ALP Engineering
& Landscape Architecture, PLLC

February 12, 2024

Hon. Christopher Carthy, Chairman and Members of the Planning Board
Town of North Castle
17 Bedford Road
Armonk, NY 10504

RE: Berkin Residence
99 Byram Ridge Road
Town of North Castle (Armonk Hamlet), New York
Section 101.01, Block 1, Lot 13

Dear Chairman Carthy and Members of the Planning Board:

We are pleased to submit a pdf file of the following plans and documents in support of the application on behalf of Jackie and Brian Berkin for Site Development Plan Approval for a new residence on the property located at 99 Byram Ridge Road.

The drawings being submitted in support of this application include the following:

Drawing No.	Drawing Title	Date
C-101	Site Layout Plan	02/12/2024
C-102	Grading and Utilities Plan	02/12/2024
C-103	Erosion and Sediment Control Plan	02/12/2024
C-104	Landscape Plan	02/12/2024
C-111	Construction Details	02/12/2024
C-112	Construction Details / Driveway Profile	02/12/2024
C-113	Construction Details	02/12/2024

In addition, the architectural plans prepared by Teo Siguenza, Architect as follows:

Drawing No.	Drawing Title	Date
A100.00	Proposed First Floor Plan	02/09/2024
A101.01	Proposed First Floor Plan	02/09/2024
A102.00	Proposed Second Floor Plan	02/09/2024
A103.00	Proposed Mezzanine/Attic Plan	02/09/2024

P.O. Box 843 Ridgefield, CT 06877
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Email: alpengineeering-la@outlook.com

Drawing No.	Drawing Title	Date
A104.00	Proposed Roof Plan	02/09/2024
R201.00	Proposed Street Side Perspective and Materials & Colors	02/09/2024
A200.00	Proposed Exterior Elevations	02/09/2024
A201.00	Proposed Exterior Elevations	02/09/2024
A202.00	Proposed Exterior Elevations	02/09/2024
A203.00	Proposed Exterior Elevations	02/09/2024
A300.00	Proposed Sections	02/09/2024
SP-2.00	Site Plan – Average Grade Calculation & Gross Land Area Calculation	02/09/2024
A101.10	Floor Plans Floor Area Calculation	02/09/2024

Also attached are:

- Application for Site Development Plan Approval form (please note that the applicant had hand delivered on 2/09 the Applicant Acknowledgement page directly to the Town)
- Short Environmental Assessment Form, dated 02/12/2024.
- Stormwater Pollution Prevention Plan / Stormwater Management Report for Berkin Property, dated 02/10/2024.
- Floor Area Calculations Worksheet, dated 02/09/2024.
- Gross Land Coverage Calculations Worksheet, dated 02/09/2024.
- Drawing entitled OWTS Site Plan, last revised 04/24/2022, prepared by Paul A. Berte, P.E.

Introduction: The subject property is located on the west side of Byram Ridge Road, approximately 200 feet north of its intersection with Indian Trail. The property is 58,278.6 square feet (1.338 acres) in size. There was an existing single family house and freestanding garage on the property which were recently demolished.

The property itself is sloping generally in a westerly direction from Byram Ridge Road. From east to west, there is about 50 feet of grade change across the property. The property is mostly wooded in the eastern third and southwestern portion of the lot. The central portion of the lot is mostly cleared of trees. The property is bounded by single family homes to the west, and south, as well as across Byram Ridge Road to the east.

There are no wetlands, either Town or State regulated, on or immediately adjacent to the property. A single family house is present on the lot, as well as a flagstone walks to the front door and a deck in the rear of the house. An existing paved driveway provides access to the house from the street.

All of the runoff from the property is eventually conveyed to Wampus River, which lies about 200 feet to the west of the property. The property lies outside of the New York City water supply watershed. Runoff from the majority of the property, with the exception of the far western portion of the lot, is conveyed generally west and south toward the property at 97 Byram Ridge Road, and into an unnamed watercourse which begins on the lot to the south and which flows into Wampus River. Runoff from the far western portion of the rear yard is conveyed to the southwest down a wooded slope toward Wampus River.

Project Proposal: It is proposed to construct a new single family house on the property which would be located in generally the same location as the existing house, which would be demolished. As part of the redevelopment of the lot, the existing driveway will be abandoned and a new driveway constructed approximately 44 feet to the south. A pool and deck in the rear of the house.

The new house façade is essentially parallel to the street and is located within the required R-1A setbacks. No variances would be required to permit its construction. Since the new garage for the house is located at the south end of the building, the new driveway alignment is directed first to the north, then sweeps in a southerly direction before turning west to provide access to the garage.

An inground pool is proposed to the southwest of the new house. The pool will be at the lower level of the new house. Another amenity at the house is a deck which will be at the first floor level; a bluestone patio will be constructed below the deck with its access from the lower level of the house.

A new septic system was designed by engineer Paul A. Berte, P.E. for a new 5 bedroom house on the property. The Westchester County Department of Health approved the new septic system on May 3, 2022. Although the new house being proposed (for a new property owner) is slightly different in its footprint, the new house has the same number of bedrooms and respects fully the required setbacks to the house and other site features.

Finally, from a stormwater management perspective, it is proposed to collect and direct runoff from the majority of the house and driveway into an array of subsurface storm drainage pipes to be located under the driveway to the south of the house for stormwater detention (peak rate attenuation) purposes. Runoff from the proposed pool and pool patio will be conveyed to a rain garden in the southern portion of the property to the southwest of the pool. Lastly, runoff from the northwestern portion of the house roof will be conveyed to a second rain garden in the rear yard.

Prior Project Review: The applicant had submitted an application to the Residential Project Review Committee (RPRC) on November 21, 2023 and in response to comments

from the RPRC, again submitted revised plans on January 2, 2024. It was at the meeting on January 16, that the RPRC concluded that this application should be forwarded to the Planning Board.

We look forward to discussing this with the Planning Board. Should you have any comments or questions regarding the enclosed submission, please feel free to call me on my direct line at (475) 215-5343, or my cell at (203) 710-0587.

Very truly yours,

ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC

Alan L. Pilch, P.E., R.L.A.
Principal

cc: Jackie and Brian Berkin (via email)
Teo Siguenza, Architect (via email)

TABLE OF LAND USE / BULK REGULATIONS
Berkin Residence
99 Byram Ridge Road
Armonk, New York

SHEET 101.1, BLOCK 1, LOT 13
ZONING DISTRICT R-1A (1 ACRE, One Family Residential District)

MINIMUM LOT SIZE	REQUIRED / PERMITTED	PROPOSED
Lot Area (in square feet)	43,560 SF	58,278.6 SF
Frontage (feet)	125	138
Width (feet)	125	195
Depth (feet)	150	291
MINIMUM YARDS		
Front Yard (feet)	50'	67.1
Side Yard (feet)	40'	47 / 57
Rear Yard (feet)	50'	151
MAXIMUM HEIGHT		
Feet	30	< 30 ft
BUILDING COVERAGE (percent of lot area)		
Maximum Building Coverage (percent)	15%	6.40%

Note: No variances are required and there are no existing nonconformities to the requirements of the R-1A district zone as per Section 355-21, Schedule of Residence District Regulations

NOTES:

1. All walls greater than four (4) feet in height shall be certified by the Design Professional prior to issuance of a Certificate of Occupancy/Completion.
2. Disturbance limits shall be staked in the field prior to construction.
3. Septic system design was done by Paul A. Berte, P.E., Ossining, NY 10562.

LEGEND

- PROPERTY LINE
- SETBACK LINE
- EDGE OF PAVEMENT
- PROPOSED STRUCTURAL WALL
- PROPOSED DECORATIVE POOL FENCE
- X X PROPOSED POOL FENCE

101.01-1-35

101.01-1-12

101.01-2-69

101.01-2-68

101.01-1-14

S 72° 14' 30" W 62'-0"

A =162.56'
R =164.57'

A =106.32'
R = 69.00'

25-foot Side Yard Setback

Proposed 4-foot height chain link fence

Proposed 4-foot height Pool Fence

57'

Deck

Deck

Proposed Single Family Residence

Proposed Septic System

151'

35' offset from SSTA

40' Rear Yard Setback

N 51° 09' 40" E 154'

Infinity Edge Spillway

18' X 36' Pool

Lawn

20' offset from SSTA

50' offset from SSTA

Pool Equipment Pad

Garage

3+18

3+00

2+00

0+50

Proposed Retaining Wall

Proposed 4-foot height chain link fence

Proposed 4-foot height chain link fence

25-foot Side Yard Setback

N 73° 57' 10" W
407'-1"

Proposed Driveway

Pervious Grass (Geoweb Geocells)

30'R
42.1'

16'-10"

9'-2"

40'R

20'R

67.1'

25'R

Proposed Driveway

50'R

50' Front Yard Setback

12'

15'R

20'-4"

11'-9"

19'R

30'

10'R

Remove Existing Driveway

Proposed Well

55'R

215'R

335'R

New Curb Cut for Driveway

S 16° 02' 50" W
38'-5"

BYRAM RIDGE ROAD

Approx. location of septic system

Approx. location of well

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

North

Civil engineer:
Alan L. Pich
ALP Engineering & Landscape Architecture, PLLC
P.O. Box 843, Ridgefield, CT 06877
P.E. #80167
C. of A. #0016331
Tel: (475) 215-5343

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____
DATE:
CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:
DATE:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

OWNER:
Jackie and Brian Berkin
brian.berkin@gmail.com
jackieberkin@gmail.com

CONSULTANTS:
Architect / Applicant:
TEO SIGUENZA ARCHITECTS
460 OLD POST ROAD
BEDFORD, NEW YORK 10506
Tel. 914.234.6289 Fax 914.234.0619

Surveyor:
Edward T. Gannon, PLS
Cherry Hill Road,
Blooming Grove, NY 10914

ISSUED:

Revised as per comments of RPRC	01/02/2024
Submission to Planning Board	02/12/2024

OWNERSHIP AND USE OF DOCUMENTS

UNAUTHORIZED ALTERATIONS AND ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209(2) OF THE NEW YORK STATE EDUCATION LAW.

No part of these drawings shall be copied, disclosed to others or used in connection with any work or project other than for which they have been prepared without the express written consent of the licensed professional who prepared the document.

SEAL:

STATE OF NEW YORK · ALAN L. PICH · 080167 · LICENSED PROFESSIONAL ENGINEER

PROJECT NAME:
BERKIN PROPERTY
99 Byram Ridge Road
Armonk, New York 10504
SBL: 101.01-1-13

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING
& LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843 Ridgefield, CT 06877
Direct Tel.(475) 215-5343 Cell (203) 710-0587

Drawing Title:
Site Layout Plan

Date: December 8, 2023

Dwn. by: alp

ID: 99 Byram Ridge Rd_01-17-2024.5

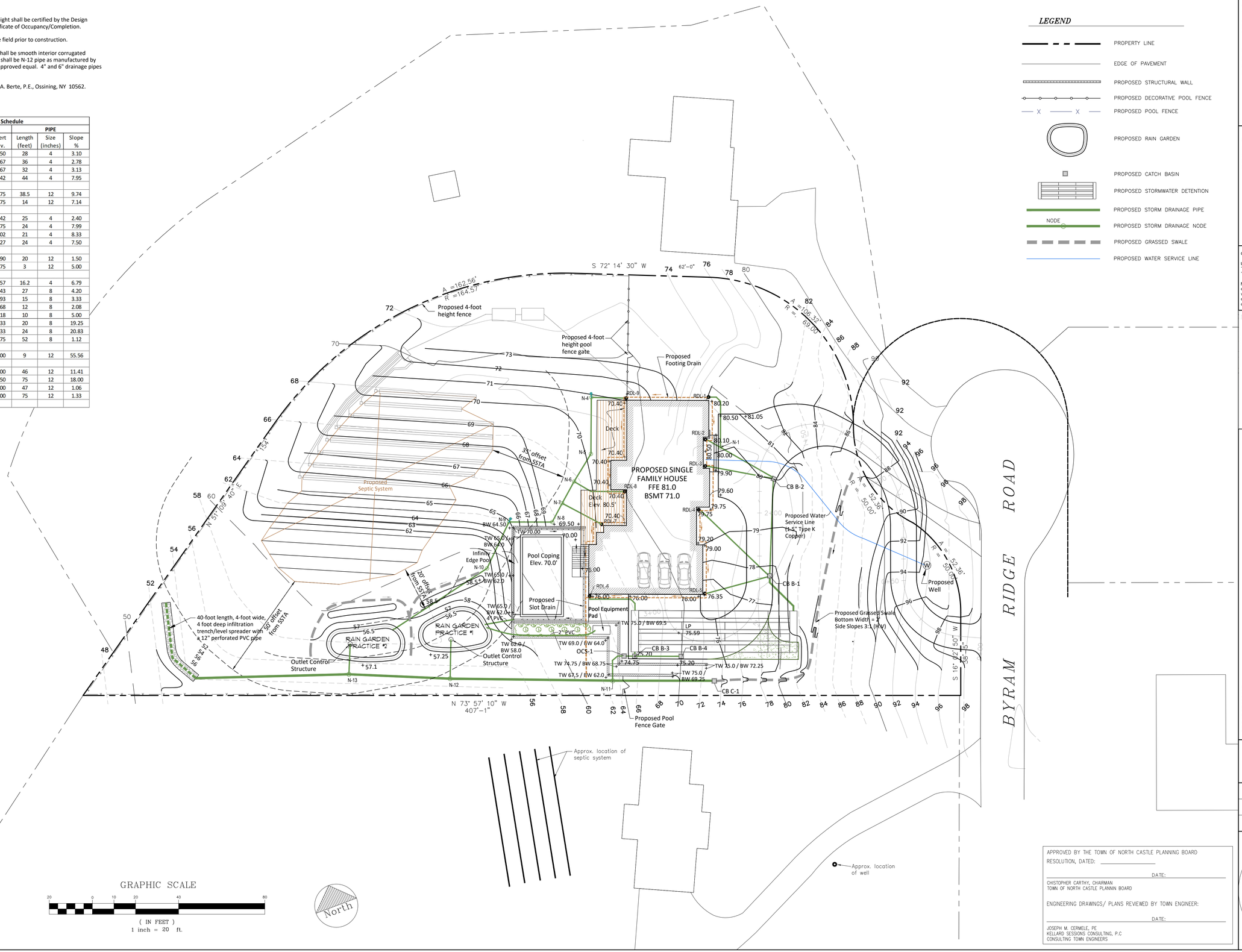
C-101

NOTES:

1. All walls greater than four (4) feet in height shall be certified by the Design Professional prior to issuance of a Certificate of Occupancy/Completion.
2. Disturbance limits shall be staked in the field prior to construction.
3. All storm drainage pipes (8" or larger) shall be smooth interior corrugated polyethylene drainage pipe (CPDP) and shall be N-12 pipe as manufactured by Advanced Drainage Systems (ADS), or approved equal. 4" and 6" drainage pipes shall be Schedule 35 PVC.
4. Septic system design was done by Paul A. Berte, P.E., Ossining, NY 10562.

Storm Drainage Pipe Schedule

FROM			TO		PIPE		
Structure From	Rim/Gnd Elev.	Invert Elev.	Structure To	Invert Elev.	Length (feet)	Size (inches)	Slope %
RDL-1	80.20	78.37	N-1	77.50	28	4	3.10
RDL-2	80.50	78.67	CB B-2	77.67	36	4	2.78
RDL-3	80.50	78.67	CB B-2	77.67	32	4	3.13
RDL-4	79.75	77.92	CB B-1	74.42	44	4	7.95
CB B-2	80.00	77.50	CB B-1	73.75	38.5	12	9.74
CB B-1	77.75	73.75	PIPE DET.	72.75	14	12	7.14
RDL-5	76.35	75.02	CB B-1	74.42	25	4	2.40
RDL-6	76.00	74.67	PIPE DET.	72.75	24	4	7.99
RDL-7	70.10	68.77	N-7	67.02	21	4	8.33
RDL-8	70.40	69.07	N-6	67.27	24	4	7.50
CB B-4	75.20	73.20	CB B-3	72.90	20	12	1.50
CB B-3	75.00	72.90	PIPE DET.	72.75	3	12	5.00
RDL-9	71.50	69.67	N-4	68.57	16.2	4	6.79
N-4	70.90	68.57	N-5	67.43	27	8	4.20
N-5	70.10	67.43	N-6	66.93	15	8	3.33
N-6	69.60	66.93	N-7	66.68	12	8	2.08
N-7	69.35	66.68	N-8	66.18	10	8	5.00
N-8	69.10	66.18	N-9	62.33	20	8	19.25
N-9	65.00	62.33	N-10	57.33	24	8	20.83
N-10	59.00	57.33	EP C-1	56.75	52	8	1.12
OCS-1	74.75	70.00	N-11	65.00	9	12	55.56
CB C-1	73.25	70.25	N-11	65.00	46	12	11.41
N-11	68.00	65.00	N-12	51.50	75	12	18.00
N-12	55.00	51.50	N-13	51.00	47	12	1.06
N-13	55.00	51.00	INF. TRN	50.00	75	12	1.33



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CONSULTING TOWN ENGINEERS

CONSULTANTS:

Architect:
TEO SIGUENZA ARCHITECTS
460 OLD POST ROAD
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Tel. 914.234.6289 Fax 914.234.0619

Surveyor:
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ISSUED:

Revised as per comments of RPRC	01/02/2024
Submission to Planning Board	02/12/2024

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SBL: 101.01-1-13

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ALP ENGINEERING
& LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843 Ridgefield, CT 06877
Direct Tel.(475) 215-5343 Cell (203) 710-0587

Drawing Title:
Grading and Utilities Plan

Date: November 20, 2023

Dwn. by: alp

ID: 99 Byram Ridge Rd_01-17-2024.5

C-102

CONSTRUCTION SEQUENCE NARRATIVE FOR SITE CONSTRUCTION

All erosion and sedimentation control measures and procedures shall comply with the latest edition (2016) of the New York State Department of Environmental Conservation publication Standards and Specifications for Erosion and Sediment Control. Erosion control measures shall be installed prior to the start of construction and maintained in effective condition throughout the construction period.

Land disturbance shall be kept to a minimum. Restabilization and final stabilization of disturbed ground surfaces shall be scheduled as soon as practicable following disturbance.

Notify all appropriate authorities (i.e., Town of North Castle Building and Engineering Department - Telephone: (914-273-3000 ext. 44) at least 48 hours prior to the commencement of site work.

Identify Disturbance Limits - Identify in the field with flagging or markers the limits of the areas to be disturbed within the property in accordance with the drawing C-101.

The disturbance limits shall be staked in the field prior to construction.

Call Dig Safe New York - Contractor is required to verify all existing underground and overhead utilities prior to any construction activity by calling Dig Safe New York and conducting one's own due diligence.

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

CONSTRUCTION SEQUENCE

1. Site Preparation - The existing driveway from Byram Ridge Road will be used as the construction access for site construction activities (see drawing C-103).

   Install Erosion and Sediment Control Measures:
   Install silt fence as per the instructions of the manufacturer and as shown on the construction details. Silt fence shall be installed in the locations as shown on the drawings. Where one length of silt fence ends and another begins, provide a minimum 10 foot overlap. Additional silt fence may be placed in the field at the discretion of representatives of the approving authorities. Silt fence shall be maintained in operable condition and shall not be removed until disturbed areas are thoroughly stabilized.

   Install the stabilized construction entrance in the location shown on the plan and maintain the entrance throughout the duration of the work.

   Install construction fencing measures as delineated on the drawings to ensure that impacts to existing site improvements, trees and vegetation to remain are avoided.

   Fence in an area for trash and waste to prevent it from being blown and washed to neighboring properties or to the public street.

2. Demolition of House - Prior to demolition, ensure that all of the utility services to the house have been disconnected or plugged. Demolish the house and remove the footings and foundation in accordance with the architect's plans. Place clean topsoil and seed and mulch, or place sod to stabilize the disturbed ground surface at the excavation site.

3. Construct the Driveway Access to the New House - Grade the driveway to the new house location. Clear the area for the future septic system and place the run-of-bank fill to the required elevations.

4. House Construction and Driveway Grading - Construct the house in accordance with the architect's plans. Grade the new driveway in accordance with the engineer's plans. Stockpile soil and soil/rock removed during excavation and protect the stockpile in the location(s) shown on the drawings and in accordance with the detail. Grade the perimeter of the house and establish the grades in the driveway in accordance with Drawing C-103.

5. Install Storm Drainage Facilities -Install the proposed drainage system from the lowest (i.e., the proposed subsurface storm drainage pipes) to the highest elevations (the roof drain leaders of the house and catch basins in the new driveway). Connect the house roof drain leaders and driveway catch basin to the storm drainage system. Install the catch basins in accordance with the plans. At each catch basin, install the inlet protection to prevent sediment from disturbed areas being conveyed into the storm drainage system.

6. Install Septic System and Well - The new residence will be served with a new on-site subsurface sewage treatment system and potable water well. The septic system will Install the septic tank, distribution box and absorption trenches to the elevations and details depicted on the plans and the profile. Apply 6" of topsoil and seed the disturbed area. Install the well in accordance with the plans.

7. Prepare the Disturbed Area for Final Stabilization and Planting - Clean up all residual site debris and litter and prepare all disturbed areas for topsoiling and seeding and/or planting. All disturbed areas are to be seeded with the permanent grass seed mix noted in the architect's plans.

   Restore the permeability of all areas that were disturbed by construction activity by following the Soil Restoration steps in accordance with the New York State *Stormwater Management Design Manual*, as follows:
   Apply 3 inches of compost over subsoil.
   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.
   Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.
   Apply topsoil to a depth of 6 inches.
   Vegetate as required by approved plan.
   Provide straw mulch cover over seeded areas.

8. Remove the erosion control measures only after full vegetative stabilization occurs on the site.

NOTES:

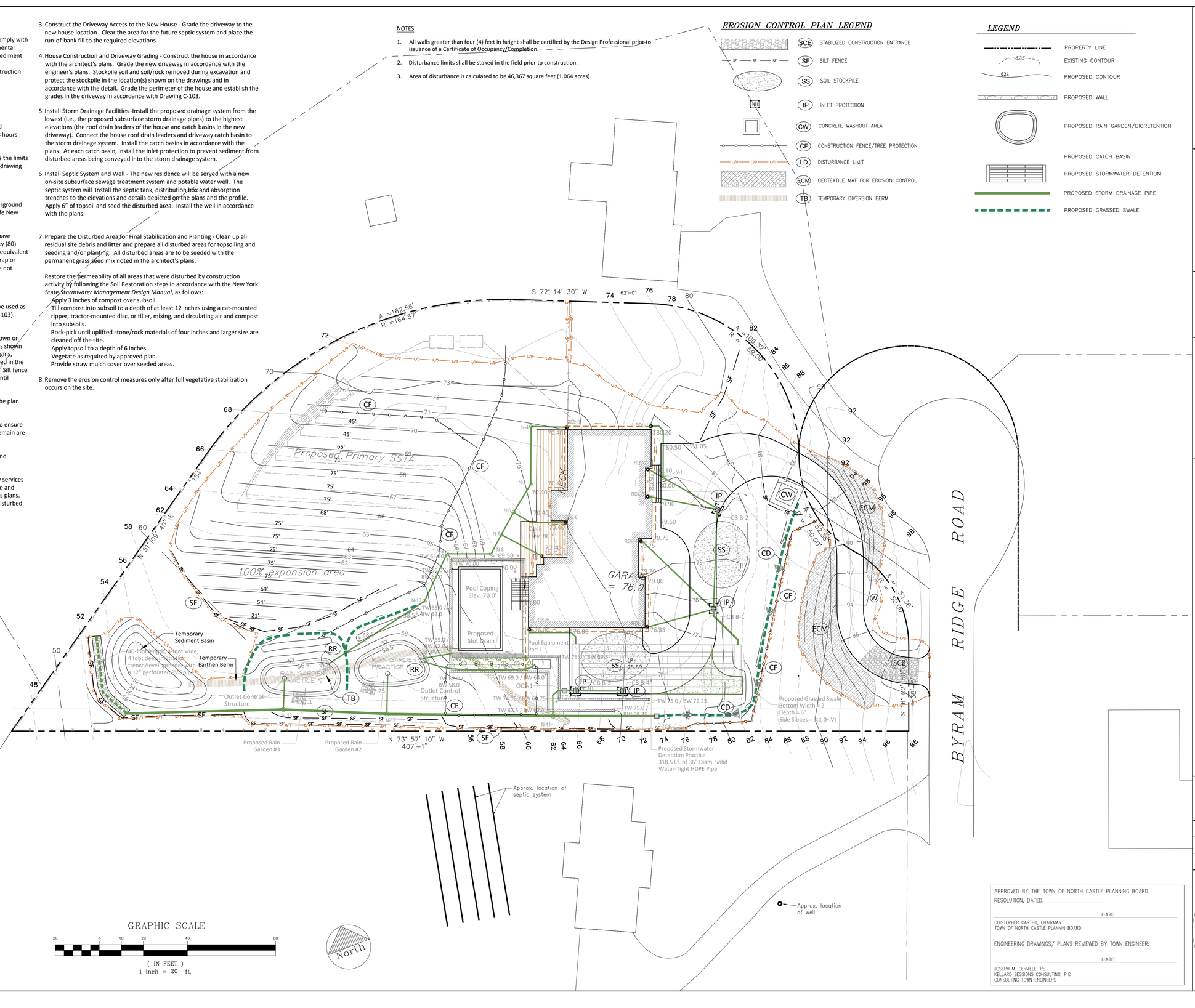
1. All walls greater than four (4) feet in height shall be certified by the Design Professional prior to issuance of a Certificate of Occupancy/Completion.
2. Disturbance limits shall be staked in the field prior to construction.
3. Area of disturbance is calculated to be 46,367 square feet (1.064 acres).

EROSION CONTROL PLAN LEGEND

- SCE — STABILIZED CONSTRUCTION ENTRANCE
- SF — SILT FENCE
- SS — SOIL STOCKPILE
- IP — INLET PROTECTION
- CW — CONCRETE WASHOUT AREA
- CF — CONSTRUCTION FENCE/TREE PROTECTION
- LD — DISTURBANCE LIMIT
- ECM — GEOTEXTILE MAT FOR EROSION CONTROL
- TB — TEMPORARY DIVERSION BERM

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED WALL
- PROPOSED RAIN GARDEN/BIORETENTION
- PROPOSED CATCH BASIN
- PROPOSED STORMWATER DETENTION
- PROPOSED STORM DRAINAGE PIPE
- PROPOSED GRASSED SWALE



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

North

Civil engineer:
Alan L. Pich
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P.O. Box 843, Ridgefield, CT 06877
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CONSULTANTS:

Architect:
TEO SIGUENZA ARCHITECTS
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Surveyor:
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ISSUED:

Revised as per comments of RPRC	01/02/2024
Submission to Planning Board	02/12/2024

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STATE OF NEW YORK · ALAN L PICH · LICENSED PROFESSIONAL ENGINEER · No. 090167

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BERKIN PROPERTY
99 Byram Ridge Road
Armonk, New York 10504
SBL: 101.01-1-13

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING
& LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843 Ridgefield, CT 06877
Direct Tel: (475) 215-5343 Cell (203) 710-0587

Drawing Title:
Erosion and Sediment Control Plan

Date: November 20, 2023

Dwn. by: alp

ID: 99 Byram Ridge Rd_01-17-2024.5

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

_____ DATE:
CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

_____ DATE:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

C-103

PLANT LIST - TREES AND SHRUBS					
CODE	QTY.	BOTANICAL NAME	COMMON NAME	SIZE AT PLANTING	SPACING
AB	5	Abies concolor	White Spruce	8'-10' height	12' on center
AC	6	Amelanchier canadensis	Shadblow	#10 clump	as shown
AF	2	Abies fraseri	Fraser Fir	8'-10' height	12' on center
AG	1	Acer griseum	Paperbark Maple	2" caliper	not applicable
AR	9	Acer rubrum	Red Maple	2-1/2" caliper	as shown
AS	4	Acer saccharum	Sugar Maple	2-1/2" caliper	as shown
CC	1	Cercis canadensis	Eastern Redbud	2-1/2" caliper	not applicable
CS	1	Cornus sericea	Red Osier Dogwood	#3 container	7' on center
HM	11	Hydrangea macrophylla	Bigleaf Hydrangea	#3 container	3.5' on center
JC	15	Juniperus chinensis 'Sargenti'	Sargent Juniper	#3 container	3' on center
JCM	16	Juniperus chinensis 'Mountbatten'	Mountbatten Juniper	#3 container	6' on center
JCOG	7	Juniperus chinensis 'Old Gold'	Old Gold Juniper	#3 container	5' on center
JCSG	10	Juniperus chinensis 'Sea Green'	Sea Green Juniper	#3 container	5' on center
KL	7	Kalmia latifolia	Mountain Laurel	#3 container	4.5' on center
LB	4	Lindera benzoin	Spicebush	#3 container	7' on center
PJ	4	Pieris japonica	Japanese Andromeda	#3 container	4.5' on center
PJM	2	Rhododendron PJM	PJM Rhododendron	#3 container	not applicable
QR	4	Quercus rubra	Red Oak	2-1/2" caliper	as shown
RC	6	Rhododendron catawbiense	Catawba Rhododendron	#3 container	6' on center
VD	6	Viburnum dentatum	Arrowwood Viburnum	#3 container	8' on center

Rain Garden Plant List

Perennials
New York aster (Aster novae-belgii)
Columbine (Aquilegia canadensis)
Bergamot (Monarda fistulosa)
Astilbe (Astilbe spp.)
Joe Pye weed (Eupatorium fistulosum)
Spiked gay feather (Liatris spicata)
Sensitive fern (Onoclea sensibilis)
Cinnamon fern (Osmunda cinnamomea)
Royal fern (Osmunda regalis)

Grasses
Tussock sedge (Carex stricta) W
Fringed sedge (Carex crinita) W

Shrubs
Red chokeberry (Aronia arbutifolia)
Summersweet clethra (Clethra alnifolia)
Red osier dogwood (Cornus sericea)
Silky Dogwood (Cornus amomum)
Gray Dogwood (Cornus racemose)
Ilex glabra (Inkberry)
Winterberry (Ilex verticillata)
Spicebush (Lindera benzoin)
Highbush blueberry (Vaccinium corymbosum)

W = plant only in lowest (i.e. wettest) part of rain garden

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

North

Civil engineer:
Alan L. Pich
ALP Engineering & Landscape Architecture, PLLC
P.O. Box 843, Ridgefield, CT 06877
P.E. #80167
C. of A. #0016331
Tel: (475) 215-5343

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STRUCTURAL WALL
- PROPOSED DECIDUOUS TREE PLANTING
- PROPOSED EVERGREEN TREE PLANTING
- PROPOSED UNDERSTORY TREE PLANTING
- PROPOSED SHRUB PLANTING
- PROPOSED RAIN GARDEN PLANTINGS

CONSULTANTS:

Architect:
TEO SIGUENZA ARCHITECTS
460 OLD POST ROAD
BEDFORD, NEW YORK 10506
Tel. 914.234.6289 Fax 914.234.0619

Surveyor:
Edward T. Gannon, PLS
Cherry Hill Road,
Blooming Grove, NY 10914

ISSUED:

Revised as per comments of RPRC	01/02/2024
Submission to Planning Board	02/12/2024

OWNERSHIP AND USE OF DOCUMENTS

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SEAL:

STATE OF NEW YORK · ALAN L PICH · LICENSED PROFESSIONAL ENGINEER · No. 080167

PROJECT NAME:
BERKIN PROPERTY
99 Byram Ridge Road
Armonk, New York 10504
SBL: 101.01-1-13

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843 Ridgefield, CT 06877
Direct Tel.(475) 215-5343 Cell (203) 710-0587

Drawing Title:
Landscape Plan

Date: November 20, 2023

Dwn. by: alp

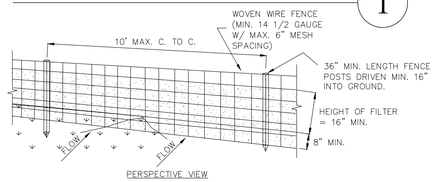
ID: 99 Byram Ridge Rd_01-17-2024.5

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____
DATE: _____
CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

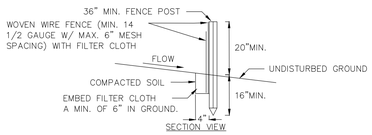
ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:
DATE: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

C-104

Silt Fence 1



PERSPECTIVE VIEW



SECTION VIEW

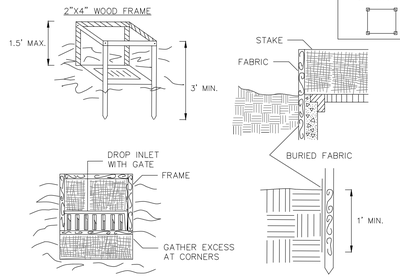
CONSTRUCTION SPECIFICATIONS

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

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	SILT FENCE

Filter Fabric Inlet Protection 2

	SYMBOL



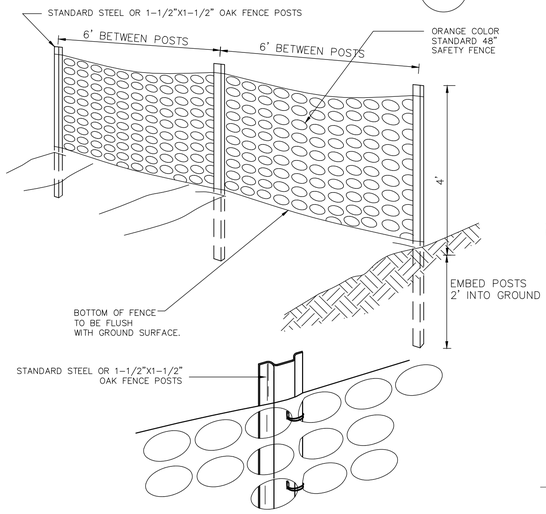
CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT. METAL WITH A MINIMUM LENGTH OF 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVE A MINIMUM 18 INCHES DEEP. SPANS GREATER THAN 3 FEET MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.

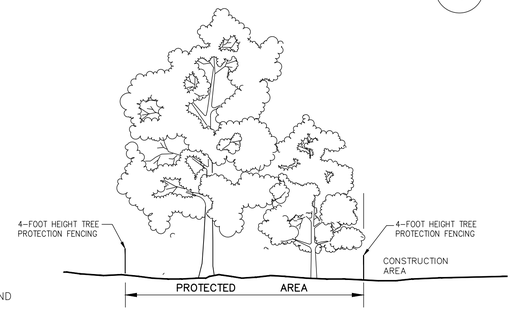
MAXIMUN DRAINAGE AREA 1 ACRE

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	FILTER FABRIC DROP INLET PROTECTION

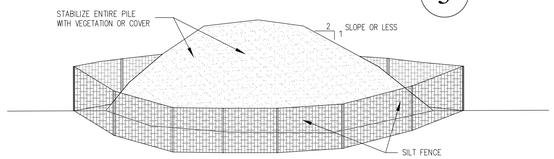
Construction Fence/Tree Protection 3



Construction Fence/Tree Protection 4



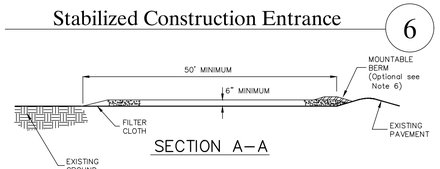
Soil Stockpile 5



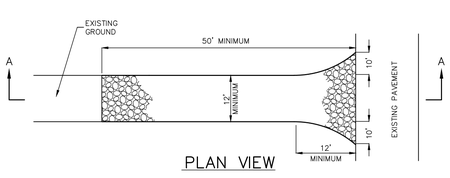
INSTALLATION NOTES

1. AREA CHOSEN FOR SOIL STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1 HORIZONTAL TO VERTICAL.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED IF STOCKPILE IS TO REMAIN OVER 14 DAYS.
4. SEE DETAIL FOR INSTALLATION OF SILT FENCE.

Stabilized Construction Entrance 6



SECTION A-A



PLAN VIEW

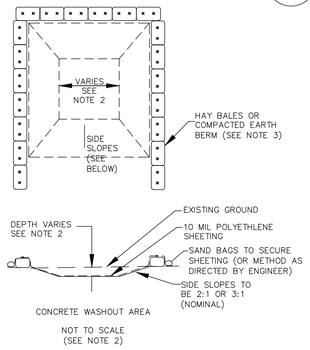
NOTES:

1. STONE SIZE - USE 1½" - 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - TO BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DRIPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

Concrete Washout Area 7

NOTES:

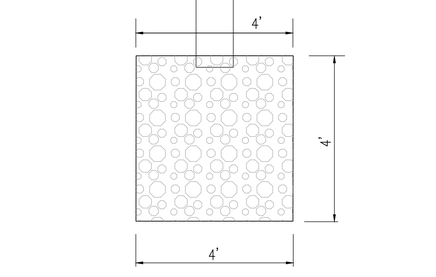
1. Concrete washout areas shall be installed prior to concrete placement of on-site. The concrete washout area shall be entirely self-contained.
2. The contractor shall submit the design, location and sizing of the concrete washout area(s) with the project's erosion and sedimentation control plan and shall be approved by the engineer. Location: Washout area(s) are to be located at least 50 feet from any stream, wetland, storm drains, or other sensitive resource. The flood contingency plan must address the concrete washout if the washout is to be located within the floodplain. Size: the washout must have sufficient volume to contain all liquid and concrete waste generated by washout operations including, but not limited to, operations associated with grout and mortar.
3. Surface discharge is unacceptable. Therefore, hay bales or other control measures, as approved by the engineer, should be used around the perimeter of the concrete washout area for containment.
4. Signs should be placed at the construction entrance, at the concrete area(s) and elsewhere as necessary to clearly indicate the location of the concrete washout to operators of concrete trucks and pump rigs. Washout area(s) should be flagged with safety fencing or other approved method.
5. Washout area(s) are to be inspected at least once a week for structural integrity, adequate holding capacity and check for leaks, tears or overflow. (As required by the construction site environmental inspection report, washout areas should be checked after heavy rains.)
6. Hardened concrete waste should be removed and disposed of when the waste has accumulated to half the concrete washout's height. The waste can be stored at an upland location, as approved by the engineer. All concrete waste shall be disposed of in a manner consistent with all applicable laws, regulations and guidelines.
7. Payment for this item is to be included under the general cost of the work for the project, including site restoration.

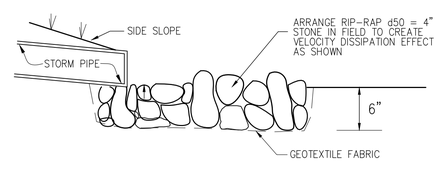


CONCRETE WASHOUT AREA

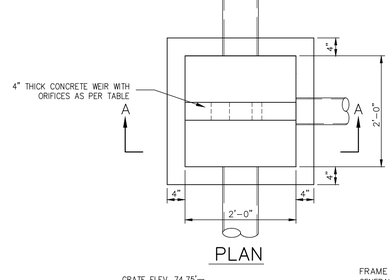
NOT TO SCALE (SEE NOTE 2)

Rip Rap Apron (Energy Dissipation) 8

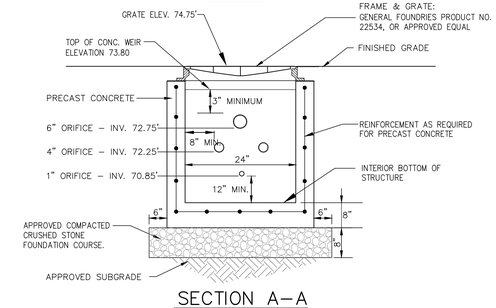




Outlet Control Structure 9



PLAN



SECTION A-A

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD

RESOLUTION, DATED: _____

DATE: _____

CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

DATE: _____

JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

Civil engineer:

Alan L. Pilch
ALP Engineering & Landscape Architecture, PLLC
P.O. Box 643, Ridgefield, CT 06877
P.E. #80167
C. of A. #0016331
Tel: (475) 215-5343

CONSULTANTS:

Architect:
TEO SIGUENZA ARCHITECTS
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BEDFORD, NEW YORK 10506
Tel. 914.234.6289 Fax 914.234.0619

Surveyor:
Edward T. Gannon, PLS
Cherry Hill Road,
Blooming Grove, NY 10914

ISSUED:

Resubmission to RPRC	01/02/2024
Submission to Planning Board	02/12/2024

OWNERSHIP AND USE OF DOCUMENTS

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SEAL:

STATE OF NEW YORK · ALAN L. PILCH · 080167 · LICENSED PROFESSIONAL ENGINEER

PROJECT NAME:
BERKIN PROPERTY
99 Byram Ridge Road
Armonk, New York 10504
SBL: 101.01-1-13

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING
& LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 643 Ridgefield, CT 06877
Direct Tel: (475) 215-5343 Cell (203) 7104587

Drawing Title:
Construction Details

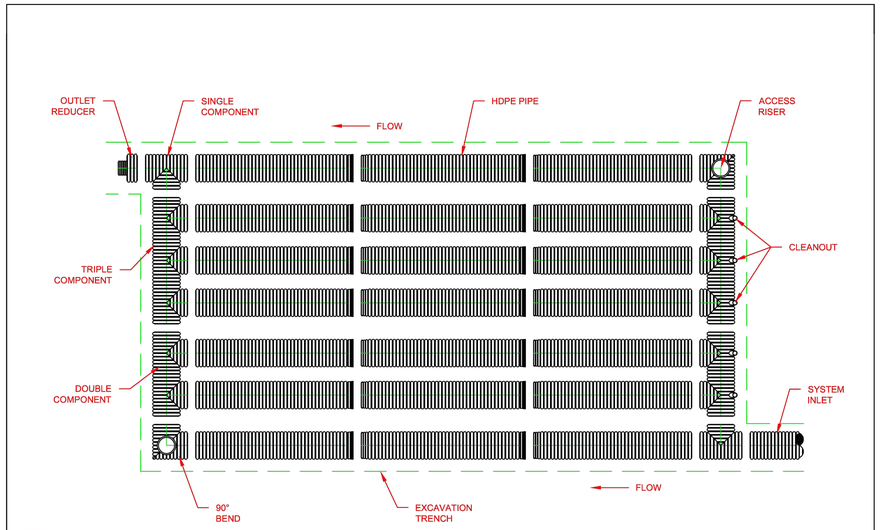
Date: November 20, 2023

Dwn. by: alp

ID: 99 Byram Ridge Rd_01-17-2024.5

C-111

Stormwater Detention Facility — 1



NOTES:

1. FOR INSTALLATION RECOMMENDATIONS, SEE STD-702 "TYPICAL RET/DET CROSS-SECTION DETAIL" AND STD-703 "TYPICAL RET/DET/CLEANOUT DETAIL"

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REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D

NOTE: ALL DIMENSIONS ARE ± 1/2 FOOT.

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DIA. DET/RET SYSTEM

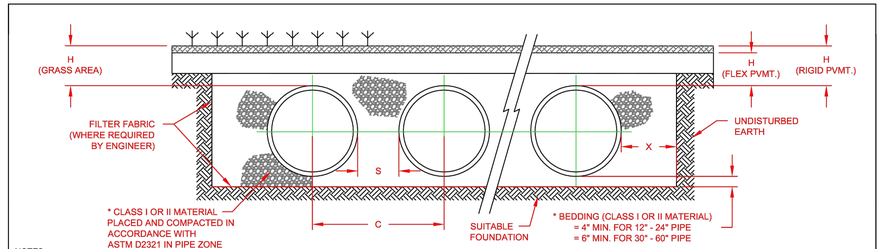
TYPICAL SUBSURFACE DET.\RET. SYSTEM LAYOUT DETAIL

DRAWING NUMBER: STD-701

4640 TRUEMAN BLVD
HILLIARD, OHIO 43026
ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN BY: TJR
DATE: 03/14/07
DATE REV.
SCALE: NTS
SHEET OF

Stormwater Detention Facility — 2



NOTES:

1. ALL REFERENCES TO CLASS I OR II MATERIAL ARE PER ASTM D2321 "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION.

2. ALL RETENTION AND DETENTION SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, LATEST EDITION AND THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES.

3. MEASURES SHOULD BE TAKEN TO PREVENT THE MIGRATION OF NATIVE FINES INTO THE BACKFILL MATERIAL, WHEN REQUIRED. SEE ASTM D2321.

4. FILTER FABRIC: A GEOTEXTILE FABRIC MAY BE USED AS SPECIFIED BY THE ENGINEER TO PREVENT THE MIGRATION OF FINES FROM THE NATIVE SOIL INTO THE SELECT BACKFILL MATERIAL.

5. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

6. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I OR II. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).

7. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I OR II IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

8. MINIMUM COVER: MINIMUM COVER OVER ALL RETNETION/DETENTION SYSTEMS IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER IS 12" UP TO 36" DIAMETER PIPE AND 24" OF COVER FOR 42" - 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

NOMINAL DIAMETER	NOMINAL O.D.	TYPICAL SPACING "S"	TYPICAL SPACING "C"	TYPICAL SIDE WALL "X"	H (NON-TRAFFIC)	H (TRAFFIC)
12" (300 MM)	14.5" (368 MM)	11" (279 MM)	25.4" (645 MM)	8" (203 MM)	12" (292 MM)	12" (292 MM)
15" (375 MM)	18" (457 MM)	12" (292 MM)	28.9" (734 MM)	8" (203 MM)	12" (292 MM)	12" (292 MM)
18" (450 MM)	21" (533 MM)	17" (434 MM)	33.9" (862 MM)	9" (229 MM)	12" (292 MM)	12" (292 MM)
24" (600 MM)	28" (711 MM)	13" (330 MM)	40.7" (1034 MM)	10" (254 MM)	12" (292 MM)	12" (292 MM)
30" (750 MM)	36" (914 MM)	18" (457 MM)	53.1" (1347 MM)	18" (457 MM)	12" (292 MM)	12" (292 MM)
36" (900 MM)	42" 1067 MM)	22" (559 MM)	63" (1600 MM)	18" (457 MM)	12" (292 MM)	12" (292 MM)
42" (1050 MM)	48" (1219 MM)	24" (610 MM)	71.9" (1826 MM)	18" (457 MM)	12" (292 MM)	24" (610 MM)
48" (1200 MM)	54" (1372 MM)	25" (635 MM)	78.5" (1994 MM)	18" (457 MM)	12" (292 MM)	24" (610 MM)
60" (1500 MM)	67" (1702 MM)	24" (610 MM)	90" (2286 MM)	18" (457 MM)	12" (292 MM)	24" (610 MM)

* CLASS I BACKFILL REQUIRED AROUND 60" DIAMETER FITTINGS.

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REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
3	REVISED 18" SPACING	TJR	01/05/09	CKS

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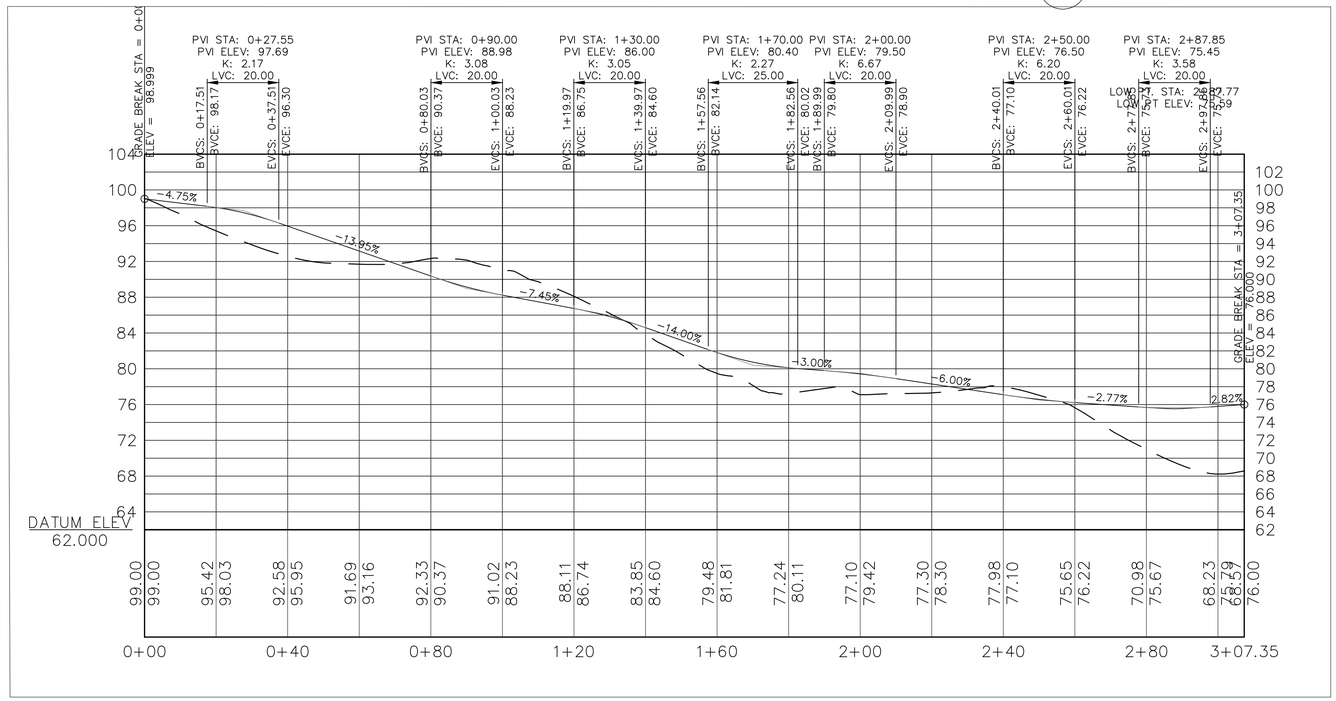
TYPICAL RET/DET CROSS SECTION DETAIL

DRAWING NUMBER: STD-702

4640 TRUEMAN BLVD
HILLIARD, OHIO 43026
ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN BY: AWM
DATE: 07.25.06
DATE REV.
SCALE: NTS
SHEET OF

Driveway Profile — 3

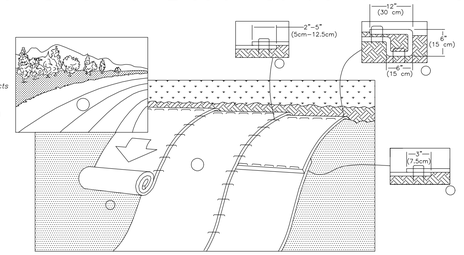


Erosion Control Mat on Slopes — 4

SLOPE INSTALLATION

Construction Detail for Erosion Control Mat on Slopes

NORTH AMERICAN GREEN
EROSION CONTROL *Products Guaranteed* SOLUTIONS
14649 HIGHWAY 41 NORTH
EVANSVILLE, IN 47725
800-772-2040
www.nagreen.com



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
   NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2" – 5" (5 CM – 12.5 CM) OVERLAP DEPENDING ON RECP's TYPE.
5. CONSCUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP's WIDTH.
   NOTE:
   *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

EROSION CONTROL MAT NOTES

1. Erosion control matting shall be installed in accordance with the manufacturer's specifications and requirements.

2. Matting to be utilized shall be manufactured by North American Green, Product C125BN, or Curlex I by American Excelsior company, or approved equal.

3. Detail shown above would be for installation of C125BN matting. If product by another manufacturer is used, then installation detail shall be as specified by that manufacturer.

Civil engineer:
Alan L. Pilch
ALP Engineering & Landscape Architecture, PLLC
P.O. Box 843, Ridgefield, CT 06877
P.E. #50167
C. of A. #0016331
Tel: (475) 215-5343

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____
DATE:
CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:
DATE:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

CONSULTANTS:

Architect:
TEO SIGUENZA ARCHITECTS
460 OLD POST ROAD
BEDFORD, NEW YORK 10506
Tel. 914.234.6289 Fax 914.234.0619

Surveyor:
Edward T. Gannon, PLS
Cherry Hill Road,
Blooming Grove, NY 10914

ISSUED:

Revised as per comments of RPRC	01/02/2024
Submission to Planning Board	02/12/2024

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SEAL:

PROJECT NAME:
BERKIN PROPERTY
99 Byram Ridge Road
Armonk, New York 10504
SBL: 101.01-1-13

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING
& LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843 Ridgefield, CT 06877
Direct Tel (475) 215-5343 Cell (203) 710-0587

Drawing Title:
Construction Details / Driveway Profile

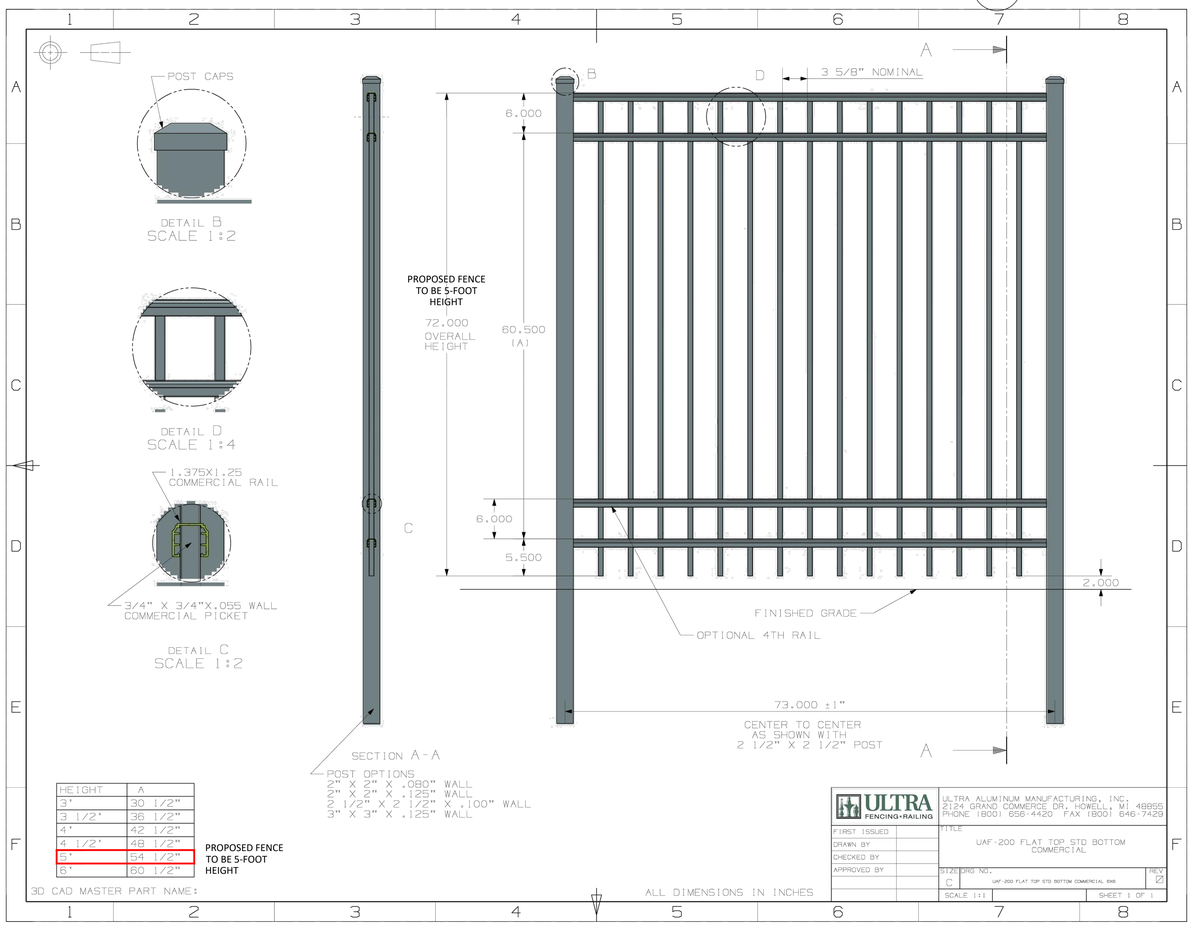
Date: November 20, 2023

Dwn. by: alp

ID: 99 Byram Ridge Rd_02-10-2024

C-112

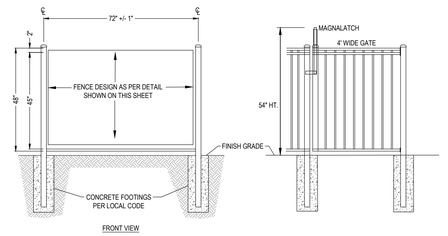
Proposed Black Aluminum Pool Fence and Gate — 1



HEIGHT	A
3'	30 1/2"
3 1/2'	36 1/2"
4'	42 1/2"
4 1/2'	48 1/2"
5'	54 1/2"
6'	60 1/2"

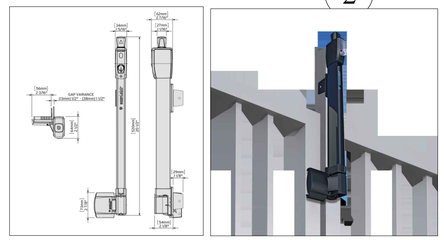
PROPOSED FENCE TO BE 5-FOOT HEIGHT

Pool Fence and Gate — 2



FRONT VIEW

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 4855-116.



POOL GATE LATCH
Brand MagnaLatch®
Product Code ML3TP
Gate Application Pool Gate, Child Safety Gate, Front Gate, Side Gate, Driveway Gate - Single, Pet Gate, Playground Gate, Public/Commercial Gate, Security Gate, Privacy Gate, Safety Gate
Gate Material Aluminum, Steel/Ornamental Iron, Wood, Vinyl/PVC
Approx Gate Size 3ft W x 5ft H (90cm x 1.5m)
Gate Frame/Post Shape Square-to-Square
Min Post Size 1" + (25mm+)
Ideal Gate Gap ¾" (19mm)
Fixing Method Screw-On
Color/Finish Black, White
Lock Type Rekeyable (to match door locks)

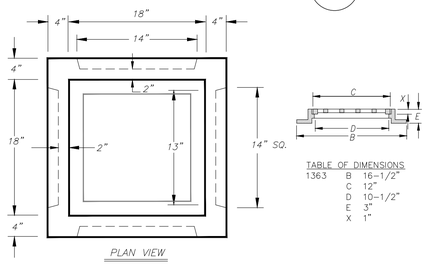
ADDITIONAL PLAN NOTES REGARDING POOL FENCE AND BARRIER:

R326.4.2.8 Dwelling wall as barrier. A wall or walls of a dwelling may serve as part of the barrier, provided that the wall or walls meet the applicable barrier requirements of Sections R326.4.2.1 through R326.4.2.6, and one of the following conditions shall be met:
1.) a.) Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds after the door and/or its screen, if present, are opened and are capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as touch pad or switch, to temporarily deactivate the alarm for a single opening. Deactivation shall last for not more than 15 seconds; and
b.) Operable windows in the wall or walls used as a barrier shall have a latching device located no less than 48 inches above the floor. Openings in operable windows shall not allow a 4-inch diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position; and
c.) Where the dwelling is wholly contained within the pool barrier or enclosure, alarms shall be provided at every door with direct access to the pool; or
2.) Other approved means of protection, such as self-closing with self-latching devices, so long as the degree of protection afforded is not less than the protection afforded by Item 1 described above.
[NY] R326.4.2.8.1 Alarm deactivation switch location. Where an alarm is provided, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings required to be Accessible units, Type A units, or Type B units, the deactivation switch shall be located 48 inches (1219 mm) above the threshold of the door.

NOTES ON POOL GATES AND DESIGN:

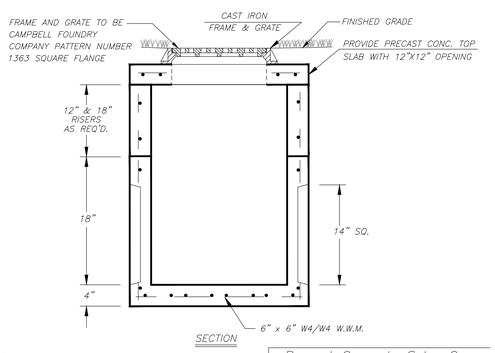
1. SELF-CLOSING AND OPENING CONFIGURATION. ALL GATES SHALL BE SELF-CLOSING. IN ADDITION, IF THE GATE IS A PEDESTRIAN ACCESS GATE, THE GATE SHALL OPEN OUTWARD, AWAY FROM THE POOL.
2. LATCHING. ALL GATES SHALL BE SELF-LATCHING, WITH THE LATCH HANDLE LOCATED WITHIN THE ENCLOSURE (I.E., ON THE POOL SIDE OF THE ENCLOSURE) AND AT LEAST 40 INCHES ABOVE GRADE. IN ADDITION, IF THE LATCH HANDLE IS LOCATED LESS THAN 54 INCHES FROM GRADE, THE LATCH HANDLE SHALL BE LOCATED AT LEAST 3 INCHES BELOW THE TOP OF THE GATE, AND NEITHER THE GATE NOR THE BARRIER SHALL HAVE ANY OPENING GREATER THAN 0.5 INCH WITHIN 18 INCHES OF THE LATCH HANDLE.
3. LOCKING. ALL GATES SHALL BE SECURELY LOCKED WITH A KEY, COMBINATION OR OTHER CHILD-PROOF LOCK SUFFICIENT TO PREVENT ACCESS TO THE SWIMMING POOL THROUGH SUCH GATE WHEN THE SWIMMING POOL IS NOT IN USE OR SUPERVISED.

Catch Basin — 3



PLAN VIEW

TABLE OF DIMENSIONS		
1363	B	16-1/2"
	C	12"
	D	10-1/2"
	E	3"
	X	1"

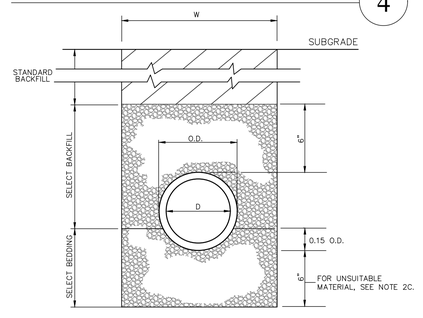


SECTION

NOTES :
*CONCRETE : 4,000 PSI @ 28 DAYS
*REINFORCING : AS PER ASTM A-185
6" x 6" W4/W4 W.W.M.
*WEIGHTS :
CATCH BASIN - 645 LBS.
CONCRETE FLAT TOP ALSO AVAILABLE
180 LBS. (3" THICK)
RISER WEIGHTS : 363 LBS/FT.

Precast Concrete Sales Co.		
123 Route 303 Valley Cottage , N.Y. 10989 Tel. (845) 268-4949 – Fax (845) 268-4376		
CONT.		
JOB		
18"x18"x18" KNOCKOUT CATCH BASIN		
DATE	DRAWN BY	DRAWING NO.
1/16	CLASSIC DESIGN	218-18

Pipe Trench — 4

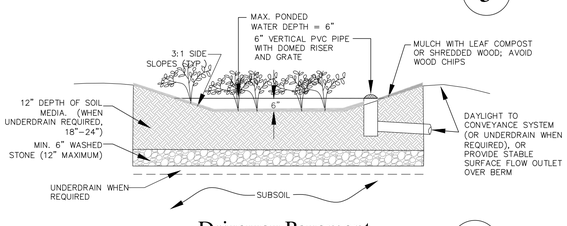


D=INSIDE DIAMETER, SPAN, OR RISE
O.D.=OUTSIDE BARREL DIAMETER, SPAN OR RISE
H.D.=OUTSIDE DIAMETER, SPAN, OR RISE @ BELL OR BAND
W=H.D. + 2.0" – FOR 48" OR SMALLER DIAMETER, SPAN, OR RISE
W=H.D. + 2.5" – FOR GREATER THAN 48" DIAMETER, SPAN, OR RISE

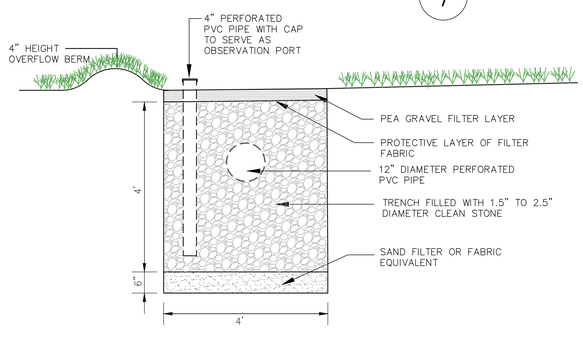
NOTES:

1. FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
   A. EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
   B. CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
2. TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
   A. FOR ALL PVC PIPE AND CONDUIT INSTALLATION.
   B. WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH.
   C. WHEN UNSUITABLE MATERIAL IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
3. FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
4. SELECT BEDDING – SHALL CONSIST OF A BED OF PROPERLY COMPACTED GRANULAR BEDDING MATERIAL (SAND OR CRUSHED STONE AS SPECIFIED) HAVING A COMPACTED THICKNESS OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE OR CONDUIT AND EXTENDING AROUND THE PIPE OR CONDUIT FOR AT LEAST 30% OF ITS DIAMETER OR RISE. THE LAYER OF BEDDING MATERIAL SHALL BE SHAPED TO FIT THE PIPE OR CONDUIT FOR AT LEAST 15% OF THE OUTSIDE DIAMETER OR RISE OF THE PIPE OR CONDUIT AND SHALL HAVE RECESSES SHAPED TO RECEIVE THE BELL OF BELL AND SPIGOT PIPE. SAND BEDDING SHALL BE CLEAN, WELL-GRADED SAND CONSISTING OF HARD, DURABLE PARTICLES FREE FROM LUMPS OF CLAY, LOAM AND ALL OTHER DELETERIOUS SUBSTANCES. CRUSHED STONE BEDDING SHALL BE WELL-GRADED CRUSHED STONE CONFORMING TO ASTM DESIGNATION C-33, SIZE NO. 67.
5. STANDARD BACKFILL – SHALL CONSIST OF ON-SITE MATERIAL (EARTH) APPROVED BY THE OWNER'S FIELD REPRESENTATIVE AND/OR SOILS ENGINEER. SHOULD THERE BE A DEFICIENCY OF PROPER ON-SITE MATERIAL FOR BACKFILLING, THE CONTRACTOR SHALL FURNISH, PLACE AND COMPACT ADDITIONAL PROPER BACKFILL MATERIAL.
6. SELECT BACKFILL – SHALL CONSIST OF GRANULAR MATERIAL (SAND OR CRUSHED STONE AS SPECIFIED) AS APPROVED BY THE OWNER'S FIELD REPRESENTATIVE AND/OR SOILS ENGINEER. SAND SHALL CONSIST OF CLEAN, WELL GRADED, HARD, DURABLE PARTICLES, FREE OF LUMPS OF CLAY, LOAM AND ALL OTHER DELETERIOUS SUBSTANCES. CRUSHED STONE SHALL CONSIST OF WELL GRADED CRUSHED STONE CONFORMING TO ASTM DESIGNATION C-33, SIZE NO. 67.
7. BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL SHALL THEN BE PLACED AND COMPACTED IN MAXIMUM TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES.

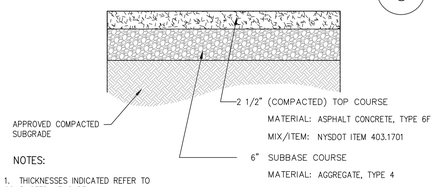
Rain Garden — 5



Infiltration Trench / Level Spreader — 7



Driveway Pavement — 6



NOTES:

1. THICKNESSES INDICATED REFER TO COMPACTED MEASURE.
2. ITEM NUMBERS REFER TO: NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS

Civil engineer:
Alan L. Pilch
ALP Engineering & Landscape Architecture, PLLC
P.O. Box 843, Ridgefield, CT 06877
P.E. #20167
C. of A. #0016331
Tel: (475) 215-5343

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____
DATE: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:
DATE: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

CONSULTANTS:

Architect:
TEO SIGUENZA ARCHITECTS
460 OLD POST ROAD
BEDFORD, NEW YORK 10506
Tel. 914.234.6289 Fax 914.234.0619

Surveyor:
Edward T. Gannon, PLS
Cherry Hill Road,
Blooming Grove, NY 10914

ISSUED:

Revised as per comments of RPRC	01/02/2024
Submission to Planning Board	02/12/2024

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SEAL:

STATE OF NEW YORK · ALAN L. PILCH · LICENSED PROFESSIONAL ENGINEER · No. 080167

PROJECT NAME:
BERKIN PROPERTY
99 Byram Ridge Road
Armonk, New York 10504
SBL: 101.01-1-13

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING
& LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843 Ridgefield, CT 06877
Direct Tel: (475) 215-5343 Cell (203) 7104587

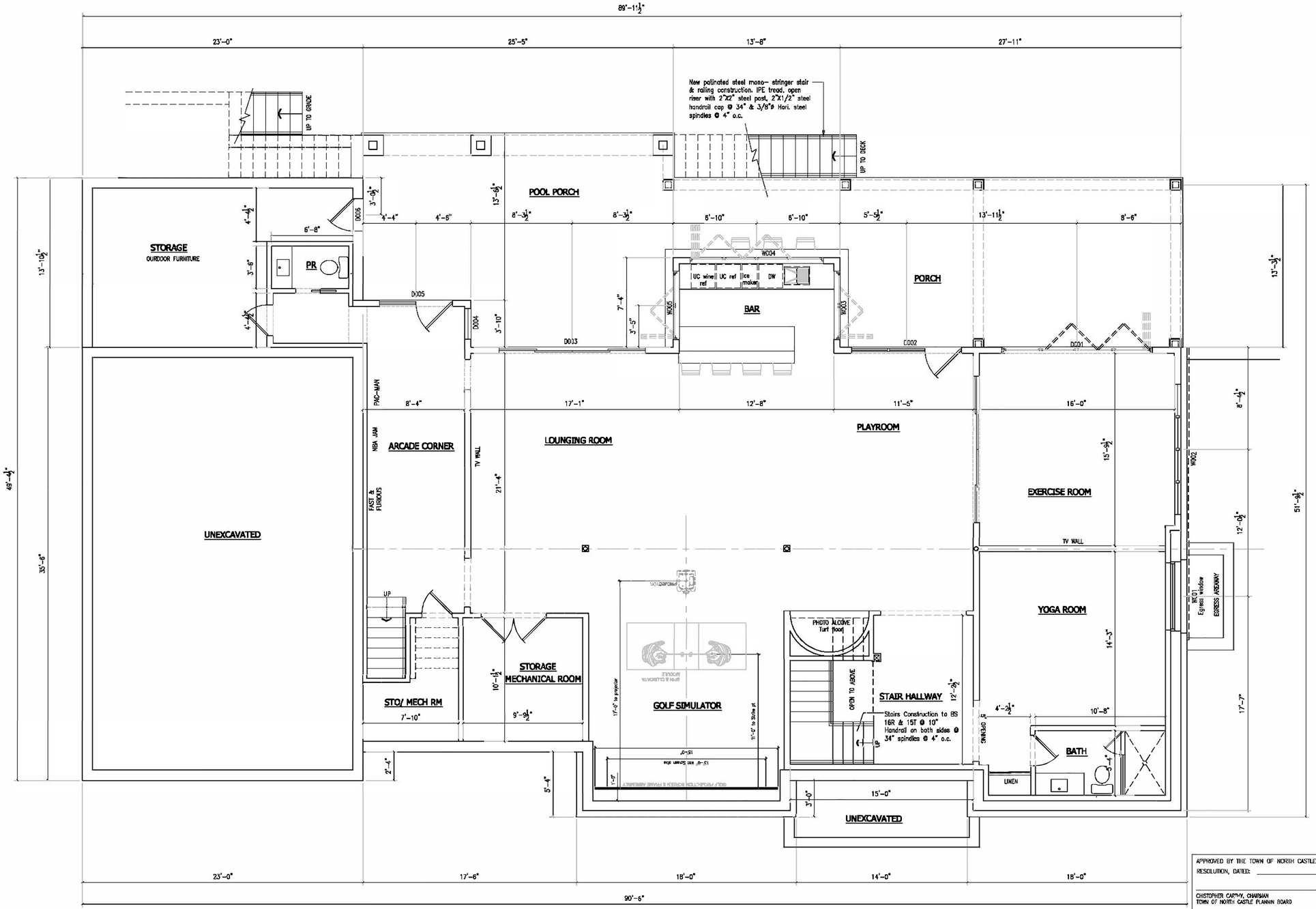
Drawing Title:
Construction Details

Date: November 20, 2023

Dwn. by: alp

ID: 99 Byram Ridge Rd_01-17-2024.5

C-113



TEO SIGÜENZA
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www.teosiguenza.com

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2. ALL DIMENSIONS TO BE CHECKED
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

	DATE:	REVISION

PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED LOWER LEVEL FLOOR PLAN

SEAL

DATE
~~2-9-24~~

SCALE
1/4" = 1'-0"

DRAWING NO.
A100.00

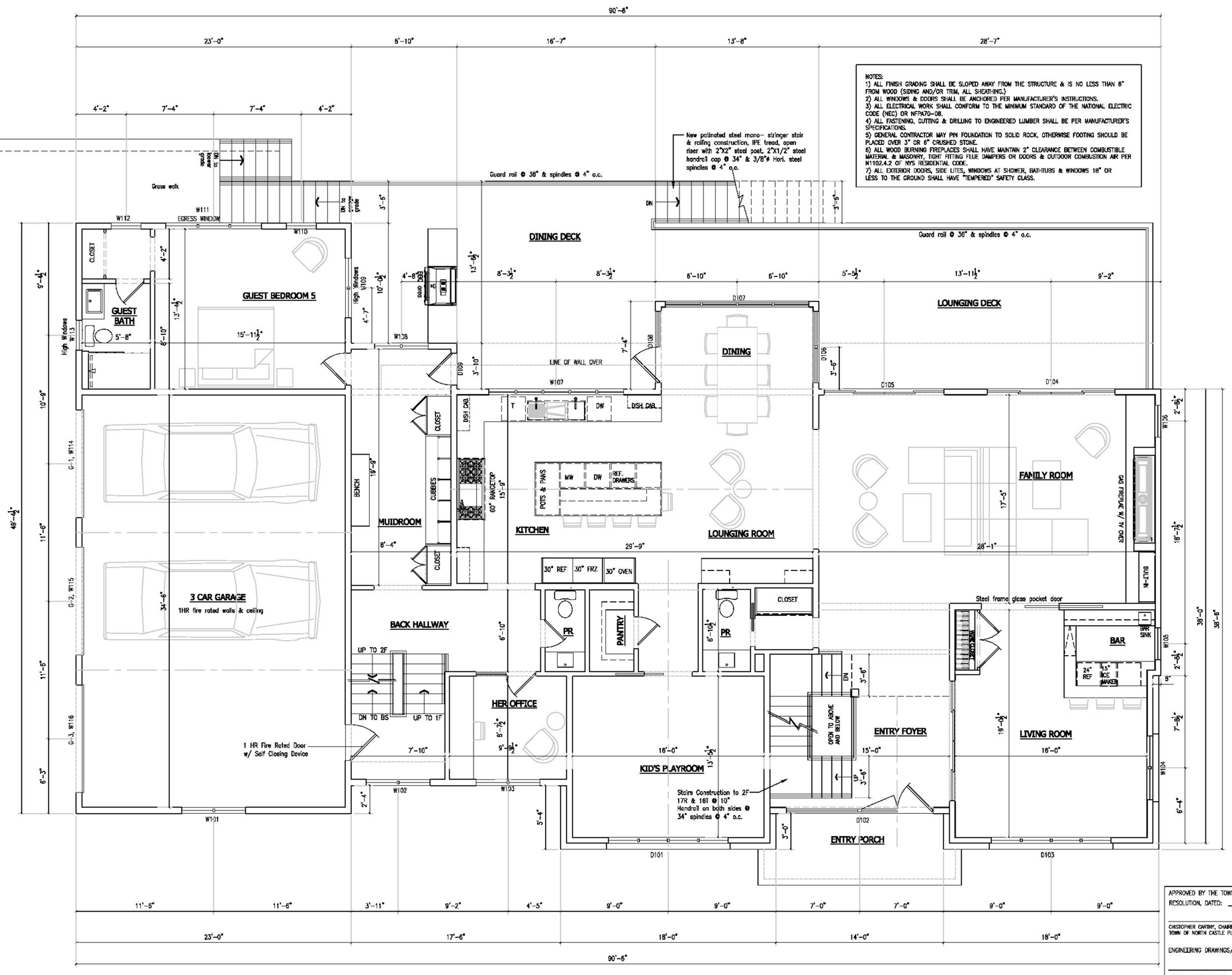
PAGE NO.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

_____ DATE:
CHISTOPHER CARTY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

_____ DATE:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS



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	DATE:	REVISION

PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED FIRST FLOOR PLAN

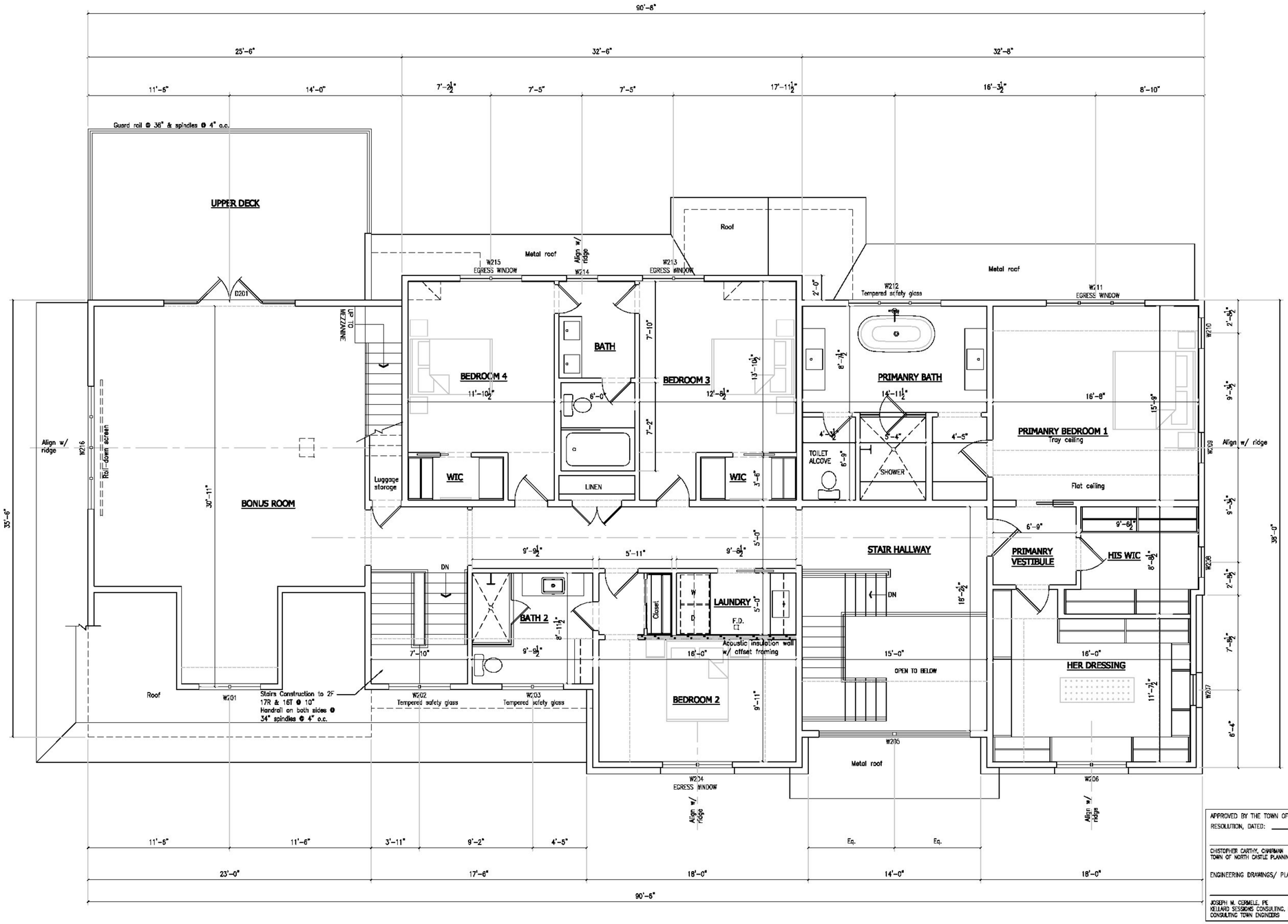
SEAL

DATE
2-8-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A101.00

PAGE NO.



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RESOLUTION, DATED: _____

DATE: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

DATE: _____

JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

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TEL: 914.234.6299 FAX: 914.234.0619
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	DATE:	REVISION

PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED SECOND FLOOR PLAN

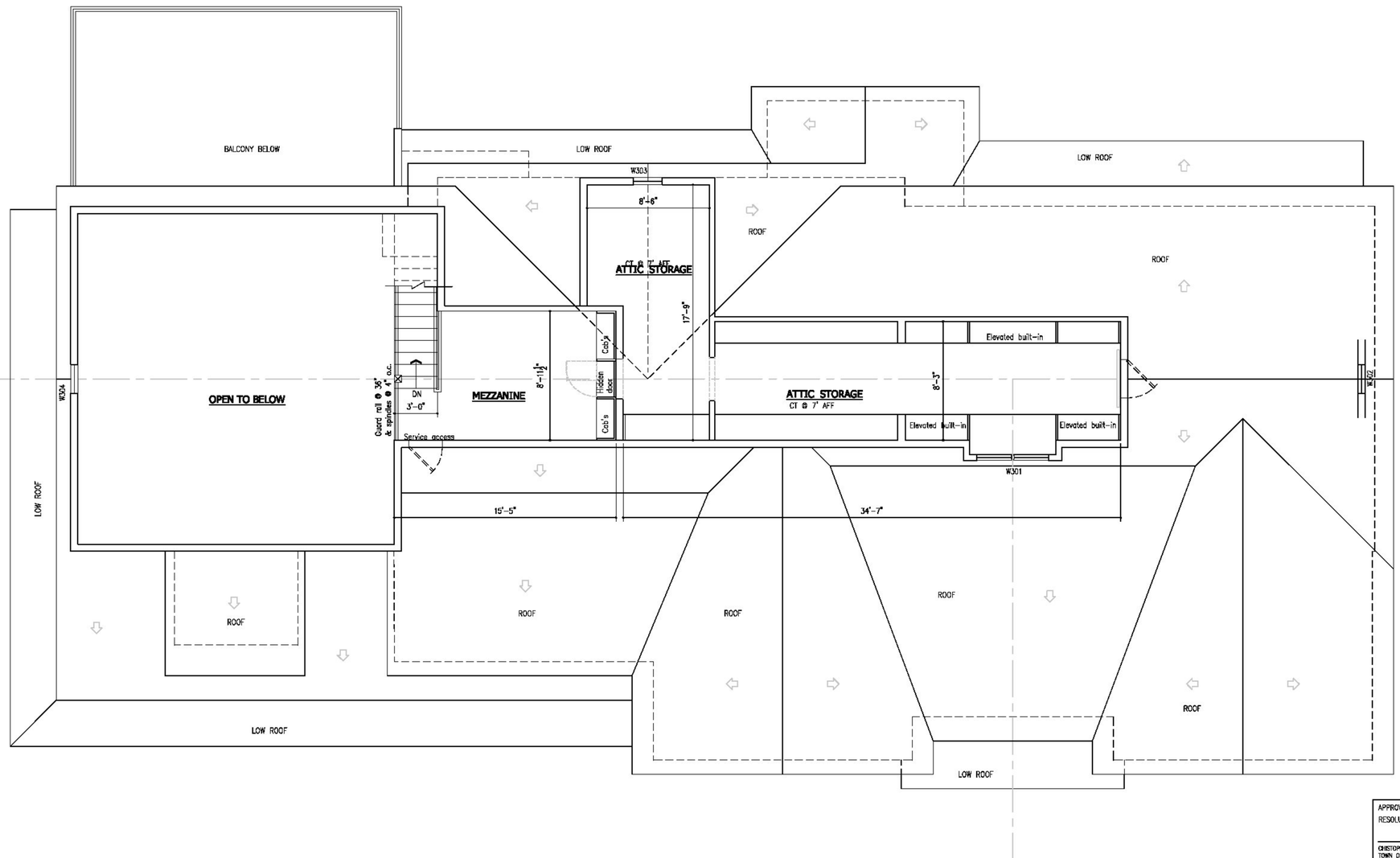
SEAL

DATE
2-9-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A102.00

PAGE NO.



APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

DATE:

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

DATE:

JOSEPH M. GERWELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

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3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

	DATE:	REVISION

PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED MEZZANINE / ATTIC PLAN

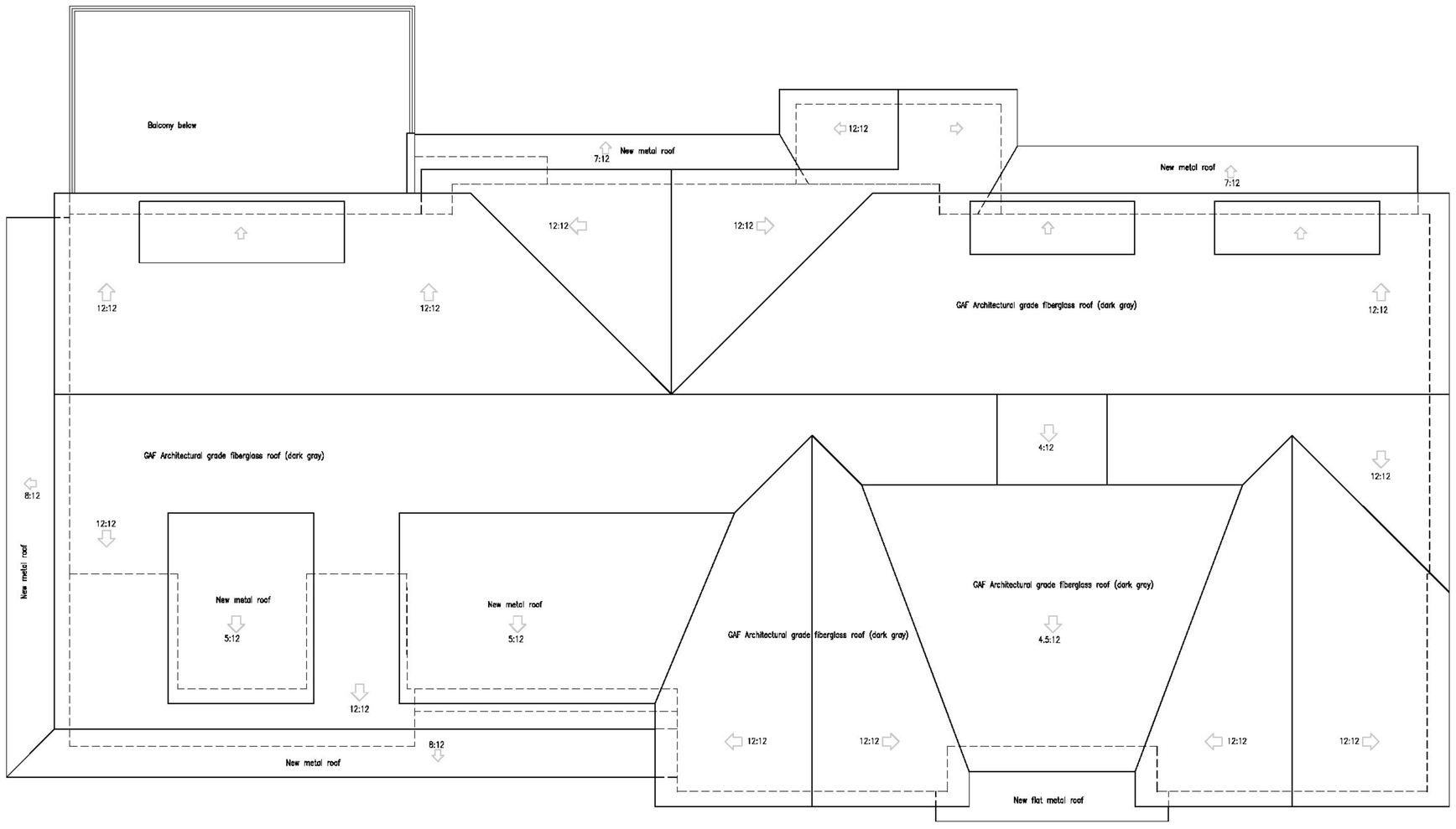
SEAL

DATE
2-8-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A103.00

PAGE NO.



TEO SIGÜENZA
ARCHITECT
460 OLD POST ROAD 2A BEDFORD, N. Y. 10506
TEL: 914.234.6299 FAX: 914.234.0619
www.teosiguenza.com

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BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED ROOF PLAN

SEAL

DATE
2-8-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A104.00

PAGE NO.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

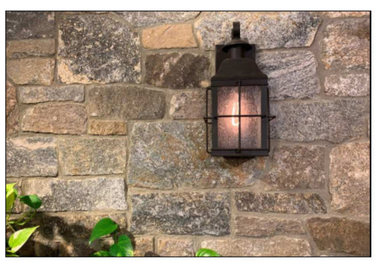
_____ DATE:
CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

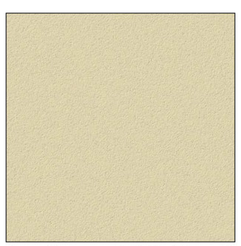
_____ DATE:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

GAF Architectural grade fiberglass Weathered_wood (Dark Gray)

Metal Roofing, Charcoal gray



Connecticut field stone (Thin square and rectangle) (Weathered Granite warm gray, brown and rust)



Stucco (3 coat system) off-white (Warm gray)

Window and Exterior doors (Aluminum, charcoal gray clad)

Material Schedule for Proposed Residence

MATERIAL	TYPE	COLOR
Siding	Stucco	Off White (warm gray)
Exterior Doors & Windows	Aluminum Clad- Wood	Charcoal gray
Roofing	GAF Architectural grade fiberglass roof and metal	Weathered_wood (Dark Gray)
Stone	Fieldstone Veneer	Connecticut Fieldstone
Bracket	Painted cedar	Light gray
Gutters & Leaders	Metal	Charcoal gray
Exterior Railing	Powder coated metal	Charcoal gray

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

DATE: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

DATE: _____
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PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED STREET SIDE PERSPECTIVE AND MATERIALS & COLORS

SEAL

DATE
~~2-9-24~~

SCALE
AS NOTED

DRAWING NO.
R201.00

PAGE NO.

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99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED EXTERIOR ELEVATIONS

SEAL

DATE
2-9-24

SCALE
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DRAWING NO.
A200.00

PAGE NO.

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DATED:
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TOWN OF NORTH CASTLE PLANNIN BOARD

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DATED:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
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KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

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SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSED EXTERIOR ELEVATIONS

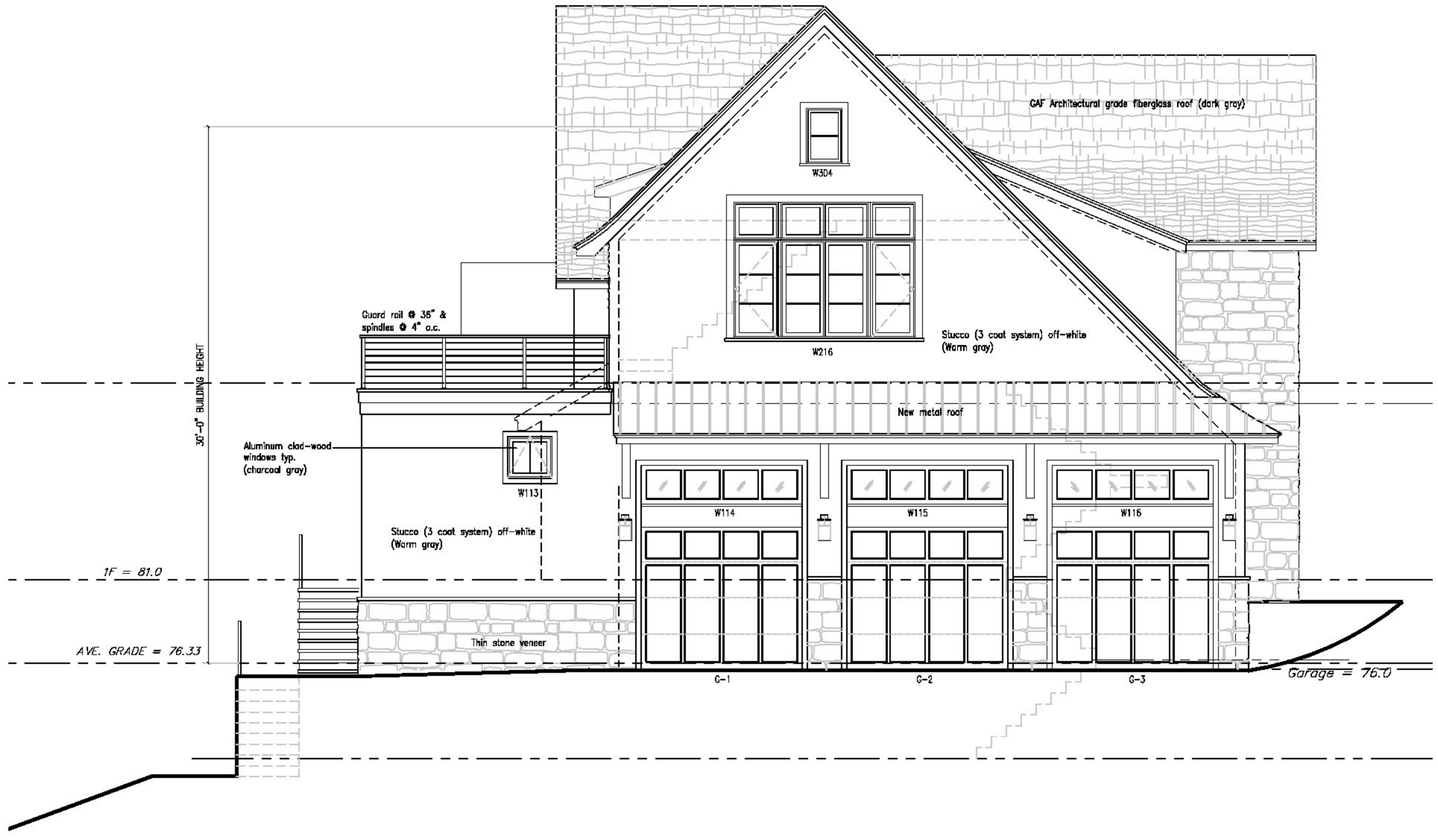
SEAL

DATE
2-8-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A202.00

PAGE NO.



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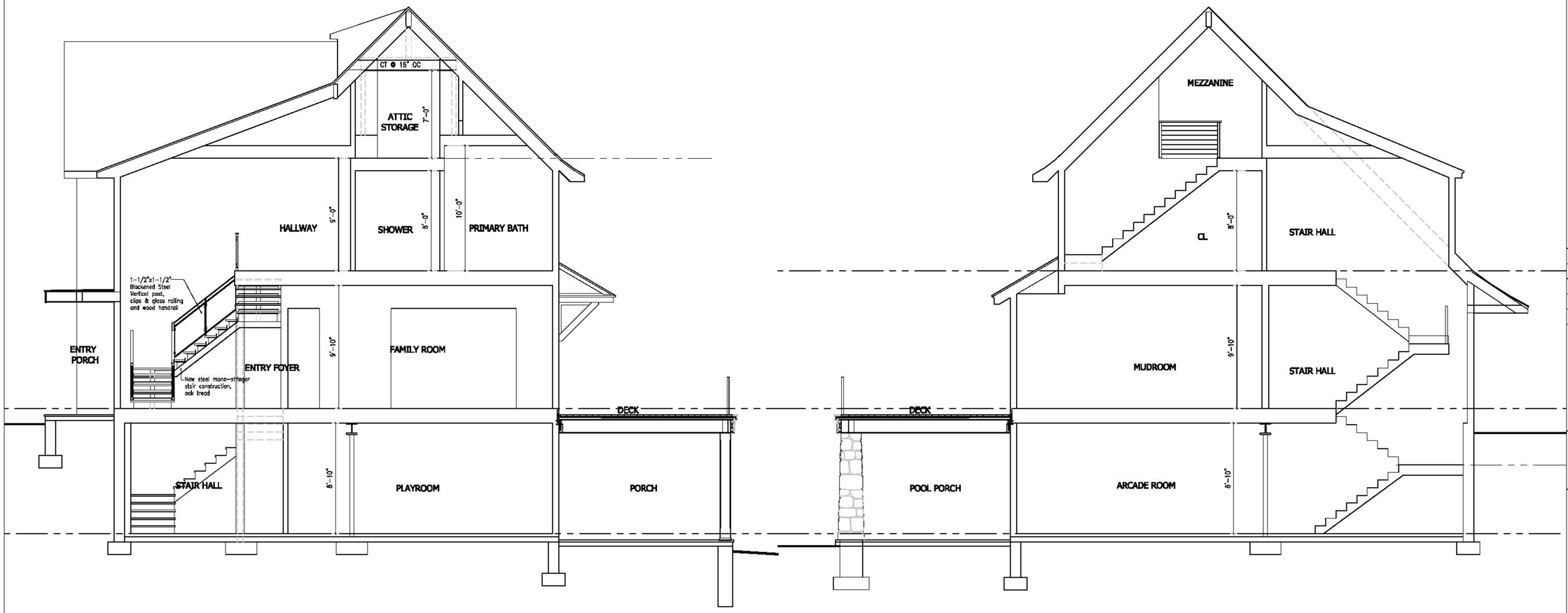

1 PROPOSED SECTION THRU ENTRY PORCH TO FAMILY ROOM
SCALE: 1/4"=1'-0"

2 PROPOSED SECTION THRU DECK TO MUDROOM STAIR
SCALE: 1/4"=1'-0"

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

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BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
PROPOSEDSECTIONS

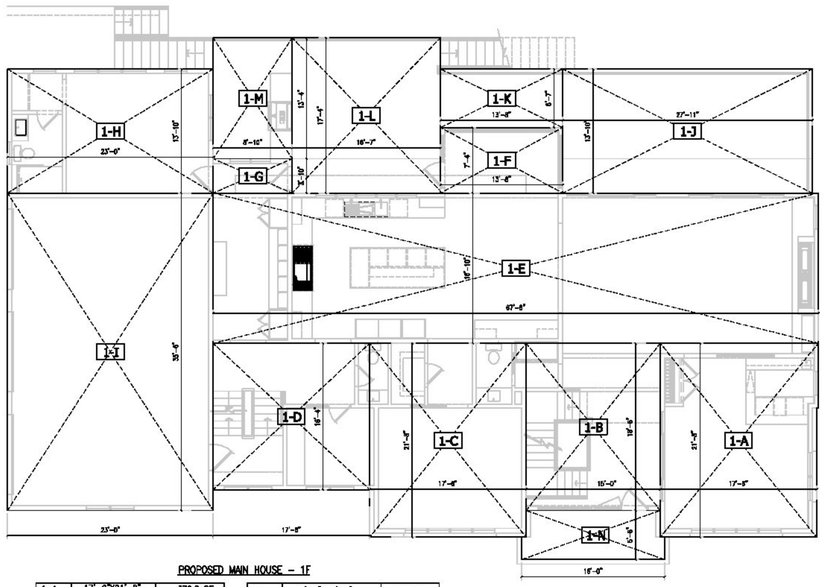
SEAL

DATE
2-8-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A300.00

PAGE NO.



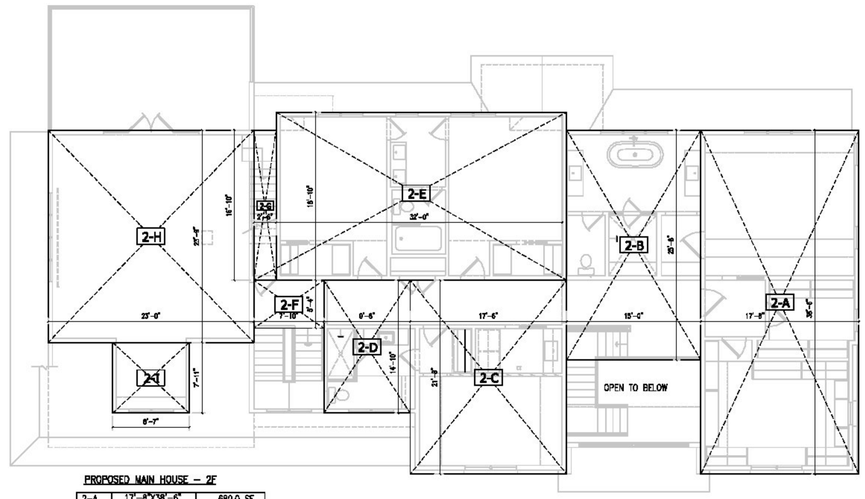
PROPOSED MAIN HOUSE – 1F

1-A	17'-6"X21'-8"	379.0 SF
1-B	15'-0"X18'-8"	280.0 SF
1-C	17'-6"X21'-8"	379.0 SF
1-D	17'-6"X16'-4"	286.0 SF
1-E	67'-8"X16'-10"	1139.0 SF
1-F	13'-8"X7'-4"	100.0 SF
1-G	8'-10"X3'-10"	34.0 SF
1-H	23'-0"X13'-10"	318.0 SF
TOTAL OF FIRST FLOOR		2,915.0 SF

1-I	23'-0"X35'-6"	817.0 SF
TOTAL OF GARAGE		817.0 SF

1-J	27'-11"X13'-10"	386.0 SF	ELEVATED DECK (BASEMENT PORCH)
1-K	13'-8"X6'-7"	90.0 SF	
1-L	16'-7"X17'-4"	287.0 SF	
1-M	8'-10"X13'-4"	118.0 SF	
1-N	16'-0"X5'-6"	88.0 SF	FRONT PORCH
TOTAL OF PORCH (MAIN HOUSE)		969.0 SF	

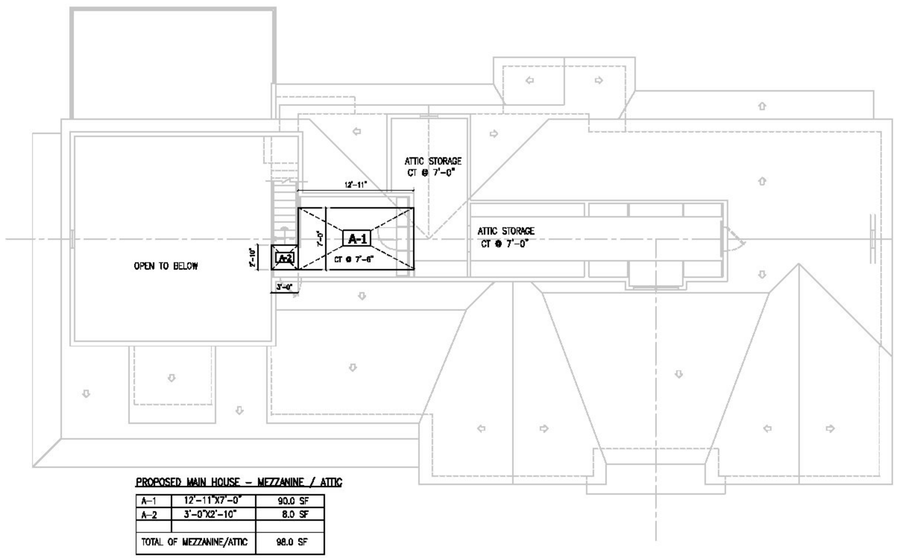
PROPOSED FIRST FLOOR PLAN



PROPOSED MAIN HOUSE – 2F

2-A	17'-8"X38'-6"	680.0 SF
2-B	15'-0"X25'-8"	385.0 SF
2-C	17'-6"X21'-8"	379.0 SF
2-D	9'-8"X14'-10"	143.0 SF
2-E	32'-0"X18'-10"	603.0 SF
2-F	7'-10"X5'-4"	42.0 SF
2-G	2'-6"X16'-10"	42.0 SF
2-H	23'-0"X23'-8"	546.0 SF
2-I	8'-7"X7'-11"	66.0 SF
TOTAL OF SECOND FLOOR		2,888.0 SF

PROPOSED SECOND FLOOR PLAN



PROPOSED MAIN HOUSE – MEZZANINE / ATTIC

A-1	12'-11"X7'-0"	90.0 SF
A-2	3'-0"X2'-10"	8.0 SF
TOTAL OF MEZZANINE/ATTIC		98.0 SF

PROPOSED MEZZANINE/ATTIC FLOOR PLAN

PROPOSED BASEMENT IS NOT A STORY (SEE AVERAGE GRADE CALCULATION PLAN)

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION, DATED: _____

_____ DATE:
CHISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

_____ DATE:
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
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TEO SIGÜENZA
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PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
FLOOR PLANS
FLOOR AREA CALCULATION

SEAL

DATE
2-8-24

SCALE
1/4" = 1'-0"

DRAWING NO.
A101.10

PAGE NO.

TOWN OF NORTH CASTLE

WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

Application for Site Development Plan Approval

Application Name

Berkin Property

I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES

Name of Property Owner: Jackie and Brian Berkin

Mailing Address: _____

Telephone: _____ Fax: _____ e-mail brian.berkin@gmail.com jackieberkin@gmail.com

Name of Applicant (if different): Teo Siguenza, Architect

Address of Applicant: 460 Old Post Road, Suite 2A, Bedford, NY 10506

Telephone: (914) 234-6289 Fax: (914) 234-0619 e-mail ts@teosiguenza.com

Interest of Applicant, if other than Property Owner:
Project architect

Is the Applicant (if different from the property owner) a Contract Vendee?

Yes ☐ No ☒

If yes, please submit affidavit sating such. If no, application cannot be reviewed by Planning Board

Name of Professional Preparing Site Plan: Alan L. Pilch, PE, RLA
ALP Engineering & Landscape Architectue, PLLC

Address: P.O. Box 843, Ridgefield, CT 06877

Telephone: (475) 215-5343 Fax: Cell: (203) 710-0587 e-mail alpengineering-la@outlook.com

Name of Other Professional: Teo Siguenza, Architect

Address: 460 Old Post Road, Suite 2A, Bedford, NY 10506

Telephone: (914) 234-6289 Fax: (914) 234-0619 e-mail _____

Name of Attorney (if any): _____

Address: _____

Telephone: _____ Fax: _____ e-mail _____

Applicant Acknowledgement

By making this application, the undersigned Applicant agrees to permit Town officials and their designated representatives to conduct on-site inspections in connection with the review of this application.

The Applicant also agrees to pay all expenses for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the professional review services shall be mailed to the Applicant, unless the Town is notified in writing by the Applicant at the time of initial submission of the application that such mailings should be sent to a designated representative instead.

Signature of Applicant: _____ Date: 02-09-24

Signature of Property Owner: _____ Date: 02-09-24

MUST HAVE BOTH SIGNATURES

Brian and Jackie Berkin
99 Byram Ridge Road
Armonk NY 10504

February 8, 2024

Town of North Castle
Attn: Building Department
17 Bedford Road
Armonk, New York 10504

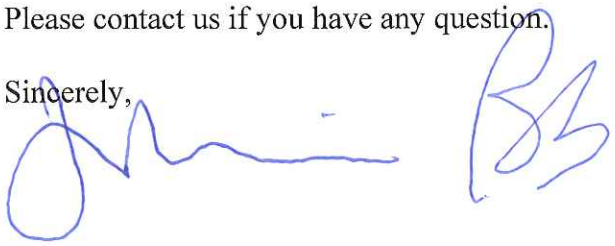
Re: 99 Byram Ridge Road
North Castle NY

To whom it may concern:

This letter is to serve as authorization for Teodoro Sigüenza, of Teo Sigüenza Architect P.L.L.C to act as our representative on the application for the Building Permit & related submissions for our property located at the above captioned address.

Please contact us if you have any question.

Sincerely,



Brian and Jackie Berkin
jackieberkin@gmail.com
brian.berkin@gmail.com

II. IDENTIFICATION OF SUBJECT PROPERTY

Street Address: 99 Byram Ridge Road

Location (in relation to nearest intersecting street):

225 feet (north, south, east or west) of Indian Trail

Abutting Street(s): Byram Ridge Road / Indian Trail

Tax Map Designation (NEW): Section 101.01 Block 1 Lot 13

Tax Map Designation (OLD): Section 2/ Block 05D/ Lot 2.B

Zoning District: R-1A Total Land Area 58,278.6 s.f.

Land Area in North Castle Only (if different) not applicable

Fire District(s) Armonk F.D. School District(s) Byram Hill S.D.

Is any portion of subject property abutting or located within five hundred (500) feet of the following:

The boundary of any city, town or village?
No X Yes (adjacent) _____ Yes (within 500 feet) _____
If yes, please identify name(s): _____

The boundary of any existing or proposed County or State park or any other recreation area?
No ____ Yes (adjacent) _____ Yes (within 500 feet) X

The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel lines?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The existing or proposed boundary of any county or State owned land on which a public building or institution is situated?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The boundary of a farm operation located in an agricultural district?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

Does the Property Owner or Applicant have an interest in any abutting property?
No X Yes _____

If yes, please identify the tax map designation of that property:

_____

III. DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed Use: Single family residential

Gross Floor Area: Existing 0 S.F. Proposed 7,687 S.F.

Proposed Floor Area Breakdown:

Retail _____S.F.; Office _____S.F.;

Industrial _____ S.F.; Institutional _____S.F.;

Other Nonresidential _____S.F.; Residential 7,687 S.F.;

Number of Dwelling Units: 1

Number of Parking Spaces: Existing 0 Required 2 Proposed 3

Number of Loading Spaces: Existing 0 Required 0 Proposed 0

Earthwork Balance: Cut 75 C.Y. Fill 200 C.Y.

Will Development on the subject property involve any of the following:

Areas of special flood hazard? No X Yes _____
(If yes, application for a Development Permit pursuant to Chapter 177 of the North Castle Town Code may also be required)

Trees with a diameter at breast height (DBH) of 8" or greater?

No _____ Yes X
(If yes, application for a Tree Removal Permit pursuant to Chapter 308 of the North Castle Town Code may also be required.)

Town-regulated wetlands? No X Yes _____
(If yes, application for a Town Wetlands Permit pursuant to Chapter 340 of the North Castle Town Code may also be required.)

State-regulated wetlands? No X Yes _____
(If yes, application for a State Wetlands Permit may also be required.)

IV. SUBMISSION REQUIREMENTS

The site development plan application package shall include all materials submitted in support of the application, including but not limited to the application form, plans, reports, letters and SEQR Environmental Assessment Form. **Submission of the following shall be required:**

- One (1) PDF set of the site development plan application package in a single PDF file .

- A check for the required application fee and a check for the required Escrow Account, both made payable to "Town of North Castle" in the amount specified on the "Schedule of Application Fees."

(continued next page)

V. INFORMATION TO BE INCLUDED ON SITE DEVELOPMENT PLAN

The following checklist is provided to enable the Applicant to determine if he/she has provided enough information on the site development plan for the Planning Board to review his/her proposal. Applicants are advised to review ARTICLE VIII, Site Development Plan of the North Castle Town Code for a complete enumeration of pertinent requirements and standards prior to making application for site development plan approval.

The application for site development plan approval will not be accepted for Planning Board review unless all items identified below are supplied and **so indicated with a check mark in the blank line provided.** If a particular item is not relevant to the subject property or the development proposal, **the letters "NA" should be entered instead**. In addition, the project will not be scheduled on a Planning Board agenda until the Applicant receives an initialed "site plan checklist" from the Planning Department.

The information to be included on a site development plan shall include:

Legal Data:

___✓___ Name of the application or other identifying title.

___✓___ Name and address of the Property Owner and the Applicant, (if different).

___✓___ Name, address and telephone number of the architect, engineer or other legally qualified professional who prepared the plan.

___✓___ Names and locations of all owners of record of properties abutting and directly across any and all adjoining streets from the subject property, including the tax map designation of the subject property and abutting and adjoining properties, as shown on the latest tax records.
(names of adjacent property owners to be provided)

___✓___ Existing zoning, fire, school, special district and municipal boundaries.

___✓___ Size of the property to be developed, as well as property boundaries showing dimensions and bearings as determined by a current survey; dimensions of yards along all property lines; name and width of existing streets; and lines of existing lots, reservations, easements and areas dedicated to public use.

___n.a.___ Reference to the location and conditions of any covenants, easements or deed restrictions that cover all or any part of the property, as well as identification of the document where such covenants, easements or deed restrictions are legally established.

___✓___ Schedule of minimum zoning requirements, as well as the plan's proposed compliance with those requirements, including lot area, frontage, lot width, lot depth, lot coverage, yards, off-street parking, off-street loading and other pertinent requirements.

___✓___ Locator map, at a convenient scale, showing the Applicant's entire property in relation to surrounding properties, streets, etc., within five hundred (500) feet of the site.

___✓___ North arrow, written and graphic scales, and the date of the original plan and all revisions, with notation identifying the revisions.

___✓___ A signature block for Planning Board endorsement of approval.

Existing Conditions Data:

___✓___ Location of existing use and design of buildings, identifying first floor elevation, and other structures.

___✓___ Location of existing parking and truck loading areas, with access and egress drives thereto.

___✓___ Location of existing facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

___✓___ Location of all other existing site improvements, including pavement, walks, curbing, retaining walls and fences.

___n.a.___ Location, size and design of existing signs.

___n.a.___ Location, type, direction, power and time of use of existing outdoor lighting.

___n.a.___ Location of existing outdoor storage, if any.

___✓___ Existing topographical contours with a vertical interval of two (2) feet or less.

___✓___ Location of existing floodplains, wetlands, slopes of 15% or greater, wooded areas, landscaped areas, single trees with a DBH of 8" or greater, rock outcrops, stone walls and any other significant existing natural or cultural features.

Proposed Development Data:

___n.a.___ Proposed location of lots, streets, and public areas, and property to be affected by proposed easements, deed restrictions and covenants.

___✓___ Proposed location, use and architectural design of all buildings, including proposed floor elevations and the proposed division of buildings into units of separate occupancy.

___✓___ Proposed means of vehicular and pedestrian access to and egress from the site onto adjacent streets.

___✓___ Proposed sight distance at all points of vehicular access.

___n.a.___ Proposed number of employees for which buildings are designed

___✓___ Proposed streets, with profiles indicating grading and cross-sections showing the width of the roadway; the location and width of sidewalks; and the location and size of utility lines.

___✓___ Proposed location and design of any pedestrian circulation on the site and off-street parking and loading areas, including handicapped parking and ramps, and including details of construction, surface materials, pavement markings and directional signage.

___✓___ Proposed location and design of facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

✓ Proposed location of all structures and other uses of land, such as walks, retaining walls, fences, designated open space and/or recreation areas and including details of design and construction.

n.a. Location, size and design of all proposed signs.

n.a. Location, type, direction, power and time of use of proposed outdoor lighting.

n.a. Location and design of proposed outdoor garbage enclosure.

n.a. Location of proposed outdoor storage, if any.

✓ Location of proposed landscaping and buffer screening areas, including the type (scientific and common names), size and amount of plantings.

n.a. Type of power to be used for any manufacturing

n.a. Type of wastes or by-products to be produced and disposal method

n.a. In multi-family districts, floor plans, elevations and cross sections

✓ The proposed location, size, design and use of all temporary structures and storage areas to be used during the course of construction.

✓ Proposed grade elevations, clearly indicating how such grades will meet existing grades of adjacent properties or the street.

✓ Proposed soil erosion and sedimentation control measures.

n.a. For all proposed site development plans containing land within an area of special flood hazard, the data required to ensure compliance with Chapter 177 of the North Castle Town Code.

_____ For all proposed site development plans involving clearing or removal of trees with a DBH of 8" or greater, the data required to ensure compliance with Chapter 308 of the North Castle Town Code.

n.a. For all proposed site development plans involving disturbance to Town-regulated wetlands, the data required to ensure compliance with Chapter 340 of the North Castle Town Code.

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:
Berkin Residence

Project Location (describe, and attach a location map):
99 Byram Ridge Road, Armonk (Town of North Castle)

Brief Description of Proposed Action:
The project is to consist of: (1) the demolition of the existing single family house and the construction of a new 3,851 square foot (footprint) house to be located in the central portion of the lot, (2) modifications to the driveway for access into the garage which will be on the south side of the house, and (3) construction of a pool and deck in the rear of the house.

Name of Applicant or Sponsor:	Telephone: (914) 234-6289
Teo Siguenza, Architect (applicant)	E-Mail: ts@teosiguenza.com

Address:
460 Old Post Road, Suite 2A

City/PO:	State:	Zip Code:
Bedford	NY	10506

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: Site Development Plan Approval (Planning Board); Building Permit (Building Department)	☐	☑

3. a. Total acreage of the site of the proposed action? 1.338 acres
   b. Total acreage to be physically disturbed? 1.064 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 1.338 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☑ Residential (suburban)
   ☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		
If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☑	☐

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements?		
If the proposed action will exceed requirements, describe design features and technologies:		
House will be designed with insulation and lighting fixtures which will meet and/or exceed the State energy code.	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply?		
If No, describe method for providing potable water:		
New well will be constructed on the property.	☑	☐

	NO	YES
11. Will the proposed action connect to existing wastewater utilities?		
If No, describe method for providing wastewater treatment:		
A new on-site septic system will be constructed for the new house.	☑	☐

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐	☑

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☐ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☐	☑
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☐	☑
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: Runoff from the property which presently is conveyed to an off-site watercourse on the neighboring property will continue to do so, although the stormwater management plan will reduce the peak rate of runoff across the 1-year through 100-year storm events.		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)?	☐	☑
If Yes, explain the purpose and size of the impoundment: A subsurface stormwater detention practice consisting of 318.5 lineal feet of 36" diameter storm drainage pipes will be installed for attenuation of the peak rate of runoff. In addition, two rain gardens will be constructed for water quality improvement purposes.		
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	☑	☐
If Yes, describe:		
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?	☑	☐
If Yes, describe:		

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

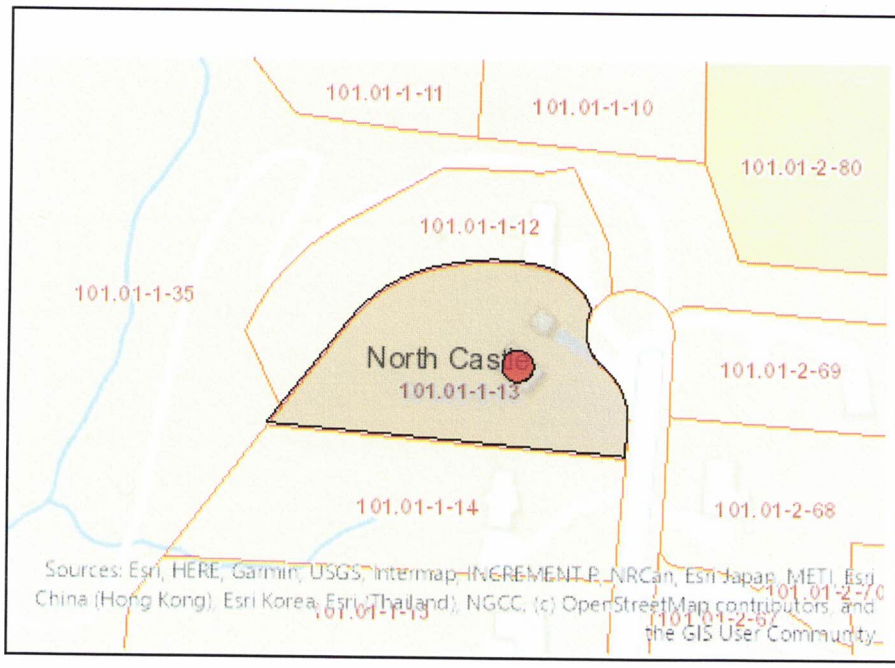
Applicant/sponsor/name: Alan L. Pilch, PE, RLA (agent for Jackie and Brian Berkin) Date: 02/12/2024

Signature: _____ Title: Principal (ALP Engineering & Land Arch.)

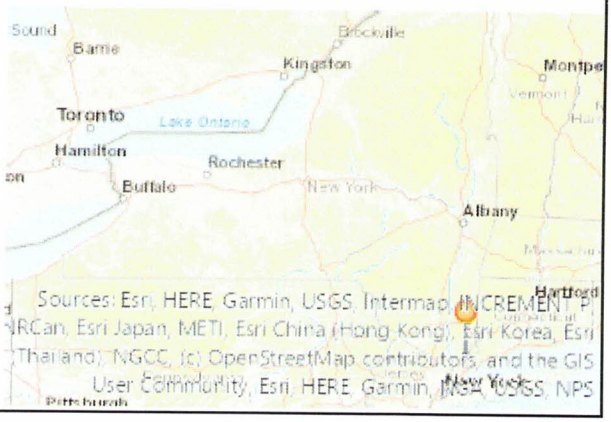
PRINT FORM

EAF Mapper Summary Report

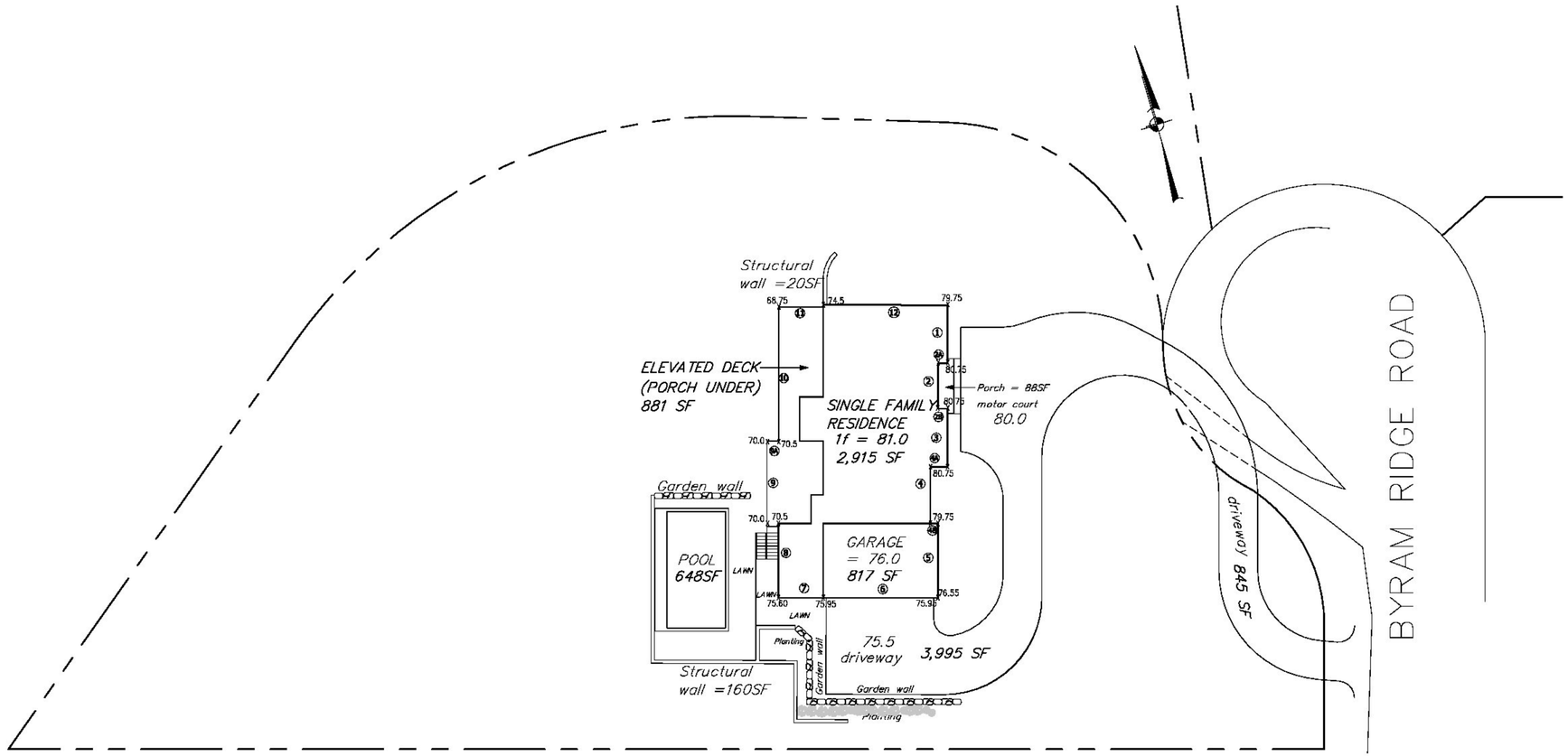
Wednesday, February 7, 2024 2:59 PM



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.



Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	No
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	No



MAXIMUM PERMITTED GROSS LAND COVERAGE (SECTION 355-26 (1))

LOT AREA = 1.3378 ACRES / 58,278.6 SF
AREA IN ACCESS OF 1.0 ACRES = 0.3378 ACRES
PERMITTEED GROSS LAND COVERAGE = 10,675 SF

BONUS MAX. GROSS LAND COVERAGE
R-1A MIN. FRONT YARD 50 FT
DISTANCE BEYOND FRONT SETBACK = 65'-50' = 15'
PERMITTEED LAND COVERAGE = 15'X10' = 150 SF

TOTAL MAX. PERMITTEED GROSS LAND COVERAGE = 10,825 SF

PROPOSED LAND COVERAGE

PRINCIPAL BUIDLING	3,732.0 SF
DECKS (PORCH UNDER)	881.0 SF
PORCHES	88.0 SF
DRIVEWAY, PARKING & WALKWAYS	4,840.0 SF
TERRACES	220.0 SF
POOL	648.0 SF
STRUCTURAL WALLS	180.0 SF
TOTAL LAND COVERAGE	10,589.0 SF< 10,825 SF

Average Grade Computations

Segment	Length	F.F. Elevation	Ave.Grade	Δ Elevation	Factor
1	18'	81.0	80.75	0.25'	4.5'
2A	3'	81.0	80.75	0.25'	0.75'
2	14'	81.0	80.75	0.25'	3.5'
2B	3'	81.0	80.75	0.25'	0.75'
3	18'	81.0	80.75	0.25'	4.5'
4A	6'	81.0	80.75	0.25'	1.5'
4	18'	81.0	80.25	0.75'	13.5'
4B	2'	81.0	79.75	1.25'	2.5'
5	23'	76.0	78.15	2.15'	49.45'
6	36'	76.0	75.95	0.05'	1.8'
7	14'	81.0	75.77	5.23'	73.22'
8	23'	81.0	73.05	7.95'	182.85'
9	25'	81.0	70.0	11.0'	275.0'
9A	4'	81.0	70.75	10.25'	41.0'
10	42'	81.0	69.63	11.37'	477.54'
11	14'	81.0	71.63	9.37'	131.18'
12	38'	81.0	77.13	3.87'	147.06'
Total	301'				1410.60'

A) 1410.60' / 301' = 4.68'< 6'-0"

B) Segments < 6'-0" from ave. grade to floor elevation = 183 1F
193 1F = 64.11% of total 301 1F Perimeter

APPROVED BY THE TOWN OF NORTH CASTLE
PLANNING BOARD
RESOLUTION, DATED: _____

DATE:

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNIN BOARD

ENGINEERING DRAWINGS/ PLANS REVIEWED BY TOWN ENGINEER:

DATE:

JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING, P.C
CONSULTING TOWN ENGINEERS

TEO SIGÜENZA
ARCHITECT
460 OLD POST ROAD 2A BEDFORD, N. Y. 10506
TEL: 914.234.6289 FAX: 914.234.0619
www.teosiguenza.com

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES
2. ALL DIMENSIONS TO BE CHECKED
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

	DATE:	REVISION

PROJECT
RESIDENCE AT
BYRAM RIDGE ROAD
SINGLE FAMILY RESIDENCE

99 BYRAM RIDGE ROAD
ARMONK, NY

DRAWING TITLE
SITE PLAN - AVERAGE GRADE CALCULATION AND GROSS LAND COVERAGE CALCULATION

SEAL

DATE
~~2-8-24~~

SCALE
1" =20'-0"

DRAWING NO.
SP-2.00

PAGE NO.

TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

January 29, 2019
Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: Residence at Byram Ridge Rd Date: 02-09-2024

Tax Map Designation or Proposed Lot No.: 101.01-1-13

Floor Area

1.	Total Lot Area (Net Lot Area for Lots Created After 12/13/06):	58,278.6 SF
2.	**Maximum** permitted floor area (per Section 355-26.B(4)):	8,610 SF
3.	Amount of floor area contained within first floor: _ ____ existing + 2,915 proposed = _	2,915 SF
4.	Amount of floor area contained within second floor: _ ____ existing + 2,888 proposed = _	2,888 SF
5.	Amount of floor area contained within garage: _ ____ existing + 817 proposed = _	817 SF
6.	Amount of floor area contained within porches capable of being enclosed: _ ____ existing + 969 proposed = _ (basement porch(elevated deck))	969 SF
7.	Amount of floor area contained within basement (if applicable – see definition): _ ____ existing + 0 proposed = _	0
8.	Amount of floor area contained within attic (if applicable – see definition): _ ____ existing + 98 proposed = _	98 SF
9.	Amount of floor area contained within all accessory buildings: _ ____ existing + 0 proposed = _	0
10.	**Proposed floor area:** Total of Lines 3 – 9 = _	7,687 SF

If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.

REGISTERED ARCHITECT PEDRO EZEQUIEL [illegible] 023170 STATE OF NEW YORK

Signature and Seal of Professional Preparing Worksheet

02-09-2024
Date

TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

GROSS LAND COVERAGE CALCULATIONS WORKSHEET

Application Name or Identifying Title: Residence at Byram Ridge Rd Date: 02-09-2024

Tax Map Designation or Proposed Lot No.: 101.01-1-13

Gross Lot Coverage

1.	Total lot Area (Net Lot Area for Lots Created After 12/13/06):	58,278.6 SF
2.	**Maximum** permitted gross land coverage (per Section 355-26.C(1)(b)):	10,675 SF
3.	**BONUS** maximum gross land cover (per Section 355-26.C(1)(b)):	
	Distance principal home is beyond minimum front yard setback 15 x 10 = 150	150
4.	**TOTAL Maximum Permitted gross land coverage** = Sum of lines 2 and 3	10,825 SF
5.	Amount of lot area covered by **principal building:** _____ existing + 3,732 proposed =	3,732 SF
6.	Amount of lot area covered by **accessory buildings:** _____ existing + 0 proposed =	0
7.	Amount of lot area covered by **decks:** _____ existing + 881 proposed = (Elevated deck porch under)	881 SF
8.	Amount of lot area covered by **porches:** _____ existing + 88 proposed =	88 SF
9.	Amount of lot area covered by **driveway, parking areas and walkways:** _____ existing + 4,840 proposed =	4,840 SF
10.	Amount of lot area covered by **terraces:** _____ existing + 220 proposed =	220 SF
11.	Amount of lot area covered by **tennis court, pool and mechanical equip:** _____ existing + 648 proposed =	648 SF
12.	Amount of lot area covered by **all other structures:** 0 existing + 180 proposed = (structural walls)	180 SF
13.	Proposed **gross land coverage:** Total of Lines 5 - 12 =	10,589 SF

If Line 13 is less than or equal to Line 4, your proposal **complies** with the Town's maximum gross land coverage regulations and the project may proceed to the Residential Project Review Committee for review. If Line 13 is greater than Line 4 your proposal does not comply with the Town's regulations.

REGISTERED ARCHITECT DOMINGO EZEQUIEL SEGURA 023170-1 STATE OF NEW YORK

Signature and Seal of Professional Preparing Worksheet

02-09-2024
Date

OWTS NOTES

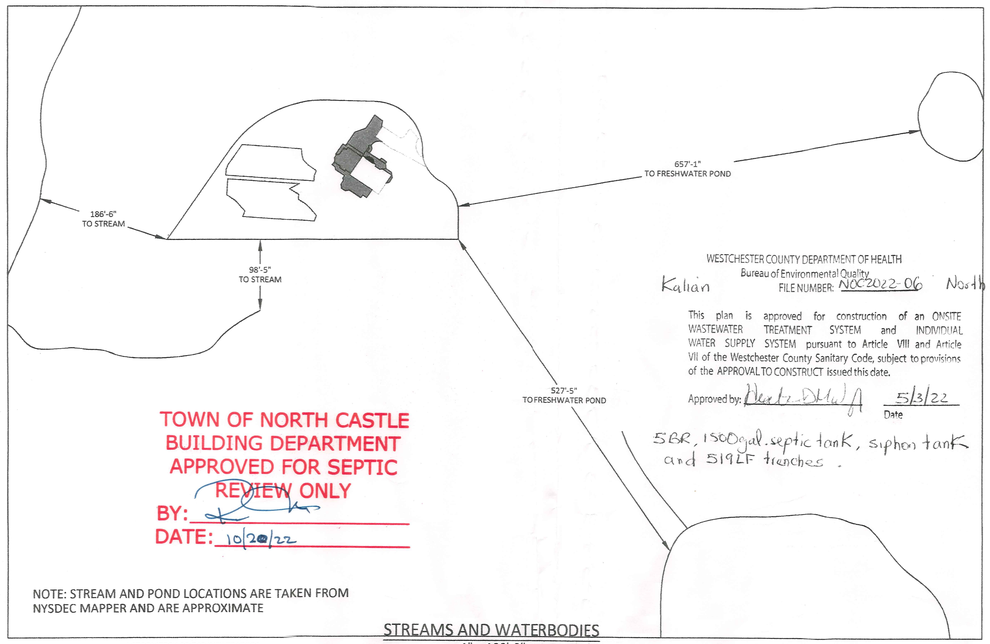
1. THERE SHALL BE NO TREES WITHIN 10 FEET OF THE OWTS.
2. THERE ARE NO OWTS WITHIN 200 FEET OF THE WELL UNLESS OTHERWISE SHOWN ON THE PLAN.
3. THERE ARE NO OWTS WITHIN 200' OF WELL.
4. THERE ARE NO WELLS WITHIN 200' OF OWTS UNLESS OTHERWISE SHOWN ON PLAN.
5. THE PROPOSED OWTS AREA SHALL BE ISOLATED AND PROTECTED AGAINST DAMAGE BY EROSION, STORAGE OF EARTH OR MATERIALS, DISPLACEMENT, COMPACTION OR OTHER ADVERSE PHYSICAL CHANGE IN THE CHARACTERISTICS OF THE SOIL OR IN THE DRAINAGE OF THE AREA.
6. IF FOR ANY REASON THE APPROVED CONSTRUCTION PLAN CANNOT BE FOLLOWED, A REVISED PLAN MUST BE PREPARED, SUBMITTED, AND APPROVED BY WCDH.
7. THE DESIGN PROFESSIONAL SHALL SUPERVISE THE CONSTRUCTION OF THE OWTS AND MAKE AN OPEN WORKS INSPECTION.
8. WITHIN 24-HOURS OF THE COMPLETION OF THE OWTS, THE DESIGN PROFESSIONAL MUST NOTIFY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH (WCDH) THAT THE OWTS IS READY FOR INSPECTION BY SUBMITTING A COMPLETED REQUEST FOR AN OPEN WORKS INSPECTION ON THE APPROPRIATE FORM TO WCDH.
9. NO BACKFILLING OF A COMPLETED OWTS CAN OCCUR UNTIL AFTER IT HAS BEEN INSPECTED AND ACCEPTED BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.
10. AFTER BACKFILLING THE OWTS, THE AREA SHALL BE COVERED WITH A MINIMUM OF 4 INCHES OF CLEAN TOP SOIL, SEEDED AND MULCHED.
11. THE INSTALLATION OF THE OWTS SHALL BE IN ACCORDANCE WITH THE MOST RECENTLY ENACTED RULES AND REGULATIONS FOR THE DESIGN AND CONSTRUCTION OF RESIDENTIAL SUBSURFACE SEWAGE TREATMENT SYSTEMS AND DRILLED WELLS IN WESTCHESTER COUNTY, NY.
12. ALL PIPES CONNECTING TO TANK AND BOXES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF BOX.
13. THE PROPOSED OWTS SHALL BE INSTALLED BY A WESTCHESTER COUNTY LICENSED SEPTIC CONTRACTOR. WELL SHALL BE INSTALLED BY A NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION REGISTERED WELL DRILLER.
14. PRIOR TO ANY EXCAVATION ALL UNDERGROUND UTILITIES MUST BE LOCATED. CALL 1-800-962-7962.
15. THE WESTCHESTER COUNTY HEALTH DEPARTMENT 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.
16. THERE ARE NO RESERVOIRS, RESERVOIR STEMS OR CONTROLLED LAKE WITHIN 500 FEET OF THE PROPOSED OWTS UNLESS OTHERWISE SHOWN ON PLAN.
17. THERE ARE NO NYSDEC WETLANDS OR WATERCOURSES WITHIN 200 FEET OF THE PROPOSED OWTS UNLESS OTHERWISE SHOWN ON PLAN.
18. THERE ARE NO NYSDEC WETLANDS OR WATERCOURSES WITHIN 200' OF THE PROPOSED OWTS UNLESS OTHERWISE SHOWN ON THE PLAN.
19. NYCDEP MUST BE CONTACTED AT LEAST TWO DAYS PRIOR TO START OF CONSTRUCTION OF THE OWTS SO THAT THE NYCDEP MAY INSPECT AND MONITOR THE INSTALLATION.
20. THERE ARE NO SOURCES OF CONTAMINATION WITHIN 200 FEET OF PROPOSED WELL.
21. THE MINIMUM WELL YIELD IS 5 GPM, YIELDS LESS THAN 5 GPM MUST BE IMMEDIATELY REPORTED TO THE DEPARTMENT.
22. DRILLED WELL TO BE SAMPLED AND TESTED IN ACCORDANCE WITH WCDOH PRIVATE WELL TESTING LAW.
23. IRRIGATION WELLS TO BE REVIEWED AND APPROVED BY WCDOH.
24. STORMTECH SC-740 CHAMBERS ARE NOT A PART OF THE OWTS.
25. THE PROPOSED FILL FOR THE OWTS AREA IS TO BE RUN OF BANK SAND AND GRAVEL AND WILL BE INSTALLED IN THE PRIMARY AREA ONLY.

MISCELLANEOUS DATA

OWNER/APPLICANT:	99 BYRAM LLC 5 W MAIN ST ELMSFORD, NY 10523
SURVEYOR:	EDWARD T. GANNON, PLS CHERRY HILL ROAD BLOOMING GROVE, NY 10914 PREPARED 9/2/2020
MUNICIPALITY:	TOWN OF NORTH CASTLE
LOT AREA:	1.34 AC
FIRE DISTRICT:	ARMONK FD
TAX MAP	101.01-1-13
WATER DISTRICT:	ONSITE WELL
SEWER DISTRICT:	ONSITE SSDS
SCHOOL DISTRICT:	BYRAM HILLS
DRAINAGE BASIN:	BYRAM RIVER BASIN
WATERSHED:	INLAND LONG ISLAND SOUND BASIN
EXISTING ZONING DISTRICT:	R-1A

OWTS DESIGN SUMMARY

1. PROPOSED DEVELOPMENT: SINGLE FAMILY, 5 BEDROOM HOME
2. DESIGN FLOW: 110 GPD/BEDROOM = 550 GPD
3. DEPTH TO GROUNDWATER: MOTTLING AT 54"
4. RUN OF BANK FILL REQUIRED = 30" Primary (±550CY) , 24" Reserve (±410CY)
5. DEPTH TO BEDROCK: N/A
6. SOIL PERCOLATION RATE = 16-20 MIN/IN
7. TOPOGRAPHY/SLOPE: 10.7%
8. SEPTIC TANK: 1500 GAL
9. SIPHON (DOSING) TANK: 378 GAL (NET CAPACITY) SET TO DOSE 259.5 GAL
10. VISUAL AND VISIBLE ALARM AT BUILDING FROM DOSING TANK
11. DISTRIBUTION BOXES: 14-WAY DISTRIBUTION BOX AND (1) 3-WAY DISTRIBUTION BOX FOR PRIMARY AND RESERVE)
12. TOTAL LENGTH ABSORPTION TRENCH REQUIRED/PROVIDED = 519 LF x 24" WIDE
13. CAP ENDS FOR ALL PERFORATED PIPES
14. SOIL CLASSIFICATION: ChB & RhD
15. PROPOSED DISTURBED AREA: 34,230 SF (0.785 Acres)
16. ESTIMATED TIME OF CONSTRUCTION: JUNE-JULY 2022.



TOWN OF NORTH CASTLE
BUILDING DEPARTMENT
APPROVED FOR SEPTIC
REVIEW ONLY
BY: _____
DATE: 10/20/22

NOTE: STREAM AND POND LOCATIONS ARE TAKEN FROM NYSDEC MAPPER AND ARE APPROXIMATE

STREAMS AND WATERBODIES
1" = 100'-0"

WESTCHESTER COUNTY DEPARTMENT OF HEALTH
Bureau of Environmental Quality
FILE NUMBER: NOC2022-06 North castle
Kalian

This plan is approved for construction of an ONSITE WASTEWATER TREATMENT SYSTEM and INDIVIDUAL WATER SUPPLY SYSTEM pursuant to Article VIII and Article VII of the Westchester County Sanitary Code, subject to provisions of the APPROVAL TO CONSTRUCT issued this date.

Approved by: _____ 5/3/22 Date

5BR, 1500gal. septic tank, siphon tank and 519LF trenches.

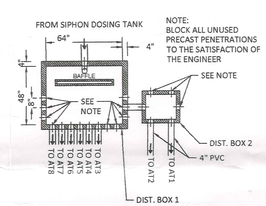
LOCATION MAP
N.T.S.

EXISTING SEPTIC SYSTEM DECOMISSIONING AND ABANDONMENT

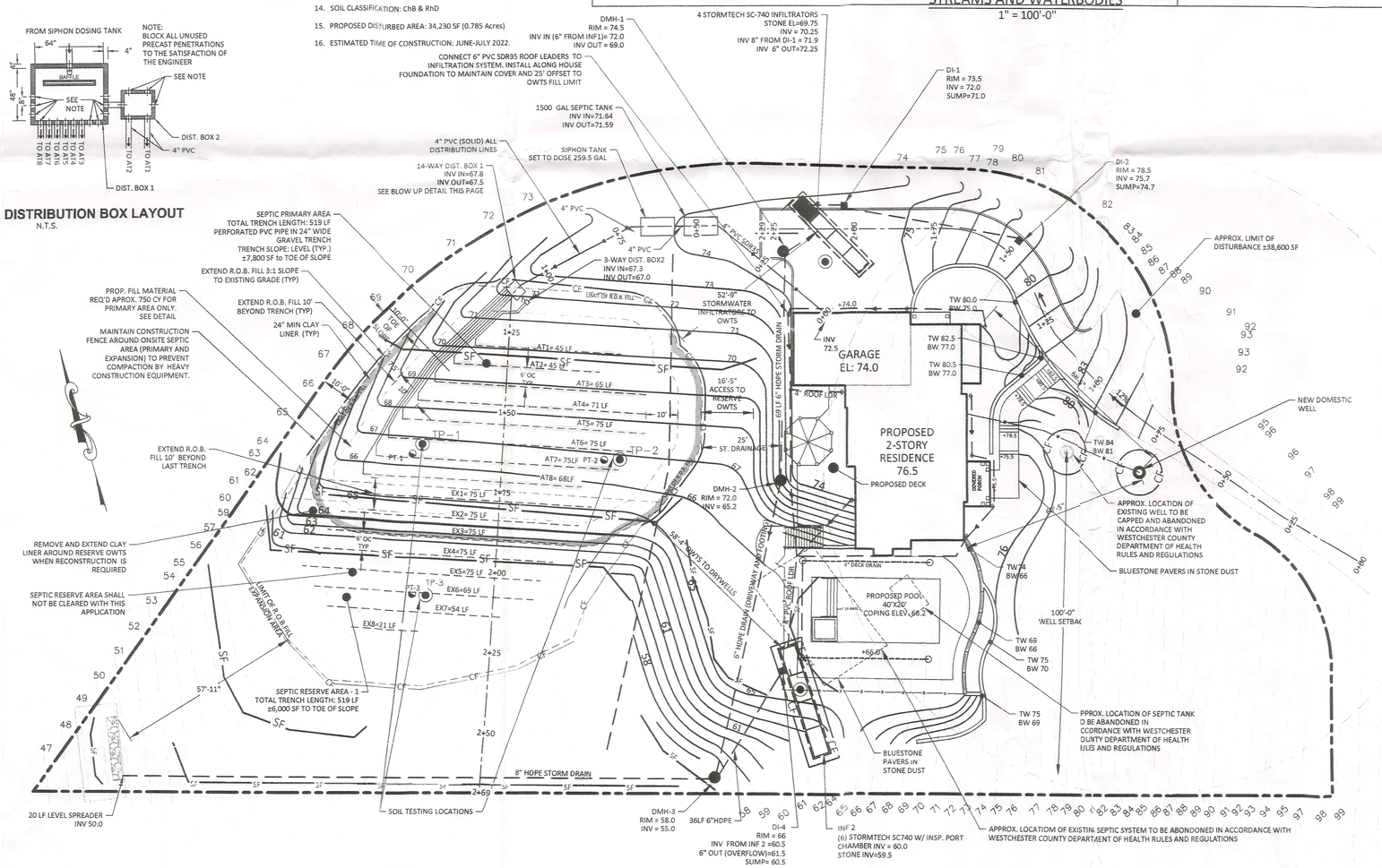
1. EXISTING SEPTIC SYSTEM SHALL BE ABANDONED IN ACCORDANCE WITH THE MOST RECENTLY ENACTED RULES AND REGULATIONS FOR THE DESIGN AND CONSTRUCTION OF RESIDENTIAL SUBSURFACE SEWAGE TREATMENT SYSTEMS AND DRILLED WELLS IN WESTCHESTER COUNTY, NY.
2. SEPTIC TANK SHALL BE EMPTIED, DEMOLISHED OR FILLED WITH SAND.

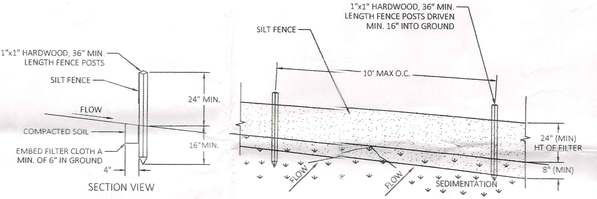
ROOF AND FOOTING DRAINS NOTE

ROOF AND FOOTING DRAINS SHALL BE CONNECTED TO THE SITE DRAINAGE SYSTEM, MAINTAINING 50' SEPARATION FROM THE SEPTIC AREA



DISTRIBUTION BOX LAYOUT
N.T.S.



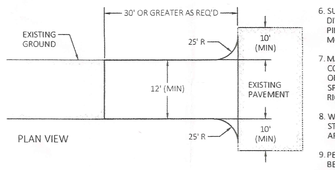


CONSTRUCTION SPECIFICATIONS:

1. SILT FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES. POSTS SHALL BE 1"x1" HARDWOOD, OR APPROVED EQUAL.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE WRAPPED AROUND 2 STAKES, MIN 2X. FILTER CLOTH SHALL BE EITHER FILTER USCF MISF180, MIRAFI 100X OR APPROVED EQUIVALENT.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED. REINFORCE AREA LOW POINTS WITH ADDITIONAL STAKES OR OTHER MATERIALS (AS RECOMMENDED BY ENGINEER). MATERIAL SHALL BE REMOVED WHEN SEDIMENT LOAD REACHES 50% HEIGHT OF FENCE.

SILT FENCE INSTALLATION DETAIL
N.T.S.

NOTE:
PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC R.O.W.



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SIGHT.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUITED, IT SHALL BE DONE ON A AREA STABILISED 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
N.T.S.

NOTE:
ALTERATIONS BY ANY PERSSON IN ANY WAY, OR ANY ITEM CONTAIN IN THIS DOCUMENT, UNLESS ACTING UNDER DIRECTION OF THE LICENSED ENGINEER WHOSE PROFESSIONAL SEAL IS AFFIX HERETO, IS A VIOLATION OF TITLE VIII, ARTICLE 145 SECTION 7209.2 OF THE NEW YORK STATE EDUCATION LAW

ARQ ARCHITECTURE P.C
ARCHITECTURE - PLANNING & ENGINEERING
100 EXECUTIVE BLVD. SUITE 204
OSSINING, NY 10562
PHONE: (914) 944-3377
FAX: (866) 567-6240

JORGE B. HERNANDEZ R.A. A.I.A.
LICENSE NUMBER: 030424-1
CERTIFICATE NUMBER: 0973256

PAUL A. BERTE, P.E
100 EXECUTIVE BLVD. SUITE 204
OSSINING, NY 10562

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REVISIONS	DATE	BY
WCHD Submission	11/8/21	
WCHD Comments	12/14/22	
WCHD Comments	3/21/22	
WCHD Comments	4/8/22	
WCHD Comments	4/24/22	

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DRAWING TITLE:
OWTS SITE PLAN

PROJECT:
99 BYRAM, LLC
OWTS PLAN

PROJECT ADDRESS:
99 BYRAM RIDGE ROAD
ARMONK, NY 10580

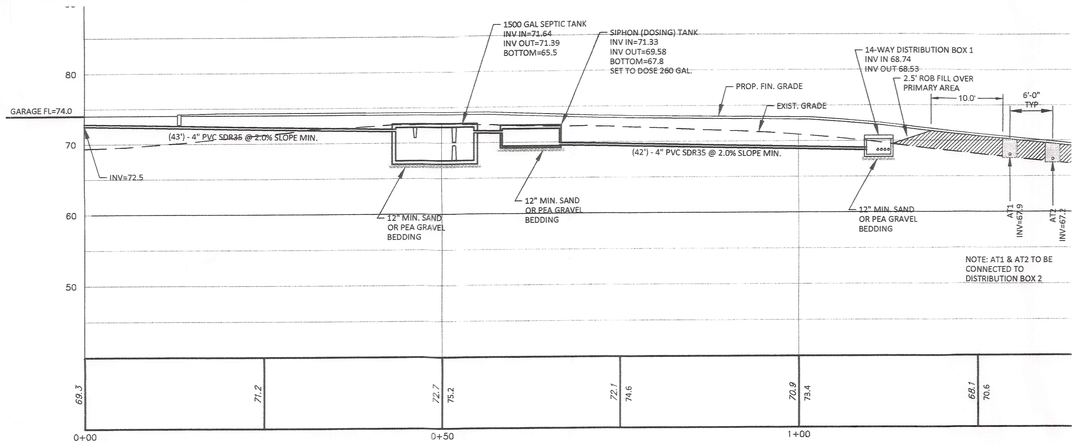
WCDOH SIGNATURE:

Septic Plan

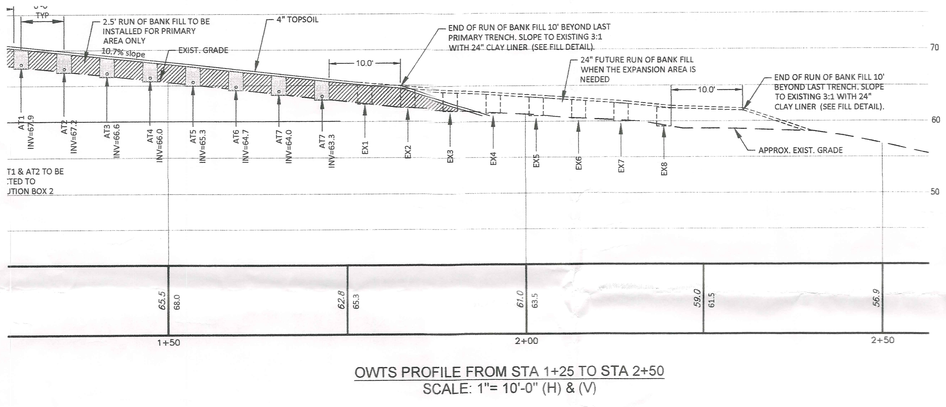
TOWN OF NORTH CASTLE
BUILDING DEPARTMENT
APPROVED FOR SEPTIC
REVIEW ONLY
BY: _____
DATE: 10/20/22

SEAL & SIGNATURE

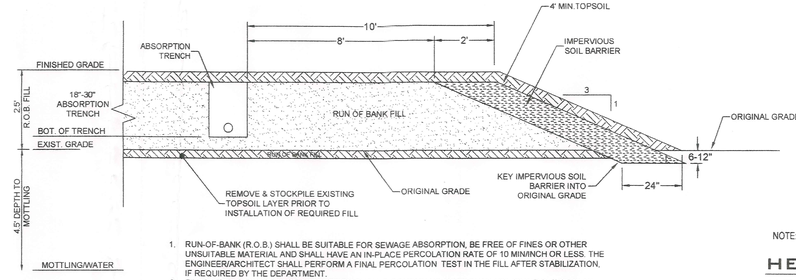
DATE.: 3/1/21	SCALE: 1" = 20'-0"
PROJECT NO.: 21-030	
DRAWING BY: SB	DRAWING NO.: 1 OF 2
CHECKED BY: PB	



OWTS PROFILE FROM STA 0+00 TO STA 1+25
SCALE: 1"= 10'-0" (H) & (V)

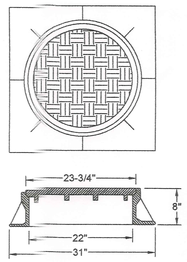


OWTS PROFILE FROM STA 1+25 TO STA 2+50
SCALE: 1"= 10'-0" (H) & (V)



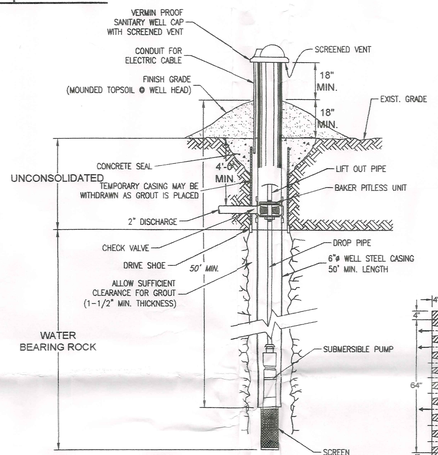
1. RUN-OF-BANK (R.O.B.) SHALL BE SUITABLE FOR SEWAGE ABSORPTION, BE FREE OF FINES OR OTHER UNSUITABLE MATERIAL AND SHALL HAVE AN IN-PLACE PERCOLATION RATE OF 10 MIN/INCH OR LESS. THE ENGINEER/ARCHITECT SHALL PERFORM A FINAL PERCOLATION TEST IN THE FILL AFTER STABILIZATION, IF REQUIRED BY THE DEPARTMENT.
2. FILL SUITABLE FOR SEWAGE ABSORPTION SHOULD CONTAIN NO MORE THAN 10% BY WEIGHT OF CLAY AND SILT PARTICLES THAT PASS A 200 SIEVE.

FILL SECTION DETAIL
N.T.S.



NOTE: FRAME AND COVER TO BE CAMBELL FOUNDRY NO. 1127 TO SUPPORT H-20 LOADING

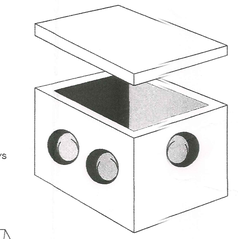
HEAVY DUTY FRAME AND COVER
N.T.S.

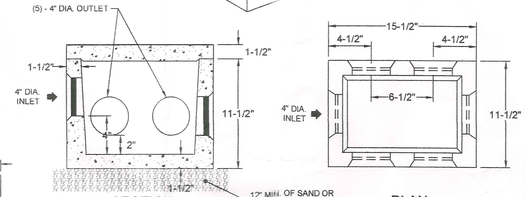


NOTE: WELL CASING SHALL BE 50' LONG WITH 10' INTO ROCK

WELL DETAIL
N.T.S.

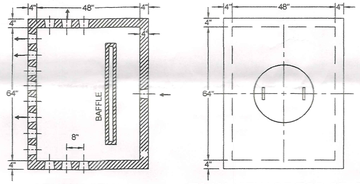
NOTE:
CONCRETE MINIMUM STRENGTH: 4000 PSI AT 28 DAYS
REINFORCEMENT: FIBER
AIR ENTRAINMENT: 5%
PIPE CONNECTION: POLYLOK SEAL (PATENTED)
CONSTRUCTION JOINT: BUTYL RUBBER SEALANT
LOADING RATING: 300 PSF
WEIGHT: 75 LBS





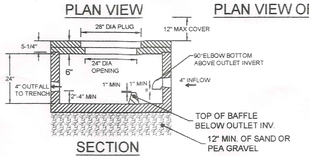
SECTION PLAN

PRECAST DISTRIBUTION BOX MODEL DB-6/5 OUTLET BOX AS MANUFACTURED BY WOODARD'S CONCRETE PRODUCTS, INC.



PLAN VIEW PLAN VIEW OF TOP SLAB

5-WAY DISTRIBUTION BOX 2
N.T.S.



SECTION

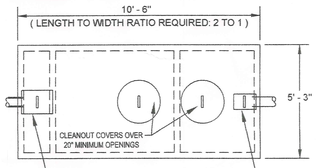
DISTRIBUTION BOX NOTES:
1. Block all unused pre-cast penetrations to the satisfaction of the engineer.
2. Bottom of box must be level and supported solidly to below frost line. Footing to extend to 36" below ground level.
3. Waterproofed masonry construction.
4. One outlet for each lateral, all laterals at the same elevation.
5. Tight joint pipe from septic tank to box and from box to laterals.
6. Baffle required to insure equal distribution.
7. Concrete minimum strength: 4000 psi at 28 days.
8. Reinforcement: fiber, air entrainment: 5%

SUBMIT CUT SHEETS FOR ENGINEER'S APPROVAL PRIOR TO INSTALLATION

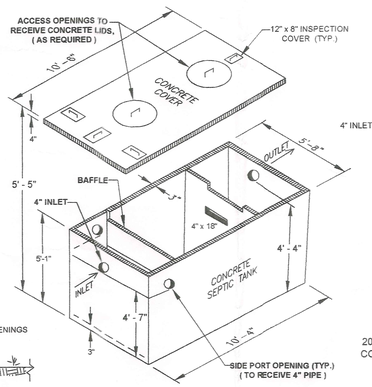
14-WAY DISTRIBUTION BOX 1
N.T.S.

LIQUID CAPACITY	LENGTH	WIDTH	INLET INVERT	HEIGHT	LIQUID LEVEL
1500 GAL.	10'-6"	5'-8"	4'-7"	5'-5"	4'-1"

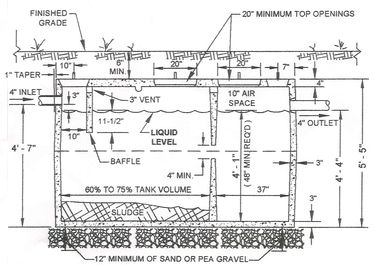
1500 GAL. AS MANUFACTURED BY WOODARD'S CONCRETE PRODUCTS, MODEL ST-1500 / 1500 GALLONS PRECAST SEPTIC TANKS.



PLAN VIEW



ELEVATION VIEW

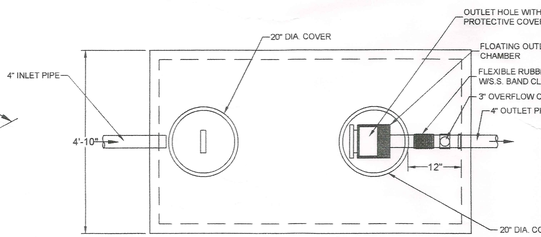


SECTION VIEW

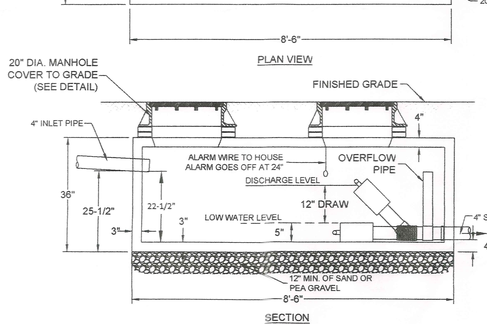
SPECIAL SEPTIC TANK NOTE:
1. INLET/OUTLET PIPE TO BE INSTALLED WITH WATERTIGHT POLYETHYLENE PIPE SEAL
2. SEPTIC TANK MUST BE WATERTIGHT, CONSTRUCTED OF DURABLE MATERIAL AND NOT SUBJECT TO EXCESSIVE CORROSION, DECAY, FROST DAMAGE OR CRACKING.
3. MINIMUM TOP DESIGN LOADING 200 PSF.
4. IF DEPTH FROM TOP OF TANK TO GRADE IS GREATER THAN 24" A RISER AND MANHOLE SHALL BE PROVIDED.

NOTE:
CONCRETE MINIMUM STRENGTH: 4000 PSI AT 28 DAYS
REINFORCEMENT: 6x6x10ga WWM
AIR ENTRAINMENT: 6%
PIPE CONNECTION: POLYLOK SEAL (PATENTED)
CONSTRUCTION JOINT: BUTYL RUBBER SEALANT
LOADING RATING: 300 PSF
WEIGHT: 11,500 LBS

1500 GALLON SEPTIC TANK DETAIL
N.T.S.



PLAN VIEW



SECTION

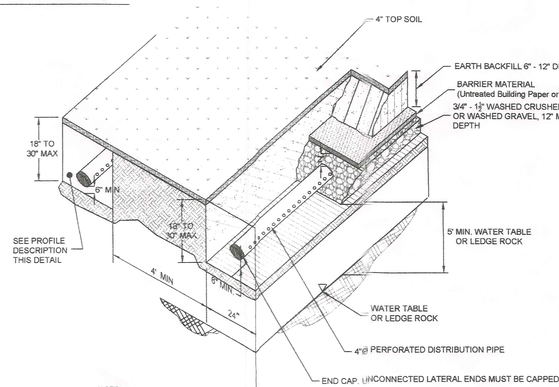
SIPHON MODEL #	313
PIPE SIZE (IN)	3
SINGLE SIPHON	
SE DRAW (IN)	12
DOSE (GALLONS)	259.5
RATE (GAL/MIN)	72
INVERT IN TO INVERT OUT (IN)	21.0

GALLONS OF DOSE	TANK SIZE (LxW)	DRAW CALCULATION
259.5(37.7 cf)	4'-4" x 8'-0"	34.6cf / 34 sf=1.02' (set at 12")

NOTE:
CONCRETE MINIMUM STRENGTH: 4000 PSI AT 28 DAYS
REINFORCEMENT: #4 Rebar, 6x6x10ga WWM
AIR ENTRAINMENT: 6%
PIPE CONNECTION: POLYLOK SEAL & SDR 35 COUPLER
CONSTRUCTION JOINT: BUTYL RUBBER SEALANT
LOADING RATING: 300 PSF
WEIGHT: 5,700 LBS

PRECAST SIPHON CHAMBER SC-5X9 AS MANUFACTURED BY WOODARD'S CONCRETE PRODUCTS, INC.

PRECAST SIPHON (DOSING) TANK
N.T.S.



NOTE:
1. A SEPARATION DISTANCE OF 5 FEET MINIMUM IS REQUIRED BETWEEN THE BOTTOM OF THE ABSORPTION TRENCH AND THE PRESENCE OF LEDGE ROCK, GROUNDWATER AND/OR MOTTLING.
2. PVC DISTRIBUTION PIPE IS TO BE SET AT ¼" TO ½" PITCH FOR GRAVITY SYSTEM AND SET LEVEL FOR DOSED SYSTEMS.
3. DO NOT INSTALL ABSORPTION TRENCHES IN WET OR FROZEN SOILS.
4. ABSORPTION TRENCES ARE TO BE INSTALLED PARALLEL TO CONTOURS.

ABSORPTION TRENCH DETAIL
N.T.S.

ARQ ARCHITECTURE P.C.
ARCHITECTURE - PLANNING & ENGINEERING
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100 EXECUTIVE BLVD. SUITE 204
OSSINING, NY 10562
PHONE: (914) 944-3377
FAX: (866) 567-6240

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REVISIONS	DATE	BY
WCHD Submission	11/8/21	
WCHD Comments	12/14/22	
WCHD COMMENTS	3/21/22	
WCHD COMMENTS	4/8/22	
WCHD COMMENTS	4/24/22	

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DRAWING TITLE:
DETAILS

PROJECT:
99 BYRAM, LLC
OWTS PLAN

PROJECT ADDRESS:
99 BYRAM RIDGE ROAD
ARMONK, NY 10580

WCDOH SIGNATURE:

APPROVED FOR CONSTRUCTION
MAY - 3 2022
WESTCHESTER COUNTY DEPT OF HEALTH
(See Field Sheet for Conditions & Instructions)

SEAL & SIGNATURE

STATE OF NEW YORK
BASIL S. SLATE
071859
LICENSED PROFESSIONAL ENGINEER

DATE.:	SCALE:
3/1/21	AS SHOWN
PROJECT NO.: 21-030	
DRAWING BY: SB	DRAWING NO.: 2 OF 2
CHECKED BY: PB	

DocuSign Envelope ID: 68EAC363-9A48-4A75-AD71-3DCAA217FC87

Bldg. Dept

Westchester gov.com

Westchester County Department of Health
Bureau of Environmental Quality

CONSTRUCTION APPROVAL APPLICATION

(WCDOH OFFICE USE ONLY)

WCDH File # NOC2022-06 Municipality: Town of North Castle Fee Amount: _____

Watershed Basin Name: Byram River Basin/Inland LI Sound If NYCDEP Watershed: Joint Review ☐ Delegated Review ☒

☒ On-site Wastewater Treatment System ☒ Private Water Supply ☒ Residential ☐ Commercial

Is property in a Water District: Y☐ N ☒ Name: _____ Is property in a Sewer District: Y☐ N ☒ Name: _____

Property Information:

Property Name 99 Byram LLC

Property Address 99 Byram Ridge Road Armonk Zip Code 10504

TMD: Section 101.01 Block 1 Lot 13 R.S. Lot _____ Lot Area 1.34 Acres

Realty Subdivision: _____ Map # _____ Date Filed _____

Owner Name: Chris Kalian Owner Email: ckalian@ridgepartners.com

Address: 5 West Main Street Elmsford State NY Zip Code: 10523

Building Type: Wood Frame SF Dwelling # of Bedrooms: 5 Total Habitable Space: +-6000 Sq. Ft.

On-site Wastewater Treatment System (OWTS) Information:

Design Flow: 550 gpd Soil Percolation Rate: 16-20 min./in Slope of OWTS Area: +-11 % Septic Tank Size: 1500 Gallons

Absorption Trench(es): Length: 519 Lin. Ft. Trench Width: 2 Ft. Area: 538 Sq. Ft.

Absorption Pit(s): # Pits na Diameter: na Ft. Depth: na Ft. Area: na Sq. Ft.

Other (circle or specify): Tri-Galleys 4X4 Galleys Flow Diffusers Other: _____

Number_____ Length: _____ Lin. Ft. Width: _____ Ft. Area:_____ Sq.Ft./Lin Ft.

ETU/ATU Make & Model _____

Other Requirements:

Pump System: Pump/Siphon Chamber: Size: _____ Gal. Dose Draw and Volume _____ inches _____Gal.

Curtain Drain: Depth: _____Ft. Width:_____ Ft. R.O.B. Sand and Gravel Fill Section: Depth: _____ Ft.

Separate Sewage Contractor (SSC): Name: _____ WCDH SSC License # _____

Water Supply System Information: ☒ Private Water Supply ☐ Public Water Supply Name: _____

Well Driller Name: _____ NYSDEC Reg # _____

Other Requirements/Conditions Licensed septic contractor and NYSDEC registered well driller.

Min. 2 ft. ROB fill in expansion area when needed.

I represent that I am wholly and completely responsible for the design and location of the proposed system(s): 1] that the on-site wastewater treatment system above described will be constructed as shown on the approved plan or approved amendments thereto and in accordance with the standards, rules and regulations of the Westchester County Department of Heath; that on completion thereof, a "Certificate of Construction Compliance" satisfactory to the Commissioner of Health will be submitted to the Department and a written guarantee will be furnished the owner, his successors, heirs or assigns, by the builder that said builder will place in good operating condition any part of said OWTS which fails to operate for a period of two (2) years immediately following the date of the issuance of the approval of the Certificate of Construction Compliance of the OWTS or any repairs thereto; 2] that the drilled well described above will be located as shown on the approved plan and that said well will be installed in accordance with the standards, rules and regulations of the Westchester County Department of Health and requirements of the WCDOH Private Well Testing Law..

Date: 4.12.22 Signed: _____ P.E./R.A.Seal _____

APPROVED FOR CONSTRUCTION

This approval expires one (1) year from the date issued unless construction of the building has been undertaken, and is revocable for cause or may be amended or modified when considered necessary by the Commissioner of Health. Any change or alteration of construction requires a new permit.

Date: 5/3/22 Approved By: _____

Commissioner, Westchester County Department of Health

STORMWATER POLLUTION PREVENTION PLAN / STORMWATER MANAGEMENT REPORT
FOR BERKIN PROPERTY, 99 BYRAM RIDGE ROAD
ARMONK, NEW YORK
Date: February 10, 2024

PREPARED BY: ALAN L. PILCH, PE, RLA
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC

INTRODUCTION

This report describes the existing and future drainage conditions on the subject property located at 99 Byram Ridge Road for the construction of a new house and modifications to the existing driveway to access the garage of the new house. The report quantifies how the stormwater management plan for the project will meet the requirements of the Town of North Castle.

The property is 58,278.6 square feet (1.338 acres) in size and is located on the west side of Byram Ridge Road. A single family house is present on the lot, as well as a flagstone walks to the front door and a deck in the rear of the house. An existing paved driveway provides access to the house from the street.

All of the runoff from the property is eventually conveyed to Wampus River, which lies about 200 feet to the west of the property. The property lies outside of the New York City water supply watershed. Runoff from the majority of the property, with the exception of the far western portion of the lot, is conveyed generally west and south toward the property at 97 Byram Ridge Road, and into an unnamed watercourse which begins on the lot to the south and which flows into Wampus River. Runoff from the far western portion of the rear yard is conveyed to the southwest down a wooded slope toward Wampus River.

All SWPPPs shall provide the following background information and erosion and sediment controls:

a) *Background information about the scope of the project, including location, type and size of project.*

The project is to consist of: (1) the demolition of the existing single family house and the construction of a new 3,851 square foot (footprint) house to be located in the central portion of the lot, (2) modifications to the driveway for access into the garage which will be on the south side of the house, and (3) construction of a pool and deck in the rear of the house. In addition, two rain gardens and a subsurface detention facility (constructed of 36-inch diameter HDPE pipes) are proposed to be installed to provide peak rate attenuation of the runoff flows from the new impervious surfaces.

b) *Site map/construction drawing(s) for the project, at a scale no smaller than one inch equals 100 feet, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing*

vegetation; on-site and adjacent off-site surface water(s), wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of different soil types with boundaries; locations of off-site material, waste, borrow or equipment storage areas; and location(s) of the stormwater discharge(s).

The site construction drawings (see sheet C-101 Layout Plan, C-102 Grading and Utilities Plan and C-103, Erosion and Sediment Control Plan) are at a scale of 1"=20'. The general location map may be found on drawing C-101. The total site area is depicted on sheets C-101 and C-102. The area of disturbance may be referenced on sheet C-102. Areas beyond the limit of disturbance are not being proposed to be disturbed (i.e., graded or removal of trees). The approximate location of existing vegetation may be found on sheet C-101. There are no wetlands on the subject property or within the 100-foot restrictive distances from a wetland.

Grading on the property may be referenced on sheet C-102. It is not proposed to store any material from the property off-site. Equipment storage areas during construction may be found on sheet C-103.

c) *Description of the soil(s) present at the site, including an identification of the hydrologic soil group (HSG).*

The USDA Soil Conservation Service has mapped two soils on the property: (i) Charlton fine sandy loam, 3 to 8 percent slopes in the eastern and central portion of the property, including the location of the proposed house and driveway modification, and (ii) Riverhead loam, 15 to 25 percent slopes in the far western portion of the property. The soils boundaries may be found on drawing C-102. Charlton fine sandy loam soils consist of fine sandy loam and gravelly fine sandy loam. The depth of the restrictive layer is noted as being more than 80 inches below grade. This soil is in hydrologic soils group B. Riverhead loam soils consist of sandy loam and loamy sand. It, too, has a depth of the restrictive layer being noted as being more than 80 inches below grade. This soil is in hydrologic soils group A.

Deep hole and percolation testing of the proposed rain garden areas will be performed if required. In that the subsurface detention facility is to consist of water-tight 36-inch diameter storm drainage pipes, there will be no infiltration from this system. In any event, infiltration is not desirable given that retaining walls are to be constructed on the west (downgradient) side of the practice.

d) *Construction phasing plan describing the intended sequence of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance. Consistent with the New York Standards and Specifications for Erosion and Sediment Control (Erosion Control Manual), not more than five acres shall be disturbed at any one time unless a greater amount is determined necessary pursuant to an approved SWPPP.*

The construction sequence of operations may be found on drawing C-103. The total land disturbance for the construction of the garage addition, driveway modification and stormwater

management practice is calculated to be 44,885 square feet (1.030 acres).

e) Description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in stormwater runoff.

The pollution prevention measures to be employed to control litter, construction chemicals and construction debris may be referenced on the Erosion and Sediment Control Plan. The measures include: silt fence, temporary soil stockpile, inlet protection, concrete wash-out area, locating a dumpster in the driveway to the south of the house, and locating a construction material storage area in the driveway. Construction debris will be placed in an on-site dumpster.

f) Description of construction and waste materials expected to be stored on site, with updates as appropriate, and a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response.

A description of construction and waste materials expected to be stored on-site may be referenced on the Erosion Control Plan.

Construction materials expected to be stored temporarily on site include, but are not limited to, soil stockpiles, aggregate, and seed to establish permanent cover for the disturbed ground, and concrete forms, wood, bluestone and building materials for the house, pool and pool patio construction. These items are not sources of pollution in the short- or long-term.

g) Temporary and permanent structural and vegetative measures to be used for soil stabilization, runoff control and sediment control for each stage of the project, from initial land clearing and grubbing to project closeout.

Temporary measures to be employed during construction include: (1) silt fences at the limit of disturbance; (2) tree protection measures, (3) inlet protection, (4) soil stockpiling of excavated material to be surrounded by silt fence, and (5) a concrete washout area.

h) A site map/construction drawing(s) specifying the location(s), size(s) and length(s) of each erosion and sediment control practice.

Drawing C-103 shows the location, size and length of each erosion and sediment control practice.

i) Dimensions, material specifications and installation details for all erosion and sediment control practices, including the siting and sizing of any temporary sediment basins.

The dimensions, material specifications and installation details for the proposed erosion and sediment control practices are on sheet C-111. A temporary sediment basin is proposed to be

sited in the southwestern corner of the property.

j) Temporary practices that will be converted to permanent control measures.

There are no temporary practices that will be converted to permanent control measures. A temporary sediment basin is proposed at the southwest corner of the property. It will be removed and revegetated following construction.

k) Implementation schedule for staging temporary erosion and sediment control practices, including the timing of initial placement and the duration that each practice should remain in place.

The detailed construction phasing plan described the implementation schedule for the temporary erosion and sediment control practices. The implementation schedule may be referenced on the Erosion and Sediment Control Plan.

l) Maintenance schedule to ensure continuous and effective operation of the erosion and sediment control practice.

The maintenance schedule for the erosion and sediment control practices may be referenced on the Erosion Control Plan. The maintenance schedule is detailed below as well.

Silt Fence - According to the 2016 NYS Standards and Specifications for Erosion and Sediment Control, maintenance of the silt fence shall be performed as needed and material removed when bulges develop in the silt fence. The silt fence shall be inspected after each significant precipitation event. If filter fabric shows signs of decomposing or is damaged, it shall be repaired immediately. Typically, this entails installing a new line of silt fence adjacent to the damaged line.

Tree Protection: Check on at least a weekly basis that the construction fence and/or tree protection has not been damaged by construction activities.

Soil Stockpiling: Perimeter sediment controls around each stockpile is to consist of silt fence installed in accordance with the standards delineated above. The silt fence shall be maintained as noted above. Stockpiles and fill area shall be inspected at least weekly for signs of erosion or problems with plant establishment.

m) Name(s) of the receiving water(s).

All of the runoff from the property is eventually conveyed to the Wampus River. Where the watercourse crosses into Connecticut, it is named the Byram River. The Byram River eventually discharges into Long Island Sound. The property lies *outside* of the New York City Water Supply Watershed.

n) Delineation of SWPPP implementation responsibilities for each part of the site.

The property owners, the Berkins, are the party responsible for the implementation of the SWPPP.

o) Description of structural practices designed to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable

It is not proposed to install any structural practices to divert flows from exposed soils. A temporary berm will be installed in the rear yard near the southern property line to divert runoff flows into the temporary sediment basin.

p) Any existing data that describes the stormwater runoff at the site; and

The description and quantification of the stormwater runoff from the site is found in this report. There are no known other sources that describe the runoff from this site.

q) Post-construction stormwater quantity and quality controls, at the discretion of the SMO and/or the Town Engineer, may be required.

Stormwater Management Plan: In the existing condition, there are 3,580 square feet of impervious surfaces on the property. With the modifications to the property, there will be an additional 9,440 square feet of new impervious surfaces, bringing the total amount of impervious surfaces up to 13,020 square feet.

Due to the limited space for locating stormwater management practices primarily resulting from slopes on the property and with the proposed septic system in the rear yard of the property, it is proposed to collect and direct runoff from the majority of the house and driveway and convey this flow into an array of subsurface storm drainage pipes to be located under the driveway to the south of the house for stormwater detention (peak rate attenuation) purposes. Runoff from the proposed pool and pool patio will be conveyed to a rain garden in the southern portion of the property to the southwest of the pool. Lastly, runoff from the northwestern portion of the house roof will be conveyed to a second rain garden in the rear yard.

The drainage areas to the rain gardens in the rear yard range from 1,400 s.f. for the pool and pool patio to 1,413 s.f. for the (northwest) portion of the house roof. As is noted in the 2015 New York State Stormwater Management Design Manual, “a single rain garden system *should* be designed to receive sheet flow runoff or shallow concentrated flow from an impervious area or from a roof drain downspout with a total contributing drainage area equal to or less than 1,000 square feet.” The use of the word “should” and not “shall” means that there is discretion on the part of the designers and reviewers with regard to this threshold. In that the exceedance is minimal, the use of a rain garden versus a bioretention practice is appropriate.

Conveyance of Flows to Stormwater Management Practices: The storm drainage system has been designed to convey the runoff from the 25 year storm event, which based on the intensity duration frequency curve is a rainfall intensity of 7.66 inches per hour over a 5 minute duration. As per the HydroCAD modeling, the 25 year storm event will result in a peak rate of runoff of 1.44 cubic feet per second to be conveyed to the underground storm drainage pipes. Based on the Manning Equation, the proposed 8" diameter storm drainage pipe from catch basin CB B-2 to CB B-1, which will be installed at a slope of 3.64%, would have a capacity of 2.5 cubic feet per second at a velocity of 7.15 feet per second. The other storm drainage pipes in the network conveying flow to the underground storm drainage pipes would be installed at greater slopes. The conclusion is that the proposed 8" storm drainage pipes into the underground storm drainage pipes as designed will have the capacity to convey the flow during the 25-year storm event.

The peak rate of runoff from the project to the design point has been calculated (see **Appendix A**). The analysis of peak rates of runoff was performed in accordance with the methodology of the United States Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) publication *Urban Hydrology for Small Watersheds*, *Technical Release 55* (TR-55), 1986. To calculate the peak rate of runoff conveyed to the design point from the property, the following information was obtained or determined:

Hydrographs were developed for the 1, 2, 10, 25 and 100-year storm recurrence intervals. Runoff depths for the 24-hour design storms used in the calculations were as follows: 2.80" for the 1-year storm, 3.42" for the 2-year storm, 5.12" for the 10-year storm, 6.46" for the 25-year storm, and 9.18" for the 100-year storm. The rainfall depths (extreme precipitation estimates) were determined from the website http://precip.eas.cornell.edu/ referenced in the 2015 *Stormwater Management Design Manual*. A 24-hour rainfall duration was used in calculating the hydrographs. A Type III storm distribution was used in the analysis. Hydrographs and pond routings were created using the computer program HydroCAD (ver. 10.20-4a), by HydroCAD Software Solutions, LLC.

The analysis shows that for all modeled storm events the peak rate of runoff conveyed to the design point is less than or equal to the existing peak rate of runoff. The design line lies along the southern property line and southern portion of the western property line which is where all flows from the property discharge to.

Table 1, Peak Rates of Runoff summarizes the peak rates of flow conveyed by the site in the existing and future conditions to the Design Line for the modeled storms.

Table 1. Peak Rates of Runoff to Design Line
(all flows in cubic feet per second)

Drainage Area/ Storm Interval	*1 year*	*2 year*	*10 year*	*25 year*	*100 year*
Existing Condition					
Flows to Design Line	0.04	0.17	1.23	2.46	5.45
Future Condition					
Flows to Design Line	0.04	0.14	1.04	2.03	4.75

As can be seen in **Table 1**, the peak rate of runoff following the construction of the new house and other site improvements will be less than or equal to the existing peak rate of runoff for all of the modeled storm events.

FIGURES

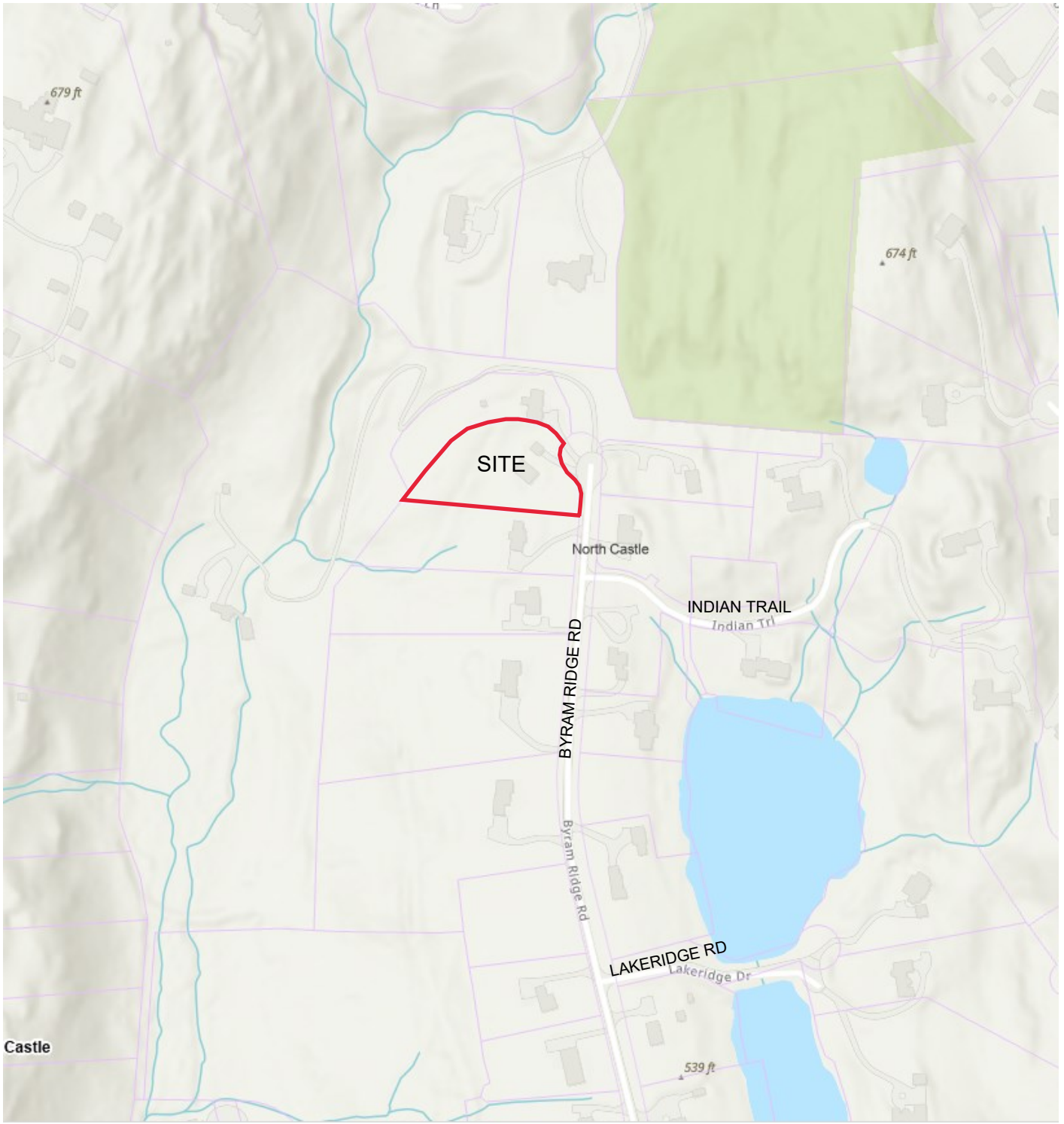
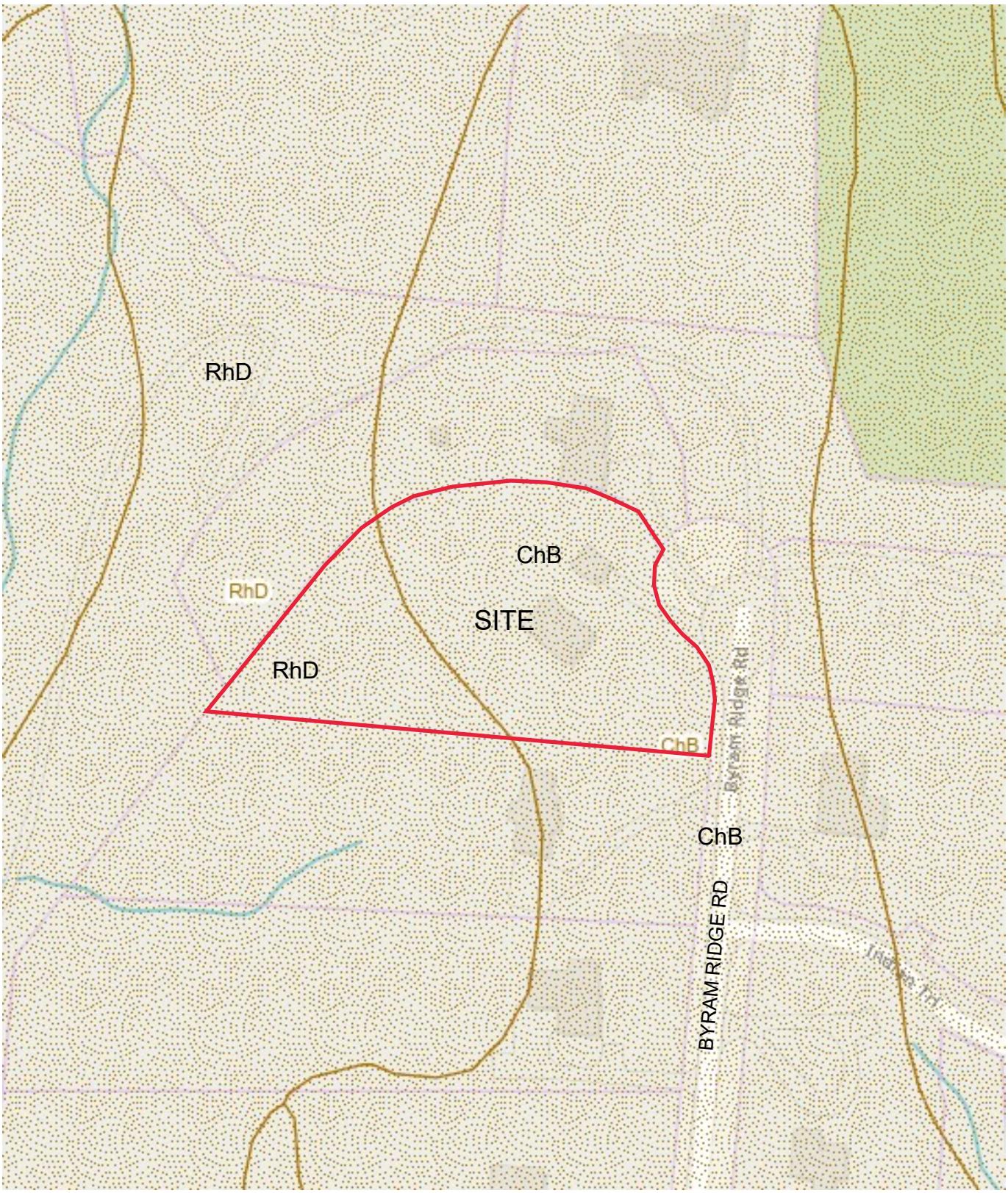


Figure 1

SITE LOCATION MAP

Scale: Not to Scale

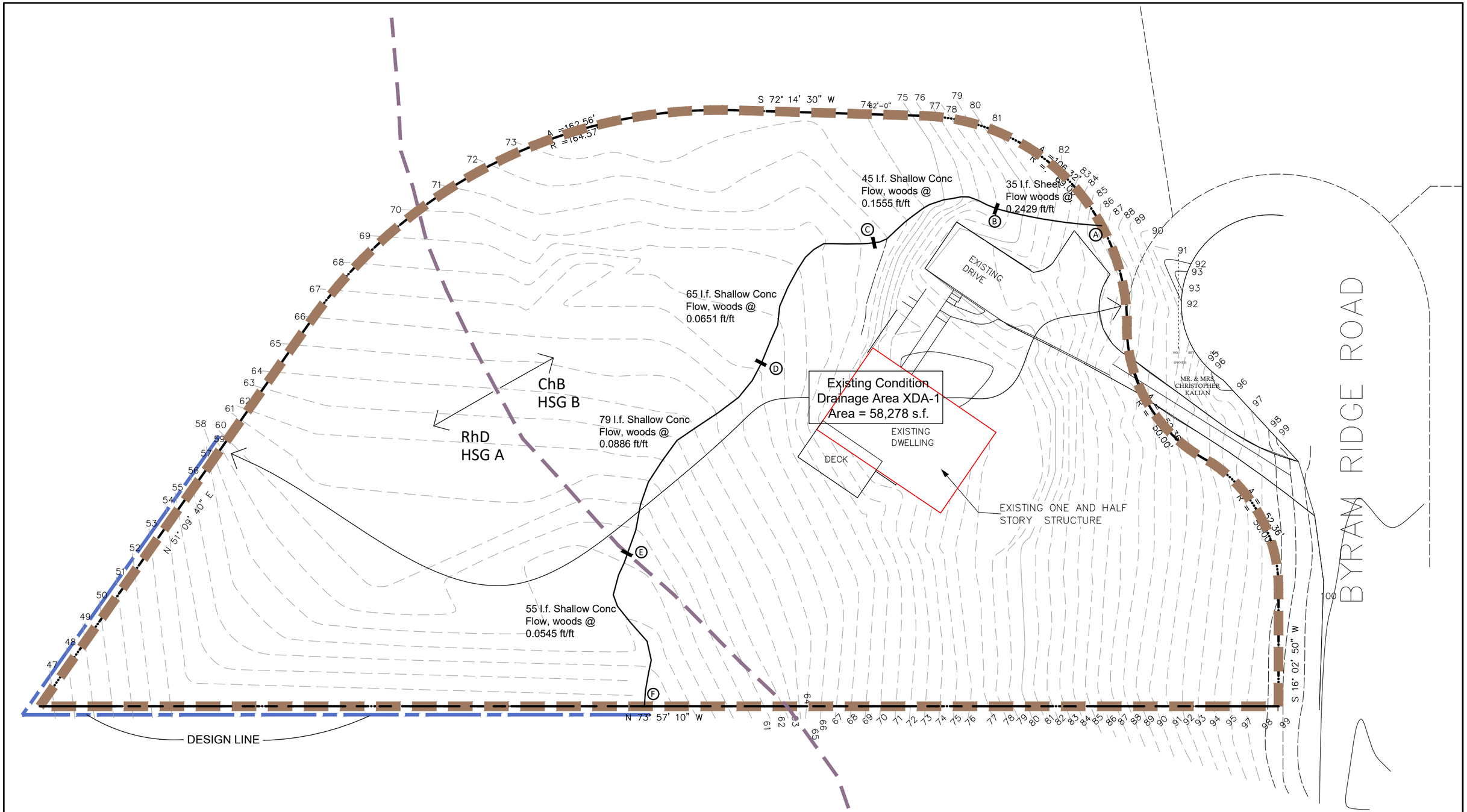


LEGEND:
ChB—Charlton fine sandy loam, 3 to 8 percent slopes
RhD—Riverhead loam, 15 to 25 percent slopes

Figure 2

SOILS MAP

Scale: Not to Scale

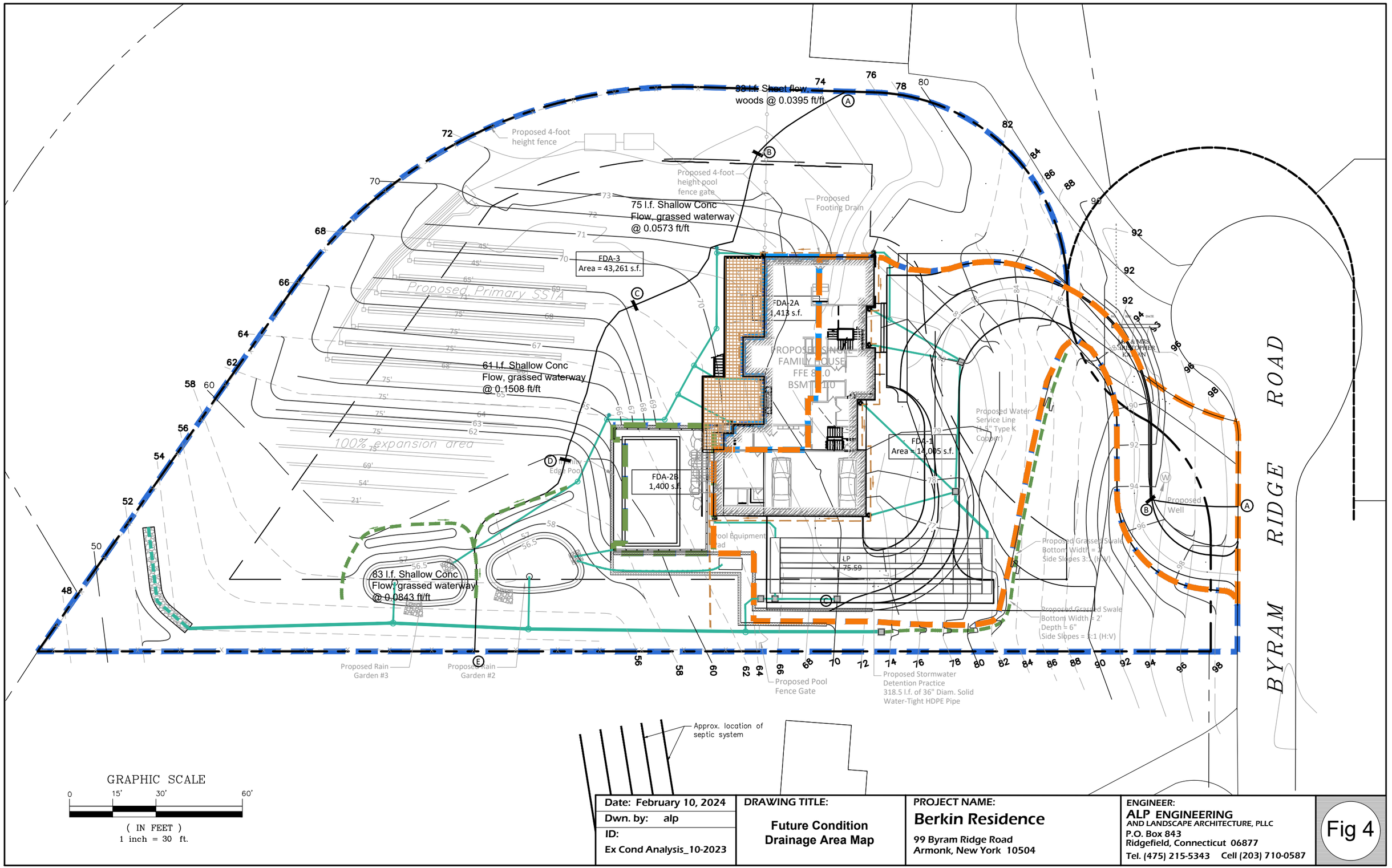


GRAPHIC SCALE

0 15' 30' 60'

(IN FEET)
1 inch = 30 ft.

Date: December 29, 2023 Dwn. by: alp ID: Ex Cond Analysis_10-2023	DRAWING TITLE: **Existing Condition Drainage Area Map**	PROJECT NAME: **Berkin Residence** 99 Byram Ridge Road Armonk, New York 10504	ENGINEER: **ALP ENGINEERING** AND LANDSCAPE ARCHITECTURE, PLLC P.O. Box 843 Ridgefield, Connecticut 06877 Tel. (475) 215-5343 Cell (203) 710-0587	Fig 3



GRAPHIC SCALE

0 15' 30' 60'

(IN FEET)
1 inch = 30 ft.

Date: February 10, 2024 Dwn. by: alp ID: Ex Cond Analysis_10-2023	DRAWING TITLE: **Future Condition Drainage Area Map**	PROJECT NAME: **Berkin Residence** 99 Byram Ridge Road Armonk, New York 10504	ENGINEER: **ALP ENGINEERING** AND LANDSCAPE ARCHITECTURE, PLLC P.O. Box 843 Ridgefield, Connecticut 06877 Tel. (475) 215-5343 Cell (203) 710-0587	Fig 4

SUPPORTING DOCUMENTATION

Table 1
99 Byram Ridge Road
Water Quality Volume (WQv) Calculation for Drainage Areas to Rain Gardens

WQv Calculation for Drainage Area FDA-2C
To Rain Garden #1

Rainfall Depth =	1.5	inches
Drainage Area =	913	s.f.
Impervious Area =	913	s.f.
% Impervious =	100.0	%
Rv =	0.95	
WQv =	0.002	ac-feet
WQv =	108.4	cu feet

WQv Calculation for Drainage Area FDA-2B
To Rain Garden #2

Rainfall Depth =	1.5	inches
Drainage Area =	1,356	s.f.
Impervious Area =	1,356	s.f.
% Impervious =	100.0	%
Rv =	0.95	
WQv =	0.004	ac-feet
WQv =	161.0	cu feet

WQv Calculation for Drainage Area FDA-2A
To Rain Garden #3

Rainfall Depth =	1.5	inches
Drainage Area =	1,413	s.f.
Impervious Area =	1,413	s.f.
% Impervious =	100.0	%
Rv =	0.95	
WQv =	0.004	ac-feet
WQv =	167.8	cu feet

Table 2
99 Byram Ridge Rd
Rain Garden #2 Design Calculations

RAIN GARDEN #1 DESIGN (FDA-2B)

Elevation *feet*	Area *s.f.*	Incremental Volume *c.f.*	Volume Sum *cu. ft.*	Volume Sum *acre-feet*
56.50	386	0	0	0
56.75	464	106	106	0.0024
57.00	550	127	233	0.0053
57.25	641	149	382	0.0088

Parameters for Rain Garden Design as per 2015 NYS Stormwater Management Design Manual

Equations as per 2015 NYS SMDM:
WQv ≤ VSM + VDL + (DP x ARG)
VSM = ARG x DSM x nSM
VDL (optional) = ARG x DDL x nDL
where:

VSM = volume of the soil media [cubic feet]
VDL = volume of the gravel drainage layer [cubic feet]
ARG = rain garden surface area [square feet]
DSM = depth of the soil media, typically* 1.0 to 1.5 [feet]
DDL = depth of the drainage layer, minimum 0.5 [feet]
DP = depth of ponding above surface, maximum 0.5 feet [feet]
nSM = porosity of the soil media (≥ 20%)
nDL = porosity of the drainage layer (≥ 40%)
WQv = Water Quality Volume [cubic feet], as defined in Chapter 4

			Remarks
Surface Area of Rain Garden, ARG =	464	sq feet	*as per design*
Depth of the Soil Media, DSM =	1.5	foot	*as per design*
Porosity of the Soil Media, nSM =	20	%	*typical*
Depth of the Gravel Drainage Layer =	0.5	foot	*as per design*
Porosity of the Drainage Layer, nDL =	40	%	*typical*
Depth of Ponding above Surface =	0.50	feet	*as per design*
Volume of Soil Media, VSM =	139	cubic feet	*calculated*
Volume of Gravel Drainage Layer, VDL =	93	cubic feet	*calculated*
WQv Calculated =	108.4	cubic feet	*calculated*
WQv <= VSM + VDL + (DP x ARG) =	464	cubic feet	*calculated*

Since the WQv is less than the equation above, the design is acceptable.

Table 3
99 Byram Ridge Rd
Rain Garden #3 Design Calculations

RAIN GARDEN #2 DESIGN (FDA-2B)

Elevation *feet*	**Area** *s.f.*	**Incremental Volume** *c.f.*	**Volume Sum** *cu. ft.*	**Volume Sum** *acre-feet*
56.50	359	0	0	0
56.75	440	100	100	0.0023
57.00	528	121	221	0.0051
57.25	622	144	365	0.0084

Parameters for Rain Garden Design as per 2015 NYS Stormwater Management Design Manual

Equations as per 2015 NYS SMDM:
WQv ≤ VSM + VDL + (DP x ARG)
VSM = ARG x DSM x nSM
VDL (optional) = ARG x DDL x nDL
where:

VSM = volume of the soil media [cubic feet]
VDL = volume of the gravel drainage layer [cubic feet]
ARG = rain garden surface area [square feet]
DSM = depth of the soil media, typically* 1.0 to 1.5 [feet]
DDL = depth of the drainage layer, minimum 0.5 [feet]
DP = depth of ponding above surface, maximum 0.5 feet [feet]
nSM = porosity of the soil media (≥ 20%)
nDL = porosity of the drainage layer (≥ 40%)
WQv = Water Quality Volume [cubic feet], as defined in Chapter 4

			Remarks
Surface Area of Rain Garden, ARG =	440	sq feet	*as per design*
Depth of the Soil Media, DSM =	1.5	foot	*as per design*
Porosity of the Soil Media, nSM =	20	%	*typical*
Depth of the Gravel Drainage Layer =	0.5	foot	*as per design*
Porosity of the Drainage Layer, nDL =	40	%	*typical*
Depth of Ponding above Surface =	0.50	feet	*as per design*
Volume of Soil Media, VSM =	132	cubic feet	*calculated*
Volume of Gravel Drainage Layer, VDL =	88	cubic feet	*calculated*
WQv Calculated =	108.4	cubic feet	*calculated*
WQv <= VSM + VDL + (DP x ARG) =	440	cubic feet	*calculated*

Since the WQv is less than the equation above, the design is acceptable.

Westchester County, New York

ChB—Charlton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wh0n
Elevation: 0 to 1,440 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Charlton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting

Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw - 7 to 22 inches: gravelly fine sandy loam
C - 22 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B
Ecological site: F144AY034CT - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Sutton
Percent of map unit: 8 percent
Landform: Hills, ground moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Paxton
Percent of map unit: 5 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Leicester
Percent of map unit: 1 percent
Landform: Depressions, drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Chatfield
Percent of map unit: 1 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Data Source Information

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 19, Sep 6, 2023

Westchester County, New York

RhD—Riverhead loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: bd9j
Elevation: 0 to 970 feet
Mean annual precipitation: 46 to 50 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 115 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Riverhead and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riverhead

Setting

Landform: Terraces, deltas
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits overlying stratified sand and gravel

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 25 inches: sandy loam
H3 - 25 to 30 inches: loamy sand
H4 - 30 to 60 inches: loamy sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F144AY023CT - Well Drained Outwash
Hydric soil rating: No

Minor Components

Pompton
Percent of map unit: 5 percent
Hydric soil rating: No

Charlton
Percent of map unit: 4 percent
Hydric soil rating: No

Hinckley
Percent of map unit: 3 percent
Hydric soil rating: No

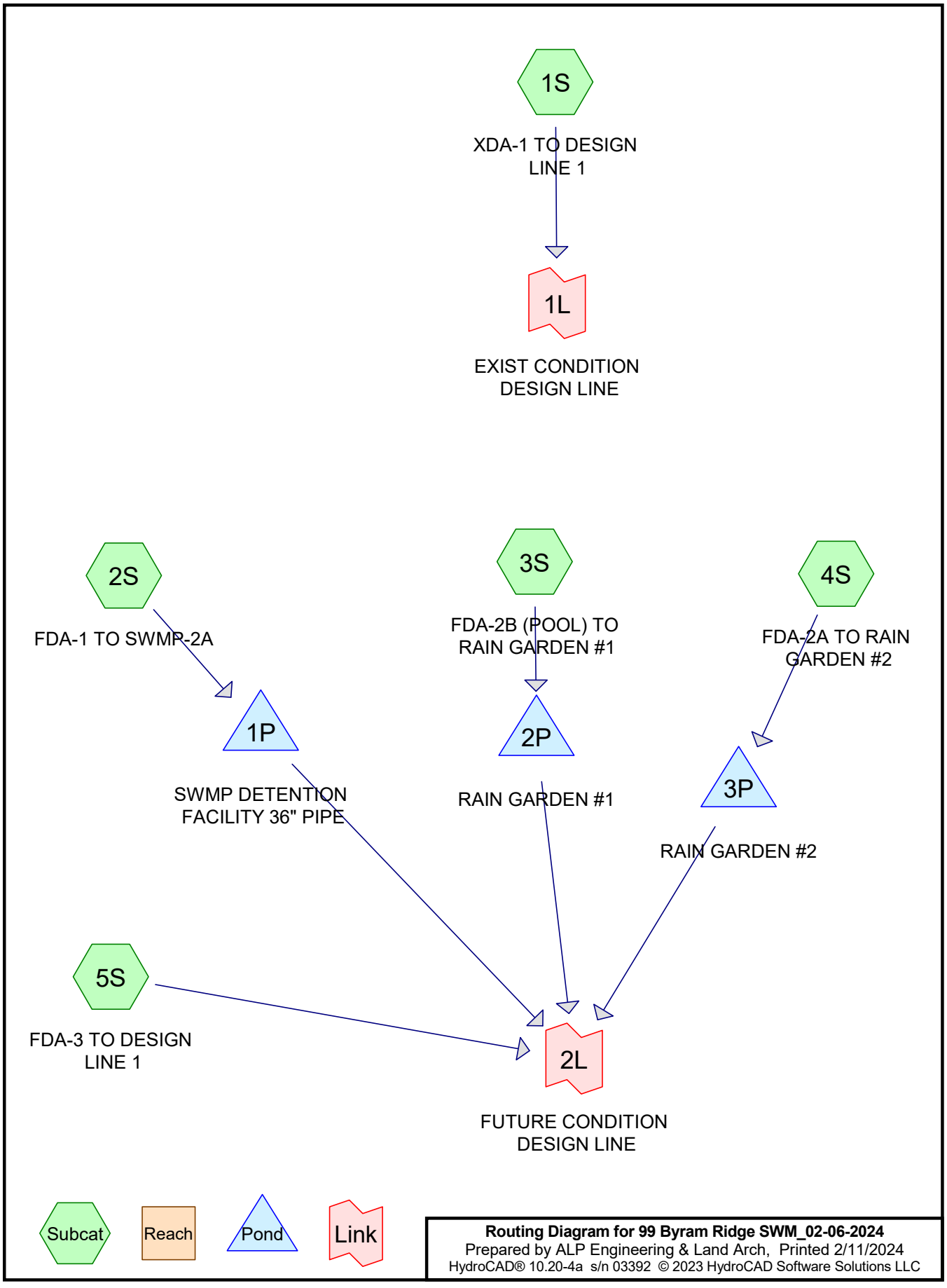
Knickerbocker
Percent of map unit: 3 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Westchester County, New York
Survey Area Data: Version 19, Sep 6, 2023

Appendix A

Stormwater Management Report
Hydrographs and Routings



Routing Diagram for 99 Byram Ridge SWM_02-06-2024
Prepared by ALP Engineering & Land Arch, Printed 2/11/2024
HydroCAD® 10.20-4a s/n 03392 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-year	Type III 24-hr		Default	24.00	1	2.80	2
2	2-year	Type III 24-hr		Default	24.00	1	3.42	2
3	10-year	Type III 24-hr		Default	24.00	1	5.12	2
4	25-year	Type III 24-hr		Default	24.00	1	6.46	2
5	100-year	Type III 24-hr		Default	24.00	1	9.18	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.228	39	>75% Grass cover, Good, HSG A (1S, 5S)
1.024	61	>75% Grass cover, Good, HSG B (1S, 2S, 5S)
0.026	98	Impervious patio surface, HSG B (5S)
0.297	98	Paved parking, HSG B (1S, 2S)
0.032	98	Pool & Pool Patio, HSG B (3S)
0.032	98	Roofs, HSG B (4S)
0.384	36	Woods, Fair, HSG A (1S)
0.205	30	Woods, Good, HSG A (5S)
0.530	55	Woods, Good, HSG B (1S, 2S, 5S)
2.758	**57**	**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.228	1.024	0.000	0.000	0.000	1.252	>75% Grass cover, Good	1S, 2S, 5S
0.000	0.026	0.000	0.000	0.000	0.026	Impervious patio surface	5S
0.000	0.297	0.000	0.000	0.000	0.297	Paved parking	1S, 2S
0.000	0.032	0.000	0.000	0.000	0.032	Pool & Pool Patio	3S
0.000	0.032	0.000	0.000	0.000	0.032	Roofs	4S
0.384	0.000	0.000	0.000	0.000	0.384	Woods, Fair	1S
0.205	0.530	0.000	0.000	0.000	0.735	Woods, Good	1S, 2S, 5S
0.817	**1.942**	**0.000**	**0.000**	**0.000**	**2.758**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: XDA-1 TO DESIGN LINE 1 Runoff Area=60,079 sf 6.41% Impervious Runoff Depth=0.13"
Flow Length=279' Tc=6.2 min CN=54 Runoff=0.04 cfs 0.014 af

Subcatchment 2S: FDA-1 TO SWMP-2A Runoff Area=14,005 sf 64.91% Impervious Runoff Depth=1.42"
Flow Length=296' Tc=6.0 min CN=85 Runoff=0.53 cfs 0.038 af

Subcatchment 3S: FDA-2B (POOL) TO Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=2.57"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment 4S: FDA-2A TO RAIN Runoff Area=1,413 sf 100.00% Impervious Runoff Depth=2.57"
Tc=6.0 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment 5S: FDA-3 TO DESIGN LINE 1 Runoff Area=43,261 sf 2.58% Impervious Runoff Depth=0.07"
Flow Length=257' Tc=8.1 min CN=51 Runoff=0.01 cfs 0.006 af

Pond 1P: SWMP DETENTION FACILITY 36" Peak Elev=72.11' Storage=900 cf Inflow=0.53 cfs 0.038 af
Outflow=0.03 cfs 0.038 af

Pond 2P: RAIN GARDEN #1 Peak Elev=56.61' Storage=45 cf Inflow=0.09 cfs 0.007 af
Discarded=0.03 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.007 af

Pond 3P: RAIN GARDEN #2 Peak Elev=56.64' Storage=52 cf Inflow=0.09 cfs 0.007 af
Discarded=0.03 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.007 af

Link 1L: EXIST CONDITION DESIGN LINE Inflow=0.04 cfs 0.014 af
Primary=0.04 cfs 0.014 af

Link 2L: FUTURE CONDITION DESIGN LINE Inflow=0.04 cfs 0.044 af
Primary=0.04 cfs 0.044 af

Total Runoff Area = 2.758 ac Runoff Volume = 0.072 af Average Runoff Depth = 0.31"
85.96% Pervious = 2.371 ac 14.04% Impervious = 0.387 ac

Summary for Subcatchment 1S: XDA-1 TO DESIGN LINE 1

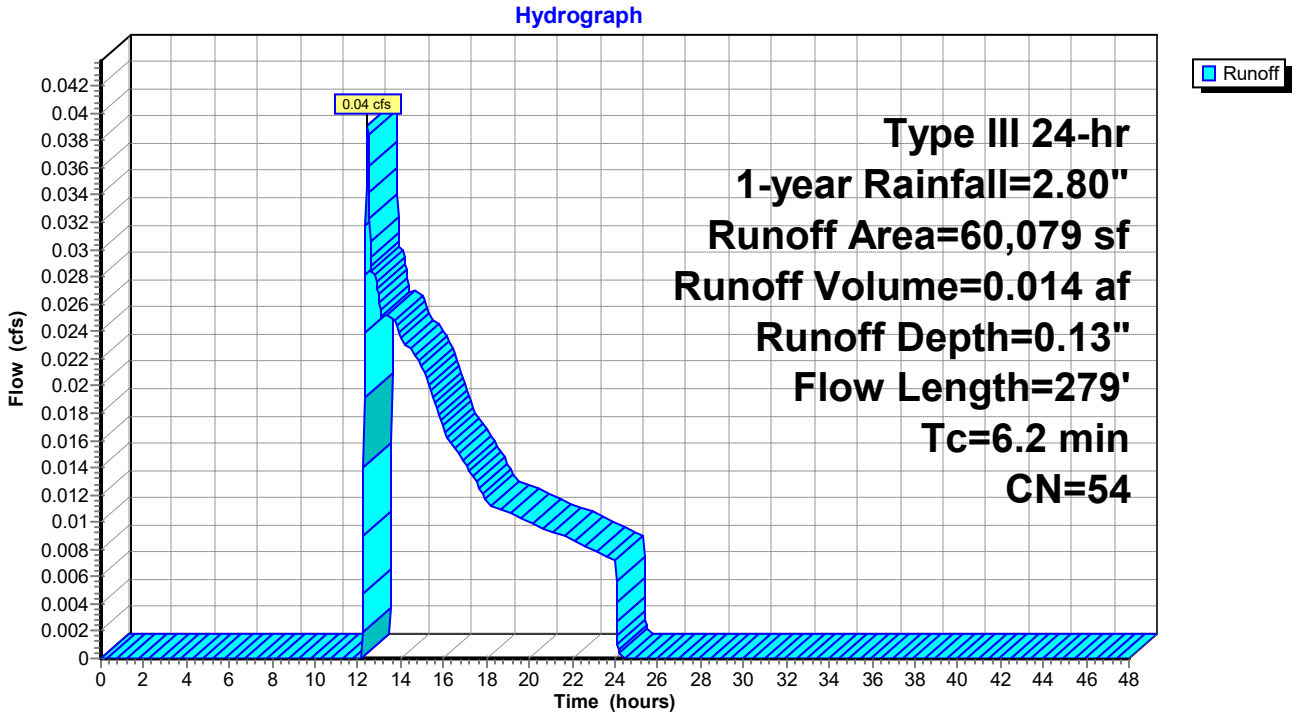
Runoff = 0.04 cfs @ 12.45 hrs, Volume= 0.014 af, Depth= 0.13"
Routed to Link 1L : EXIST CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.80"

Area (sf)	CN	Description
3,850	98	Paved parking, HSG B
16,730	36	Woods, Fair, HSG A
1,967	39	>75% Grass cover, Good, HSG A
19,766	55	Woods, Good, HSG B
17,766	61	>75% Grass cover, Good, HSG B
60,079	54	Weighted Average
56,229		93.59% Pervious Area
3,850		6.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	35	0.2429	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	45	0.1555	1.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	65	0.0651	1.28		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	79	0.0886	1.49		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.8	55	0.0545	1.17		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
6.2	279	Total			

Subcatchment 1S: XDA-1 TO DESIGN LINE 1



Summary for Subcatchment 2S: FDA-1 TO SWMP-2A

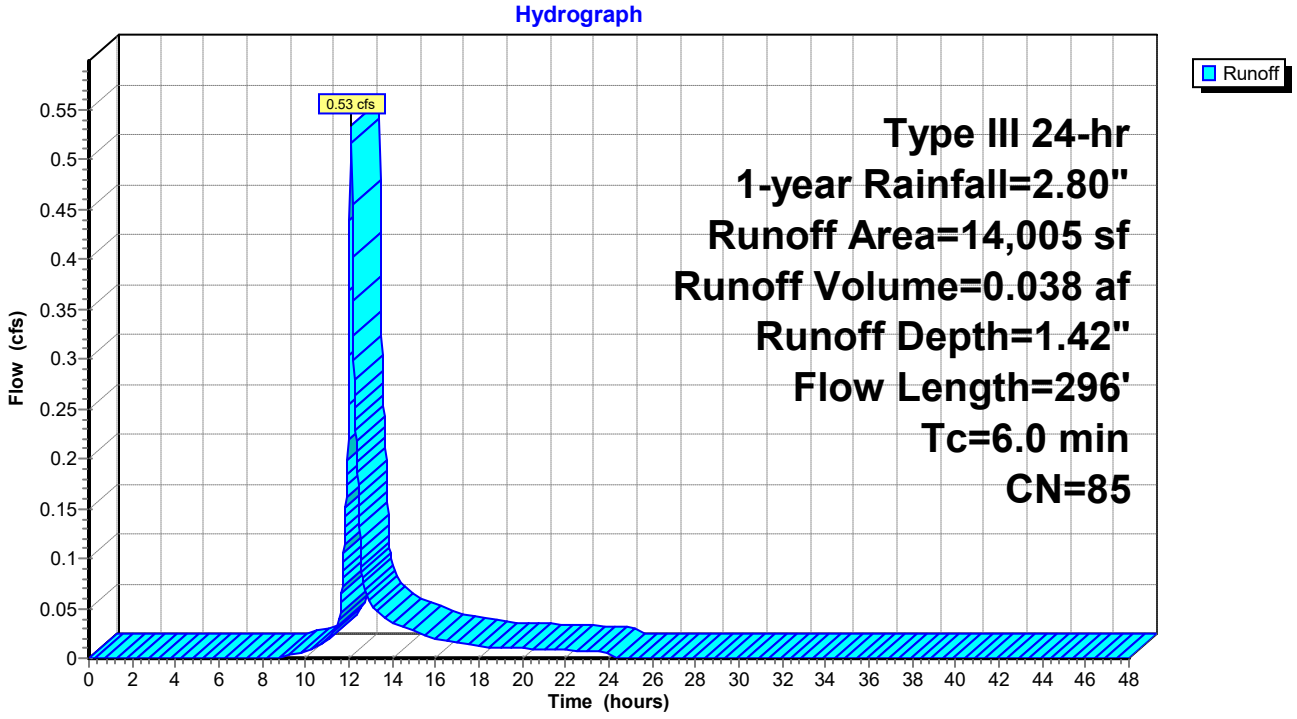
Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af, Depth= 1.42"
Routed to Pond 1P : SWMP DETENTION FACILITY 36" PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.80"

Area (sf)	CN	Description
9,091	98	Paved parking, HSG B
4,004	61	>75% Grass cover, Good, HSG B
910	55	Woods, Good, HSG B
14,005	85	Weighted Average
4,914		35.09% Pervious Area
9,091		64.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	30	0.1333	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	266	0.7440	17.51		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.0					**Direct Entry, FACTOR**
6.0	296	Total			

Subcatchment 2S: FDA-1 TO SWMP-2A



Summary for Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1

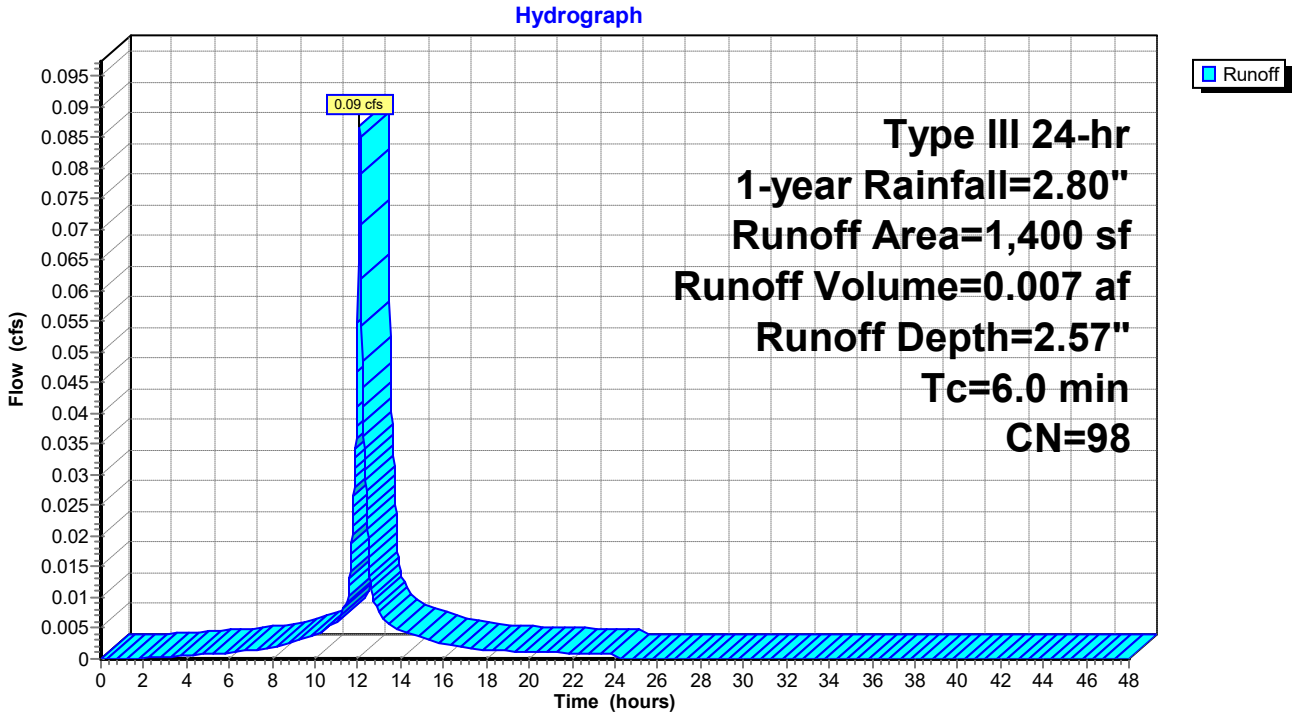
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 2.57"
Routed to Pond 2P : RAIN GARDEN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.80"

	Area (sf)	CN	Description
*	1,400	98	Pool & Pool Patio, HSG B
	1,400		100.00% Impervious Area

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

Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1



Summary for Subcatchment 4S: FDA-2A TO RAIN GARDEN #2

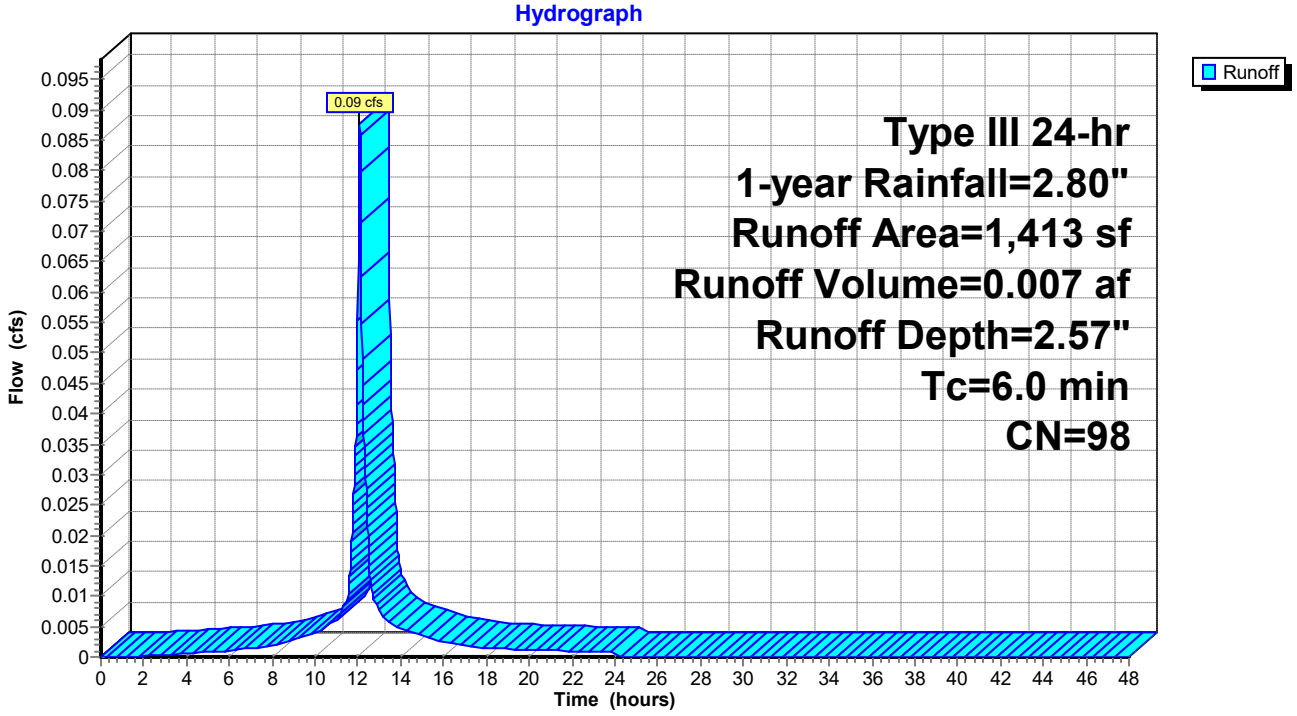
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 2.57"
Routed to Pond 3P : RAIN GARDEN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.80"

Area (sf)	CN	Description
1,413	98	Roofs, HSG B
1,413		100.00% Impervious Area

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

Subcatchment 4S: FDA-2A TO RAIN GARDEN #2



Summary for Subcatchment 5S: FDA-3 TO DESIGN LINE 1

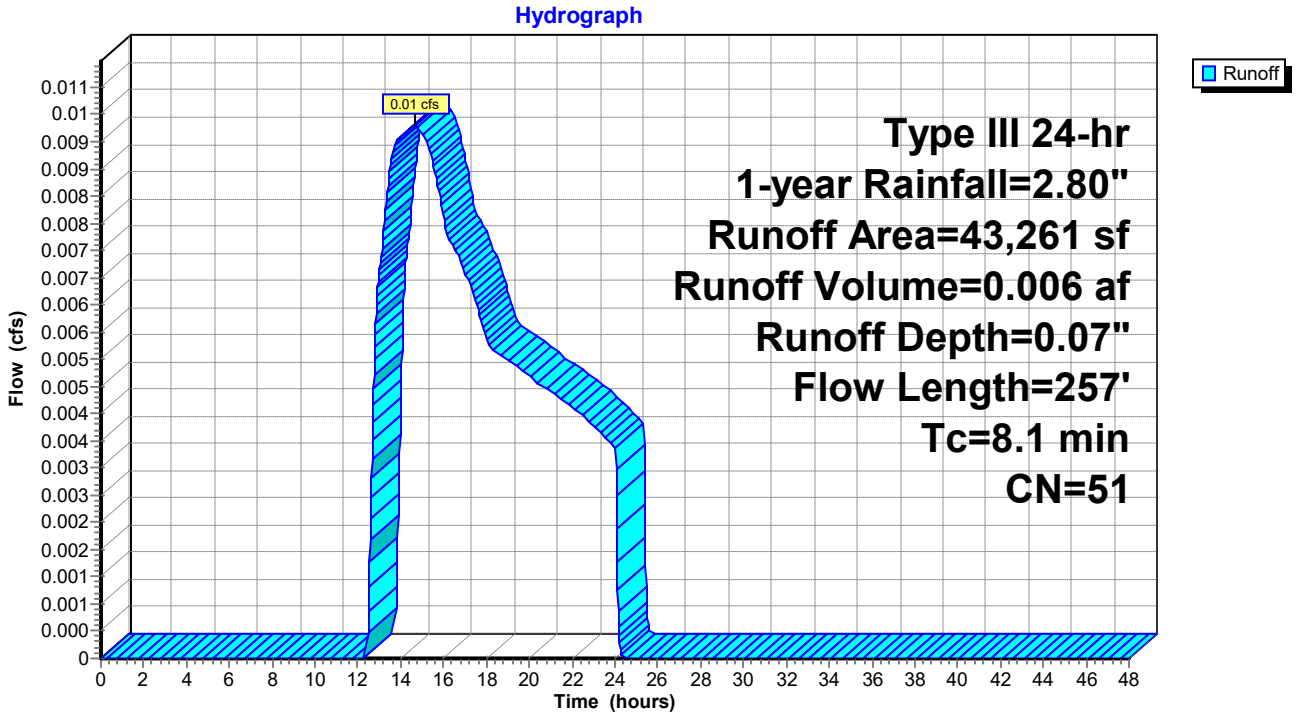
Runoff = 0.01 cfs @ 14.66 hrs, Volume= 0.006 af, Depth= 0.07"
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.80"

	Area (sf)	CN	Description
*	1,116	98	Impervious patio surface, HSG B
	7,943	39	>75% Grass cover, Good, HSG A
	8,933	30	Woods, Good, HSG A
	22,854	61	>75% Grass cover, Good, HSG B
	2,415	55	Woods, Good, HSG B
	43,261	51	Weighted Average
	42,145		97.42% Pervious Area
	1,116		2.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	38	0.0395	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	75	0.0573	3.59		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.2	61	0.1508	5.82		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
0.3	83	0.0843	4.36		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
8.1	257	Total			

Subcatchment 5S: FDA-3 TO DESIGN LINE 1



Summary for Pond 1P: SWMP DETENTION FACILITY 36" PIPE

Inflow Area = 0.322 ac, 64.91% Impervious, Inflow Depth = 1.42" for 1-year event
Inflow = 0.53 cfs @ 12.09 hrs, Volume= 0.038 af
Outflow = 0.03 cfs @ 14.79 hrs, Volume= 0.038 af, Atten= 95%, Lag= 162.2 min
Primary = 0.03 cfs @ 14.79 hrs, Volume= 0.038 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 72.11' @ 14.79 hrs Surf.Area= 944 sf Storage= 900 cf

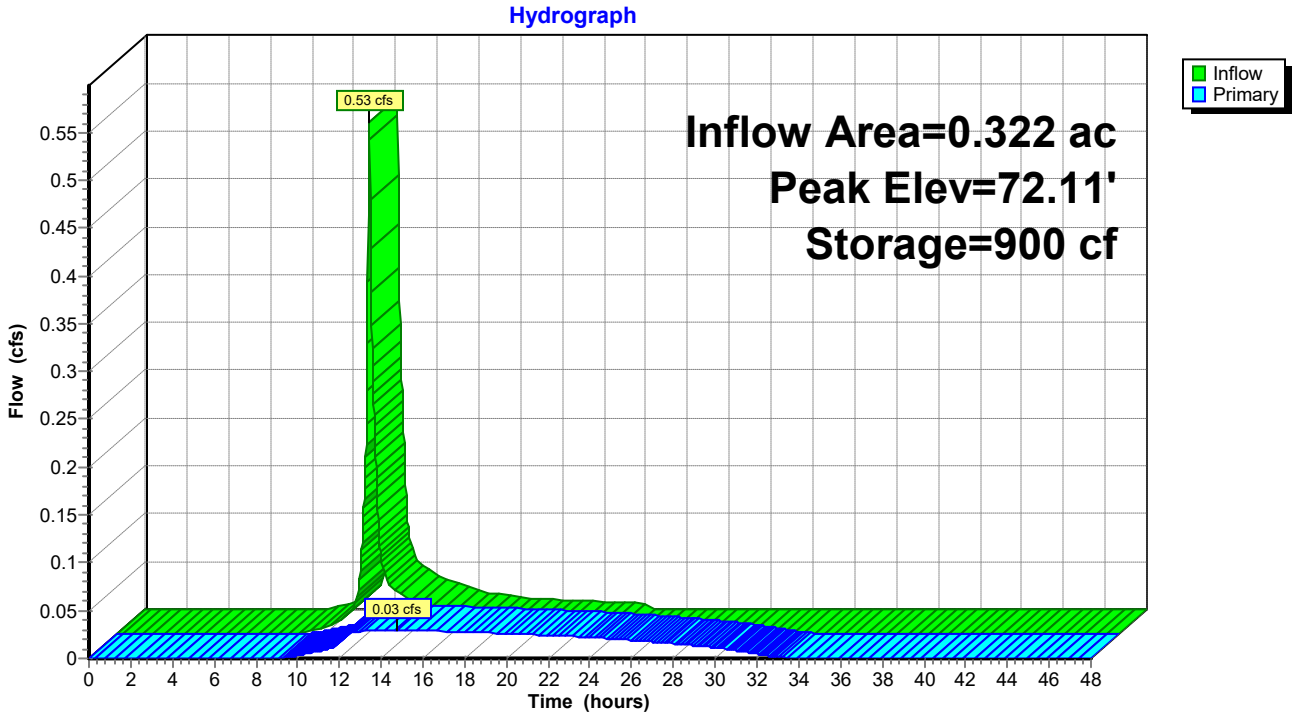
Plug-Flow detention time= 374.9 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 374.8 min (1,207.0 - 832.2)

Volume	Invert	Avail.Storage	Storage Description
#1	70.85'	2,251 cf	**36.0" Round Pipe Storage 36" Diam.** L= 318.5'

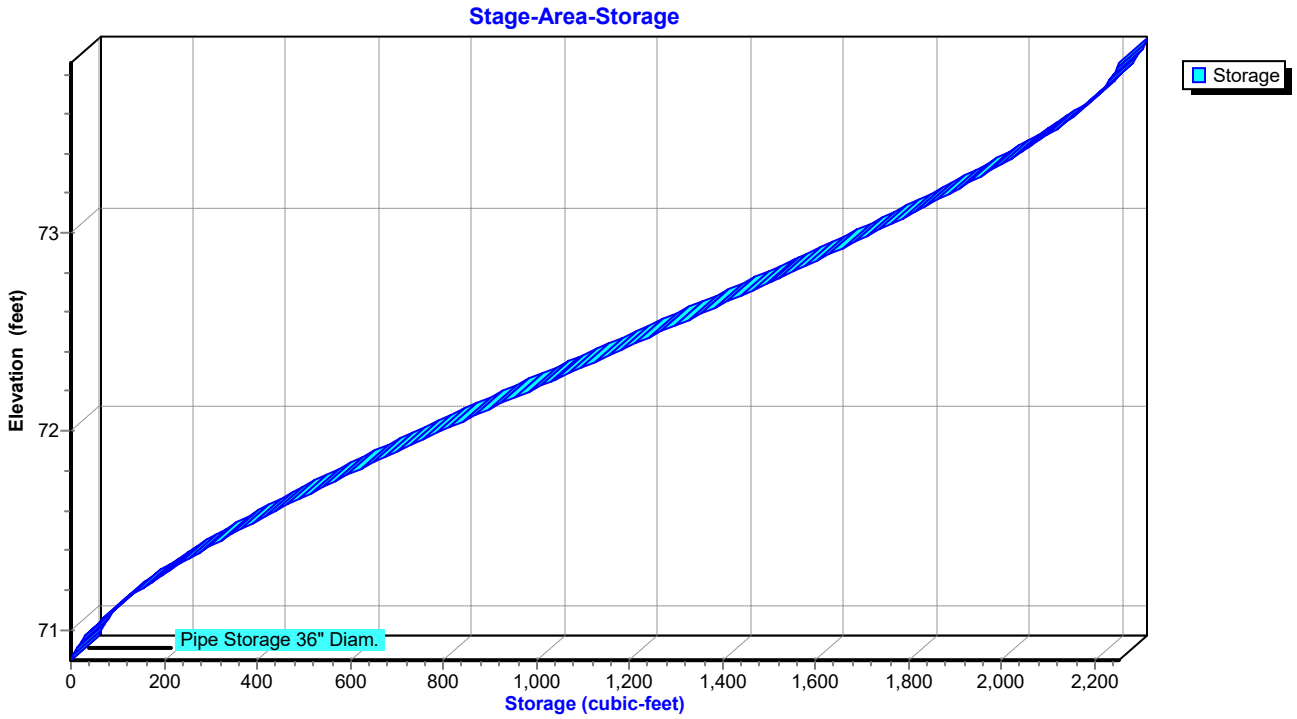
Device	Routing	Invert	Outlet Devices
#1	Primary	70.85'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	72.25'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Primary	72.75'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	73.80'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.03 cfs @ 14.79 hrs HW=72.11' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.32 fps)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Summary for Pond 2P: RAIN GARDEN #1

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 2.57" for 1-year event
Inflow = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af
Outflow = 0.03 cfs @ 12.36 hrs, Volume= 0.007 af, Atten= 66%, Lag= 16.5 min
Discarded = 0.03 cfs @ 12.36 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.61' @ 12.36 hrs Surf.Area= 421 sf Storage= 45 cf

Plug-Flow detention time= 8.1 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 8.1 min (767.4 - 759.3)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	531 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

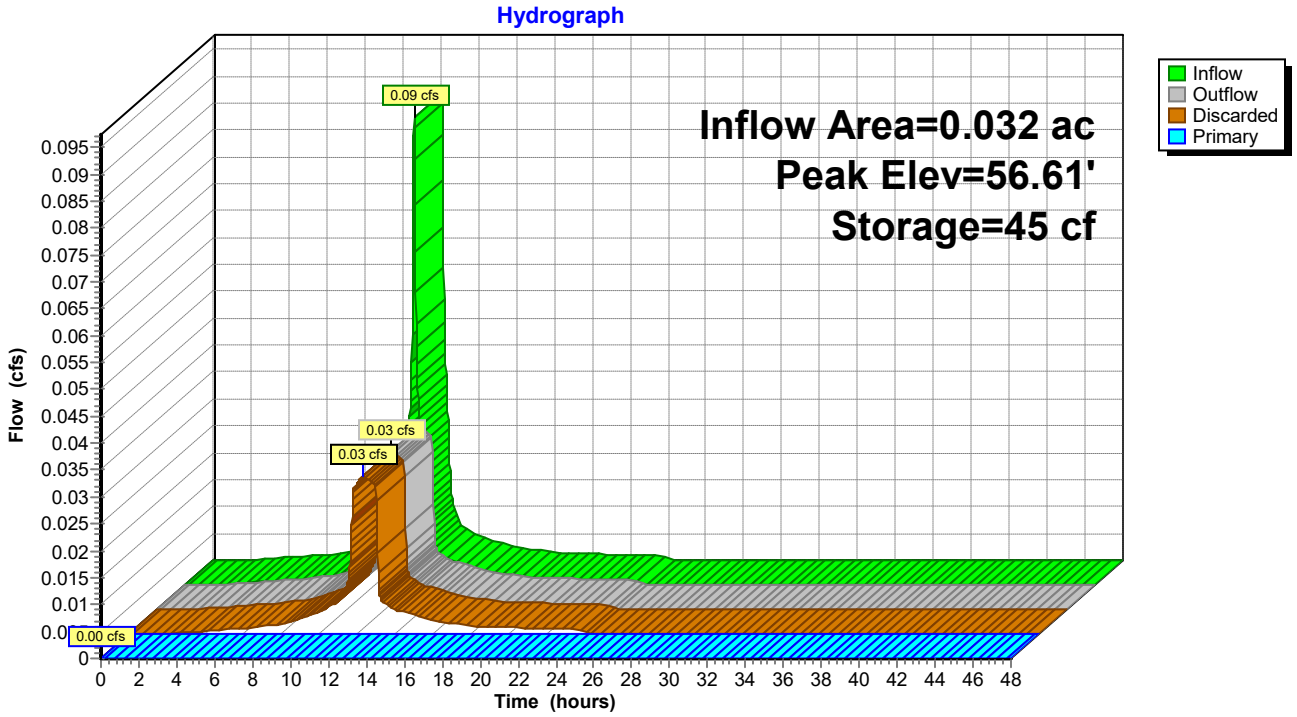
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	386	0	0
56.75	464	106	106
57.00	550	127	233
57.50	641	298	531

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

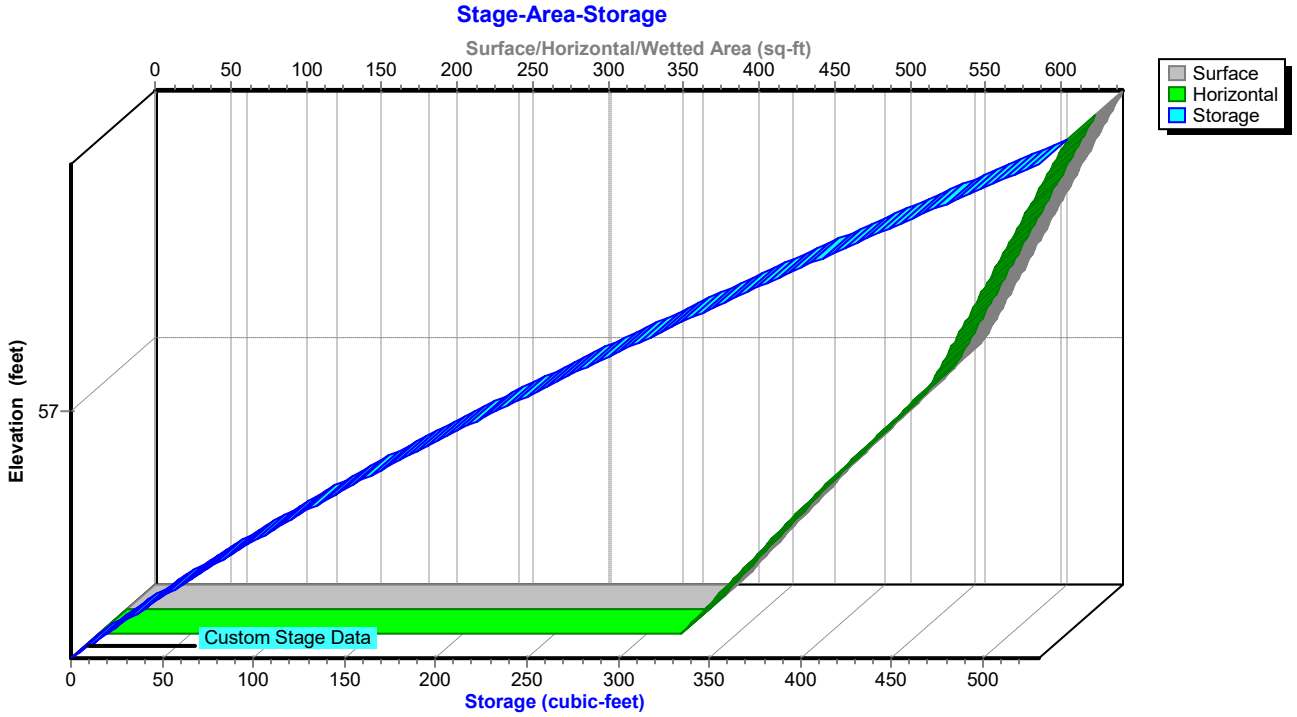
Discarded OutFlow Max=0.03 cfs @ 12.36 hrs HW=56.61' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: RAIN GARDEN #1



Pond 2P: RAIN GARDEN #1



Summary for Pond 3P: RAIN GARDEN #2

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 2.57" for 1-year event
Inflow = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af
Outflow = 0.03 cfs @ 12.38 hrs, Volume= 0.007 af, Atten= 68%, Lag= 17.6 min
Discarded = 0.03 cfs @ 12.38 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.64' @ 12.38 hrs Surf.Area= 404 sf Storage= 52 cf

Plug-Flow detention time= 11.3 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 11.3 min (770.6 - 759.3)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

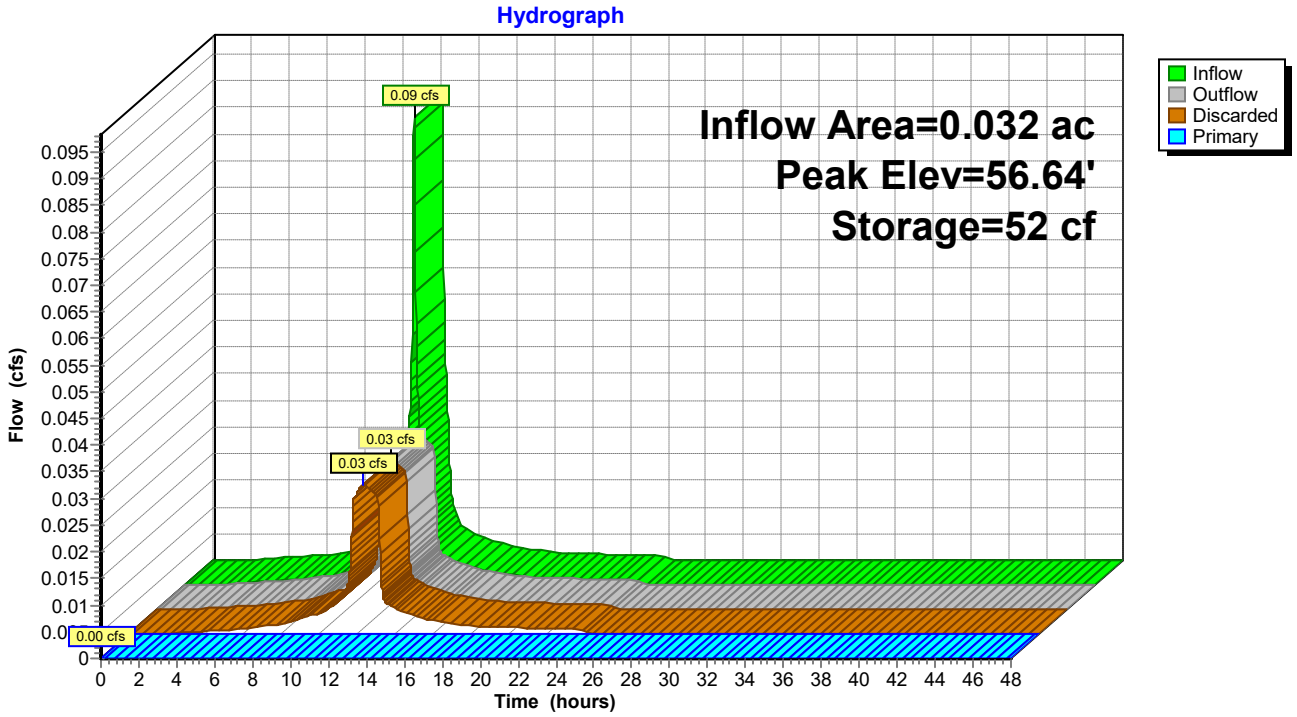
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	360	0	0
56.75	440	100	100
57.00	528	121	221
58.50	622	863	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

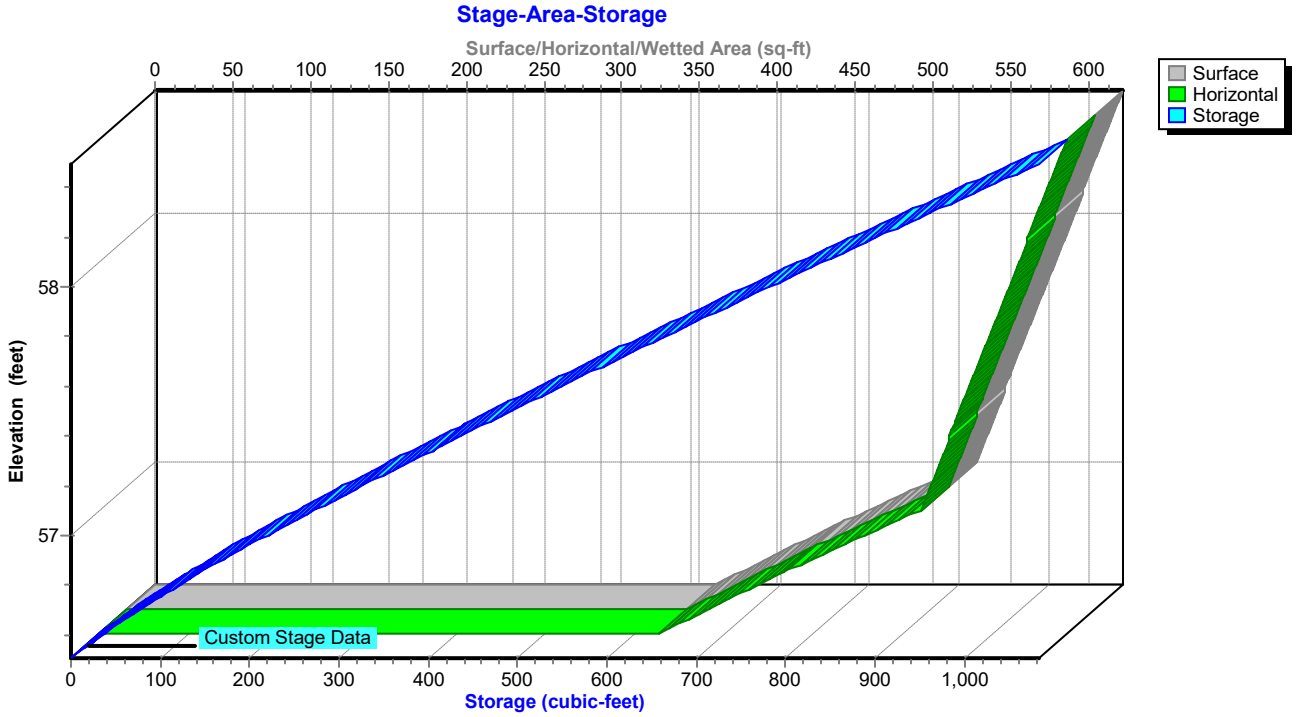
Discarded OutFlow Max=0.03 cfs @ 12.38 hrs HW=56.64' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: RAIN GARDEN #2



Pond 3P: RAIN GARDEN #2

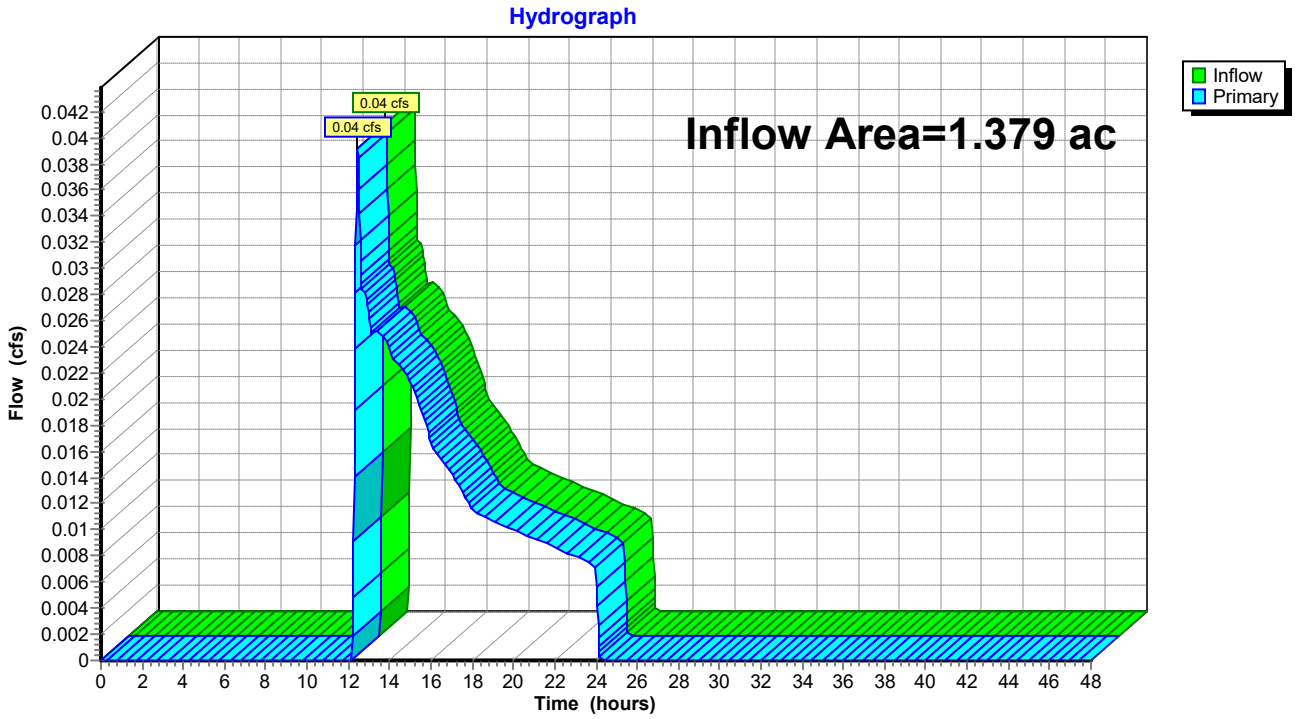


Summary for Link 1L: EXIST CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 6.41% Impervious, Inflow Depth = 0.13" for 1-year event
Inflow = 0.04 cfs @ 12.45 hrs, Volume= 0.014 af
Primary = 0.04 cfs @ 12.45 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 1L: EXIST CONDITION DESIGN LINE

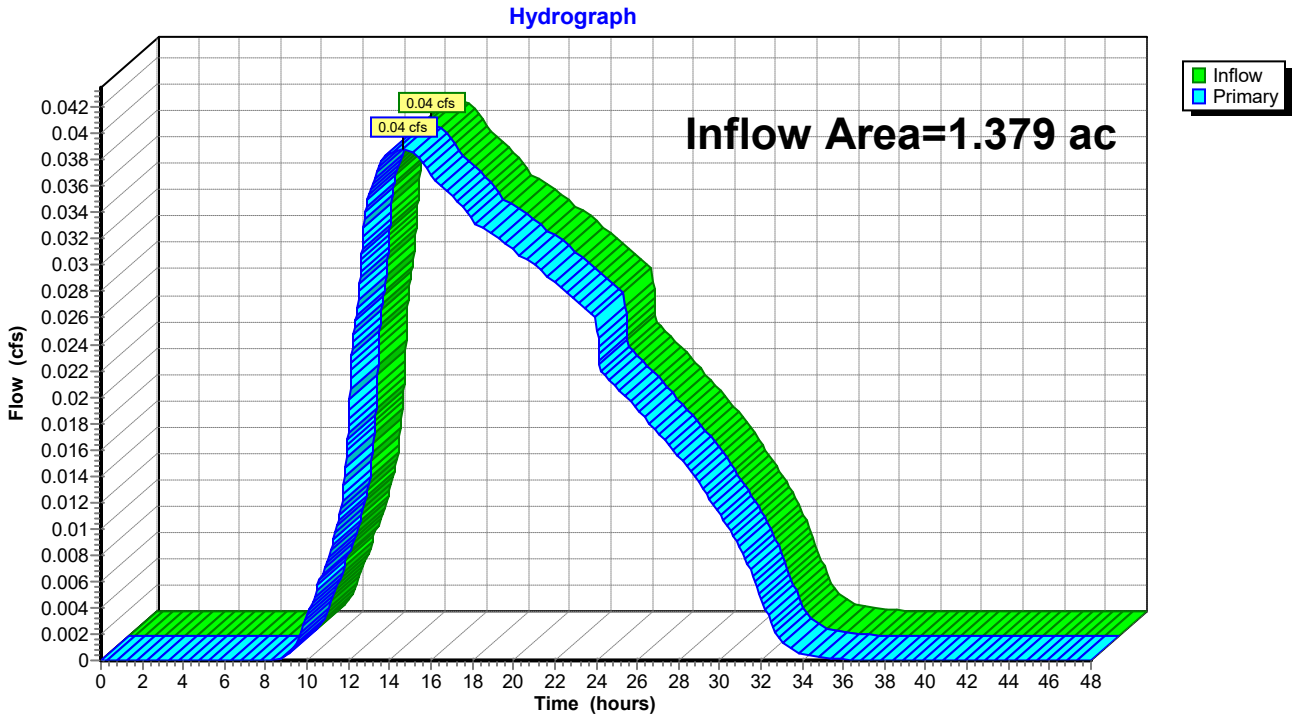


Summary for Link 2L: FUTURE CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 21.67% Impervious, Inflow Depth = 0.38" for 1-year event
Inflow = 0.04 cfs @ 14.69 hrs, Volume= 0.044 af
Primary = 0.04 cfs @ 14.69 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 2L: FUTURE CONDITION DESIGN LINE



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: XDA-1 TO DESIGN LINE 1 Runoff Area=60,079 sf 6.41% Impervious Runoff Depth=0.29"
Flow Length=279' Tc=6.2 min CN=54 Runoff=0.17 cfs 0.033 af

Subcatchment 2S: FDA-1 TO SWMP-2A Runoff Area=14,005 sf 64.91% Impervious Runoff Depth=1.95"
Flow Length=296' Tc=6.0 min CN=85 Runoff=0.73 cfs 0.052 af

Subcatchment 3S: FDA-2B (POOL) TO Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=3.19"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment 4S: FDA-2A TO RAIN Runoff Area=1,413 sf 100.00% Impervious Runoff Depth=3.19"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment 5S: FDA-3 TO DESIGN LINE 1 Runoff Area=43,261 sf 2.58% Impervious Runoff Depth=0.20"
Flow Length=257' Tc=8.1 min CN=51 Runoff=0.06 cfs 0.017 af

Pond 1P: SWMP DETENTION FACILITY 36" Peak Elev=72.35' Storage=1,128 cf Inflow=0.73 cfs 0.052 af
Outflow=0.08 cfs 0.052 af

Pond 2P: RAIN GARDEN #1 Peak Elev=56.66' Storage=68 cf Inflow=0.11 cfs 0.009 af
Discarded=0.03 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.009 af

Pond 3P: RAIN GARDEN #2 Peak Elev=56.69' Storage=75 cf Inflow=0.11 cfs 0.009 af
Discarded=0.03 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.009 af

Link 1L: EXIST CONDITION DESIGN LINE Inflow=0.17 cfs 0.033 af
Primary=0.17 cfs 0.033 af

Link 2L: FUTURE CONDITION DESIGN LINE Inflow=0.12 cfs 0.069 af
Primary=0.12 cfs 0.069 af

Total Runoff Area = 2.758 ac Runoff Volume = 0.119 af Average Runoff Depth = 0.52"
85.96% Pervious = 2.371 ac 14.04% Impervious = 0.387 ac

Summary for Subcatchment 1S: XDA-1 TO DESIGN LINE 1

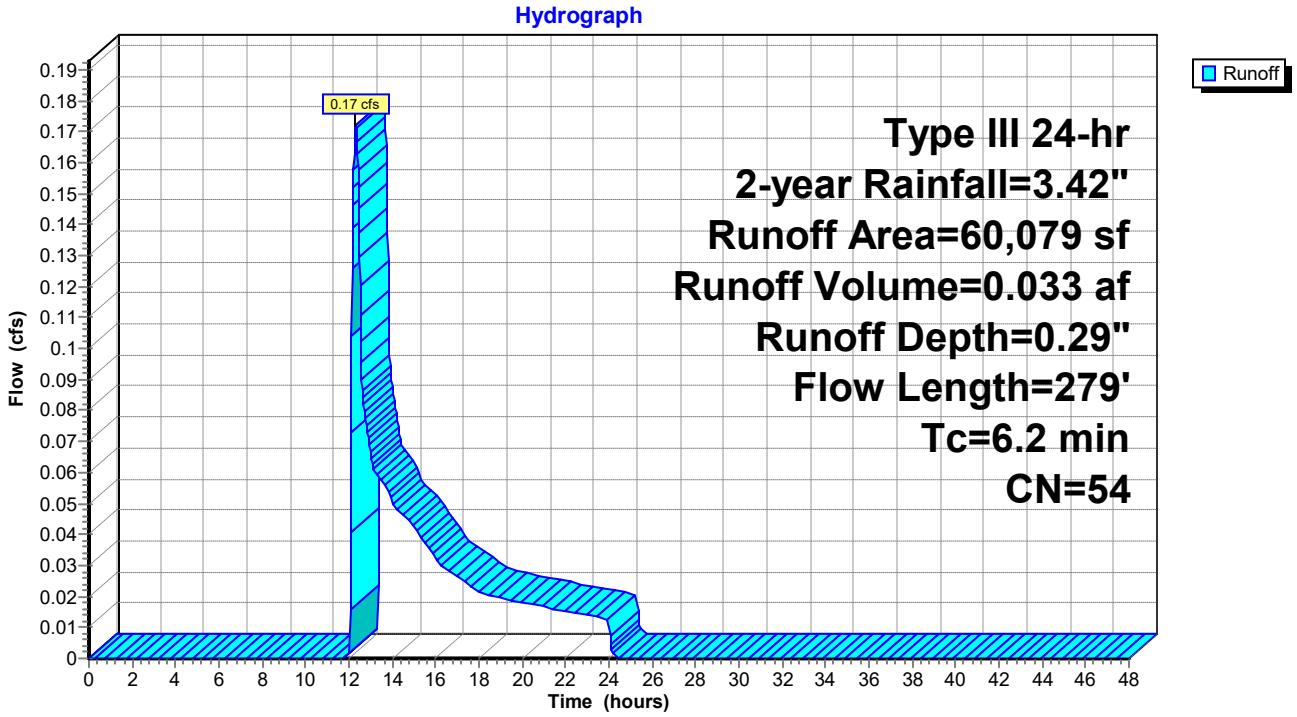
Runoff = 0.17 cfs @ 12.32 hrs, Volume= 0.033 af, Depth= 0.29"
Routed to Link 1L : EXIST CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.42"

Area (sf)	CN	Description
3,850	98	Paved parking, HSG B
16,730	36	Woods, Fair, HSG A
1,967	39	>75% Grass cover, Good, HSG A
19,766	55	Woods, Good, HSG B
17,766	61	>75% Grass cover, Good, HSG B
60,079	54	Weighted Average
56,229		93.59% Pervious Area
3,850		6.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	35	0.2429	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	45	0.1555	1.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	65	0.0651	1.28		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	79	0.0886	1.49		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.8	55	0.0545	1.17		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
6.2	279	Total			

Subcatchment 1S: XDA-1 TO DESIGN LINE 1



Summary for Subcatchment 2S: FDA-1 TO SWMP-2A

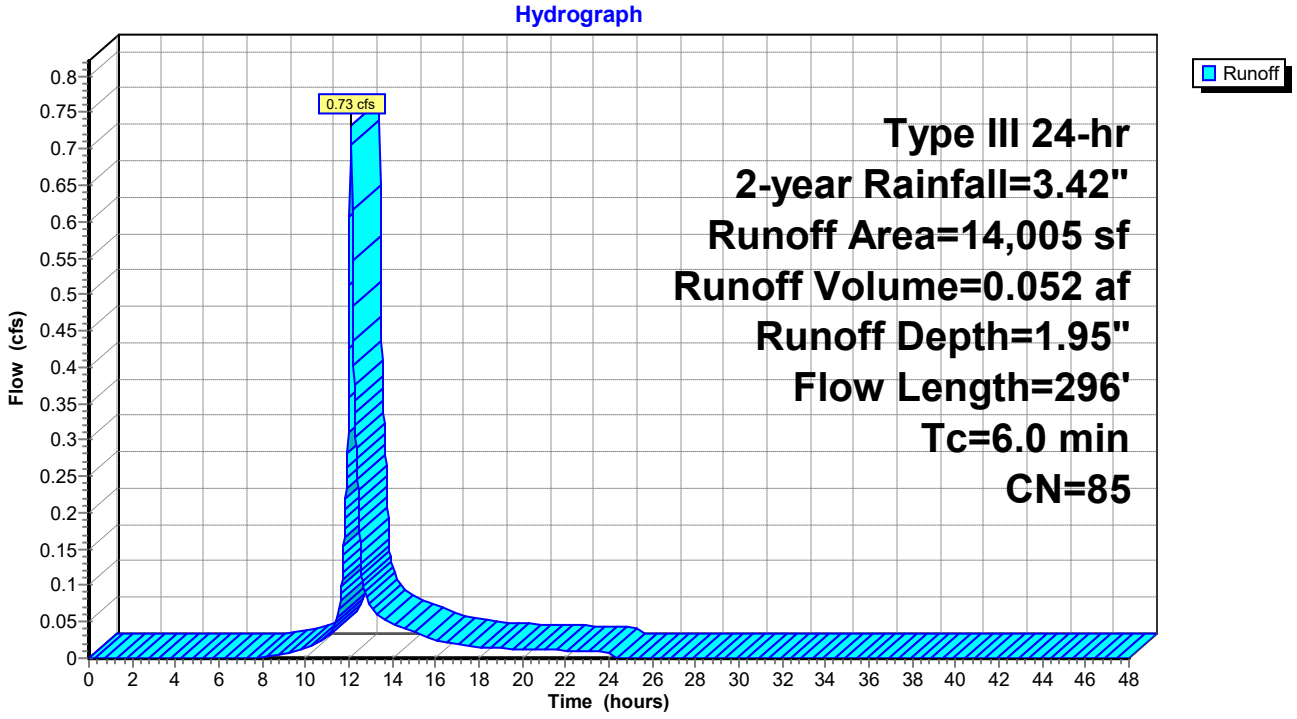
Runoff = 0.73 cfs @ 12.09 hrs, Volume= 0.052 af, Depth= 1.95"
Routed to Pond 1P : SWMP DETENTION FACILITY 36" PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.42"

Area (sf)	CN	Description
9,091	98	Paved parking, HSG B
4,004	61	>75% Grass cover, Good, HSG B
910	55	Woods, Good, HSG B
14,005	85	Weighted Average
4,914		35.09% Pervious Area
9,091		64.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	30	0.1333	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	266	0.7440	17.51		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.0					**Direct Entry, FACTOR**
6.0	296	Total			

Subcatchment 2S: FDA-1 TO SWMP-2A



Summary for Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1

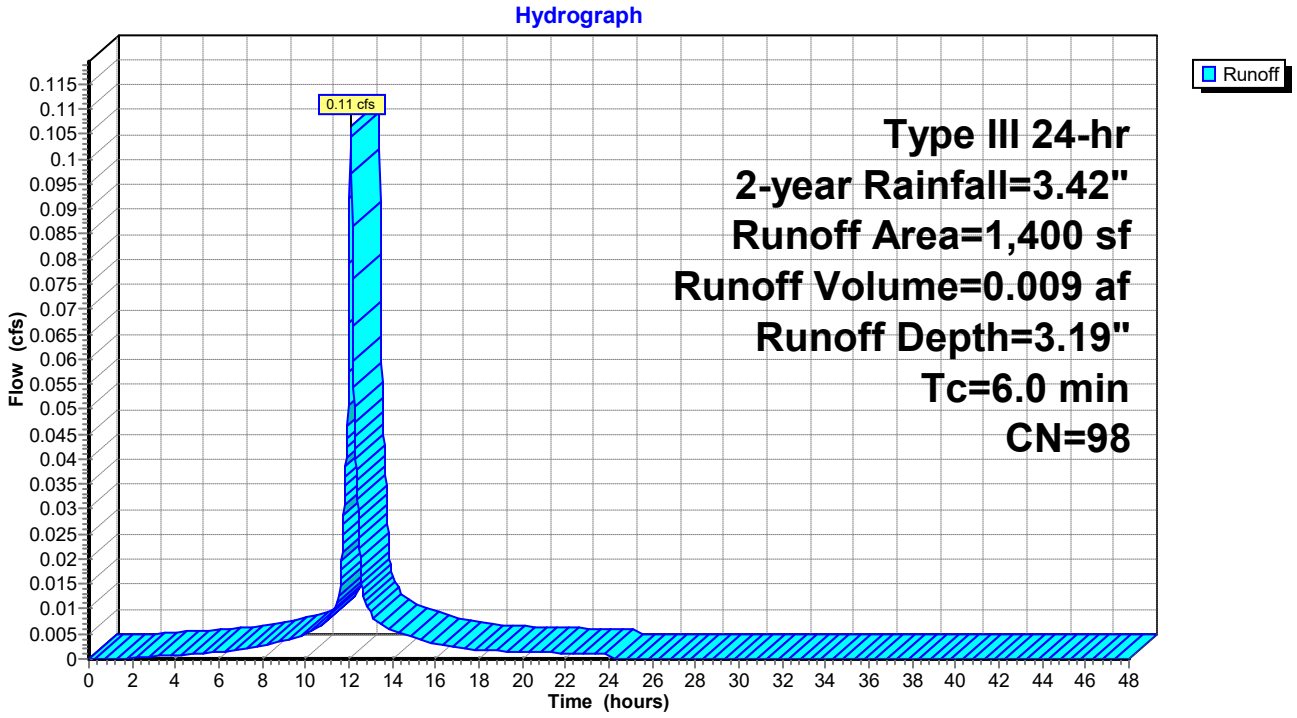
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 3.19"
Routed to Pond 2P : RAIN GARDEN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.42"

	Area (sf)	CN	Description
*	1,400	98	Pool & Pool Patio, HSG B
	1,400		100.00% Impervious Area

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

Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1



Summary for Subcatchment 4S: FDA-2A TO RAIN GARDEN #2

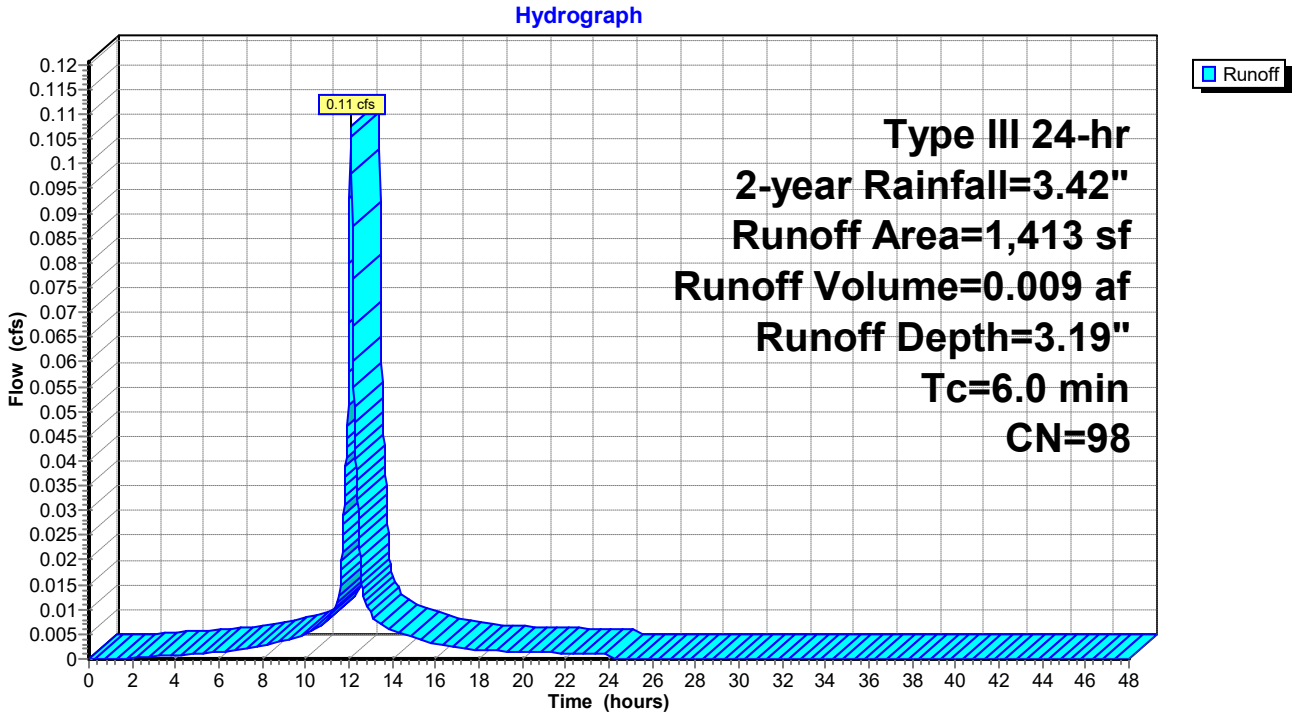
Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 3.19"
Routed to Pond 3P : RAIN GARDEN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.42"

Area (sf)	CN	Description
1,413	98	Roofs, HSG B
1,413		100.00% Impervious Area

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

Subcatchment 4S: FDA-2A TO RAIN GARDEN #2



Summary for Subcatchment 5S: FDA-3 TO DESIGN LINE 1

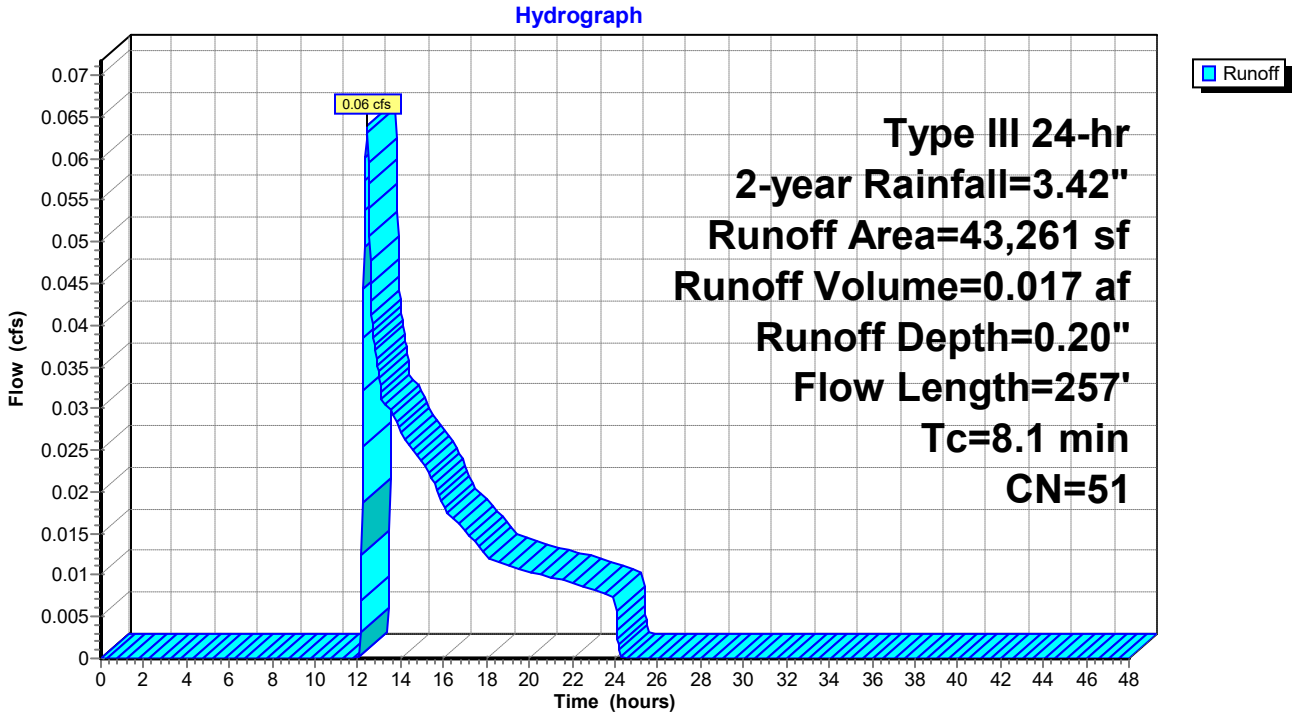
Runoff = 0.06 cfs @ 12.42 hrs, Volume= 0.017 af, Depth= 0.20"
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 2-year Rainfall=3.42"

	Area (sf)	CN	Description
*	1,116	98	Impervious patio surface, HSG B
	7,943	39	>75% Grass cover, Good, HSG A
	8,933	30	Woods, Good, HSG A
	22,854	61	>75% Grass cover, Good, HSG B
	2,415	55	Woods, Good, HSG B
	43,261	51	Weighted Average
	42,145		97.42% Pervious Area
	1,116		2.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	38	0.0395	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	75	0.0573	3.59		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.2	61	0.1508	5.82		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
0.3	83	0.0843	4.36		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
8.1	257	Total			

Subcatchment 5S: FDA-3 TO DESIGN LINE 1



Summary for Pond 1P: SWMP DETENTION FACILITY 36" PIPE

Inflow Area = 0.322 ac, 64.91% Impervious, Inflow Depth = 1.95" for 2-year event
Inflow = 0.73 cfs @ 12.09 hrs, Volume= 0.052 af
Outflow = 0.08 cfs @ 12.88 hrs, Volume= 0.052 af, Atten= 89%, Lag= 47.8 min
Primary = 0.08 cfs @ 12.88 hrs, Volume= 0.052 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 72.35' @ 12.88 hrs Surf.Area= 955 sf Storage= 1,128 cf

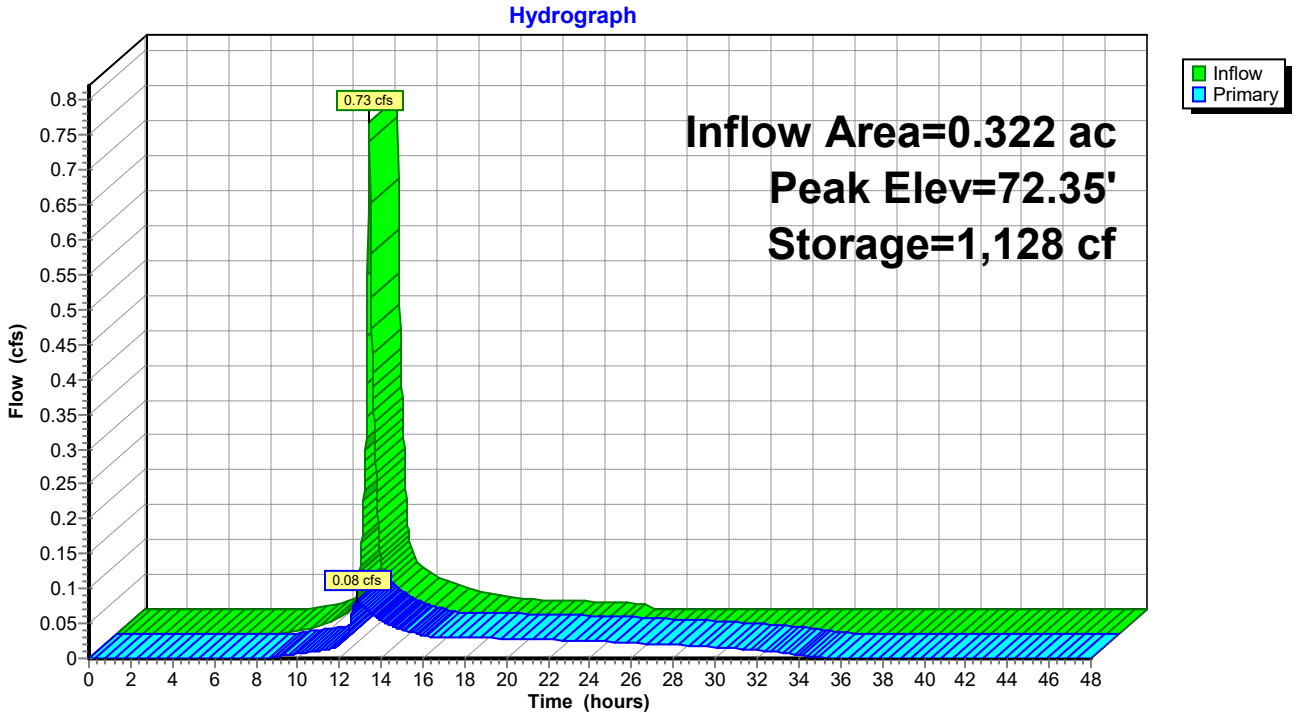
Plug-Flow detention time= 368.0 min calculated for 0.052 af (100% of inflow)
Center-of-Mass det. time= 368.2 min (1,191.3 - 823.2)

Volume	Invert	Avail.Storage	Storage Description
#1	70.85'	2,251 cf	**36.0" Round Pipe Storage 36" Diam.** L= 318.5'

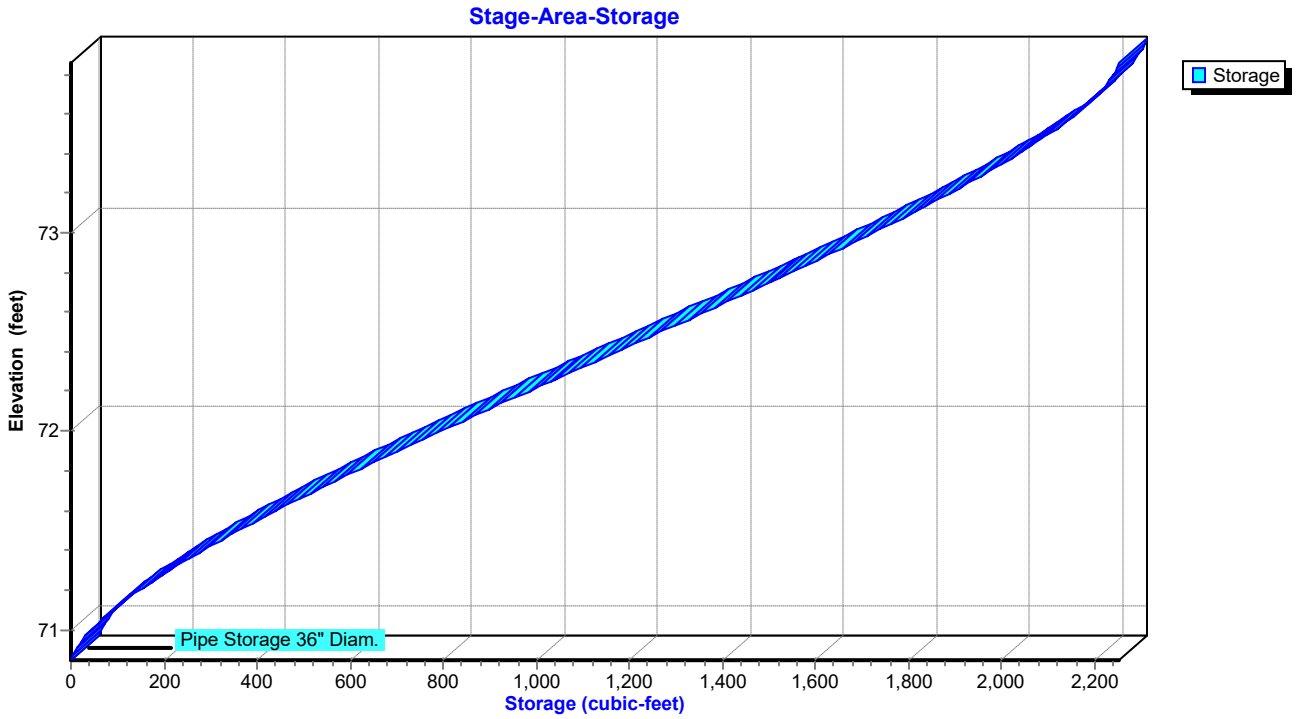
Device	Routing	Invert	Outlet Devices
#1	Primary	70.85'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	72.25'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Primary	72.75'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	73.80'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.08 cfs @ 12.88 hrs HW=72.35' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.82 fps)
- **2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 1.09 fps)
- **3=Orifice/Grate** (Controls 0.00 cfs)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Summary for Pond 2P: RAIN GARDEN #1

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 3.19" for 2-year event
Inflow = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.03 cfs @ 12.41 hrs, Volume= 0.009 af, Atten= 72%, Lag= 19.9 min
Discarded = 0.03 cfs @ 12.41 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.66' @ 12.41 hrs Surf.Area= 437 sf Storage= 68 cf

Plug-Flow detention time= 11.6 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 11.6 min (766.6 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	531 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

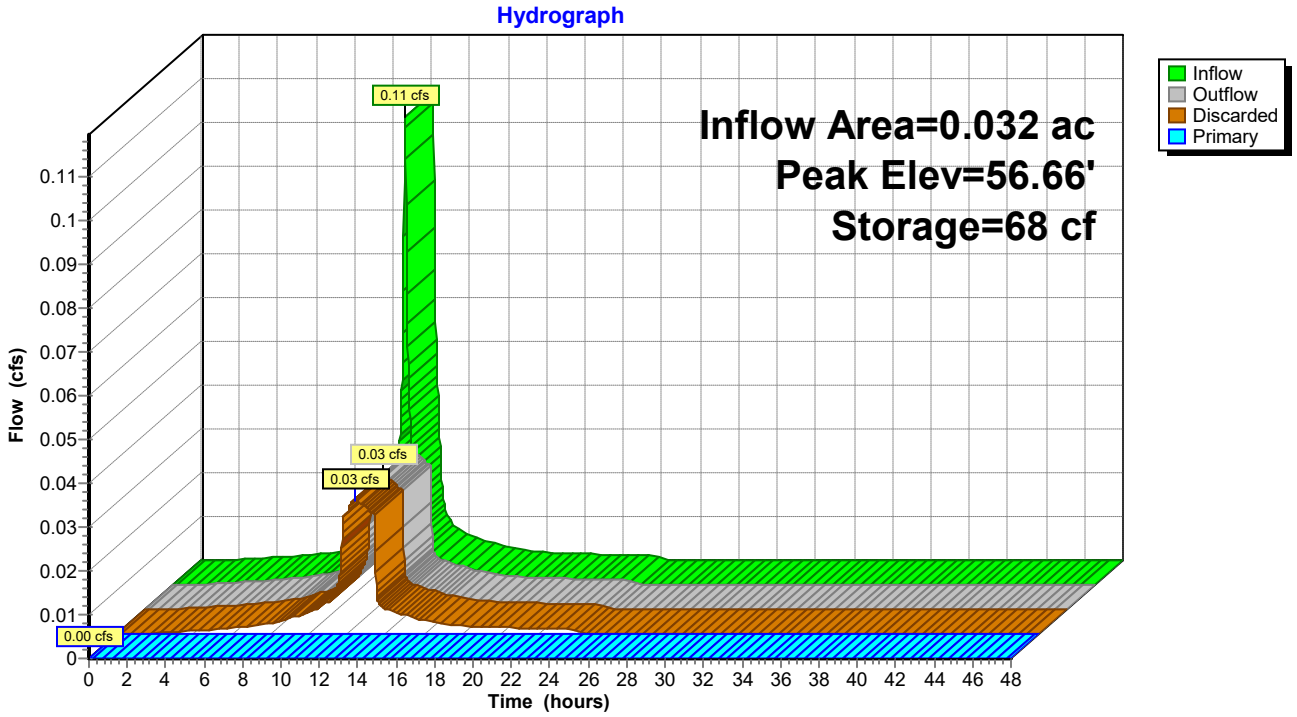
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	386	0	0
56.75	464	106	106
57.00	550	127	233
57.50	641	298	531

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir**
			Head (feet) 0.49 0.98 1.48
			Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

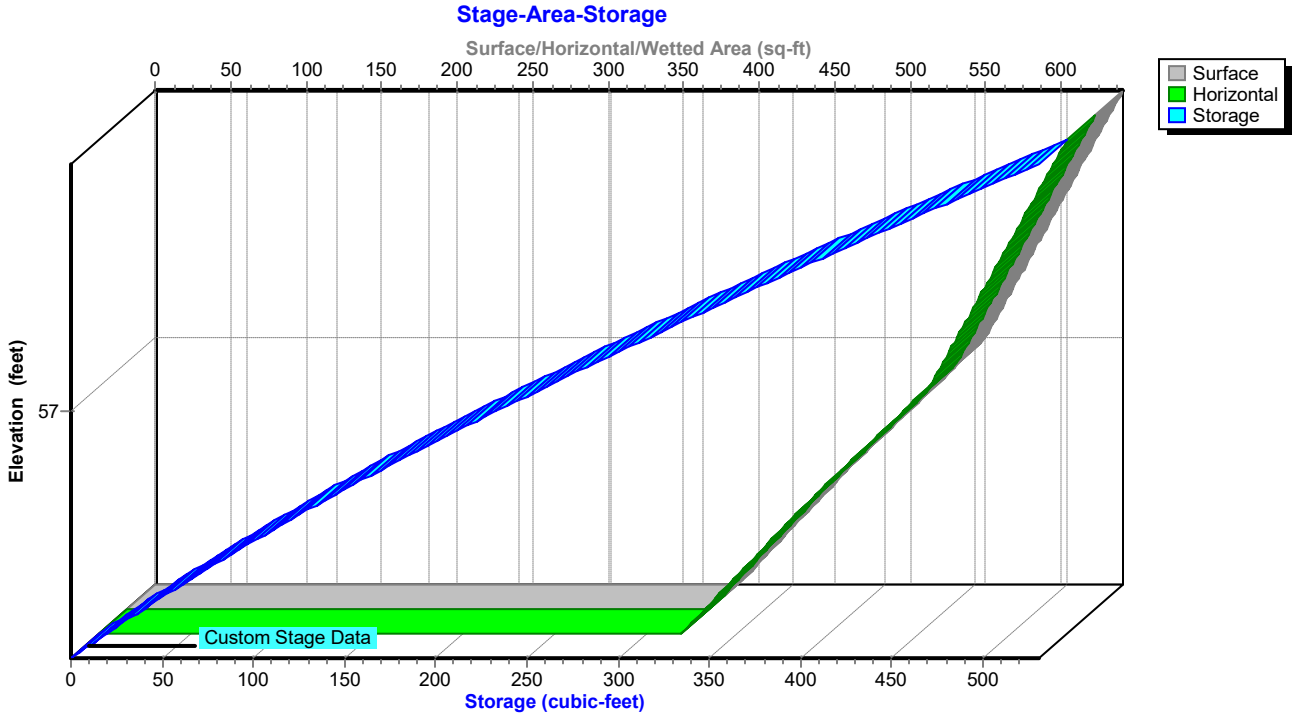
Discarded OutFlow Max=0.03 cfs @ 12.41 hrs HW=56.66' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: RAIN GARDEN #1



Pond 2P: RAIN GARDEN #1



Summary for Pond 3P: RAIN GARDEN #2

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 3.19" for 2-year event
Inflow = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af
Outflow = 0.03 cfs @ 12.43 hrs, Volume= 0.009 af, Atten= 73%, Lag= 20.7 min
Discarded = 0.03 cfs @ 12.43 hrs, Volume= 0.009 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.69' @ 12.43 hrs Surf.Area= 422 sf Storage= 75 cf

Plug-Flow detention time= 15.1 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 15.1 min (770.1 - 755.0)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

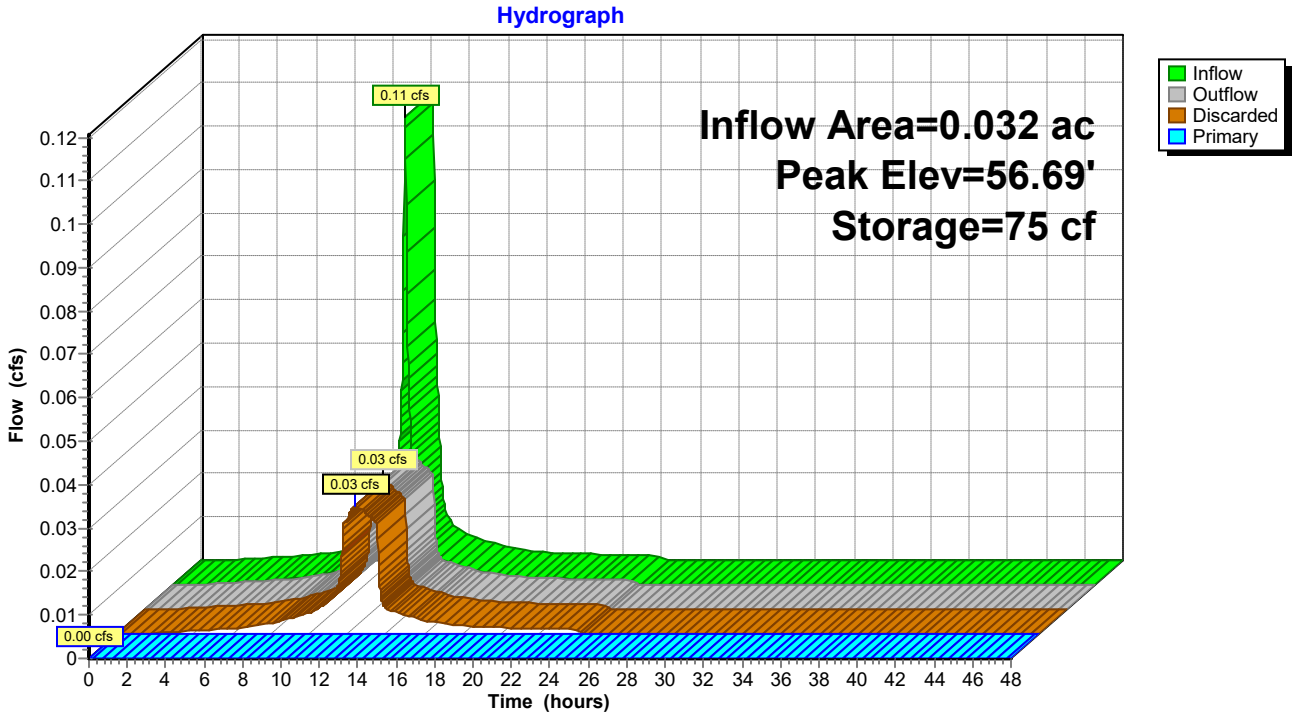
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	360	0	0
56.75	440	100	100
57.00	528	121	221
58.50	622	863	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

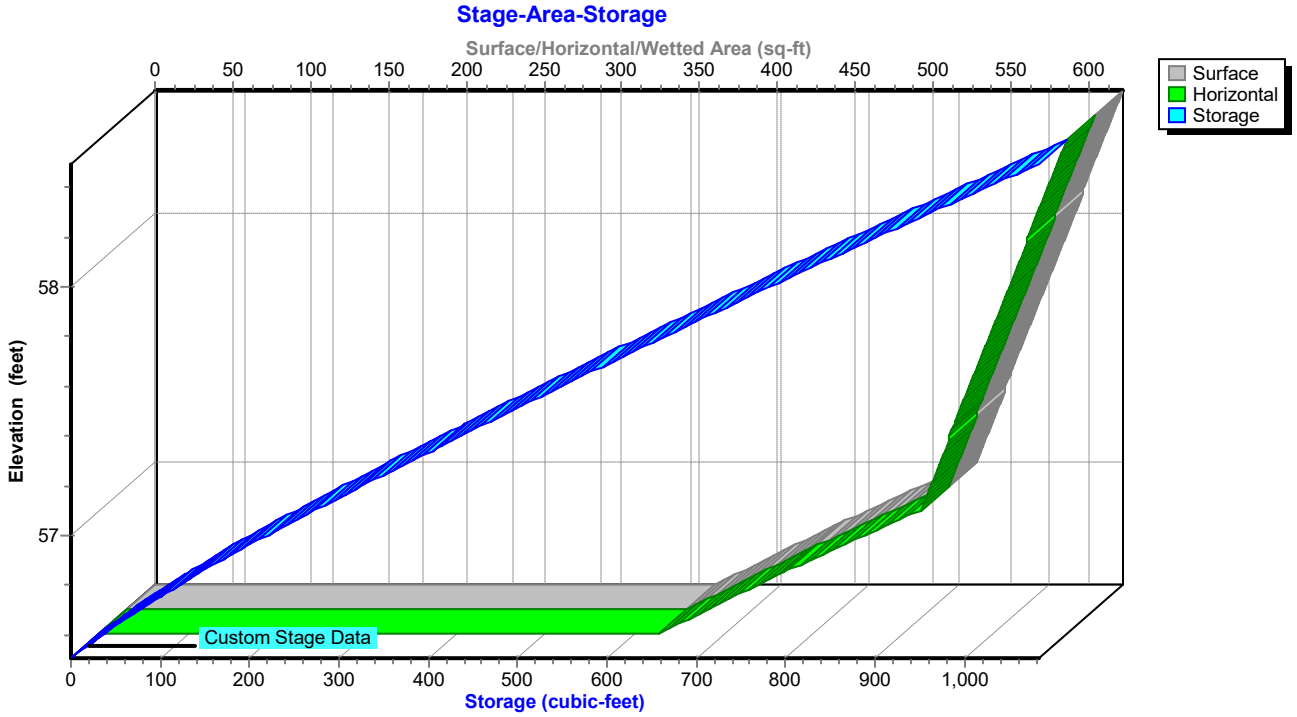
Discarded OutFlow Max=0.03 cfs @ 12.43 hrs HW=56.69' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: RAIN GARDEN #2



Pond 3P: RAIN GARDEN #2

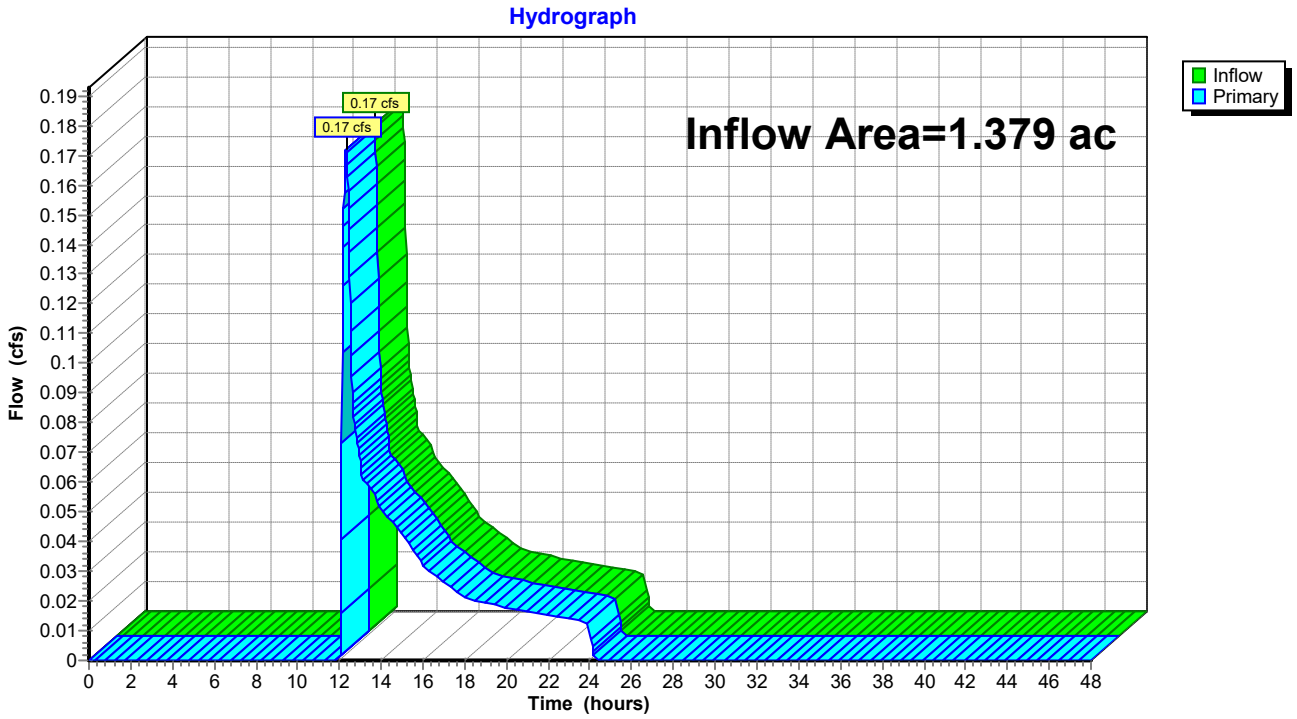


Summary for Link 1L: EXIST CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 6.41% Impervious, Inflow Depth = 0.29" for 2-year event
Inflow = 0.17 cfs @ 12.32 hrs, Volume= 0.033 af
Primary = 0.17 cfs @ 12.32 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 1L: EXIST CONDITION DESIGN LINE

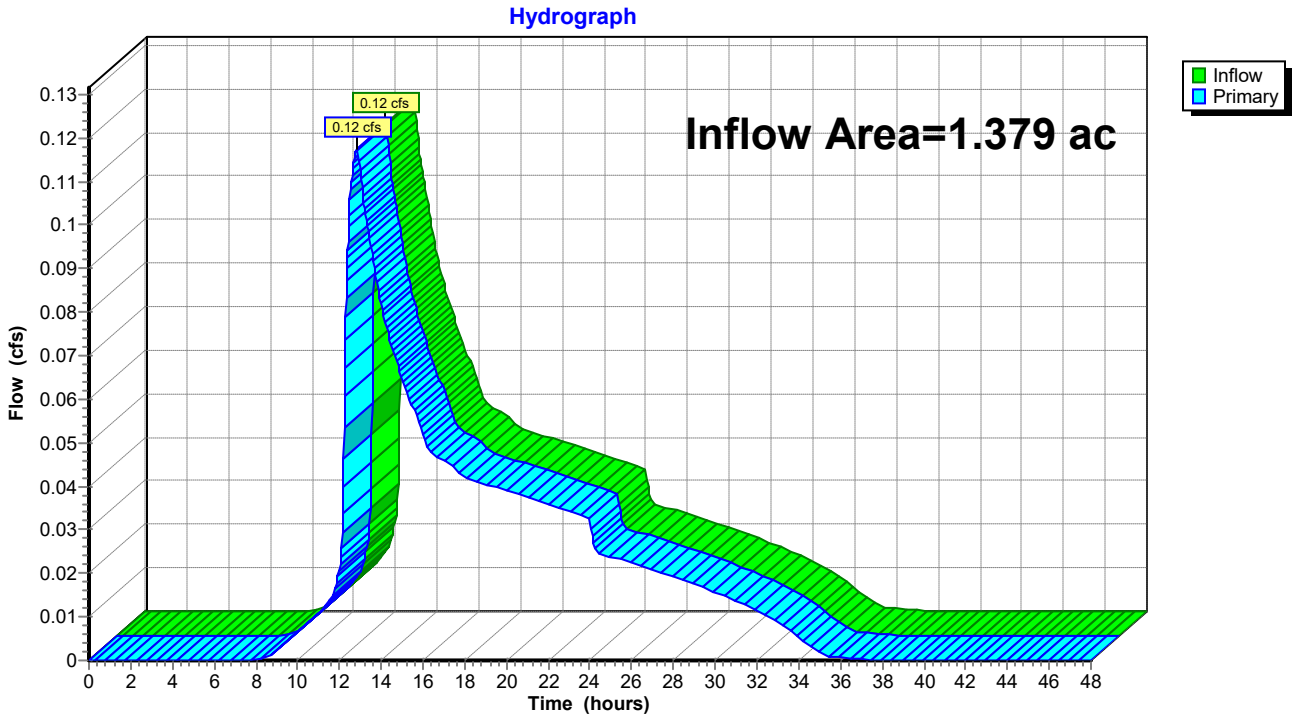


Summary for Link 2L: FUTURE CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 21.67% Impervious, Inflow Depth = 0.60" for 2-year event
Inflow = 0.12 cfs @ 12.84 hrs, Volume= 0.069 af
Primary = 0.12 cfs @ 12.84 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 2L: FUTURE CONDITION DESIGN LINE



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: XDA-1 TO DESIGN LINE 1 Runoff Area=60,079 sf 6.41% Impervious Runoff Depth=0.98"
Flow Length=279' Tc=6.2 min CN=54 Runoff=1.23 cfs 0.112 af

Subcatchment 2S: FDA-1 TO SWMP-2A Runoff Area=14,005 sf 64.91% Impervious Runoff Depth=3.48"
Flow Length=296' Tc=6.0 min CN=85 Runoff=1.29 cfs 0.093 af

Subcatchment 3S: FDA-2B (POOL) TO Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=4.88"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment 4S: FDA-2A TO RAIN Runoff Area=1,413 sf 100.00% Impervious Runoff Depth=4.88"
Tc=6.0 min CN=98 Runoff=0.16 cfs 0.013 af

Subcatchment 5S: FDA-3 TO DESIGN LINE 1 Runoff Area=43,261 sf 2.58% Impervious Runoff Depth=0.80"
Flow Length=257' Tc=8.1 min CN=51 Runoff=0.59 cfs 0.066 af

Pond 1P: SWMP DETENTION FACILITY 36" Peak Elev=72.76' Storage=1,509 cf Inflow=1.29 cfs 0.093 af
Outflow=0.53 cfs 0.093 af

Pond 2P: RAIN GARDEN #1 Peak Elev=56.81' Storage=136 cf Inflow=0.16 cfs 0.013 af
Discarded=0.03 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.013 af

Pond 3P: RAIN GARDEN #2 Peak Elev=56.85' Storage=144 cf Inflow=0.16 cfs 0.013 af
Discarded=0.03 cfs 0.013 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.013 af

Link 1L: EXIST CONDITION DESIGN LINE Inflow=1.23 cfs 0.112 af
Primary=1.23 cfs 0.112 af

Link 2L: FUTURE CONDITION DESIGN LINE Inflow=1.04 cfs 0.159 af
Primary=1.04 cfs 0.159 af

Total Runoff Area = 2.758 ac Runoff Volume = 0.298 af Average Runoff Depth = 1.30"
85.96% Pervious = 2.371 ac 14.04% Impervious = 0.387 ac

Summary for Subcatchment 1S: XDA-1 TO DESIGN LINE 1

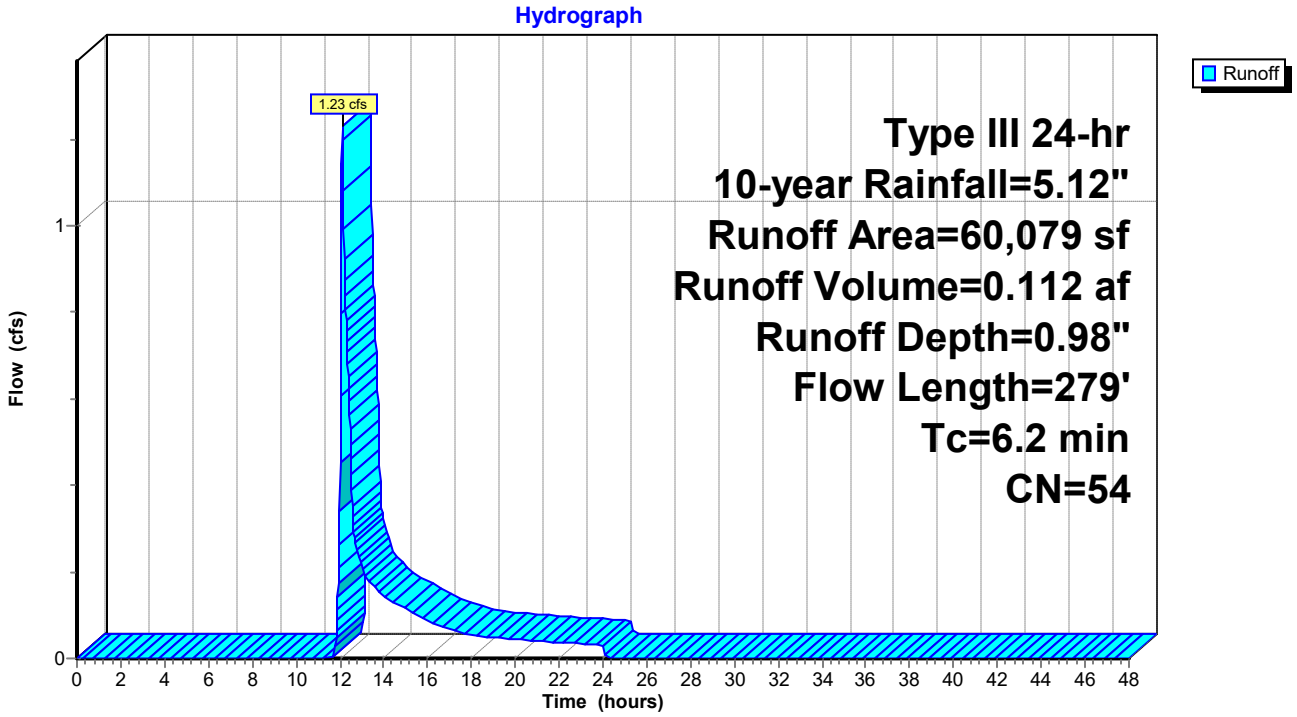
Runoff = 1.23 cfs @ 12.11 hrs, Volume= 0.112 af, Depth= 0.98"
Routed to Link 1L : EXIST CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.12"

Area (sf)	CN	Description
3,850	98	Paved parking, HSG B
16,730	36	Woods, Fair, HSG A
1,967	39	>75% Grass cover, Good, HSG A
19,766	55	Woods, Good, HSG B
17,766	61	>75% Grass cover, Good, HSG B
60,079	54	Weighted Average
56,229		93.59% Pervious Area
3,850		6.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	35	0.2429	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	45	0.1555	1.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	65	0.0651	1.28		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	79	0.0886	1.49		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.8	55	0.0545	1.17		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
6.2	279	Total			

Subcatchment 1S: XDA-1 TO DESIGN LINE 1



Summary for Subcatchment 2S: FDA-1 TO SWMP-2A

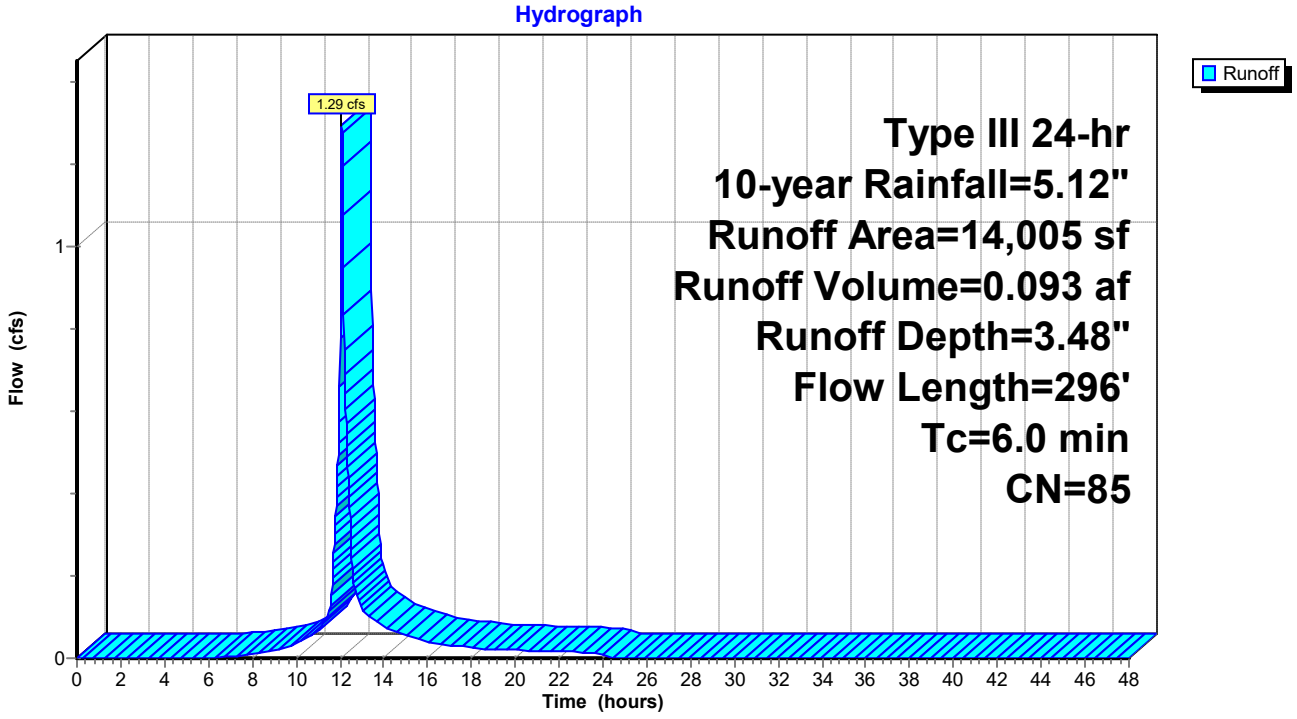
Runoff = 1.29 cfs @ 12.09 hrs, Volume= 0.093 af, Depth= 3.48"
Routed to Pond 1P : SWMP DETENTION FACILITY 36" PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.12"

Area (sf)	CN	Description
9,091	98	Paved parking, HSG B
4,004	61	>75% Grass cover, Good, HSG B
910	55	Woods, Good, HSG B
14,005	85	Weighted Average
4,914		35.09% Pervious Area
9,091		64.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	30	0.1333	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	266	0.7440	17.51		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.0					**Direct Entry, FACTOR**
6.0	296	Total			

Subcatchment 2S: FDA-1 TO SWMP-2A



Summary for Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1

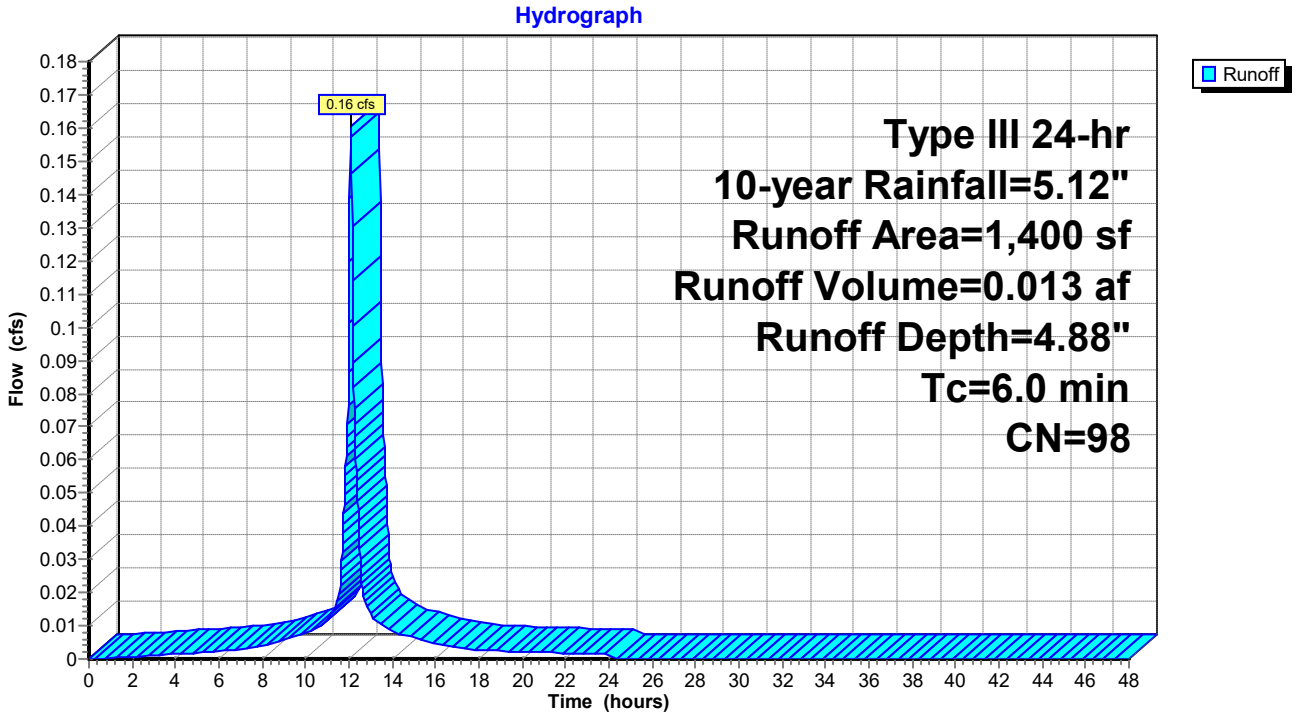
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 4.88"
Routed to Pond 2P : RAIN GARDEN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.12"

	Area (sf)	CN	Description
*	1,400	98	Pool & Pool Patio, HSG B
	1,400		100.00% Impervious Area

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

Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1



Summary for Subcatchment 4S: FDA-2A TO RAIN GARDEN #2

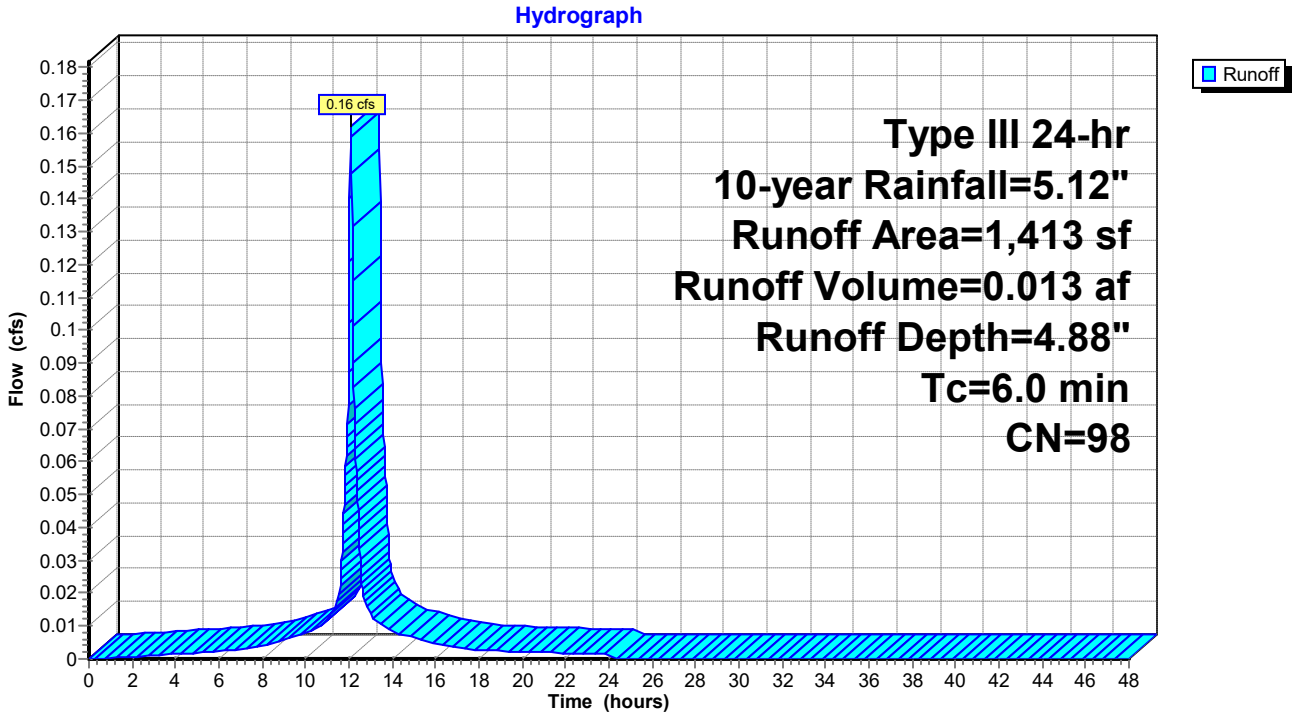
Runoff = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af, Depth= 4.88"
Routed to Pond 3P : RAIN GARDEN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.12"

Area (sf)	CN	Description
1,413	98	Roofs, HSG B
1,413		100.00% Impervious Area

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

Subcatchment 4S: FDA-2A TO RAIN GARDEN #2



Summary for Subcatchment 5S: FDA-3 TO DESIGN LINE 1

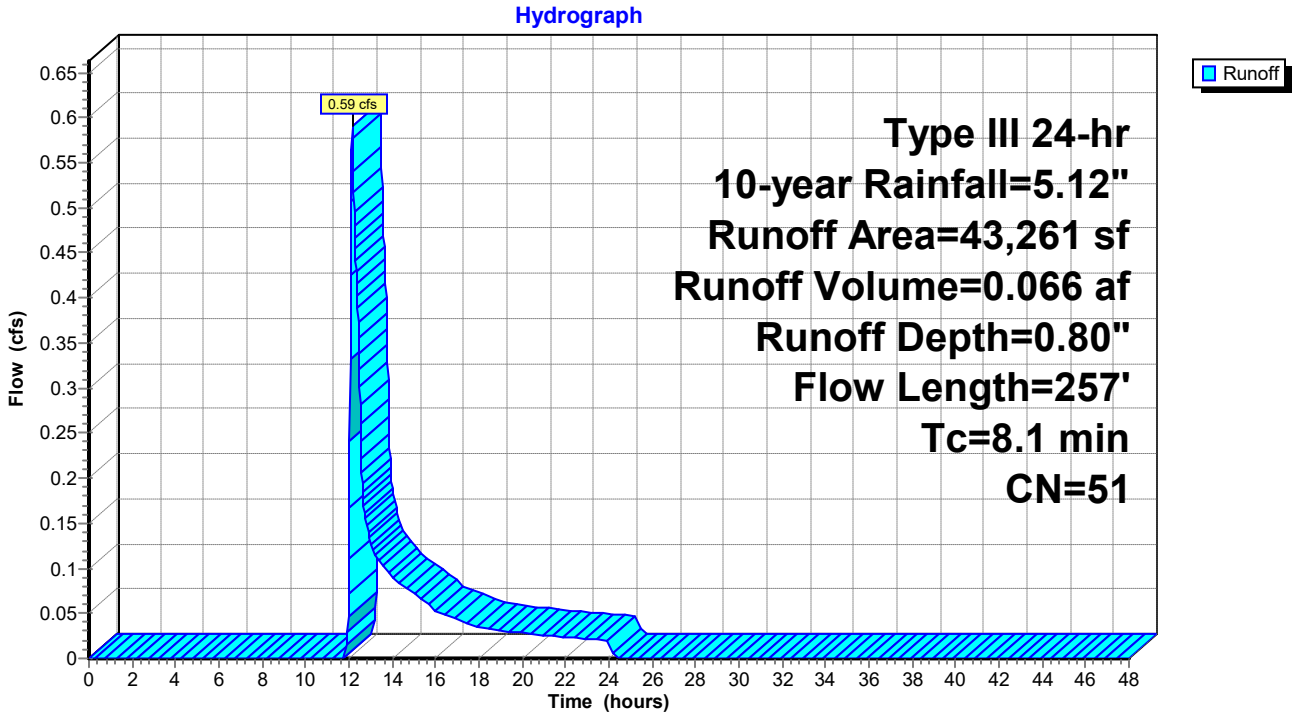
Runoff = 0.59 cfs @ 12.15 hrs, Volume= 0.066 af, Depth= 0.80"
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.12"

	Area (sf)	CN	Description
*	1,116	98	Impervious patio surface, HSG B
	7,943	39	>75% Grass cover, Good, HSG A
	8,933	30	Woods, Good, HSG A
	22,854	61	>75% Grass cover, Good, HSG B
	2,415	55	Woods, Good, HSG B
	43,261	51	Weighted Average
	42,145		97.42% Pervious Area
	1,116		2.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	38	0.0395	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	75	0.0573	3.59		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.2	61	0.1508	5.82		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
0.3	83	0.0843	4.36		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
8.1	257	Total			

Subcatchment 5S: FDA-3 TO DESIGN LINE 1



Summary for Pond 1P: SWMP DETENTION FACILITY 36" PIPE

Inflow Area = 0.322 ac, 64.91% Impervious, Inflow Depth = 3.48" for 10-year event
Inflow = 1.29 cfs @ 12.09 hrs, Volume= 0.093 af
Outflow = 0.53 cfs @ 12.31 hrs, Volume= 0.093 af, Atten= 59%, Lag= 13.6 min
Primary = 0.53 cfs @ 12.31 hrs, Volume= 0.093 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 72.76' @ 12.31 hrs Surf.Area= 920 sf Storage= 1,509 cf

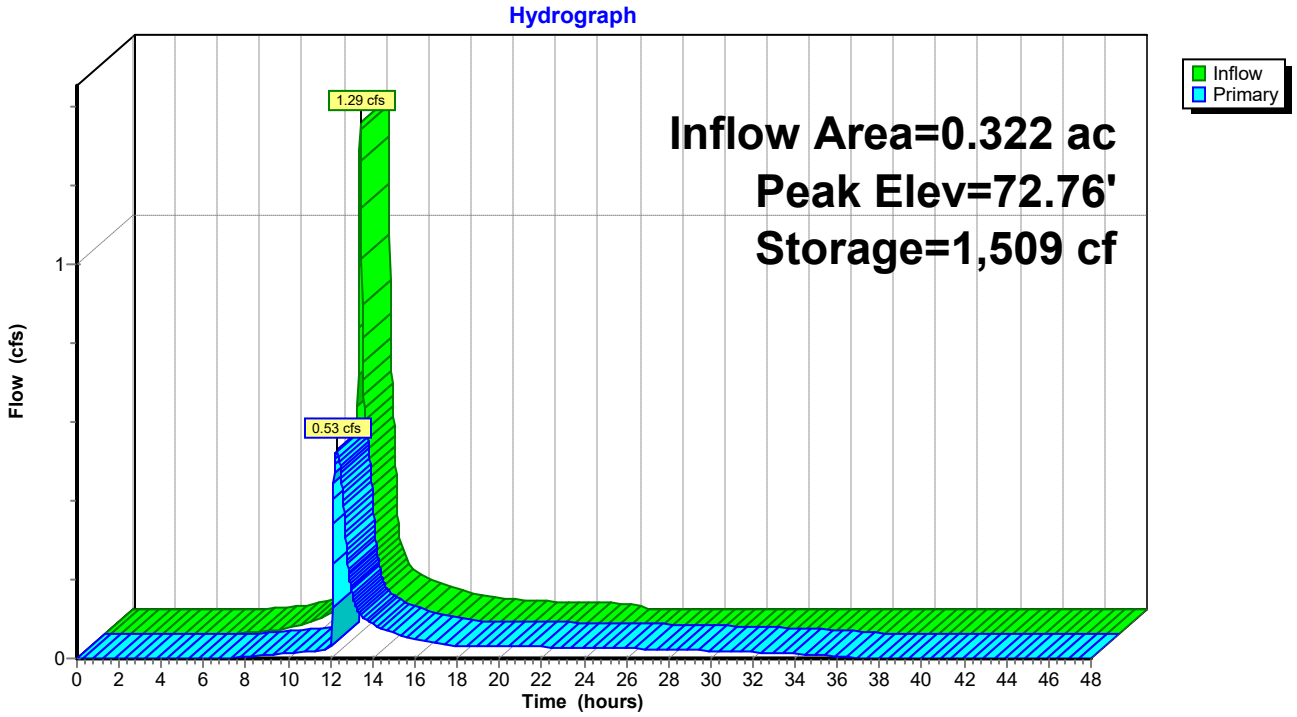
Plug-Flow detention time= 253.8 min calculated for 0.093 af (100% of inflow)
Center-of-Mass det. time= 253.7 min (1,060.3 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1	70.85'	2,251 cf	**36.0" Round Pipe Storage 36" Diam.** L= 318.5'

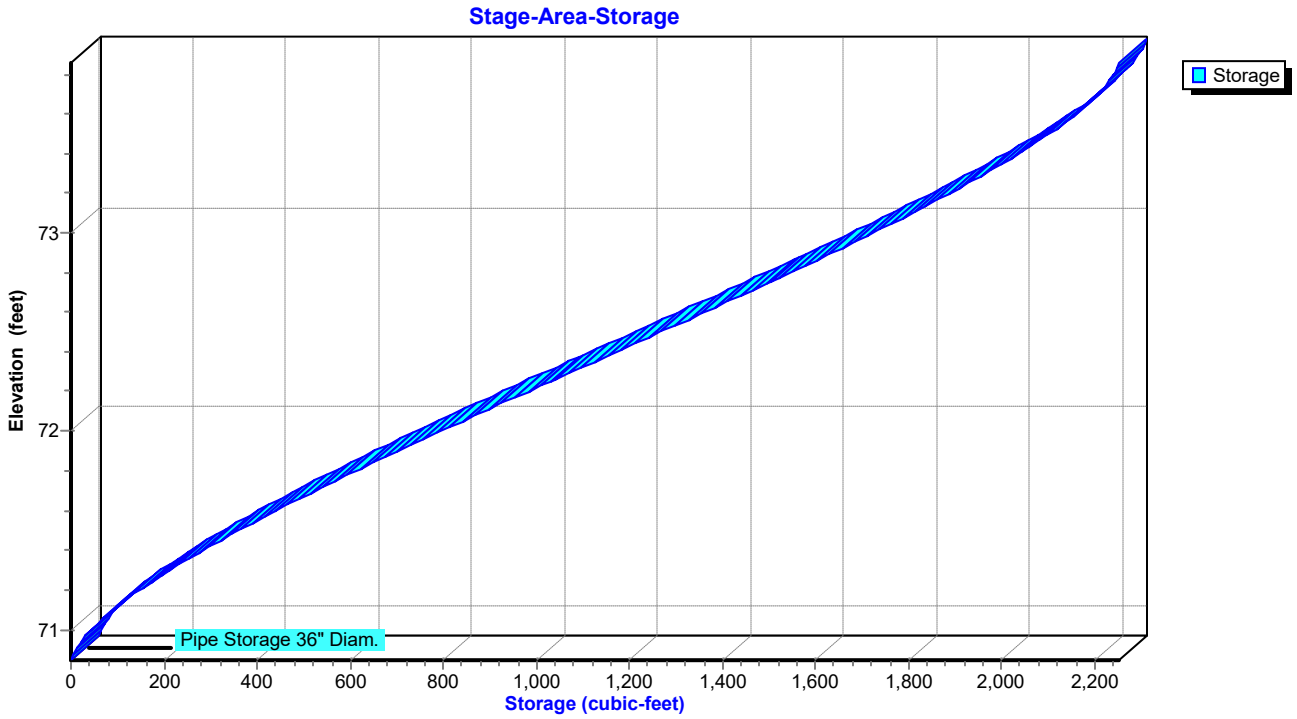
Device	Routing	Invert	Outlet Devices
#1	Primary	70.85'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	72.25'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Primary	72.75'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	73.80'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.53 cfs @ 12.31 hrs HW=72.76' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 6.57 fps)
- **2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 2.81 fps)
- **3=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.27 fps)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Summary for Pond 2P: RAIN GARDEN #1

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 4.88" for 10-year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af
Outflow = 0.03 cfs @ 12.50 hrs, Volume= 0.013 af, Atten= 79%, Lag= 24.8 min
Discarded = 0.03 cfs @ 12.50 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.81' @ 12.50 hrs Surf.Area= 485 sf Storage= 136 cf

Plug-Flow detention time= 22.6 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 22.6 min (770.2 - 747.6)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	531 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

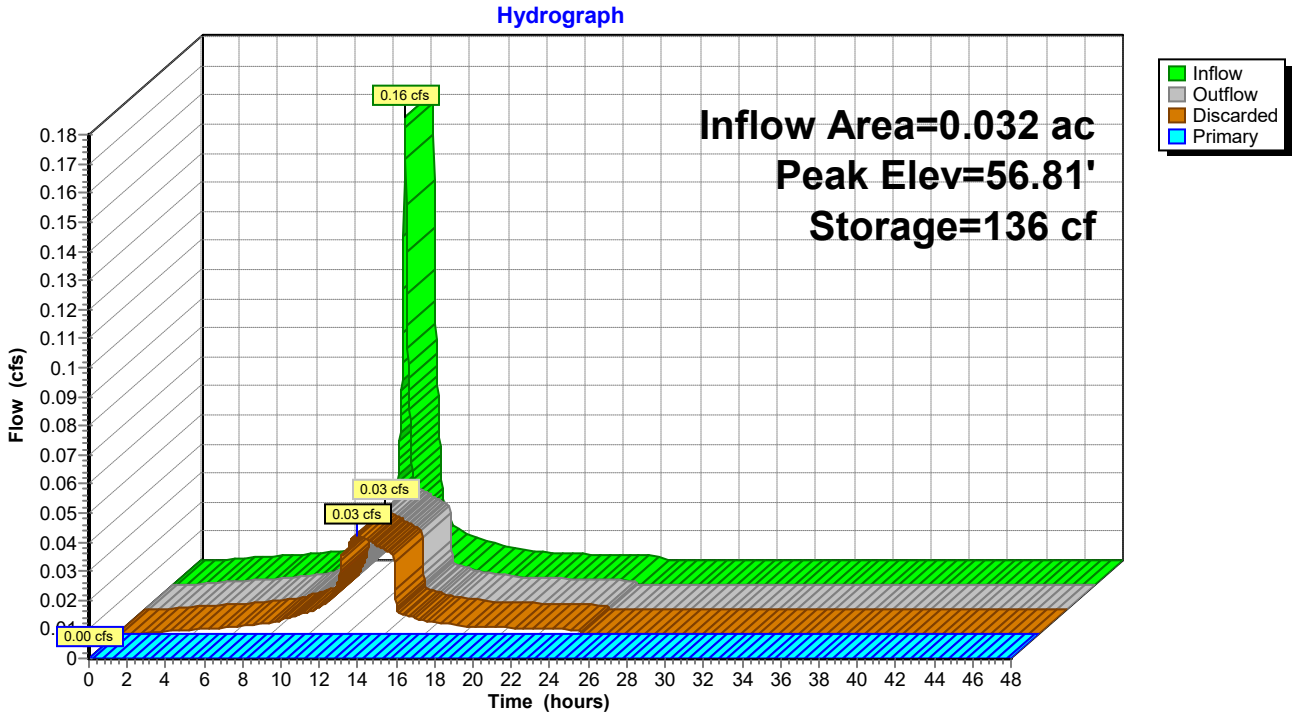
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	386	0	0
56.75	464	106	106
57.00	550	127	233
57.50	641	298	531

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

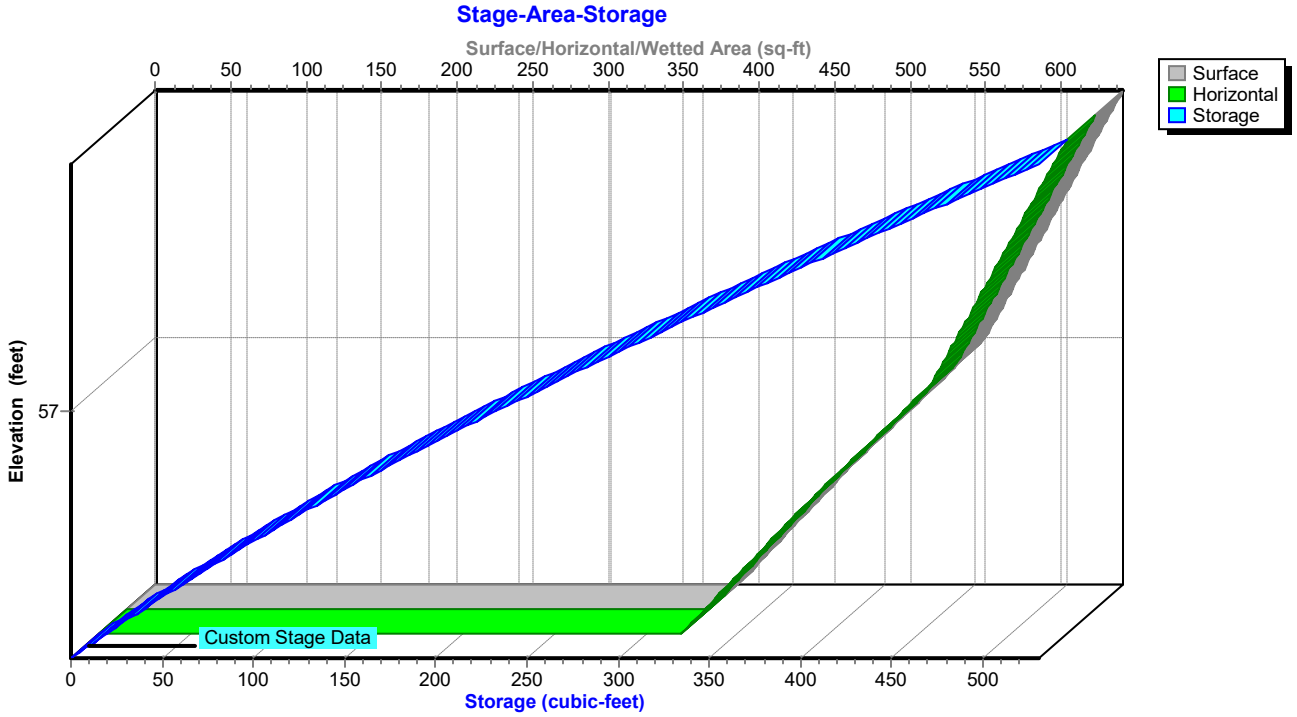
Discarded OutFlow Max=0.03 cfs @ 12.50 hrs HW=56.81' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: RAIN GARDEN #1



Pond 2P: RAIN GARDEN #1



Summary for Pond 3P: RAIN GARDEN #2

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 4.88" for 10-year event
Inflow = 0.16 cfs @ 12.08 hrs, Volume= 0.013 af
Outflow = 0.03 cfs @ 12.50 hrs, Volume= 0.013 af, Atten= 80%, Lag= 25.2 min
Discarded = 0.03 cfs @ 12.50 hrs, Volume= 0.013 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.85' @ 12.50 hrs Surf.Area= 474 sf Storage= 144 cf

Plug-Flow detention time= 26.7 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 26.7 min (774.3 - 747.6)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

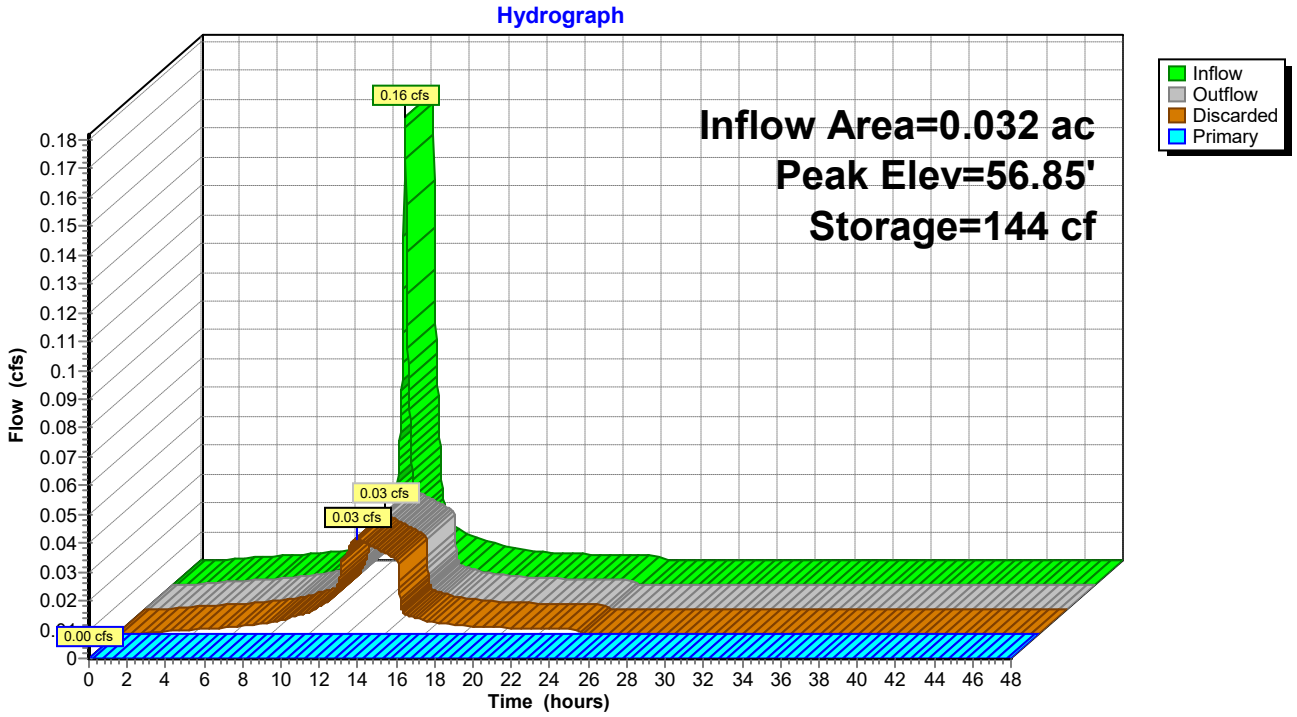
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	360	0	0
56.75	440	100	100
57.00	528	121	221
58.50	622	863	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

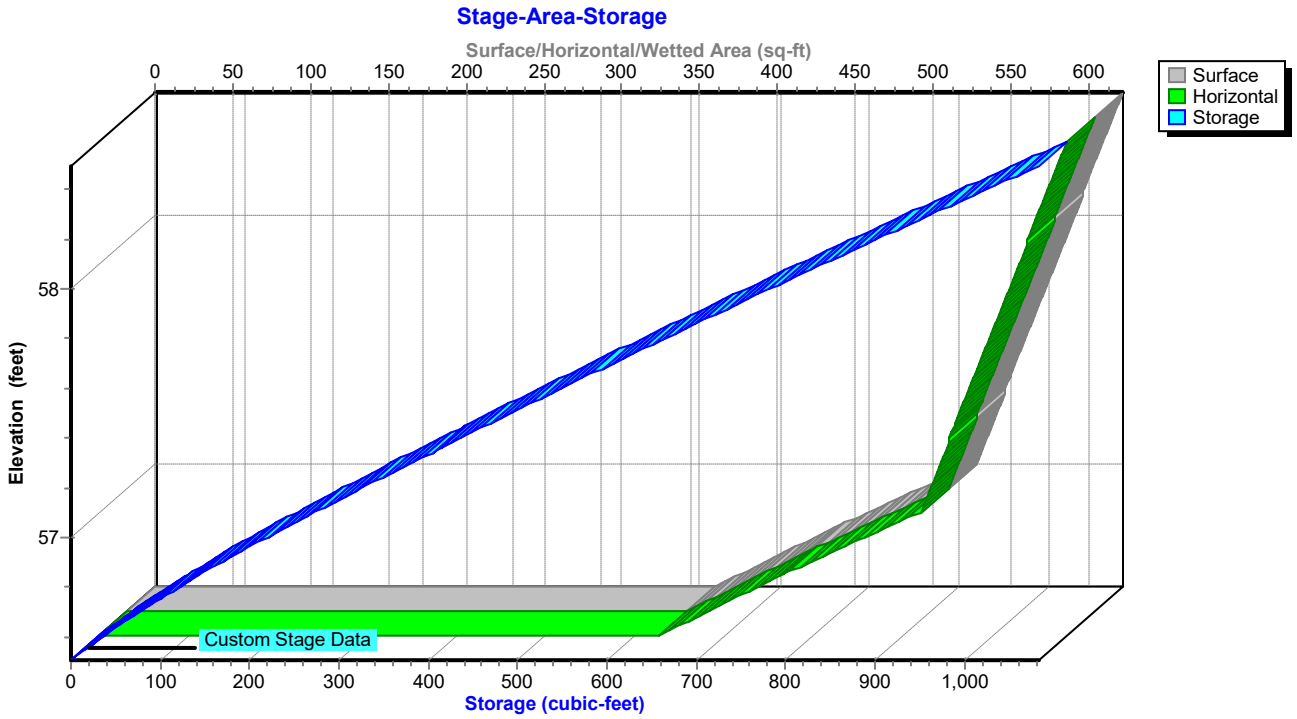
Discarded OutFlow Max=0.03 cfs @ 12.50 hrs HW=56.85' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: RAIN GARDEN #2



Pond 3P: RAIN GARDEN #2

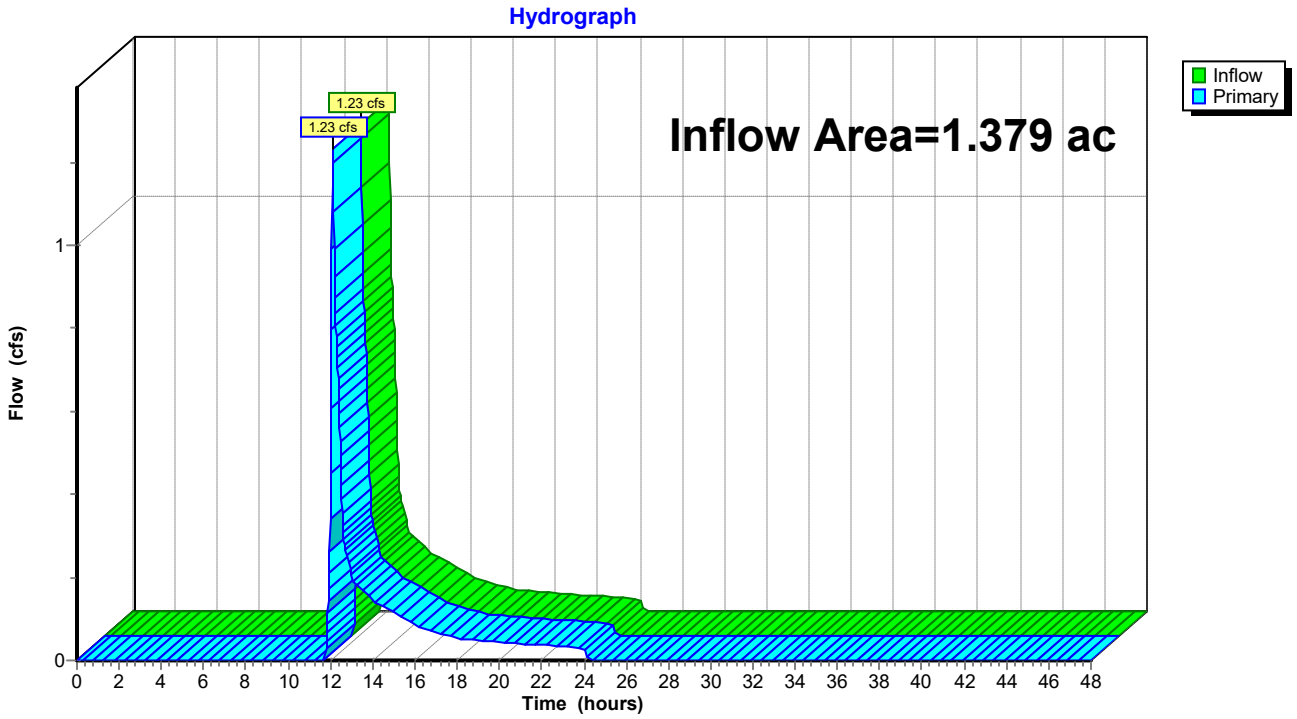


Summary for Link 1L: EXIST CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 6.41% Impervious, Inflow Depth = 0.98" for 10-year event
Inflow = 1.23 cfs @ 12.11 hrs, Volume= 0.112 af
Primary = 1.23 cfs @ 12.11 hrs, Volume= 0.112 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 1L: EXIST CONDITION DESIGN LINE

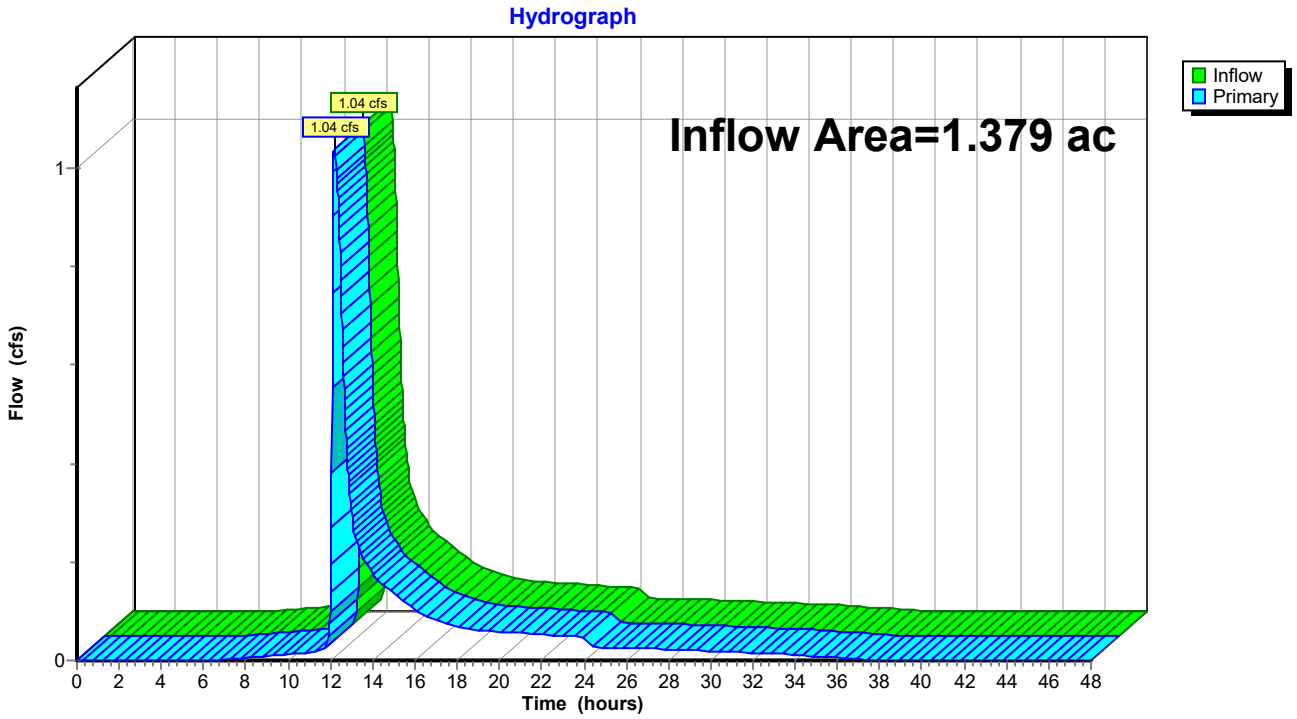


Summary for Link 2L: FUTURE CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 21.67% Impervious, Inflow Depth = 1.39" for 10-year event
Inflow = 1.04 cfs @ 12.18 hrs, Volume= 0.159 af
Primary = 1.04 cfs @ 12.18 hrs, Volume= 0.159 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 2L: FUTURE CONDITION DESIGN LINE



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: XDA-1 TO DESIGN LINE 1 Runoff Area=60,079 sf 6.41% Impervious Runoff Depth=1.70"
Flow Length=279' Tc=6.2 min CN=54 Runoff=2.46 cfs 0.196 af

Subcatchment 2S: FDA-1 TO SWMP-2A Runoff Area=14,005 sf 64.91% Impervious Runoff Depth=4.74"
Flow Length=296' Tc=6.0 min CN=85 Runoff=1.74 cfs 0.127 af

Subcatchment 3S: FDA-2B (POOL) TO Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=6.22"
Tc=6.0 min CN=98 Runoff=0.20 cfs 0.017 af

Subcatchment 4S: FDA-2A TO RAIN Runoff Area=1,413 sf 100.00% Impervious Runoff Depth=6.22"
Tc=6.0 min CN=98 Runoff=0.21 cfs 0.017 af

Subcatchment 5S: FDA-3 TO DESIGN LINE 1 Runoff Area=43,261 sf 2.58% Impervious Runoff Depth=1.46"
Flow Length=257' Tc=8.1 min CN=51 Runoff=1.33 cfs 0.121 af

Pond 1P: SWMP DETENTION FACILITY 36" Peak Elev=73.09' Storage=1,807 cf Inflow=1.74 cfs 0.127 af
Outflow=1.02 cfs 0.127 af

Pond 2P: RAIN GARDEN #1 Peak Elev=56.92' Storage=192 cf Inflow=0.20 cfs 0.017 af
Discarded=0.04 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.017 af

Pond 3P: RAIN GARDEN #2 Peak Elev=56.96' Storage=202 cf Inflow=0.21 cfs 0.017 af
Discarded=0.04 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.017 af

Link 1L: EXIST CONDITION DESIGN LINE Inflow=2.46 cfs 0.196 af
Primary=2.46 cfs 0.196 af

Link 2L: FUTURE CONDITION DESIGN LINE Inflow=2.27 cfs 0.247 af
Primary=2.27 cfs 0.247 af

Total Runoff Area = 2.758 ac Runoff Volume = 0.477 af Average Runoff Depth = 2.07"
85.96% Pervious = 2.371 ac 14.04% Impervious = 0.387 ac

Summary for Subcatchment 1S: XDA-1 TO DESIGN LINE 1

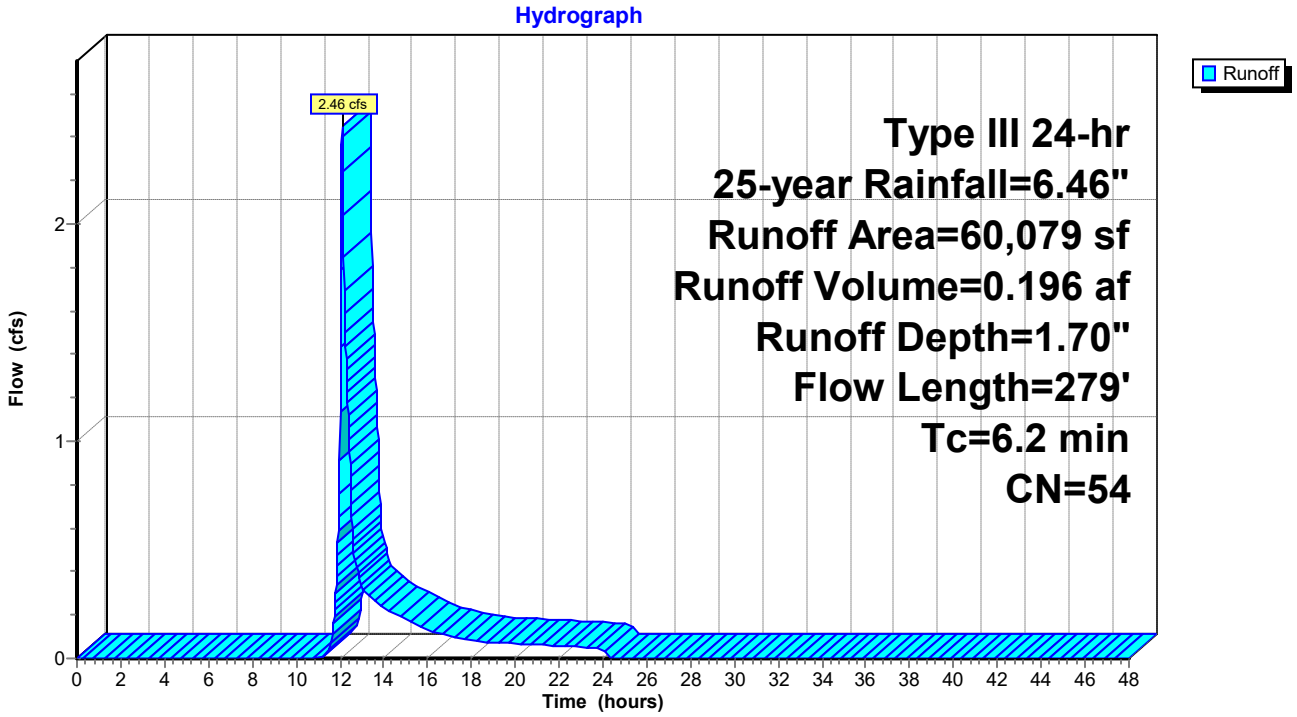
Runoff = 2.46 cfs @ 12.10 hrs, Volume= 0.196 af, Depth= 1.70"
Routed to Link 1L : EXIST CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.46"

Area (sf)	CN	Description
3,850	98	Paved parking, HSG B
16,730	36	Woods, Fair, HSG A
1,967	39	>75% Grass cover, Good, HSG A
19,766	55	Woods, Good, HSG B
17,766	61	>75% Grass cover, Good, HSG B
60,079	54	Weighted Average
56,229		93.59% Pervious Area
3,850		6.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	35	0.2429	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	45	0.1555	1.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	65	0.0651	1.28		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	79	0.0886	1.49		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.8	55	0.0545	1.17		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
6.2	279	Total			

Subcatchment 1S: XDA-1 TO DESIGN LINE 1



Summary for Subcatchment 2S: FDA-1 TO SWMP-2A

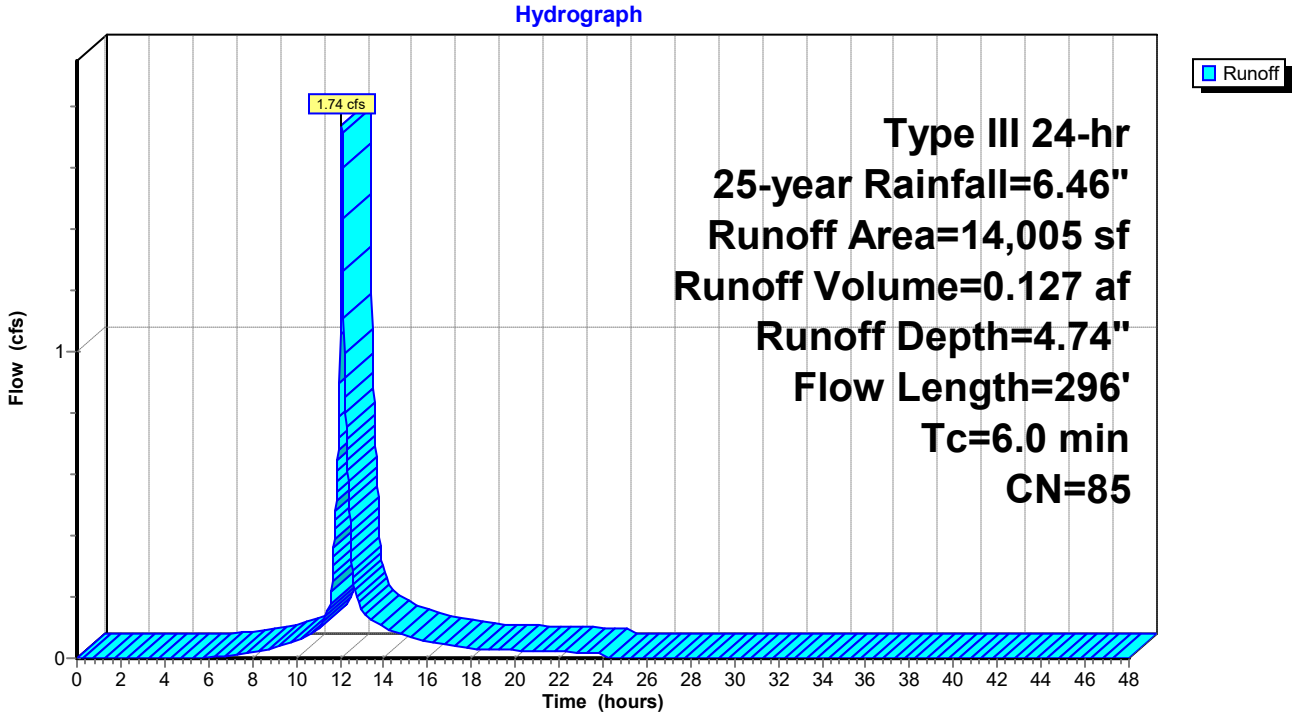
Runoff = 1.74 cfs @ 12.09 hrs, Volume= 0.127 af, Depth= 4.74"
Routed to Pond 1P : SWMP DETENTION FACILITY 36" PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.46"

Area (sf)	CN	Description
9,091	98	Paved parking, HSG B
4,004	61	>75% Grass cover, Good, HSG B
910	55	Woods, Good, HSG B
14,005	85	Weighted Average
4,914		35.09% Pervious Area
9,091		64.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	30	0.1333	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	266	0.7440	17.51		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.0					**Direct Entry, FACTOR**
6.0	296	Total			

Subcatchment 2S: FDA-1 TO SWMP-2A



Summary for Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1

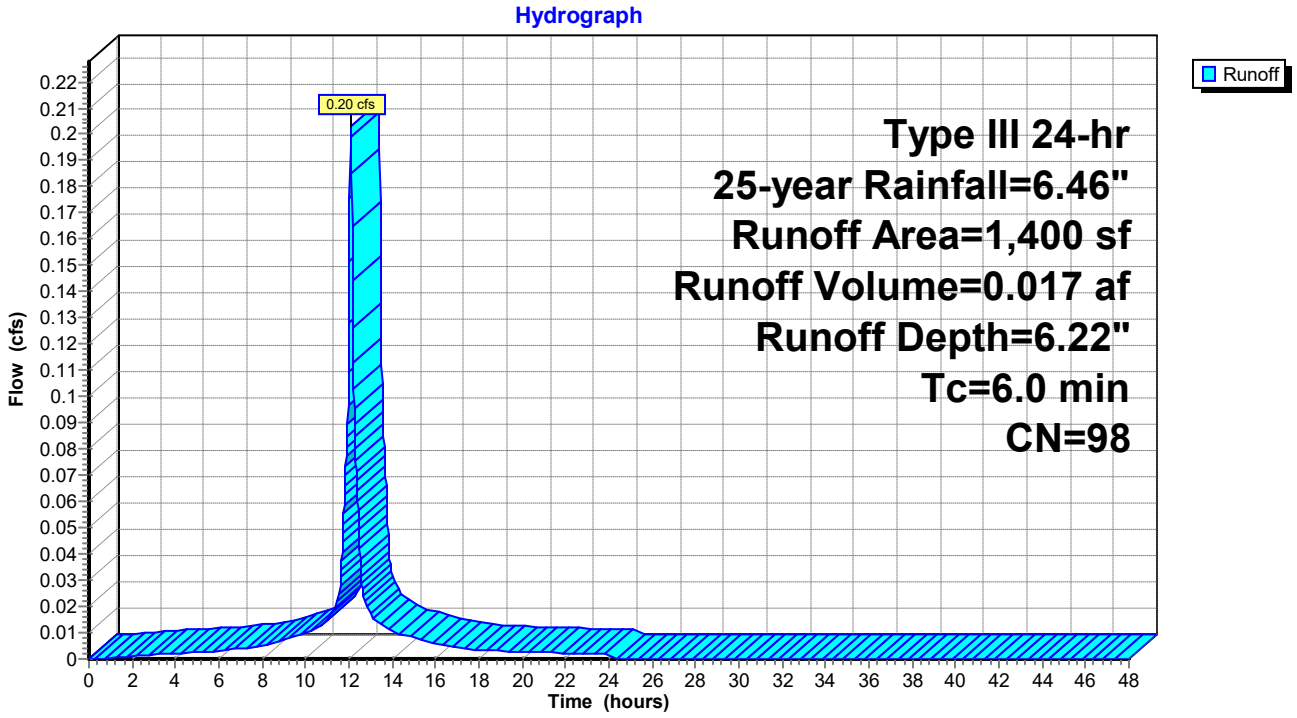
Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 6.22"
Routed to Pond 2P : RAIN GARDEN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.46"

	Area (sf)	CN	Description
*	1,400	98	Pool & Pool Patio, HSG B
	1,400		100.00% Impervious Area

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

Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1



Summary for Subcatchment 4S: FDA-2A TO RAIN GARDEN #2

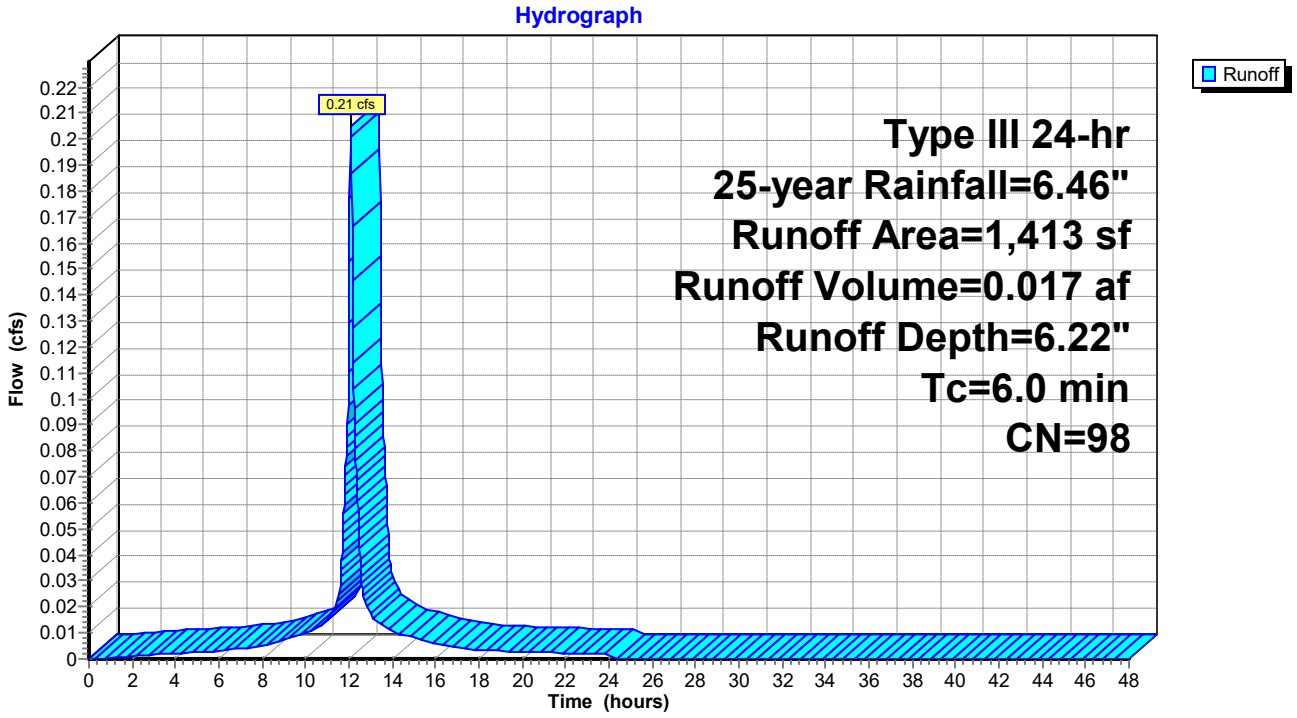
Runoff = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af, Depth= 6.22"
Routed to Pond 3P : RAIN GARDEN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.46"

Area (sf)	CN	Description
1,413	98	Roofs, HSG B
1,413		100.00% Impervious Area

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

Subcatchment 4S: FDA-2A TO RAIN GARDEN #2



Summary for Subcatchment 5S: FDA-3 TO DESIGN LINE 1

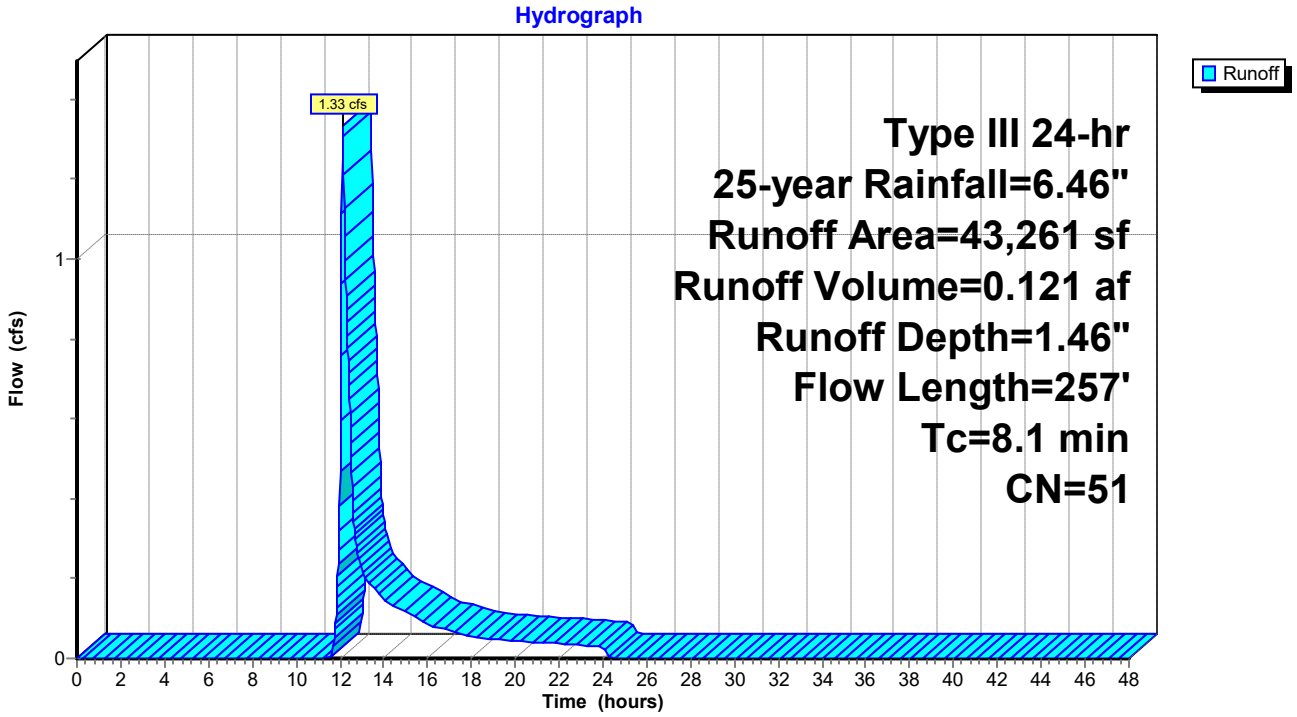
Runoff = 1.33 cfs @ 12.13 hrs, Volume= 0.121 af, Depth= 1.46"
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.46"

	Area (sf)	CN	Description
*	1,116	98	Impervious patio surface, HSG B
	7,943	39	>75% Grass cover, Good, HSG A
	8,933	30	Woods, Good, HSG A
	22,854	61	>75% Grass cover, Good, HSG B
	2,415	55	Woods, Good, HSG B
	43,261	51	Weighted Average
	42,145		97.42% Pervious Area
	1,116		2.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	38	0.0395	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	75	0.0573	3.59		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.2	61	0.1508	5.82		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
0.3	83	0.0843	4.36		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
8.1	257	Total			

Subcatchment 5S: FDA-3 TO DESIGN LINE 1



Summary for Pond 1P: SWMP DETENTION FACILITY 36" PIPE

Inflow Area = 0.322 ac, 64.91% Impervious, Inflow Depth = 4.74" for 25-year event
Inflow = 1.74 cfs @ 12.09 hrs, Volume= 0.127 af
Outflow = 1.02 cfs @ 12.20 hrs, Volume= 0.127 af, Atten= 41%, Lag= 6.7 min
Primary = 1.02 cfs @ 12.20 hrs, Volume= 0.127 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 73.09' @ 12.20 hrs Surf.Area= 829 sf Storage= 1,807 cf

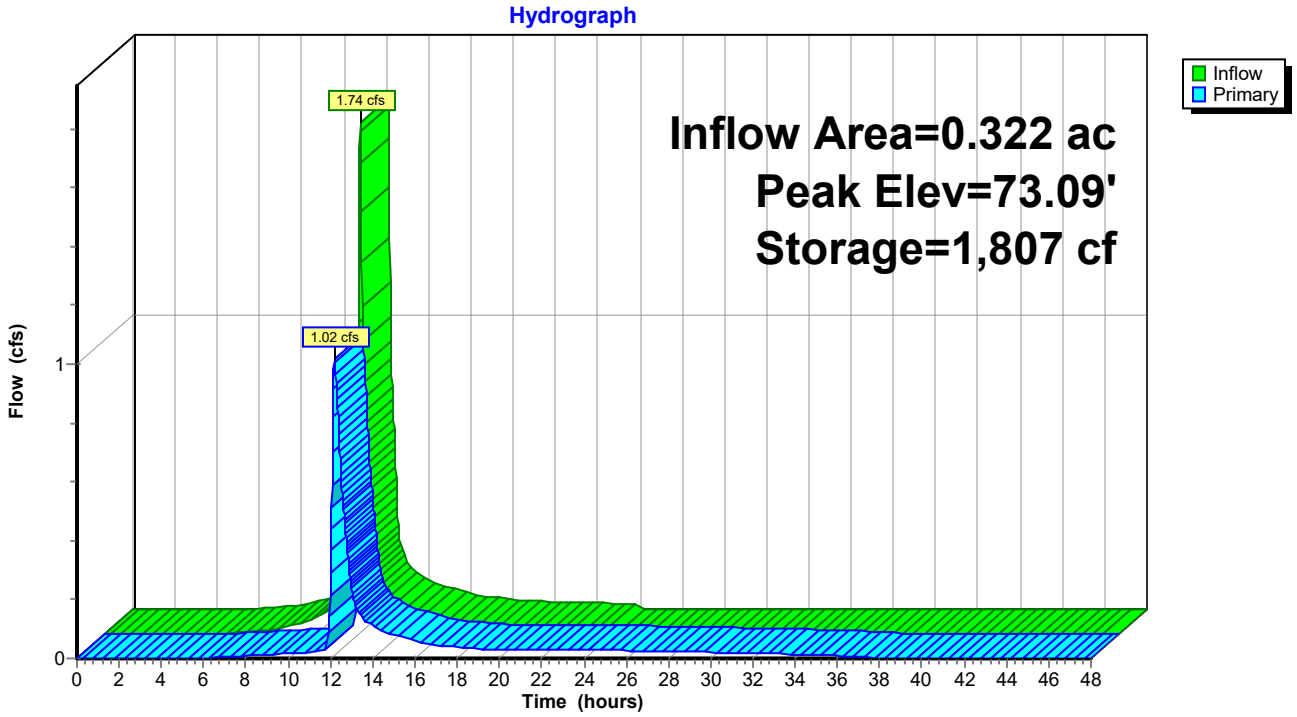
Plug-Flow detention time= 208.7 min calculated for 0.127 af (100% of inflow)
Center-of-Mass det. time= 209.0 min (1,006.9 - 797.9)

Volume	Invert	Avail.Storage	Storage Description
#1	70.85'	2,251 cf	**36.0" Round Pipe Storage 36" Diam.** L= 318.5'

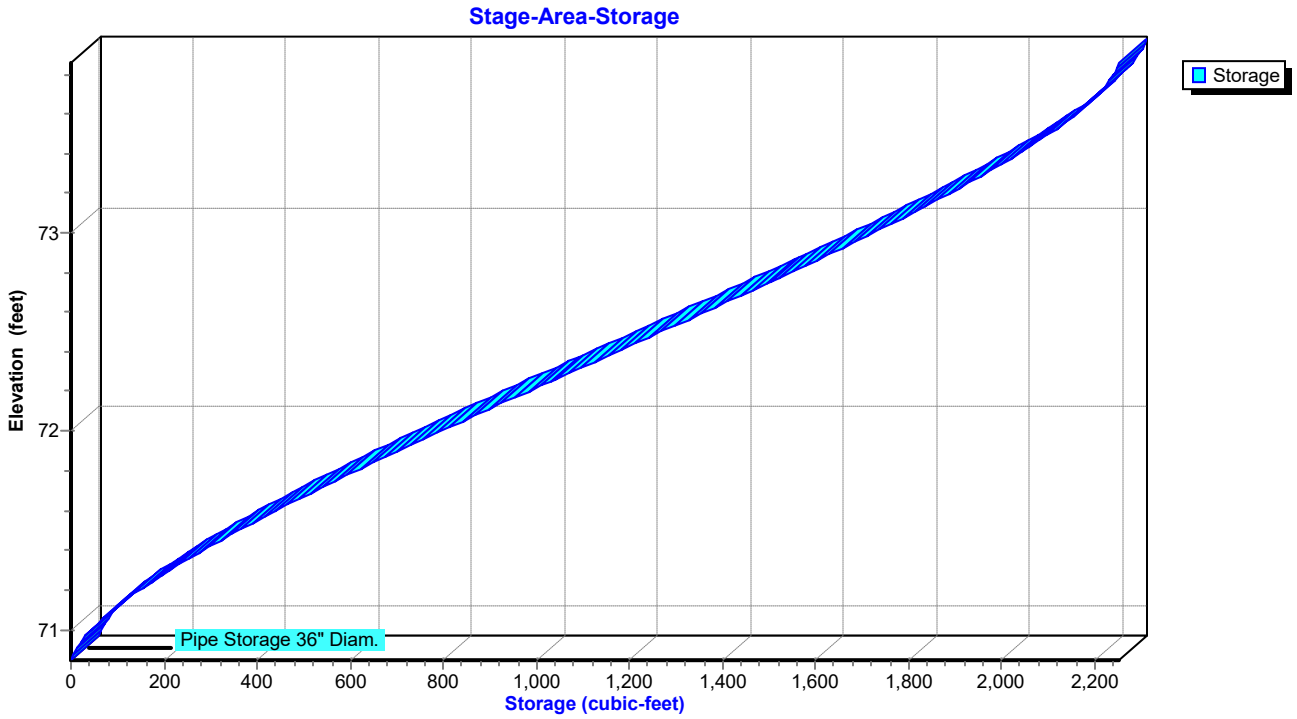
Device	Routing	Invert	Outlet Devices
#1	Primary	70.85'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	72.25'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Primary	72.75'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	73.80'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.02 cfs @ 12.20 hrs HW=73.09' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 7.15 fps)
- **2=Orifice/Grate** (Orifice Controls 0.69 cfs @ 3.96 fps)
- **3=Orifice/Grate** (Orifice Controls 0.29 cfs @ 2.00 fps)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Summary for Pond 2P: RAIN GARDEN #1

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 6.22" for 25-year event
Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.04 cfs @ 12.53 hrs, Volume= 0.017 af, Atten= 82%, Lag= 26.8 min
Discarded = 0.04 cfs @ 12.53 hrs, Volume= 0.017 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.92' @ 12.53 hrs Surf.Area= 524 sf Storage= 192 cf

Plug-Flow detention time= 31.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 31.7 min (775.8 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	531 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

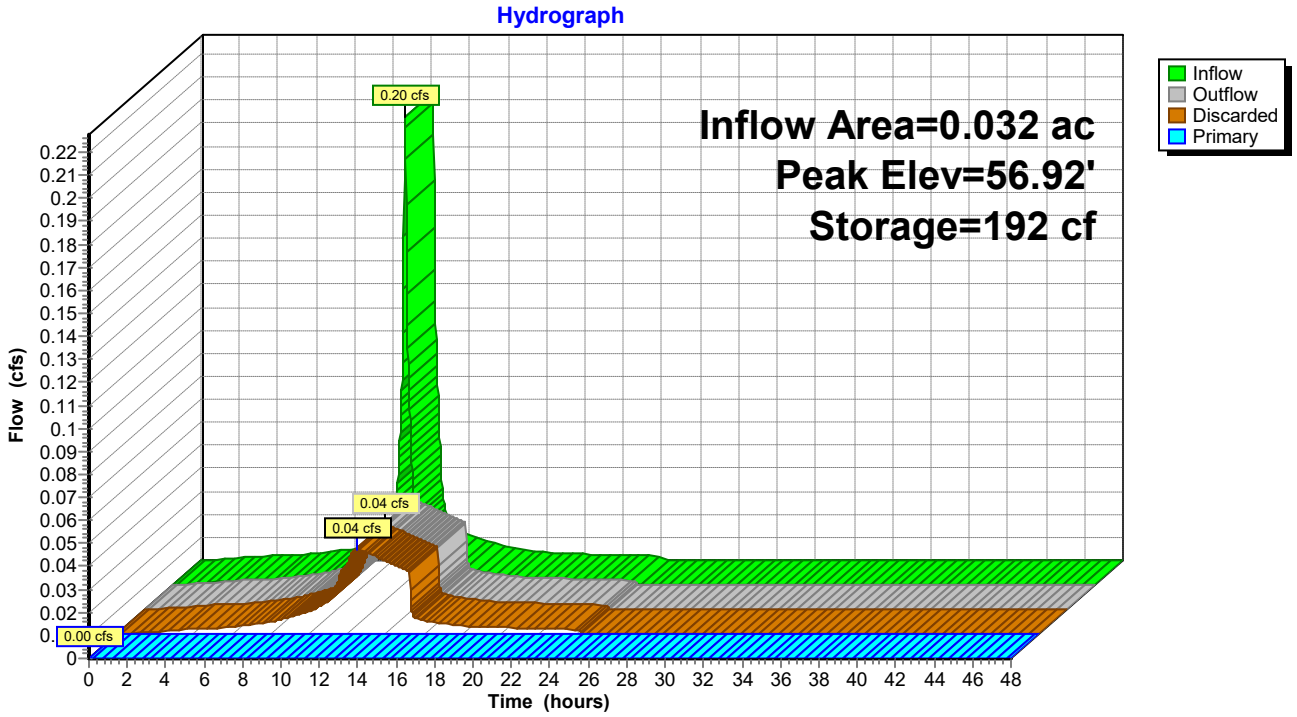
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	386	0	0
56.75	464	106	106
57.00	550	127	233
57.50	641	298	531

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir**
			Head (feet) 0.49 0.98 1.48
			Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

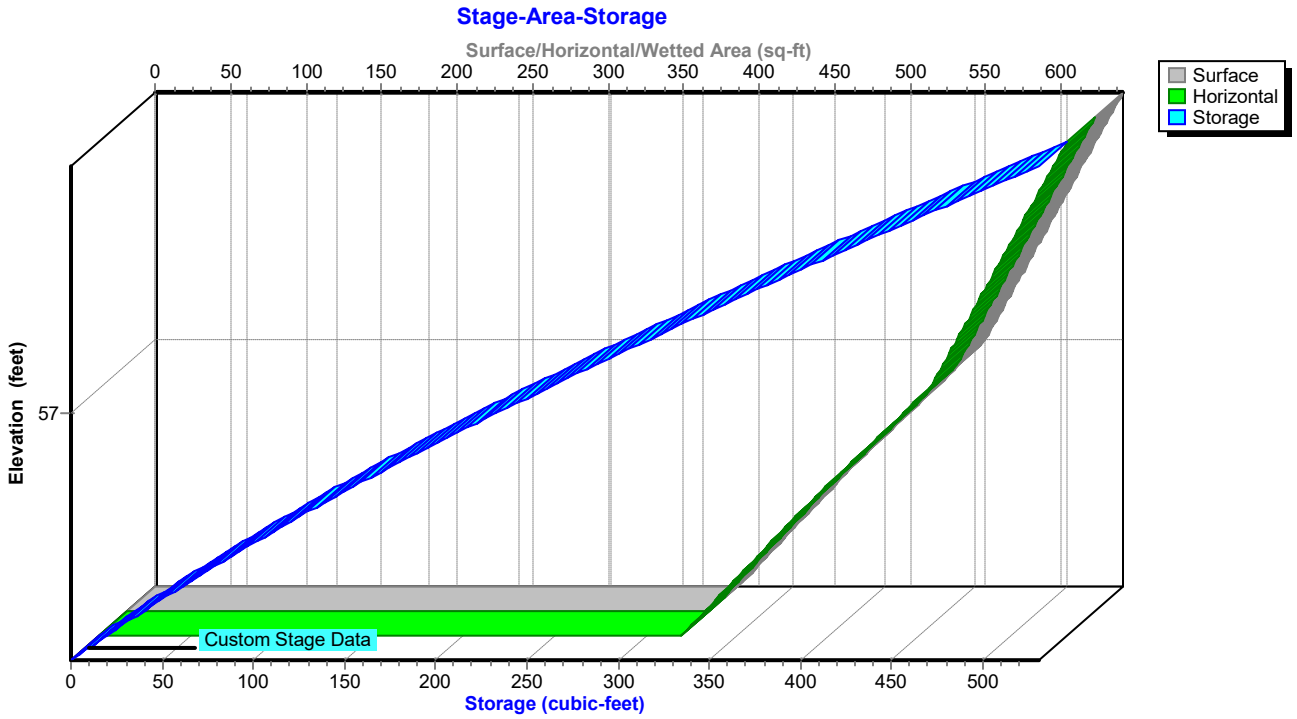
Discarded OutFlow Max=0.04 cfs @ 12.53 hrs HW=56.92' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: RAIN GARDEN #1



Pond 2P: RAIN GARDEN #1



Summary for Pond 3P: RAIN GARDEN #2

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 6.22" for 25-year event
Inflow = 0.21 cfs @ 12.08 hrs, Volume= 0.017 af
Outflow = 0.04 cfs @ 12.54 hrs, Volume= 0.017 af, Atten= 83%, Lag= 27.2 min
Discarded = 0.04 cfs @ 12.54 hrs, Volume= 0.017 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 56.96' @ 12.54 hrs Surf.Area= 515 sf Storage= 202 cf

Plug-Flow detention time= 36.1 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 36.1 min (780.2 - 744.1)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

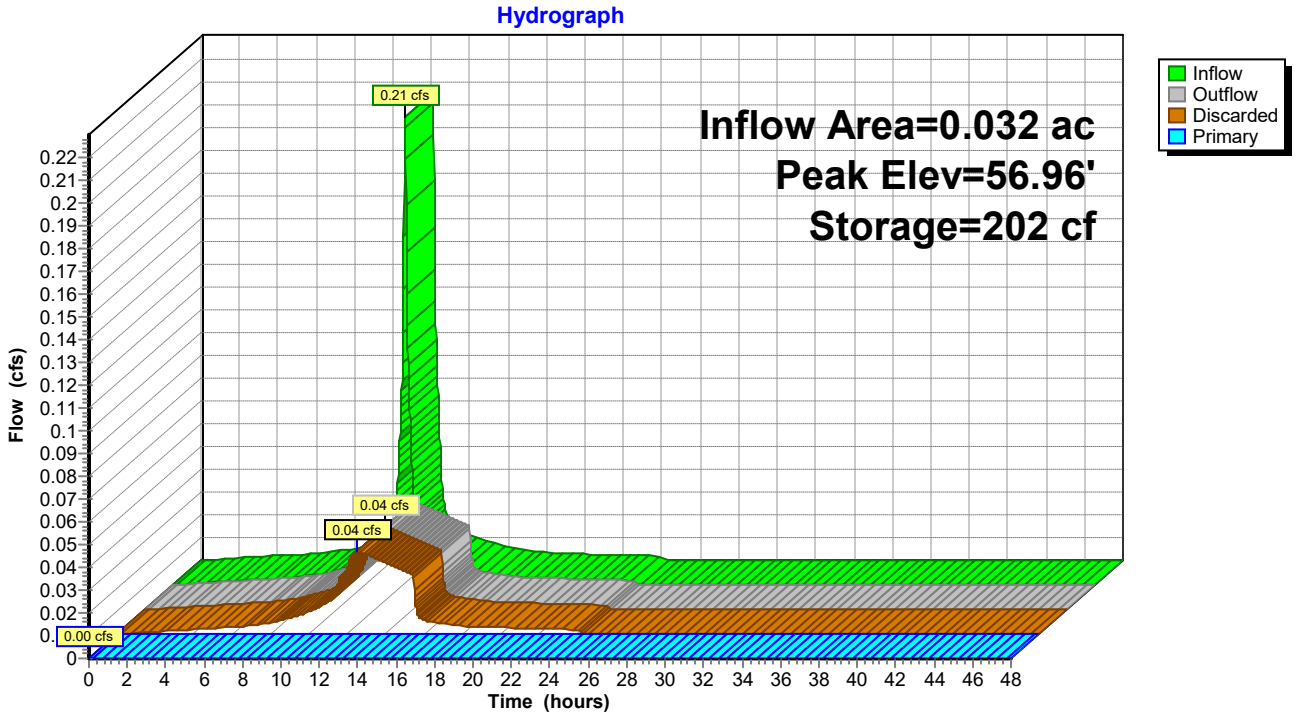
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	360	0	0
56.75	440	100	100
57.00	528	121	221
58.50	622	863	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

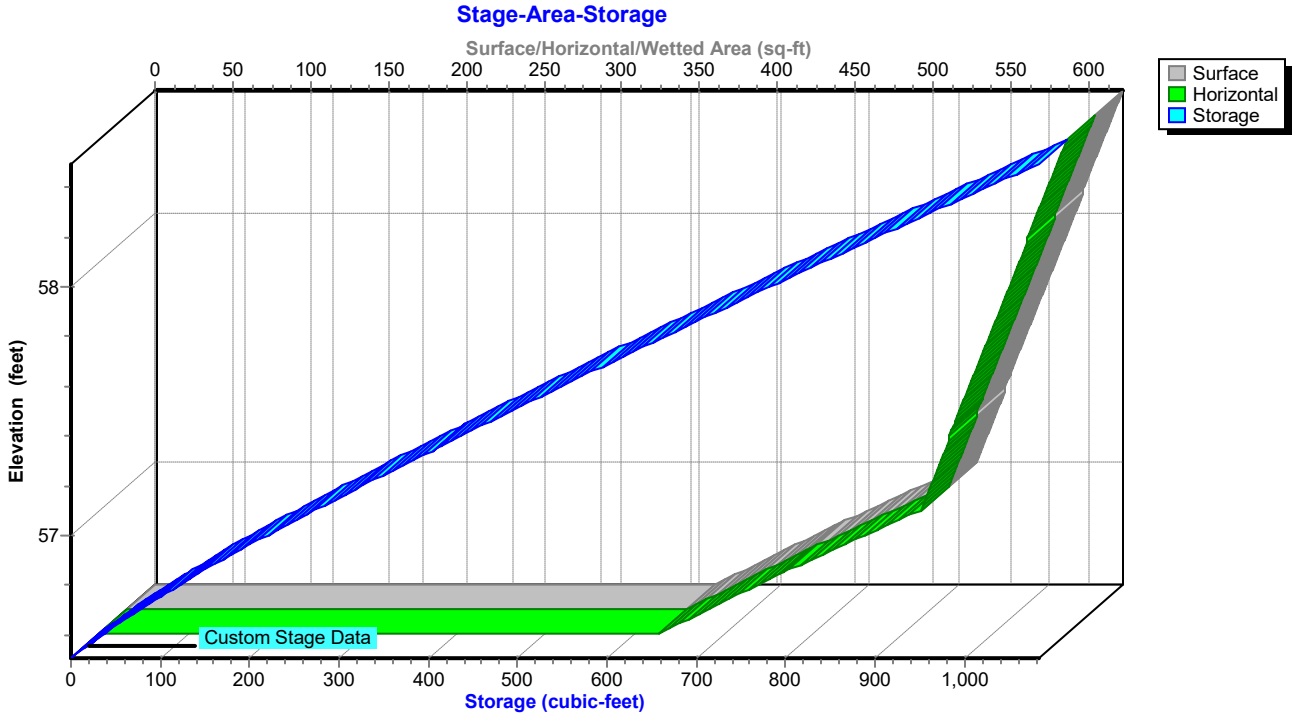
Discarded OutFlow Max=0.04 cfs @ 12.54 hrs HW=56.96' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=56.50' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: RAIN GARDEN #2



Pond 3P: RAIN GARDEN #2

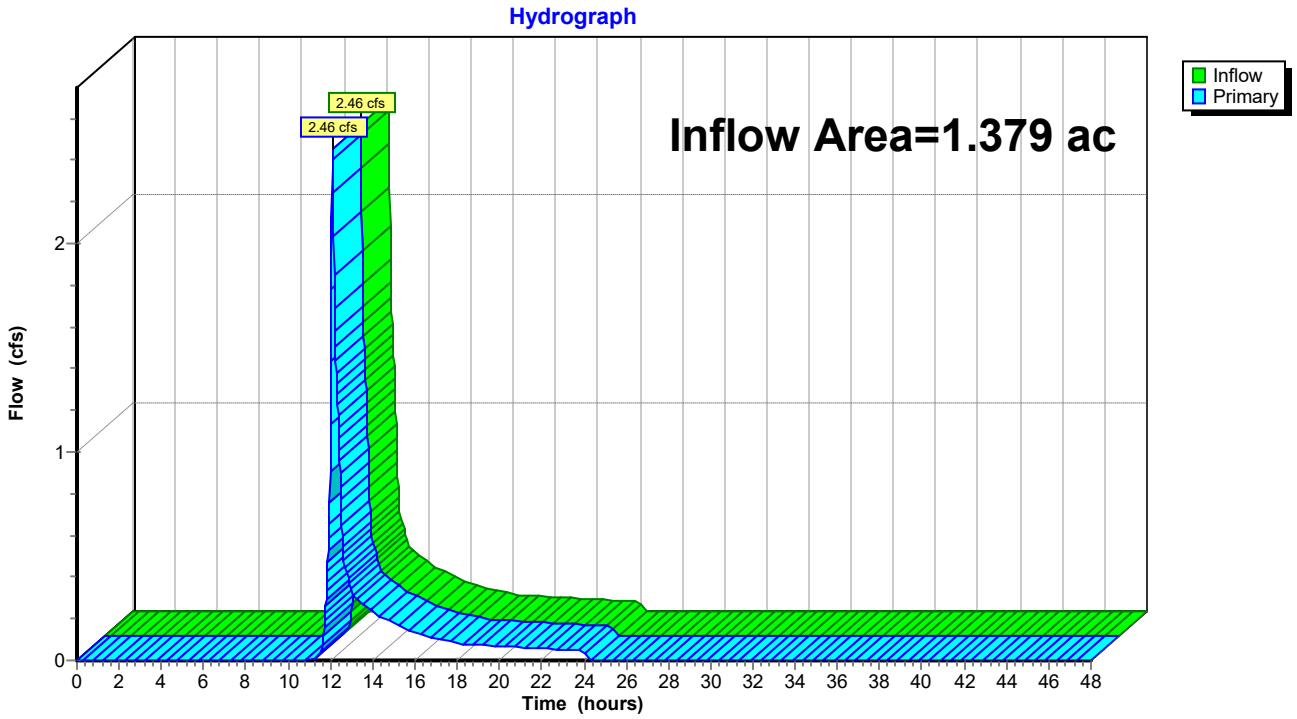


Summary for Link 1L: EXIST CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 6.41% Impervious, Inflow Depth = 1.70" for 25-year event
Inflow = 2.46 cfs @ 12.10 hrs, Volume= 0.196 af
Primary = 2.46 cfs @ 12.10 hrs, Volume= 0.196 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 1L: EXIST CONDITION DESIGN LINE

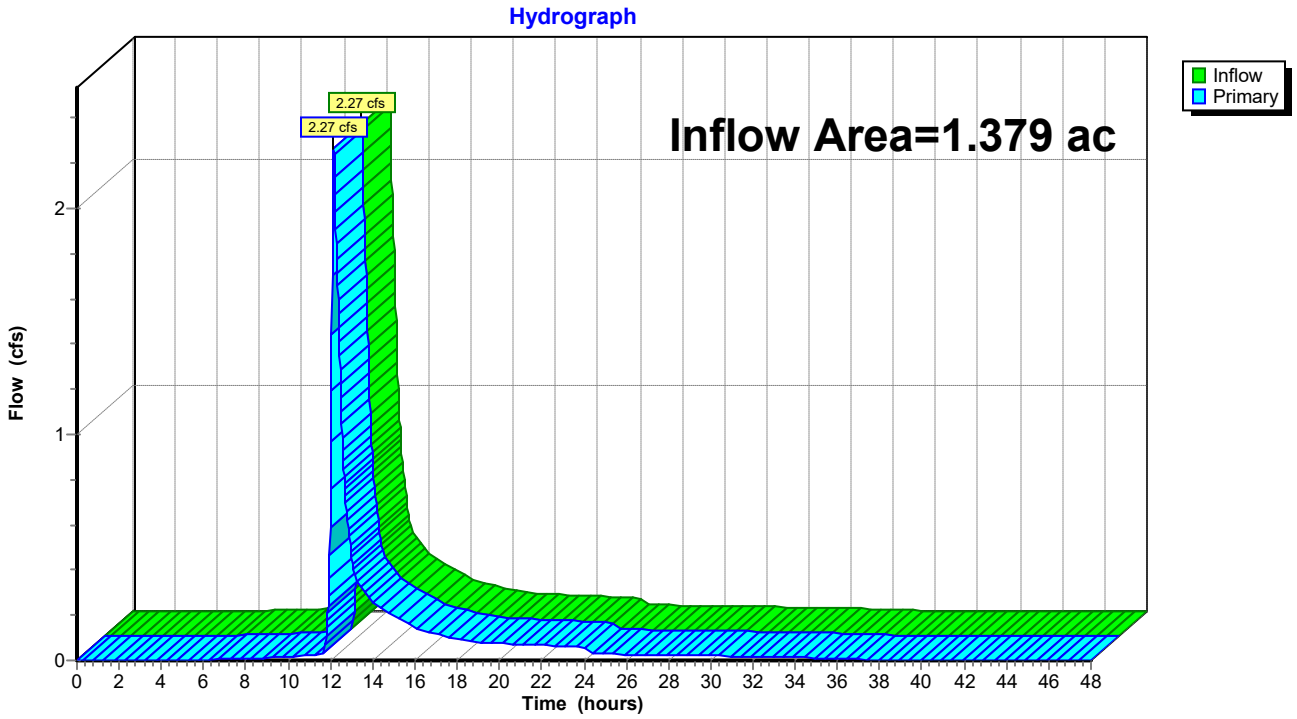


Summary for Link 2L: FUTURE CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 21.67% Impervious, Inflow Depth = 2.15" for 25-year event
Inflow = 2.27 cfs @ 12.16 hrs, Volume= 0.247 af
Primary = 2.27 cfs @ 12.16 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 2L: FUTURE CONDITION DESIGN LINE



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: XDA-1 TO DESIGN LINE 1 Runoff Area=60,079 sf 6.41% Impervious Runoff Depth=3.49"
Flow Length=279' Tc=6.2 min CN=54 Runoff=5.45 cfs 0.402 af

Subcatchment 2S: FDA-1 TO SWMP-2A Runoff Area=14,005 sf 64.91% Impervious Runoff Depth=7.36"
Flow Length=296' Tc=6.0 min CN=85 Runoff=2.65 cfs 0.197 af

Subcatchment 3S: FDA-2B (POOL) TO Runoff Area=1,400 sf 100.00% Impervious Runoff Depth=8.94"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment 4S: FDA-2A TO RAIN Runoff Area=1,413 sf 100.00% Impervious Runoff Depth=8.94"
Tc=6.0 min CN=98 Runoff=0.29 cfs 0.024 af

Subcatchment 5S: FDA-3 TO DESIGN LINE 1 Runoff Area=43,261 sf 2.58% Impervious Runoff Depth=3.12"
Flow Length=257' Tc=8.1 min CN=51 Runoff=3.22 cfs 0.259 af

Pond 1P: SWMP DETENTION FACILITY 36" Peak Elev=73.75' Storage=2,230 cf Inflow=2.65 cfs 0.197 af
Outflow=1.84 cfs 0.197 af

Pond 2P: RAIN GARDEN #1 Peak Elev=57.06' Storage=269 cf Inflow=0.29 cfs 0.024 af
Discarded=0.04 cfs 0.022 af Primary=0.06 cfs 0.002 af Outflow=0.10 cfs 0.024 af

Pond 3P: RAIN GARDEN #2 Peak Elev=57.08' Storage=262 cf Inflow=0.29 cfs 0.024 af
Discarded=0.04 cfs 0.022 af Primary=0.07 cfs 0.002 af Outflow=0.11 cfs 0.024 af

Link 1L: EXIST CONDITION DESIGN LINE Inflow=5.45 cfs 0.402 af
Primary=5.45 cfs 0.402 af

Link 2L: FUTURE CONDITION DESIGN LINE Inflow=4.97 cfs 0.460 af
Primary=4.97 cfs 0.460 af

Total Runoff Area = 2.758 ac Runoff Volume = 0.905 af Average Runoff Depth = 3.94"
85.96% Pervious = 2.371 ac 14.04% Impervious = 0.387 ac

Summary for Subcatchment 1S: XDA-1 TO DESIGN LINE 1

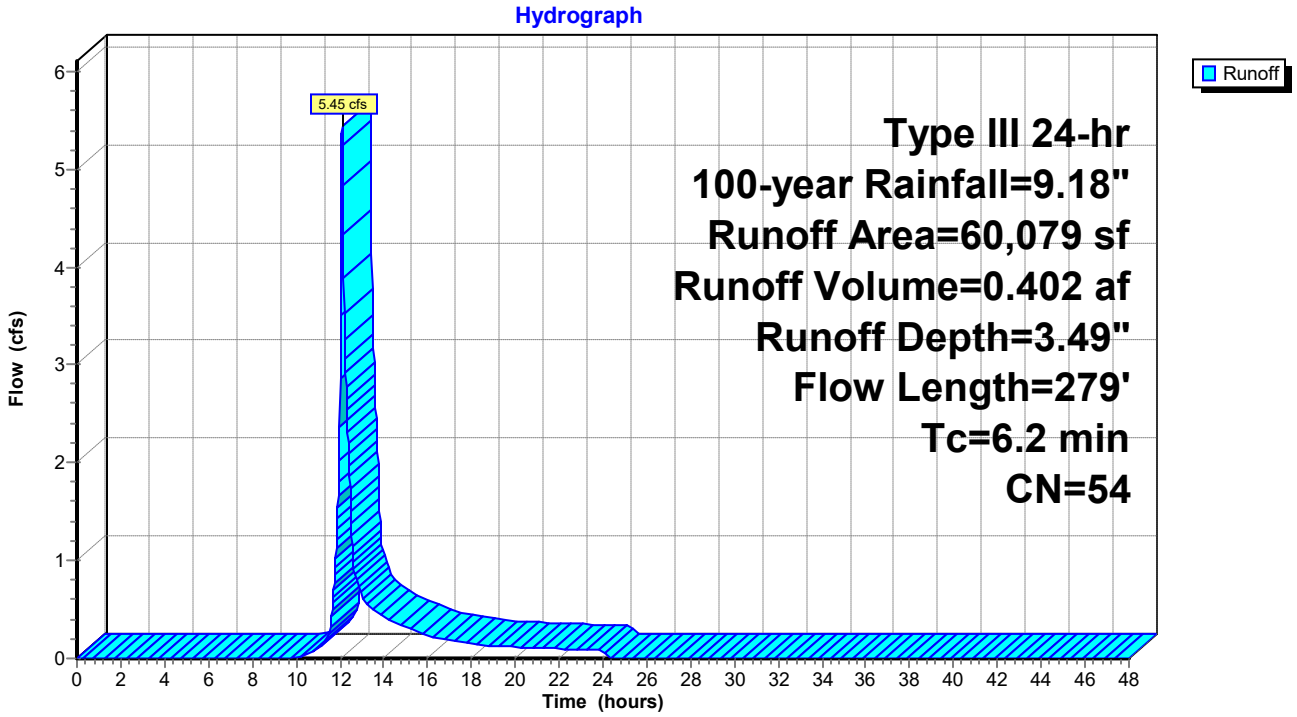
Runoff = 5.45 cfs @ 12.10 hrs, Volume= 0.402 af, Depth= 3.49"
Routed to Link 1L : EXIST CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-year Rainfall=9.18"

Area (sf)	CN	Description
3,850	98	Paved parking, HSG B
16,730	36	Woods, Fair, HSG A
1,967	39	>75% Grass cover, Good, HSG A
19,766	55	Woods, Good, HSG B
17,766	61	>75% Grass cover, Good, HSG B
60,079	54	Weighted Average
56,229		93.59% Pervious Area
3,850		6.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	35	0.2429	0.18		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.4	45	0.1555	1.97		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	65	0.0651	1.28		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	79	0.0886	1.49		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.8	55	0.0545	1.17		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
6.2	279	Total			

Subcatchment 1S: XDA-1 TO DESIGN LINE 1



Summary for Subcatchment 2S: FDA-1 TO SWMP-2A

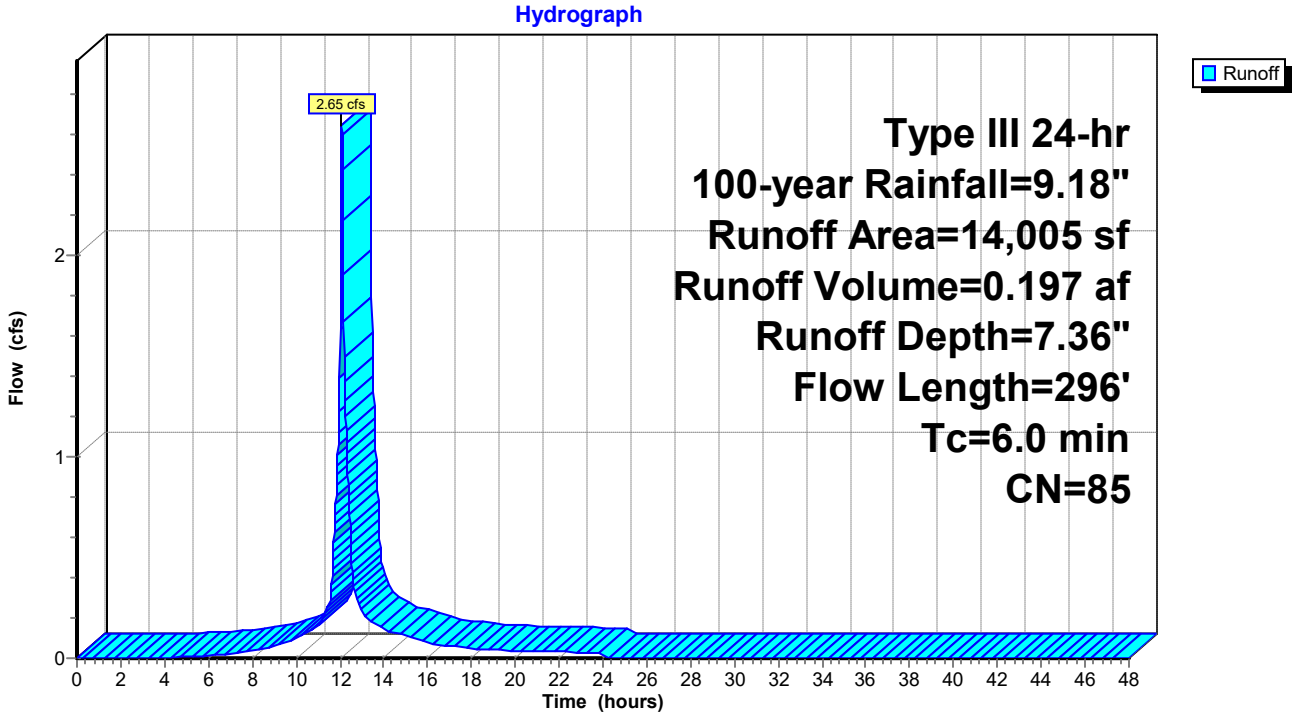
Runoff = 2.65 cfs @ 12.08 hrs, Volume= 0.197 af, Depth= 7.36"
Routed to Pond 1P : SWMP DETENTION FACILITY 36" PIPE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-year Rainfall=9.18"

Area (sf)	CN	Description
9,091	98	Paved parking, HSG B
4,004	61	>75% Grass cover, Good, HSG B
910	55	Woods, Good, HSG B
14,005	85	Weighted Average
4,914		35.09% Pervious Area
9,091		64.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	30	0.1333	0.13		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	266	0.7440	17.51		**Shallow Concentrated Flow, B-C** Paved Kv= 20.3 fps
2.0					**Direct Entry, FACTOR**
6.0	296	Total			

Subcatchment 2S: FDA-1 TO SWMP-2A



Summary for Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1

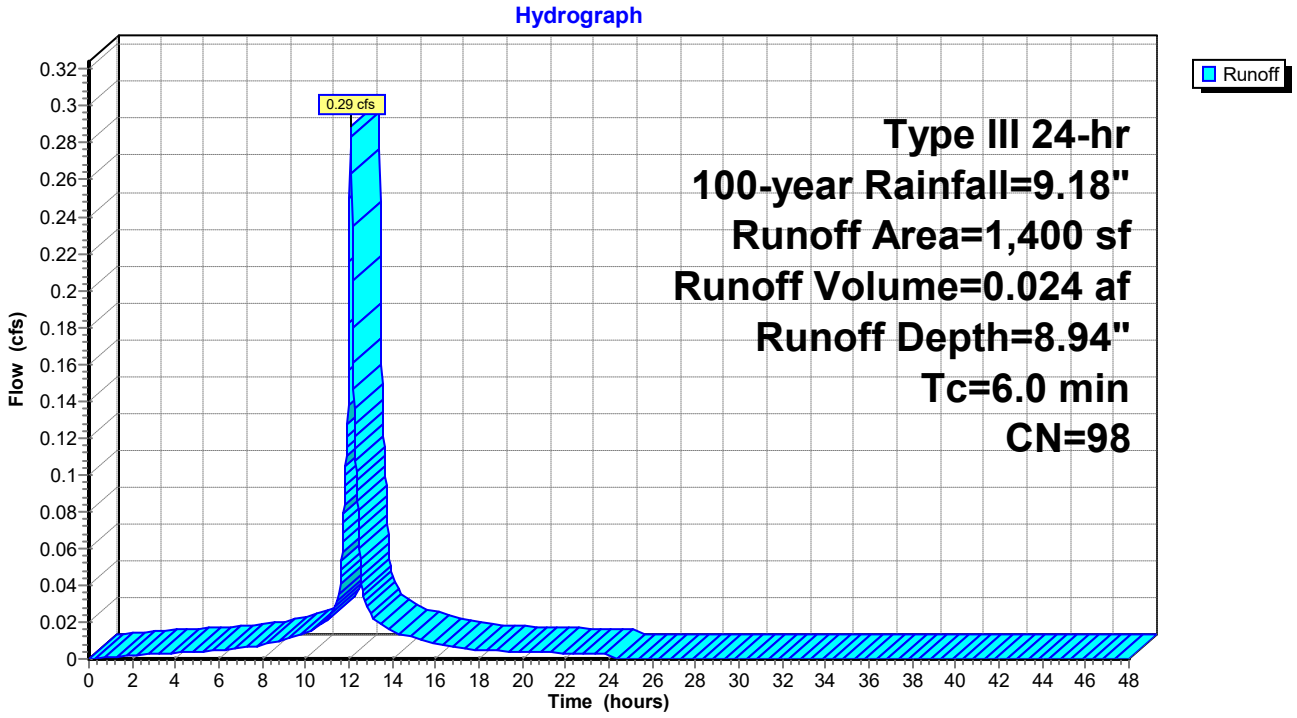
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af, Depth= 8.94"
Routed to Pond 2P : RAIN GARDEN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-year Rainfall=9.18"

	Area (sf)	CN	Description
*	1,400	98	Pool & Pool Patio, HSG B
	1,400		100.00% Impervious Area

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

Subcatchment 3S: FDA-2B (POOL) TO RAIN GARDEN #1



Summary for Subcatchment 4S: FDA-2A TO RAIN GARDEN #2

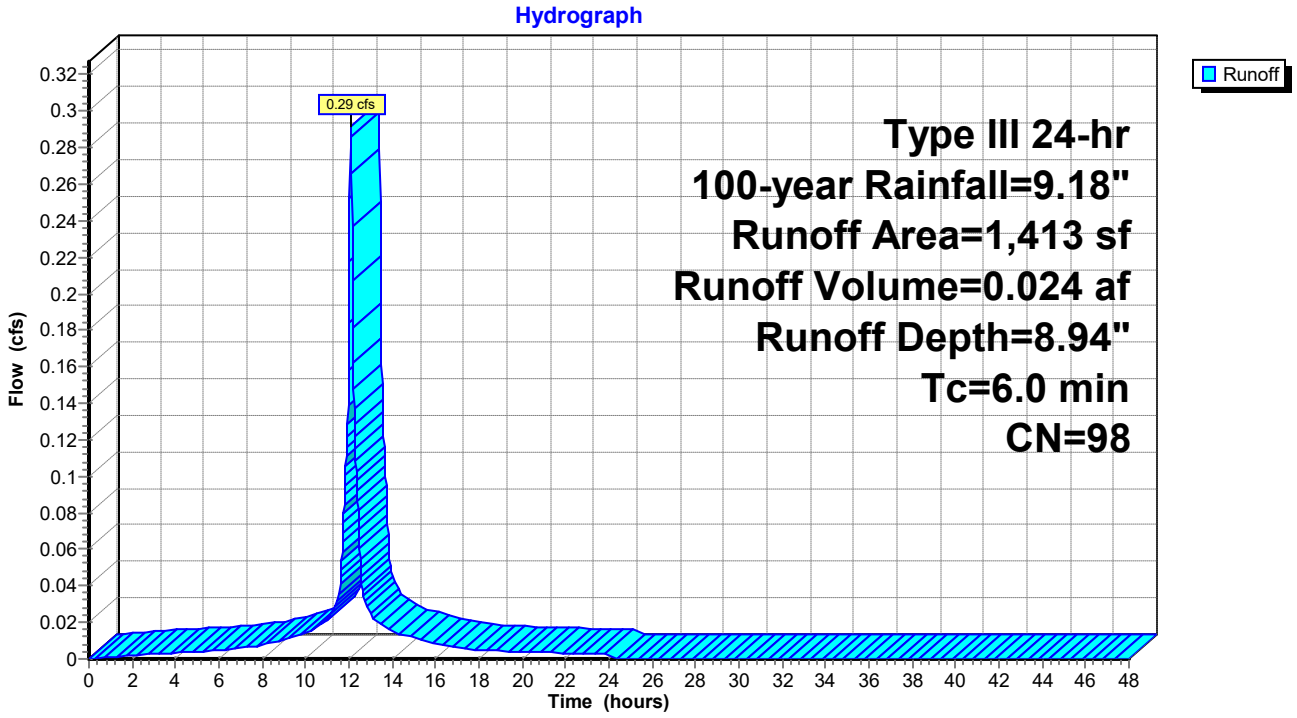
Runoff = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af, Depth= 8.94"
Routed to Pond 3P : RAIN GARDEN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-year Rainfall=9.18"

Area (sf)	CN	Description
1,413	98	Roofs, HSG B
1,413		100.00% Impervious Area

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

Subcatchment 4S: FDA-2A TO RAIN GARDEN #2



Summary for Subcatchment 5S: FDA-3 TO DESIGN LINE 1

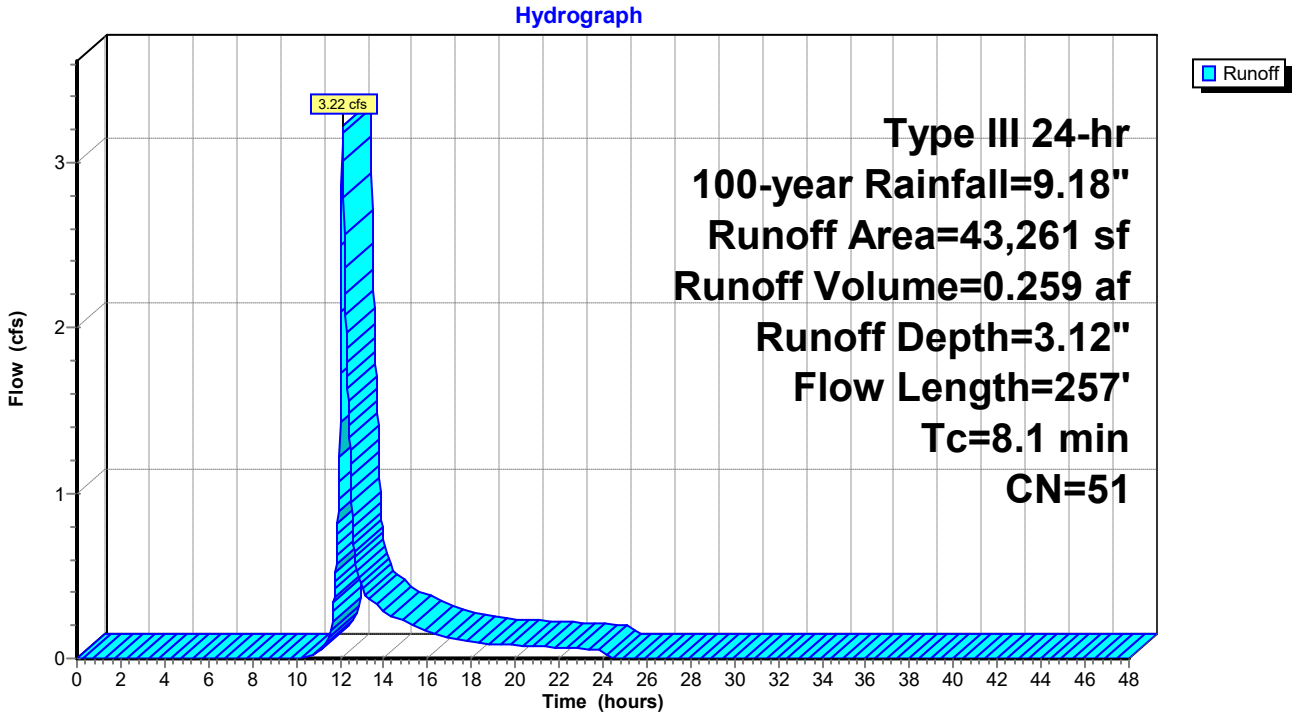
Runoff = 3.22 cfs @ 12.12 hrs, Volume= 0.259 af, Depth= 3.12"
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 100-year Rainfall=9.18"

	Area (sf)	CN	Description
*	1,116	98	Impervious patio surface, HSG B
	7,943	39	>75% Grass cover, Good, HSG A
	8,933	30	Woods, Good, HSG A
	22,854	61	>75% Grass cover, Good, HSG B
	2,415	55	Woods, Good, HSG B
	43,261	51	Weighted Average
	42,145		97.42% Pervious Area
	1,116		2.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	38	0.0395	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.41"
0.3	75	0.0573	3.59		**Shallow Concentrated Flow, B-C** Grassed Waterway Kv= 15.0 fps
0.2	61	0.1508	5.82		**Shallow Concentrated Flow, C-D** Grassed Waterway Kv= 15.0 fps
0.3	83	0.0843	4.36		**Shallow Concentrated Flow, D-E** Grassed Waterway Kv= 15.0 fps
8.1	257	Total			

Subcatchment 5S: FDA-3 TO DESIGN LINE 1



Summary for Pond 1P: SWMP DETENTION FACILITY 36" PIPE

Inflow Area = 0.322 ac, 64.91% Impervious, Inflow Depth = 7.36" for 100-year event
Inflow = 2.65 cfs @ 12.08 hrs, Volume= 0.197 af
Outflow = 1.84 cfs @ 12.17 hrs, Volume= 0.197 af, Atten= 31%, Lag= 4.9 min
Primary = 1.84 cfs @ 12.17 hrs, Volume= 0.197 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 73.75' @ 12.17 hrs Surf.Area= 335 sf Storage= 2,230 cf

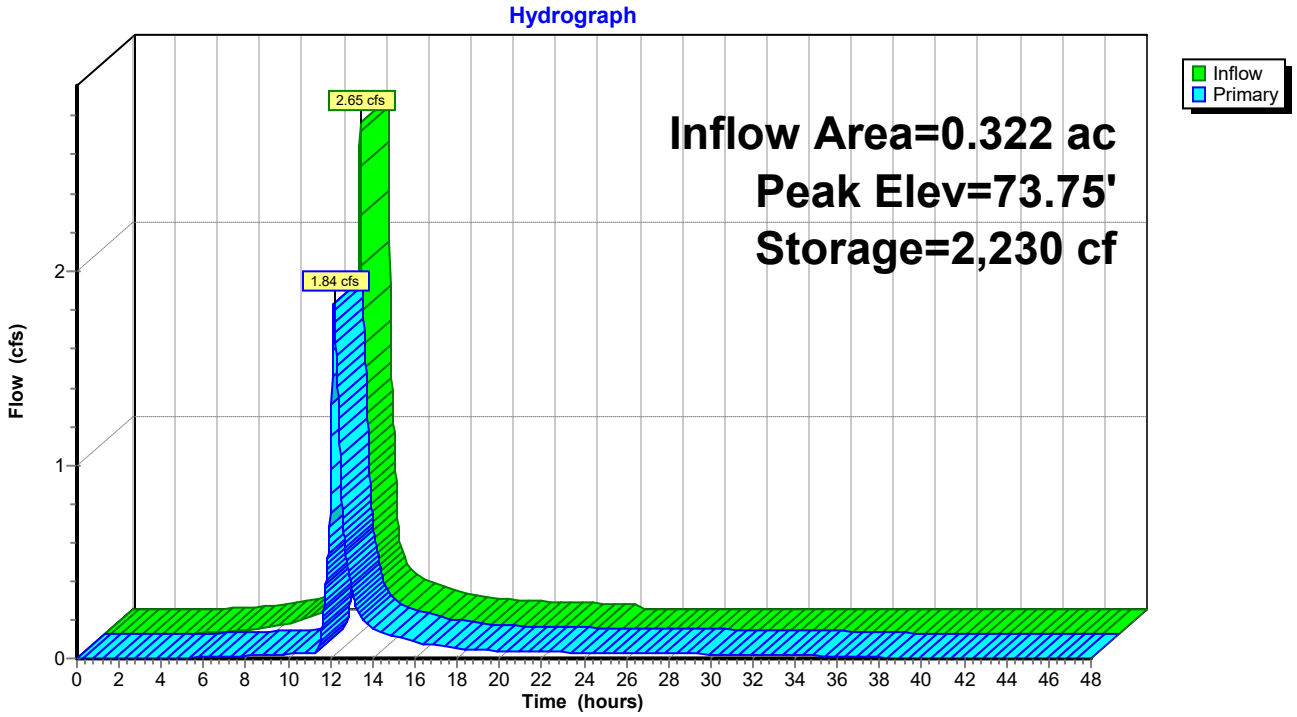
Plug-Flow detention time= 155.8 min calculated for 0.197 af (100% of inflow)
Center-of-Mass det. time= 156.1 min (942.0 - 785.9)

Volume	Invert	Avail.Storage	Storage Description
#1	70.85'	2,251 cf	**36.0" Round Pipe Storage 36" Diam.** L= 318.5'

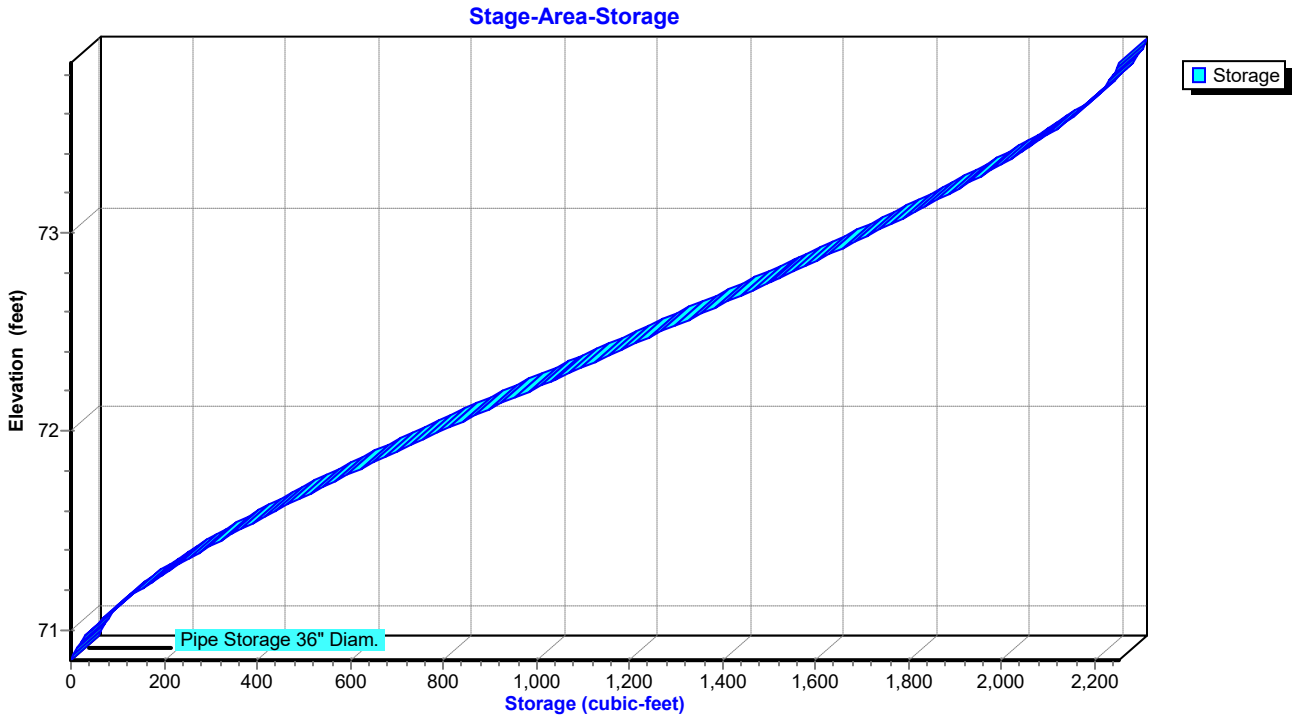
Device	Routing	Invert	Outlet Devices
#1	Primary	70.85'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	72.25'	**4.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Primary	72.75'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	73.80'	**2.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.83 cfs @ 12.17 hrs HW=73.75' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.04 cfs @ 8.14 fps)
- **2=Orifice/Grate** (Orifice Controls 0.97 cfs @ 5.56 fps)
- **3=Orifice/Grate** (Orifice Controls 0.82 cfs @ 4.17 fps)
- **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Pond 1P: SWMP DETENTION FACILITY 36" PIPE



Summary for Pond 2P: RAIN GARDEN #1

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 8.94" for 100-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af
Outflow = 0.10 cfs @ 12.36 hrs, Volume= 0.024 af, Atten= 67%, Lag= 16.9 min
Discarded = 0.04 cfs @ 12.36 hrs, Volume= 0.022 af
Primary = 0.06 cfs @ 12.36 hrs, Volume= 0.002 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.06' @ 12.36 hrs Surf.Area= 562 sf Storage= 269 cf

Plug-Flow detention time= 38.0 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 38.0 min (777.6 - 739.6)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	531 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

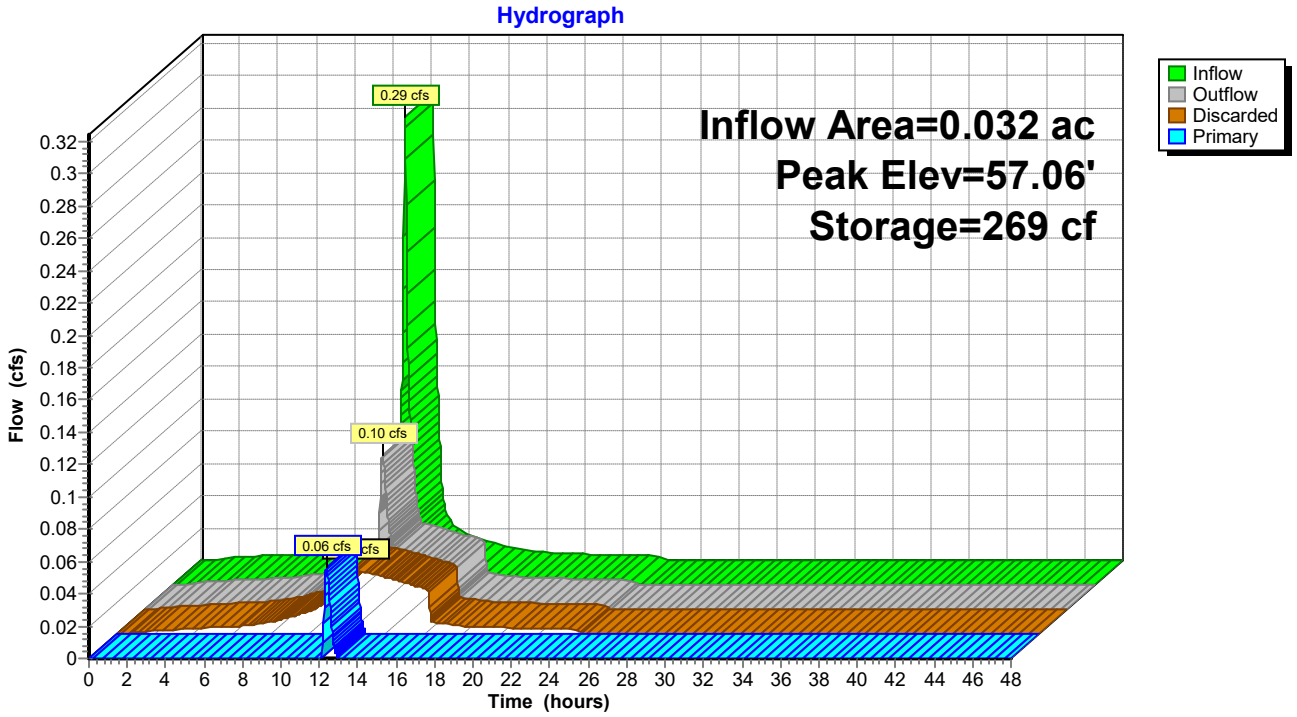
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	386	0	0
56.75	464	106	106
57.00	550	127	233
57.50	641	298	531

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

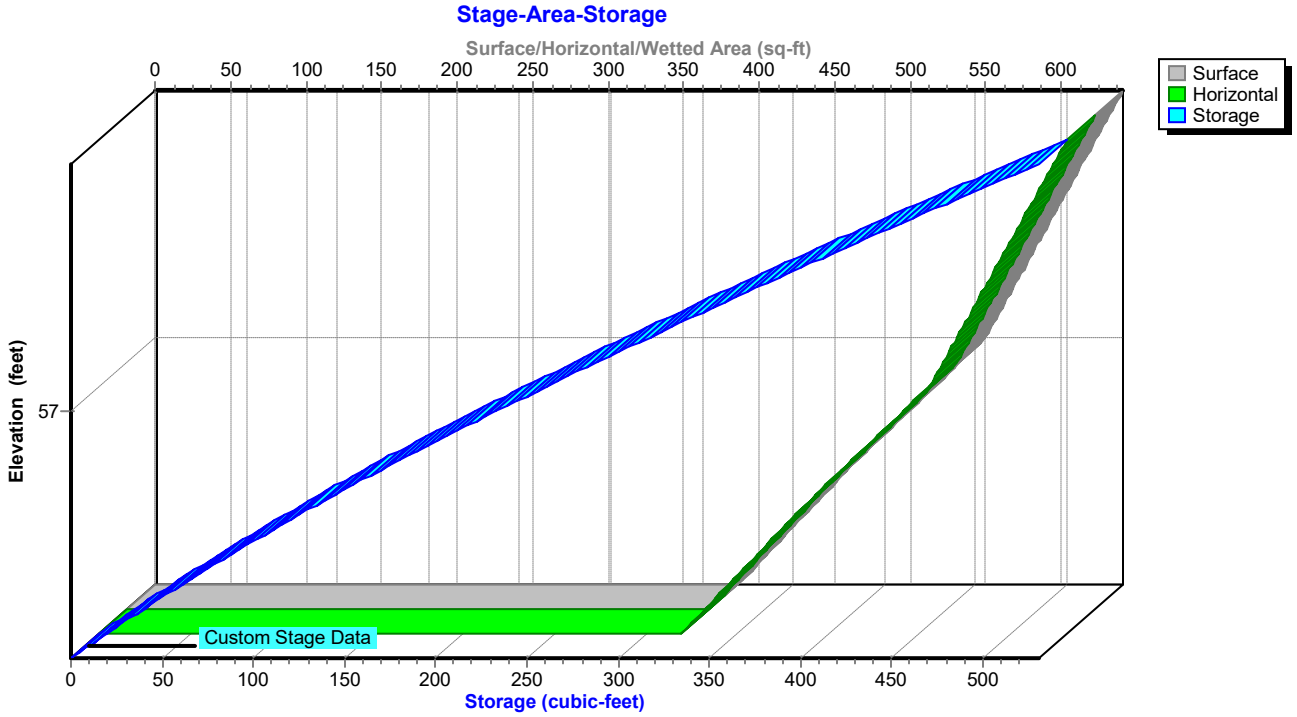
Discarded OutFlow Max=0.04 cfs @ 12.36 hrs HW=57.06' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.06 cfs @ 12.36 hrs HW=57.06' (Free Discharge)
├**1=Orifice/Grate** (Weir Controls 0.06 cfs @ 0.83 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: RAIN GARDEN #1



Pond 2P: RAIN GARDEN #1



Summary for Pond 3P: RAIN GARDEN #2

Inflow Area = 0.032 ac,100.00% Impervious, Inflow Depth = 8.94" for 100-year event
Inflow = 0.29 cfs @ 12.08 hrs, Volume= 0.024 af
Outflow = 0.11 cfs @ 12.31 hrs, Volume= 0.024 af, Atten= 62%, Lag= 13.6 min
Discarded = 0.04 cfs @ 12.31 hrs, Volume= 0.022 af
Primary = 0.07 cfs @ 12.31 hrs, Volume= 0.002 af
Routed to Link 2L : FUTURE CONDITION DESIGN LINE

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Peak Elev= 57.08' @ 12.31 hrs Surf.Area= 533 sf Storage= 262 cf

Plug-Flow detention time= 38.1 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 38.1 min (777.7 - 739.6)

Volume	Invert	Avail.Storage	Storage Description
#1	56.50'	1,084 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

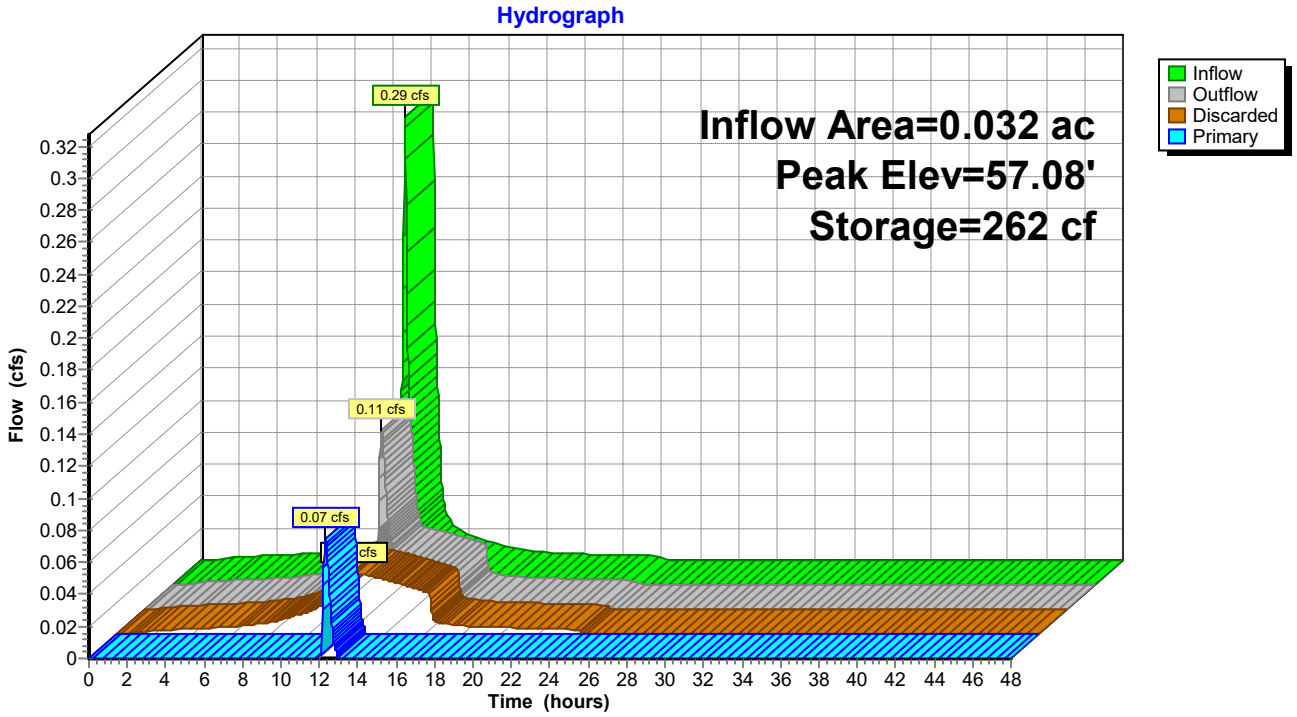
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
56.50	360	0	0
56.75	440	100	100
57.00	528	121	221
58.50	622	863	1,084

Device	Routing	Invert	Outlet Devices
#1	Primary	57.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	57.35'	**6.0' long (Profile 6) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.12 3.41 3.59
#3	Discarded	56.50'	**3.000 in/hr Exfiltration over Horizontal area**

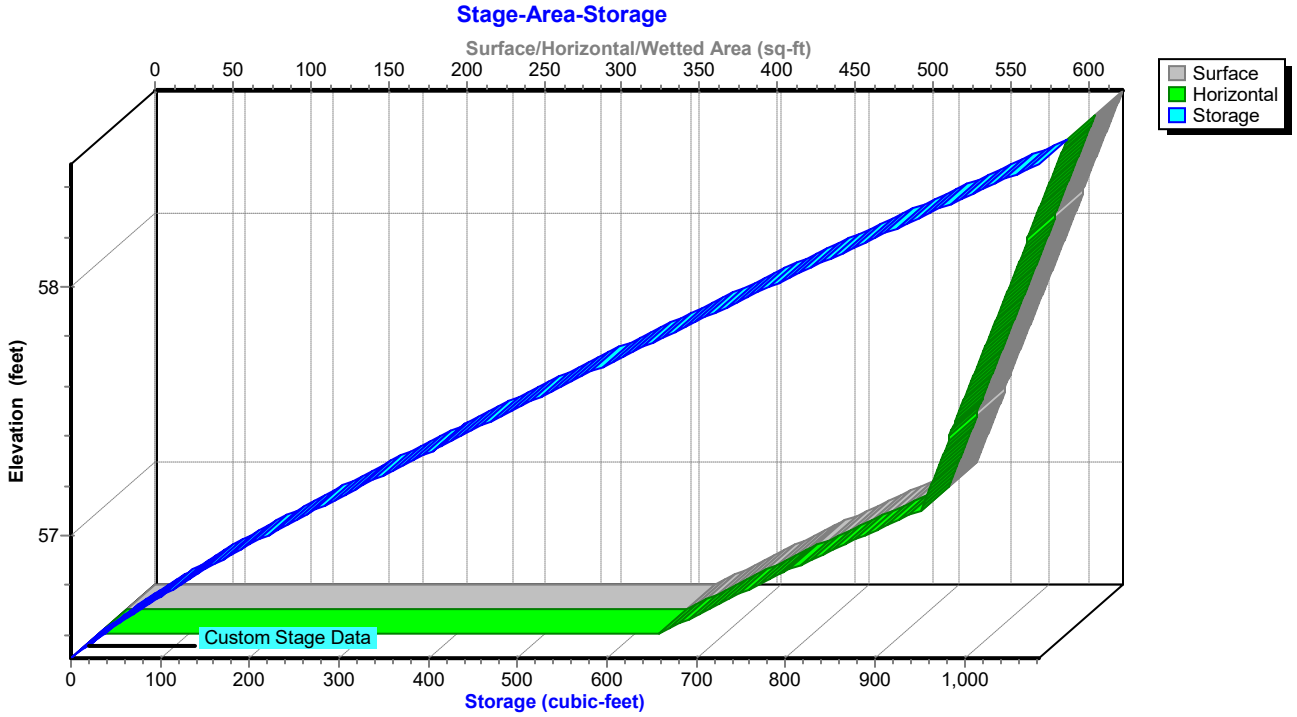
Discarded OutFlow Max=0.04 cfs @ 12.31 hrs HW=57.08' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.07 cfs @ 12.31 hrs HW=57.08' (Free Discharge)
├**1=Orifice/Grate** (Weir Controls 0.07 cfs @ 0.91 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: RAIN GARDEN #2



Pond 3P: RAIN GARDEN #2

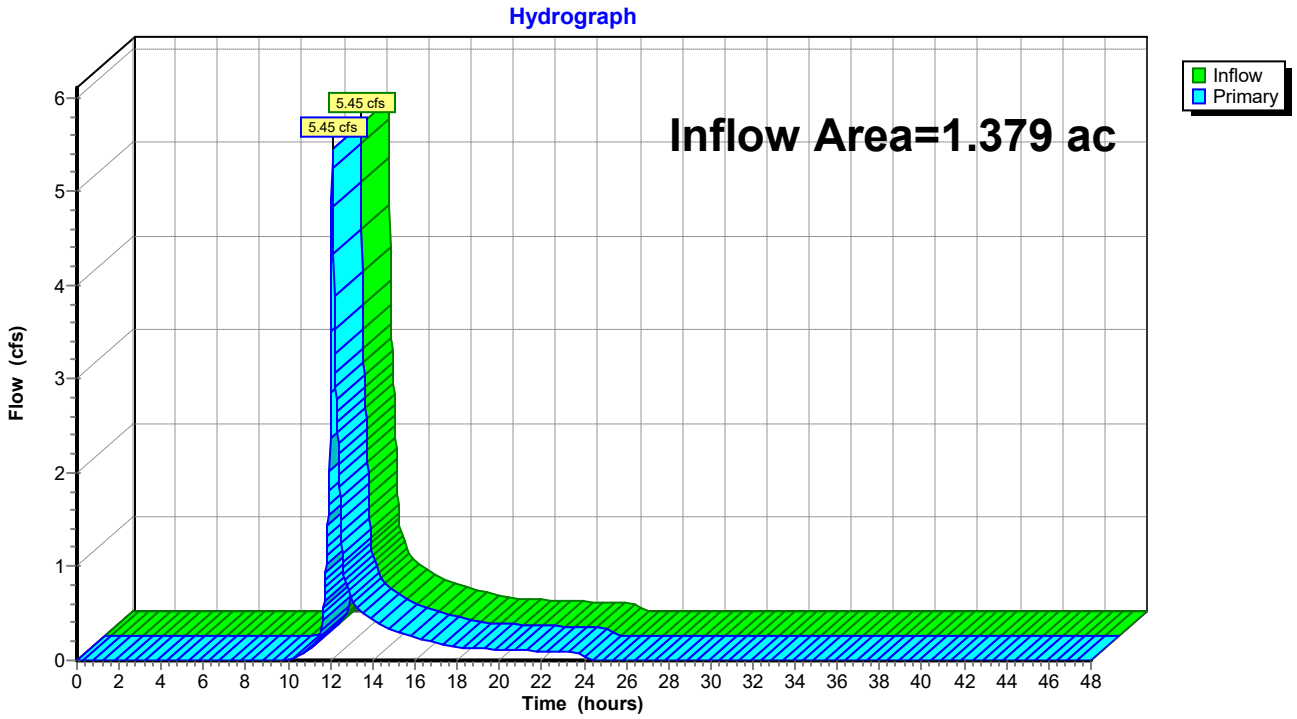


Summary for Link 1L: EXIST CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 6.41% Impervious, Inflow Depth = 3.49" for 100-year event
Inflow = 5.45 cfs @ 12.10 hrs, Volume= 0.402 af
Primary = 5.45 cfs @ 12.10 hrs, Volume= 0.402 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 1L: EXIST CONDITION DESIGN LINE



Summary for Link 2L: FUTURE CONDITION DESIGN LINE

Inflow Area = 1.379 ac, 21.67% Impervious, Inflow Depth = 4.00" for 100-year event
Inflow = 4.97 cfs @ 12.13 hrs, Volume= 0.460 af
Primary = 4.97 cfs @ 12.13 hrs, Volume= 0.460 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 2L: FUTURE CONDITION DESIGN LINE