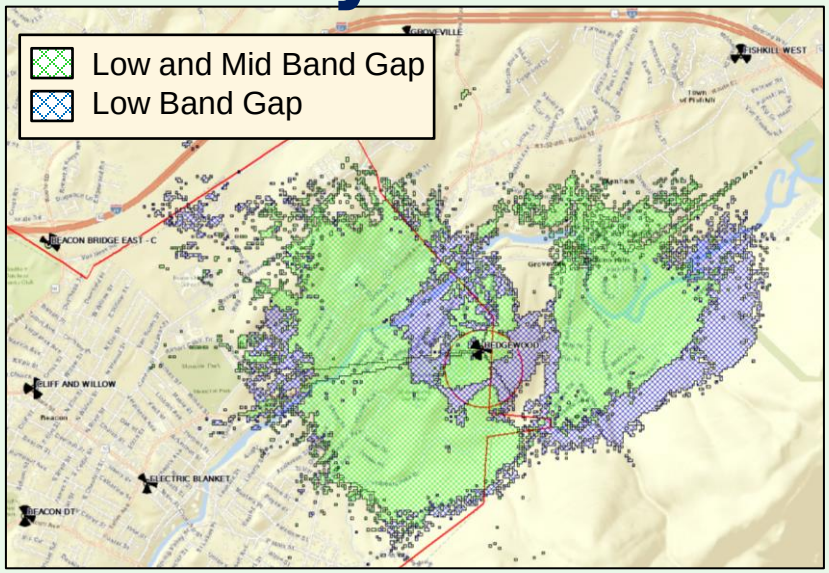
The map above represents mid band coverage from existing sites + Hedgewood site at 76'ACL. Midband footprint significantly reduced at 76'ACL and our focus areas will have either tier 4 outdoor coverage (-95dBm to -105dBm, which means no indoor midband coverage) or no midband coverage at all.

verizon

Height Justification Narrative/Summary

As mentioned before, Hedgewood project area is already experiencing high network utilization, primarily on low band due to lack of adequate and reliable mid band coverage in the area. Due to the high number of users in the project area, it is important to provide adequate mid band signal strength to this objective area. Verizon RF evaluated the minimum height requirement and it is our expert opinion that any height lower than 120' (116' ACL) will fail the capacity objective of the project. As shown previously, 116' ACL is not as ideal for the project as 126' would be, however it does provide acceptable coverage for the majority of the project area.

RF Justification Summary



The proposed site at 116' ACL resolves the substantial and significant gaps in coverage and capacity impacting the **Hedgewood** project area. The gaps are shown in the above graphic: The shaded areas as detailed in the legend represent gaps in coverage and capacity that Hedgewood (site) will resolve.

The network was analyzed to determine whether there is sufficient **RF coverage and capacity** in the **City of Beacon**. It was determined that there are significant gaps in adequate LTE service for Verizon Wireless in the 2100MHz frequency band. In addition to the coverage deficiencies, Verizon Wireless' network does not have sufficient capacity (low band or mid band) to handle the existing and projected LTE voice and data traffic in the area near and neighboring the proposed **Hedgewood** facility ("targeted service improvement area"). Based on the need for additional coverage and capacity while considering the topography and specific area requiring service, any further addition of capacity to distant existing sites does not remedy Verizon's significant gap in reliable service. Therefore, the proposed facility is also needed to provide "**capacity relief**" to the existing nearby Verizon Wireless sites, allowing the proposed facility and those neighboring sites to adequately serve the existing and projected capacity demand in this area.

With the existing network configuration there are significant gaps in service which restricts Verizon Wireless customers from originating, maintaining or receiving reliable calls and network access. It is our expert opinion that the proposed height will satisfy the coverage and capacity needs of Verizon Wireless and its subscribers in this portion of the **City of Beacon** and the **Hedgewood** project area. The proposed location depicted herein satisfies the identified service gaps and is proposed at the minimum height necessary for adequate service.

Brendan Hennessy

Brendan Hennessy
Engineer III – RF Design
Verizon Wireless

verizon

City of Beacon Planning Board Agenda
09/12/2023

Title:

Certificate of Appropriateness - 7 High Street; Facade

ATTACHMENTS

7 High ARB app PB 9.12.23.pdf

ARCHITECTURAL REVIEW BOARD APPLICATION

RECEIVED 8/29/23 MP

Date: 29-Aug-23

Project Address: 7 High Street, Beacon, NY

Project Architect/Engineer: Joseph A Torhan, Architect

Owner/Builder: The Lindley, LLC

Contact Phone No.: 646-284-3118 Email: jDonovan@hudsontodd.com

Approval Requested: X Certificate of Appropriateness (sign or façade change) _____ New Single-Family House

Color/Materials:

Siding: Hardie siding color: Cobblestone

Roofing: Timberline color: Barkwood

Windows: Color: color: Ebony Type: Marvin Elevate

Trim: Hardie trim color: Arctic White

Garage Door: NA

Stone/Brick: exsiting

Joseph Donovan

Signature of Owner

Applications for sign approval must also submit a sign permit application & supporting documents

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

PROJECT:

ALTERATION OF:

7 HIGH STREET

BEACON, NEW YORK 12508

ISSUED TO PLANNING BOARD FOR CERTIFICATE OF APPROPRIATENESS

ZONING INFORMATION

One Family Residence District R1-7.5
Historic District and Landmark Overlay Zone

Minimum Lot Size; Area 7,500 square feet, Area Per Unit 7,500 square feet,
Width 75 feet, Depth 100 feet (Existing non-conforming)

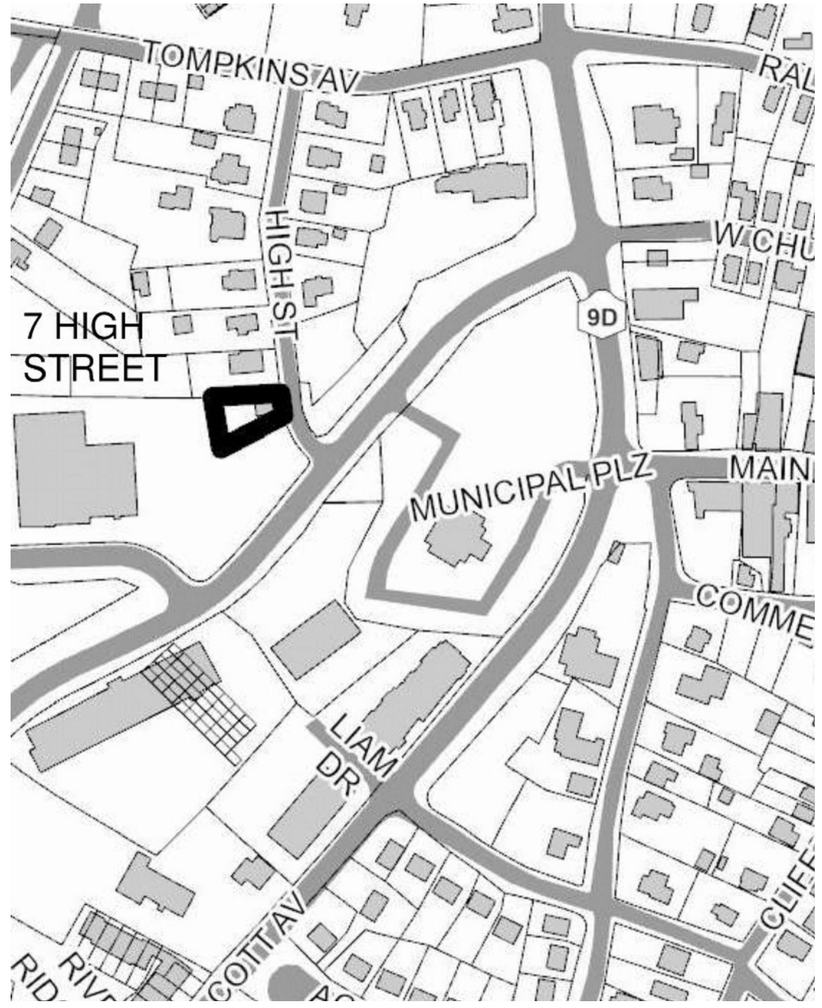
Minimum Yard; Front 15 feet, Side 10 feet, Rear 25 feet
(Conforms, No change proposed)

Maximum Building Height; 2.5 Stories, 35 feet
(Conforms/No change proposed)

Maximum Permitted Building Coverage 30% permitted, 7.3% existing
(Conforms, No change proposed)

Maximum Number of Units per Building, 1 (Conforms/No change proposed)

PROJECT LOCATION MAP



DRAWING LIST

A1 - Title Sheet
A2 - Site Plan
A3 - Existing Conditions Photos: Views Looking North and North-West
A4 - Existing Conditions Photos: Views Looking East and South-West
A5 - East Elevation (front)
A6 - North Elevation (right)
A7 - West Elevation (rear)
A8 - South Elevation (left)
A9 - Exterior Materials, Finishes and Colors
A10 - Section A Through New Shed Dormer

Joseph E. Torhan Architect PLLC
joe.torhanarchitect@gmail.com
845-475-4102

Owner Lindley Todd LLC
4 Cross Street
Beacon, NY 12508

Project PROPOSED ALTERATION:
7 High Street
Beacon, NY 12508

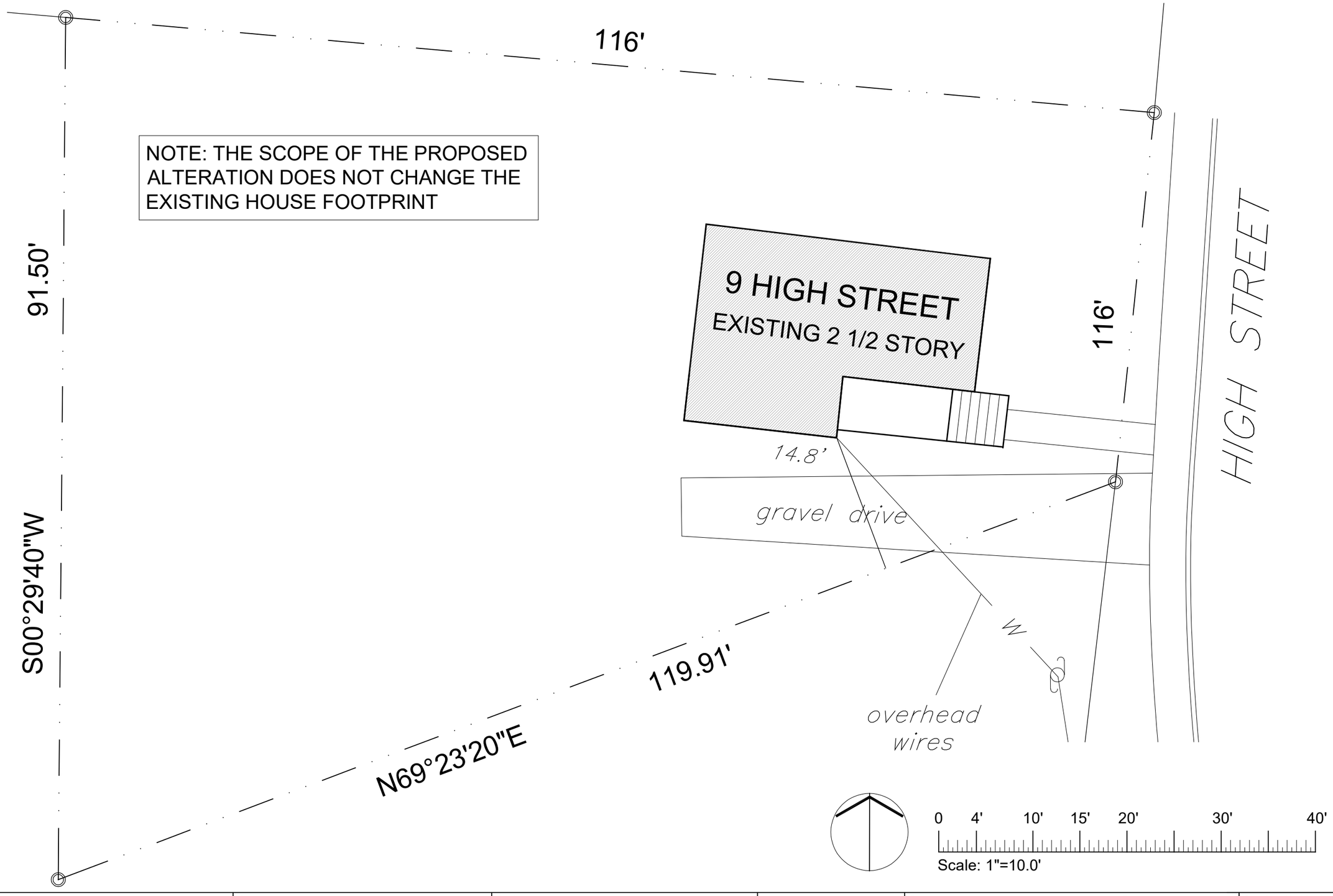
Revision No. | Revision Date

Drawing TITLE SHEET
Scale Not to Scale
Date 28 August 2023

Drawing Number A1
Sheet 1 of 10

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NOTE: THE SCOPE OF THE PROPOSED ALTERATION DOES NOT CHANGE THE EXISTING HOUSE FOOTPRINT



Joseph E. Torhan Architect joe.torhanarchitect@gmail.com 845-475-4102	Owner The Lindley LLC 4 Cross Street Beacon, NY 12508	Project PROPOSED ALTERATION: 7 HIGH STREET Beacon, NY 12508	Revision No. Revision Date	Drawing SITE PLAN Scale 1"=10.0' Date 28 August 2023	Drawing Number A-2 Sheet 2 of 10

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VIEW LOOKING NORTH - WEST



VIEW LOOKING NORTH

* EXISTING WINDOW TO BE REMOVED

REMOVAL / DEMOLITION NOTES:

1. Remove all existing roofing, siding, window trim, gutters and downspouts.
2. Remove all existing doors and windows at First and Second Floors
3. Except for window noted on VIEW LOOKING NORTH image, all existing doors and windows at Cellar Floor to remain.
4. Remove all existing deteriorated and/or damaged soffit and fascia trim.
5. Existing brick chimney to be removed.

Joseph E. Torhan Architect
joe.torhanarchitect@gmail.com
845-475-4102

Owner The Lindley LLC
4 Cross Street
Beacon, NY 12508

Project PROPOSED ALTERATION:
7 HIGH STREET
Beacon, NY 12508

Revision No. Revision Date

Drawing EXISTING CONDITIONS PHOTOS:
VIEWS LOOKING NORTH AND NORTH-WEST

Scale Not to Scale Date 28 August 2023

Drawing Number A3

Sheet 3 of 10

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VIEW LOOKING EAST



VIEW LOOKING SOUTH - WEST

REMOVAL / DEMOLITION NOTES:

1. Remove all existing roofing, siding, window trim, gutters and downspouts.
2. Remove all existing doors and windows at First and Second Floors
3. Except for window noted on VIEW LOOKING NORTH image, all existing doors and windows at Cellar Floor to remain.
4. Remove all existing deteriorated and/or damaged soffit and fascia trim.
5. Existing brick chimney to be removed.

Joseph E. Torhan Architect joe.torhanarchitect@gmail.com 845-475-4102	Owner The Lindley LLC 4 Cross Street Beacon, NY 12508	Project PROPOSED ALTERATION: 7 HIGH STREET Beacon, NY 12508	Revision No. Revision Date	Drawing EXISTING CONDITIONS PHOTOS: VIEWS LOOKING EAST AND SOUTH-WEST Scale Not to Scale Date 28 August 2023	Drawing Number A4 Sheet 4 of 10

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ALL STEEP SLOPE ROOF AREAS:

PROVIDE AND INSTALL NEW ASPHALT SHINGLE ROOFING, UNDERLAYMENT, ICE BARRIER, FLASHING, DRIP EDGES, GUTTERS, LEADERS AND DOWNSPOUTS.

LOW SLOPE ENTRY PORCH ROOF:

PROVIDE AND INSTALL NEW MEMBRANE ROOFING, UNDERLAYMENT, ICE BARRIER, FLASHING, DRIP EDGES.
COLOR OF MEMBRANE TO MATCH STEEP SLOPE ROOFING.



SEE A9 FOR TYPICAL EXTERIOR MATERIALS, FINISHES AND COLORS

0 4' 10' 15'

Scale: $\frac{1}{4}$"=1-0"

Joseph E. Torhan Architect joe.torhanarchitect@gmail.com 845-475-4102	Owner The Lindley LLC 4 Cross Street Beacon, NY 12508	Project PROPOSED ALTERATION: 7 HIGH STREET Beacon, NY 12508	Revision No. / Revision Date	Drawing EAST (front) ELEVATION Scale $\frac{1}{4}$" = 1'-0" Date 28 August 2023	Drawing Number A5 Sheet 5 of 10

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Joseph E. Torhan Architect
joe.torhanarchitect@gmail.com
845-475-4102

Owner
The Lindley LLC
4 Cross Street
Beacon, NY 12508

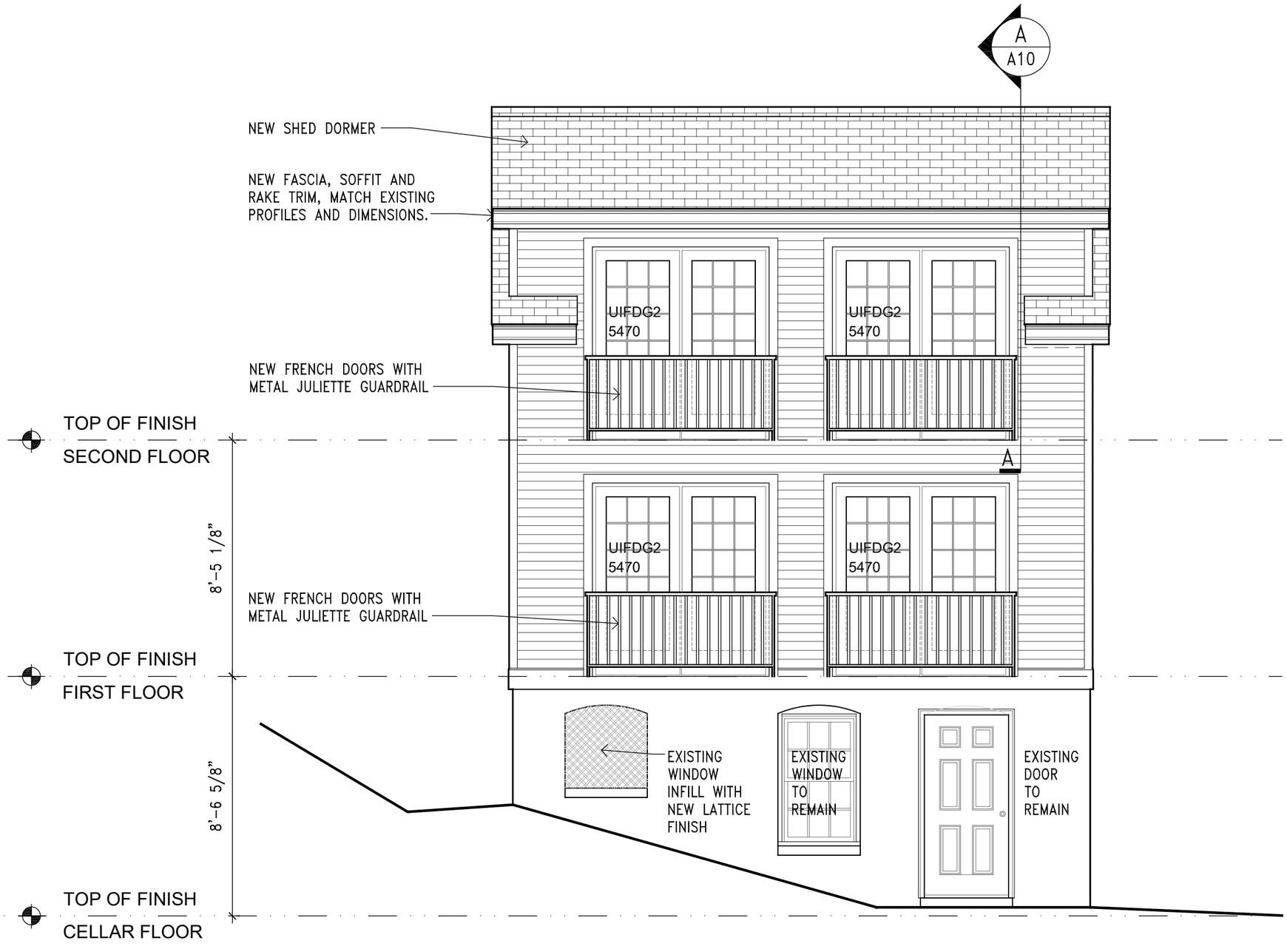
Project PROPOSED ALTERATION:
7 HIGH STREET
Beacon, NY 12508

Revision No. | Revision Date

Drawing NORTH (right) ELEVATION
Scale 1/4" = 1'-0"
Date 28 August 2023

Drawing Number A6
Sheet 6 of 10

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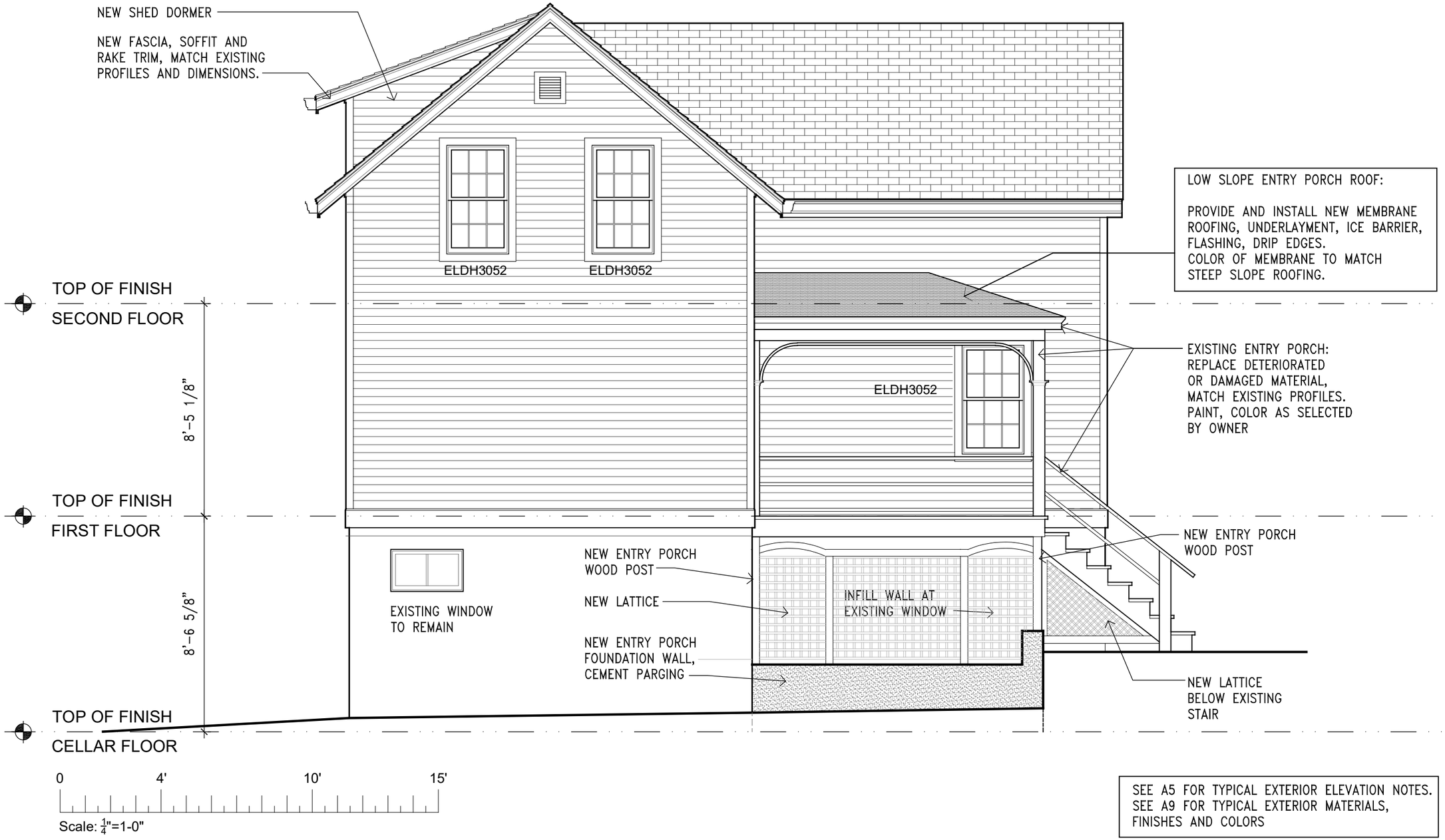
SEE A5 FOR TYPICAL EXTERIOR ELEVATION NOTES.
SEE A9 FOR TYPICAL EXTERIOR MATERIALS, FINISHES AND COLORS

0 4' 10' 15'

Scale: $\frac{1}{4}$"=1-0"

Joseph E. Torhan Architect joe.torhanarchitect@gmail.com 845-475-4102	Owner The Lindley LLC 4 Cross Street Beacon, NY 12508	Project PROPOSED ALTERATION: 7 HIGH STREET Beacon, NY 12508	Revision No. Revision Date	Drawing WEST (rear) ELEVATION Scale $\frac{1}{4}$" = 1'-0" Date 28 August 2023	Drawing Number A7 Sheet 7 of 10

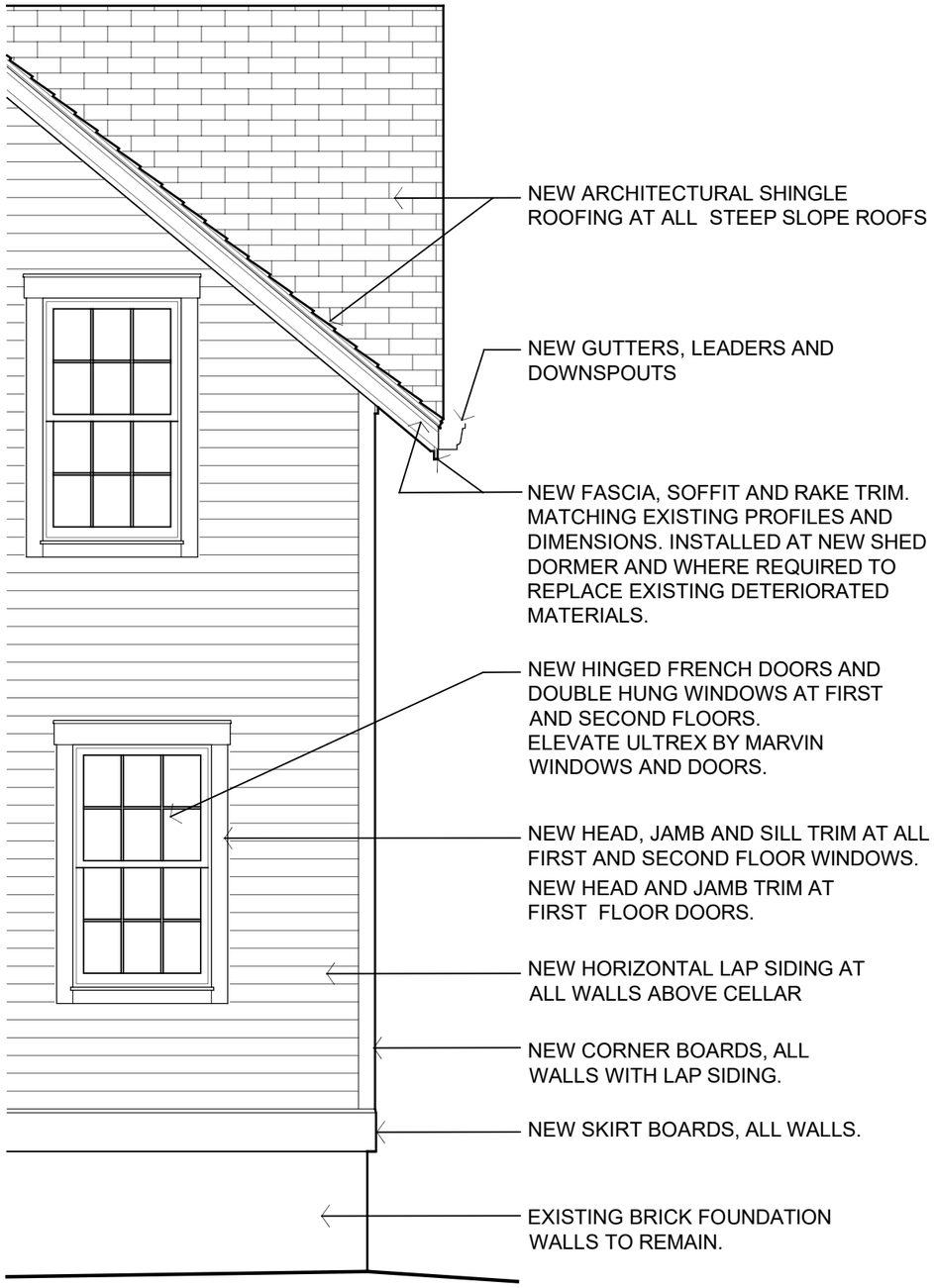
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SEE A5 FOR TYPICAL EXTERIOR ELEVATION NOTES.
SEE A9 FOR TYPICAL EXTERIOR MATERIALS, FINISHES AND COLORS

Joseph E. Torhan Architect joe.torhanarchitect@gmail.com 845-475-4102	Owner The Lindley LLC 4 Cross Street Beacon, NY 12508	Project PROPOSED ALTERATION: 7 HIGH STREET Beacon, NY 12508	Revision No. / Revision Date	Drawing SOUTH (left) ELEVATION Scale 1/4" = 1'-0" Date 28 August 2023	Drawing Number A8 Sheet 8 of 10

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STEEP SLOPE ROOFING:

All steep slopes to receive fiberglass asphalt shingles.
GAF Timberline HDZ, Class A, Architectural Shingles.
Color to be 'Barkwood'.

TRIM; FASCIA, SOFFIT, RAKE, CORNER BOARDS AND SKIRT BOARDS:

James Hardie fiber cement trim boards. Smooth texture, finish color to be 'Arctic White'.

GUTTERS AND DOWNSPOUTS:

'Arctic White', subject to availability.

SIDING:

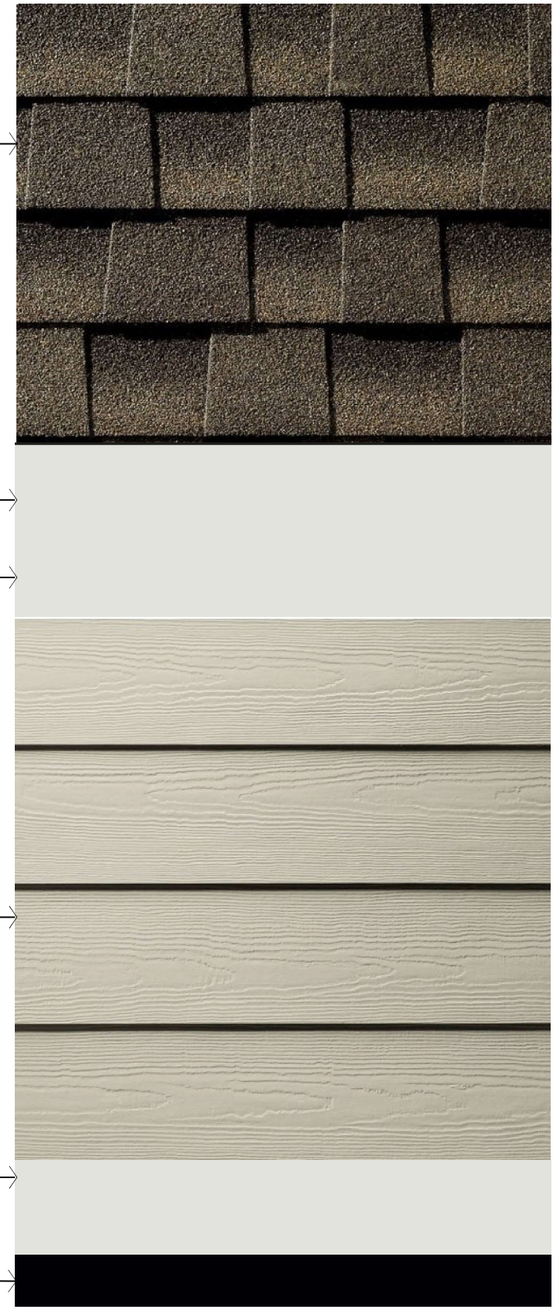
James Hardie fiber cement plank lap siding.
Color to be 'Cobble Stone'.

DOOR TRIM, WINDOW TRIM AND LATTICE:

James Hardie fiber cement trim boards.
Smooth texture, finish color to be 'Arctic White'.

WINDOWS AND JULIETTE GUARDRAIL:

All new windows to be 'Elevate' windows as manufactured by Marvin. Color of frames to be 'Ebony'.



TYPICAL EXTERIOR MATERIALS:

MATERIAL FINISHES AND COLORS:

Joseph E. Torhan Architect
joe.torhanarchitect@gmail.com
845-475-4102

Owner: The Lindley LLC
4 Cross Street
Beacon, NY 12508

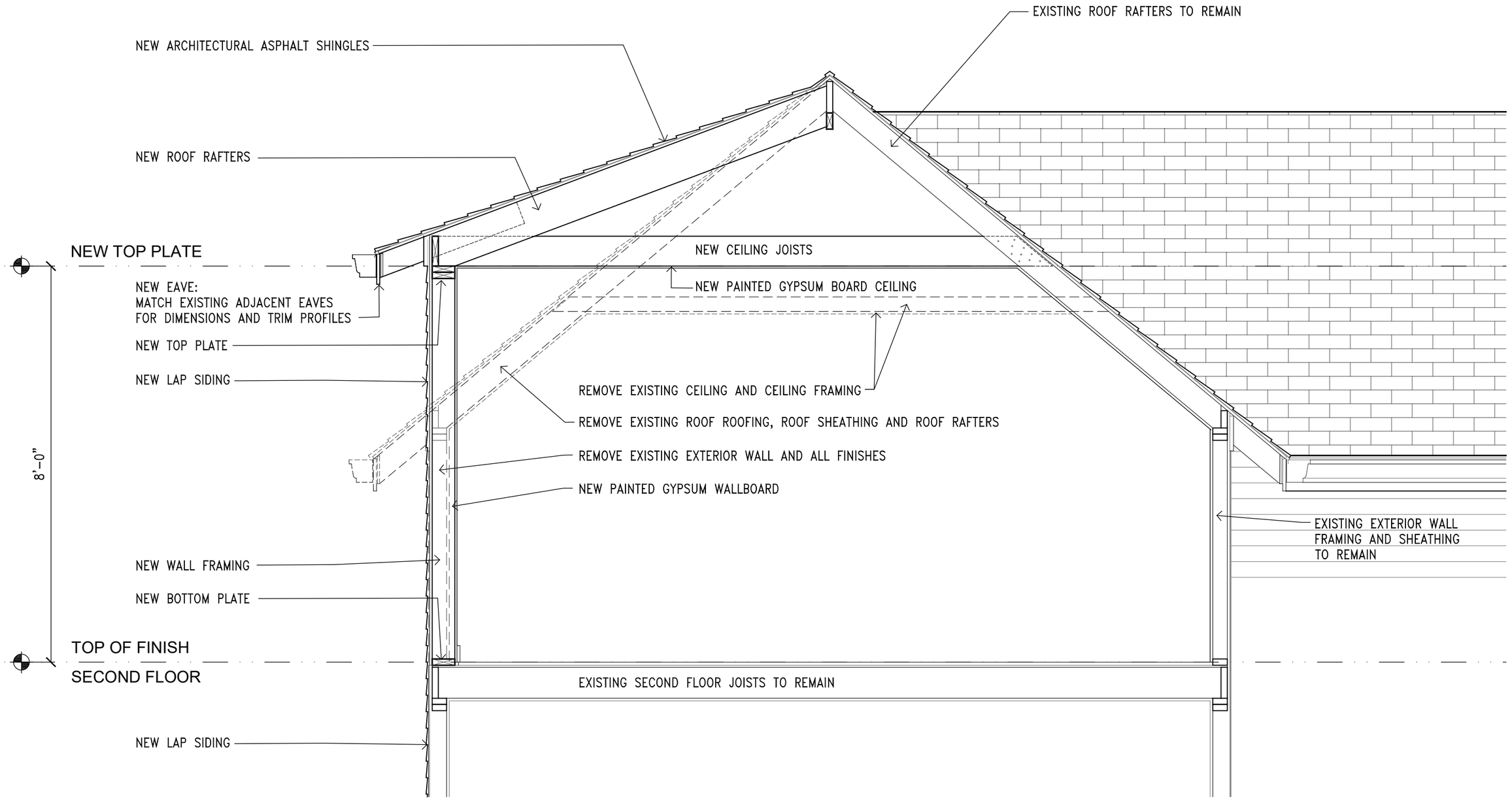
Project: PROPOSED ALTERATION:
7 HIGH STREET
Beacon, NY 12508

Revision No. | Revision Date

Drawing: EXTERIOR MATERIALS, FINISHES AND COLORS
Scale: Not to Scale
Date: 28 August 2023

Drawing Number: A9
Sheet: 9 of 10

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Joseph E. Torhan Architect
joe.torhanarchitect@gmail.com
845-475-4102

Owner
The Lindley LLC
4 Cross Street
Beacon, NY 12508

Project PROPOSED ALTERATION:
7 HIGH STREET
Beacon, NY 12508

Revision No. Revision Date

Drawing SECTION A
THROUGH NEW SHED DORMER

Scale $\frac{1}{2}$" = 1'-0"

Date 28 August 2023

Drawing Number A10

Sheet 10 of 10

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