HUDSON ENGINEERING & CONSULTING, P.C.

November 9, 2023

John Kellard, P.E.
Kellard Sessions Consulting
500 Main Street
Armonk, NY 10504

Re: Town of North Castle
Proposed Single-Family Dwelling
6 Cannato Place
Section 101.01, Block 1, Lot 45

Dear Mr. Kellard:

We have received your comment memo dated September 8, 2023, and offer the following responses on behalf of the applicant:

1. The applicant is proposing to mitigate stormwater runoff from the project with the installation of fourteen (14) Cultec infiltration units which will accept runoff from the proposed impervious driveway and residence. The applicant is required to mitigate the increase in runoff through the 100-year, 24-hour storm event. However, since Cannato Place does not have stormwater collection or piping facilities to accept discharge from the project, the applicant has designed a mitigation system which infiltrates all runoff from impervious surfaces through the 100-year event. We find the design acceptable, subject to verification of soil test data and the review of the system details.

   Comment noted. See revised stormwater management plan. Location has been revised.

2. The applicant is required to perform deep soil tests and percolation tests in the vicinity of the stormwater mitigation system, to be witnessed by the Town Engineer. The applicant should contact our office to schedule testing.

   Field testing occurred on 9/08/23 and was witnessed by personnel from Kellard Sessions.

3. The applicant should submit calculations confirming that the 6" diameter drainpipe along the front of the proposed residence has sufficient capacity to convey runoff from the roof and driveway.

   See revised Stormwater Narrative. Pipe calculations are now included.

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4. The applicant has provided a driveway profile for the proposed driveway. Additional detail would be helpful in reviewing the design and constructing the driveway. Please include the existing portion of driveway approaching the proposed driveway so the transition can be understood, vertical curves where changes of grade occur and proposed finish grade elevations along the drive. Please also show on the profile the location of drainage structures, rim elevations and location of the garage. Please provide driveway stationing on the Site Plan.

   See revised plan sheet.

5. The driveway approach at the garage and limited area to back out of the garage will make for an uncomfortable maneuver entering and exiting the garage. This is further complicated by the significant elevation drop within the garage backout area. The applicant should examine the turning movements at the garage and increase the depth of the backout area as required.

   See revised driveway layout and turning radius plan shown on sheet C-4.

6. Site grading will require the construction of retaining walls within the rear yard, along the driveway and the garage backout area. Walls within the backyard will extend to a height of five (5) feet, while walls along the driveway will extend to a height of eight (8) feet with double walls making up a total height of approximately 15 feet. The applicant will need to submit retaining wall designs, details, and specifications. Walls adjacent to the proposed driveway will need to evaluate loading from vehicles above and designed for bearing, sliding, and overturning.

   A note has been added to sheet C-2 stating that all retaining walls over 4' high need to be designed by a structural engineer. Hudson Engineering is not responsible for the design of walls proposed on the site over 4' in height.

7. Driveway access to the lot is along a common driveway which crosses lands of two (2) neighboring properties. The applicant should submit driveway and utility easements agreements for the common driveway. In addition, the common driveway providing access to other properties crosses the subject property. A portion of the common driveway is not within the easement area. The Planning Board should

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determine whether such discrepancy should be addressed by modifying the easement at this time.

Comment noted. The revised site plan includes an updated survey which shows the location and extent of the existing driveway easement.

If you should have any additional questions or comments, please do not hesitate to contact our office at (914) 909-0420, or via email at nick@hudsonec.com.

Sincerely,

Nicholas Shirriah

STORMWATER MANAGEMENT PLAN & DRAINAGE ANALYSIS

6 Cannato Place
Town of North Castle - New York

June 1, 2023
Revised August 4, 2023
Revised September 21, 2023
Revised November 22, 2023

Hudson Engineering & Consulting, P.C.
45 Knollwood Road - Suite 201
Elmsford, NY 10523
(914) 909-0420

Narrative

STORMWATER MANAGEMENT
PLAN & DRAINAGE ANALYSIS
6 Cannato Place
Town of North Castle - New York

INTRODUCTION

This Stormwater Management Plan presents the proposed Best Management Practices (BMPs) to control erosion and sedimentation and manage stormwater during and upon construction of Single-Family Dwelling on a 1.0 Acre lot at 6 Cannato Place, Armonk [SBL: 101.01-1-45] in the Town of North Castle, Westchester County, New York.

This Plan consists of this narrative and a plan set entitled: "Proposed Single Family Dwelling, 6 Cannato Place, Town of North Castle, Westchester County - New York", all as prepared by Hudson Engineering and Consulting, P.C., Elmsford, New York, latest date November 22, 2023. The design is in accordance with the Town of North Castle's requirements. The approximate area of the limits of disturbance is 0.70-acres. Since the project disturbance is less than one acre the New York State Department of Environmental Conservation [NYSDEC] stormwater regulations are not applicable.

METHODOLOGY

The stormwater analysis was developed utilizing the Soil Conservation Service (SCS) TR-20, 24-hour Type III storm events (HydroCad®) to assist with the design of the mitigating practices. The "Complex Number" (CN) value determination is based on soil type, vegetation, and land use. The design is in accordance with the Town of North Castle's stormwater regulations. The "Time of Concentration" (T_c) was determined as a direct entry of one-minute. The CN and T_c data are input into the computer model. The project site was modeled for the 100-year Type III – 24-hour storm event.

PRE-DESIGN INVESTIGATIVE ANALYSIS

A pre-design investigative analysis was performed including percolation and deep hole tests in the locations shown on the plans. A series of percolation tests were performed in the vicinity of the potential stormwater mitigation practice [TP-1] until constant rates were achieved, their results as follows:

- TP-1: A percolation rate of 1.0-minute per inch (60.0-inches per hour) was observed. A percolation rate of 25-inches per hour was utilized in the design.

- TP-2: A percolation rate of 1.0-minute per inch (60.0-inches per hour) was observed. A percolation rate of 25-inches per hour was utilized in the design.

Two (2) deep test holes were excavated and labeled {TP-1 & TP-2] as shown on the plans.

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- TP-1 was excavated to a depth of 79-inches. The test revealed topsoil to a depth of 12-inches, and moderately compact sandy loam to the invert. No groundwater was observed. Ledge rock was encountered at the invert.

- TP-2 was excavated to a depth of 66-inches. The test revealed topsoil to a depth of 6-inches, and moderately compact sandy loam to the invert. No groundwater was observed. Ledge rock was encountered at the invert.

The deep test hole log and percolation test data sheets are attached.

PRE-DEVELOPED CONDITION

In the pre-developed condition, the site is characterized as sloping from northeast to southwest. The soil classification based upon USDA Web Soil Survey is primarily Charlton-Chatfield complex, 15 to 35 percent slopes, very rocky. The site vegetation can be characterized as lawn and landscaped. The site is located on the western side of the cul-de-sac on Cannato Place. The site consists of an existing dwelling, detached garage, stone patio, retaining walls and asphalt driveway.

In the pre-developed condition, the project site is modeled as one watershed denoted as *Watershed 1,* tributary to Design Point 1.

Watershed 1 contains approximately 43,562 square feet, consisting of 6,994 sf of impervious area in the form of the existing dwelling, detached garage, asphalt driveway and other impervious areas. The remaining 36,478 sf in *Watershed 1* consists of woodland areas in “B” soils. The weighted complex number (CN) value is calculated as 61 and the Time of Concentration (Tc) is calculated as 11.9 minutes. Overland flow from this watershed originates at the rear of the existing dwelling and flows in a western direction, eventually exiting the watershed at the western property line.

Pre-Developed Conditions	
	100-Year
	cfs
DP-1	4.20

POST-DEVELOPED CONDITION

In the post-developed condition, the project site is modeled as two watersheds denoted as *Watershed 1A & 1B*.

Watershed 1A contains approximately 7,369 square feet of tributary area in the form of the proposed dwelling, asphalt driveway & patio. The weighted Complex Number (CN) value for this area is 98 and the Time of Concentration (Tc) is calculated as a direct entry of 1 minute. The stormwater runoff from this tributary area is conveyed via a comprehensive drainage system to Fourteen (14) Cultec® 330XLHD stormwater chambers set in one foot of gravel at the sides and six inches of gravel at the invert. The system is designed to fully accept (no release) the entire stormwater runoff volume for the 100-year storm event from the watershed and ex-filtrate the runoff into the surrounding soil sub-strata.

Watershed 1B contains approximately 36,193 square feet, consisting of 855 sf of impervious area in the form of the proposed walkway and a section of the proposed asphalt driveway. The remaining 35,338 sf in *Watershed 1B* consists of woodland areas in "B" soils. The weighted complex number (CN) value is calculated as 56 and the Time of Concentration (Tc) is calculated as 8.4 minutes. Overland flows from this watershed originates near the north rear end of the proposed dwelling and flows in a western direction, eventually exiting the watershed at the western property line.

Post-Developed Conditions	
	100-Year
	cfs
DP-1	3.30

SUMMARY OF FLOWS AT DESIGN POINT

The peak runoff rates at DP-1 were calculated as follows:

Flows at Design Point (DP-1)	
	100-Year
	cfs
Pre-	4.20
Post-	3.30

PIPE CALCULATIONS:

All drainage pipes have been sized to convey the flows for all storm events up to and including the 100-year Type III 24-hour event, as required. The pipe sizes, slopes, materials, and maximum capacities have been calculated as follows:

Pipe Capacity Calculations (Watershed 1A-1)						
Pipe Dia. (in)	**Pipe Material**	**Manning's Coefficient**	**Slope (%)**	**Pipe Capacity (cfs)**	**100-Year Peak Flow (cfs)**	
6	HDPE	0.013	5.05	1.26	0.74	
Pipe Capacity Calculations (Watershed 1A-2)						
Pipe Dia. (in)	**Pipe Material**	**Manning's Coefficient**	**Slope (%)**	**Pipe Capacity (cfs)**	**100-Year Peak Flow (cfs)**	
8	HDPE	0.013	3.16	2.15	1.08	

CONCLUSION:

The stormwater management plan meets all the requirements set forth by the Town of North Castle. Design modification requirements that may occur during the approval process will be performed and submitted for review to the Town of North Castle.

Soils Map

Map Scale: 1:1,280 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 18, Sep 10, 2022

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

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

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	4.2	53.6%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	3.3	42.3%
HrF	Hollis-Rock outcrop complex, 35 to 60 percent slopes	D	0.3	4.0%
Totals for Area of Interest			**7.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Extreme Precipitation Table

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	
Location	
Latitude	41.148 degrees North
Longitude	73.711 degrees West
Elevation	170 feet
Date/Time	Mon Apr 10 2023 14:06:16 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.34	0.52	0.64	0.84	1.05	1.31	**1yr**	0.91	1.23	1.50	1.85	2.28	2.80	3.18	**1yr**	2.48	3.05	3.55	4.26	4.90	**1yr**
2yr	0.40	0.62	0.77	1.02	1.28	1.60	**2yr**	1.11	1.49	1.84	2.27	2.79	3.42	3.85	**2yr**	3.03	3.70	4.26	5.04	5.71	**2yr**
5yr	0.47	0.73	0.92	1.23	1.58	1.99	**5yr**	1.36	1.83	2.30	2.85	3.51	4.31	4.88	**5yr**	3.81	4.69	5.45	6.32	7.09	**5yr**
10yr	0.53	0.83	1.05	1.42	1.85	2.35	**10yr**	1.59	2.15	2.73	3.40	4.19	5.13	5.84	**10yr**	4.54	5.62	6.56	7.51	8.35	**10yr**
25yr	0.61	0.97	1.24	1.71	2.28	2.94	**25yr**	1.97	2.66	3.42	4.28	5.29	6.46	7.42	**25yr**	5.72	7.14	8.40	9.42	10.38	**25yr**
50yr	0.69	1.11	1.42	1.99	2.68	3.48	**50yr**	2.31	3.12	4.07	5.10	6.30	7.70	8.90	**50yr**	6.82	8.56	10.13	11.19	12.23	**50yr**
100yr	0.78	1.27	1.63	2.31	3.15	4.13	**100yr**	2.72	3.67	4.84	6.08	7.52	9.19	10.67	**100yr**	8.13	10.26	12.22	13.30	14.42	**100yr**
200yr	0.89	1.45	1.88	2.69	3.72	4.91	**200yr**	3.21	4.31	5.77	7.26	8.98	10.97	12.80	**200yr**	9.71	12.31	14.75	15.80	17.00	**200yr**
500yr	1.06	1.75	2.28	3.31	4.63	6.16	**500yr**	3.99	5.34	7.26	9.17	11.36	13.89	16.31	**500yr**	12.29	15.68	18.93	19.86	21.16	**500yr**

Lower Confidence Limits

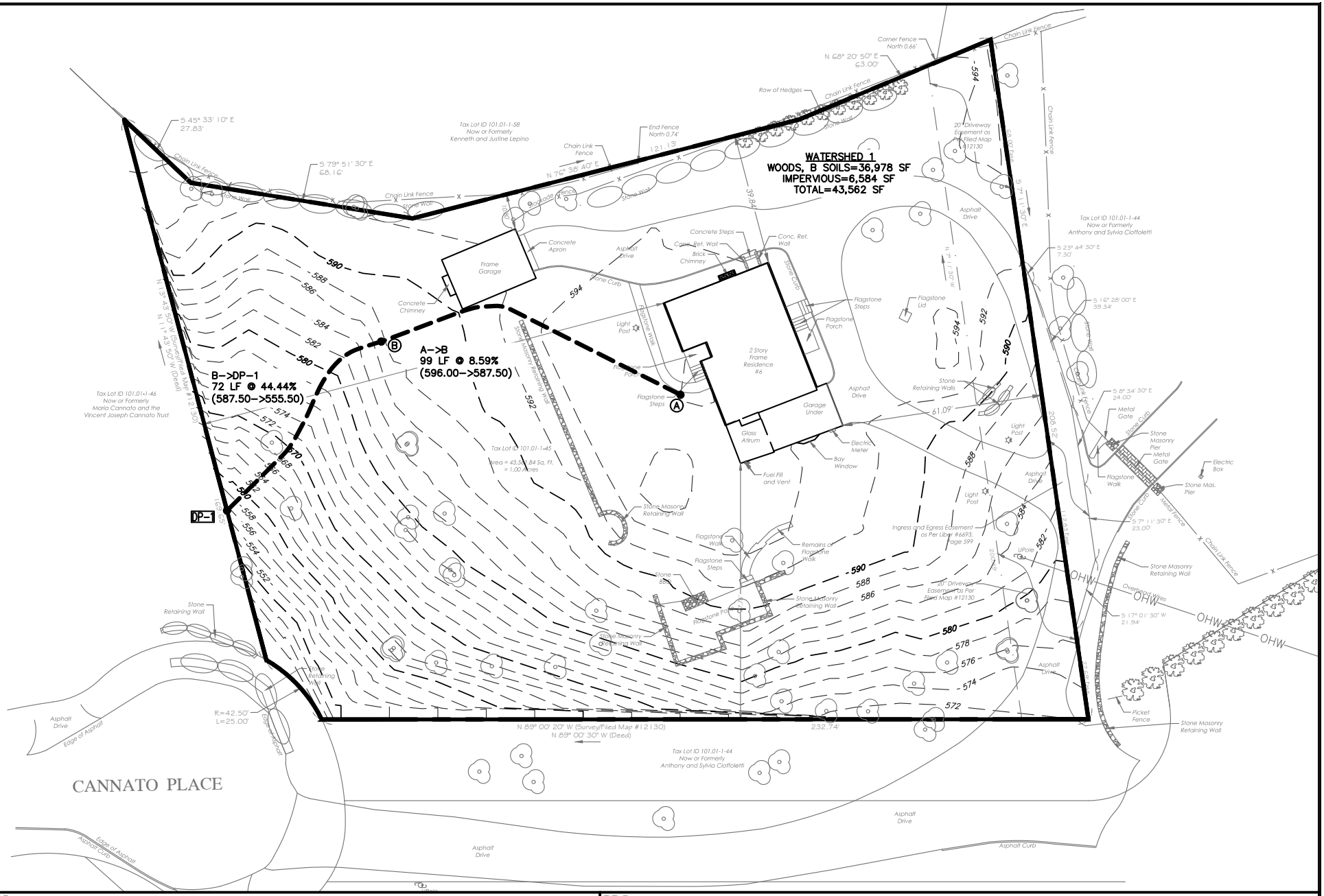
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.39	0.48	0.65	0.80	1.00	**1yr**	0.69	0.98	1.29	1.60	2.00	2.58	2.70	**1yr**	2.28	2.59	3.19	3.66	4.35	**1yr**
2yr	0.39	0.61	0.75	1.01	1.25	1.49	**2yr**	1.08	1.46	1.70	2.18	2.74	3.33	3.73	**2yr**	2.94	3.59	4.12	4.88	5.55	**2yr**
5yr	0.43	0.66	0.82	1.13	1.44	1.74	**5yr**	1.24	1.70	1.97	2.57	3.21	3.99	4.53	**5yr**	3.53	4.35	5.02	5.83	6.59	**5yr**
10yr	0.47	0.72	0.89	1.24	1.61	1.96	**10yr**	1.39	1.92	2.21	2.92	3.64	4.59	5.23	**10yr**	4.07	5.03	5.82	6.58	7.48	**10yr**
25yr	0.51	0.77	0.96	1.37	1.80	2.29	**25yr**	1.55	2.24	2.54	3.45	4.29	5.52	6.36	**25yr**	4.89	6.12	7.10	7.67	8.84	**25yr**
50yr	0.53	0.81	1.00	1.44	1.94	2.56	**50yr**	1.68	2.51	2.83	3.92	4.85	6.38	7.39	**50yr**	5.64	7.11	8.25	8.53	10.01	**50yr**
100yr	0.56	0.85	1.06	1.53	2.10	2.86	**100yr**	1.81	2.80	3.16	4.45	5.49	7.37	8.59	**100yr**	6.52	8.26	9.60	9.52	11.34	**100yr**
200yr	0.59	0.89	1.13	1.64	2.29	3.21	**200yr**	1.97	3.14	3.52	5.07	6.24	8.52	9.98	**200yr**	7.54	9.60	11.19	10.54	12.86	**200yr**
500yr	0.63	0.94	1.21	1.76	2.51	3.74	**500yr**	2.16	3.65	4.08	6.07	7.40	10.35	12.20	**500yr**	9.16	11.73	13.72	12.02	15.18	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.37	0.58	0.70	0.94	1.16	1.41	**1yr**	1.00	1.38	1.58	2.08	2.62	3.06	3.47	**1yr**	2.70	3.34	3.82	4.59	5.30	**1yr**
2yr	0.43	0.66	0.81	1.10	1.36	1.58	**2yr**	1.17	1.55	1.82	2.31	2.89	3.54	3.98	**2yr**	3.13	3.83	4.41	5.30	5.93	**2yr**
5yr	0.51	0.79	0.98	1.35	1.72	2.02	**5yr**	1.48	1.97	2.32	2.97	3.71	4.63	5.27	**5yr**	4.10	5.07	5.86	6.80	7.63	**5yr**
10yr	0.61	0.93	1.16	1.62	2.09	2.43	**10yr**	1.81	2.37	2.80	3.60	4.51	5.70	6.50	**10yr**	5.04	6.25	7.26	8.37	9.26	**10yr**
25yr	0.77	1.18	1.46	2.09	2.75	3.13	**25yr**	2.37	3.06	3.63	4.65	5.81	7.47	8.59	**25yr**	6.62	8.26	9.67	11.00	11.98	**25yr**
50yr	0.92	1.40	1.74	2.50	3.37	3.81	**50yr**	2.91	3.72	4.42	5.65	7.05	9.18	10.62	**50yr**	8.13	10.21	12.01	13.55	14.55	**50yr**
100yr	1.11	1.68	2.10	3.03	4.16	4.64	**100yr**	3.59	4.53	5.39	6.88	8.58	11.29	13.14	**100yr**	9.99	12.63	14.93	16.69	17.70	**100yr**
200yr	1.34	2.01	2.55	3.69	5.14	5.63	**200yr**	4.44	5.50	6.57	8.35	10.42	13.87	16.23	**200yr**	12.28	15.61	18.55	20.56	21.53	**200yr**
500yr	1.73	2.58	3.31	4.81	6.85	7.28	**500yr**	5.91	7.12	8.55	10.83	13.49	18.22	21.50	**500yr**	16.13	20.67	24.72	27.20	27.87	**500yr**

Powered by ACIS Northeast Regional Climate Center

Pre-Development Analysis of the 100-year Storm Event



PROJECT:

PROPOSED SINGLE-FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY - NEW YORK

TITLE:

WATERSHED MAP - EXISTING

No.	Description	Date
	Revisions	

THIS PLAN NOT VALID FOR CONSTRUCTION WITHOUT ENGINEERS SEAL & SIGNATURE

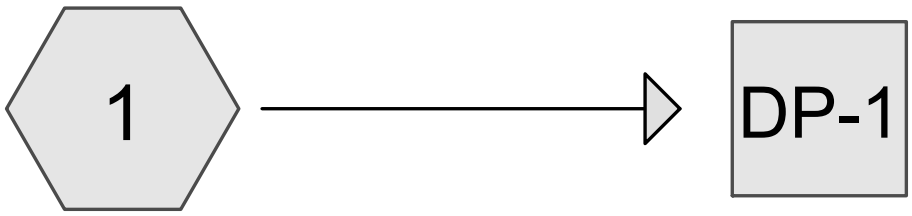
HEC

HUDSON ENGINEERING & CONSULTING, P.C.
45 Knollwood Road - Suite 201
Elmsford, NY 10523
T: 914-909-0420
F: 914-560-2066

Date:	08/04/23
Scale:	1"=60'
Drawn By:	N.S.
Checked By:	M.S.
Sheet:	1 / 1

Sheet No.

WS-E



Watershed 1 Design Point 1

Subcat Reach Pond Link

Routing Diagram for 6 Cannato - Existing Condition
Prepared by Hudson Engineering & Consulting, P.C., Printed 8/4/2023

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	100-Year	Type III 24-hr		Default	24.00	1	9.19	2

Summary for Subcatchment 1: Watershed 1

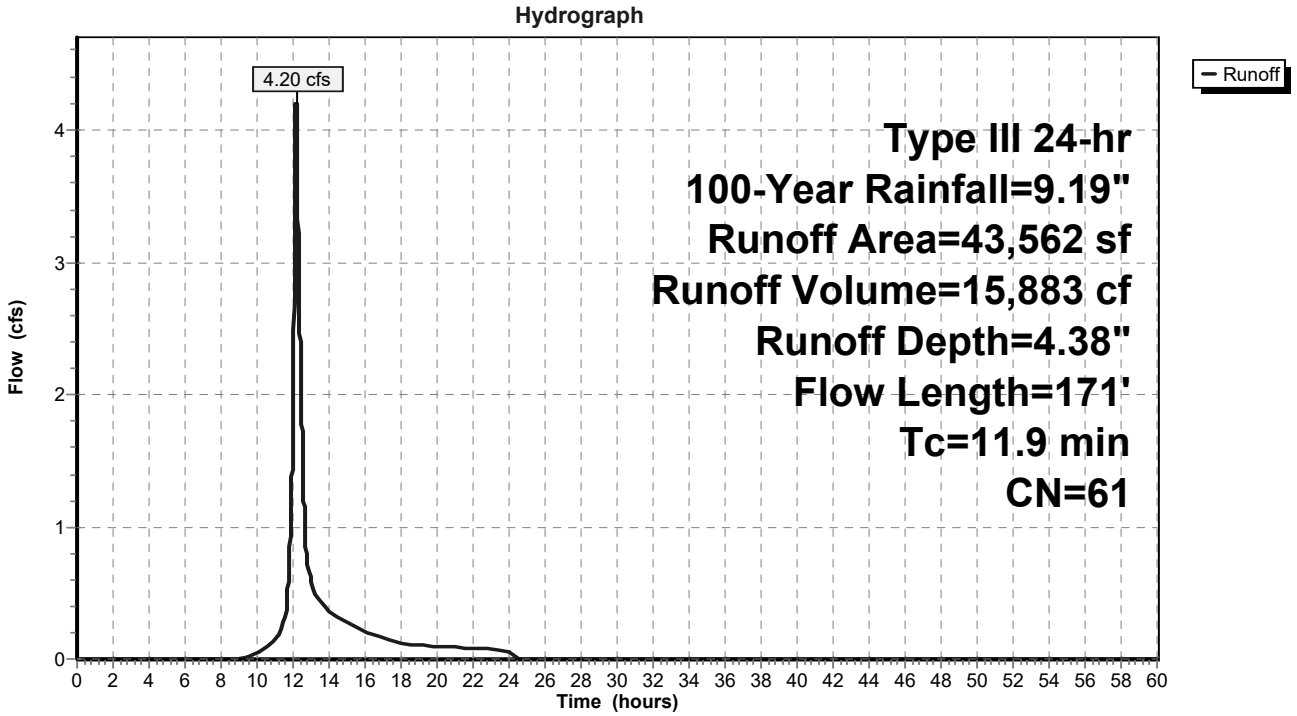
Runoff = 4.20 cfs @ 12.17 hrs, Volume= 15,883 cf, Depth= 4.38"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.19"

	Area (sf)	CN	Description
*	1,713	98	Existing Dwelling
*	406	98	Existing Detached Garage
*	318	98	Existing Other Impervious
*	4,147	98	Existing Asphalt Driveway
	36,978	55	Woods, Good, HSG B
	43,562	61	Weighted Average
	36,978		84.89% Pervious Area
	6,584		15.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	99	0.0859	0.14		**Sheet Flow, A->B** Woods: Light underbrush n= 0.400 P2= 3.42"
0.4	72	0.4444	3.33		**Shallow Concentrated Flow, B->DP-1** Woodland Kv= 5.0 fps
11.9	171	Total			

Subcatchment 1: Watershed 1

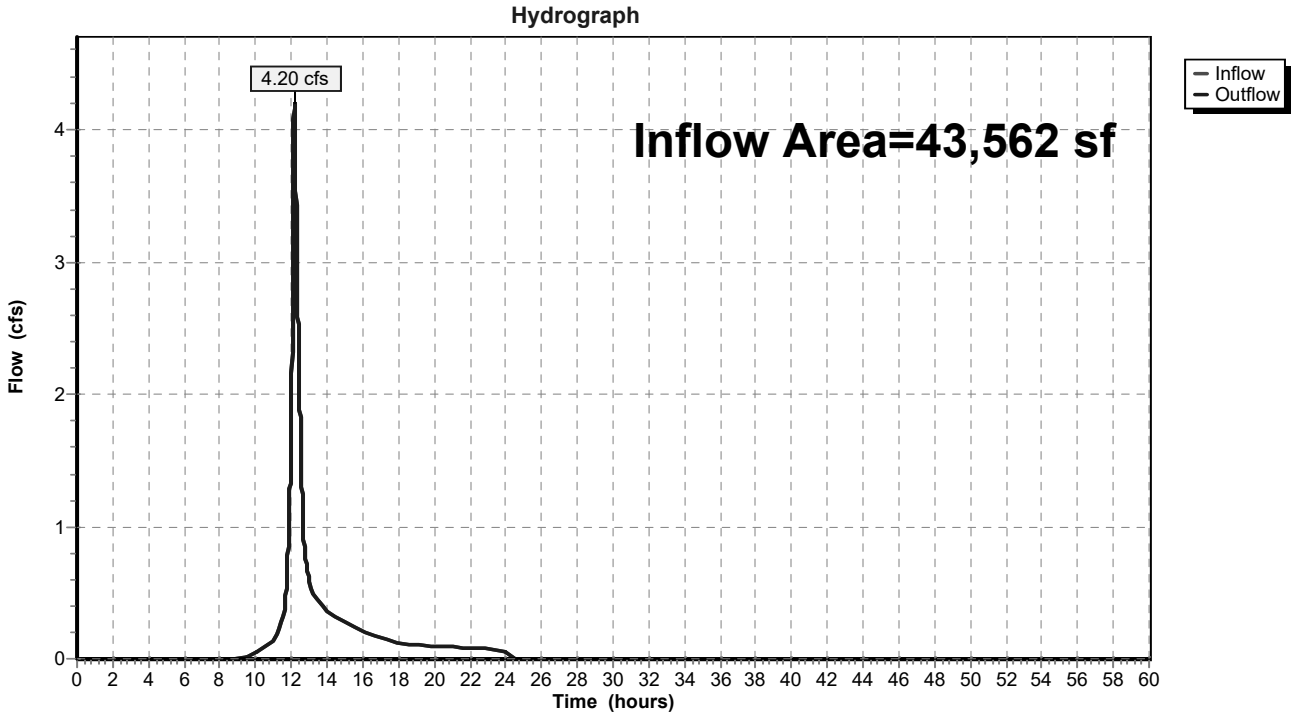


Summary for Reach DP-1: Design Point 1

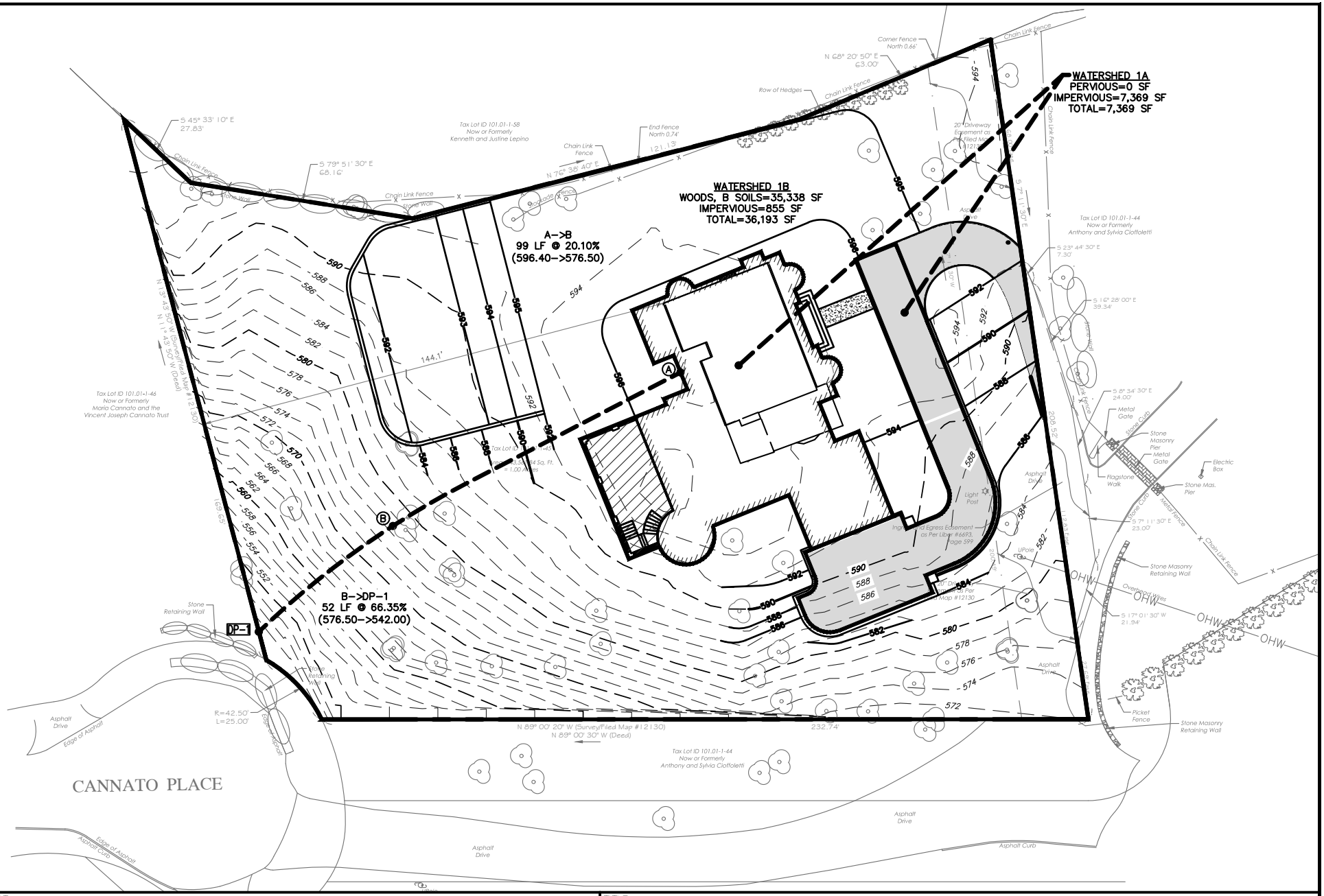
Inflow Area = 43,562 sf, 15.11% Impervious, Inflow Depth = 4.38" for 100-Year event
Inflow = 4.20 cfs @ 12.17 hrs, Volume= 15,883 cf
Outflow = 4.20 cfs @ 12.17 hrs, Volume= 15,883 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Post-Development Analysis of the 100-year Storm Event



PROJECT:

PROPOSED SINGLE-FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY - NEW YORK

TITLE:

WATERSHED MAP - PROPOSED

No.	Description	Date
	Revisions	

THIS PLAN NOT VALID FOR CONSTRUCTION
WITHOUT ENGINEERS SEAL & SIGNATURE

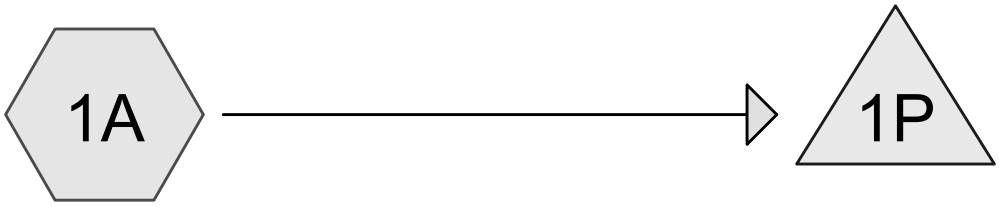
HEC

HUDSON
ENGINEERING
&
CONSULTING, P.C.
45 Knollwood Road - Suite 201
Elmsford, NY 10523
T: 914-909-0420
F: 914-560-2066

Date:	09/21/23
Scale:	1"=60'
Drawn By:	N.S.
Checked By:	M.S.
Sheet:	1 / 1

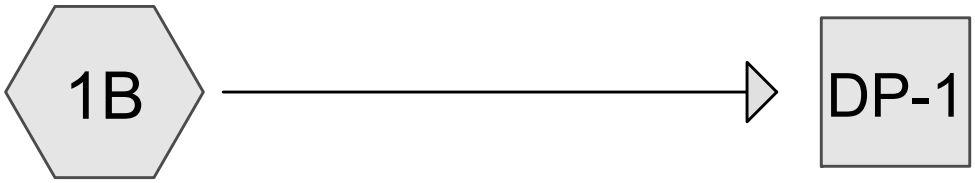
Sheet No.

WS-P



Watershed 1A

14 Cultec R-330XLHD



Watershed 1B

Design Point 1

Subcat Reach Pond Link

Routing Diagram for 6 Cannato - Proposed Condition

Prepared by Hudson Engineering & Consulting, P.C., Printed 9/21/2023

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	100-Year	Type III 24-hr		Default	24.00	1	9.19	2

Summary for Subcatchment 1A: Watershed 1A

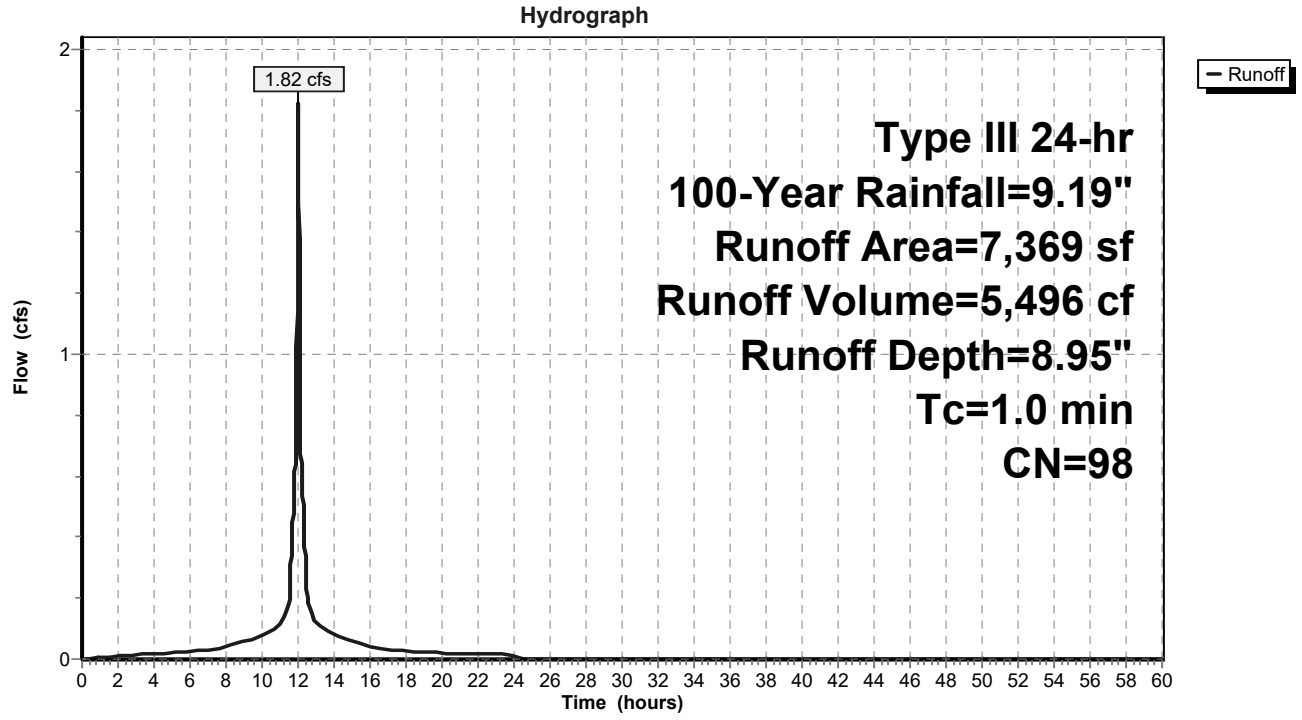
Runoff = 1.82 cfs @ 12.01 hrs, Volume= 5,496 cf, Depth= 8.95"
Routed to Pond 1P : 14 Cultec R-330XLHD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.19"

	Area (sf)	CN	Description
*	4,386	98	Proposed Dwelling
*	2,330	98	Section of Proposed Driveway
*	653	98	Proposed Patio
	7,369	98	Weighted Average
	7,369		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					**Direct Entry, Direct Entry**

Subcatchment 1A: Watershed 1A



Summary for Subcatchment 1B: Watershed 1B

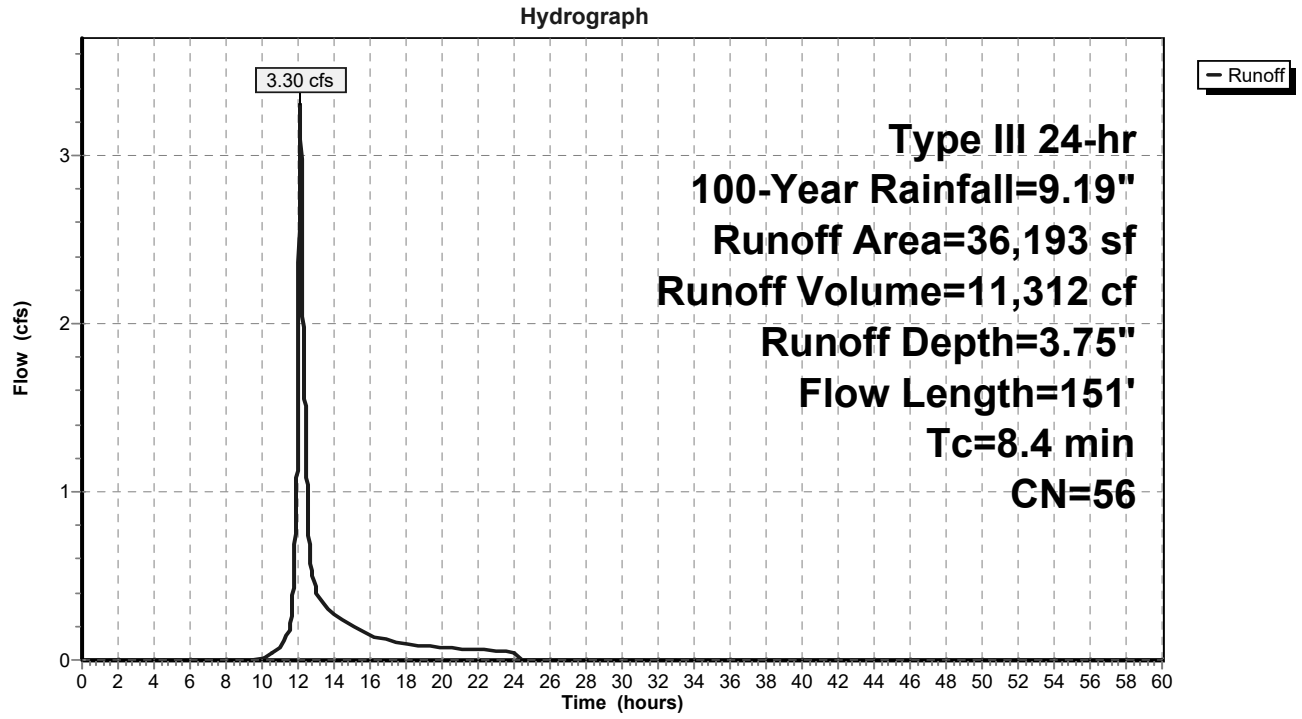
Runoff = 3.30 cfs @ 12.12 hrs, Volume= 11,312 cf, Depth= 3.75"
Routed to Reach DP-1 : Design Point 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.19"

	Area (sf)	CN	Description
*	196	98	Proposed Walkway
	35,338	55	Woods, Good, HSG B
*	659	98	Section of Proposed Driveway
	36,193	56	Weighted Average
	35,338		97.64% Pervious Area
	855		2.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	99	0.2010	0.20		**Sheet Flow, A->B** Woods: Light underbrush n= 0.400 P2= 3.42"
0.2	52	0.6635	4.07		**Shallow Concentrated Flow, B->DP-1** Woodland Kv= 5.0 fps
8.4	151	Total			

Subcatchment 1B: Watershed 1B

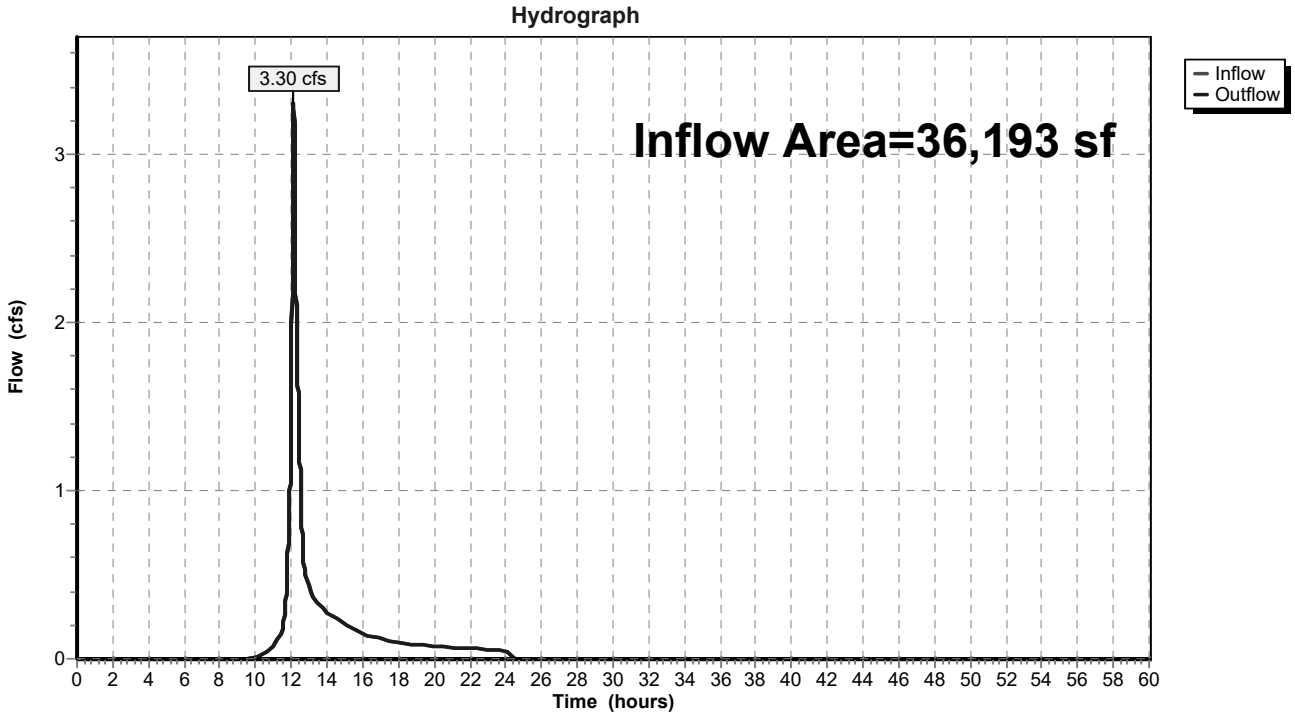


Summary for Reach DP-1: Design Point 1

Inflow Area = 36,193 sf, 2.36% Impervious, Inflow Depth = 3.75" for 100-Year event
Inflow = 3.30 cfs @ 12.12 hrs, Volume= 11,312 cf
Outflow = 3.30 cfs @ 12.12 hrs, Volume= 11,312 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Reach DP-1: Design Point 1



Summary for Pond 1P: 14 Cultec R-330XLHD

Inflow Area = 7,369 sf,100.00% Impervious, Inflow Depth = 8.95" for 100-Year event
Inflow = 1.82 cfs @ 12.01 hrs, Volume= 5,496 cf
Outflow = 0.34 cfs @ 11.64 hrs, Volume= 5,495 cf, Atten= 81%, Lag= 0.0 min
Discarded = 0.34 cfs @ 11.64 hrs, Volume= 5,495 cf

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 3.39' @ 12.40 hrs Surf.Area= 586 sf Storage= 1,121 cf

Plug-Flow detention time= 15.0 min calculated for 5,495 cf (100% of inflow)
Center-of-Mass det. time= 15.0 min (749.9 - 734.9)

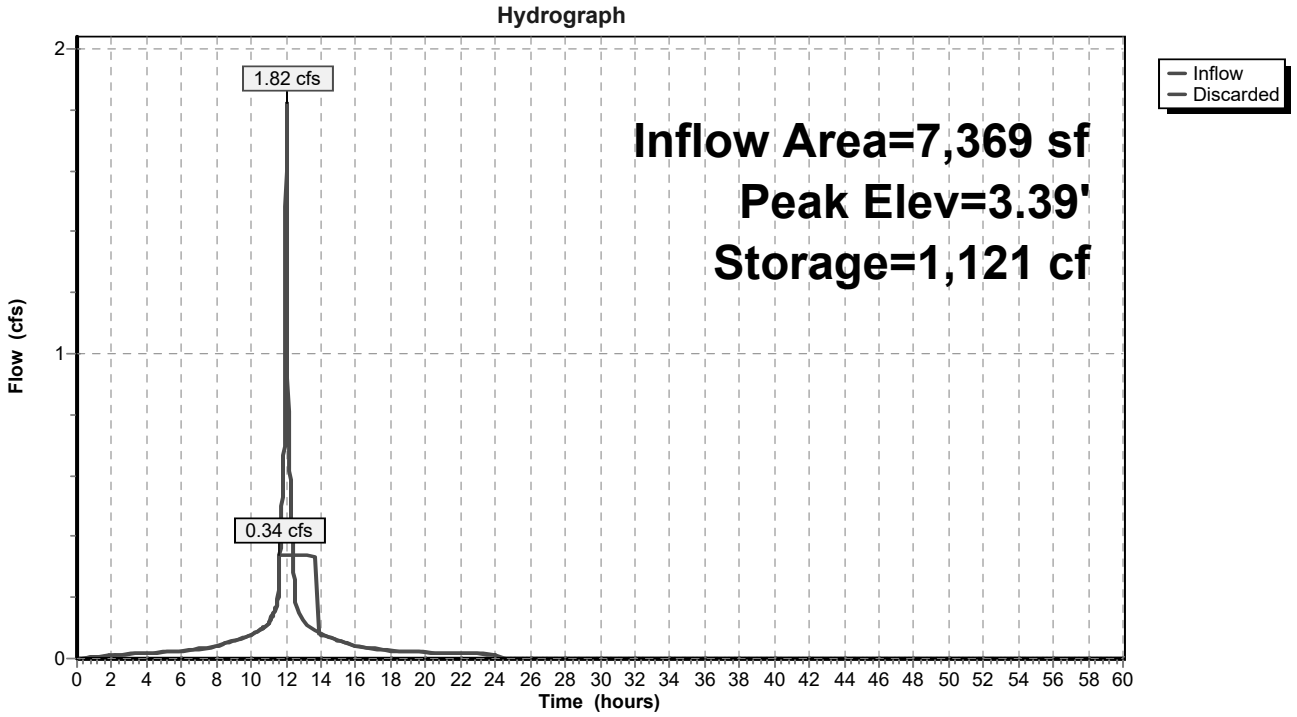
Volume	Invert	Avail.Storage	Storage Description
#1A	0.00'	397 cf	**11.17'W x 52.50'L x 3.54'H Field A** 2,076 cf Overall - 753 cf Embedded = 1,324 cf x 30.0% Voids
#2A	1.00'	753 cf	**Cultec R-330XLHD** x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
		1,150 cf	Total Available Storage

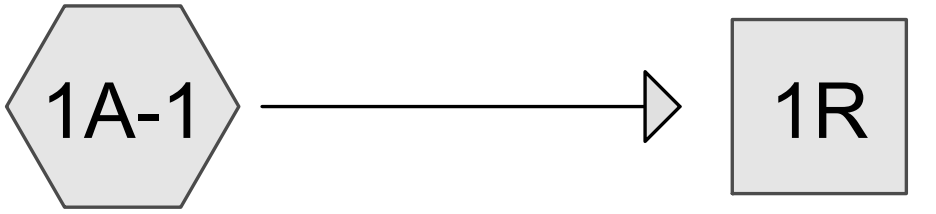
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	0.00'	**25.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.34 cfs @ 11.64 hrs HW=0.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.34 cfs)

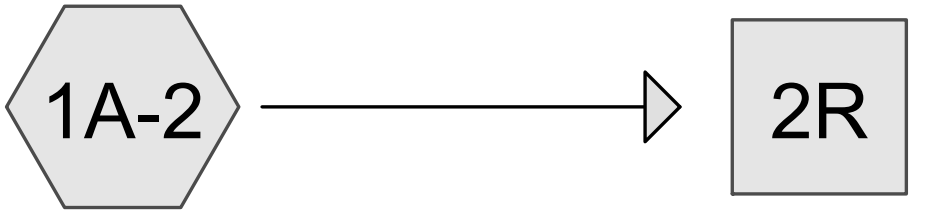
Pond 1P: 14 Cultec R-330XLHD





Section of Roof Area & Patio

6" HDPE



Driveway & Portion of Roof Area

8" HDPE

Subcat Reach Pond Link

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	100-Year	Type III 24-hr		Default	24.00	1	9.19	2

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1R	595.00	590.00	99.0	0.0505	0.013	0.0	6.0	0.0
2	2R	593.00	590.00	95.0	0.0316	0.013	0.0	8.0	0.0

Summary for Subcatchment 1A-1: Section of Roof Area & Patio

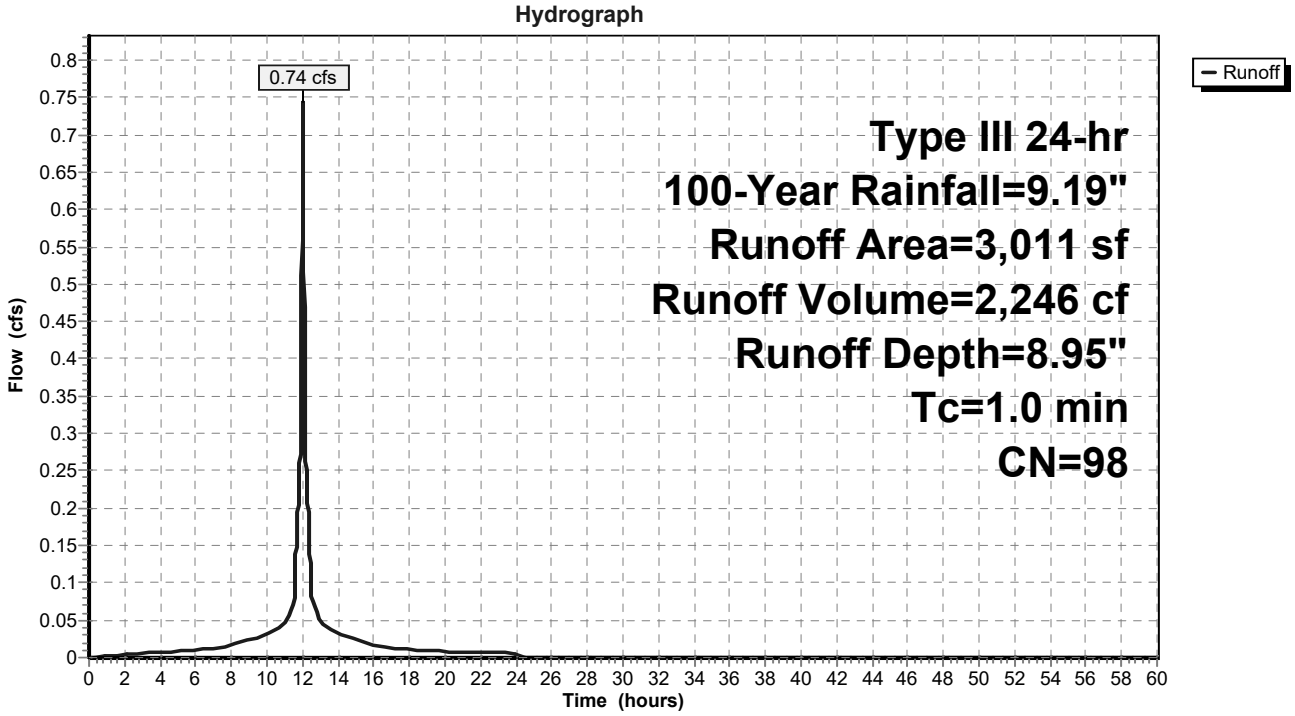
Runoff = 0.74 cfs @ 12.01 hrs, Volume= 2,246 cf, Depth= 8.95"
Routed to Reach 1R : 6" HDPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.19"

	Area (sf)	CN	Description
*	2,358	98	Proposed Dwelling
*	653	98	Proposed Patio
	3,011	98	Weighted Average
	3,011		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					**Direct Entry, Direct Entry**

Subcatchment 1A-1: Section of Roof Area & Patio



Summary for Subcatchment 1A-2: Driveway & Portion of Roof Area

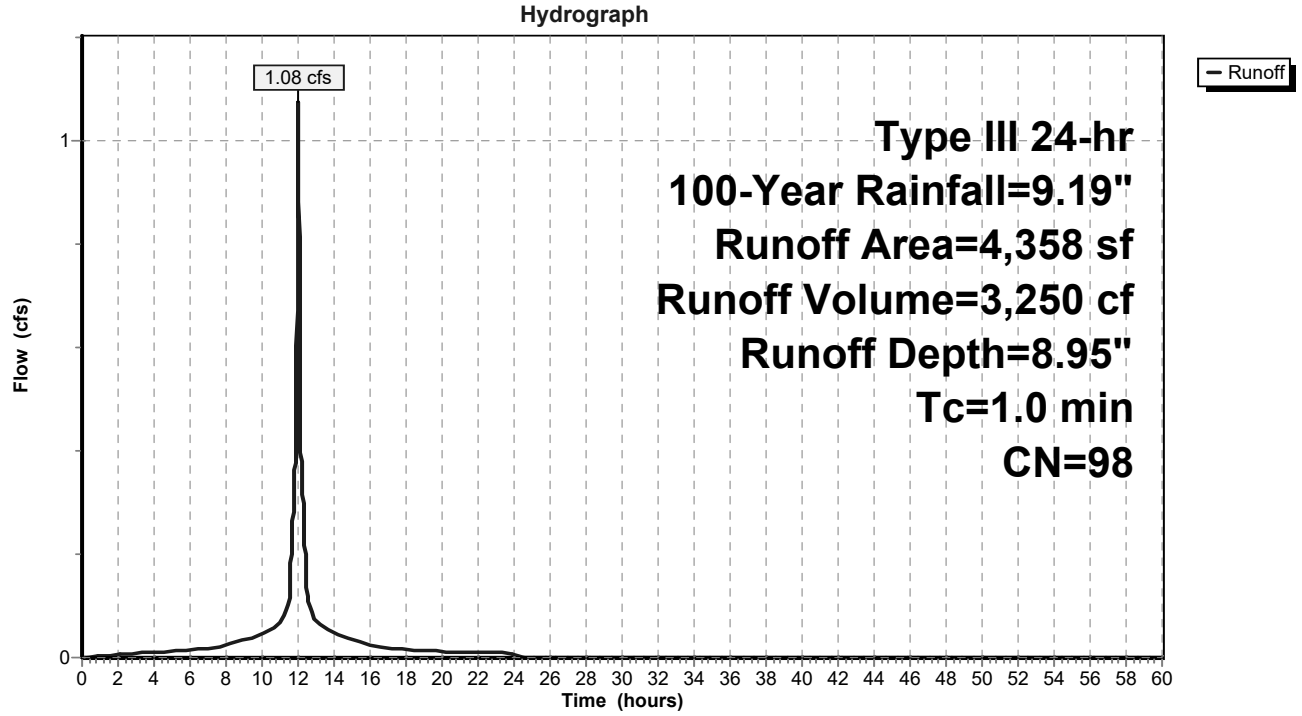
Runoff = 1.08 cfs @ 12.01 hrs, Volume= 3,250 cf, Depth= 8.95"
Routed to Reach 2R : 8" HDPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=9.19"

	Area (sf)	CN	Description
*	2,028	98	Section of Roof Area
*	2,330	98	Section of Proposed Driveway
	4,358	98	Weighted Average
	4,358		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0					**Direct Entry, Direct Entry**

Subcatchment 1A-2: Driveway & Portion of Roof Area



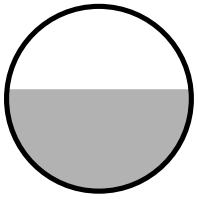
Summary for Reach 1R: 6" HDPE

Inflow Area = 3,011 sf,100.00% Impervious, Inflow Depth = 8.95" for 100-Year event
Inflow = 0.74 cfs @ 12.01 hrs, Volume= 2,246 cf
Outflow = 0.74 cfs @ 12.02 hrs, Volume= 2,246 cf, Atten= 1%, Lag= 0.5 min

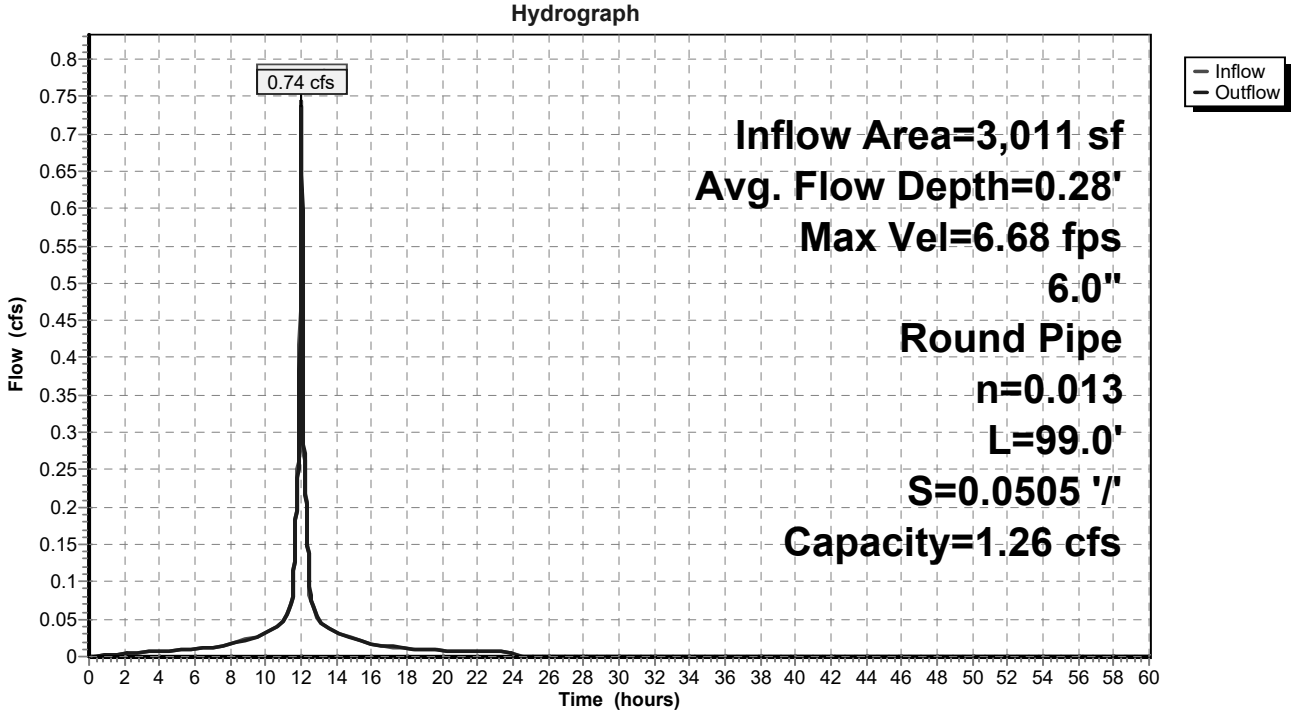
Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.68 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.19 fps, Avg. Travel Time= 0.8 min

Peak Storage= 11 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.28' , Surface Width= 0.50'
Bank-Full Depth= 0.50' Flow Area= 0.2 sf, Capacity= 1.26 cfs

6.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 99.0' Slope= 0.0505 '/'
Inlet Invert= 595.00', Outlet Invert= 590.00'



Reach 1R: 6" HDPE



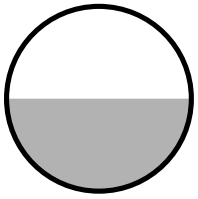
Summary for Reach 2R: 8" HDPE

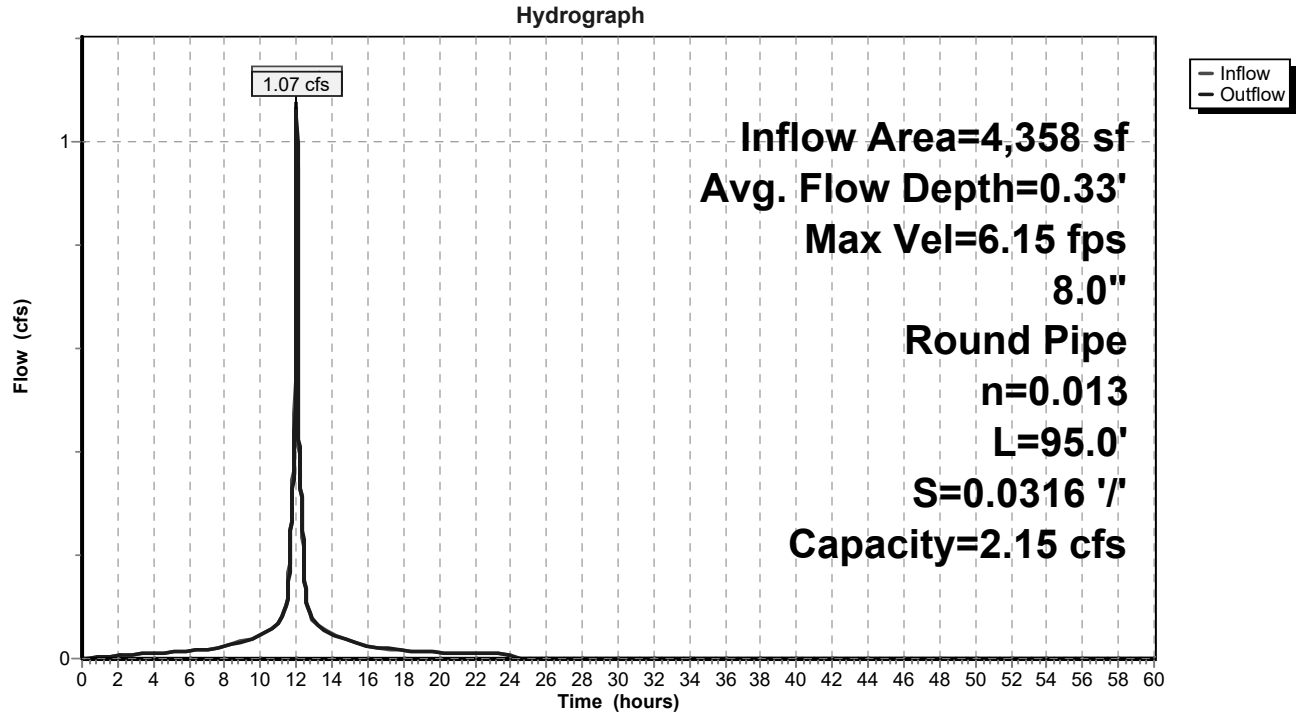
Inflow Area = 4,358 sf,100.00% Impervious, Inflow Depth = 8.95" for 100-Year event
Inflow = 1.08 cfs @ 12.01 hrs, Volume= 3,250 cf
Outflow = 1.07 cfs @ 12.02 hrs, Volume= 3,250 cf, Atten= 1%, Lag= 0.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.15 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.00 fps, Avg. Travel Time= 0.8 min

Peak Storage= 17 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 0.67'
Bank-Full Depth= 0.67' Flow Area= 0.3 sf, Capacity= 2.15 cfs

8.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 95.0' Slope= 0.0316 '/'
Inlet Invert= 593.00', Outlet Invert= 590.00'





Percolation & Deep Hole Test Logs

HUDSON ENGINEERING & CONSULTING, P.C.

SITE ADDRESS: 6 Cannato Place

TOWN/VILLAGE: Town of North Castle

DATE: 09/08/2023 TIME: 9:30am

WEATHER: Cloudy TEMP. 75° F

WITNESSED BY: Nicholas Shirriah

DEEP TEST HOLE DATA SHEET – STORMWATER MANAGEMENT SYSTEM

DEPTH	HOLE NO. 1	HOLE NO. 2	HOLE NO. 3	HOLE NO. 4
G.L.	0 – 12”	0 – 6”		
6”	Topsoil	Topsoil		
12”				
18”				
24”				
30”				
36”				
42”				
48”				
54”				
60”				
66”		**Ledge @ 66**		
72”		6 – 66”		
78”	**Ledge @ 79”**	Mod. Compact		
84”	12 – 79”	Sandy loam		
90”	Mod. Compact	**No GW**		
96”	Sandy loam			
102”	**No GW**			
108”				

- *Indicate level at which Ground Water (GW), Mottling and/or Ledge Rock is encountered.*
- *Indicate level for which water level rises after being encountered.*

EXCAVATION PERFORMED BY: **PRECISION FIELD TESTING**

45 Knollwood Road - Elmsford, NY 10523 (914) 909-0420 Fax (914) 560-2086

HUDSON ENGINEERING & CONSULTING, P.C.

SITE ADDRESS: 6 Cannato Place

TOWN/VILLAGE: North Castle (Armonk)

DATE: 09/08/2023 TIME: 11:00am

WEATHER: Sunny TEMP. 75˚ F

WITNESSED BY: Nicholas Shirriah

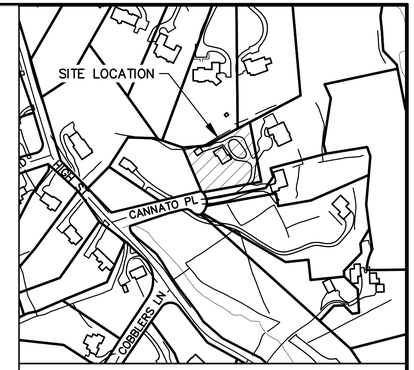
PERCOLATION TEST HOLE DATA SHEET – STORMWATER MANAGEMENT SYSTEM

Owner _____

HOLE #	CLOCK TIME				PERCOLATION				
					Depth to Water From Ground Surface			Soil Rate	
Hole Number	Run No.	Start	Stop	Elapse Time (Min.)	Start Inches	Stop Inches	Water Level in Inches Drop in inches	Min. per inch	Inches per Hour
# 1	1	11:06	11:20	14	22	46	24	0.583	102.92
	2	11:21	11:41	20	22	46	24	0.833	72.03
4" Ø	3	11:42	12:06	24	22	46	24	1	60
	4	12:06	12:30	24	22	46	24	1	60
	5								
# 2	1								
	2								
4" Ø	3								
	4								
	5								
# 3	1								
	2								
4" Ø	3								
	4								
	5								

Notes:

1) Tests to be repeated at the same depth until approximately equal soil rates are obtained at each percolation test hole. All data to be submitted for review.
2) Depth measurements to be made from top of hole



LOCATION MAP

SCALE: 1"=250'

GENERAL NOTES:

1. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE SUPERVISION OF THE CONSTRUCTION.
2. NO CHANGES SHALL BE MADE TO THESE PLANS EXCEPT AS PER NYS LAW CHAPTER 987.
3. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO ACI, AISC, ZONING, AND THE NEW YORK STATE BUILDING CODE.
4. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY DISCREPANCIES.
5. ALL CHANGES MADE TO THE PLANS SHALL BE APPROVED BY THE ENGINEER AND ANY SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE ORIGINAL BUILDING PERMIT.
6. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES, AND OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTACT WITH THE CONTRACTOR.
8. SAFETY DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL AGENCIES IN EFFECT DURING THE PERIOD OF CONSTRUCTION.
9. THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL MAKE APPLICATION TO RECEIVE ALL NECESSARY PERMITS TO PERFORM THE WORK UNDER CONTRACT. THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL BE LICENSED TO DO ALL WORK AS REQUIRED BY THE LOCAL, COUNTY, AND STATE AGENCIES WHICH MAY HAVE JURISDICTION OVER THOSE TRADES, AND SHALL PRESENT THE OWNER WITH COPIES OF ALL LICENSES AND INSURANCE CERTIFICATES.
10. FINAL GRADING AROUND THE BUILDING AREA SHALL SLOPE AWAY FROM THE STRUCTURE.
11. ALL WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS.
12. ADJOINING PUBLIC AND PRIVATE PROPERTY SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION, REMODELING AND DEMOLITION WORK. PROTECTION MUST BE PROVIDED FOR FOOTINGS, FOUNDATIONS, PARTY WALLS, CHIMNEYS, SKYLIGHTS AND ROOFS. PROVISIONS SHALL BE MADE TO CONTROL WATER RUNOFF AND EROSION DURING CONSTRUCTION OR DEMOLITION ACTIVITIES. THE PERSON MAKING OR CAUSING AN EXCAVATION TO BE MADE SHALL PROVIDE WRITTEN NOTICE TO THE OWNERS OF ADJOINING BUILDINGS ADVISING THEM THAT THE EXCAVATION IS TO BE MADE AND THAT THE ADJOINING BUILDING SHOULD BE PROTECTED. SAID NOTIFICATION SHALL BE DELIVERED NOT LESS THAN 10 DAYS PRIOR TO THE SCHEDULED STARTING DATE OF THE EXCAVATION.
13. OWNER SHALL INSURE THAT THE INSURANCE PROVIDED BY THE CONTRACTOR HIRED TO PERFORM THE WORK SHALL BE ENDORSED TO NAME HUDSON ENGINEERING & CONSULTING, P.C., AND ANY DIRECTORS, OFFICERS, EMPLOYEES, SUBSIDIARIES, AND AFFILIATES, AS ADDITIONAL INSURED ON ALL POLICIES AND HOLD HARMLESS DOCUMENTS, AND SHALL STIPULATE THAT THIS INSURANCE IS PRIMARY, AND THAT ANY OTHER INSURANCE OR SELF-INSURANCE MAINTAINED BY HUDSON ENGINEERING & CONSULTING, P.C., SHALL BE EXCESS ONLY AND SHALL NOT BE CALLED UPON TO CONTRIBUTE WITH THIS INSURANCE. ISO ADDITIONAL INSURED ENDORSEMENT FORM NUMBER CG2010 1185 UNDER GL. COPIES OF THE INSURANCE POLICIES SHALL BE SUBMITTED TO HUDSON ENGINEERING & CONSULTING, P.C., FOR APPROVAL PRIOR TO THE SIGNING OF THE CONTRACT.
14. INDUSTRIAL CODE RULE 753: THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 72 HOURS PRIOR TO THE START OF HIS OPERATIONS AND SHALL COMPLY WITH ALL THE LATEST INDUSTRIAL CODE RULE 753 REGULATIONS.

6 CANNATO PLACE - ZONING ANALYSIS TABLE

SECTION: 101.01 BLOCK: 1 LOT: 45	DISTRICT: R-1A One-Family Residence		
REGULATION	Required	Existing	Proposed
Min. Lot Area (S.F.)	43,560	43,562	N/C
Min. Lot Width (ft.)	125	205.8	N/C
Min. Lot Depth (ft.)	150	232.7	N/C
Min. Yards			
- Front (ft.)	50	144.1	124.5
- Side 1 (ft.)	25	39.8	35.0
- Side 2 (ft.)	25	77.6	48.0
- Rear (ft.)	40	61.09	50
Building Coverage (S.F.)	Per Lot Size	1,713	4,386
Max Building Coverage (%)	12.0%	3.9%	10.0%

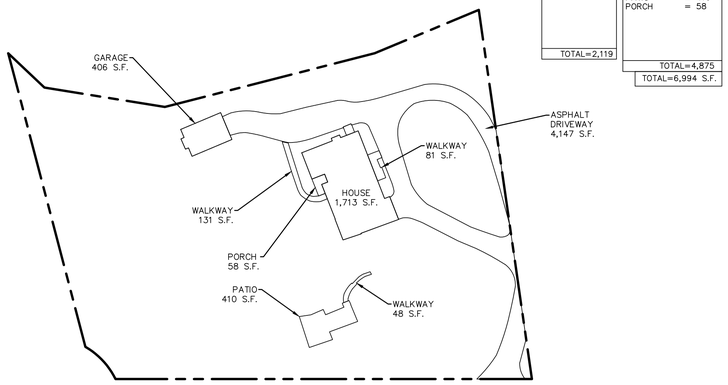
SLOPE ANALYSIS (ENTIRE SITE)

NO.	MIN. SLOPE	MAX. SLOPE	AREA	COLOR
1	0%	15%	18271	
2	15%	25%	6560	
3	25%	35%	5913	
4	35%	Vertical	12818	

LEGEND

PROPERTY LINE

EXISTING TREE TO BE REMOVED

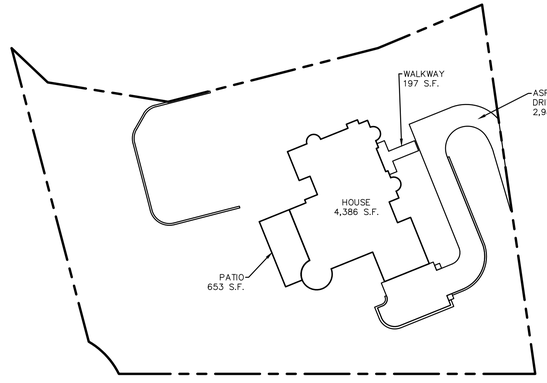


BUILDING	
HOUSE	= 1,713
GARAGE	= 406
TOTAL=2,119	

IMPERVIOUS	
DRIVEWAY	= 4,147
WALKWAYS	= 260
PATIO	= 410
PORCH	= 58
TOTAL=4,875	
TOTAL=6,994 S.F.	

EXISTING LOT COVERAGE

SCALE: 1"=40'



BUILDING	
HOUSE	= 4,386
TOTAL=4,386	

IMPERVIOUS	
DRIVEWAY	= 2,989
WALKWAYS	= 197
PATIO	= 653
TOTAL=3,839	
TOTAL=8,225 S.F.	

PROPOSED LOT COVERAGE

SCALE: 1"=40'

EXISTING INFORMATION SHOWN HEREON PROVIDED BY ANASTASIA I. PARSATOON LAND SURVEYING, P.C. DATED SEPTEMBER 26, 2022.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

ANY ALTERATIONS OR REVISIONS OF THESE PLANS, UNLESS DONE BY OR UNDER THE DIRECTION OF THE NYS LICENSED AND REGISTERED ENGINEER THAT PREPARED THEM, IS A VIOLATION OF THE NYS EDUCATION LAW.

No.	Revisions	Date
1.	Revisions based on RPRC comments dated 07/05/23	09/20/23

THIS PLAN NOT VALID FOR CONSTRUCTION WITHOUT ENGINEERS SEAL & SIGNATURE

PROJECT:

PROPOSED SINGLE-FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY - NEW YORK

EXISTING CONDITIONS PLAN

STATE OF NEW YORK · MICHAEL F. STERN · LICENSED PROFESSIONAL ENGINEER · No. 80637

HEC

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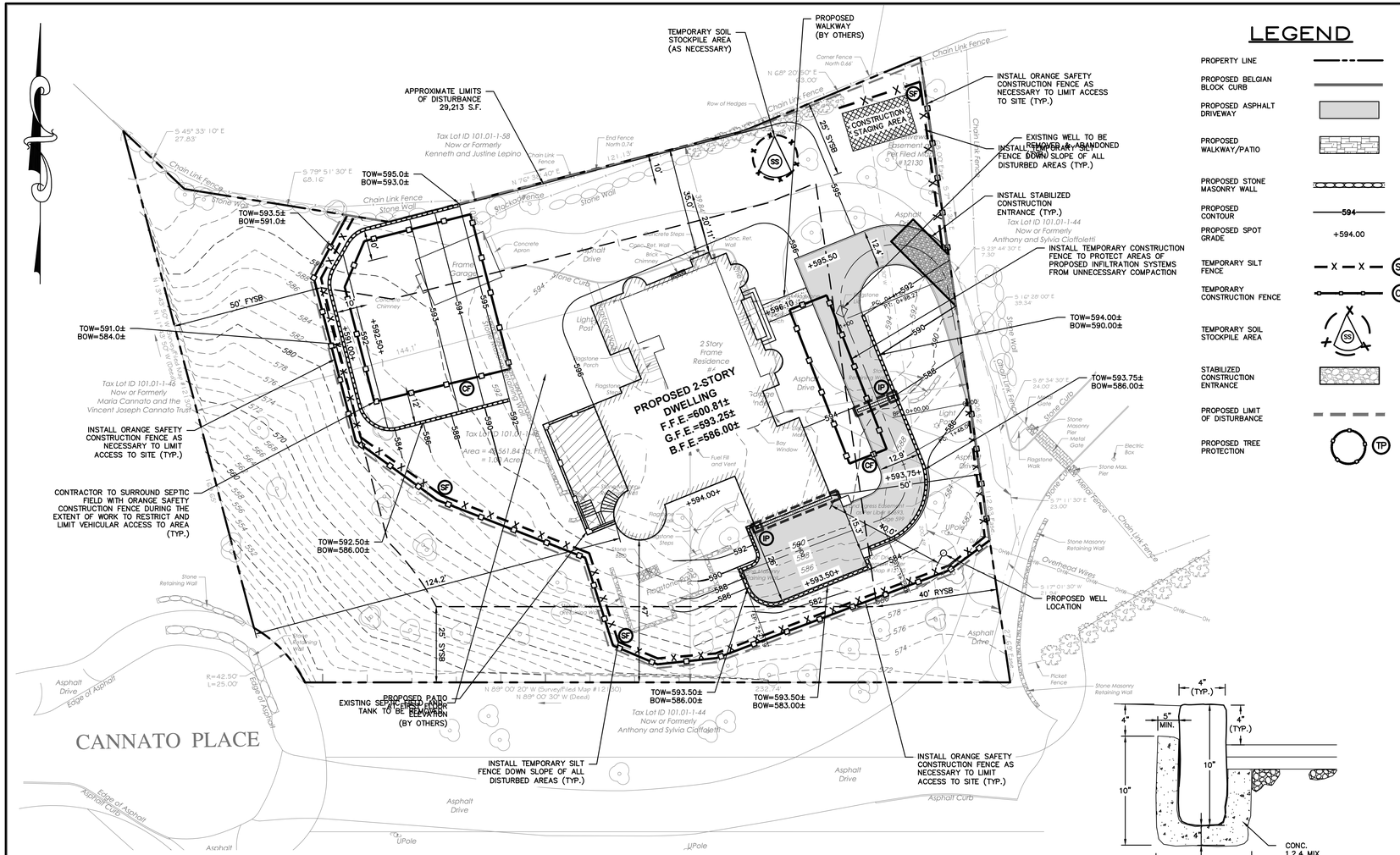
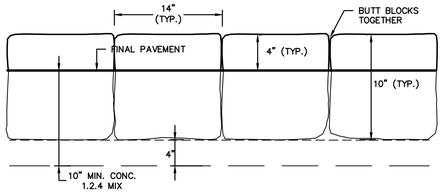
Date: 06/01/23 Sheet: 1 / 4
Scale: 1" = 20'
Designed By N.S.
Checked By M.S.
Sheet No. C-1



SECTION



ELEVATION

BELGIUM BLOCK CURB DETAIL

LEGEND

- PROPERTY LINE
- PROPOSED BELGIAN BLOCK CURB
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED WALKWAY/PATIO
- PROPOSED STONE MASONRY WALL
- PROPOSED CONTOUR — 594
- PROPOSED SPOT GRADE +594.00
- TEMPORARY SILT FENCE — X — X — (SF)
- TEMPORARY CONSTRUCTION FENCE (CF)
- TEMPORARY SOIL STOCKPILE AREA (SS)
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED TREE PROTECTION (TP)

SLOPE ANALYSIS (LIMIT OF DISTURBANCE)

NO.	MIN. SLOPE	MAX. SLOPE	AREA	COLOR
1	0%	15%	16758	
2	15%	25%	5122	
3	25%	35%	3302	
4	35%	Vertical	3138	

INSTALLATION & MAINTENANCE OF EROSION CONTROL:

CONSTRUCTION SCHEDULE
NOTIFY APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 5 DAYS PRIOR TO START.

EROSION CONTROL MEASURES
INSTALL ALL EROSION CONTROL MEASURES PRIOR TO START OF CONSTRUCTION. CALL FOR INSPECTION FROM THE APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 2 DAYS PRIOR TO FINISH.

INSPECTION BY MUNICIPALITY
MAINTENANCE (TO BE PERFORMED DURING ALL PHASES OF CONSTRUCTION)

AFTER ANY RAIN CAUSING RUNOFF, CONTRACTOR TO INSPECT HAYBALES, ETC. AND REMOVE ANY EXCESSIVE SEDIMENT AND INSPECT STOCKPILES AND CORRECT ANY PROBLEMS WITH SEED ESTABLISHMENT.
INSPECTIONS SHALL BE DOCUMENTED IN WRITING AND SUBMITTED TO THE APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION.

INSPECTION BY MUNICIPALITY – FINAL GRADING
REMOVE UNNEEDED SUBGRADE FROM SITE.
CALL FOR INSPECTION FROM THE APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 2 DAYS PRIOR TO FINISH.

INSPECTION BY MUNICIPALITY – LANDSCAPING

SPREAD TOPSOIL EVENLY OVER AREAS TO BE SEEDED. HAND RAKE LEVEL. BROADCAST 1.25 LB. BAG OF JONATHAN GREEN "FASTGROW" MIX OR EQUAL OVER AREA TO BE SEEDED. APPLY STRAW MULCH AND WATER WITHIN 2 DAYS OF COMPLETION OF TOPSOILING. CALL FOR INSPECTION FROM THE APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 2 DAYS PRIOR TO FINISH.

INSPECTION BY MUNICIPALITY – FINAL LANDSCAPING

GRASS ESTABLISHED.
CALL FOR INSPECTION FROM THE APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 2 DAYS PRIOR TO FINISH.

INSPECTION BY MUNICIPALITY – FINAL INSPECTION

ALL EROSION CONTROL MEASURES REMOVED AND GRASS ESTABLISHED.
CALL FOR INSPECTION FROM THE APPROPRIATE MUNICIPAL AGENCY HAVING JURISDICTION AT LEAST 2 DAYS PRIOR TO FINISH.

TOWN OF NORTH CASTLE NOTES:

1. WALLS GREATER THAN FOUR (4) FEET IN HEIGHT SHALL BE INSPECTED DURING ITS INSTALLATION AND CERTIFIED BY THE DESIGN PROFESSIONAL PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY/COMPLETION.

2. ALL WALLS BY OTHERS

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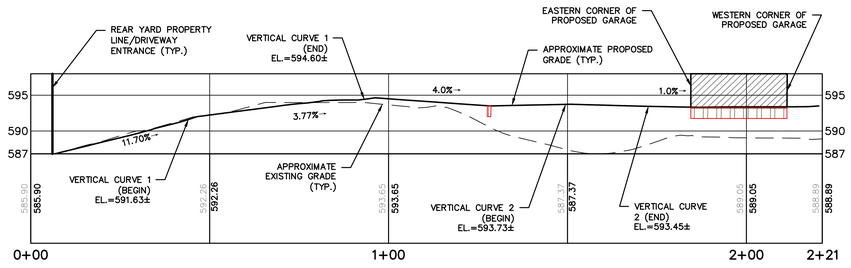
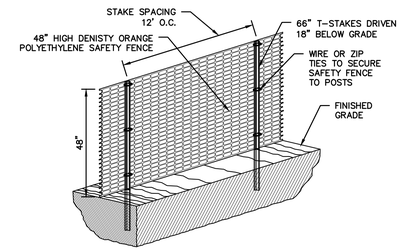


DRIVEWAY PROFILE
(STA. 0+00 TO STA. 2+21)
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

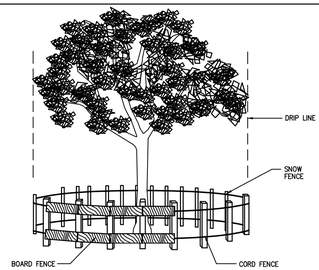
EROSION & SEDIMENT CONTROL PLAN IS BASED ON EXISTING INFORMATION SHOWN HEREON PROVIDED BY ANASTASIA I. PARSATOON LAND SURVEYING, P.C. DATED SEPTEMBER 26, 2022.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

FENCING AND ARMORING

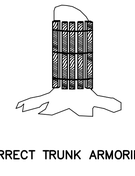


CONSTRUCTION FENCE



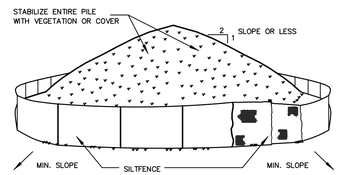
CORRECT METHODS OF TREE FENCING

TRIANGULAR BOARD FENCE



CORRECT TRUNK ARMORING

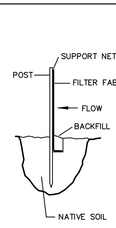
SOIL STOCKPILING



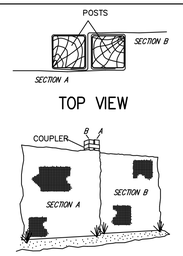
INSTALLATION NOTES

INSTALLATION NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. SOILS OR FILL TO BE STOCKPILED ON SITE DURING CUTTING AND FILLING ACTIVITIES SHOULD BE LOCATED ON LEVEL PORTIONS OF THE SITE WITH A MINIMUM OF 50–75 FOOT SETBACKS FROM TEMPORARY DRAINAGE SWALES.
3. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
4. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
5. STOCKPILES REMAINING IN PLACE FOR MORE THAN A WEEK SHOULD BE SEEDED AND MULCHED OR COVERED WITH GEOTEXTILE FABRIC SURROUNDED BY SILT FENCE.
6. SEE SPECIFICATIONS (THIS MANUAL) FOR INSTALLATION OF SILT FENCE.

SILT FENCE



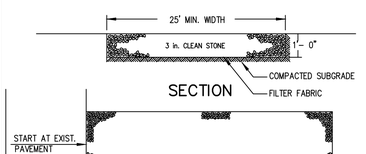
TOE–IN METHOD



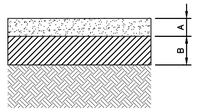
JOINING SECTIONS OF FENCING

INSTALLATION NOTES:
1. EXCAVATE A 4 INCH * 4 INCH TRENCH ALONG THE LOWER PERIMETER OF THE SITE.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM)WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM THE TRENCH BOTTOM.
4. LAY THE TOE–IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH.
5. JOIN SECTIONS AS SHOWN ABOVE.

STABILIZED CONSTRUCTION ENTRANCE



INSTALLATION NOTES:
1. STONE SIZE – USE 3" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
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 – 25 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.



A– 2" TOP COURSE– N.Y.S.D.O.T. ITEM, 403.178202, TYPE 6 F2
B– 4" SUBBASE COURSE– N.Y.S.D.O.T. ITEM, 304.12, TYPE 2

DRIVEWAY PAVEMENT SECTION

Cut/Fill Summary

Name	2d Area	Cut	Fill	Net
Proposed Cut Fill	26501.09 Sq. Ft.	1560.77 Cu. Yd.	1247.52 Cu. Yd.	313.25 Cu. Yd.<cut>
Totals	26501.09 Sq. Ft.	1560.77 Cu. Yd.	1247.52 Cu. Yd.	313.25 Cu. Yd.<cut>

No.	Description	Date
2.	Revisions based on KELLARD comments	09/20/23
1.	Revisions based on RPRC comments dated 07/05/23	09/01/23

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PROJECT:
PROPOSED SINGLE–FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY – NEW YORK

EROSION & SEDIMENT CONTROL PLAN

STATE OF NEW YORK · MICHAEL F. STEIN · LICENSED PROFESSIONAL ENGINEER · No. 80657

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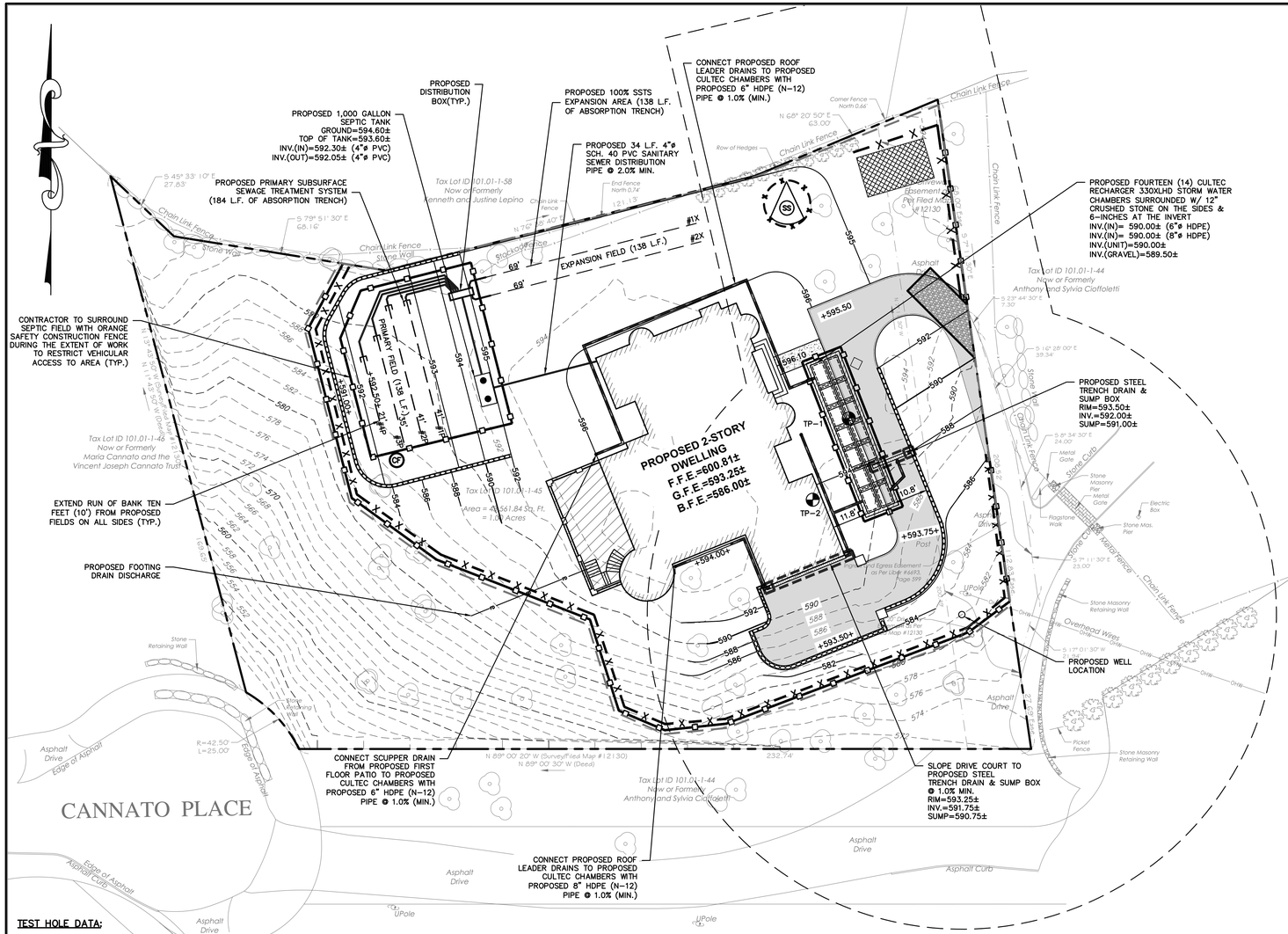
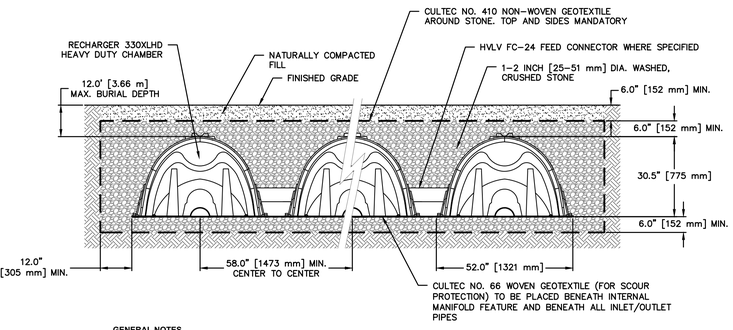


LEGEND

- PROPERTY LINE
- PROPOSED BELGIAN BLOCK CURB
- PROPOSED ASPHALT DRIVEWAY
- PROPOSED WALKWAY/PATIO
- PROPOSED STONE MASONRY WALL
- PROPOSED CONTOUR — 594
- PROPOSED SPOT GRADE — +594.00
- PROPOSED STORM PIPE
- PROPOSED DRAIN INLET
- PROPOSED TRENCH DRAIN
- TEMPORARY INLET PROTECTION — IP
- TEMPORARY SILT FENCE — SF
- TEMPORARY CONSTRUCTION FENCE — CF
- TEMPORARY SOIL STOCKPILE AREA — SS
- STABILIZED CONSTRUCTION ENTRANCE
- TEST PIT LOCATION — TP-1
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED TREE PROTECTION — TP

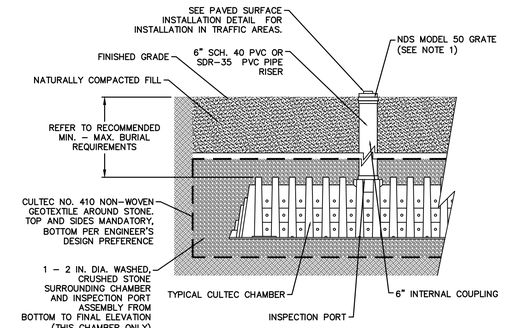


GENERAL NOTES

RECHARGER 330XL HD BY CULTEC, INC. OF BROOKFIELD, CT.
STORAGE PROVIDED = 11.32 CF/FT [1.05 m³/m] PER DESIGN UNIT.
REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES.
THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS

ALL RECHARGER 330XL HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
ALL RECHARGER 330XL HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS

CULTEC RECHARGER 330XLHD



INSTALLATION DETAIL

CULTEC INSPECTION PORT

NOTES:

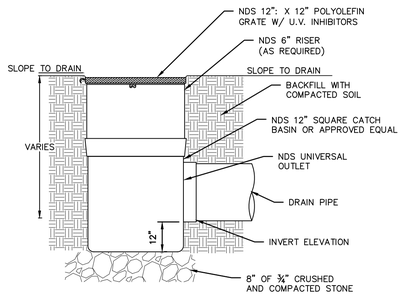
1. WHEN ACCESS PORT IS UTILIZED AS SYSTEM OVERFLOW, INSTALL NDS MODEL 50 GRATE. GRATE TO BE SET 1/2" ABOVE ADJACENT GRADE. ADJACENT GRADE TO PITCH AWAY FROM ACCESS PORT IN ALL DIRECTION.
2. INSPECTION PORT NOT TO SERVE AS OVERFLOW WHEN INSTALLED IN PAVED/TRAFFIC AREAS.

TEST HOLE DATA:

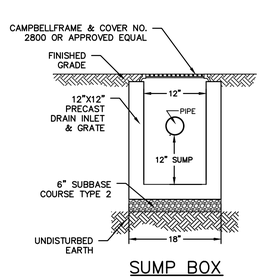
TEST HOLE #1
DEPTH - 96"
0-6" TOPSOIL
6-96" SANDY LOAM W/ SMALL ROCKS
NO GROUNDWATER
NO LEDGE ROCK
PERC. = 51.67 INCHES/HOUR

TEST HOLE #2
DEPTH - 40"
0-5" TOPSOIL
5-40" MOD. COMPACT SANDY LOAM W/ SOME SILT
NO GROUNDWATER
LEDGE ROCK @ 40"

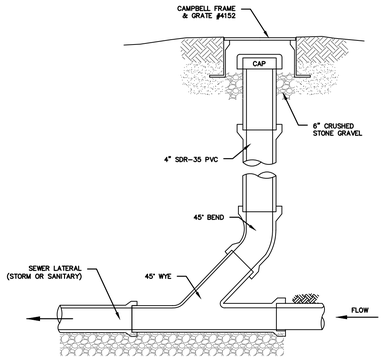
TEST HOLE #3
DEPTH - 40"
0-4" TOPSOIL
4-48" SANDY LOAM, VERY ROCKY
NO GROUNDWATER
PERD. LEDGE ROCK @ 48"



NDS SQUARE CATCH BASIN

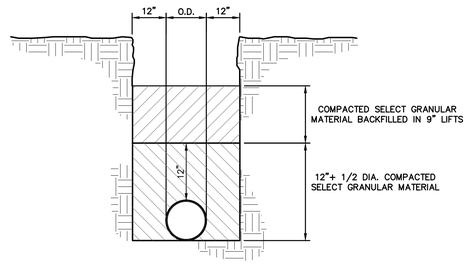


SUMP BOX

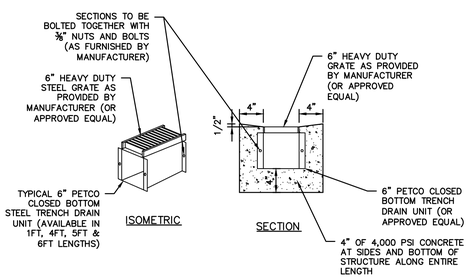


NOTES (STORM SEWER):
1. REFER TO PLAN FOR SPECIFIC PIPE SIZING AND SLOPE SPECIFICATIONS; HOWEVER, IN GENERAL, ALL STORM SEWER SERVICES TO BE 6"ø SCH. 40 @ 1.0% MINIMUM.
2. CLEANOUTS SHALL BE PLACED BEFORE SIGNIFICANT PIPE BEND LOCATIONS (I.E., JUNCTIONS, 90-DEGREE BENDS, ETC.) UNLESS A ROOF LEADER DOWNSPOUT CONNECTION IS PROPOSED.

SEWER CLEANOUT DETAIL (GRAVITY)
(STORM)



TRENCH BEDDING



STEEL TRENCH DRAIN

CONTRACTOR SHALL CONTACT DESIGN ENGINEER TO SCHEDULE A SITE INSPECTION PRIOR TO BACKFILLING INFILTRATION/ATTENUATION SYSTEM(S). ALL CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND VISIBLE AT TIME OF INSPECTION. SHOULD THE CONTRACTOR BACKFILL PRIOR TO INSPECTION, THE CONTRACTOR SHALL EXPOSE THE SYSTEM AT THEIR OWN EXPENSE.

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STORMWATER MANAGEMENT PLAN IS BASED ON EXISTING INFORMATION SHOWN HEREON PROVIDED BY ANASTASIA I. PARSATOON LAND SURVEYING, P.C. DATED SEPTEMBER 26, 2022.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

No.	Description	Date
2.	Revisions based on KELLARD comments	09/20/23
1.	Revisions based on RPRC comments dated 07/05/23	08/03/23

THIS PLAN NOT VALID FOR CONSTRUCTION WITHOUT ENGINEERS SEAL & SIGNATURE

PROJECT:
PROPOSED SINGLE-FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY - NEW YORK

STORMWATER MANAGEMENT PLAN

STATE OF NEW YORK · MICHAEL F. STERN · 10 Knollwood Rd. · LICENSED PROFESSIONAL ENGINEER · No. 80637

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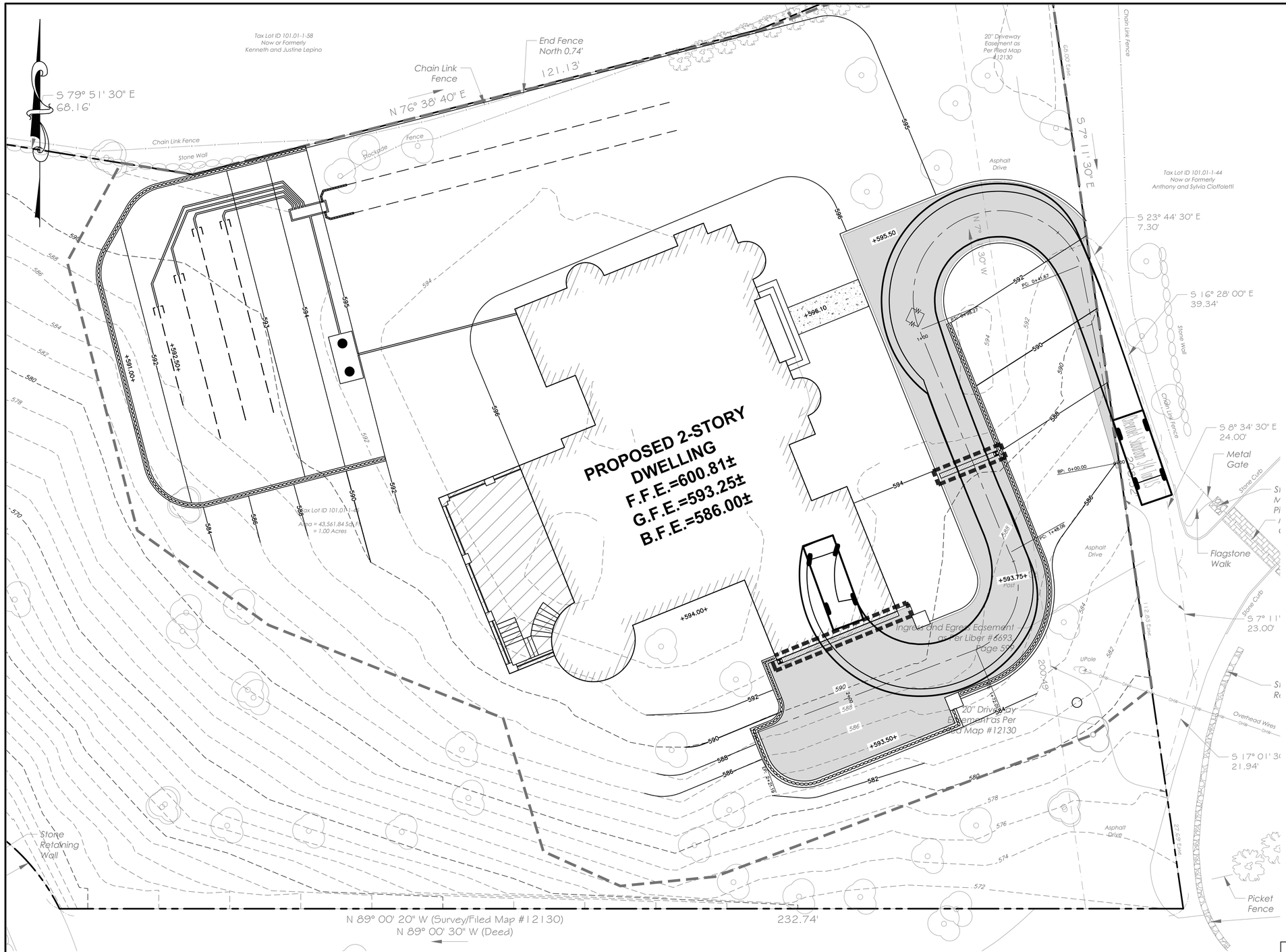
Date: 06/01/23 Sheet: 3/4
Scale: 1" = 20'
Designed By N.S.
Checked By M.S.
Sheet No. C-3



LEGEND

PROPERTY LINE	
PROPOSED BELGIAN BLOCK CURB	
PROPOSED ASPHALT DRIVEWAY	
PROPOSED WALKWAY/PATIO	
PROPOSED STONE MASONRY WALL	
PROPOSED CONTOUR	594
PROPOSED SPOT GRADE	+594.00

TURNING RADIUS PLAN IS BASED ON EXISTING INFORMATION SHOWN HEREON PROVIDED BY ANASTASIA I. PARSATOON LAND SURVEYING, P.C. DATED SEPTEMBER 26, 2022.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

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No.	Description Revisions	Date

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PROJECT:

PROPOSED SINGLE-FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY - NEW YORK

VEHICLE TURNING RADIUS PLAN

STATE OF NEW YORK
MICHAEL F. STEIN
No. 80697
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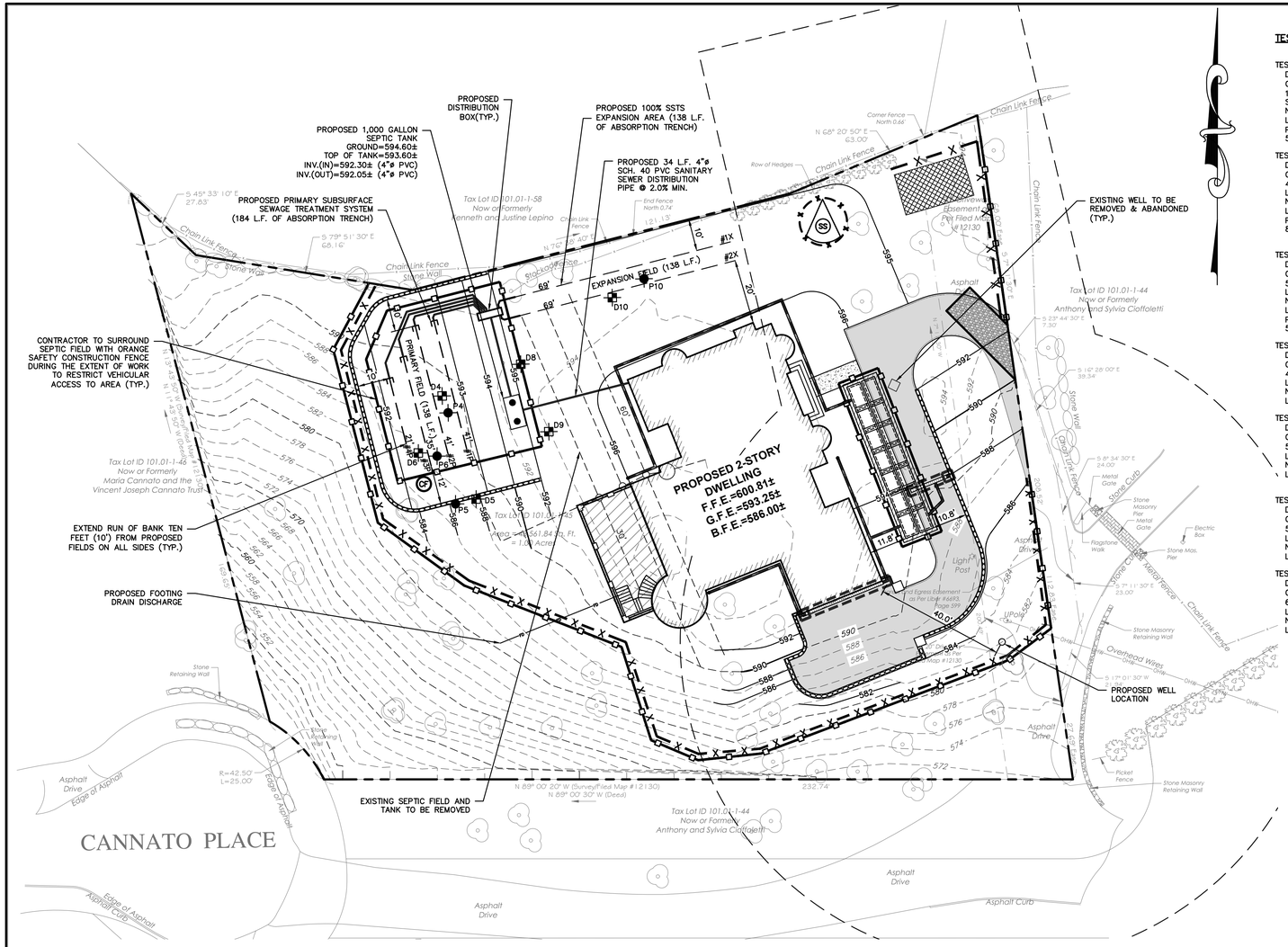

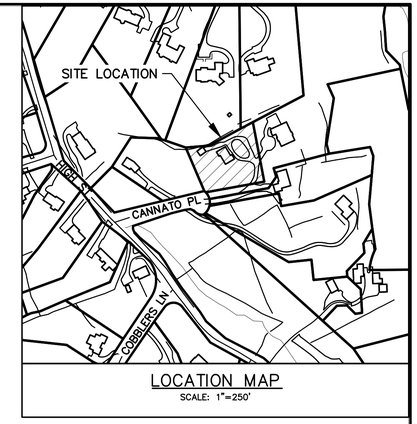

LOCATION MAP

SCALE: 1"=250'

TEST HOLE DATA:

TEST HOLE #4
DEPTH – 75"
0–4" TOPSOIL
12–68" MOD. COMPACT SANDY LOAM
NO GROUNDWATER
LEDGE @ 72"
PERC. = 12 INCHES/HOUR
5 MINUTES PER INCH

TEST HOLE #5
DEPTH – 48"
0–4" TOPSOIL
4–48" MOD. COMPACT SANDY LOAM
NO GROUNDWATER
LEDGE @ 48"
PERC.=7.5 INCHES/HOUR
8 MINUTES PER INCH

TEST HOLE #6
DEPTH – 72"
0–5" TOPSOIL
5–72" MOD. COMPACT SANDY LOAM
NO GROUNDWATER
LEDGE @ 72"
PERC. = 12 INCHES/HOUR
5 MINUTES PER INCH

TEST HOLE #7
DEPTH – 43"
0–4" TOPSOIL
4–43" MOD. COMPACT SANDY LOAM
NO GROUNDWATER
LEDGE @ 43"

TEST HOLE #8
DEPTH – 33"
0–5" TOPSOIL
5–33" MOD. COMPACT SANDY LOAM W/ PEBBLES
NO GROUNDWATER
LEDGE @ 33"

TEST HOLE #9
DEPTH – 36"
0–5" TOPSOIL
5–36" MOD. COMPACT SANDY LOAM W/ PEBBLES
NO GROUNDWATER
LEDGE @ 36"

TEST HOLE #10
DEPTH – 66"
0–6" TOPSOIL
6–66" MOD. COMPACT SANDY LOAM W/ SOME PEBBLES
NO GROUNDWATER
LEDGE @ 66"

GENERAL NOTES:

1. THE ENGINEER SHALL BE RESPONSIBLE FOR THE SUPERVISION OF THE CONSTRUCTION.
2. NO CHANGES SHALL BE MADE TO THESE PLANS EXCEPT AS PER NYS LAW CHAPTER 987.
3. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO ACI, AISC, ZONING, AND THE NEW YORK STATE BUILDING CODE.
4. ALL CONDITIONS, LOCATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY DISCREPANCIES.
5. ALL CHANGES MADE TO THE PLANS SHALL BE APPROVED BY THE ENGINEER AND ANY SUCH CHANGES SHALL BE FILED AS AMENDMENTS TO THE ORIGINAL BUILDING PERMIT.
6. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER FOR THE ACTS AND OMISSIONS OF HIS EMPLOYEES, SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES, AND OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTACT WITH THE CONTRACTOR.
8. SAFETY DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL AGENCIES IN EFFECT DURING THE PERIOD OF CONSTRUCTION.
9. THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL MAKE APPLICATION TO RECEIVE ALL NECESSARY PERMITS TO PERFORM THE WORK UNDER CONTRACT. THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL BE LICENSED TO DO ALL WORK AS REQUIRED BY THE LOCAL, COUNTY, AND STATE AGENCIES WHICH MAY HAVE JURISDICTION OVER THOSE TRADES, AND SHALL PRESENT THE OWNER WITH COPIES OF ALL LICENSES AND INSURANCE CERTIFICATES.
10. FINAL GRADING AROUND THE BUILDING AREA SHALL SLOPE AWAY FROM THE STRUCTURE.
11. ALL WRITTEN DIMENSIONS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY SCALED DIMENSIONS.
12. ADJOINING PUBLIC AND PRIVATE PROPERTY SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION, REMODELING AND DEMOLITION WORK. PROTECTION MUST BE PROVIDED FOR FOOTINGS, FOUNDATIONS, PARTY WALLS, CHIMNEYS, SKYLIGHTS AND ROOFS. PROVISIONS SHALL BE MADE TO CONTROL WATER RUNOFF AND EROSION DURING CONSTRUCTION OR DEMOLITION ACTIVITIES. THE PERSON MAKING OR CAUSING AN EXCAVATION TO BE MADE SHALL PROVIDE WRITTEN NOTICE TO THE OWNERS OF ADJOINING BUILDINGS ADVISING THEM THAT THE EXCAVATION IS TO BE MADE AND THAT THE ADJOINING BUILDING SHOULD BE PROTECTED. SAID NOTIFICATION SHALL BE DELIVERED NOT LESS THAN 10 DAYS PRIOR TO THE SCHEDULED STARTING DATE OF THE EXCAVATION.
13. OWNER SHALL INSURE THAT THE INSURANCE PROVIDED BY THE CONTRACTOR HIRED TO PERFORM THE WORK SHALL BE ENDORSED TO NAME HUDSON ENGINEERING & CONSULTING, P.C., AND ANY DIRECTORS, OFFICERS, EMPLOYEES, SUBSIDIARIES, AND AFFILIATES, AS ADDITIONAL INSURED ON ALL POLICIES AND HOLD HARMLESS DOCUMENTS, AND SHALL STIPULATE THAT THIS INSURANCE IS PRIMARY, AND THAT ANY OTHER INSURANCE OR SELF-INSURANCE MAINTAINED BY HUDSON ENGINEERING & CONSULTING, P.C., SHALL BE EXCESS ONLY AND SHALL NOT BE CALLED UPON TO CONTRIBUTE WITH THIS INSURANCE. ISO ADDITIONAL INSURED ENDORSEMENT FORM NUMBER CG2010 1185 UNDER GL. COPIES OF THE INSURANCE POLICIES SHALL BE SUBMITTED TO AND HUDSON ENGINEERING & CONSULTING, P.C., FOR APPROVAL PRIOR TO THE SIGNING OF THE CONTRACT.
14. INDUSTRIAL CODE RULE 753: THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 72 HOURS PRIOR TO THE START OF HIS OPERATIONS AND SHALL COMPLY WITH ALL THE LATEST INDUSTRIAL CODE RULE 753 REGULATIONS.
15. PRIOR TO ANY EXCAVATION ALL UNDERGROUND UTILITIES MUST BE LOCATED. CALL 1–800–962–7962 (DIGSAFELY NEW YORK)

OWTS NOTES:

1. On–Site Wastewater Treatment System (OWTS) is designed on a soil percolation rate of 8 minutes per inch drop per soil investigation data witnessed in the field, and a proposed residence consisting of THREE bedrooms, located at 6 Cannato Place, Armonk, NY 10504– Tax Map Number: Sheet 101.01 – Block 1 – Lot 45.
2. The OWTS shall include the following: 1,000 gallon precast concrete septic tank, pump chamber and 184 linear feet of 24 inch wide absorption trench.
3. All trees within 10' of OWTS be removed.
4. All components of the OWTS and construction techniques of same to be in accordance with the latest Westchester County Department of Health Rules & Regulations. General contractors and OWTS installers to be familiar with same.
5. Engineer is to be notified prior to starting work on the OWTS. There shall be no backfilling of any portion of the OWTS without authorization of engineer. The design professional shall supervise the construction of the OWTS and make an open works inspection.
6. Within 24–hours of the completion of the OWTS, the design professional must notify the WCDH that the OWTS is ready for inspection by submitting a completed request for an open works inspection on the appropriate form to WCDH.
7. No backfilling of a completed OWTS can occur until after it has been inspected and accepted by the WCDH.
8. After backfilling the OWTS, the area shall be covered with a minimum of 4–inches of clean topsoil, seeded and mulched.
9. The installation of the OWTS shall be in accordance with the Rules and Regulations for the Design and Construction of Residential Subsurface Sewage Treatment Systems and Drilled Wells in Westchester County, NY.
10. The disposal area must be isolated and effectively protected against damage by erosion, storage of earth or materials or compaction by machine equipment, damage to any portion of system due to any cause shall be repaired before final approval is issued.
11. After authorized by engineer, absorption area must be backfilled carefully, graded and seeded. Backfill shall be clean earth only and shall not be tamped, rolled or puddled other than with the use of a hand roller for lawn making. Minimum 4" clean topsoil shall extend over entire absorption area.
12. House sewer to be 4" diameter SCH–40 PVC pipe. No 90–degree angles allowed, all 45 degree angles to be provided with cleanouts. Minimum pipe slope of house sewer to be 1/4" per foot.
13. All pipes connecting to tank and boxes shall be cut flush with the inside wall of box.
14. The proposed OWTS shall be installed by a Westchester County Licensed septic contractor.
15. Roof leader and footing drain to discharge away from disposal area.
16. There shall be no modification to any aspect of this plan unless approval is obtained from engineer.
17. Permanent markers shall be installed and located by the surveyor as directed by the engineer to locate the septic tank or junction boxes if they are greater than 100 feet from the building served.
18. Prior to commencing any work, the contractor is to contact the underground line location service (code 753). Trench sheeting and bracing shall be provided where required by OSHA and NYS Department of Labor Industrial Code 753 (where trench or any excavation depth exceeds 5'). No trenching shall be left open overnight without the express written approval from the owner or the engineer.
19. This plan is prepared for the purpose of obtaining a permit from the Westchester County Department of Health to construct an individual separate sewage disposal system. Items including the tile fields, septic tank, pump system and force main must be constructed where shown on the plan and in accordance with the details shown on the plan. Soil testing for percolation data and soil characteristics was performed only in the area of the proposed tile fields. No representation as to the subsurface condition in areas outside the location of the tile fields is made or implied by this plan. All other items shown on the plan including, without limitation, the location of the proposed residence and driveway, are shown for schematic purpose only, and no representation is made to the subsurface conditions at those locations.
20. USDA soil types in vicinity of OWTS are Chatfield–Charlton Complex (CsD, 15–35% slopes, very rocky), Charlton–Chatfield complex (Crc, 0–15%, very rocky).
21. No wells are located within 200' of the proposed OWTS unless otherwise shown on plan. Contractor to verify the location of any adjoining well or OWTS within 200 feet of the proposed OWTS and well, and report any discrepancies to the engineer.
22. If for any reason the approved construction plan can not be followed, a revised plan must be prepared, submitted and approved by WCDH.
23. The WCDH approval expires one year from the date on the approval stamp and is required to be renewed on or before the expiration date. The approval is revocable for cause or may be amended or modified when considered necessary by the department.
24. All excavations within the area of the SSTS are to be backfilled with Run of Bank Fill.
25. There are no sources of contamination within 200' of the proposed well.
26. The minimum well yield is 5 gpm; yields less than 5 gpm must be immediately reported to the department.

PROPERTY NOTES:

OWNER: ARBEN GECAJ, 2465 ARTHUR AVENUE, BRONX, NY 10458

1. **LOCATION:** 6 CANNATO PLACE, ARMONK, NY 10504
2. **MUNICIPALITY:** TOWN OF NORTH CASTLE

WATERSHED BASIN: INLAND LONG ISLAND SOUND BASIN

SECTION: 101.01 **BLOCK:** 1 **LOT:** 45

3. **APPROXIMATE START & COMPLETION DATE:** FALL 2023, SUMMER 2024
4. THERE ARE NO PHYSICAL FEATURES WITHIN 100' OF THIS PROPERTY WHICH WOULD INFLUENCE THE DESIGN OF THE PROPOSED PLAN EXCEPT AS SHOWN HEREON AND SPECIFICALLY APPROVED OR PENDING APPROVAL BY THE GOVERNING AGENCY.

LEGEND

PROPERTY LINE

PROPOSED LIMIT OF DISTURBANCE

PROPOSED PRIMARY ABSORPTION TRENCH

PROPOSED 100% EXPANSION AREA ABSORPTION TRENCH

PROPOSED SEWER PIPE

PROPOSED SEPTIC TANK

OWTS ENGINEERS REPORT:

PROPOSAL: 3 BEDROOM RESIDENCE

DESIGN FLOW: FOR 3 BDRM. (1 X 110 GPD) = 330 GPD
R–1A RESIDENTIAL ZONE

SOILS: 0"–4" TOPSOIL
4"–43" MODERATELY COMPACT SANDY LOAM
LEDGE @ 43 – 72"

DESIGN PERC. RATE: 5 MIN/IN
REQUIRED LINEAR FEET FIELDS: 138 X 24"
REQUIRED SEPTIC TANK: 1,000 GAL.
OTHER IMPROVEMENTS REQUIRED: DRILLED WELL
GROUND WATER: N/A
TOTAL RUN OF BANK SAND & GRAVEL FILL REQUIRED (FOR OWTS GRADING): 3.5–FEET MAX (208 CY)
SLOPE OF ABSORPTION FIELD: 5.26%

WATERSHED: LONG ISLAND SOUND BASIN
USDA SOILS WITHIN S.T.A.:
CHARLTON–CHATFIELD COMPLEX – 0 TO 15% SLOPES, VERY ROCKY
CHATFIELD–CHARLTON COMPLEX – 15 TO 35% SLOPES, VERY ROCKY

Lot Number	Area (Acres)	Test Pit Description	Percent Slope Of OWTS Area		Perc Rate (min./in)	
101.01-1-45	1.00	0-4" - Topsoil 5"- 43" - Moderately Compacted Sandy Loam	4.17%		5.00	
GW. EL. (ft.)	Impervious Layer El. (ft.)	Length of Fields	Run of Bank Sand and Gravel Fill for OWTS Grading		Curtain Drain	
		3-Bedroom (ft.)	Depth (ft.)	Volume (CY)	Depth (ft.)	Length (LF)
No GW	<4.0'	138	3.5	208	None	None

ANY ALTERATIONS OR REVISIONS OF THESE PLANS, UNLESS DONE BY OR UNDER THE DIRECTION OF THE NYS LICENSED AND REGISTERED ENGINEER THAT PREPARED THEM, IS A VIOLATION OF THE NYS EDUCATION LAW.

OWTS PLAN IS BASED ON EXISTING INFORMATION SHOWN HEREON PROVIDED BY ANASTASIA I. PARSATOON LAND SURVEYING, P.C. DATED SEPTEMBER 26, 2022.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

No.	Description	Date
1	Revisions based on comments dated 06/29/23	10/03/23

THIS PLAN NOT VALID FOR CONSTRUCTION WITHOUT ENGINEERS SEAL & SIGNATURE

PROJECT:

PROPOSED SINGLE–FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY – NEW YORK

OWTS PLAN

STATE OF NEW YORK · MICHAEL F. SERN · 10 · 080657 · LICENSED PROFESSIONAL ENGINEER

HEC

HUDSON ENGINEERING & CONSULTING, P.C.
45 Knollwood Road – Suite 201
Elmsford, New York 10523
T: 914–909–0420
F: 914–560–2086
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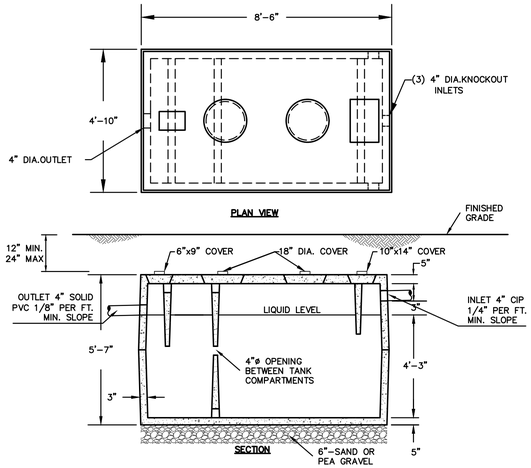
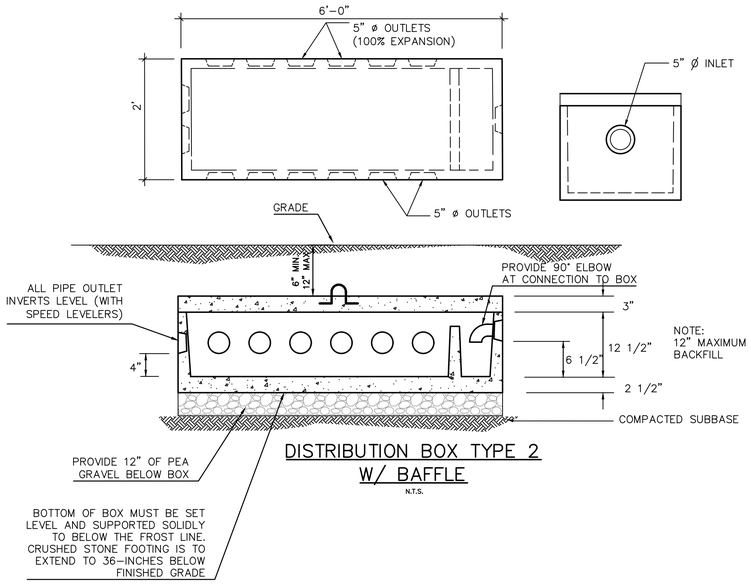
Date:	05/25/23
Scale:	1" = 20'
Designed By:	N.S.
Checked By:	M.S.
Sheet:	1 / 2
Sheet No.	S-1



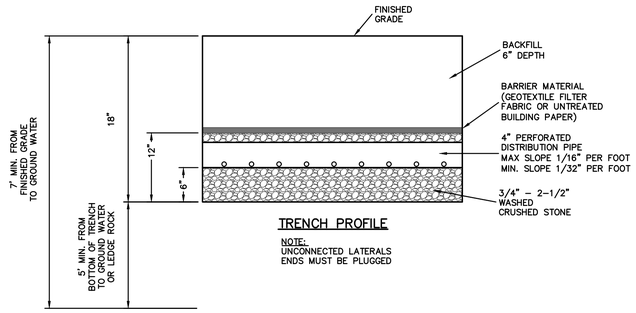
1,000 GALLON SEPTIC TANK-DETAIL

NOTES:
1) MANUFACTURED BY PRECAST CONCRETE SALES CO. WITH LENGTH TO WIDTH RATIO 2:1.
2) STRUCTURAL DESIGN CRITERIA
   a. CONCRETE - 5,000 P.S.I. MINIMUM STRENGTH @ 28 DAYS
   b. STEEL REINFORCEMENT - ASTM 1-615, GRADE 60
   c. CONCRETE COVER TO STEEL REBAR REINFORCEMENT - 1" MINIMUM
   d. TANKS SHALL MEET ASTM C858 AND ACI 318 WITH AASHTO HS-20 LOADING.
   e. EARTH COVER - 0 TO 2 FEET
   f. CONSTRUCTION JOINT - SEALED WITH 1" DIA. BUTYL RUBBER OR EQUIVALENT.
3.) THE MINIMUM FILL COVER IS 6- TO 12-INCHES, MAXIMUM COVER IS 24-INCHES AND IF FILL COVER EXCEEDS 2-FEET, MANHOLE RISERS SHALL BE INSTALLED TO GRADE



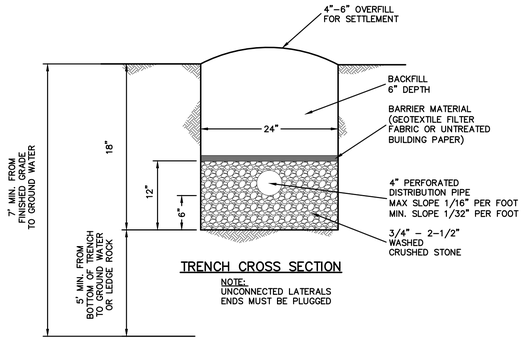
DISTRIBUTION BOX TYPE 2 W/ BAFFLE

N.T.S.



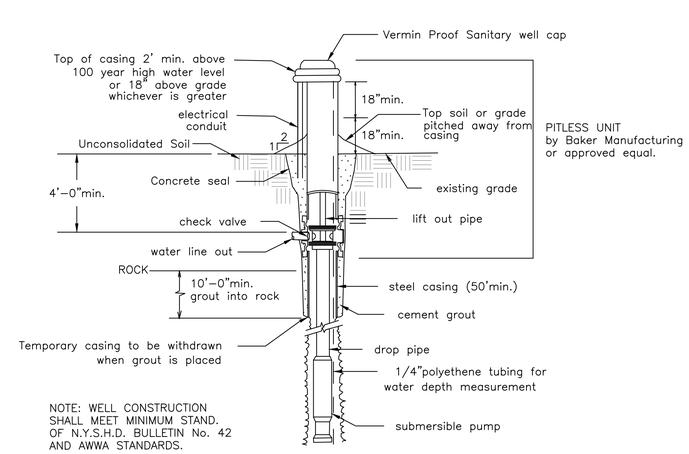
TRENCH PROFILE

NOTE:
UNCONNECTED LATERALS ENDS MUST BE PLUGGED



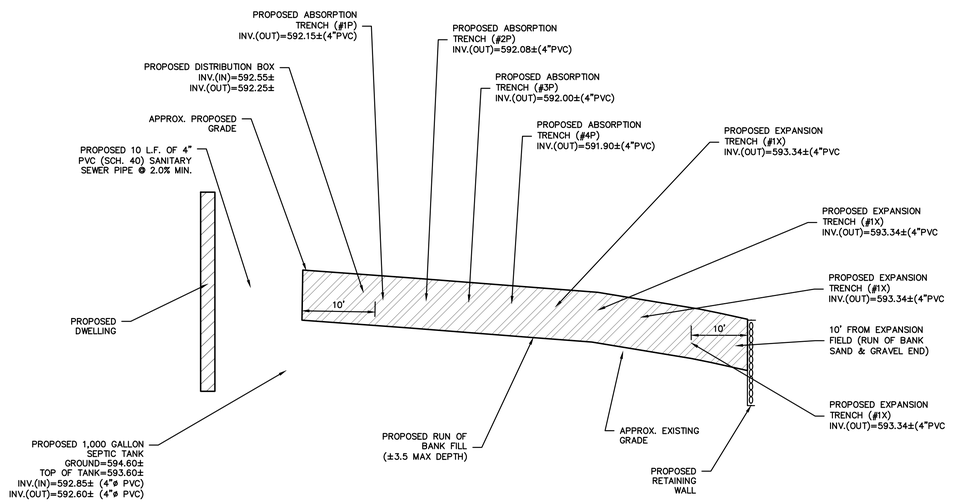
TRENCH CROSS SECTION

NOTE:
UNCONNECTED LATERALS ENDS MUST BE PLUGGED

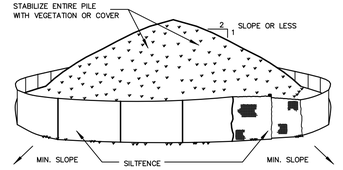


NOTE: WELL CONSTRUCTION SHALL MEET MINIMUM STAND. OF N.Y.S.H.D. BULLETIN No. 42 AND AWWA STANDARDS.

TYPICAL WELL DETAIL



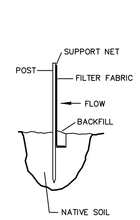
Soil Stockpiling



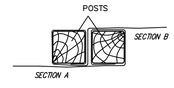
INSTALLATION NOTES

INSTALLATION NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. SOILS OR FILL TO BE STOCKPILED ON SITE DURING CUTTING AND FILLING ACTIVITIES SHOULD BE LOCATED ON LEVEL PORTIONS OF THE SITE WITH A MINIMUM OF 50-75 FOOT SETBACKS FROM TEMPORARY DRAINAGE SWALES.
3. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
4. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
5. STOCKPILES REMAINING IN PLACE FOR MORE THAN A WEEK SHOULD BE SEEDED AND MULCHED OR COVERED WITH GEOTEXTILE FABRIC SURROUNDED BY SILT FENCE.
6. SEE SPECIFICATIONS (THIS MANUAL) FOR INSTALLATION OF SILT FENCE.

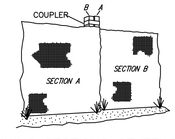
Silt Fence



TOE-IN METHOD

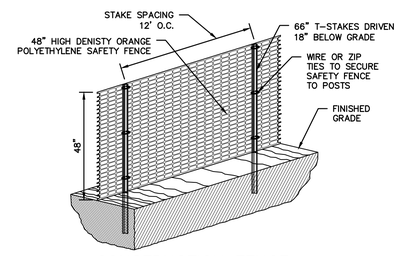


TOP VIEW



JOINING SECTIONS OF FENCING

INSTALLATION NOTES:
1. EXCAVATE A 4 INCH * 4 INCH TRENCH ALONG THE LOWER PERIMETER OF THE SITE.
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM)WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH.
5. JOIN SECTIONS AS SHOWN ABOVE.



CONSTRUCTION FENCE

No.	Description	Date
1	Revisions based on comments dated 06/28/23	10/03/23

THIS PLAN NOT VALID FOR CONSTRUCTION WITHOUT ENGINEER'S SEAL & SIGNATURE

PROJECT:
PROPOSED SINGLE-FAMILY DWELLING
6 CANNATO PLACE
TOWN OF NORTH CASTLE
WESTCHESTER COUNTY - NEW YORK

OWTS DETAILS

HEC
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T: 914-909-0420
F: 914-560-2086

STATE OF NEW YORK · MICHAEL F. STEIN · LICENSED PROFESSIONAL ENGINEER · No. 80657

Date: 05/25/23 Sheet: 2
Scale: N.T.S. 2
Designed By: N.S.
Checked By: M.S. 2
Sheet No.
S-2