Len Warner
Karen Quiana
Kevin Byrne
Jill Reynolds
J. Randall Williams
Richard Muscat
John Gunn

CITY OF BEACON, NEW YORK
THE PLANNING BOARD WILL MEET ON TUESDAY, JUNE 9, 2020 AT 7:00 PM. DUE TO PUBLIC HEALTH AND SAFETY CONCERNS RELATED TO COVID-19, THE PLANNING BOARD WILL NOT BE MEETING IN-PERSON. IN ACCORDANCE WITH THE GOVERNORâ€™S EXECUTIVE ORDER 202.1, THE JUNE 9, 2020 MEETING WILL BE HELD VIA VIDEOCONFERENCING, AND A TRANSCRIPT WILL BE PROVIDED AT A LATER DATE. THE PUBLIC CAN WATCH THE LIVE MEETING ONLINE AT YOUTUBE AT WWW.YOUTUBE.COM/CHANNEL/UCVPPIGGWZDER7WYMW-SUDXG. IF ANY INTERESTED MEMBERS OF THE PUBLIC WOULD LIKE TO PROVIDE COMMENTS ON THE APPLICATION, COMMENTS CAN BE CALLED IN DURING THE MEETING AT (929) 205-6099; WEBINAR ID: 860 5880 9867; PASSWORD 623420. COMMENTS CAN ALSO BE PROVIDED VIA EMAIL NO LATER THAN 5PM ON JUNE 9, 2020 TO ETHA GROGAN, PLANNING BOARD SECRETARY, AT EGROGAN@CITYOFBEACON.ORG. PLEASE CHECK THE MEETING MATERIALS POSTED ON THE CITY WEBSITE (WWW.CITYOFBEACON.ORG) AND FOR FURTHER INSTRUCTIONS. THIS AGENDA AND THE MEETING FORMAT ARE SUBJECT TO CHANGE.

June 9, 2020
7:00 PM
Planning Board Agenda

Regular Meeting

1. Continue public hearing for SEQRA environmental review on applications for Subdivision and Site Plan Approval, â€œBeacon Views Townhousesâ€ 39 units, Conklin Street, submitted by Beacon Views, LLC

Miscellaneous Business

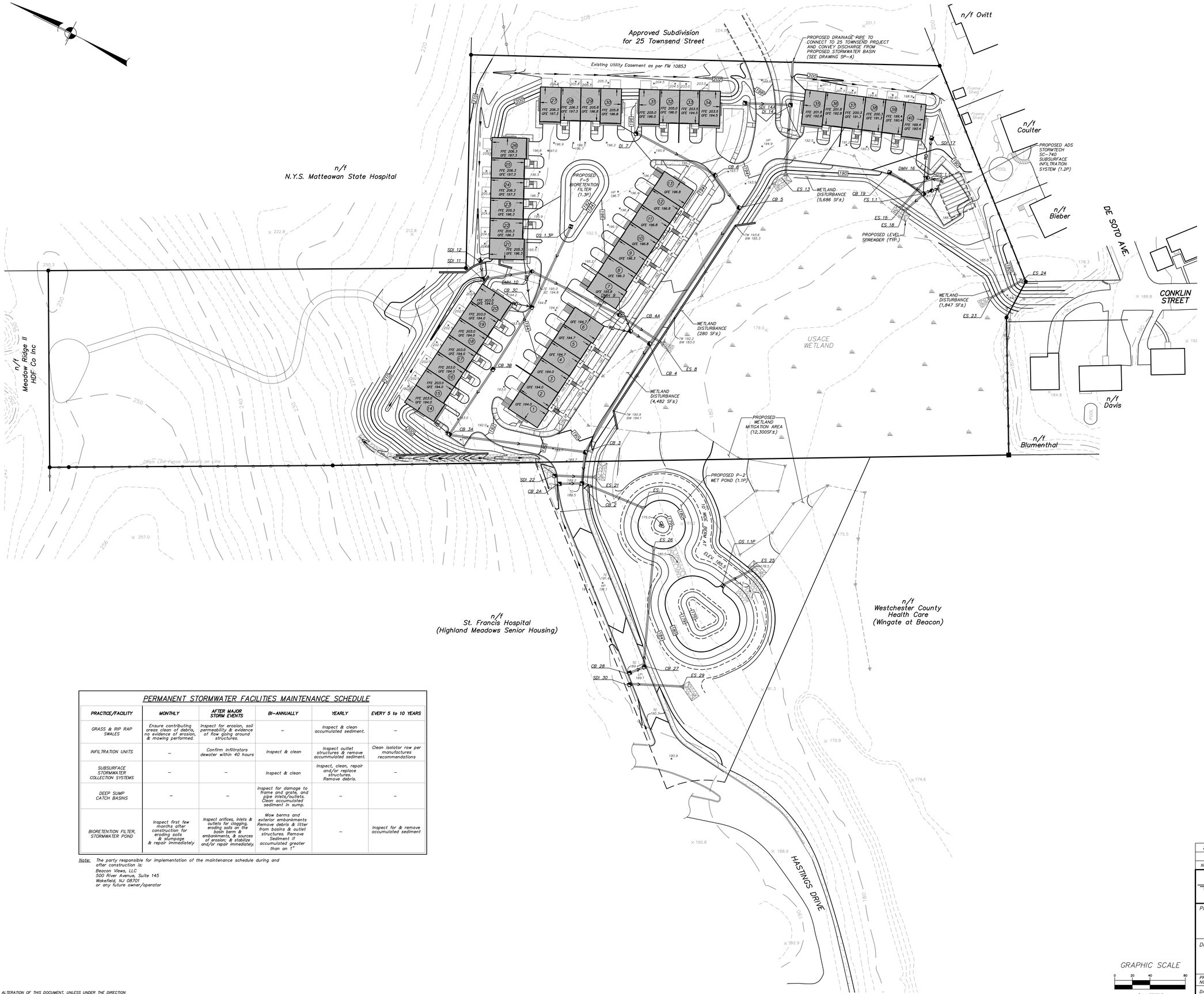
1. Zoning Board of Appeals â€“ no meeting in June

Architectural Review

1. Consider request for two 90-day extensions of Subdivision Approval â€“ 25 Townsend Street, submitted by AK Property Holding, LLC

2. Certificate of Appropriateness â€“ 466 Main Street; new faÃ§ade color

3. Certificate of Appropriateness â€“ 31 Willow Street, St. Johnâ€™s Church; new roof



LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- EXISTING WETLAND FLAG
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT GRADE
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED TOP OF WALL & BOTTOM OF WALL ELEVATIONS
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION
- PROPOSED HDPE DRAINAGE PIPE (SIZE AS NOTED)
- PROPOSED GRASS SWALE

PROPOSED DRAINAGE TABLE

STRUCTURE	RIM.	INV.	PIPE	LENGTH	SLOPE
DI 7	195.9	192.7			
			12" HDPE	101 L.F.	2.4%
CB 6	193.5	190.3			
			12" HDPE	46 L.F.	1.1%
CB 5	193.4	IN 189.8 | OUT 189.3			
			15" HDPE	184 L.F.	1.2%
CB 4	191.2	187.3			
			15" HDPE	143 L.F.	1.0%
CB 3	189.4	IN 185.8 | OUT 182.3			
			24" HDPE	35 L.F.	1.1%
CB 2	189.0	182.3			
			24" HDPE	76 L.F.	3.0%
ES 1	--	180.0			
CB 4A	191.2	188.0			
			12" HDPE	26 L.F.	1.9%
CB 4	191.2	187.5			
CB 2A	189.0	185.8			
			12" HDPE	25 L.F.	2.0%
CB 2	189.0	185.3			
OS 1.3P	193.5	188.2			
			12" HDPE	102 L.F.	1.1%
CB 3C	194.2	IN 187.1 | OUT 186.7			
			15" HDPE	83 L.F.	1.1%
CB 3B	193.0	186.0			
			15" HDPE	88 L.F.	1.0%
CB 3A	192.4	185.1			
			15" HDPE	155 L.F.	1.0%
CB 3	189.4	183.5			
SDI 22	189.9	186.7			
			15" HDPE	47 L.F.	1.5%
ES 21	--	186.0			
SDI 12	202.9	198.8			
			12" HDPE	22 L.F.	9.2%
SDI 11	199.9	IN 196.8 | OUT 195.5			
			12" HDPE	57 L.F.	5.6%
DMH 10	196.0	192.6			
			12" HDPE	110 L.F.	2.6%
DMH 9	192.9	189.7			
			12" HDPE	60 L.F.	12.0%
ES 8	--	182.5			
SDI 14A	196.0	192.3			
			12" HDPE	52 L.F.	3.3%
DI 14	193.8	IN 190.6 | OUT 190.0			
			15" HDPE	80 L.F.	5.5%
ES 13	--	186.0			
SDI 17	190.5	187.1			
			15" HDPE	45 L.F.	8.0%
DMH 16	188.1	183.5			
			15" HDPE	47 L.F.	1.1%
ES 15	--	183.0			
CB 19	189.3	186.1			
			12" HDPE	46 L.F.	3.1%
FS 1.1	187.7	184.7			
			12" HDPE	30 L.F.	5.7%
ES 18	--	183.0			
FS 1.1	187.7	184.7			
			8" HDPE	10 L.F.	2.0%
HDS 1.1	187.8	184.5			
			8" HDPE	9 L.F.	2.2%
1.2P	--	184.3			
1.2P	--	184.3			
			8" HDPE	19 L.F.	1.1%
DMH 16	188.1	184.1			
ES 24	--	176.0			
			15" HDPE	44 L.F.	1.1%
ES 23	--	175.5			
OS 1.1P	184.5	179.0			
			24" HDPE	37 L.F.	1.4%
ES 25	--	178.5			
CB 28	188.9	185.7			
			12" HDPE	18 L.F.	2.8%
CB 27	188.9	185.2			
			12" HDPE	136 L.F.	3.8%
ES 26	--	180.0			
SDI 30	189.5	186.2			
			15" HDPE	61 L.F.	1.1%
ES 29	--	185.5			

PERMANENT STORMWATER FACILITIES MAINTENANCE SCHEDULE

PRACTICE/FACILITY	MONTHLY	AFTER MAJOR STORM EVENTS	BI-ANNUALLY	YEARLY	EVERY 5 to 10 YEARS
GRASS & RIP RAP SWALES	Ensure contributing areas clean of debris, no evidence of erosion, & mowing performed.	Inspect for erosion, soil permeability & evidence of flow going around structures.	–	Inspect & clean accumulated sediment.	–
INFILTRATION UNITS	–	Confirm infiltrators dewater within 40 hours	Inspect & clean	Inspect outlet structures & remove accummulated sediment.	Clean isolator row per manufactures recommendations
SUBSURFACE STORMWATER COLLECTION SYSTEMS	–	–	Inspect & clean	Inspect, clean, repair and/or replace structures. Remove debris.	–
DEEP SUMP CATCH BASINS	–	–	Inspect for damage to frame and grate, and pipe inlets/outlets. Clean accumulated sediment in sump.	–	–
BIORETENTION FILTER, STORMWATER POND	Inspect first few months after construction for eroding soils & slumpage & repair immediately	Inspect orifices, inlets & outlets for clogging, eroding soils on the basin berm & embankments, & sources of erosion; & stabilize and/or repair immediately.	Mow berms and exterior embankments Remove debris & litter from basins & outlet structures. Remove Sediment if accumulated greater than an 1"	–	Inspect for & remove accumulated sediment

Note: The party responsible for implementation of the maintenance schedule during and after construction is:
Beacon Views, LLC
500 River Avenue, Suite 145
Wakefield, NJ 08701
or any future owner/operator

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

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ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
GRADING & DRAINAGE PLAN

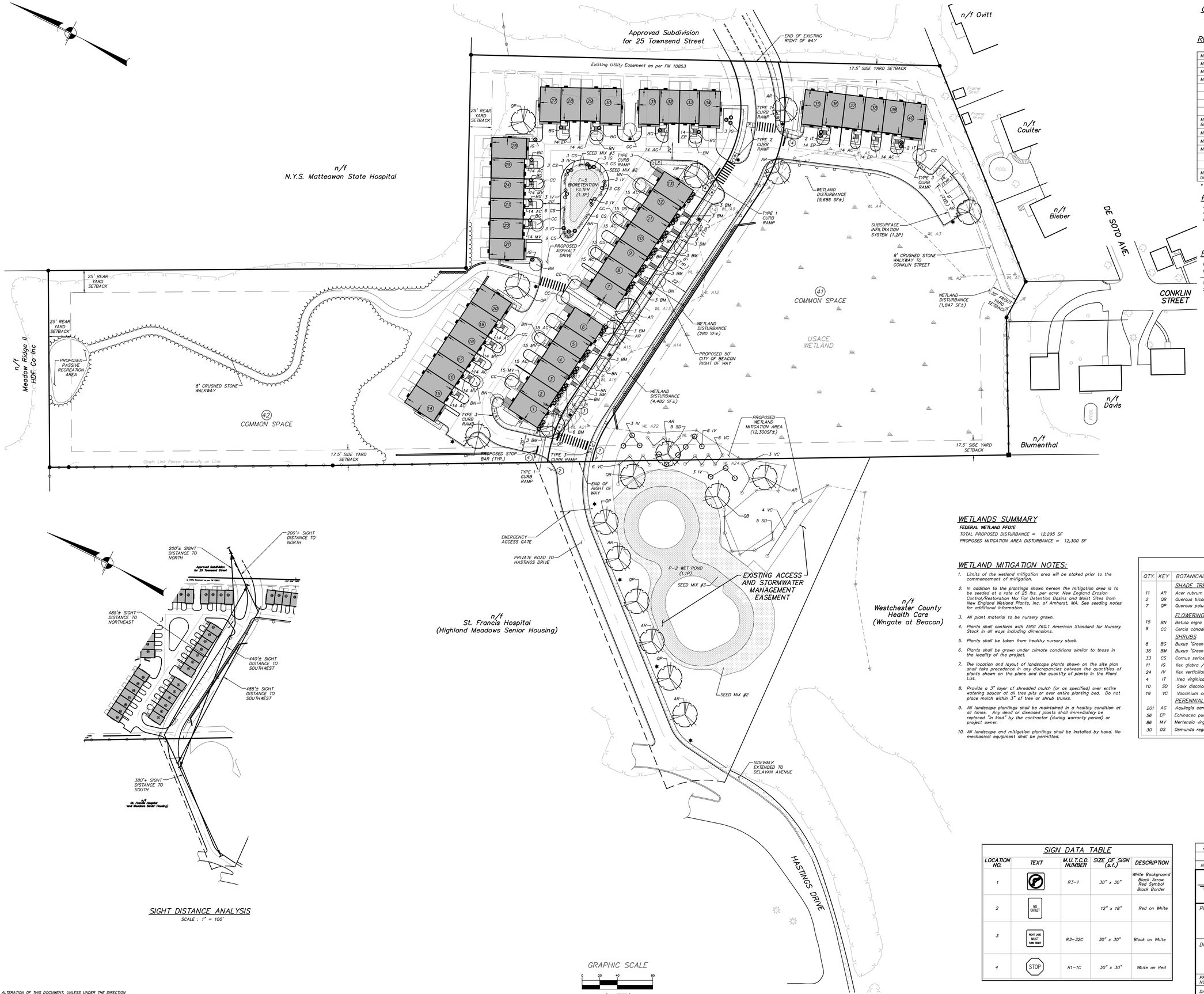
STATE OF NEW YORK — JEFFREY J. COMPLAND — 091931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	J.F.R.
SCALE	1" = 40'	CHECKED BY	A.D.T.

DRAWING NO. SP-2.1 SHEET 4 / 15

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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SIGHT DISTANCE ANALYSIS

SCALE : 1" = 100'

GRAPHIC SCALE

0 20 40 80

(IN FEET)

1 inch = 40 ft.

GENERAL NOTES:

1) Trash and recycling to be collected at each unit by a privately hired waste management contractor.

RD-5 ZONE REQUIREMENTS:

	Required/Permitted:	Provided:
Minimum Lot Area:	5,000 SF	374,518 SF±
Minimum Lot Width:	50'	440'±
Minimum Lot Depth:	100'	848'±
Minimum Yard Setbacks:		
Front:	30'	30'
Minimum Side:	17.5'	35'
Total of 2:	20'	75'
Rear:	25'	25'
Minimum Distance Between Buildings on the Same Lot:	30'	20'*
Maximum Building Height:	3 Stories or 35'	Less than 35'
Minimum Building Height:	1 Story and 12'	More than 12'
Maximum Building Coverage		
Multi-family:	20%	8.1%
Other uses:	30%	0%
Maximum No. of Dwelling Units per Building	16	7

* Seeking relief from minimum distance as part of terms of conservation subdivision

PARKING REQUIREMENTS:

2 per Dwelling Unit + .25 Spaces per Bedroom	= 110 Spaces
Garage Spaces	= 80 Spaces
Driveway Spaces	= 40 Spaces
Visitor Spaces	= 19 Spaces
	= 139 Spaces Provided

RECREATION AREAS SUMMARY

Required SF @ 2,000 for First 20 Units Required 100 SF for Each Additional Unit	= 4,000 SF Required
Western Trail Passive Recreation Area	= 7,080 SF
Southern Trail to Conklin Street Area	= 1,385
	= 8,465 SF Provided

LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- WL A23 / WL A24 — EXISTING WETLAND FLAG
- EXISTING TREE LINE
- 1 — PROPOSED SIGN
- PROPOSED DOOR LOCATION
- 9 — PROPOSED # OF STALLS TO BE STRIPED
- PROPOSED CONCRETE CURB
- PROPOSED EDGE OF SIDEWALK
- PROPOSED RETAINING WALL
- PROPOSED PAINTED STOPBAR
- PROPOSED CROSSWALK
- PROPOSED LANDSCAPING
- PROPOSED GUIDE RAIL
- PROPOSED POST MOUNTED LIGHT
- PROPOSED BUILDING MOUNTED LIGHT

WETLANDS SUMMARY

FEDERAL WETLAND PFO1E

TOTAL PROPOSED DISTURBANCE = 12,295 SF

PROPOSED MITIGATION AREA DISTURBANCE = 12,300 SF

WETLAND MITIGATION NOTES:

1. Limits of the wetland mitigation area will be staked prior to the commencement of mitigation.
2. In addition to the plantings shown hereon the mitigation area is to be seeded at a rate of 25 lbs. per acre: New England Erosion Control/Restoration Mix For Detention Basins and Moist Sites from New England Wetland Plants, Inc. of Amherst, MA. See seeding notes for additional information.
3. All plant material to be nursery grown.
4. Plants shall conform with ANSI Z60.1 American Standard for Nursery Stock in all ways including dimensions.
5. Plants shall be taken from healthy nursery stock.
6. Plants shall be grown under climate conditions similar to those in the locality of the project.
7. The location and layout of landscape plants shown on the site plan shall take precedence in any discrepancies between the quantities of plants shown on the plans and the quantity of plants in the Plant List.
8. Provide a 3" layer of shredded mulch (or as specified) over entire watering saucer at all tree pits or over entire planting bed. Do not place mulch within 3" of tree or shrub trunks.
9. All landscape plantings shall be maintained in a healthy condition at all times. Any dead or diseased plants shall immediately be replaced "in kind" by the contractor (during warranty period) or project owner.
10. All landscape and mitigation plantings shall be installed by hand. No mechanical equipment shall be permitted.

PLANT LIST

QTY.	KEY	BOTANICAL/COMMON NAME	SIZE	ROOT
		SHADE TREES		
11	AR	Acer rubrum / Red Maple	10'-12' HT.	B&B
2	QB	Quercus bicolor / Swamp White Oak	10'-12' HT.	B&B
7	QP	Quercus palustris / Pin Oak	10'-12' HT.	B&B
		FLOWERING TREES		
15	BN	Betula nigra / River Birch	8'-10' HT.	B&B
9	CC	Cercis canadensis / Eastern Redbud	8'-10' HT.	B&B
		SHRUBS		
8	BG	Buxus 'Green Gem' / Green Gem Boxwood		#3 CONT./3' O.C.
36	BM	Buxus 'Green Mountain' / Green Mountain Boxwood		#3 CONT./3' O.C.
33	CS	Cornus sericea / Red Twig Dogwood		#3 CONT./4' O.C.
11	IG	Ilex glabra / Inkberry		#3 CONT./4' O.C.
24	IV	Ilex verticillata / Winterberry		#5 CONT./15' O.C.
4	IT	Itea virginica / Virginia Sweetspire		#3 CONT./3' O.C.
10	SD	Salix discolor / Pussy Willow		#5 CONT./15' O.C.
19	VC	Vaccinium corymbosum / Highbush Blueberry		#5 CONT./15' O.C.
		PERENNIALS/GROUND COVERS		
201	AC	Aquilegia canadensis / Columbine		#1 CONT./18" O.C.
56	EP	Echinacea purpurea / Purple Coneflower		#1 CONT./18" O.C.
86	MV	Mertensia virginica / Virginia Bluebells		#1 CONT./18" O.C.
30	OS	Osmunda regalis / Royal Fern		#1 CONT./18" O.C.

SIGN DATA TABLE

LOCATION NO.	TEXT	M.U.T.C.D. NUMBER	SIZE OF SIGN (s.f.)	DESCRIPTION
1		R3-1	30" x 30"	White Background Black Arrow Red Symbol Black Border
2	NO OUTLET		12" x 18"	Red on White
3	RIGHT LANE MUST TURN RIGHT	R3-32C	30" x 30"	Black on White
4	STOP	R1-1C	30" x 30"	White on Red

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:

BEACON VIEWS

CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:

LAYOUT & LANDSCAPE PLAN

STATE OF NEW YORK — JEFFREY J. CONTENTO — LICENSED PROFESSIONAL ENGINEER — P.E. 1931

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.	DRAWING NO.	SHEET
DATE	8-27-19	DRAWN BY	J.F.R.	SP-1	3 / 15
SCALE	AS SHOWN	CHECKED BY	A.D.T.		

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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Approved Subdivision for 25 Townsend Street

n/f Ovitt

n/f Coulter

n/f Bieber

n/f Davis

n/f Blumenthal

n/f N.Y.S. Matteawan State Hospital

n/f Meadow Ridge II HDF Co Inc

n/f St. Francis Hospital (Highland Meadows Senior Housing)

n/f Westchester County Health Care (Wingate at Beacon)

DE SOTO AVE.

CONKLIN STREET

HASTINGS DRIVE

USACE WETLAND

Existing Utility Easement as per FM 10853

S 24°59'10" E (comp)
(S 24°59'01" E (deed))

241.50' (total)
38.00'
203.50'

N 65°00'59" E
473.19'

S 26°41'10" E
222.71'

N 63°15'18" E
298.91'

N 26°51'40" W
21.65'

N 26°41'40" W
765.83'

N 27°12'40" W
(N 27°41'40" W (per f.m.))
229.78'

S 62°42'26" W
155.74'

S 41°55'05" W
(S 41°25'05" W (per f.m.))
269.91'

S 03°05'54" E
41.94'

530.95'
481.19'

17.5' SIDE YARD SETBACK

25' REAR YARD SETBACK

30' FRONT YARD SETBACK

EXISTING CHAIN LINK FENCE TO BE REMOVED

EXISTING ACCESS AND STORMWATER MANAGEMENT EASEMENT

Frame Shed

POOL

Lot 4
Lot Line Realignment prepared for JCMW, Inc.
(filed September 30, 1987 as map no 8138)

LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- WL A23 — WL A24 — EXISTING WETLAND FLAG
- EXISTING TREE LINE
- 190 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- × 215.1 EXISTING SPOT GRADE
- EXISTING ITEMS TO BE REMOVED

General Notes:

1. Property line shown on these plans is based upon a map entitled "Boundary and Topographic Survey of Property prepared for Beacon Community Foundation, Inc.", dated March 22, 2005 as prepared by Insite Engineering, Surveying & Landscape Architecture, P.C.
2. Topography shown on these plans are based upon aerial photography dated April 14, 2003 and is photogrametricaly compiled. Elevations shown herean conform to the North American Vertical Datum of 1988 (N.A.V.D. 1988) as derived by GPS observation. The contour interval is 2'.
3. Site features and topography at the boundary of the access and stormwater easement where it meets Hastings Drive were field located on August 8, 2019 by Insite Engineering, Surveying & Landscape Architecture, P.C.
4. The existing wetland limit line as shown on these plans is based on a field delineation performed by Ecological Solutions, LLC on April 15, 2019 and survey located by Insite Engineering, Surveying & Landscape Architecture, P.C. The area of the wetland on the subject property is 2.55 acres.

UNIT DENSITY CALCULATIONS (RD–5)

Based on note "q" of Chapter 223–17c Schedule of Regulations for Residential Districts

Total Parcel (8.55 acres)	= 372,438 SF±
Wetland	= 111,078 SF±
Slopes 25% or Greater	= 8,500 SF±
Buildable Area	= 252,860 SF
Permitted Units @ 5,000 SF per Unit	= 50 Units
Proposed Units	= 40 Units

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
2	5–26–20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4–28–20	RESUBMISSION TO PLANNING BOARD	JFR

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www.insite–eng.com

PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
EXISTING CONDITIONS & REMOVALS PLAN

STATE OF NEW YORK — JEFFREY J. CONTARINO — 91931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8–27–19	DRAWN BY	J.F.R.
SCALE	1" = 40'	CHECKED BY	A.D.T.

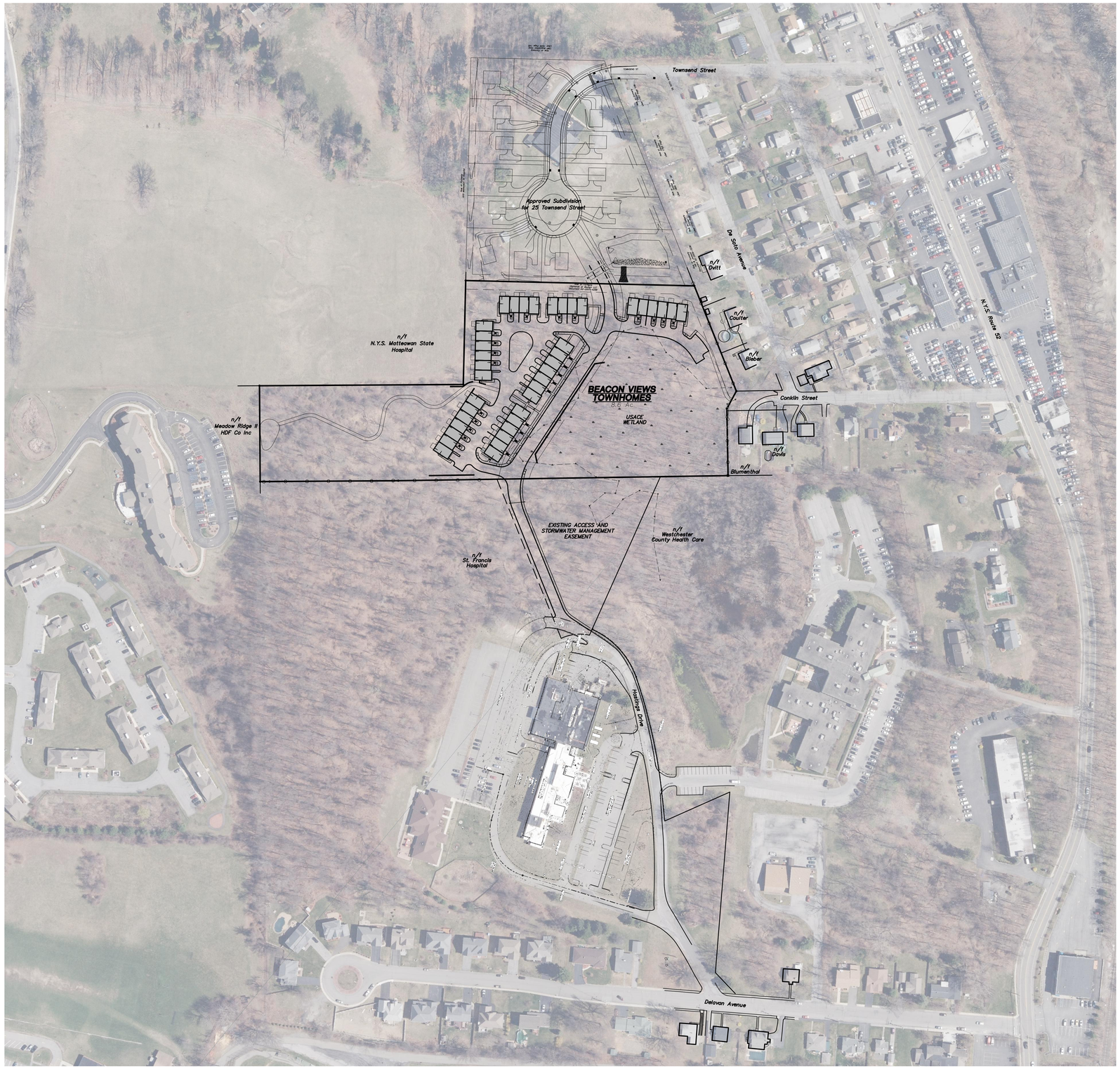
DRAWING NO. EX–1
SHEET 2 / 15

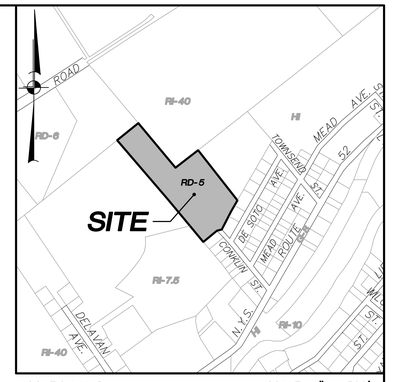
ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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BEACON VIEWS

HASTINGS DRIVE / CONKLIN STREET
CITY OF BEACON, NY





LOCATION MAP SCALE: 1" = 500'±

Applicant:
Beacon Views, LLC
500 River Avenue, Suite 145
Wakefield, NJ 08701

Record Owner:
Highlands at Beacon, LLC
2847 Church Street
Pine Plains, NY 12567

Site Data:
Tax Map No.: 6055-03-331123
Total Lot Area: 8.6 AC.

General Notes:

1. Property line shown on these plans is based upon a map entitled "Boundary and Topographic Survey of Property prepared for Beacon Community Foundation, Inc.", dated March 22, 2005 as prepared by Insite Engineering, Surveying & Landscape Architecture, P.C.
2. Topography shown on these plans are based upon aerial photography dated April 14, 2003 and is photogrametrically compiled. Elevations shown hereon conform to the North American Vertical Datum of 1988 (N.A.V.D. 1988) as derived by GPS observation. The contour interval is 2'.
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SITE PLAN DRAWING LIST

DRAWING NO.	DRAWING NAME	SHEET NO.
CS-1	COVER SHEET	1
EX-1	EXISTING CONDITIONS & REMOVALS PLAN	2
SP-1	LAYOUT & LANDSCAPE PLAN	3
SP-2.1	GRADING & DRAINAGE PLAN	4
SP-2.2	UTILITIES PLAN	5
SP-3	EROSION & SEDIMENT CONTROL PLAN	6
SP-4	SITE ACCESS PLAN	7
LP-1	LIGHTING PLAN	8
PR-1	DRAINAGE PROFILES	9
PR-2	WATER & SEWER PROFILES	10
D-1	DETAILS	11
D-2	DETAILS	12
D-3	DETAILS	13
D-4	DETAILS	14
D-5	DETAILS	15

Site Access Notes:

1. The applicant seeks to utilize the proposed connection to the right of way through the approved subdivision on 25 Townsend Street as its primary means of access for the Beacon Views Properties.
2. The road shown in the existing easement on the Highland Meadows Senior Housing Property would be utilized as an emergency access only, in this case.
3. In the event there is a delay in the construction of the road in the approved 25 Townsend Street right of way, the applicant would exercise the easement over the Highland Meadows Senior Housing Property, and utilize the proposed road thereon as the primary access to the site, until such time as the 25 Townsend Street road was constructed. At which time the road through the Highland Meadows Senior Housing Property easement would be gated and transitioned to emergency access only, as stated above.

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

Site Plan

Approved by resolution of the Beacon Planning Board on the ---th day of XXX , 2019.

Chairman, City Planning Board — Date

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

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PROJECT: BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING: COVER SHEET

STATE OF NEW YORK — JEFFREY F. ROBERTS — 21931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	J.F.R.
SCALE	1" = 100'	CHECKED BY	A.D.T.

DRAWING NO. CS-1 SHEET 1 / 15

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INSITE
ENGINEERING, SURVEYING &
LANDSCAPE ARCHITECTURE, P.C.

PRELIMINARY STORMWATER POLLUTION PREVENTION PLAN

Prepared For

BEACON VIEWS

City of Beacon, New York

May 26, 2020



Applicant Information:

Beacon Views, LLC
500 River Avenue
Wakefield, New Jersey 08701

Note: This report in conjunction with the project plans make up the complete Preliminary Stormwater Pollution Prevention Plan.

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1.0 INTRODUCTION

1.1 Project Description

The proposed project is located off of Conklin Street in the City of Beacon. The site is approximately 8.6 acres and is identified as Tax Map No. 6055-03-331123. The parcel is located in the RD-5 zoning district. The subject parcel and surroundings are shown on Figure 1. The project proposes seven (7) multi-family townhouse buildings (40 total townhouse units) and associated appurtenances. The primary access to the site will be off Hastings Drive, through the adjoining the former St. Francis Hospital property. An emergency access drive will be provided to the north, through the adjacent parcel. It is proposed to capture and treat the stormwater runoff associated with the proposed improvements.

1.2 Existing Stormwater Runoff Conditions

The subject project is located on one tax parcel off of Conklin Street, immediately north of Hastings Drive. The existing ground cover on the site is characterized as a mixture of woods, open grassed meadow areas and impervious surfaces from the adjacent properties. The property generally drains from north to south down to the onsite wetland.

The hydrologic soils groups for the project consists of C/D soils. The designations of the onsite soils located within the proposed limits of disturbance consist of Bernardston Silt Loam (BeB), Canandigua Silt Loam (Ca), and Nassau-Cardigan Complex (NwC) as identified on the Soil Conservation Service Web Soil Survey. The soils boundaries are shown on Figure 2 and 3 of this report.

As previously stated, the stormwater runoff from the existing property generally drains from north to south towards the existing onsite wetland. Approximately 20 acres of offsite stormwater runoff is conveyed through the subject property from offsite runoff. The analysis included in the project SWPPP utilizes one design line, Design Line 1, to assess the stormwater runoff from the property and any potential impacts from development to the existing natural resources on the property. Design Line 1 is located along a portion of the existing wetland boundary. The Pre-Development Drainage Map (Figure 2 of this report) shows the location of Design Line 1. The contributing area to Design Line 1 is identified as subcatchment PRE.

1.3 Proposed Stormwater Runoff Conditions

As previously stated, the proposed application includes the construction of seven (7) multi-family town house buildings, asphalt driveway, parking areas and associated appurtenances. Stormwater mitigation for the newly created impervious surfaces will be provided in the form of proposed stormwater management practices (SMP's) discussed further in later sections of this report. The proposed SMP's will be designed to capture and treat runoff from the impervious surfaces associated with the proposed buildings, driveway, parking areas and pedestrian walkways.

It is proposed to maintain the existing drainage patterns on the site to the maximum extent practical in the proposed condition to minimize the impact to the existing downstream wetland. As previously discussed, the stormwater analysis included in the SWPPP utilizes one design line, Design Line 1. It should be noted that Design Line 1 was adjusted in the post development condition and varies slightly from the design line used in the pre development analysis. Design Line 1, in the post-development condition, is located along the proposed wetland boundary line in order to analyze the stormwater runoff from all areas of the propose development. Stormwater treatment for the subject project will be accomplished with several different practices including a bioretention filter, subsurface infiltration system and a P-2 Wet Pond. The stormwater management practices have been sized to capture and treat the

Water Quality Volume from the developed area. A hydrodynamic separator is proposed upstream of the subsurface infiltration system for pretreatment only to satisfy the requirements of the Design Manual..

The stormwater runoff from the proposed development will be captured in a collection system and conveyed to the stormwater management practices. The stormwater runoff will be treated by three (3) stormwater management practices, including a I-4 Subsurface Infiltration System (1.2P), F-5 Biorentention Filter (1.3P) and a P-2 Wet Pond (1.1P). Pretreatment of the stormwater runoff will be provided with a hydrodynamic separator upstream of the proposed subsurface infiltration system, gravel diaphragm and mulch layer for the bioretention filter and a forebay in the wet pond. A flow splitter is proposed upstream of the subsurface infiltration system to discharge the water quality volume to the practice for treatment and bypass the larger storm events.

The contributing area to the subsurface infiltration system (1.2P) is shown as subcatchment 1.2S. Subcatchment 1.2S consists of proposed impervious surface on the southeast side of the project site including townhouse units 35-40 and associated parking area and is collected and conveyed to the proposed infiltration system through roof drains, drain inlets and drainage piping. The contributing area to the bioretention filter (1.3P) and wet pond (1.1P) are shown as subcatchment 1.3S and 1.1S, respectively. Subcatchment 1.3S consists of a portion of the proposed lawn area between townhouse units 26 and 27 and the proposed pavement area that sheet flows to the proposed filter. Subcatchment 1.2S consists of the majority of the proposed impervious area that is collected and conveyed through roof drains, drainage structures and drainage piping. The untreated/undeveloped area directly tributary to Design Line 1 in the post-development condition is shown as subcatchment 1.0S. The subcatchments are shown in Figure 3 of this report. A summary of the subcatchments in the post-development condition including the downstream treatment practice, total area and amount of impervious area within the subcatchment is shown in Table 1.3.1 below.

Table 1.3.1 – Post Development Subcatchment Summary

Subcatchment	Stormwater Management Practice	Total Area[1] (ac)	Impervious Area[1] (ac)
1.0S	Not Treated	18.5	0.5[2]
1.1S	1.1P	3.1	2.1
1.2S	1.2P	0.5	0.4
1.3S	1.3P	0.4	0.2

[1] Refer to subcatchment areas in Appendix C.
[2] The impervious area within subcatchment 1.0S is existing from the properties adjacent to the project site that are also tributary to Design Line 1.

As shown in the following sections of this report, the stormwater quality and quantity for the proposed development have been mitigated to the maximum extent practicable to minimize the impacts to the existing conditions of the downstream, onsite wetland. Additionally, an erosion and sediment control plan has been prepared in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control* to protect the existing waterbodies and drainage features during construction activities and in the post development condition.

2.0 STORMWATER MANAGEMENT

The proposed stormwater management system for the Beacon Views has been designed to meet the requirements of local, city, and state stormwater ordinances and guidelines, including but not limited to those of the City of Beacon and the NYSDEC.

Since the subject project proposes the disturbance of more than one (1) acre, coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit No. GP-0-20-001 is required. In order to meet the requirements, set forth by this permit, the latest edition of the NYSDEC *New York State Stormwater Management Design Manual* (NYSSMDM) was referenced for the

design of the proposed stormwater management system. The NYSSMDM specifies five design criteria that are discussed in detail below. They are Runoff Reduction Volume, Water Quality Volume, Stream Channel Protection Volume, Overbank Flood Control, and Extreme Flood Control. The first two of the requirements relates to treating water quality, while the later pertain to stormwater quantity (peak flow) attenuation.

To address stormwater quantity requirements of the NYSDEC, the "HydroCAD" Stormwater Modeling System," by HydroCAD Software Solutions LLC in Tamworth, New Hampshire, was used to model and assess the peak stormwater flows for the subject project. HydroCAD is a computer aided design program for modeling the hydrology and hydraulics of stormwater runoff. It is based primarily on hydrology techniques developed by the United States Department of Agriculture, Soil Conservation Service (USDA, SCS) TR-20 method combined with standard hydraulic calculations. For details on the input data for the subcatchments and design storms, please refer to Appendices B and C.

The input requirements for the HydroCAD computer program are as follows:

Subcatchments (contributing watershed/sub-watersheds)

- Design storm rainfall in inches
- CN (runoff curve number) values which are based on soil type and land use/ground cover
- Tc (time of concentration) flow path information
- Watershed Area in Acres

Stormwater Basins

- Surface area at appropriate elevations
- Flood elevation
- Outlet structure information

The precipitation values and intensity duration frequency (IDF) curves for the 1-Year, 10-Year, 100-Year 24-hour design storm events and rainfall distribution curves utilized for this report were obtained from the information provided by Northeast Regional Climate Center (NRCC) and the Natural Resources Conservation Service (NRCS) which is available online at *www.precip.eas.cornell.edu.* The values provided for all design storms analyzed have been listed below.

Table 2.0.1 – Precipitation Values for Corresponding Design Storms

Design Storm	24-Hour Rainfall
1-Year	2.6"
10-Year	4.7"
100-Year	8.3"

The CN (runoff curve number) values utilized in this report were referenced from the USDA, SCS publication *Urban Hydrology for Small Watersheds*. The following is a summary of the various land uses/ground covers and their associated CN values utilized in this report.

Table 2.0.2 – Project Ground Cover and Associated Curve Numbers (CN)

Land Use/Ground Cover	CN Value
Woods, D Soil	77
Meadow, D Soil	78
>75% Grass Cover, D Soil	80
Impervious Surface	98

2.1 NYSDEC Runoff Reduction Volume, RR_v

The Runoff Reduction Volume (RR_v) criterion is intended to replicate pre-development hydrology by maintaining preconstruction infiltration, peak flow runoff, discharge volume, as well as minimizing concentrated stormwater flow. As stated in Chapter 4 of the Design Manual, RR_v may be treated with standard SMP's with RR_v capacity sized in accordance with the Chapter 4/6 requirements, or with green infrastructure practices (GIP's) sized in accordance with the requirements set forth in Chapter 5. Runoff reduction is achieved when runoff from a site is captured, directed to a SMP or a GIP, infiltrated to the ground, reused, or removed by evapotranspiration, so it does not contribute to the stormwater discharge from the site. The goal for each site is to reduce the entire WQ_v (100%) through the implementation of GIP's and standard SMP's with RR_v capacity. However, if 100% of the WQ_v cannot be reduced by applying a combination of green infrastructure techniques and standard SMP's with RR_v capacity, "they must, at a minimum, reduce runoff from a percentage of the impervious area constructed as part of the project using the green infrastructure techniques and standard SMPs with RR_v capacity. In addition, the designer must provide justification in the SWPPP that evaluates each of the green infrastructure techniques listed in Table 3.2 and identify the specific site limitations that make application of the technique(s) infeasible."

The project SWPPP cannot provide 100% of the WQ_v through the implementation of GIP's or standard SMP's with RR_v capacity. This is because the onsite soils conditions and depth to groundwater in portions of the site, thus minimizing the area where infiltration practices for treatment of the RR_v / WQ_v is possible. With respect to runoff volume, the project SWPPP addresses and satisfies the RR_V requirements of the Design Manual. In order to meet these requirements to the maximum extent practicable, the project SWPPP has minimized the creation of impervious surfaces to the maximum extent practicable. The types of GIP's and standard SMP's with RR_v capacity that can be employed onsite are limited. The project SWPPP as required by the Design Manual meets and exceeds the RR_v minimum required. In addition, as required by the Design Manual, an analysis evaluating each of the green infrastructure techniques in Table 3.2 has been provided in Appendix F. For this project there are two (2) types of practices employed towards meeting the RR_v requirements.

The project proposes a F-5 Bioretention Filter and an I-4 Subsurface Infiltration System in an area of the project site where the soil conditions meet the Design Manual requirements. These two stormwater practices, sized in accordance with the Design Manual, will be applied as a GIP/SMP with volume reduction towards meeting the RR_v minimum. The biorentention filter sizing calculations have been provided in Appendix I of this SWPPP. Sizing calculations for the subsurface infiltration practice are provided in Section 2.2 below.

For a calculation of the Initial WQ_v / RR_v, the RR_v minimum, the RR_v / WQ_v required, and the RR_v provided, refer to Appendix A. In calculating the RR_v minimum, onsite soils belongs to the Hydrologic Soil Groups D. These soil groups have a specific reduction factor of 0.20. The table below summarizes the RR_v requirements for the site, as calculated in Appendix A.

Table 2.1.1 Runoff Reduction Volume Summary

Design Line	Initial WQ_v / RR_v (c.f.)[1]	RR_v Minimum (c.f.)	WQ_v RR_v Required (Initial WQ_v / RR_v minus RR_v provided through GIP with Area Reduction) (c.f.)	RR_v Provided (c.f.)	WQ_v Required for Downstream SMP (c.f.)
Design Line 1	13,012	2,607	13,012	3,856	9,156

[1] Refer to Appendix A for Initial WQ_v Calculations

As noted in the table above the project has provided greater than the RR_v minimum. By implementing GIP's to the greatest extent practicable, and exceeding the RR_v minimum, the NYSDEC RR_v requirement has been addressed. As previously stated, 100% of the WQ_v/RR_v required could not be provided due to onsite soil conditions and the limited area where infiltration is feasible. As 100% of the WQ_v / RR_v required was not provided for the subcatchments, a downstream standard SMP must be provided to treat the difference between the WQ_v / RR_v required and the RR_v provided. A P-2 Wet Pond will be provided as the primary downstream stormwater management practice to treat the remaining WQ_v for the subcatchments. As the WQv for subcatchment 1.1S, shown in Table 2.2.1, is greater than the WQv required, the Wet Pond has been sized to treat the greater WQ_v. The proposed Wet Pond is being provided to meet stormwater quality/quantity requirements of the NYSDEC.

2.2 NYSDEC Water Quality Volume, WQ_v

The stormwater management practices have been designed in accordance with the *Performance Criteria* (Chapter 4) of the NYSSMDM. As outlined in Chapter 4, the WQv is the runoff volume produced during the 90% storm. The proposed infiltration practices have been designed to treat the WQv in accordance with the NYSSMDM. The following equation, per Chapter 4, was used to determine the water quality volume for the 90% storm for each of the contributing areas to the treatment practices:

$$\text{The water quality volume shall be } WQ_v = \frac{(P)(R_v)(A)}{12}$$

Where,

WQ_v = water quality volume (in acre-feet)
P = 90% Rainfall Event Number
R_v = 0.05 + 0.009(I), where I is percent impervious cover
A = site area in acres

The stormwater management practices have been designed in accordance with the *Performance Criteria* (Chapter 4) of the NYSSMDM. As outlined in Chapter 4, the WQv is the runoff volume produced during the 90% storm. The proposed infiltration practices have been designed to treat the WQv in accordance with the NYSSMDM. The equation above, per Chapter 4, was used to determine the water quality volume for the 90% storm for each of the contributing areas to the treatment practices:

Table 2.2.1 - Water Quality Volume Calculation Summary

Subcatchment	WQ_v[1] (cf)
1.1S	10,162
1.2S	1,908
1.3S	942

[1] For detailed calculations see Appendix A

As previously stated, there are three stormwater management practices proposed as part of the development of the site to meet both the WQv and RRv requirements. Each practice has been designed to treat the Water Quality Volume from the contributing area. The subsurface infiltration practice is designed as an offline practice with a flow splitter upstream of the practice. The infiltration practice is sized to treat at a minimum the WQv from the contributing area, while allowing portions of larger storms to discharge from the infiltration practice through an overflow pipe as allowed by the NYSSMDM. The overflow pipe is set to allow the full WQv storage within the practice as required by the Design Manual. The calculation of the WQv is performed per the methods of the NYSSMDM in Appendix A.

Deep test holes have been performed in the area of the proposed infiltration practice but infiltration testing has yet to be performed. The deep test results performed meet the requirements of the Design Manual for an infiltration practice. Test results can be found on Figure 4. As such the infiltration rate used in the HydroCAD stormwater modeling of the infiltration practices was kept conservative to an infiltration rate of 1-inch per hour. Infiltration testing will be performed to confirm the design of the infiltration practice.

Pretreatment has been provided for the proposed subsurface infiltration system in the form of a hydrodynamic separator. The hydrodynamic separator is proposed for pretreatment only and is not deisnged as a proprietary stormwater management practice to treat the stormwater runoff. The peak flow for the 1-year storm was used to size the hydrodynamic separator used as pretreatment for the infiltration system. Per the Design Manual requirements a minimum pretreatment volume of 25% of the WQ_v must be provided for an infiltration facility where the infiltration rate for the underlaying soils is less than 2.0 inches per hour. By sizing the hydrodynamic separator for the peak flow from the 1-year storm event, pretreatment for greater than 100% of the WQ_v is provided. The data (including capacities) for the hydrodynamic separator is included in Appendix H. Although the Hydroworks HydroStorm HS 6 does not meet the NYSDEC requirements of TSS and phosphorous removal to be used as a proprietary practice to treat new impervious development, it is a verified proprietary practice to be used for pretreatment. The table below summarizes the WQv-year peak flows and hydrodynamic separate flow rates.

Table 2.2.2 – Pretreatment Hydrodynamic Separator Summary

Stormwater Management Practice	WQv[1] Peak Flow (C.F.S).	Hydrodynamic Separator Model	Hydrodynamic Separator Capacity (C.F.S.)
1.2P	1.62	HydroStorm HS 6	1.98 CFS

[1] For detailed calculations see Appendix A

As noted in the table above the capacity of the hydrodynamic separator exceeds the calculated WQv peak flow. The hydrodynamic separator has an internal bypass capable of passing the flows from the contributing areas from the larger storm events.

As previously stated above the F-5 Bioretention Filter has been sized to treat the WQv from the contributing area. Sizing calculations for the biorententio filter per the Design Manual Requirements are shown in Appendix I of the SWPPP.

The P-2 wet pond has been sized in accordance with Chapter 6 of the Design Manual as shown in the table below. The P-2 Wet Pond has been sized to store 100% of the WQv in the permanent pool. As previously stated, the P-2 Wet Pond has been sized for the WQv calculated in Appendix A as the WQv from the contributing area. The provided volume for the P-2 Wet Pond can be verified in the stage storage tables contained in Appendix C. It should be noted that a P-2 Wet Pond was chosen due to the groundwater elevation in the area of the proposed basin. Although Chapter 6 of the Design Manual states that a P-2 Wet Pond should have a minimum contributing area of 25 acres, Table 7.2 in the Design Manual states that the drainage area can be less if adequate water balance and anti-clogging device is provided. As shown on the project plans, the P-2 Wet Pond proposes to use a “Snout” over the orifice on the outlet structure in the pond to act as an anti-clogging device.

Table 2.1.3 P-2 Wet Pond Summary

Design Elements	Required	Provided	Remarks
Pond Location	Not within Jurisdictional Waters	Outside of Jurisdictional Waters	See Project Plans
Forebay Volume	10% of WQv (1,016 cubic feet)	20% of WQv (2,050 cubic feet)	See Appendix C
Forebay Depth	4' Min. – 6' Max.	5' Provided	See Project Plans
WQv Storage	100% Min. within Permanent Pool (10,162 cubic feet)	100%+ within Permanent Pool (10,715 cubic feet)	See Appendix C
Minimum Length to Width Ratio	1.5 : 1	Greater than 2 : 1	See Project Plans
Minimum Surface Area to Drainage Area Ratio	1 : 100	1 : 39	See Project Plans
Benches at Water Level	Aquatic Bench	Aquatic Bench	See Project Plans
Landscaping	Pond and Buffer Plantings Required	Pond and Buffer Plantings Provided	See Project Plans

2.3 NYSDEC Stream Channel Protection Volume, CP_v

The Stream Channel Protection (CP_v) criterion is intended to protect stream channels from erosion and is accomplished by the 24-hour extended detention of the 1-year, 24-hour storm event or by fully infiltrating the stormwater runoff from the 1-year, 24-hour storm event. The Stream Channel Protection Volume is calculated using the runoff volume from 1-year, 24-hour storm event from the HydroCAD modeling in Appendix C. A summary of the CP_v for each subcatchment is provided in Table 2.3.1 below. As shown in Appendix C, the proposed I-4 Subsurface Infiltration System has been designed to fully infiltrate the stormwater runoff from the 1-year, 24-hour design storm and the P-2 Wet Pond has been designed to provide 24-hour extended detention of the 1-year, 24-hour storm, therefore the CPv criterion has been met for the proposed areas of new development.

Table 2.2.1 - Water Quality Volume Calculation Summary

Subcatchment	CP_v[1] (af)	CP_v[1] (cf)
1.1S	0.464	20,212
1.2S	0.082	3,572
1.3S	0.052	2,265

[1] See Appendix C for the runoff volume from the 1-Year, 24-Hour Storm Event

2.4 NYSDEC Overbank Flood Control, Q_p, and Extreme Flood Control, Q_f

The Overbank Flood Control (Q_p) requirement is intended to prevent an increase in the frequency and magnitude of out-of-bank flooding events generated by urban development. Overbank control requires storage to attenuate the post-development 10-year, 24-hour peak discharge to pre-development rates. The Extreme Flood Control (Q_f) requirement is intended to prevent the increased risk of flood damage from large storm events, maintain the boundaries of the pre-development 100-year flood plain, and protect the physical integrity of stormwater management practices. Extreme flood control requires storage to attenuate the post-development 100-year, 24-hour peak discharge to pre-development rates. As shown in Table 2.4.1 attenuation for both the 10-year and 100-year 24-hour storms has been provided thus satisfying the Q_p and Q_f requirements. As requested by the City of Beacon, in addition to the requirements of the Design Manual, attenuation of the peak flows for the

1-year, 24-hour design storm has been provided as shown in Table 2.4.1. The following table summarizes the pre and post development peak flows expected for the proposed project.

Table 2.4.1– Pre and Post-Development Peak Flows

24-HOUR DESIGN STORM PEAK FLOWS (c.f.s.)						
	1-YEAR		10-YEAR (Overbank Flood Control)		100-YEAR (Extreme Flood Control)	
	Pre	Post	Pre	Post	Pre	Post
Design Line 1	13.9	12.7	39.2	36.2	83.3	80.4

As shown in the above table the peak flows discharging to the design line in the proposed condition have been mitigated to slightly below the existing condition levels. Since the rate of runoff in the proposed condition is less than the existing condition, the proposed onsite stormwater improvements will mitigate the potential impact of the peak flows downstream in the final condition.

3.0 STORMWATER CONVEYANCE SYSTEM

The stormwater collection and conveyance systems for the project will consist of catch basins, drain inlets, drainage manholes, swales and HDPE pipe. The system will be sized to collect and convey at minimum the 100-year, 1-hour design storm using the Rational Method. The Rational Method is a standard method used by engineers to develop flow rates for sizing collection systems. The Rational Method calculates flows based on a one-hour design storm. Calculations shall be provided in future reports.

4.0 EROSION AND SEDIMENT CONTROL

Erosion and sediment control should be accomplished by four basic principles: diversion of clean water, containment of sediment, treatment of dirty water, and stabilization of disturbed areas. Diversion of clean water should be accomplished with swales. This diverted water should be safely conveyed around the construction area as necessary and discharged downstream of the disturbed areas. Sediment should be contained with the use of silt fence at the toe of disturbed slopes and excavation of the temporary sediment basin. Disturbed areas should be permanently stabilized within 14 days of final grading to limit the required length of time that the temporary facilities must be utilized. The owner will be responsible for the maintenance of the temporary erosion control facilities.

4.1 Temporary Erosion and Sediment Control Facilities

Temporary erosion and sediment control facilities should be installed and maintained as required to reduce the impacts to off-site properties. The owner will be required to provide maintenance for the temporary erosion and sediment control facilities. In general, the following temporary methods and materials should be used to control erosion and sedimentation from the project site:

- Stabilized Construction Entrance
- Silt Fence Barriers
- Storm Drain Inlet Protection

A stabilized construction entrance should be installed at the entrance to the site as shown on the plan. The design drawings will include details to guide the contractor in the construction of this entrance. The intent of the stabilized construction entrance is to prevent the “tracking” of soil from the site. Dust control should be accomplished with water sprinkling trucks if required. During dry periods, sprinkler trucks should wet all exposed earth surfaces as required to prevent the transport of air-borne particles to adjoining areas.

Siltation barriers constructed of geosynthetic filter cloth should be installed at the toe of all disturbed slopes. The intent of these barriers is to contain silt and sediment at the source and inhibit its transport by stormwater runoff. The siltation barriers will also help reduce the rate of runoff by creating filters through which the stormwater must pass.

4.2 Permanent Erosion and Sediment Control Facilities

Permanent erosion and sediment control will be accomplished by diverting stormwater runoff from steep slopes, controlling/reducing stormwater runoff velocities and volumes, and vegetative and structural surface stabilization. All of the permanent facilities are relatively maintenance free and only require periodic inspections. The owner will provide maintenance for all the permanent erosion and sediment control facilities.

The temporary sediment trap shall be cleaned of all sediment and debris, and converted to an extended detention dry stormwater basin per the final elevations and dimensions, and stabilized with the vegetation as indicated on the project drawings. Riprap aprons will be used at the discharge end of all piped drainage systems. Runoff velocities will be reduced to levels that are non-erosive to the receiving waterbodies through use of these aprons.

Other than the buildings and paved surfaces, disturbed surfaces will be stabilized with vegetation. The vegetation will control stormwater runoff by preventing soil erosion, reducing runoff volume and velocities, and providing a filter medium. Permanent seeding should optimally be undertaken in the spring from March 21st through May 20th and in late summer from August 15th to October 15th.

5.0 IMPLEMENTATION, MAINTENANCE & GENERAL HOUSEKEEPING

5.1 Construction Phase

Details associated with the implementation and maintenance of the proposed stormwater facilities and erosion control measures during construction are shown on the project drawings. A Construction Sequence has been provided on the project plans to guide the contractor in the installation of the erosion control measures as well as the site plan features. In accordance with NYSDEC SPDES General Permit GP-0-20-001 no phase will exceed the maximum of 5 acres of disturbance at any given time as less than 5 acres of disturbance is proposed. The erosion control plan includes associated details and notes to aid the contractor in implementing the plan.

During construction, a Site Log Book, Appendix E, is required to be kept per NYSDEC SPDES General Permit GP-0-20-001. Erosion and sediment control inspections are required to be conducted as necessary under coverage of the permit (minimum twice a week) and an updated logbook and a copy of the SWPPP is required to be kept on site for the duration of the construction activities. The Construction Site Log Book is an appendix taken from the *New York Standards and Specifications for Erosion and Sediment Control* (Blue Book).

In addition to the proposed erosion and sediment control facilities, the following good housekeeping best management practices shall be implemented to mitigate potential pollution during the construction phase of the project. The general contractor overseeing the day-to-day site operation shall be responsible for the good housekeeping best management practices included in the following general categories:

- Material Handling and Waste Management
- Establishment of Building Material Staging Areas
- Establishment of Washout Areas
- Proper Equipment Fueling and Maintenance Practices
- Spill Prevention and Control Plan

All construction waste materials shall be collected and removed from the site regularly by the general contractor. The general contractor shall supply waste barrels for proper disposal of waste materials. All personnel working on the site shall be instructed of the proper procedures for construction waste disposal.

Although it is not anticipated any hazardous waste materials will be utilized during construction, any hazardous waste materials shall be disposed of in accordance with federal, state, and local regulations. No hazardous waste shall be disposed of on-site. Hazardous waste materials shall be stored in appropriate and clearly marked containers and segregated from the other non-waste materials. All hazardous waste shall be stored in a structurally sound and sealed shipping containers located in the staging areas. Material safety data sheets, material inventory, and emergency contact numbers will be maintained in the office trailer. All personnel working on the site shall be instructed of the proper procedures for hazardous waste disposal.

Temporary sanitary facilities (portable toilets) shall be provided on site during the entire length of construction. The sanitary facilities shall be in an alternate area away from the construction activities on the site. The portable toilets shall be inspected weekly for evidence of leaking holding tanks.

All recyclables, including wood pallets, cardboard boxes, and all other recyclable construction scraps shall be disposed of in a designated recycling barrel provided by the contractor and removed from the site regularly. All personnel working on the site shall be instructed of the proper procedures for construction waste recycling.

All construction equipment and maintenance materials shall be stored in a designated staging area. Silt fence shall be installed down gradient of the construction staging area. Shipping containers shall be utilized to store hand tools, small parts, and other construction materials, not taken off site daily. Construction waste barrels, recycling barrels and if necessary hazardous waste containers shall be located within the limits of the construction staging area.

Throughout the construction of the project, several types of vehicles and equipment will be used on-site. Fueling of the equipment shall occur within the limits of the construction staging area. Fuel will be delivered to the site as needed, by the general contractor, or a party chosen by the general contractor. Only minor vehicle equipment maintenance shall occur on-site, all major maintenance shall be performed off-site. All equipment fluids generated from minor maintenance activities shall be disposed of into designated drums and stored in accordance with the hazardous waste storage as previously discussed.

Vehicles and equipment shall be inspected on each day of use. Any leak discovered shall be repaired immediately. All leaking equipment unable to be repaired shall be removed from the site. Ample supplies of absorbent, spill-cleanup materials, and spill kits shall be located in the construction staging area. All spills shall be cleaned up immediately upon discovery. Spent absorbent materials and rags shall be hauled off-site immediately after the spill is cleaned for disposal at a local landfill. All personnel working on the site shall be instructed of the proper procedures for spill prevention and control. Any spill large enough to discharge to surface water will be immediately reported to the local fire / police departments and the National Response Center 1-800-424-8802.

During the initial year of planting, the plants may require watering to germinate and establish. Note that several seedings may be required during the first year to completely establish vegetation on the site.

As shown in the NYSDEC Full Environmental Assessment Form in Appendix J of this report, the project site is located in an area with threatened or endangered animals. The Indiana Bat is listed as a threatened or endangered animal in the area of the proposed project site. Additional care should be taken during construction to monitor for the Indiana Bat and appropriate measures should be taken for protection of the Indiana Bat if one is to be observed onsite.

5.2 Soil Restoration

Soil Restoration is required to be applied across areas of the development site where soils have been disturbed and will be vegetated. The purpose is to recover the original properties and porosity of the soil compacted during construction activity. Soil Restoration is applied in the cleanup, restoration, and landscaping phase of construction followed by the permanent establishment of an appropriate, deep-rooted groundcover to help maintain the restored soil structure. Soil restoration includes mechanical decompaction and compost amendment. The table below describes various soil disturbance activities related to land development, soil types and the requirements for soil restoration for each activity as identified in the Design Manual. Restoration is applied across areas of a development site where soils have been compacted and will be vegetated according to the criteria defined in the table below:

<table>
<tr><th colspan="4">Soil Restoration Requirements[1, 2,4]
(Onsite soils within the limit of disturbance belong to Hydrologic Soil Groups (HSG) D)</th></tr>
<tr><th>Type of Soil Disturbance</th><th colspan="2">Soil Restoration Requirement</th><th>Comments/Examples</th></tr>
<tr><td>No soil disturbance</td><td colspan="2">Restoration not permitted</td><td>Preservation of Natural Features</td></tr>
<tr><td>Minimal soil disturbance</td><td colspan="2">Restoration not required</td><td>Clearing and grubbing</td></tr>
<tr><td rowspan="2">Areas where topsoil is stripped only - no change in grade</td><td>HSG A & B</td><td>HSG C&D</td><td rowspan="2">Protect area from any ongoing construction activities.</td></tr>
<tr><td>Apply 6 inches of topsoil</td><td>Aerate[3] and apply 6 inches of topsoil</td></tr>
<tr><td rowspan="2">Areas of cut or fill</td><td>HSG A &B</td><td>HSG C&D</td><td rowspan="2"></td></tr>
<tr><td>Aerate[1] and apply 6 inches of topsoil</td><td>Apply full Soil Restoration [2]</td></tr>
<tr><td>Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5-foot perimeter around foundation walls)</td><td colspan="2">Apply full Soil Restoration (decompaction and compost Enhancement[6])</td><td></td></tr>
<tr><td>Areas where Runoff Reduction and/or Infiltration practices are applied</td><td colspan="2">Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.</td><td>Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area</td></tr>
<tr><td>Redevelopment projects</td><td colspan="2">Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.</td><td></td></tr>
</table>

1. Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
2. Per “Deep Ripping and De-compaction, DEC 2008”.
3. Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which functions like a mini-subsoiler.
4. During periods of relatively low to moderate subsoil moisture, the disturbed soils are returned to rough grade and the following Soil Restoration steps applied:

5.1. Apply 3 inches of compost over subsoil.
5.2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor-mounted disc, or tiller, mixing, and circulating air and compost into subsoils.
5.3. Rock-pick until uplifted stone/rock materials of four inches and larger size area cleaned off the site.
5.4. Apply topsoil to a depth of 6 inches.
5.5. Vegetate as required by seeding notes located on the project drawings.
5.6. Tilling should not be performed within the drip line of any existing trees or over any utility installations that are within 24 inches of the surface.

6. Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.

After soil restoration is completed an inspector should be able to push a 3/8" metal bar twelve inches into the soil with just body weight. Following decompaction/soil restoration activities, the following maintenance is anticipated during the first year:

- Initial inspections for the first six months (once after each storm greater than a half-inch).
- Reseeding to repair bare or eroding areas to assure grass stabilization.
- Water once every three days for first month, and then provide a half inch of water per week during first year. Irrigation plan may be adjusted according to the rain event.
- Fertilization may be needed in the fall after the first growing season to increase plant vigor.

In order to ensure the soil remains decompacted the following ongoing maintenance is recommended:

- Planting the appropriate ground cover with deep roots to maintain the soil structure.
- Keeping the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths (sometimes it may be necessary to de-thatch the turf every few years).

5.3 Long Term Maintenance Plan

Each spring the paved areas should be cleaned to remove the winter's accumulation of traction sand. After this is completed, all drain inlets sumps and the stormwater basins should be cleaned. All pipes should be checked for debris and blockages and cleaned as required. During the cleaning process, the drain inlets, catch basins, and pipes should be inspected for structural integrity and overall condition; repairs and/or replacement will be made as required.

The stormwater facilities for the subject project have been designed to minimize the required maintenance. This section discusses the minimum maintenance requirements to insure long-term performance of the stormwater facilities. Initially the stormwater facilities will require an increased maintenance and inspection schedule until all portions of the site are stable. Generally, the stormwater facilities consist of either collection and conveyance components or treatment components.

The stormwater collection and conveyance system is composed of HDPE, drainage pipe and precast concrete drainage structures. The owner will assume the maintenance responsibilities for the drainage system. Minimal maintenance is typically required for these facilities. All pipes should be checked for debris and blockages and cleaned as required. All drain inlet sumps, including the sumps within the hydrodynamic separators, shall be inspected bi-annually and cleaned to removed deposited sediment. During the cleaning process, the pipes should be inspected for structural integrity and overall condition; repairs and/or replacement should be made as required. Additionally, the detention systems shall be checked for deposited sediment as well. Visual inspection of system through the inspection ports shall take place yearly, and the system shall be cleaned / jetted as necessary to remove deposited sediment.

The stormwater facilities have been designed to limit the routine maintenance requirements. Initially the filter will require regular maintenance until the permanent vegetation is established. Permanent vegetation is considered established when 80% of the final plant density is established. Vegetation should be inspected weekly during construction as part of coverage under NYSDEC SPDES General Permit GP-0-20-001 during construction and in the permanent condition. Damaged areas should be immediately re-seeded and re-mulched. The floor of the filter will be planted with a seed mixture that contains plants that are tolerant of occasional flooding. The seed mixtures contain several

plant species that vary slightly in their needs for survival. It is expected that not all of the species will survive within the basin due to variations such as water, nutrients, and light. During the initial year of planting, the plants may require watering to germinate and become established. Note that several seedings may be required during the first year to completely establish vegetation within the basin. After the initial year of establishment, the filter does not need to be fertilized or watered. A natural selection process will occur over the first few years, such that the species within the seed mixture most suitable to the conditions will survive.

Refer to the Infiltration Trench and Basin Inspection & Maintenance checklist found in Appendix G of this report prepared for all portions of this project the requirements to insure long-term performance of all stormwater facilities

Refer to the Hydroworks Hydrostorm Operations & Maintenance Manual in Appendix H of this report for the manufacture maintenance requirements for the proposed hydrodynamic separator.

APPENDIX A

NYSDEC Water Quality Volume and Runoff Reduction Calculations

WQv Calculation Worksheet

Project: Beacon Views, LLC
Project #: 19131.100
Date: 5/26/2020

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

The following calculation determines the water quality flow rate for the 90% Water Quality Event using the Small Storm Hydrology Method specified in Appendix B of the New York State Stormwater Management Design Manual.

Subcatchment ID: 1.1

1.Water Quality Volume $=WQ_v = \frac{P * R_v * A}{12}$

P = WQv 24-hour Rainfall Amount	=	1.4	in.
A = Subcatchment Area	=	134000	SF
Ai= Impervious Area within Subcatchment Area	=	89100	
I = Ai/A	=	66.5	%
Rv = 0.05 + 0.009 (I%)	=	0.65	
WQv = Water Quality Volume	=	10,162	CF

Subcatchment ID: 1.2

1.Water Quality Volume $=WQ_v = \frac{P * R_v * A}{12}$

P = WQv 24-hour Rainfall Amount	=	1.4	in.
A = Subcatchment Area	=	19700	SF
Ai= Impervious Area within Subcatchment Area	=	17000	
I = Ai/A	=	86.3	%
Rv = 0.05 + 0.009 (I%)	=	0.83	
WQv = Water Quality Volume	=	1,908	CF

WQv Calculation Worksheet

Project: Beacon Views, LLC
Project #: 19131.100
Date: 5/26/2020

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

The following calculation determines the water quality flow rate for the 90% Water Quality Event using the Small Storm Hydrology Method specified in Appendix B of the New York State Stormwater Management Design Manual.

Subcatchment ID: 1.3S

1.Water Quality Volume $=WQ_v = \frac{P * R_v * A}{12}$

P = WQv 24-hour Rainfall Amount	=	1.4	in.
A = Subcatchment Area	=	16480	SF
Ai= Impervious Area within Subcatchment Area	=	8140	
I = Ai/A	=	49.4	%
Rv = 0.05 + 0.009 (I%)	=	0.49	
WQv = Water Quality Volume	=	942	CF

RRv Calculation Worksheet - Design Line 1

Project: Beacon Views, LLC
Project #: 19131.100
Date: 5/26/2020

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1. RRv Initial = Water Quality Volume (WQv) *0.299 ac-ft* = *13,012 c.f.*
(refer to Water Quality Volume Calculation Sheet)

2. *RRv Minimum* = [(P) (Rv) (S) (Aic)] /12 where…

P = Rainfall (in.)	=	1.40	in.
Rv = 0.05 + 0.009 (100%)	=	0.95	
S = Hydrologic Soil Group Specific Reduction Factor	=	0.20	
[HSG A = 0.55] [HSG B = 0.40] [HSG C = 0.30] [HSG D = 0.20]			
Aic = Total area of new impervious cover	=	2.7	Acres
RRv Minimum	=	*2,607*	*c.f.*

3. *RRv Required* = RRv Initial - Green Infrastructure Practice (GIP) with Area Reduction

GIP with Area Reduction Applied in Project		
5.3.1 Conservation of Natural Area	N/A	
5.3.2 Sheet Flow to Riparian Buffers or Filter Strips	N/A	
5.3.4 Tree Planting / Tree Box (37 trees at 100 s.f. per tree)		c.f.
5.3.5 Disconnection of Rooftop Runoff	-	
5.3.6 Stream Daylighting	N/A	
RRv Required(=WQv-RRV by area)	= 13,012	c.f.

4. *RRv Provided*

GIP with Volume Reduction Applied in Project	WQv Treated (c.f.)	% of WQv Applied to *RRv Provided*	*RRv Provided (c.f.)*
5.3.3 Vegetated Open Swales		20%	0
[HSG A / B = 20%] [HSG C / D = 10%] {Modified HSG C - D = 15% - 12%]		10%	0
5.3.7 Rain Garden		40%	0
[No underdrains / Good Soils = 100%] [With underdrains / Poor Soils = 40%]			
5.3.8 Green Roof		100%	N/A
[RRv provided equals volume provided in Green Roof]			
5.3.9 Stormwater Planters		45%	N/A
[Infiltration Planters = 100%] [Flow Through HSG C = 45%] [Flow Though HSG D = 30%]			
5.3.10 Rain Tank / Cisterns		100%	N/A
5.3.11 Porous Pavement		100%	0
Infiltration Practice (Standard SMP)	3572	100%	3,572
Bioretention Practice (Standard SMP)	709	40%	284
[Without Underdrains HSG A/B = 80%] [With Underdrain HSG C\D = 40%]			
Dry Swale (Open Channel Practice) (Standard SMP)		20%	N/A
[HSG A/B = 40%] [HSG C/D = 20%]			
RRv Provided =			*3,856*

5. Summary

RRv Initial	=	13,012 c.f.	
RRv Required	=	13,012 c.f.	
RRv Minimum	=	2,607 c.f.	
RRv Provided	=	3,856 c.f.	
WQv Required for Downstream SMP	=	9,156 c.f.	(= RRv Required - RRv Provided)

Is RRv Provided greater than or equal to RRv Minimum? Yes

APPENDIX B

Pre-Development Computer Data



Subcat Reach Pond Link

Routing Diagram for Pre Development

Prepared by Insite Engineering, Surveying & Landscape Architecture, P.C., Printed 5/22/2020

HydroCAD® 10.00-15 s/n 02171 © 2015 HydroCAD Software Solutions LLC

Summary for Subcatchment PRE:

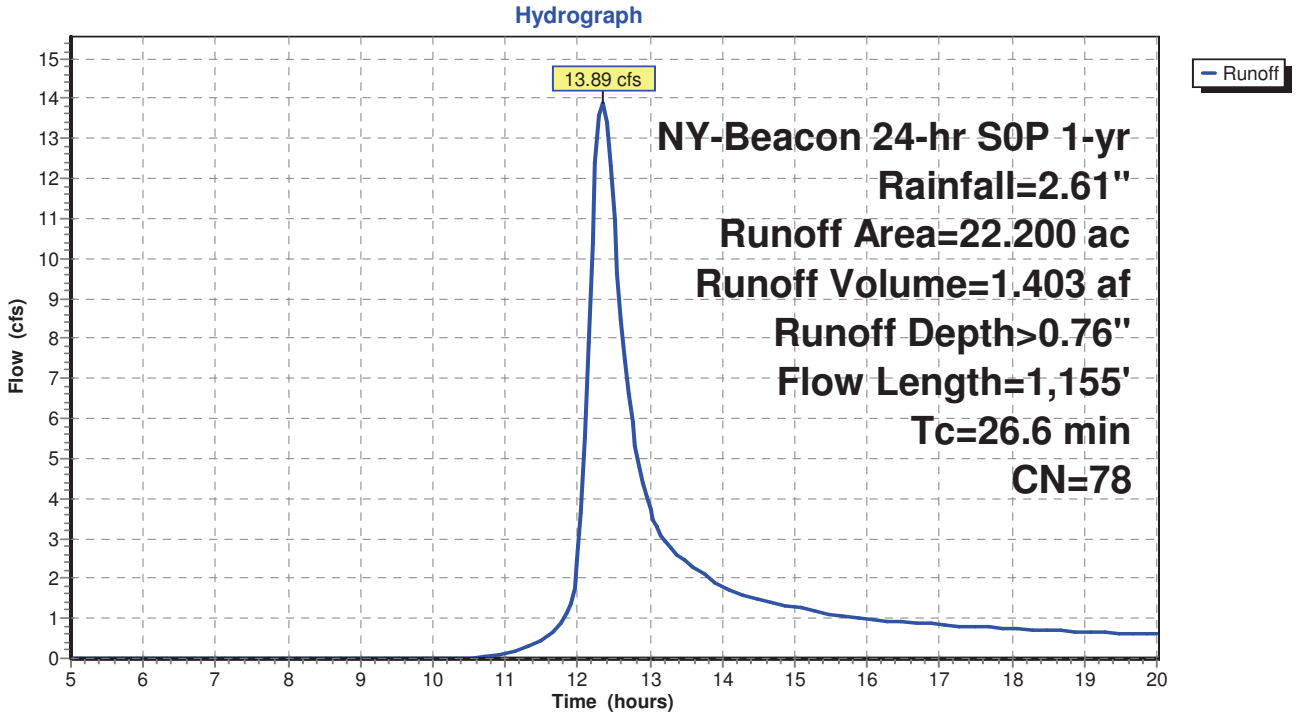
Runoff = 13.89 cfs @ 12.34 hrs, Volume= 1.403 af, Depth> 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
15.400	77	Woods, Good, HSG D
5.800	78	Meadow, non-grazed, HSG D
0.500	80	>75% Grass cover, Good, HSG D
0.500	98	Paved parking, HSG D
22.200	78	Weighted Average
21.700		97.75% Pervious Area
0.500		2.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0600	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
4.7	345	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	170	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.6	340	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	200	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.6	1,155	Total			

Subcatchment PRE:



Summary for Subcatchment PRE:

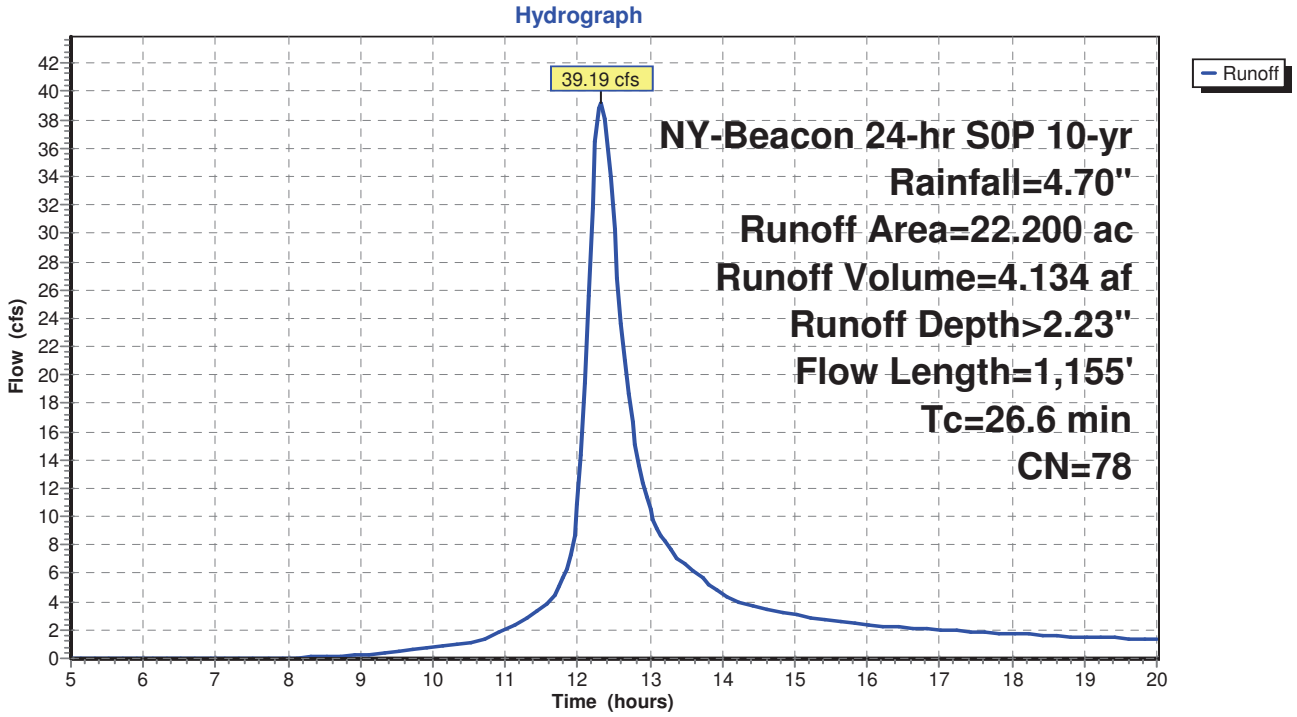
Runoff = 39.19 cfs @ 12.33 hrs, Volume= 4.134 af, Depth> 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 10-yr Rainfall=4.70"

Area (ac)	CN	Description
15.400	77	Woods, Good, HSG D
5.800	78	Meadow, non-grazed, HSG D
0.500	80	>75% Grass cover, Good, HSG D
0.500	98	Paved parking, HSG D
22.200	78	Weighted Average
21.700		97.75% Pervious Area
0.500		2.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0600	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
4.7	345	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	170	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.6	340	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	200	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.6	1,155	Total			

Subcatchment PRE:



Summary for Subcatchment PRE:

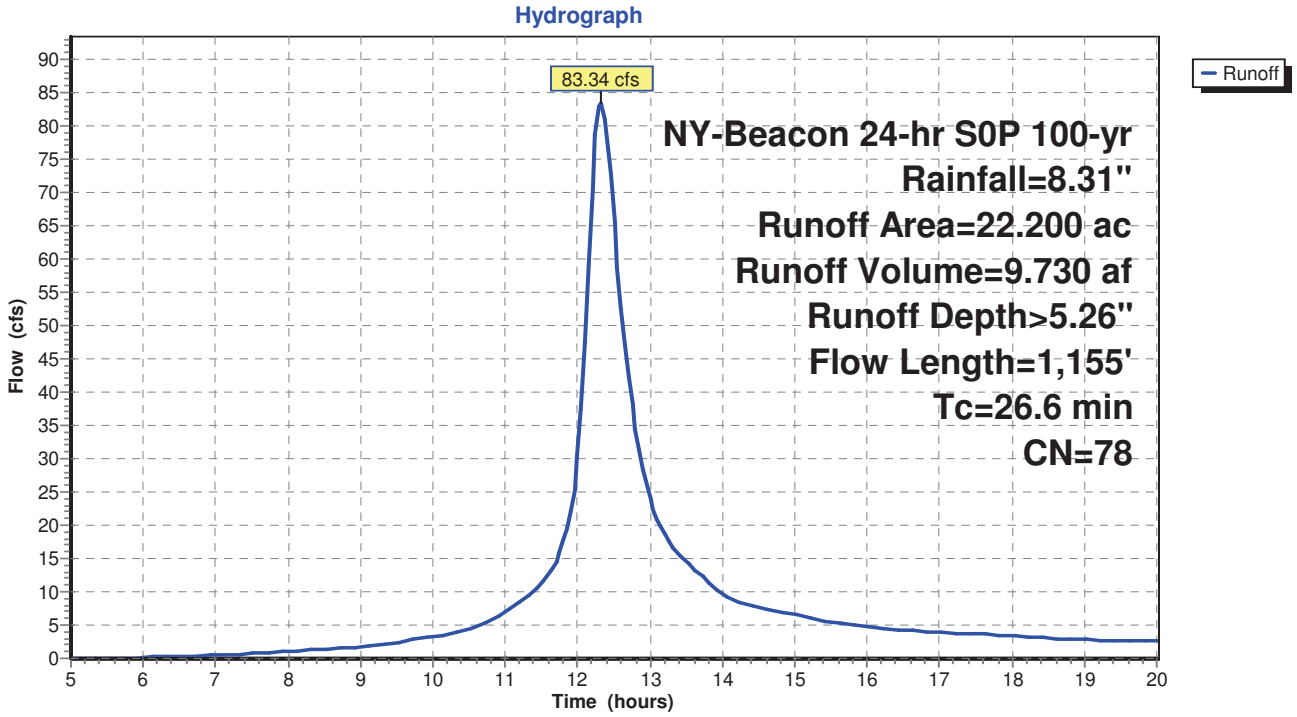
Runoff = 83.34 cfs @ 12.32 hrs, Volume= 9.730 af, Depth> 5.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 100-yr Rainfall=8.31"

Area (ac)	CN	Description
15.400	77	Woods, Good, HSG D
5.800	78	Meadow, non-grazed, HSG D
0.500	80	>75% Grass cover, Good, HSG D
0.500	98	Paved parking, HSG D
22.200	78	Weighted Average
21.700		97.75% Pervious Area
0.500		2.25% Impervious Area

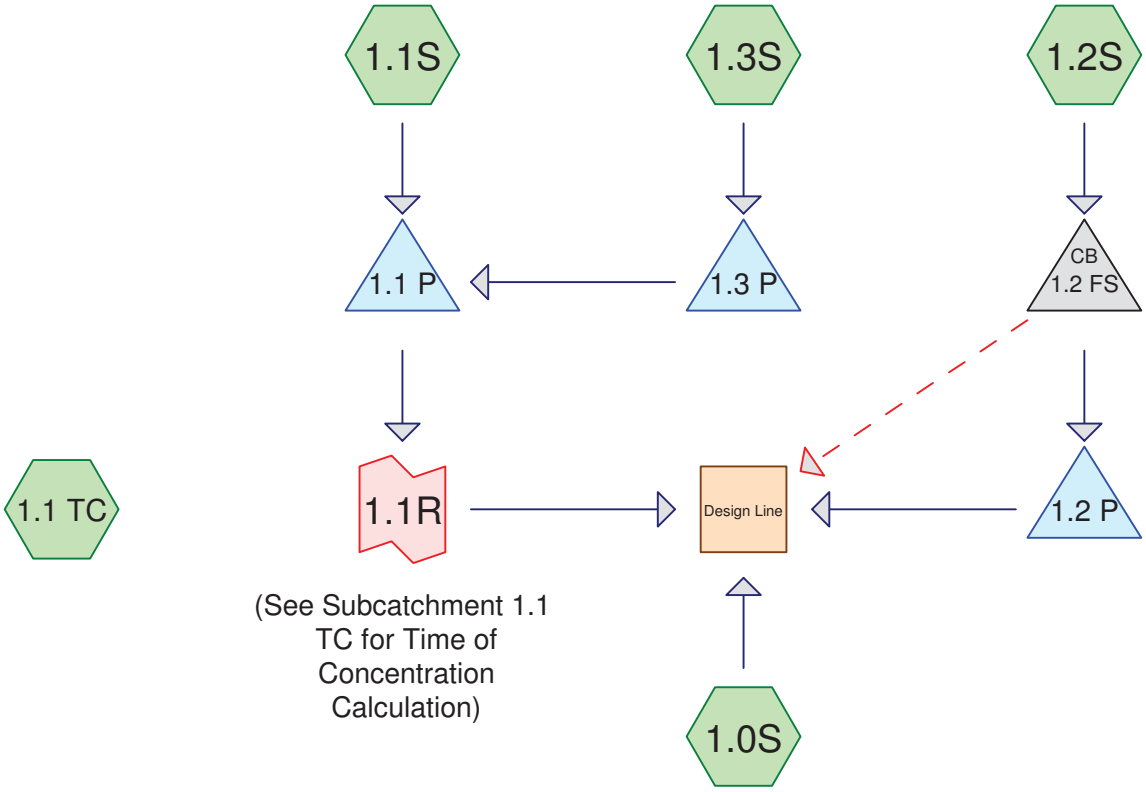
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0600	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
4.7	345	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	170	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.6	340	0.1000	1.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.0	200	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.6	1,155	Total			

Subcatchment PRE:



APPENDIX C

Post-Development Computer Data



Subcat Reach Pond Link

Routing Diagram for Post Development

Prepared by Insite Engineering, Surveying & Landscape Architecture, P.C., Printed 5/22/2020

HydroCAD® 10.00-15 s/n 02171 © 2015 HydroCAD Software Solutions LLC

Summary for Subcatchment 1.0S:

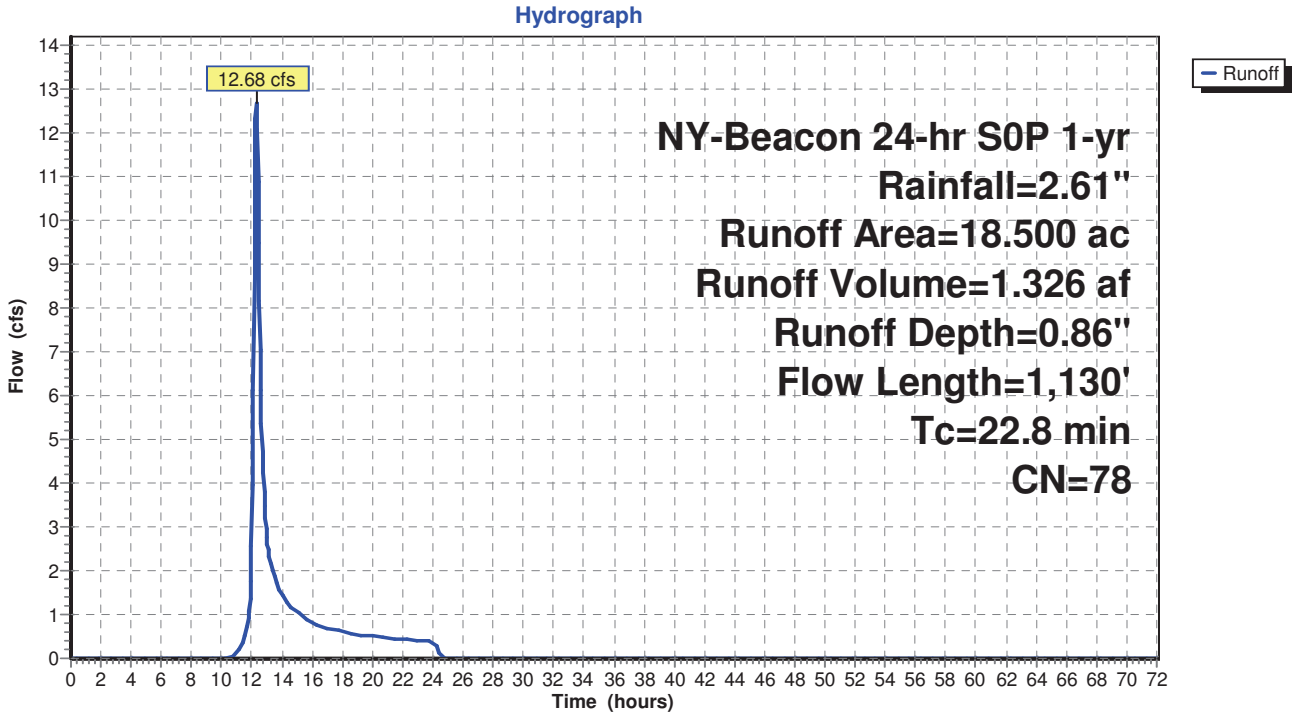
Runoff = 12.68 cfs @ 12.29 hrs, Volume= 1.326 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
11.200	77	Woods, Good, HSG D
5.800	78	Meadow, non-grazed, HSG D
1.000	80	>75% Grass cover, Good, HSG D
0.500	98	Paved parking, HSG D
18.500	78	Weighted Average
18.000		97.30% Pervious Area
0.500		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0800	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
4.7	345	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	170	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.1	280	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	235	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
22.8	1,130	Total			

Subcatchment 1.0S:



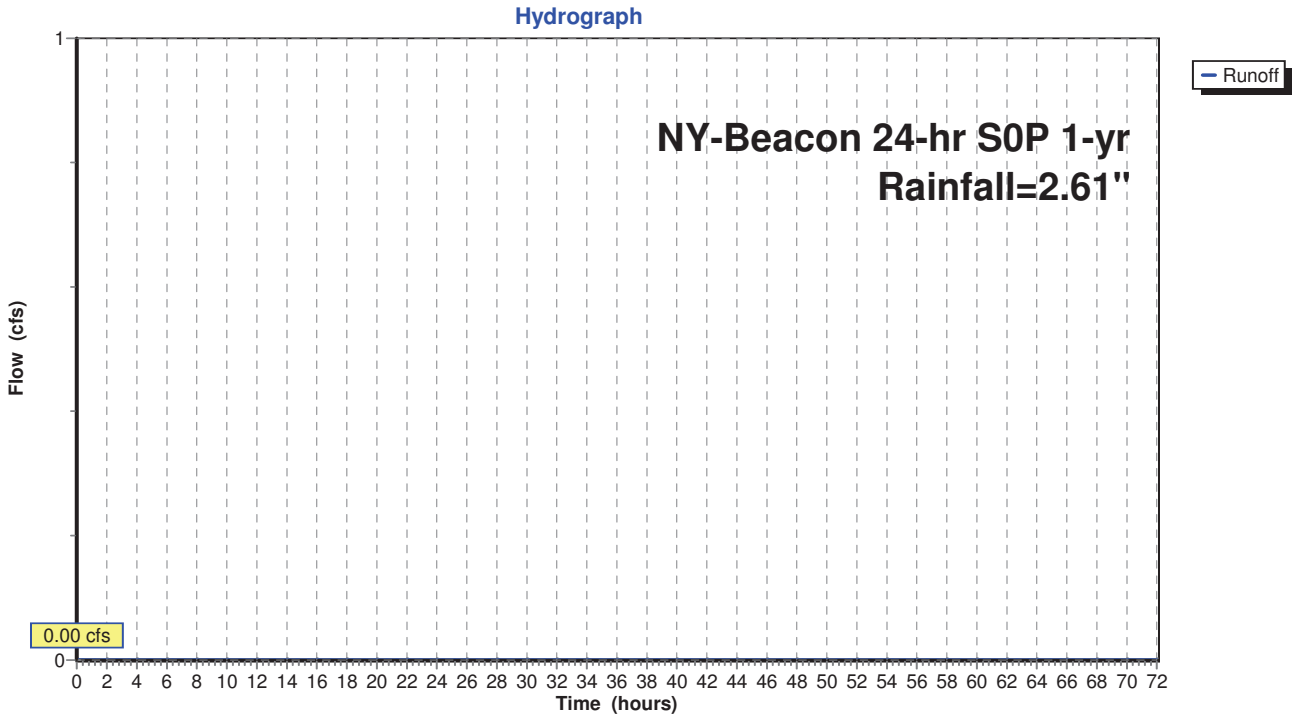
Summary for Subcatchment 1.1 TC:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 1-yr Rainfall=2.61"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
0.6	30	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.0	130	Total			

Subcatchment 1.1 TC:



Summary for Subcatchment 1.1S:

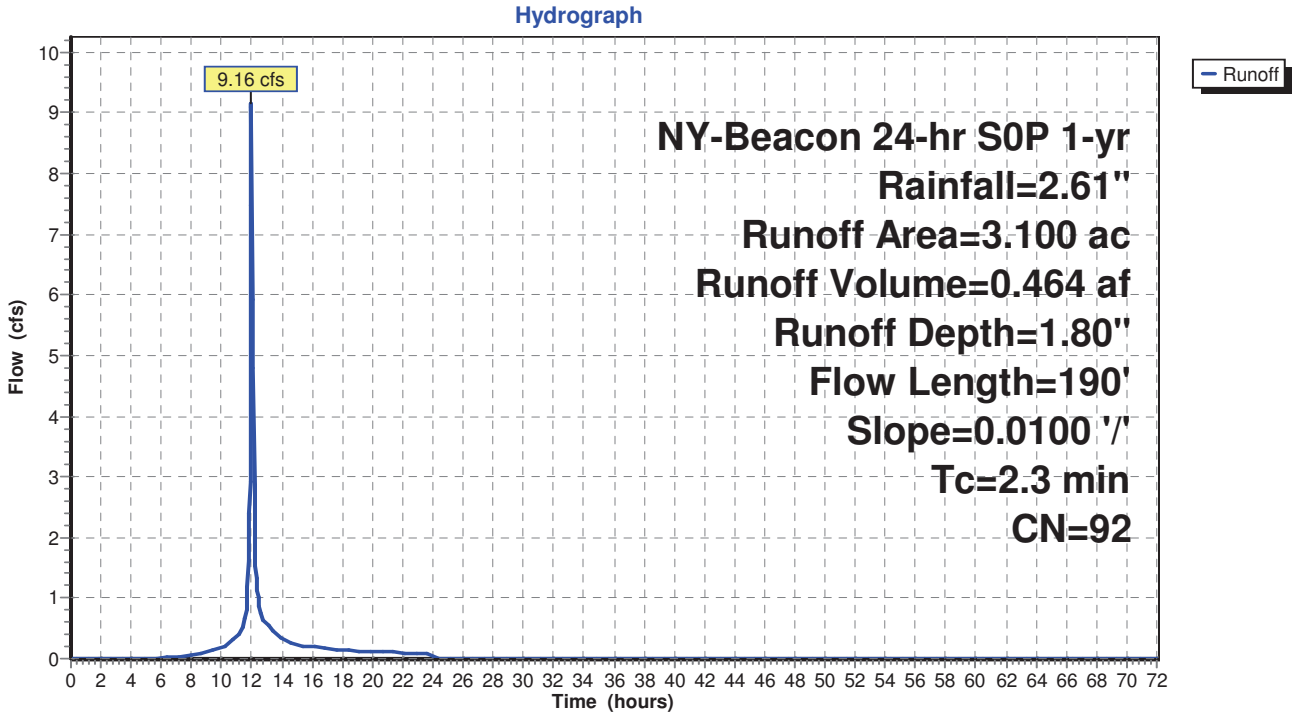
Runoff = 9.16 cfs @ 11.99 hrs, Volume= 0.464 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
2.100	98	Paved parking, HSG D
1.000	80	>75% Grass cover, Good, HSG D
3.100	92	Weighted Average
1.000		32.26% Pervious Area
2.100		67.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.04		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.16"
0.7	90	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	190	Total			

Subcatchment 1.1S:



Summary for Subcatchment 1.2S:

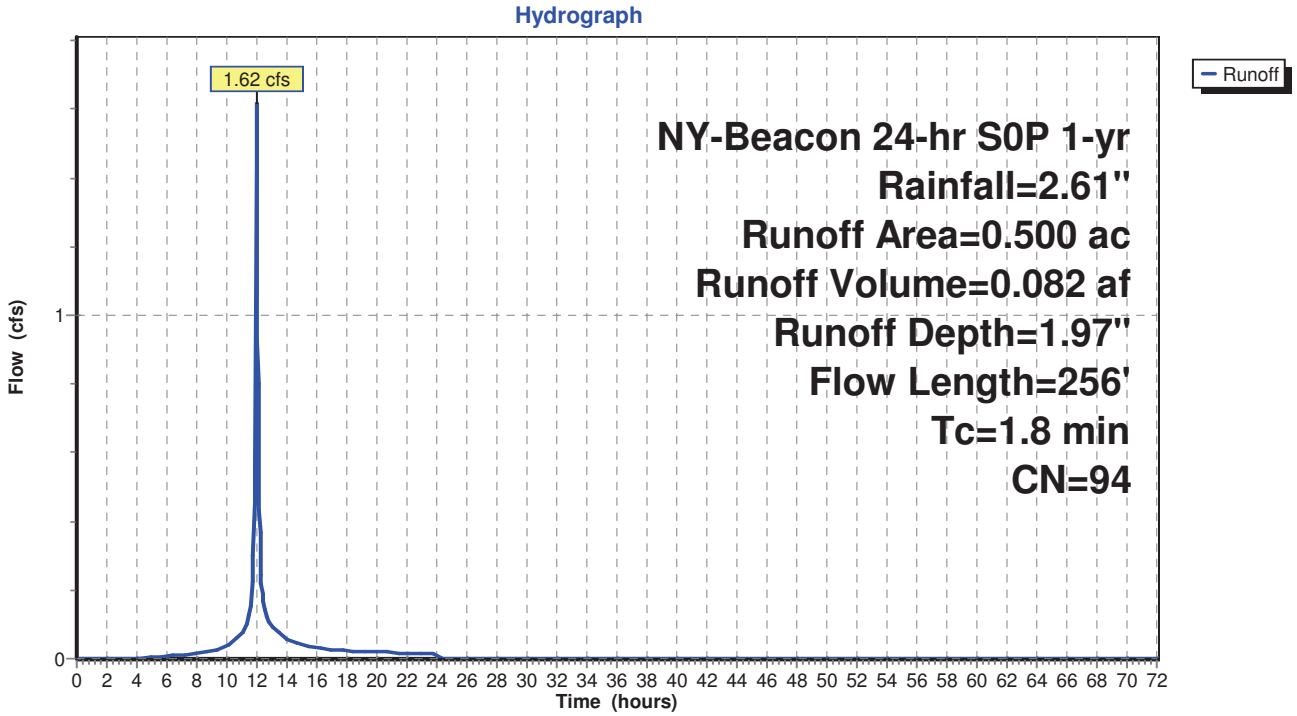
Runoff = 1.62 cfs @ 11.98 hrs, Volume= 0.082 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.400	98	Paved parking, HSG D
0.100	80	>75% Grass cover, Good, HSG D
0.500	94	Weighted Average
0.100		20.00% Pervious Area
0.400		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0400	1.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.16"
0.9	156	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	256	Total			

Subcatchment 1.2S:



Summary for Subcatchment 1.3S:

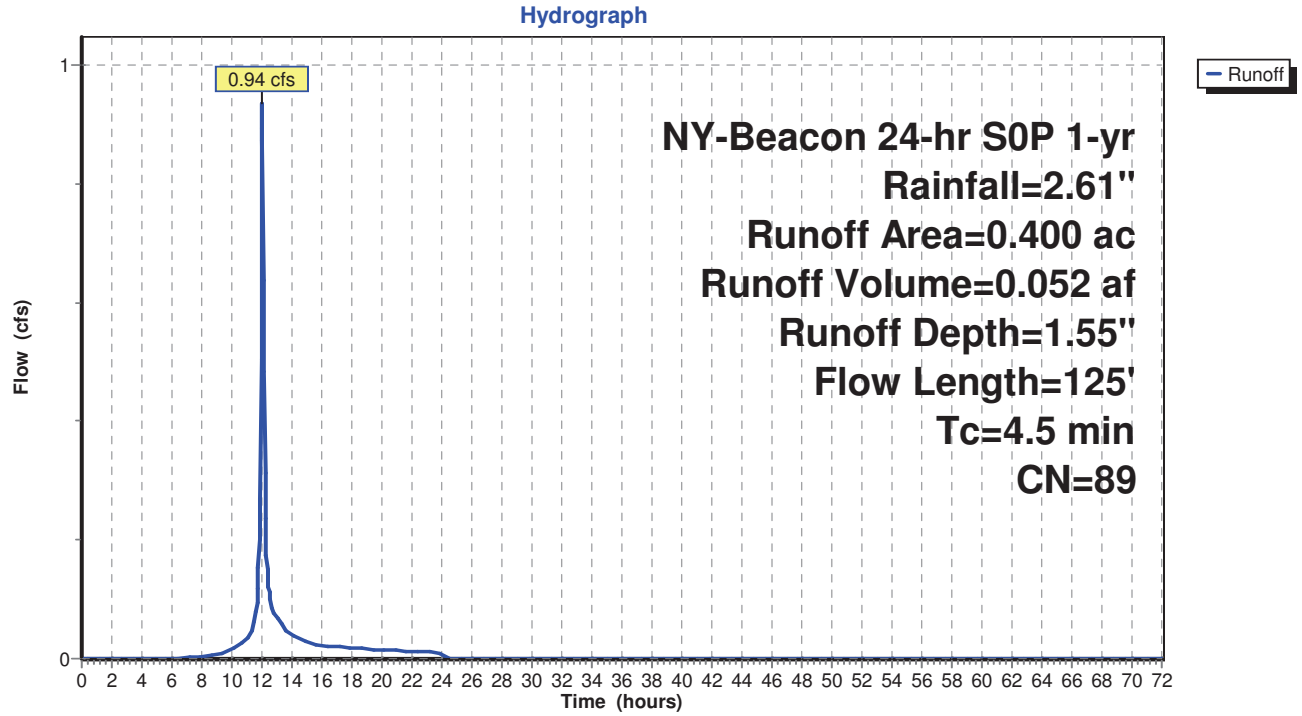
Runoff = 0.94 cfs @ 12.02 hrs, Volume= 0.052 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 1-yr Rainfall=2.61"

Area (ac)	CN	Description
0.200	98	Paved parking, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.400	89	Weighted Average
0.200		50.00% Pervious Area
0.200		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	85	0.1100	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.16"
0.1	40	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.5	125	Total			

Subcatchment 1.3S:

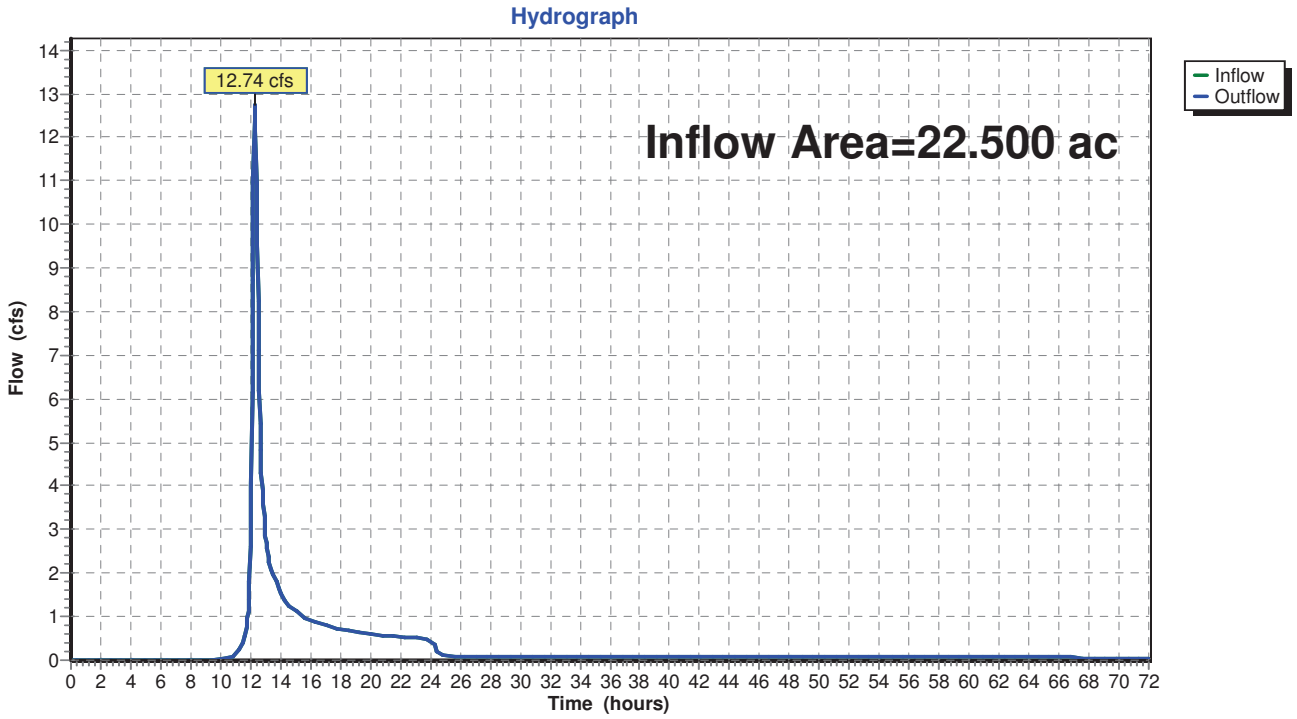


Summary for Reach Design Line:

Inflow Area = 22.500 ac, 14.22% Impervious, Inflow Depth > 0.92" for 1-yr event
Inflow = 12.74 cfs @ 12.29 hrs, Volume= 1.734 af
Outflow = 12.74 cfs @ 12.29 hrs, Volume= 1.734 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach Design Line:



Summary for Pond 1.1 P:

Inflow Area = 3.500 ac, 65.71% Impervious, Inflow Depth = 1.77" for 1-yr event
Inflow = 9.17 cfs @ 11.99 hrs, Volume= 0.515 af
Outflow = 0.10 cfs @ 23.88 hrs, Volume= 0.409 af, Atten= 99%, Lag= 713.0 min
Primary = 0.10 cfs @ 23.88 hrs, Volume= 0.409 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 180.00' Surf.Area= 7,640 sf Storage= 10,715 cf
Peak Elev= 182.11' @ 23.88 hrs Surf.Area= 13,270 sf Storage= 28,016 cf (17,301 cf above start)
Flood Elev= 184.50' Surf.Area= 19,225 sf Storage= 60,459 cf (49,744 cf above start)

Plug-Flow detention time= 2,745.5 min calculated for 0.163 af (32% of inflow)
Center-of-Mass det. time= 1,473.7 min (2,330.8 - 857.1)

Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	2,050 cf	**Forebay (Prismatic)** Listed below (Recalc)
#2	175.00'	67,360 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		69,410 cf	Total Available Storage

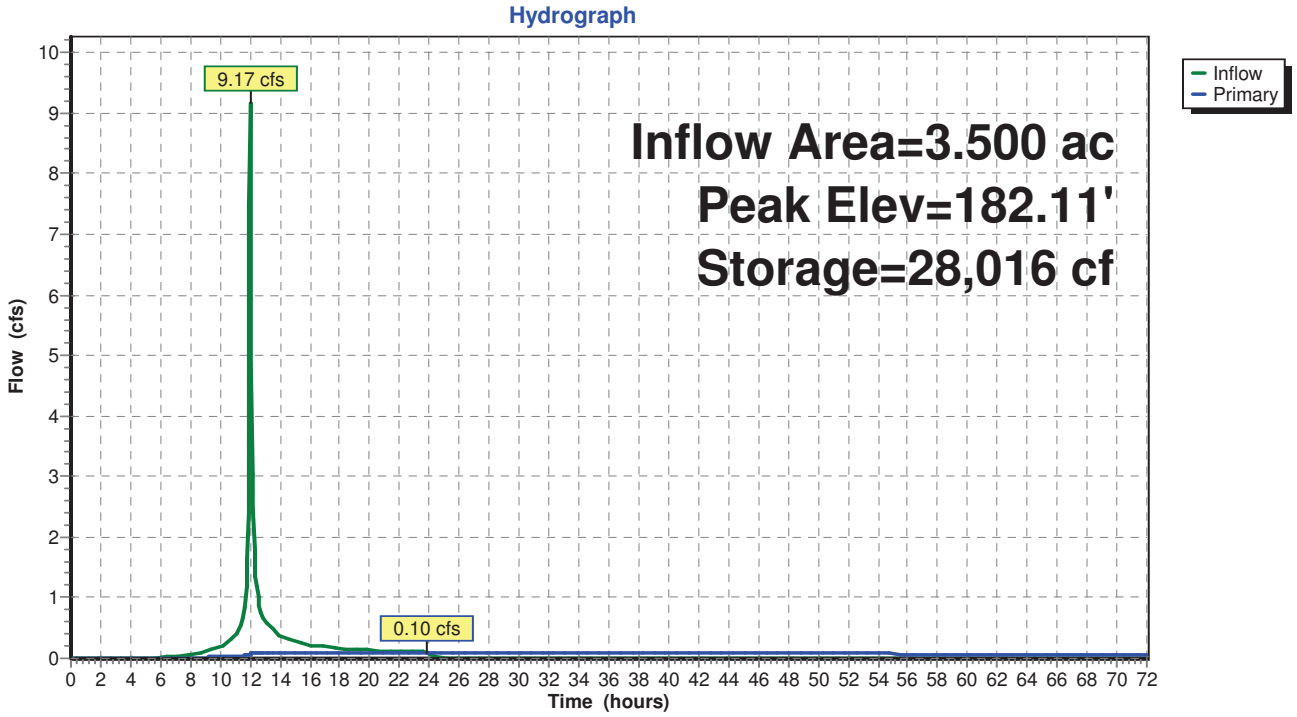
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	5	0	0
177.00	110	115	115
179.00	450	560	675
180.00	2,300	1,375	2,050

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	500	0	0
177.00	1,180	1,680	1,680
179.00	2,090	3,270	4,950
180.00	5,340	3,715	8,665
182.00	10,730	16,070	24,735
184.00	14,970	25,700	50,435
185.00	18,880	16,925	67,360

Device	Routing	Invert	Outlet Devices
#1	Primary	179.00'	**24.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 179.00' / 178.50' S= 0.0147 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	180.00'	**1.6" Vert. Orifice/Grate** C= 0.600
#3	Device 1	182.10'	**1.0' 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

Primary OutFlow Max=0.10 cfs @ 23.88 hrs HW=182.11' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.10 cfs of 21.99 cfs potential flow)
  └─**2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 6.89 fps)
  └─**3=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.32 fps)

Pond 1.1 P:


Hydrograph
Inflow Area=3.500 ac
Peak Elev=182.11'
Storage=28,016 cf
9.17 cfs
0.10 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72
0 1 2 3 4 5 6 7 8 9 10

Summary for Pond 1.2 FS:

Inflow Area = 0.500 ac, 80.00% Impervious, Inflow Depth = 1.97" for 1-yr event
Inflow = 1.62 cfs @ 11.98 hrs, Volume= 0.082 af
Outflow = 1.62 cfs @ 11.98 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Primary = 1.62 cfs @ 11.98 hrs, Volume= 0.082 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

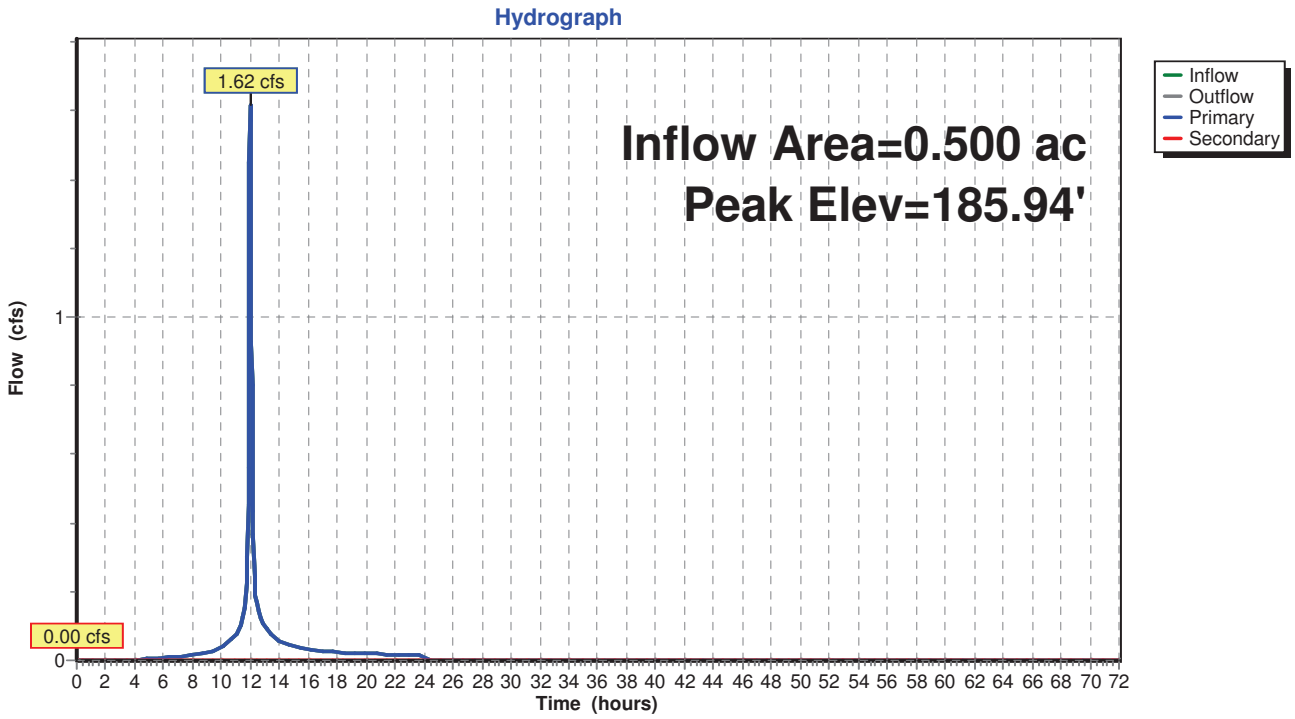
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 185.94' @ 11.98 hrs
Flood Elev= 187.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	184.70'	**8.0" Round Culvert** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.70' / 184.50' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Secondary	184.70'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.70' / 184.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	186.00'	**4.0' 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

Primary OutFlow Max=1.53 cfs @ 11.98 hrs HW=185.86' TW=183.04' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.53 cfs @ 4.39 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=184.70' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Controls 0.00 cfs)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1.2 FS:


Hydrograph
Inflow Area=0.500 ac
Peak Elev=185.94'
1.62 cfs
0.00 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.2 P:

Inflow Area = 0.500 ac, 80.00% Impervious, Inflow Depth = 1.97" for 1-yr event
Inflow = 1.62 cfs @ 11.98 hrs, Volume= 0.082 af
Outflow = 0.03 cfs @ 10.45 hrs, Volume= 0.082 af, Atten= 98%, Lag= 0.0 min
Discarded = 0.03 cfs @ 10.45 hrs, Volume= 0.082 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 184.28' @ 16.29 hrs Surf.Area= 0.030 ac Storage= 0.047 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 633.1 min (1,428.5 - 795.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	182.00'	0.028 af	**34.75'W x 38.04'L x 3.50'H Field A** 0.106 af Overall - 0.037 af Embedded = 0.069 af x 40.0% Voids
#2A	182.50'	0.037 af	**ADS_StormTech SC-740** x 35 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 Row Length Adjustment= +0.44' x 6.45 sf x 7 rows
		0.065 af	Total Available Storage

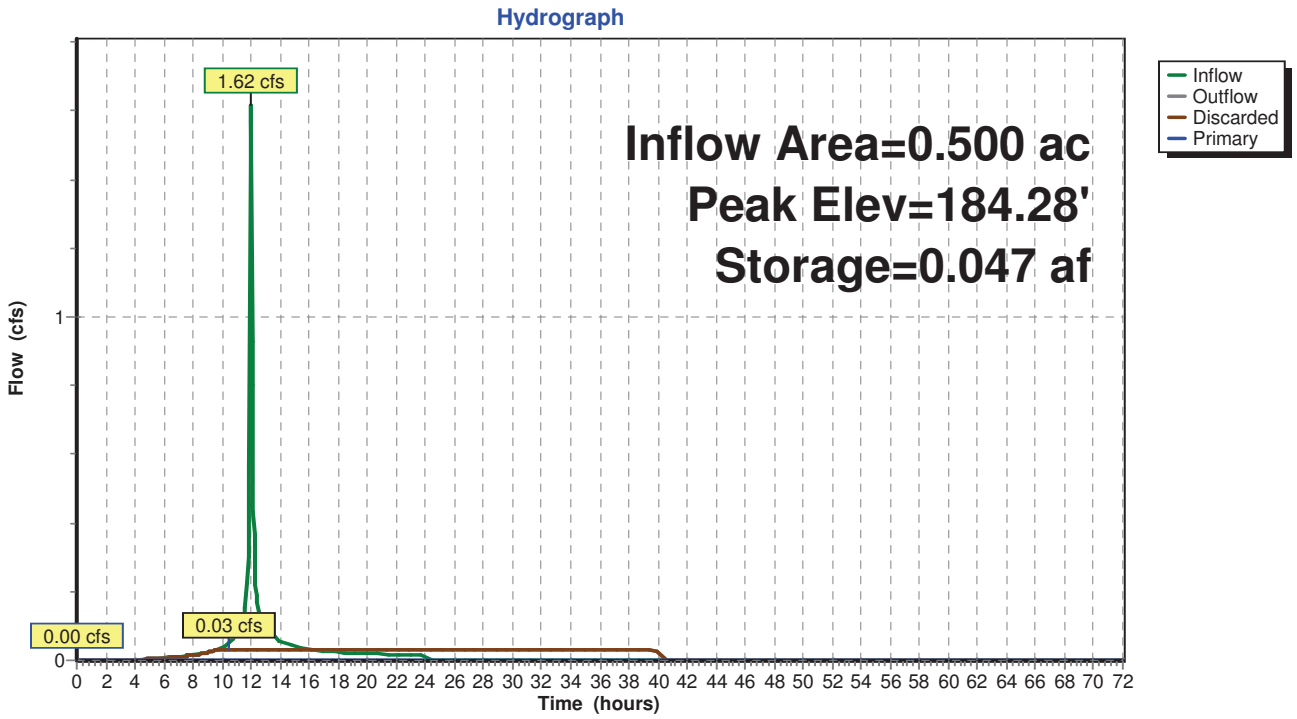
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	182.00'	**1.000 in/hr Exfiltration over Horizontal area**
#2	Primary	184.30'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.30' / 184.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.03 cfs @ 10.45 hrs HW=182.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=182.00' TW=0.00' (Dynamic Tailwater)
↑**2=Culvert** (Controls 0.00 cfs)

Pond 1.2 P:


Hydrograph
Inflow Area=0.500 ac
Peak Elev=184.28'
Storage=0.047 af
1.62 cfs
0.03 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.3 P:

Inflow Area = 0.400 ac, 50.00% Impervious, Inflow Depth = 1.55" for 1-yr event
Inflow = 0.94 cfs @ 12.02 hrs, Volume= 0.052 af
Outflow = 0.27 cfs @ 12.23 hrs, Volume= 0.052 af, Atten= 71%, Lag= 12.7 min
Primary = 0.27 cfs @ 12.23 hrs, Volume= 0.052 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 192.61' @ 12.23 hrs Surf.Area= 1,630 sf Storage= 886 cf

Plug-Flow detention time= 464.5 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 465.3 min (1,291.8 - 826.5)

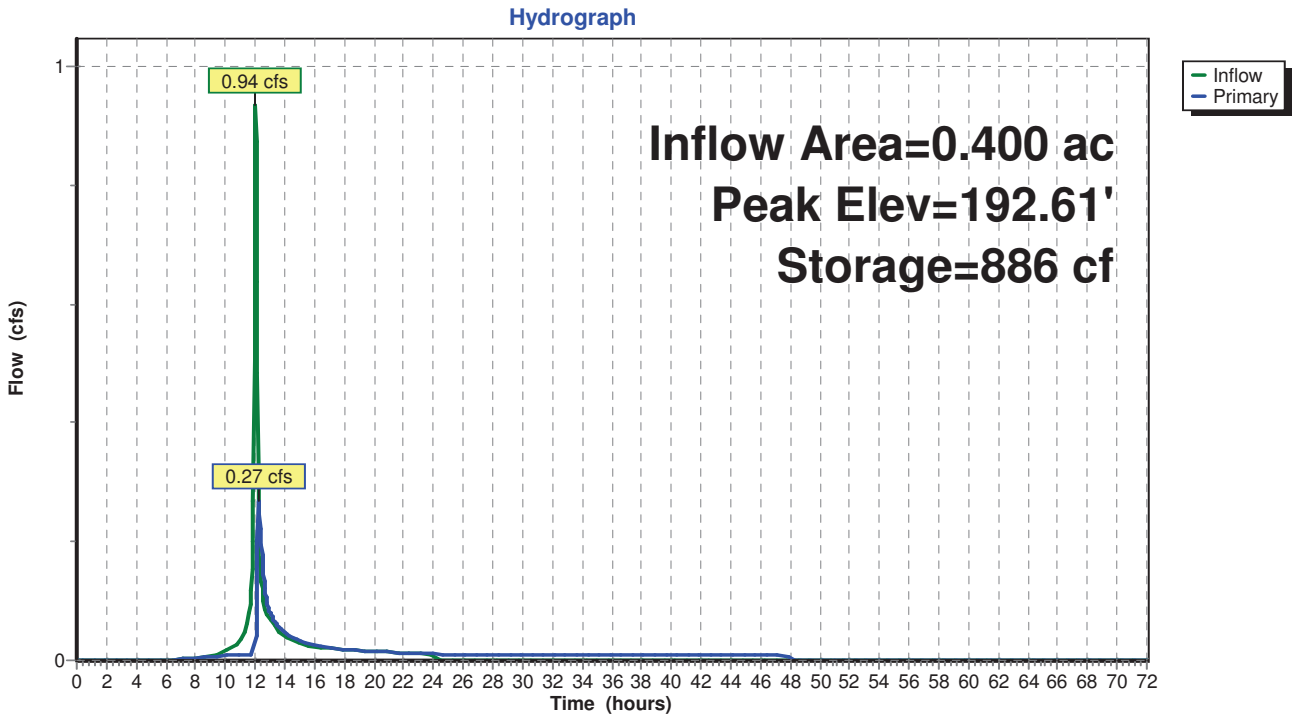
Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	3,720 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
192.00	1,270	0	0
194.00	2,450	3,720	3,720

Device	Routing	Invert	Outlet Devices
#1	Primary	188.20'	**12.0" Round Culvert** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 188.20' / 187.10' S= 0.0108 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	192.00'	**0.250 in/hr Exfiltration over Horizontal area**
#3	Device 1	192.50'	**2.5' 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

Primary OutFlow Max=0.26 cfs @ 12.23 hrs HW=192.61' TW=181.46' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.26 cfs of 6.17 cfs potential flow)
  └**2=Exfiltration** (Exfiltration Controls 0.01 cfs)
  └**3=Broad-Crested Rectangular Weir** (Weir Controls 0.26 cfs @ 0.93 fps)

Pond 1.3 P:

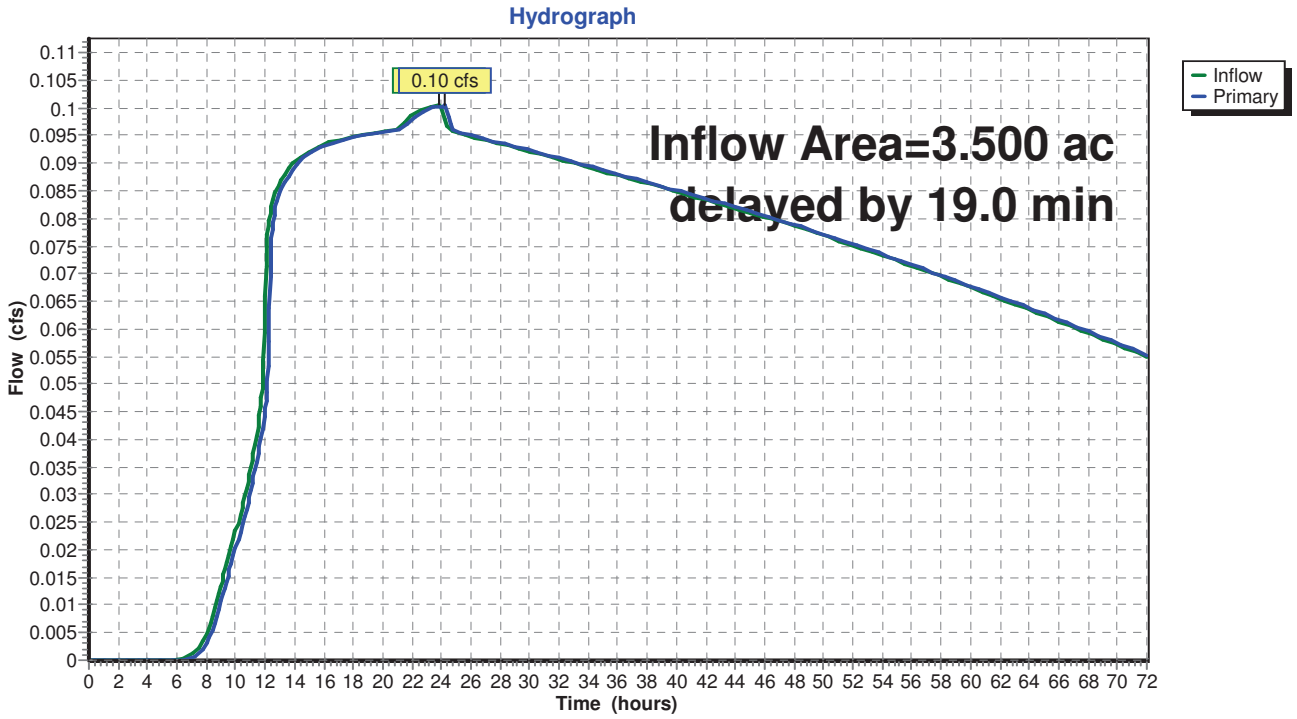

Hydrograph
Inflow Area=0.400 ac
Peak Elev=192.61'
Storage=886 cf
0.94 cfs
0.27 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Link 1.1R: (See Subcatchment 1.1 TC for Time of Concentration Calculation)

Inflow Area = 3.500 ac, 65.71% Impervious, Inflow Depth > 1.40" for 1-yr event
Inflow = 0.10 cfs @ 23.88 hrs, Volume= 0.409 af
Primary = 0.10 cfs @ 24.19 hrs, Volume= 0.408 af, Atten= 0%, Lag= 19.0 min

Primary outflow = Inflow delayed by 19.0 min, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1.1R: (See Subcatchment 1.1 TC for Time of Concentration Calculation)



Summary for Subcatchment 1.0S:

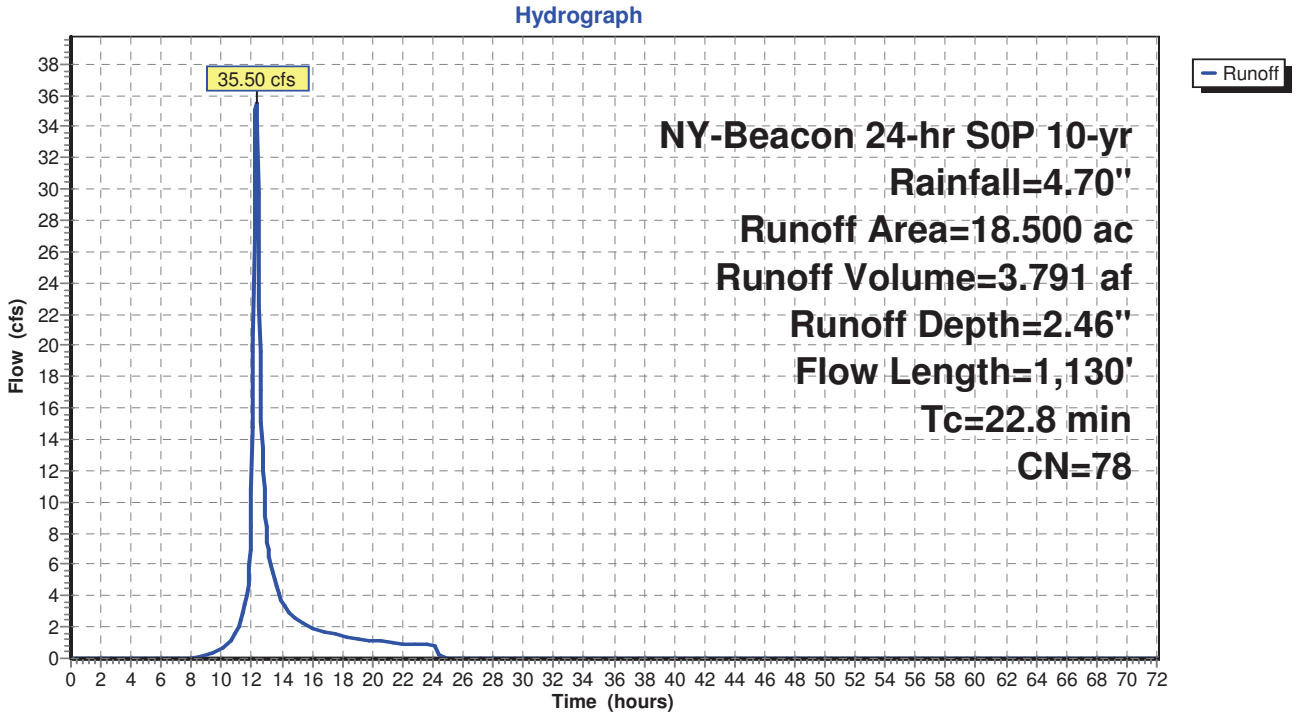
Runoff = 35.50 cfs @ 12.28 hrs, Volume= 3.791 af, Depth= 2.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 10-yr Rainfall=4.70"

Area (ac)	CN	Description
11.200	77	Woods, Good, HSG D
5.800	78	Meadow, non-grazed, HSG D
1.000	80	>75% Grass cover, Good, HSG D
0.500	98	Paved parking, HSG D
18.500	78	Weighted Average
18.000		97.30% Pervious Area
0.500		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0800	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
4.7	345	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	170	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.1	280	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	235	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
22.8	1,130	Total			

Subcatchment 1.0S:



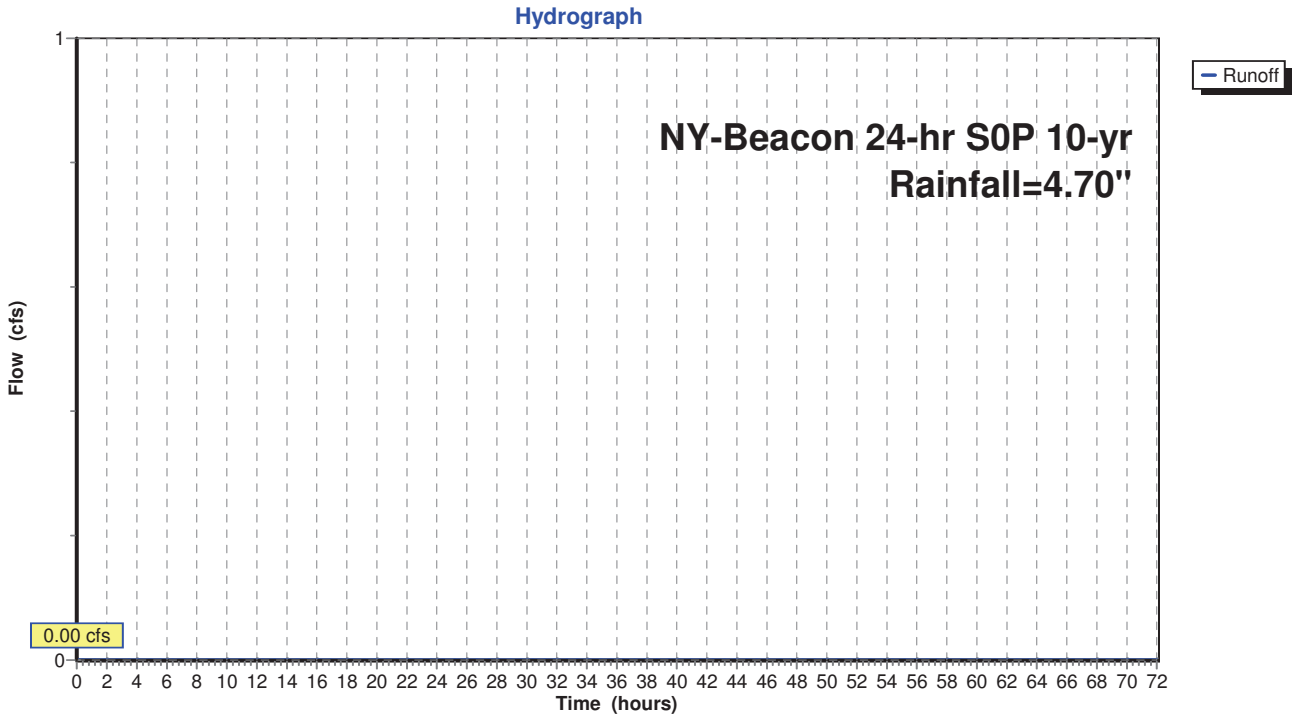
Summary for Subcatchment 1.1 TC:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 10-yr Rainfall=4.70"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
0.6	30	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.0	130	Total			

Subcatchment 1.1 TC:



Summary for Subcatchment 1.1S:

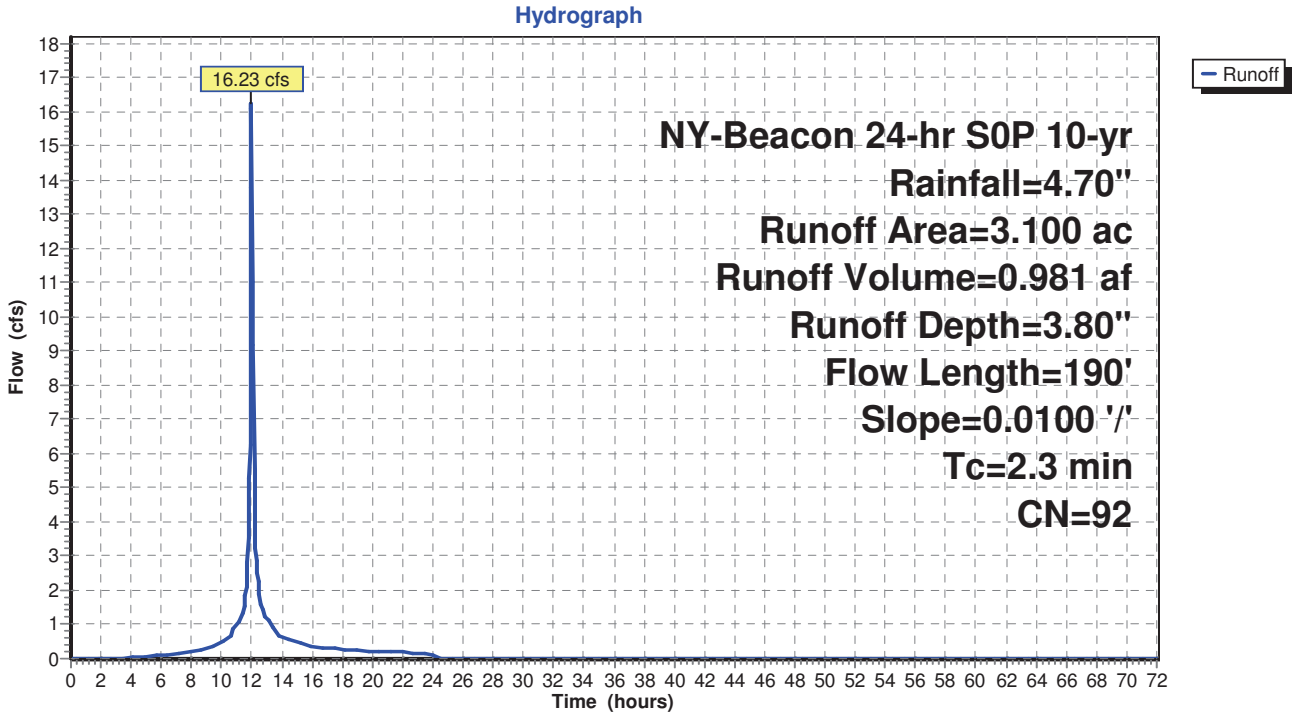
Runoff = 16.23 cfs @ 11.99 hrs, Volume= 0.981 af, Depth= 3.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 10-yr Rainfall=4.70"

Area (ac)	CN	Description
2.100	98	Paved parking, HSG D
1.000	80	>75% Grass cover, Good, HSG D
3.100	92	Weighted Average
1.000		32.26% Pervious Area
2.100		67.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.04		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.16"
0.7	90	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	190	Total			

Subcatchment 1.1S:



Summary for Subcatchment 1.2S:

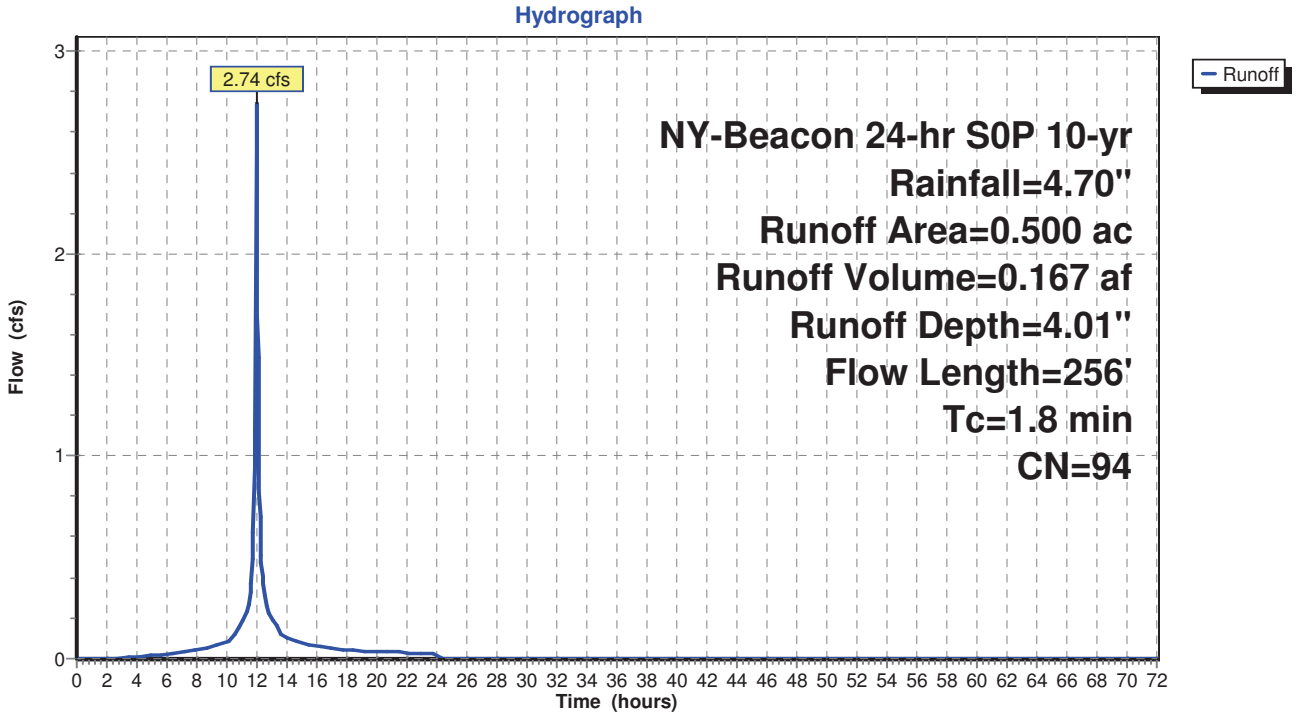
Runoff = 2.74 cfs @ 11.98 hrs, Volume= 0.167 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 10-yr Rainfall=4.70"

Area (ac)	CN	Description
0.400	98	Paved parking, HSG D
0.100	80	>75% Grass cover, Good, HSG D
0.500	94	Weighted Average
0.100		20.00% Pervious Area
0.400		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0400	1.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.16"
0.9	156	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	256	Total			

Subcatchment 1.2S:



Summary for Subcatchment 1.3S:

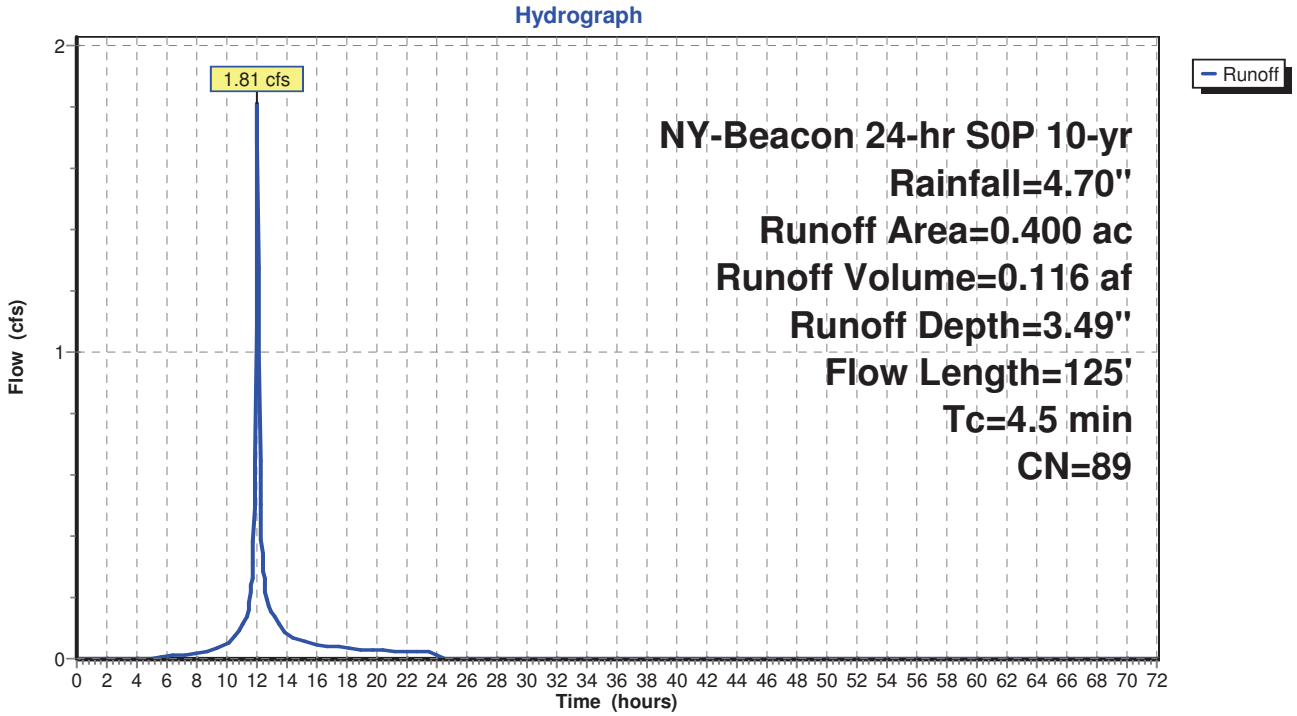
Runoff = 1.81 cfs @ 12.02 hrs, Volume= 0.116 af, Depth= 3.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 10-yr Rainfall=4.70"

Area (ac)	CN	Description
0.200	98	Paved parking, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.400	89	Weighted Average
0.200		50.00% Pervious Area
0.200		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	85	0.1100	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.16"
0.1	40	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.5	125	Total			

Subcatchment 1.3S:

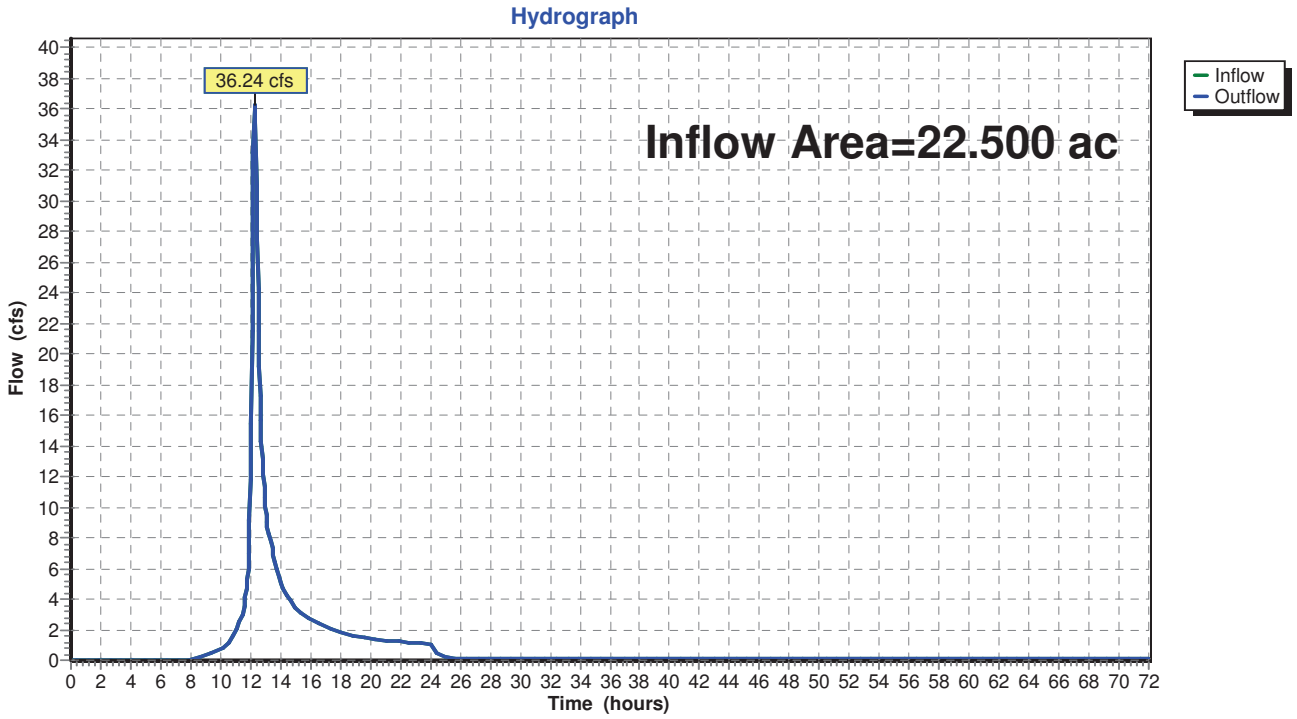


Summary for Reach Design Line:

Inflow Area = 22.500 ac, 14.22% Impervious, Inflow Depth > 2.58" for 10-yr event
Inflow = 36.24 cfs @ 12.28 hrs, Volume= 4.841 af
Outflow = 36.24 cfs @ 12.28 hrs, Volume= 4.841 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach Design Line:



Summary for Pond 1.1 P:

Inflow Area = 3.500 ac, 65.71% Impervious, Inflow Depth = 3.76" for 10-yr event
Inflow = 17.09 cfs @ 11.99 hrs, Volume= 1.097 af
Outflow = 2.04 cfs @ 12.57 hrs, Volume= 0.980 af, Atten= 88%, Lag= 34.6 min
Primary = 2.04 cfs @ 12.57 hrs, Volume= 0.980 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 180.00' Surf.Area= 7,640 sf Storage= 10,715 cf
Peak Elev= 182.81' @ 12.57 hrs Surf.Area= 14,754 sf Storage= 36,209 cf (25,494 cf above start)
Flood Elev= 184.50' Surf.Area= 19,225 sf Storage= 60,459 cf (49,744 cf above start)

Plug-Flow detention time= 1,094.4 min calculated for 0.734 af (67% of inflow)
Center-of-Mass det. time= 712.1 min (1,522.3 - 810.2)

Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	2,050 cf	**Forebay (Prismatic)** Listed below (Recalc)
#2	175.00'	67,360 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		69,410 cf	Total Available Storage

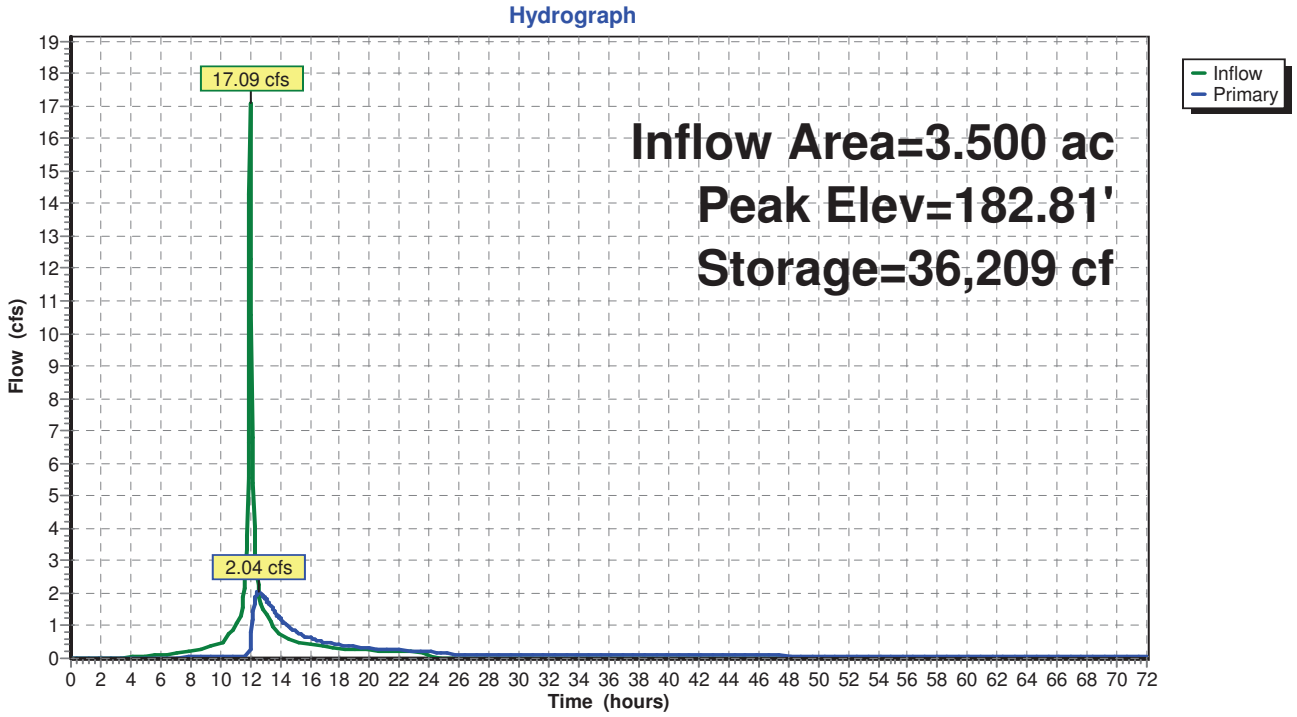
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	5	0	0
177.00	110	115	115
179.00	450	560	675
180.00	2,300	1,375	2,050

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	500	0	0
177.00	1,180	1,680	1,680
179.00	2,090	3,270	4,950
180.00	5,340	3,715	8,665
182.00	10,730	16,070	24,735
184.00	14,970	25,700	50,435
185.00	18,880	16,925	67,360

Device	Routing	Invert	Outlet Devices
#1	Primary	179.00'	**24.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 179.00' / 178.50' S= 0.0147 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	180.00'	**1.6" Vert. Orifice/Grate** C= 0.600
#3	Device 1	182.10'	**1.0' 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

Primary OutFlow Max=2.04 cfs @ 12.57 hrs HW=182.81' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 2.04 cfs of 25.37 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 7.98 fps)
  └─**3=Broad-Crested Rectangular Weir** (Weir Controls 1.93 cfs @ 2.70 fps)

Pond 1.1 P:


Hydrograph
Inflow Area=3.500 ac
Peak Elev=182.81'
Storage=36,209 cf
17.09 cfs
2.04 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.2 FS:

Inflow Area = 0.500 ac, 80.00% Impervious, Inflow Depth = 4.01" for 10-yr event
Inflow = 2.74 cfs @ 11.98 hrs, Volume= 0.167 af
Outflow = 2.74 cfs @ 11.98 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min
Primary = 1.81 cfs @ 11.98 hrs, Volume= 0.161 af
Secondary = 0.93 cfs @ 11.98 hrs, Volume= 0.007 af

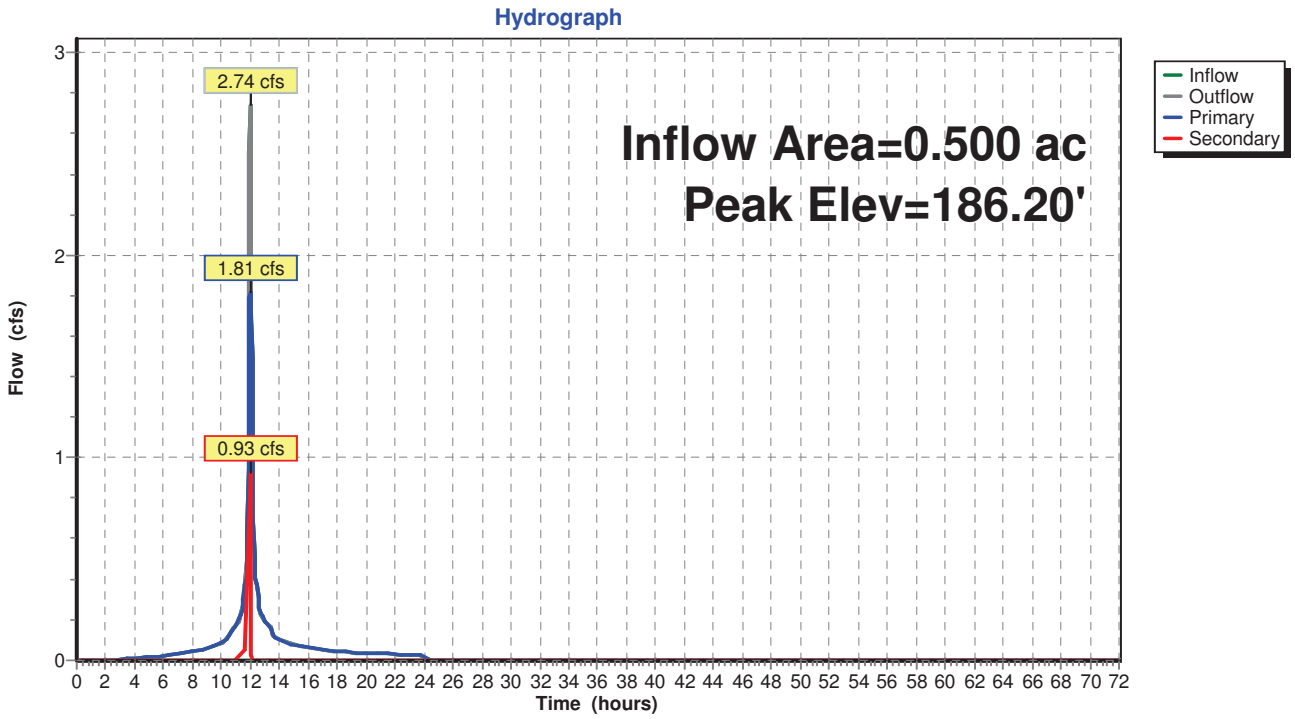
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 186.20' @ 11.98 hrs
Flood Elev= 187.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	184.70'	**8.0" Round Culvert** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.70' / 184.50' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Secondary	184.70'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.70' / 184.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	186.00'	**4.0' 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

Primary OutFlow Max=1.79 cfs @ 11.98 hrs HW=186.17' TW=184.28' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.79 cfs @ 5.14 fps)

Secondary OutFlow Max=0.81 cfs @ 11.98 hrs HW=186.17' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.81 cfs of 3.73 cfs potential flow)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 0.81 cfs @ 1.17 fps)

Pond 1.2 FS:


Hydrograph
Inflow Area=0.500 ac
Peak Elev=186.20'
2.74 cfs
1.81 cfs
0.93 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.2 P:

Inflow Area = 0.500 ac, 80.00% Impervious, Inflow Depth = 3.85" for 10-yr event
Inflow = 1.81 cfs @ 11.98 hrs, Volume= 0.161 af
Outflow = 1.08 cfs @ 12.14 hrs, Volume= 0.161 af, Atten= 41%, Lag= 9.6 min
Discarded = 0.03 cfs @ 7.95 hrs, Volume= 0.096 af
Primary = 1.05 cfs @ 12.14 hrs, Volume= 0.064 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 185.06' @ 12.14 hrs Surf.Area= 0.030 ac Storage= 0.060 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 403.9 min (1,179.9 - 776.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	182.00'	0.028 af	**34.75'W x 38.04'L x 3.50'H Field A** 0.106 af Overall - 0.037 af Embedded = 0.069 af x 40.0% Voids
#2A	182.50'	0.037 af	**ADS_StormTech SC-740** x 35 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 Row Length Adjustment= +0.44' x 6.45 sf x 7 rows
		0.065 af	Total Available Storage

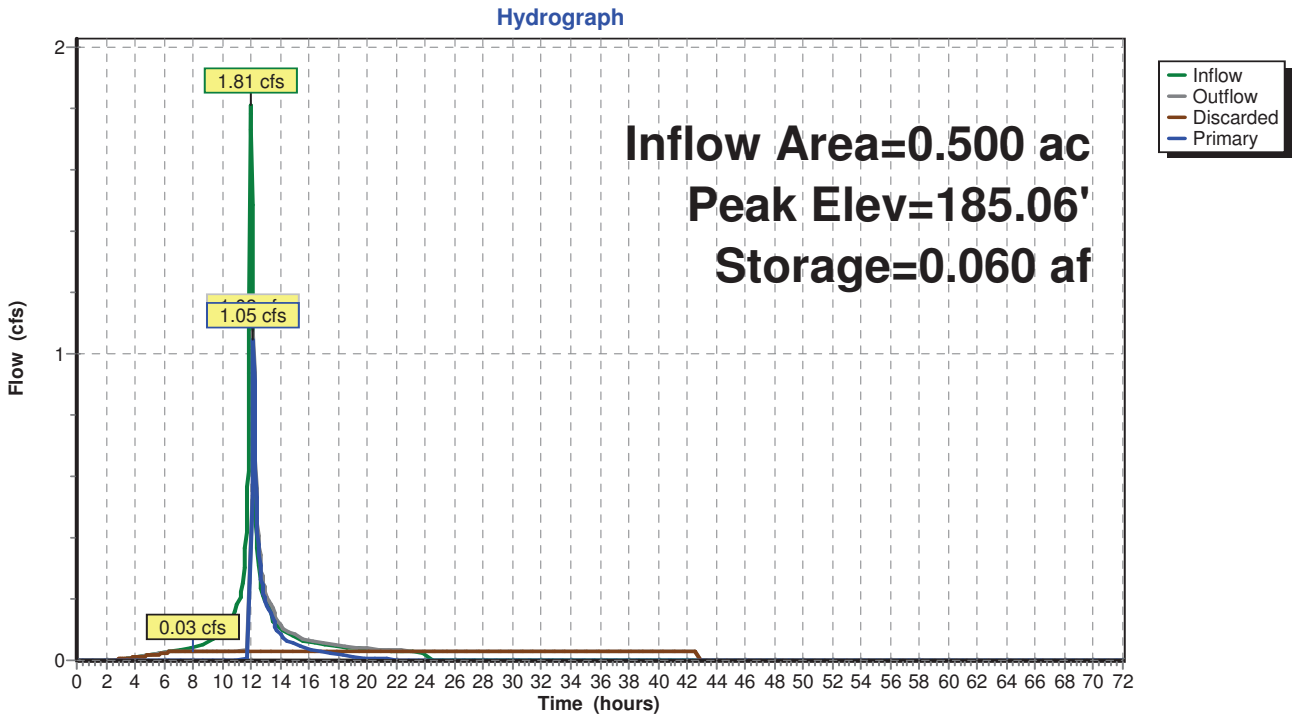
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	182.00'	**1.000 in/hr Exfiltration over Horizontal area**
#2	Primary	184.30'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.30' / 184.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.03 cfs @ 7.95 hrs HW=182.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.03 cfs @ 12.14 hrs HW=185.05' TW=0.00' (Dynamic Tailwater)
↑**2=Culvert** (Barrel Controls 1.03 cfs @ 3.27 fps)

Pond 1.2 P:


Hydrograph
Inflow Area=0.500 ac
Peak Elev=185.06'
Storage=0.060 af
1.81 cfs
1.05 cfs
0.03 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 1 2
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.3 P:

Inflow Area = 0.400 ac, 50.00% Impervious, Inflow Depth = 3.49" for 10-yr event
Inflow = 1.81 cfs @ 12.02 hrs, Volume= 0.116 af
Outflow = 1.39 cfs @ 12.10 hrs, Volume= 0.116 af, Atten= 23%, Lag= 4.5 min
Primary = 1.39 cfs @ 12.10 hrs, Volume= 0.116 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 192.83' @ 12.10 hrs Surf.Area= 1,761 sf Storage= 1,261 cf

Plug-Flow detention time= 225.7 min calculated for 0.116 af (100% of inflow)
Center-of-Mass det. time= 226.7 min (1,026.4 - 799.8)

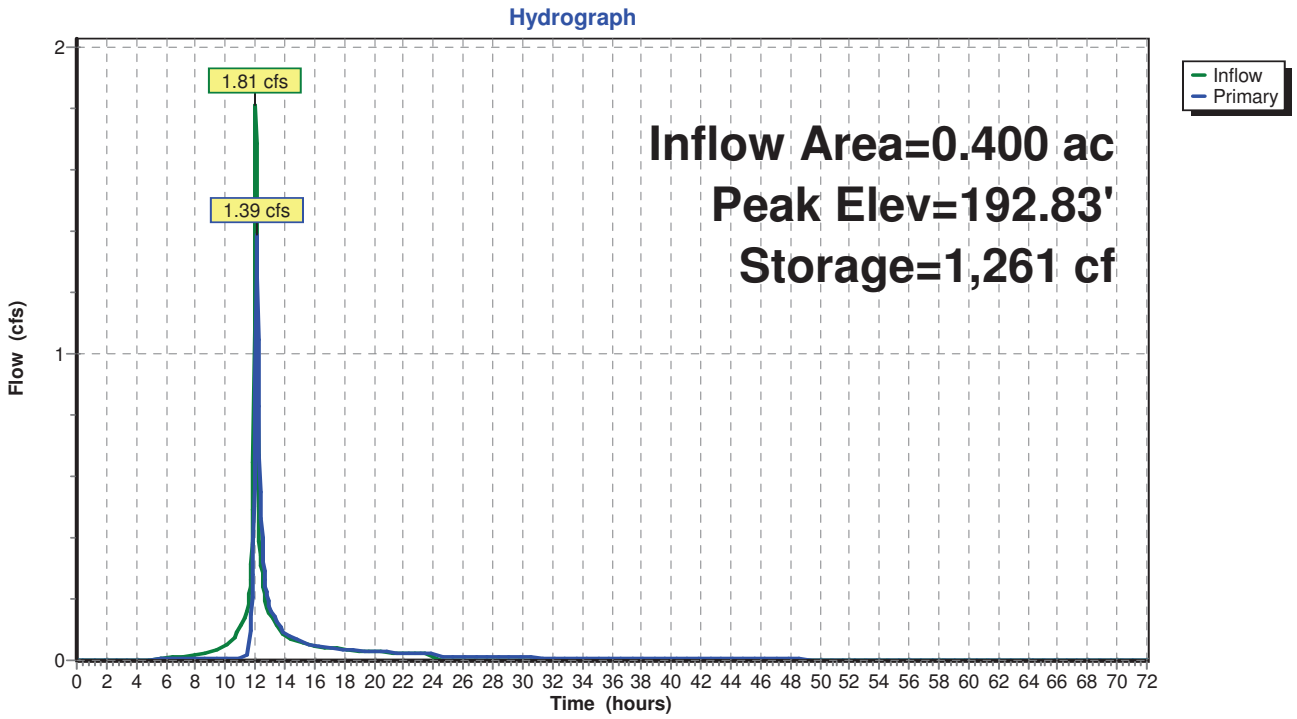
Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	3,720 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
192.00	1,270	0	0
194.00	2,450	3,720	3,720

Device	Routing	Invert	Outlet Devices
#1	Primary	188.20'	**12.0" Round Culvert** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 188.20' / 187.10' S= 0.0108 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	192.00'	**0.250 in/hr Exfiltration over Horizontal area**
#3	Device 1	192.50'	**2.5' 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

Primary OutFlow Max=1.38 cfs @ 12.10 hrs HW=192.83' TW=182.48' (Dynamic Tailwater)
└**1=Culvert** (Passes 1.38 cfs of 6.32 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.01 cfs)
  └**3=Broad-Crested Rectangular Weir** (Weir Controls 1.37 cfs @ 1.66 fps)

Pond 1.3 P:

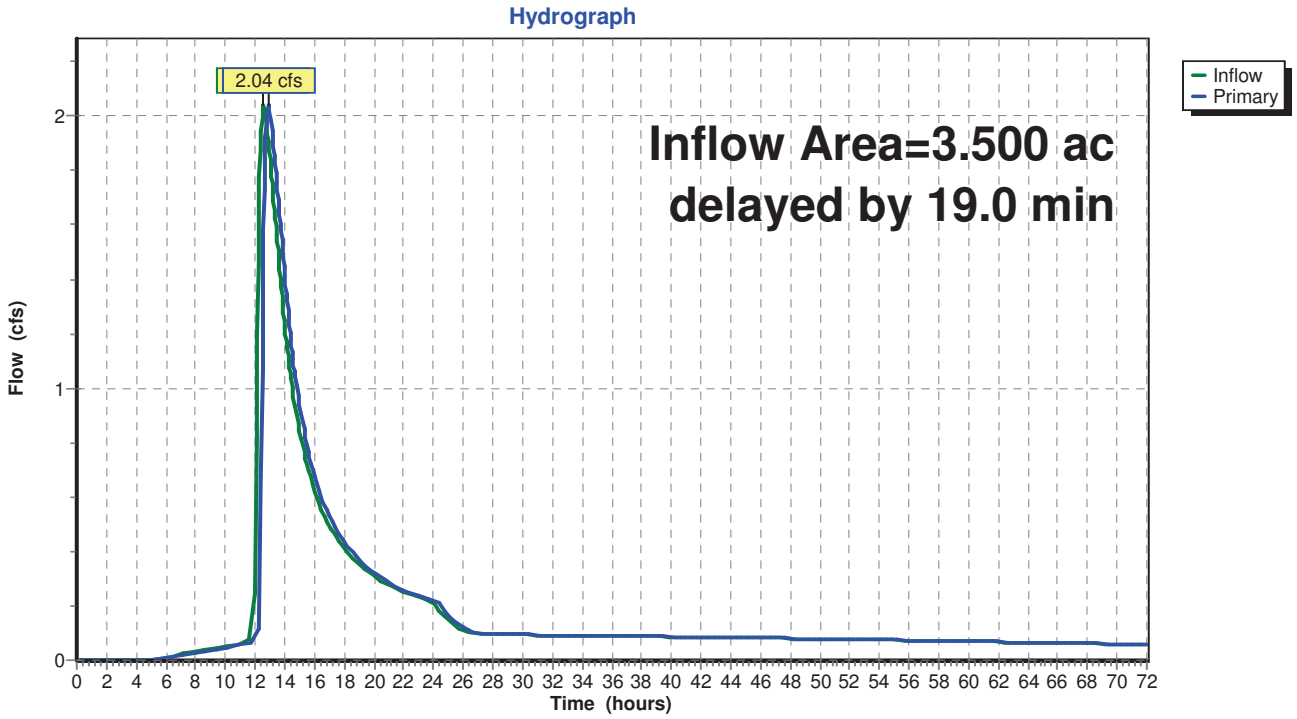

Hydrograph
Inflow Area=0.400 ac
Peak Elev=192.83'
Storage=1,261 cf
1.81 cfs
1.39 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0
1
2
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Link 1.1R: (See Subcatchment 1.1 TC for Time of Concentration Calculation)

Inflow Area = 3.500 ac, 65.71% Impervious, Inflow Depth > 3.36" for 10-yr event
Inflow = 2.04 cfs @ 12.57 hrs, Volume= 0.980 af
Primary = 2.04 cfs @ 12.89 hrs, Volume= 0.979 af, Atten= 0%, Lag= 19.3 min

Primary outflow = Inflow delayed by 19.0 min, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1.1R: (See Subcatchment 1.1 TC for Time of Concentration Calculation)



Summary for Subcatchment 1.0S:

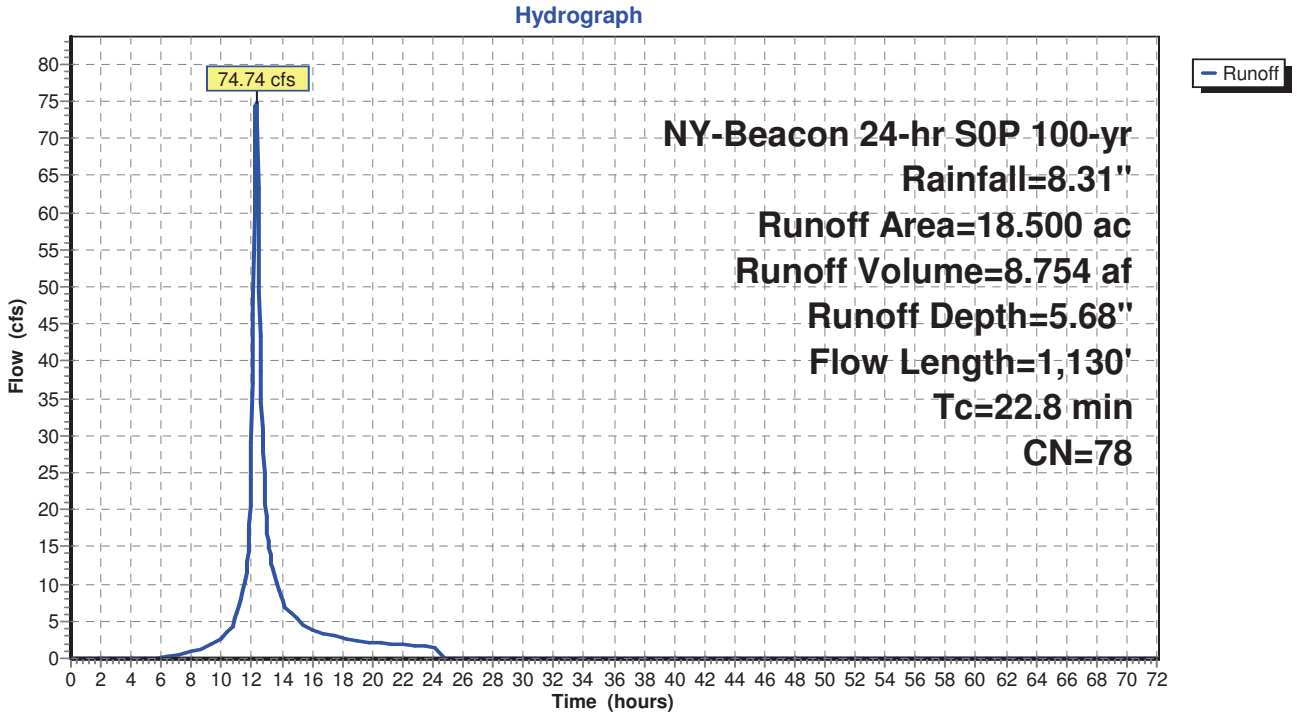
Runoff = 74.74 cfs @ 12.28 hrs, Volume= 8.754 af, Depth= 5.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 100-yr Rainfall=8.31"

Area (ac)	CN	Description
11.200	77	Woods, Good, HSG D
5.800	78	Meadow, non-grazed, HSG D
1.000	80	>75% Grass cover, Good, HSG D
0.500	98	Paved parking, HSG D
18.500	78	Weighted Average
18.000		97.30% Pervious Area
0.500		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0800	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
4.7	345	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	170	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.1	280	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	235	0.0500	3.35		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
22.8	1,130	Total			

Subcatchment 1.0S:



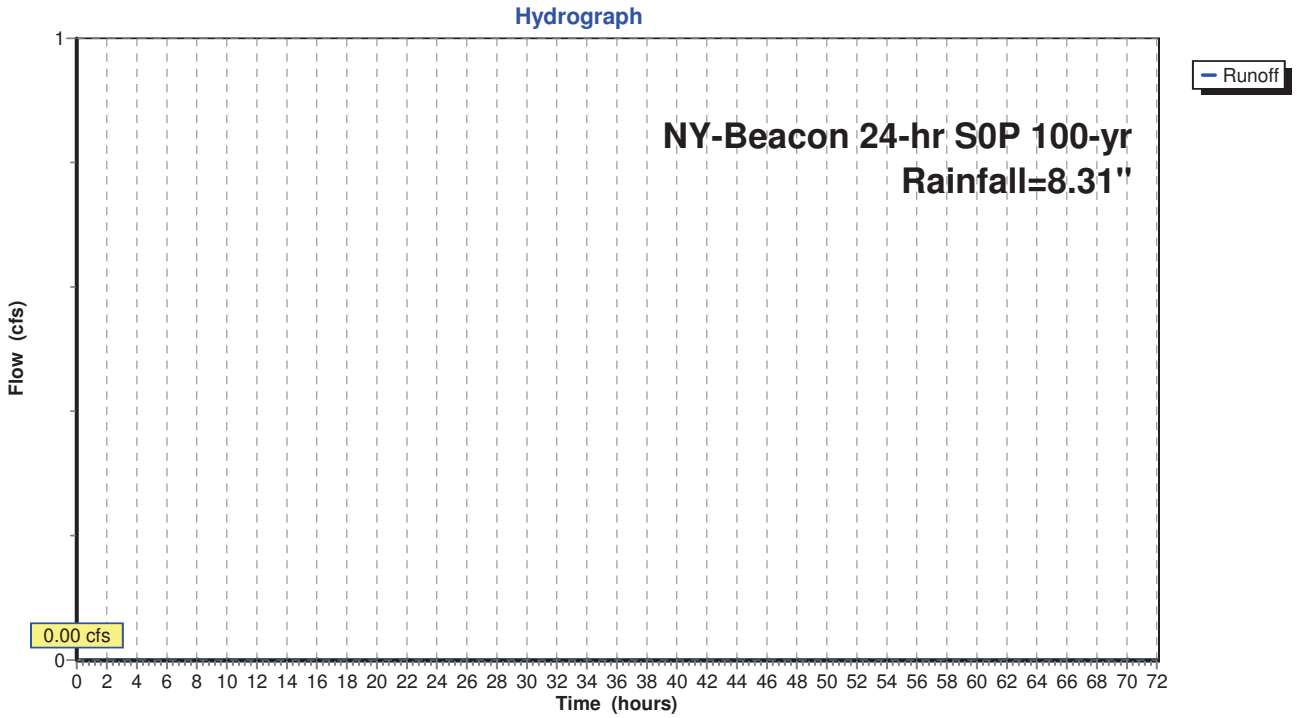
Summary for Subcatchment 1.1 TC:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 100-yr Rainfall=8.31"

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.4	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.16"
0.6	30	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.0	130	Total			

Subcatchment 1.1 TC:



Summary for Subcatchment 1.1S:

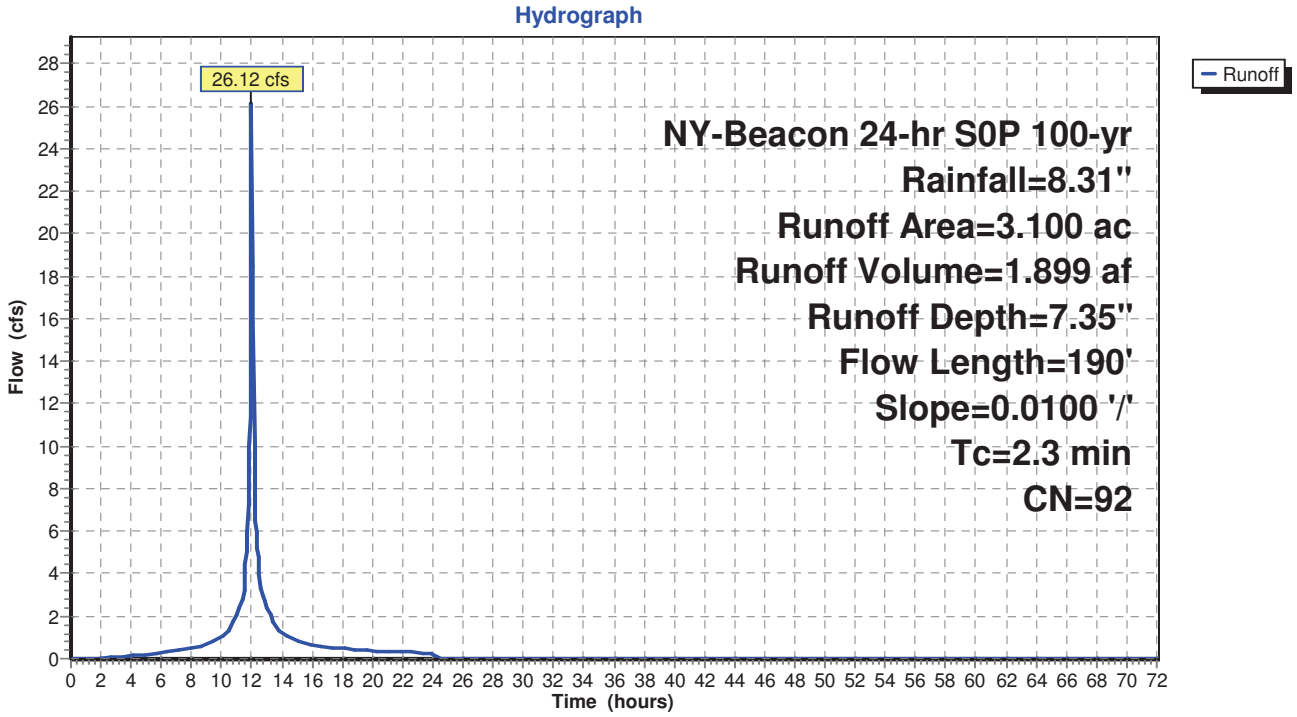
Runoff = 26.12 cfs @ 11.99 hrs, Volume= 1.899 af, Depth= 7.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 100-yr Rainfall=8.31"

Area (ac)	CN	Description
2.100	98	Paved parking, HSG D
1.000	80	>75% Grass cover, Good, HSG D
3.100	92	Weighted Average
1.000		32.26% Pervious Area
2.100		67.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	100	0.0100	1.04		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.16"
0.7	90	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.3	190	Total			

Subcatchment 1.1S:



Summary for Subcatchment 1.2S:

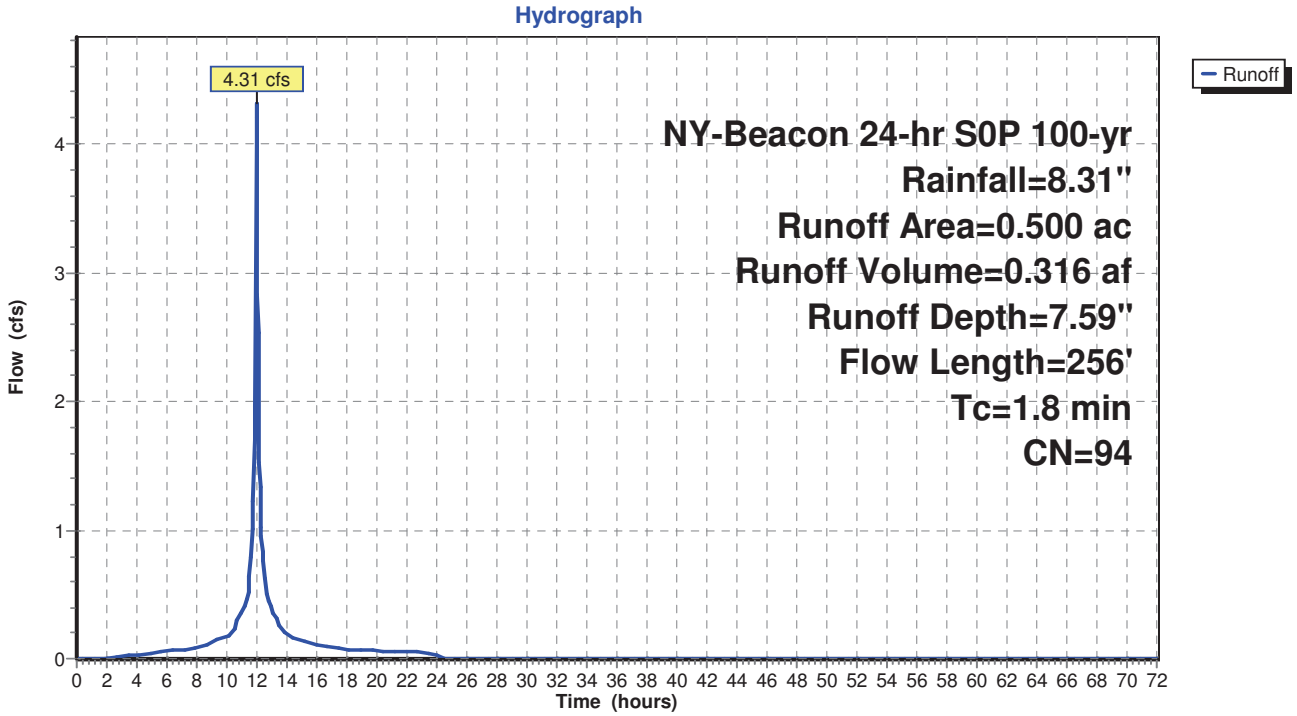
Runoff = 4.31 cfs @ 11.98 hrs, Volume= 0.316 af, Depth= 7.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 100-yr Rainfall=8.31"

Area (ac)	CN	Description
0.400	98	Paved parking, HSG D
0.100	80	>75% Grass cover, Good, HSG D
0.500	94	Weighted Average
0.100		20.00% Pervious Area
0.400		80.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	100	0.0400	1.80		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.16"
0.9	156	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	256	Total			

Subcatchment 1.2S:



Summary for Subcatchment 1.3S:

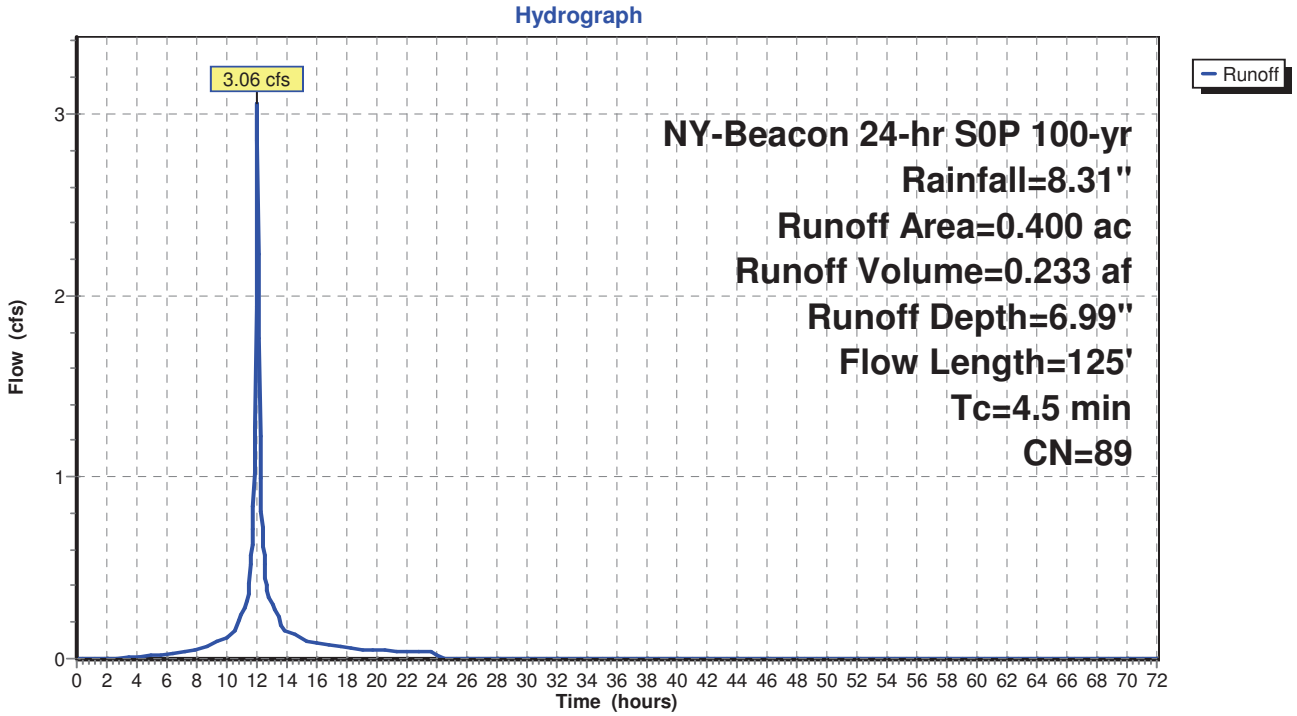
Runoff = 3.06 cfs @ 12.02 hrs, Volume= 0.233 af, Depth= 6.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NY-Beacon 24-hr S0P 100-yr Rainfall=8.31"

Area (ac)	CN	Description
0.200	98	Paved parking, HSG D
0.200	80	>75% Grass cover, Good, HSG D
0.400	89	Weighted Average
0.200		50.00% Pervious Area
0.200		50.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.4	85	0.1100	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.16"
0.1	40	0.0500	4.54		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
4.5	125	Total			

Subcatchment 1.3S:

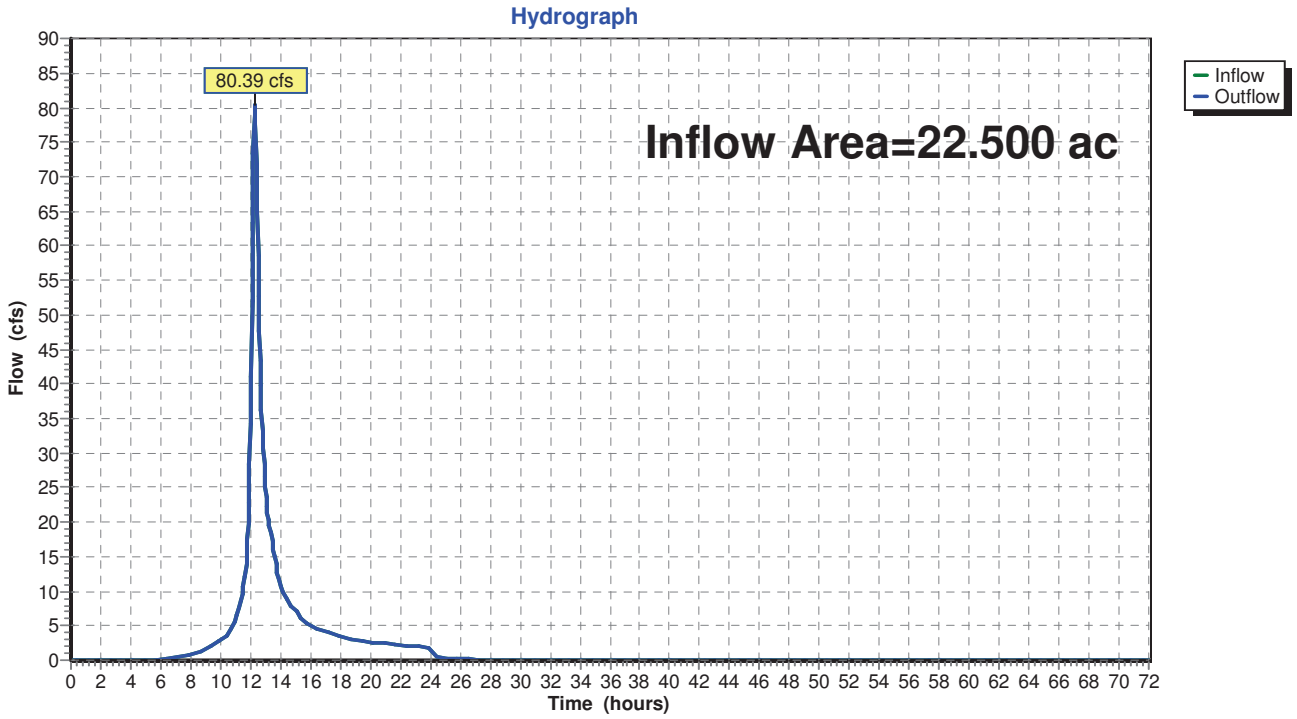


Summary for Reach Design Line:

Inflow Area = 22.500 ac, 14.22% Impervious, Inflow Depth > 5.85" for 100-yr event
Inflow = 80.39 cfs @ 12.29 hrs, Volume= 10.977 af
Outflow = 80.39 cfs @ 12.29 hrs, Volume= 10.977 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach Design Line:



Summary for Pond 1.1 P:

Inflow Area = 3.500 ac, 65.71% Impervious, Inflow Depth = 7.31" for 100-yr event
Inflow = 27.89 cfs @ 11.99 hrs, Volume= 2.132 af
Outflow = 8.69 cfs @ 12.24 hrs, Volume= 2.011 af, Atten= 69%, Lag= 14.7 min
Primary = 8.69 cfs @ 12.24 hrs, Volume= 2.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Starting Elev= 180.00' Surf.Area= 7,640 sf Storage= 10,715 cf
Peak Elev= 183.98' @ 12.24 hrs Surf.Area= 17,228 sf Storage= 52,186 cf (41,471 cf above start)
Flood Elev= 184.50' Surf.Area= 19,225 sf Storage= 60,459 cf (49,744 cf above start)

Plug-Flow detention time= 541.2 min calculated for 1.764 af (83% of inflow)
Center-of-Mass det. time= 393.2 min (1,174.1 - 780.9)

Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	2,050 cf	**Forebay (Prismatic)** Listed below (Recalc)
#2	175.00'	67,360 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
		69,410 cf	Total Available Storage

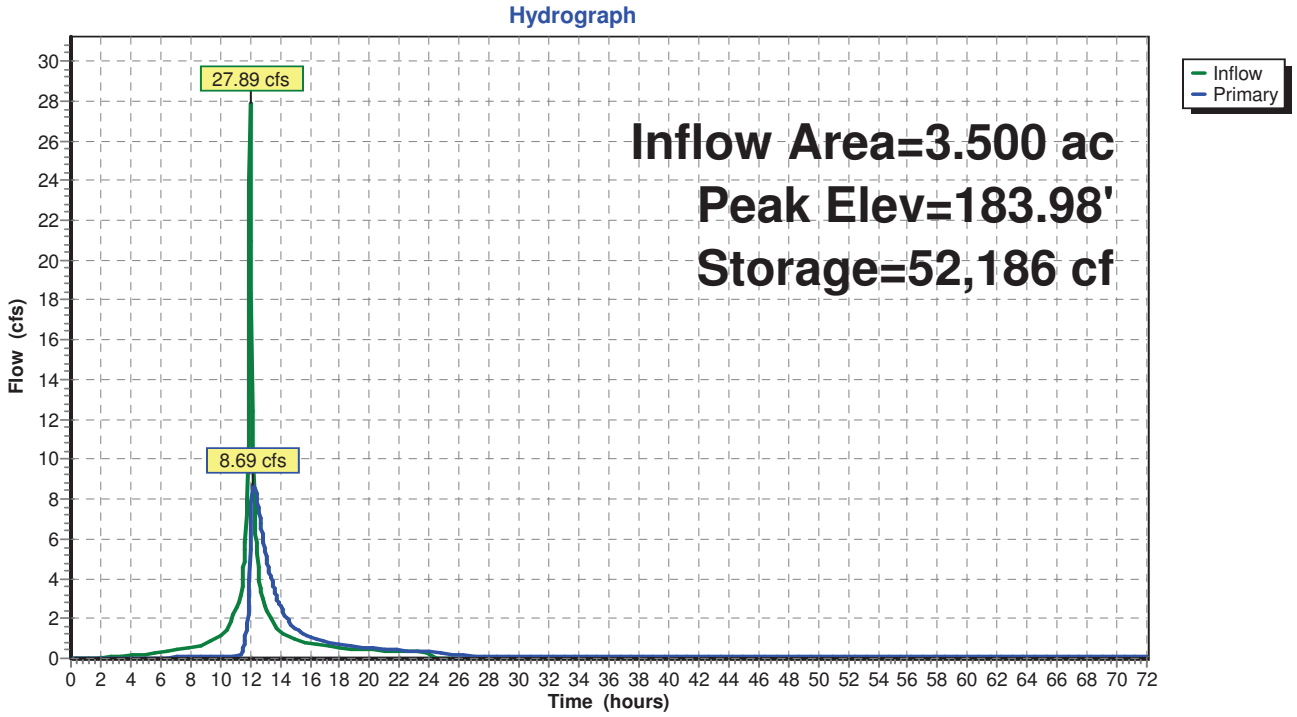
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	5	0	0
177.00	110	115	115
179.00	450	560	675
180.00	2,300	1,375	2,050

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	500	0	0
177.00	1,180	1,680	1,680
179.00	2,090	3,270	4,950
180.00	5,340	3,715	8,665
182.00	10,730	16,070	24,735
184.00	14,970	25,700	50,435
185.00	18,880	16,925	67,360

Device	Routing	Invert	Outlet Devices
#1	Primary	179.00'	**24.0" Round Culvert** L= 34.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 179.00' / 178.50' S= 0.0147 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	180.00'	**1.6" Vert. Orifice/Grate** C= 0.600
#3	Device 1	182.10'	**1.0' 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

Primary OutFlow Max=8.68 cfs @ 12.24 hrs HW=183.98' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Passes 8.68 cfs of 30.17 cfs potential flow)
↑**2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 9.52 fps)
3=Broad-Crested Rectangular Weir (Weir Controls 8.55 cfs @ 4.55 fps)

Pond 1.1 P:


Hydrograph
Inflow Area=3.500 ac
Peak Elev=183.98'
Storage=52,186 cf
27.89 cfs
8.69 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.2 FS:

Inflow Area = 0.500 ac, 80.00% Impervious, Inflow Depth = 7.59" for 100-yr event
Inflow = 4.31 cfs @ 11.98 hrs, Volume= 0.316 af
Outflow = 4.31 cfs @ 11.98 hrs, Volume= 0.316 af, Atten= 0%, Lag= 0.0 min
Primary = 1.72 cfs @ 11.95 hrs, Volume= 0.284 af
Secondary = 2.62 cfs @ 11.98 hrs, Volume= 0.033 af

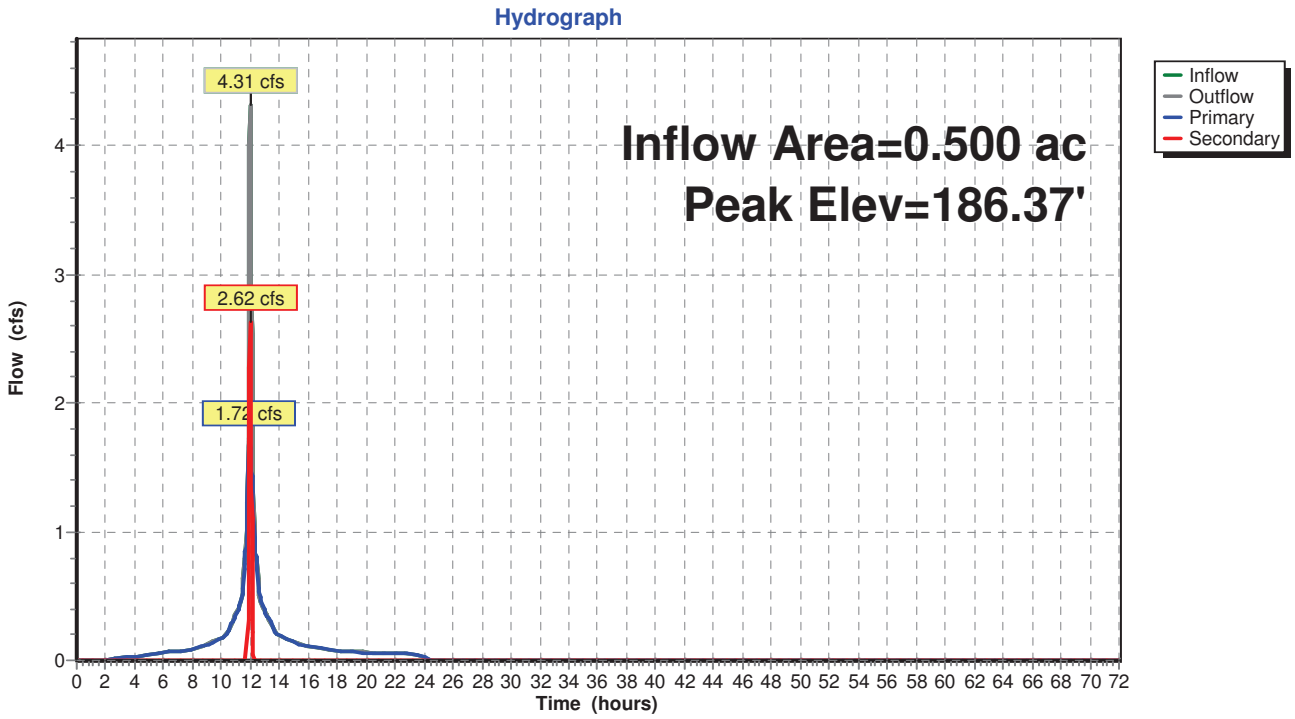
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 186.37' @ 11.98 hrs
Flood Elev= 187.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	184.70'	**8.0" Round Culvert** L= 12.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.70' / 184.50' S= 0.0167 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf
#2	Secondary	184.70'	**12.0" Round Culvert** L= 30.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.70' / 184.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#3	Device 2	186.00'	**4.0' 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

Primary OutFlow Max=1.63 cfs @ 11.95 hrs HW=186.34' TW=185.40' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 1.63 cfs @ 4.66 fps)

Secondary OutFlow Max=2.46 cfs @ 11.98 hrs HW=186.36' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 2.46 cfs of 4.07 cfs potential flow)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 2.46 cfs @ 1.73 fps)

Pond 1.2 FS:


Hydrograph
Inflow Area=0.500 ac
Peak Elev=186.37'
4.31 cfs
2.62 cfs
1.72 cfs
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 1 2 3 4
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.2 P:

Inflow Area = 0.500 ac, 80.00% Impervious, Inflow Depth = 6.81" for 100-yr event
Inflow = 1.72 cfs @ 11.95 hrs, Volume= 0.284 af
Outflow = 1.52 cfs @ 12.05 hrs, Volume= 0.284 af, Atten= 12%, Lag= 5.8 min
Discarded = 0.03 cfs @ 5.00 hrs, Volume= 0.103 af
Primary = 1.49 cfs @ 12.05 hrs, Volume= 0.181 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 185.49' @ 12.05 hrs Surf.Area= 0.030 ac Storage= 0.065 af

Plug-Flow detention time= 255.5 min calculated for 0.283 af (100% of inflow)
Center-of-Mass det. time= 256.2 min (1,017.4 - 761.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	182.00'	0.028 af	**34.75'W x 38.04'L x 3.50'H Field A** 0.106 af Overall - 0.037 af Embedded = 0.069 af x 40.0% Voids
#2A	182.50'	0.037 af	**ADS_StormTech SC-740** x 35 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 Row Length Adjustment= +0.44' x 6.45 sf x 7 rows
		0.065 af	Total Available Storage

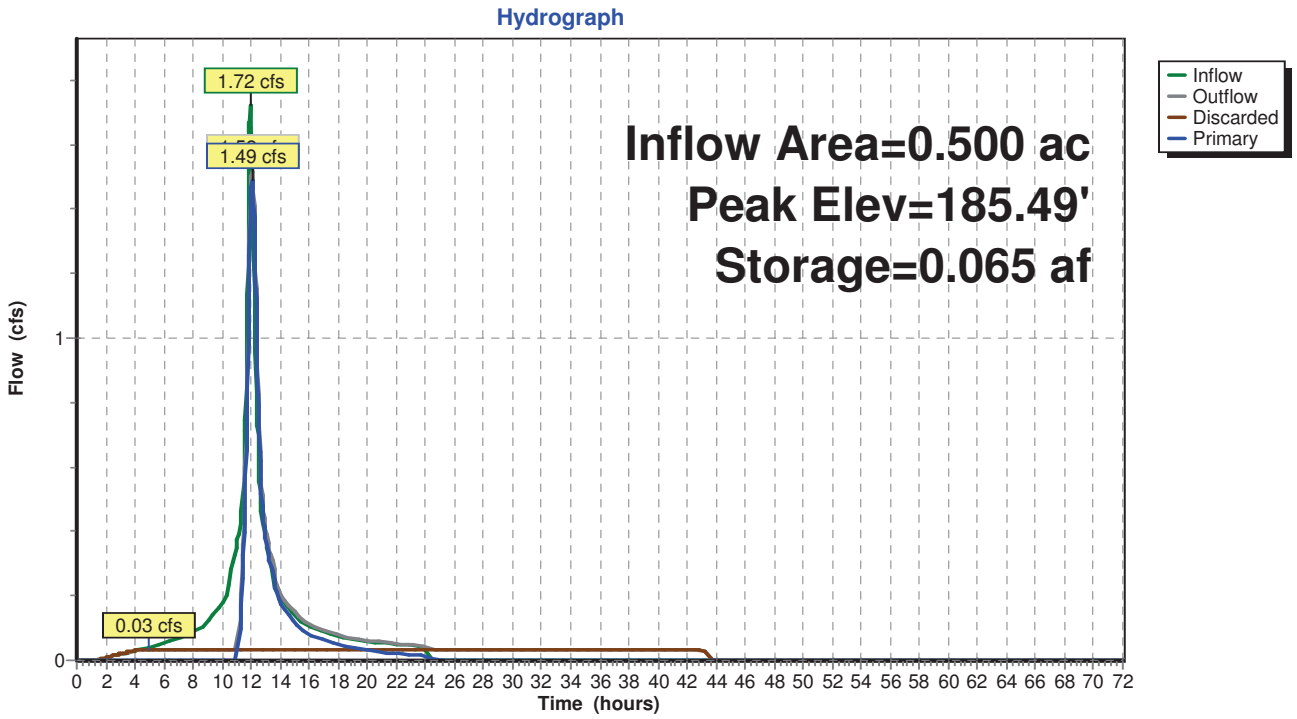
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	182.00'	**1.000 in/hr Exfiltration over Horizontal area**
#2	Primary	184.30'	**8.0" Round Culvert** L= 20.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 184.30' / 184.10' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.35 sf

Discarded OutFlow Max=0.03 cfs @ 5.00 hrs HW=182.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=1.49 cfs @ 12.05 hrs HW=185.49' TW=0.00' (Dynamic Tailwater)
↑—**2=Culvert** (Barrel Controls 1.49 cfs @ 4.26 fps)

Pond 1.2 P:


Hydrograph
Inflow Area=0.500 ac
Peak Elev=185.49'
Storage=0.065 af
1.72 cfs
1.49 cfs
0.03 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Pond 1.3 P:

Inflow Area = 0.400 ac, 50.00% Impervious, Inflow Depth = 6.99" for 100-yr event
Inflow = 3.06 cfs @ 12.02 hrs, Volume= 0.233 af
Outflow = 2.52 cfs @ 12.08 hrs, Volume= 0.233 af, Atten= 17%, Lag= 3.7 min
Primary = 2.52 cfs @ 12.08 hrs, Volume= 0.233 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 192.98' @ 12.08 hrs Surf.Area= 1,851 sf Storage= 1,535 cf

Plug-Flow detention time= 127.2 min calculated for 0.233 af (100% of inflow)
Center-of-Mass det. time= 128.1 min (906.2 - 778.1)

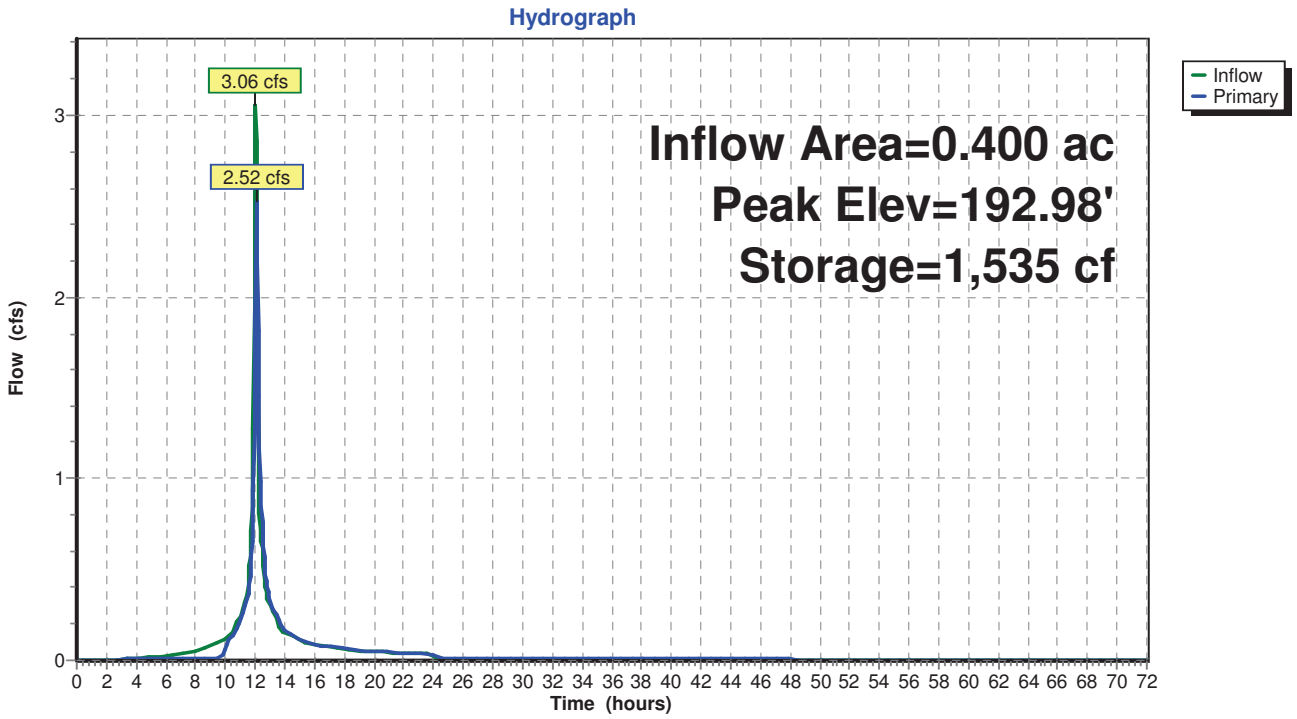
Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	3,720 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
192.00	1,270	0	0
194.00	2,450	3,720	3,720

Device	Routing	Invert	Outlet Devices
#1	Primary	188.20'	**12.0" Round Culvert** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 188.20' / 187.10' S= 0.0108 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	192.00'	**0.250 in/hr Exfiltration over Horizontal area**
#3	Device 1	192.50'	**2.5' 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

Primary OutFlow Max=2.48 cfs @ 12.08 hrs HW=192.98' TW=183.80' (Dynamic Tailwater)
└**1=Culvert** (Passes 2.48 cfs of 6.42 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.01 cfs)
  └**3=Broad-Crested Rectangular Weir** (Weir Controls 2.47 cfs @ 2.07 fps)

Pond 1.3 P:

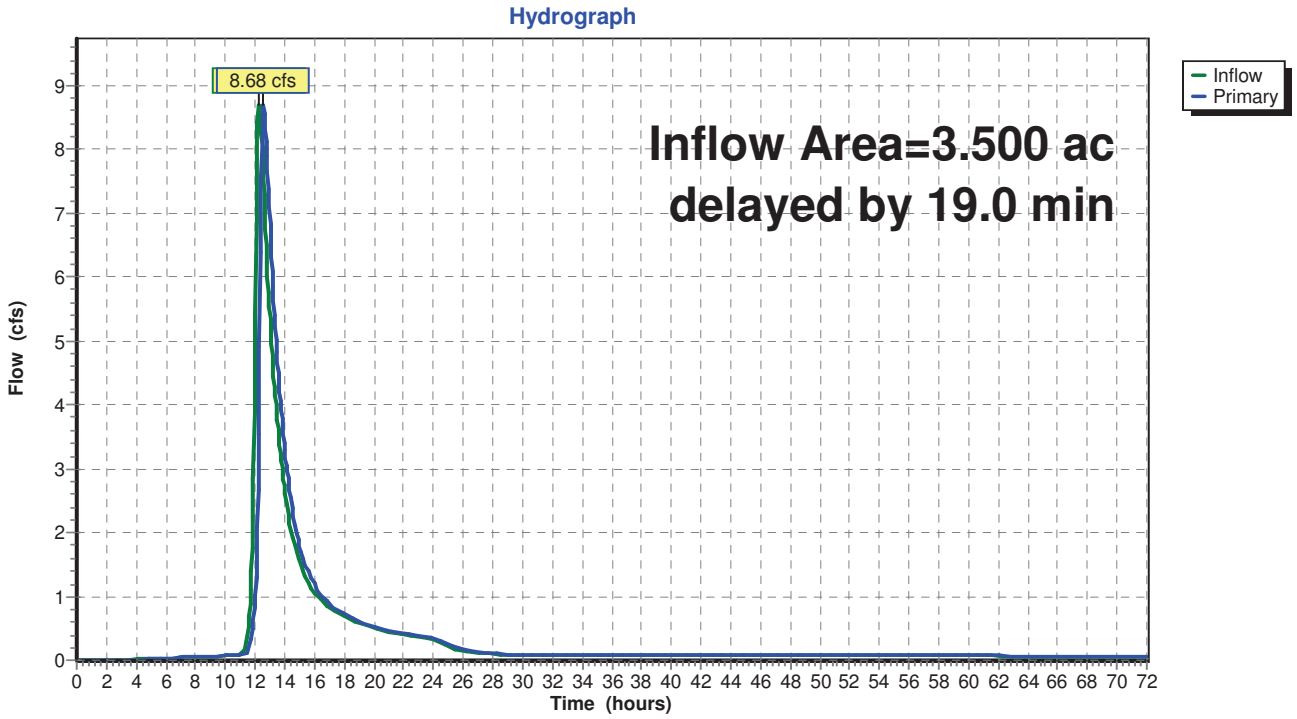

Hydrograph
3.06 cfs
2.52 cfs
Inflow Area=0.400 ac
Peak Elev=192.98'
Storage=1,535 cf
Inflow
Primary
Flow (cfs)
Time (hours)
0 1 2 3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72

Summary for Link 1.1R: (See Subcatchment 1.1 TC for Time of Concentration Calculation)

Inflow Area = 3.500 ac, 65.71% Impervious, Inflow Depth > 6.90" for 100-yr event
Inflow = 8.69 cfs @ 12.24 hrs, Volume= 2.011 af
Primary = 8.68 cfs @ 12.56 hrs, Volume= 2.010 af, Atten= 0%, Lag= 19.2 min

Primary outflow = Inflow delayed by 19.0 min, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1.1R: (See Subcatchment 1.1 TC for Time of Concentration Calculation)



APPENDIX D

Project and Owner information

Site Data:

Beacon Views
City of Beacon
Dutchess County, New York

Owner Information:

Highlands @ Beacon, LLC
2847 Church Street
Pine Plains, New York 12567

Applicant Information:

Beacon Views, LLC
500 River Avenue
Wakefield, New Jersey 08701

Party Responsible for Implementation of the Stormwater Pollution Prevention Plan (Including Maintenance During and After Construction):

Beacon Views, LLC
500 River Avenue
Wakefield, New Jersey 08701

Qualified Professional Responsible for Inspection of the Stormwater Pollution Prevention Plan:

Inspector to be determined at time of construction

APPENDIX E

NYSDEC SPDES for Construction Activities Construction Site Log Book

APPENDIX F
CONSTRUCTION SITE INSPECTION AND MAINTENANCE LOG BOOK

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR CONSTRUCTION ACTIVITIES

SAMPLE CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents
   a. Preamble to Site Assessment and Inspections
   b. Pre-Construction Site Assessment Checklist

II. Construction Duration Inspections
   a. Directions
   b. Modification to the SWPPP

I. **PRE-CONSTRUCTION MEETING DOCUMENTS**

Project Name _____

Permit No. _____ **Date of Authorization** _____

Name of Operator _____

Prime Contractor _____

a. **Preamble to Site Assessment and Inspections**

The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified inspector[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.
3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

b. Pre-construction Site Assessment Checklist
(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

4) Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

_____ _____

Inspector (print name) **Date of Inspection**

_____ _____

Qualified Inspector (print name) **Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA
[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

APPENDIX F

NYSDEC Stormwater Design Manual Chapter 5 Analysis

Table Key: • = Practice Used in Accordance with Chapter 5 Requirements
o = Practice Not Used
- = Practice is Not Applicable

NYSDEC Chapter 5 Requirements	Subcatchments			Remarks
	1.1	1.2	1.3	
Chapter 5, Section 5.1: Preservation if Natural Features and Conservation Design				
Practices				
Preservation of Undisturbed Areas	•	•	•	See Note #2
Preservation of Buffers	-	-		
Reduction of Clearing & Grading	•	•	•	See Note #4
Locating Development in Less Sensitive Areas	•	•	•	See Note #4
Open Space Design	-	-		
Soil Restoration	•	•	•	See Note #5
Chapter 5, Section 5.2: Reduction of Impervious Cover				
Practices				
Roadway Reduction	•	-	-	See Note #1
Sidewalk Reduction	•	•	•	
Driveway Reduction	•	•	•	See Note #1
Cul-de-sac Reduction	-	-		
Building Footprint Reduction	•	•	•	See Note #3
Parking Reduction	•	•	•	See Note #4
Conservation of Natural Areas	•	•	•	See Note #2
Sheetflow to Riparian Buffers or Filter Strips	-	-	-	
Vegetated Swale	•	-	-	
Tree Planting / Tree Pit	-	-	-	
Disconnection of Rooftop Runoff	-	-	-	
Stream Daylighting	-	-	-	
Rain Gardens	-	-	-	
Green Roofs	-	-	-	
Stormwater Planters	-	-	-	
Rain Barrels / Cisterns	-	-	-	
Porous Pavement	-	-	-	

Notes:

1. The proposed driveways and road have been designed to provide a minimum width for safe ingress and egress for the development.
2. Although no formal calculations have been provided, the subject project has provided conservation of natural areas to the maximum extent practical.
3. The proposed buildings are multi-story, thus minimize the building footprints.
4. The reduction in clearing and grading, as well as the driveway and parking areas foot print reduction will be enforced with the approval of the project SWPPP. Notes on the project plans, establish that any changes in the project plans would require an amended approval from the necessary regulatory agencies
5. Soil restoration requirements per NYSDEC stantards shown on project plans.

APPENDIX G

NYSDEC Stormwater Management Practice Construction and Maintenance Inspection Checklist

Stormwater/Wetland Pond Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Pre-Construction/Materials and Equipment		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
2. Subgrade Preparation		
Area beneath embankment stripped of all vegetation, topsoil, and organic matter		
3. Pipe Spillway Installation		
Method of installation detailed on plans		
A. Bed preparation		
Installation trench excavated with specified side slopes		
Stable, uniform, dry subgrade of relatively impervious material (If subgrade is wet, contractor shall have defined steps before proceeding with installation)		
Invert at proper elevation and grade		
B. Pipe placement		
Metal / plastic pipe		
1. Watertight connectors and gaskets properly installed		
2. Anti-seep collars properly spaced and having watertight connections to pipe		
3. Backfill placed and tamped by hand under “haunches” of pipe		
4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
3. Pipe Spillway Installation		
Concrete pipe		
1. Pipe set on blocks or concrete slab for pouring of low cradle		
2. Pipe installed with rubber gasket joints with no spalling in gasket interface area		
3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set		
4. Entire area where anti-seep collar(s) will come in contact with pipe coated with mastic or other approved waterproof sealant		
5. Low cradle and bottom half of anti-seep collar installed as monolithic pour and of an approved mix		
6. Upper half of anti-seep collar(s) formed with reinforcing steel set		
7. Concrete for collar of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
8. Forms stripped and collar inspected for honeycomb prior to backfilling. Parge if necessary.		
C. Backfilling		
Fill placed in maximum 8 inch lifts		
Backfill taken minimum 2 feet above top of anti-seep collar elevation before traversing with heavy equipment		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
4. Riser / Outlet Structure Installation		
Riser located within embankment		
A. Metal riser		
Riser base excavated or formed on stable subgrade to design dimensions		
Set on blocks to design elevations and plumbed		
Reinforcing bars placed at right angles and projecting into sides of riser		
Concrete poured so as to fill inside of riser to invert of barrel		
B. Pre-cast concrete structure		
Dry and stable subgrade		
Riser base set to design elevation		
If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
Watertight and structurally sound collar or gasket joint where structure connects to pipe spillway		
C. Poured concrete structure		
Footing excavated or formed on stable subgrade, to design dimensions with reinforcing steel set		
Structure formed to design dimensions, with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
Forms stripped & inspected for “honeycomb” prior to backfilling; parge if necessary		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
5. Embankment Construction		
Fill material		
Compaction		
Embankment		
1. Fill placed in specified lifts and compacted with appropriate equipment		
2. Constructed to design cross-section, side slopes and top width		
3. Constructed to design elevation plus allowance for settlement		
6. Impounded Area Construction		
Excavated / graded to design contours and side slopes		
Inlet pipes have adequate outfall protection		
Forebay(s)		
Pond benches		
7. Earth Emergency Spillway Construction		
Spillway located in cut or structurally stabilized with riprap, gabions, concrete, etc.		
Excavated to proper cross-section, side slopes and bottom width		
Entrance channel, crest, and exit channel constructed to design grades and elevations		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
8. Outlet Protection		
A. End section		
Securely in place and properly backfilled		
B. Endwall		
Footing excavated or formed on stable subgrade, to design dimensions and reinforcing steel set, if specified		
Endwall formed to design dimensions with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)		
Forms stripped and structure inspected for "honeycomb" prior to backfilling; parge if necessary		
C. Riprap apron / channel		
Apron / channel excavated to design cross-section with proper transition to existing ground		
Filter fabric in place		
Stone sized as per plan and uniformly place at the thickness specified		
9. Vegetative Stabilization		
Approved seed mixture or sod		
Proper surface preparation and required soil amendments		
Excelsior mat or other stabilization, as per plan		

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
10. Miscellaneous		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
11. Stormwater Wetlands		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place Reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		

Comments:

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Actions to be Taken:

Infiltration Trench Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Soil permeability tested		
Groundwater / bedrock sufficient at depth		
2. Excavation		
Size and location		
Side slopes stable		
Excavation does not compact subsoils		
3. Filter Fabric Placement		
Fabric specifications		
Placed on bottom, sides, and top		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
4. Aggregate Material		
Size as specified		
Clean / washed material		
Placed properly		
5. Observation Well		
Pipe size		
Removable cap / footplate		
Initial depth =_____feet		
6. Final Inspection		
Pretreatment facility in place		
Contributing watershed stabilized prior to flow diversion		
Outlet		

Comments:

Actions to be Taken:

Bioretention Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Facility area cleared		
If designed as exfilter, soil testing for permeability		
Facility location staked out		
2. Excavation		
Size and location		
Lateral slopes completely level		
If designed as exfilter, ensure that excavation does not compact susoils.		
Longitudinal slopes within design range		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
3. Structural Components		
Stone diaphragm installed correctly		
Outlets installed correctly		
Underdrain		
Pretreatment devices installed		
Soil bed composition and texture		
4. Vegetation		
Complies with planting specs		
Topsoil adequate in composition and placement		
Adequate erosion control measures in place		
5. Final Inspection		
Dimensions		
Proper stone diaphragm		
Proper outlet		
Soil/ filter bed permeability testing		
Effective stand of vegetation and stabilization		
Construction generated sediments removed		
Contributing watershed stabilized before flow is diverted to the practice		

Comments:

Actions to be Taken:

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project _____
Location: _____
Site Status: _____

Date: _____
Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6.Pond, toe & chimney drains clear and functioning		
7.Seeps/leaks on downstream face		
8.Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam “As-Built”		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____ 1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3.Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants “choked” with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

Infiltration Trench Operation, Maintenance, and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Trench surface clear of debris		
Inflow pipes clear of debris		
Overflow spillway clear of debris		
Inlet area clear of debris		
2. Sediment Traps or Forebays (Annual)		
Obviously trapping sediment		
Greater than 50% of storage volume remaining		
3. Dewatering (Monthly)		
Trench dewaters between storms		
4. Sediment Cleanout of Trench (Annual)		
No evidence of sedimentation in trench		
Sediment accumulation doesn't yet require cleanout		
5. Inlets (Annual)		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Good condition		
No evidence of erosion		
6. Outlet/Overflow Spillway (Annual)		
Good condition, no need for repair		
No evidence of erosion		
7. Aggregate Repairs (Annual)		
Surface of aggregate clean		
Top layer of stone does not need replacement		
Trench does not need rehabilitation		

Comments:

Actions to be Taken:

Bioretention Operation, Maintenance and Management Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
1. Debris Cleanout (Monthly)		
Bioretention and contributing areas clean of debris		
No dumping of yard wastes into practice		
Litter (branches, etc.) have been removed		
2. Vegetation (Monthly)		
Plant height not less than design water depth		
Fertilized per specifications		
Plant composition according to approved plans		
No placement of inappropriate plants		
Grass height not greater than 6 inches		
No evidence of erosion		
3. Check Dams/Energy Dissipaters/Sumps (Annual, After Major Storms)		
No evidence of sediment buildup		

MAINTENANCE ITEM	SATISFACTORY / UNSATISFACTORY	COMMENTS
Sumps should not be more than 50% full of sediment		
No evidence of erosion at downstream toe of drop structure		
4. Dewatering (Monthly)		
Dewaters between storms		
No evidence of standing water		
5. Sediment Deposition (Annual)		
Swale clean of sediments		
Sediments should not be > 20% of swale design depth		
6. Outlet/Overflow Spillway (Annual, After Major Storms)		
Good condition, no need for repair		
No evidence of erosion		
No evidence of any blockages		
7. Integrity of Filter Bed (Annual)		
Filter bed has not been blocked or filled inappropriately		

Comments:

Actions to be Taken:

APPENDIX H

Hydrodynamic Separator Sizing and Maintenance Manual

State of New Jersey

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code – 401-02B
Division of Water Quality
Bureau of Nonpoint Pollution Control
P.O. Box 420 – 401 E. State St.
Trenton, NJ 08625-0420
Phone: (609) 633-7021 / Fax: (609) 777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

CATHERINE R. McCABE
Acting Commissioner

March 27, 2018

Graham Bryant, M.Sc., P.E.
President
Hydroworks, LLC
136 Central Avenue
Clark, NJ 07066

Re: MTD Lab Certification
HydroStorm Hydrodynamic Separator by Hydroworks, LLC
Online Installation

TSS Removal Rate 50%

Dear Mr. Bryant:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7 (c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Hydroworks, LLC has requested an MTD Laboratory Certification for the Hydroworks HydroStorm Hydrodynamic Separator.

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated February 2018) for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The NJDEP certifies the use of the HydroStorm by Hydroworks, LLC at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

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1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The HydroStorm shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.

3. This HydroStorm cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Hydrostorm. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at http://www.hydroworks.com/hydrostormo&m.pdf for any changes to the maintenance requirements.

6. Sizing Requirement:

   The example below demonstrates the sizing procedure for the Hydrostorm:

   Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using a HydroStorm. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

   Maximum Treatment Flow Rate (MTFR) Evaluation:

   The site runoff (Q) was based on the following:
   time of concentration = 10 minutes
   i = 3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
   c = 0.99 (runoff coefficient for impervious)
   Q = ciA = 0.99 x 3.2 x 0.25 = 0.79 cfs

   Given the site runoff is 0.79 cfs and based on Table 1 below, the HydroStorm Model HS4 with a MTFR of 0.88 cfs could be used for this site to remove 50% of the TSS from the impervious area without exceeding the MTFR.

   The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1.

Table 1 HydroStorm Sizing Information

HydroStorm Model	NJDEP 50% TSS Maximum Treatment Flow Rate (cfs)	Treatment Area (ft^2)	Hydraulic Loading Rate (gpm/ft^2)	50% Maximum Sediment Storage (ft^3)
HS3	0.50	7.1	31.4	3.6
HS4	0.88	12.6	31.4	6.3
HS5	1.37	19.6	31.4	9.8
HS6	1.98	28.3	31.4	14.2
HS7	2.69	38.5	31.4	19.3
HS8	3.52	50.3	31.4	25.2
HS9	4.45	63.6	31.4	31.8
HS10	5.49	78.5	31.4	39.3
HS11	6.65	95.0	31.4	47.5
HS12	7.91	113.0	31.4	56.5

A detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Brian Salvo or Nick Grotts of my office at (609) 633-7021.

Sincerely,

James J. Murphy, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

cc: Chron File
Richard Magee, NJCAT
Vince Mazzei, NJDEP - DLUR
Ravi Patraju, NJDEP - BES
Gabriel Mahon, NJDEP - BNPC
Brian Salvo, NJDEP – BNPC
Nick Grotts, NJDEP – BNPC

Hydroworks® HydroStorm

Operations & Maintenance Manual

Version 1.0

Please call Hydroworks at 888-290-7900 or email us at support@hydroworks.com if you have any questions regarding the Inspection Checklist. Please fax a copy of the completed checklist to Hydroworks at 888-783-7271 for our records.

Introduction

The HydroStorm is a state of the art hydrodynamic separator. Hydrodynamic separators remove solids, debris and lighter than water (oil, trash, floating debris) pollutants from stormwater. Hydrodynamic separators and other water quality measures are mandated by regulatory agencies (Town/City, State, Federal Government) to protect storm water quality from pollution generated by urban development (traffic, people) as part of new development permitting requirements.

As storm water treatment structures fill up with pollutants they become less and less effective in removing new pollution. Therefore, it is important that storm water treatment structures be maintained on a regular basis to ensure that they are operating at optimum performance. The HydroStorm is no different in this regard and this manual has been assembled to provide the owner/operator with the necessary information to inspect and coordinate maintenance of their HydroStorm.

Hydroworks® HydroStorm Operation

The Hydroworks HydroStorm (HS) separator is a unique hydrodynamic by-pass separator. It incorporates a protected submerged pretreatment zone to collect larger solids, a treatment tank to remove finer solids, and a dual set of weirs to create a high flow bypass. High flows are conveyed directly to the outlet and do not enter the treatment area, however, the submerged pretreatment area still allows removal of coarse solids during high flows.

Under normal or low flows, water enters an inlet area with a horizontal grate. The area underneath the grate is submerged with openings to the main treatment area of the separator. Coarse solids fall through the grate and are either trapped in the pretreatment area or conveyed into the main treatment area depending on the flow rate. Fines are transported into the main treatment area. Openings and weirs in the pretreatment area allow entry of water and solids into the main treatment area and cause water to rotate in the main treatment area creating a vortex motion. Water in the main treatment area is forced to rise along the walls of the separator to discharge from the treatment area to the downstream pipe.

The vortex motion forces solids and floatables to the middle of the inner chamber. Floatables are trapped since the inlet to the treatment area is submerged. The design maximizes the retention of settled solids since solids are forced to the center of the inner chamber by the vortex motion of water while water must flow up the walls of the separator to discharge into the downstream pipe.

A set of high flow weirs near the outlet pipe create a high flow bypass over both the pretreatment area and main treatment chamber. The rate of flow into the treatment area is regulated by the number and size of openings into the treatment chamber and the height of by-pass weirs. High flows flow over the weirs directly to the outlet pipe preventing the scour and resuspension of any fines collected in the treatment chamber.

A central access tube is located in the structure to provide access for cleaning. The arrangement of the inlet area and bypass weirs near the outlet pipe facilitate the use of multiple inlet pipes.

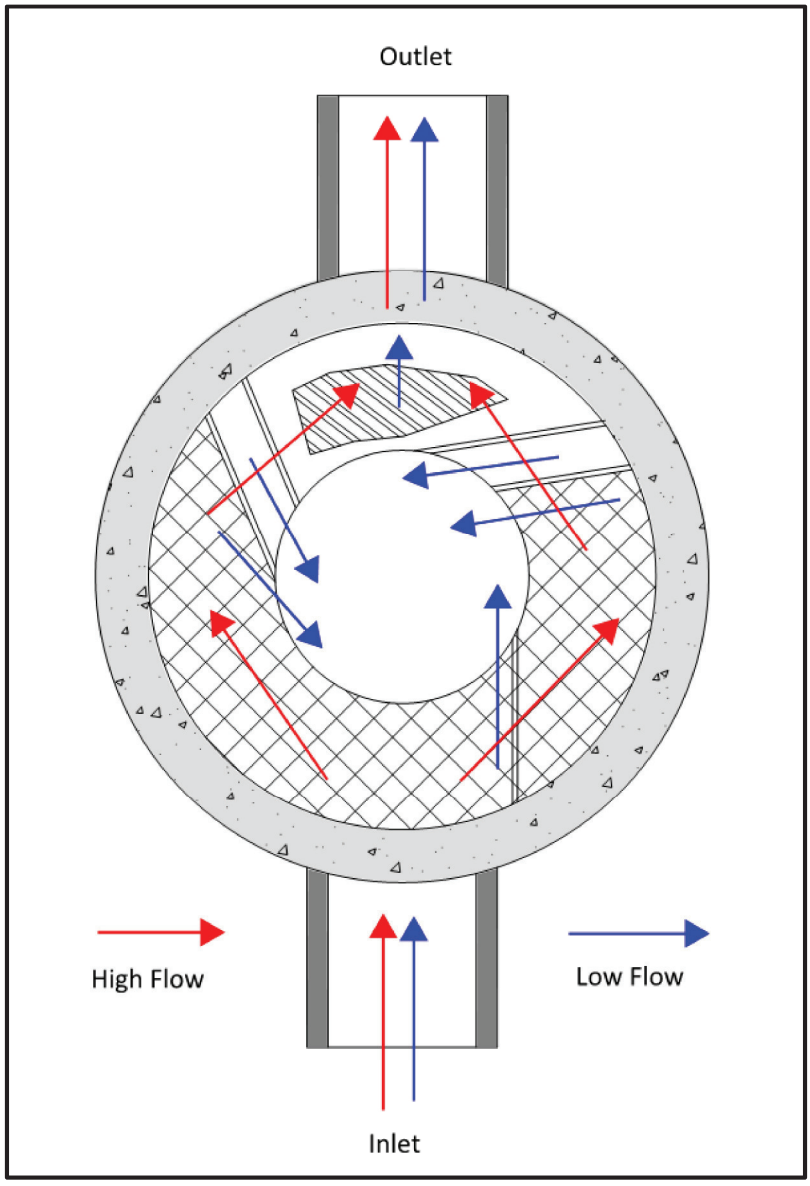


Figure 1. Hydroworks HydroStorm Operation – Plan View

Figure 2 is a profile view of the HydroStorm separator showing the flow patterns for low and high flows.

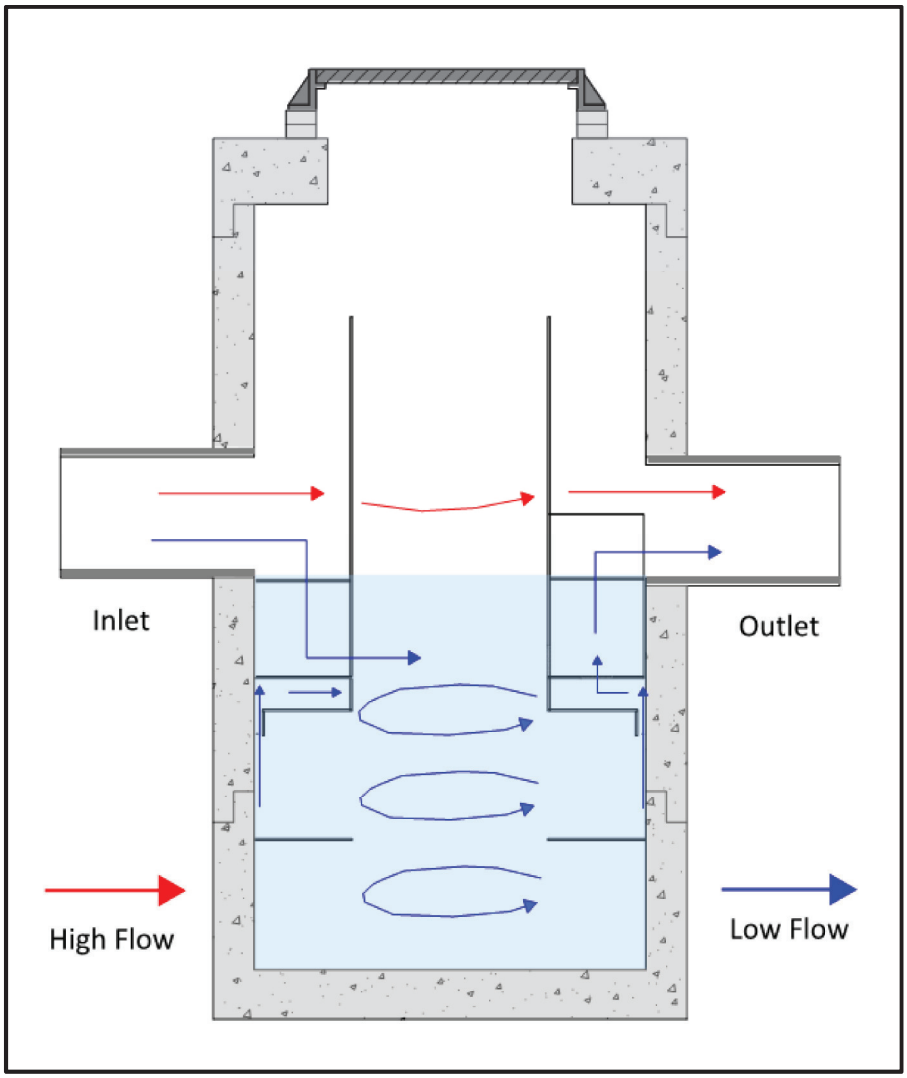


Figure 2. Hydroworks HydroStorm Operation – Profile View

The HS 4i is an inlet version of the HS 4 separator. There is a catch-basin grate on top of the HS 4i. A funnel sits sits underneath the grate on the frame and directs the water to the inlet side of the separator to ensure all lows flows are properly treated. The whole funnel is removed for inspection and cleaning.

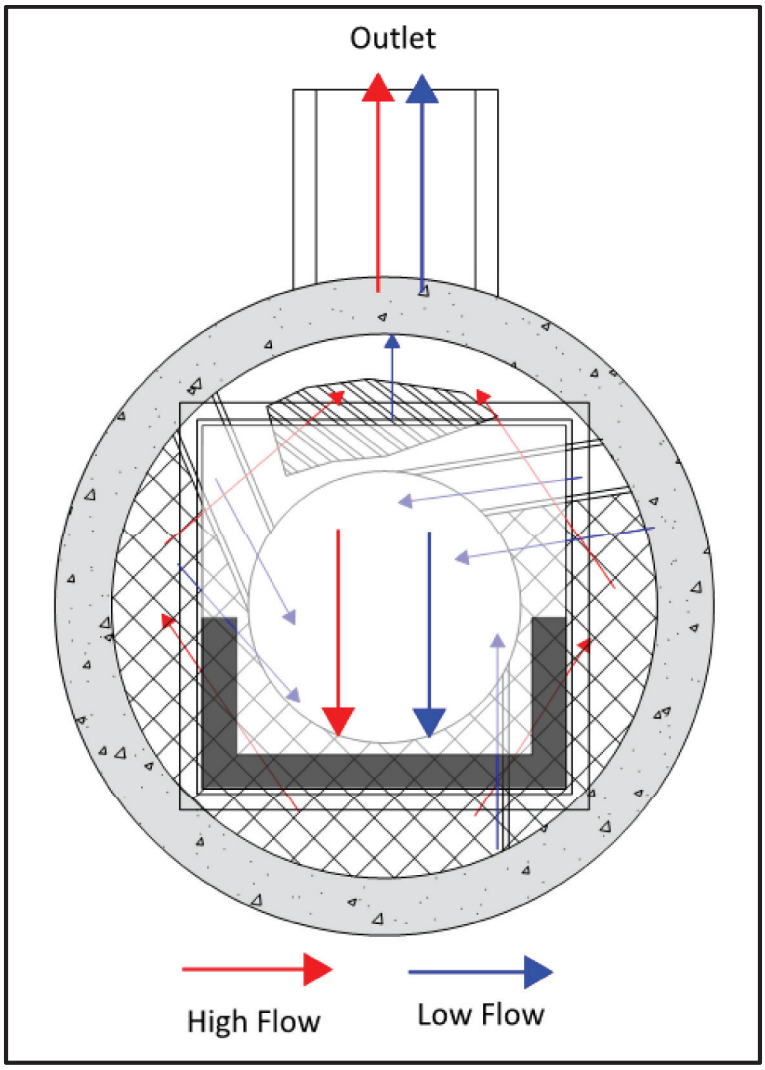


Figure 3. Hydroworks HS 4i Funnel

Inspection

Procedure

Floatables

A visual inspection can be conducted for floatables by removing the covers and looking down into the center access tube of the separator. Separators with an inlet grate (HS 4i or custom separator) will have a plastic funnel located under the grate that must be removed from the frame prior to inspection or maintenance. If you are missing a funnel please contact Hydroworks at the numbers provided at the end of this document.

TSS/Sediment

Inspection for TSS build-up can be conducted using a Sludge Judge®, Core Pro®, AccuSludge® or equivalent sampling device that allows the measurement of the depth of TSS/sediment in the unit. These devices typically have a ball valve at the bottom of the tube that allows water and TSS to flow into the tube when lowering the tube into the unit. Once the unit touches the bottom of the device, it is quickly pulled upward such that the water and TSS in the tube forces the ball valve closed allowing the user to see a full core of water/TSS in the unit. The unit should be inspected for TSS through each of the access covers. Several readings (2 or 3) should be made at each access cover to ensure that an accurate TSS depth measurement is recorded.

Frequency

Construction Period

The HydroStorm separator should be inspected every four weeks and after every large storm (over 0.5" (12.5 mm) of rain) during the construction period.

Post-Construction Period

The Hydroworks HydroStorm separator should be inspected during the first year of operation for normal stabilized sites (grassed or paved areas). If the unit is subject to oil spills or runoff from unstabilized (storage piles, exposed soils) areas the HydroStorm separator should be inspected more frequently (4 times per year). The initial annual inspection will indicate the required future frequency of inspection and maintenance if the unit was maintained after the construction period.

Reporting

Reports should be prepared as part of each inspection and include the following information:

1. Date of inspection
2. GPS coordinates of Hydroworks unit
3. Time since last rainfall
4. Date of last inspection
5. Installation deficiencies (missing parts, incorrect installation of parts)
6. Structural deficiencies (concrete cracks, broken parts)
7. Operational deficiencies (leaks, blockages)
8. Presence of oil sheen or depth of oil layer
9. Estimate of depth/volume of floatables (trash, leaves) captured
10. Sediment depth measured
11. Recommendations for any repairs and/or maintenance for the unit
12. Estimation of time before maintenance is required if not required at time of inspection

A sample inspection checklist is provided at the end of this manual.

Maintenance

Procedure

The Hydroworks HydroStorm unit is typically maintained using a vacuum truck. There are numerous companies that can maintain the HydroStorm separator. Maintenance with a vacuum truck involves removing all of the water and sediment together. The water is then separated from the sediment on the truck or at the disposal facility.

A central access opening (24” or greater) is provided to the gain access to the lower treatment tank of the unit. This is the primary location to maintain by vacuum truck. The pretreatment area can also be vacuumed and/or flushed into the lower treatment tank of the separator for cleaning via the central access once the water level is lowered below the pretreatment floor.

In instances where a vacuum truck is not available other maintenance methods (i.e. clamshell bucket) can be used, but they will be less effective. If a clamshell bucket is used the water must be decanted prior to cleaning since the sediment is under water and typically fine in nature. Disposal of the water will depend on local requirements. Disposal options for the decanted water may include:

1. Discharge into a nearby sanitary sewer manhole
2. Discharge into a nearby LID practice (grassed swale, bioretention)
3. Discharge through a filter bag into a downstream storm drain connection

The local municipality should be consulted for the allowable disposal options for both water and sediments prior to any maintenance operation. Once the water is decanted the sediment can be removed with the clamshell bucket.

Disposal of the contents of the separator depend on local requirements. Maintenance of a Hydroworks HydroStorm unit will typically take 1 to 2 hours based on a vacuum truck and longer for other cleaning methods (i.e. clamshell bucket).

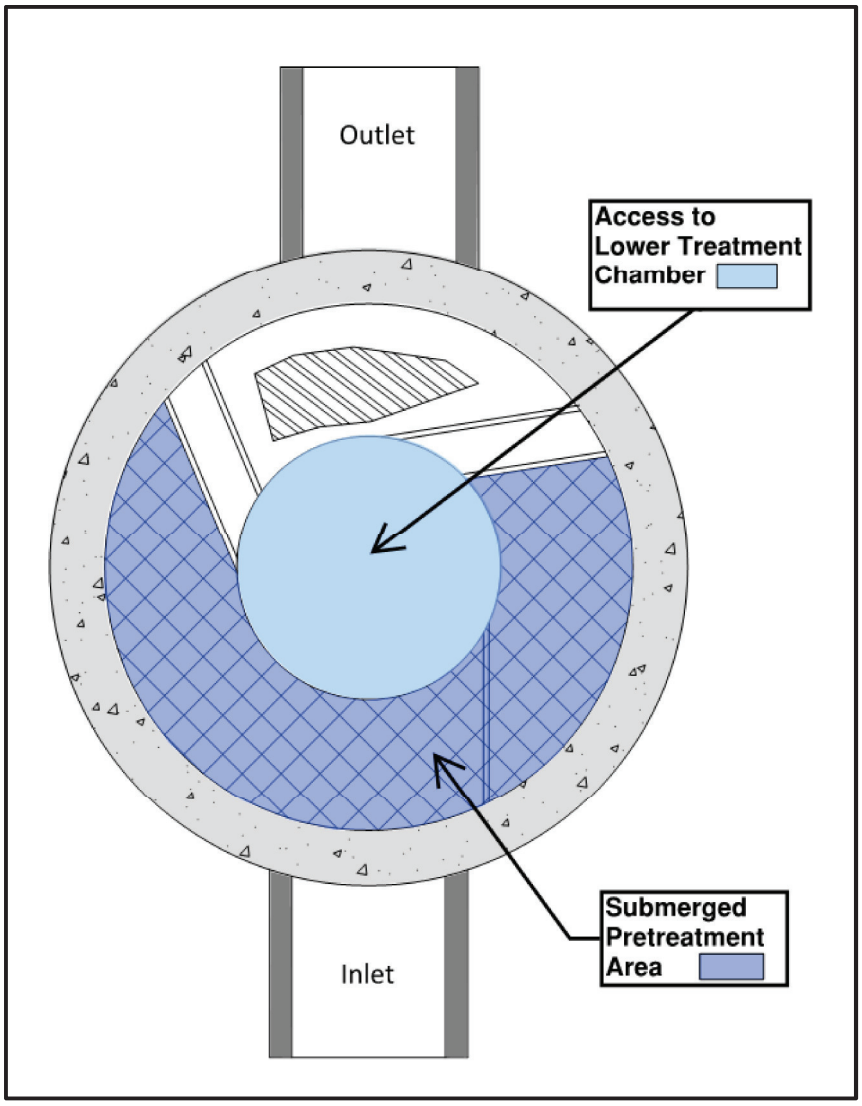


Figure 3. Maintenance Access

Frequency

Construction Period

A HydroStorm separator can fill with construction sediment quickly during the construction period. The HydroStorm must be maintained during the construction period when the depth of TSS/sediment reaches 24" (600 mm). It must also be maintained during the construction period if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the area of the separator

The HydroStorm separator should be maintained at the end of the construction period, prior to operation for the post-construction period.

Post-Construction Period

The HydroStorm was independently tested by Alden Research Laboratory in 2017. A HydroStorm HS 4 was tested for scour with a 50% sediment depth of 0.5 ft. Therefore, maintenance for sediment accumulation is required if the depth of sediment is 1 ft or greater in separators with standard water (sump) depths (Table 1).

There will be designs with increased sediment storage based on specifications or site-specific criteria. A measurement of the total water depth in the separator through the central access tube should be taken and compared to water depth given in Table 1. The standard water depth from Table 1 should be subtracted from the measured water depth and the resulting extra depth should be added to the 1 ft to determine the site-specific sediment maintenance depth for that separator.

For example, if the measured water depth in the HS-7 is 7 feet, then the sediment maintenance depth for that HS-7 is 2 ft (= 1 + 7 – 6) and the separator does not need to be cleaned for sediment accumulation until the measure sediment depth is 2 ft.

The HydroStorm separator must also be maintained if there is an appreciable depth of oil in the unit (more than a sheen) or if floatables other than oil cover over 50% of the water surface of the separator.

Table 1 Standard Dimensions for Hydroworks HydroStorm Models

Model	Diameter (ft)	Total Water Depth (ft)	Sediment Maintenance Depth for Table 1 Total Water Depth(ft)
HS-3	3	3	1
HS-4	4	4	1
HS-5	5	4	1
HS-6	6	4	1
HS-7	7	6	1
HS-8	8	7	1
HS-9	9	7.5	1
HS-10	10	8	1
HS-11	11	9	1
HS-12	12	9.5	1

HYDROSTORM INSPECTION SHEET

Date _____
Date of Last Inspection _____

Site _____
City _____
State _____
Owner _____

GPS Coordinates _____

Date of last rainfall _____

Site Characteristics	**Yes**	**No**
Soil erosion evident	☐	☐
Exposed material storage on site	☐	☐
Large exposure to leaf litter (lots of trees)	☐	☐
High traffic (vehicle) area	☐	☐

HydroStorm	**Yes**	**No**
Obstructions in the inlet or outlet	☐ *	☐
Missing internal components	☐ **	☐
Improperly installed inlet or outlet pipes	☐ ***	☐
Internal component damage (cracked, broken, loose pieces)	☐ **	☐
Floating debris in the separator (oil, leaves, trash)	☐	☐
Large debris visible in the separator	☐ *	☐
Concrete cracks/deficiencies	☐ ***	☐
Exposed rebar	☐ **	☐
Water seepage (water level not at outlet pipe invert)	☐ ***	☐

Water level depth below outlet pipe invert _____"

Routine Measurements

Floating debris depth	**< 0.5" (13mm)**	☐	**>0.5" 13mm)**	☐ *
Floating debris coverage	**< 50% of surface area**	☐	**> 50% surface area**	☐ *
Sludge depth	**< 12" (300mm)**	☐	**> 12" (300mm)**	☐ *

* Maintenance required
** Repairs required
*** Further investigation is required

Hydroworks

Other Comments:

Hydroworks® HydroStorm

One Year Limited Warranty

Hydroworks, LLC warrants, to the purchaser and subsequent owner(s) during the warranty period subject to the terms and conditions hereof, the Hydroworks HydroStorm to be free from defects in material and workmanship under normal use and service, when properly installed, used, inspected and maintained in accordance with Hydroworks written instructions, for the period of the warranty. The standard warranty period is 1 year.

The warranty period begins once the separator has been manufactured and is available for delivery. Any components determined to be defective, either by failure or by inspection, in material and workmanship will be repaired, replaced or remanufactured at Hydroworks' option provided, however, that by doing so Hydroworks, LLC will not be obligated to replace an entire insert or concrete section, or the complete unit. This warranty does not cover shipping charges, damages, labor, any costs incurred to obtain access to the unit, any costs to repair/replace any surface treatment/cover after repair/replacement, or other charges that may occur due to product failure, repair or replacement.

This warranty does not apply to any material that has been disassembled or modified without prior approval of Hydroworks, LLC, that has been subjected to misuse, misapplication, neglect, alteration, accident or act of God, or that has not been installed, inspected, operated or maintained in accordance with Hydroworks, LLC instructions and is in lieu of all other warranties expressed or implied. Hydroworks, LLC does not authorize any representative or other person to expand or otherwise modify this limited warranty.

The owner shall provide Hydroworks, LLC with written notice of any alleged defect in material or workmanship including a detailed description of the alleged defect upon discovery of the defect. Hydroworks, LLC should be contacted at 136 Central Ave., Clark, NJ 07066 or any other address as supplied by Hydroworks, LLC. (888-290-7900).

This limited warranty is exclusive. There are no other warranties, express or implied, or merchantability or fitness for a particular purpose and none shall be created whether under the uniform commercial code, custom or usage in the industry or the course of dealings between the parties. Hydroworks, LLC will replace any goods that are defective under this warranty as the sole and exclusive remedy for breach of this warranty.

Subject to the foregoing, all conditions, warranties, terms, undertakings or liabilities (including liability as to negligence), expressed or implied, and howsoever arising, as to the condition, suitability, fitness, safety, or title to the Hydroworks HydroStorm are hereby negated and excluded and Hydroworks, LLC gives and makes no such representation, warranty or undertaking except as expressly set forth herein. Under no circumstances shall Hydroworks, LLC be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the HydroStorm, or the cost of other goods or services related to the purchase and installation of the HydroStorm. For this Limited Warranty to apply, the HydroStorm must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Hydroworks' written installation instructions.

Hydroworks, LLC expressly disclaims liability for special, consequential or incidental damages (even if it has been advised of the possibility of the same) or breach of expressed or implied warranty. Hydroworks, LLC shall not be liable for penalties or liquidated damages, including loss of production and profits; labor and materials; overhead costs; or other loss or expense incurred by the purchaser or any third party. Specifically excluded from limited warranty coverage are damages to the HydroStorm arising from ordinary wear and tear; alteration, accident, misuse, abuse or neglect; improper maintenance, failure of the product due to improper installation of the concrete sections or improper sizing; or any other event not caused by Hydroworks, LLC. This limited warranty represents Hydroworks' sole liability to the purchaser for claims related to the HydroStorm, whether the claim is based upon contract, tort, or other legal basis.

APPENDIX I

Bioretention Filter Sizing Calculations

SMP 1.3P - NYSDEC Bioretention Filter (Design F-5)

Project: Beacon Views, LLC
Project #: 19131.100
Date: 4/28/2020

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

1a. WQv Required for Downstream SMP = 0.022 ac-ft 942 c.f.

1b. Subcatchment % Imperviousness = 50.0% %

2. Required Practice Volume

2a. Total required volume = 75% of WQv (in filter) = 707 c.f.

2b. Total volume provided in filter = = 709 c.f.
(Calculated using Stage - Volume information in HydroCAD output. Volume calculated at elevation 194.5)

3. Pretreatment Requirements:
Pretreatment will be provided by a grass filter strip, gravel diaphragm and mulch layer.

4. Required Filter Area:

4a. Required Filter Area = $\frac{WQv\ (df)}{k\ (hf + df) + tf}$

df=	2.50	ft.
hf=	0.25	ft.
k=	0.50	ft./day
tf=	1.67	days
Required Filter Area=	1026	s.f.

4b. Provided Filter Area = 1,270 s.f.

APPENDIX J

NYSDEC Full Environmental Assessment Form

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

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

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

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

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Beacon Views Townhouses		
Project Location (describe, and attach a general location map): 100 Conklin Street, Beacon, NY 12508		
Brief Description of Proposed Action (include purpose or need): Application for Site Development Plan approval proposing the development of 42 townhomes subdivided into individual townhouse lots, and supporting improvements including a road, stormwater management facilities and public utility connections.		
Name of Applicant/Sponsor: Beacon Views, LLC	Telephone: 718-258-9027 E-Mail: ctadult@aol.com	
Address: 500 River Avenue, Suite 145		
City/PO: Lakewood	State: NJ	Zip Code: 08701
Project Contact (if not same as sponsor; give name and title/role): Greg Kamedulski	Telephone: 203-313-9412 E-Mail: gkamedulsky@gmail.com	
Address: 500 River Avenue, Suite 145		
City/PO: Lakewood	State: NJ	Zip Code: 08701
Property Owner (if not same as sponsor): Highlands at Beacon LLC	Telephone: E-Mail:	
Address: 2847 Church Street		
City/PO: Pine Plains	State: NY	Zip Code: 12567

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	**If Yes: Identify Agency and Approval(s) Required**	**Application Date (Actual or projected)**
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes☑No		
b. City, Town or Village Planning Board or Commission ☑Yes☐No	City of Beacon Planning Board - Site Plan Approval & Subdivision Approval	8/27/19
c. City, Town or Village Zoning Board of Appeals ☐Yes☑No		
d. Other local agencies ☐Yes☑No		
e. County agencies ☑Yes☐No	Dutchess County Planning Dutchess County Department of Health	10/1/19
f. Regional agencies ☐Yes☑No		
g. State agencies ☑Yes☐No	NYSDEC GP-0-15-002 Stormwater General Permit	10/1/19
h. Federal agencies ☑Yes☐No	ACOE Wetland General Permit	10/1/19

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

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

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

C. Planning and Zoning

C.1. Planning and zoning actions.

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

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

C.2. Adopted land use plans.

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

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

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

If Yes, identify the plan(s):

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

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
RD-5 - Designed Residence District

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

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

C.4. Existing community services.

a. In what school district is the project site located? Beacon City Schools

b. What police or other public protection forces serve the project site?
City of Beacon Police

c. Which fire protection and emergency medical services serve the project site?
City of Beacon Fire Department

d. What parks serve the project site?
City of Beacon Parks and Recreation, Memorial Park

D. Project Details

D.1. Proposed and Potential Development

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

b. a. Total acreage of the site of the proposed action? 8.55 acres
b. Total acreage to be physically disturbed? 3.25 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 8.55 acres

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

d. Is the proposed action a subdivision, or does it include a subdivision? ☑ Yes ☐ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
Residential, Creation of townhouse lots.
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? 43
iv. Minimum and maximum proposed lot sizes? Minimum 1,800 Maximum 6.8 ac

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: 24 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

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

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	42			
At completion of all phases	42			

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

If Yes,

i. Total number of structures _____

ii. Dimensions (in feet) of largest proposed structure: _____ height; _____ width; and _____ length

iii. Approximate extent of building space to be heated or cooled: _____ square feet

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

If Yes,

i. Purpose of the impoundment: Stormwater Management

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

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

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

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

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

D.2. Project Operations

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

If Yes:

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

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

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

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

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

If yes, describe. _____

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

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

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

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

ix. Summarize site reclamation goals and plan: _____

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

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): Federal flagged wetland PF01E

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:
The proposed project would fill the existing wetland by approximately 9,460 s.f.

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☑ Yes ☐ No
If Yes, describe: In order to limit disturbance into the wetland, retaining walls will be installed.

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

- acres of aquatic vegetation proposed to be removed: .22 ac±
- expected acreage of aquatic vegetation remaining after project completion: 2.33 ac±
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): Site grading.
- proposed method of plant removal: Excavation
- if chemical/herbicide treatment will be used, specify product(s): None

v. Describe any proposed reclamation/mitigation following disturbance:
1 to 1 creation of wetlands

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

i. Total anticipated water usage/demand per day: 13,860 (max day) gallons/day

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

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

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

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

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

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

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

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

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

i. Total anticipated liquid waste generation per day: 13,860 (max day) gallons/day

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

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

- Name of wastewater treatment plant to be used: City of Beacon
- Name of district: City of Beacon
- Does the existing wastewater treatment plant have capacity to serve the project? ☑ Yes ☐ No
- Is the project site in the existing district? ☑ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☑ No

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

If Yes:

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

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

If Yes:

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

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

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

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

If Yes:

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

_____ Square feet or 2.26 acres (impervious surface)

_____ Square feet or 8.55 acres (parcel size)

ii. Describe types of new point sources. Roadway catch basins, roof drain connections, cut off swales

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

Onsite stormwater management facilities

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

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

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

If Yes, identify:

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

Heavy equipment during construction.

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

None.

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

Boilers for each residential unit.

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

If Yes:

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

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

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

If Yes:

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

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

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

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

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

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

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

iii. Parking spaces: Existing 0 Proposed _____ Net increase/decrease _____

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

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

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

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

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

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

N/A

If Yes:

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

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

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

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

i. During Construction:

- Monday - Friday: 7 am - 5 pm
- Saturday: _____
- Sunday: _____
- Holidays: _____

ii. During Operations:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

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

If yes:

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

Typical noise associated with excavation and general construction during business hours.

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

Describe: Limited tree clearing for improvements. New landscape screening will be installed.

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

If yes:

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

Roadway pole mounted lights at 18' high with house side shields.

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

Describe: Limited tree clearing for improvements. New landscape screening will be installed.

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

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

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

If Yes:

i. Product(s) to be stored

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

iii. Generally, describe the proposed storage facilities:

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

N/A

If Yes:

i. Describe proposed treatment(s):

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

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

N/A

If Yes:

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

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

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

- Construction:
- Operation:

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

- Construction:
- Operation:

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

If Yes:

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

ii. Anticipated rate of disposal/processing:

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

iii. If landfill, anticipated site life: _____ years

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

If Yes:

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

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

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

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

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

If Yes: provide name and location of facility: _____

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

E. Site and Setting of Proposed Action

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

a. Existing land uses.

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

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

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces		2.1 ac±	
• Forested	6.0 ac±	2.6 ac±	
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)	2.6 ac±	2.3 ac±	
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: Slope, Lawn and Landscape Areas		1.6 ac±	

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

i. If Yes: explain: _____

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

If Yes,

i. Identify Facilities:

Beacon High School, Roundbout Middle School, Wingate at Beacon, Hedgewood Home for Adults.

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

If Yes:

i. Dimensions of the dam and impoundment:

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

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

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

If Yes:

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

- If yes, cite sources/documentation: _____

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

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

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

If Yes:

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

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

If Yes:

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

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

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

☐ Neither database

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

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

If yes, provide DEC ID number(s): _____

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

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

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

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? varies feet

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

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

Bernardston Silt (BeB) (BeC)	52 %
Canandaigua Silt (Ca)	29 %
Nassau Cardigan Complex (NwC)	19 %

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

e. Drainage status of project site soils:
☑ Well Drained: 66 % of site
☐ Moderately Well Drained: _____ % of site
☑ Poorly Drained 34 % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 50 % of site
☑ 10-15%: 15 % of site
☑ 15% or greater: 35 % of site

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

h. Surface water features.

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

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

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

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

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

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Wetland PF01E Approximate Size 2.55 ac onsite
- Wetland No. (if regulated by DEC) _____

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

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

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

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

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

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

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:
Whitetail Deer, Gray Squirrel
Racoon

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

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑Yes ☐No
If Yes:
i. Species and listing (endangered or threatened):
Indiana Bat

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

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

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

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

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

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

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

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

If Yes:

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

ii. Name: Matteawan State Hospital

iii. Brief description of attributes on which listing is based:
Area of social history, health and medicine and institutional architecture

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

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

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

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

If Yes:

i. Identify resource: Hudson Highlands Scenic Area

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Hudson River Valley Scenic Area of Statewide Significance

iii. Distance between project and resource: 2.4 miles.

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

If Yes:

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

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

F. Additional Information

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

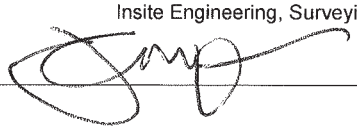
If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

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

Applicant/Sponsor Name Jeffrey J. Contelmo, P.E. Date 8/27/19

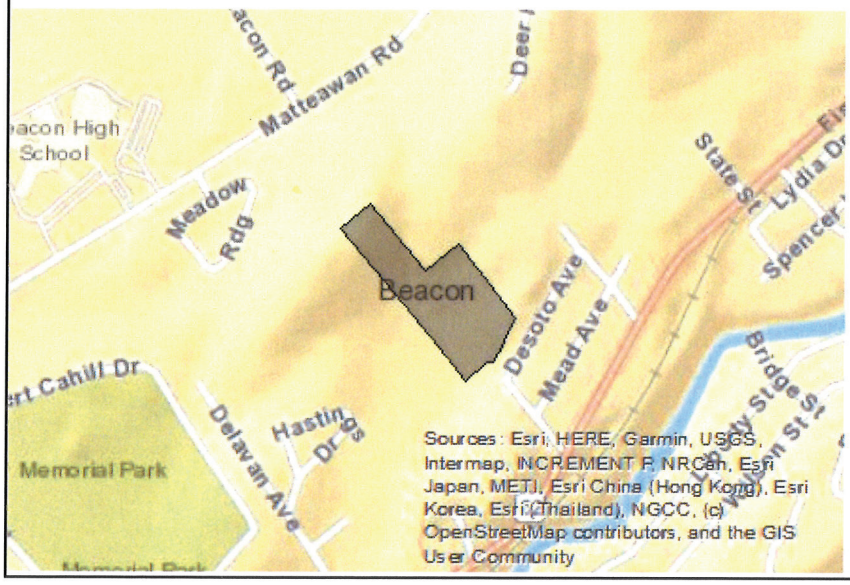
Insite Engineering, Surveying & Landscape Architecture, P.C.

Signature  Title Senior Principal Engineer

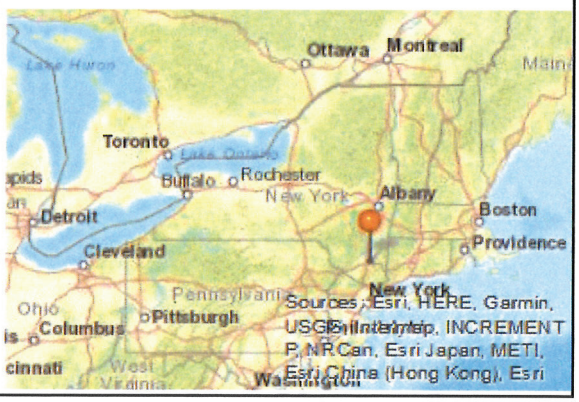
PRINT FORM

EAF Mapper Summary Report

Monday, July 01, 2019 12:51 PM



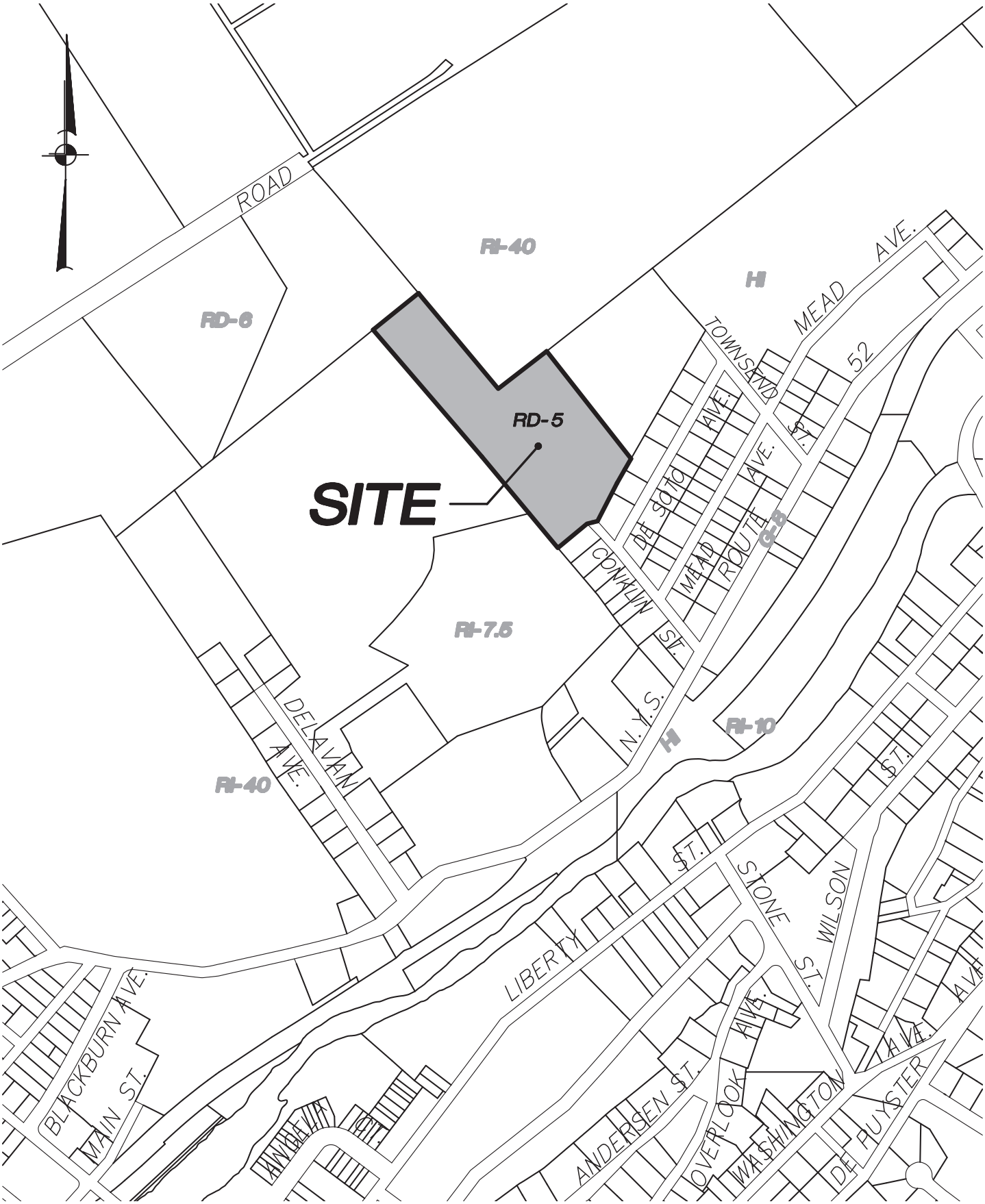
Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the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



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

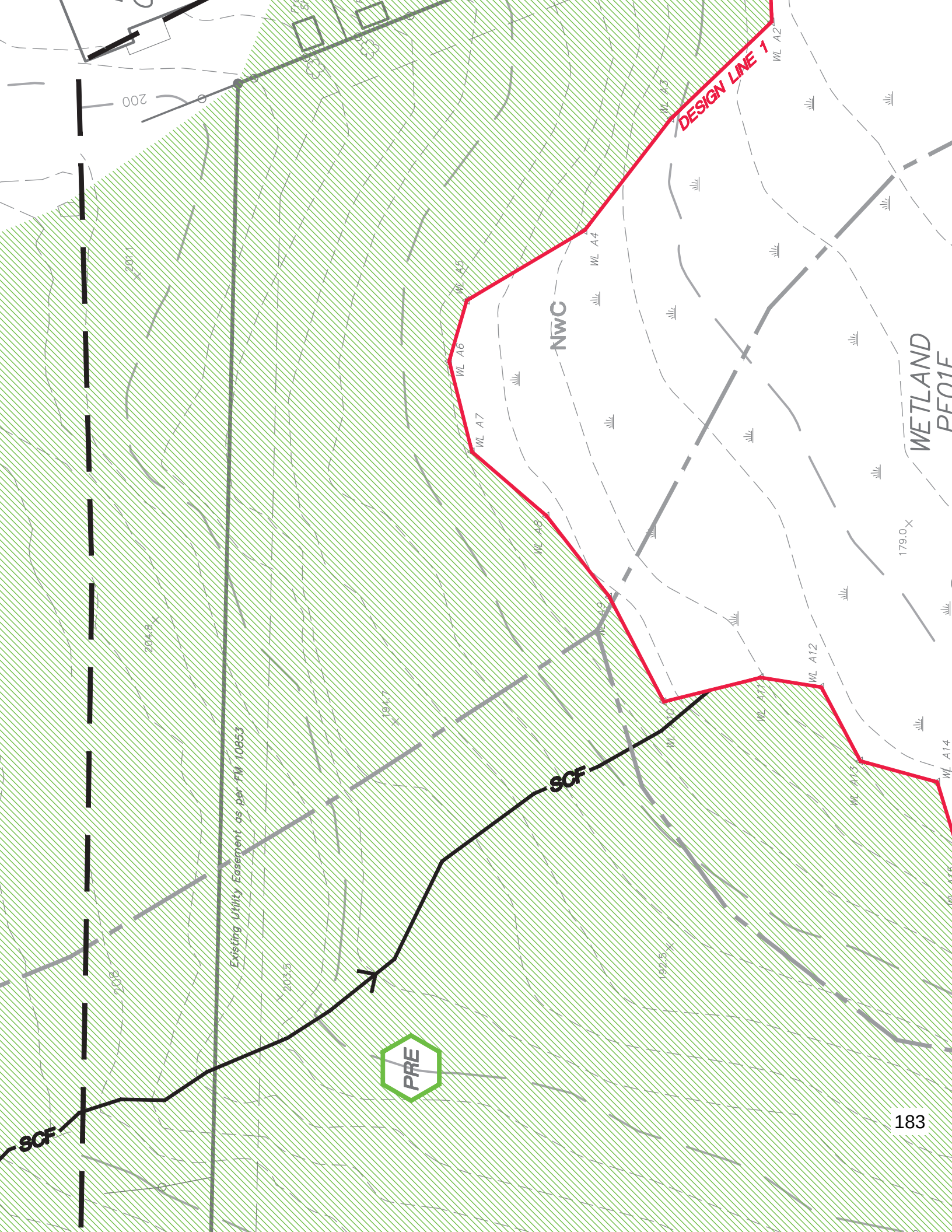
E.2.o. [Endangered or Threatened Species - Name]	Indiana Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

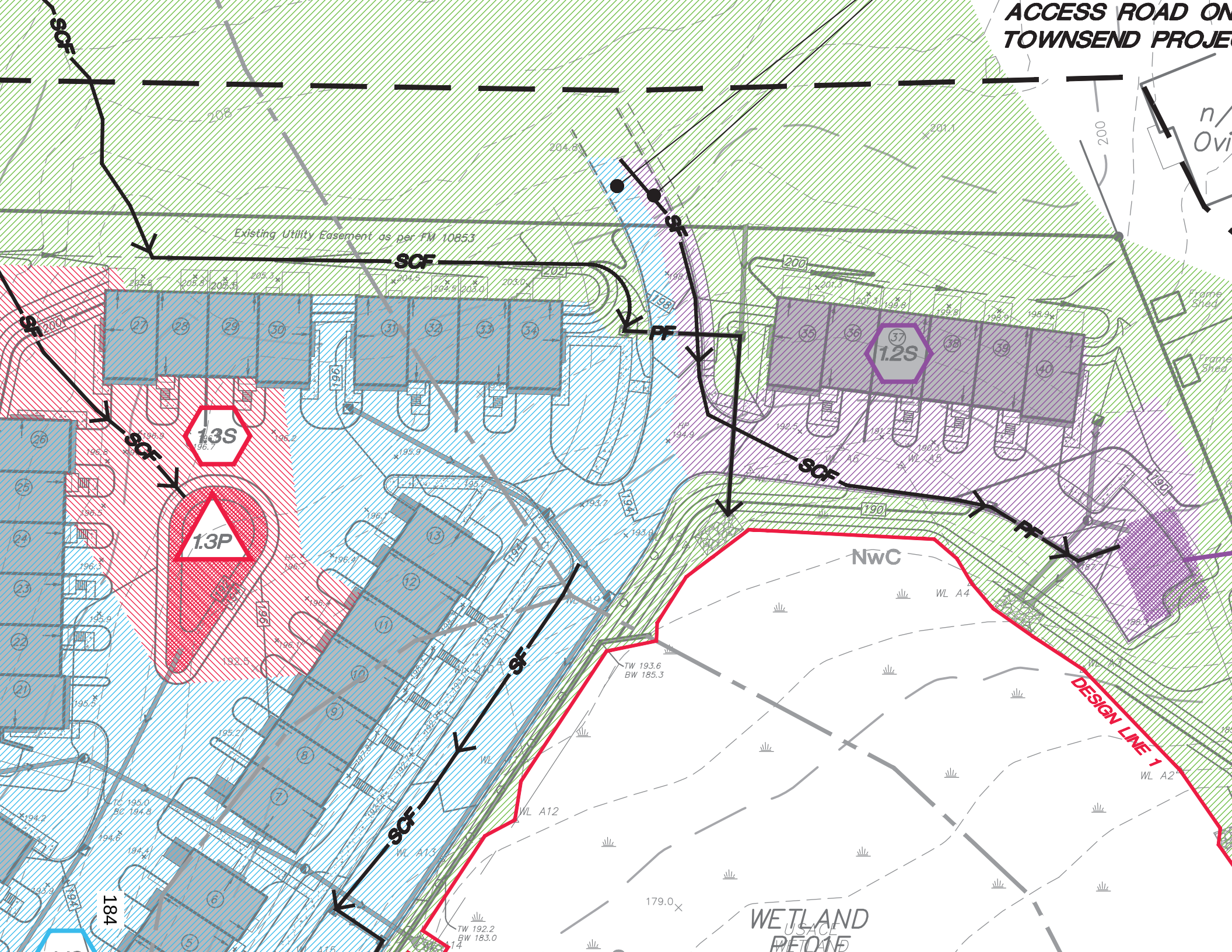
FIGURES

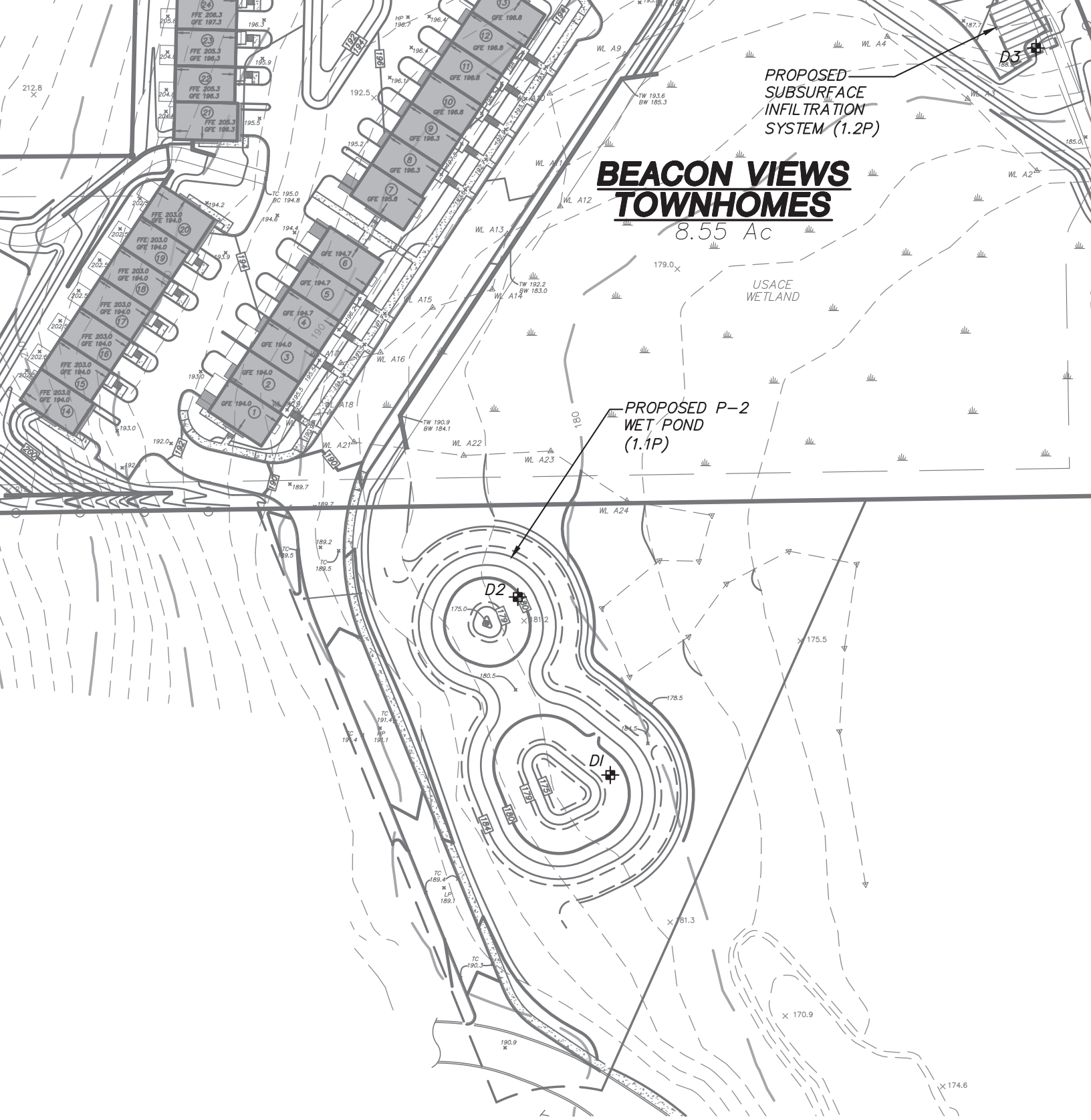


PROJECT: BEACON VIEWS CITY OF BEACON, DUTCHESS COUNTY, NEW YORK	PREPARED BY: INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C. 3 Garrett Place • Carmel, New York 10512 Phone (845) 225-9690 • Fax (845) 225-9717 www.insite-eng.com	DATE: 8-26-19 SCALE: 1" = 500'
DRAWING: LOCATION MAP		PROJECT NO.: 19131.100 FIGURE: 1

Z:\E\19131100\Stormwater\Figures\Figure 1 - Location Map.dwg, 8/26/2019 7:56:56 AM, ependleton, 1:1


DESIGN LINE 1
WL A2
WL A3
WL A4
WL A5
WL A6
WL A7
WL A8
WL A9
WL A10
WL A11
WL A12
WL A13
WL A14
NwC
WETLAND
PF01F
SCF
SCF
PRE
Existing Utility Easement as per FM 10853
200
201.1
204.8
194.7
208
203.5
192.5
179.0

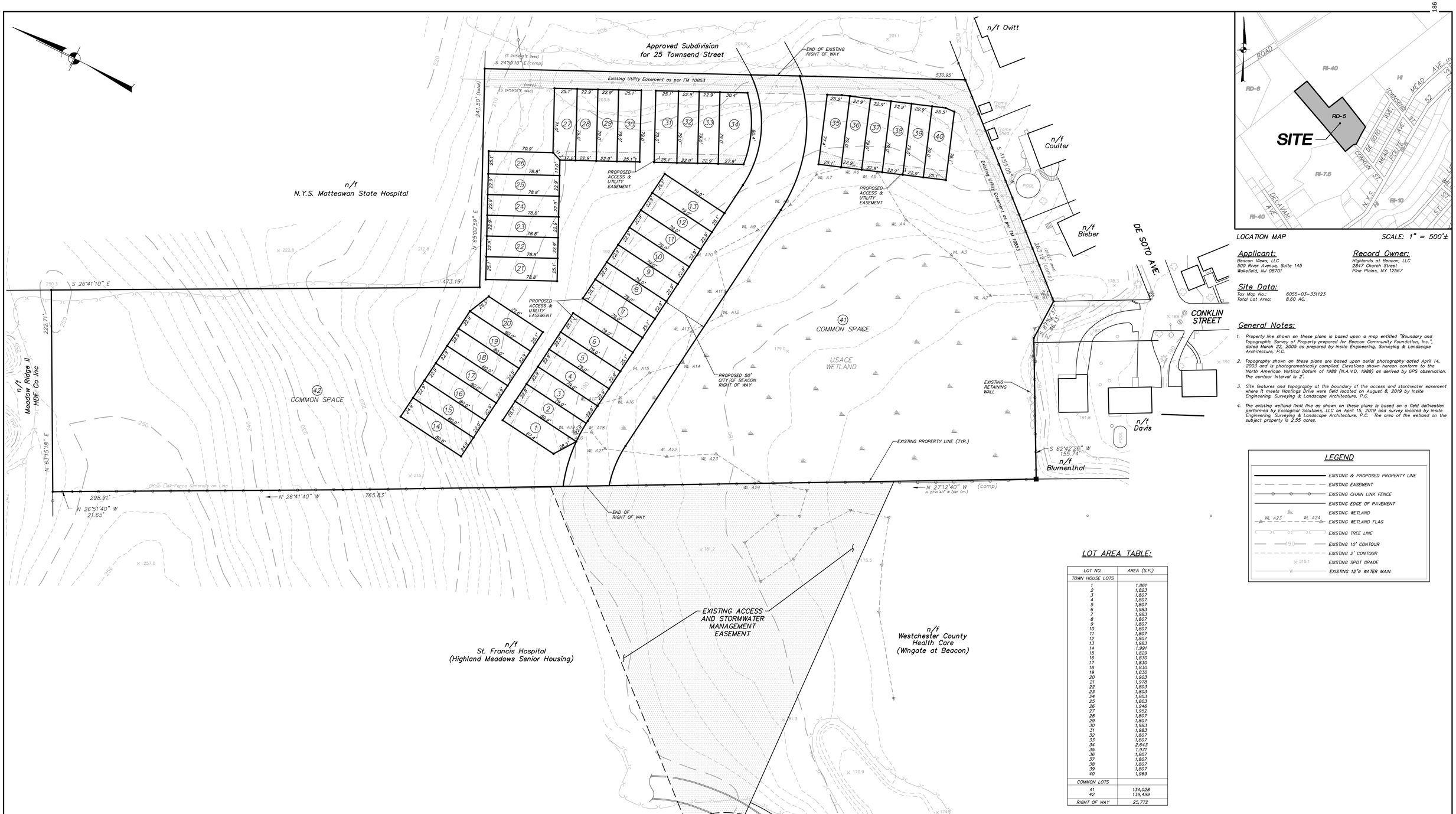

ACCESS ROAD ON
TOWNSEND PROJE
Existing Utility Easement as per FM 10853
SCF
SF
PF
1.2S
1.3S
1.3P
NwC
WL A4
WL A12
WL A13
WL A2
DESIGN LINE 1
TW 193.6
BW 185.3
TW 192.2
BW 183.0
WETLAND
USACE
184



EEP HOLE TEST RESULTS:
EEP TESTS PERFORMED: 12/16/2019
EEP TESTS WITNESSED BY:
VAN PENDLETON (INSITE ENGINEERING, SURVEYING & LANDSCAPE RCHITECTURE, P.C.) & CASSANDRA BIBBO (LANC AND TULLY NGINEERING AND SURVEYING, P.C.)

-1:	0"-2"	TOPSOIL
	2"-64"+	BROWN SILTY LOAM
		GROUNDWATER @ 36". NO ROCK.
-2:	0"-2"	TOPSOIL
	2"-48"+	BROWN SILTY LOAM
		GROUNDWATER @ 18". NO ROCK.

NOTE: INFILTRATION TESTING FOR THE SUBSURFACE INFILTRATION SYSTEM 1.2P HAS YET TO BE PERFORMED. TESTING WILL BE PERFORMED AT A LATER DATE.



LOCATION MAP SCALE: 1" = 500'±

Applicant:
Beacon Views, LLC
500 River Avenue, Suite 145
Wakefield, NJ 08701

Record Owner:
Highlands at Beacon, LLC
2847 Church Street
Pine Plains, NY 12567

Site Data:
Tax Map No.: 6055-03-331123
Total Lot Area: 8.60 AC.

General Notes:

1. Property line shown on these plans is based upon a map entitled "Boundary and Topographic Survey of Property prepared for Beacon Community Foundation, Inc.", dated March 22, 2005 as prepared by Insite Engineering, Surveying & Landscape Architecture, P.C.
2. Topography shown on these plans are based upon aerial photography dated April 14, 2003 and is photogrametrically compiled. Elevations shown hereon conform to the North American Vertical Datum of 1988 (N.A.V.D. 1988) as derived by GPS observation. The contour interval is 2'.
3. Site features and topography at the boundary of the access and stormwater easement where it meets Hastings Drive were field located on August 8, 2019 by Insite Engineering, Surveying & Landscape Architecture, P.C.
4. The existing wetland limit line as shown on these plans is based on a field delineation performed by Ecological Solutions, LLC on April 15, 2019 and survey located by Insite Engineering, Surveying & Landscape Architecture, P.C. The area of the wetland on the subject property is 2.55 acres.

LEGEND

- EXISTING & PROPOSED PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- WL A23 / WL A24 — EXISTING WETLAND FLAG
- EXISTING TREE LINE
- 190 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- × 215.1 — EXISTING SPOT GRADE
- W — EXISTING 12"ø WATER MAIN

LOT AREA TABLE:

LOT NO.	AREA (S.F.)
TOWN HOUSE LOTS	
1	1,861
2	1,823
3	1,807
4	1,807
5	1,807
6	1,983
7	1,983
8	1,807
9	1,807
10	1,807
11	1,807
12	1,807
13	1,983
14	1,991
15	1,829
16	1,830
17	1,830
18	1,830
19	1,830
20	1,903
21	1,978
22	1,803
23	1,803
24	1,803
25	1,803
26	1,946
27	1,952
28	1,807
29	1,807
30	1,983
31	1,983
32	1,807
33	1,807
34	2,643
35	1,971
36	1,807
37	1,807
38	1,807
39	1,807
40	1,969
COMMON LOTS	
41	134,028
42	139,499
RIGHT OF WAY	25,772

Dutchess County Health Department

This plan does not constitute a realty subdivision as defined by Article XI, Title II of Section 1116 of the Public Health Law of the State of New York, and Article XI of the Dutchess County Sanitary Code.

Permission is hereby granted for the filing of this map with the Clerk of Dutchess County. Approval for arrangements for water supply and.or sewage disposal is neither sought nor granted.

Date:_____

_____
Authorized Representative of the Commissioner of Health

Consent to File

The undersigned applicant for the property and the undersigned owner of the property shown herein certify that they are familiar with this map and its notes and its contents as stated hereon including all conditions of approval. The applicant and the owner understand their obligation to the Town to comply with all conditions of subdivision approval and consent to the filing of this map in the Office of the Dutchess County Clerk.

Owner _____

Date _____

Applicant _____

Date _____

Engineering and Land Surveying by Insite Engineering, Surveying & Landscape Architecture, P.C.

Professional Engineer	Professional Land Surveyor	Land Surveyor's Certification
		I hereby certify that the survey shown hereon was completed on _____; that this map was completed 2020; and that this survey has been prepared in accordance with the existing Code of Practice for Land Surveys as adopted by the New York State Association of Professional Land Surveyors, Inc.

_____
NICHOLAS G. CHAPIS, L.S.
New York State License No. 049330

City of Beacon Endorsement

Approved by Resolution of the Planning Board of the City of Beacon, New York, on the ____ day of _____, 20__ subject to all requirements ad conditions of said Resolution. Any change, erasure, modification or revision of this plat, as Approved, shall void this approval.

Signed this ____ day of _____, 20__, by

_____
Chairman

_____
Secretary

Preliminary Plat

Prepared for the

Beacon Views

Situate in the

City of Beacon
Dutchess County, New York

Date: April 24, 2020

Prepared by:
INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place • Carmel, New York 10512
Phone (845) 225-9690 • Fax (845) 225-9717
www.insite-eng.com

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INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

May 26, 2020

City of Beacon Planning Board
1 Municipal Plaza
Beacon, NY 12508

RE: Beacon Views Site Plan and Conservation Subdivision
Conklin Street
Beacon, New York
Tax Parcel ID: 6055-03-331123

Dear Chairman Gunn and Members of the Board:

Enclosed please find the following documents in support of the subject application:

- Preliminary Plat, revised May 26, 2020.
- Revised Site Plan Set, revised May 26, 2020.
- Revised Water and Wastewater Report, revised May 26, 2020.
- Revised SWPPP, revised May 26, 2020.
- Response letter to traffic comments from Maser Consulting P.A., dated May 22, 2020.
- Wetland Evaluation & Impact Report dated May 18, 2020 from Ecological Solutions, LLC.

The Preliminary Plat, Site Plans, and reports have been revised in response to comments received from the City's consultants.

In response to the comments provided in a letter from John Clarke Planning and Design, dated May 8, 2020, we offer the following responses:

1a. The Zoning Bulk Table has been revised to show the minimum side yard of 17.5'.

1b. Plantings have been identified and totaled in the Plant Schedule.

1c. A crosswalk has been added between the walkway to the passive recreation area and the sidewalk between units 6 and 7.

1d. The grades through this area do not allow the sidewalk to be on the west side of the road.

2a. Building mounted lights have been added to each unit, and the fixture specification added to the Lighting Plan.

2b. Per § 223-14b the location, type, location, and shading of the proposed light fixtures are shown in the lighting plan. The fixtures are full cut off, and a note has been added to the plan to indicate that the proposed streetlights are to run on a photocell from dusk until dawn. The mounting height will be 12', and color temperature will be 2700K.

2c. Per § 223-14b the location, type, location, and shading of the proposed light fixtures are shown in the lighting plan.

3. Fire truck maneuvers have been included on sheet SP-4. The specifications of the truck depicted in the plan is similar in dimensions and turning radius to the vehicle that the Fire Department has provided as their largest vehicle.

4. A note has been added to SP-1 addressing trash collection.

5. It is acknowledged that brick should be used for the first level all around the building. Revised renderings will be provided with a future submission

6. A revised Wetland Evaluation & Impact Report has been submitted which addresses the requirements of code section 223-16A. The report has been expanded to include assessments of the 13 functions and values as they apply to the existing wetland. The area of the proposed disturbance and mitigation areas have been included.

7 The acceptability of the School Impact Analysis findings is noted, and we are happy to address any future comments from Beacon City School District.

In response to the comments provided in a letter from Lanc & Tully Engineering and Surveying, P.C., dated May 11, 2020 we offer the following responses:

General Comments

1. Based upon guidance from the Planning Board and staff, the proposed access to the project would be through the 25 Townsend Street subdivision. By the rights granted in the access and utility easement held by the applicant over a portion of the Highland Meadows Senior Housing property, a road would also be constructed connecting the site to Hastings Drive and Delavan Avenue. The anticipated function of this road would be to serve as a gated emergency access. However, in the event of a delay in the construction of the proposed road on the 25 Townsend property, the road to Hastings Drive would function as the primary access, until such time that the 25 Townsend road was constructed. At which time the access road to Hastings would be transitioned to the emergency access as described above, and the 25 Townsend road would become the primary project access.

2. A Site Access Plan (SP-4) has been added to the set to illustrate the proposed connection to the 25 Townsend cul-de-sac, and associated improvements. A plan for the improvements to the Highland Meadows Senior Housing property, as required by the Easement agreement, will be developed as discussions with the property owner goes forward.

3. It continues to be the applicant's position that the creation of wetland mitigation within the easement is permitted.

4. Drainage, water and sewer profiles have been added do sheets PR-1 and PR-2 of the plan set.

Water & Sewer Report Comments

1. The connection to the existing Town of Fishkill transmission line that intersects the subject property is no longer proposed and the reference has been eliminated from the report.

2. As stated in the revised water and sewer report, the connection to the Town of Fishkill transmission line in now longer proposed and all referenced have been eliminated.

3. Coordination for testing of the City water system in the general area of the proposed development will be coordinated with the water department. The results of the system dynamics will be included in the updated water and sewer report and submitted for review by the City Engineer upon completion.

4. Upon the completion of the testing of the City of Beacon water system, the water and sewer report will be revised to include the dynamics of the system and figures to support the proposed design.

5. The connection to the existing Town of Fishkill transmission line that intersects the subject property is no longer proposed and the reference has been eliminated from the report. Water for the development will be provided by an 8" diameter watermain extension from the existing water main at the intersection of Conklin Street and DeSoto Ave. It is proposed to install an 8" City of Beacon watermain extension into the subject property to provide water service to the development. The proposed watermain extension is proposed to connect to the proposed water improvements for the subdivision on the property immediately to the north, creating a larger loop through both developments for increased redundancy within the City system in this portion of the City.

6. Contact has been made with the City of Beacon's consulting engineer relative to the sanitary sewer collection and conveyance system. Our office will work with the consulting engineer to provide relative sewer flow information from the proposed project for an assessment of the downstream City sewer system.

Wetlands Evaluation & Impacts Report Comments

1. A revised Wetland Evaluation & Impact Report has been submitted. The areas of wetland disturbance have been called out and a summary has been added to SP-1. The wetland mitigation area has been graded and the proposed plantings are indicated.

2. The revised report includes discussion of the potential impact to the ecology of the site, and further exploration of impacts on threatened and endangered species will addressed during permitting with the USACE.

3. The report has been revised to discuss the specific requirements of the proposed wetland mitigation. The wetland mitigation area has also been graded and the proposed plantings therein are indicated.

Preliminary Subdivision Plat:

1. Metes and bounds have been added to the existing property lines, and typical dimensions for the townhouse lots have been incorporated, pursuant to the preliminary plat requirements of the Code. The final plat will include bearings and distances for the proposed property lines.

2. As suggested, easements have been created in the rear of lots 1 through 13, and where the lots extend into the commonly used private road. Written descriptions will be provided with a future submission.

3. The plat has been revised to indicate that the wetland is a Federal wetland, regulated by the United States Army Corps of Engineers.

4. The existing low rubble retaining wall as show on the plan has been field verified. Though the Blumenthal driveway within the City right of way is surrounded by steep slopes there is no other wall in the area.

5. The Now or Formerly has been provided for the Blumental residence.

Existing Conditions Plan:

1. The existing low rubble retaining wall as show on the plan has been field verified. Though the Blumenthal driveway within the City right of way is surrounded by steep slopes there is no other wall in the area.

2. The plan has been revised to indicate that the wetland is a Federal wetland, regulated by the United States Army Corps of Engineers. A note has been included to address the delineating party and date.

Layout & Landscape Plan

1. Sight distances have been revised to show their full extents.
2. Proposed plantings have been labeled and the schedule has been revised.
3. A Stop Sign has been added to the Sign Table and Stop Signs have been added to both driveways, and the spur road toward Conklin.
4. The signs are labelled in the plan with the corresponding number in the table.
5. As suggested, easements have been created in the rear of lots 1 through 13, and where the lots extend into the commonly used private road. Written descriptions will be provided with a future submission.

Grading and Utilities Plan

1. The proposed grading through the mitigation area has been shown. The proposed plantings for this area have also been shown on SP-1.
2. The proposed drainage swales on the project site have been graded out and spot elevations provided.
3. The walking path grades between units 20 and 21 have been refined. The inclusion of small retaining walls will be necessary to ease the grades in the walkway.
4. The unit numbering is now shown on the Grading & Utilities Plans, which have been broken out into SP-2.1 and SP-2.2.
5. The water line running along the front of units 35 through 40 has been revised to connect to the existing water main at the intersection of Conklin Street and Desoto Ave. A watermain extension is proposed to loop from the intersection through to the proposed water improvements in the proposed subdivision to the north. This will provide additional redundancy in the City water system in this portion of the City.
6. The location of the valves on the proposed water main have been added do Drawing SP-2.2.
7. Each wetland disturbance has been called out with specific square footages.
8. The existing low rubble retaining wall as show on the plan has been field verified. Though the Blumenthal driveway within the City right of way is surrounded by steep slopes there is no other wall in the area.
9. Additional details regarding the offsite improvement on Conklin Street have been added to the Construction Notes on Drawing SP-3.
10. It is acknowledged that Emergency Services should review the plans, and a set will be provided to them in the future.
11. Additional top and bottom of wall elevations have been added to the proposed retaining walls.
12. Outlet protection has been added to end sections ES 8, ES 21, ES 23, and ES 29.

Detail Sheets

1. The Right of Way Asphalt Detail has been revised as requested.

2. The diameter of the light pole base has been indicated in the detail.

3. The sidewalk detail has been revised as requested.

4. The size of the wire mesh has been indicated in the sidewalk detail.

SWPPP Comments

1. The Design Line for the stormwater analysis has been revised to follow the existing wetland boundary in the pre-development condition and the proposed wetland boundary in the post-development condition.

2. The subcatchment PRE on Figure 2 and subcatchment 1.0S on Figure 3 have been revised to remove the portion of the subcatchment to the north that does not drain to the south towards the design line.

3. The Design Line has been revised to include the tributary area from the proposed improvements on Conklin Street and include the stormwater runoff tributary to proposed end section ES 24.

4. The overall subcatchment includes the area of Hastings Drive that drains onto the proposed access road and is tributary to the proposed wet pond. Hastings Drive currently drains from east to west away from the project site and proposed access road.

5. Subcatchments 1.1S and 1.2S have been revised to include 0.1 acres of future potential impervious area from the proposed access road through the 25 Townsend Street project site.

6. The change in topography data has been indicated on Figure 2 and Figure 3 of the project SWPPP.

7. Additional information regarding each subcatchment has been included in Section 1.2 and 1.3 of the project SWPPP.

8. The time of concentration for subcatchment 1.1S has been revised to be the hydraulically most distant point.

9. The time of concentration for subcatchment 1.0S has been revised to be correlate with what is shown on Figure 3 of the project SWPPP.

10. All swale grading is shown in Figure 3 of the project SWPPP.

11. A link has been added downstream of the proposed wet pond, 1.1P in Appendix C of the SWPPP to model the time for the stormwater discharge to traverse from the outlet pipe to the design line. Subcatchment 1.1 TC has been added to Appendix C to verify the time of concentration used in the link 1.1R. No additional link or reach was added downstream of the subsurface infiltration system 1.2P as the stormwater discharges directly to the design line.

12. The link 1.1R has been indicated on Figure 3 of the project SWPPP.

13. Figure 4 has been revised to indicate a total depth of 48”+ for deep test hole D-2.

14. Infiltration testing for the proposed subsurface infiltration system will be coordinated with the City Engineer and performed prior to future submissions.

15. As stated in Table 7.2 of the NYS Stormwater Design Manual, the drainage area can be adjusted from the 25-acre minimum contributing area if adequate water balance and anti-clogging device is provided. The project proposes to use a “snout” as an anti-clogging device and provide adequate water balance in order to justify the design of a P-2 wet pond. Additional information regarding the design selection of the proposed P-2 wet pond has been added to Section 2.2 of the SWPPP.

16. The proposed hydrodynamic separator is to be used as a pretreatment practice only. Although the proposed Hydroworks HydroStorm hydrodynamic separator does not meet the NYSDEC requirements for treatment of new development, but it does meet the requirements to be used as a pretreatment practice upstream of an infiltration practice.

17. Stream Channel Protection Volume calculations are provided in Appendix C of the SWPPP.

18. The proposed subsurface infiltration system 1.2P has been revised to fully infiltrate the stormwater runoff from the 1-year, 24-hour storm event to meet the NYSDEC stream channel protection criterion.

19. The peak flows for the 1-year, 24-hour storm event for both the pre and post-development condition has been included in Table 2.4.1 of the SWPPP.

20. The construction sequence is included in the project plans. Section 5.1 of the SWPPP refers to the project plans for the provided Construction Sequence. The Stormwater Pollution Prevention Plan report along with the plan set make up the complete SWPPP for the subject project.

21. Silt fence add been added to Drawing SP-3 within the Phase 3 boundary for the construction of the walking path and passive recreation area installation.

22. Additional information regarding the threatened and endangered animals within the project area has been added to Section 5.1 of the SWPPP. The NYSDEC Full Environmental Assessment Form has been added to Appendix J of the SWPPP.

23. It is acknowledged that the NYSDOT has requested a copy of the drainage study for the subject project, and we will submit a copy for their review. As shown in the project SWPPP the peak flows for the proposed development have been mitigated in accordance with NYSDEC standards to the design line in the post development condition. As such, the mitigation of the peak flows for all design storms to the boundary of the wetland located on the subject project, is evidence that the NYSDOT drainage system, located approximately 1,000 feet downstream of the wetland, will not be impacted by the proposed development. Additional stormwater modeling through downstream properties will not be required, as peak flow mitigation has been provided ahead of the onsite wetland area.

We request appearance before the Board at their June 9, 2020 meeting to further discuss the revised materials we have provided.

Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

By: _____
Jeffrey J. Contelmo, PE
Senior Principal Engineer

JJC/adt

Enclosures

cc: Nathan Kahn
Greg Kamedulski
Aryeh Siegel (Email Only)
Phil Grealy, P.E. (Email Only)

Insite File No. 19131.100

Wetland Evaluation and Impact Report

Beacon Views Site
Conklin Street
City of Beacon
Dutchess County, New York

March 14, 2020
Revised May 18, 2020

Prepared by:

Michael Nowicki
Ecological Solutions, LLC
1248 Southford Road
Southbury, Connecticut 06488

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1.0 EXISTING CONDITIONS/SUMMARY

Regulatory Review - Ecological Solutions, LLC completed a wetland evaluation and impact assessment for the proposed residential townhouse development located on Conklin Street in the City of Beacon (*Attachment 1*). The proposed project is sited on the undeveloped central section of the site since there is no other area for the development other than in the proposed location.

The wetland boundary on the property was delineated by Ecological Solutions, LLC on October 17, 2019 in accordance with the Routine Onsite Determination Method prescribed in the 1987 USACE Wetlands Delineation Manual and recent Northcentral/Northeast supplement. The US Army Corps of Engineers (USACE) regulates the delineated wetland and a Nationwide Permit #29 will be required for the discharge of fill material to the wetland up to 0.5 acres. Currently the proposed project will impact 0.28 acres of federal wetlands/waters of the US. A New York State Department of Environmental Conservation (NYSDEC) Individual Water Quality Certification is required for this project since federal wetland/waters impacts exceed 0.25 acres. The City of Beacon Code – Chapter 223-16 requires the Applicant to evaluate the functions of the wetlands and impacts associated with this development.

Existing Wetland– The wetland is located on the southern section of the site and is best described as a small segment of red maple swamp which contains red maple, pin oak, American elm with spicebush and red-osier dogwood in the understory and skunk cabbage as the dominant herbaceous plant. This area is a dense thicket of multiflora rose, poison ivy, and stunted trees of about 4-5 inches dbh. This area is almost impenetrable with a tangle of trees, vines, and ground cover.

Project Description/Impacts - The Applicant is seeking to construct 40 multifamily residential units and appurtenant features including stormwater detention, grading, landscaping, and walkways.

2.0 WETLAND FUNCTIONS/IMPACTS/MITIGATION

2.1 Wetland Functions

To satisfy Section 223-16a of the Beacon City Code an assessment of the functions and values was conducted on the wetland identified and delineated on the property. Using a widely accepted method for wetland functions and values assessment developed by the New England District, U.S. Army Corps of Engineers, 13 distinct wetland functions and values were assessed for the delineated wetland on the site. This method yielded an objective, descriptive quality index. This assessment had two major objectives:

1. Objectively identify the functions and values provided by the wetland identified on the site.

2. Provide baseline data with which the Applicant could work in planning land uses, and against which the Applicant could assess potential impacts of proposed development of the site.

The descriptive quality index of each wetland, based on this methodology, is summarized in this report.

Wetlands are legally protected because of the functions they perform and the benefits that society reaps from those functions. Wetland functions are chemical, physical, and biological processes that wetlands naturally perform as a matter of course, such as absorption of nutrients or floodwaters, or provision of habitat for fish and wildlife. Wetland values are the benefits that society derives from wetland functions, such as flood abatement, or water quality maintenance.

The functions and values assessment conducted on the property was based on the method outlined in *The Highway Methodology Workbook Supplement: Wetland Functions and Values, A Descriptive Approach*, by the U.S. Army Corps of Engineers New England District. This method was selected over an arbitrary numeric quantifying assessment scheme because it provides an objective, descriptive approach to functions and values assessment based on professional observation and judgment rather than a simple numeric value rating system. Quantified functions and values assessments do not always provide for descriptive information about wetlands and therefore may overlook important aspects of wetland functions and values.

The Highway Method provides for assessment of each wetland for thirteen defined functions and values. Of these, the first eight are considered wetland functions, and the last five are considered to be wetland values. These are:

1. **Groundwater Recharge/Discharge –** the potential for a wetland to serve as a recharge area for an aquifer or as a surface discharge point for groundwater.

2. **Floodflow Attenuation–** A wetland's ability to store and attenuate floodwaters during prolonged precipitation events, thereby reducing or preventing flood damage.

3. **Fish and Shellfish Habitat –** The ability of permanent or temporary water bodies to provide suitable habitat for fish or shellfish.

4. **Sediment/Toxicant/Pathogen Retention –** The effectiveness of the wetland in trapping sediments, toxicants or pathogens, thereby protecting water quality.

5. **Nutrient Removal/Retention/Transformation –** The effectiveness of the wetland at absorbing, retaining, and transforming or binding excess nutrients, thereby protecting water quality.

6. **Production Export –** The wetland's ability to produce food or usable products for humans or other living organisms.

7. **Sediment/Shoreline Stabilization –** The wetland's ability to prevent erosion and sedimentation by stabilizing soils along stream banks or the shorelines of water bodies.

8. **Wildlife Habitat** – The ability of wetlands to provide food, water, cover, or space for wildlife populations typically associated with wetlands or their adjacent areas, both resident and migratory.

9. **Recreation –** The value placed on a wetland by society for providing consumptive and non-consumptive as well as active or passive recreational opportunities such as canoeing/boating, fishing, hunting, bird/wildlife watching, hiking, etc.

10. **Education/Scientific Value –** The value placed on a wetland by society for providing subjects for scientific study or research or providing a teaching resource for schools.

11. **Uniqueness/Heritage –** The value placed on a wetland by society for having unique characteristics such as archaeological sites or sites of historical events, unusual aesthetic qualities, or unique plants, animals, or geologic features, etc.

12. **Visual Quality/Aesthetics –** The value placed on a wetland by society for having visual and/or other aesthetic qualities.

13. **Threatened or Endangered Species Habitat –** The value placed on a wetland by society for effectively harboring or providing habitat for threatened or endangered species.

Each function or value in the list has a set list of qualifiers for identifying which functions and values are performed or provided by each wetland. The qualifiers are referenced by number on a standard evaluation form to document the functions and values assessment. In addition to outlining qualifying rationale for each function and value, the data forms also document information on each wetland's size, distance to nearest road or other development, adjacent land uses, position in the watershed, impacts from human activity, tributaries, cover types, connectivity to other wetlands, and general condition. All of these elements factor into the functions and values assessment.

2.2 Assessment Results

The forested wetland is a well developed red maple swamp that is fed by overland flow and groundwater discharge. The wetland continues offsite to the south. Functions and values provided by the wetland includes floodflow attenuation, sediment trapping, nutrient removal, and fish/wildlife habitat. Of these, the

most significant functions based on extent of rationale in identifying functions and values are floodflow attenuation and fish/wildlife habitat. Wildlife useage noted in the wetland is consistent with other sites in the area since there were deer tracks observed in the substrate as well as raccoon tracks and other mammals. Common bird species would also be expected to utilize the wetland for nesting and foraging.

1. **Groundwater Recharge/Discharge –** The groundwater discharge function will be impacted by the development through the loss of 0.28 acres of wetland. The loss will be mitigated through the establishment of a wetland mitigation area and the proposed conversion of upland to wetland in a 1:1 ratio. In addition stormwater will be collected from impermeable surfaces of the development and treated in a basin and discharged to the wetland mitigation area and wetland or will be infiltrated directly to groundwater which will contribute hydrology so there is no net loss of function.

2. **Floodflow Attenuation –** The wetland will maintain its size through the mitigation effort. The gain of capacity from the stormwater basin will increase the total storage area for floodflow attenuation on the site.

3. **Fish and Shellfish Habitat –** There is no habitat noted in the wetland for this function so no impacts are anticipated.

4. **Sediment/Toxicant/Pathogen Retention –** As with flood flow attenuation there is a net gain of function with the addition of a stormwater basin and mitigation effort which will allow the wetland to maintain its capacity to retain sediment, toxicants, and pathogens. Substantial erosion control measures and wetland plantings will mitigate erosion potential.

5. **Nutrient Removal/Retention/Transformation –** This function should not be significantly impacted because the stormwater basin will capture nutrients prior to stormwater being discharged into the wetland mitigation area and wetland. Construction of the stormwater basin and mitigation area should occur during the beginning of the project as some of the first items to be completed.

6. **Production Export –** This function will not be impacted or enhanced by the proposal.

7. **Sediment/Shoreline Stabilization -** This function will not be impacted or enhanced by the proposal since there is no shore area.

8. **Wildlife Habitat –** This function will be impacted but the mitigation effort could offer opportunities to species that require openings in habitat. The wetland mitigation area will offset wetland habitat lost to the development.

9. **Recreation –** The wetland is within private property. This function will not be impacted.

10. **Education/Scientific Value –** The wetland is within private property and is not used for education. This function will not be impacted.

11. **Uniqueness/Heritage –** The wetland is not part of a critical environmental area or unique to this watershed.

12. **Visual Quality/Aesthetics –** The wetland impacts proposed will be mitigated through with the installation of the wetland mitigation area. An wetland mitigation area will begin as an open area which adjacent to forested wetlands adds good visual juxtaposition and is visually and aesthetically pleasing.

13. **Threatened or Endangered Species Habitat –** A Threatened and endangered species habitat assessment is required as part of all USACE and NYSDEC permitting. Impacts to habitat could require Time of Year restrictions on tree clearing as an example. Assessments for habitat for listed species will be provided as part of Agency permitting once completed.

2.3 Wetland Impacts

Impacts to the wetland will occur and permits will be required from the USACE and NYSDEC. The 0.28 acres of impact are to the wetland edge and existing upland boundary adjacent to the wetland and are associated with the proposed private road. Impacts to the wetland cannot be avoided due to the site topography but can be minimized through grading techniques and retaining walls if necessary. The impact to the wetland will not be significant since the project can obtain a Nationwide Permit. The impacts around the periphery of the wetland will not reduce the effectiveness of the wetland in performing it's vital functions of storing floodflows, providing wildlife habitat, and removing nutrients from flows into this area. A mitigation plan will create wetland from current upland area to replace the directly impacted wetland area in a ratio of at least 1:1 or 0.28 acres.

2.4 Wetland Mitigation

The proposed layout for the development and associated features sought to minimize encroachments into Federal regulated wetlands. The proposed project is designed to provide a suitable layout for the development that meets the City of Beacon Building and Highway Code and meets the Phase II Stormwater Regulations for treating stormwater from impervious surfaces prior to discharge.

The site design minimizes wetland disturbances to the maximum extent practicable. To compensate for the loss of wetland area and functional capacity, the Applicant is committed to the establishment of additional wetland in one area on the site in a ratio of 1:1 with the proposed impacts or 0.28 acres. The compensatory wetland establishment plan will be based on the proposed establishment area being similar in spatial relation and existing features, and the following principles:

- The water table in the establishment wetlands must be maintained near the finished grade;
- The establishment area must not be flooded for prolonged periods of time as a result of significant rainstorms;
- The area must be planted with sufficient hydrophytic vegetation and seed to allow wetland communities to emerge within a reasonable time period.

The final design of the establishment area will strive to create edge habitat around the existing wetland type. Wetland plantings will be installed after the placement of suitable substrate material in the

establishment area. This bedding material will keep soil moisture high during summer dry periods when establishment of vegetation is critical. The design of an interconnected system of existing wetland with forested and shrub wetland is intended so that the existing wetlands serve as a "regeneration nucleus" around which a forested vegetative cover type could be established. This layout will exploit the predicted hydrologic condition of the establishment area. Generally, wildlife populations thrive when edge habitat between cover and food types is increased. Increased edge equates to more resources being available to an animal in a smaller area.

The placement of suitable substrate in the establishment area will provide an ecotonal microhabitat of value to certain wildlife species, while the wooded swamp interface with shrubs will provide two additional ecotones or "edge habitat". By maximizing the amounts and types of these ecotonal areas both the colonization of the area by local wildlife and the natural successional formation of shrub swamp and wooded swamp habitats will be considerably accelerated.

The proposed wetland mitigation area is currently being analyzed and plans promulgated for submission to the USACE and NYSDEC. The submission to both Agencies and the City will occur once the site layout is accepted by the City so that plan modifications are not necessary for permitting with the Federal and State Agencies. As part of the submission to the Agencies a Federal and State Threatened and Endangered Species Habitat Assessment Report will be completed and provided for submission as required by both Agencies.

The wetland mitigation area and its functions will be reviewed by the Agencies prior to permit issuance to ensure that there is no net loss of function or values provided by this habitat.

3.0 PHOTOGRAPHS

Forested wetland on site



Site wetland area to remain in this condition



INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

PRELIMINARY WATER & WASTEWATER ENGINEERING REPORT

For

Beacon Views
City of Beacon, New York

May 26, 2020



Prepared By
Insite Engineering, Surveying & Landscape Architecture, P.C.
3 Garrett Place
Carmel, New York 10512

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4.0 PROPOSED WASTEWATER CONNECTIONS TO CITY OF BEACON SYSTEM 2

1.0 INTRODUCTION

The Beacon Views project is located on a parcel adjacent to Conklin Street and Hastings Drive. The subject property is in the City's RD-5 District and is identified as Tax Map No. 6055-03-331123. The applicant, Beacon Views, LLC wishes to construct nine buildings containing 40 townhomes.

The project is in the City of Beacon Water and Sewer area. Water for the development will be provided by an 8" diameter watermain extension from the existing water main at the intersection of Conklin Street and DeSoto Ave. It is proposed to install an 8" City of Beacon watermain extension into the subject property to provide water service to the development. The proposed watermain extension is proposed to connect to the proposed water improvements for the subdivision on the property immediately to the north, creating a larger loop through both developments for increased redundancy within the City system in this portion of the City.

Sewer will be provided with an 8" diameter gravity main through the site that will collect service connections from each unit. The 8" diameter gravity main will discharge to the existing city sewer system on Conklin Street.

2.0 PROJECT DESIGN FLOWS AND ANTICIPATED FLOWS

Design maximum daily wastewater flows for the proposed project, Beacon Views, are based on the hydraulic loading rates given in the New York State Department of Environmental Conservation (NYSDEC) publication *Design Standards for Intermediate Sized Wastewater Treatment Works – 2014* (DEC 14). The design maximum daily water use is a conservative design flow on which the water infrastructure will be designed. This value does not represent the average daily flow which is expected to be substantially less.

The following table calculates the hydraulic loading rates and the design flow rates (gallons per day or gpd) for the proposed project.

Table 1: Beacon Views Project Design Maximum Daily Flow Rate

Proposed Use	Hydraulic Loading Rate	Design Maximum Daily Flow (gpd)
40 –Three Bedroom Townhome	330 gpd/dwelling	13,200
	Total	**13,200**

The anticipated design average daily flows for the project are expected to be significantly less than the design maximum daily design flow. The design maximum daily flows represent conservative flows to ensure that the proposed sewer infrastructure is designed with an ample factor of safety. The anticipated average daily flows are based on occupancy rates and measured data for water use. Statistical data (obtained from *Rutgers University, Center for Urban Policy Research*, *Residential Demographic Multipliers*, June 2006) for the average number of occupants in rental units (based on number of bedrooms) was used to calculate the expected number of residents anticipated for the project as shown in the table below. Data from the American Water Works Association (AWWA) shows that the average in home water use is 69 gpd per person. This number is reduced to 45 gpd per person when water saving fixtures are used, which is the case for this project.

Table 2: Design Average Daily Flow

Proposed Use	Occupancy Rate	Total Anticipated Residents	Water Use Per Resident (gpd)	Water Use (gpd)
40 –Three Bedroom Townhome	3.0 people/unit	120	45	5,400
			Total Anticipated Water Use (gpd)	**5,400**

As demonstrated above, through the use of water saving fixtures as required by current building code, a design maximum flow of 13,200 gpd is proposed for the project, while the design average daily flows are anticipated to be substantially less 5,400 gpd.

The peak hourly flow is calculated using a peaking factor that is based on the population of the subject project. A peaking factor of four will be used for the project based on Figure 1 from *Recommended Standards for Wastewater Facilities* (RRWW).

Peak Hourly Domestic Flow

13,200 gpd ÷ (24 hr/day) ÷ (60 min/hr) = 9.2 gallons per minute (gpm)

Peak Hourly Flow = 9.2 gpm x 4 = 36.8 gpm

Although the anticipated flows (design average daily flow) for the project are lower than the design maximum daily flows, the design maximum daily flows are used for the design of the system. This provides an additional factor of safety in the proposed design.

3.0 PROPOSED WATER CONNECTION TO THE CITY OF BEACON SYSTEM

3.1 System Characteristics

Based on review of existing system in vicinity of the subject project, there is an existing watermain located at the intersection of Conklin Street and DeSoto Ave to the east of the subject property. It is proposed to extend an 8" watermain from the City water system at this location into the property to service the proposed development. Additionally, it is proposed to connect the watermain for the subject property to the improvements in the proposed subdivision to the north. This ultimately creates a larger loop in the City of Beacon water system for increased redundancy in this area of the City. The dynamics of the system in the project area are not yet known and will be addressed as the project advances.

3.2 Proposed Water Service Connection

The existing watermain which the project proposes to connect to is located at the intersection of the Conklin Street and DeSoto Ave. Discussions with the Town of Fishkill Water Department and City of Beacon Water and Sewer Department will be required regarding the potential connection to the existing watermain in this location. The project proposes one (1) 8" diameter DIP watermain extension from the existing watermain, with a proposed connection to the watermain improvements in the subdivision to the north, for a larger loop in the City of Beacon water system. The water service lines to the buildings will be sized for each of the residential building units.

Two (2) centrally located fire hydrants are proposed throughout the proposed development. All hydrants will be manufactured by Mueller as required by the City.

Restrained joint connections will be provided at all pipe bends. Upon completion of the water service installation pressure testing, disinfection, and flushing will be performed in accordance with AWWA standards.

RSWW recommends that the normal working pressure not be below 35 psi, and both the RSWW and the *American Water Works Association* (AWWA) M 31 recommend that a minimum of 20 psi be maintained at all points in the water distribution system during fire flows.

4.0 PROPOSED WASTEWATER CONNECTION TO THE CITY OF BEACON SYSTEM

Sanitary sewer connection for the Beacon Views development will be provided via a gravity sewer main through the development with a connection to the gravity sewer system located east of the project site, on Conklin Street. The proposed onsite gravity sewer main will be 8" PVC SDR 35. The sewer main will convey the wastewater flows from the project site to the existing sewer manhole on the corner of Conklin Street and De Soto Avenue.

Wastewater flow from each building will be conveyed by 4" diameter PVC SDR 35 sewer service lines to the proposed 8" main. The service connections will be installed with a minimum slope of ¼" per foot slope meeting the requirements of DEC14. All PVC pipe will contain rubber push on gaskets at pipe

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connections. Cleanouts will be provided on each sewer service connection just outside of each building. Upon installation of the sewer mains will be tested with low pressure air tests in conformance with ASTM F1417-92 and the sewer manholes shall be vacuum tested in conformance with ASTM 1244-02, per the notes on the project plans. As stated above all sewer service lines will be 4" PVC SDR 35 at a minimum of 2% slope.

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May 22, 2020

VIA EMAIL

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

Re: Beacon Views Townhomes
MC Project No. 19002075A

Dear Chairman Gunn and Members of the Planning Board:

We are writing in response to the comments on the above project as contained in Creighton Manning's (CM) May 8, 2020 letter, as well as to those comments received at the public hearing held on Tuesday, May 12, 2020. The following summarizes our various responses.

CME Letter Dated May 8, 2020

CM Comment: CM is satisfied with Maser's response to comments 1, 2, 3, 4, and 7. We note that comments 3 and 4 will be fulfilled as part of the final site plan.

Response: ***Comment noted. The final details will be included as part of the Insite final site plans.***

CM Comment: With regard to Comment 5, at least 200 feet of intersection sight distance is shown to be provided at each of the driveways along the proposed access roadway except for one sight line that measures 160 feet. CM recommends that the applicant investigate measures to increase the sight line so that a minimum of 200 feet is provided.

Response: ***The proposed access road which had a sight distance of 160 feet indicated has been slightly modified to improve the sight distance as shown on the revised site plan. Based on travel speeds expected in this area, this will safely accommodate vehicles.***

CM Comment: With regard to Comment 6, CM acknowledges that the Cover Sheet, CS-1, depicts the proposed roadway extension accessing the proposed cul-de-sac for 25 Townsend Street. CM recommends that the applicant address the potential need for and provided greater detail of the appropriate traffic control within and in advance of the cul-de-sac area to guide drivers. Possible traffic control measures that could benefit the operation and safety of the cul-de-sac include, but are not limited to:

- Painted or textured central island of cul-de-sac, or other markings, to promote traffic calming
- Stop control on the Beacon Views access roadway approach
- Advance signage alerting drivers that the roadway does not provide connectivity to other roadway networks
- Curbside parking restrictions within the cul-de-sac

Response: ***With the connection to the 25 Townsend Street Subdivision, the plan shows a connection to the proposed cul-de-sac. Once the connection is made, there may no longer be a need for the cul-de-sac and if a portion of that is removed, this would function more as a typical through street. If for some reason that does not occur, the measures outlined by CM, including stop control on the Beacon Views access road approach and other advance signing and striping improvements, would be incorporated into the final site plan.***

May 12, 2020 Public Hearing Comments

Board Comments

1. Member Glen Warner requested clarification regarding flattening of the cul-de-sac.

Response: ***As indicated, the Applicant will work with the City on the final details of the connection to the cul-de-sac proposed at 25 Townsend Street. However, it is anticipated that the cul-de-sac will no longer be necessary once the connection the Beacon Views project is completed since vehicles will not necessarily have to turn around at this location. Nevertheless, the final details will be coordinated with the City as part of the final site plan approval. These will include any signing, striping, and other details***

consistent with those identified in the May 8, 2020 letter from Creighton Manning Engineering.

Public Comments

1. Javit Afzali, representing the Highland Meadows Development – His comments were related to consideration of traffic conditions along Hastings Drive and Delavan Avenue including comments on multi-day and 24-hour volume considerations.

Response: ***The detailed Traffic Impact Study for the project was prepared in accordance with standard procedures to evaluate impacts of proposed developments and is consistent with other studies completed in the City of Beacon. The study focuses on the highest hours of traffic generation for the proposed development as it relates to the surrounding roadway network and it considers the weekday morning and afternoon peak periods. Traffic data collected included weekday traffic counts between the hours of 7:00 AM – 9:00 AM and 3:00 PM – 6:00 PM. Due the presence of the Salem Tabernacle Church, Sunday was also counted between the hours of 9:30 AM – 12:30 PM.***

As indicated on Table No. 1 from the Traffic Impact Study, the peak traffic generation for a 40-unit townhouse development is approximately 30 total vehicles per hour during the highest peak one-hour period. During other hours of the day, the volumes are less and are spread out over the course of several hours of the day. Based on industry standards including those used by the NYSDOT and the City of Beacon, the capacity of a roadway system is evaluated based on peak hour conditions. The traffic study includes as part of the base existing traffic volume conditions, all existing traffic utilizing Delavan Avenue and Hastings Drive, including the existing 29 single-family homes, the traffic generated by the Beacon Volunteer Ambulance Corp., Wingate at Beacon, Highland Meadows Senior Residences and related facilities, and the Salem Tabernacle Church. The traffic volumes capture all of the movements to and from these facilities and the existing peak one-hour volumes are shown on Figures No. 2 and 3 in the Traffic Impact Study.

As indicated in the Traffic Impact Study, the preferred access to the site is via the 25 Townsend Street Subdivision. With this access scenario, there would be an emergency access connection provided to Hastings Drive

which in turn would also provide emergency access to the remainder of the existing uses in that area which currently do not have emergency access.

In the event that Hastings Drive was utilized on an interim basis until the 25 Townsend Street Subdivision was complete, the amount of traffic expected to be added from the Beacon Views project during the highest period would be approximately 30 vehicles per hour total. As part of the road construction, an emergency access connection to Conklin Street would be provided if required by the City. This would also provide emergency access to the remainder of Hastings Drive.

Based on the existing traffic volumes at the intersection of Hastings Drive and Delavan Avenue, growth in those volumes due to increased activity along these two roadways, as well as the additional traffic from the Beacon Views project, the analysis was completed at this intersection and indicates that acceptable Levels of Service will be experienced. Associated with the development, various signing and striping improvements would be implemented by the Applicant as required by the City.

The evaluation of 24-hour traffic conditions is not typical for the City and does not correlate to the peak hour capacity of a roadway system. As such, no evaluation of 24-hour periods is necessary. With the completion of the signing and striping improvements identified in the study, traffic from the Beacon Views development would be adequately accommodated on the roadway system.

2. Peg O'Leary, representing Highland Meadows – Her comments were regarding information on daily traffic and multi-day traffic volumes observed along Hastings Drive and the concern regarding potential impacts to school buses, etc. She questioned the inclusion of the Pinnacle Learning Center traffic and traffic from other uses that utilize Hastings Drive including the Highland Meadows employees and visitors, school buses, etc.

Response: ***As indicated previously, the existing traffic counts contained in the Traffic Impact Study included traffic generated by all uses along Hastings Drive and Delavan Avenue focused on the morning and afternoon peak hour periods since these are the typical time periods that are required based on City, State, and national standards for evaluating potential traffic impacts. The analysis contained in the traffic impact study indicates that the traffic generated by the proposed Beacon Views development will not significantly***

impact traffic operations in the area and that with the signing and striping improvements, will be able to accommodate the increased traffic volumes.

Lastly, note that the Project Applicant's representative has reached out to Ms. O'Leary's attorney to obtain a copy of the back up on the traffic assertions that were referenced in the comments made at the hearing but did not receive a response back.

If you have any questions regarding the above, please do not hesitate to contact us.

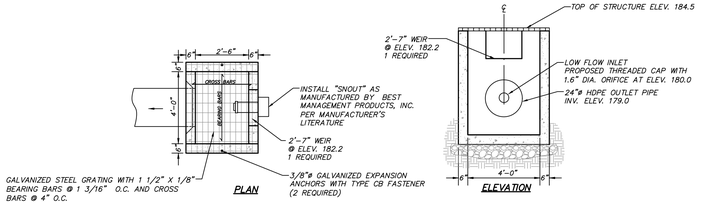
Very truly yours,

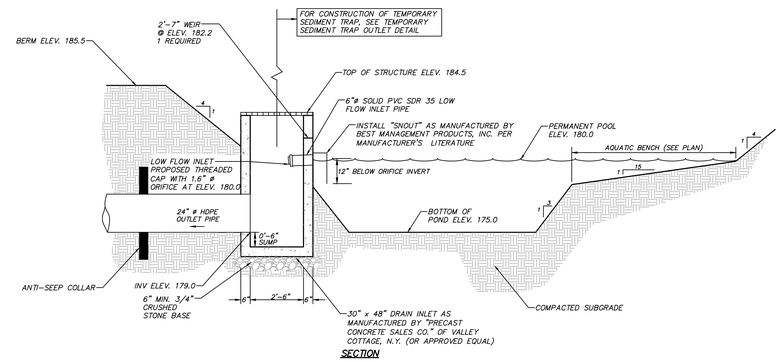
MASER CONSULTING P.A.

Philip J. Grealy, Ph.D., P.E.
Principal/Department Manager

PJG/ces
Enclosures
cc:

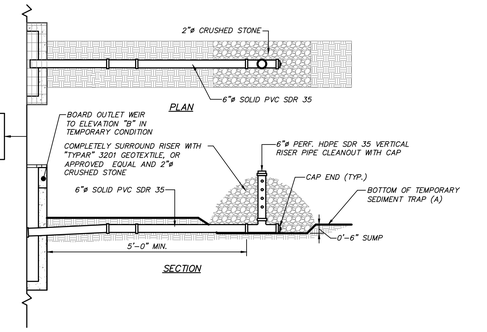
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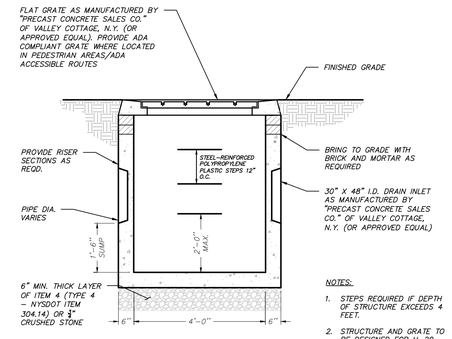


NOTE: THE "SNOUT" ON THE OUTLET STRUCTURE IS PROVIDED AS AN ANTI-CLOGGING DEVICE TO MEET THE REQUIREMENTS OF THE "NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL".

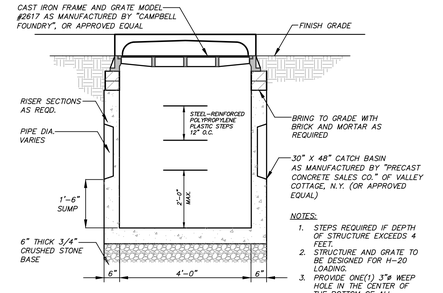
1.1P WET POND (NYSDEC DESIGN P-2) PERMANENT OUTLET STRUCTURE DETAIL
(N.T.S.)



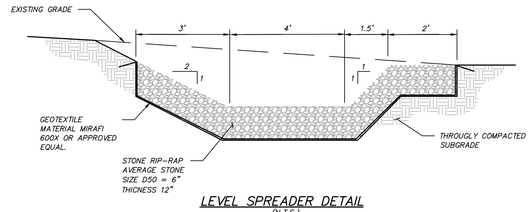
TEMPORARY SEDIMENT TRAP OUTLET STRUCTURE DETAIL
(N.T.S.)



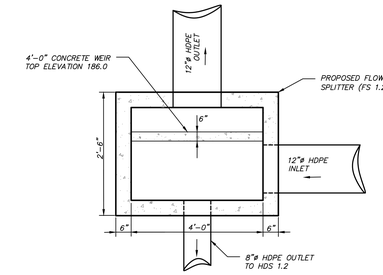
30" X 48" DRAIN INLET DETAIL
(N.T.S.)



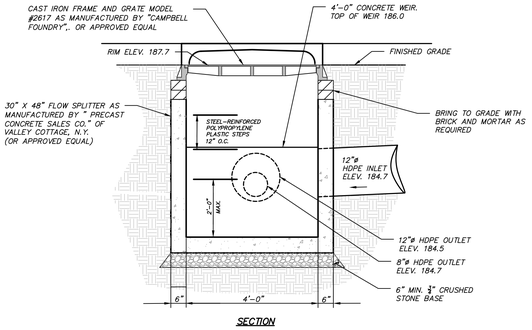
CATCH BASIN DETAIL
(N.T.S.)



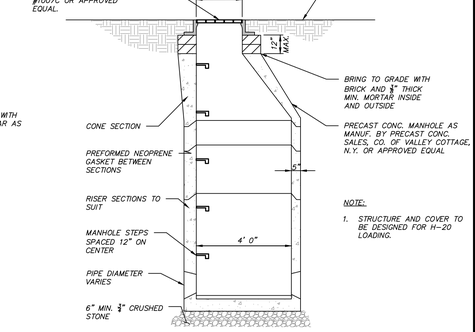
LEVEL SPREADER DETAIL
(N.T.S.)



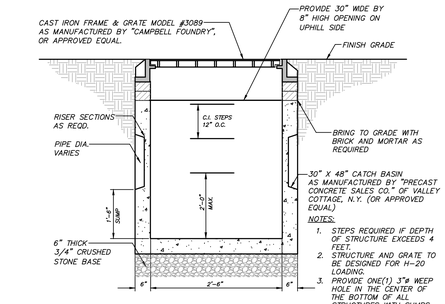
PLAN



FLOW SPLITTER FS 1.2 DETAIL
(N.T.S.)



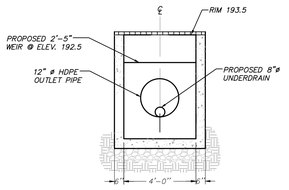
DRAINAGE MANHOLE DETAIL
(N.T.S.)

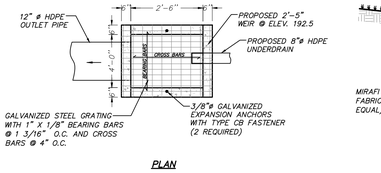


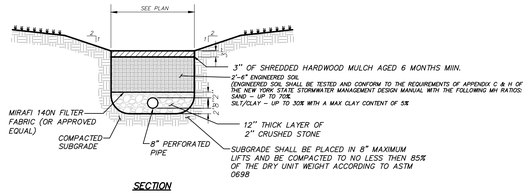
SIDE DRAIN INLET DETAIL
(N.T.S.)
(STRUCTURE AND GRATE TO BE DESIGNED FOR H-20 LOADING)

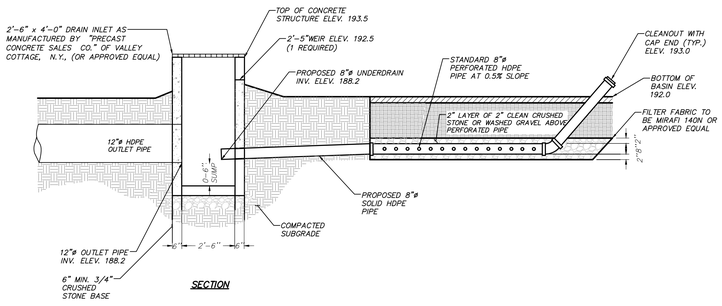
WET POND OUTLET NOTES

1. THE WET POND (1.1P) BASIN IS PROPOSED TO BE UTILIZED AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION.
2. AFTER THE CONTRIBUTING AREAS TO THE BASIN HAS BEEN PERMANENTLY STABILIZED, THE FOLLOWING SHALL BE ACCOMPLISHED:
   A. CLEAN BASIN AND OUTLET STRUCTURE AND REMOVE 6"ø PERFORATED VERTICAL RISER PIPE, CRUSHED STONE AND FILTER FABRIC.
   B. ADD THREADED CAP WITH ORIFICE AT DISCHARGE END OF 6"ø SOLID PVC SDR 35 PIPES PER DETAIL.
   C. REPLACE THE PERFORATED PIPE AND CRUSHED STONE. DO NOT REPLACE FILTER FABRIC.
   D. ESTABLISH THE FINAL VEGETATION IN THE BASIN IN ACCORDANCE WITH THE TYPICAL P-2 WET POND BASIN PLANTING DETAIL.
3. FOLLOWS: * WHEN INITIALLY USED AS THE TEMPORARY SEDIMENT BASIN DEWATERING DEVICE THE RISER SHALL BE WRAPPED WITH TYPAR 3201 GEOTEXTILE OR APPROVED EQUAL AND SURROUNDED WITH 2"ø STONE. THE TOP OF THE RISER SHALL BE SET AT THE SAME ELEVATION AS THE WEIRS AS SHOWN IN THE STORMWATER BASIN OUTLET STRUCTURE DETAILS.

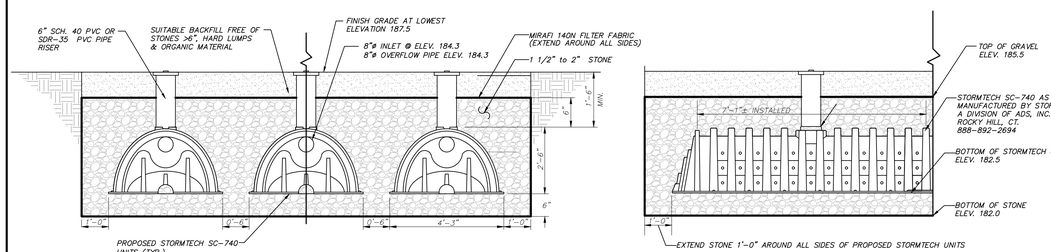




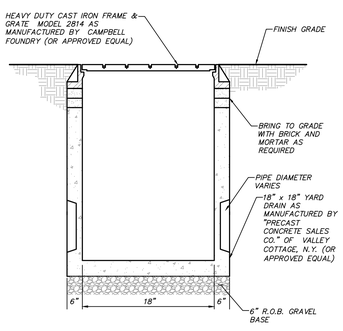




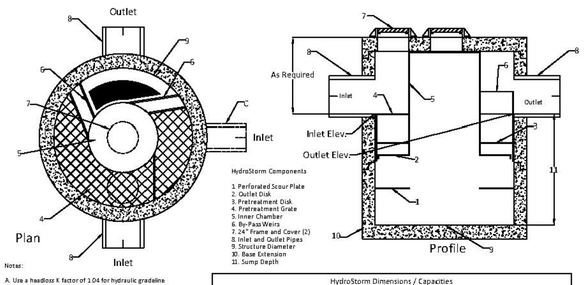
BIORETENTION FILTER OUTLET STRUCTURE DETAIL (NYSDEC DESIGN F-5)
(N.T.S.)



STORMWATER INFILTRATION SYSTEM 1.2P (NYSDEC DESIGN I-4) DETAIL
(N.T.S.)



18" X 18" YARD DRAIN DETAIL
(N.T.S.)

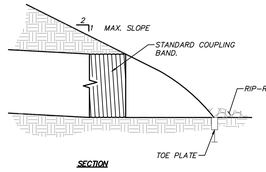


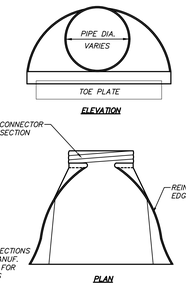
Notes:
A. Use a headloss K factor of 1.04 for hydraulic gradeline calculations
B. Sump depths shown are minimums. Additional depth can be added for site specific capacities
C. Multiple inlet pipes allowed
D. Drops allowed
E. Inlet invert elevations should be the same or higher than the outlet invert elevation. Inlet can be up to 12" lower than outlet if pretreatment area is omitted but 12" must be added to sump depth to maintain overall treatment volume
F. Solid Cover shown. HydroStorm can be designed with an inlet grate if required.
G. Oil capacities given are spill capacities. Oil should be removed from the unit once an oil depth of 2" or more is measured in the inner chamber
H. Sediment depths are maximum holding capacities and not recommended capacities for regular maintenance. Maintenance is recommended annually or once every 2 years
I. Capacities are rounded down to nearest 5 gal or ft3
J. Base Extensions not provided on standard units. Extensions can be provided if required due to groundwater/buoyancy concerns at the request of the engineer of record

HydroStorm by Hydroworks, LLC
Patent Pending
www.hydroworks.com
888-290-7900

HydroStorm Dimensions / Capacities							
Model	Diameter (ft) (D)	Sump Depth (ft) (LL)	Inner Chamber (ft) (S)	Max. Pipe (in) (B)	Volume (gal)	Oil (gal)	Sediment (ft3)
HS 7	7	6	3.5	42	1725	410	140
HS 8	8	7	4	48	2630	615	220
HS 9	9	7.5	4.5	54	3565	890	295
HS 10	10	8	5	60	4700	1130	385
HS 12	12	9.5	6	72	8035	1875	665

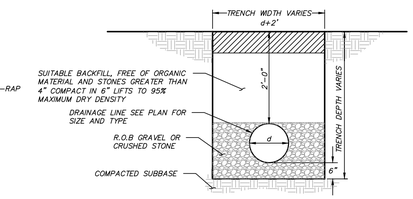
HDS 1.2 HYDROWORKS HYDROSTORM HS 6 HYDRODYNAMIC SEPARATOR DETAIL
(N.T.S.)





NOTE:
END SECTION CONNECTIONS TO CONFORM TO MANUF. RECOMMENDATIONS FOR VARIOUS PIPE SIZES

END SECTION DETAIL
(N.T.S.)



DRAINAGE LINE TRENCH DETAIL
(N.T.S.)

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

INSITE
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9690
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
DETAILS

STATE OF NEW YORK — JEFFREY J. CONTOLI — 091931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	J.F.R.
SCALE	AS NOTED	CHECKED BY	A.D.T.

DRAWING NO. D-5 SHEET 15 / 15

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

Z:\EVE\19131\00 Submit\19131-1-5 dwg, 8/26/2020 11:43:48 AM, jmaier, 1:1

SEWER TESTING PROCEDURES

TESTS FOR NON-PRESSURE PIPELINES FOR TRANSPORT OF SEWAGE

The leakage shall be determined by exfiltration, infiltration or low pressure air.

A. *Exfiltration Testing*

1. Exfiltration tests shall be made by filling a section of pipeline with water and measuring the quantity of leakage.
2. The head of water at the beginning of the test shall be at least 2 feet above the highest pipe within the section being tested.
   a. Should groundwater be present within the section being tested, the head of water for the test shall be 2 feet above the hydraulic gradient of the groundwater.
   b. Should the requirement of 2 feet of water above the highest pipe subject any joint at the lower end of the test section to a differential head of greater than 11.5 feet, another method of testing shall be employed.

B. *Infiltration Testing*

1. Infiltration tests will be allowed only when the water table gauges determine the groundwater level to be 2 feet or more above the highest pipe of the section being tested.
2. Infiltration test shall be made by measuring the quantity of water leaking into a section of pipeline.
3. Measurement of the infiltration shall be by means of a calibrated weir constructed at the outlet of the section being tested.

C. *Allowable Leakage for Non-Pressure Pipelines*

1. The allowable leakage (exfiltration or infiltration) for non-pressure pipelines shall not exceed the following in gallons per 24 hours per inch of diameter per 1000 feet of pipe:

Type of Pipe	Leakage
Ductile iron – mechanical or push-on joints	100
Polyvinyl chloride, thermal plastic or fiberglass with rubber joints	100
Cast iron soil pipe	0

2. Regardless of the above allowable leakage, any spurting leaks detected shall be permanently stopped.

D. *Low Pressure Air Testing*

1. Air testing for acceptance shall not be performed until the backfilling has been completed.
2. Low pressure air tests shall conform to ASTM F1417-92, Section 8.2.2, Time-Pressure Drop Method for a 0.5 psi drop, except as specified herein and shall not be limited to type or size of pipe.
3. All sections of pipelines shall be cleaned and flushed prior to testing.
4. The air test shall be based on the starting pressure of 3.5 to 4.0 psi gauge. The time allowed for the 0.5 psi drop in pressure, measured in seconds, will be computed based on the size and length of the test section by the Engineer.
   a. When groundwater is present, the average test pressure of 3 psig shall be above any back pressure due to the groundwater level.
   b. The maximum pressure allowed under any condition in air testing shall be 10 psig. The maximum groundwater level for air testing is 1.3 feet above the top of the pipe.
5. The equipment required for air testing shall be furnished by the Contractor and shall include the necessary compressor, valves, gauges and plugs to allow for the monitoring of the pressure, release of pressure and a separable test gauge.
   a. The test gauge shall be sized to allow for the measuring of the 0.5 psig loss allowed during the test period and shall be on a separate line to the test section.

E. *Deflection Testing*

1. Deflection testing shall be performed 30 days after backfilling. The test shall be made by passing a ball or cylinder no less then 95% of the pipe diameter through the pipe. The test shall be performed without mechanical pulling devices.

F. *Manhole Testing*

1. General
   a. Each manhole shall be tested by vacuum testing.
2. Vacuum testing shall be performed after backfilling in accordance with the latest revision of ASTM C1244-11 as follows:
   a. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
   b. A vacuum of 10 in. of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time shall be measured for the vacuum to drop to 9 in. of mercury.
   c. The manhole shall pass if the time for the vacuum reading to drop from 10 in. of mercury to 9 in. of mercury meets or exceeds the values indicated below:

Minimum Test Times for Various Manhole Diameters in Seconds:

Depth (ft)	Diameter (inches) 48	60
	Time (seconds)	
8 or less	20	26
10	25	33
12	30	39
14	35	46
16	40	52
18	45	59
20	50	65

   d. If the manhole fails the initial test, necessary repairs shall be made by an approved method. The manhole shall then be retested until a satisfactory test is obtained.

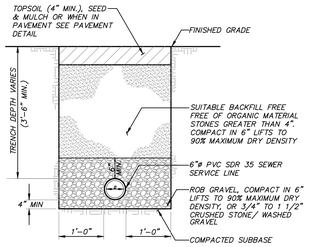
Dutchess County Department of Health Notes:

Standard Notes for Projects with Central Water & Sewer

1. The design, construction and installation shall be in accordance with this plan and generally accepted standards in effect at the time of construction which include:
   - "New York State Design Standards for Intermediate Sized Wastewater Treatment Systems", NYSDEC
   - "Recommended Standards for Sewage Treatment Works, (Ten States)."
   - "Recommended Standards for Water Works, (Ten States)."
   - "New York State Department of Health and Dutchess County Environmental Health Services Division policies, procedures and standards."
   - "Dutchess County and New York State Sanitary Codes."
   - "Dutchess County Environmental Health Services Division Certificate of Approval letter."
2. This plan is approved as meeting the appropriate and applied technical standards, guidelines, policies and procedures for arrangement of sewage disposal and water supply facilities.
3. Upon completion of the facilities, the finished works shall be inspected, tested, and certified complete to the DC EHSD by the New York State licensed Professional Engineer supervising construction. No part of the facilities shall be placed into service until accepted by the DC EHSD.
4. Approval of any plan(s) or amendment thereto shall be valid for a period of five (5) years from the date of approval. Following the expiration of said approval, the plan(s) shall be re-submitted to the Commissioner of Health for consideration for re-approval. Re-submission or revised submission of plans and/or associated documents shall be subject to compliance with the technical standards, guidelines, policies and procedures in effect at the time of the re-submission.
5. No cellar, footing, floor, garage, cooler or roof drains shall be discharged into the sewage collection system.
6. All buildings shall be constructed at an elevation high enough to ensure gravity flow to the sewage collection system.
7. All required Erosion & Sediment Control and Stormwater Pollution Prevention Water Quality & Quantity Control structures, permanent and temporary, are shown on the plans.
8. The DC EHSD shall be notified sixty days prior to any change in use; use changes may require re-approval by the DC EHSD.
9. No buildings are to be occupied and the new water system shall not be placed into service, until a "Completed Works Approval" is issued under section 5-1.22(d) of Part 5 of the New York State Sanitary Code (10NYCRR5).
10. No buildings are to be occupied and the new wastewater collection system shall not be placed into service until, a "Certificate of Construction Compliance" is issued under section 19.7 of Article 19 of the Dutchess County Sanitary Code.
11. All service lines are the responsibility of the owner up to the property line. The water and sewer companies shall be responsible for all valves and pipes which are not on the owner's property.
12. The retaining wall / slope stabilization details shown on the project plans are not certified for structural integrity by the DC EHSD.
13. The undersigned owners of the property hereon state that they are familiar with this map, its contents and its legends and hereby consent to all said terms and conditions as stated hereon.

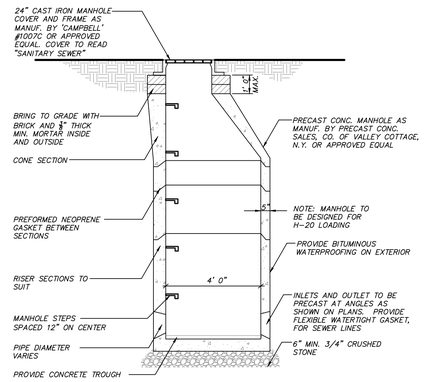
_____ Owner Signature _____ Date

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.



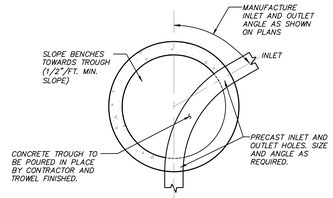
SANITARY SEWER / SANITARY SERVICE LINE TRENCH DETAIL

(N.T.S.)



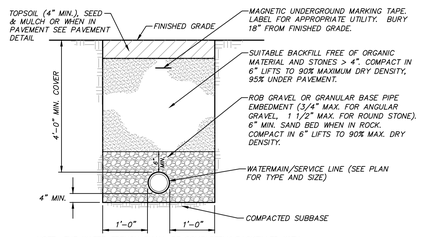
SANITARY MANHOLE DETAIL

(N.T.S.)



MANHOLE TROUGH DETAIL

(N.T.S.)



NOTE: THE WATER TRENCH SHALL BE COMPLETELY BACKFILLED WITH NYSDOT ITEM 304.12 WITHIN THE NYSDOT RIGHT OF WAY

WATERMAIN/SERVICE LINE TRENCH DETAIL

(N.T.S.)

DUCTILE IRON PIPE WATER TESTING PROCEDURES

TESTS ON PRESSURE PIPING FOR TRANSPORT OF WATER

A. *Hydrostatic Pressure Test*
Hydrostatic testing shall be performed in accordance with the revision of AWWA C600, Section 5.2, "Hydrostatic Testing".

1. *Test pressure shall be as scheduled or, where no pressure is scheduled, shall be 150 psi, or 1.25 times the static operating pressure, whichever is higher.*
2. *Test pressure shall be held on the piping for a period of at least 2 hours, unless a longer period is requested by the Engineer.*
3. *The test medium shall be water.*

B. *Hydrostatic Leakage Test*

1. *The leakage test shall be conducted concurrently with the pressure test.*
2. *The rate of leakage shall be determined at 15-minute intervals by means of volumetric measurement of the makeup water added to maintain the test pressure. The test shall proceed until the rate of leakage has stabilized or is decreasing below an allowable value, for three consecutive 15-minute intervals. After this, the test pressure shall be maintained for at least another 15 minutes.*
   a. *At the completion of the test, the pressure shall be released at the furthermost point from the point of application.*
3. *All exposed piping shall be examined during the test and all leaks, defective material or joints shall be repaired or replaced before repeating the tests.*
4. *The allowable leakage will be determined by the following formula.*

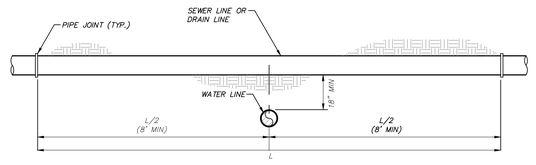
$$Q = \frac{LD\sqrt{P}}{148{,}000}$$

Where:
Q = quantity of makeup water, in gallons per hour
L = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during the hydrostatic test, in pounds per square inch (gauge)

5. *Regardless of the above allowables, any visible leaks shall be permanently stopped.*
6. *The test medium shall be water.*

C. *Disinfection*
Prior to placing the water main into service, the new pipe shall be cleaned and disinfected in accordance with the latest revision of AWWA C651, Section 4.4.3, "The Continuous Feed Method". The "Tablet Method" will not be accepted.

1. *All work under this section shall be performed in the presence of the Design Engineer, and a representative of the public health authority having jurisdiction, as required.*
2. *Chlorination shall be scheduled such that sampling and flushing will be performed during normal daylight working hours. The contractor shall provide acceptable backflow prevention on all supply water to prevent any potential backflow contamination or cross connection.*
3. *Chlorination shall be by the use of a solution of water and liquid chlorine, calcium hypochlorite or sodium hypochlorite and the solution shall be contained in the pipe or structure as specified.*
4. *Prior to chlorination, all dirt and foreign matter shall be removed by a thorough cleaning and flushing of the pipeline or structure.*
5. *The chlorine solution shall be introduced to pipelines through corporation stops placed in the horizontal axis of the pipe, to structures by means of tubing extending directly into the structure, or other approved methods.*
6. *The application of the chlorine solution shall be by means of a controlled solution feed device. The rate of chlorine solution flow shall be in such proportion to the rate of water entering the pipe or structure that the resulting free chlorine residual shall be between 25 and 50 parts per million (PPM) or milligrams per liter (mg/l).*
7. *The chlorine treated water shall be retained in the pipe or structure at least 24 hours, unless otherwise directed. During the retention period, all valves and hydrants within the treated sections shall be operated.*
8. *The chlorine residual shall be not less than 10 PPM (or mg/l) at any point in the pipe or structure at the end of the 24-hour retention period.*
9. *When making repairs to, or when specified, structures and portions of pipelines shall be chlorinated by a concentrated chlorine solution containing not less than 200 PPM (mg/l) of free chlorine. The solution shall be applied with a brush or sprayed on the entire inner surface of the empty pipes or structures. The structures disinfected shall remain in contact with the strong chlorine solution for at least 30 minutes.*
10. *After the required retention of chlorinated water in the pipe or structures, they shall be thoroughly flushed until the replacement water shall, upon test, both chemically and bacteriological, be proven equal to water quality served by the public from the existing water supply system.*
11. *The disposal of chlorinated water from any pipe or structure shall be such that it will not cause damage to any vegetation, fish, or animal life.*
12. *The Contractor shall make all arrangements for the testing of water quality by an approved independent laboratory. Two acceptable bacteriological test, taken at least 24 hours apart, shall be collected from the new water main. At least 1 set of samples must be collected from every 1,000 LF of the new water main, plus one set from the end of the line and at least one set from each branch. The results for all tests shall be forwarded to the Design Engineer and the public health authority having jurisdiction.*
13. *All water quality requirements shall be fulfilled prior to the passage of any water through the new system to a public supply or the use of the new system.*

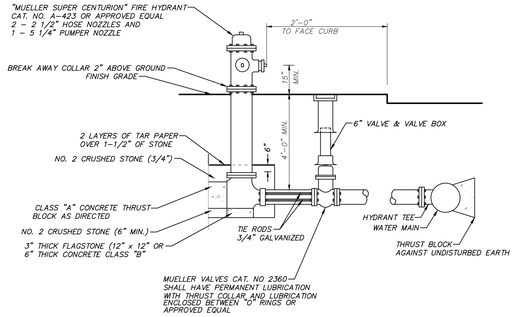


WATER LINE CROSSING UNDER SANITARY SEWER LINE OR STORM DRAIN LINE

NOTES:
1. WHEN 18" SEPARATION CANNOT BE MAINTAINED, THE WATER LINE SHALL BE ENCASED IN CONCRETE (SEE DETAIL) ONLY WITH PRIOR APPROVAL OF THE DESIGN ENGINEER AND DEPARTMENT OF HEALTH.
2. PROVIDE PIPE AND FITTING RESTRAINT AS REQUIRED.
3. THE 18" SEPARATION APPLIES TO WATER MAINS AND WATER SERVICE CONNECTIONS.

WATER LINE CROSSING DETAIL

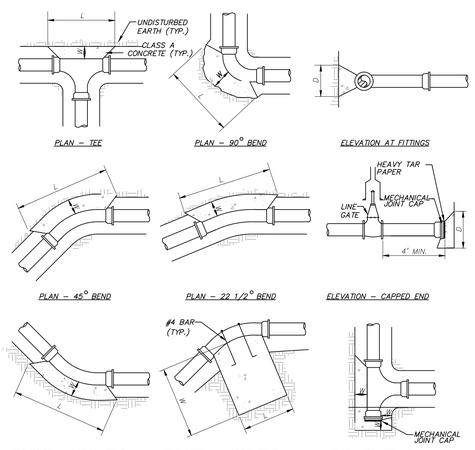
(N.T.S.)



HYDRANT NOTES:
1. *PUMPER OUTLET SHALL FACE STREET;*
2. *HOSE OUTLETS SHALL BE PARALLEL TO STREET.*
3. *1-1/2" STONE SHALL BE PLACED AROUND THE HYDRANT FROM THE BOTTOM OF THE TRENCH, BUT AT LEAST 6" BELOW THE BASE OF THE HYDRANT TO 6" ABOVE THE WASTE OPENING AND TO A DISTANCE OF 12" AROUND THE ELBOW.*
4. *IF GROUND WATER IS ENCOUNTERED WITHIN 7' OF SURFACE, THEN HYDRANT DRAINS SHOULD BE PLUGGED. WHEN THE DRAINS ARE PLUGGED, THE BARRELS MUST BE PUMPED DRY AFTER USE DURING FREEZING WEATHER. WHERE HYDRANT DRAINS ARE NOT PLUGGED, A GRAVEL POCKET OR DRY WELL SHALL BE PROVIDED UNLESS THE NATURAL SOILS WILL PROVIDE ADEQUATE DRAINAGE. HYDRANT DRAINS SHALL NOT BE CONNECTED TO OR LOCATED WITHIN 10 FEET OF SANITARY SEWERS OR STORM DRAINS.*

HYDRANT DETAIL

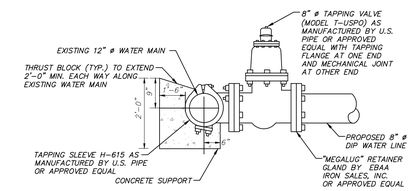
(N.T.S.)



THRUST BLOCK SCHEDULE									
PIPE SIZE	CAP/TEE L	CAP/TEE D	22 1/2° L	22 1/2° D	45° L	45° D	90° L	90° D	W
6"	2'	1.5'	2'	1.5'	2'	1.5'	2'	1.5'	1.5'

THRUST BLOCK DETAILS

(N.T.S.)



TAPPING SLEEVE, VALVE, AND THRUST BLOCK DETAIL

(N.T.S.)

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place
Carmel, NY 10512
(845) 225-9090
(845) 225-9717 fax
www.insite-eng.com

PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

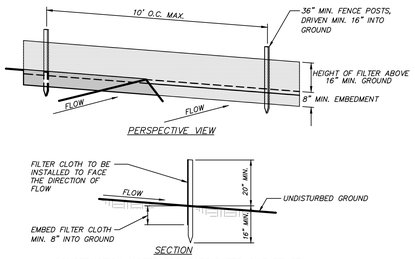
DRAWING:
DETAILS

STATE OF NEW YORK — JEFFREY J. CONTI — 51931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	191.31.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	J.F.R.
SCALE	AS NOTED	CHECKED BY	A.D.T.

DRAWING NO. D-4 — SHEET 14 / 15

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CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS AT TOP AND MID SECTION.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

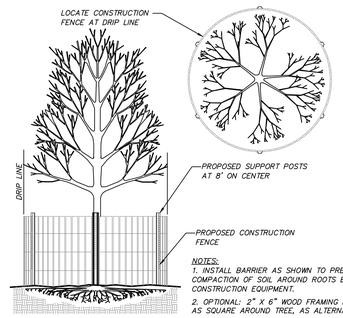
POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

FILTER CLOTH: FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE DETAIL

(N.T.S.)



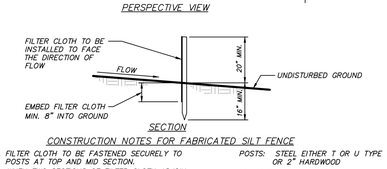
NOTES:
1. INSTALL BARRIER AS SHOWN TO PREVENT COMPACTION OF SOIL AROUND ROOTS BY CONSTRUCTION EQUIPMENT.
2. OPTIONAL: 2" X 6" WOOD FRAMING BUILT AS SQUARE AROUND TREE, AS ALTERNATIVE.

TREE PROTECTION DETAIL

(N.T.S.)

TREE PROTECTION NOTES:

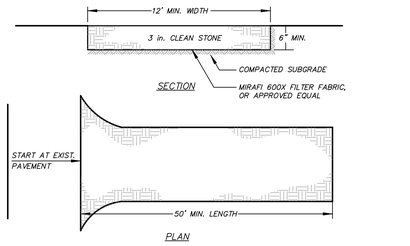
1. Trees to be preserved in proximity to disturbance areas shall be marked in the field by the Landscape Architect prior to start of construction.
2. Install tree protection measures prior to start of site clearing & construction.
3. No construction equipment shall be parked and no earth or construction materials shall be stockpiled or stored under the canopy of trees to be preserved.
4. During tree removal operations associated with construction, do not damage adjacent trees to remain. Lower limbs and tree trunks, do not drop them.
5. Carefully tie back any tree branches that conflict with construction equipment.
6. Where trenching for utilities is required within a root zone, tunneling under and around roots shall be by hand digging. If roots 3" or larger are encountered immediately adjacent to the location of new construction and relocation is not practical, the roots shall be hand pruned under the supervision of a Certified Arborist or Landscape Architect to 6" back from the new construction limit. All exposed roots to receive appropriate treatment prior to backfilling.
7. If tree protection fencing to protect the root zone is not possible, six to eight inches of wood chip mulch and 3/4 inch plywood shall be placed over the entire affected root zone area to prevent soil compaction.
8. Any tree damaged during construction activities must be immediately repaired by a qualified arborist at no additional cost to the owner.



NOTES:
1. AREA CHOSEN FOR STOCKPILE LOCATION SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE IMMEDIATELY SEEDED WITH K31 PERENNIAL TALL FESCUE.
4. ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED ON THE DOWNGRADIENT SIDE.

TEMPORARY SOIL STOCKPILE DETAIL

(N.T.S.)

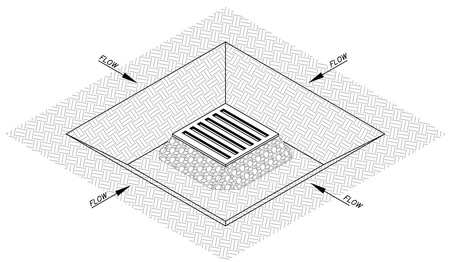


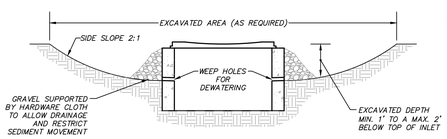
INSTALLATION NOTES

1. STONE SIZE – USE 3" STONE
2. LENGTH – AS REQUIRED, BUT 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 – 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
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 RIGHT 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 RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

(N.T.S.)





1. CLEAR THE AREA OF ALL DEBRIS THAT WILL HINDER EXCAVATION
2. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN
3. WEEP HOLES SHALL BE PROTECTED BY GRAVEL
4. UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA, SEAL WEEP HOLES, FILL EXCAVATION WITH STABLE SOIL TO FINAL GRADE, COMPACT IT PROPERLY, AND STABILIZE WITH PERMANENT SEEDING
5. MAXIMUM DRAINAGE AREA = 1 ACRE

EXCAVATED DROP INLET PROTECTION DETAIL

(N.T.S.)

REQUIRED EROSION CONTROL SWPPP CONTENTS:

Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP–0–20–001), all Stormwater Pollution Prevention Plan's (SWPPP) shall include erosion and sediment control practices designed in conformance with the most current version of the technical standard, "New York Standards and Specifications for Erosion and Sediment Control." Where erosion and sediment control practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of required SWPPP components is provided in accordance with Part III.B.1a–l of General Permit GP–0–20–001:

a. Background Information: The subject project consists of the construction of (7) townhome buildings with appurtenances and utilities.

b. Site map / construction drawing: These plans serve to satisfy this SWPPP requirement.

c. Description of the soils present at the site: Onsite soils located within the proposed limits of disturbance consist of Bernardston Silt Loam (BnB), Canandigua Silt Loam (Ca), and Nassau–Cardigan Complex (NwC) as identified on the Soil Conservation Service Websoil Survey. These soil types belong to the Hydrologic Soil Group "C/D" and "D".

d. Construction phasing plan / sequence of operations: The Construction Sequence and phasing found on these plans provide the required phasing. A Construction Sequence and Erosion and Sediment Control Maintenance Schedule has been provided. The Sedimentation and Erosion Control Notes contained hereon outline a general sequence of operations for the proposed project. In general all erosion and sediment control facilities shall be installed prior to commencement with land disturbing activities, and areas of disturbance shall be limited to the shortest period of time as practicable.

e. Description of erosion and sediment control practices: This plan, and details / notes shown hereon serve to satisfy this SWPPP requirement.

f. Temporary and permanent soil stabilization plan: The Sedimentation and Erosion Control Notes and Details provided heron identify temporary and permanent stabilization measures to be employed with respect to specific elements of the project, and at the various stages of development.

g. Site map / construction drawing: This plan set serves to satisfy this SWPPP requirement.

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices: The details, Erosion and Sediment Control Notes, and Erosion and Sediment Control Maintenance Schedule serve to satisfy this SWPPP requirement.

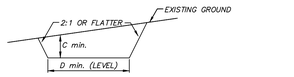
i. An inspection schedule: Inspections are to be performed twice weekly and by a qualified professional as required by the General Permit GP–0–20–001. In addition the NYSDEC Trained Contractor shall perform additional inspections as cited in the Erosion and Sediment Control Notes.

j. A description of pollution prevention measures that will be used to control litter, construction chemicals and construction debris: In general, all construction litter / debris shall be collected and removed from the site. The general contractor shall supply either waste barrels or dumpster for proper waste disposal. Any construction chemicals utilized during construction shall either be removed from site daily by the contractor or stored in a structurally sound and weatherproof building. No hazardous waste shall be disposed of onsite, and shall ultimately be disposed of in accordance with all federal, state and local regulations. Material Safety Data Sheets (MSDS), material inventory, and emergency contact numbers shall be maintained by the general contractor for all construction chemicals utilized onsite. Finally, temporary sanitary facilities (portable toilets) shall be provided onsite during the entire length of construction, and inspected weekly for evidence of leaking holding tanks.

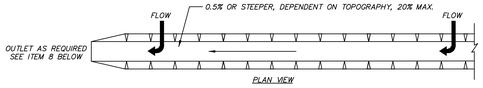
k. A description and location of any stormwater discharges associated with industrial activity other than construction at the site: There are no known industrial stormwater discharges present or proposed at the site.

l. Identification of any elements of the design that are not in conformance with the technical standard, "New York Standards and Specifications for Erosion and Sediment Control." All proposed elements of this SWPPP have been designed in accordance with the "New York Standards and Specifications for Erosion and Sediment Control."

	SWALE A (< 5 AC.)	SWALE B (5–10 AC.)
C	1'	1'
D	4'	6'



CROSS SECTION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON–EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTION–ABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULAR–ITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PRO–VIDED AFTER EACH RAIN EVENT.
9. STABILIZATION SHALL BE AS PER THE CHART BELOW:

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC. OR LESS)	B (5–10 AC.)
1	0.5–3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1–5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1–8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP–RAP 4–8" RECYCLED CONCRETE EQUIVALENT
4	8.1–20%	LINED 4–8" RIP–RAP	ENGINEERED DESIGN

TEMPORARY SWALE DETAIL

(N.T.S.)

REQUIRED POST–CONSTRUCTION STORMWATER MANAGEMENT PRACTICE COMPONENTS:

1. Pursuant to the NYSDEC "SPDES General Permit for Stormwater Discharges from Construction Activity" (GP–0–20–001), all construction projects needing post–construction stormwater management practices shall prepare a SWPPP that also includes practices designed in conformance with the most current version of the technical standard, New York State Stormwater Management Design Manual ("Design Manual"). Where post–construction stormwater management practices are not designed in conformance with this technical standard, the owner or operator must demonstrate equivalence to the technical standard. The following list of SWPPP components is provided in accordance with Part III.B.2a–g and III.B.3:

   a. Identification of all post–construction stormwater management practices to be constructed as part of the project; This plan, and details/notes shown hereon serve to satisfy this SWPPP requirement.

   b. A site map/construction drawing(s) showing the specific location and size of each post–construction stormwater management practice; This plan, and details/notes shown hereon serve to satisfy this SWPPP requirement.

   A Stormwater Modeling and Analysis Report including pre–development conditions, post–development conditions, the results of the stormwater modeling, a summary table demonstrating that each practice has been designed in conformance with the sizing criteria, identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required. The required analysis will be provided in a Preliminary Stormwater Pollution Prevention Plan.

   c. Soil testing results and locations. This SWPPP requirement will be provided in the Preliminary Stormwater Pollution Prevention Plan.

   d. Infiltration testing results. This SWPPP requirement will be provided in the Preliminary Stormwater Pollution Prevention Plan.

   e. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post–construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice. The Permanent Stormwater Facilities Maintenance Schedule provided on these plans serves to satisfy this requirement.

2. Enhanced Phosphorus Removal Standards – Beginning on September 30, 2008, all construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post–construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the most current version of the technical standard, New York Stormwater Management Design Manual. At a minimum, the post–construction stormwater management practice component of the SWPPP shall include items 2.a – 2.f above: These standards do not apply to the subject project.

EROSION & SEDIMENT CONTROL NOTES:

1. The Erosion and Sediment Control Plan is only to be referred to for the installation of erosion and sediment control measures. For all other construction related activities, including, but not limited to, grading and utilities, refer to the appropriate drawings.
2. Each contractor or subcontractor responsible for soil disturbance shall have a NYSDEC trained contractor onsite during soil disturbing activities. The NYSDEC trained contractor will be responsible to comply with the stormwater pollution prevention plan and for the implementation and maintenance of erosion and sediment control measures on this site prior to and during construction. The NYSDEC trained contractor shall sign a certification statement required by GP–0–20–001.
3. All construction activities involving the removal or disposition of soil are to be provided with appropriate protective measures to minimize erosion and contain sediment disposition within. Minimum soil erosion and sediment control measures shall be implemented as shown on the plans and shall be installed in accordance with "New York Standards and Specifications For Erosion and Sediment Control," latest edition.
4. Wherever feasible, natural vegetation should be retained and protected. Disturbance shall be minimized in the areas required to perform construction. No more than 5 acres of unprotected soil shall be exposed at any one time, unless prior authorization is granted by the MS4.
5. When land is exposed during development, the exposure shall be kept to the shortest practical period of time, but in no case more than 7 days after the construction activity in that portion of the site has ceased. Disturbance shall be minimized in the areas required to perform construction.
6. All construction vehicles shall be kept clear of the watercourses and wetland control areas and outside the areas of proposed development. Silt fence and orange construction fence shall be installed in the areas where the grading is in close proximity of the watercourses or wetland control areas.
7. The stabilized construction entrance and silt fence shall be installed as shown on the plans prior to beginning any clearing, grubbing or earthwork.
8. All topsoil to be stripped from the area being developed shall be stockpiled and immediately seeded with a rye grass mixture having a quick germination time.
9. Any graded areas not subject to further disturbance or construction traffic shall, within 7 days of final grading, receive permanent vegetation cover in combination with a suitable mulch. Refer to "Site Seeding Notes" for additional detail and application rate.
10. Grass seed mix may be applied by either mechanical or hydroseeding methods. Turf establishment shall be performed in accordance with the current edition of the NYSDOT Standard Specification, Construction and Materials, Section 610–3.02, Method No. 1".
11. Cut or fill (all) slopes steeper than 3:1 shall be stabilized immediately after grading with a rolled erosion control product (RECP) such as, Curlex I Single Net Erosion Control Blanket, or approved equal.
12. Paved roadways shall be kept clean at all times.
13. The site shall at all times be graded and maintained such that all stormwater runoff is diverted to soil erosion and sediment control facilities.
14. All storm drainage outlets shall be stabilized, as required, before the discharge points become operational.
15. Stormwater from disturbed areas must be passed through erosion control barriers before discharge beyond disturbed areas or discharged into other drainage systems.
16. Erosion and sediment control measures shall be inspected and maintained on a daily basis by the NYSDEC Trained Contractor, to insure that channels, temporary and permanent ditches and pipes are clear of debris, that embankments and berms have not been breached and that all straw bales and silt fences are intact. Any failure of erosion and sediment control measures shall be immediately repaired by the contractor and inspected for approval by the site engineer.
17. Dust shall be controlled by sprinkling or other approved methods as necessary, or as directed by the trained contractor or site engineer.
18. Cut and fills shall not endanger adjoining property, nor divert water onto the property of others.
19. All fills shall be placed and compacted in 6" lifts to provide stability of material and to prevent settlement.
20. The NYSDEC Trained Contractor shall inspect downstream conditions for evidence of sedimentation on a weekly basis and after rainstorms.
21. As warranted by field conditions, special additional erosion and sediment control measures, as specified by the site engineer and the Town Engineer shall be installed by the contractor.
22. Erosion and sediment control measures shall remain in place until all disturbed areas are suitably stabilized.
23. After completion of the site improvements, the owner will assume responsibility for maintenance of the access drive, parking lot, drainage system and stormwater facilities. Each spring the paved areas shall be cleaned to remove the winter accumulation of traction sand. After this is completed all drain inlet and catch basin sumps should be cleaned. All pipes should be checked for debris and blockage and cleaned as required. During the cleaning process, the drain inlets, catch basins and pipes should be inspected for structural integrity and overall condition. Repairs and/or replacements should be made as required.
24. Inspection of the stormwater basin should be performed every 6 months and after large storm events. These inspections should, at a minimum, check the outlet pipes for blockage and the general overall integrity of the basin and appurtenances.
25. Maintain basin vegetation including removal of trees and replacement of vegetation that should die. Remove any litter which accumulates as necessary. Typically, the accumulated silt will be required to be removed every 10 to 20 years. Any accumulated silt shall be removed from the stormwater basins once the site has been stabilized.
26. Refer to the Stormwater Pollution Prevention Plan for additional details regarding long–term maintenance of the storm drainage facilities.

EROSION AND SEDIMENT CONTROL MAINTENANCE SCHEDULE

	MONITORING REQUIREMENTS			MAINTENANCE REQUIREMENTS	
PRACTICE	DAILY	WEEKLY	AFTER RAINFALL	DURING CONSTRUCTION	AFTER CONSTRUCTION
SILT FENCE BARRIER	–	Inspect	Inspect	Clean/Replace	Remove
STABILIZED CONSTRUCTION ENTRANCE	Inspect	–	Inspect	Clean/Replace Stone and Fabric	Remove
DUST CONTROL	Inspect	–	Inspect	Mulching/ Spraying Water	N/A
*VEGETATIVE ESTABLISHMENT	–	Inspect	Inspect	Water/Reseed/ Remulch	Reseed to 80% Coverage
INLET PROTECTION	–	Inspect	Inspect	Clean/Repair/ Replace	Remove
SOIL STOCKPILES	–	Inspect	Inspect	Mulching/ Silt Fence Repair	Remove
SWALES	–	Inspect	Inspect	Clean/Mulch/ Repair	Mow Permanent Grass/Replace/ Repair Rip Rap
CHECK DAMS	–	Inspect	Inspect	Clean/Replace Stones/Repair	Clean/Replace Stones/Repair
CONCRETE DRAINAGE STRUCTURES	–	Inspect	Inspect	Clean Sumps/ Remove Debris/ Repair/Replace	Clean Sumps/ Remove Debris/ Repair/Replace
DRAINAGE PIPES	–	Inspect	Inspect	Clean/Repair	Clean/Repair
ROAD & PAVEMENT	–	Inspect	Inspect	Clean	Clean

* Permanent vegetation is considered stabilized when 80% of the plant density is established. Erosion control measures shall remain in place until all disturbed areas area permanently stabilized.

Note: The party responsible for implementation of the maintenance schedule during and after construction is:

BEACON VIEWS, LLC
500 RIVER AVENUE
WAKEFIELD, NEW JERSEY 08701

and/or the current owner(s) of the subject property.

SOIL RESTORATION REQUIREMENTS[1,2]

(ONSITE SOILS WITHIN THE LIMIT OF DISTURBANCE BELONG TO THE HYDROLOGIC SOIL GROUP (HSG) C/D)

TYPE OF SOIL DISTURBANCE	SOIL RESTORATION REQUIREMENT		COMMENTS/EXAMPLES
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only – no change in grade	~~HSG A & B~~ ~~Apply 6" of topsoil~~	HSG C & D Aerate[3] and apply 6" of topsoil	Protect area from any ongoing construction activities
Areas of cut or fill	~~HSG A & B~~ ~~Aerate and apply 6" of topsoil~~	HSG C & D Apply full Soil Restoration[4]	
Heavy traffic areas on site (especially in a zone 5–25 feet around buildings but not within a 5 foot perimeter around foundation walls.)	Apply full Soil Restoration[5] (de–compaction and compost enhancement)[6]		
Areas where runoff reduction and/or infiltration practices are applied	Restoration not required, but may be applied for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practices from any ongoing construction activities construction a single phase operation fence area.
~~Redevelopment projects~~	~~Soil restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.~~		

1. Table taken from Chapter 5 of the "New York State Stormwater Management Design Manual"
2. Items struck out on the table are items that are not applicable to this project.
3. Aeration includes the use of machines such as tractor–drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which functions like a mini–subsoiler.
4. Per "Deep Ripping and Decompaction, DEC 2008"
5. During periods of relatively low to moderate subsoil moisture, the disturbed soils are returned to rough grade and the following Soil Restoration steps applied:
   5.1. Apply 3 inches of compost over subsoil.
   5.2. Till compost into subsoil to a depth of at least 12 inches using a cat–mounted ripper, tractor–mounted disc, or tiller, mixing, and circulating air and compost into subsoils.
   5.3. Rock–pick until uplifted stone/rock materials of four inches and larger size area cleaned off the site.
   5.4. Apply topsoil to a depth of 6 inches.
   5.5. Vegetate as required by Erosion & Sediment Control Note #9.
   5.6. Tilling should not be performed within the drip line of any existing trees or over any utility installations that are within 24 inches of the surface
6. Compost shall be aged, from plant derived materials, free of viable weed seeds, have no visible free water or dust produced when handling, pass through a half inch screen and have a pH suitable to grow desired plants.

NO.	DATE	REVISION	BY
2	5–26–20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4–28–20	RESUBMISSION TO PLANNING BOARD	JFR

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Carmel, NY 10512
(845) 225–9690
(845) 225–9717 fax
www.insite–eng.com

PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
DETAILS

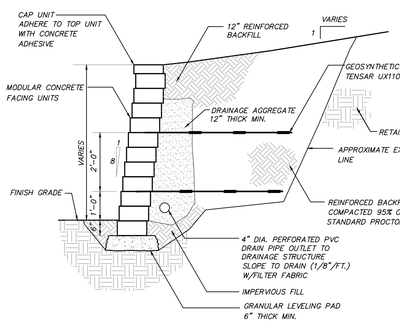
STATE OF NEW YORK — JAMES J. CONDON — 21931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8–27–19	DRAWN BY	J.F.R.
SCALE	AS NOTED	CHECKED BY	A.D.T.

DRAWING NO. D–3 — SHEET 13 / 15

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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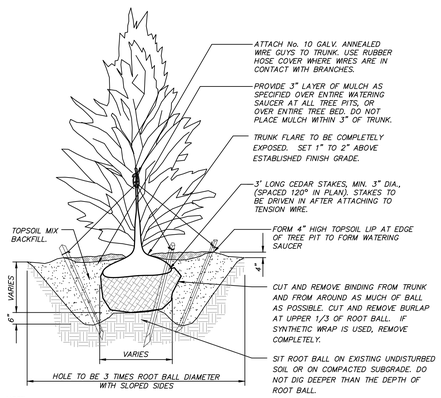


NOTES:

1. STRIP VEGETATION AND ORGANIC SOIL FROM WALL AND GEOSYNTHETIC ALIGNMENT.
2. BENCH CUT ALL EXCAVATED SLOPES.
3. DO NOT OVER EXCAVATE UNLESS DIRECTED BY SITE ENGINEER TO REMOVE UNSUITABLE SOIL.
4. SITE ENGINEER SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
5. LEVELING PAD SHALL CONSIST OF COMPACTED COARSE SAND OR CRUSHED GRAVEL, 6" THICK MIN.
6. CONTRACTOR MAY OPT FOR A LEAN CONCRETE PAD. CONCRETE PAD SHALL BE UNREINFORCED, 3" THICK MAXIMUM.
7. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE 6".
8. FOR UNITS TO BE EMBEDDED, COMPACT FILL IN FRONT OF UNITS AT THE SAME TIME FILL BEHIND UNITS IS COMPACTED.
9. DRAINAGE AGGREGATE SHALL BE INSTALLED DIRECTLY BEHIND THE WALL WITHIN 12" OF THE TOP OF THE WALL. DRAINAGE AGGREGATE SHALL NOT EXTEND BELOW FINAL GRADE IN FRONT OF WALL.
10. COMPACTION SHALL BE TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.(ASTM D-698)
11. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE SITE SOILS ENGINEER.
12. COMPACTION WITHIN 3 FT. OF WALL SHALL BE LIMITED TO HAND OPERATED EQUIPMENT.
13. GEOSYNTHETIC SHALL BE PLACED WITH STRONGEST DIRECTION PERPENDICULAR TO WALL. FOLLOW GEOSYNTHETIC MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
14. CONTRACTOR SHALL DIRECT SURFACE RUNOFF TO AVOID DAMAGING WALL WHILE UNDER CONSTRUCTION.
15. ANY SURFACE DRAINAGE FEATURES, FINISH GRADING, PAVEMENT, OR TURF SHALL BE INSTALLED IMMEDIATELY AFTER WALL IS COMPLETED.
16. FOLLOW APPLICABLE PROVISIONS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
17. MODULAR BLOCK RETAINING WALL AT STEPS TO BE INSTALLED VERTICALLY (NO BATTER)
18. MODULAR BLOCK RETAINING WALL MANUFACTURER TO SUPPLY CONSTRUCTION DETAILS OF WALL SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE STATE OF NEW YORK.

MODULAR BLOCK RETAINING WALL DETAIL

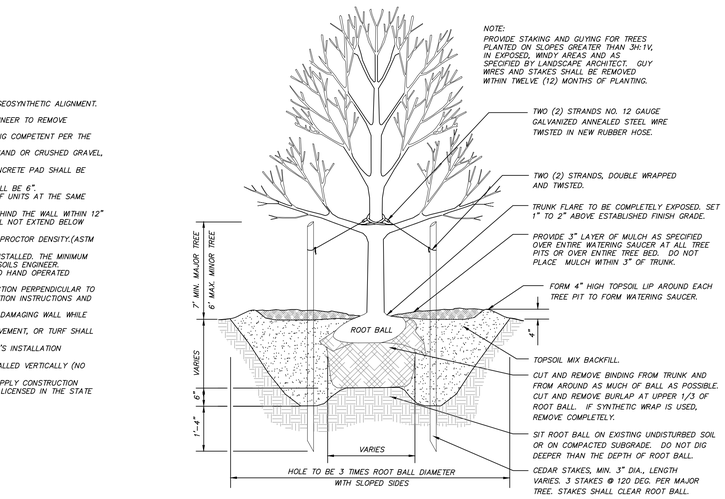
(N.T.S.)



NOTE:
PROVIDE STAKING AND GUYING FOR TREES PLANTED ON SLOPES GREATER THAN 3H:1V, IN EXPOSED, WINDY AREAS AND AS SPECIFIED BY LANDSCAPE ARCHITECT. GUY WIRES AND STAKES SHALL BE REMOVED WITHIN TWELVE MONTHS OF PLANTING.

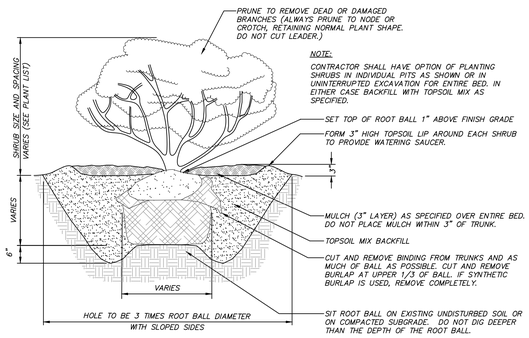
EVERGREEN TREE PLANTING DETAIL

(N.T.S.)



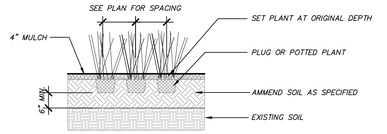
TREE PLANTING DETAIL

(N.T.S.)



SHRUB PLANTING DETAIL

(N.T.S.)



PERENNIAL / ORNAMENTAL GRASS PLANTING DETAIL

(N.T.S.)

GENERAL SITE SEEDING NOTES:

1. All proposed seeded areas to receive 4" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
2. Upon final grading and placement of topsoil and any required soil amendments, areas to receive permanent vegetation cover in combination with suitable mulch as follows:
   - select seed mixture per drawings and seeding notes.
   - fertilizer applied at the manufacturer's recommended rate using Lesco 10-0-18 (no phosphorous) fertilizer or equivalent.
   - mulch: salt hay or small grain straw applied at a rate of 90 lbs./1000 s.f. or 2 tons/acre, to be applied and anchored according to New York State Standards and Specifications for Erosion and Sediment Control, August 2005.
   - if the season prevents the establishment of a permanent vegetation cover, the disturbed areas will be mulched with straw or equivalent.
3. The seed mixes as specified on these drawings are as follows:
   A. Seed Mix for lawn areas and mow strip along roads at a rate of 100 lbs. per acre:

Kentucky Bluegrass	20%
Creeping Red Fescue	40%
Perennial Ryegrass	20%
Annual Ryegrass	20%

4. Seed Mix #2 for areas as shown on the drawings, including tops of berms and backslopes of embankments of stormwater basins at a rate of 25 lbs. per acre: New England Conservation/Wildlife Mix from New England Wetland Plants, Inc. of Amherst, MA.
5. Seed Mix #3 for areas as shown on the drawings in the bioFiltration filter at a rate of 18 lbs per acre: Erosion Control/ Restoration Mix for Detention Basins and Moist Sites from New England Wetland Plants, Inc. of Amherst MA.

GENERAL PLANTING NOTES:

1. All proposed planting beds to receive a 12" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
2. Any new soils added will be amended as required by results of soil testing and placed using a method that will not cause compaction.
3. No fertilizer shall be added in stormwater basin plantings. Nutrient requirements to be met by incorporation of acceptable organic matter.
4. All plant material to be nursery grown.
5. Plants shall conform with ANSI Z60.1 American Standard for Nursery Stock in all ways including dimensions.
6. Plant material shall be taken from healthy nursery stock.
7. All plants shall be grown under climate conditions similar to those in the locality of the project.
8. Plants shall be planted in all locations designed on the plan or as staked in the field by the Landscape Architect.
9. The location and layout of landscape plants shown on the site plan shall take precedence in any discrepancies between the quantities of plants shown on the plans and the quantity of plants in the Plant List.
10. Provide a 3" layer of shredded pine bark mulch (or as specified) over entire watering saucer at all tree pits or over entire planting bed. Do not place mulch within 3" of tree or shrub trunks.
11. All landscape plantings shall be maintained in a healthy condition at all times. Any dead or diseased plants shall immediately be replaced "in kind" by the contractor (during warranty period) or project owner.

GENERAL SITE SEEDING NOTES:

1. All proposed seeded areas to receive 4" min. depth of topsoil. Soil amendments and fertilizer application rates shall be determined based on specific testing of topsoil material.
2. Upon final grading and placement of topsoil and any required soil amendments, areas to receive permanent vegetation cover in combination with suitable mulch as follows:
   - select seed mixture per drawings and seeding notes.
   - fertilizer applied at the manufacturer's recommended rate using Lesco 10-0-18 (no phosphorous) fertilizer or equivalent.
   - mulch: salt hay or small grain straw applied at a rate of 90 lbs./1000s.f. or 2 tons/acre, to be applied and anchored according to New York State Standards and Specifications for Erosion and Sediment Control, August 2005.
   - if the season prevents the establishment of a permanent vegetation cover, the disturbed areas will be mulched with straw or equivalent.
3. Seed Mix #1 for areas as shown on the drawings, including tops of berms and backslopes of embankments of stormwater basins at a rate of 25 lbs. per acre: New England Conservation/Wildlife Mix from New England Wetland Plants, Inc. of Amherst, MA.
4. Seed Mix #2 for areas as shown on the drawings in stormwater basins with no standing water at a rate of 18 lbs per acre: Erosion Control/ Restoration Mix for Detention Basins and Moist Sites from New England Wetland Plants, Inc. of Amherst MA.
5. Seed Mix #3 for all other disturbed areas not specified as seed mix #1 or #2. Primarily for lawn areas and mow strip along roads at a rate of 100 lbs. per acre:

Kentucky Bluegrass	20%
Creeping Red Fescue	40%
Perennial Ryegrass	20%
Annual Ryegrass	20%

6. Seed mixes to be planted between March 21 and May 20, or between August 15 and October 15 or as directed by project representative.
7. Mulch: Salt hay or small grain straw applied at a rate of 90 lbs./1000 S.F. or 2 tons/acre, to be applied and anchored according to "New York Standards and Specification For Erosion and Sediment Control," latest edition.
8. Grass seed mix may be applied by either mechanical or hydroseeding methods. Seeding shall be performed in accordance with the current edition of the "NYSDOT Standard Specification, Construction and Materials, Section 610-3.02, Method No. 1". Hydroseeding shall be performed using materials and methods as approved by the site engineer.

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

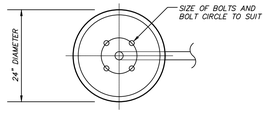
DRAWING:
DETAILS

STATE OF NEW YORK — JEFFREY J. CONTARINO — 31937 — LICENSED PROFESSIONAL ENGINEER

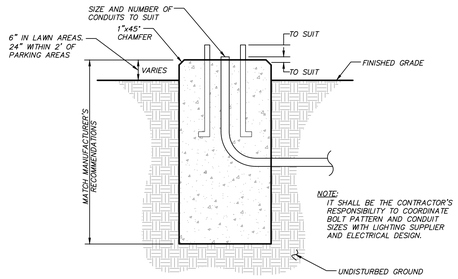
PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.	DRAWING NO.	SHEET
DATE	8-27-19	DRAWN BY	J.F.R.	D-2	12 / 15
SCALE	AS NOTED	CHECKED BY	A.D.T.		

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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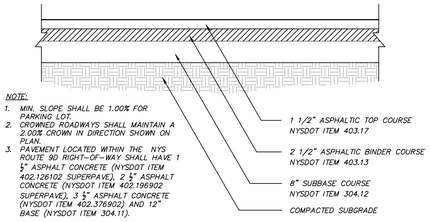
PLAN VIEW



SECTION

LIGHT POLE BASE DETAIL

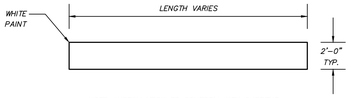
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NOTE:
1. MIN. SLOPE SHALL BE 1.00% FOR PARKING LOT.
2. CROWNED ROADWAYS SHALL MAINTAIN A 2.00% CROWN IN DIRECTION SHOWN ON PLAN.
3. PAVEMENT LOCATED WITHIN THE NYS ROUTE 9D RIGHT-OF-WAY SHALL HAVE 1 ½" ASPHALT CONCRETE (NYSDOT ITEM 402.126102 SUPERPAVE), 2 ½" ASPHALT CONCRETE (NYSDOT ITEM 402.196902 SUPERPAVE), 3 ½" ASPHALT CONCRETE (NYSDOT ITEM 402.376902) AND 12" BASE (NYSDOT ITEM 304.11).

SITE PAVEMENT DETAIL

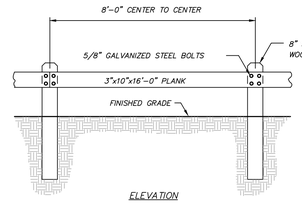
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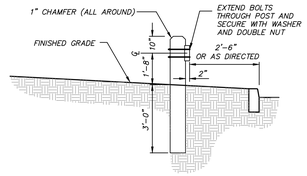
NOTE: INSTALLATION TO CONFORM WITH CURRENT NYSDOT STANDARDS AND SPECIFICATIONS.

PAINTED STOP BAR DETAIL

(N.T.S.)



ELEVATION

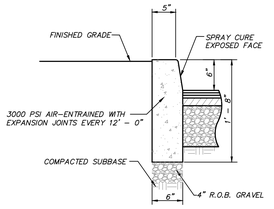


SECTION

NOTES:
1. ALL WOOD TO BE SEASONED NO.1 DOUGLAS FIR, SOUTHERN PINE OR OTHER APPROVED STRUCTURAL LUMBER.
2. ALL WOOD TO BE TREATED WITH AN APPROVED WOOD PRESERVATIVE SUITABLE FOR INSTALLATION IN AND ADJACENT TO GROUND SURFACES.

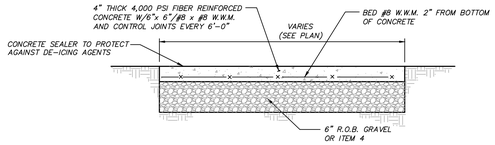
WOOD GUIDE RAIL DETAIL

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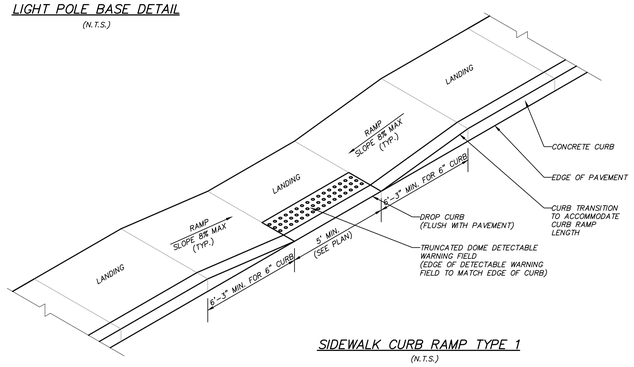
CONCRETE CURB DETAIL

(N.T.S.)



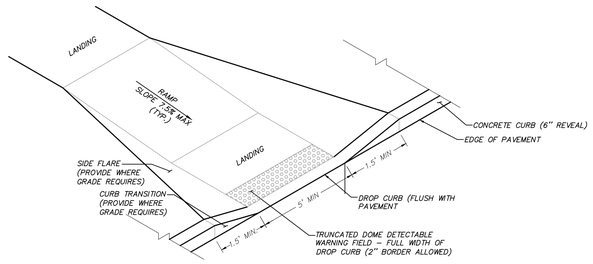
CONCRETE SIDEWALK DETAIL

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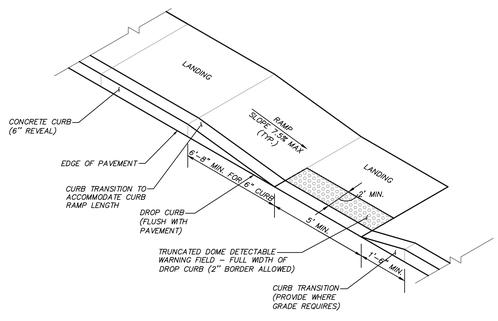
SIDEWALK CURB RAMP TYPE 1

(N.T.S.)



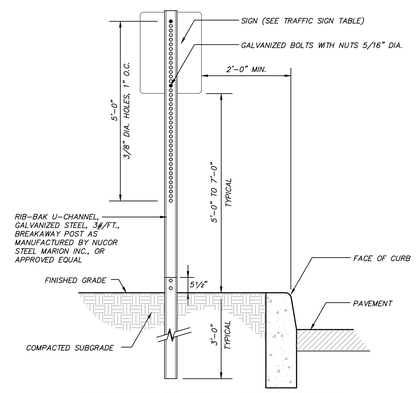
SIDEWALK CURB RAMP TYPE 2

(N.T.S.)



SIDEWALK CURB RAMP TYPE 3

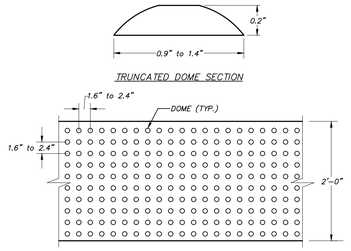
(N.T.S.)



NOTE: FOR HANDICAP PARKING SIGNAGE, SIGNS SHALL BE INSTALLED AT A CLEAR HEIGHT OF BETWEEN 5'-0" AND 7'-0" ABOVE GRADE OF PARKING SPACE AND SUCH THAT SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

TRAFFIC SIGN DETAIL

(N.T.S.)



TRUNCATED DOME SECTION

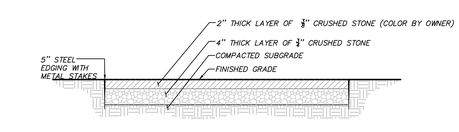
TRUNCATED DOME SPACING

TRUNCATED DOME DETAIL

(N.T.S.)

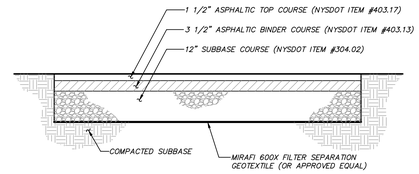
TRUNCATED DOME DETECTABLE WARNING FIELD NOTES:

1. The detectable warning field shall consist of raised truncated domes with a nominal diameter of 0.9 inches, a nominal height of 0.2 inches, and a nominal spacing of 2.35 inches on center in accordance with the most recent version of ANSI ICC A117.1.
2. The details provided are not drawn to scale. The quantity of domes depicted on the detectable warning field (the domes and the entire 24 inch level surface) is for illustration only.
3. The size of the detectable warning field shall be 24 inches in the direction of travel and shall extend the full width of the curb ramp or flush surface, exclusive of side flares.
4. Detectable warnings shall be located so that the edge of the warning field nearest to the roadway or street surface is 6 inches to 9 inches from the edge of the roadway/street, or from the front of the dropped curb, where a dropped curb continues across the bottom of the sidewalk curb ramp.
5. Domes shall be aligned on a square grid in the predominant direction of travel.
6. The detectable warning field shall be yellow.



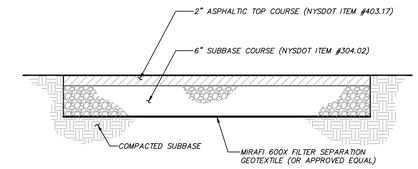
GRAVEL WALKWAY DETAIL

(N.T.S.)



RIGHT OF WAY ASPHALT DETAIL

(N.T.S.)



PRIVATE DRIVEWAY ASPHALT DETAIL

(N.T.S.)

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

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(845) 225-9717 fax
www.insite-emp.com

PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

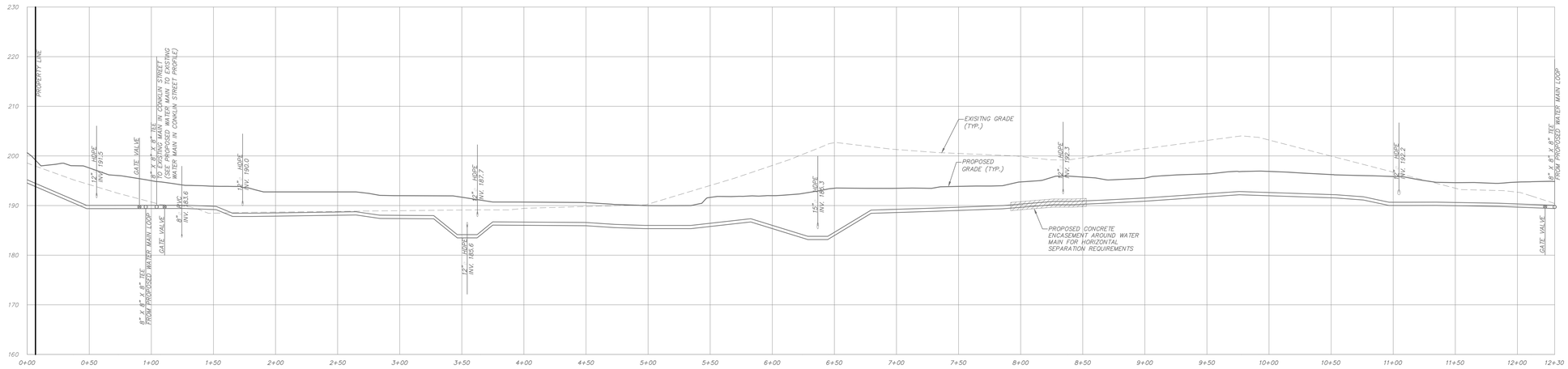
DRAWING:
DETAILS

STATE OF NEW YORK — JAMES J. CONTINO — 21931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.	DRAWING NO.	SHEET
DATE	8-27-19	DRAWN BY	J.F.R.	D-1	11 / 15
SCALE	AS NOTED	CHECKED BY	A.D.T.		

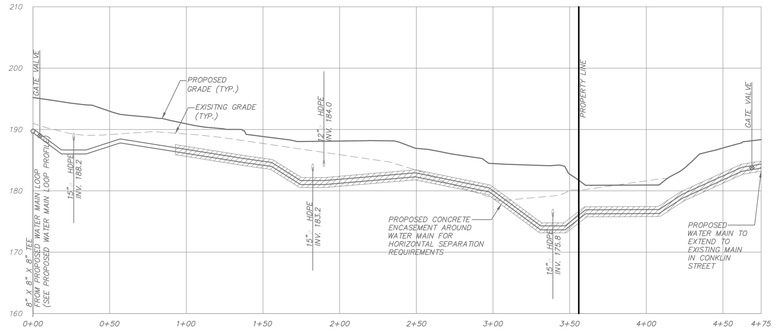
ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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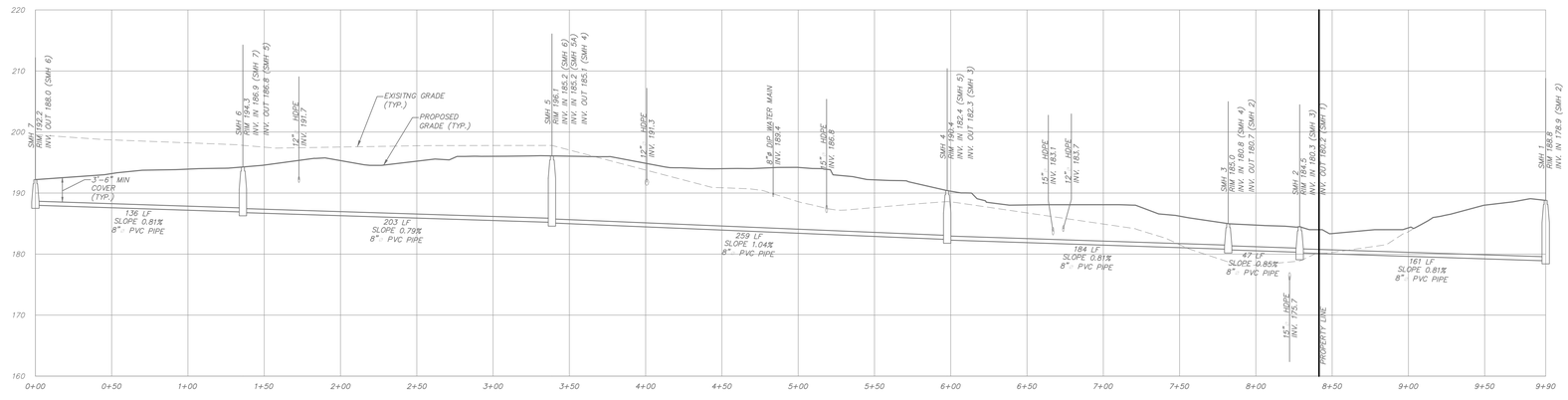
PROPOSED WATER MAIN LOOP PROFILE

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



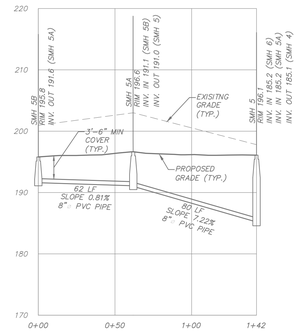
PROPOSED WATER MAIN TO EXISTING WATER MAIN IN CONKLIN STREET PROFILE

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



SMH 7 TO SMH 1

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



SMH 5B TO SMH 5

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 inch = 40 ft.

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

NO.	DATE	REVISION	BY

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(845) 225-9717 fax
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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

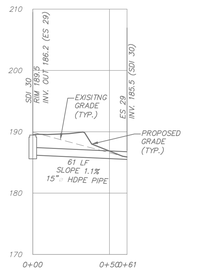
DRAWING:
WATER & SEWER PROFILES

STATE OF NEW YORK — ERNEST J. CONTENTO — 21931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	E.J.P.
SCALE	AS SHOWN	CHECKED BY	Z.M.P.

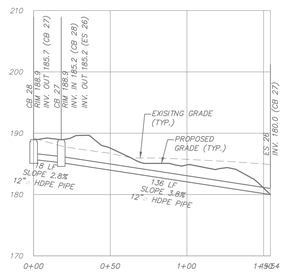
DRAWING NO. PR-2
SHEET 10 / 15

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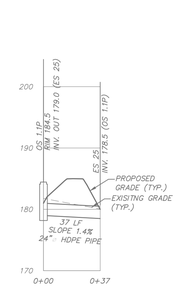
SDI 30 TO ES 29

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



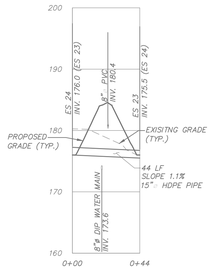
CB 28 TO ES 26

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



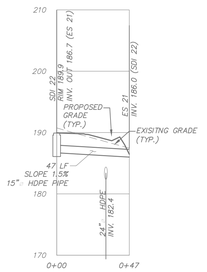
OS 1.1P TO ES 25

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



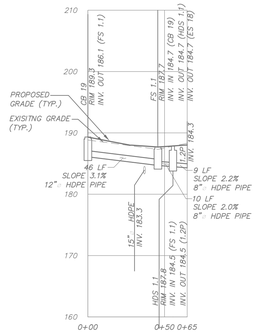
ES 24 TO ES 23

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



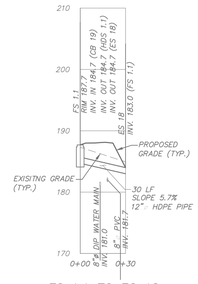
SDI 22 TO ES 21

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



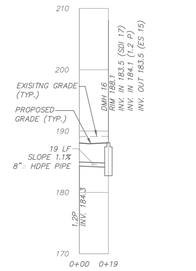
CB 19 TO INFILTRATION SYSTEM 1.2P

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



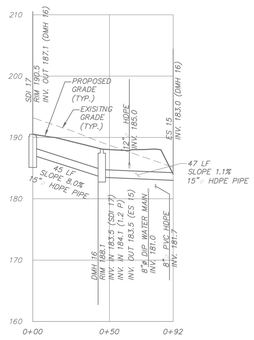
FS 1.1 TO ES 18

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



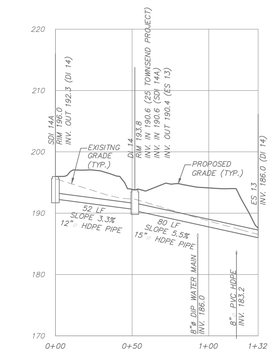
INFILTRATION SYSTEM 1.1P TO DMH 16

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



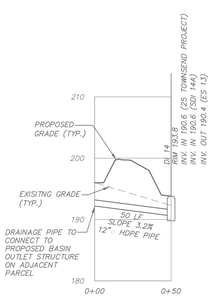
SDI 17 TO ES 15

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



SDI 14A TO ES 13

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



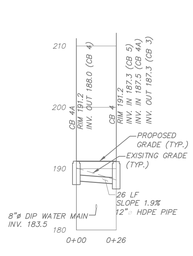
DRAINAGE EXTENSION FROM ADJACENT PROJECT TO DI 14

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



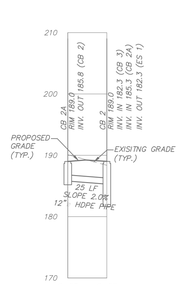
SDI 12 TO ES 8

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



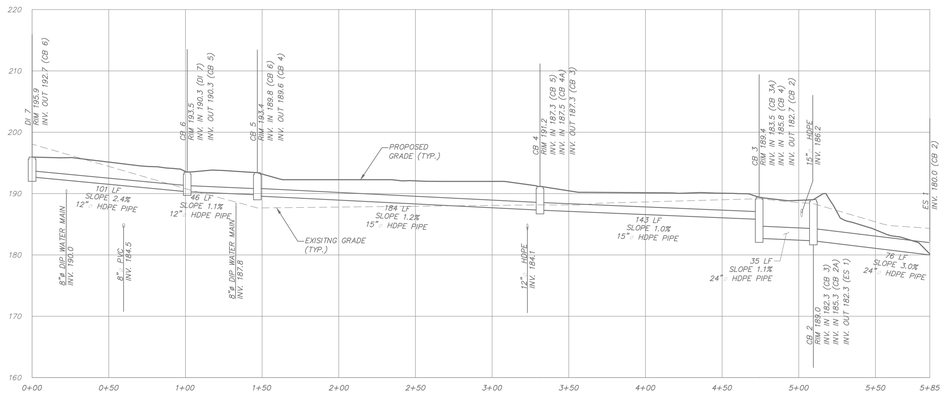
CB 4A TO CB 4

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



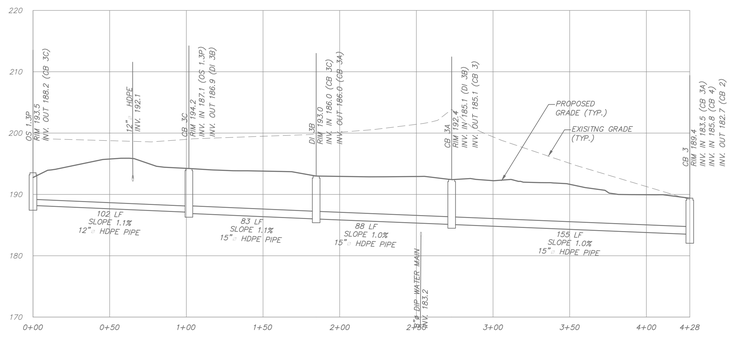
CB 2A TO CB 2

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



DI 7 TO ES 1

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'



OS 1.3P TO CB 3

SCALE: HORIZ. 1" = 40'
VER. 1" = 10'

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GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY

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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
DRAINAGE PROFILES

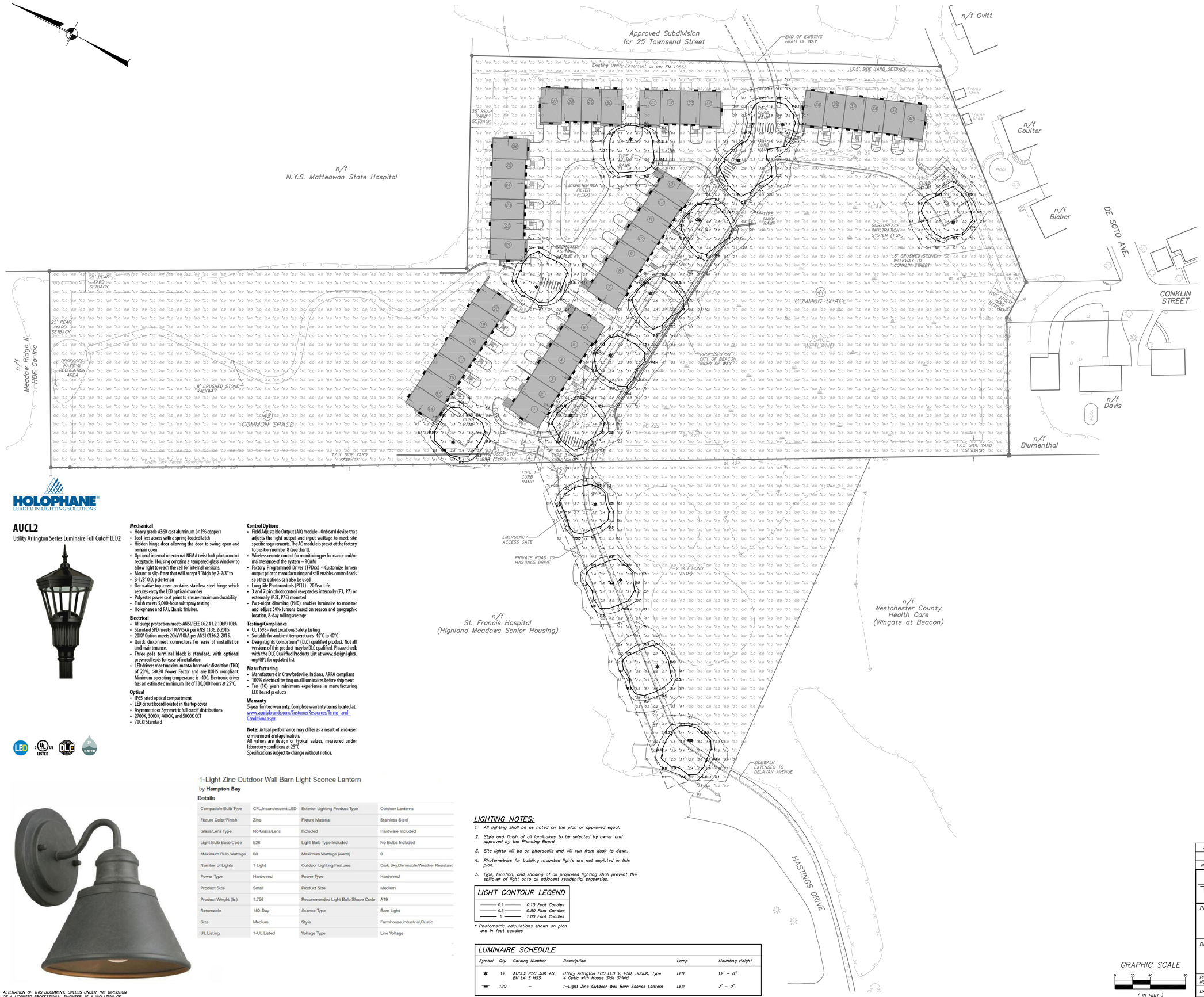
STATE OF NEW YORK — STANLEY J. CONTANT — 19131 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	E.J.P.
SCALE	AS SHOWN	CHECKED BY	Z.M.P.

DRAWING NO. PR-1

SHEET 9 / 15

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- EXISTING WETLAND FLAG
- EXISTING TREE LINE
- PROPOSED SIGN
- PROPOSED DOOR LOCATION
- PROPOSED # OF STALLS TO BE STRIPED
- PROPOSED CONCRETE CURB
- PROPOSED EDGE OF SIDEWALK
- PROPOSED RETAINING WALL
- PROPOSED PAINTED STOPBAR
- PROPOSED CROSSWALK
- PROPOSED GUIDE RAIL
- PROPOSED POST MOUNTED LIGHT
- PROPOSED BUILDING MOUNTED LIGHT

LIGHTING NOTES:

1. *All lighting shall be as noted on the plan or approved equal.*
2. *Style and finish of all luminaires to be selected by owner and approved by the Planning Board.*
3. *Site lights will be on photocells and will run from dusk to dawn.*
4. *Photometrics for building mounted lights are not depicted in this plan.*
5. *Type, location, and shading of all proposed lighting shall prevent the spillover of light onto all adjacent residential properties.*

LIGHT CONTOUR LEGEND

- 0.1 — *0.10 Foot Candles*
- 0.5 — *0.50 Foot Candles*
- 1 — *1.00 Foot Candles*

* *Photometric calculations shown on plan are in foot candles.*

LUMINAIRE SCHEDULE

Symbol	Qty	Catalog Number	Description	Lamp	Mounting Height
✱	14	AUCL2 P50 30K AS BK L4 S HSS	Utility Arlington FCO LED 2, P50, 3000K, Type 4 Optic with House Side Shield	LED	12' – 0"
▬	120	–	1–Light Zinc Outdoor Wall Barn Sconce Lantern	LED	7' – 0"

GRAPHIC SCALE

0 20 40 80

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
2	5–26–20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4–28–20	RESUBMISSION TO PLANNING BOARD	JFR

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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
LIGHTING PLAN

STATE OF NEW YORK — JEFFREY J. CONTRATTO — P.E. 91931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8–27–19	DRAWN BY	J.F.R.
SCALE	1" = 40'	CHECKED BY	A.D.T.

DRAWING NO. LP–1 SHEET 8 / 15

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HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS

AUCL2
Utility Arlington Series Luminaire Full Cutoff LED2

Mechanical
- Heavy grade A360 cast aluminum (< 1% copper)
- Tool-less access with a spring-loaded latch
- Hidden hinge door allowing the door to swing open and remain open
- Optional internal or external NEMA twist lock photocontrol receptacle. Housing contains a tempered glass window to allow light to reach the cell for internal versions.
- Mount to slip-fitter that will accept 3" high by 2-7/8" to 3-1/8" O.D. pole tenon
- Decorative top cover contains stainless steel hinge which secures entry the LED optical chamber
- Polyester power coat paint to ensure maximum durability
- Finish meets 5,000-hour salt spray testing
- Holophane and RAL Classic finishes.

Electrical
- All surge protection meets ANSI/IEEE C62.41.2 10kV/10kA.
- Standard SPD meets 10kV/5kA per ANSI C136.2-2015.
- 20KV Option meets 20KV/10kA per ANSI C136.2-2015.
- Quick disconnect connectors for ease of installation and maintenance.
- Three pole terminal block is standard, with optional prewired leads for ease of installation
- LED drivers meet maximum total harmonic distortion (THD) of 20%. >0.90 Power Factor and are ROHS compliant. Minimum operating temperature is -40C. Electronic driver has an estimated minimum life of 100,000 hours at 25°C.

Optical
- IP65 rated optical compartment
- LED circuit board located in the top cover
- Asymmetric or Symmetric full cutoff distributions
- 2700K, 3000K, 4000K, and 5000K CCT
- 70CRI Standard

Control Options
- Field Adjustable Output (AO) module - Onboard device that adjusts the light output and input wattage to meet site specific requirements. The AO module is preset at the factory to position number 8 (see chart).
- Wireless remote control for monitoring performance and/or maintenance of the system – ROAM
- Factory Programmed Driver (FPDxx) - Customize lumen output prior to manufacturing and still enables control leads so other options can also be used
- Long Life Photocontrols (PCLL) - 20 Year Life
- 3 and 7 pin photocontrol receptacles internally (P3, P7) or externally (P3E, P7E) mounted
- Part-night dimming (PND) enables luminaire to monitor and adjust 50% lumens based on season and geographic location, 8-day rolling average

Testing/Compliance
- UL 1598 - Wet Locations Safety Listing
- Suitable for ambient temperatures -40°C to 40°C
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check with the DLC Qualified Products List at www.designlights.org/QPL for updated list

Manufacturing
- Manufactured in Crawfordsville, Indiana, ARRA compliant
- 100% electrical testing on all luminaires before shipment
- Ten (10) years minimum experience in manufacturing LED based products

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.

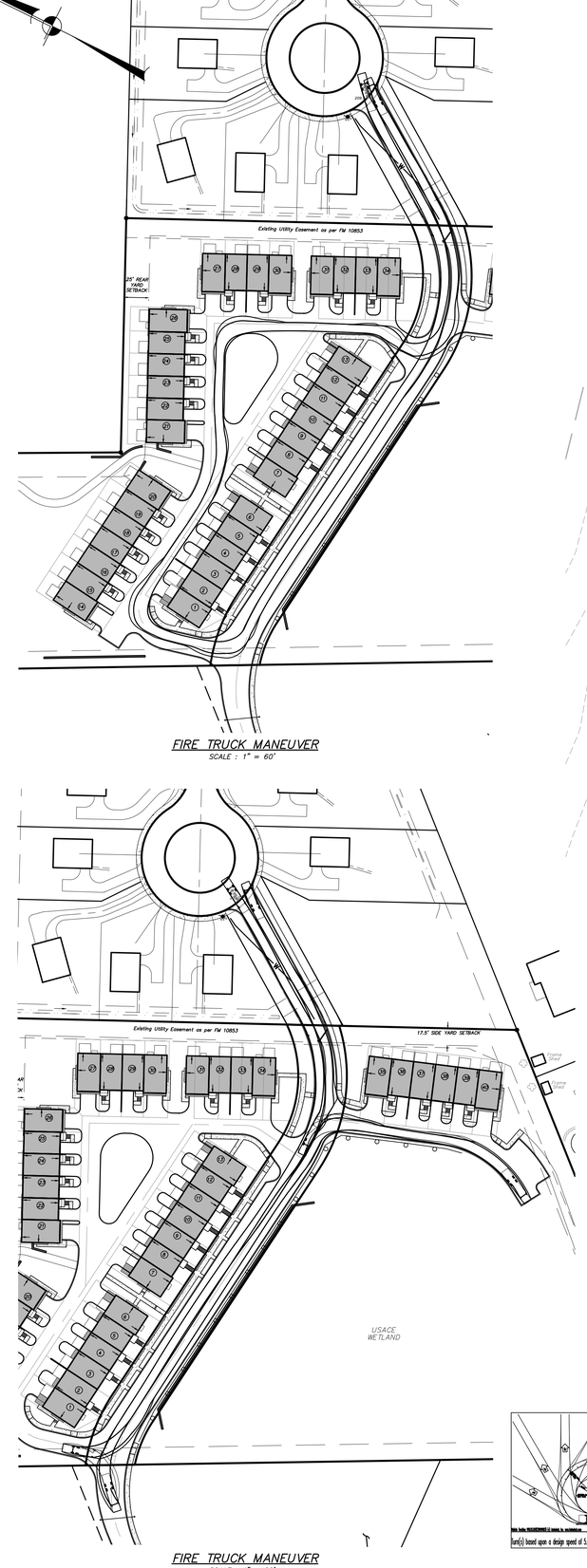
1-Light Zinc Outdoor Wall Barn Light Sconce Lantern
by **Hampton Bay**

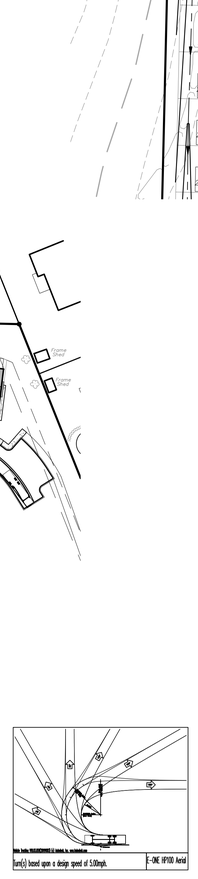
Details

Compatible Bulb Type	CFL,Incandescent,LED	Exterior Lighting Product Type	Outdoor Lanterns
Fixture Color/Finish	Zinc	Fixture Material	Stainless Steel
Glass/Lens Type	No Glass/Lens	Included	Hardware Included
Light Bulb Base Code	E26	Light Bulb Type Included	No Bulbs Included
Maximum Bulb Wattage	60	Maximum Wattage (watts)	0
Number of Lights	1 Light	Outdoor Lighting Features	Dark Sky,Dimmable,Weather Resistant
Power Type	Hardwired	Power Type	Hardwired
Product Size	Small	Product Size	Medium
Product Weight (lb.)	1.756	Recommended Light Bulb Shape Code	A19
Returnable	180-Day	Sconce Type	Barn Light
Size	Medium	Style	Farmhouse,Industrial,Rustic
UL Listing	1-UL Listed	Voltage Type	Line Voltage

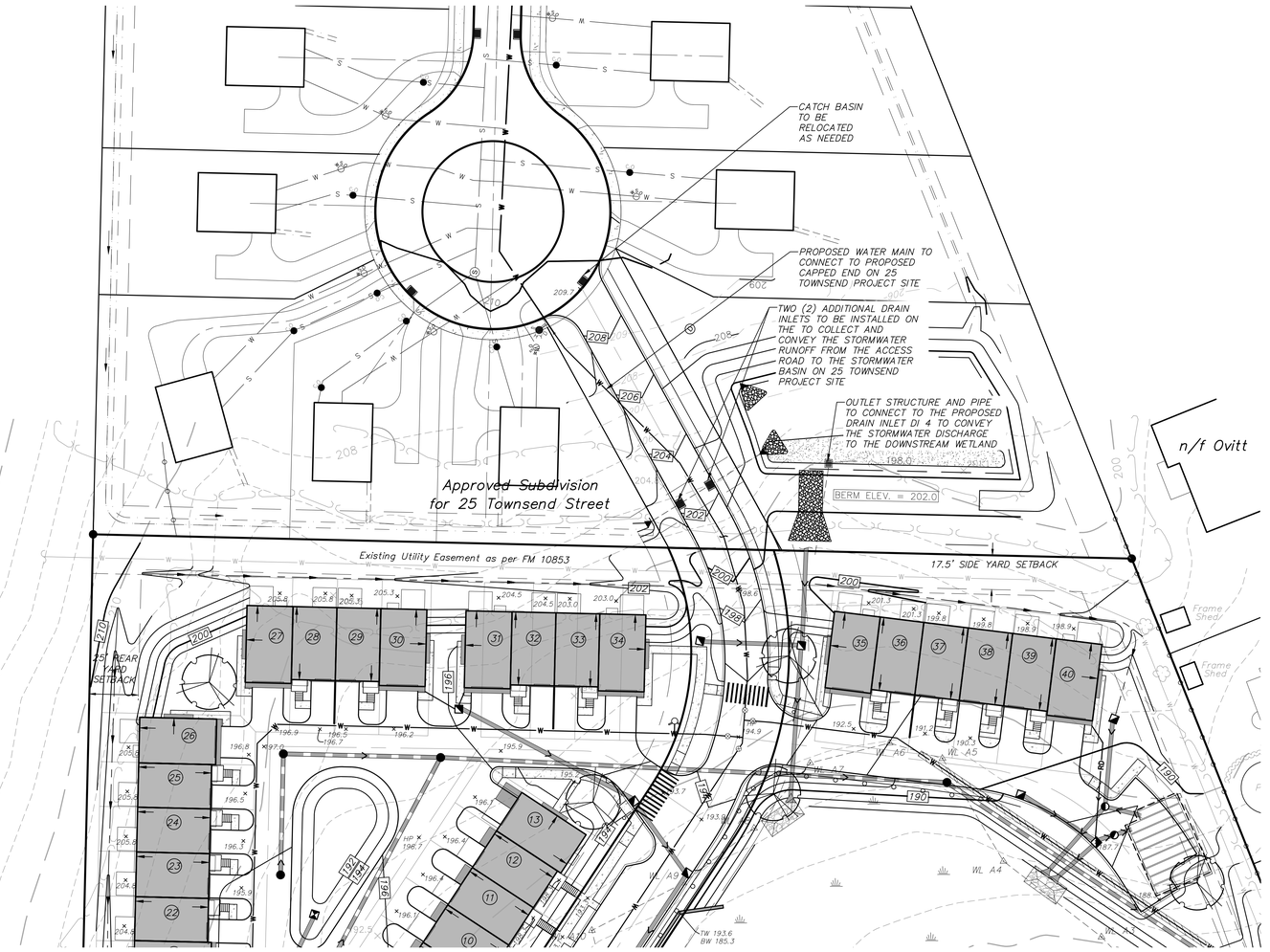
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FIRE TRUCK MANEUVER
SCALE : 1" = 60'





FIRE TRUCK MANEUVER
SCALE : 1" = 60'



25 TOWNSEND STREET THROUGH CONNECTION
SCALE : 1" = 30'

GRAPHIC SCALE
0 15 30
(IN FEET)
1 inch = 30 ft.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- EXISTING WETLAND FLAG (Wt. A23, Wt. A24)
- EXISTING TREE LINE
- PROPOSED SIGN
- PROPOSED DOOR LOCATION
- PROPOSED # OF STALLS TO BE STRIPED
- PROPOSED CONCRETE CURB
- PROPOSED EDGE OF SIDEWALK
- PROPOSED RETAINING WALL
- PROPOSED PAINTED STOPBAR
- PROPOSED CROSSWALK
- PROPOSED LANDSCAPING
- PROPOSED GUIDE RAIL
- PROPOSED POST MOUNTED LIGHT
- PROPOSED BUILDING MOUNTED LIGHT

Site Access Notes:

1. The applicant seeks to utilize the proposed connection to the right of way through the approved subdivision on 25 Townsend Street as its primary means of access for the Beacon Views Properties.
2. The road shown in the existing easement on the Highland Meadows Senior Housing Property would be utilized as an emergency access only, in this case.
3. In the event there is a delay in the construction of the road in the approved 25 Townsend Street right of way, the applicant would exercise the easement over the Highland Meadows Senior Housing Property, and utilize the proposed road thereon as the primary access to the site, until such time as the 25 Townsend Street road was constructed. At which time the road through the Highland Meadows Senior Housing Property easement would be gated and transitioned to emergency access only, as stated above.

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

NO.	DATE	REVISION	BY

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Carmel, NY 10512
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(845) 225-9717 fax
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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

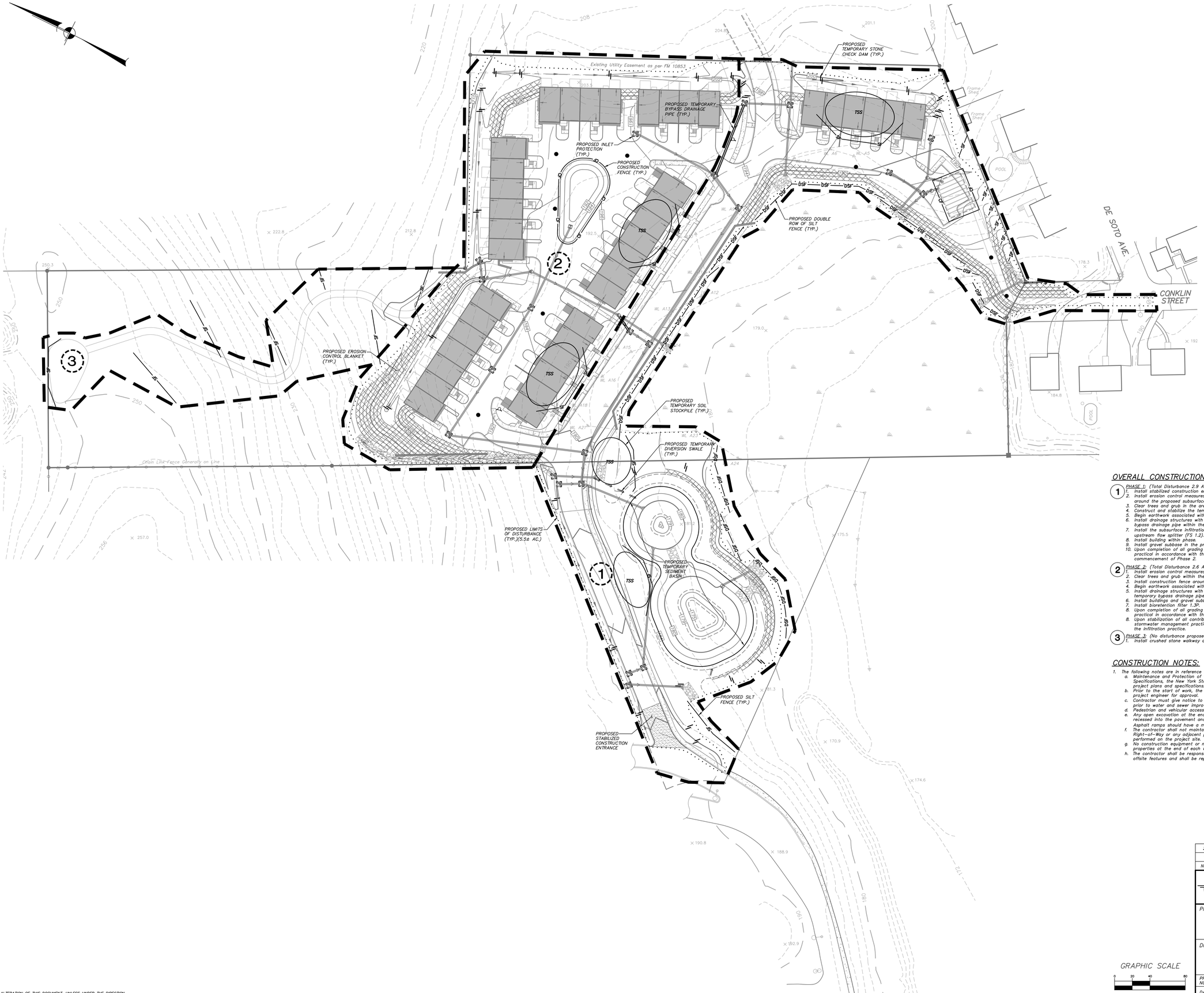
DRAWING:
SITE ACCESS PLAN

STATE OF NEW YORK — JEFFREY J. CONTI — 21931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	5-26-20	DRAWN BY	J.F.R.
SCALE	AS SHOWN	CHECKED BY	A.D.T.

DRAWING NO. SP-4
SHEET 7 / 15

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- EXISTING WETLAND FLAG
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT GRADE
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED SEWER MANHOLE
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION
- PROPOSED FIRE HYDRANT
- PROPOSED GRASS SWALE
- SF — PROPOSED SILT FENCE
- CF — PROPOSED CONSTRUCTION FENCE
- PROPOSED STONE RIP-RAP
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED STONE CHECK DAM
- PROPOSED TEMPORARY DIVERSION SWALE
- TSS / SF — PROPOSED TEMPORARY SOIL STOCKPILE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED DRAINAGE STRUCTURE W/ INLET PROTECTION
- PROPOSED PHASING LINE
- PROPOSED PHASING NUMBER

OVERALL CONSTRUCTION SEQUENCE:

(1) PHASE 1: (Total Disturbance 2.9 Ac. ±)
1. Install stabilized construction entrances in accordance with the notes and details at location shown on drawing.
2. Install erosion control measures shown on the plan in accordance with the details. Install construction fence around the proposed subsurface infiltration system (1.2P).
3. Clear trees and grub in the area of stormwater basin 1.1P.
4. Construct and stabilize the temporary sediment basin in accordance with the notes and details.
5. Begin earthwork associated with the road, parking area and building within limits of the phase.
6. Install drainage structures with inlet protection as shown and pipes within limits of phase. Install temporary bypass drainage pipe within the phase to direct stormwater runoff to the temporary sediment basin.
7. Install the subsurface infiltration system (1.2P) and plug the outlet pipe to the infiltration practice in the upstream flow splitter (FS 1.2).
8. Install building within phase.
9. Install gravel subbase in the proposed paved areas.
10. Upon completion of all grading operations topsoil, seed, and mulch any and all disturbed areas as soon as practical in accordance with the sedimentation and erosion control notes. Phase 1 must be stabilized prior to the commencement of Phase 2.

(2) PHASE 2: (Total Disturbance 2.6 Ac. ±)
1. Install erosion control measures shown on the plan in accordance with the details.
2. Clear trees and grub within the limits of the phase.
3. Install construction fence around the proposed bioretention filter (1.3P).
4. Begin earthwork associated with the parking area and buildings.
5. Install drainage structures with inlet protection as shown and pipes within the limits of the phase. Install temporary bypass drainage pipe within the phase to direct stormwater runoff to the temporary sediment basin.
6. Install buildings and gravel subbase in the proposed paved areas.
7. Install bioretention filter 1.3P.
8. Upon completion of all grading operations topsoil, seed, and mulch any and all disturbed areas as soon as practical in accordance with the sedimentation and erosion control notes.
8. Upon stabilization of all contributing area complete, convert the temporary sediment basin to the proposed stormwater management practice per the notes and details and remove plug from primary outlet in FS 1.2 to the infiltration practice.

(3) PHASE 3: (No disturbance proposed in this phase)
1. Install crushed stone walkway and passive recreation area.

CONSTRUCTION NOTES:

1. The following notes are in reference to the proposed water and sewer main improvements on Conklin Street:
   a. Maintenance and Protection of Traffic shall be provide in accordance with Section 619 of the Standard Specifications, the New York State Manual of Uniform Control Devices, and any provisions contained in the project plans and specifications.
   b. Prior to the start of work, the contractor shall submit a Maintenance and Protection of Traffic Plan to the project engineer for approval.
   c. Contractor must give notice to all effected residential dwellings on Conklin Street fourty-eight (48) hours prior to water and sewer improvement connections on Conklin Street.
   d. Pedestrian and vehicular access to all residence must be maintained at all times during construction.
   e. Any open excavation at the end of the work day must be covered with steel plates. Plates must be recessed into the pavement and pinned or pinned with asphalt ramps placed along all sides of the plate. Asphalt ramps should have a maximum slope of ½ inch per foot.
   f. The contractor shall not maintain construction equipment or stored overnight within the City of Beacon Right-of-Way or any adjacent properties. Construction equipment maintenance and storage must be performed on the project site.
   g. No construction equipment or material is to be left within the City of Beacon Right-of-Way or adjacent properties at the end of each work day.
   h. The contractor shall be responsible for the restoration of any offsite disturbance and/or damage to existing offsite features and shall be repaired or replaced in kind at the expense of the contractor.

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

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(845) 225-9717 fax
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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
EROSION & SEDIMENT CONTROL PLAN

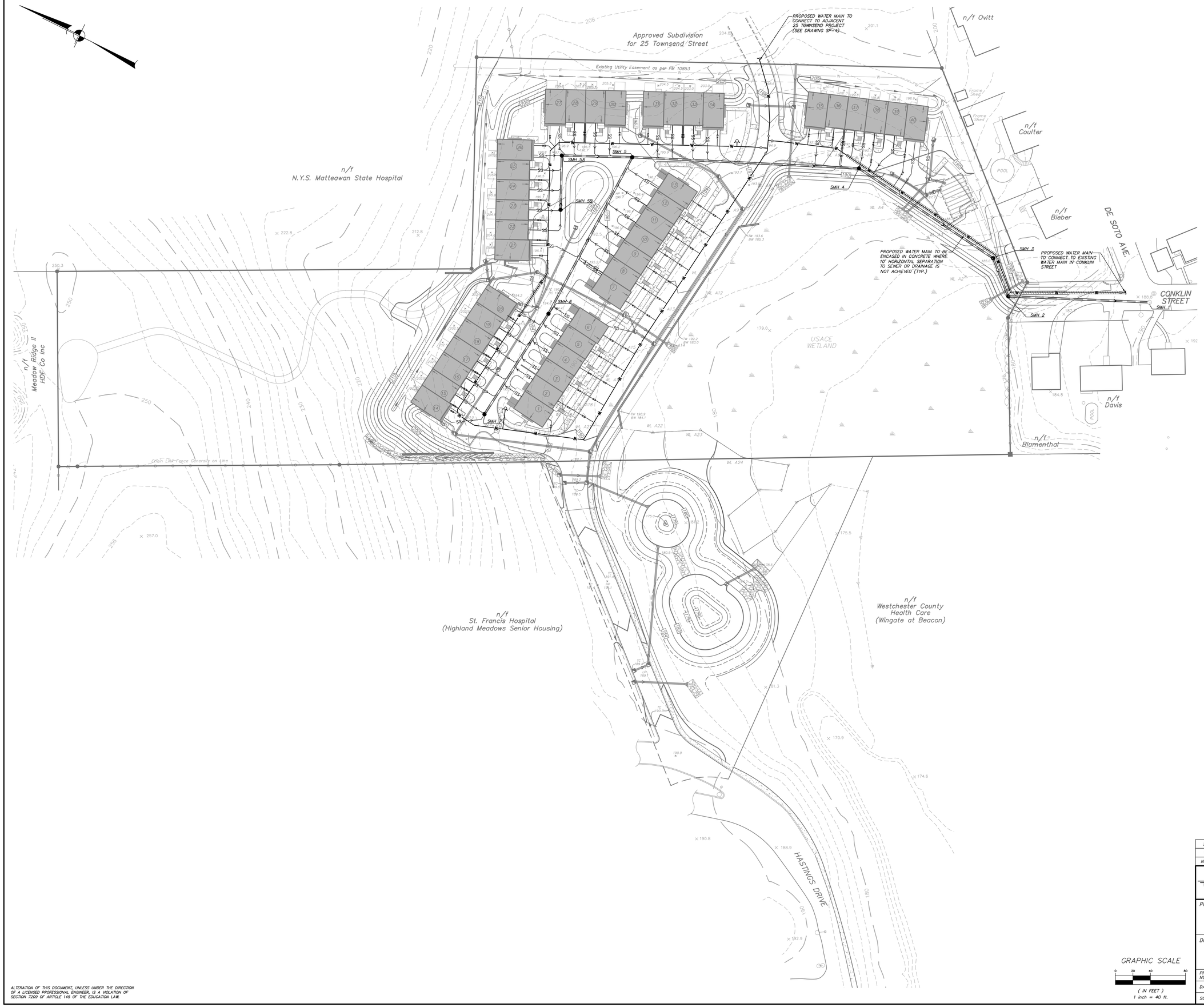
STATE OF NEW YORK — JEFFREY J. CONTENTO — 51931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	J.F.R.
SCALE	1" = 40'	CHECKED BY	A.D.T.

DRAWING NO. SP-3 — SHEET 6 / 15

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING EDGE OF PAVEMENT
- EXISTING WETLAND
- EXISTING WETLAND FLAG (WL A23, WL A24)
- EXISTING 10' CONTOUR (190)
- EXISTING 2' CONTOUR
- EXISTING SPOT GRADE (× 215.1)
- EXISTING 12"ø WATER MAIN (W)
- PROPOSED 10' CONTOUR (190)
- PROPOSED 2' CONTOUR
- PROPOSED SPOT ELEVATION (× 188.8)
- PROPOSED TOP OF WALL & BOTTOM OF WALL ELEVATIONS (TW 187.8 / BW 184.0)
- PROPOSED SEWER MANHOLE
- PROPOSED DRAINAGE MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED OUTLET STRUCTURE
- PROPOSED END SECTION
- PROPOSED WATER GATE VALVE (⊗ GV)
- PROPOSED FIRE HYDRANT
- PROPOSED HDPE DRAINAGE PIPE (SIZE AS NOTED)
- PROPOSED 8"ø PVC SDR 35 SEWER MAIN
- PROPOSED 4"ø PVC SDR 35 SEWER SERVICE (SS)
- PROPOSED 8"ø DIP CLASS 52 WATER MAIN (W)
- PROPOSED X"ø DIP WATER SERVICE LINE (W9)
- PROPOSED GRASS SWALE

PROPOSED SEWER TABLE

STRUCTURE	RIM.	INV.	PIPE	LENGTH	SLOPE
SMH 7	192.2	188.0			
SMH 6	194.3	IN 186.9 | OUT 186.6	8" PVC	136 L.F.	0.8%
SMH 5	196.1	IN 185.2 | OUT 185.1	8" PVC	203 L.F.	0.8%
SMH 4	190.4	IN 182.4 | OUT 182.3	8" PVC	259 L.F.	1.0%
SMH 3	185.0	IN 180.8 | OUT 180.7	8" PVC	184 L.F.	0.8%
SMH 2	184.5	IN 180.3 | OUT 180.2	8" PVC	47 L.F.	0.9%
SMH 1	188.8	178.9	8" PVC	161 L.F.	0.8%
SMH 5B	195.8	191.6			
SMH 5A	196.6	IN 191.1 | OUT 191.0	8" PVC	62 L.F.	0.8%
SMH 5	196.1	IN 185.2 | OUT 185.1	8" PVC	80 L.F.	7.2%

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY
2	5-26-20	REVISED PER PLANNING BOARD COMMENTS	JFR
1	4-28-20	RESUBMISSION TO PLANNING BOARD	JFR

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(845) 225-9717 fax
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PROJECT:
BEACON VIEWS
CITY OF BEACON, DUTCHESS COUNTY, NEW YORK

DRAWING:
UTILITIES PLAN

STATE OF NEW YORK — JEFFREY J. CONTOLI — 91931 — LICENSED PROFESSIONAL ENGINEER

PROJECT NUMBER	19131.100	PROJECT MANAGER	J.J.C.
DATE	8-27-19	DRAWN BY	J.F.R.
SCALE	1" = 40'	CHECKED BY	A.D.T.

DRAWING NO. SP-2.2
SHEET 5 / 15

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 7209 OF ARTICLE 145 OF THE EDUCATION LAW.

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Taylor M. Palmer
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May 26, 2020

BY FEDERAL EXPRESS
AND E-MAIL

Hon. John Gunn, Chairman
& Members of the Planning Board
City of Beacon
One Municipal Plaza
Beacon, New York 12508

Re: AK Property Holding, LLC – Request for Extension of Final Subdivision Approval
Property: 25 Townsend Street, Beacon, New York

Dear Chairman Gunn and Planning Board Members:

On behalf of AK Property Holding, LLC (the "Applicant"), we are writing to request an additional two (2) 90-day extensions of the July 10, 2018 Final Subdivision Approval Resolution, which was last extended by this Board on January 14, 2020.[1] This request is timely, as 180 days (6 months) have not elapsed since the date of the last extension that was granted on January 14, 2020, which runs until June 30, 2020.

As we discussed with the Planning Board, the Applicant worked diligently with the project consultants, City Staff and the Dutchess County Department of Behavior and Community Health (the "County Health Department") in order to obtain County Health Department sign-off on the Final Subdivision Plat. At this time the Applicant advises that they are still working diligently to satisfy the prerequisite Conditions provided in the 2018 Approval Resolution in order for the Final Subdivision Plat to be signed by the Planning Board Chairman and subsequently recorded in the Dutchess County Clerk's Office. Additionally, the Applicant advises that they have been in negotiations with multiple potential buyers of the Property, including a buyer that defaulted on their contract. We also understand from the Applicant that there has been additional difficulties with filing of the performance guarantee due to complications arising from the COVID-19 pandemic.

Additionally, attached hereto as **Exhibit B** is a copy of the Draft Offer of Dedication for a 50- foot right-of-way, together with the accompanying draft deed, which documents are currently being

[1] A copy of the 2018 Approval Resolution, adopted July 10, 2018 (the "2018 Approval Resolution"), as well as the Planning Board's January 14, 2020 Meeting Minutes approving the last extension request are attached to this letter as **Exhibit A**.

reviewed by the Planning Board Attorney for approval. This condition was imposed by the Planning Board at its January 14, 2020 meeting. *See* **Exhibit A** – Meeting Minutes.[2]

We respectfully request that you please place this matter on the next available Planning Board Agenda for consideration of the Applicant's request for two (2) 90-day extensions. Thank you in advance for your consideration in this matter.

Very truly yours,

Taylor M. Palmer

Enclosures
cc: Jennifer L. Gray, Esq. – Planning Board Attorney

[2] Note: As noted in the Applicant's December 27, 2019 correspondence to this Board, we understand that there is also a pending site plan application for a townhouse development on the adjoining property (the "Beacon Views Townhouses Development"), which proposes access the Beacon Views Townhouses Development property through the 25 Townsend Subdivision. As noted therein, there has been no change of circumstances since the original approval – and if anything – there are even more unique circumstances now that support this linkage through the 25 Townsend Subdivision to the adjoining Beacon Views Townhouses Development property.

Exhibit A

Planning Board
January 14, 2020

The Planning Board meeting was held on Tuesday, January 14, 2020 in the Municipal Center Courtroom. The meeting commenced at 7:00 p.m. with Chairman John Gunn, Members Randall Williams, Rick Muscat, Karen Quiana, Len Warner, and Kevin Byrne. Also in attendance were City Attorney Jennifer Gray, City Engineer John Russo (in for Art Tully), and City Planner John Clarke. Member Jill Reynolds was excused.

Training

City Attorney Jennifer Gray summarized the Planning Board's general procedures and standards for existing and new members of the Planning Board. She reviewed open meetings law, executive sessions, Freedom of Information Law (FOIL), and went over the Planning Board's responsibilities. The required four hour training each year is fulfilled with training sessions that take place before each meeting, or educational opportunities offered outside the City. She explained the Planning Board implements zoning laws established by the City Council, where the Zoning Board has the authority to grant relief from those zoning regulations. City Attorney Jennifer Gray emphasized the importance of establishing a rational basis for any decisions or approvals made by the Board. The Planning Board is tasked to review Site Plans, Subdivisions, Special Use Permits (in some cases), SEQRA, acts as the Architectural Review Board, and issues Certificates of Appropriateness for properties located in the Historical Overlay and Landmark Zone. Members were referred to review the Planning Board's rules of procedure for public meetings.

Regular Meeting

The regular meeting began at 7:30 p.m. with Mr. Gunn welcoming new members to the board. Four affirmative votes are needed to take action, and because only three members that participated in the December 2019 meeting were present, the minutes of the December 10, 2019 meeting will be voted on at the February 2020 meeting.

Miscellaneous Business

<u>Consider adoption of a Resolution appointing Planning Board members to the Architectural Review Subcommittee</u>

Two Planning Board members volunteered to be on the Architectural Review Subcommittee to replace former members David Burke and Gary Barrack. After careful consideration of the commitment for daytime meetings, Mr. Gunn made a motion to make the following appointments to the Architectural Review Subcommittee: Kevin Byrne for a 2-year term expiring January 2022; Len Warner for a 1-year term expiring January 2021; and Jill Reynolds for a 1.5-year term expiring June 2021. The motion was seconded by Mr. Williams. All voted in favor. Motion carried; 6-0

ITEM NO. 1 CONTINUE PUBLIC HEARING ON APPLICATIONS FOR SUBDIVISION (LOT LINE REALIGNMENT) APPROVAL AND SITE PLAN APPROVAL RELATIVE TO CONCEPT PLAN APPROVAL, 23-28 CREEK DRIVE, MIXED USE DEVELOPMENT, SUBMITTED BY 23-28 CREEK DRIVE, LLC

Mr. Byrne recused himself from discussion of this item as he had publicly commented on the application prior to his appointment to the Planning Board.

Attorney Taylor Palmer, Contract Vendee Rodney Weber, and Engineer Michael Bodendorf were present to continue review of the proposed mixed-use commercial and residential development at 23-28 Creek Drive. Mr. Palmer summarized the history of the application noting the City Council granted Concept Plan Approval, the Planning Board issued a Negative SEQRA Declaration, necessary variances were granted by the Zoning Board of Appeals, and work with Greenway Committee was done. A public park will be maintained by the property owner and the greenway trail will connect to the trails on either side of the property. Mr. Siegel described site access, property and building layout, and compared the building architecture and materials to others in the area. Mr. Weber explained Creek Drive will only be used as an emergency access because the City did not want two access points so near each other on Churchill Street, and an easement is in place a portion of the road is owned by Metro North. Discussion took place with regard to the Main and Churchill Street intersection, potential impacts to Fishkill Creek, stormwater management, and site remediation.

Mr. Clarke reviewed his planning comments, noting the lighting plan must be in compliance with the City's new regulations. Although the landscaping was improved, trees in the parking area must be a minimum of 3-inches in diameter. Mr. Russo reviewed his engineering comments and reported the applicant submitted information to the Dutchess County Health Department as required. Mr. Gunn opened the floor for public comments.

Thomas Wright, Chairman of the Greenway Committee, submitted a late memorandum based on last minute discussions with members. He reported the applicant has worked with them however he wanted to summarize their comments and concerns. Discussion took place with regard to the trail and the applicant agreed to the following:

- provide trail dimensions
- stake out the trail at the north end of the parcel
- created a planted shoulder between the access drive at the portion of trail between the radius and existing trail
- provide plantings along the wall in the pinch point area
- make a 2 ft. shoulder on each side of the trail where possible
- submit a formal easement agreement with adjacent property owner for the area that extends into the adjacent property
- provide stair detail
- return to the Planning Board for approval if retaining walls are needed
  situate the viewing platform to the lowest set of stairs
- include sign-off from the Greenway Trail Committee
- submit details for proposed benches
- add a note on the plan indicating the trail will not be used for snow storage
- stake out the trail prior to construction

Arthur Camins, 39 Rombout Avenue, felt the proposed exterior building materials were not in line with buildings in the surrounding area. He believed the top three floors should be brick, and that windowsills, lentils and window setbacks should be made part of the design.

James Grigg, 11 Creek Drive, Chief Finance Officer of Orange Regional Medical Center in Middletown, and Beacon's representative on the Dutchess County Board of Health, spoke to the habitat and natural landscaping the applicant provided in the neighboring development along the creek. He indicated wildlife thrives due to the landscaping the developer has chosen and he felt this project will be handled in a similar manner. Docuware is important for Beacon because it's main operation will take place Monday through Friday which will do a lot for businesses during the week. He explained that he avoids the intersection of Churchill and Main Street by exiting the development the other way. Mr. Grigg pointed out that the Creek Drive development is a real community and expressed his support of the project.

Docuware President Thomas Schneck, the company based in Germany who will occupy the commercial space at the 23-25 Creek Drive site, gave a brief overview of their company. The software-based company has over 18,000 customers and 280 employees worldwide that digitizes paper and routes documents throughout a company. Currently they employ 70 people in the space they rent near Stewart Airport in New Windsor and employees are excited to move to a location that offers opportunities to walk to work, lunch and services. Mr. Schneck reported they are passionate about being part of the community and have begun to reach out to schools and engage in local charities. He reported their lease in New Windsor is up at the end of 2021 so they are anxious to begin development.

Stosh Yankowski, 86 South Chestnut Street, supported the project but did not like the building design. He felt it should be brick to fit with other buildings and believed the fire escape stair should be moved to face Tioronda Avenue.

There were no further comments and Mr. Williams made a motion to close the public hearing, seconded by Mr. Muscat. All voted in favor. Motion carried.

Mr. Gunn made a motion to refer the application to the Architectural Review Subcommittee, seconded by Mr. Williams. All voted in favor. Motion carried. Consideration was giving to selecting an alternate member for the Architectural Review Subcommittee because Mr. Byrne must be recused from review of this application. Further discussion will take place during Miscellaneous Business.

A draft resolution of Site Plan Approval was drafted and circulated prior to the meeting. City Attorney Jennifer Gray reviewed conditions set forth in the resolution and discussion took place with regard to a timeline for the project. Recreation fees were discussed and consideration was given the fact that the applicant is providing a public park that will be maintained by the owner, that a Greenway Trail traverses the property, and that the project provides only eight residential units. After careful consideration, Mr. Gunn made a motion to waive the payment of recreation fees, seconded by Mr. Williams. All voted in favor. Motion carried.

After much discussion and consideration, Mr. Williams made a motion to adopt the resolution of approval, seconded by Mr. Muscat. All voted in favor with the exception of Ms. Quiana who abstained. Motion carried; 4-0. The applicant will return to the Planning Board for architectural review approval.

Miscellaneous Business

Consider request for two 90-day extensions of Subdivision Approval – 25 Townsend Street, submitted by AK Property Holding, LLC

Attorney Taylor Palmer, Cuddy & Feder, described his client's request for two 90-day extensions of Final Subdivision Approval for 25 Townsend Street. The owner has been involved with two purchase agreements with buyers who subsequently defaulted on their contracts. These contracts included the requisite performance guarantee for the construction of public improvements which seemed to be a drawback. A letter from the adjoining owner of property slated for a townhouse development that would gain access through 25 Townsend Street has asked that a formal offer of dedication for road purposes be included in the extension resolution. The Subdivision Plat includes a note to this effect but nothing in the resolution calls for an irrevocable right-of-way dedication.

After careful consideration, Mr. Williams made a motion to grant two 90-day extensions subject to an irrevocable offer of dedication for a 50-foot right-of-way for future road purposes to the City of Beacon, seconded by Ms. Quiana. All voted in favor. Motion carried.

ITEM NO. 2 PUBLIC HEARING ON APPLICATION FOR SUBDIVISION AND SITE PLAN APPROVAL RELATIVE TO CONCEPT PLAN APPROVAL, MIXED USE DEVELOPMENT, 248 TIORONDA AVENUE, SUBMITTED BY CHAI BUILDERS CORP

Mr. Byrne recused himself from discussion of this item as he had publicly commented on the application prior to his appointment to the Planning Board. Mr. Gunn made a motion to open the public hearing on applications for Subdivision and Site Plan Approvals, seconded by Mr. Williams. All voted in favor. Motion carried.

Engineer Chris LaPorta from Chazen Engineering was joined by Larry Boudreau, Architect Alexander Blakely of AB Architekten, and owner Berry Kohn to continue review of the project at 248 Tioronda Avenue. Mr. LaPorta explained the former Tuck Tape parcel is proposed to be developed into two multi-family buildings with a total of 64 units and a separate 25,400 sq. ft. office space building. He explained that chronologically this project is in a similar pattern as the 23-28 Creek Drive development. They received Concept Plan Approval from the City Council, received consultant comments on their Site Plan submission that will be addressed, and are hoping to be referred the Architectural Review Board subcommittee.

Mr. Clarke reported the walkway above the retaining wall was to be the ADA compliant portion of the Greenway Trail, therefore the short set of stairs that were relocated to this area must be switched back to their originally proposed location. As previously stated, a sidewalk should be created to connect buildings so pedestrians don't need to traverse through the parking lot. Trees must be added to the green space, and additional trees and shrubs are needed in front of the buildings. The applicant agreed to amend the greenway trail as requested, however had

concern for the grade drop because a retaining wall would be required. After some discussion the applicant agreed to add trees to the green area and improve landscaping in front of the buildings, and will look into a walkway.

Mr. Russo reported the applicant submitted documents to the Board of Health for approval of the water and sewer systems. He advised the applicant to add gates along the emergency access road to prevent vehicular traffic from parking on the road. Although the location of the gate is noted on the plan, the details on the gate should also be shown. The applicant was asked to change the shape of the bioretention pond so it appears more natural to the environment. There were no further comments and Mr. Gunn opened the floor for public comments.

Thomas Wright, Chairman of the Greenway Trail Committee, reported he asked the applicant to consider softening the square stubs along the trail. He asked that details for the stairs be added to the plan.

There were no further comments and Mr. Gunn made a motion to refer the application to the Architectural Review Subcommittee, seconded by Ms. Quiana. All voted in favor. Motion carried.

Architect Alexander Blakely presented revised renderings and elevations for review, explaining that although they are three-story buildings, only one-and-a-half stories are visible from Tioronda Avenue. Discussion took place with regard to rooftop bulkheads, planters and mechanical enclosures, specifically for ways to minimize their appearance. The architect was asked to provide a more realistic rendering of the type and height of trees that will be planted. The City Council asked the Planning Board to look at whether the separation between residential buildings should be increased. After a lengthy discussion, members found the distance to be acceptable given the massing given the massing of buildings and to keep them further away from Wolcott Avenue. The public hearing will continue at the February meeting.

ITEM NO. 3 PUBLIC HEARING ON APPLICATION FOR SITE PLAN APPROVAL RELATIVE TO SPECIAL USE PERMIT APPROVAL, BAR AND ARCADE, 296 MAIN STREET, SUBMITTED BY HAPPY VALLEY ARCADE, LLC

Mr. Williams made a motion to open the public hearing on the application for Site Plan Approval, seconded by Mr. Warner. All voted in favor. Motion carried.

Aryeh Siegel described his client's proposal to convert an existing one-story garage into a bar with arcade games and create an outdoor patio, explaining the existing two-story retail/office portion of the building will not be changed. The City Council granted a Special Use Permit for the bar use as required, and they are now back to the Planning Board for Site Plan Approval. Entry to the bar/arcade would be through the courtyard off Main Street. The Special Use Permit issued by the City Council restricted live music in the courtyard so only limited piped in music will be played. The landscaping was enhanced and a privacy fence was added on the eastern side to protect the adjacent residential property. The garage doors on the North Cedar side will be changed to more of a storefront appearance with doors for emergency egress and deliveries.

Mr. Gunn opened the floor for public comment. There were no public comments and Mr. Williams made a motion to close the public hearing, seconded by Mr. Muscat. All voted in favor. Motion carried. After careful consideration, Mr. Warner made a motion to authorize the City Attorney to draft a resolution of Site Plan Approval for the project, seconded by Mr. Williams. All voted in favor. Motion carried; 6-0.

ITEM NO. 4 CONSIDER ADOPTION OF A SEQRA NEGATIVE DECLARATION RELATIVE TO APPLICATIONS FOR SPECIAL USE PERMIT, SITE PLAN APPROVAL AND SUBDIVISION APPROVAL, NEW SINGLE-FAMILY HOUSE WITH ACCESSORY APARTMENT AND ARTIST STUDIO SPACE, 1182 NORTH AVENUE, SUBMITTED BY ANDREW MACDONALD

This item was removed from the agenda.

ITEM NO. 5 CONTINUE REVIEW OF APPLICATION FOR SITE PLAN APPROVAL (RELATIVE TO A SPECIAL USE PERMIT), WINE AND TAPAS BAR, 305 MAIN STREET, SUBMITTED BY DOUGLAS BALLINGER

Architect Brad Will and applicant Douglas Ballinger were present to continue final review of the proposal to convert an existing building into a wine and tapas bar at 305 Main Street. The project includes a new storefront and rear patio. Mr. Will explained they addressed last month's comment about the height of wall sconces and the gargoyle lighting fixtures will be in compliance with very low light and appropriate color temperatures. Mr. Russo reported that as previously noted, the deed for 305 Main Street includes an easement to allow access to the trash enclosures as required.

A resolution for Site Plan Approval was circulated prior to the meeting and City Attorney Gray provided members with a revised version with one minor change for consideration. City Attorney Gray reviewed the change and conditions outlined in the resolution. After careful consideration, Mr. Williams made a motion to adopt the resolution of Site Plan Approval as amended, seconded by Ms. Quiana. All voted in favor. Motion carried; 6-0.

ITEM NO. 6 CONTINUE REVIEW OF APPLICATION FOR SITE PLAN APPROVAL, MULTI-FAMILY RESIDENTIAL (62 UNITS), 16 WEST MAIN STREET, SUBMITTED BY FARRELL BUILDING COMPANY

Aryeh Siegel described his client's proposal to construct a 62-unit residential building (including 6 BMR units) on property located at 16 West Main Street. As required, the fourth floor has a 15 ft. setback on both street fronts and the project requires no variances. Although the property is within walking distance to the train station, the applicant wants to provide one parking space per unit. Indoor and outdoor bicycle storage will be provided. A lengthy discussion took place with regard to the building's architectural design and members provided recommendations for improvement.

Engineer Stephen Spina reviewed changes to the site plan and explained they added privacy fencing, improved sight distance, and made improvements to the courtyard area. The Bank Street access will only be used as an entrance because it lacks appropriate sight distance when exiting the site.

Mr. Clarke summarized his comments and advised the applicant to move the ADA spaces closer to the entrance near the elevators. He asked members to consider whether space should be created along Bank Street for street trees. Mr. Clarke reported a traffic study and school impact study must be done, and an updated EAF is needed so SEQRA review can commence.

Mr. Russo summarized his comments and reported the applicant is working on the I & I study. He explained there are concerns with the North Interceptor in that area which may delay the project. Soil testing is required, the applicant must meet with the City's fire department, amendments are needed to the lighting plan, and sight easements at the intersections must be provided.

After careful consideration Mr. Warner made a motion to refer the application to the Architectural Review Subcommittee, seconded by Ms. Quiana. All voted in favor. Motion carried.

ITEM NO. 7 CONTINUE REVIEW OF APPLICATIONS FOR SPECIAL USE PERMIT AND SITE PLAN APPROVAL, ACCESSORY APARTMENT, 3 WATER STREET, SUBMITTED BY POK BEACON, LLC

Aryeh Siegel described his client's proposal to construct a one-story accessory apartment and addition to the main building at 3 Water Street. A subdivision application must be submitted to consolidate the two lots into one parcel. Revisions were made to relocate the accessory apartment and parking spaces, and landscaping was improved as requested. Mr. Siegel reported the applicant will offer the small triangle of land that extends into the right-of-way to the City, and hire an engineer to address Lanc & Tully's comments.

Mr. Clarke asked that the proposed hornbeam hedge be placed far enough back so it will not grow into the front sidewalk and suggested planting three new street trees along Water Street.

After careful consideration, Ms. Quiana made a motion in support of the Special Use Permit for an accessory apartment, noting the applicant is willing to make an offer of dedication to the City for the triangular portion of property along Water Street. The motion was seconded by Mr. Muscat. All voted in favor. Motion carried.

ITEM NO. 8 REVIEW APPLICATION FOR SUBDIVISION APPROVAL (2-LOT RESIDENTIAL), 160 ROMBOUT AVENUE, SUBMITTED BY KARIC ASSOCIATES, LLC

Engineer Dan Koehler, Hudson Land Design, described his client's proposal to subdivide property at 160 Rombout Avenue on the corner of South Brett Street into two parcels – one for the existing house and one for a new single-family house. The property is located in the R1-5 zoning district and the new lot will be served with municipal water and sewer services. A new underground stormwater management area will be installed to the rear of the property to mitigate impacts to the neighboring property.

Mr. Clarke explained the applicant must document existing setbacks for houses on the same side of the street to justify the reduced front yard setback. The driveway turnaround should be expanded because it is not deep enough to allow a vehicle to turn around. Mr. Clarke

summarized his remaining comments. Discussion took place about the angle of the proposed house and whether it must be perpendicular to the street.

Mr. Russo reported the I & I study revealed no illegal connections to the sanitary sewer system. He asked for more information on utility connections and advised that a maintenance agreement will be needed for the stormwater management system. Mr. Russo advised that this property also utilizes the north interceptor and sewer connection can't be made until corrections have taken place.

After some consideration, Ms. Gunn made a motion to declare the Planning Board's intent to act as Lead Agency in the SEQRA environmental review process and authorize circulation of a Notice of Intent to act as Lead Agency, seconded by Ms. Quiana. All voted in favor. Motion carried.

Miscellaneous Business

Zoning Board of Appeals – January agenda

Members reviewed the agenda for the Zoning Board of Appeals' January meeting and had no comments.

Alternate Architectural Review Subcommittee Member

In the event a member needs to recuse themselves or a meeting cannot be held due to schedule conflicts, members agreed to appoint an alternate member to the Architectural Review Subcommittee. After careful consideration, Mr. Gunn made a motion to appoint Karen Quiana as an alternate subcommittee member, seconded by Mr. Muscat. All voted in favor. Motion carried.

Consider request for extension of Site Plan Approval – 249 Main Street

Ms. Quiana was recused from this item due to a conflict of interest. City Attorney Jennifer Gray explained the Special Use Permit for the project at 249 Main Street will expire and the applicant has requested an extension of approval. A two-month extension was granted in September of 2019, however work has not been completed. After careful consideration, Mr. Byrne made a motion to grant a six-month extension as requested, seconded by Mr. Warner. All voted in favor. Motion carried.

City Council request to review Local Law amending Chapter 134 of City Code concerning Historic Preservation

City Planner John Clarke reviewed amendments proposed and discussion took place with regard to preservation of the interior of a building when special historic or architectural features exist, i.e. the interior of the Howland Center, the Post Office murals, buildings with original tin ceilings, etc. Members discussed the possibility of protecting certain interiors by setting a different standard for buildings that are on the National Register of Historic Places. Review took place about the process that places a building on the National Register, and discussion took place about the process under the City Code for nominating and preserving specimen trees or landscape features. After a lengthy discussion, Mr. Warner made a motion to support the proposed amendments, and asked that consideration be given to protecting interiors of buildings that are open to the public and listed on the National Register by amending the language to

exclude such properties from the exemption for a Certificate of Appropriateness. The motion was seconded by Ms. Quiana. All voted in favor. Motion carried.

City Council request to review Local Law amending Chapters 223 and 210 of City Code concerning the Schedule of Regulations and associated amendments regarding permitted uses Schedule of Regulations and Tables

Mr. Clarke explained the Schedule of Regulations has been revised and put into a format much easier to read and understand. The Council has been working on the table updates, cleaning up the code, and making changes. City Planner John Clarke gave a detailed explanation of the proposed amendments to the Schedules of Regulations in the City Code and proposed amendments to the Zoning Code and Zoning Map. Mr. Clarke highlighted proposed changes to Special Use Permit requirements, areas where additional uses are permitted within certain zoning districts, the creation of transitional zones for properties located on first block off Main Street, and the elimination of PB, OB, and LB zoning districts. Mr. Clarke further reviewed amendments to setback requirements and elimination of Floor Area Ratios from the Schedule of Dimensional Regulations. Members discussed the changes at length and questioned the degree to which the proposed amendments would affect permitted density in the various zoning districts. After a lengthy review, Mr. Gunn made a motion to offer a positive endorsement of the changes, and send a recommendation that the City Council make available objective data to aid in understanding the resulting impacts of the proposed zoning amendments. The motion was seconded by Mr. Byrne. All voted in favor. Motion carried.

Discussion took place regarding appointing a member to act as the Planning Board's representative to the Traffic Safety Committee to replace Gary Barrack. The committee meets during the day so a member would need to be available during daytime hours. Further discussion will take place next month and Ms. Reynolds will be asked to fill this position.

There was no further business to discuss and the meeting was adjourned on a motion made by Ms. Quiana, seconded by Mr. Muscat. All voted in favor. Motion carried. The meeting adjourned at 12:03 a.m.

RESOLUTION

PLANNING BOARD
BEACON, NEW YORK

FINAL SUBDIVISION PLAT APPROVAL FOR
25 TOWNSEND STREET

WHEREAS, the Beacon Planning Board received an application for Final Subdivision Plat Approval from AK Property Holding LLC ("Applicant") for a residential subdivision (the "Project" or "Proposed Action"); and

WHEREAS, the property is located within the R1-7.5 One-Family Residence District and is designated as Parcel 6055-03-383149 on the City Tax Map (collectively, the "Subject Property" or "Site"); and

WHEREAS, the Subject Property is owned by AK Property Holding LLC and is comprised of approximately 5 acres which was formerly the site of the Knights of Columbus; and

WHEREAS, the Applicant is proposing to subdivide the parcel to create 13 residential lots for the construction of new single-family residences with an additional common lot for stormwater infiltration and 50' right-of-way offered for dedication to the City of Beacon for future road purposes and the opportunity to connect the Subject Property to the adjacent parcel upon the development of the adjacent parcel; and

WHEREAS, the new lots would be serviced by a cul-de-sac roadway with sidewalks and a landscaped center island; and

WHEREAS, the subdivision is shown on the drawing, entitled "Preliminary Subdivision Plan," last revised June 26, 2018, prepared by Hudson Land Design, Beacon, N.Y.; and

WHEREAS, the plans reviewed by the Planning Board consist of the following:

- Sheet 1 of 8, entitled "Existing Conditions and Demo Plan," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.
- Sheet 2 of 8, entitled "Preliminary Subdivision Plan," last revised June 26, 2018, prepared by Hudson Land Design, Beacon, N.Y.
- Sheet 3 of 8, entitled "Utility Plan," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.
- Sheet 4 of 8, entitled "Utility Plan and Profile," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.
- Sheet 5 of 8, entitled "Erosion & Sediment Control Plan," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.

- Sheet 6 of 8, entitled "Construction Details," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.
- Sheet 7 of 8, entitled "Construction Details," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.
- Sheet 8 of 8, entitled "Construction Details," last revised June 26, 2018, prepared by Hudson Land Design, Beacon N.Y.

WHEREAS, the application also consists of application forms and the Environmental Assessment Form (EAF), and all other submissions by the Applicant; and

WHEREAS, the Planning Board reviewed the application at its meetings on January 12, 2016, June 14, 2016, April 11, 2017, May 9, 2017, August 8, 2017, September 12, 2017, February 14, 2018, March 13, 2018, April 10, 2018, May 8, 2018, June 12, 2018 and July 10, 2018; and

WHEREAS, on March 13, 2018, following a coordinated review pursuant to SEQRA the Planning Board adopted a Negative Declaration after taking a "hard look" at each of the relevant areas of environmental concern through review of the EAF and all associated materials prepared in connection with the Proposed Action; and

WHEREAS, following the adoption of the Negative Declaration pursuant to SEQRA, on March 13, 2018, the Planning Board opened the public hearing on the application for Subdivision Approval, at which time all those interested were given an opportunity to be heard and the public hearing was continued to May 8, 2018 and June 12, 2018, and closed on June 12, 2018; and

WHEREAS, on June 12, 2018 the Planning Board granted Preliminary Subdivision Approval for the Project; 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.

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

BE IT FURTHER RESOLVED, that the Planning Board finds that the conditions 1 and 2 in Section "A" of the Preliminary Subdivision Approval Resolution, adopted on June 12, 2018, have been fulfilled to the satisfaction of the Planning Board, except for those conditions that have become conditions of Final Subdivision Approval set forth below, and the Planning Board hereby amends the conditions of the Preliminary Subdivision Approval Resolution to remove condition 4 in Section "A" therein.

BE IT FURTHER RESOLVED, that the Planning Board hereby grants Final Subdivision Plat Approval to the Project, as shown on the application materials enumerated above, subject to the following conditions and modifications:

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

1. The comments contained in the City Engineer's letter to the Planning Board dated July 5, 2018, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Engineer.

2. The comments contained in the City Planner's letter to the Planning Board dated July 5, 2018, and all comments in any subsequent letter(s) issued, shall be fulfilled to the satisfaction of the City Planner.

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

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

5. The Applicant shall submit all necessary easements in recordable form satisfactory to the City Attorney, which shall be recorded in the Dutchess County Clerk's Office simultaneously with the Subdivision Plat and prior to the transfer of any subdivision lot, with a copy of the recorded documents submitted to the City Clerk for filing. Such easements include but may not be limited to the following:

    a. 20' wide Conservation and Landscape Easement
    b. 10' wide Drainage Easement
    c. 15' wide Drainage Easement with diversion berm
    d. Stormwater Management Maintenance Agreement & Access Easement in accordance with Section 190-9 of the City Code

    Thereafter, the Applicant shall submit written evidence certifying that such easements have been duly recorded in the Dutchess County Clerk's Office.

6. The Applicant shall submit appropriate Homeowner's Association documentation for review as to form by the City Attorney, which shall include maintenance obligations for the landscaped cul-de-sac island and all stormwater facilities, including the infiltration basin and all pipes, swales and structures that convey stormwater through the Subject Property. The "HOA Lot" containing the infiltration basin shall be owned and maintained by the HOA. Unless and until the City of Beacon accepts the

offer of dedication of the 50' right of way spur off of the cul-de-sac, such right-of-way shall be owned and maintained by the HOA.

7. Pursuant to Section 195-15 of the City Code, the Applicant shall submit a performance guarantee for the construction of all public improvements in an amount to be determined by the City Engineer and in a form acceptable to the City Attorney.

8. Sheet 2 of 8, entitled "Preliminary Subdivision Plan," last revised June 26, 2018, prepared by Hudson Land Design, Beacon, N.Y. shall be re-labeled as "Final Subdivision Plan."

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

1. The Applicant shall submit a Construction Management Plan for review and approval of the Building Inspector, Highway Superintendent and City Engineer.

2. The Applicant shall fund an escrow account with the City of Beacon for the monthly stormwater inspections in an amount as determined by the City Engineer.

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 Section 195-25.A(4) of the City Code. The Planning Board hereby requires that, prior to the issuance of the Certificate of Occupancy, the Applicant shall pay a Recreation Fee as per the City's Fee Schedule in effect at the time of payment.

2. 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.

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

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 written notification by the City that such fees are due. If such fees are not paid within the thirty (30) day period, and an extension therefor has not been granted by the City, this Resolution shall be rendered null and void if the Final Plat has not yet been filed in the Dutchess County Clerk's Office.

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

6. 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.

7. The approvals granted by this Resolution do not supersede the authority of any other entity.

8. 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.

9. 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.

10. 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.

Resolution Adopted: July 10, 2018
Beacon, New York

John Gunn, Chairman

7/10/2018
Date

motion by R. Williams, seconded by R. Muscat:

Gary Barrack	Voting AYE	Rick Muscat	Voting AYE
David Burke	Voting EXCUSED	Randall Williams	Voting AYE
Jill Reynolds	Voting AYE	John Gunn, Chairman	Voting AYE
Patrick Lambert	Voting AYE		

Received in the Office of the
City Clerk
July 12, 2018

Exhibit B

OFFER OF DEDICATION

KNOW ALL MEN THAT **AK PROPERTY HOLDING, LLC**, a New York limited liability company having offices at 67-38 108th Street, Forest Hills, New York 11375 (the "Grantor"), for and in consideration of the sum of Ten and 00/100 ($10.00) Dollars and other good and valuable consideration, DOES HEREBY OFFER in dedication to the **CITY OF BEACON**, a municipal corporation organized and existing under the laws of the State of New York having an office at One Municipal Plaza, Beacon, New York 12508 (the "Grantee"), the following:

1. Fee simple title in and to a certain area in the southwesterly portion of the Premises (as hereinafter defined) shown and labeled on the Subdivision Map (as hereinafter defined) as "Proposed 50' Wide R-O-W to the City of Beacon for Future Road Extension", which area is more fully described in the Bargain and Sale Deed annexed hereto as Exhibit 1 and made a part hereof.

This Offer of Dedication is irrevocable from the date hereof and may be accepted by the Grantee upon the completion of the improvements in accordance with the subject approvals granted by the City of Beacon or its Planning Board to subdivide the parcel to create 13 residential lots for the construction of new single-family residences with an additional common lot for stormwater infiltration and a 7,420 sq. ft. (0.170 acre) 50' right-of-way offered for dedication to the City of Beacon for future road purposes, known as the "25 Townsend Subdivision" on the Grantor's lands located at 25 Townsend Street, Beacon, New York 12508 (the "Premises"), including, without limitation, the approvals granted in a certain Final Subdivision Plat Approval Resolution of the Planning Board adopted July 10, 2018, by recording in the Office of the Clerk of the County of Dutchess (the "Clerk's Office") either (i) a certified instrument or resolution of the City of Beacon accepting the within offer or (ii) the Deed, duly executed by Grantor or its applicable successor or assign, in either case together with such additional documents necessary to record the same in the Clerk's Office.

"Subdivision Map" as used herein means that certain subdivision map entitled "Final Subdivision Plan Prepared for 25 Townsend Street" prepared by TEC Land Surveying, dated November 2, 2018, and filed in the Office of the Dutchess County Clerk on _____, 2020, as Filed Map No. _____.

Dated: _____, 2020

AK PROPERTY HOLDING, LLC

By:_____
Name:
Title:

ACKNOWLEDGMENTS

STATE OF NEW YORK)
) ss.:
COUNTY OF _____)

On the _____ day of _____ in the year _____ 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

OFFER OF DEDICATION

AK Property Holding, LLC

to

City of Beacon

Record & Return:
Keane & Beane, P.C.
445 Hamilton Avenue, Ste 1500
White Plains, New York 10601
Attn: Nicholas M. Ward-Willis, Esq.

Section: 6055
Block: 03
Lot(s): 383149
County: Dutchess

EXHIBIT 1

Deed

BARGAIN AND SALE DEED WITH COVENANT AGAINST GRANTOR'S ACTS

THIS INDENTURE, made the _____ day of _____, 2020 between **AK PROPERTY HOLDING, LLC**, a New York limited liability company, having an address at 67-38 108th Street, Forest Hills, New York 11375 (the "party of the first part") and **CITY OF BEACON,** a municipal corporation organized and existing under the laws of the State of New York, having an address at One Municipal Plaza, Beacon, New York 12508 (the "party of the second part").

W I T N E S S E T H:

That the party of the first part, in consideration of Ten ($10.00) Dollars and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the City of Beacon, County of Dutchess and State of New York being more particularly bounded and described in Schedule "A" attached hereto.

BEING and intended to be the same premises shown on that subdivision map entitled "Final Subdivision Plan Prepared for 25 Townsend Street" prepared by TEC Land Surveying, dated November 2, 2018, and filed in the Office of the Dutchess County Clerk on _____, as Filed Map No. _____.

TOGETHER with all right, title and interest, if any, of the party of the first part, in and to any streets and roads abutting the above-described premises to the center lines thereof;

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises;

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

[*Signature page immediately follows*]

[*Signature page to Bargain and Sale Deed with Covenant Against Grantor's Acts*]

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

AK PROPERTY HOLDING, LLC

By:_____
Name:
Title:

ACKNOWLEDGEMENT

STATE OF NEW YORK)
) ss.:
COUNTY OF)

On the _____ day of _____ in the year 2020 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

RECORD AND RETURN TO;

Keane & Beane, P.C.
445 Hamilton Avenue, Suite 1500
White Plains, New York 10601
Attn: Nicholas M. Ward-Willis, Es

SCHEDULE A

Description of Property

50’ Right-of-Way

All that plot, piece, or parcel of land situate, lying, and being in the City of Beacon, County of Dutchess, State of New York as shown on a filed map entitled “Final Subdivision Plan Prepared for 25 Townsend Street” and filed in the Dutchess County Clerk’s office as Filed Map No _____ and bounded and described as follows: and being more particularly described as follows:

Beginning at a point being the northwest corner of Lot 10 and the northerlymost corner of the HOA Lot as shown on said Filed Map_____; Thence along said HOA Lot S 22° 01' 29" W for a distance of 176.20 feet to a point; said point being located on the northerly bounds of the lands, now or formerly, of Highlands at Beacon, LLC (Doc. #02 2007 4288); thence along the same N 37° 48' 51" W for a distance of 57.88 feet to a point being the southeast corner of Lot 9 as shown on said Filed Map_____; thence along lot 9 N 22° 01' 44" E a distance of 128.50 feet to a point on the proposed road; thence along the same along a curve turning to the left having a radius of 65.50 feet, an arc length of 54.99
feet and whose long chord bears S 88° 23' 22" E for a distance of 53.39 feet to the point or Place of Beginning. Containing 7,420 Square Feet of land.


THE BAGEL SHOPPE
BAKERY · DELI



THE BEACON BAGEL
THE BEACON BAGEL
THE BAGEL SHOPPE
BAKERY · DELI
The Bagel Shoppe

ARCHITECTURAL REVIEW BOARD APPLICATION

Date: 5/7/20

Project Address: 466 MAIN ST. BEACON, NY

Project Architect/Engineer: _____

Owner/Builder: JOSEPH RAFFAELE Katherine jrcatrina@gmail.com

Contact Phone No.: 845-774-6044

Approval Requested: ✓ Certificate of Appropriateness _____ New Single Family House

Color/Materials:

Siding: _____

Roofing: _____

Windows: Color: _____ Type: _____

Trim: HISTORICAL BLACK PAINT

Garage Door: _____

Stone/Brick: _____

_____
Signature of Owner

FOR OFFICE USE ONLY:

The Architectural Review Board has reviewed the plans submitted for approval for the project listed above and has determined:

Plan Denied _____
(Date)

Plan Approved _____
(Date)

Subject to the following:

_____

_____

FEE: $100.00

ARCHITECTURAL REVIEW BOARD APPLICATION

Date: May 26, 2020

Project Address: 31 Willow Street

Project Architect/Engineer: Aryeh Siegel Architect

Owner/Builder: St. John the Evangelist Church

Approval Requested: ☑ Certificate of Appropriateness ☐ New Single Family House

Color/Materials:

Siding: N/A

Roofing: New North Country Slate non-fading gray slate roof to replace existing asphalt shingle roof

Windows: Color: N/A Type: N/A

Trim: Paint color at Tower trim: Benjamin Moore Historic Color series selection: HC85, HC86, HC87

Garage Door: N/A

Stone/Brick: N/A

Signature of Owner

FOR OFFICE USE ONLY:

The Architectural Review Board has reviewed the plans submitted for approval for the project listed above and has determined:

Plan Denied _____ (Date)

Plan Approved _____ (Date)

Subject to the following:

FEE: $100.00



Existing Photo



North Country Slate: Non-fading Gray Slate



North Country Slate:
Non-fading Gray Slate
Roofing - Sample Installation



HC-87
Ashley Gray

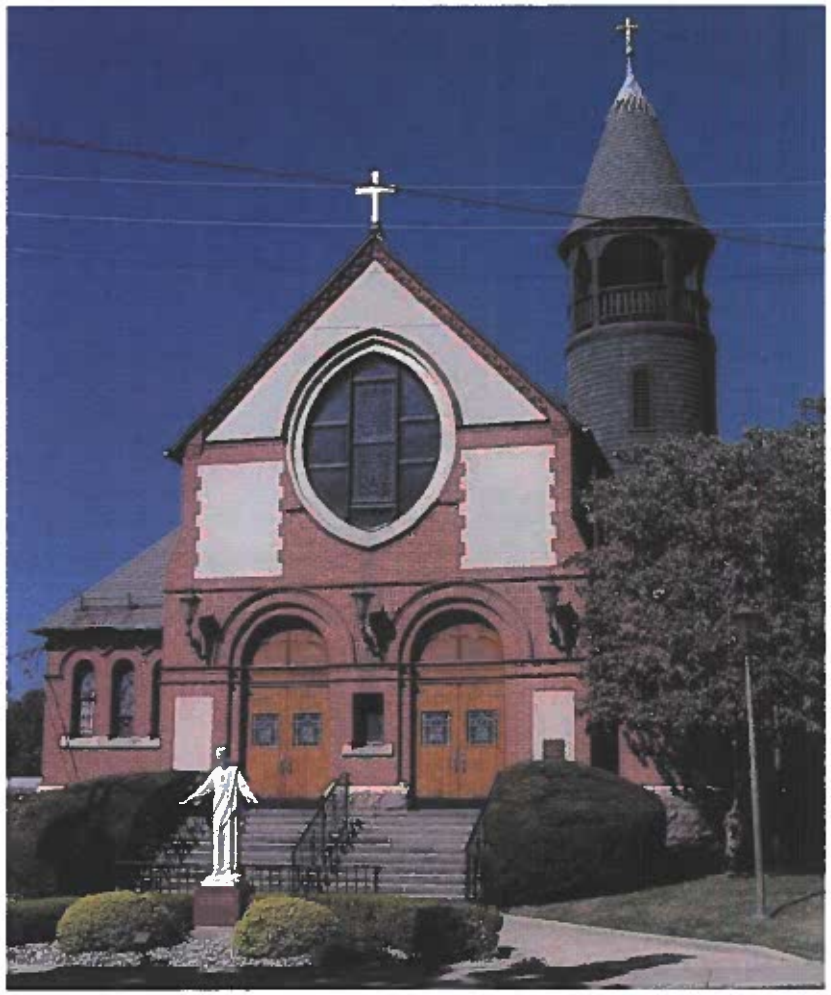


HC-86
Kingsport Gray



HC-85
Fairview Taupe

Benjamin Moore Historical Colors for Tower Trim



Existing Photo

SLATE TO REPLACE EXISTING ASPHALT SHINGLES
AT ENTIRE ROOF AND AT CORNER TOWER ROOF AND
SIDING.

ARB Application

St. John the Evangelist Church
31 Willow Street Beacon, New York
Scale Not to Scale
May 26, 2020

Owner
St. John the Evangelist Church
31 Willow Street
Beacon, New York 12508

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