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STORMWATER MANAGEMENT REPORT

PREPARED FOR:

EDGEWATER HILL ENTERPRISES, LLC

SALT POND APARTMENTS
000 EAST HIGH STREET (CT ROUTE 66)
EAST HAMPTON, CONNECTICUT

DECEMBER 2020
REVISED JANUARY 19, 2021
(PER TRINKAUS ENGINEERING LLC REVIEW)

PREPARED BY:

BOUNDARIES LLC

PROJECT I.D. NO. 20-2853

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Introduction

On behalf of Edgewater Hill Enterprises, LLC., Boundaries, LLC. has prepared the following stormwater management report for the proposed forty-unit multifamily residential development located south of the East Hampton Town Hall and Police Department in the Edgewater Hill Mixed Use Development. Additional supporting information regarding the proposed development and the construction completed to date can be found in the approved development Master Plan documents prepared by others. The following analysis demonstrates that the proposed stormwater management system provides retention of the water quality volume and attenuation of peak stormwater flows.

The location of the project is shown on the Locus Map included as Figure 1. The FEMA Flood Insurance Rate Map is included as Figure 2.

Wetlands located on the subject properties include an existing man-made pond located in the central portion of the proposed development and upgradient wetland areas that contribute to the pond. Stormwater runoff from the man-made pond and from upgradient undeveloped and developed areas ultimately discharge through a series of open channels and pipes to Lake Pocotopaug.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey the soils in the project area consist of Woodbridge fine sandy loam, 8 to 15% slopes, very stony, and Paxton and Montauk fine sandy loams, 15 to 35% slopes, extremely stony. Woodbridge soils are classified as Hydrologic Soil Group C/D and Paxton and Montauk soils are classified as Hydrologic Soil Group C. The NRCS Web Soil Survey Soils Report is provided in Appendix A. Given that the soils in the project area are classified as Hydrologic Soil Group C little to no infiltration of runoff is anticipated as part of the stormwater management system.

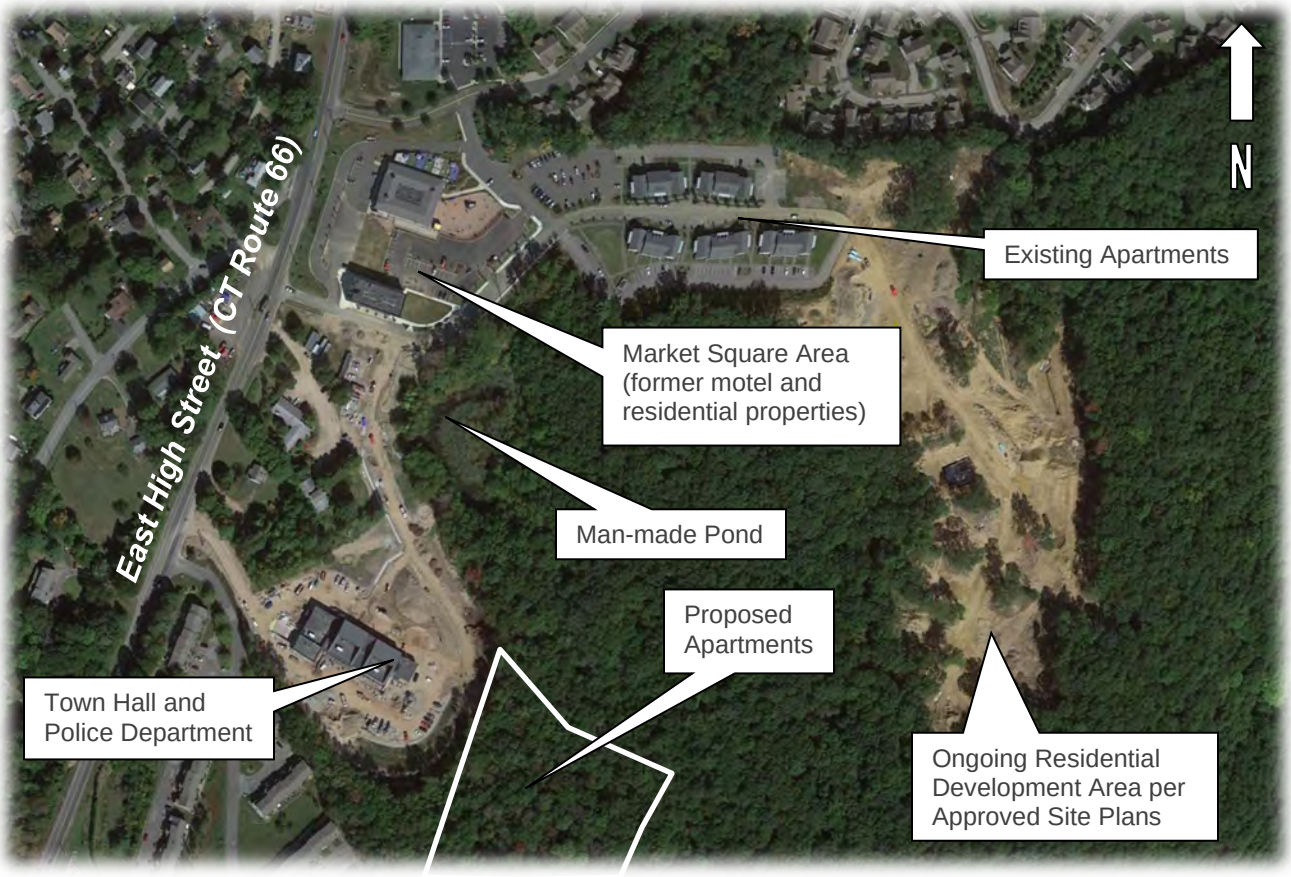
Pre- and post-development conditions hydrographs were estimated using the hydrologic modeling program HydroCAD. The methodology selected was NRCS TR-20. Times of concentration were estimated using multiple segment flow paths as described in the NRCS TR-55 manual. The Type III 24-hour storm was analyzed under antecedent moisture condition two (2). Rainfall totals were as reported by the NOAA Precipitation Frequency Data Server accessed on April 27, 2020. HydroCAD modeling results are presented in Appendix B. Pipe sizing calculations were completed using the calculated Manning's capacity of the pipe reaches. The water quality volume was calculated using the methods detailed in the CT DEEP Stormwater Quality Manual. Supporting calculations are included in Appendix C.

The proposed improvements include the construction of five (5) eight (8) unit apartment buildings, approximately 800 linear feet of new access roadway, associated sidewalks, circulation drives and parking areas and the extension of sewer, water, gas, electric and communications utilities to service the proposed buildings. Stormwater runoff from the proposed impervious areas will be collected in catch basins with prior to discharging to two (2) stormwater basins for detention of peak stormwater runoff rates. The low-level outlets of the stormwater basins are elevated above the basin bottoms to retain the water quality volume on-site following storm events. The bottom of the basins will function as constructed stormwater wetlands providing treatment of all stormwater runoff. Runoff will discharge to the wetlands system upgradient of the manmade pond in the same location as an existing drainage discharge installed as part of the Town Hall and Police Department project. The proposed site development plans are included in Appendix D. The stormwater basins are intended to provide attenuation of post-development peak discharge rates to match pre-development rates, treatment of stormwater runoff, and retention of the water quality volume following storm events. The stormwater management system has been designed to meet the requirements of the Connecticut Department of Energy and Environmental Protection (CT DEEP)

Stormwater Quality Manual for both peak stormwater runoff flow rate attenuation and retention of the stormwater quality volume for the 2, 10, 25, 50 and 100-year storm events.

Pre-Development Conditions

The Edgewater Hill development is located within the Edgewater Hill Mixed Use Development District. The development is being completed utilizing a phased approach. To date, the first two buildings in the Market Square area, the first phase of residential apartment buildings and the new Town Hall and Police Department have been constructed. A third mixed use commercial building in Market Square and additional residential lots are currently under construction. The project area formerly included a motel, residential properties and associated infrastructure. Runoff from the frontage along East High Street (CT Route 66) drains to CT DOT's 30-inch RCP culvert that carries flow under CT Route 66 and ultimately discharges to Lake Pocotopaug. Stormwater runoff from the Town Hall and Police Department, apartments, a small portion of the residential development and upgradient undeveloped areas flows to the existing pond. The pond is drained through an 18-inch diameter HDPE pipe that discharges to the stormwater management system in Edgewater Circle. Runoff from the remainder of the site flows overland to the east (away from State facilities and Lake Pocotopaug) and is not included in this analysis. Existing conditions aerial photography of the properties is shown below.



Aerial Photograph of Site

Pre-development watersheds are shown on Figure 3. Pre-development watersheds were delineated using topographic survey data for the subject parcels and aerial mapping for off-site contributing areas. Land uses were estimated using aerial photography and topographic survey data. The pre-development

conditions analyzed in the model are based on the conditions before the Edgewater Hill project was initiated. DA-APT EX is the ±9.3-acre wooded area that will be developed as part of this project. The weighted CN of the watershed is 70. Runoff from this area flows overland to the wetland areas upgradient of the manmade pond. Reported peak flow rates are summarized below in Table 1. Detailed modeling results are included in Appendix B.

Runoff Curve Numbers (CN) used for the pre-development conditions analysis are as follows: 70 (woods with good ground cover) for wooded areas in Hydrologic Soil Group C and 77 (woods with good ground cover) for wooded areas in Hydrologic Soil Group D.

Table 1
Peak Runoff Rates – Pre-Development Conditions – Apartments Sub-Watershed

Design Storm Event	Apartments Sub-Watershed Peak Runoff Rate – Link 2L (CFS)
2-Year	6.77
10-Year	17.25
25-Year	24.52
50-Year	30.21
100-Year	36.44

Post-Development Conditions

The proposed improvements include the construction of approximately 800 feet of paved road, parking areas and circulation drives to serve the new apartment buildings. Stormwater runoff will be collected in deep sump catch basins with hooded outlets at the downstream structures. The catch basins will discharge to two stormwater basins intended to attenuate peak runoff rates. The water quality volume will be retained below the low-level outlets on the two stormwater basins following storm events.

The proposed stormwater management system components proposed for construction include the following:

- Fourteen (14) deep sump precast concrete catch basins;
- Seven (7) precast concrete drainage manholes;
- Two (2) precast concrete outlet control structures;
- Yard drains, cleanouts and drainage pipe of various diameters; and
- Two stormwater basins.

The proposed stormwater management system is intended to meet the following design standards:

- The post-development peak discharge rates from the 2-year, 10-year, 25-year, 50-year, and 100-year storms are less than or equal to pre-development peak discharge rates;
- The conveyance system leading to, from, and through stormwater management facilities has capacity for the 10-year, 24-hour storm, at a minimum;
- The groundwater recharge volume is captured;
- Stormwater runoff is treated by the constructed stormwater wetlands; and
- The water quality volume is retained following storm events.

The post-development conditions hydrologic model includes the proposed apartments, supporting infrastructure and areas contributing runoff to the proposed stormwater collection system and stormwater basins. Post-development conditions watersheds are shown on Figure 4. Post-development conditions watersheds were delineated using topographic survey data and the proposed development plans for the subject areas. Land uses were estimated using aerial photography and the proposed development plans. Site development plans are included in Appendix D.

Runoff Curve Numbers (CN) used for the post-development conditions analysis are as follows: 70 (woods with good ground cover) for wooded areas in Hydrologic Soil Group C, 77 (woods with good ground cover) for wooded areas in Hydrologic Soil Group D, 74 (>75% grass cover) for the grassed areas in Hydrologic Soil Group C, 80 (>75% grass cover) for the grassed areas in Hydrologic Soil Group D, and 98 (impervious) for existing and proposed impervious areas such as paved roads, driveways, buildings, and the stormwater basin surface.

The proposed conditions watersheds are described further below:

<u>Drainage Area #2E (DA #2E)</u>

This 3.0± acre watershed encompasses a portion of the southern half of the proposed apartments and contributing areas, and is comprised of the proposed buildings, parking lots and access drives, revegetated areas to be graded, and wooded areas that will remain undisturbed. The weighted CN of the watershed is 83. Runoff from this area will be collected by a series of catch basins and will discharge to Stormwater Basin 2.

Drainage Area #2F (DA #2F)
This 0.2± acre watershed encompasses the revegetated areas to be graded and wooded areas that will remain undisturbed which directly drain to Stormwater Basin 2. The weighted CN of the watershed is 86. Runoff from this area will flow overland and directly discharge to Stormwater Basin 2.

Drainage Area #2G (DA #2G)
This 0.6± acre watershed encompasses the revegetated areas to be graded that will directly drain to Stormwater Basin 1. The weighted CN of the watershed is 84. Runoff from this area will flow overland and directly discharge to Stormwater Basin 1.

Drainage Area #2H (DA #2H)
This 2.7± acre watershed encompasses the western half of the proposed apartments and contributing areas, and is comprised of the proposed buildings, parking lots and access drives, revegetated areas to be graded, and wooded areas that will remain undisturbed. The weighted CN of the watershed is 84. Runoff from this area will be collected by a series of catch basins and discharge to Stormwater Basin 1.

Drainage Area #2I (DA #2I)
This 0.5± acre watershed encompasses the eastern half of the northern apartments and contributing areas, and is comprised of the proposed buildings, parking lots and access drives, and revegetated areas to be graded. The weighted CN of the watershed is 92. Runoff from this area will be collected by a series of catch basins and discharge to Stormwater Basin 1.

Drainage Area #2J (DA #2J)
This 2.3± acre watershed encompasses the portion of the project area between the development and the wetlands boundary and areas that drain off site without entering the stormwater collection system. The area is comprised of a portion of the access road, undisturbed wooded areas, and grassed areas between the stormwater basin and the wetlands boundary. The weighted CN of the watershed is 80. Runoff from this area flows off-site overland.

Post-development conditions peak runoff rates were analyzed at the wetland boundary adjacent to the proposed development area. Comparisons of pre- and post-development peak runoff rates are presented below in Table 2.

Table 2
Peak Runoff Rates – Post-Development Conditions vs. Pre-Development Conditions – Apartments Only

Storm Event	Post-Development Conditions Total Off-Site Peak Runoff Rate – Link 20L (CFS)	Pre-Development Conditions Total Off-Site Peak Runoff Rate – Pond 2P (CFS)	Change in Peak Runoff Rate (CFS)
2-Year	5.97	6.77	-0.80
10-Year	13.70	17.25	-3.55
25-Year	20.53	24.52	-3.99
50-Year	23.57	30.21	-6.64
100-Year	27.76	36.44	-8.68

As presented above, the proposed stormwater management system does not result in increases to off-site flow rates or water surface elevations, and meets the recommendations of the CT DEEP Stormwater Quality Manual for peak flow rate attenuation.

Stormwater Management System Design

Pipe Sizing

Stormwater runoff from the proposed development area will be collected and discharged to two (2) stormwater basins. The proposed stormwater collection system consists of catch basins and curbing along the proposed roadway and parking lots. The proposed drains are sized for the 10-year storm event, at a minimum, based on the calculated Manning's capacity of each pipe reach in accordance with the Town of East Hampton Zoning Regulations. Pipe sizing calculations are included in Appendix C.

Scour Protection

The piped discharge and overflow spillway will be protected from erosion by rip rap sized in accordance with the recommendations of the CT DEEP Stormwater Quality Manual. Sizing calculations for the scour protection are summarized in Table 3 and included in Appendix C.

Table 3
Scour Protection Sizing

Stormwater Discharge	25-year Discharge Flow (CFS)	Proposed Surface Treatment	Sizing Reference
Stormwater Basin 1 Inlet	24.3	Modified Rip Rap Apron	Per 2002 CT DEEP SESC Guidelines Chapter 5-10 Outlet Protection
Stormwater Basin 2 Inlet	13.1	Modified Rip Rap Apron	

Water Quality Volume

The stormwater management system is intended to provide treatment of the runoff from the proposed impervious areas. Treatment of runoff from the site will be accomplished using a treatment train consisting of sediment forebays in each stormwater basin and the constructed stormwater wetlands system following the sediment forebay. The stormwater basins are sized to retain the water quality volume associated with the upgradient impervious areas in the storage provided below the low-level outlets. The sediment forebays are sized for 25% of the water quality volume. Sizing calculations for the stormwater basins are summarized in Table 4 and are included in Appendix C.

Table 4
Water Quality Volume Sizing Criteria

Stormwater Basin	Contributing Impervious Area	Contributing Drainage Area	Water Quality Volume	Forebay Volume	Storage Volume Below Low-Level Outlet
Stormwater Basin 1	2.31 acres	7.00 acres	7,674 cubic feet	2,260 cubic feet (29.5%)	7,932 cubic feet (103.4%)
Stormwater Basin 2	0.99 acres	3.28 acres	3,278 cubic feet	1,516 cubic feet (46.3%)	3,293 cubic feet (100.5%)

Test holes were completed in the area of the stormwater basins to confirm soil conditions. The bottom of each basin was found to be above ledge rock encountered in the test holes. The soil profile also included a restrictive layer that varied from 3.5 feet in thickness to 4.5 feet in thickness overlaying a layer fine to medium sand with gravel. This restrictive layer has resulted in a perched groundwater table. The perched groundwater table will help in the establishment of wetland plant species in the constructed

stormwater wetland. Soil berms will also be constructed in the bottom of the basin to increase contact time between the vegetation and the runoff. This system will provide treatment of the water quality volume prior to discharge. Stormwater treatment calculations prepared by Trinkaus Engineering, LLC. are included in Appendix C.

Groundwater Recharge Volume

The soils in the project area are mapped as Hydrologic Soil Group C/D and as such have limited ability for infiltration of stormwater. As mentioned above, the limiting factor for infiltration of runoff is a compact layer of silty sand that results in a perched groundwater table. The groundwater recharge volume calculations are included in Appendix C and summarized below in Table 5. The volume of water retained in the bottom of the stormwater basins exceeds the groundwater recharge volume.

Table 5
Groundwater Recharge Volume Sizing Criteria

Sizing Criteria	Result
Groundwater Recharge Volume	926 cubic feet
Total Storage Volume in Stormwater Basins	11,225 cubic feet

Construction Phase Stormwater Management

Construction phase stormwater management is intended to be provided in accordance with the erosion and sedimentation control plans included in the Site Development Plans. The following best management practices will be implemented to protect downstream water quality:

- The downgradient sediment barrier will be a compost filter tube.
- An upgradient sediment fence barrier embedded in wood chip berm will be installed to divert clean runoff around the disturbed areas.
- Grubbing of stums is intended to be completed by phase.
    - Phase 1 includes the construction of the haul road and staging/stockpile area. Disturbed area will be approximately 1.8 acres. Disturbed areas outside of the gravel road surface will be seeded and mulched.
    - Phase 2 includes the extension of the proposed roadway, sidewalks and utilities. Disturbed areas will be approximately 2.3 acres.
    - Phase 3 includes the mass earthwork required to establishing the pad sites for the proposed buildings. Disturbed area will be approximately 4.7 acres.
- Intermediate sediment barriers will be installed during grading operations.
- Water bars will be constructed in the roadway to direct runoff to the sediment traps.
- Sediment traps are sized for 134 cubic yards of storage per acre of upgradient contributing area.
- Temporary seeding with perennial rye grass is intended for all stockpiles and disturbed areas that will remain unworked for greater than 21 days.

Temporary sediment trap sizing criteria is included in Appendix C and summarized below in Table 6.

Table 6
Temporary Sediment Trap Sizing Criteria

Temporary Sediment Trap	Contributing Area	Storage Volume Required	Storage Volume Below Spillway Elevation
Temporary Sediment Trap 1	2.4 acres	8,683 cubic feet	8,994 cubic feet
Temporary Sediment Trap 2	3.34 acres	12,084 cubic feet	13,280 cubic feet
Temporary Sediment Trap 3	0.25 acres	905 cubic feet	1,037 cubic feet

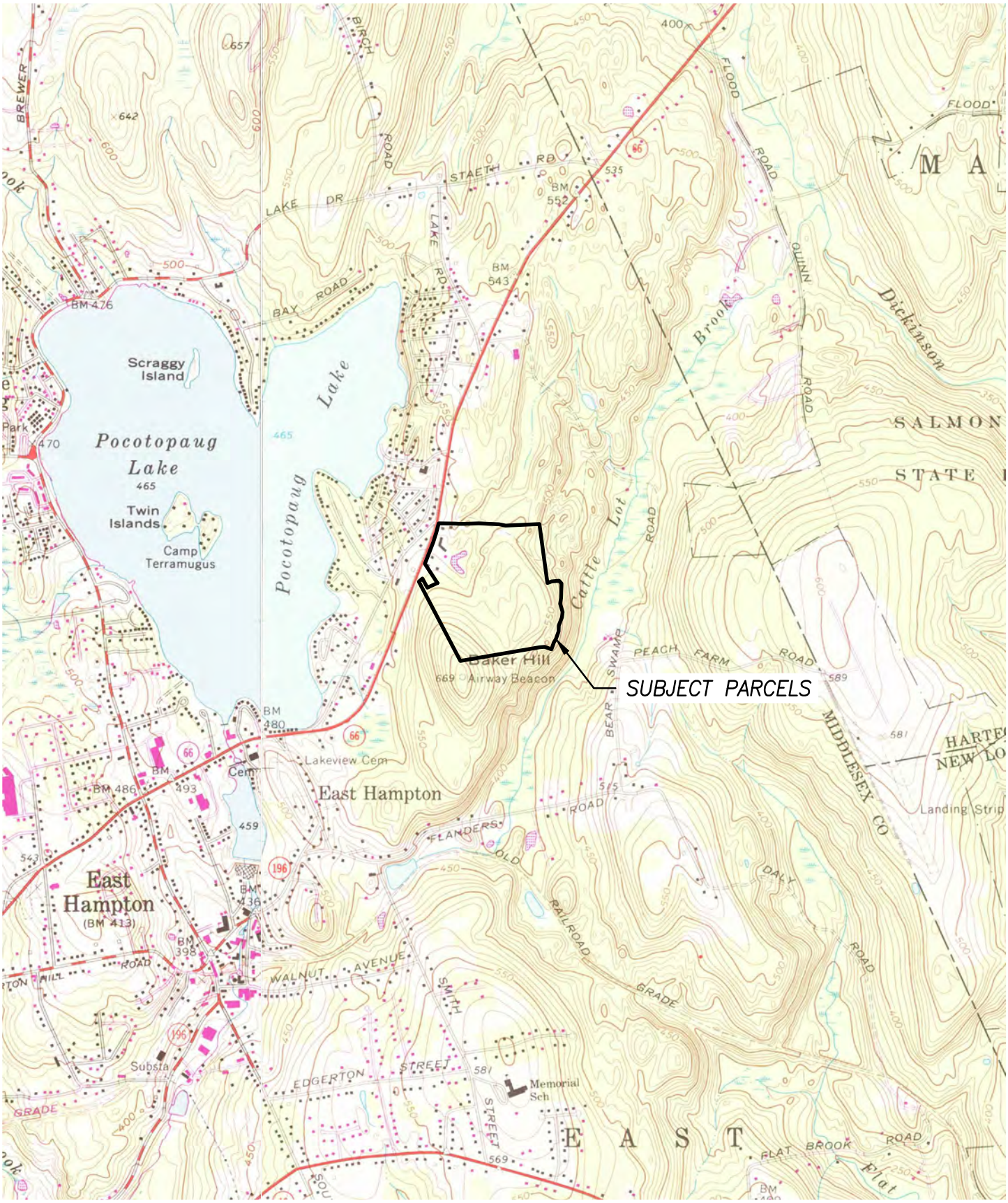
At the completion of construction, the temporary sediment traps will be backfilled, brought to design grades and loamed and seeded for final restoration.

Summary

The proposed stormwater management system is intended to comply with the applicable requirements of CT DEEP and the Town of East Hampton.

The proposed improvements are shown on plans titled “Site Development Plan, Salt Pond Apartments, Prepared for Edgewater Hill Enterprises, LLC., 000 East High Street, East Hampton, Connecticut, December 2020, Job I.D. No. 20-2853, Sheet 1 through Sheet 25 of 25” prepared by Boundaries LLC.

Figures



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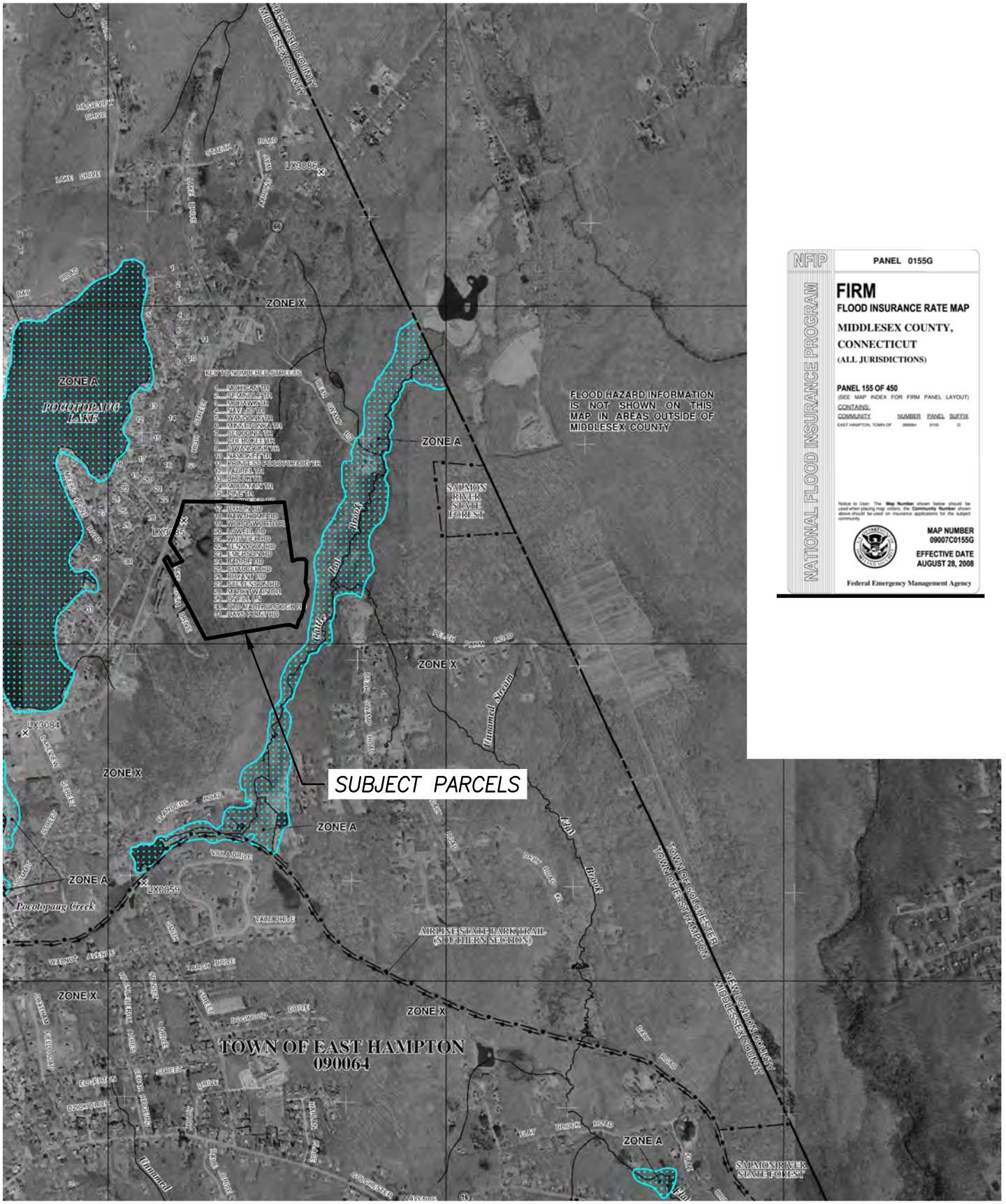
Locus Map

(Middle Haddam - 68 / Moodus - 69 Quads)

Salt Pond Apartments

East High Street, East Hampton, CT

SCALE:	1"=2,000'
DATE:	December 2020
JOB NO.	20-2853
FIGURE	1



NFIP

PANEL 0155G

FIRM

FLOOD INSURANCE RATE MAP

MIDDLESEX COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

PANEL 155 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAST HAMPTON, TOWN OF	090064	0155	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09007C0155G

EFFECTIVE DATE
AUGUST 28, 2008

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

BOUNDARIES

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE

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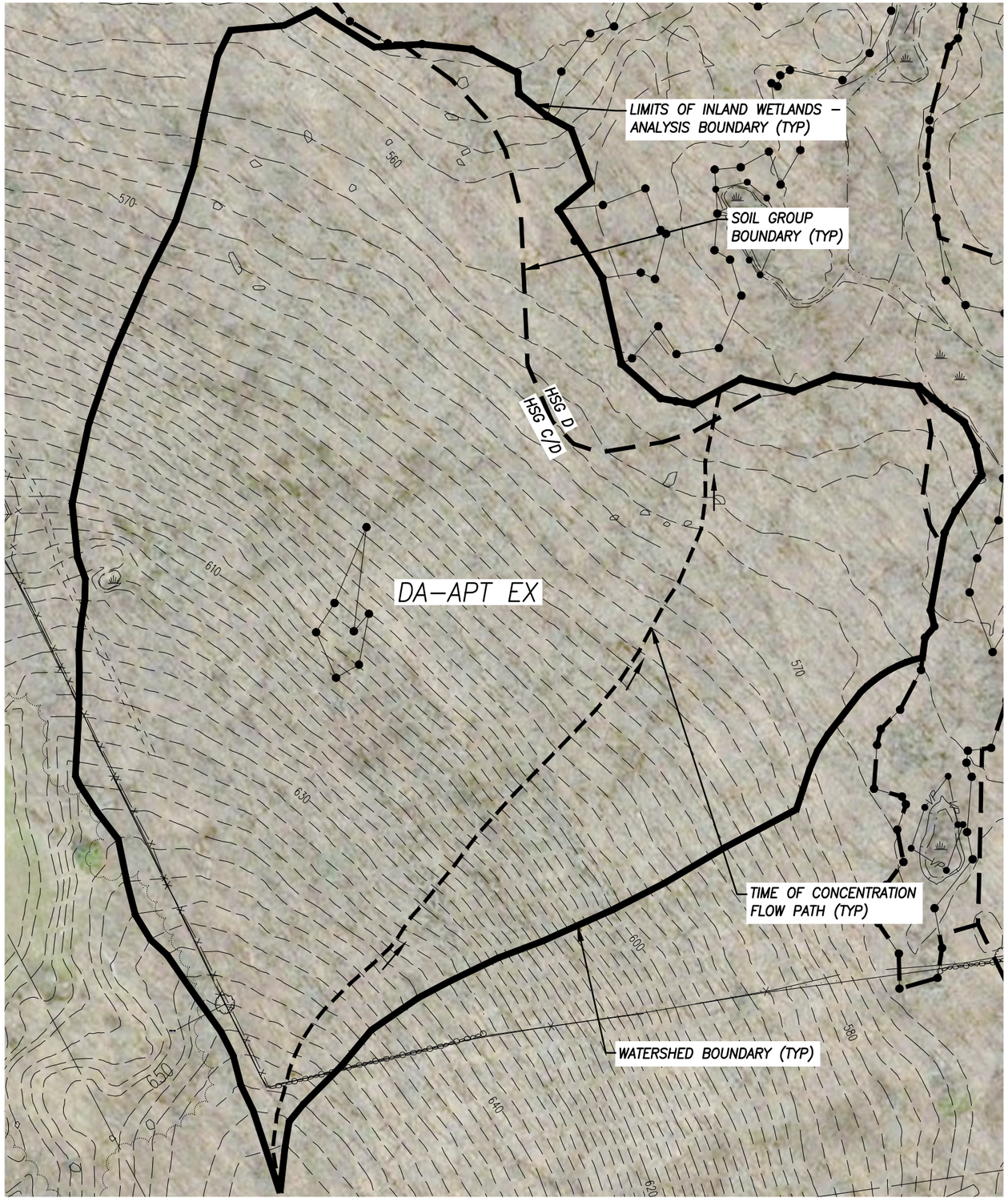
FEMA Flood Insurance Rate Map

Map 090064 Panel 155 G

Salt Pond Apartments

East High Street, East Hampton, CT

SCALE:	1"=2,000'
DATE:	December 2020
JOB NO.	20-2853
FIGURE	2



Pre–Development Conditions			
Watershed	Area (acres)	CN Value	Description
DA–APT EX	9.299	70	Wooded undeveloped land

GRAPHIC SCALE

200 100 50 0 100

(IN FEET)
1 inch = 100 ft.

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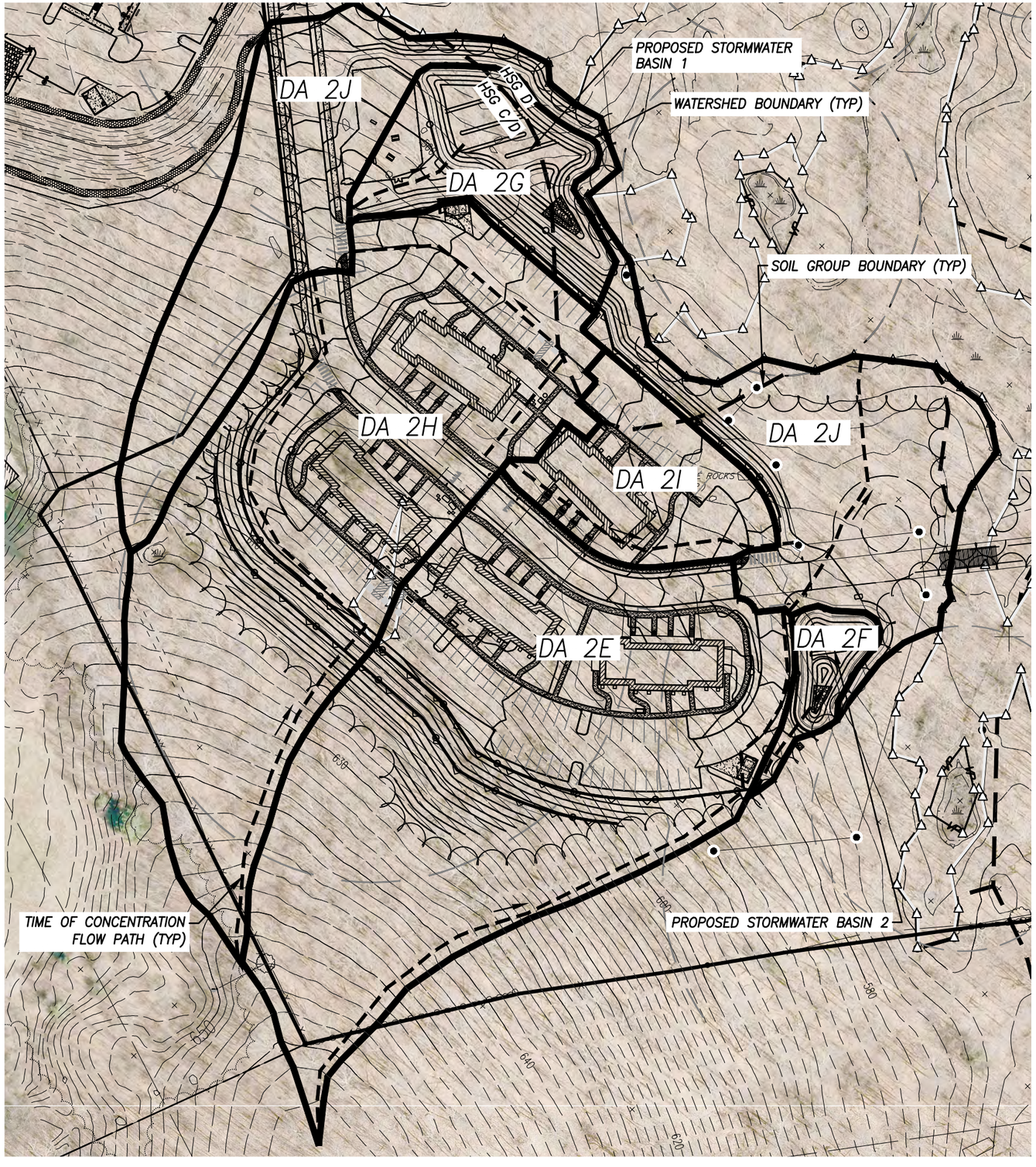
Pre-Development Conditions Watersheds
Salt Pond Apartments
Edgewater Hill Enterprises LLC
East High Street, East Hampton, Connecticut

SCALE: 1"=100'
DATE: January 2021
FIGURE 3



Post-Development Conditions

Watershed	Area (acres)	CN Value	Description
DA-2E	3.023	83	Proposed apartments, roadway, parking (south) and grassed slope
DA-2F	0.152	86	Grassed slope and direct runoff to Stormwater Basin 2
DA-2G	0.554	84	Dog park and grassed slope and direct Runoff to Stormwater Basin 1
DA-2H	2.748	84	Proposed apartments, roadway, parking and grassed slope
DA-2I	0.536	92	Proposed apartments and parking (north)
DA-2J	2.286	80	Downgradient cleared areas and portions of Edgewater Circle
TOTAL	9.299	83	Apartments project area

GRAPHIC SCALE

200 100 50 0 100

(IN FEET)
1 inch = 100 ft.

BOUNDARIES
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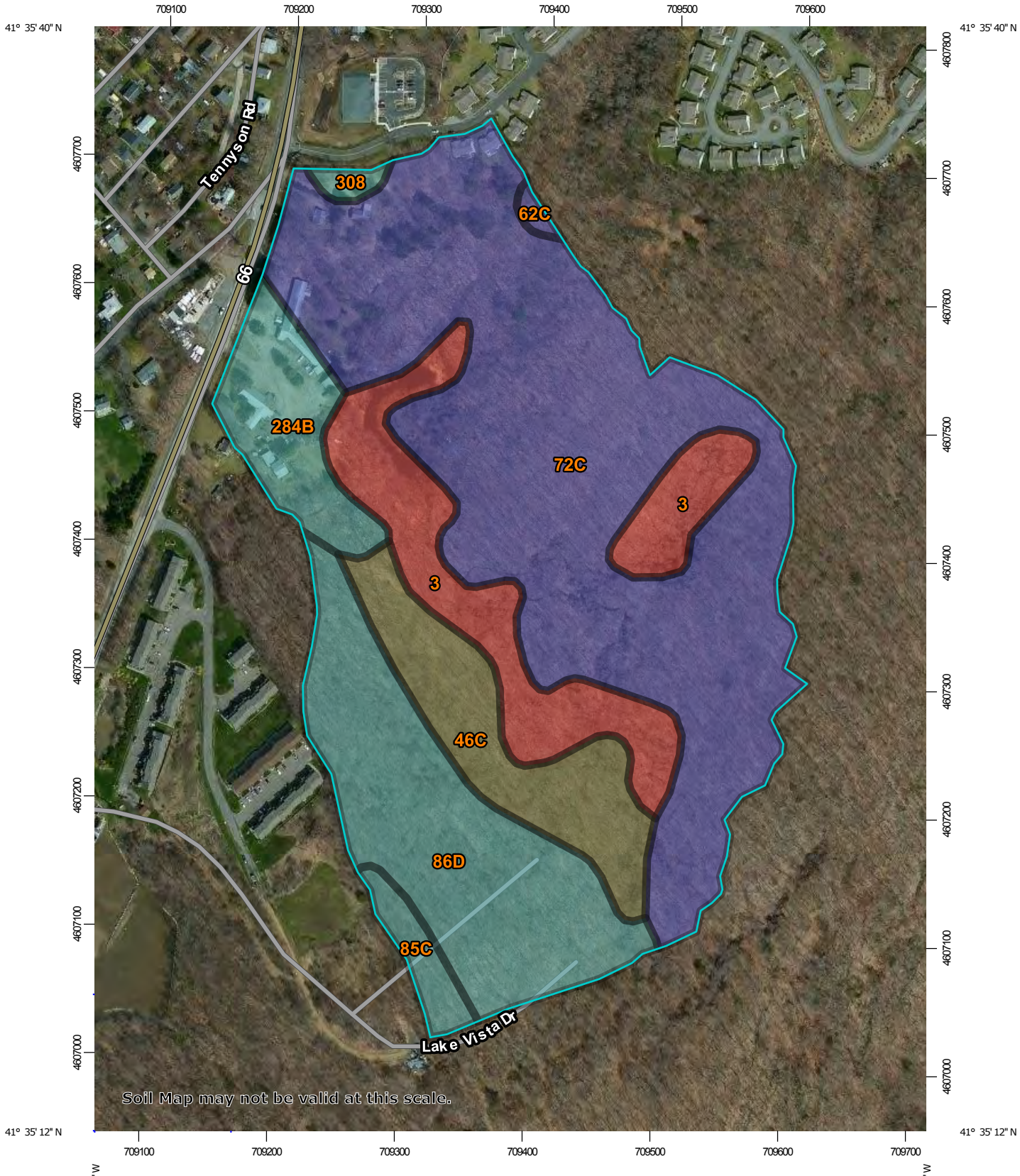
Post-Development Conditions Watershed
Salt Pond Apartments
Edgewater Hill Enterprises LLC
East High Street, East Hampton, Connecticut

SCALE: 1"=100'
DATE: January 2021
FIGURE 4

Appendix A
NRCS Web Soil Survey Soils Report



Map Scale: 1:4,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 15, Sep 28, 2016

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

Date(s) aerial images were photographed: Mar 28, 2011—Apr 18, 2011

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

Table—Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	7.2	13.7%
46C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	C/D	4.9	9.4%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	B	0.2	0.3%
72C	Nipmuck-Brookfield complex, 3 to 15 percent slopes, very rocky	B	26.1	50.0%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	C	1.0	1.9%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	9.3	17.7%
284B	Paxton-Urban land complex, 3 to 8 percent slopes	C	3.3	6.3%
308	Udorthents, smoothed	C	0.3	0.6%
Totals for Area of Interest			**52.2**	**100.0%**

Rating Options—Hydrologic Soil Group

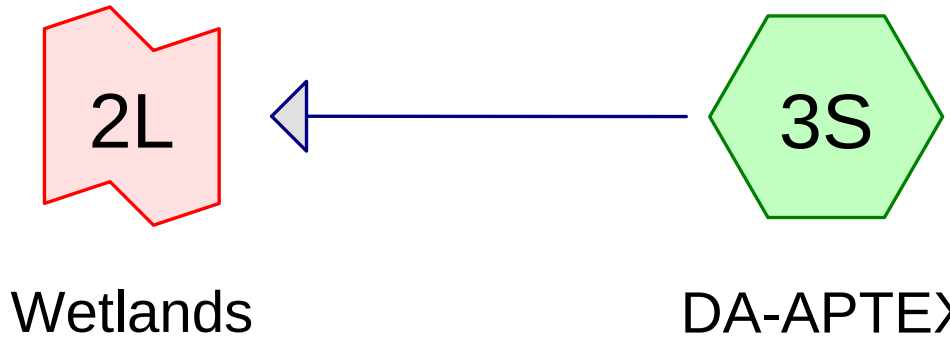
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix B
HydroCAD Modeling Results

Pre-Development Conditions HydroCAD Results



Subcat Reach Pond Link

Routing Diagram for Existing Apartments Only
Prepared by {enter your company name here}, Printed 1/19/2021

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.37	2
2	10-Year	Type III 24-hr		Default	24.00	1	5.18	2
3	25-Year	Type III 24-hr		Default	24.00	1	6.30	2
4	50-Year	Type III 24-hr		Default	24.00	1	7.14	2
5	100-Year	Type III 24-hr		Default	24.00	1	8.04	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
8.687	70	Woods, Good, HSG C (3S)
0.612	77	Woods, Good, HSG D (3S)
9.299	**70**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
8.687	HSG C	3S
0.612	HSG D	3S
0.000	Other	
9.299		**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
0.000	0.000	8.687	0.612	0.000	9.299	Woods, Good	3S
0.000	**0.000**	**8.687**	**0.612**	**0.000**	**9.299**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3S: DA-APTEX Runoff Area=9.299 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=785' Tc=15.6 min CN=70 Runoff=6.77 cfs 0.720 af

Link 2L: Wetlands Inflow=6.77 cfs 0.720 af
Primary=6.77 cfs 0.720 af

Total Runoff Area = 9.299 ac Runoff Volume = 0.720 af Average Runoff Depth = 0.93"
100.00% Pervious = 9.299 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 3S: DA-APTEX

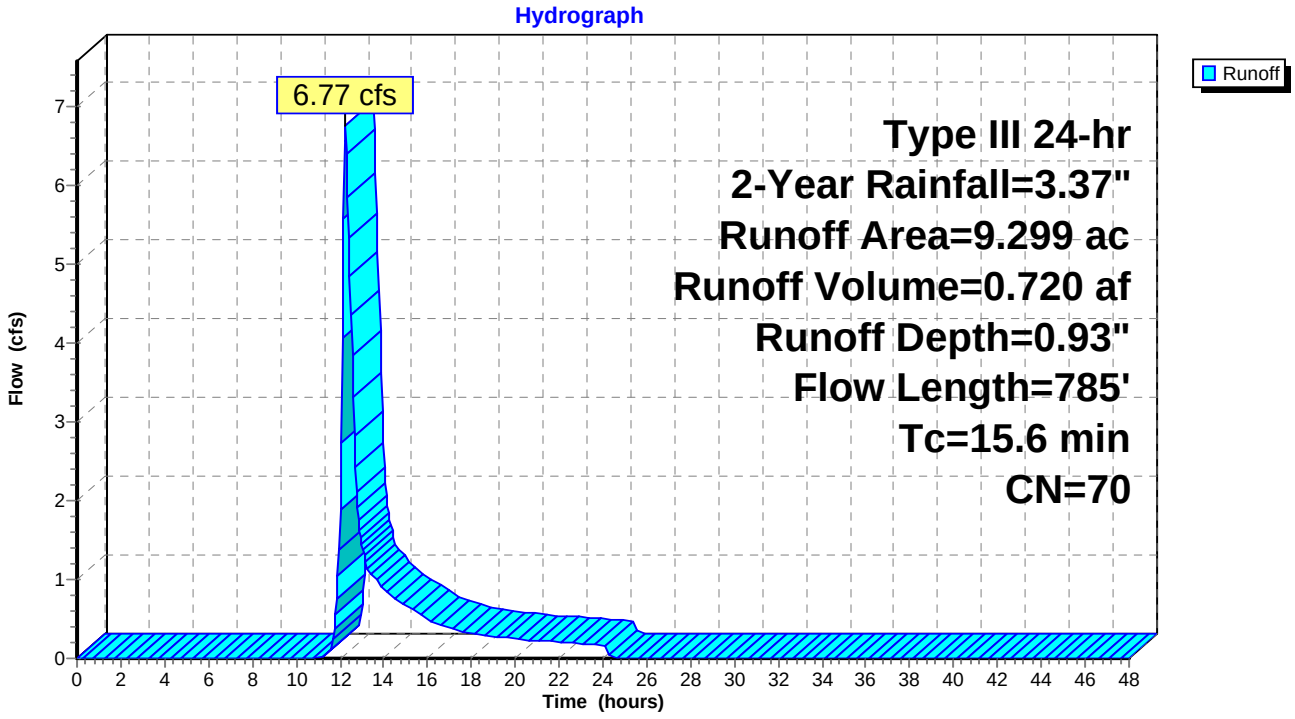
Runoff = 6.77 cfs @ 12.24 hrs, Volume= 0.720 af, Depth= 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

Area (ac)	CN	Description
8.687	70	Woods, Good, HSG C
0.612	77	Woods, Good, HSG D
9.299	70	Weighted Average
9.299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.37"
6.5	735	0.1427	1.89		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
15.6	785	Total			

Subcatchment 3S: DA-APTEX

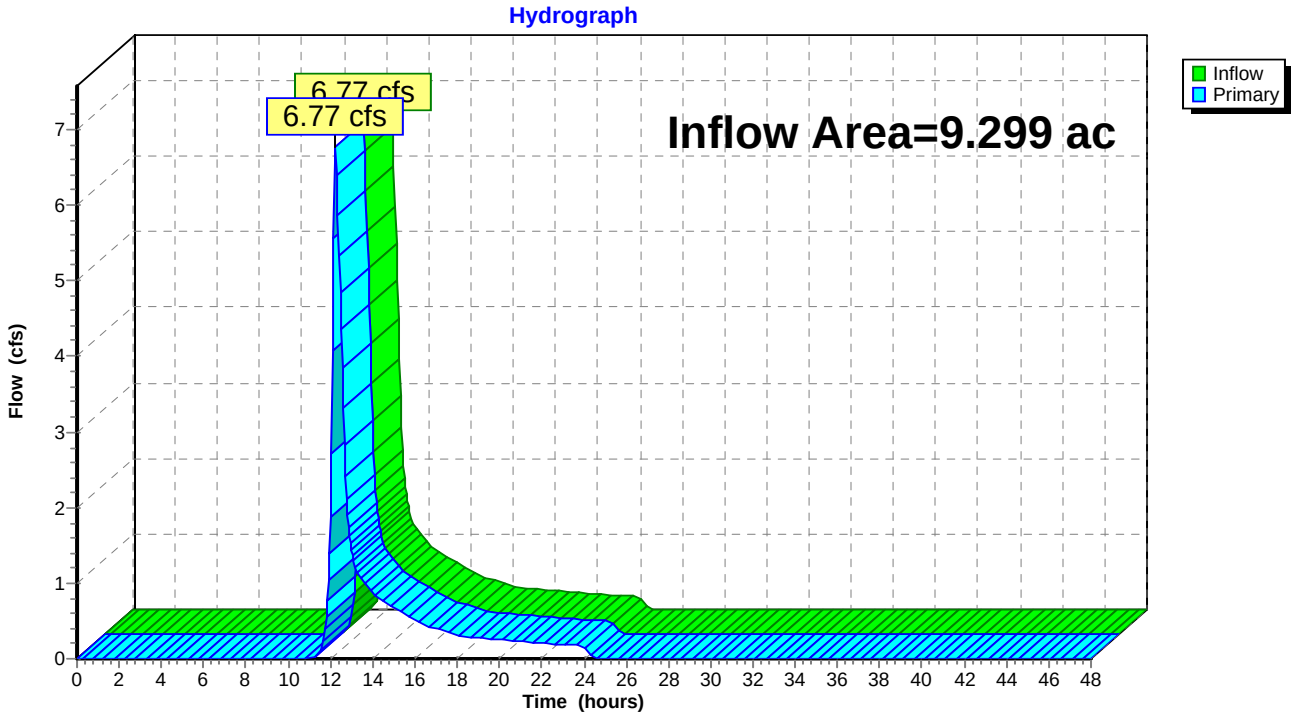


Summary for Link 2L: Wetlands

Inflow Area = 9.299 ac, 0.00% Impervious, Inflow Depth = 0.93" for 2-Year event
Inflow = 6.77 cfs @ 12.24 hrs, Volume= 0.720 af
Primary = 6.77 cfs @ 12.24 hrs, Volume= 0.720 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: Wetlands



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3S: DA-APTEX Runoff Area=9.299 ac 0.00% Impervious Runoff Depth=2.17"
Flow Length=785' Tc=15.6 min CN=70 Runoff=17.25 cfs 1.682 af

Link 2L: Wetlands Inflow=17.25 cfs 1.682 af
Primary=17.25 cfs 1.682 af

Total Runoff Area = 9.299 ac Runoff Volume = 1.682 af Average Runoff Depth = 2.17"
100.00% Pervious = 9.299 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 3S: DA-APTEX

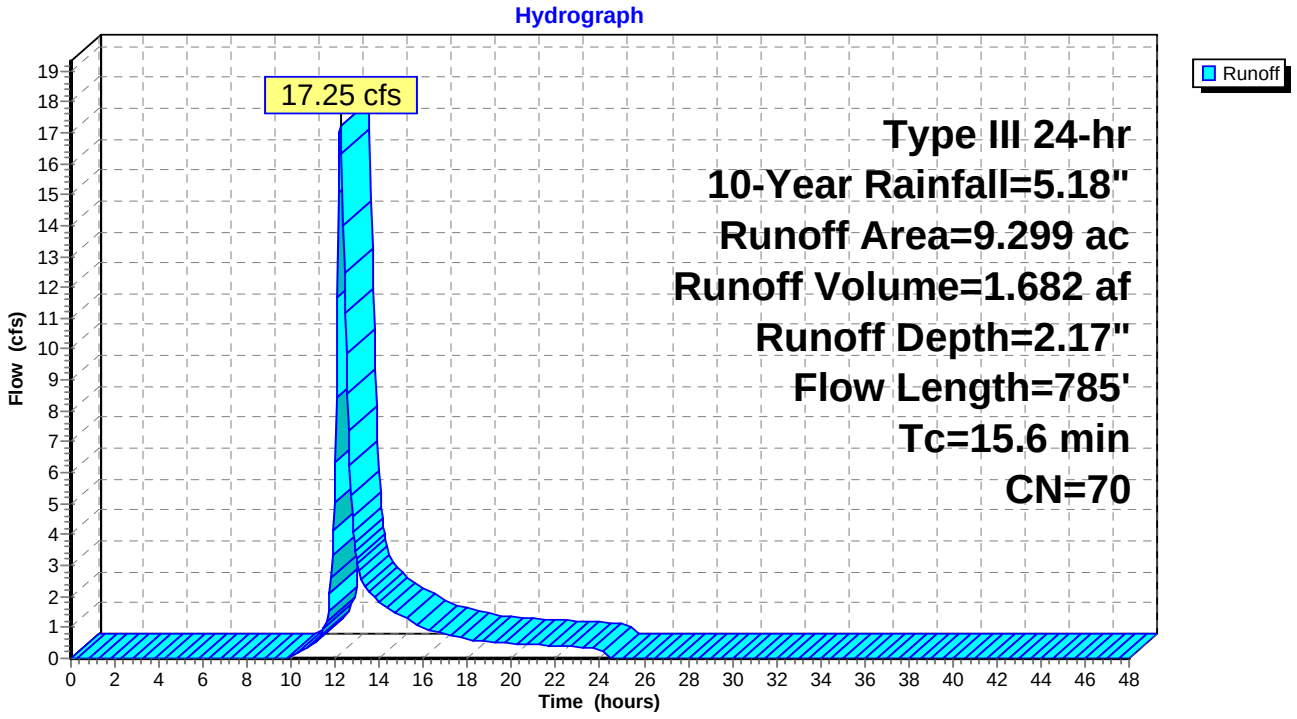
Runoff = 17.25 cfs @ 12.22 hrs, Volume= 1.682 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

Area (ac)	CN	Description
8.687	70	Woods, Good, HSG C
0.612	77	Woods, Good, HSG D
9.299	70	Weighted Average
9.299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.37"
6.5	735	0.1427	1.89		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
15.6	785	Total			

Subcatchment 3S: DA-APTEX

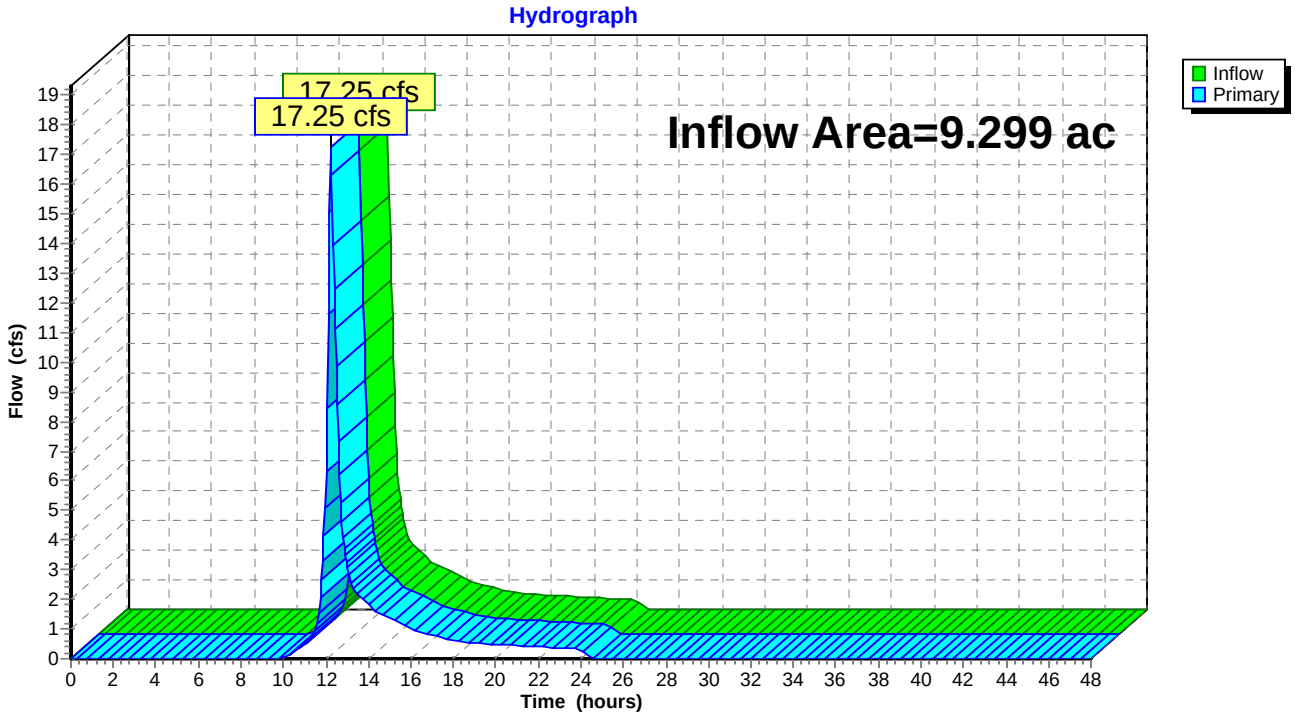


Summary for Link 2L: Wetlands

Inflow Area = 9.299 ac, 0.00% Impervious, Inflow Depth = 2.17" for 10-Year event
Inflow = 17.25 cfs @ 12.22 hrs, Volume= 1.682 af
Primary = 17.25 cfs @ 12.22 hrs, Volume= 1.682 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: Wetlands



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3S: DA-APTEX Runoff Area=9.299 ac 0.00% Impervious Runoff Depth=3.05"
Flow Length=785' Tc=15.6 min CN=70 Runoff=24.52 cfs 2.360 af

Link 2L: Wetlands Inflow=24.52 cfs 2.360 af
Primary=24.52 cfs 2.360 af

Total Runoff Area = 9.299 ac Runoff Volume = 2.360 af Average Runoff Depth = 3.05"
100.00% Pervious = 9.299 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 3S: DA-APTEX

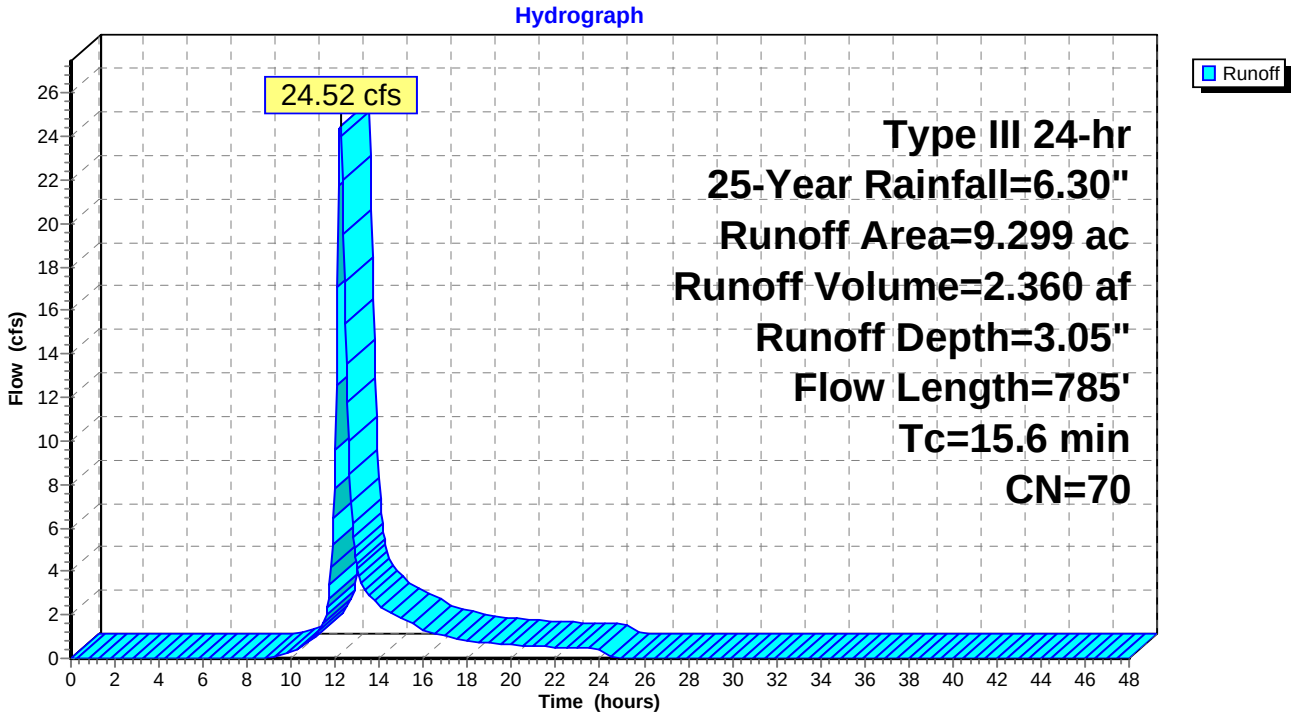
Runoff = 24.52 cfs @ 12.22 hrs, Volume= 2.360 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

Area (ac)	CN	Description
8.687	70	Woods, Good, HSG C
0.612	77	Woods, Good, HSG D
9.299	70	Weighted Average
9.299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.37"
6.5	735	0.1427	1.89		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
15.6	785	Total			

Subcatchment 3S: DA-APTEX

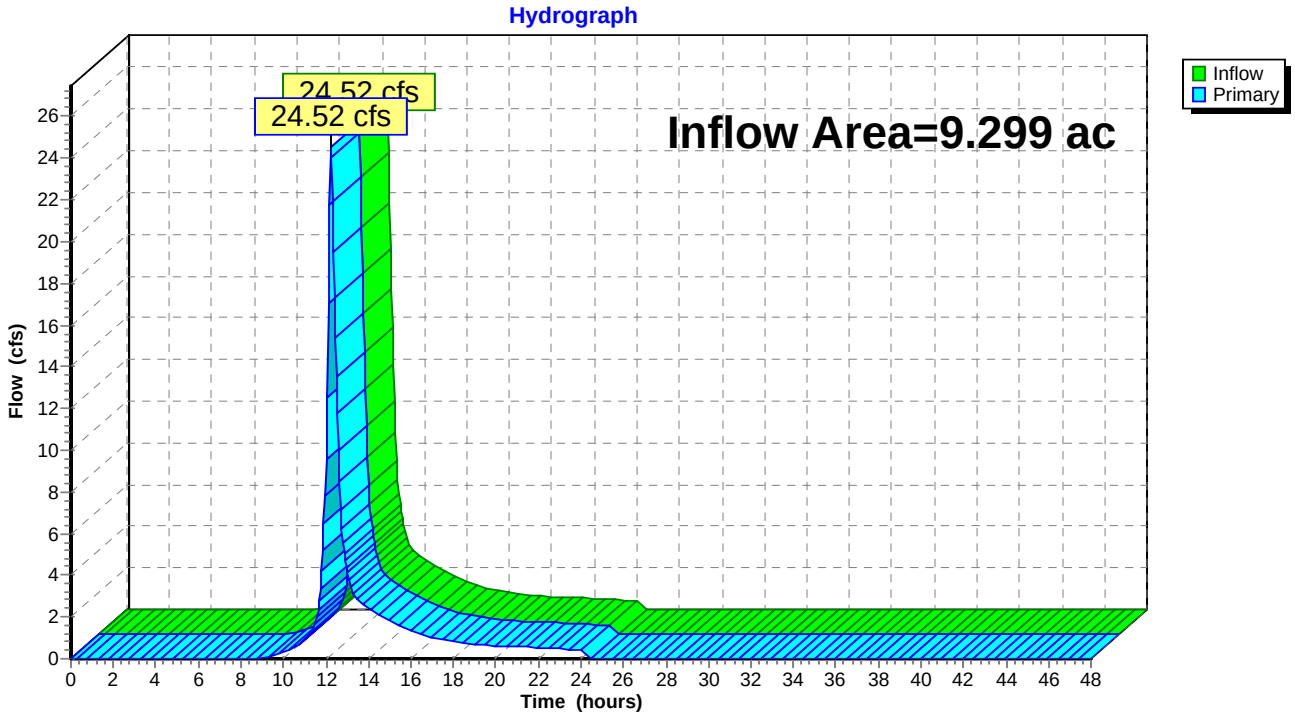


Summary for Link 2L: Wetlands

Inflow Area = 9.299 ac, 0.00% Impervious, Inflow Depth = 3.05" for 25-Year event
Inflow = 24.52 cfs @ 12.22 hrs, Volume= 2.360 af
Primary = 24.52 cfs @ 12.22 hrs, Volume= 2.360 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: Wetlands



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3S: DA-APTEX Runoff Area=9.299 ac 0.00% Impervious Runoff Depth=3.74"
Flow Length=785' Tc=15.6 min CN=70 Runoff=30.21 cfs 2.894 af

Link 2L: Wetlands Inflow=30.21 cfs 2.894 af
Primary=30.21 cfs 2.894 af

Total Runoff Area = 9.299 ac Runoff Volume = 2.894 af Average Runoff Depth = 3.74"
100.00% Pervious = 9.299 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 3S: DA-APTEX

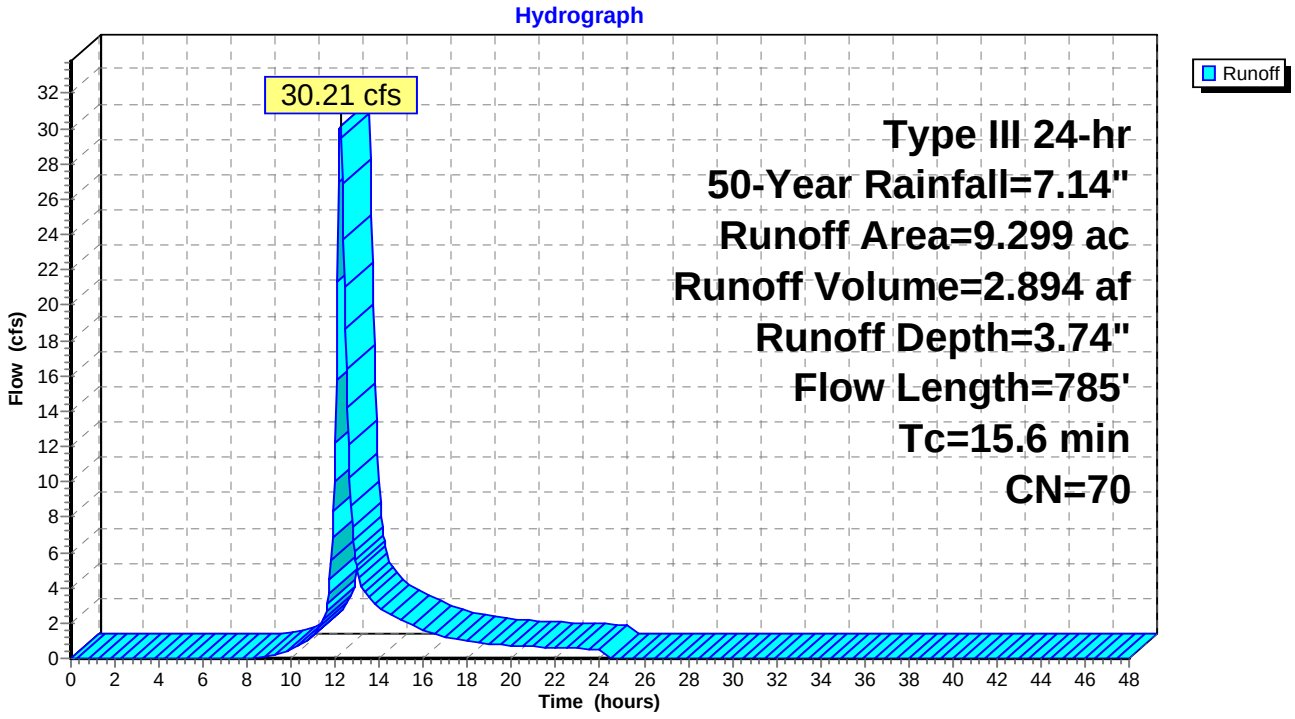
Runoff = 30.21 cfs @ 12.22 hrs, Volume= 2.894 af, Depth= 3.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

Area (ac)	CN	Description
8.687	70	Woods, Good, HSG C
0.612	77	Woods, Good, HSG D
9.299	70	Weighted Average
9.299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.37"
6.5	735	0.1427	1.89		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
15.6	785	Total			

Subcatchment 3S: DA-APTEX

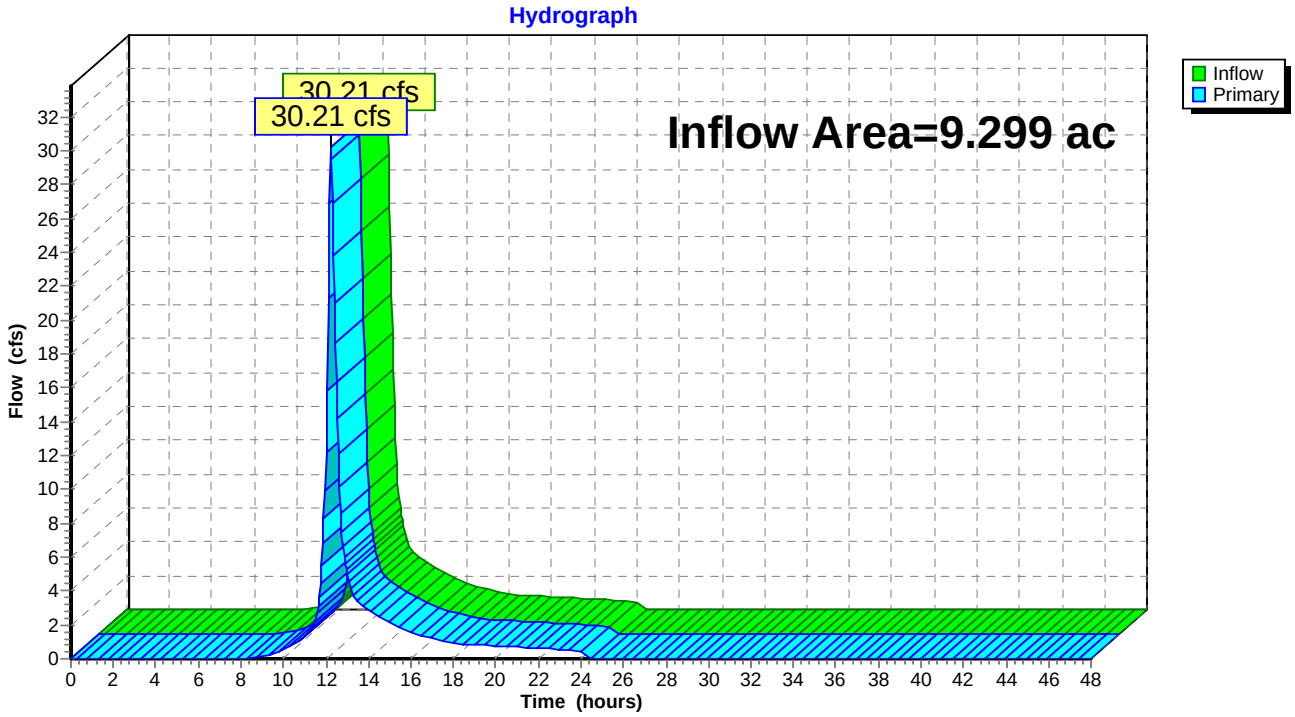


Summary for Link 2L: Wetlands

Inflow Area = 9.299 ac, 0.00% Impervious, Inflow Depth = 3.74" for 50-Year event
Inflow = 30.21 cfs @ 12.22 hrs, Volume= 2.894 af
Primary = 30.21 cfs @ 12.22 hrs, Volume= 2.894 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: Wetlands



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 3S: DA-APTEX Runoff Area=9.299 ac 0.00% Impervious Runoff Depth=4.50"
Flow Length=785' Tc=15.6 min CN=70 Runoff=36.44 cfs 3.486 af

Link 2L: Wetlands Inflow=36.44 cfs 3.486 af
Primary=36.44 cfs 3.486 af

Total Runoff Area = 9.299 ac Runoff Volume = 3.486 af Average Runoff Depth = 4.50"
100.00% Pervious = 9.299 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 3S: DA-APTEX

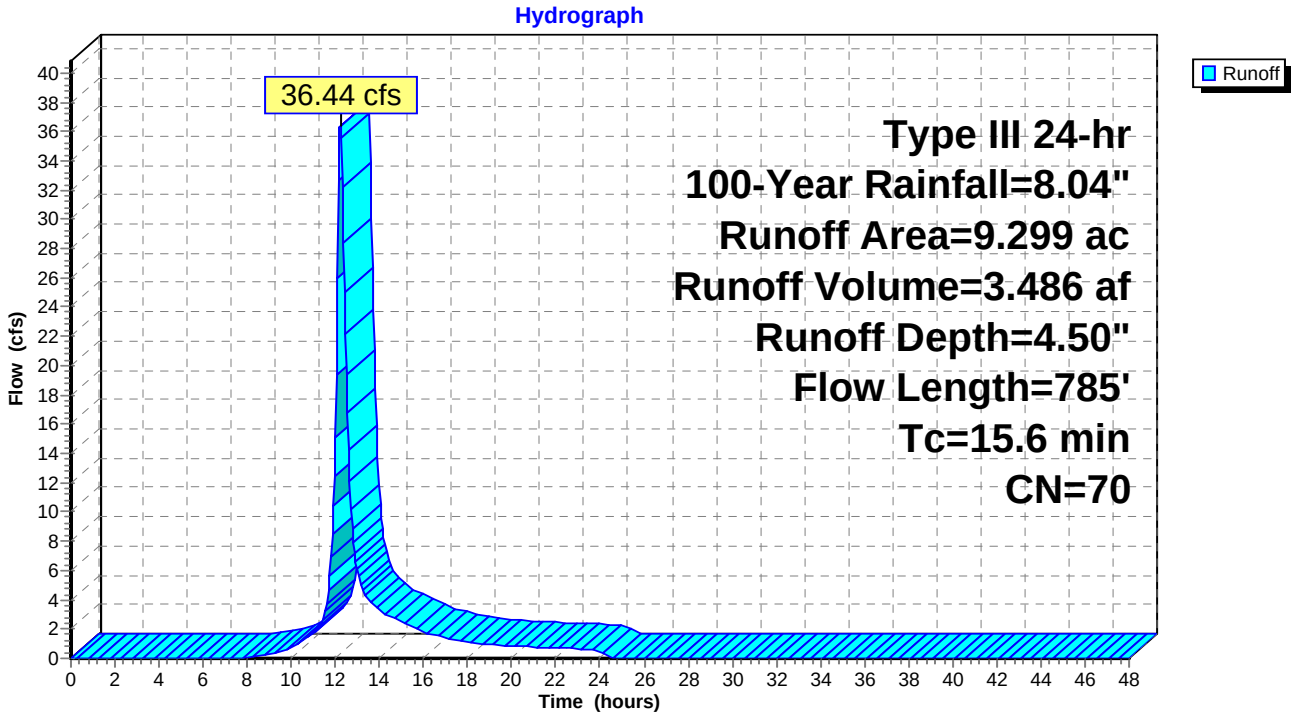
Runoff = 36.44 cfs @ 12.22 hrs, Volume= 3.486 af, Depth= 4.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

Area (ac)	CN	Description
8.687	70	Woods, Good, HSG C
0.612	77	Woods, Good, HSG D
9.299	70	Weighted Average
9.299		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	50	0.0400	0.09		**Sheet Flow, Grass** Woods: Light underbrush n= 0.400 P2= 3.37"
6.5	735	0.1427	1.89		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
15.6	785	Total			

Subcatchment 3S: DA-APTEX

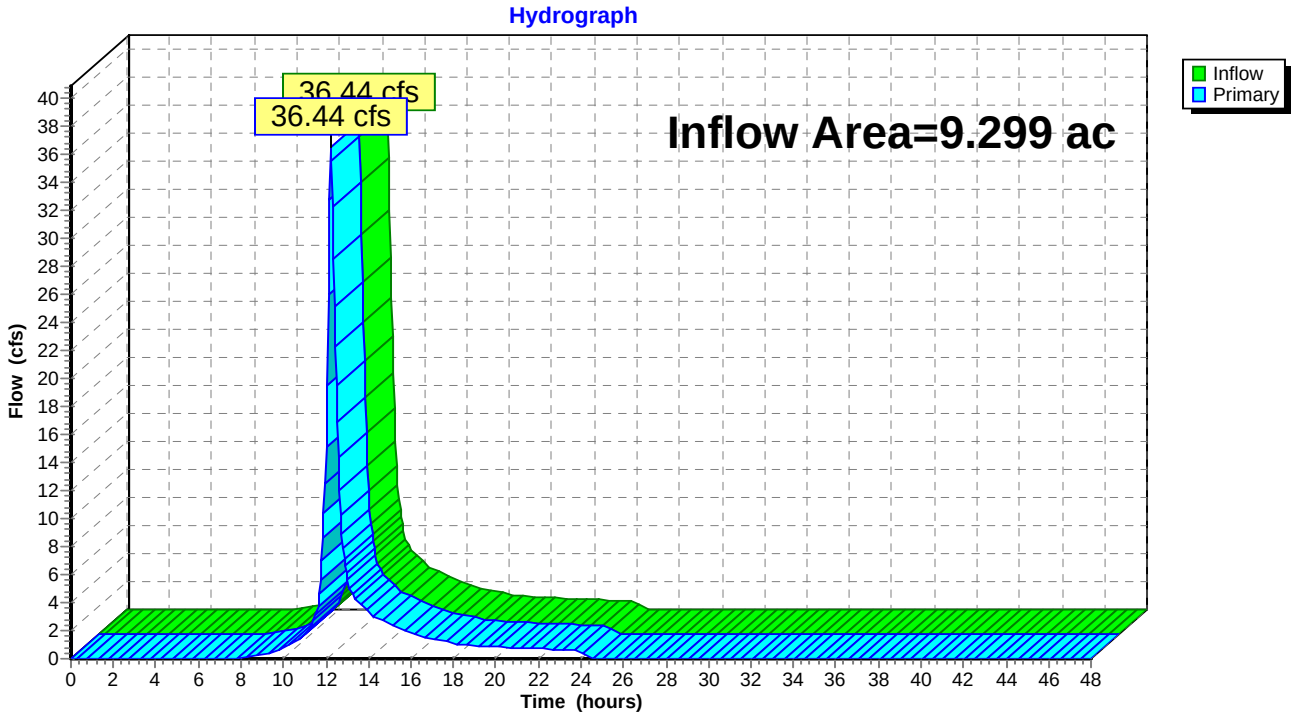


Summary for Link 2L: Wetlands

Inflow Area = 9.299 ac, 0.00% Impervious, Inflow Depth = 4.50" for 100-Year event
Inflow = 36.44 cfs @ 12.22 hrs, Volume= 3.486 af
Primary = 36.44 cfs @ 12.22 hrs, Volume= 3.486 af, Atten= 0%, Lag= 0.0 min

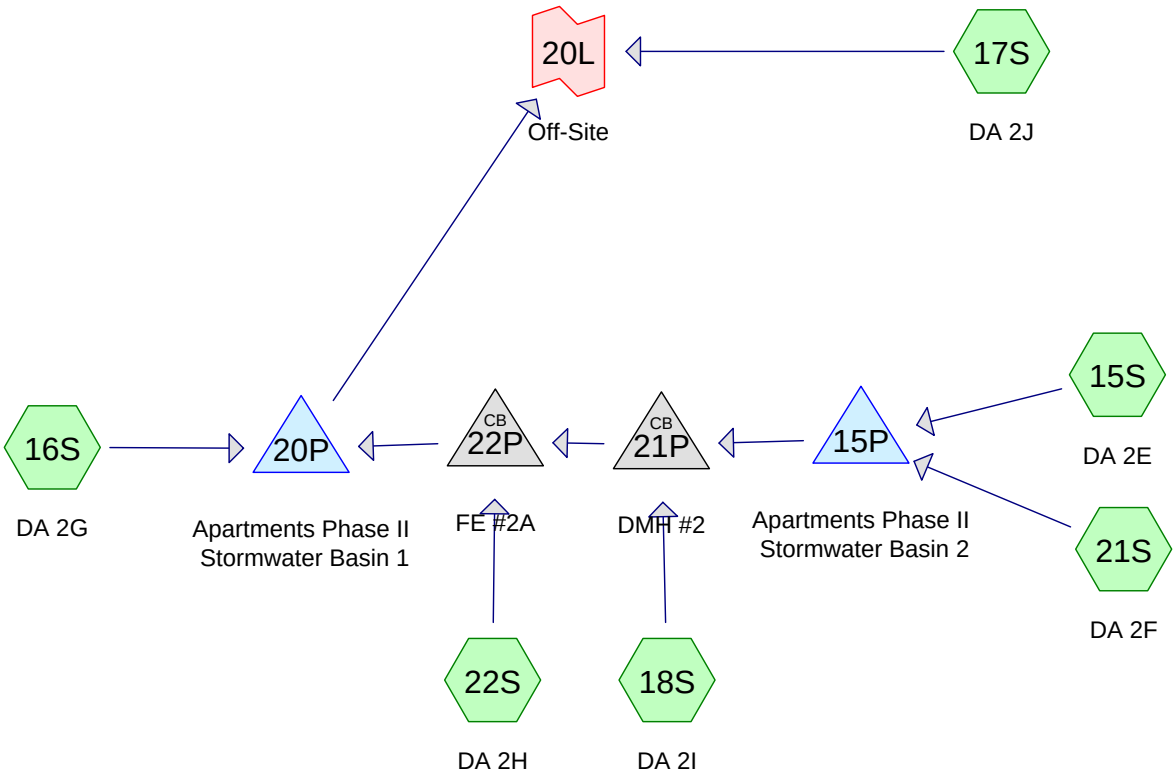
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: Wetlands



Post-Development Conditions

HydroCAD Results



Subcat Reach Pond Link

Routing Diagram for Proposed - Apartments Only

Prepared by {enter your company name here}, Printed 1/19/2021

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.37	2
2	10-Year	Type III 24-hr		Default	24.00	1	5.18	2
3	25-Year	Type III 24-hr		Default	24.00	1	6.30	2
4	50-Year	Type III 24-hr		Default	24.00	1	7.14	2
5	100-Year	Type III 24-hr		Default	24.00	1	8.04	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.782	74	>75% Grass cover, Good, HSG C (17S)
3.254	80	>75% Grass cover, Good, HSG D (15S, 16S, 17S, 18S, 21S, 22S)
0.010	80	>75% Grass cover, Good, HSG D, North (22S)
0.384	98	Paved parking, HSG C (17S)
0.775	98	Paved parking, HSG C, North (18S, 22S)
1.535	98	Paved parking, HSG C, South (15S, 22S)
0.184	98	Two single Family Houses and Paved Driveways (17S)
0.186	98	Water Surface, 0% imp, HSG C (16S, 21S)
2.189	70	Woods, Good, HSG C (15S, 17S, 22S)
9.299	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
5.851	HSG C	15S, 16S, 17S, 18S, 21S, 22S
3.264	HSG D	15S, 16S, 17S, 18S, 21S, 22S
0.184	Other	17S
9.299		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover
0.000	0.000	0.782	3.264	0.000	4.046	>75% Grass cover, Good
0.000	0.000	2.694	0.000	0.000	2.694	Paved parking
0.000	0.000	0.000	0.000	0.184	0.184	Two single Family Houses and Paved Driveways
0.000	0.000	0.186	0.000	0.000	0.186	Water Surface, 0% imp
0.000	0.000	2.189	0.000	0.000	2.189	Woods, Good
0.000	**0.000**	**5.851**	**3.264**	**0.184**	**9.299**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	15P	566.00	564.27	68.0	0.0254	0.013	0.0	18.0	0.0
2	20P	554.00	552.00	102.0	0.0196	0.013	0.0	18.0	0.0
3	21P	563.77	559.50	260.0	0.0164	0.013	0.0	24.0	0.0
4	22P	556.50	555.00	60.0	0.0250	0.012	0.0	36.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 15S: DA 2E Runoff Area=3.023 ac 32.58% Impervious Runoff Depth>1.75"
Flow Length=671' Tc=12.0 min CN=83 Runoff=5.06 cfs 0.440 af

Subcatchment 16S: DA 2G Runoff Area=0.554 ac 0.00% Impervious Runoff Depth>1.82"
Flow Length=110' Tc=6.0 min CN=84 Runoff=1.16 cfs 0.084 af

Subcatchment 17S: DA 2J Runoff Area=2.286 ac 24.85% Impervious Runoff Depth>1.53"
Flow Length=240' Tc=6.0 min CN=80 Runoff=4.01 cfs 0.292 af

Subcatchment 18S: DA 2I Runoff Area=0.536 ac 64.18% Impervious Runoff Depth>2.51"
Flow Length=230' Slope=0.0200 '/' Tc=11.0 min CN=92 Runoff=1.30 cfs 0.112 af

Subcatchment 21S: DA 2F Runoff Area=0.152 ac 0.00% Impervious Runoff Depth>1.98"
Flow Length=107' Tc=6.0 min CN=86 Runoff=0.35 cfs 0.025 af

Subcatchment 22S: DA 2H Runoff Area=2.748 ac 35.70% Impervious Runoff Depth>1.82"
Flow Length=676' Tc=10.0 min CN=84 Runoff=5.08 cfs 0.417 af

Pond 15P: Apartments Phase II Stormwater Peak Elev=568.22' Storage=5,058 cf Inflow=5.31 cfs 0.465 af
Outflow=4.00 cfs 0.458 af

Pond 20P: Apartments Phase II Peak Elev=556.81' Storage=18,654 cf Inflow=10.02 cfs 1.072 af
Outflow=4.75 cfs 1.039 af

Pond 21P: DMH #2 Peak Elev=564.72' Inflow=4.92 cfs 0.570 af
24.0" Round Culvert n=0.013 L=260.0' S=0.0164 '/' Outflow=4.92 cfs 0.570 af

Pond 22P: FE #2A Peak Elev=557.65' Inflow=9.12 cfs 0.988 af
36.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=9.12 cfs 0.988 af

Link 20L: Off-Site Inflow=5.97 cfs 1.330 af
Primary=5.97 cfs 1.330 af

Total Runoff Area = 9.299 ac Runoff Volume = 1.370 af Average Runoff Depth = 1.77"
69.05% Pervious = 6.421 ac 30.95% Impervious = 2.878 ac

Summary for Subcatchment 15S: DA 2E

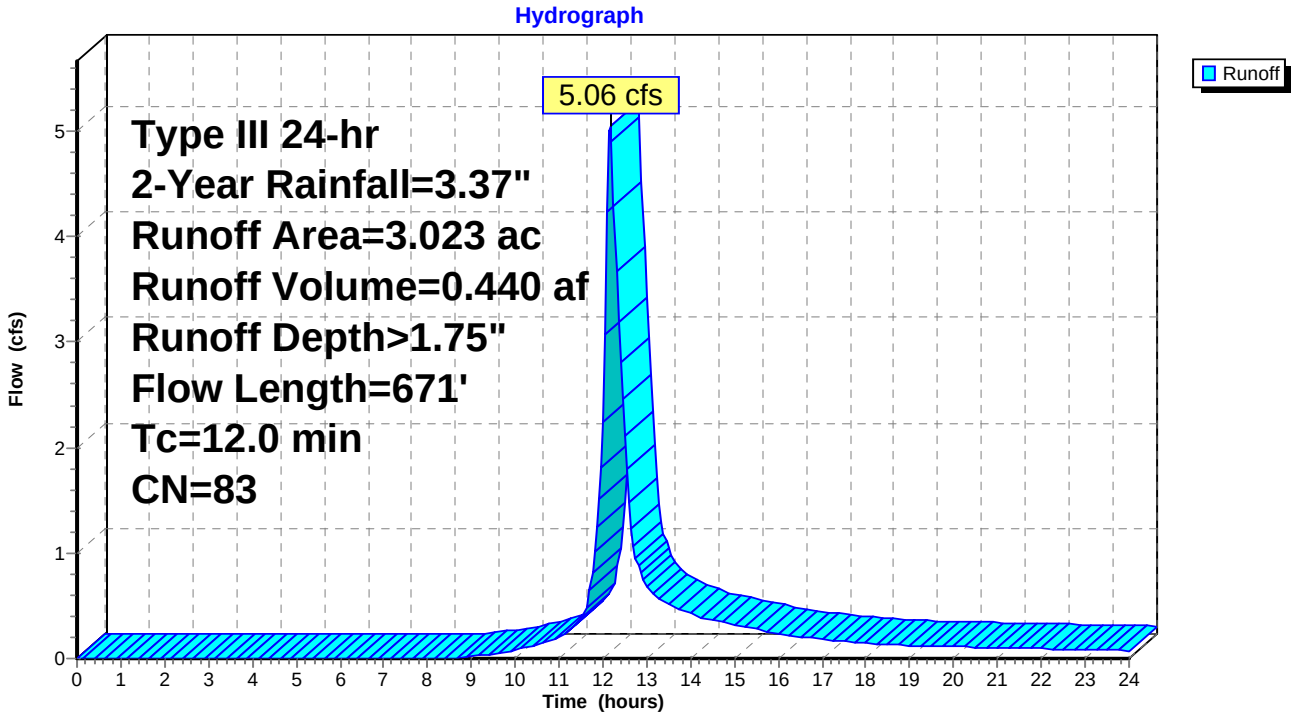
Runoff = 5.06 cfs @ 12.17 hrs, Volume= 0.440 af, Depth> 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
*	0.985	98	Paved parking, HSG C, South
	0.455	80	>75% Grass cover, Good, HSG D
	0.917	70	Woods, Good, HSG C
	0.666	80	>75% Grass cover, Good, HSG D
	3.023	83	Weighted Average
	2.038		67.42% Pervious Area
	0.985		32.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
3.3	417	0.1799	2.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	164	0.0421	4.17		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
12.0	671	Total			

Subcatchment 15S: DA 2E



Summary for Subcatchment 16S: DA 2G

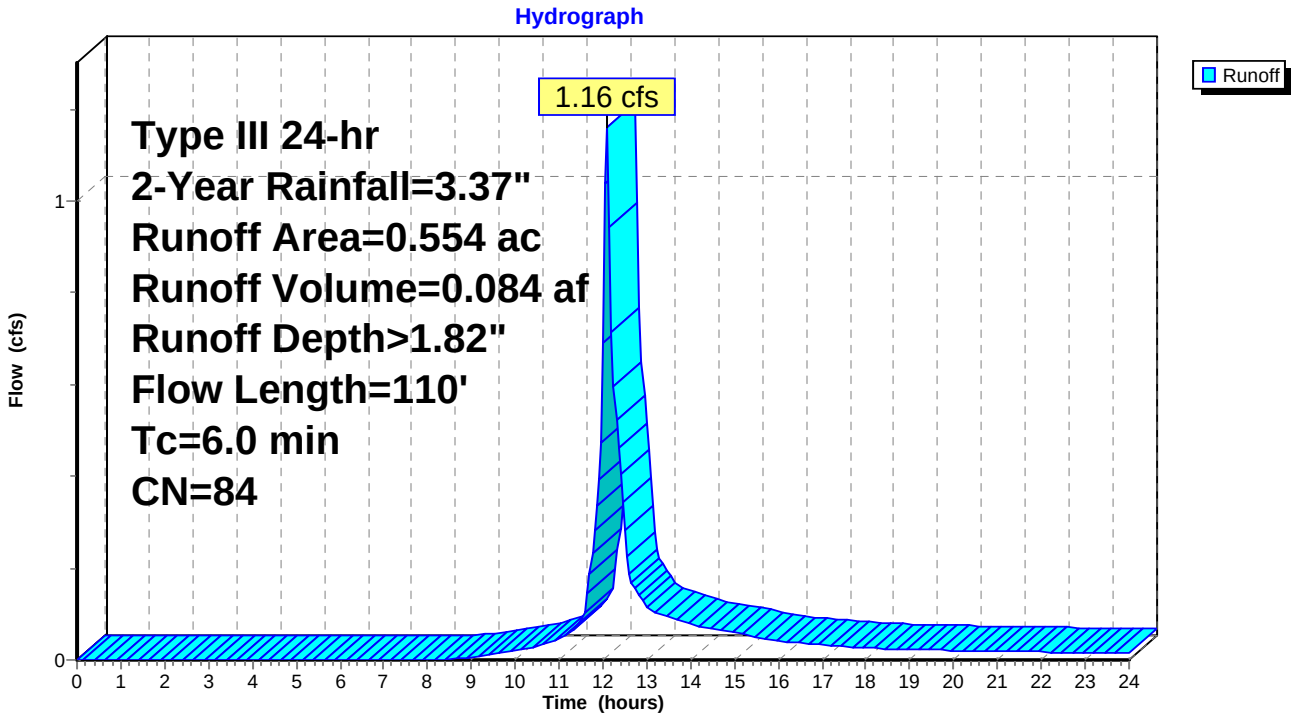
Runoff = 1.16 cfs @ 12.09 hrs, Volume= 0.084 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

Area (ac)	CN	Description
0.135	98	Water Surface, 0% imp, HSG C
0.017	80	>75% Grass cover, Good, HSG D
0.229	80	>75% Grass cover, Good, HSG D
0.157	80	>75% Grass cover, Good, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.554	84	Weighted Average
0.554		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0500	0.15		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.2	60	0.3500	4.14		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
5.7	110	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 16S: DA 2G



Summary for Subcatchment 17S: DA 2J

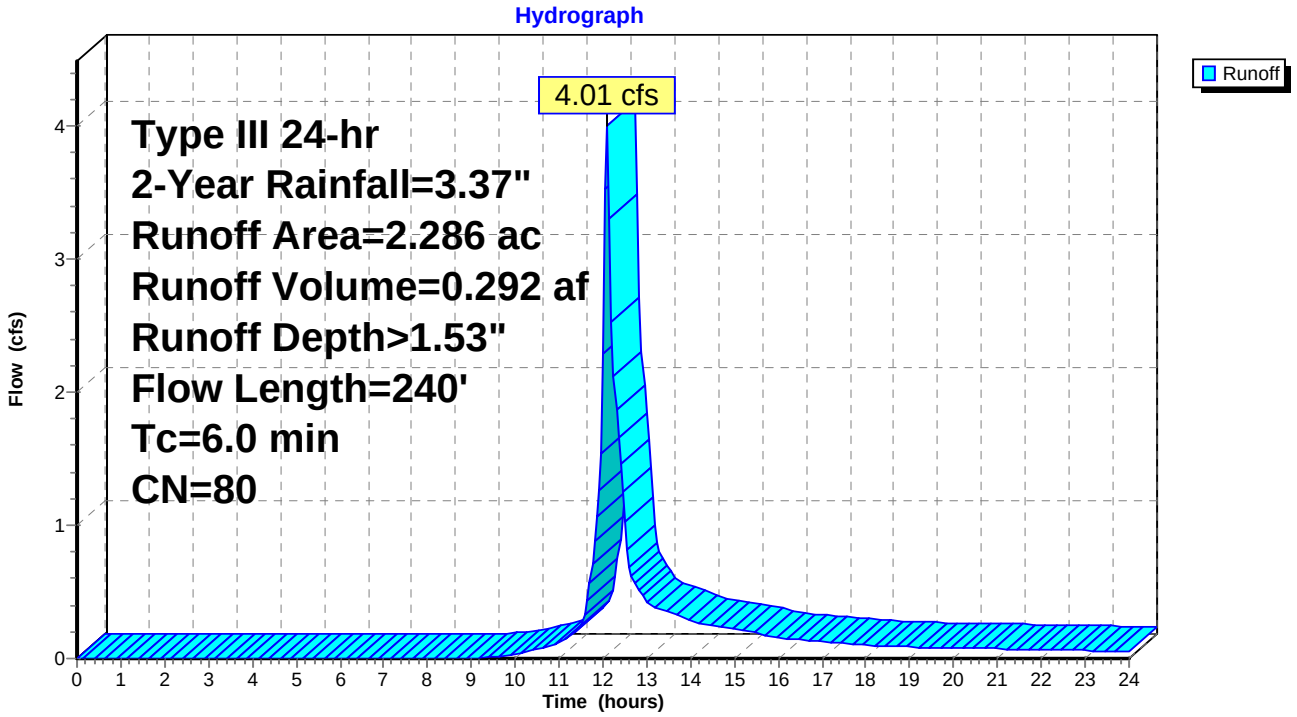
Runoff = 4.01 cfs @ 12.10 hrs, Volume= 0.292 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
	0.412	80	>75% Grass cover, Good, HSG D
	0.061	98	Paved parking, HSG C
	0.032	74	>75% Grass cover, Good, HSG C
	0.140	98	Paved parking, HSG C
	0.721	74	>75% Grass cover, Good, HSG C
*	0.184	98	Two single Family Houses and Paved Driveways
	0.183	98	Paved parking, HSG C
	0.524	70	Woods, Good, HSG C
	0.029	74	>75% Grass cover, Good, HSG C
	2.286	80	Weighted Average
	1.718		75.15% Pervious Area
	0.568		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	24	0.1000	0.17		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	26	0.0500	1.56		**Sheet Flow, Paved/Gravel** Smooth surfaces n= 0.011 P2= 3.37"
0.3	85	0.0824	4.62		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	105	0.1333	2.56		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.6	240	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 17S: DA 2J



Summary for Subcatchment 18S: DA 2I

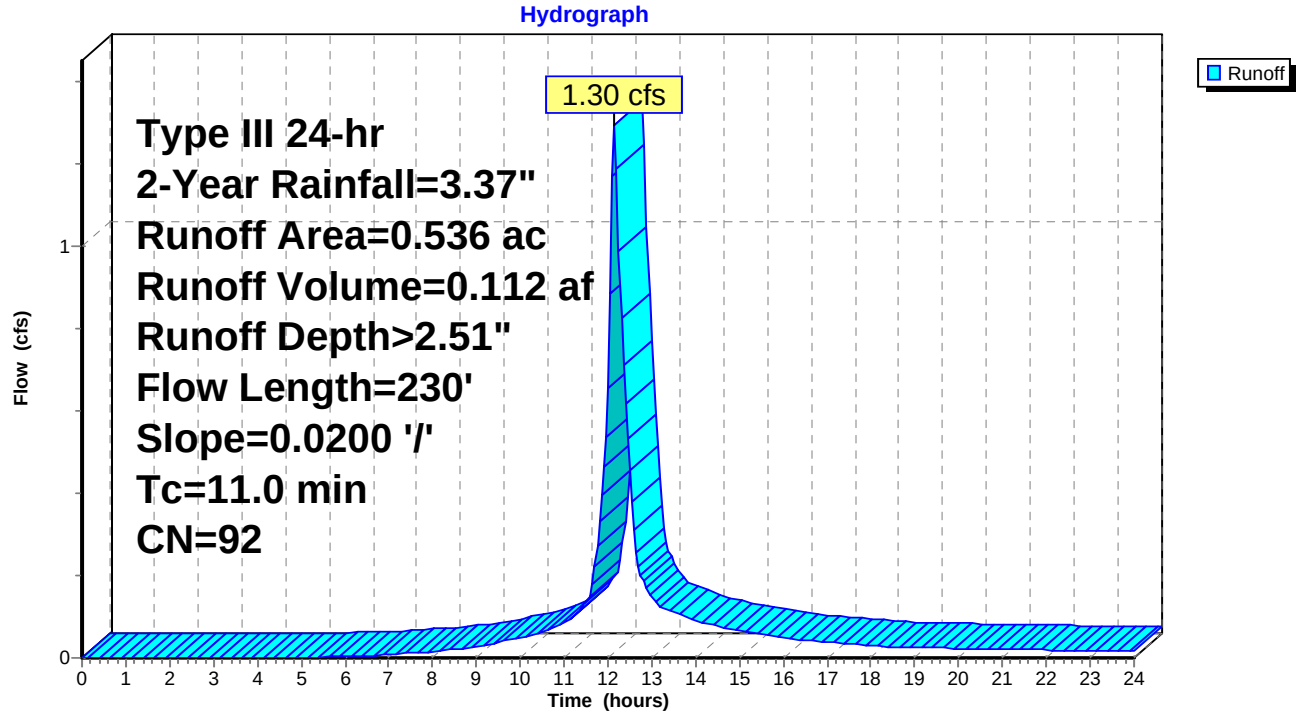
Runoff = 1.30 cfs @ 12.15 hrs, Volume= 0.112 af, Depth> 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
*	0.344	98	Paved parking, HSG C, North
	0.192	80	>75% Grass cover, Good, HSG D
	0.536	92	Weighted Average
	0.192		35.82% Pervious Area
	0.344		64.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
3.0	180	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
11.0	230	Total			

Subcatchment 18S: DA 2I



Summary for Subcatchment 21S: DA 2F

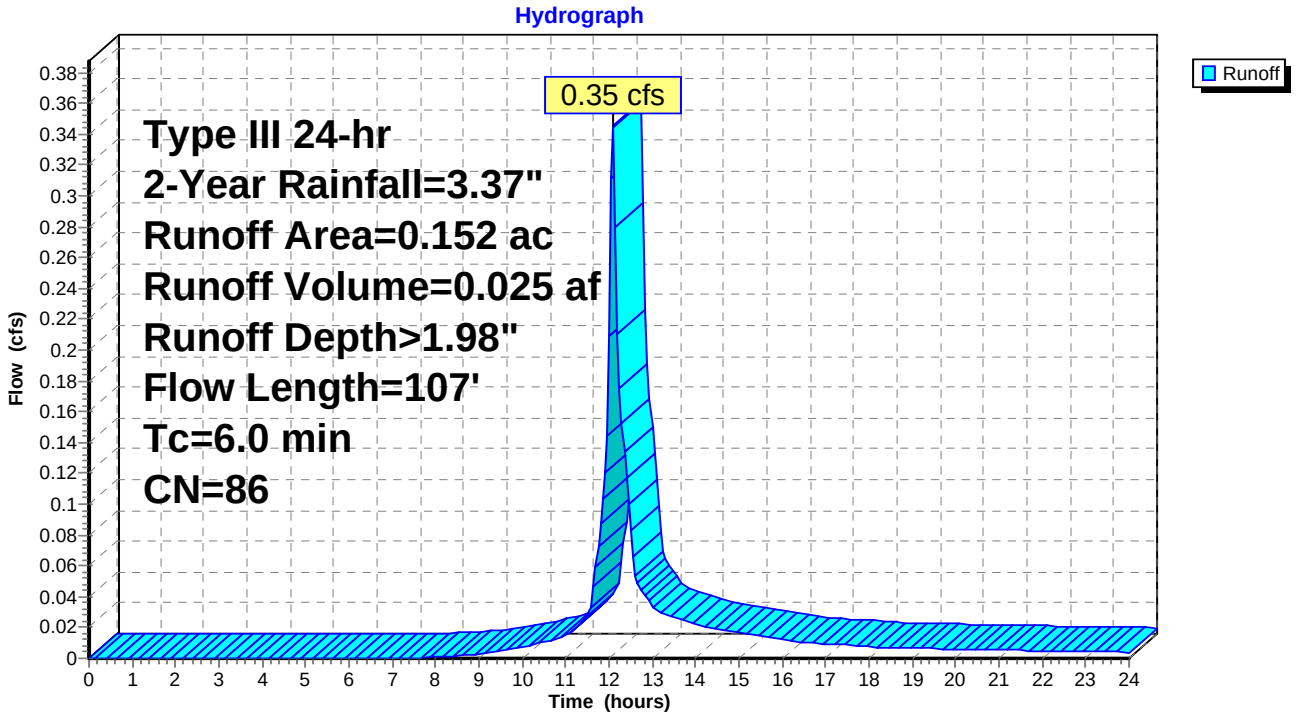
Runoff = 0.35 cfs @ 12.09 hrs, Volume= 0.025 af, Depth> 1.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

Area (ac)	CN	Description
0.051	98	Water Surface, 0% imp, HSG C
0.101	80	>75% Grass cover, Good, HSG D
0.152	86	Weighted Average
0.152		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	57	0.1754	2.93		**Shallow Concentrated Flow, Woods** Short Grass Pasture Kv= 7.0 fps
4.5	107	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 21S: DA 2F



Summary for Subcatchment 22S: DA 2H

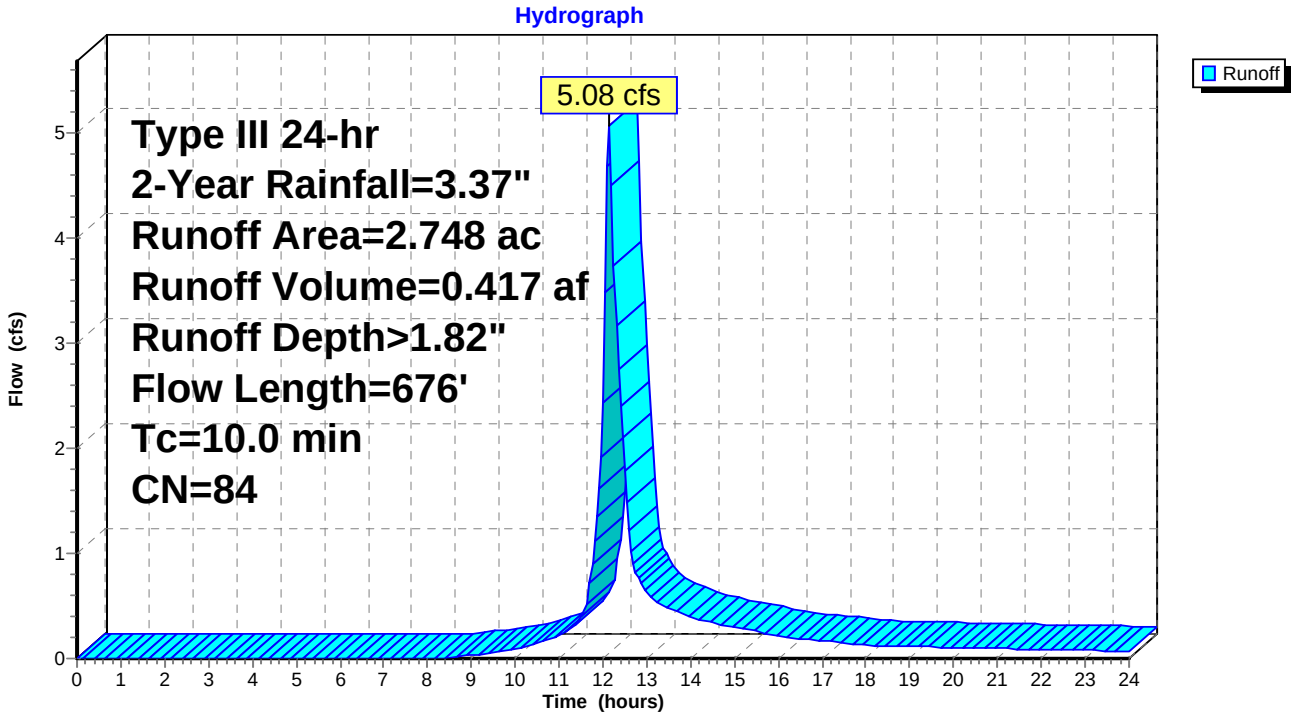
Runoff = 5.08 cfs @ 12.14 hrs, Volume= 0.417 af, Depth> 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
*	0.431	98	Paved parking, HSG C, North
*	0.010	80	>75% Grass cover, Good, HSG D, North
	0.313	80	>75% Grass cover, Good, HSG D
*	0.550	98	Paved parking, HSG C, South
	0.360	80	>75% Grass cover, Good, HSG D
	0.748	70	Woods, Good, HSG C
	0.336	80	>75% Grass cover, Good, HSG D
	2.748	84	Weighted Average
	1.767		64.30% Pervious Area
	0.981		35.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
1.7	190	0.1316	1.81		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	81	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	355	0.0310	3.57		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
10.0	676	Total			

Subcatchment 22S: DA 2H



Summary for Pond 15P: Apartments Phase II Stormwater Basin 2

Inflow Area = 3.175 ac, 31.02% Impervious, Inflow Depth > 1.76" for 2-Year event
Inflow = 5.31 cfs @ 12.17 hrs, Volume= 0.465 af
Outflow = 4.00 cfs @ 12.29 hrs, Volume= 0.458 af, Atten= 25%, Lag= 7.6 min
Primary = 4.00 cfs @ 12.29 hrs, Volume= 0.458 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 567.00' Surf.Area= 2,390 sf Storage= 1,777 cf
Peak Elev= 568.22' @ 12.29 hrs Surf.Area= 2,982 sf Storage= 5,058 cf (3,281 cf above start)
Flood Elev= 569.70' Surf.Area= 3,741 sf Storage= 10,022 cf (8,245 cf above start)

Plug-Flow detention time= 83.2 min calculated for 0.418 af (90% of inflow)
Center-of-Mass det. time= 17.8 min (851.7 - 833.9)

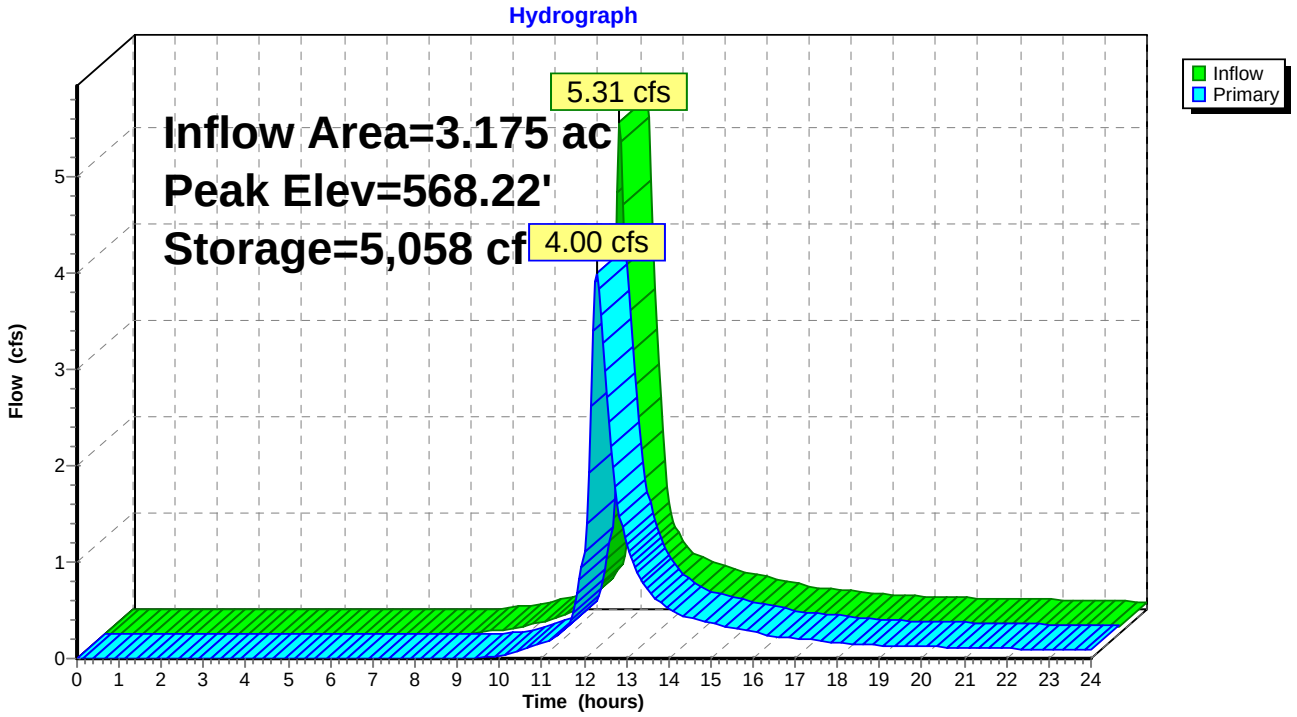
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	11,168 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	1,164	0	0
567.00	2,390	1,777	1,777
568.00	2,867	2,629	4,406
570.00	3,895	6,762	11,168

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**18.0" Round 18" HDPE** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 566.00' / 564.27' S= 0.0254 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	567.00'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	567.50'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	568.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	569.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=3.99 cfs @ 12.29 hrs HW=568.22' TW=564.72' (Dynamic Tailwater)
└─**1=18" HDPE** (Passes 3.99 cfs of 10.32 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 1.86 cfs @ 4.74 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.75 cfs @ 2.89 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 0.37 cfs @ 1.60 fps)
  └─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 15P: Apartments Phase II Stormwater Basin 2



Summary for Pond 20P: Apartments Phase II Stormwater Basin 1

Inflow Area = 7.013 ac, 32.94% Impervious, Inflow Depth > 1.83" for 2-Year event
Inflow = 10.02 cfs @ 12.17 hrs, Volume= 1.072 af
Outflow = 4.75 cfs @ 12.56 hrs, Volume= 1.039 af, Atten= 53%, Lag= 23.2 min
Primary = 4.75 cfs @ 12.56 hrs, Volume= 1.039 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 555.00' Surf.Area= 6,117 sf Storage= 5,401 cf
Peak Elev= 556.81' @ 12.56 hrs Surf.Area= 8,345 sf Storage= 18,654 cf (13,252 cf above start)
Flood Elev= 559.40' Surf.Area= 11,019 sf Storage= 43,681 cf (38,280 cf above start)

Plug-Flow detention time= 130.1 min calculated for 0.913 af (85% of inflow)
Center-of-Mass det. time= 44.6 min (880.3 - 835.8)

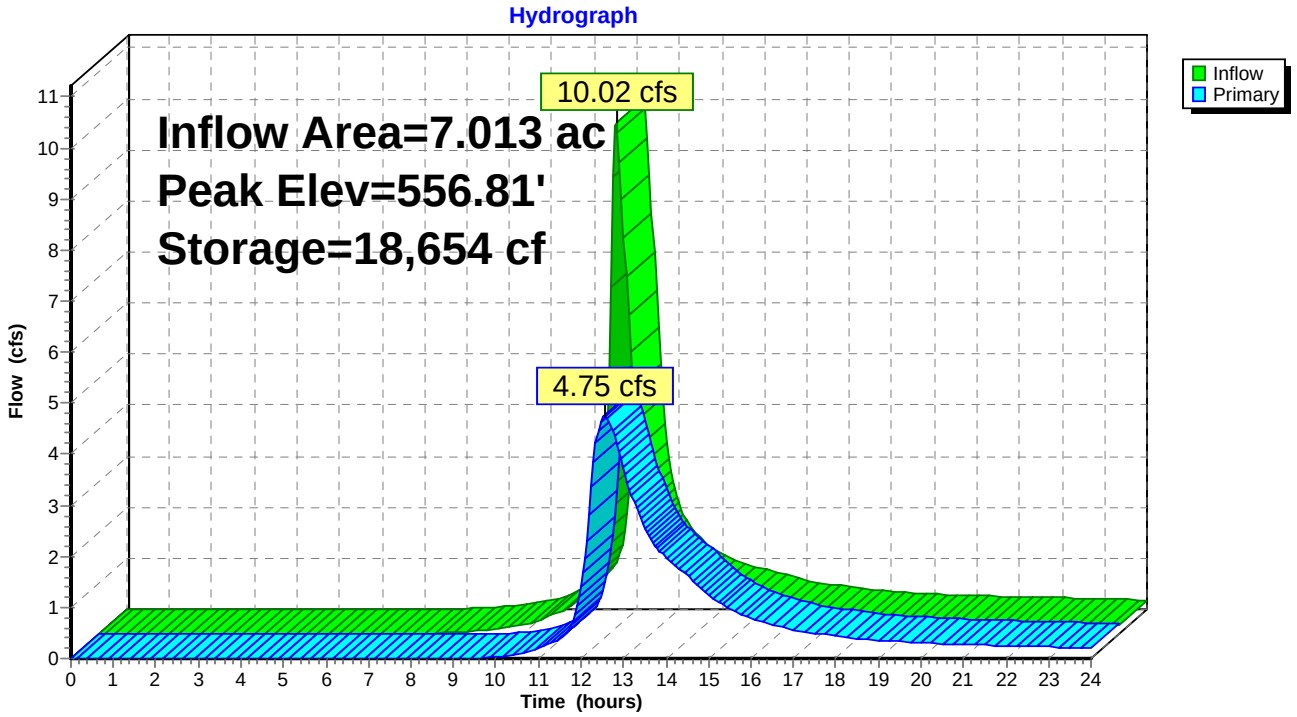
Volume	Invert	Avail.Storage	Storage Description
#1	554.00'	50,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
554.00	4,686	0	0
556.00	7,547	12,233	12,233
558.00	9,522	17,069	29,302
560.00	11,661	21,183	50,485

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**18.0" Round 18" HDPE** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.00' / 552.00' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	555.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	556.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	557.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	558.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.75 cfs @ 12.56 hrs HW=556.81' TW=0.00' (Dynamic Tailwater)
└─**1=18" HDPE** (Passes 4.75 cfs of 12.20 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 3.10 cfs @ 5.68 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 1.65 cfs @ 3.06 fps)
  ├─**4=Orifice/Grate** (Controls 0.00 cfs)
  └─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 20P: Apartments Phase II Stormwater Basin 1



Summary for Pond 21P: DMH #2

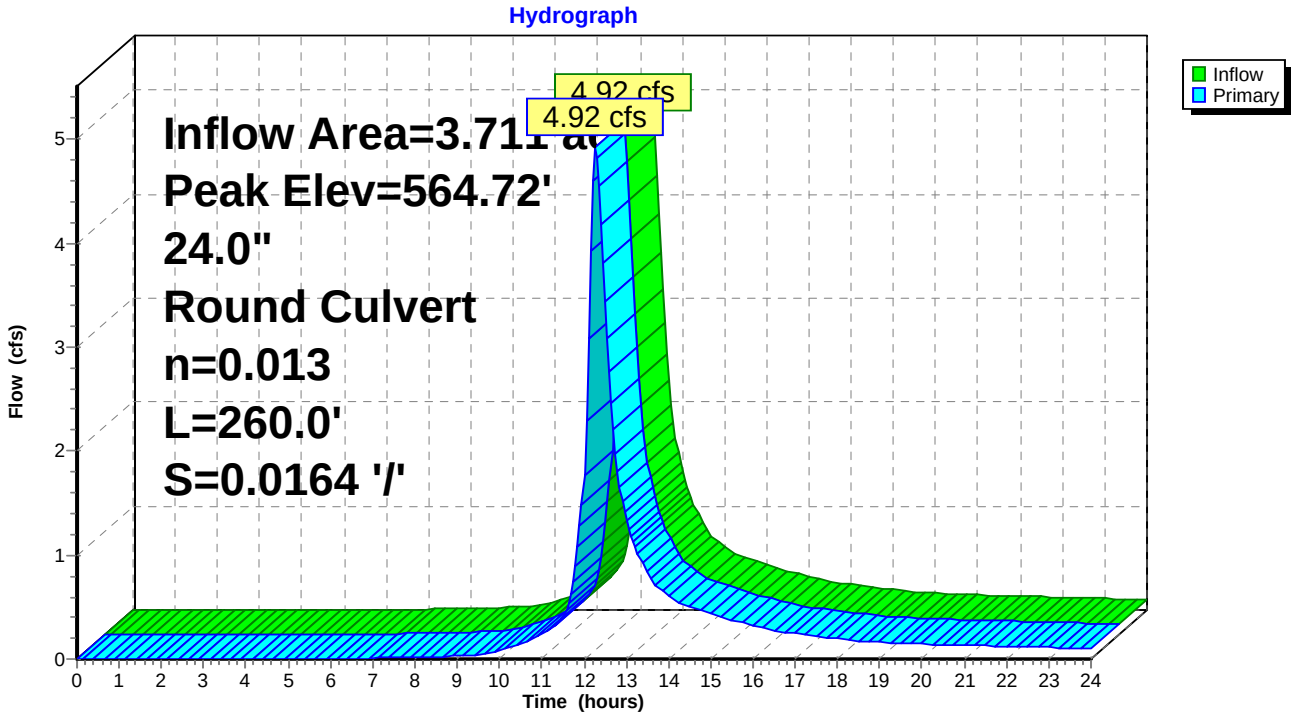
Inflow Area = 3.711 ac, 35.81% Impervious, Inflow Depth > 1.84" for 2-Year event
Inflow = 4.92 cfs @ 12.27 hrs, Volume= 0.570 af
Outflow = 4.92 cfs @ 12.27 hrs, Volume= 0.570 af, Atten= 0%, Lag= 0.0 min
Primary = 4.92 cfs @ 12.27 hrs, Volume= 0.570 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 564.72' @ 12.27 hrs
Flood Elev= 569.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	563.77'	**24.0" Round Culvert** L= 260.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 563.77' / 559.50' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.88 cfs @ 12.27 hrs HW=564.72' TW=557.60' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.88 cfs @ 3.32 fps)

Pond 21P: DMH #2



Summary for Pond 22P: FE #2A

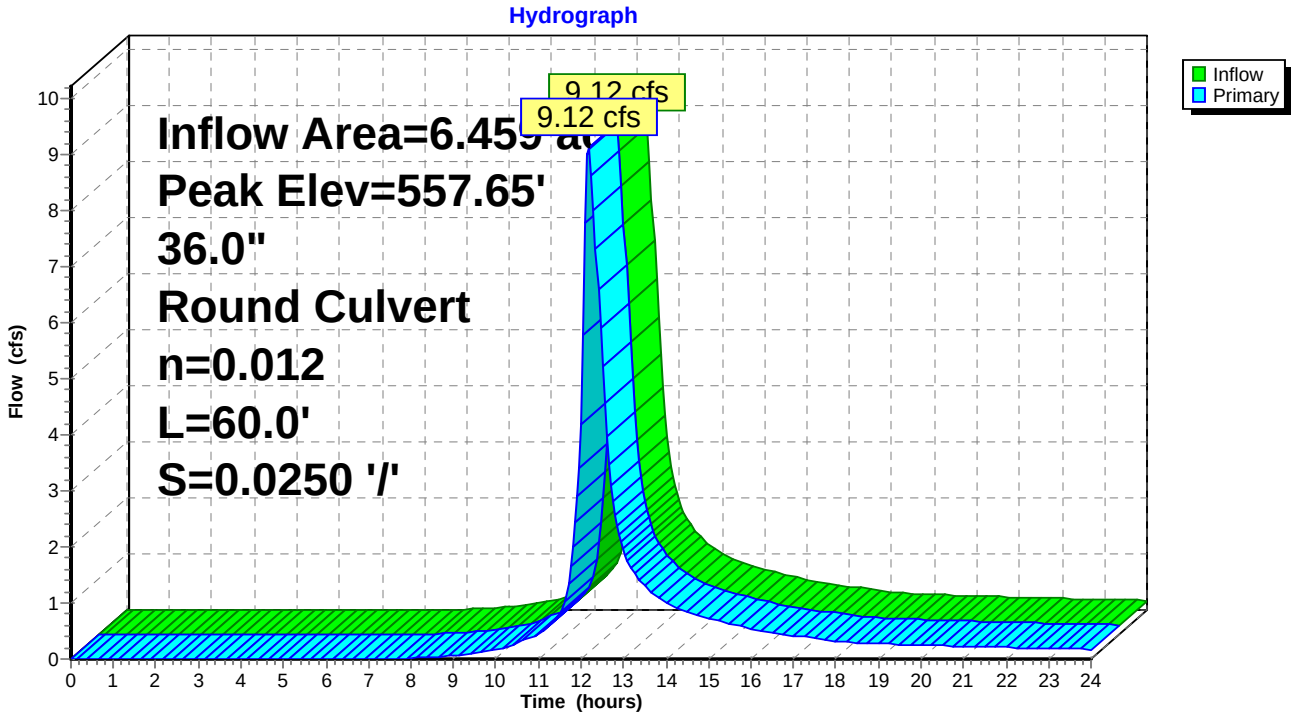
Inflow Area = 6.459 ac, 35.76% Impervious, Inflow Depth > 1.84" for 2-Year event
Inflow = 9.12 cfs @ 12.18 hrs, Volume= 0.988 af
Outflow = 9.12 cfs @ 12.18 hrs, Volume= 0.988 af, Atten= 0%, Lag= 0.0 min
Primary = 9.12 cfs @ 12.18 hrs, Volume= 0.988 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 557.65' @ 12.18 hrs
Flood Elev= 564.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	556.50'	**36.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 556.50' / 555.00' S= 0.0250 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=9.06 cfs @ 12.18 hrs HW=557.65' TW=556.25' (Dynamic Tailwater)
1=Culvert (Inlet Controls 9.06 cfs @ 3.65 fps)

Pond 22P: FE #2A

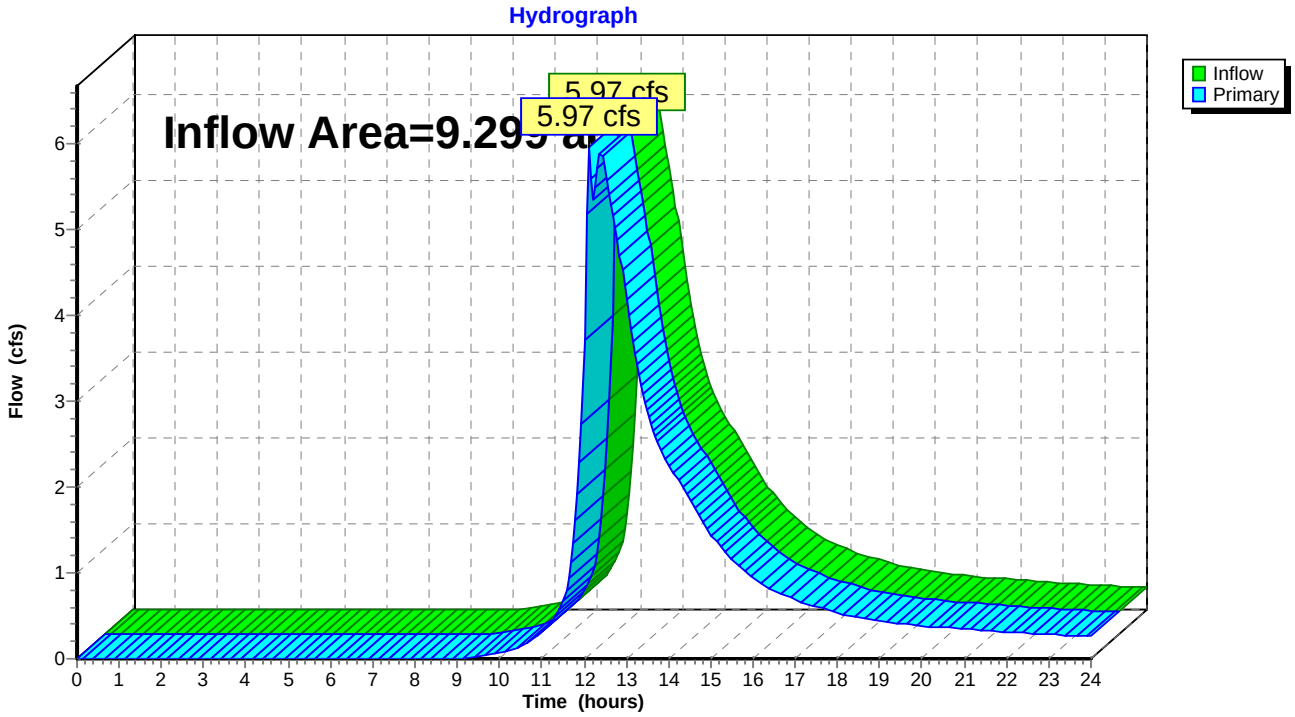


Summary for Link 20L: Off-Site

Inflow Area = 9.299 ac, 30.95% Impervious, Inflow Depth > 1.72" for 2-Year event
Inflow = 5.97 cfs @ 12.11 hrs, Volume= 1.330 af
Primary = 5.97 cfs @ 12.11 hrs, Volume= 1.330 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 20L: Off-Site



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 15S: DA 2E Runoff Area=3.023 ac 32.58% Impervious Runoff Depth>3.33"
Flow Length=671' Tc=12.0 min CN=83 Runoff=9.62 cfs 0.839 af

Subcatchment 16S: DA 2G Runoff Area=0.554 ac 0.00% Impervious Runoff Depth>3.43"
Flow Length=110' Tc=6.0 min CN=84 Runoff=2.17 cfs 0.158 af

Subcatchment 17S: DA 2J Runoff Area=2.286 ac 24.85% Impervious Runoff Depth>3.05"
Flow Length=240' Tc=6.0 min CN=80 Runoff=8.00 cfs 0.581 af

Subcatchment 18S: DA 2I Runoff Area=0.536 ac 64.18% Impervious Runoff Depth>4.26"
Flow Length=230' Slope=0.0200 '/' Tc=11.0 min CN=92 Runoff=2.14 cfs 0.190 af

Subcatchment 21S: DA 2F Runoff Area=0.152 ac 0.00% Impervious Runoff Depth>3.63"
Flow Length=107' Tc=6.0 min CN=86 Runoff=0.62 cfs 0.046 af

Subcatchment 22S: DA 2H Runoff Area=2.748 ac 35.70% Impervious Runoff Depth>3.43"
Flow Length=676' Tc=10.0 min CN=84 Runoff=9.48 cfs 0.786 af

Pond 15P: Apartments Phase II Stormwater Peak Elev=568.73' Storage=6,631 cf Inflow=10.08 cfs 0.885 af
Outflow=8.47 cfs 0.877 af

Pond 20P: Apartments Phase II Peak Elev=557.90' Storage=28,390 cf Inflow=20.47 cfs 2.011 af
Outflow=11.01 cfs 1.967 af

Pond 21P: DMH #2 Peak Elev=565.24' Inflow=10.22 cfs 1.067 af
24.0" Round Culvert n=0.013 L=260.0' S=0.0164 '/' Outflow=10.22 cfs 1.067 af

Pond 22P: FE #2A Peak Elev=558.38' Inflow=18.88 cfs 1.852 af
36.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=18.88 cfs 1.852 af

Link 20L: Off-Site Inflow=13.70 cfs 2.548 af
Primary=13.70 cfs 2.548 af

Total Runoff Area = 9.299 ac Runoff Volume = 2.600 af Average Runoff Depth = 3.36"
69.05% Pervious = 6.421 ac 30.95% Impervious = 2.878 ac

Summary for Subcatchment 15S: DA 2E

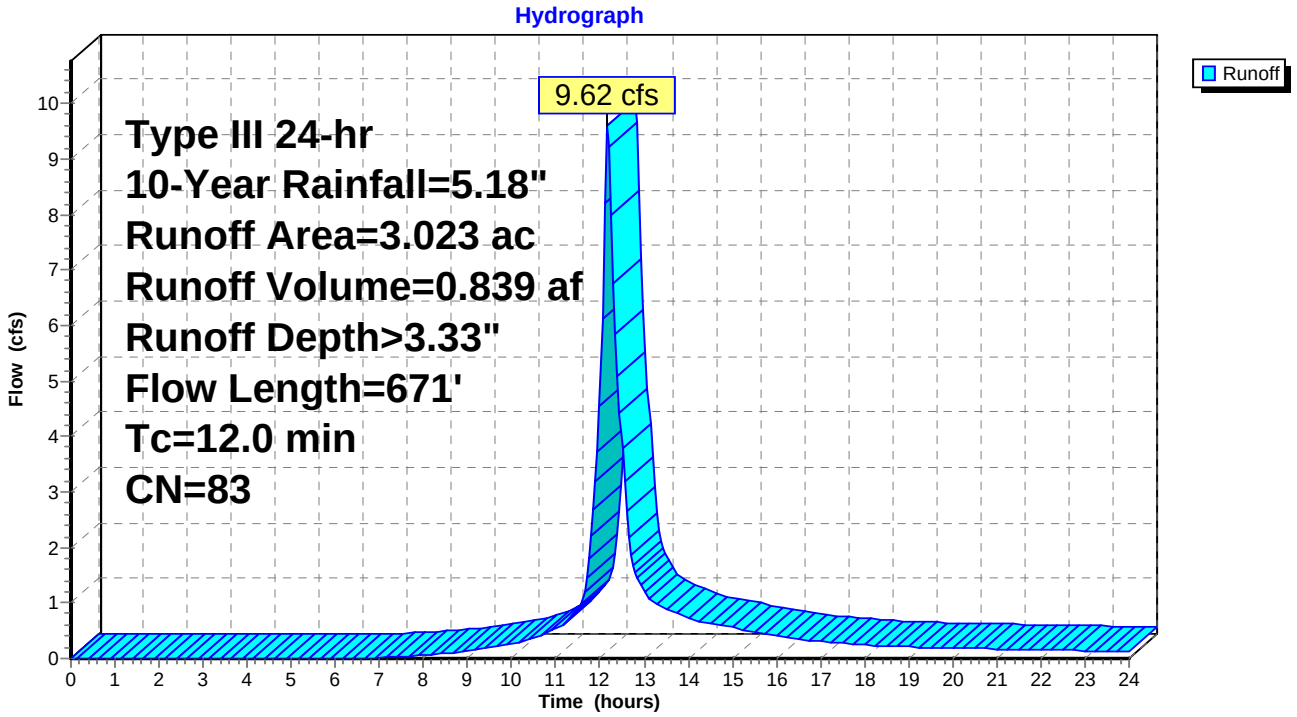
Runoff = 9.62 cfs @ 12.17 hrs, Volume= 0.839 af, Depth> 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

	Area (ac)	CN	Description
*	0.985	98	Paved parking, HSG C, South
	0.455	80	>75% Grass cover, Good, HSG D
	0.917	70	Woods, Good, HSG C
	0.666	80	>75% Grass cover, Good, HSG D
	3.023	83	Weighted Average
	2.038		67.42% Pervious Area
	0.985		32.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
3.3	417	0.1799	2.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	164	0.0421	4.17		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
12.0	671	Total			

Subcatchment 15S: DA 2E



Summary for Subcatchment 16S: DA 2G

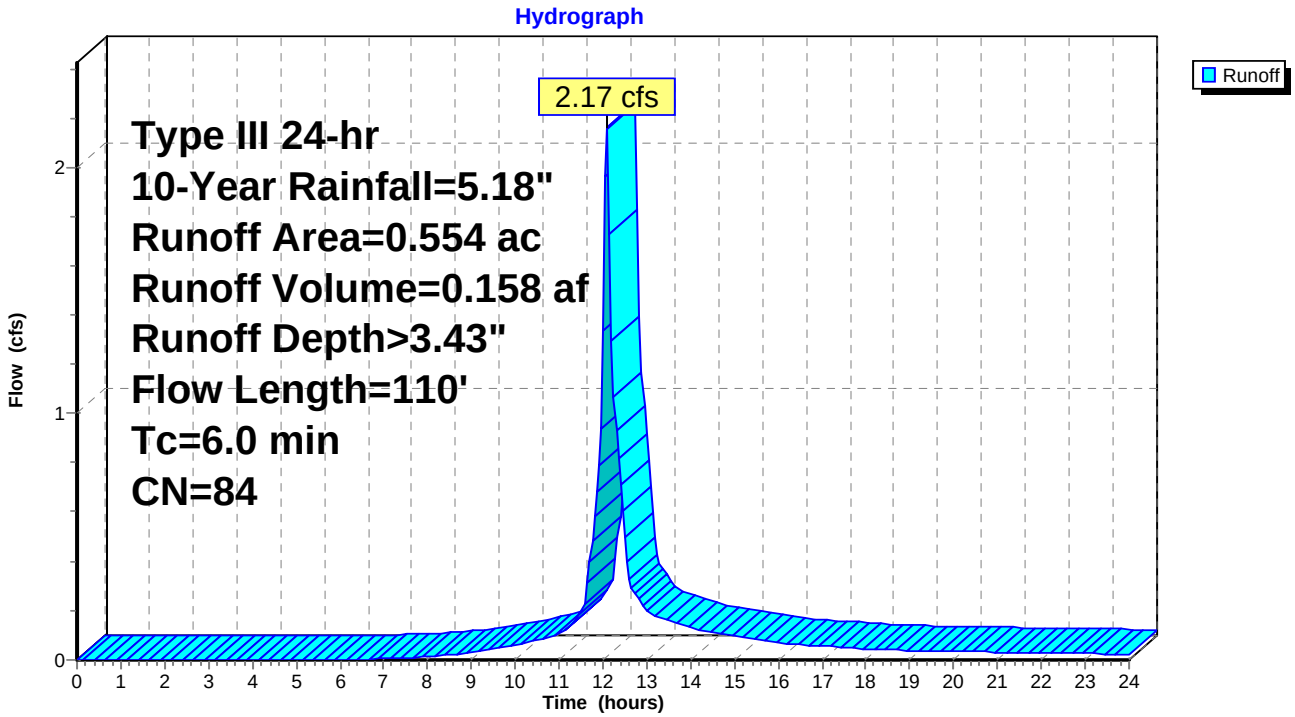
Runoff = 2.17 cfs @ 12.09 hrs, Volume= 0.158 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

Area (ac)	CN	Description
0.135	98	Water Surface, 0% imp, HSG C
0.017	80	>75% Grass cover, Good, HSG D
0.229	80	>75% Grass cover, Good, HSG D
0.157	80	>75% Grass cover, Good, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.554	84	Weighted Average
0.554		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0500	0.15		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.2	60	0.3500	4.14		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
5.7	110	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 16S: DA 2G



Summary for Subcatchment 17S: DA 2J

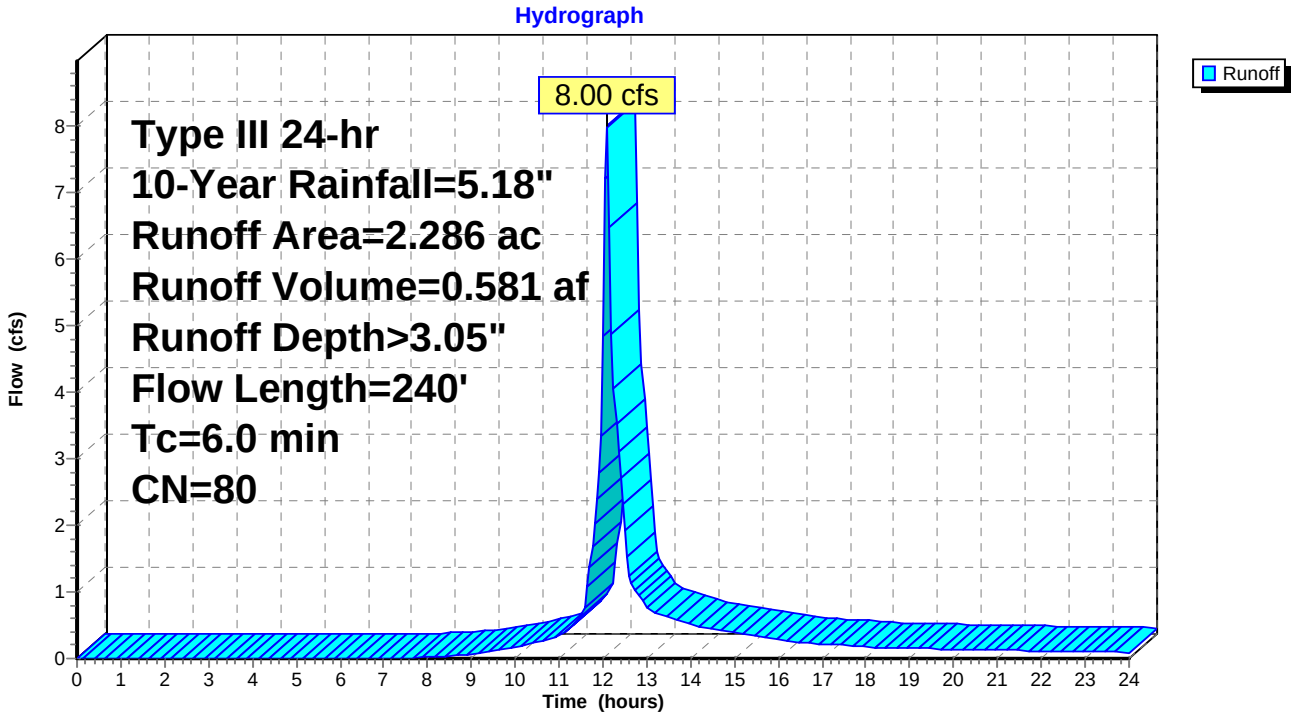
Runoff = 8.00 cfs @ 12.09 hrs, Volume= 0.581 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

	Area (ac)	CN	Description
	0.412	80	>75% Grass cover, Good, HSG D
	0.061	98	Paved parking, HSG C
	0.032	74	>75% Grass cover, Good, HSG C
	0.140	98	Paved parking, HSG C
	0.721	74	>75% Grass cover, Good, HSG C
*	0.184	98	Two single Family Houses and Paved Driveways
	0.183	98	Paved parking, HSG C
	0.524	70	Woods, Good, HSG C
	0.029	74	>75% Grass cover, Good, HSG C
	2.286	80	Weighted Average
	1.718		75.15% Pervious Area
	0.568		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	24	0.1000	0.17		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	26	0.0500	1.56		**Sheet Flow, Paved/Gravel** Smooth surfaces n= 0.011 P2= 3.37"
0.3	85	0.0824	4.62		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	105	0.1333	2.56		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.6	240	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 17S: DA 2J



Summary for Subcatchment 18S: DA 2I

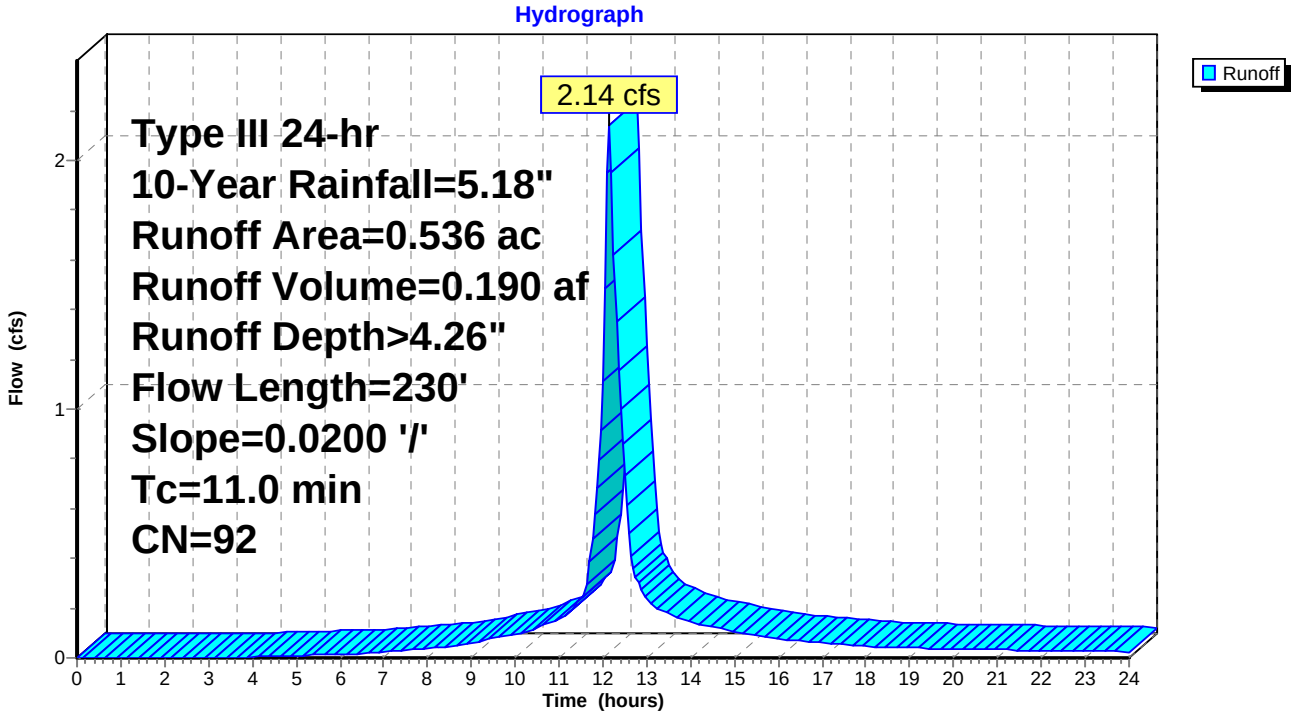
Runoff = 2.14 cfs @ 12.15 hrs, Volume= 0.190 af, Depth> 4.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

	Area (ac)	CN	Description
*	0.344	98	Paved parking, HSG C, North
	0.192	80	>75% Grass cover, Good, HSG D
	0.536	92	Weighted Average
	0.192		35.82% Pervious Area
	0.344		64.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
3.0	180	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
11.0	230	Total			

Subcatchment 18S: DA 2I



Summary for Subcatchment 21S: DA 2F

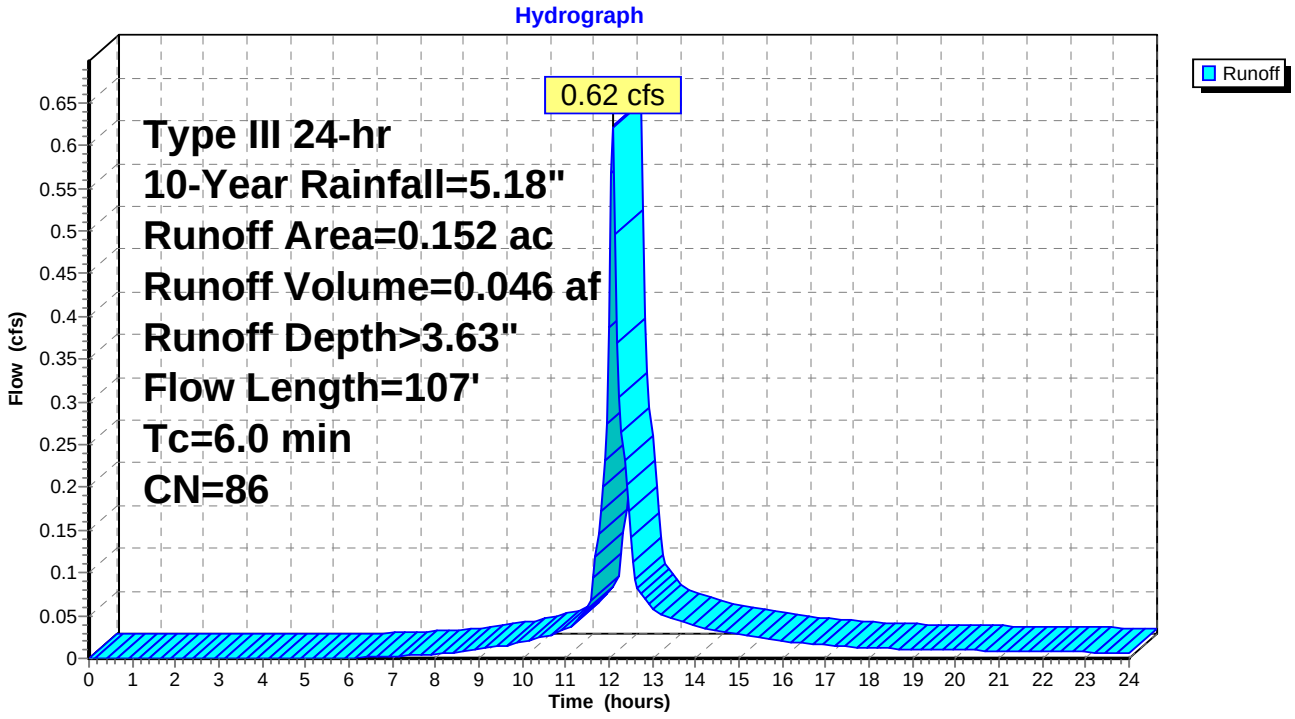
Runoff = 0.62 cfs @ 12.09 hrs, Volume= 0.046 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

Area (ac)	CN	Description
0.051	98	Water Surface, 0% imp, HSG C
0.101	80	>75% Grass cover, Good, HSG D
0.152	86	Weighted Average
0.152		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	57	0.1754	2.93		**Shallow Concentrated Flow, Woods** Short Grass Pasture Kv= 7.0 fps
4.5	107	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 21S: DA 2F



Summary for Subcatchment 22S: DA 2H

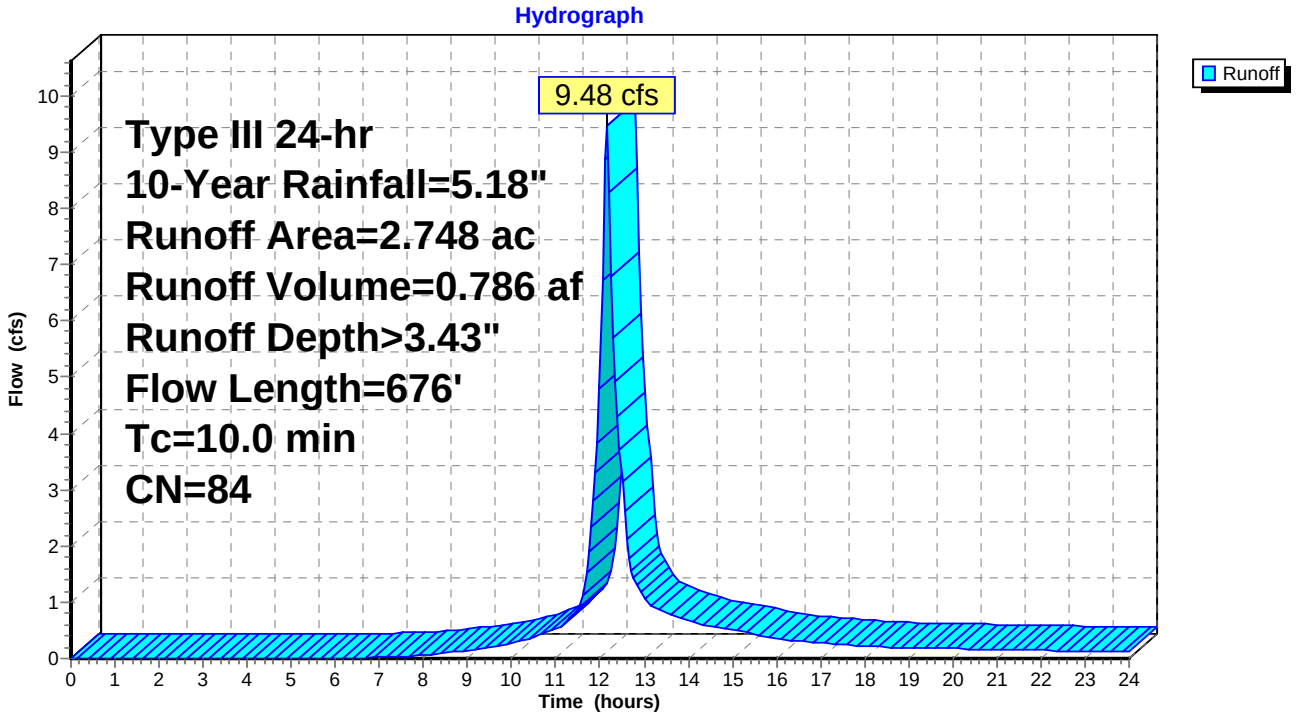
Runoff = 9.48 cfs @ 12.14 hrs, Volume= 0.786 af, Depth> 3.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.18"

	Area (ac)	CN	Description
*	0.431	98	Paved parking, HSG C, North
*	0.010	80	>75% Grass cover, Good, HSG D, North
	0.313	80	>75% Grass cover, Good, HSG D
*	0.550	98	Paved parking, HSG C, South
	0.360	80	>75% Grass cover, Good, HSG D
	0.748	70	Woods, Good, HSG C
	0.336	80	>75% Grass cover, Good, HSG D
	2.748	84	Weighted Average
	1.767		64.30% Pervious Area
	0.981		35.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
1.7	190	0.1316	1.81		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	81	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	355	0.0310	3.57		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
10.0	676	Total			

Subcatchment 22S: DA 2H



Summary for Pond 15P: Apartments Phase II Stormwater Basin 2

Inflow Area = 3.175 ac, 31.02% Impervious, Inflow Depth > 3.35" for 10-Year event
Inflow = 10.08 cfs @ 12.16 hrs, Volume= 0.885 af
Outflow = 8.47 cfs @ 12.25 hrs, Volume= 0.877 af, Atten= 16%, Lag= 5.3 min
Primary = 8.47 cfs @ 12.25 hrs, Volume= 0.877 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 567.00' Surf.Area= 2,390 sf Storage= 1,777 cf
Peak Elev= 568.73' @ 12.25 hrs Surf.Area= 3,241 sf Storage= 6,631 cf (4,854 cf above start)
Flood Elev= 569.70' Surf.Area= 3,741 sf Storage= 10,022 cf (8,245 cf above start)

Plug-Flow detention time= 56.5 min calculated for 0.836 af (94% of inflow)
Center-of-Mass det. time= 14.8 min (830.4 - 815.6)

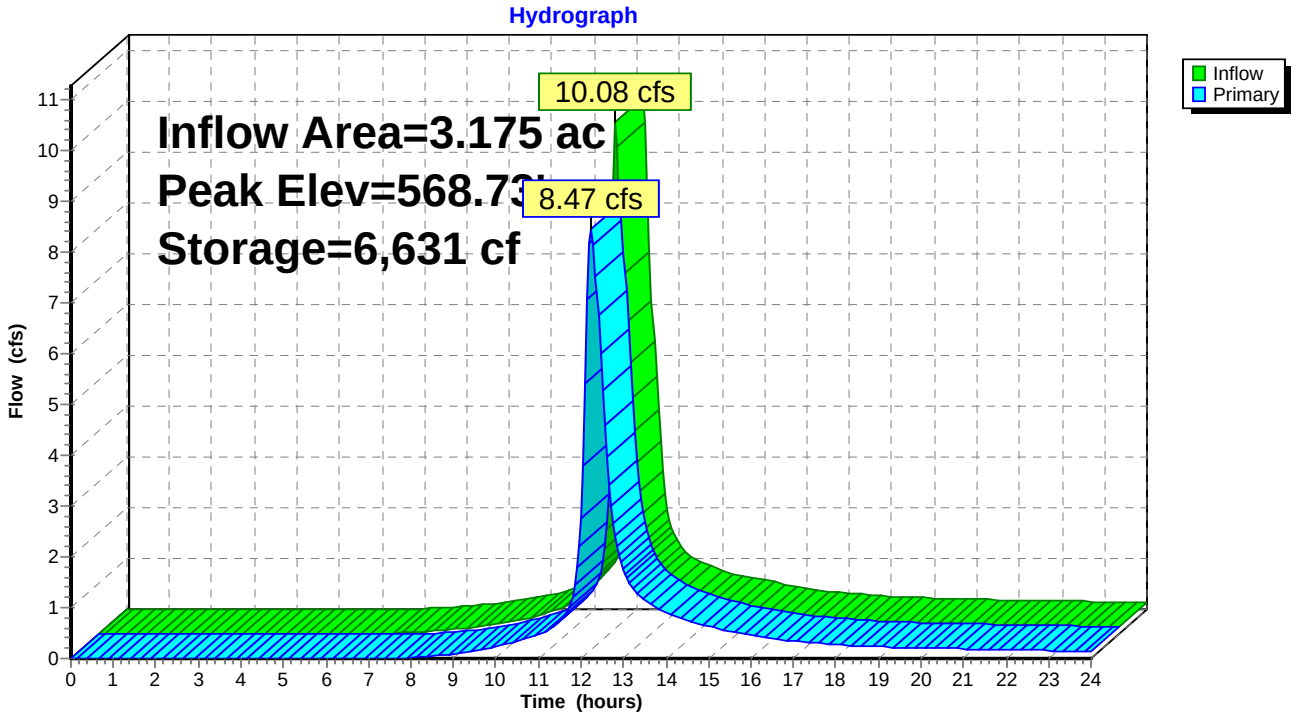
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	11,168 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	1,164	0	0
567.00	2,390	1,777	1,777
568.00	2,867	2,629	4,406
570.00	3,895	6,762	11,168

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**18.0" Round 18" HDPE** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 566.00' / 564.27' S= 0.0254 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	567.00'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	567.50'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	568.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	569.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=8.46 cfs @ 12.25 hrs HW=568.73' TW=565.23' (Dynamic Tailwater)
└─**1=18" HDPE** (Passes 8.46 cfs of 11.97 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 2.30 cfs @ 5.85 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 3.23 cfs @ 4.11 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 2.94 cfs @ 2.91 fps)
  └─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 15P: Apartments Phase II Stormwater Basin 2



Summary for Pond 20P: Apartments Phase II Stormwater Basin 1

Inflow Area = 7.013 ac, 32.94% Impervious, Inflow Depth > 3.44" for 10-Year event
Inflow = 20.47 cfs @ 12.16 hrs, Volume= 2.011 af
Outflow = 11.01 cfs @ 12.46 hrs, Volume= 1.967 af, Atten= 46%, Lag= 17.7 min
Primary = 11.01 cfs @ 12.46 hrs, Volume= 1.967 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 555.00' Surf.Area= 6,117 sf Storage= 5,401 cf
Peak Elev= 557.90' @ 12.46 hrs Surf.Area= 9,427 sf Storage= 28,390 cf (22,989 cf above start)
Flood Elev= 559.40' Surf.Area= 11,019 sf Storage= 43,681 cf (38,280 cf above start)

Plug-Flow detention time= 96.2 min calculated for 1.843 af (92% of inflow)
Center-of-Mass det. time= 39.7 min (856.9 - 817.2)

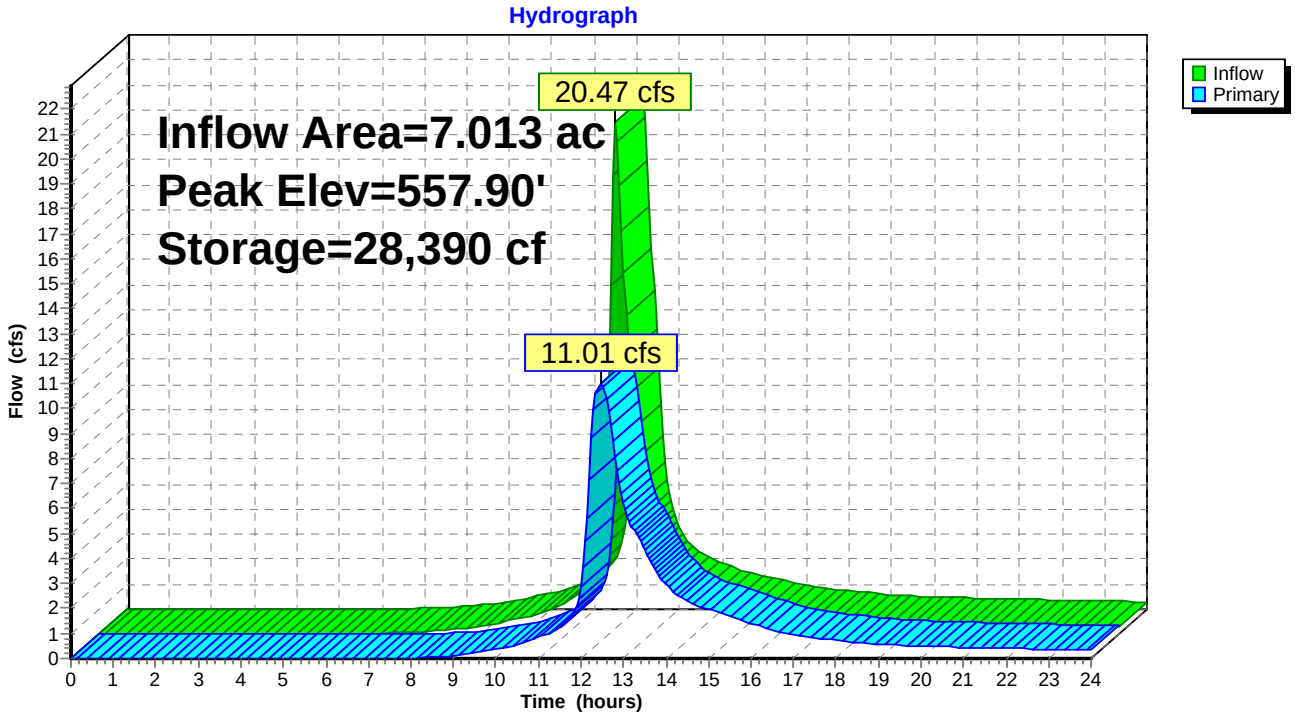
Volume	Invert	Avail.Storage	Storage Description
#1	554.00'	50,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
554.00	4,686	0	0
556.00	7,547	12,233	12,233
558.00	9,522	17,069	29,302
560.00	11,661	21,183	50,485

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**18.0" Round 18" HDPE** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.00' / 552.00' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	555.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	556.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	557.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	558.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=11.00 cfs @ 12.46 hrs HW=557.90' TW=0.00' (Dynamic Tailwater)
└─**1=18" HDPE** (Passes 11.00 cfs of 15.11 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 4.14 cfs @ 7.59 fps)
  ├─**3=Orifice/Grate** (Orifice Controls 3.20 cfs @ 5.87 fps)
  ├─**4=Orifice/Grate** (Orifice Controls 3.66 cfs @ 3.35 fps)
  └─**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 20P: Apartments Phase II Stormwater Basin 1



Summary for Pond 21P: DMH #2

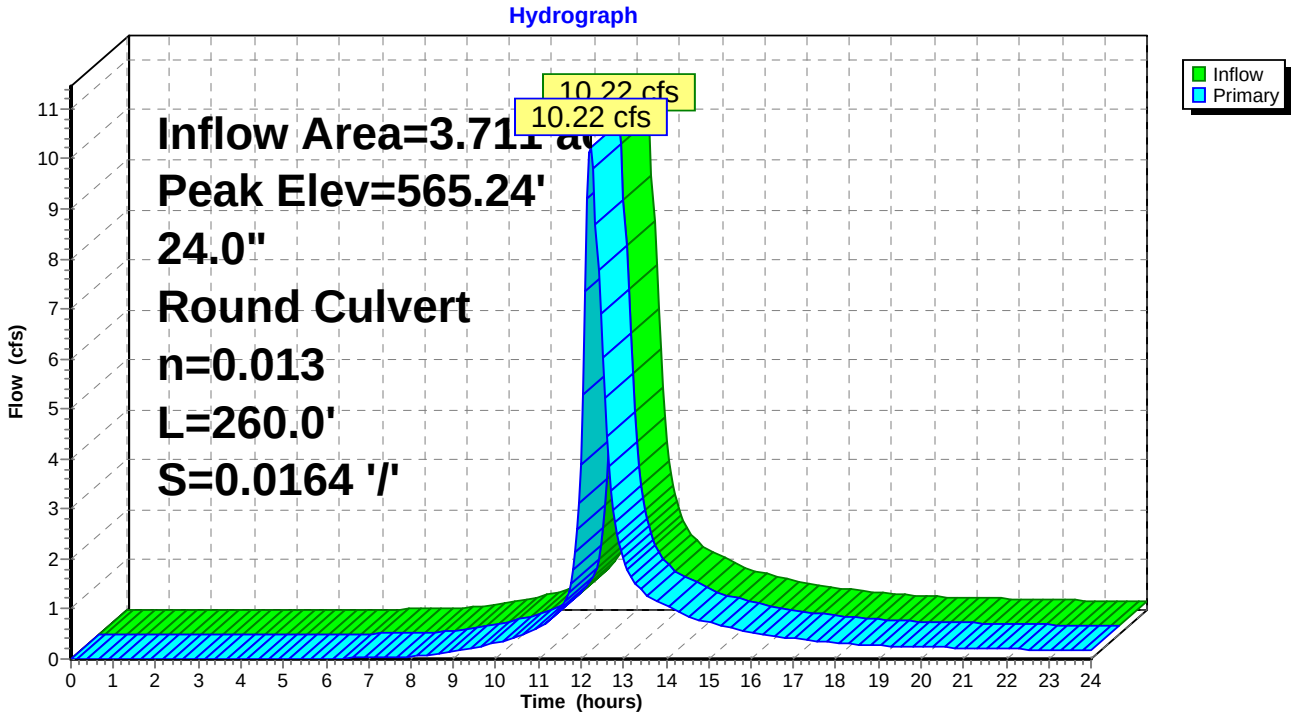
Inflow Area = 3.711 ac, 35.81% Impervious, Inflow Depth > 3.45" for 10-Year event
Inflow = 10.22 cfs @ 12.22 hrs, Volume= 1.067 af
Outflow = 10.22 cfs @ 12.22 hrs, Volume= 1.067 af, Atten= 0%, Lag= 0.0 min
Primary = 10.22 cfs @ 12.22 hrs, Volume= 1.067 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 565.24' @ 12.22 hrs
Flood Elev= 569.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	563.77'	**24.0" Round Culvert** L= 260.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 563.77' / 559.50' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.11 cfs @ 12.22 hrs HW=565.23' TW=558.36' (Dynamic Tailwater)
1=Culvert (Inlet Controls 10.11 cfs @ 4.11 fps)

Pond 21P: DMH #2



Summary for Pond 22P: FE #2A

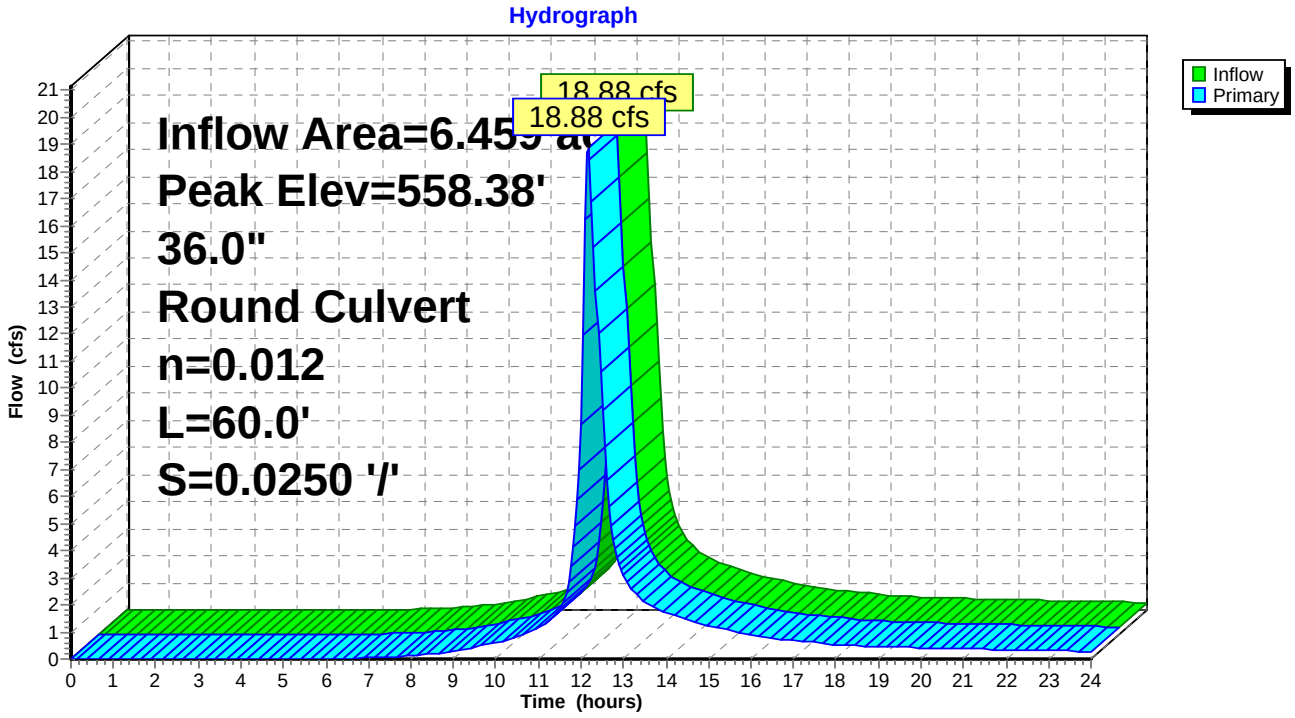
Inflow Area = 6.459 ac, 35.76% Impervious, Inflow Depth > 3.44" for 10-Year event
Inflow = 18.88 cfs @ 12.17 hrs, Volume= 1.852 af
Outflow = 18.88 cfs @ 12.17 hrs, Volume= 1.852 af, Atten= 0%, Lag= 0.0 min
Primary = 18.88 cfs @ 12.17 hrs, Volume= 1.852 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 558.38' @ 12.28 hrs
Flood Elev= 564.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	556.50'	**36.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 556.50' / 555.00' S= 0.0250 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=18.61 cfs @ 12.17 hrs HW=558.29' TW=557.20' (Dynamic Tailwater)
1=Culvert (Outlet Controls 18.61 cfs @ 6.07 fps)

Pond 22P: FE #2A

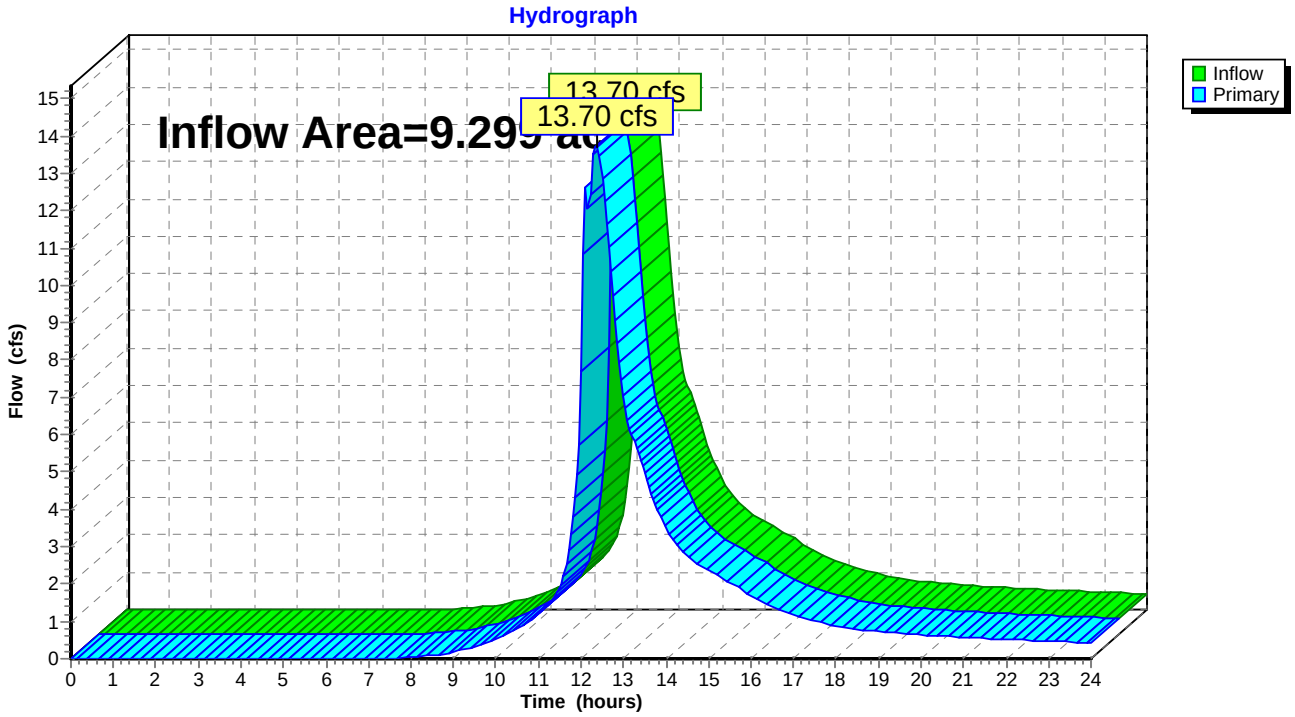


Summary for Link 20L: Off-Site

Inflow Area = 9.299 ac, 30.95% Impervious, Inflow Depth > 3.29" for 10-Year event
Inflow = 13.70 cfs @ 12.36 hrs, Volume= 2.548 af
Primary = 13.70 cfs @ 12.36 hrs, Volume= 2.548 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 20L: Off-Site



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 15S: DA 2E Runoff Area=3.023 ac 32.58% Impervious Runoff Depth>4.36"
Flow Length=671' Tc=12.0 min CN=83 Runoff=12.50 cfs 1.099 af

Subcatchment 16S: DA 2G Runoff Area=0.554 ac 0.00% Impervious Runoff Depth>4.47"
Flow Length=110' Tc=6.0 min CN=84 Runoff=2.80 cfs 0.207 af

Subcatchment 17S: DA 2J Runoff Area=2.286 ac 24.85% Impervious Runoff Depth>4.05"
Flow Length=240' Tc=6.0 min CN=80 Runoff=10.57 cfs 0.771 af

Subcatchment 18S: DA 2I Runoff Area=0.536 ac 64.18% Impervious Runoff Depth>5.36"
Flow Length=230' Slope=0.0200 '/' Tc=11.0 min CN=92 Runoff=2.66 cfs 0.239 af

Subcatchment 21S: DA 2F Runoff Area=0.152 ac 0.00% Impervious Runoff Depth>4.69"
Flow Length=107' Tc=6.0 min CN=86 Runoff=0.80 cfs 0.059 af

Subcatchment 22S: DA 2H Runoff Area=2.748 ac 35.70% Impervious Runoff Depth>4.47"
Flow Length=676' Tc=10.0 min CN=84 Runoff=12.25 cfs 1.024 af

Pond 15P: Apartments Phase II Stormwater Peak Elev=569.05' Storage=7,690 cf Inflow=13.09 cfs 1.158 af
Outflow=11.03 cfs 1.149 af

Pond 20P: Apartments Phase II Peak Elev=558.35' Storage=32,709 cf Inflow=26.37 cfs 2.619 af
Outflow=16.15 cfs 2.569 af

Pond 21P: DMH #2 Peak Elev=565.52' Inflow=13.08 cfs 1.388 af
24.0" Round Culvert n=0.013 L=260.0' S=0.0164 '/' Outflow=13.08 cfs 1.388 af

Pond 22P: FE #2A Peak Elev=558.86' Inflow=24.25 cfs 2.412 af
36.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=24.25 cfs 2.412 af

Link 20L: Off-Site Inflow=20.53 cfs 3.341 af
Primary=20.53 cfs 3.341 af

Total Runoff Area = 9.299 ac Runoff Volume = 3.400 af Average Runoff Depth = 4.39"
69.05% Pervious = 6.421 ac 30.95% Impervious = 2.878 ac

Summary for Subcatchment 15S: DA 2E

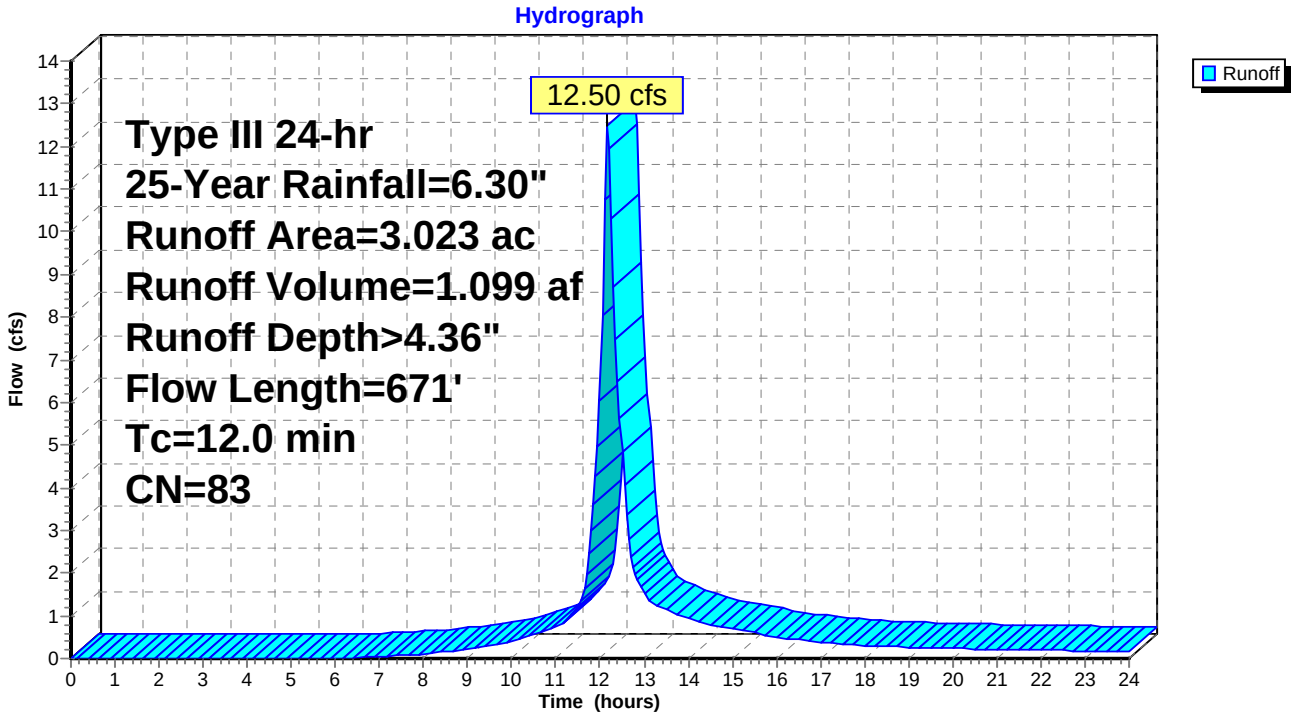
Runoff = 12.50 cfs @ 12.16 hrs, Volume= 1.099 af, Depth> 4.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

	Area (ac)	CN	Description
*	0.985	98	Paved parking, HSG C, South
	0.455	80	>75% Grass cover, Good, HSG D
	0.917	70	Woods, Good, HSG C
	0.666	80	>75% Grass cover, Good, HSG D
	3.023	83	Weighted Average
	2.038		67.42% Pervious Area
	0.985		32.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
3.3	417	0.1799	2.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	164	0.0421	4.17		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
12.0	671	Total			

Subcatchment 15S: DA 2E



Summary for Subcatchment 16S: DA 2G

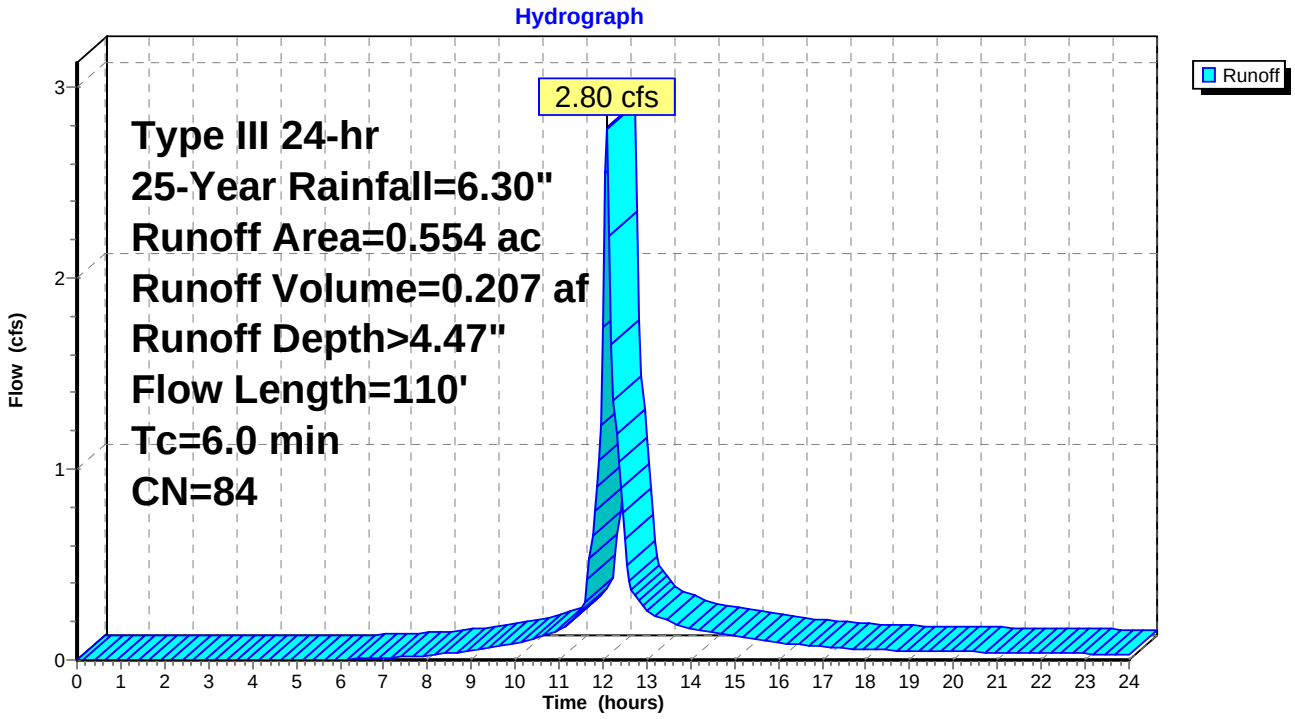
Runoff = 2.80 cfs @ 12.09 hrs, Volume= 0.207 af, Depth> 4.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

Area (ac)	CN	Description
0.135	98	Water Surface, 0% imp, HSG C
0.017	80	>75% Grass cover, Good, HSG D
0.229	80	>75% Grass cover, Good, HSG D
0.157	80	>75% Grass cover, Good, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.554	84	Weighted Average
0.554		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0500	0.15		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.2	60	0.3500	4.14		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
5.7	110	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 16S: DA 2G



Summary for Subcatchment 17S: DA 2J

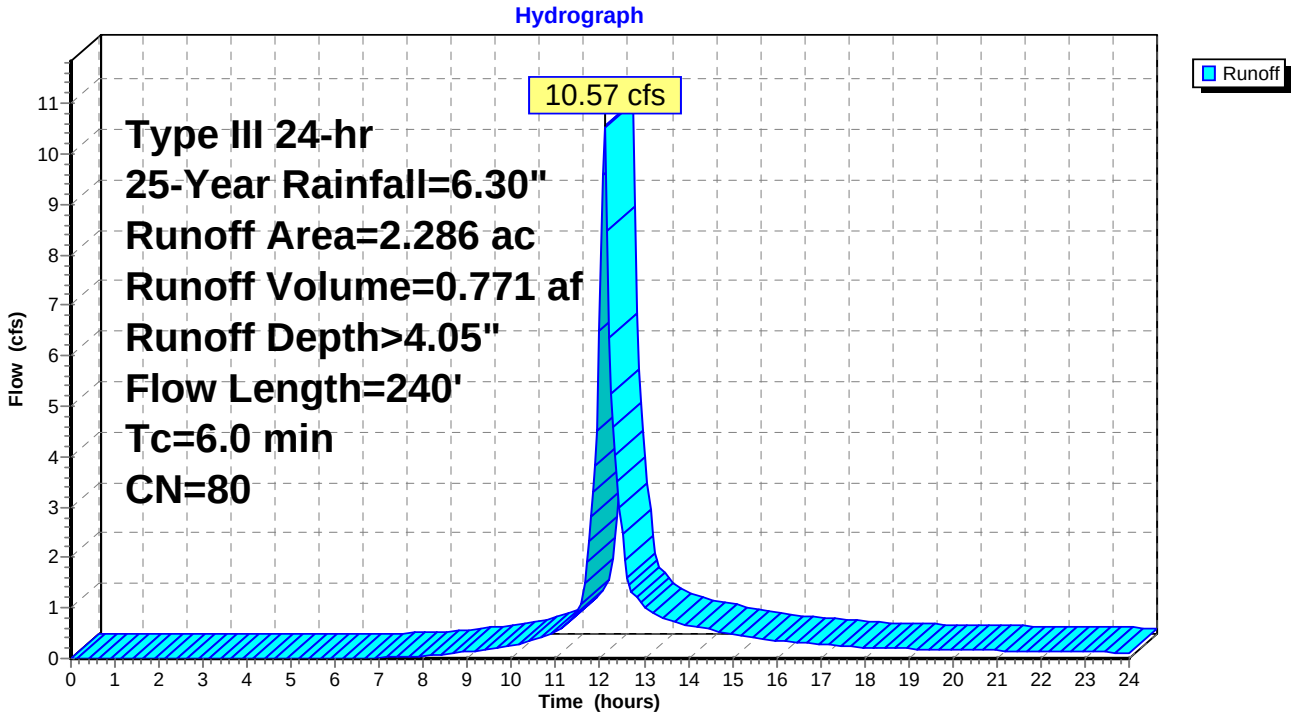
Runoff = 10.57 cfs @ 12.09 hrs, Volume= 0.771 af, Depth> 4.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

	Area (ac)	CN	Description
	0.412	80	>75% Grass cover, Good, HSG D
	0.061	98	Paved parking, HSG C
	0.032	74	>75% Grass cover, Good, HSG C
	0.140	98	Paved parking, HSG C
	0.721	74	>75% Grass cover, Good, HSG C
*	0.184	98	Two single Family Houses and Paved Driveways
	0.183	98	Paved parking, HSG C
	0.524	70	Woods, Good, HSG C
	0.029	74	>75% Grass cover, Good, HSG C
	2.286	80	Weighted Average
	1.718		75.15% Pervious Area
	0.568		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	24	0.1000	0.17		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	26	0.0500	1.56		**Sheet Flow, Paved/Gravel** Smooth surfaces n= 0.011 P2= 3.37"
0.3	85	0.0824	4.62		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	105	0.1333	2.56		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.6	240	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 17S: DA 2J



Summary for Subcatchment 18S: DA 2I

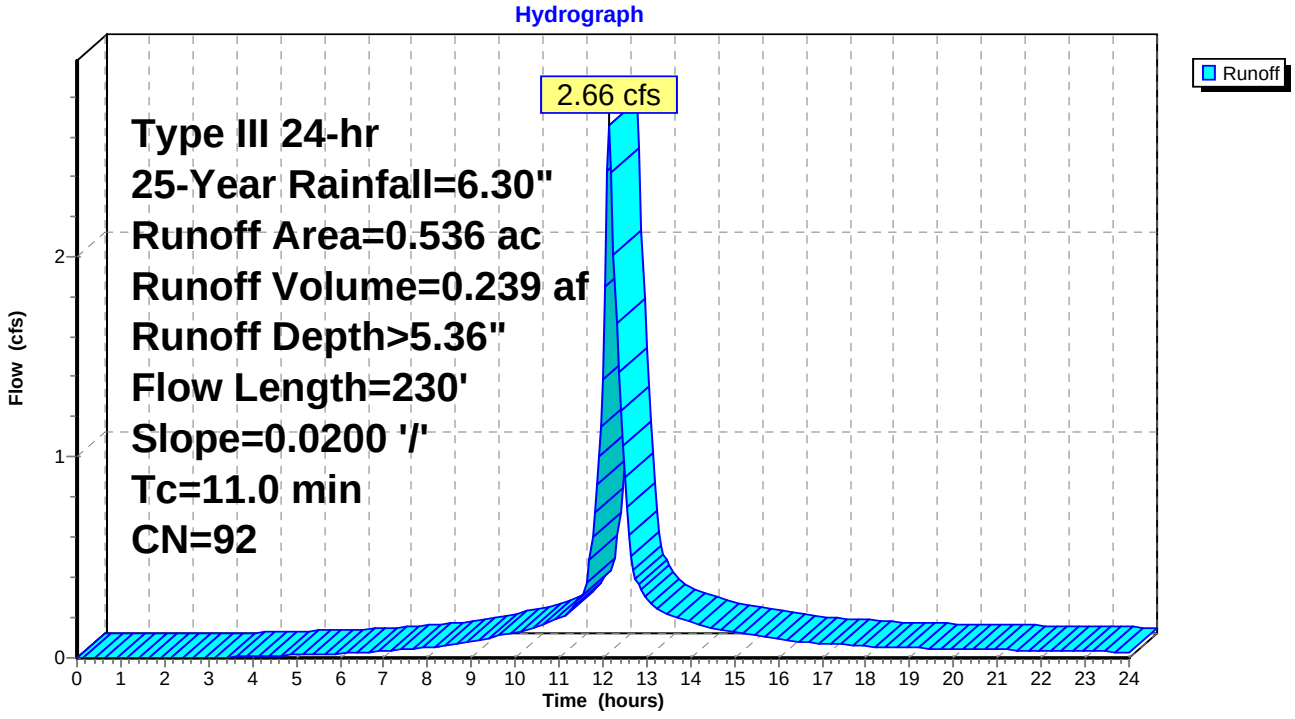
Runoff = 2.66 cfs @ 12.15 hrs, Volume= 0.239 af, Depth> 5.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

	Area (ac)	CN	Description
*	0.344	98	Paved parking, HSG C, North
	0.192	80	>75% Grass cover, Good, HSG D
	0.536	92	Weighted Average
	0.192		35.82% Pervious Area
	0.344		64.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
3.0	180	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
11.0	230	Total			

Subcatchment 18S: DA 2I



Summary for Subcatchment 21S: DA 2F

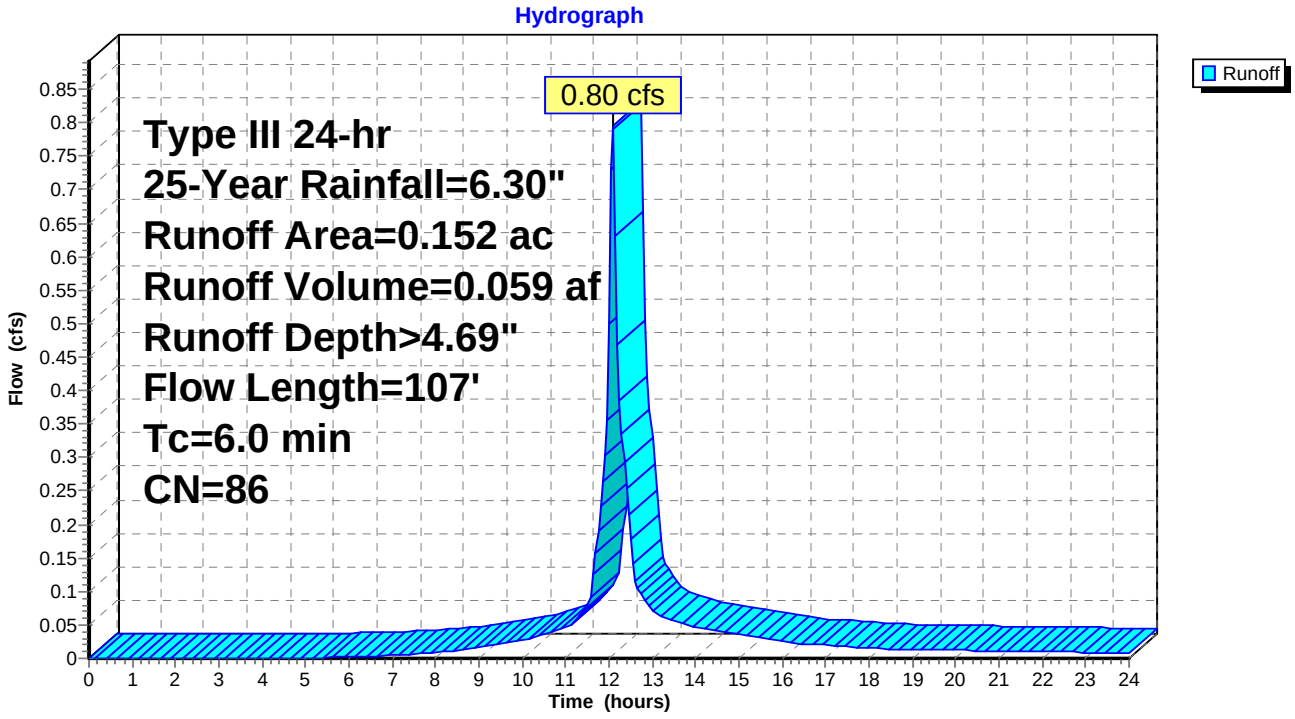
Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.059 af, Depth> 4.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

Area (ac)	CN	Description
0.051	98	Water Surface, 0% imp, HSG C
0.101	80	>75% Grass cover, Good, HSG D
0.152	86	Weighted Average
0.152		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	57	0.1754	2.93		**Shallow Concentrated Flow, Woods** Short Grass Pasture Kv= 7.0 fps
4.5	107	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 21S: DA 2F



Summary for Subcatchment 22S: DA 2H

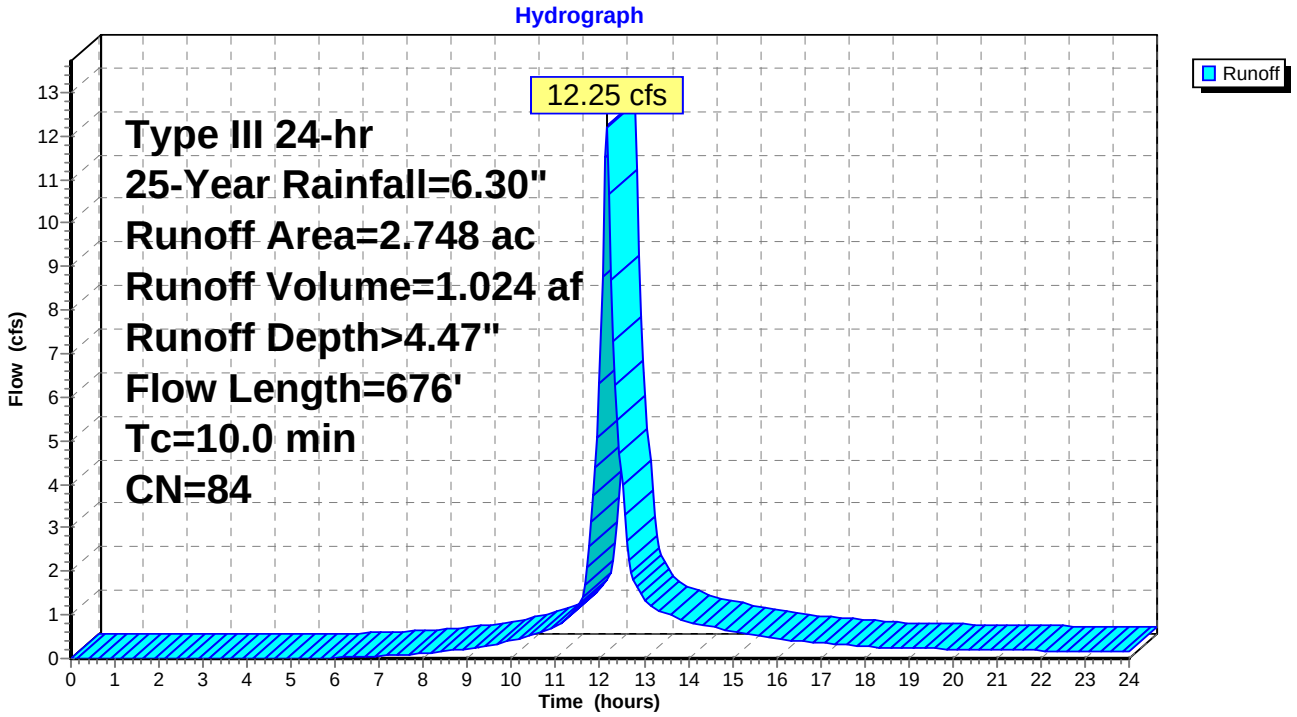
Runoff = 12.25 cfs @ 12.14 hrs, Volume= 1.024 af, Depth> 4.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.30"

	Area (ac)	CN	Description
*	0.431	98	Paved parking, HSG C, North
*	0.010	80	>75% Grass cover, Good, HSG D, North
	0.313	80	>75% Grass cover, Good, HSG D
*	0.550	98	Paved parking, HSG C, South
	0.360	80	>75% Grass cover, Good, HSG D
	0.748	70	Woods, Good, HSG C
	0.336	80	>75% Grass cover, Good, HSG D
	2.748	84	Weighted Average
	1.767		64.30% Pervious Area
	0.981		35.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
1.7	190	0.1316	1.81		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	81	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	355	0.0310	3.57		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
10.0	676	Total			

Subcatchment 22S: DA 2H



Summary for Pond 15P: Apartments Phase II Stormwater Basin 2

Inflow Area = 3.175 ac, 31.02% Impervious, Inflow Depth > 4.38" for 25-Year event
Inflow = 13.09 cfs @ 12.16 hrs, Volume= 1.158 af
Outflow = 11.03 cfs @ 12.25 hrs, Volume= 1.149 af, Atten= 16%, Lag= 5.4 min
Primary = 11.03 cfs @ 12.25 hrs, Volume= 1.149 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 567.00' Surf.Area= 2,390 sf Storage= 1,777 cf
Peak Elev= 569.05' @ 12.25 hrs Surf.Area= 3,405 sf Storage= 7,690 cf (5,913 cf above start)
Flood Elev= 569.70' Surf.Area= 3,741 sf Storage= 10,022 cf (8,245 cf above start)

Plug-Flow detention time= 48.5 min calculated for 1.108 af (96% of inflow)
Center-of-Mass det. time= 13.9 min (821.9 - 808.1)

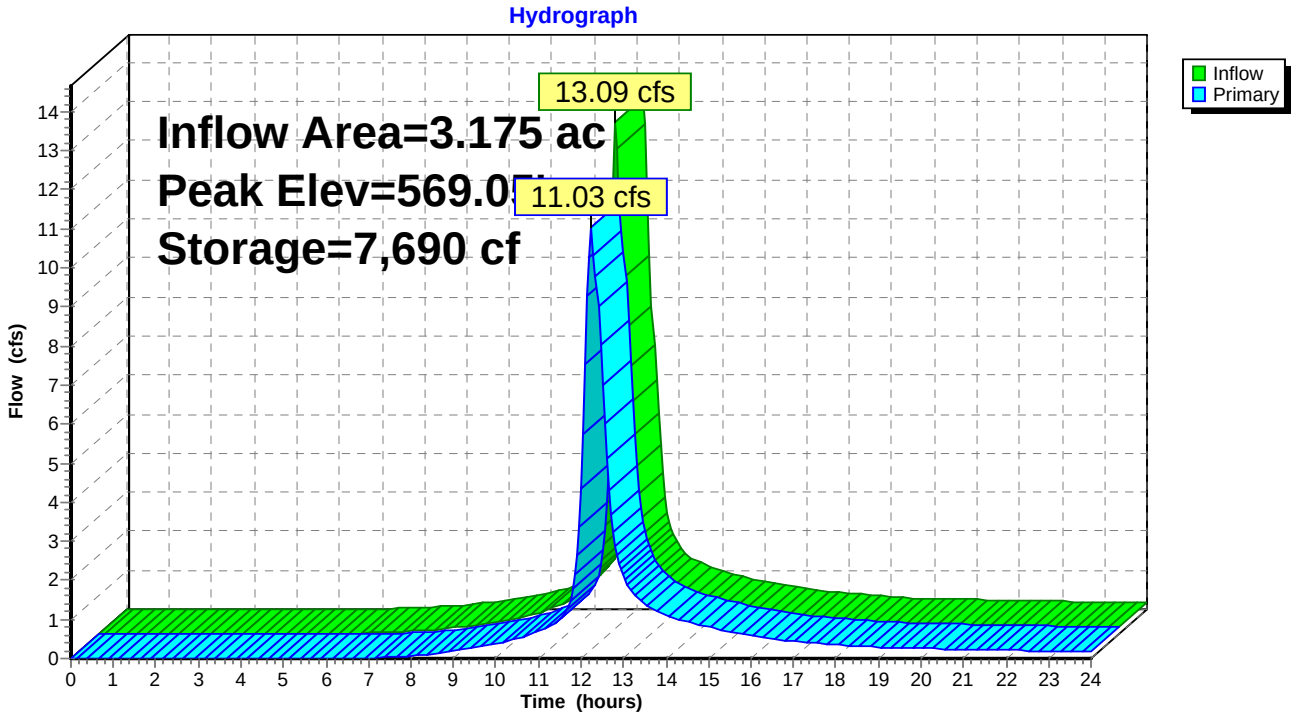
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	11,168 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	1,164	0	0
567.00	2,390	1,777	1,777
568.00	2,867	2,629	4,406
570.00	3,895	6,762	11,168

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**18.0" Round 18" HDPE** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 566.00' / 564.27' S= 0.0254 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	567.00'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	567.50'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	568.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	569.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=11.02 cfs @ 12.25 hrs HW=569.05' TW=565.51' (Dynamic Tailwater)
└**1=18" HDPE** (Passes 11.02 cfs of 12.89 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 2.53 cfs @ 6.45 fps)
  ├**3=Orifice/Grate** (Orifice Controls 3.87 cfs @ 4.93 fps)
  ├**4=Orifice/Grate** (Orifice Controls 4.17 cfs @ 3.82 fps)
  └**5=Broad-Crested Rectangular Weir** (Weir Controls 0.45 cfs @ 0.60 fps)

Pond 15P: Apartments Phase II Stormwater Basin 2



Summary for Pond 20P: Apartments Phase II Stormwater Basin 1

Inflow Area = 7.013 ac, 32.94% Impervious, Inflow Depth > 4.48" for 25-Year event
Inflow = 26.37 cfs @ 12.16 hrs, Volume= 2.619 af
Outflow = 16.15 cfs @ 12.41 hrs, Volume= 2.569 af, Atten= 39%, Lag= 15.3 min
Primary = 16.15 cfs @ 12.41 hrs, Volume= 2.569 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 555.00' Surf.Area= 6,117 sf Storage= 5,401 cf
Peak Elev= 558.35' @ 12.41 hrs Surf.Area= 9,897 sf Storage= 32,709 cf (27,307 cf above start)
Flood Elev= 559.40' Surf.Area= 11,019 sf Storage= 43,681 cf (38,280 cf above start)

Plug-Flow detention time= 84.2 min calculated for 2.440 af (93% of inflow)
Center-of-Mass det. time= 36.9 min (846.5 - 809.6)

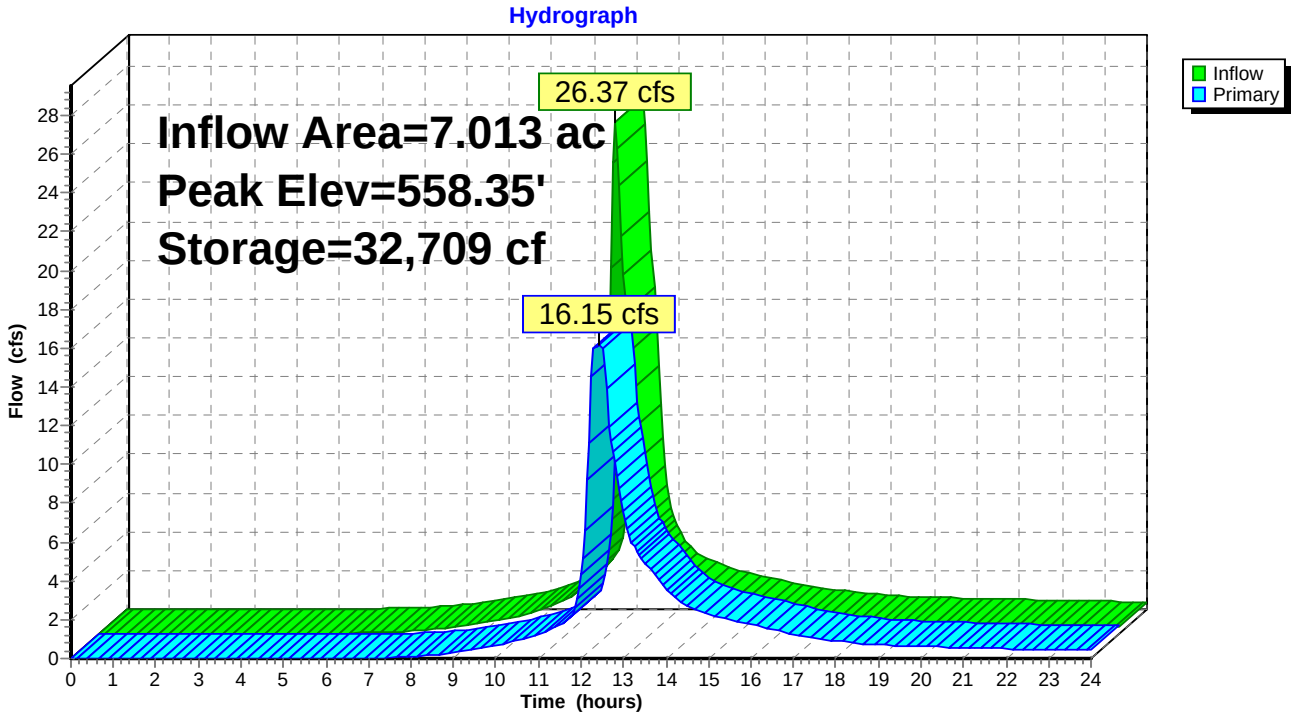
Volume	Invert	Avail.Storage	Storage Description
#1	554.00'	50,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
554.00	4,686	0	0
556.00	7,547	12,233	12,233
558.00	9,522	17,069	29,302
560.00	11,661	21,183	50,485

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**18.0" Round 18" HDPE** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.00' / 552.00' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	555.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	556.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	557.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	558.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=16.14 cfs @ 12.41 hrs HW=558.35' TW=0.00' (Dynamic Tailwater)
└**1=18" HDPE** (Inlet Controls 16.14 cfs @ 9.13 fps)
  ├**2=Orifice/Grate** (Passes < 4.50 cfs potential flow)
  ├**3=Orifice/Grate** (Passes < 3.65 cfs potential flow)
  ├**4=Orifice/Grate** (Passes < 5.07 cfs potential flow)
  └**5=Broad-Crested Rectangular Weir** (Passes < 9.48 cfs potential flow)

Pond 20P: Apartments Phase II Stormwater Basin 1



Summary for Pond 21P: DMH #2

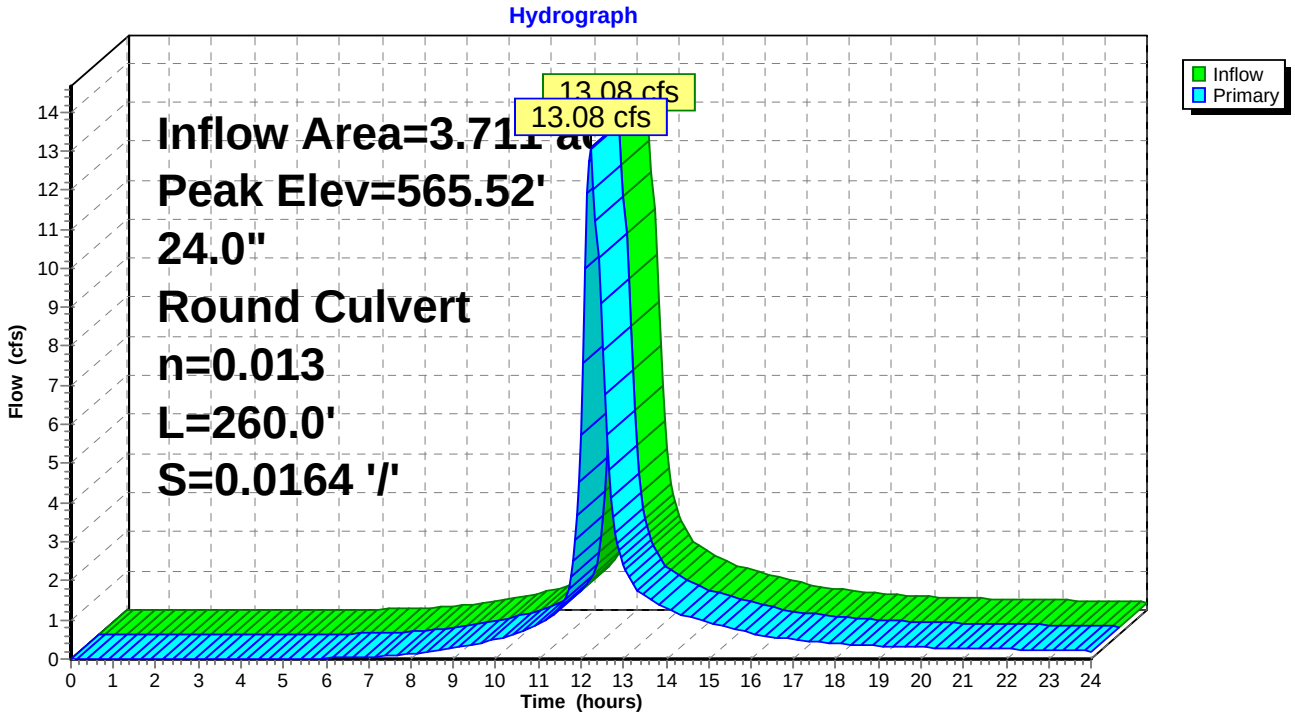
Inflow Area = 3.711 ac, 35.81% Impervious, Inflow Depth > 4.49" for 25-Year event
Inflow = 13.08 cfs @ 12.24 hrs, Volume= 1.388 af
Outflow = 13.08 cfs @ 12.24 hrs, Volume= 1.388 af, Atten= 0%, Lag= 0.0 min
Primary = 13.08 cfs @ 12.24 hrs, Volume= 1.388 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 565.52' @ 12.24 hrs
Flood Elev= 569.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	563.77'	**24.0" Round Culvert** L= 260.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 563.77' / 559.50' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=12.95 cfs @ 12.24 hrs HW=565.50' TW=558.84' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 12.95 cfs @ 4.48 fps)

Pond 21P: DMH #2



Summary for Pond 22P: FE #2A

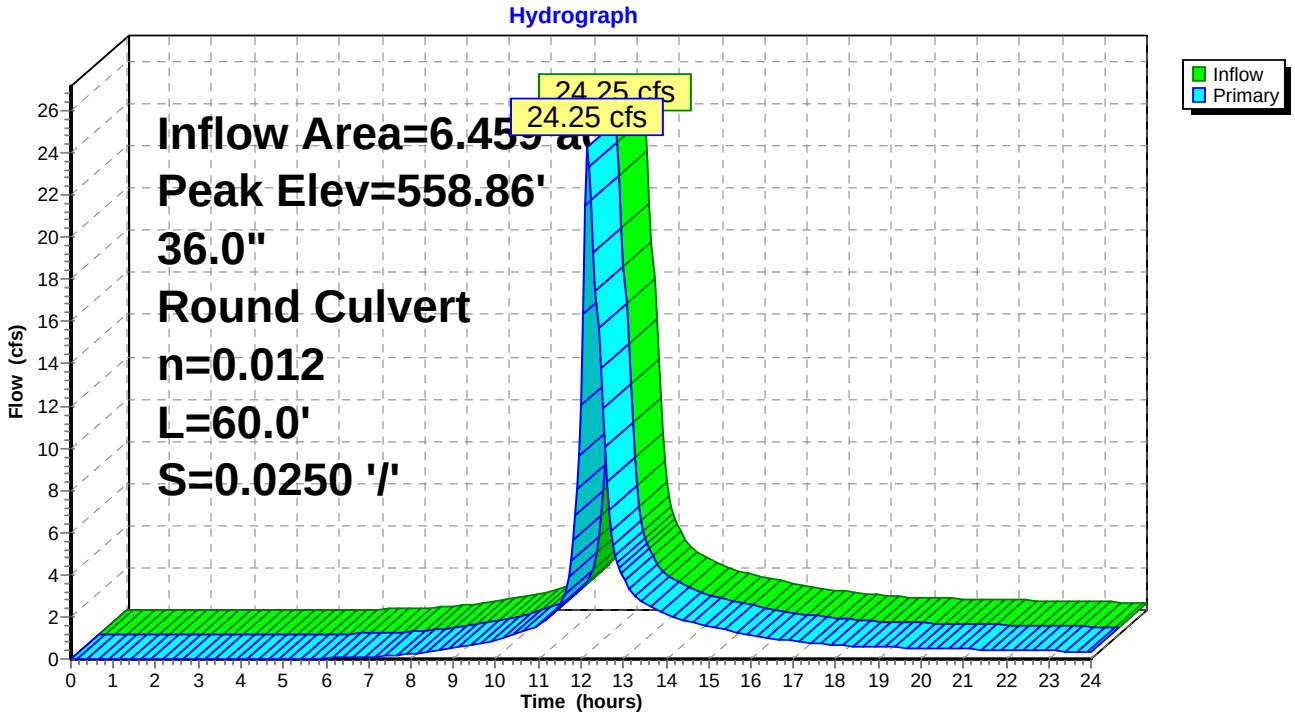
Inflow Area = 6.459 ac, 35.76% Impervious, Inflow Depth > 4.48" for 25-Year event
Inflow = 24.25 cfs @ 12.16 hrs, Volume= 2.412 af
Outflow = 24.25 cfs @ 12.16 hrs, Volume= 2.412 af, Atten= 0%, Lag= 0.0 min
Primary = 24.25 cfs @ 12.16 hrs, Volume= 2.412 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 558.86' @ 12.26 hrs
Flood Elev= 564.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	556.50'	**36.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 556.50' / 555.00' S= 0.0250 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=23.97 cfs @ 12.16 hrs HW=558.72' TW=557.71' (Dynamic Tailwater)
1=Culvert (Outlet Controls 23.97 cfs @ 5.95 fps)

Pond 22P: FE #2A

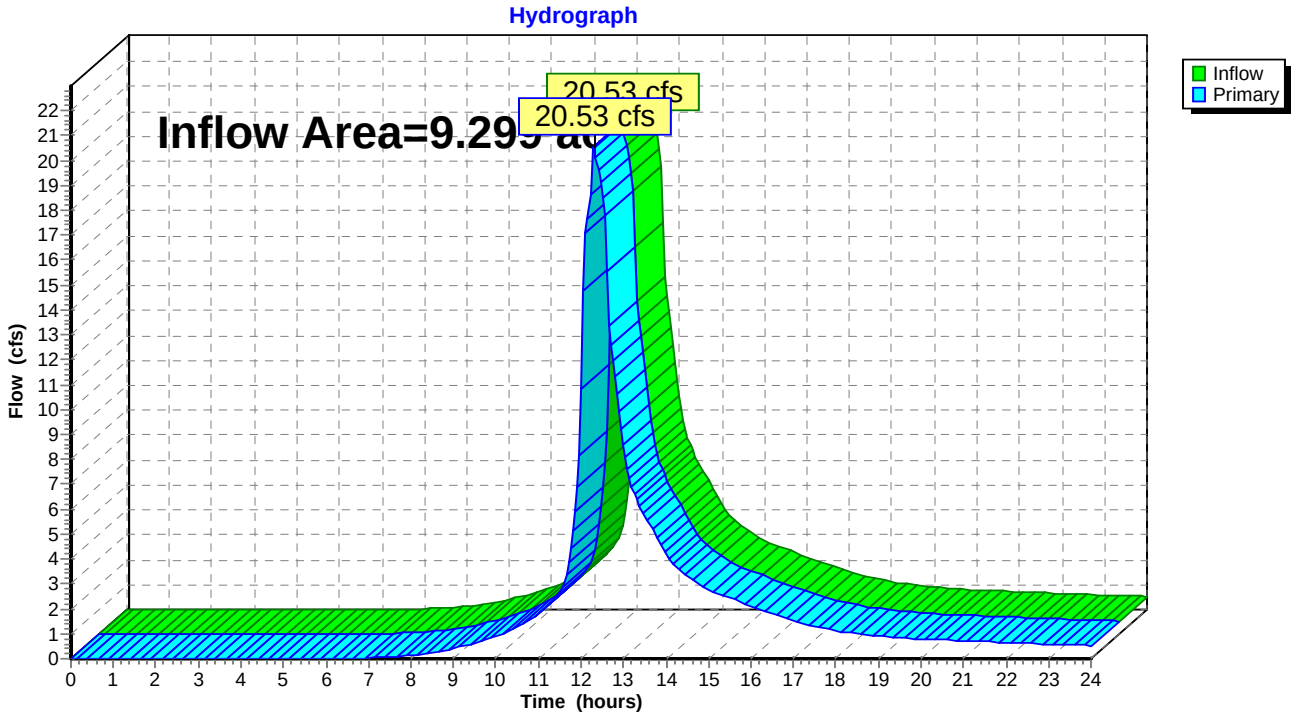


Summary for Link 20L: Off-Site

Inflow Area = 9.299 ac, 30.95% Impervious, Inflow Depth > 4.31" for 25-Year event
Inflow = 20.53 cfs @ 12.31 hrs, Volume= 3.341 af
Primary = 20.53 cfs @ 12.31 hrs, Volume= 3.341 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 20L: Off-Site



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 15S: DA 2E Runoff Area=3.023 ac 32.58% Impervious Runoff Depth>5.15"
Flow Length=671' Tc=12.0 min CN=83 Runoff=14.67 cfs 1.298 af

Subcatchment 16S: DA 2G Runoff Area=0.554 ac 0.00% Impervious Runoff Depth>5.27"
Flow Length=110' Tc=6.0 min CN=84 Runoff=3.27 cfs 0.243 af

Subcatchment 17S: DA 2J Runoff Area=2.286 ac 24.85% Impervious Runoff Depth>4.82"
Flow Length=240' Tc=6.0 min CN=80 Runoff=12.52 cfs 0.918 af

Subcatchment 18S: DA 2I Runoff Area=0.536 ac 64.18% Impervious Runoff Depth>6.18"
Flow Length=230' Slope=0.0200 '/' Tc=11.0 min CN=92 Runoff=3.04 cfs 0.276 af

Subcatchment 21S: DA 2F Runoff Area=0.152 ac 0.00% Impervious Runoff Depth>5.50"
Flow Length=107' Tc=6.0 min CN=86 Runoff=0.93 cfs 0.070 af

Subcatchment 22S: DA 2H Runoff Area=2.748 ac 35.70% Impervious Runoff Depth>5.27"
Flow Length=676' Tc=10.0 min CN=84 Runoff=14.32 cfs 1.206 af

Pond 15P: Apartments Phase II Stormwater Peak Elev=569.20' Storage=8,233 cf Inflow=15.36 cfs 1.367 af
Outflow=13.37 cfs 1.357 af

Pond 20P: Apartments Phase II Peak Elev=558.85' Storage=37,754 cf Inflow=30.88 cfs 3.082 af
Outflow=17.22 cfs 3.029 af

Pond 21P: DMH #2 Peak Elev=565.92' Inflow=16.19 cfs 1.633 af
24.0" Round Culvert n=0.013 L=260.0' S=0.0164 '/' Outflow=16.19 cfs 1.633 af

Pond 22P: FE #2A Peak Elev=559.26' Inflow=28.70 cfs 2.839 af
36.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=28.70 cfs 2.839 af

Link 20L: Off-Site Inflow=23.57 cfs 3.947 af
Primary=23.57 cfs 3.947 af

Total Runoff Area = 9.299 ac Runoff Volume = 4.011 af Average Runoff Depth = 5.18"
69.05% Pervious = 6.421 ac 30.95% Impervious = 2.878 ac

Summary for Subcatchment 15S: DA 2E

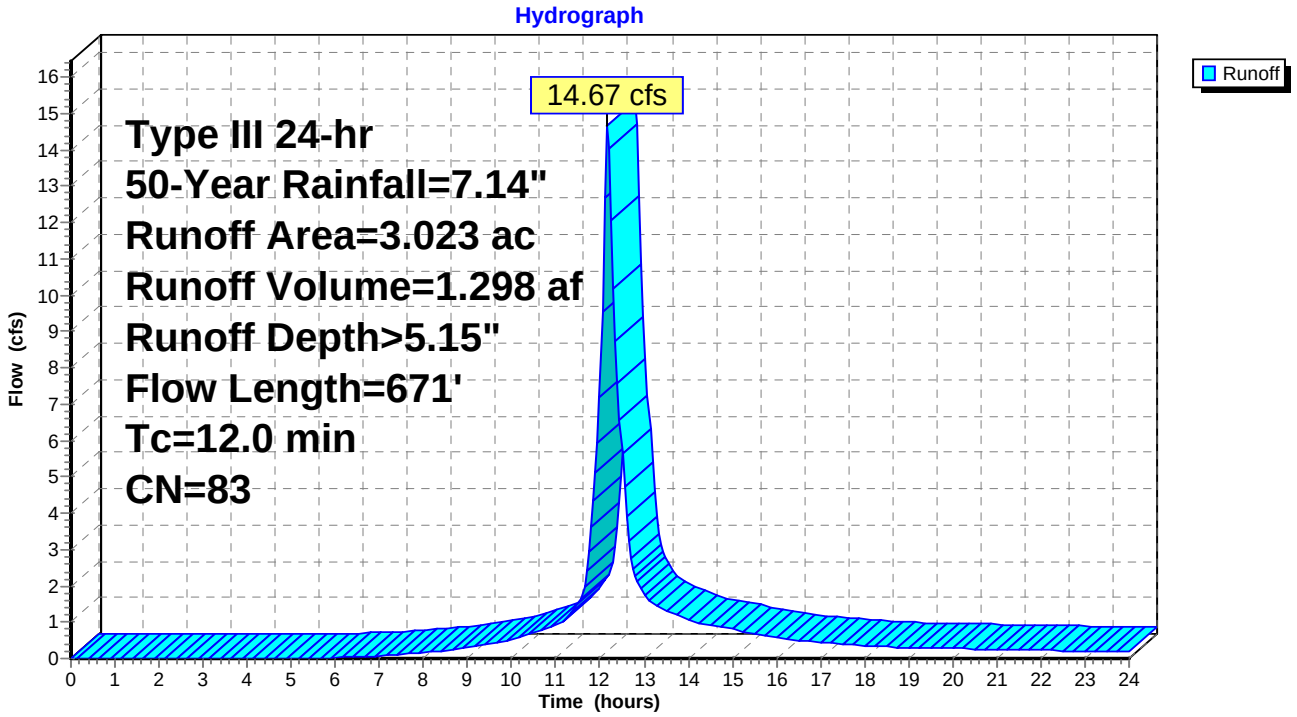
Runoff = 14.67 cfs @ 12.16 hrs, Volume= 1.298 af, Depth> 5.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

	Area (ac)	CN	Description
*	0.985	98	Paved parking, HSG C, South
	0.455	80	>75% Grass cover, Good, HSG D
	0.917	70	Woods, Good, HSG C
	0.666	80	>75% Grass cover, Good, HSG D
	3.023	83	Weighted Average
	2.038		67.42% Pervious Area
	0.985		32.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
3.3	417	0.1799	2.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	164	0.0421	4.17		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
12.0	671	Total			

Subcatchment 15S: DA 2E



Summary for Subcatchment 16S: DA 2G

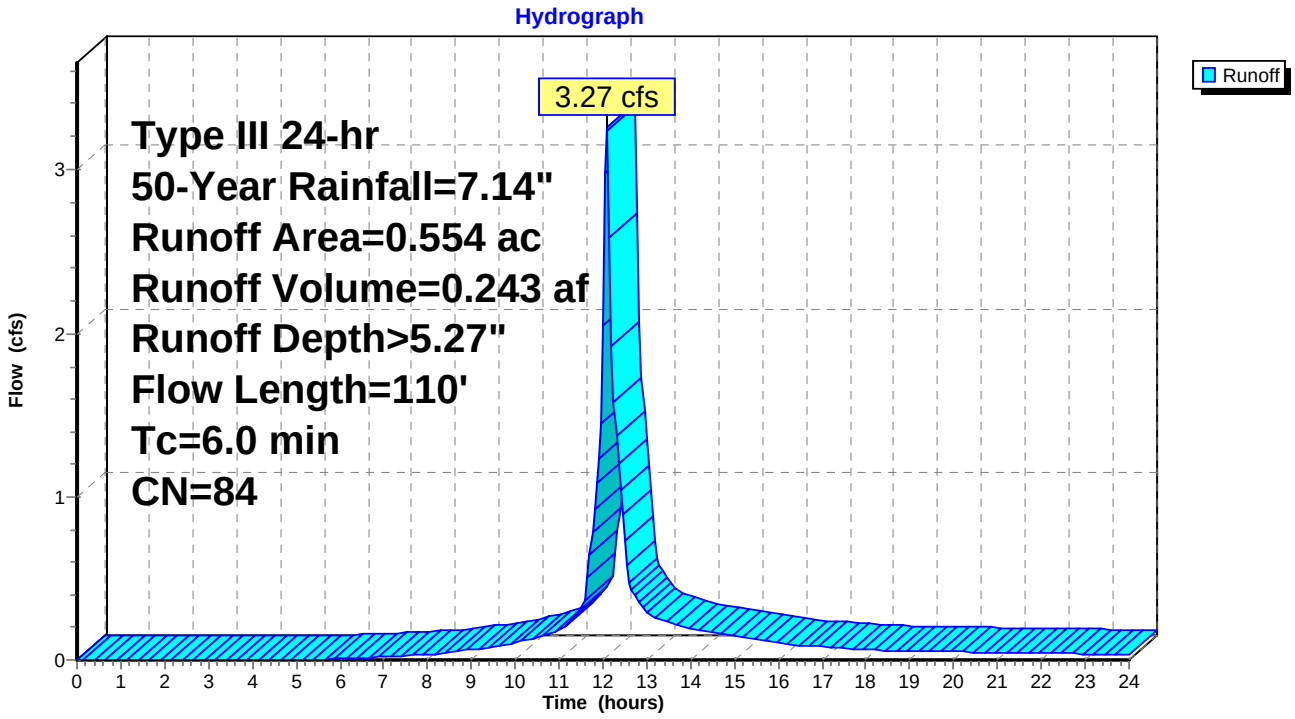
Runoff = 3.27 cfs @ 12.09 hrs, Volume= 0.243 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

Area (ac)	CN	Description
0.135	98	Water Surface, 0% imp, HSG C
0.017	80	>75% Grass cover, Good, HSG D
0.229	80	>75% Grass cover, Good, HSG D
0.157	80	>75% Grass cover, Good, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.554	84	Weighted Average
0.554		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0500	0.15		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.2	60	0.3500	4.14		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
5.7	110	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 16S: DA 2G



Summary for Subcatchment 17S: DA 2J

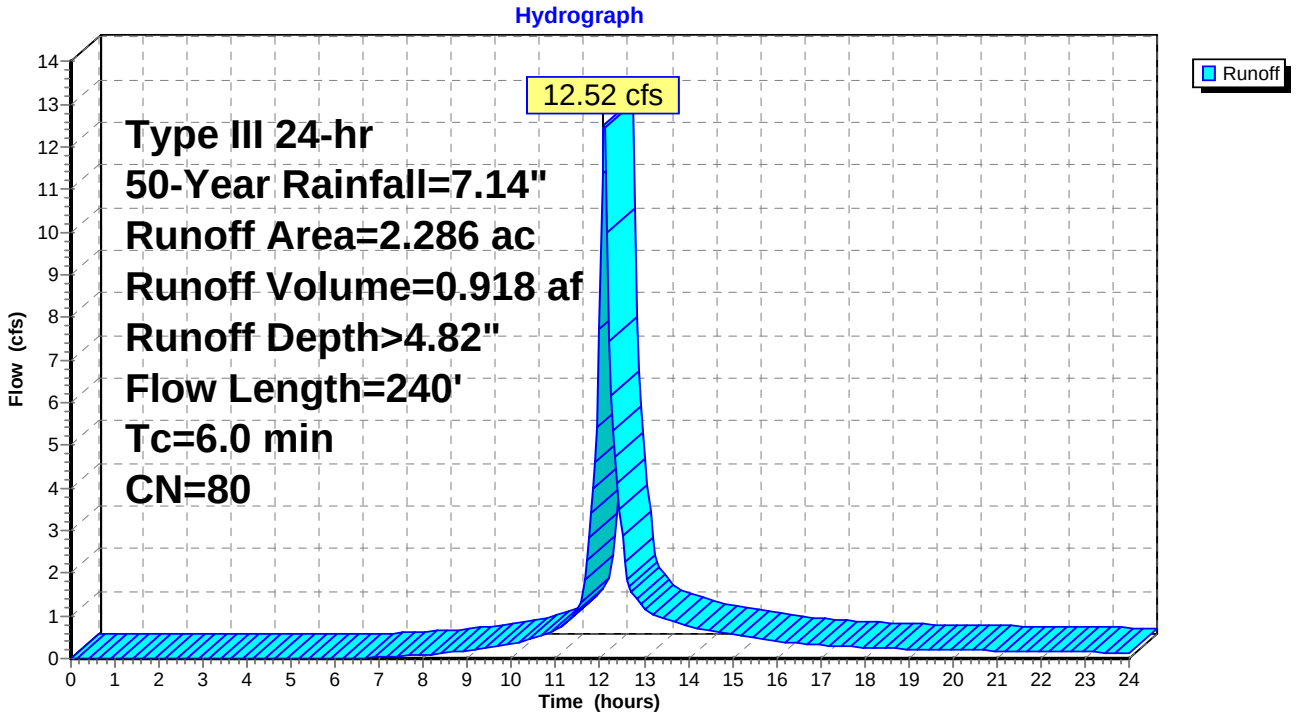
Runoff = 12.52 cfs @ 12.09 hrs, Volume= 0.918 af, Depth> 4.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

	Area (ac)	CN	Description
	0.412	80	>75% Grass cover, Good, HSG D
	0.061	98	Paved parking, HSG C
	0.032	74	>75% Grass cover, Good, HSG C
	0.140	98	Paved parking, HSG C
	0.721	74	>75% Grass cover, Good, HSG C
*	0.184	98	Two single Family Houses and Paved Driveways
	0.183	98	Paved parking, HSG C
	0.524	70	Woods, Good, HSG C
	0.029	74	>75% Grass cover, Good, HSG C
	2.286	80	Weighted Average
	1.718		75.15% Pervious Area
	0.568		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	24	0.1000	0.17		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	26	0.0500	1.56		**Sheet Flow, Paved/Gravel** Smooth surfaces n= 0.011 P2= 3.37"
0.3	85	0.0824	4.62		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	105	0.1333	2.56		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.6	240	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 17S: DA 2J



Summary for Subcatchment 18S: DA 2I

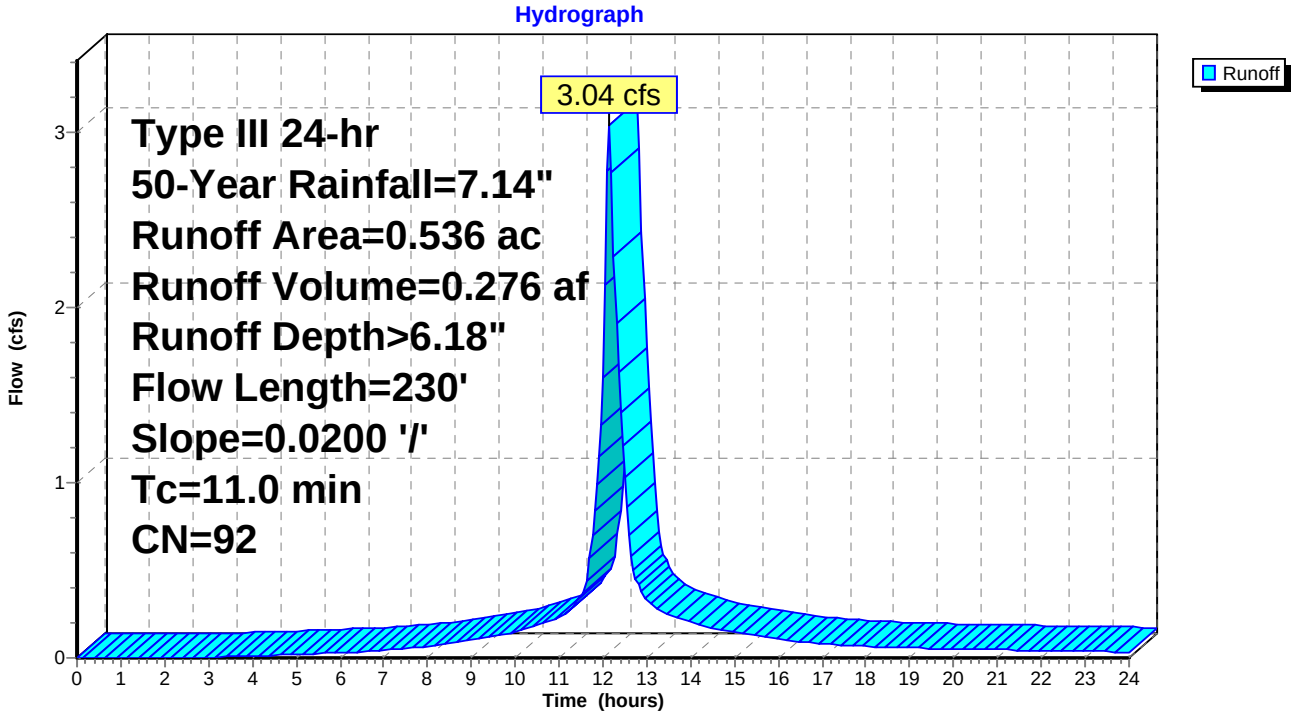
Runoff = 3.04 cfs @ 12.15 hrs, Volume= 0.276 af, Depth> 6.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

	Area (ac)	CN	Description
*	0.344	98	Paved parking, HSG C, North
	0.192	80	>75% Grass cover, Good, HSG D
	0.536	92	Weighted Average
	0.192		35.82% Pervious Area
	0.344		64.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
3.0	180	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
11.0	230	Total			

Subcatchment 18S: DA 2I



Summary for Subcatchment 21S: DA 2F

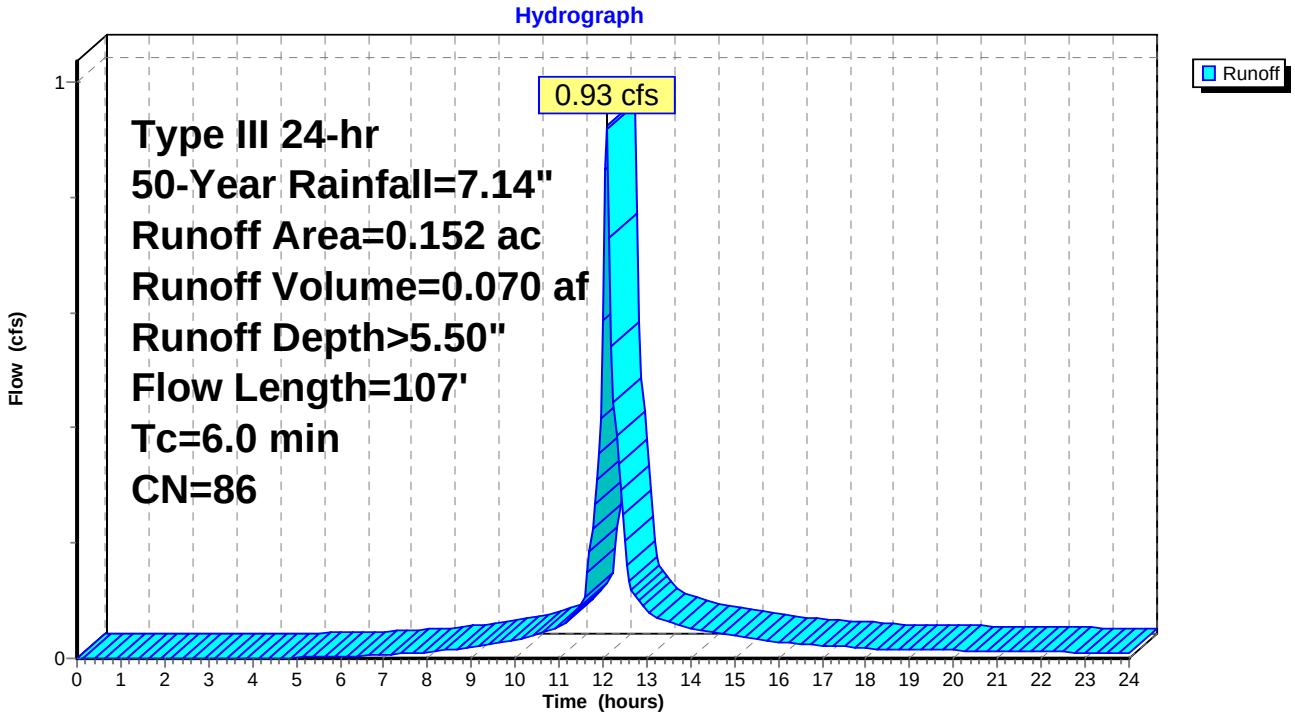
Runoff = 0.93 cfs @ 12.09 hrs, Volume= 0.070 af, Depth> 5.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

Area (ac)	CN	Description
0.051	98	Water Surface, 0% imp, HSG C
0.101	80	>75% Grass cover, Good, HSG D
0.152	86	Weighted Average
0.152		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	57	0.1754	2.93		**Shallow Concentrated Flow, Woods** Short Grass Pasture Kv= 7.0 fps
4.5	107	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 21S: DA 2F



Summary for Subcatchment 22S: DA 2H

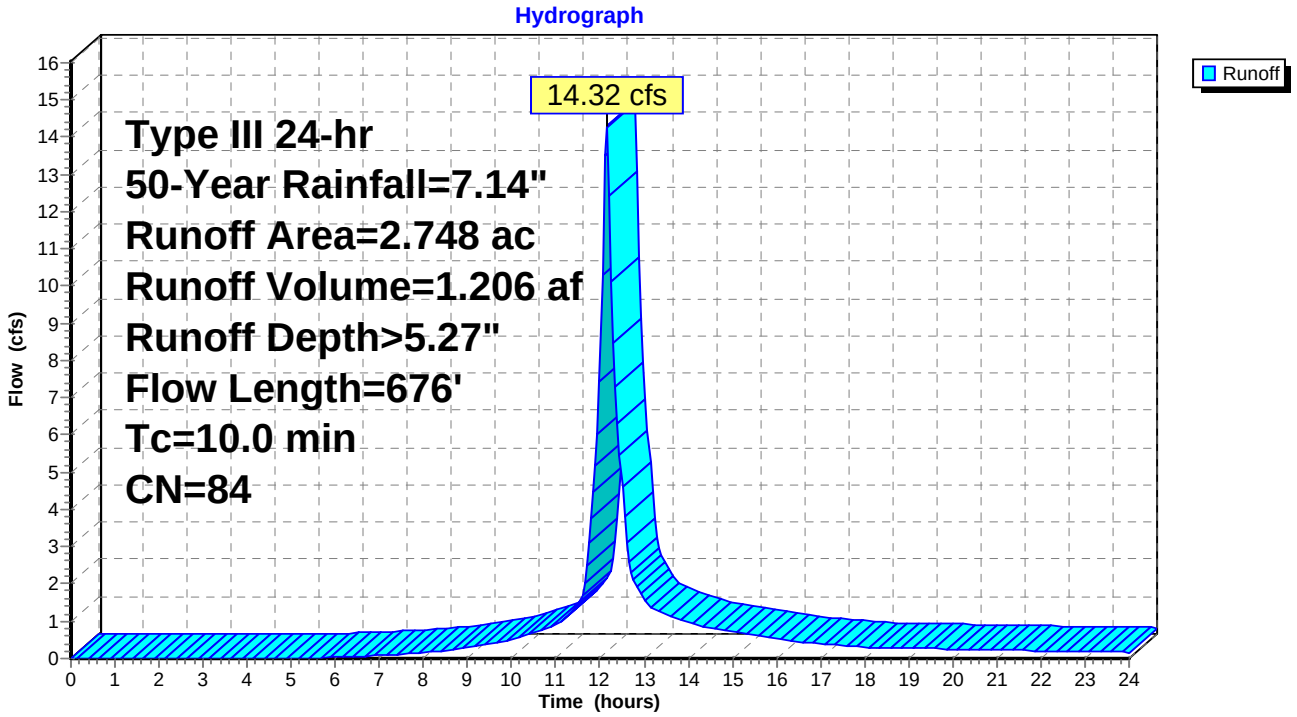
Runoff = 14.32 cfs @ 12.14 hrs, Volume= 1.206 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.14"

	Area (ac)	CN	Description
*	0.431	98	Paved parking, HSG C, North
*	0.010	80	>75% Grass cover, Good, HSG D, North
	0.313	80	>75% Grass cover, Good, HSG D
*	0.550	98	Paved parking, HSG C, South
	0.360	80	>75% Grass cover, Good, HSG D
	0.748	70	Woods, Good, HSG C
	0.336	80	>75% Grass cover, Good, HSG D
	2.748	84	Weighted Average
	1.767		64.30% Pervious Area
	0.981		35.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
1.7	190	0.1316	1.81		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	81	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	355	0.0310	3.57		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
10.0	676	Total			

Subcatchment 22S: DA 2H



Summary for Pond 15P: Apartments Phase II Stormwater Basin 2

Inflow Area = 3.175 ac, 31.02% Impervious, Inflow Depth > 5.17" for 50-Year event
Inflow = 15.36 cfs @ 12.16 hrs, Volume= 1.367 af
Outflow = 13.37 cfs @ 12.23 hrs, Volume= 1.357 af, Atten= 13%, Lag= 4.1 min
Primary = 13.37 cfs @ 12.23 hrs, Volume= 1.357 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 567.00' Surf.Area= 2,390 sf Storage= 1,777 cf
Peak Elev= 569.20' @ 12.23 hrs Surf.Area= 3,486 sf Storage= 8,233 cf (6,456 cf above start)
Flood Elev= 569.70' Surf.Area= 3,741 sf Storage= 10,022 cf (8,245 cf above start)

Plug-Flow detention time= 43.9 min calculated for 1.313 af (96% of inflow)
Center-of-Mass det. time= 13.3 min (816.8 - 803.5)

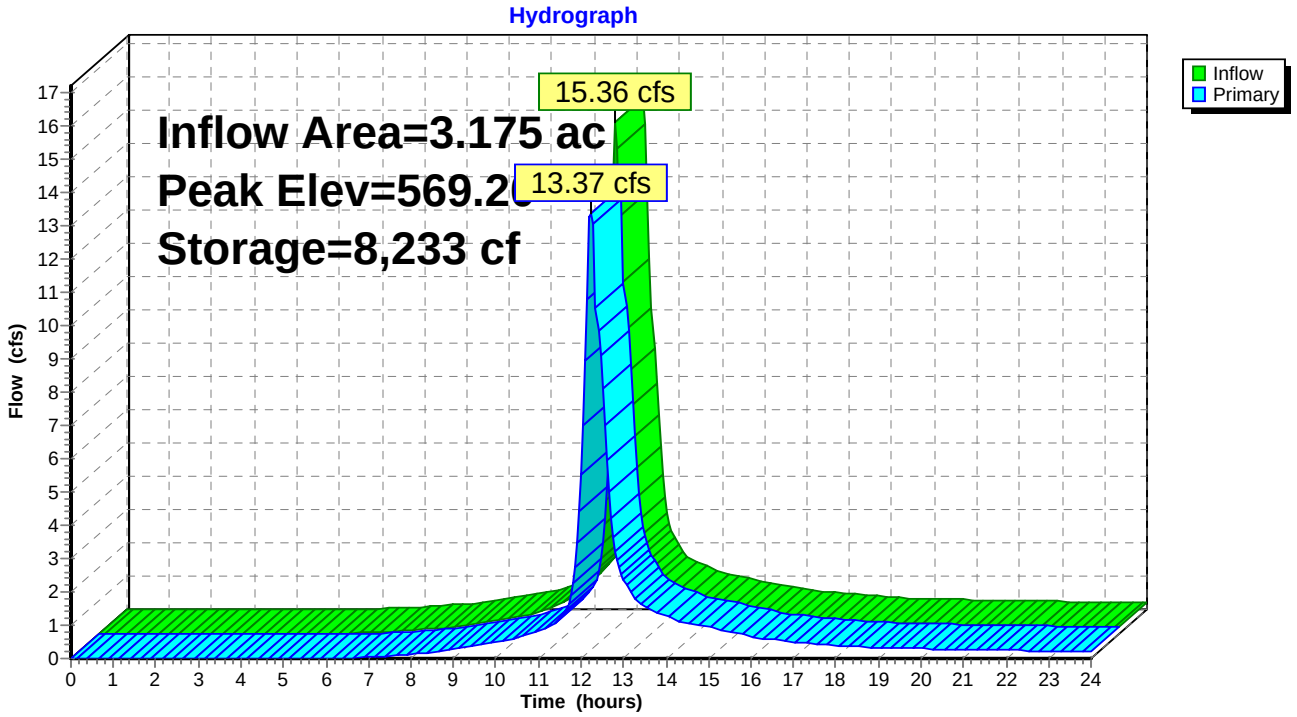
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	11,168 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	1,164	0	0
567.00	2,390	1,777	1,777
568.00	2,867	2,629	4,406
570.00	3,895	6,762	11,168

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**18.0" Round 18" HDPE** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 566.00' / 564.27' S= 0.0254 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	567.00'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	567.50'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	568.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	569.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=13.30 cfs @ 12.23 hrs HW=569.19' TW=565.86' (Dynamic Tailwater)
└─**1=18" HDPE** (Inlet Controls 13.30 cfs @ 7.53 fps)
  ├─**2=Orifice/Grate** (Passes < 2.64 cfs potential flow)
  ├─**3=Orifice/Grate** (Passes < 4.13 cfs potential flow)
  ├─**4=Orifice/Grate** (Passes < 4.63 cfs potential flow)
  └─**5=Broad-Crested Rectangular Weir** (Passes < 3.81 cfs potential flow)

Pond 15P: Apartments Phase II Stormwater Basin 2



Summary for Pond 20P: Apartments Phase II Stormwater Basin 1

Inflow Area = 7.013 ac, 32.94% Impervious, Inflow Depth > 5.27" for 50-Year event
Inflow = 30.88 cfs @ 12.17 hrs, Volume= 3.082 af
Outflow = 17.22 cfs @ 12.44 hrs, Volume= 3.029 af, Atten= 44%, Lag= 16.0 min
Primary = 17.22 cfs @ 12.44 hrs, Volume= 3.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 555.00' Surf.Area= 6,117 sf Storage= 5,401 cf
Peak Elev= 558.85' @ 12.44 hrs Surf.Area= 10,428 sf Storage= 37,754 cf (32,353 cf above start)
Flood Elev= 559.40' Surf.Area= 11,019 sf Storage= 43,681 cf (38,280 cf above start)

Plug-Flow detention time= 79.1 min calculated for 2.905 af (94% of inflow)
Center-of-Mass det. time= 36.1 min (841.0 - 804.9)

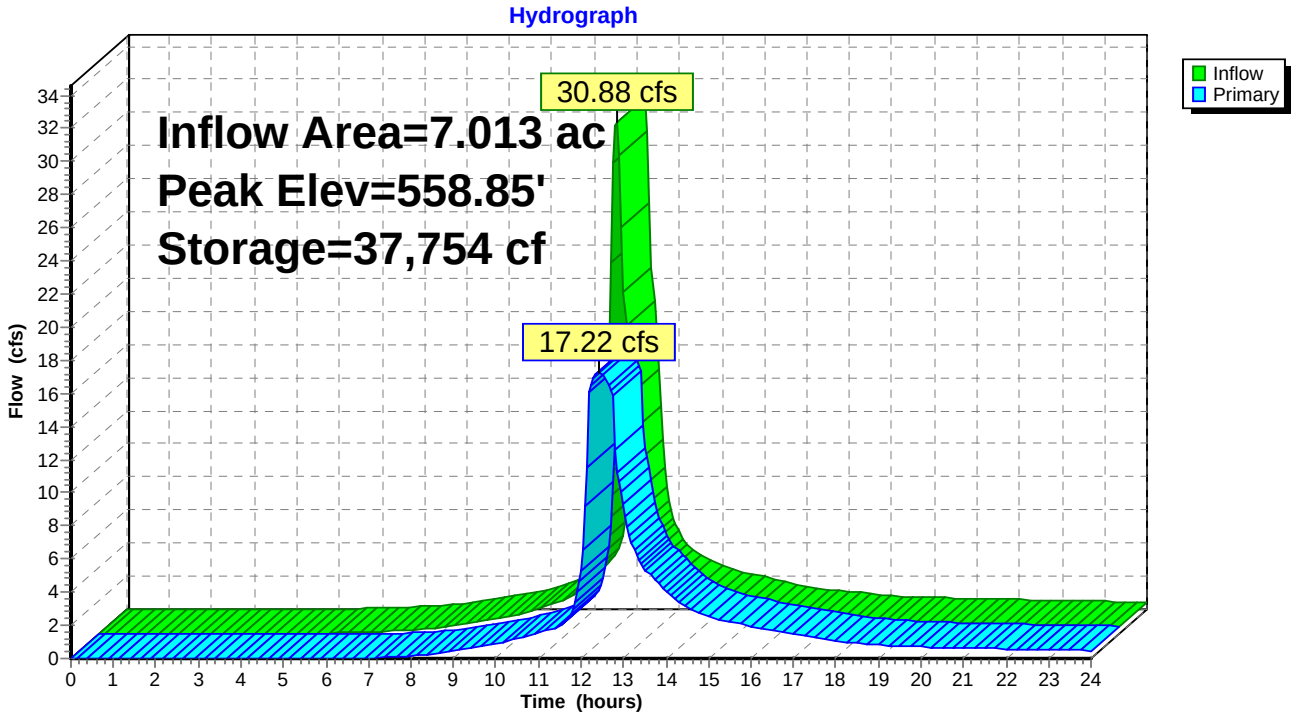
Volume	Invert	Avail.Storage	Storage Description
#1	554.00'	50,485 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
554.00	4,686	0	0
556.00	7,547	12,233	12,233
558.00	9,522	17,069	29,302
560.00	11,661	21,183	50,485

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**18.0" Round 18" HDPE** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.00' / 552.00' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	555.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	556.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	557.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	558.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=17.22 cfs @ 12.44 hrs HW=558.84' TW=0.00' (Dynamic Tailwater)
└**1=18" HDPE** (Inlet Controls 17.22 cfs @ 9.74 fps)
  ├**2=Orifice/Grate** (Passes < 4.86 cfs potential flow)
  ├**3=Orifice/Grate** (Passes < 4.09 cfs potential flow)
  ├**4=Orifice/Grate** (Passes < 6.27 cfs potential flow)
  └**5=Broad-Crested Rectangular Weir** (Passes < 40.97 cfs potential flow)

Pond 20P: Apartments Phase II Stormwater Basin 1



Summary for Pond 21P: DMH #2

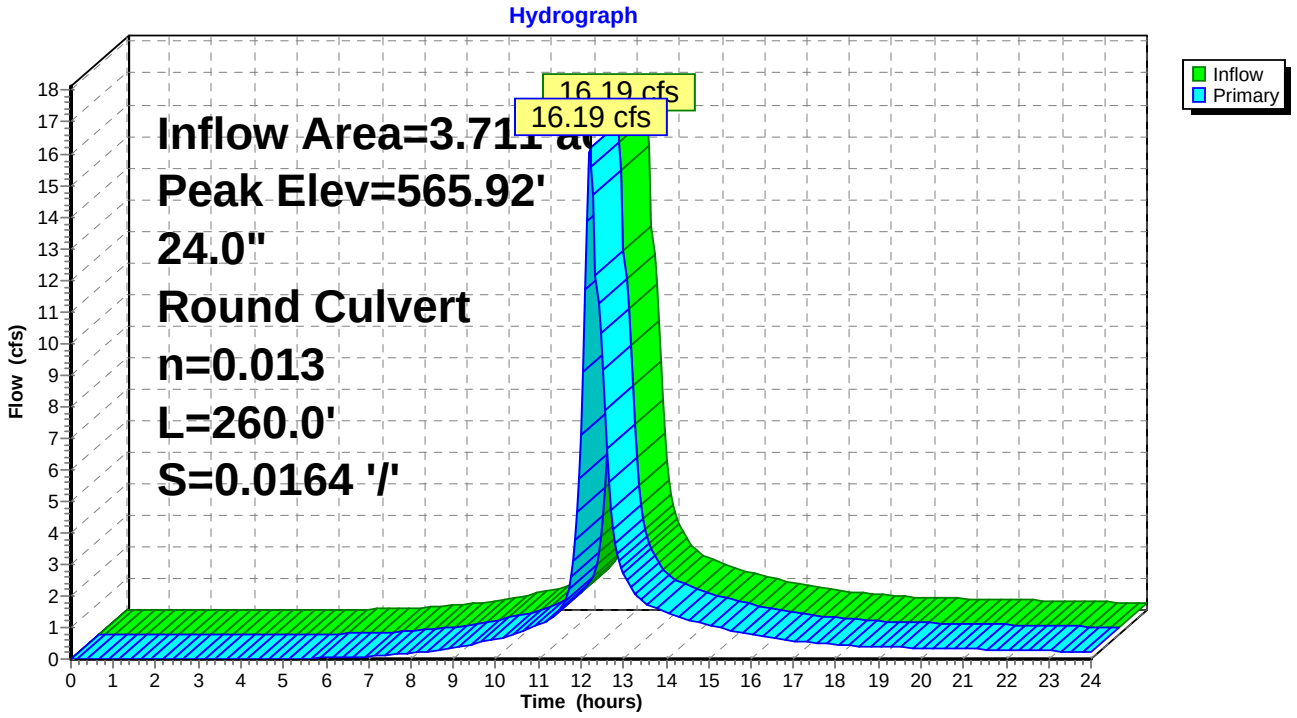
Inflow Area = 3.711 ac, 35.81% Impervious, Inflow Depth > 5.28" for 50-Year event
Inflow = 16.19 cfs @ 12.22 hrs, Volume= 1.633 af
Outflow = 16.19 cfs @ 12.22 hrs, Volume= 1.633 af, Atten= 0%, Lag= 0.0 min
Primary = 16.19 cfs @ 12.22 hrs, Volume= 1.633 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 565.92' @ 12.22 hrs
Flood Elev= 569.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	563.77'	**24.0" Round Culvert** L= 260.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 563.77' / 559.50' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=15.90 cfs @ 12.22 hrs HW=565.87' TW=559.21' (Dynamic Tailwater)
1=Culvert (Inlet Controls 15.90 cfs @ 5.06 fps)

Pond 21P: DMH #2



Summary for Pond 22P: FE #2A

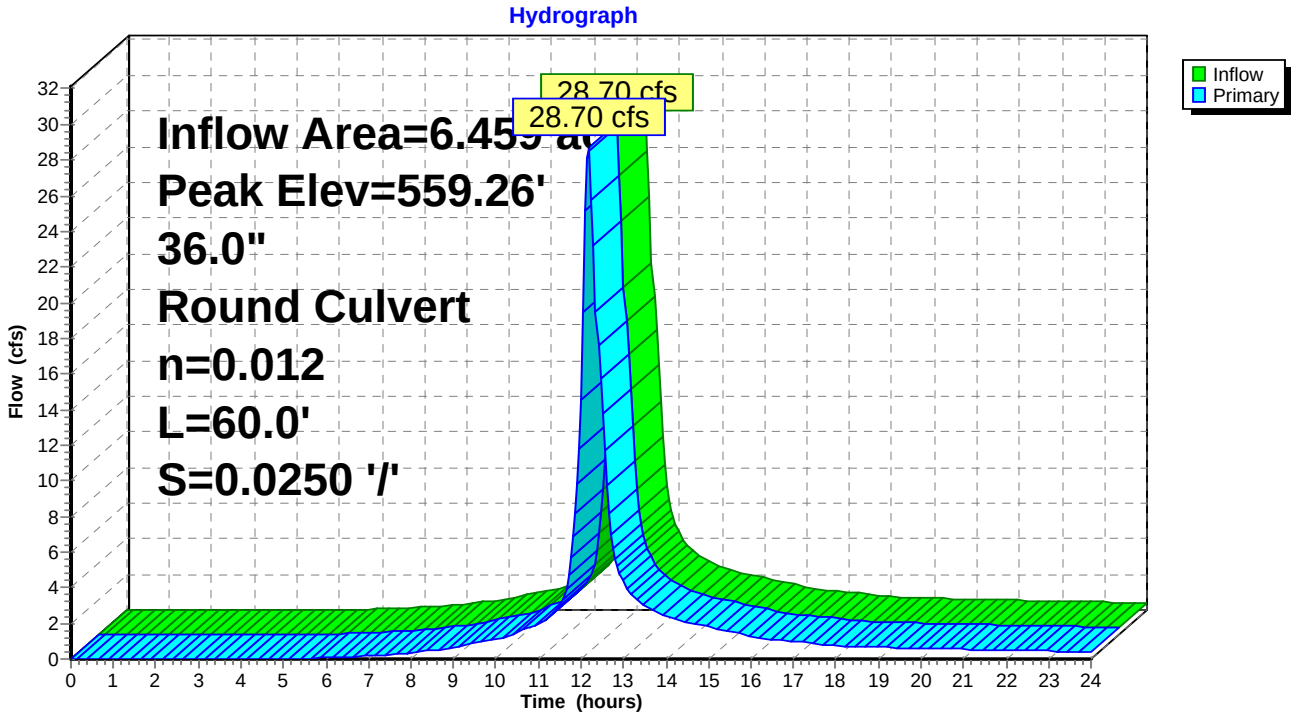
Inflow Area = 6.459 ac, 35.76% Impervious, Inflow Depth > 5.27" for 50-Year event
Inflow = 28.70 cfs @ 12.18 hrs, Volume= 2.839 af
Outflow = 28.70 cfs @ 12.18 hrs, Volume= 2.839 af, Atten= 0%, Lag= 0.0 min
Primary = 28.70 cfs @ 12.18 hrs, Volume= 2.839 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 559.26' @ 12.29 hrs
Flood Elev= 564.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	556.50'	**36.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 556.50' / 555.00' S= 0.0250 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=28.40 cfs @ 12.18 hrs HW=559.12' TW=558.19' (Dynamic Tailwater)
1=Culvert (Outlet Controls 28.40 cfs @ 5.78 fps)

Pond 22P: FE #2A

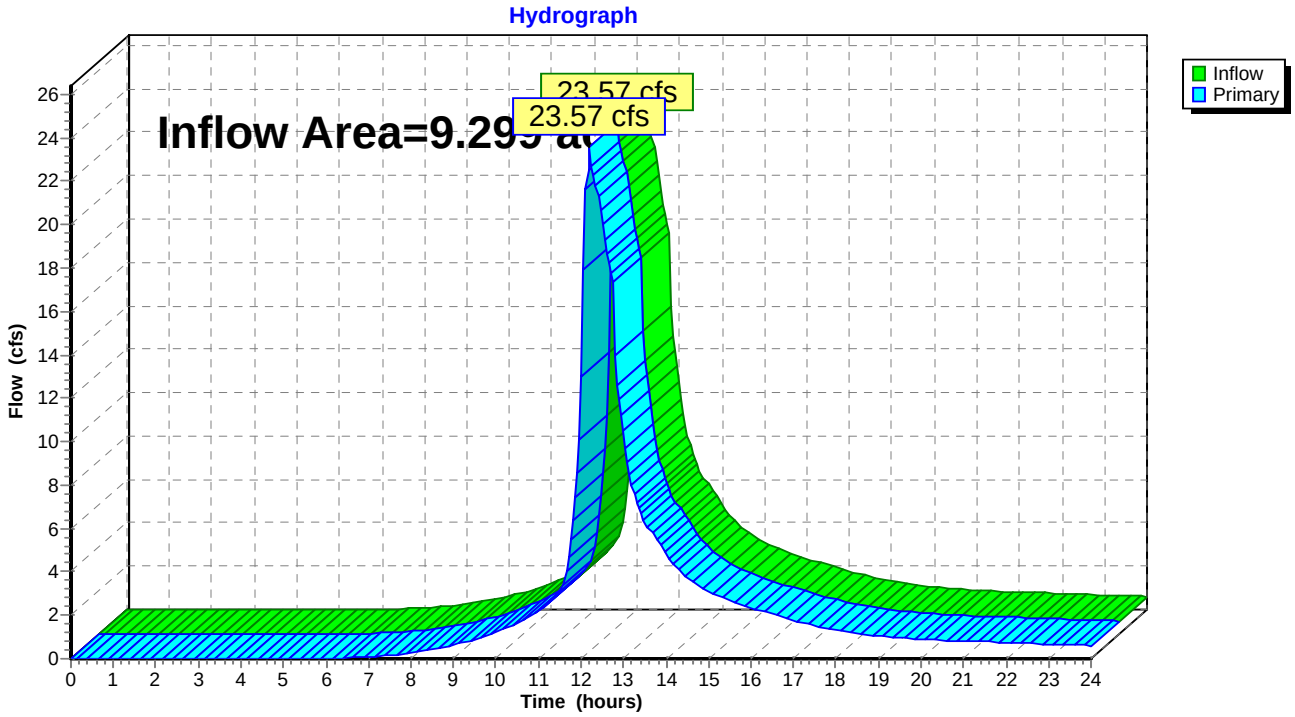


Summary for Link 20L: Off-Site

Inflow Area = 9.299 ac, 30.95% Impervious, Inflow Depth > 5.09" for 50-Year event
Inflow = 23.57 cfs @ 12.21 hrs, Volume= 3.947 af
Primary = 23.57 cfs @ 12.21 hrs, Volume= 3.947 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 20L: Off-Site



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 2
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 15S: DA 2E Runoff Area=3.023 ac 32.58% Impervious Runoff Depth>6.00"
Flow Length=671' Tc=12.0 min CN=83 Runoff=17.00 cfs 1.513 af

Subcatchment 16S: DA 2G Runoff Area=0.554 ac 0.00% Impervious Runoff Depth>6.13"
Flow Length=110' Tc=6.0 min CN=84 Runoff=3.77 cfs 0.283 af

Subcatchment 17S: DA 2J Runoff Area=2.286 ac 24.85% Impervious Runoff Depth>5.66"
Flow Length=240' Tc=6.0 min CN=80 Runoff=14.61 cfs 1.078 af

Subcatchment 18S: DA 2I Runoff Area=0.536 ac 64.18% Impervious Runoff Depth>7.07"
Flow Length=230' Slope=0.0200 '/' Tc=11.0 min CN=92 Runoff=3.46 cfs 0.316 af

Subcatchment 21S: DA 2F Runoff Area=0.152 ac 0.00% Impervious Runoff Depth>6.37"
Flow Length=107' Tc=6.0 min CN=86 Runoff=1.06 cfs 0.081 af

Subcatchment 22S: DA 2H Runoff Area=2.748 ac 35.70% Impervious Runoff Depth>6.13"
Flow Length=676' Tc=10.0 min CN=84 Runoff=16.54 cfs 1.403 af

Pond 15P: Apartments Phase II Stormwater Peak Elev=569.50' Storage=9,270 cf Inflow=17.79 cfs 1.593 af
Outflow=14.10 cfs 1.582 af

Pond 20P: Apartments Phase II Peak Elev=559.41' Storage=43,789 cf Inflow=36.32 cfs 3.584 af
Outflow=18.37 cfs 3.527 af

Pond 21P: DMH #2 Peak Elev=566.04' Inflow=17.02 cfs 1.898 af
24.0" Round Culvert n=0.013 L=260.0' S=0.0164 '/' Outflow=17.02 cfs 1.898 af

Pond 22P: FE #2A Peak Elev=559.79' Inflow=33.44 cfs 3.301 af
36.0" Round Culvert n=0.012 L=60.0' S=0.0250 '/' Outflow=33.44 cfs 3.301 af

Link 20L: Off-Site Inflow=27.76 cfs 4.605 af
Primary=27.76 cfs 4.605 af

Total Runoff Area = 9.299 ac Runoff Volume = 4.673 af Average Runoff Depth = 6.03"
69.05% Pervious = 6.421 ac 30.95% Impervious = 2.878 ac

Summary for Subcatchment 15S: DA 2E

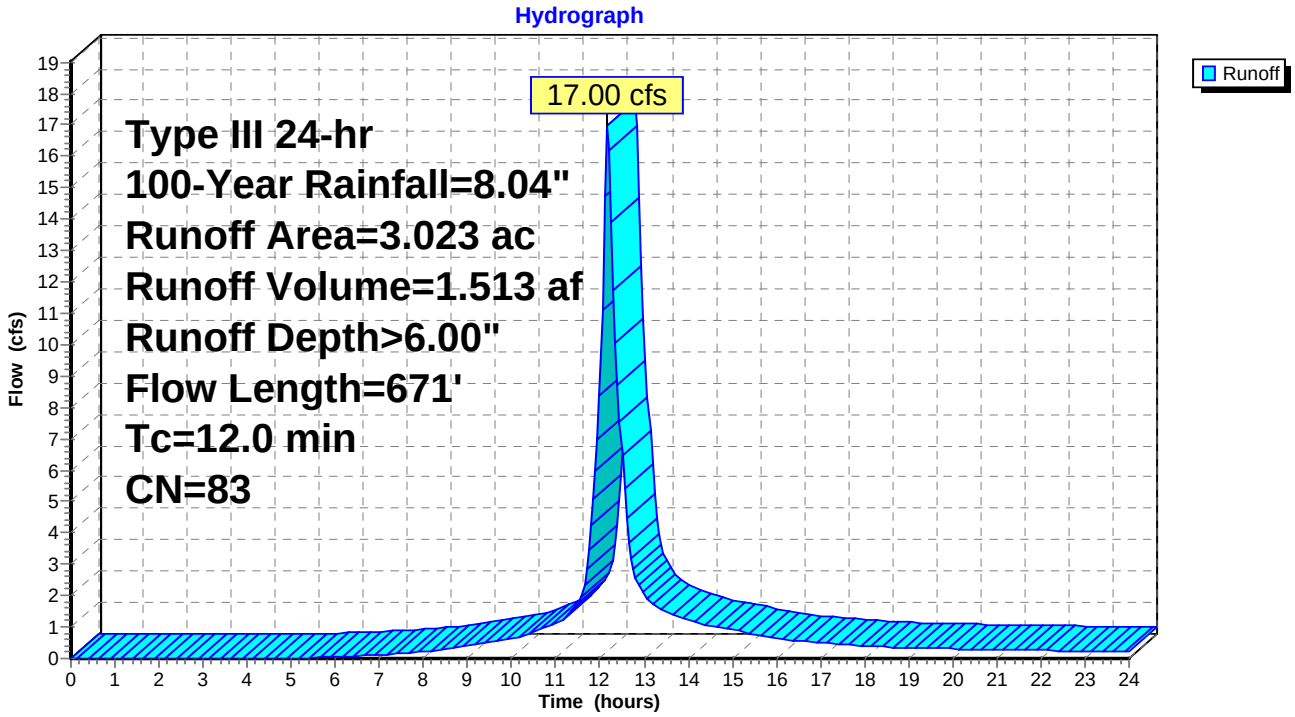
Runoff = 17.00 cfs @ 12.16 hrs, Volume= 1.513 af, Depth> 6.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

	Area (ac)	CN	Description
*	0.985	98	Paved parking, HSG C, South
	0.455	80	>75% Grass cover, Good, HSG D
	0.917	70	Woods, Good, HSG C
	0.666	80	>75% Grass cover, Good, HSG D
	3.023	83	Weighted Average
	2.038		67.42% Pervious Area
	0.985		32.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
3.3	417	0.1799	2.12		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.7	164	0.0421	4.17		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
12.0	671	Total			

Subcatchment 15S: DA 2E



Summary for Subcatchment 16S: DA 2G

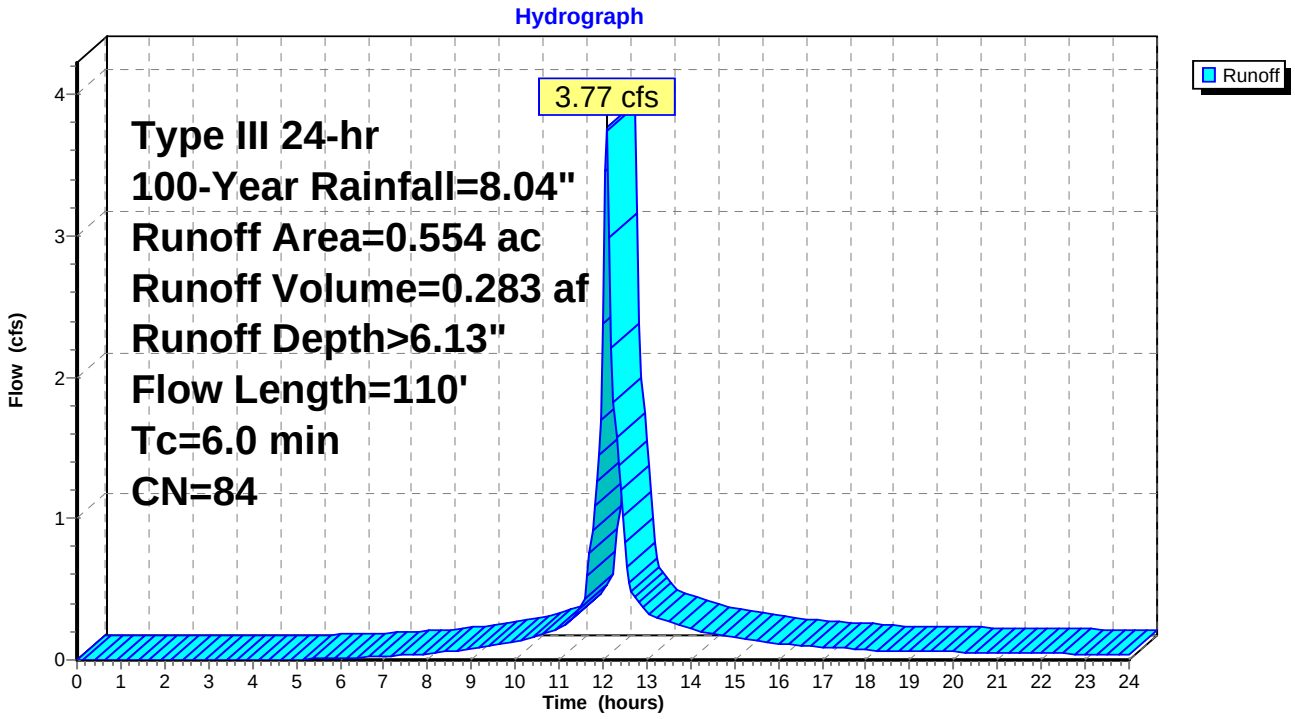
Runoff = 3.77 cfs @ 12.09 hrs, Volume= 0.283 af, Depth> 6.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

Area (ac)	CN	Description
0.135	98	Water Surface, 0% imp, HSG C
0.017	80	>75% Grass cover, Good, HSG D
0.229	80	>75% Grass cover, Good, HSG D
0.157	80	>75% Grass cover, Good, HSG D
0.016	80	>75% Grass cover, Good, HSG D
0.554	84	Weighted Average
0.554		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	50	0.0500	0.15		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.2	60	0.3500	4.14		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
5.7	110	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 16S: DA 2G



Summary for Subcatchment 17S: DA 2J

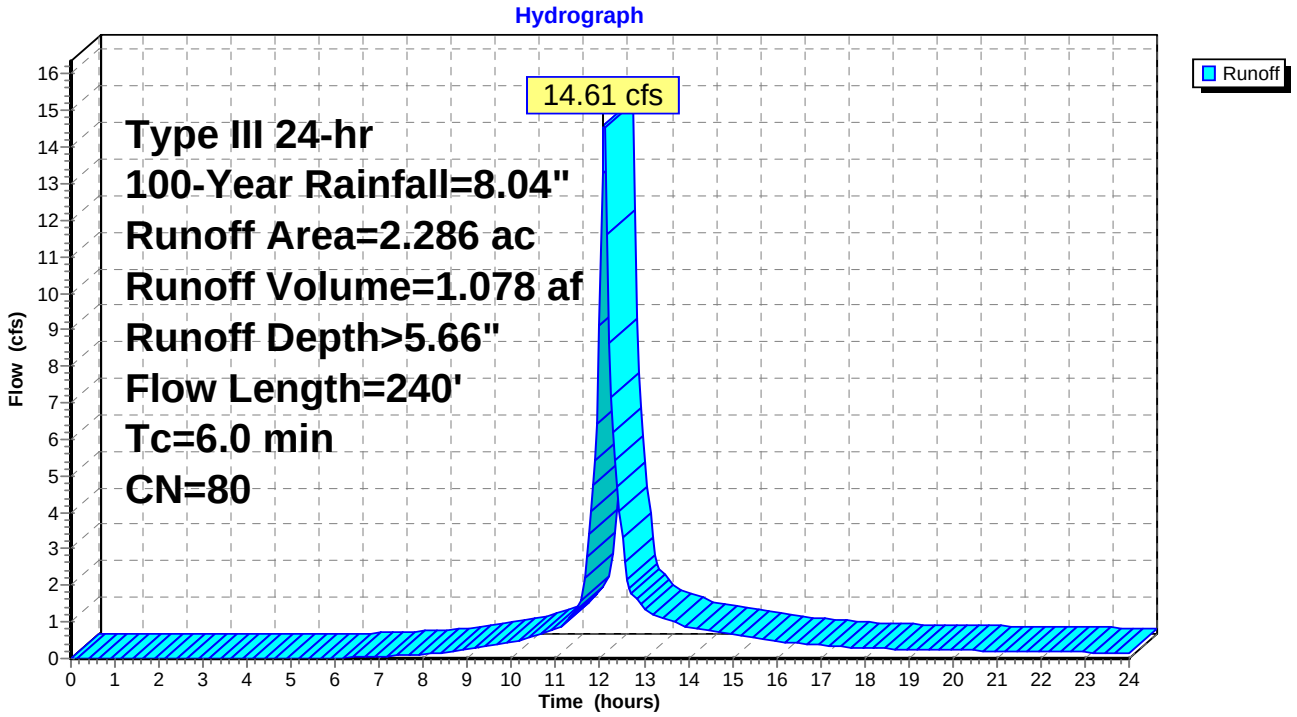
Runoff = 14.61 cfs @ 12.09 hrs, Volume= 1.078 af, Depth> 5.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

	Area (ac)	CN	Description
	0.412	80	>75% Grass cover, Good, HSG D
	0.061	98	Paved parking, HSG C
	0.032	74	>75% Grass cover, Good, HSG C
	0.140	98	Paved parking, HSG C
	0.721	74	>75% Grass cover, Good, HSG C
*	0.184	98	Two single Family Houses and Paved Driveways
	0.183	98	Paved parking, HSG C
	0.524	70	Woods, Good, HSG C
	0.029	74	>75% Grass cover, Good, HSG C
	2.286	80	Weighted Average
	1.718		75.15% Pervious Area
	0.568		24.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	24	0.1000	0.17		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	26	0.0500	1.56		**Sheet Flow, Paved/Gravel** Smooth surfaces n= 0.011 P2= 3.37"
0.3	85	0.0824	4.62		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.7	105	0.1333	2.56		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
3.6	240	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 17S: DA 2J



Summary for Subcatchment 18S: DA 2I

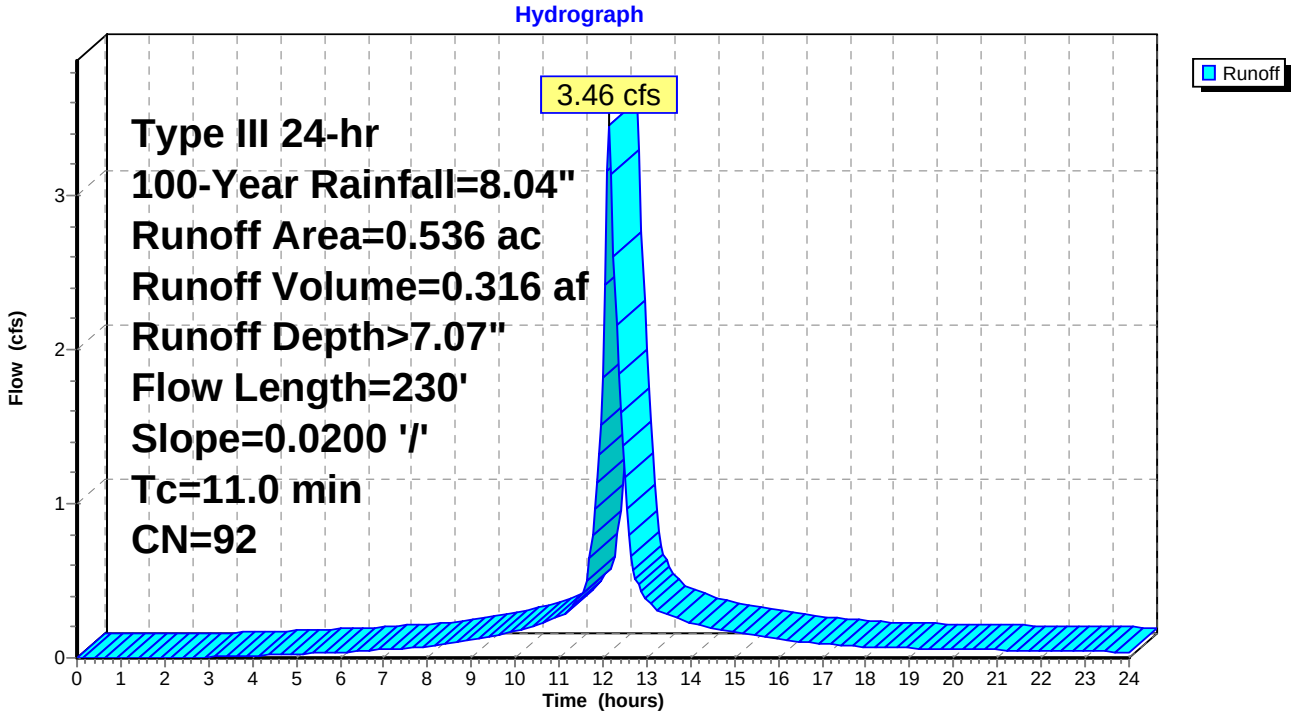
Runoff = 3.46 cfs @ 12.15 hrs, Volume= 0.316 af, Depth> 7.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

	Area (ac)	CN	Description
*	0.344	98	Paved parking, HSG C, North
	0.192	80	>75% Grass cover, Good, HSG D
	0.536	92	Weighted Average
	0.192		35.82% Pervious Area
	0.344		64.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0200	0.10		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
3.0	180	0.0200	0.99		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
11.0	230	Total			

Subcatchment 18S: DA 2I



Summary for Subcatchment 21S: DA 2F

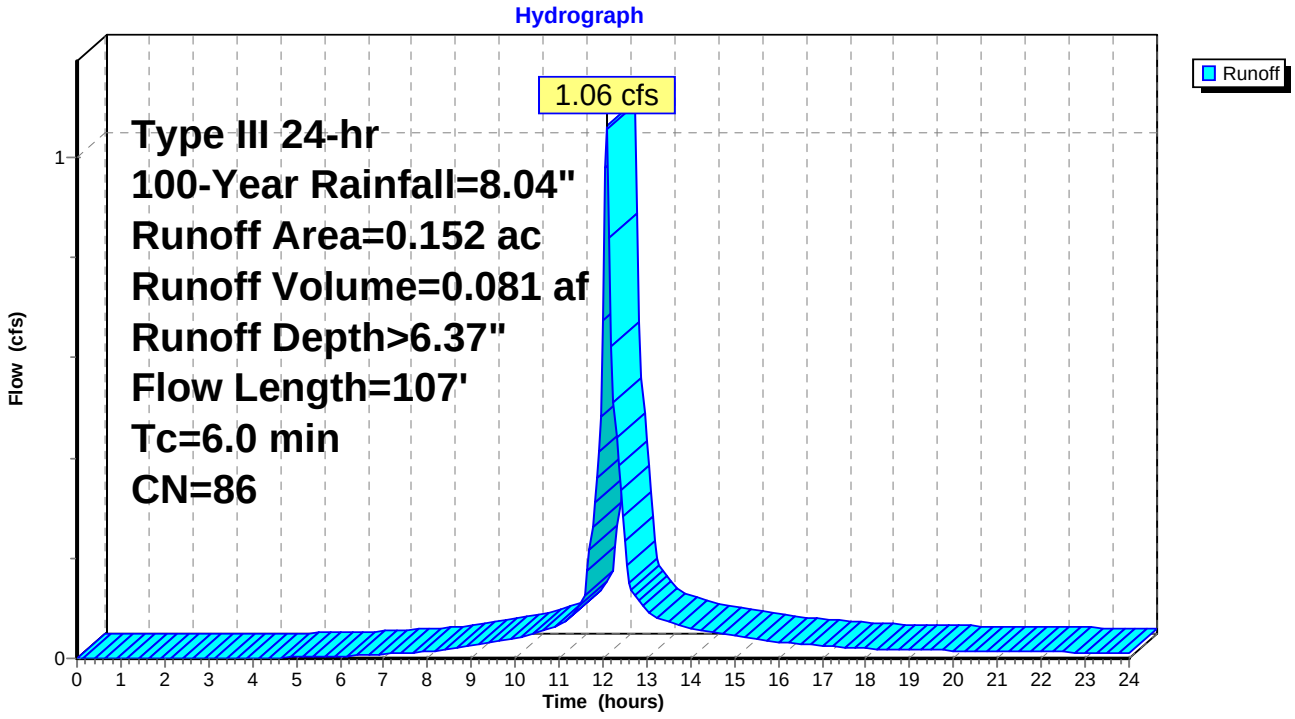
Runoff = 1.06 cfs @ 12.09 hrs, Volume= 0.081 af, Depth> 6.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

Area (ac)	CN	Description
0.051	98	Water Surface, 0% imp, HSG C
0.101	80	>75% Grass cover, Good, HSG D
0.152	86	Weighted Average
0.152		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow, Grass** Grass: Dense n= 0.240 P2= 3.37"
0.3	57	0.1754	2.93		**Shallow Concentrated Flow, Woods** Short Grass Pasture Kv= 7.0 fps
4.5	107	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 21S: DA 2F



Summary for Subcatchment 22S: DA 2H

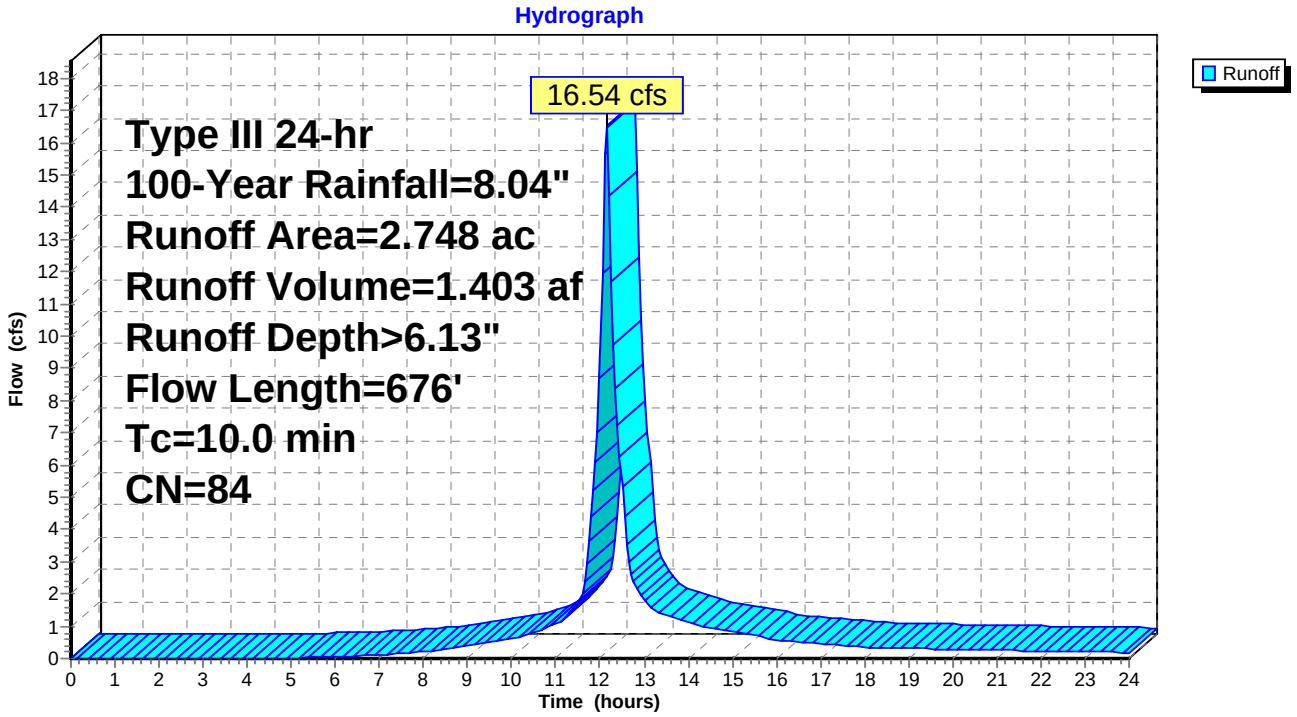
Runoff = 16.54 cfs @ 12.14 hrs, Volume= 1.403 af, Depth> 6.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.04"

	Area (ac)	CN	Description
*	0.431	98	Paved parking, HSG C, North
*	0.010	80	>75% Grass cover, Good, HSG D, North
	0.313	80	>75% Grass cover, Good, HSG D
*	0.550	98	Paved parking, HSG C, South
	0.360	80	>75% Grass cover, Good, HSG D
	0.748	70	Woods, Good, HSG C
	0.336	80	>75% Grass cover, Good, HSG D
	2.748	84	Weighted Average
	1.767		64.30% Pervious Area
	0.981		35.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
1.7	190	0.1316	1.81		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.3	81	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.7	355	0.0310	3.57		**Shallow Concentrated Flow, Paved** Paved Kv= 20.3 fps
10.0	676	Total			

Subcatchment 22S: DA 2H



Summary for Pond 15P: Apartments Phase II Stormwater Basin 2

Inflow Area = 3.175 ac, 31.02% Impervious, Inflow Depth > 6.02" for 100-Year event
Inflow = 17.79 cfs @ 12.16 hrs, Volume= 1.593 af
Outflow = 14.10 cfs @ 12.26 hrs, Volume= 1.582 af, Atten= 21%, Lag= 6.0 min
Primary = 14.10 cfs @ 12.26 hrs, Volume= 1.582 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 567.00' Surf.Area= 2,390 sf Storage= 1,777 cf
Peak Elev= 569.50' @ 12.26 hrs Surf.Area= 3,636 sf Storage= 9,270 cf (7,493 cf above start)
Flood Elev= 569.70' Surf.Area= 3,741 sf Storage= 10,022 cf (8,245 cf above start)

Plug-Flow detention time= 40.7 min calculated for 1.541 af (97% of inflow)
Center-of-Mass det. time= 12.9 min (812.2 - 799.2)

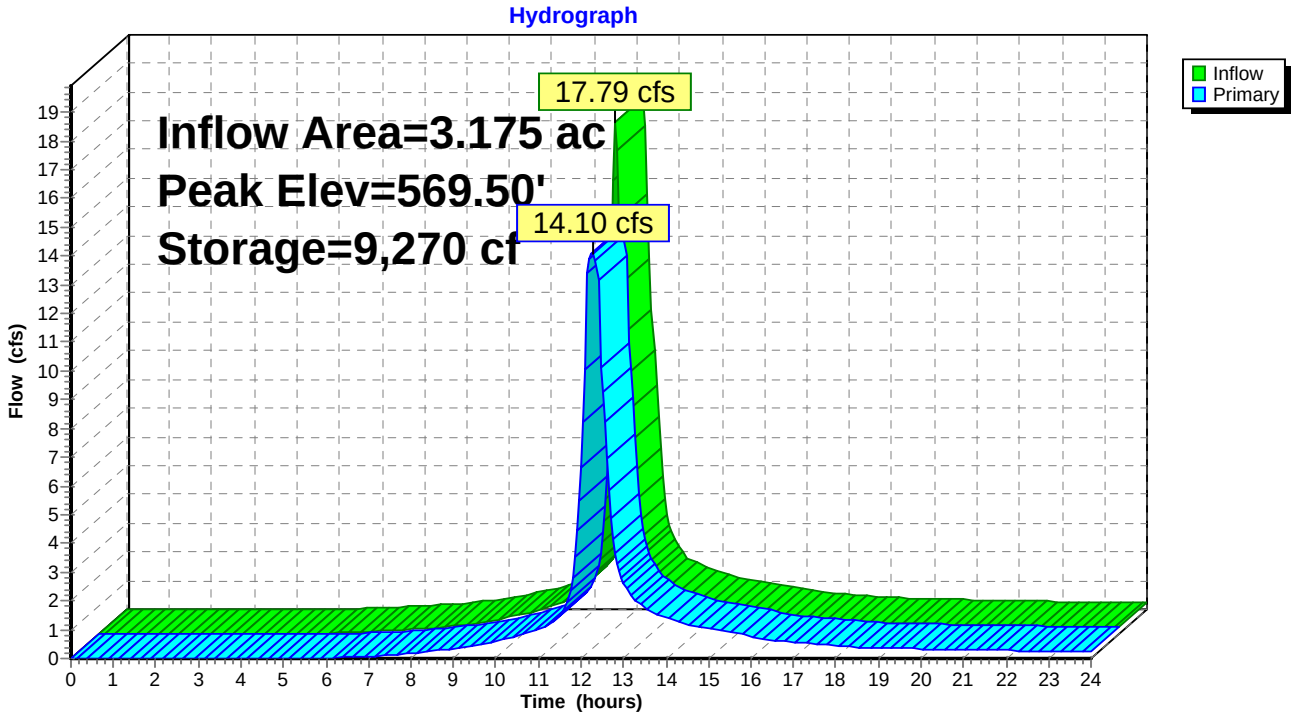
Volume	Invert	Avail.Storage	Storage Description
#1	566.00'	11,168 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
566.00	1,164	0	0
567.00	2,390	1,777	1,777
568.00	2,867	2,629	4,406
570.00	3,895	6,762	11,168

Device	Routing	Invert	Outlet Devices
#1	Primary	566.00'	**18.0" Round 18" HDPE** L= 68.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 566.00' / 564.27' S= 0.0254 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	567.00'	**6.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Device 1	567.50'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	568.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	569.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=14.08 cfs @ 12.26 hrs HW=569.49' TW=565.97' (Dynamic Tailwater)
└─**1=18" HDPE** (Inlet Controls 14.08 cfs @ 7.97 fps)
  ├─**2=Orifice/Grate** (Passes < 2.83 cfs potential flow)
  ├─**3=Orifice/Grate** (Passes < 4.61 cfs potential flow)
  ├─**4=Orifice/Grate** (Passes < 5.43 cfs potential flow)
  └─**5=Broad-Crested Rectangular Weir** (Passes < 16.25 cfs potential flow)

Pond 15P: Apartments Phase II Stormwater Basin 2



Summary for Pond 20P: Apartments Phase II Stormwater Basin 1

[58] Hint: Peaked 0.01' above defined flood level

Inflow Area = 7.013 ac, 32.94% Impervious, Inflow Depth > 6.13" for 100-Year event
Inflow = 36.32 cfs @ 12.15 hrs, Volume= 3.584 af
Outflow = 18.37 cfs @ 12.46 hrs, Volume= 3.527 af, Atten= 49%, Lag= 18.7 min
Primary = 18.37 cfs @ 12.46 hrs, Volume= 3.527 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Starting Elev= 555.00' Surf.Area= 6,117 sf Storage= 5,401 cf
Peak Elev= 559.41' @ 12.46 hrs Surf.Area= 11,030 sf Storage= 43,789 cf (38,388 cf above start)
Flood Elev= 559.40' Surf.Area= 11,019 sf Storage= 43,681 cf (38,280 cf above start)

Plug-Flow detention time= 74.7 min calculated for 3.396 af (95% of inflow)
Center-of-Mass det. time= 36.0 min (836.7 - 800.7)

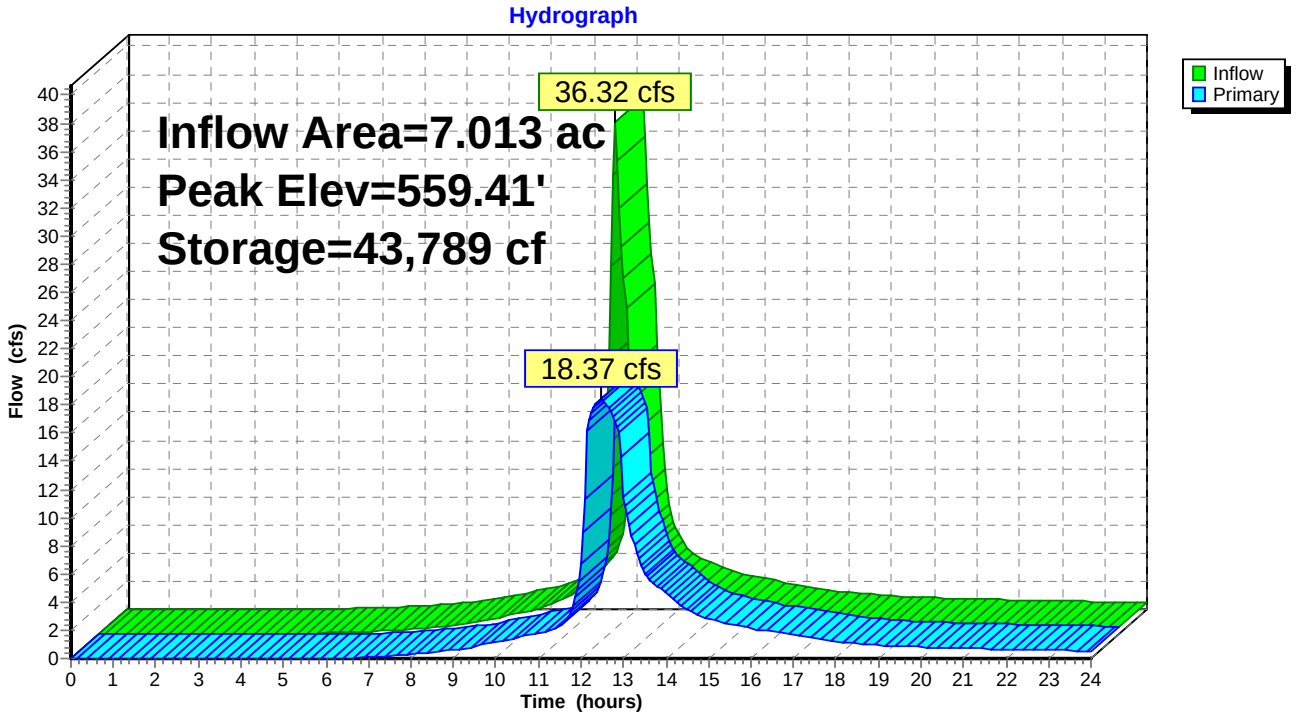
Volume	Invert	Avail.Storage	Storage Description
#1	554.00'	50,485 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
554.00	4,686	0	0
556.00	7,547	12,233	12,233
558.00	9,522	17,069	29,302
560.00	11,661	21,183	50,485

Device	Routing	Invert	Outlet Devices
#1	Primary	554.00'	**18.0" Round 18" HDPE** L= 102.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 554.00' / 552.00' S= 0.0196 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	555.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	556.00'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	557.00'	**10.0" Vert. Orifice/Grate X 2.00** C= 0.600 Limited to weir flow at low heads
#5	Device 1	558.00'	**16.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=18.36 cfs @ 12.46 hrs HW=559.40' TW=0.00' (Dynamic Tailwater)
└─**1=18" HDPE** (Inlet Controls 18.36 cfs @ 10.39 fps)
  ├─**2=Orifice/Grate** (Passes < 5.24 cfs potential flow)
  ├─**3=Orifice/Grate** (Passes < 4.54 cfs potential flow)
  ├─**4=Orifice/Grate** (Passes < 7.40 cfs potential flow)
  └─**5=Broad-Crested Rectangular Weir** (Passes < 88.39 cfs potential flow)

Pond 20P: Apartments Phase II Stormwater Basin 1



Summary for Pond 21P: DMH #2

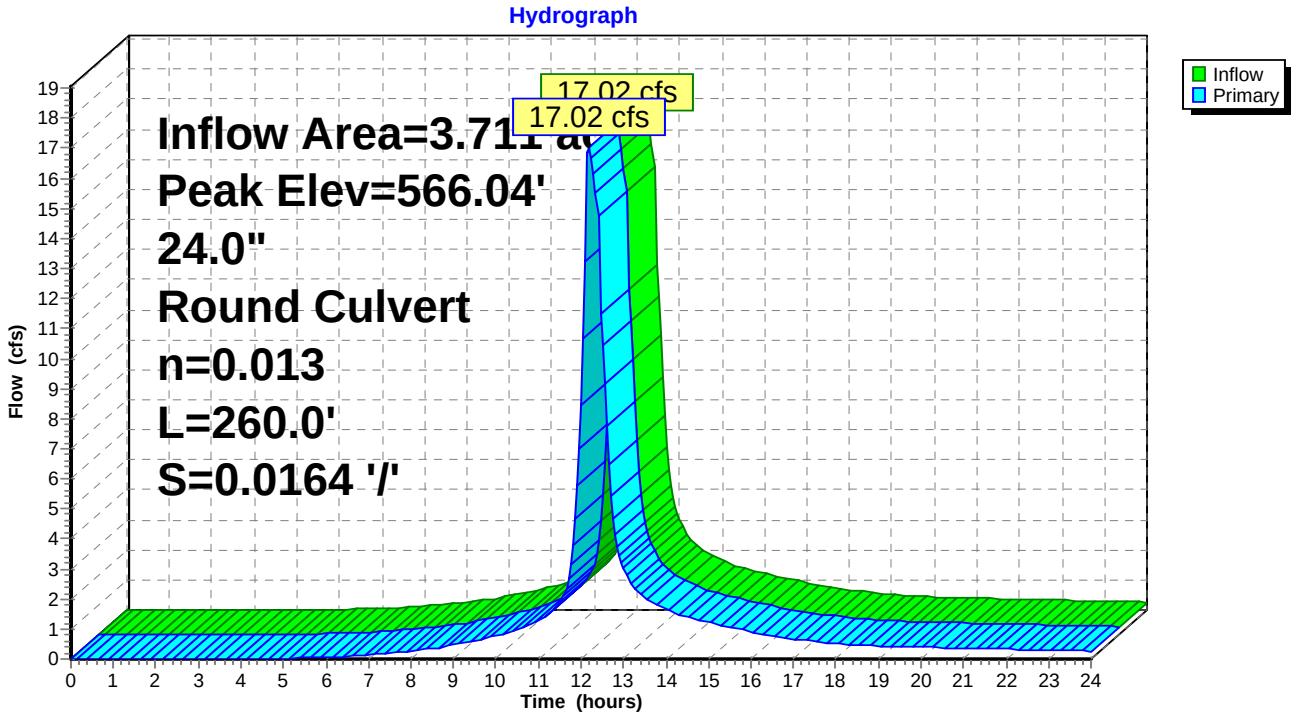
Inflow Area = 3.711 ac, 35.81% Impervious, Inflow Depth > 6.14" for 100-Year event
Inflow = 17.02 cfs @ 12.19 hrs, Volume= 1.898 af
Outflow = 17.02 cfs @ 12.19 hrs, Volume= 1.898 af, Atten= 0%, Lag= 0.0 min
Primary = 17.02 cfs @ 12.19 hrs, Volume= 1.898 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 566.04' @ 12.19 hrs
Flood Elev= 569.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	563.77'	**24.0" Round Culvert** L= 260.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 563.77' / 559.50' S= 0.0164 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=16.99 cfs @ 12.19 hrs HW=566.03' TW=559.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 16.99 cfs @ 5.41 fps)

Pond 21P: DMH #2



Summary for Pond 22P: FE #2A

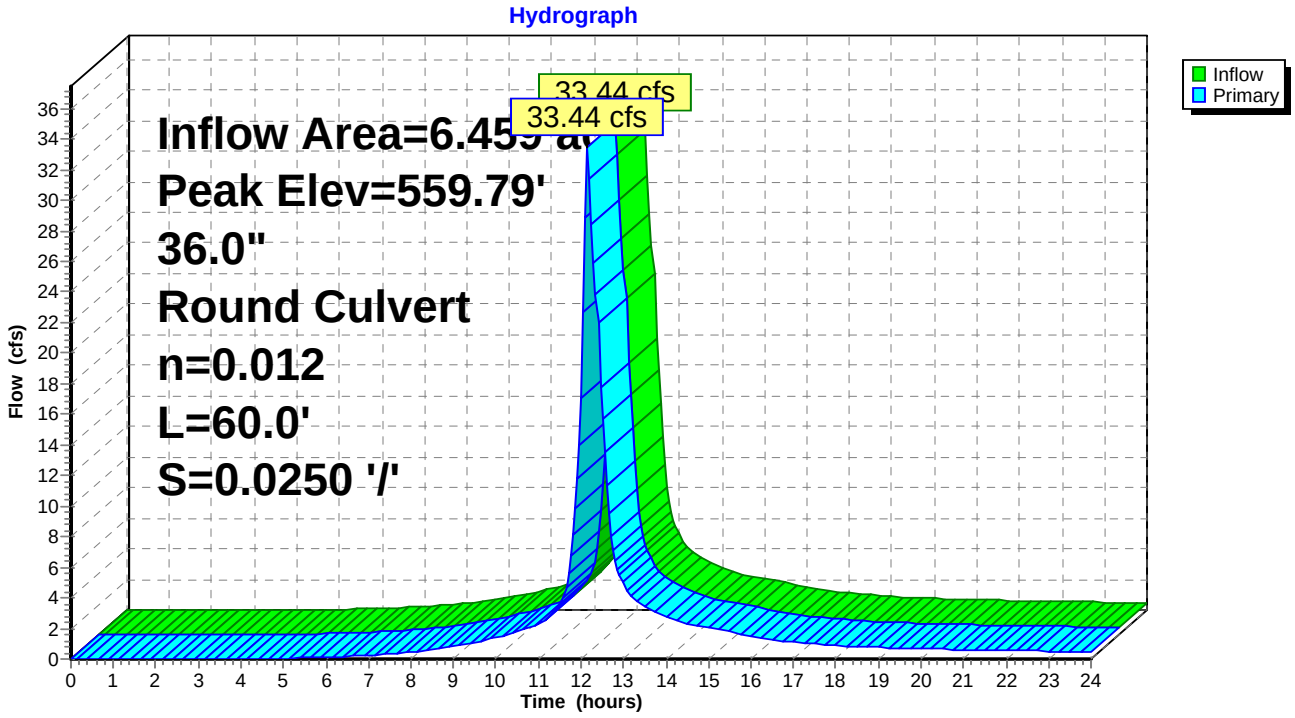
Inflow Area = 6.459 ac, 35.76% Impervious, Inflow Depth > 6.13" for 100-Year event
Inflow = 33.44 cfs @ 12.16 hrs, Volume= 3.301 af
Outflow = 33.44 cfs @ 12.16 hrs, Volume= 3.301 af, Atten= 0%, Lag= 0.0 min
Primary = 33.44 cfs @ 12.16 hrs, Volume= 3.301 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 559.79' @ 12.38 hrs
Flood Elev= 564.47'

Device	Routing	Invert	Outlet Devices
#1	Primary	556.50'	**36.0" Round Culvert** L= 60.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 556.50' / 555.00' S= 0.0250 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 7.07 sf

Primary OutFlow Max=33.07 cfs @ 12.16 hrs HW=559.41' TW=558.41' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 33.07 cfs @ 6.00 fps)

Pond 22P: FE #2A

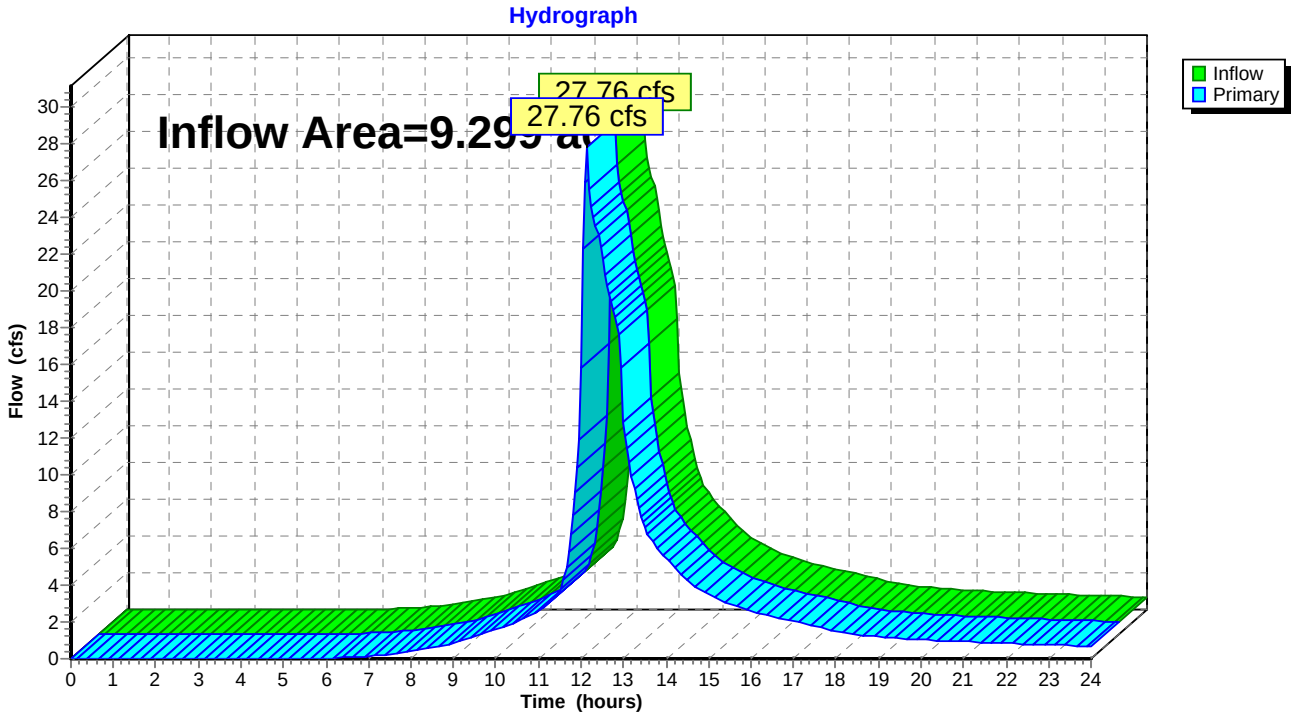


Summary for Link 20L: Off-Site

Inflow Area = 9.299 ac, 30.95% Impervious, Inflow Depth > 5.94" for 100-Year event
Inflow = 27.76 cfs @ 12.15 hrs, Volume= 4.605 af
Primary = 27.76 cfs @ 12.15 hrs, Volume= 4.605 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 20L: Off-Site



Appendix C
Supporting Stormwater Calculations

Appendix C

Pipe Sizing Calculations

Manning's Equation for Open Channel Flow

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

Maximum pipe capacities for the trunk line drains are presented below as compared to the peak flow rates calculated using the Rational Method for the contributing watersheds or the HydroCAD modeling results as applicable. Pipes are sized with capacity for the 10-year design storm minimum in accordance with the recommendations of the CT DOT Drainage Manual for curb and gutter systems.

DMH 6 to DMH 2 (18-inch HDPE at S=0.015)

Q=	**12.90**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.77	SF	Area of Pipe
R=	0.375	FT	Hydraulic Radius = A/P
S=	0.015	FT/FT	Pipe Slope
r=	0.75	FT	Pipe Radius
P=	4.71	FT	Pipe Perimeter

Design Flow Rate
Q= 8.97 CFS
(10-year flow from DA 2H)
CAPACITY FOR 10-YEAR EVENT (MIN)

DMH 7 to DMH-6 (18-inch HDPE at S=0.015)

Q=	**12.90**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.77	SF	Area of Pipe
R=	0.375	FT	Hydraulic Radius = A/P
S=	0.015	FT/FT	Pipe Slope
r=	0.75	FT	Pipe Radius
P=	4.71	FT	Pipe Perimeter

Design Flow Rate
Q= 8.97 CFS
(10-year flow from DA 2H)
CAPACITY FOR 10-YEAR EVENT (MIN)

CB 1 to DMH 7 (15-inch HDPE at S = 0.060)

Q=	**15.87**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.06	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate
Q= 8.97 CFS
(10-year flow from DA 2H)
CAPACITY FOR 10-YEAR EVENT (MIN)

CB 2 to CB 1 (15-inch HDPE at S = 0.072)

Q=	**17.38**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.072	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate
Q= 8.97 CFS
(10-year flow from DA 2H)
CAPACITY FOR 10-YEAR EVENT (MIN)

CB 3 to CB 2 (15-inch HDPE at S = 0.061)

Q=	**16.00**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.061	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

Q= 9.42 CFS

(10-year flow from DA 2H)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 4 to CB 3 (15-inch HDPE at S = 0.013)

Q=	**7.39**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.013	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

C_f= 1

C= 0.95

I= 5.42 in/hour

A= 0.16 acre

Q= **0.8 CFS**

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 5 to CB 3 (15-inch HDPE at S = 0.059)

Q=	**15.73**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.059	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

Q= 9.42 CFS

(10-year flow from DA 2H)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 6 to CB 5 (15-inch HDPE at S = 0.025)

Q=	**10.24**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.025	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

Q= 9.42 CFS

(10-year flow from DA 2H)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 7 to CB 6 (15-inch HDPE at S = 0.037)

Q=	**12.46**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.037	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

Q= 9.42 CFS

(10-year flow from DA 2H)

CAPACITY FOR 10-YEAR EVENT (MIN)

Appendix C

Pipe Sizing Calculations

CB 8 to DMH 5 (15-inch HDPE at S = 0.074)

Q=	**17.62**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.074	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

Q= 2.02 CFS

(10-year flow from DA 2I)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 9 to CB 8 (15-inch HDPE at S = 0.020)

Q=	**9.16**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.02	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

Q= 2.02 CFS

(10-year flow from DA 2I)

CAPACITY FOR 10-YEAR EVENT (MIN)

DMH 8 to Outlet (18-inch HDPE at S = 0.023)

Q=	**15.97**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.77	SF	Area of Pipe
R=	0.375	FT	Hydraulic Radius = A/P
S=	0.023	FT/FT	Pipe Slope
r=	0.75	FT	Pipe Radius
P=	4.71	FT	Pipe Perimeter

Design Flow Rate

Q= 9.16 CFS

(10-year flow from DA 2E)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 10 to DMH 8 (18-inch HDPE at S = 0.019)

Q=	**14.52**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.77	SF	Area of Pipe
R=	0.375	FT	Hydraulic Radius = A/P
S=	0.019	FT/FT	Pipe Slope
r=	0.75	FT	Pipe Radius
P=	4.71	FT	Pipe Perimeter

Design Flow Rate

Q= 9.16 CFS

(10-year flow from DA 2E)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 11 to CB 10 (18-inch HDPE at S = 0.027)

Q=	**17.31**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.77	SF	Area of Pipe
R=	0.375	FT	Hydraulic Radius = A/P
S=	0.027	FT/FT	Pipe Slope
r=	0.75	FT	Pipe Radius
P=	4.71	FT	Pipe Perimeter

Design Flow Rate

Q= 9.16 CFS

(10-year flow from DA 2E)

CAPACITY FOR 10-YEAR EVENT (MIN)

Appendix C

Pipe Sizing Calculations

CB 12 to CB 11 (18-inch HDPE at S = 0.010)

Q=	**10.53**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.77	SF	Area of Pipe
R=	0.375	FT	Hydraulic Radius = A/P
S=	0.01	FT/FT	Pipe Slope
r=	0.75	FT	Pipe Radius
P=	4.71	FT	Pipe Perimeter

Design Flow Rate

Q= 9.16 CFS

(10-year flow from DA 2E)

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 13 to CB 12 (15-inch HDPE at S = 0.014)

Q=	**7.66**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.014	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

C_f=	1	
C=	0.95	
I=	5.42	in/hour
A=	0.44	acre
Q=	**2.3**	**CFS**

CAPACITY FOR 10-YEAR EVENT (MIN)

CB 14 to CB 13 (15-inch HDPE at S = 0.009)

Q=	**6.14**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.009	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

C_f=	1	
C=	0.95	
I=	5.42	in/hour
A=	0.44	acre
Q=	**2.3**	**CFS**

CAPACITY FOR 10-YEAR EVENT (MIN)

DMH 3 to DMH 2 (24-inch HDPE at S = 0.012)

Q=	**24.85**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	3.14	SF	Area of Pipe
R=	0.5	FT	Hydraulic Radius = A/P
S=	0.012	FT/FT	Pipe Slope
r=	1	FT	Pipe Radius
P=	6.28	FT	Pipe Perimeter

Design Flow Rate

Q= 11.05 CFS

(10-year flow from DA 2I and Stormwater Basin 2

CAPACITY FOR 10-YEAR EVENT (MIN)

DMH 4 to DMH 3 24-inch HDPE at S = 0.016)

Q=	**28.69**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	3.14	SF	Area of Pipe
R=	0.5	FT	Hydraulic Radius = A/P
S=	0.016	FT/FT	Pipe Slope
r=	1	FT	Pipe Radius
P=	6.28	FT	Pipe Perimeter

Design Flow Rate

Q= 11.05 CFS

(10-year flow from DA 2I and Stormwater Basin 2

CAPACITY FOR 10-YEAR EVENT (MIN)

Appendix C

Pipe Sizing Calculations

DMH 5 to DMH 4 (24-inch HDPE at S = 0.016)

Q=	**28.69**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	3.14	SF	Area of Pipe
R=	0.5	FT	Hydraulic Radius = A/P
S=	0.016	FT/FT	Pipe Slope
r=	1	FT	Pipe Radius
P=	6.28	FT	Pipe Perimeter

Design Flow Rate

Q= 11.05 CFS

(10-year flow from DA 2I and Stormwater Basin 2

CAPACITY FOR 10-YEAR EVENT (MIN)

Roof Drainage* (8-inch PVC at S = 0.02 minimum)

Q=	**1.97**	**CFS**	Flow Rate
n=	0.011		Roughness Coefficient
A=	0.34	SF	Area of Pipe
R=	0.165	FT	Hydraulic Radius = A/P
S=	0.02	FT/FT	Pipe Slope
r=	0.33	FT	Pipe Radius
P=	2.07	FT	Pipe Perimeter

Design Flow Rate

C_f=	1	
C=	0.95	
I=	5.42	in/hour
A=	0.318	acre
Q=	**1.6**	**CFS**

CAPACITY FOR 10-YEAR EVENT (MIN) FOR TWO BUILDINGS

Roof Drainage* (8-inch PVC at S = 0.01 minimum)

Q=	**1.39**	**CFS**	Flow Rate
n=	0.011		Roughness Coefficient
A=	0.34	SF	Area of Pipe
R=	0.165	FT	Hydraulic Radius = A/P
S=	0.01	FT/FT	Pipe Slope
r=	0.33	FT	Pipe Radius
P=	2.07	FT	Pipe Perimeter

Design Flow Rate

C_f=	1	
C=	0.95	
I=	5.42	in/hour
A=	0.159	acre
Q=	**0.8**	**CFS**

CAPACITY FOR 10-YEAR EVENT (MIN) FOR ONE BUILDING

**2015 International Plumbing Code specifies a rainfall intensity of 2.75 inches/hour for roof drain sizing. Proposed sizing is conservative.*

Appendix C

Rip Rap Apron Sizing Calculations

Per 2002 CT DEEP Soil Erosion and Sediment Control Guidelines

Stormwater Basin 1 Inlet

Q=	24.3	CFS	25-year storm
D=	36.00	in	Pipe Diameter
L_a=	31.93	FT	Length of Apron = (1.7Q/D^(3/2))+8D
W=	21.8	FT	Width = $3D+0.4L_a$
			Width at Pipe End = 6 FT
D_{50}=	0.27	FT	D_{50} = (0.02/TW)*(Q/D)^(4/3)
	Use modified riprap		TW=0.4D

Stormwater Basin 2 Inlet

Q=	13.1	CFS	25-year storm
D=	18.00	in	Pipe Diameter
L_a=	24.11	FT	Length of Apron = (1.7Q/D^(3/2))+8D
W=	14.1	FT	Width = $3D+0.4L_a$
			Width at Pipe End = 3 FT
D_{50}=	0.60	FT	D_{50} = (0.02/TW)*(Q/D)^(4/3)
	Use modified riprap		TW=0.4D

Appendix C

Water Quality Volume Calculations

Water Quality Volume - Apartments Phase 2

WQV = (1")(R)(A)/12

WQV = Water Quality Volume (acre-feet)

R = Runoff Co-Efficient = 0.005 + 0.009(I)

I = Impervious Area (%)

A = Site Area (acres)

Water Quality Volume for Contributing Area to Stormwater Basin 1 (DA 2E, DA 2F, DA 2G, 2H, DA 2I)

IA=	2.31	acres
I =	33.00	%
R =	0.30	
A =	7.00	acres
WQV =	0.18	acre-feet
=	**7,673.84**	**cubic feet**

Sediment Forebay Volume

Bottom Area =	155	SF
Top Area =	975	SF
Depth =	4	FT
Volume =	2,260	CF
% Stored =	29.45%	

Constructed Stormwater Wetlands Volume

Bottom Area =	4,688	SF
Top Area =	6,655	SF
Depth =	1	FT
Volume =	5,672	CF
% Stored =	73.91%	
Retention Provided =	**7,932**	**CF**
% Provided =	**103.36%**	

Appendix C

Water Quality Volume Calculations

Water Quality Volume for Contributing Area to Stormwater Basin 2 (DA 2E and DA 2F)

IA=	0.99	acres
I =	30.03	%
R =	0.28	
A =	3.28	acres
WQV =	0.08	acre-feet
=	**3,277.53**	**cubic feet**

Sediment Forebay Volume

Bottom Area =	36	SF
Top Area =	722	SF
Depth =	4	FT
Volume =	1,516	CF
% Stored =	46.25%	

Constructed Stormwater Wetlands Volume

Bottom Area =	1,164	SF
Top Area =	2,390	SF
Depth =	1	FT
Volume =	1,777	CF
% Stored =	54.22%	
Retention Provided =	**3,293**	**CF**
% Provided =	**100.47%**	

Appendix C

Groundwater Recharge Volume Calculations

Groundwater Recharge Volume - Apartments Phase 2

GRV = (D)(A)(I)/12

GRV = Groundwater Recharge Volume (acre-feet)

D = Depth of runoff to be rechared (inches)

A = Site Area (acres)

I = Post-development site imperviousness

D=	0.10	inches	HSG C (Table 7-4 of the DEEP Water Quality Manual)
A =	7.00	acres	
IA =	2.55	acres	
I =	0.36		
GRV =	0.02	acre-feet	
=	**925.65**	cubic feet	

Appendix C

Temporary Sediment Trap Sizing Calculations

Temporary Sediment Traps sized for 134 cubic yards of storage per acre of contributing area.

Temporary Sediment Trap 1

Contributing area =	2.4	acres
Required storage =	322	cubic yards
	8,683	cubic feet
Bottom of excavation =	549.00	
Emergency spillway =	553.00	
Storage provided =	**8,994**	**cubic feet**
	138.80	**cubic yards per acre**

Temporary Sediment Trap 2

Contributing area =	3.34	acres
Required storage =	448	cubic yards
	12,084	cubic feet
Bottom of excavation =	558.00	
Emergency spillway =	562.00	
Storage provided =	**13,280**	**cubic feet**
	147.26	**cubic yards per acre**

Temporary Sediment Trap 3

Contributing area =	0.25	acres
Required storage =	34	cubic yards
	905	cubic feet
Bottom of excavation =	558.00	
Emergency spillway =	561.00	
Storage provided =	**1,037**	**cubic feet**
	153.63	**cubic yards per acre**

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http://www.trinkausengineering.com

January 9, 2021

Pollutant loading analysis:

A pollutant renovation analysis was done for the two proposed stormwater basins to demonstrate the reductions in non-point source runoff which will be achieved by the two extended detention shallow wetland systems.

The Scheuler Equation was used to calculate the pollutant loads for the Water Quality Storm Event (1"/24-hours) for Total Suspended Solids (TSS), Total Nitrogen (TN), Total Phosphorous (TP), Zinc (Zn), Total Petroleum Hydrocarbons (TPH), and Dissolved Inorganic Nitrogen (DIN) for the proposed apartment complex.

Table #1 shows the loads which will directed to Basin #2 (upper basin) and how is directed to Basin #1. Table #2 shows the reductions for Basin #1 for those areas which are not first directed to Basin #2. Table #3 shows the total reduction in non-point source pollutants from the proposed development.

In the tables below, loads are shown in pounds per the water quality rainfall event.

Table #1 – Basin #2

Pollutant	Load	Load Removed	Remaining Load directed to Basin #1
TSS	12.81	8.84	3.97
TN	0.45	0.25	0.197
TP	0.064	0.025	0.039
Zn	0.046	0.02	0.025
TPH	0.32	0.144	0.176
DIN	0.069	0.024	0.044

Table #2 – Basin #1

Pollutant	Load	Load Removed
TSS	16.825	11.609
TN	0.589	0.329
TP	0.084	0.032
Zn	0.061	0.027
TPH	0.420	0.189
DIN	0.090	0.032

Table #3 – Total Pollutant Load Reductions

Pollutant	Total Load	Total Load Removed	Total Percent Removed
TSS	29.644	23.196	78.2
TN	1.037	0.691	66.6
TP	0.148	0.073	49.3
Zn	0.108	0.056	55.7
TPH	0.741	0.413	55.7
DIN	0.160	0.072	44.8

Conclusion:

The proposed stormwater management system will significantly reduce non-point source pollutants from the proposed development which will ultimately reach Lake Pocotopaug. This analysis did not consider the TSS trapping ability in a standard catch basin sump of 5%, so it is a conservative analysis. The pollutant removal efficiencies will increase over time as the wetland plants become fully established in the two stormwater basins.

Respectfully Submitted,
Trinkaus Engineering, LLC

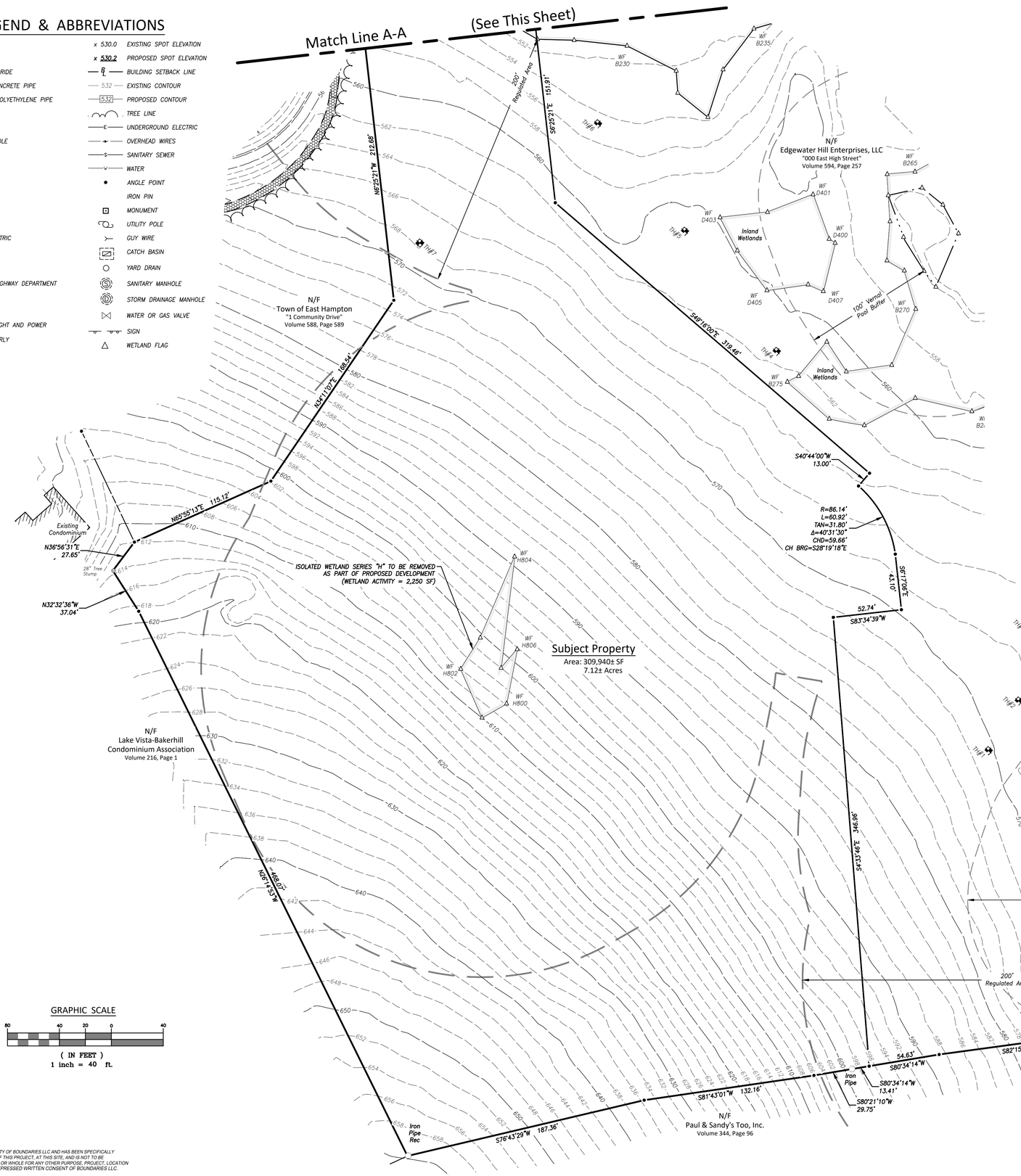
Steven Trinkaus, PE

Appendix D
Proposed Site Development Plans

LEGEND & ABBREVIATIONS

±	MORE OR LESS
TYP	TYPICAL
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
SF	SQUARE FEET
FF	FINISH FLOOR
SMH	SANITARY MANHOLE
CB	CATCH BASIN
YD	YARD DRAIN
TF	TOP OF FRAME
INV	INVERT
GV	GAS VALVE
WV	WATER VALVE
HHE	HANDHOLE ELECTRIC
W/	WITH
WF #1	WETLAND FLAG
CHD	CONNECTICUT HIGHWAY DEPARTMENT
MON	MONUMENT
REC	RECOVERED
CL&P	CONNECTICUT LIGHT AND POWER
N/F	NOW OR FORMERLY

x 530.0	EXISTING SPOT ELEVATION
x 530.2	PROPOSED SPOT ELEVATION
℄	BUILDING SETBACK LINE
532	EXISTING CONTOUR
532	PROPOSED CONTOUR
	TREE LINE
E	UNDERGROUND ELECTRIC
	OVERHEAD WIRES
S	SANITARY SEWER
W	WATER
	ANGLE POINT
	IRON PIN
	MONUMENT
	UTILITY POLE
	GUY WIRE
	CATCH BASIN
	YARD DRAIN
	SANITARY MANHOLE
	STORM DRAINAGE MANHOLE
	WATER OR GAS VALVE
	SIGN
	WETLAND FLAG



GRAPHIC SCALE

80 40 20 0 40

(IN FEET)
1 inch = 40 ft.

SURVEY NOTES

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS AND SUGGESTED METHODS AND PROCEDURES FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 29, 2019. IT IS AN IMPROVEMENT LOCATION AND TOPOGRAPHIC SURVEY AND CONFORMS TO HORIZONTAL CLASS A-2 AND TOPOGRAPHIC CLASS T-2 ACCURACY STANDARDS. IT IS INTENDED TO BE USED FOR SITE DEVELOPMENT .
2. NORTH ORIENTATION DEPICTED HEREON IS (NAD83) BASED UPON REFERENCE MAP A.
3. VERTICAL DATUM DEPICTED HEREON IS BASED ON REFERENCE MAP A.
4. THE LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE BASED ON THE LOCATION OF ABOVE GROUND STRUCTURES AND RECORD DRAWINGS PROVIDED BY OTHERS. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES. ALL SUBTERRANEAN FEATURES AND IMPROVEMENTS MAY NOT BE DEPICTED OR NOTED HEREON. THE LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS.
5. THE FIELD SURVEY WAS COMPLETED ON MARCH 11, 2020. LAND RECORD AND RELATED RESEARCH WAS COMPLETED ON MAY 1, 2020.

REFERENCE MAP

A. PROPERTY SURVEY 'RESUBDIVISION PLAN', PREPARED FOR EDGEWATER HILL ENTERPRISES, LLC, EAST HIGH STREET – EAST HAMPTON, CONNECTICUT, SCALE: 1"=80', DATE: MAY 2020, JOB I.D. NO. 20-2795-3, SHEET 1 OF 2 THROUGH 2 OF 2, PREPARED BY BOUNDARIES, LLC.

B. RESUBDIVISION PLAN, THE NEIGHBOR HOOD AT EDGEWATER HILL, PREPARED FOR EDGEWATER HILL ENTERPRISES, LLC, 000 EAST HIGH STREET (CT ROUTE #66), EAST HAMPTON, CONNECTICUT, DATED: OCTOBER 2018, LAST REVISED: MAY 2, 2019, SHEET 5 OF 18, PREPARED BY: BOUNDARIES LLC.

C. PROPERTY SURVEY "FREE SPLIT PLAN" PREPARED FOR EDGEWATER HILL ENTERPRISES, LLC, EAST HIGH STREET, EAST HAMPTON, CONNECTICUT, DATED: JANUARY 2018, SCALE: 1"= 40', JOB I.D. NO. 17-2524-5, SHEET 1 OF 1 PREPARED BY BOUNDARIES, LLC.

D. COMPILATION PLAN, PREPARED FOR THE TOWN OF EAST HAMPTON, EDGEWATER CIRCLE, EAST HAMPTON, CONNECTICUT, SCALE: 1"=40', DATED: JULY 2018, JOB I.D. NO.: 17-2524-10, PREPARED BY: BOUNDARIES LLC.

TEST HOLE RESULTS

TEST HOLES WERE WITNESSED BY DAVID C. McKAY, P.E. OF BOUNDARIES LLC. ON NOVEMBER 10 AND 11, 2020.

TH#1
0" – 11" TOPSOIL
11" – 34" FINE BROWN SANDY LOAM WITH COBBLES
34" – 40" COMPACT BROWN FINE TO MEDIUM SAND WITH COBBLES AND BOULDERS
40" – 55" COMPACT GRAY SILTY SAND WITH MOTTLES
55" – 109" BROWN FINE TO MEDIUM SAND WITH GRAVEL AND BOULDERS
ROOTS TO 74"
MOTTLING AT 48"
GROUNDWATER SEEPING AT 58", DRY BELOW
NO LEDGE

TH#2
0" – 12" TOPSOIL
12" – 28" BROWN FINE SANDY LOAM WITH COBBLES
28" – 72" COMPACT GRAY SILTY SAND WITH COBBLES,
72" – 90" BROWN FINE TO MEDIUM SAND WITH GRAVEL AND COBBLES
ROOTS TO 72"
MOTTLING AT 28"
NO WATER
LEDGE AT 90"

TH#3
0" – 8" TOPSOIL
8" – 25" BROWN FINE SANDY LOAM
25" – 43" COMPACT BROWN TO GRAY SILTY SAND WITH MOTTLES
ROOTS TO 35"
MOTTLING AT 28"
NO WATER
LEDGE AT 43"

TH#4
0" – 11" TOPSOIL
11" – 20" BROWN FINE SANDY LOAM
20" – 68" COMPACT GRAY SILTY SAND WITH COBBLES, MOTTLED
68" – 100" BROWN FINE TO MEDIUM SAND WITH COBBLES
ROOTS TO 24"
MOTTLING AT 20"
WATER SEEPING AT 30", DRY BELOW
NO LEDGE

TH#5
0" – 11" TOPSOIL
11" – 23" BROWN FINE SANDY LOAM
23" – 97" COMPACT GRAY SILTY SAND WITH COBBLES AND BOULDERS
ROOTS TO 34"
MOTTLING AT 23"
NO WATER
LEDGE AT 97"

TH#6
0" – 11" TOPSOIL
11" – 28" BROWN FINE SANDY LOAM
28" – 82" COMPACT GRAY AND BROWN SILTY SAND WITH COBBLES
82" – 112" COMPACT BROWN FINE TO MEDIUM SAND WITH COBBLES
ROOTS TO 32"
MOTTLING AT 28"
NO WATER
LEDGE AT 112"

TH#7
0" – 12" TOPSOIL
12" – 34" BROWN FINE SANDY LOAM
34" – 99" COMPACT GRAY AND BROWN SILTY SAND
99" – 141" COMPACT BROWN FINE TO MEDIUM SAND WITH TRACE GRAVEL
141" – 184" COMPACT BROWN SILTY SAND
ROOTS TO 34"
MOTTLING AT 34"
NO WATER
NO LEDGE

NOT FOR CONSTRUCTION
1/15/2021

"TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON."

JOHN U. FAULISE JR. L.S. — LICENSE NO. 70016 — DATE

P:\CIVIL 3D PROJECTS\2020\20-2853 EDGEWATER APARTMENTS\DWG\DESIGN\2 EX-CONDITIONS.DWG

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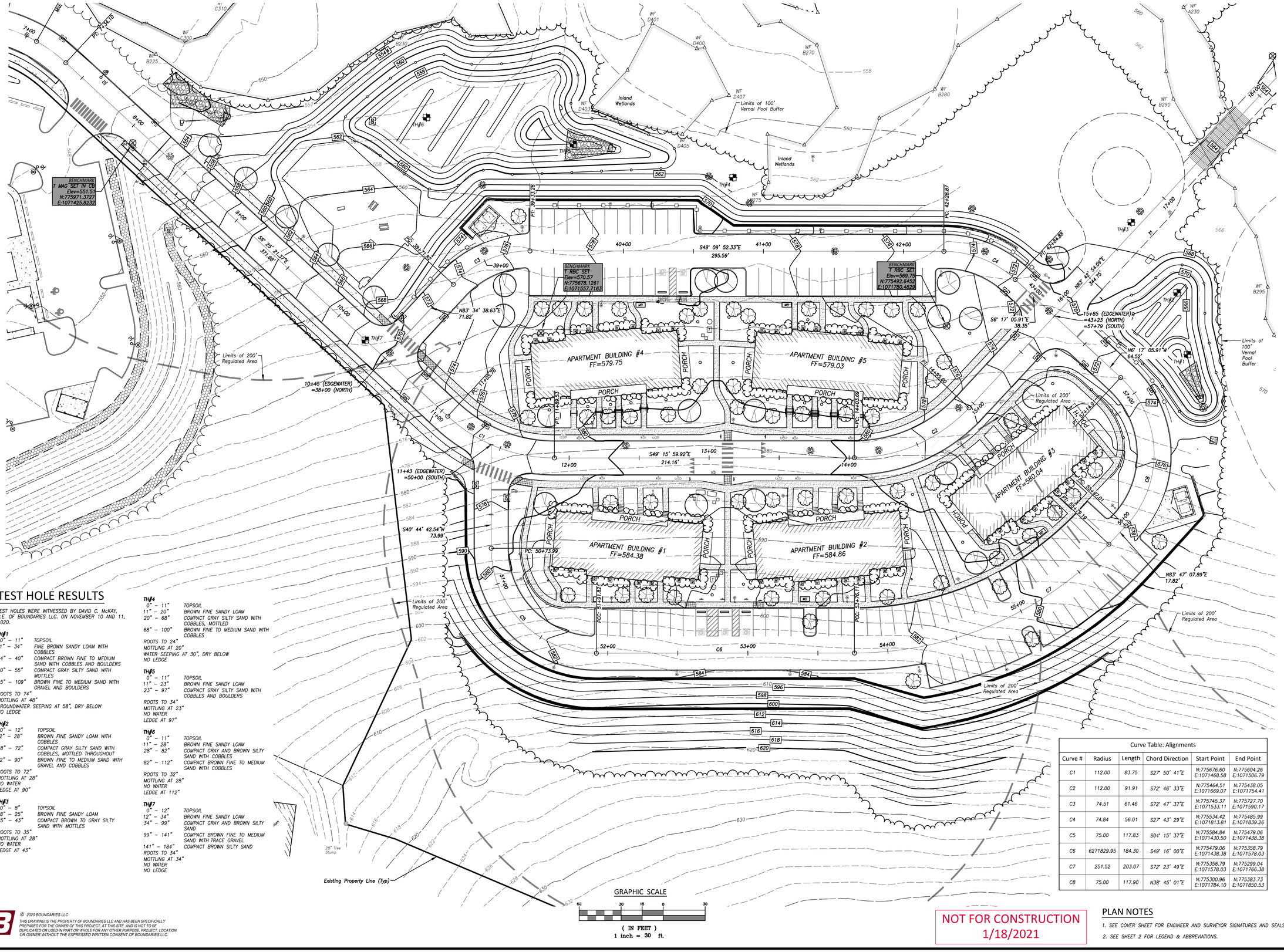
Salt Pond Apartments at Edgewater Hill
"Improvement Location and Topographic Survey"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE: 1" = 40'
DATE: December 2020
JOB I.D. NO. 20-2853

Revisions
Rev. A - IWWC Comments & Stormwater Quality - 1/18/21

SHEET NO.
2 / 25



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- 28" – 72" COMPACT GRAY SILTY SAND WITH COBBLES, MOTTLED THROUGHOUT
- 72" – 90" BROWN FINE TO MEDIUM SAND WITH GRAVEL AND COBBLES

ROOTS TO 72"
MOTTLING AT 28"
NO WATER
LEDGE AT 90"

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- 141" – 184" COMPACT BROWN SILTY SAND

ROOTS TO 34"
MOTTLING AT 34"
NO WATER
NO LEDGE

Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	112.00	83.75	S27° 50' 41"E	N:775676.60 E:1071468.58	N:775604.26 E:1071506.79
C2	112.00	91.91	S72° 46' 33"E	N:775464.51 E:1071669.07	N:775438.05 E:1071754.41
C3	74.51	61.46	S72° 47' 37"E	N:775745.37 E:1071533.11	N:775727.70 E:1071590.17
C4	74.84	56.01	S27° 43' 29"E	N:775534.42 E:1071813.81	N:775485.99 E:1071839.26
C5	75.00	117.83	S04° 15' 37"E	N:775584.84 E:1071430.50	N:775479.06 E:1071438.38
C6	6271829.95	184.30	S49° 16' 00"E	N:775479.06 E:1071438.38	N:775358.79 E:1071578.03
C7	251.52	203.07	S72° 23' 49"E	N:775358.79 E:1071578.03	N:775299.04 E:1071766.38
C8	75.00	117.90	N38° 45' 01"E	N:775300.96 E:1071784.10	N:775383.73 E:1071850.53

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1/18/2021

PLAN NOTES

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.
2. SEE SHEET 2 FOR LEGEND & ABBREVIATIONS.

P:\CIVIL 3D PROJECTS\2020\20-2853 EDGEWATER APARTMENTS\DWG\DESIGN\3 APARTMENT SITE PLAN.DWG

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Salt Pond Apartments at Edgewater Hill
"Overall Layout Plan"
Prepared for
Edgewater Hill Enterprises, LLC
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SCALE: 1" = 30'
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JOB I.D. NO. 20-2853

Revisions
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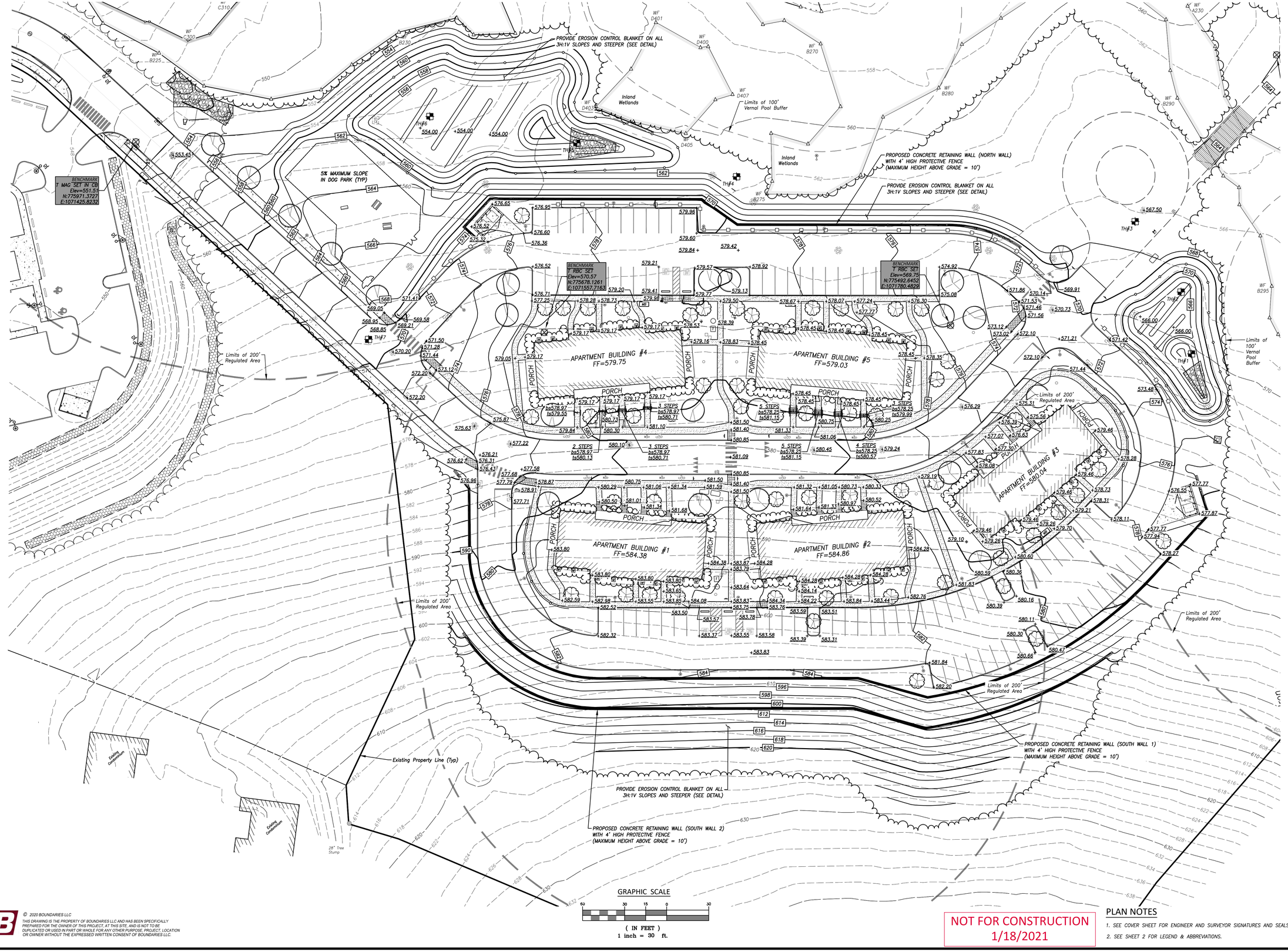

GRAPHIC SCALE

60 30 15 0 30

(IN FEET)
1 inch = 30 ft.

NOT FOR CONSTRUCTION
1/18/2021

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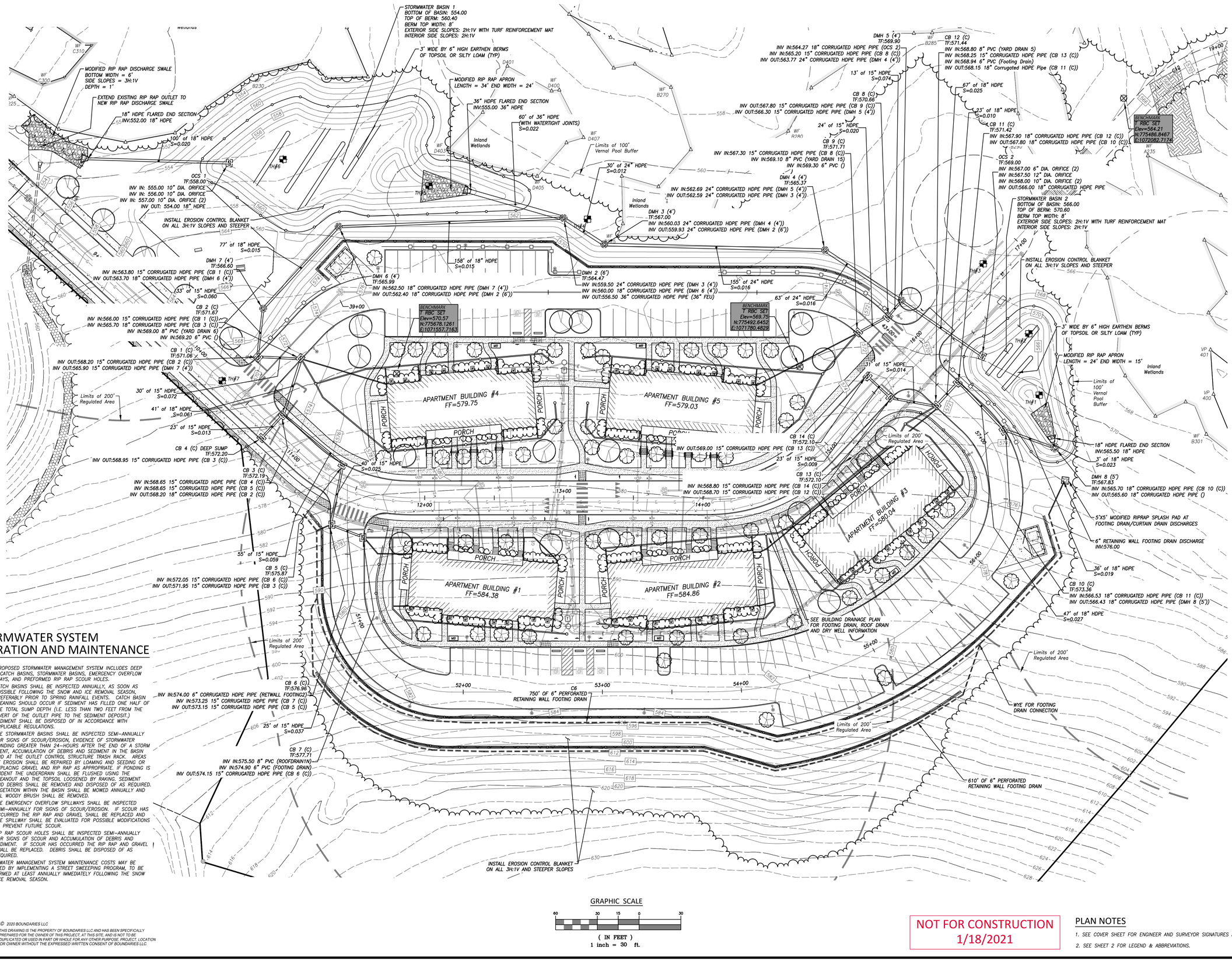
\\192.168.2.3\PROJECTS\CIVIL 3D PROJECTS\2020\20-2853 EDGEWATER APARTMENTS\DWG\DESIGN\3 APARTMENT SITE PLAN.DWG



STORMWATER SYSTEM OPERATION AND MAINTENANCE

1. THE PROPOSED STORMWATER MANAGEMENT SYSTEM INCLUDES DEEP SUMP CATCH BASINS, STORMWATER BASINS, EMERGENCY OVERFLOW SPILLWAYS, AND PREFORMED RIP RAP SCOUR HOLES.
   - 1.1. CATCH BASINS SHALL BE INSPECTED ANNUALLY, AS SOON AS POSSIBLE FOLLOWING THE SNOW AND ICE REMOVAL SEASON, PREFERABLY PRIOR TO SPRING RAINFALL EVENTS. CATCH BASIN CLEANING SHOULD OCCUR IF SEDIMENT HAS FILLED ONE HALF OF THE TOTAL SUMP DEPTH (I.E. LESS THAN TWO FEET FROM THE INVERT OF THE OUTLET PIPE TO THE SEDIMENT DEPOSIT.) SEDIMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.
   - 1.2. THE STORMWATER BASINS SHALL BE INSPECTED SEMI--ANNUALLY FOR SIGNS OF SCOUR/EROSION, EVIDENCE OF STORMWATER PONDING GREATER THAN 24--HOURS AFTER THE END OF A STORM EVENT, ACCUMULATION OF DEBRIS AND SEDIMENT IN THE BASIN AND AT THE OUTLET CONTROL STRUCTURE TRASH RACK. AREAS OF EROSION SHALL BE REPAIRED BY LOAMING AND SEEDING OR REPLACING GRAVEL AND RIP RAP AS APPROPRIATE. IF PONDING IS EVIDENT THE UNDERDRAIN SHALL BE FLUSHED USING THE CLEANOUT AND THE TOPSOIL LOOSENED BY RAKING. SEDIMENT AND DEBRIS SHALL BE REMOVED AND DISPOSED OF AS REQUIRED. VEGETATION WITHIN THE BASIN SHALL BE MOWED ANNUALLY AND ALL WOODY BRUSH SHALL BE REMOVED.
   - 1.3. THE EMERGENCY OVERFLOW SPILLWAYS SHALL BE INSPECTED SEMI--ANNUALLY FOR SIGNS OF SCOUR/EROSION. IF SCOUR HAS OCCURRED THE RIP RAP AND GRAVEL SHALL BE REPLACED AND THE SPILLWAY SHALL BE EVALUATED FOR POSSIBLE MODIFICATIONS TO PREVENT FUTURE SCOUR.
   - 1.4. RIP RAP SCOUR HOLES SHALL BE INSPECTED SEMI--ANNUALLY FOR SIGNS OF SCOUR AND ACCUMULATION OF DEBRIS AND SEDIMENT. IF SCOUR HAS OCCURRED THE RIP RAP AND GRAVEL SHALL BE REPLACED. DEBRIS SHALL BE DISPOSED OF AS REQUIRED.
2. STORMWATER MANAGEMENT SYSTEM MAINTENANCE COSTS MAY BE REDUCED BY IMPLEMENTING A STREET SWEEEPING PROGRAM, TO BE PERFORMED AT LEAST ANNUALLY IMMEDIATELY FOLLOWING THE SNOW AND ICE REMOVAL SEASON.

GRAPHIC SCALE

60 30 15 0 30

(IN FEET)

1 inch = 30 ft.

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PLAN NOTES

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25

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Limits of 100' Vernal Pool Buffer
Inland Wetlands
WF 04/05
WF 02/25
TH#1
TH#2
TH#3
TH#4
TH#5
TH#7
FOR CONTINUATION SEE SHEET 10
CB 2 (C) TF:571.67
INV IN:566.00 15" CORRUGATED HDPE PIPE (CB 1 (C))
INV IN:565.70 18" CORRUGATED HDPE PIPE (CB 3 (C))
INV IN:569.00 8" PVC (YARD DRAIN 6)
INV IN:569.20 6" PVC ()
19' of 8" PVC S=0.020
YARD DRAIN 6 TF:573.74
INV IN:571.20 8" PVC (ROOFDRAIN4N)
INV IN:571.20 8" PVC (ROOFDRAIN4S)
INV OUT:571.20 8" PVC (CB 2 (C))
63' of 6" PVC FOOTING DRAIN DISCHARGE S=0.091
BENCHMARK T RBC SET Elev=570.57 N:775678.1261 E:1071557.7163
24' of 8" PVC S=0.010
14' of 8" PVC S=0.110
44' of 8" PVC S=0.010
YARD DRAIN 7 TF:578.10
INV IN:575.23 8" PVC
INV OUT:575.23 8" PVC
YARD DRAIN 8 TF:578.51
INV OUT:575.80 8" PVC
53' of 8" PVC S=0.010
YARD DRAIN 17 TF:578.02
INV OUT:575.40 8" PVC
56' of 8" PVC S=0.010
YARD DRAIN 16 TF:578.01
INV IN:574.82 8" PVC
INV OUT:574.82 8" PVC
45' of 8" PVC S=0.010
8"X6" PVC TEE FOR ROOF DRAINAGE CONNECTION (TYP)
BENCHMARK T RBC SET Elev=569.75 N:775492.6452 E:1071780.4829
47' of 8" PVC S=0.011
37' of 8" PVC S=0.073
81' of 6" PVC FOOTING DRAIN DISCHARGE S=0.069
CB 9 (C) TF:571.71
INV IN:567.30 15" CORRUGATED HDPE PIPE (CB 8 (C))
INV IN:569.10 8" PVC (YARD DRAIN 15)
INV IN:569.30 6" PVC ()
YARD DRAIN 15 TF:574.55
INV IN:571.90 8" PVC (ROOFDRAIN5N)
INV IN:571.90 8" PVC (ROOFDRAIN5S)
INV OUT:571.90 8" PVC (CB 9 (C))
CB 12 (C) TF:571.44
INV IN:568.80 8" PVC (YARD DRAIN 5)
INV IN:568.25 15" CORRUGATED HDPE PIPE (CB 13 (C))
INV IN: 568.94 6" PVC (Footing Drain)
INV OUT:568.15 18" Corrugated HDPE Pipe (CB 11 (C))
37' of 8" PVC S=0.048
10' of 8" PVC S=0.054
YARD DRAIN 14A TF:578.01
INV OUT:575.30 8" PVC
APARTMENT BUILDING #4 FF=579.75
YARD DRAIN 9 TF:578.51
INV IN:573.97 8" PVC
INV OUT:573.97 8" PVC
61' of 8" PVC S=0.033
YARD DRAIN 10 TF:578.50
INV IN:574.25 8" PVC
INV OUT:574.25 8" PVC
YARD DRAIN 12 TF:578.50
INV IN:574.58 8" PVC
INV OUT:574.58 8" PVC
15' of 8" PVC S=0.010
24' of 8" PVC S=0.010
13' of 8" PVC S=0.011
12' of 8" PVC S=0.011
26' of 8" PVC S=0.010
YARD DRAIN 11 TF:578.50
INV IN:574.42 8" PVC
INV OUT:574.42 8" PVC
YARD DRAIN 13 TF:578.50
INV IN:574.84 8" PVC
INV OUT:574.84 8" PVC
44' of 8" PVC S=0.010
YARD DRAIN 23 TF:578.02
INV OUT:575.30 8" PVC
17' of 8" PVC S=0.010
APARTMENT BUILDING #5 FF=579.03
23' of 8" PVC S=0.084
YARD DRAIN 22 TF:578.02
INV IN:574.81 8" PVC
INV OUT:574.81 8" PVC
YARD DRAIN 21 TF:578.01
INV IN:574.53 8" PVC
INV OUT:574.53 8" PVC
YARD DRAIN 19 TF:578.01
INV IN:574.23 8" PVC
INV OUT:574.23 8" PVC
10' of 8" PVC S=0.010
20' of 8" PVC S=0.011
26' of 8" PVC S=0.011
16' of 8" PVC S=0.010
11' of 8" PVC S=0.011
24' of 8" PVC S=0.011
19' of 8" PVC S=0.011
YARD DRAIN 18 TF:578.01
INV IN:573.97 8" PVC
INV OUT:573.97 8" PVC
YARD DRAIN 20 TF:578.02
INV IN:574.40 8" PVC
INV OUT:574.40 8" PVC
36' of 8" PVC S=0.041
37' of 8" PVC S=0.010
Limits of 200' Regulated Area
YARD DRAIN 5 TF:574.31
INV IN:571.60 8" PVC (ROOFDRAIN3S)
INV IN:571.60 8" PVC (ROOFDRAIN3N)
INV OUT:571.60 8" PVC (CB 12 (C))
24' of 8" PVC S=0.064
11' of 8" PVC S=0.009
34' of 6" PVC FOOTING DRAIN DISCHARGE S=0.054
17' of 8" PVC S=0.012
6" PVC TEE INV:570.80
9' of 6" PVC FOOTING DRAIN DISCHARGE S=0.021
37' of 8" PVC S=0.103
13' of 8" PVC S=0.020
18' of 8" PVC S=0.012
38' of 8" PVC S=0.055
6" PVC INV:574.80
17' of 8" PVC S=0.024
57' of 6" PVC FOOTING DRAIN DISCHARGE S=0.046
8" PVC TEE INV:575.95
25' of 8" PVC S=0.026
7' of 8" PVC S=0.107
6" PVC INV:573.45
APARTMENT BUILDING #3 FF=580.04
10' of 8" PVC S=0.039
18' of 8" PVC S=0.020
CLEANOUT 3B TF:579.20
INV IN:576.27 8" PVC
INV OUT:576.27 8" PVC
6' of 8" PVC S=0.020
9' of 8" PVC S=0.011
78' of 6" PVC FOOTING DRAIN DISCHARGE S=0.033
20' of 8" PVC S=0.050
8" PVC TEE INV:576.50
14' of 8" PVC S=0.035
25' of 8" PVC S=0.024
55' of 8" PVC S=0.022
8"X6" PVC REDUCER
CLEANOUT 1A TF:582.00
INV IN:579.28 6" PVC
INV OUT:579.28 6" PVC
31' of 6" PVC S=0.016
CLEANOUT 2A TF:581.91
INV OUT:579.10 8" PVC
55' of 8" PVC S=0.020
CB 7 (C) TF:577.71
INV IN:575.50 8" PVC (ROOFDRAIN1N)
INV IN:574.90 6" PVC (FOOTING DRAIN)
INV OUT:574.15 15" CORRUGATED HDPE PIPE (CB 6 (C))
Limits of 200' Regulated Area
APARTMENT BUILDING #1 FF=584.38
APARTMENT BUILDING #2 FF=584.86
49' of 8" PVC S=0.077
56' of 8" PVC S=0.010
9' of 8" PVC S=0.010
25' of 8" PVC S=0.010
27' of 8" PVC S=0.010
25' of 8" PVC S=0.024
49' of 8" PVC S=0.055
29' of 8" PVC S=0.010
14' of 6" PVC FOOTING DRAIN DISCHARGE S=0.020
25' of 6" PVC FOOTING DRAIN DISCHARGE S=0.073
13' of 8" PVC S=0.011
CLEANOUT 1B TF:583.12
INV IN:580.00 8" PVC
INV OUT:580.00 8" PVC
26' of 8" PVC S=0.011
6" PVC FOR ROOF DRAINAGE CONNECTIONS (TYP)
24' of 8" PVC S=0.010
10' of 8" PVC S=0.010
YARD DRAIN 1 TF:583.88
INV OUT:581.20 8" PVC
YARD DRAIN 2 TF:583.83
INV OUT:580.80 8" PVC
57' of 8" PVC S=0.010
YARD DRAIN 4 TF:579.62
INV IN:576.70 8" PVC (ROOFDRAIN2N)
INV IN:576.70 8" PVC (ROOFDRAIN2S)
INV OUT:576.70 8" PVC (RoofDrain5A)
CLEANOUT 2B TF:583.12
INV IN:579.57 8" PVC
INV OUT:579.57 8" PVC
LOCATION OF PROPOSED ROOF DRAINAGE DOWNSPOUT (TYP)
4" of 8" PVC S=0.010
CLEANOUT 3A TF:579.62
INV IN:576.85 8" PVC
INV OUT:576.85 8" PVC
20' of 8" PVC S=0.010
23' of 8" PVC S=0.010
15' of 8" PVC S=0.011
YARD DRAIN 3 TF:579.10
INV IN:576.41 8" PVC
INV OUT:576.41 8" PVC
45' of 8" PVC S=0.010
Limits of 200' Regulated Area
PORCH
MB
GRAPHIC SCALE
40 20 10 0 20
(IN FEET)
1 inch = 20 ft.

NOT FOR CONSTRUCTION
1/18/2021

PLAN NOTES
1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.
2. SEE SHEET 2 FOR LEGEND & ABBREVIATIONS.

P:\CIVIL 3D PROJECTS\2020\20-2853 EDGEWATER APARTMENTS\DWG\DESIGN\3 APARTMENT SITE PLAN.DWG

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Salt Pond Apartments at Edgewater Hill
"Building Drainage Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE: 1" = 20'
DATE: December 2020
JOB I.D. NO. 20-2853
Revisions
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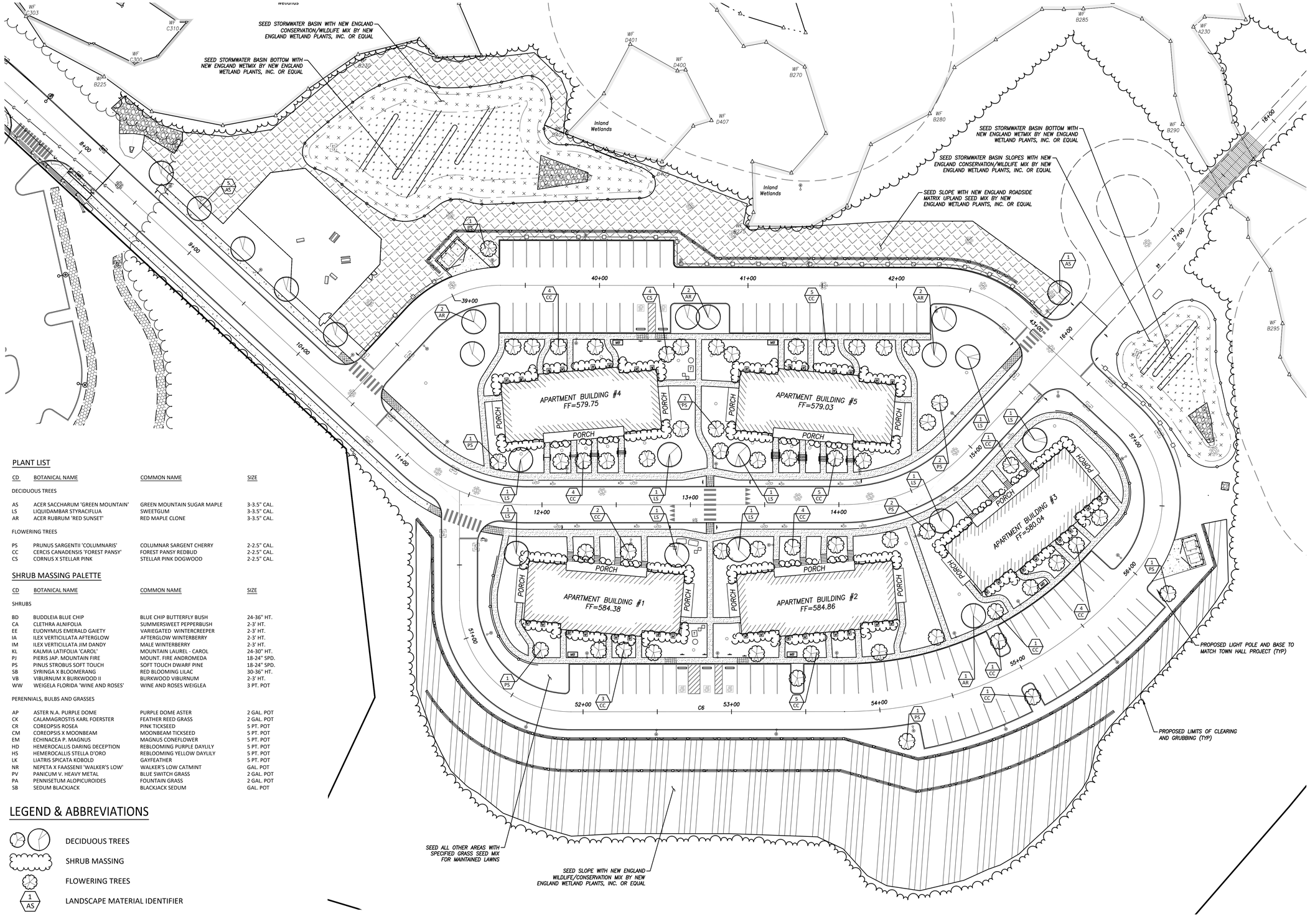

PLANT LIST

CD	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
AS	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	3-3.5" CAL.
LS	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	3-3.5" CAL.
AR	ACER RUBRUM 'RED SUNSET'	RED MAPLE CLONE	3-3.5" CAL.
FLOWERING TREES			
PS	PRUNUS SARGENTII 'COLUMNARIS'	COLUMNAR SARGENT CHERRY	2-2.5" CAL.
CC	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	2-2.5" CAL.
CS	CORNUS X STELLAR PINK	STELLAR PINK DOGWOOD	2-2.5" CAL.

SHRUB MASSING PALETTE

CD	BOTANICAL NAME	COMMON NAME	SIZE
SHRUBS			
BD	BUDDLEIA BLUE CHIP	BLUE CHIP BUTTERFLY BUSH	24-36" HT.
CA	CLETHRA ALNIFOLIA	SUMMERSWEET PEPPERBUSH	2-3' HT.
EE	EUONYMUS EMERALD GAIETY	VARIEGATED WINTERCREEPER	2-3' HT.
IA	ILEX VERTICILLATA AFTERGLOW	AFTERGLOW WINTERBERRY	2-3' HT.
IM	ILEX VERTICILLATA JIM DANDY	MALE WINTERBERRY	2-3' HT.
KL	KALMIA LATIFOLIA 'CAROL'	MOUNTAIN LAUREL - CAROL	24-30" HT.
PJ	PIERIS JAP. MOUNTAIN FIRE	MOUNT. FIRE ANDROMEDA	18-24" SPD.
PS	PINUS STROBUS SOFT TOUCH	SOFT TOUCH DWARF PINE	18-24" SPD.
SB	SYRINGA X BLOOMERANG	RED BLOOMING LILAC	30-36" HT.
VB	VIBURNUM X BURKWOOD II	BURKWOOD VIBURNUM	2-3' HT.
WW	WEIGELA FLORIDA 'WINE AND ROSES'	WINE AND ROSES WEIGLEA	3 PT. POT
PERENNIALS, BULBS AND GRASSES			
AP	ASTER N.A. PURPLE DOME	PURPLE DOME ASTER	2 GAL. POT
CK	CALAMAGROSTIS KARL FOERSTER	FEATHER REED GRASS	2 GAL. POT
CR	COREOPSIS ROSEA	PINK TICKSEED	5 PT. POT
CM	COREOPSIS X MOONBEAM	MOONBEAM TICKSEED	5 PT. POT
EM	ECHINACEA P. MAGNUS	MAGNUS CONEFLOWER	5 PT. POT
HD	HEMEROCALLIS DARING DECEPTION	REBLOOMING PURPLE DAYLILY	5 PT. POT
HS	HEMEROCALLIS STELLA D'ORO	REBLOOMING YELLOW DAYLILY	5 PT. POT
LK	LIATRIS SPICATA KOBOLD	GAYFEATHER	5 PT. POT
NR	NEPETA X FAASSENII 'WALKER'S LOW"	WALKER'S LOW CATMINT	GAL. POT
PV	PANICUM V. HEAVY METAL	BLUE SWITCH GRASS	2 GAL. POT
PA	PENNISETUM ALOPICUROIDES	FOUNTAIN GRASS	2 GAL. POT
SB	SEDUM BLACKJACK	BLACKJACK SEDUM	GAL. POT

LEGEND & ABBREVIATIONS

DECIDUOUS TREES

SHRUB MASSING

FLOWERING TREES

1 AS — LANDSCAPE MATERIAL IDENTIFIER

GRAPHIC SCALE

60 30 15 0 30

(IN FEET)
1 inch = 30 ft.

NOT FOR CONSTRUCTION
1/18/2021

PLAN NOTES

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2. SEE SHEET 2 FOR LEGEND & ABBREVIATIONS.

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Salt Pond Apartments at Edgewater Hill
"Landscaping Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE: 1" = 30'
DATE: December 2020
JOB I.D. NO. 20-2853

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EXISTING TURBIDITY CURTAIN AT POND OUTLET TO BE MAINTAINED FOR THE DURATION OF CONSTRUCTION

INSTALL 18" COMPOST FILTER TUBE AT DISCHARGE POINT

PROPOSED ANTI-TRACKING PAD AT CONSTRUCTION EXIT

PROVIDE STONE CHECK DAM AT SEDIMENT TRAP SPILLWAY

CONTINUOUS 18" COMPOST FILTER TUBE AT LIMIT OF DISTURBANCE

PROVIDE EROSION CONTROL BLANKET ON ALL 3H:1V SLOPES AND STEEPER (SEE DETAIL)

510' OF CONTINUOUS 8" COMPOST FILTER TUBE AT TOP OF WALL

500' OF CONTINUOUS 8" COMPOST FILTER TUBE AT MIDPOINT OF SLOPE

SEED ALL DISTURBED AREAS WITH PERENNIAL RYE IMMEDIATELY AFTER GRUBBING

Limits of 100' Vernal Pool Buffer

Inland Wetlands

PROVIDE DIVERSION SWALE TO TEMPORARY SEDIMENT TRAP. REINFORCE SWALE WITH EROSION CONTROL BLANKET

PROVIDE STONE CHECK DAM AT SEDIMENT TRAP SPILLWAY

CONTINUOUS 18" COMPOST FILTER TUBE AT LIMIT OF DISTURBANCE

TEMPORARY SEDIMENT TRAP 2
DEPTH FROM BOTTOM TO SPILLWAY: 4'
INTERIOR SIDE SLOPES: 2H:1V
CONTRIBUTING AREA: 3.34 ACRES
STORAGE PROVIDED: 13,280 CUBIC FEET
BOTTOM DIMENSIONS: 28' WIDE BY 84' LONG

FOR CONTINUATION SEE SHEET 17

160' OF CONTINUOUS 12" COMPOST FILTER TUBE AT LIMIT OF DISTURBANCE

PROVIDE EROSION CONTROL BLANKET ON ALL 3H:1V SLOPES AND STEEPER (SEE DETAIL)

275' OF CONTINUOUS SEDIMENT FENCE BARRIER BACKED BY STAKED HAY BALES UPGRADIENT OF STORMWATER BASIN

PHASE 3
±4.7 ACRES

INSTALL CATCH BASIN INLET PROTECTION DEVICE WITH CURB DEFLECTOR (TYP FOR ALL CATCH BASINS)

TEMPORARY SEDIMENT TRAP 1
DEPTH FROM BOTTOM TO SPILLWAY: 4'
INTERIOR SIDE SLOPES: 2H:1V
CONTRIBUTING AREA: 2.40 ACRES
STORAGE PROVIDED: 8,994 CUBIC FEET
BOTTOM DIMENSIONS: 30' WIDE BY 50' LONG

PROPOSED WATER BAR DURING ROADWAY CONSTRUCTION (TYP)

Limits of 200' Regulated Area

PROVIDE HAY BALE CHECK DAM AT WATER BAR DISCHARGE (TYP)

PHASE LIMIT LINE (GRUBBING SHALL BE COMPLETED BY PHASE)

PROVIDE INLET PROTECTION WITH CURB DEFLECTOR IN ALL CATCH BASINS (TYP)

PROVIDE 600' OF INTERMEDIATE SEDIMENT FENCE BARRIER AT LIMITS OF GRADING FOR ROADWAY CONSTRUCTION. INSTALL SEDIMENT FENCE PARALLEL WITH CONTOUR.

APARTMENT BUILDING #4
FF=579.75

APARTMENT BUILDING #5
FF=579.03

PORCH

PROVIDE EROSION CONTROL BLANKET ON ALL 3H:1V SLOPES AND STEEPER (SEE DETAIL)

PHASE 2
±2.3 ACRES

APARTMENT BUILDING #1
FF=584.38

APARTMENT BUILDING #2
FF=584.86

APARTMENT BUILDING #3
FF=580.04

150' OF CONTINUOUS SEDIMENT FENCE BARRIER BACKED BY STAKED HAY BALES UPGRADIENT OF STORMWATER BASIN

Limits of 100' Vernal Pool Buffer

Limits of 200' Regulated Area

NOTE: WHEN ANY DISTURBED SLOPE 3H:1V OR STEEPER IS INTENDED TO BE LEFT UNWORKED FOR GREATER THAN 7 DAYS THEN COMPOST FILTER TUBES OR EQUAL EROSION CONTROL MEASURE SHALL BE INSTALLED AT THE BASE OF THE SLOPE AND SPACED UP THE SLOPE IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS

PHASE 3
±4.7 ACRES

PROVIDE EROSION CONTROL BLANKET ON ALL 3H:1V SLOPES AND STEEPER (SEE DETAIL)

590' OF CONTINUOUS 8" COMPOST FILTER TUBE AT TOP OF WALL

SEED ALL DISTURBED AREAS WITH PERENNIAL RYE IMMEDIATELY AFTER GRUBBING

460' OF CONTINUOUS 8" COMPOST FILTER TUBE AT TOP OF WALL

390' OF CONTINUOUS 8" COMPOST FILTER TUBE AT MIDPOINT OF SLOPE

PROVIDE 1,200' OF SEDIMENT FENCE BARRIER EMBEDDED IN WOOD CHIP BERM AT UPGRADIENT LIMITS OF CLEARING TO DIVERT CLEAN RUNOFF AROUND PROJECT AREA

Existing Condominium

N36°56'31"E 27.65'

N32°32'36"W 37.04'

28" Tree Stump

TH#1 TH#2 TH#3 TH#4 TH#5 TH#6 TH#7

GRAPHIC SCALE

60 30 15 0 30

(IN FEET)
1 inch = 30 ft.

NOT FOR CONSTRUCTION
1/18/2021

PLAN NOTES

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.
2. SEE SHEET 2 FOR LEGEND & ABBREVIATIONS.

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CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING ZONE CASEWORK
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Salt Pond Apartments at Edgewater Hill
"Erosion and Sedimentation Control Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE: 1" = 30'
DATE: December 2020
JOB I.D. NO. 20-2853

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Rev. A - IWWC Comments &
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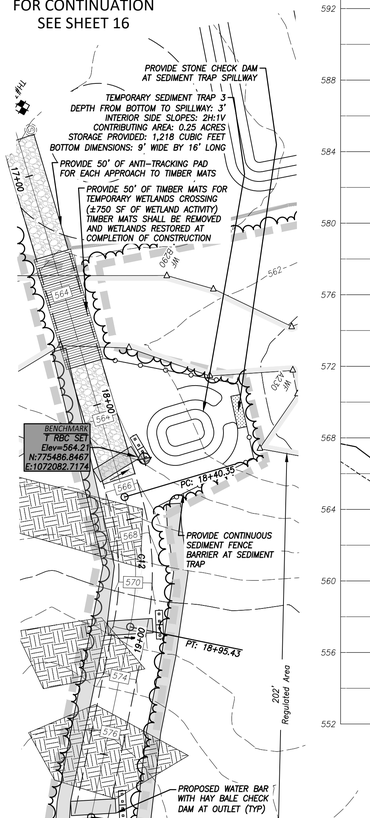
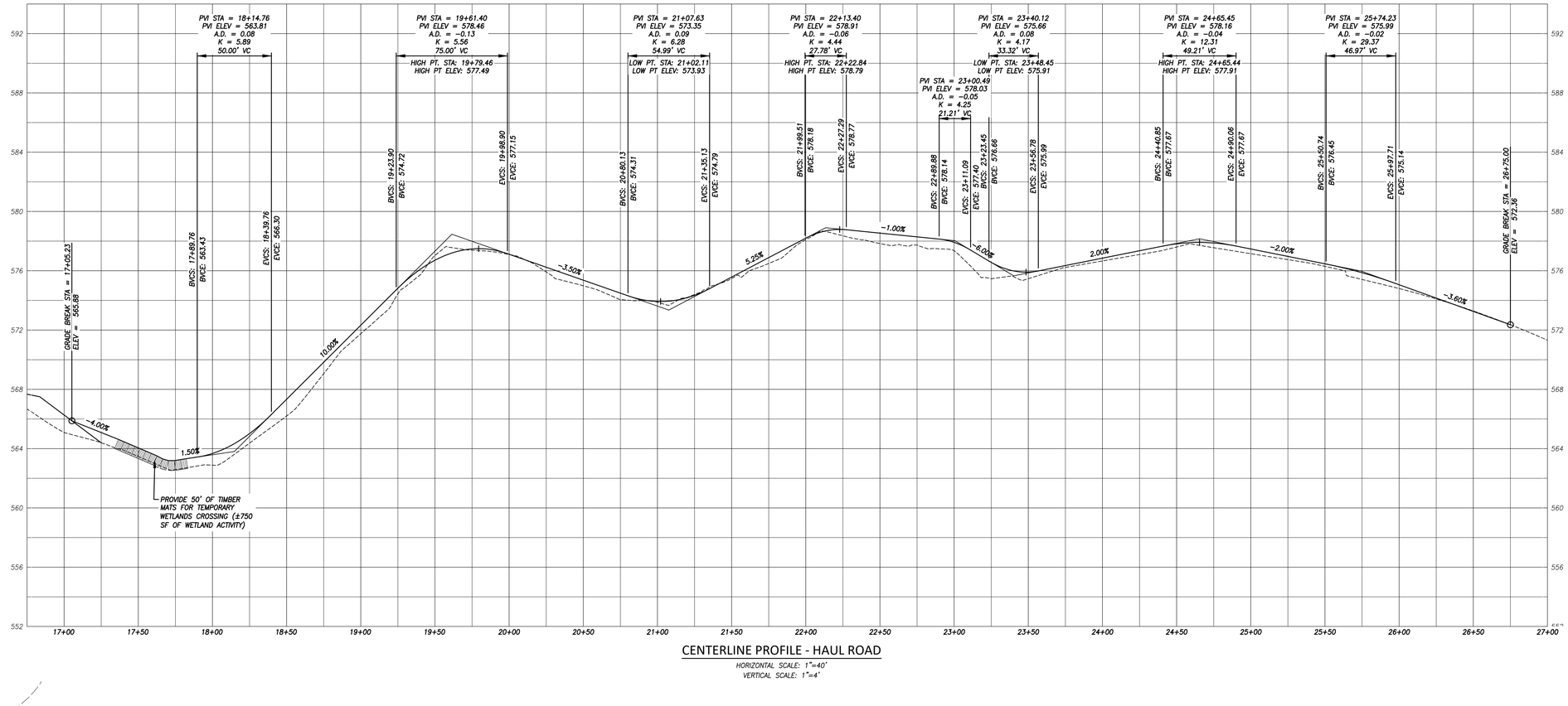
FOR CONTINUATION
SEE SHEET 16





CENTERLINE PROFILE - HAUL ROAD

HORIZONTAL SCALE: 1"=40'
VERTICAL SCALE: 1"=4'

GRAPHIC SCALE

60 30 15 0 30

(IN FEET)
1 inch = 30 ft.

Curve Table: Alignments					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C9	112.00	183.95	N64° 50' 27"E	N:775438.04 E:1072226.62	N:775507.75 E:1072375.03
C10	1100.00	322.43	N08° 31' 18"E	N:775628.75 E:1072412.81	N:775946.48 E:1072460.42
C11	2000.00	30.34	N17° 21' 13"E	N:775551.73 E:1072389.14	N:775580.69 E:1072398.19
C12	112.00	55.08	S82° 11' 45"E	N:775475.79 E:1072097.09	N:775468.39 E:1072151.11

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PLAN NOTES

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Salt Pond Apartments at Edgewater Hill
"Site Logistics Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE: As Noted
DATE: December 2020
JOB I.D. NO. 20-2853

Revisions
Rev. A - IWWC Comments &
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SHEET NO.
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NARRATIVE:

THIS PROPOSAL CONSISTS OF THE DEVELOPMENT OF FIVE (5) EIGHT–UNIT APARTMENT BUILDINGS ON ±9.1 ACRES IN THE EDGEWATER HILL MIXED USE DEVELOPMENT DISTRICT. THE PROJECT INCLUDES THE CONSTRUCTION OF ±800 LINEAR FEET OF NEW ACCESS ROADWAY, ASSOCIATED SIDEWALKS, CIRCULATION DRIVES AND PARKING AREAS AND THE EXTENSION OF SEWER, WATER, GAS, ELECTRIC AND COMMUNICATIONS UTILITIES TO SERVICE THE PROPOSED BUILDINGS.

STORMWATER RUNOFF FROM THE PROPOSED IMPERVIOUS AREAS WILL BE COLLECTED IN DEEP SUMP CATCH BASINS WITH HOODED OUTLETS AT THE DOWNSTREAM STRUCTURE PRIOR TO DISCHARGING TO TWO STORMWATER BASINS FOR DETENTION OF PEAK STORMWATER RUNOFF RATES. THE LOW LEVEL OUTLETS OF THE STORMWATER BASINS ARE ELEVATED ABOVE THE BASIN BOTTOMS TO RETAIN THE WATER QUALITY VOLUME ON–SITE FOLLOWING STORM EVENTS. DUE TO THE PRESENCE OF A RESTRICTIVE LAYER AND PERCHED GROUNDWATER TABLES THE BOTTOM OF THE BASINS ARE SLOPED AND WILL BE PROVIDED WITH UNDERDRAINS SIZED TO ALLOW THE BASINS TO DRAIN WITHIN 72 HOURS FOLLOWING STORM EVENTS. GROUNDWATER RECHARGE WILL BE PROVIDED BY DRY WELLS WITH HIGH LEVEL OVERFLOWS THAT WILL CAPTURE THE RUNOFF FROM THE PROPOSED BUILDING ROOFS AND GRASSED AREAS.

ACCORDING TO THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA), NATURAL RESOURCES CONSERVATION SERVICE (NRCS) WEB SOIL SURVEY FOR THE STATE OF CONNECTICUT, THE SOILS LOCATED IN THE DEVELOPMENT AREA ARE AS FOLLOWS:

3 RIDGEBURY, LEICESTER & WHITMAN SOILS, 0–8% SLOPES, EXTREMELY STONY (HSG D) (CT WETLAND SOIL)
46C WOODBRIDGE FINE SANDY LOAM, 8–15% SLOPES, VERY STONY (HSG C/D)
86D PAXTON AND MONTAUK FINE SANY LOAMS, 15–35% SLOPES, EXTREMELY STONY (HSG C)

INLAND WETLANDS LOCATED UPON THE SUBJECT PROPERTY ARE AS SHOWN ON THE APPROVED EDGEWATER HILL MASTER PLAN, AND PERMITS TO CONDUCT REGULATED ACTIVITIES FOR THE PROPOSED WORK ARE REQUIRED FROM THE MUNICIPAL WETLANDS AND WATERCOURSES AGENCY. THE PROJECT PROPOSES THE REMOVAL OF ISOLATED WETLAND SERIES H (±2,250 SF OF WETLAND ACTIVTY) AND THE INSTALLATION OF TIMBER MATS FOR THE CROSSING OF WETLAND SERIES A/B AT ITS NARROWEST POINT FOR THE HAUL ROAD (±750 SF OF WETLAND ACTIVITY). THE DEVELOPMENT OF THE PROJECT INCLUDES ±3,000 SQUARE FEET (0.07 ACRES) OF WETLAND ACTIVITY, 298,993 SQUARE FEET (6.86 ACRES) OF UPLAND REVIEW AREA ACTIVITY, AND A TOTAL SITE DISTURBANCE OF 377,632 SQUARE FEET (8.67 ACRES).

CONTINUOUS SEDIMENT BARRIERS WILL BE INSTALLED AT LOCATIONS SHOWN PRIOR TO ANY EARTHWORK OPERATIONS. THESE MEASURES WILL BE MAINTAINED UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. GRUBBING OF STUMPS SHALL BE COMPLETED IN PHASES AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN TO LIMIT THE AMOUNT OF DISTURBED SOILS AT ANY TIME.

REFERENCE IS MADE TO:

1. CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, MAY 2002.
2. SOIL SURVEY OF MIDDLESEX COUNTY CONNECTICUT, U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE.

DEVELOPMENT SCHEDULE:

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS TO SCHEDULE A MANDATORY PRECONSTRUCTION MEETING ON SITE TO DISCUSS ISSUES AS THEY RELATE TO THE PROPOSED PROJECT. THESE ISSUES WILL INCLUDE BUT NOT BE LIMITED TO:

1. RESOURCE PROTECTION.
2. CONSTRUCTION VEHICLE ACCESS, PARKING AND FUELING.
3. CONSTRUCTION METHODS AND SCHEDULING.
4. EXISTING SITE UTILITIES AND MARK–OUT COORDINATION.
5. MATERIAL DELIVERY AND STOCKPILING.
6. UTILITY AS–BUILT DRAWINGS.
7. STORMWATER POLLUTION CONTROL PLAN AND SITE INSPECTION PROCEDURES.

SUGGESTED SEQUENCE OF CONSTRUCTION:

PHASE 1 – INSTALLATION OF EROSION CONTROLS

1. OBTAIN APPROPRIATE PERMITS, NOTIFY TOWN OFFICIALS OF CONSTRUCTION COMMENCEMENT, AND SUBMIT CONSTRUCTION TIMETABLE.
2. FLAG THE LIMITS OF CONSTRUCTION AND CLEARING LIMITS.
3. INSTALL THE CONSTRUCTION ENTRANCE/ANTI–TRACKING PAD.
4. ON–SITE CONSTRUCTION SEQUENCE SHALL START WITH CLEARING WITHIN THE PROPOSED CLEARING LIMITS AND REMOVE CUT WOOD. CHIP BRUSH AND SLASH, STOCKPILE CHIPS FOR FUTURE USE OR REMOVE OFF SITE. DO NOT GRUB STUMPS.
5. INSTALL GEOTEXTILE SEDIMENT FENCE, WOOD CHIP BERMS, AND/OR COMPOST FILTER TUBES AS SHOWN ON PLAN.
6. FOLLOWING INSTALLATION OF THE EROSION CONTROLS, THE CONTRACTOR SHALL CONTACT THE ENGINEER AND TOWN STAFF FOR INSPECTION AND APPROVAL OF INSTALLED MEASURES. NO WORK SHALL COMMENCE UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED.

PHASE 2 – SITE PREPARATION

1. GRUBBING SHALL BE COMPLETED IN PHASES AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN TO LIMIT THE AMOUNT OF DISTURBED SOIL AT ANY TIME.
2. STRIP AND STOCKPILE TOPSOIL FROM PROPOSED GRADING AREAS BY PHASE AFTER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED. THE TOPSOIL SHALL BE SEEDED IMMEDIATELY AFTER STOCKPILING IN ORDER TO STABILIZE THE SLOPE AND LIMIT SEDIMENT RUNOFF. STOCKPILED TOPSOIL SHALL BE SEEDED AND MULCHED WHEN IT IS TO BE STORED FOR MORE THAN 21 DAYS FROM TIME OF STOCKPILING.
3. MAKE ALL CUTS AND FILLS REQUIRED BY PHASE. ESTABLISH THE SUBGRADE FOR THE TOPSOIL AREAS, PARKING AND ROADWAY AS REQUIRED AND BENCH THE BUILDING TO A SUBGRADE. ALLOW A REASONABLE AMOUNT OF AREA AROUND THE FOOTPRINT OF THE BUILDING FOR THE CONSTRUCTION ACTIVITIES.
4. COMPACT SUBGRADE TO 95% MAXIMUM DENSITY PRIOR TO PLACING FILL OR SUBBASE FOR PAVED AREAS.

PHASE 3 – SITE IMPROVEMENTS AND BUILDING CONSTRUCTION

1. CONSTRUCT TEMPORARY HAUL ROAD, ASSOCIATED TEMPORARY SEDIMENT TRAP, AND ROUGH GRADE EXTENSION OF EDGEWATER CIRCLE.
2. PRIOR TO INSTALLING SURFACE WATER CONTROLS SUCH AS TEMPORARY DIVERSIONS AND WATER BARS, INSPECT EXISTING CONDITIONS TO ENSURE DISCHARGE LOCATIONS ARE STABLE. IF NOT STABLE, REVIEW DISCHARGE CONDITIONS WITH THE DESIGN ENGINEER AND IMPLEMENT ADDITIONAL STABILIZATION MEASURES PRIOR TO INSTALLING WATER SURFACE CONTROLS.
3. CONSTRUCT TEMPORARY SEDIMENT TRAPS 1 AND 2.
4. CONSTRUCT PERMANENT STORMWATER BASINS EARLY IN THE SEQUENCE OF CONSTRUCTION AND INSTALL UPGRADIENT EROSION CONTROL MEASURES TO PROTECT STORMWATER BASINS FROM RUNOFF. LOAM, SEED AND MULCH STORMWATER BASINS WITH SPECIFIED SEED MIXES.
5. INSTALL ALL SANITARY SEWERS, DRAINAGE SYSTEMS AND UTILITIES TO WITHIN 5 FEET OF THE BUILDING OR AS OTHERWISE MODIFIED BY THE DESIGN ENGINEER TO ADJUST FOR UNFORSEEN SITE CONDITIONS.
6. PERFORM MASS EARTHWORK AS REQUIRED TO ESTABLISH SUB–GRADES FOR BUILDINGS 1 AND 2.
7. PREPARE SUB–BASE, SLOPES, PARKING AREAS, SHOULDER AREAS, ACCESS ROADS AND ANY OTHER AREA OF DISTURBANCE FOR FINAL GRADING.
8. INSTALL SUBBASE AND BASE COURSES OF GRAVEL IN PARKING AREAS.
9. PLACE TOPSOIL WHERE REQUIRED. COMPLETE THE PERIMETER LANDSCAPE PLANTINGS.
10. FINE GRADE, RAKE, SEED AND MULCH TO WITHIN 2 FEET OF THE CURBING.
11. UPON SUBSTANTIAL COMPLETION OF BUILDINGS 1 AND 2, COMPLETE THE BALANCE OF SITE WORK AND STABILIZATION OF ALL OTHER DISTURBED AREAS. INSTALL FIRST COURSE OF PAVING.
12. AFTER STABILIZATION OF ROADWAY AND AREAS SURROUNDING BUILDINGS 1 AND 2 CONTINUE EARTHWORK FOR BUILDINGS 3, 4 AND 5. EXCESS SOILS SHALL BE STOCKPILED IN THE DESIGNATED STAGING AREA, SURROUNDED WITH SILT FENCE, SEEDED WITH RYE GRASS, AND MULCHED WITH HAY.

PHASE 4 – FINAL SEEDING AND CLEANUP

1. EXCAVATE COLLECTED SEDIMENT FROM SEDIMENT TRAPS AND BACKFILL TO DESIGN GRADES.
2. WHEN ALL OTHER WORK HAS BEEN COMPLETED, REPAIR AND SWEEP ALL PAVED AREAS FOR THE FINAL COURSE OF PAVING. INSPECT THE DRAINAGE SYSTEM AND CLEAN AS NEEDED.
3. INSTALL FINAL COURSE OF PAVEMENT AFTER STORMWATER BASIN VEGETATION HAS BEEN ESTABLISHED.
4. ALL DISTURBED AREAS SHALL BE PREPARED WITH TOPSOIL AND SEEDED AND MULCHED ACCORDING TO THIS PLAN.
5. AFTER ALL FINAL GRADED DISTURBED AREAS HAVE BEEN STABILIZED, REMOVE ALL EROSION AND SEDIMENT STRUCTURES. CLEAN ALL STORMWATER STRUCTURES OF SEDIMENT AND DEBRIS.

ANTICIPATED CONSTRUCTION SCHEDULE

NO.	PHASE DESCRIPTION	ESTIMATED DURATION
1	INSTALLATION OF EROSION CONTROLS	2 WEEKS
2	SITE PREPARATION	3 TO 4 MONTHS
3	SITE IMPROVEMENTS AND BUILDING CONSTRUCTION	15 TO 18 MONTHS
4	FINAL PAVING, FINAL SEEDING AND CLEANUP	1 TO 2 MONTHS

EROSION CONTROL OPERATION & MAINTENANCE:

THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT THE PROJECT. NO CONSTRUCTION SHALL PROCEED UNTIL PROPER SEDIMENTATION AND EROSION CONTROL METHODS HAVE BEEN INSTALLED AS THE SEQUENCE OF CONSTRUCTION NECESSITATES.

MAINTENANCE OF EROSION AND SEDIMENT CONTROLS SHALL BE COMPLETED IN ACCORDANCE WITH THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (2002). THE CONTRACTOR SHALL MAINTAIN A COPY OF THE GUIDELINES ON–SITE AND REFER TO THE APPROPRIATE MAINTENANCE PROCEDURES THAT SHALL BE UTILIZED DURING THE CONSTRUCTION (https://portal.ct.gov/DEEP/Water/Soil–Erosion–and–Sediment–Control–Guidelines/Guidelines–for–Soil–Erosion–and–Sediment–Control).
A SUMMARY OF THE MAINTENANCE REQUIREMENTS FOR THE PROJECT IS PROVIDED BELOW.

DURING CONSTRUCTION, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN PROPER WORKING ORDER. DISTURBED AREAS SHALL BE KEPT TO A MINIMUM AND SHALL ONLY TAKE PLACE WHERE IMMEDIATELY REQUIRED TO FURTHER CONSTRUCTION. IT IS DESIRABLE FROM AN EROSION PREVENTION PERSPECTIVE TO MINIMIZE DISTURBED AREAS. FINAL GRADING AND SEEDING SHALL TAKE PLACE AS SOON AS PRACTICAL.

A RAIN GAUGE SHALL BE PLACED AT THE PROJECT IN A WORKABLE LOCATION AND MONITORED DURING RAINFALL PERIODS UNTIL ALL DISTURBED AREAS ARE STABILIZED.

EVERY PRECAUTION SHALL BE USED DURING CONSTRUCTION TO PREVENT AND MINIMIZE THE DEGRADATION OF THE EXISTING WATER QUALITY FROM STORMWATER RUNOFF DURING CONSTRUCTION. ALL ACTIVITIES SHALL BE IN CONFORMANCE TO AND CONSISTENT WITH ALL APPLICABLE WATER QUALITY STANDARDS AND MANAGEMENT PRACTICES AS SET FORTH BY LOCAL, STATE AND FEDERAL AGENCIES.

THE SITE CONTRACTOR SHALL APPOINT AN ONSITE AGENT WHO SHALL BE PERSONALLY RESPONSIBLE FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN AND ENFORCING THE PRESCRIBED SAFEGUARDS DURING THE EXCAVATION AND OPERATION PERIOD.

THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES THROUGHOUT THE PROJECT, INFORMING ALL PARTIES ENGAGED ON SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER AGENCY AND OFFICIALS OF ANY TRANSFER OF THIS RESPONSIBILITY.

ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REPAIRED, CLEANED AND/OR REPLACED AS NECESSARY THROUGHOUT THE PROJECT IN ORDER TO MAINTAIN COMPLETE AND INTEGRAL EROSION AND SEDIMENT CONTROL PROTECTION. ONCE IN PLACE, ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO REMAIN IN PLACE IN PROPER CONDITION AND BE CONTINUOUSLY MAINTAINED UNTIL FINAL SITE RESTORATION HAS BEEN COMPLETED. FOLLOWING SUCH PERMANENT STABILIZATION, THE EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISMANTLED, REMOVED, AND DISPOSED OF IN AN APPROVED MANNER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES BEYOND THOSE SHOWN ON THE PLANS OR PRESCRIBED HEREIN SHALL BE PUT IN PLACE, WHENEVER NECESSARY, TO ADDRESS FIELD CONDITIONS AND/OR AS ORDERED BY THE ENGINEER.

QUALIFIED PERSONNEL PROVIDED BY THE SITE CONTRACTOR SHALL INSPECT PERIMETER EROSION CONTROL MEASURES, ALL DISTURBED AREAS AND THE LOCATIONS WHERE VEHICLES ENTER AND LEAVE THE SITE. THESE AREAS SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN TWENTY–FOUR HOURS AT THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. ADDITIONAL MEASURES BEYOND THOSE INDICATED AND/OR SHOWN ON THIS PLAN SET OR PRESCRIBED HEREIN SHALL BE PUT IN PLACE, WHENEVER NECESSARY, TO ADDRESS FIELD CONDITIONS AND/OR AS ORDERED BY THE ENGINEER OR TOWN STAFF. WHERE SITES HAVE BEEN TEMPORARILY OR FINALLY STABILIZED, SUCH INSPECTION SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH FOR THREE CONSECUTIVE MONTHS.

NO SOIL, FILL OR OTHER MATERIALS SHALL BE DEPOSITED IN SURROUNDING INLAND WETLANDS.

ALL TEMPORARY STORAGE AND/OR STOCKPILE AREAS SHALL BE PROPERLY STABILIZED TO PREVENT EROSION AND SUITABLY CONTAINED TO PREVENT TURBID RUNOFF.

DUMPING OF OIL OR OTHER DELETERIOUS MATERIALS ON THE GROUND IS FORBIDDEN. THE APPLICANT SHALL PROVIDE A MEANS OF CATCHING, RETAINING AND PROPERLY DISPOSING OF DRAINED OIL, REMOVED OIL FILTERS, OR OTHER DELETERIOUS MATERIAL FROM EQUIPMENT USED ON SITE. MAJOR VEHICLE MAINTENANCE SHALL BE COMPLETED OFF SITE. ALL OIL SPILLS SHALL BE IMMEDIATELY REPORTED TO THE DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION/HAZARDOUS MATERIALS OFFICE. FAILURE TO DO SO MAY RESULT IN THE IMPOSITION OF FINES UNDER THE APPLICABLE CONNECTICUT GENERAL STATUTES.

DURING CONSTRUCTION, THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE INSPECTION AND MAINTENANCE TO INSURE PROPER PERFORMANCE OF EROSION CONTROL MEASURES. INSPECTION AND MAINTENANCE SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

- INSPECT ALL SEDIMENT FENCE, WOOD CHIP BERMS AND OTHER EROSION CONTROL MEASURES. REPAIR OR REPLACE ANY DAMAGED PORTION IN ORDER TO INSURE ITS PROPER AND EFFECTIVE OPERATION. REMOVE ACCUMULATED SEDIMENT IF REQUIRED (GREATER THAN 4" DEPTH).
- INSPECT ALL STOCKPILES. REPAIR OR REPLACE ANY DAMAGED PORTION OF EROSION CONTROL MEASURES SURROUNDING THESE AREAS IN ORDER TO PREVENT SEDIMENTATION DOWNGRADIENT. RESEED AND RE–MULCH AS REQUIRED TO STABILIZE STOCKPILES.
- INSPECT GRASS RESTORED AREAS. REVEGETATE ANY ERODED OR DISTURBED AREAS TO PROVIDE PERMANENT STABILIZATION. RESEED AND/OR REVEGETATE ANY AREAS THAT DO NOT HAVE A SUITABLE STAND OF GRASS OR ANY SCOURED AREAS TO PROVIDE PERMANENT STABILIZATION.
- INSPECT ANTI–TRACKING PAD. REMOVE AND DISPOSE OF PAD AND REPLACE IF PAD IS NO LONGER FUNCTIONING EFFICIENTLY OR ACCUMULATED SEDIMENT IS TO A DEPTH OF 2" BELOW THE STONE SURFACE.
- INSPECT ALL STONE CHECK DAMS, TEMPORARY DIVERSIONS, AND WATER BARS. REMOVE ACCUMULATED SEDIMENT IF REQUIRED (BLOCKING MORE THAN 3" DEPTH OF FLOW).
- INSPECT ALL TEMPORARY AND PERMANENT STORMWATER BASINS. REMOVE ACCUMULATED SEDIMENT IF REQUIRED (GREATER THAN 6" DEPTH), REVEGETATE IF NECESSARY TO PROVIDE STABILIZATION.
- INSPECT DOWNGRADIENT AREAS OF ALL STORMWATER DISCHARGES AND DEVELOPMENT AREAS. STABILIZE ANY ERODED AREAS IF FOUND.

EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S)

MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL

TOPSOIL:

TOPSOIL WILL BE REMOVED AND STOCKPILED ON SITE AND UTILIZED FOR FINAL GRADING. ADDITIONAL TOPSOIL, IF REQUIRED, WILL BE SUPPLIED FROM AN OFF–SITE SOURCE. EXCESS MATERIALS RESULTING FROM "CUT SLOPES" IN THE AREAS OF THE PROPOSED CONSTRUCTION THAT ARE NOT INTENDED FOR REUSE WILL BE IMMEDIATELY REMOVED FROM THE SITE. WHEN SOIL IS STOCKPILED, THE SLOPE OF THE STOCKPILE WILL NOT EXCEED 2 HORIZONTAL TO 1 VERTICAL. GRUBBING OF STUMPS SHALL BE COMPLETED BY PHASE TO MINIMIZE AMOUNT OF DISTURBED SOILS.

INSTALLATION SCHEDULE: AS NOTED, EXCAVATED TOPSOIL WILL BE STOCKPILED ON SITE. SEDIMENT FENCE WILL BE PLACED AROUND ANY STOCKPILES THAT ARE NOT IMMEDIATELY REMOVED FROM THE SITE TO PROTECT THE EXISTING DRAINAGE DITCHES AND OFF SITE AREAS.

MAINTENANCE AND INSPECTION: THE CUT AND FILL AREAS WILL BE INSPECTED WEEKLY FOR EROSION. THESE AREAS WILL BE STABILIZED IMMEDIATELY WITH EROSION CONTROLS OR GRADED TO AVOID POSSIBLE DISTURBANCE TO THE EXISTING DRAINAGE DITCHES OR OFF SITE AREAS. SEE ALSO MAINTENANCE AND INSPECTION PROCEDURES FOR SILT FENCE.

CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT

AREA FOR SILT TO ACCUMULATE:

BMP/INSTALLATION SCHEDULE: BEFORE ANY GRADING OPERATIONS BEGIN, A WOOD CHIP BERM OR SEDIMENT FENCE WILL BE INSTALLED ADJACENT TO THE AREAS UNDER CONSTRUCTION JUST OUTSIDE THE LIMITS OF DISTURBANCE.

OTHER ADJACENT OFF SITE AREAS WILL ALWAYS BE PROTECTED BY A SEDIMENT FENCE OR ANOTHER BMP UNTIL FINAL STABILIZATION IS ACHIEVED.

SEDIMENT FENCE IS ALSO PROPOSED UPGRADIENT OF DISTURBED AREAS TO MINIMIZE CLEAN RUNOFF ENTERING THE PROJECT AREA.

MAINTENANCE AND INSPECTION: THE GRADED AREAS AND SEDIMENT FENCE WILL BE INSPECTED WEEKLY TO ENSURE THAT THERE ARE NO STRUCTURAL FAILURES AND IMMEDIATELY AFTER RAIN EVENTS.

CONSTRUCTION SPECIFICATIONS

WOOD CHIP BERM:

THE MATERIAL FOR WOOD CHIP BERMS WILL BE ACQUIRED IN CONJUNCTION WITH THE REMOVAL AND CHIPPING OF TREES LOCATED WITHIN THE PROJECT AREA.

INSTALLATION: ERECT WOOD CHIP BERM IN A CONTINUOUS FASHION AT THE SPECIFIED HEIGHT AND WIDTH.

MAINTENANCE:

1. SEDIMENT SHOULD BE REMOVED ONCE IT HAS ACCUMULATED TO A DEPTH OF 4".
2. BERM SHOULD BE REPAIRED IF IT HAS BEEN BREACHED.
3. BERM CAN BE LEFT IN PLACE PERMANENTLY AND LEFT TO DETERIORATE.
4. ALL SEDIMENT ACCUMULATED AT THE BERM SHOULD BE REMOVED AND PROPERLY DISPOSED OF IF THE BERM IS TO BE REMOVED.

SEDIMENT FENCE:

1. THE MATERIAL FOR SEDIMENT FENCES SHOULD BE A PERVIOUS SHEET OF SYNTHETIC FABRIC SUCH AS POLYPROPYLENE, NYLON, POLYESTER, OR POLYETHYLENE YARN.
2. THE STAKES USED TO ANCHOR THE FILTER FABRIC SHOULD BE WOOD OR METAL. WOODEN STAKES SHOULD BE AT LEAST 3 FEET LONG AND HAVE A MINIMUM DIAMETER OF 2 INCHES IF A HARDWOOD LIKE OAK IS USED. STAKES FROM SOFT WOODS LIKE PINE SHOULD BE AT LEAST 4 INCHES IN DIAMETER.
3. ERECT SEDIMENT FENCE IN A CONTINUOUS FASHION FROM A SINGLE ROLL OF FABRIC TO ELIMINATE GAPS IN THE FENCE. IF A CONTINUOUS ROLL OF FABRIC IS NOT AVAILABLE, OVERLAP THE FABRIC FROM BOTH DIRECTIONS ONLY AT STAKES OR POSTS. OVERLAP AT LEAST 6 INCHES. EXCAVATE A TRENCH TO BURY THE BOTTOM OF THE FABRIC FENCE AT LEAST 6 INCHES BELOW THE GROUND SURFACE. THIS HELPS TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. GAPS WOULD MAKE THE FENCING USELESS AS A SEDIMENT BARRIER.
4. THE HEIGHT OF THE FENCE POSTS SHOULD BE 16 TO 34 INCHES ABOVE THE ORIGINAL GROUND SURFACE. SPACE THE POSTS NO MORE THAN 10 FEET APART.
5. THE FENCE SHOULD BE DESIGNED TO WITHSTAND THE RUNOFF FROM A 10–YEAR PEAK STORM EVENT. ONCE INSTALLED, IT SHOULD REMAIN IN PLACE UNTIL ALL AREAS UPSLOPE HAVE BEEN PERMANENTLY STABILIZED BY VEGETATION OR OTHER MEANS.

INSTALLATION:

1. DIG A 6" DEEP TRENCH ON THE UPHILL SIDE OF THE PROPOSED BARRIER LOCATION.
2. POSITION THE POSTS ON THE DOWNHILL SIDE OF THE FABRIC BARRIER AND DRIVE THE POST 12" INTO THE GROUND.
3. LAY THE BOTTOM 6" OF THE FABRIC BARRIER IN THE TRENCH TO PREVENT UNDERMINING AND BACKFILL. COMPACT BACKFILLED SOILS.

MAINTENANCE:

1. SEDIMENT SHOULD BE REMOVED ONCE IT HAS ACCUMULATED TO 4" DEPTH.
2. FILTER FABRIC SHOULD BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS).
3. SEDIMENT FENCE SHOULD REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
4. ALL SEDIMENT ACCUMULATED AT THE FENCE SHOULD BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE FENCE IS REMOVED.

INSPECTION:

1. INSPECT SEDIMENT FENCE BEFORE ANTICIPATED STORM EVENTS (OR SERIES OF STORM EVENTS SUCH AS INTERMITTENT SHOWERS OVER ONE OR MORE DAYS) AND WITHIN 24 HOURS AFTER THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER, AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS, AT LEAST 72 HOURS APART.
2. WHERE SITES HAVE BEEN FINALLY OR TEMPORARILY STABILIZED, SUCH INSPECTIONS MAY BE CONDUCTED ONCE PER MONTH.

HAY/STRAW BALE BARRIER

INSTALLATION:

1. EXCAVATE TRENCH 4" AND PLACE MATERIAL UPSLOPE OF TRENCH.
2. PLACE BALES IN A SINGLE ROW IN THE TRENCH, LENGTHWISE, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER AND THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES (TO AVOID PREMATURE ROTTING OF THE BINDINGS).
3. ANCHOR EACH BALE WITH AT LEAST 2 STAKES, DRIVING THE FIRST STAKE IN EACH BALE TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES MUST BE DRIVEN A MINIMUM OF 18 INCHES INTO THE GROUND. FILL ANY GAPS BETWEEN THE BALES WITH STRAW TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES.
4. BACKFILL THE BALES WITH THE EXCAVATED TRENCH MATERIAL TO A MINIMUM DEPTH OF 4 INCHES ON THE UPHILL SIDE OF THE BALES. TAMP BY HAND OR MACHINE AND COMPACT THE SOIL. LOOSE HAY/STRAW SCATTERED OVER THE DISTURBED AREA IMMEDIATELY UPHILL FROM THE HAY BALE BARRIER TENDS TO INCREASE BARRIER EFFICIENCY.

MAINTENANCE

1. INSPECT THE HAY/STRAW BALE BARRIER AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER TO DETERMINE MAINTENANCE NEEDS. FOR DEWATERING OPERATIONS, INSPECT FREQUENTLY BEFORE, DURING, AND AFTER PUMPING OPERATIONS. REMOVE THE SEDIMENT DEPOSITS WHEN SEDIMENT DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER.
2. REPLACE OR REPAIR THE BARRIER WITHIN 24 HOURS OF OBSERVED FAILURE. FAILURE OF THE BARRIER HAS OCCURRED WHEN SEDIMENT FAILS TO BE RETAINED BY THE BARRIER BECAUSE:
   (a) THE BARRIER HAS BEEN OVERTOPPED, UNDERCUT OR BYPASSED BY RUNOFF WATER,
   (b) THE BARRIER HAS BEEN MOVED OUT OF POSITION, OR
   (c) THE BALES HAVE DETERIORATED OR BEEN DAMAGED.
3. WHEN REPETITIVE FAILURES OCCUR AT THE SAME LOCATION, REVIEW CONDITIONS AND LIMITATIONS FOR USE AND DETERMINE IF ADDITIONAL CONTROLS ARE NEEDED TO REDUCE FAILURE RATE OR REPLACE HAY/STRAW BALE BARRIER.
4. MAINTAIN THE HAY/STRAW BALE BARRIER UNTIL THE CONTRIBUTING AREA IS STABILIZED. AFTER THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED, PULL THE STAKES OUT OF THE HAY BALES. REMOVE SEDIMENT.

DUST CONTROL:

DUST FROM THE SITE WILL BE CONTROLLED BY USING A MOBILE PRESSURE–TYPE DISTRIBUTOR TRUCK THAT WILL APPLY POTABLE WATER AT RATE OF 300 GALLONS PER ACRE AND MINIMIZED AS NEEDED TO AVOID PONDING.

INSTALLATION SCHEDULE: DUST CONTROL WILL BE IMPLEMENTED AS NEEDED ONCE SITE GRADING HAS BEEN INITIATED, AND DURING WINDY CONDITIONS EXCEEDING 20MPH, WHILE SITE GRADING IS OCCURRING. SPRAYING OF POTABLE WATER WILL BE PERFORMED ONCE PER DAY DURING THE MONTHS OF MARCH THROUGH MAY AND NO MORE THAN THREE TIMES PER DAY FROM JUNE TO SEPTEMBER OR WHENEVER DRYNESS OF SOIL WARRANTS IT.

MAINTENANCE SCHEDULE: AT LEAST ONE MOBILE UNIT WILL BE AVAILABLE AT ALL TIMES DURING CONSTRUCTION TO APPLY POTABLE WATER. EACH MOBILE UNIT SHALL BE EQUIPPED WITH A POSITIVE SHUTOFF VALVE TO PREVENT OVER WATERING OF DISTURBED AREAS.

RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES

SIZE AND CONSTRUCT THE BASIN IN ACCORDANCE WITH THE REQUIREMENTS OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, MAY 2002".

SITE PREPARATION:

CLEAR, GRUB AND STRIP TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, OR OTHER UNSUITABLE MATERIAL FROM AREAS UNDER THE EMBANKMENT OR ANY STRUCTURAL WORKS RELATED TO THE BASIN.

CLEAR AND GRUB THE AREA OF MOST FREQUENT INUNDATION (MEASURED FROM THE TOP OF THE OUTLET CONTROL STRUCTURE) OF ALL BRUSH AND TREES TO FACILITATE CLEAN OUT AND RESTORATION.

INSTALL SEDIMENT CONTROLS FOR CONTRIBUTING AREAS. INSTALL SEDIMENT CONTROLS TO TRAP SEDIMENT BEFORE IT ENTERS AND LEAVES THE DETENTION BASIN CONSTRUCTION SITE. STABILIZE THE BASIN IN ACCORDANCE WITH THE ENGINEERED DESIGN, STABILIZE THE SPOIL AND BORROW AREAS, AND OTHER DISTURBED AREAS IN ACCORDANCE WITH THE TEMPORARY SEEDING OR PERMANENT SEEDING, WHICHEVER IS APPLICABLE.

INSTALL SAFETY FEATURES AND DEVICES TO PROTECT HUMANS AND ANIMALS FROM SUCH ACCIDENTS AS FALLING OR DROWNING. TEMPORARY FENCING CAN BE USED UNTIL BARRIER PLANTINGS ARE ESTABLISHED. USE PROTECTIVE MEASURES SUCH AS GUARDRAILS AND FENCES ON SPILLWAYS AND IMPOUNDMENTS AS NEEDED.

MAINTENANCE:

INSPECT THE TEMPORARY SEDIMENT BASIN AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCHES OR GREATER TO DETERMINE CONDITIONS IN THE BASIN. CLEAN THE BASIN OF COLLECTED SEDIMENTS WHEN SEDIMENT ACCUMULATION EXCEEDS 6 INCHES. SEDIMENT LEVELS SHALL BE MARKED WITHIN THE SEDIMENT STORAGE AREA BY STAKES OR OTHER MEANS SHOWING THE THRESHOLD ELEVATION FOR SEDIMENT CLEANOUT. PRIOR TO THE REMOVAL OF SEDIMENTS, DEWATER THE BASIN THROUGH PUMPING OR OTHER MEANS TO EXPOSE PREVIOUSLY SUBMERGED SEDIMENTS. DO NOT ALLOW ACCUMULATED SEDIMENT TO FLUSH INTO THE DRAINAGEWAY. STOCKPILE THE SEDIMENT IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE OR INTO A WETLAND, WATERCOURSE OR OTHER SENSITIVE AREA.

TEMPORARY SEDIMENT BASIN BOTTOM SHALL BE 2 FEET ABOVE THE PROPOSED BOTTOM OF THE PERMANENT STORMWATER BASIN. THE STORMWATER BASIN SHALL BE EXCAVATED TO DESIGN GRADES ONLY AFTER ALL UPGRADIENT AREAS HAVE BEEN STABILIZED AND BEFORE FINAL PAVING.

DEWATERING:

BMP DESCRIPTION/INSTALLATION: IN THE EVENT GROUNDWATER IS ENCOUNTERED

DURING CONSTRUCTION, DEWATERING MAY BE REQUIRED THROUGH THE USE OF SUMP PUMPS. INSTALLATION OF SUMPS SHALL FOLLOW THE REQUIREMENTS OF THE SUMP PIT. THE PURPOSE OF THIS PRACTICE IS TO REMOVE EXCESSIVE WATER FROM EXCAVATIONS IN A MANNER THAT IMPROVES THE QUALITY OF THE WATER BEING PUMPED. PUMPED WATER SHALL BE DISCHARGED TO AN APPROVED FILTERING SYSTEM.

CONSTRUCTION SPECIFICATIONS

SUMP PIT

1. A PERFORATED VERTICAL STANDPIPE SHALL BE PLACED IN THE CENTER OF THE PIT TO COLLECT FILTERED WATER. THE STANDPIPE SHALL BE SLOTTED OR PERFORATED CORRUGATED METAL OR PVC PIPE AND ITS DIAMETER AND NUMBER OF PERFORATIONS SHALL BE COMPATIBLE WITH THE PUMP SIZE BEING USED.
2. WATER SHALL THEN BE PUMPED FROM THE CENTER OF THE PIPE TO A SUITABLE DISCHARGE AREA (SEDIMENT FILTER BAG OR DEWATERING SETTLING BASIN).
3. THE PIT SHALL BE FILLED WITH CRUSHED STONE OR GRAVEL NO SMALLER THAN CT DOT #67 SIZE NOR LARGER THAN CT DOT #3 SIZE. CRUSHED STONE SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM OF THE STANDPIPE.
4. DISCHARGE OF WATER PUMPED FROM THE STANDPIPE SHALL BE TO A SUITABLE PRACTICE SUCH AS A SEDIMENT FILTER BAG OR AN APPROVED DEWATERING SETTLING BASIN.
5. FILTER FABRIC SHALL BE WRAPPED AROUND THE STANDPIPE TO ENSURE CLEAN WATER DISCHARGE. IT IS RECOMMENDED THAT 1/4 TO 1/2 INCH HARDWARE CLOTH WIRE MESH BE WRAPPED AROUND AND SECURED TO THE STANDPIPE PRIOR TO ATTACHING THE FILTER FABRIC. THIS WILL INCREASE THE RATE OF WATER SEEPAGE INTO THE STANDPIPE.

SOIL STABILIZATION:

TEMPORARY STABILIZATION:

BMP DESCRIPTION: HYDROMULCHING WILL BE USED ON SLOPES WHERE CONSTRUCTION WILL CEASE FOR MORE THAN 14 DAYS AND OVER THE WINTER MONTHS TO STABILIZE ERODIBLE MATERIALS. HAY/STRAW MULCH AND WOOD FIBER WILL BE MIXED WITH A TACKIFIER AND APPLIED UNIFORMLY BY MACHINE WITH AN APPLICATION RATE OF 2 TONS (100–200 BALES) PER ACRE. THE CONTRACTOR WILL USE CRIMPING EQUIPMENT TO BIND THE MULCH TO THE SOIL IF THE TACKIFIER IS NOT EFFECTIVE. NETTING WILL BE USED ON SMALL AREAS WITH STEEP SLOPES. IN AREAS WHERE HYDROMULCHING IS INACCESSIBLE, HAY/STRAW MULCH WILL BE APPLIED BY HAND AT THE SAME APPLICATION RATE.

TEMPORARY SEEDING WILL BE USED ON ANY AREA WHERE CONSTRUCTION ACTIVITY IS SUSPENDED FOR MORE THAN TWENTY–ONE DAYS TO STABILIZE ERODIBLE MATERIALS. SEE BELOW FOR GUIDANCE ON SEEDING MIXTURES, RATES, AND ACCEPTABLE PLANTING DATES FOR TEMPORARY SEEDING.

INSTALLATION SCHEDULE: PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES WILL TEMPORARILY CEASE FOR MORE THAN 14 DAYS WILL BE STABILIZED WITH MULCH. WHERE CONSTRUCTION ACTIVITIES WILL TEMPORARILY CEASE FOR MORE THAN 21 DAYS IT WILL BE TEMPORARILY SEEDED. WINTER STABILIZATION WILL BE PROVIDED BETWEEN DECEMBER 25 AND MARCH 30.

MAINTENANCE AND INSPECTION: MULCHED AREAS WILL BE INSPECTED WEEKLY TO ENSURE THAT ADEQUATE COVERAGE IS PROVIDED. REPAIRS WILL BE CONDUCTED AS NEEDED.

SEED MIXTURE FOR TEMPORARY SEEDING

	LBS./ACRE	LBS./1000 S.F.
PERENNIAL RYEGRASS	40	1.0

SEE FIGURE TS–2 IN THE 2002 GUIDELINES FOR ADDITIONAL TEMPORARY SEED MIXES.

FINAL STABILIZATION:

PERMANENT SEEDING SHOULD BE APPLIED IMMEDIATELY AFTER THE FINAL DESIGN GRADES ARE ACHIEVED AT THE SITE BUT NO LATER THAN 14 DAYS AFTER CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED. AFTER THE ENTIRE SITE IS STABILIZED, ANY SEDIMENT THAT HAS ACCUMULATED SHALL BE REMOVED AND HAULED OFF SITE. CONSTRUCTION DEBRIS, TRASH, AND TEMPORARY BMP'S SHALL ALSO BE REMOVED AND ANY AREAS DISTURBED DURING REMOVAL SHALL BE SEEDED IMMEDIATELY.

SEEDBED PREPARATION:

1. TOPSOIL WILL BE SPREAD OVER FINAL GRADED AREAS AT A MINIMUM DEPTH OF FOUR INCHES. TOPSOIL SHALL INCLUSIVELY MEAN A SOIL MEETING ONE OF THE FOLLOWING SOIL TEXTURAL CLASSES ESTABLISHED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE CLASSIFICATION SYSTEM BASED UPON THE PROPORTION OF SAND, SILT, AND CLAY SIZE PARTICLES AFTER PASSING A 2 MILLIMETER (MM) SIEVE AND SUBJECTED TO A PARTICLE SIZE ANALYSIS:
   1.1. LOAMY SAND, INCLUDING COARSE, LOAMY FINE, AND LOAMY VERY FINE SAND, SANDY LOAM, INCLUDING COARSE, FINE AND VERY FINE SANDY LOAM, LOAM, OR SILT LOAM WITH NOT MORE THAN 60% SILT;
   1.2. CONTAINING NOT LESS THAN 6% AND NOT MORE THAN 20% ORGANIC MATTER AS DETERMINED BY LOSS–ON–IGNITION OF OVEN DRIED SAMPLES DRIED AT 105 DEGREES CENTIGRADE;
   1.3. POSSESSING A PH RANGE OF 6.0–7.5, EXCEPT IF THE VEGETATIVE PRACTICE BEING USED SPECIFICALLY REQUIRES A LOWER PH, THEN PH MAY BE ADJUSTED ACCORDINGLY;
   1.4. HAVING SOLUBLE SALTS NOT EXCEEDING 500 PPM;
   1.5. AND THAT IS LOOSE AND FRIABLE AND FREE FROM REFUSE, STUMPS, ROOTS, BRUSH, WEEDS, FROZEN PARTICLES, ROCKS, AND STONES OVER 1.25 INCHES IN DIAMETER, AND ANY MATERIAL THAT WILL PREVENT THE FORMATION OF A SUITABLE SEEDBED OR PREVENT SEED GERMINATION AND PLANT GROWTH.
2. FERTILIZER WILL BE APPLIED TO THE SEEDBED AS NEEDED. FERTILIZERS WILL BE COMMERCIAL TYPE OF UNIFORM COMPOSITION, FREE–FLOWING AND CONFORMING TO THE APPLICABLE STATE AND FEDERAL LAWS. CHOOSE NATIVE SPECIES THAT ARE ADAPTED TO LOCAL WEATHER AND SOIL CONDITIONS WHEREVER POSSIBLE TO REDUCE WATER AND FERTILIZER INPUTS AND LOWER MAINTENANCE OVERALL.
3. TOPSOIL WILL BE LOOSENED BY RAKING, TILLING OR OTHER SUITABLE METHODS.

FINAL STABILIZATION SHOULD BE INSTALLED ON PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED BUT NO LATER THAN 14 DAYS AFTER CONSTRUCTION CEASES.

ALL SEEDED AREAS SHALL BE INSPECTED WEEKLY DURING CONSTRUCTION ACTIVITIES FOR FAILURE UNTIL A DENSE COVER OF VEGETATION HAS BEEN ESTABLISHED. IF FAILURE IS NOTICED ON THE SEEDED AREA, THE AREA WILL BE RESEEDED, FERTILIZED AND MULCHED IMMEDIATELY. AFTER CONSTRUCTION IS COMPLETE AT THE SITE PERMANENT STABILIZATION MEASURES WILL BE MONITORED UNTIL FINAL STABILIZATION IS REACHED.

SEED MIXTURE FOR LAWN AREAS

	LBS./ACRE	LBS./1000 S.F.
KENTUCKY BLUEGRASS	20	0.45
CREEPING RED FESCUE	20	0.45
PERENNIAL RYEGRASS	5	0.10
	45	1.00

SEED MIXTURE FOR STORMWATER BASINS

	LBS./ACRE	LBS./1000 S.F.
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTIONS BASINS BY NEW ENGLAND WETLAND PLANTS, INC. OF AMHERST, MA.	35	0.80

SPECIES: RIVERBANK WILD RYE (ELYMUS RIPARIUS), CREEPING RED FESCUE (FESTUCA RUBRA), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), SWITCH GRASS (PANICUM VIRGATUM), UPLAND BENTGRASS (AGROSTIS PERENNANS), NODDING BUR MARIGOLD (BIDENS CERNUA), HOLLOW–STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM), NEW ENGLAND ASTER (ASTER NOVAE–ANGLIAE), BONESET (EUPATORIUM PERFOLIATUM), BLUE VERVAIN (VERBENA HASTATA), SOFT RUSH (JUNCUS EFFUSUS), WOOL GRASS (SCIRPUS CYPERINUS).

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. IT IS AN APPROPRIATE SEED MIX FOR ECOLOGICALLY SENSITIVE RESTORATIONS THAT REQUIRE STABILIZATION AS WELL AS LONG–TERM ESTABLISHMENT OF NATIVE VEGETATION.

SEED MIXTURE FOR STORMWATER BASINS

	LBS./ACRE	LBS./1000 S.F.
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTIONS BASINS BY NEW ENGLAND WETLAND PLANTS, INC. OF AMHERST, MA.	35	0.80

SPECIES: RIVERBANK WILD RYE (ELYMUS RIPARIUS), CREEPING RED FESCUE (FESTUCA RUBRA), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), SWITCH GRASS (PANICUM VIRGATUM), UPLAND BENTGRASS (AGROSTIS PERENNANS), NODDING BUR MARIGOLD (BIDENS CERNUA), HOLLOW–STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM), NEW ENGLAND ASTER (ASTER NOVAE–ANGLIAE), BONESET (EUPATORIUM PERFOLIATUM), BLUE VERVAIN (VERBENA HASTATA), SOFT RUSH (JUNCUS EFFUSUS), WOOL GRASS (SCIRPUS CYPERINUS).

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS CONTAINS A SELECTION OF NATIVE GRASSES AND WILDFLOWERS DESIGNED TO COLONIZE GENERALLY MOIST, RECENTLY DISTURBED SITES WHERE QUICK GROWTH OF VEGETATION IS DESIRED TO STABILIZE THE SOIL SURFACE. IT IS AN APPROPRIATE SEED MIX FOR ECOLOGICALLY SENSITIVE RESTORATIONS THAT REQUIRE STABILIZATION AS WELL AS LONG–TERM ESTABLISHMENT OF NATIVE VEGETATION.

SEED MIXTURE FOR SLOPES ADJACENT TO WETLANDS

	LBS./ACRE	LBS./1000 S.F.
NEW ENGLAND ROADSIDE MATRIX UPLAND SEED MIX BY NEW ENGLAND WETLAND PLANTS, INC. OF AMHERST, MA.	35	0.80

SPECIES:
GRASSES
VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), RED FESCUE (FESTUCA RUBRA), BIG BLUESTEM (ANDROPOGON GERARDII), INDIAN GRASS (SORGHASTRUM NUTANS), SWITCH GRASS (PANICUM VIRGATUM)
WILDFLOWERS
PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BEARD TONGUE (PENSTEMON DIGITALIS), BLACK EYED SUSAN (RUDBECKIA HIRTA), HOLLOW–STEM JOE PYE WEED (EUPATORIUM FISTULOSUM/EUTROCHIUM FISTULOSUM)
SHRUBS
GREY DOGWOOD (CORNUS RACEMOSA), SILKY DOGWOOD (CORNUS AMOMUM), STAGHORN SUMAC (RHUS TYPHINA)

THE NEW ENGLAND ROADSIDE MATRIX MIXES ARE DESIGNED FOR USE ALONG ROADS AND HIGHWAYS. THESE MIXES ARE UNUSUAL IN THAT THEY CONTAIN NATIVE GRASSES, WILDFLOWERS, AND SHRUBS THAT ARE BLENDED TOGETHER AS A NATIVE MATRIX SEED MIX. IN AREAS THAT RECEIVE FREQUENT MOWING, THE COLD SEASON GRASSES WILL DOMINATE, SUCH AS THOSE AREAS CLOSET TO THE ROADWAY SHOULDER. IN AREAS FARTHER FROM THE ROAD, WHICH MAY BE MOWN ONLY ONCE EACH YEAR, OR IN HARD TO MOW AREAS, SUCH AS AROUND SIGN POSTS, THE WILDFLOWER COMPONENT WILL BECOME DOMINANT. ALONG CUTS AND SIDE SLOPES WHICH MAY NEVER BE MOWN, THE SHRUB COMPONENT WILL ADD DIVERSITY AND BEAUTY TO THE ROADSIDE PLANTINGS. IT IS A PARTICULARLY
APPROPRIATE SEED MIX FOR ROADSIDES, INDUSTRIAL SITES, OR CUT AND FILL SLOPES.

SEED MIXTURE FOR OTHER UNMOWED SLOPES

	LBS./ACRE	LBS./1000 S.F.
NEW ENGLAND CONSERVATION/WILDLIFE MIX BY NEW ENGLAND WETLAND PLANTS, INC. OF AMHERST, MA.	35	0.80

SPECIES: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), INDIAN GRASS (SORGHASTRUM NUTANS), BLUE VERVAIN (VERBENA HASTATA), BUTTERFLY MILKWEED (ASCLEPIAS TUBEROSA), BLACK EYED SUSAN (RUDBECKIA HIRTA), COMMON SNEEZEWEED (HELENIUM AUTUNALE), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).

THE NEW ENGLAND CONSERVATION/WILDLIFE MIX PROVIDES A PERMANENT COVER OF GRASSES, WILDFLOWERS, AND LEGUMES. FOR BOTH GOOD EROSION CONTROL AND WILDLIFE HABITAT VALUE. THE MIX IS DESIGNED TO BE A NO MAINTENANCE SEEDING, AND IS APPROPRIATE FOR CUT AND FILL SLOPES, DETENTION BASIN SIDE SLOPES, AND DISTURBED AREAS ADJACENT TO COMMERCIAL AND RESIDENTIAL PROJECTS.

THE RECOMMENDED SEEDING DATES ARE: APRIL 1–JUNE 15 AND AUGUST 1–OCTOBER 1.
SEE FIGURE PS–2 IN THE 2002 GUIDELINES FOR ADDITIONAL PERMANENT SEED MIXES.

SPILL PREVENTION AND CONTROL PLAN:

1. VEHICLE FUELING: REFUELING OF VEHICLES AND EQUIPMENT SHALL BE CONDUCTED IN A DESIGNATED LAYDOWN AREA, AT LEAST 100 FEET FROM WETLANDS OR DRAINAGE STRUCTURES. THE LOCATION WITHIN THE LAYDOWN AREA SHALL BE COMPRISED OF AN IMPERVIOUS SURFACE WITHOUT ACCESS TO ANY SUBSURFACE DRAINAGE STRUCTURES. A SPILL CLEANUP KIT SHALL BE MAINTAINED AT THE FUELING LOCATION.
2. HAZARDOUS MATERIAL STORAGE: HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO FUEL, OIL AND PETROLEUM PRODUCTS AND SOLVENTS SHALL BE STORED IN AN APPROVED COVERED STORAGE UNIT AND PROVIDED WITH SECURED SECONDARY CONTAINMENT WITH AN IMPERVIOUS FLOOR IN ACCORDANCE WITH FEDERAL AND MUNICIPAL REGULATIONS.
3. SAFETY DATA SHEETS, A MATERIAL INVENTORY, AND EMERGENCY CONTACT INFORMATION SHALL BE MAINTAINED AT THE PROJECT OFFICE.
4. SPILL KITS: SPILL KITS SHALL BE STORED WITHIN THE MATERIAL STORAGE AREA, CONCRETE WASHOUT AREAS, AND DESIGNATED FUELING AREA.
5. SPILLS: ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. SPENT ABSORBENT MATERIALS AND RAGS SHALL BE PLACED IN A SEALED DRUM AND SHALL BE HAULED OFF–SITE IMMEDIATELY AFTER THE SPILL IS CLEANED UP FOR DISPOSAL AT THE APPROPRIATE LANDFILL. SPILLS OR RELEASES OF HAZARDOUS CHEMICALS OR PETROLEUM PRODUCTS SHALL BE PROMPTLY REPORTED TO CTDEEP AT 1–800–424–3338 AND THE NATIONAL RESPONSE CENTER 1–800–424–8802.
   IN ACCORDANCE WITH CONNECTICUT GENERAL STATUES THE CONTRACTOR SHALL WITHIN 24 HOURS OF VERBAL NOTIFICATION COMPLETE A WRITTEN "REPORT OF PETROLEUM OR CHEMICAL PRODUCT DISCHARGE, SPILLAGE OR RELAEASE" AND MAIL IT TO: CTDEEP, BUREAU OF WASTE MANAGEMENT, 79 ELM STREET, HARTFORD, CT, 06106–5127.

INSTALLATION SCHEDULE: THE SPILL PREVENTION AND CONTROL PROCEDURES WILL BE IMPLEMENTED ONCE CONSTRUCTION BEGINS ON–SITE.

CONSTRUCTION SEQUENCE FOR WETLAND RESTORATION:

1. REMOVE TIMBER MATS FROM WETLAND AREAS AND SCARIFY UNDERLYING ORGANIC SOILS.
2. SEED DISTURBED AREAS WITH AN APPROVED WETLAND SEED MIX (NEW ENGLAND WETMIX BY NEW ENGLAND WETLAND PLANTS, INC. OR EQUAL) IN ACCORDANCE WITH SUPPLIER'S RECOMMENDED APPLICATION RATE (1 POUND PER 2,500 SQUARE FEET MINIMUM). AFTER SEEDING, MULCH RESTORED AREAS WITH WEED FREE STRAW AT A RATE OF 3 BALES PER 1,000 SQUARE FEET MINIMUM.
3. WATER SEEDED AREA UNTIL GERMINATION HAS OCCURRED. WATER AS NEEDED DURING SUMMER MONTHS AND DRIER SPRING SEASONS.
4. INSPECT RESTORED AREA AFTER FIRST GROWING SEASON AND RESEED AND REMULCH IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS IF LESS THAN 50% COVERAGE HAS BEEN ACHIEVED.

NOT FOR CONSTRUCTION
1/15/2021

PLAN NOTES

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.
2. SEE SHEET 2 FOR LEGEND & ABBREVIATIONS.

P:\CIVIL 3D PROJECTS\2020\20-2853 EDGEWATER APARTMENTS\DWG\DESIGN\4 NOTES AND DETAILS.DWG

BOUNDARIES
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Boundaries LLC
179 Pachaug River Drive, Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

Salt Pond Apartments at Edgewater Hill
"Erosion and Sedimentation Control Notes"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE:	As Noted
DATE:	December 2020
JOB I.D. NO.	20-2853
Revisions	
Rev. A - IWWC Comments & Stormwater Quality - 1/18/21	
SHEET NO.	18
	25

SPILL PREVENTION AND CONTROL
BEST MANAGEMENT PRACTICES (BMP'S) DESCRIPTION:

1. MATERIAL HANDLING AND WASTE MANAGEMENT:

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND DISPOSED OF INTO METAL WASTE DUMPSTERS IN DESIGNATED AREAS. DUMPSTERS WILL HAVE A SECURE TIGHT LID, BE PLACED AWAY FROM STORM WATER DRAINS AND STRUCTURES, AND WILL MEET ALL FEDERAL, STATE, AND LOCAL REGULATIONS. ONLY TRASH AND CONSTRUCTION DEBRIS SHALL BE PLACED IN THE DUMPSTERS. CONSTRUCTION MATERIALS SHALL NOT BE BURIED ON SITE.

MAINTENANCE AND INSPECTION: THE DUMPSTERS SHALL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER STORM EVENTS. THE DUMPSTER SHALL BE EMPTIED WEEKLY OR MORE FREQUENTLY IF NEEDED, AND TAKEN TO THE APPROPRIATE LANDFILL.

HAZARDOUS WASTE MATERIALS:

BMP DESCRIPTION: ALL HAZARDOUS WASTE MATERIALS INCLUDING OIL FILTERS, PETROLEUM PRODUCTS, PAINT, AND EQUIPMENT MAINTENANCE FLUIDS SHALL BE STORED IN STRUCTURALLY SOUND AND SEALED SHIPPING CONTAINERS IN A DESIGNATED AREA. HAZARDOUS WASTE MATERIALS SHALL BE STORED IN APPROPRIATE AND CLEARLY MARKED CONTAINERS AND SEGREGATED FROM OTHER NON-WASTE MATERIALS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL WASTE MATERIALS IN A DESIGNATED AREA AND SHALL CONSIST OF COMMERCIALLY AVAILABLE SPILL PALLETS OR EQUAL. ADDITIONALLY, ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. HAZARDOUS WASTE MATERIALS SHALL NOT BE DISPOSED OF INTO THE ON-SITE DUMPSTERS.

MAINTENANCE AND INSPECTION: THE HAZARDOUS WASTE MATERIALS AREA SHALL BE INSPECTED WEEKLY AND AFTER STORM EVENTS. THE STORAGE AREA SHALL BE KEPT CLEAN, WELL ORGANIZED AND EQUIPPED WITH AMPLE CLEANUP SUPPLIES AS APPROPRIATE FOR THE MATERIALS BEING STORED. SAFETY DATA SHEETS, MATERIAL INVENTORY, AND EMERGENCY CONTACT NUMBERS SHALL BE MAINTAINED IN THE PROJECT OFFICE.

SANITARY WASTE:

BMP DESCRIPTION: PORTABLE TOILETS, LOCATED IN THE STAGING AREA, SHALL BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THE TOILETS SHALL BE LOCATED AWAY FROM CONCENTRATED DRAINAGE FLOW PATHS AND SHALL HAVE COLLECTION PANS UNDERNEATH AS SECONDARY CONTAINMENT.

MAINTENANCE AND INSPECTION: SANITARY WASTE SHALL BE COLLECTED A MINIMUM OF ONCE A WEEK AND SHALL BE INSPECTED WEEKLY FOR EVIDENCE OF LEAKING HOLDING TANKS.

RECYCLING:

BMP DESCRIPTION: WOOD PALLETS, CARDBOARD BOXES, AND OTHER RECYCLABLE CONSTRUCTION SCRAPS SHALL BE DISPOSED OF IN A DESIGNATED DUMPSTER FOR RECYCLING. THE DUMPSTER SHALL HAVE A SECURE WATERTIGHT LID, BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS AND MEET ALL LOCAL AND STATE SOLID-WASTE MANAGEMENT REGULATIONS. ONLY SOLID RECYCLABLE CONSTRUCTION SCRAPS FROM THE SITE SHALL BE DEPOSITED IN THE DESIGNATED DUMPSTER.

MAINTENANCE AND INSPECTION: THE RECYCLING DUMPSTER SHALL BE INSPECTED WEEKLY. THE RECYCLING DUMPSTER SHALL BE EMPTIED WHEN FULL AND TAKEN TO AN APPROVED RECYCLING CENTER BY THE CONTRACTOR. IF RECYCLABLE CONSTRUCTION WASTES ARE EXCEEDING THE DUMPSTER'S CAPACITY, THE DUMPSTERS SHALL BE EMPTIED MORE FREQUENTLY.

2. DESIGNATE WASHOUT AREAS:

CONCRETE WASHOUT

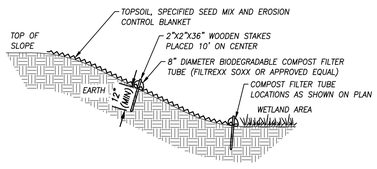
BMP DESCRIPTION: A DESIGNATED TEMPORARY, ABOVE-GRADE CONCRETE WASHOUT AREA SHALL BE CONSTRUCTED FOR CONCRETE WASHOUT. THE WASHOUT AREA SHALL BE LINED WITH PLASTIC SHEETING AT LEAST 10 MILS THICK AND FREE OF HOLES OR TEARS. CONCRETE POURS WILL NOT BE CONDUCTED DURING OR BEFORE AN ANTICIPATED STORM EVENT. CONCRETE MIXER TRUCKS AND CHUTES SHALL BE WASHED IN THE DESIGNATED WASHOUT AREA OR CONCRETE WASTES SHALL BE PROPERLY DISPOSED OF OFF-SITE. WHEN THE TEMPORARY WASHOUT AREA IS NO LONGER NEEDED FOR THE CONSTRUCTION PROJECT, THE HARDENED CONCRETE AND MATERIALS USED TO CONSTRUCT THE AREA WILL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS, AND THE AREA SHALL BE STABILIZED.

INSTALLATION SCHEDULE: THE WASHOUT AREA SHALL BE CONSTRUCTED BEFORE CONCRETE POURS OCCUR AT THE SITE.

3. VEHICLE FUELING AND MAINTENANCE PRACTICES:

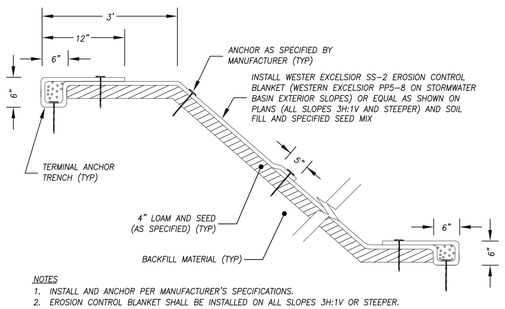
BMP DESCRIPTION: SEVERAL TYPES OF VEHICLES AND EQUIPMENT WILL BE USED ON-SITE THROUGHOUT THE PROJECT, INCLUDING GRADERS, EXCAVATORS, LOADERS, ROLLERS, TRUCKS AND TRAILERS, AND BACKHOES. ALL MINOR EQUIPMENT MAINTENANCE AND FUELING SHALL BE PERFORMED IN THE STAGING AREA. THIS PROPOSED ACTIVITY SHALL BE SITUATED SO THAT DRAINAGE FACILITIES OR WATER COURSES LOCATED IN THE AREA ARE NOT AT RISK FROM POTENTIAL INFILTRATION. ABSORBENT, SPILL-CLEANUP MATERIALS AND SPILL KITS SHALL BE AVAILABLE AT THE COMBINED STAGING AND MATERIALS STORAGE AREA. FUEL SHALL BE DELIVERED TO THE SITE ON AN AS NEEDED BASIS BY A FUEL DELIVERY SERVICE. FUELING AND MINOR MAINTENANCE OF EQUIPMENT WILL ONLY OCCUR IN DESIGNATED FUELING AREAS ON AN IMPERVIOUS SURFACE. VEHICLE AND EQUIPMENT WASHING IS PROHIBITED ON SITE.

INSTALLATION SCHEDULE: BMPS IMPLEMENTED FOR FUELING ACTIVITIES SHALL BEGIN AT THE START OF THE PROJECT.



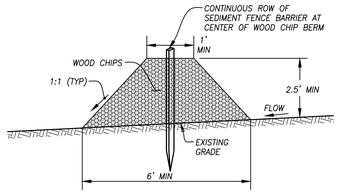
NOTE:
FILTER TUBE SPACING ON 3H:1V SLOPES SHALL BE 30 FEET MAXIMUM. FILTER TUBE SPACING ON 2H:1V SLOPES SHALL BE 20 FEET MAXIMUM.

COMPOST FILTER TUBE INSTALLATION DETAIL
NOT TO SCALE

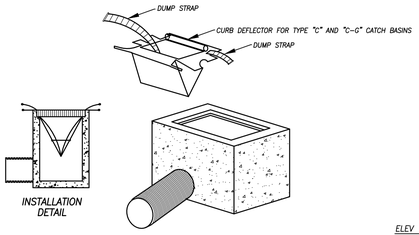


NOTES
1. INSTALL AND ANCHOR PER MANUFACTURER'S SPECIFICATIONS.
2. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER.

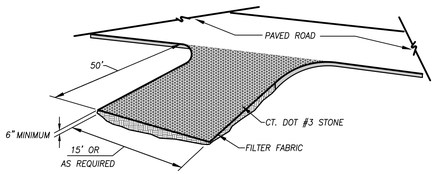
EROSION CONTROL BLANKET DETAIL
NOT TO SCALE



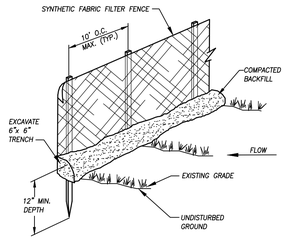
WOOD CHIP BERM WITH SEDIMENT FENCE DETAIL
NOT TO SCALE



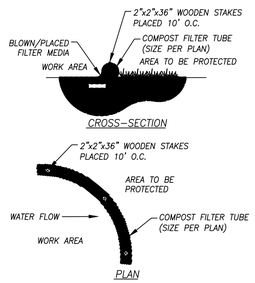
INLET SEDIMENT CONTROL DEVICE
NOT TO SCALE



ANTI-TRACKING PAD
NOT TO SCALE

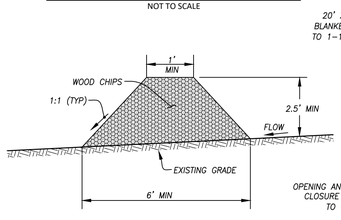


SEDIMENT FENCE DETAIL
NOT TO SCALE

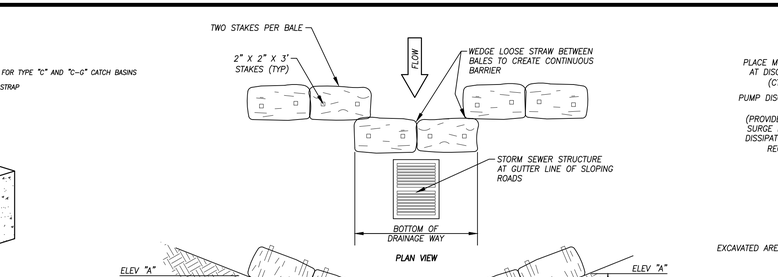


NOTES:
1. COMPOST FILTER TUBES SHALL BE FILTREXX SOXX OR EQUAL.
2. ALL MATERIAL TO MEET FILTREXX SPECIFICATIONS.
3. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
4. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

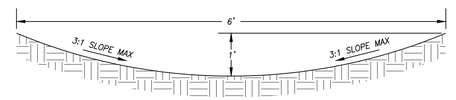
COMPOST FILTER TUBE DETAIL
NOT TO SCALE



WOOD CHIP BERM DETAIL
NOT TO SCALE

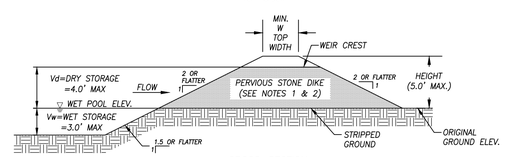


HAY BALE CHECK DAM
NOT TO SCALE



NOTE: DIVERSION CHANNEL TO BE LINED WITH EROSION CONTROL BLANKET INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

DIVERSION SWALE DETAIL
NOT TO SCALE



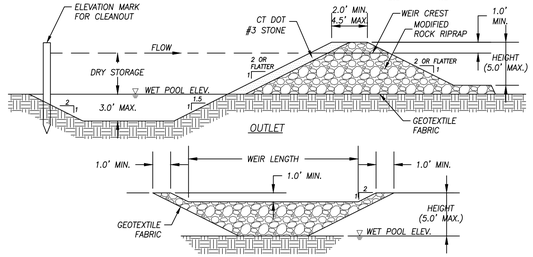
CROSS-SECTION

TOP WIDTH VS. HEIGHT

H = HEIGHT OF EMBANKMENT
W = TOP WIDTH OF EMBANKMENT

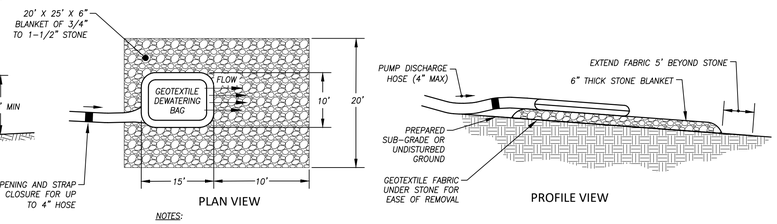
H (ft)	W (ft)
1.5	2.0
2.0	2.0
2.5	2.5
3.0	2.5
3.5	3.0
4.0	3.0
4.5	4.0
5.0	4.5

NOTES:
1. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIPRAP WITH #3 STONE ON FACE.
2. NON-OVERFLOW PORTIONS AND ABUTMENTS OF TEMPORARY SEDIMENT TRAP MAY BE CONSTRUCTED OF COMPACTED EARTH FILL.



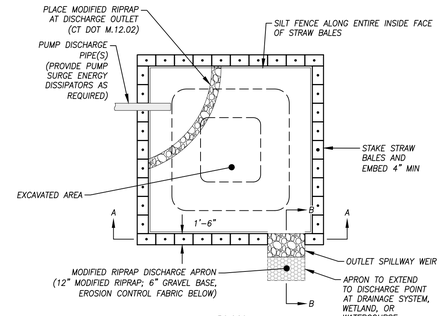
NOTE:
TYPICALLY, SEDIMENT TRAPS ARE REQUIRED FOR ANY DISCHARGE POINT THAT SERVES AN AREA BETWEEN 2 AND 5 DISTURBED ACRES OF LAND. ALL TEMPORARY SEDIMENT TRAPS SHALL BE DESIGNED IN CONFORMANCE WITH THE "2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL". GENERALLY, TEMPORARY SEDIMENT TRAPS SHALL BE SIZED TO PROVIDE A MINIMUM OF 134 CUBIC YARDS OF WATER STORAGE PER ACRE DRAINED. ALL TEMPORARY SEDIMENT TRAPS SHALL BE MAINTAINED TO ASSURE EFFICIENT OPERATION UNTIL THE CONTRIBUTING AREA IS COMPLETELY STABILIZED. TEMPORARY SEDIMENT TRAPS MAY BE RELOCATED DURING CONSTRUCTION TO ACCOMMODATE PHASING. CONTRACTOR SHALL REVIEW LOCATIONS OF TEMPORARY SEDIMENT TRAPS WITH DESIGN ENGINEER PRIOR TO INSTALLATION. NO TEMPORARY SEDIMENT TRAP SHALL HAVE MORE THAN 5 ACRES OF DISTURBED LAND CONTRIBUTING TO IT.

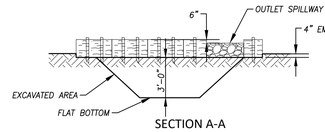
DETAIL FOR TEMPORARY SEDIMENT TRAPS 3 AND 4
NOT TO SCALE

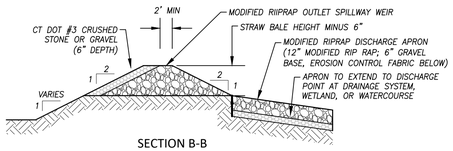


NOTES:
1. GEOTEXTILE BAG MATERIAL SHALL BE A NON-WOVEN MATERIAL.
2. DO NOT OVER PRESSURIZE BAG OR USE BEYOND CAPACITY.
3. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, AND OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
4. DOWNGRADIENT FROM RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, E.G., FOREST FLOOR OR COARSE GRAVEL/STONE.

GEOTEXTILE DEWATERING BAG
NOT TO SCALE

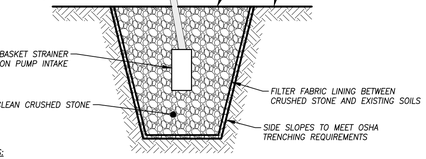






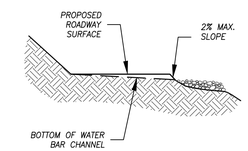
NOTES:
1. THE CONTRACTOR SHALL SIZE BASIN BASED ON THE SELECTED PUMP DISCHARGE FLOWS, AND ENLARGE AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER, TO ALLOW FOR PROPER FUNCTION OF THE BASIN.
2. ALTERNATE PUMPING SETTLING BASINS OR FRACTIONATION TANKS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

TYPICAL PUMP SETTLING BASIN DETAIL
NOT TO SCALE

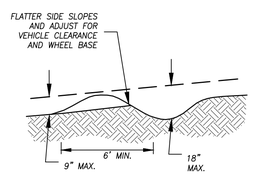


NOTES:
1. THE CONTRACTOR SHALL SIZE SUMP BASED ON THE SELECTED PUMP DISCHARGE FLOWS, AND ENLARGE AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER, TO ALLOW FOR PROPER FUNCTION OF THE SUMP.
2. MINIMUM SUMP DIMENSIONS ARE 2' DEEP (MEASURED FROM THE BOTTOM OF THE TRENCH EXCAVATION) AND 2' DIAMETER.
3. CRUSHED STONE SHALL BE NO SMALLER THAN CT DOT #67 SIZE NOR LARGER THAN CT DOT #3 SIZE.
4. SUMPS SHALL BE EXCAVATED AND RELOCATED AS REQUIRED TO MAINTAIN A DRY EXCAVATION.
5. ALTERNATE PUMP INTAKE PROTECTION AND DEWATERING METHODS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

TYPICAL PUMP INTAKE DETAIL
NOT TO SCALE



PERPENDICULAR SECTION



ROADWAY SECTION

WATER BAR DETAIL
NOT TO SCALE

PLAN NOTES

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.
2. SEE SHEET 2 FOR LEGEND & ABBREVIATIONS.

NOT FOR CONSTRUCTION
1/15/2021

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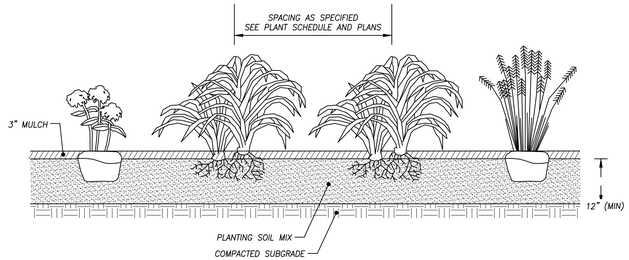
Salt Pond Apartments at Edgewater Hill
"Erosion and Sedimentation Control Notes and Details"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street - East Hampton, Connecticut

SCALE: As Noted
DATE: December 2020
JOB I.D. NO. 20-2853

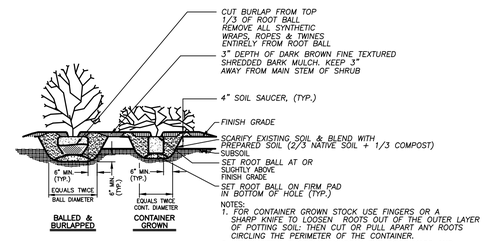
Revisions
Rev. A - IWWC Comments &
Stormwater Quality - 1/18/21

SHEET NO.
19
25



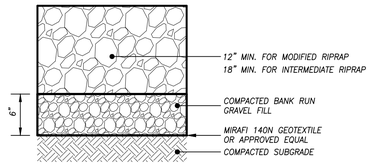
NOTES:
1. ROTOTILL FERTILIZER AND LIME INTO SOIL PRIOR TO PLANTING IN ACCORDANCE WITH SOIL ANALYSIS RECOMMENDATIONS.
2. DO NOT OVER-COMPACT PLANTING BED. WATER THOROUGHLY AFTER PLANTING.
3. ADJUST PLANTING DEPTH AS RECOMMENDED BY SUPPLIER.
4. MULCH SHALL NOT COME INTO CONTACT WITH CROWNS OF PERENNIALS.

PERENNIAL/GROUNDCOVER PLANTING DETAIL
NOT TO SCALE



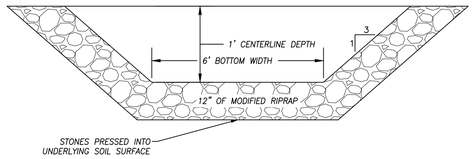
NOTES:
1. FOR CONTAINER GROWN STOCK USE FINGERS OR A SHARP KNIFE TO LOOSEN ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. AT PLANTING THOROUGHLY SOAK THE ROOT MASS AND ADJACENT SOIL. REPEAT SEVERAL TIMES DURING THE FIRST MONTH AND THROUGHOUT THE FOLLOWING TWO SUMMERS.

SHRUB PLANTING DETAIL
NOT TO SCALE

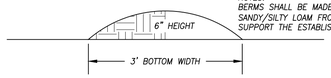


NOTES:
1. TO BE USED AT PIPE DISCHARGES AND RIP RAP SWALE. SEE PLAN FOR APRON DIMENSIONS.

TYPICAL RIPRAP SECTION
NOT TO SCALE

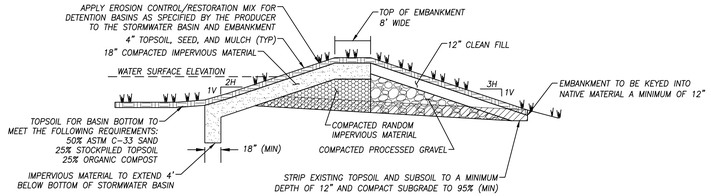


MODIFIED RIP RAP SWALE DETAIL
NOT TO SCALE



NOTES:
BERMS SHALL BE MADE FROM TOPSOIL OR SANDY/SILTY LOAM FROM THE SITE IN ORDER TO SUPPORT THE ESTABLISHMENT OF VEGETATION.

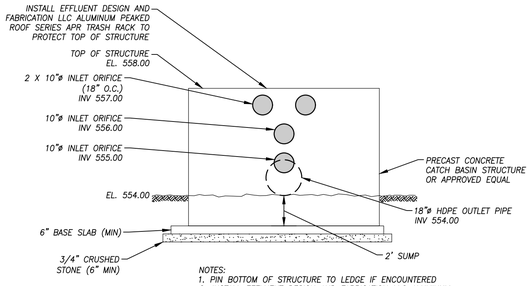
DETAIL OF EARTH BERMS IN CONSTRUCTED WETLAND SYSTEM
NOT TO SCALE



NOTES:
1. REMOVE VEGETATION, DEBRIS, ORGANIC MATERIALS, AND TOPSOIL TO A MINIMUM OF 12" BELOW EXISTING GRADE PRIOR TO EMBANKMENT CONSTRUCTION. COMPACTED EXPOSED SUBSOIL AND SCARIFY SURFACE.
2. FILL MATERIALS SHALL BE PLACED IN LIFTS NOT EXCEEDING 12". PRIOR TO COMPACTION EACH LIFT SHALL BE MOISTENED AS NECESSARY TO ACHIEVE THE OPTIMUM MOISTURE CONTENT. THE TOP 12" OF SUBGRADE AND EACH LIFT SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH ASTM D1557. FILL MATERIAL SHALL NOT BE PLACED ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAINING FROST, ICE, OR ORGANICS.
3. CLEAN FILL MATERIAL SHALL BE FREE OF ORGANICS AND NO STONES GREATER THAN 3".
4. PROCESSED GRAVEL SHALL MEET THE REQUIREMENTS OF CT DOT FORM 817 M.02.06 GRADATION A.
5. IMPERVIOUS MATERIAL SHALL BE DENSE GRADED AND HAVE A PERMEABILITY RATE OF 1 X 10-4 CM/SEC OR LESS, HAVE A PERCENTAGE OF MATERIALS PASSING THE NO. 200 SIEVE OF GREATER THAN 10%, AND AN EFFECTIVE GRAIN SIZE DIAMETER (D10) OF 0.05 MM OR LESS. IT SHALL BE FREE OF ORGANICS AND SHALL HAVE NO STONES GREATER 2".
6. RANDOM IMPERVIOUS MATERIAL SHALL BE DENSE GRADED AND FREE OF ORGANICS WITH NO STONES LARGER THAN 2". MATERIAL SHALL MEET ONE OF THE FOLLOWING GRADATIONS:

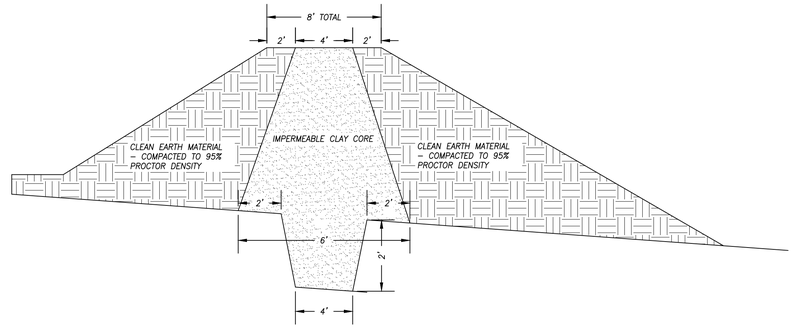
Sieve Size	Percent Passing	
	1-1/4" Processed Aggregate	2" Processed Aggregate
2-1/2"	100	100
2"	100	96
1-1/2"	99	91
1"	61	67
3/4"	51	58
1/4"	40	33
#40	16	15
#200	7	5

STORMWATER BASIN 2 EMBANKMENT DETAIL
NOT TO SCALE

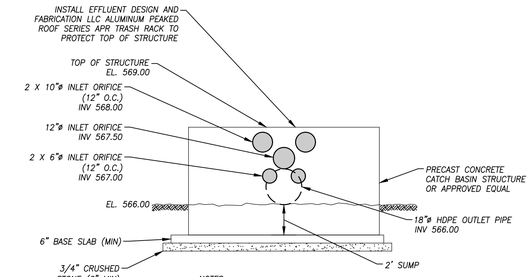


NOTES:
1. PIN BOTTOM OF STRUCTURE TO LEDGE IF ENCOUNTERED
2. INSTALL EFFLUENT DESIGN AND FABRICATION LLC ALUMINUM WEDGE SERIES AW TRASH RACK TO PROTECT ALL ORIFICES.

OUTLET CONTROL STRUCTURE 1
NOT TO SCALE



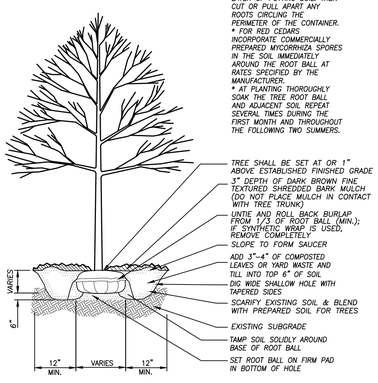
SECTION THROUGH STORMWATER BASIN 1 EMBANKMENT SHOWING IMPERMEABLE CORE
NOT TO SCALE



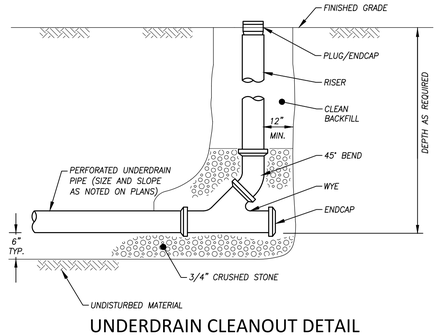
NOTES:
1. PIN BOTTOM OF STRUCTURE TO LEDGE IF ENCOUNTERED
2. INSTALL EFFLUENT DESIGN AND FABRICATION LLC ALUMINUM WEDGE SERIES AW TRASH RACK TO PROTECT ALL ORIFICES.

OUTLET CONTROL STRUCTURE 2
NOT TO SCALE

NOTES:
* DO NOT STAKE OR WRAP TRUNK.
* FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
* FOR RED CEDARS INCORPORATE COMMERCIALLY PREPARED MYCORRHIZA SPORES IN THE SOIL IMMEDIATELY AROUND THE ROOT BALL AT RATES SPECIFIED BY THE MANUFACTURER.
* AT PLANTING THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT SOIL REPEAT SEVERAL TIMES DURING THE FIRST MONTH AND THROUGHOUT THE FOLLOWING TWO SUMMERS.



TREE PLANTING DETAIL
NOT TO SCALE



UNDERDRAIN CLEANOUT DETAIL
NOT TO SCALE

NOT FOR CONSTRUCTION
1/15/2021

PLAN NOTES
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Salt Pond Apartments at Edgewater Hill
"Construction Details"
Prepared for
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000 East High Street - East Hampton, Connecticut

SCALE: As Noted
DATE: December 2020
JOB I.D. NO. 20-2853

Revisions
Rev. A - IWWC Comments & Stormwater Quality - 1/18/21

SHEET NO.
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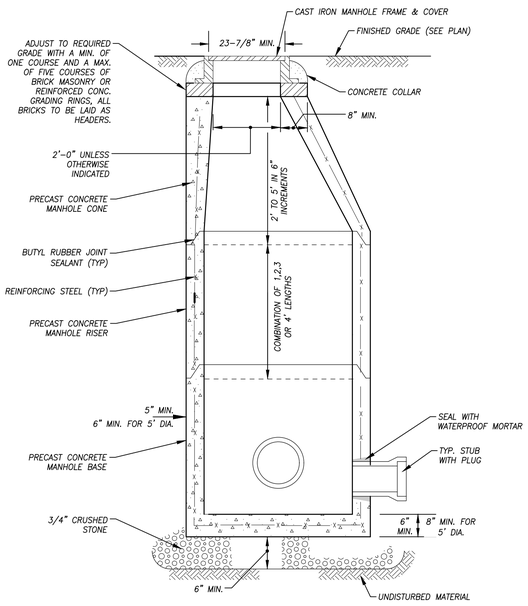
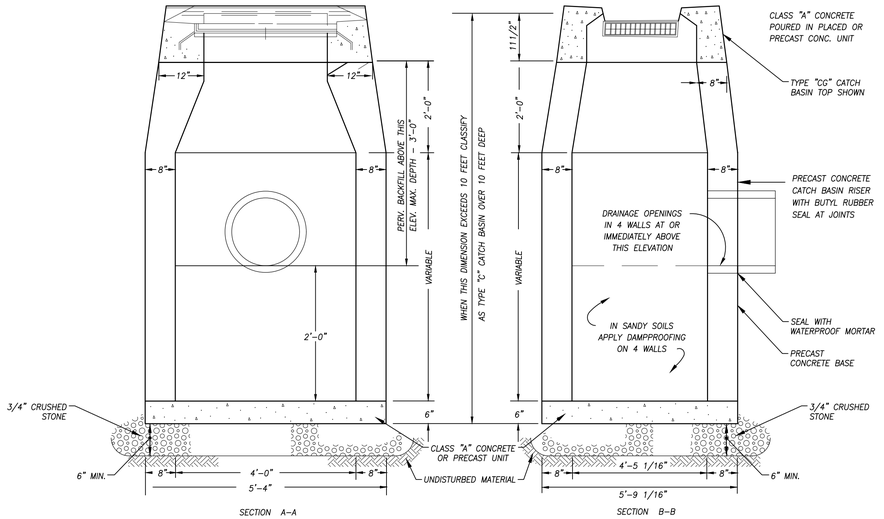


PRECAST CONCRETE STORM DRAIN MANHOLE DETAIL

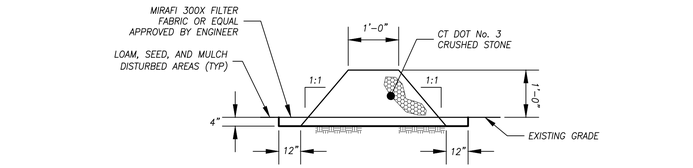
NOT TO SCALE



NOTES:
1. CATCH BASIN TO BE CONSTRUCTED IN ACCORDANCE WITH CT DOT STANDARD DETAIL HW-507_01 AND TOPS TO BE PROVIDED IN ACCORDANCE WITH HW-507_07.
2. WHERE PRECAST CONC. UNIT IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE PIPE OUTLETTING FROM THE CATCH BASIN.

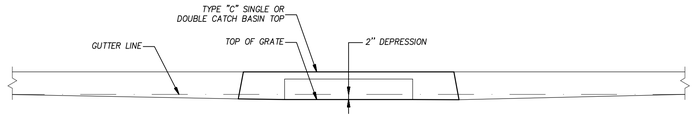
PRECAST CATCH BASIN DETAIL

NOT TO SCALE



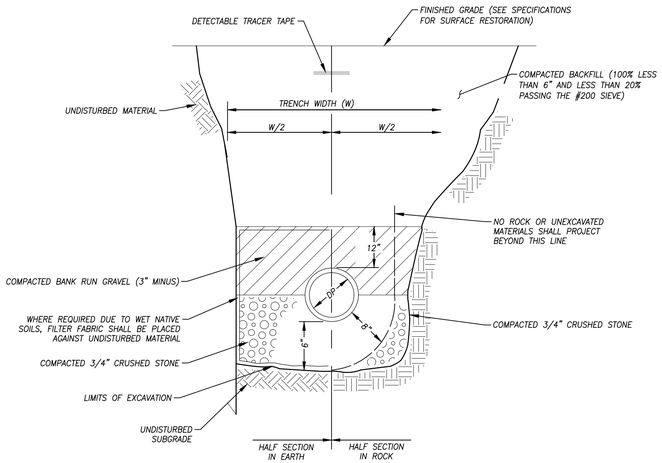
STONE CHECK DAM

NOT TO SCALE



TYPE "C" CATCH BASIN TOP IN A LINE OF 6" BITUMINOUS CURBING DETAIL

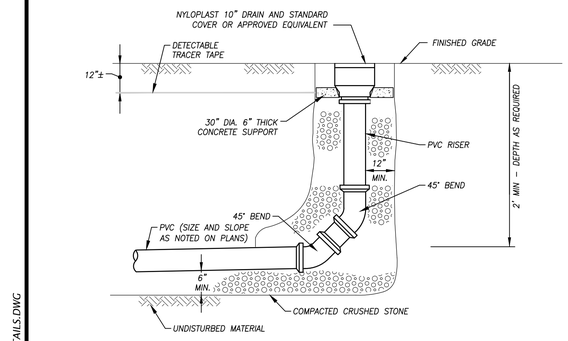
NOT TO SCALE



NOTES:
1. THE TOP 12" OF TRENCH BACKFILL IN TRAVELED WAYS SHALL BE COMPACTED PROCESSED GRAVEL.

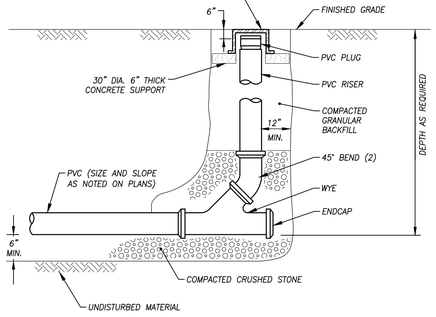
TRENCH DETAIL (STORM DRAINAGE)

NOT TO SCALE



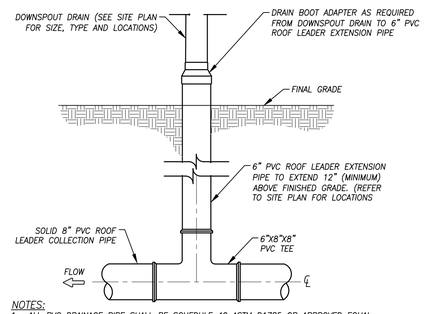
YARD DRAIN DETAIL

NOT TO SCALE



CLEANOUT DETAIL

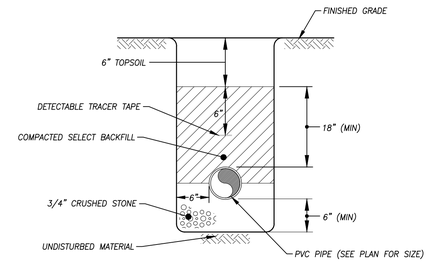
NOT TO SCALE



NOTES:
1. ALL PVC DRAINAGE PIPE SHALL BE SCHEDULE 40 ASTM D1785 OR APPROVED EQUAL.
2. DOWNSPOUT DETAILS OR SIZES PROVIDED ON SITE PLAN DRAWINGS SHALL SUPERSEDE INFORMATION IN THIS DETAIL.

DOWNSPOUT CONENCTION & PERIMETER ROOF DRAIN DETAIL

NOT TO SCALE



YARD/ROOF DRAIN TRENCH DETAIL

NOT TO SCALE

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1/15/2021

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SHEET NO.
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