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STORMWATER MANAGEMENT REPORT

PREPARED FOR:

EDGEWATER HILL ENTERPRISES, LLC

PROPOSED MIXED USE BUILDING (MS-2)
000 EAST HIGH STREET (CT ROUTE 66)
EAST HAMPTON, CONNECTICUT

MAY 2020

PREPARED BY:

BOUNDARIES LLC

PROJECT I.D. NO. 20-2795-2

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Introduction

On behalf of Edgewater Hill Enterprises, LLC., Boundaries, LLC. has prepared the following stormwater management report for the proposed MS-2 mixed use commercial building located in the "Market Square" portion of 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 treatment of stormwater runoff and attenuation of the peak stormwater flows leaving the site to the State of Connecticut Department of Transportation's (CT DOT) stormwater management system located in East High Street (CT Route 66), ultimately discharging to Lake Pocotopaug.

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. The pond drains into the stormwater management system in Edgewater Circle. 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. Additional wetland areas are located on the property, but are outside of the Market Square area, and are upgradient of the current phase of the proposed development.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey the soils in the project area consist of Paxton-Urban land complex, 3 to 8% slopes; Nipmuck-Brookfield complex, 3 to 15% slopes, very rocky; and Ridgebury, Leicester, and Whitman soils, 0 to 8% slopes, extremely stony. Nipmuck-Brookfield complex is classified as Hydrologic Soil Group B. Paxton soils are classified as Hydrologic Soil Group C. Ridgebury, Leicester, and Whitman soils are wetland soils (near the pond) and are classified as Hydrologic Soil Group D. Upgradient contributing areas consist of Udorthents; Woodbridge fine sandy loam, 8 to 15% slopes; Canton and Charlton fine sandy loams, 3 to 15% slopes; and Paxton and Montauk fine sandy loams, 8 to 35% slopes, very/extremely stony. Woodbridge and Paxton and Montauk soils are classified as Hydrologic Soil Group C. Canton and Charlton soils are classified as Hydrologic Soil Group B. The NRCS Web Soil Survey Soils Report is provided in Appendix A.

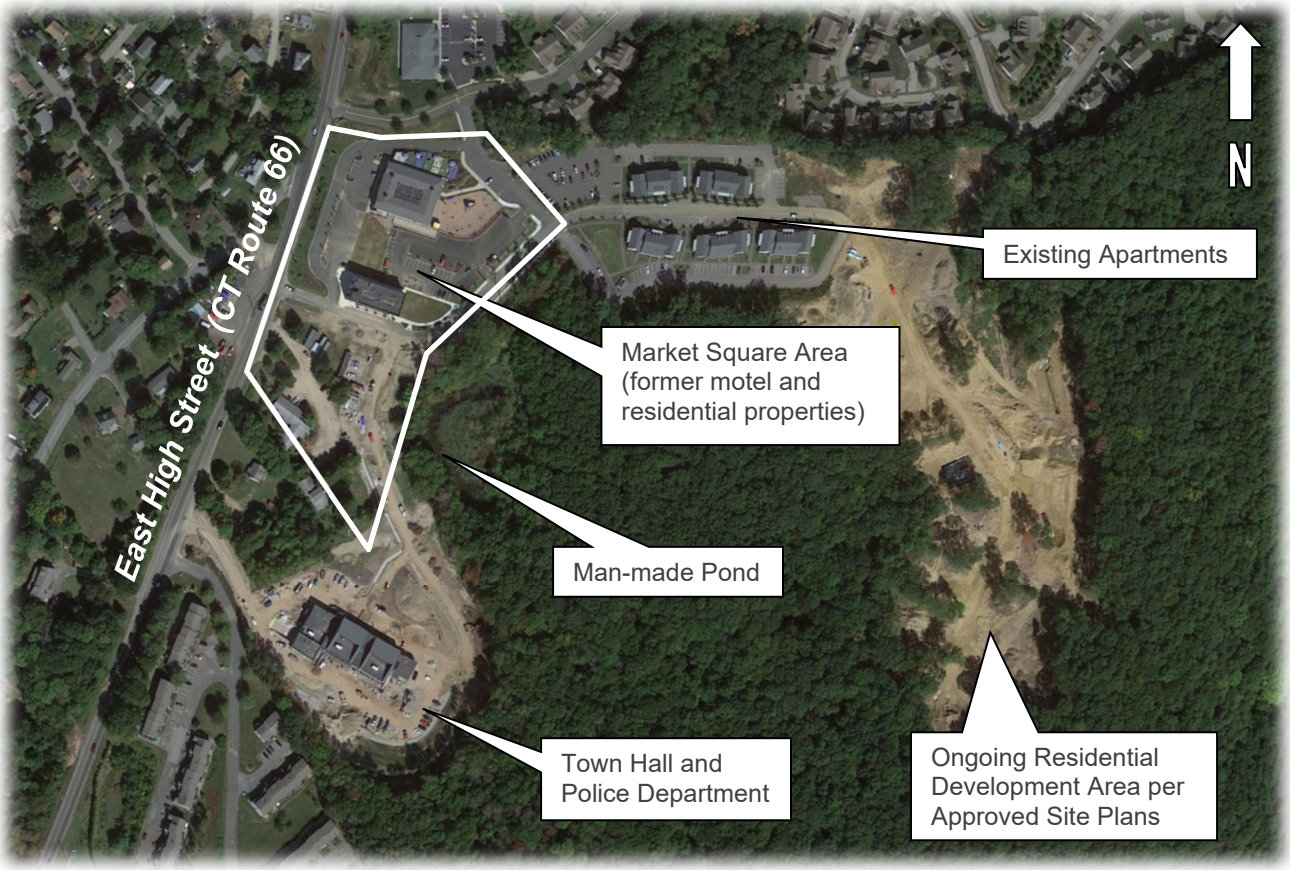
Pre- and post-development conditions hydrographs were estimated using the hydrologic modeling program HydroCAD. The methodology selected was NRCS TR-20. Times of concentration were estimated using multiple segment flow paths as described in the NRCS TR-55 manual. The Type III 24-hour storm was analyzed 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 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 stormwater calculations are included in Appendix C.

The proposed improvements include the installation of catch basins and stormwater collection appurtenant to the construction of the MS-2 building, excavation of a temporary sediment trap to be used during subsequent phases of construction (to be converted to permanent water quality basin upon the completion of the Market Square phase of development), and discharge of the treated runoff to CT DOT's stormwater collection system through the existing stormwater management system installed in Edgewater Circle. The proposed site development plans are included in Appendix D. The proposed stormwater management system has been designed so there will be no drainage impact to State facilities.

The stormwater management system will provide attenuation of post-development peak discharge rates to match pre-development rates and will provide treatment of stormwater discharges. 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 and the Connecticut Department of Transportation Drainage Manual for both peak stormwater runoff flow rate attenuation and stormwater quality mitigation for the 2, 10, 25 and the 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 and the residential apartment buildings have been constructed. The new Town Hall and Police Department 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

Photographs of the existing State drainage facilities are presented below. The Edgewater Hill development discharges to a wetland upgradient of CT DOT's 30-inch culvert. No modifications or improvements are proposed to the existing discharge, wetland area, or 30-inch culvert inlet. The wetland area and drainage discharge and inlets are stable and show no signs of sedimentation, scour, or erosion.

Edgewater Hill Drainage Discharge to Wetlands Adjacent to CT Route 66

Wetlands System Adjacent to CT Route 66

Headwall and 30-inch Culvert Inlet Towards CT Route 66

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.

Runoff Curve Numbers (CN) used for the pre-development conditions analysis are as follows: 55 (woods with good ground cover) for wooded areas in Hydrologic Soil Group B, 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, 61 (>75% grass cover) for the grassed areas in Hydrologic Soil Group B, 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, 96 (gravel surface) for the exposed dirt/gravel areas, and 98 (impervious) for existing impervious areas such as paved areas, buildings and the pond surface.

The pre-development conditions watersheds are described further below:

Drainage Area #1 (DA #1)

This 6.8± acre watershed encompasses the western portion of the project area, and is comprised of the former motel, residential properties, and areas that drain directly to the 30-inch culvert under Route 66. The weighted CN of the drainage area is 70. Runoff from this area flows overland to the shoulder of Route 66 prior to leaving the site through the 30-inch culvert.

Drainage Area #2 (DA #2)

This 45.5± acre watershed encompasses the portion of the site that contributes runoff to the existing pond and is comprised of a portion of the existing residential properties and the wooded undeveloped areas. The weighted CN of the watershed is 66. Runoff from this area flows overland to the pond before it flows through an 18-inch drainage pipe to the 30-inch culvert that crosses Route 66.

Pre-development conditions peak runoff rates were analyzed at the 30-inch culvert, where the runoff leaves the site. Reported peak flow rates are summarized below in Table 1. Detailed modeling results are included in Appendix B.

Table 1
Peak Runoff Rates – Pre-Development Conditions

Design Storm Event	Total Off-Site Peak Runoff Rate – Pond 2P (CFS)	Peak Water Surface Elevation at 30-inch Culvert – Pond 2P (FT)	Time to Peak at 30-inch Culvert – Pond 2P (hours)
2-Year	6.62	521.10	12.57
10-Year	16.88	521.93	12.41
25-Year	21.32	522.26	12.40
50-Year	24.93	522.53	12.39
100-Year	28.78	522.85	12.38

Post-Development Conditions

The proposed improvements installation of catch basins and additional piping to collect runoff from the proposed MS-2 building and parking lot. The drainage system will discharge to a proposed temporary sediment trap that will be converted to a permanent water quality basin during subsequent phases of the Market Square buildout. The proposed improvements to the stormwater management system are part of the overall stormwater management strategy to provide treatment and peak rate attenuation of the stormwater runoff prior to leaving the site.

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

- Four (4) precast concrete catch basins;
- One (1) precast concrete drainage manhole;
- One (1) precast concrete outlet control structure;
- 275 feet of drainage pipe; and
- Water Quality Basin.

No modifications or improvements are proposed to the existing discharges upgradient of the CT DOT's drainage facilities or to the CT DOT's drainage facilities.

The proposed improvements to the stormwater management system 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 25-year, 24-hour storm, at a minimum; and
- The water quality volume is treated prior to discharge from the site.

The proposed conditions hydrologic model includes the full buildout of the Market Square, the existing daycare, apartment buildings, and the Town Hall and Police Department and associated infrastructure. Individual site plans need to be prepared for each of the future phases, however the future development of Market Square has been included in the stormwater modeling to demonstrate that the stormwater management system as proposed meets the design standards noted above. Post-development conditions watersheds and the built-out Market Square development 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: 55 (woods with good ground cover) for wooded areas in Hydrologic Soil Group B, 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, 61 (>75% grass cover) for the grassed areas in Hydrologic Soil Group B, 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, 86 (newly graded area) for the mulched play areas in Hydrologic Soil Group B, and 98 (impervious) for existing and proposed impervious areas such as paved roads, driveways, buildings, and the pond surface.

The proposed conditions watersheds are described further below:

Drainage Area #1A (DA #1A)

This 2.1± acre watershed encompasses a portion of the existing Edgewater Hill mixed use development that flows to the 30-inch culvert, and is comprised of the parking lot, access drive, and building associated with the existing daycare. The weighted CN of the watershed is 91. Runoff from this area flows overland to a series of catch basins and discharges to the 30-inch culvert. The discharge to the 30-inch culvert was constructed as part of Phase 1 of the Edgewater Hill Development and will not be modified as part of this project.

Drainage Area #1B (DA #1B)

This 2.2± acre watershed encompasses the remainder of the northern half of the Market Square area and is comprised of the existing play areas associated with the daycare, the proposed buildings in the northern half of Market Square, associated parking areas and access drives, and a portion of the existing road to the apartment buildings. The weighted CN of the watershed is 92. Runoff from this area is collected by a series of catch basins and discharges through a hydrodynamic separator to the existing pond for treatment and attenuation of the runoff. Ultimately the runoff discharges through the 18-inch HDPE pipe to the 30-inch culvert. The discharge to the 30-inch culvert was constructed as part of Phase 1 of the Edgewater Hill Development and will not be modified as part of this project.

Drainage Area #1C (DA #1C)

This 0.3± acre watershed encompasses a portion of the southern half of Market Square and is comprised of the access drives and associated parking constructed as part of the Town Hall and Police Department project. The weighted CN of the watershed is 94. Runoff from this area is collected by a series of catch basins and discharges through a hydrodynamic separator to the existing pond for treatment and attenuation of the runoff. Ultimately the runoff discharges through the 18-inch HDPE pipe to the 30-inch culvert. The discharge to the 30-inch culvert was constructed as part of Phase 1 of the Edgewater Hill Development and will not be modified as part of this project.

Drainage Area #1D (DA #1D)

This 2.0± acre watershed encompasses a portion of the southern half of Market Square, and is comprised of the proposed buildings, parking lots and access drives that will be constructed during future phases of the development. The currently proposed MS-2 building is located within this watershed. The weighted CN of the watershed is 93. Runoff from this area will be collected by a water quality swale and water quality basin for treatment and attenuation of the runoff prior to discharging to the 30-inch culvert. The discharge to the 30-inch culvert was constructed as part of Phase 1 of the Edgewater Hill Development and will not be modified as part of this project.

Drainage Area #2A (DA #2A)

This 3.7± acre watershed encompasses a portion of the existing residential development associated with the Edgewater Hill project, and is comprised of the existing apartment buildings, existing access drives and associated parking areas. The weighted CN of the drainage area is 83. Runoff from this area is collected by a series of catch basins and discharges to the existing man-made pond.

Drainage Area #2B (DA #2B)

This 2.2± acre watershed encompasses a portion of the access drives for the apartment buildings and currently undeveloped areas and is comprised of the upgradient apartment units and adjacent wooded areas. The weighted CN of the drainage area is 72. Runoff from this area is collected by a catch basin and discharged to an existing detention basin prior to flowing to the existing man-made pond.

Drainage Area #2C (DA #2C)

This 38.3± acre watershed encompasses the remaining areas that drain to the existing man-made pond and is comprised of the existing wooded and wetland areas. The weighted CN of the drainage area is 67. Runoff from this area flows overland into the existing man-made pond.

Drainage Area #2D (DA #2D)

This 5.7± acre watershed encompasses the Town Hall and Police Department and associated access drives and parking lot. The weighted CN of the drainage area is 83. Runoff from this area is collected by a series of catch basins and swales and discharged to various underground storage/infiltration systems, retention basin and rain garden prior to draining to the existing man-made pond. Stormwater modeling results for this watershed are imported from the detailed model prepared for the Town Hall and Police Department site plan approval.

Post-development conditions peak runoff rates were analyzed at the 30-inch culvert. The peak runoff rates are summarized below in Table 2. Comparisons of peak runoff rates, water surface elevations, and time to peak flows at the 30-inch culvert are presented below in Tables 3 through 5.

Table 2
Peak Runoff Rates – Post-Development Conditions

Storm Event	Total Off-Site Peak Runoff Rate – Pond 2P (CFS)	Peak Water Surface Elevation at 30-inch Culvert – Pond 2P (FT)	Time to Peak at 30-inch Culvert – Pond 2P (hours)
2-Year	6.57	521.10	13.54
10-Year	14.79	521.78	12.42
25-Year	20.87	522.22	12.20
50-Year	24.76	522.51	12.19
100-Year	28.51	522.82	12.18

Table 3
Peak Runoff Rates – Post-Development Conditions vs. Pre-Development Conditions

Storm Event	Post-Development Conditions Total Off-Site Peak Runoff Rate – Pond 2P (CFS)	Pre-Development Conditions Total Off-Site Peak Runoff Rate – Pond 2P (CFS)	Change in Peak Runoff Rate (CFS)
2-Year	6.57	6.62	-0.05
10-Year	14.79	16.88	-2.09
25-Year	20.87	21.32	-0.45
50-Year	24.76	24.93	-0.17
100-Year	28.51	28.78	-0.27

Table 4
Peak Water Surface Elevations – Post-Development Conditions vs. Pre-Development Conditions

Storm Event	Post-Development Conditions Peak Water Surface Elevation at 30-inch Culvert – Pond 2P (FT)	Pre-Development Conditions Peak Water Surface Elevation at 30-inch Culvert – Pond 2P (FT)	Change in Peak Water Surface Elevation (FT)
2-Year	521.10	521.10	0.00
10-Year	521.78	521.93	-0.15
25-Year	522.22	522.26	-0.04
50-Year	522.51	522.53	-0.02
100-Year	522.82	522.85	-0.03

Table 5
Time to Peak Flow – Post-Development Conditions vs. Pre-Development Conditions

Storm Event	Post-Development Conditions Time to Peak Flow at 30-inch Culvert – Pond 2P (hours)	Pre-Development Conditions Time to Peak Flow at 30-inch Culvert – Pond 2P (hours)	Change in Time of Peak Flow (hours)
2-Year	13.54	12.57	+0.96
10-Year	12.42	12.41	+0.01
25-Year	12.20	12.40	-0.20
50-Year	12.19	12.39	-0.20
100-Year	12.18	12.38	-0.20

As presented above, the proposed stormwater management system does not result in increases to off-site flow rates or water surface elevations, and therefore will have no impact to CT DOT drainage facilities and meets the recommendations of the CT DEEP Stormwater Quality Manual for peak flow rate attenuation. The decrease in time to peak flow during the 25-year, 50-year and 100-year storm events is measured in minutes and will therefore not result in significant changes to downstream flow patterns. The increase in time to peak flow during the 2-year storm event is a result of the detention provided throughout the development and is an expected result of peak flow rate attenuation for smaller storm events. The time to peak flow during the 10-year storm event is essentially unchanged from pre-development conditions. The analysis results presented above include the full build-out of the Market Square area as shown on Figure 4.

Stormwater Management System Design

The proposed methodology for managing the stormwater from the Market Square area consists of treating the stormwater runoff from the northern half of Market Square and the existing roadway (Edgewater Circle) utilizing hydrodynamic separators and utilizing the storage capacity of the man-made pond to attenuate peak flow rates. This portion of the development has been completed under the previous phase of construction.

Stormwater runoff from the southern half of Market Square will be collected, treated and detained in a proposed water quality basin prior to discharging through the existing collection system in Edgewater Circle to the 30-inch RCP culvert at Route 66. Additional analysis and treatment/peak flow rate

attenuation of the future phases of residential development will be required as development progresses as the water quality basin is sized only for the impervious area associated with the southern portion of Market Square as shown on Figure 4 of this report.

The proposed stormwater collection system consists of catch basins and curbing along the future parking areas and sidewalks. The proposed drains are sized for the 25-year storm event, at a minimum, based on the calculated Manning's capacity of each pipe reach. Pipe sizing calculations are summarized below and are included in Appendix C.

Table 6
Pipe Reach Capacity Summary – 25-Year Design Storm

Structure From	Structure To	Manning's Capacity (CFS)	25-year Design Storm Flow for Pipe Reach (CFS)
Type CL Catch Basin	**Drainage Manhole**	9.16	0.3
Type CG Catch Basin	**Drainage Manhole**	22.68	11.39
Outlet Control Structure	**Type CG Catch Basin**	22.68	11.39
Type C Catch Basin 1	**Rip Rap Scour Hole**	6.48	1.3
Type C Catch Basin 2	**Type C Catch Basin 1**	6.48	0.9
Roof	**Water Quality Basin**	1.97	1.2

The piped discharge and overflow spillway will be protected from erosion by rip rap sized in accordance with the recommendations of the CT DOT Drainage Manual. Sizing calculations for the scour protection are summarized in Table 7 and included in Appendix C.

Table 7
Scour Protection Sizing

Stormwater Discharge	100-year Discharge Velocity (FPS)	Proposed Surface Treatment	Typical Allowable Velocity (FPS)
Catch Basin Drainage	4.6	Modified Rip Rap Scour Hole	14.7 (Per DOT Drainage Manual)
Water Quality Basin Spillway	1.88 (No spillway discharge modeled for 100-year design storm. Velocity shown assumes all other outlets are blocked.)	Modified Rip Rap Spillway	8 for rip rap (Per DOT Drainage Manual)

The stormwater management system will also provide treatment of the runoff from the proposed impervious areas. Treatment of runoff from the site will be accomplished using a deep sump catch basin with hooded outlet prior to the discharge to the Water Quality Basin. The proposed Water Quality Basin

is sized to retain and infiltrate the water quality volume associated with the upgradient impervious areas. Sizing calculations for the Water Quality Basin are summarized in Table 8 and are included in Appendix C.

Table 8
Water Quality Basin Sizing Criteria

Design Criteria	Sizing Result
Contributing Impervious Area	1.27 acres
Contributing Drainage Area	1.84 acres
Water Quality Volume	4,179 cubic feet
Storage Below Lowest Orifice	6,958 cubic feet

The water quality basin is intended to be provided with an underdrain system to ensure that there is not a standing pool of water in the water quality basin between storm events. The underdrain will be embedded in crushed stone, wrapped in filter fabric, beneath a sand filter layer to filter and treat the stored runoff as it is released after storm events. This system will provide the treatment of the water quality volume that is required prior to discharge.

Construction Phase Stormwater Management

The Water Quality Basin presented in the HydroCAD model (Appendix B) is sized to provide treatment of the water quality volume from the entire southern half of the Market Square area. The current proposal includes the development of only one (1) of the buildings and the minimum amount of impervious area required to provide parking for the proposed building. Therefore, the proposed Water Quality Basin will only be partially constructed as part of this phase of development. The proposed basin will serve as a temporary sediment trap during construction of the current and future phases of Market Square. The temporary sediment trap is currently sized to provide 134 cubic yards of storage capacity per acre of upgradient disturbed area, and to retain the water quality volume associated with the impervious area created during construction of the MS-2 building and associated infrastructure (current phase). The required and provided volumes are summarized in Tables 9 and 10 and included in Appendix C.

Table 9
MS-2 Phase Temporary Sediment Trap Sizing Criteria

Design Criteria	Sizing Result
Contributing Area	0.7 acres
Storage Volume Required	2,533 cubic feet
Storage Volume Below Outlet Structure Top of Frame	5,720 cubic feet (Outlet orifices to be blocked until upgradient areas are stabilized)

Table 10
MS-2 Phase Water Quality Basin Sizing Criteria

Design Criteria	Sizing Result
Contributing Impervious Area	0.42 acres
Contributing Drainage Area	0.70 acres
Water Quality Volume	1,375 cubic feet
Storage Below Lowest Orifice	1,629 cubic feet

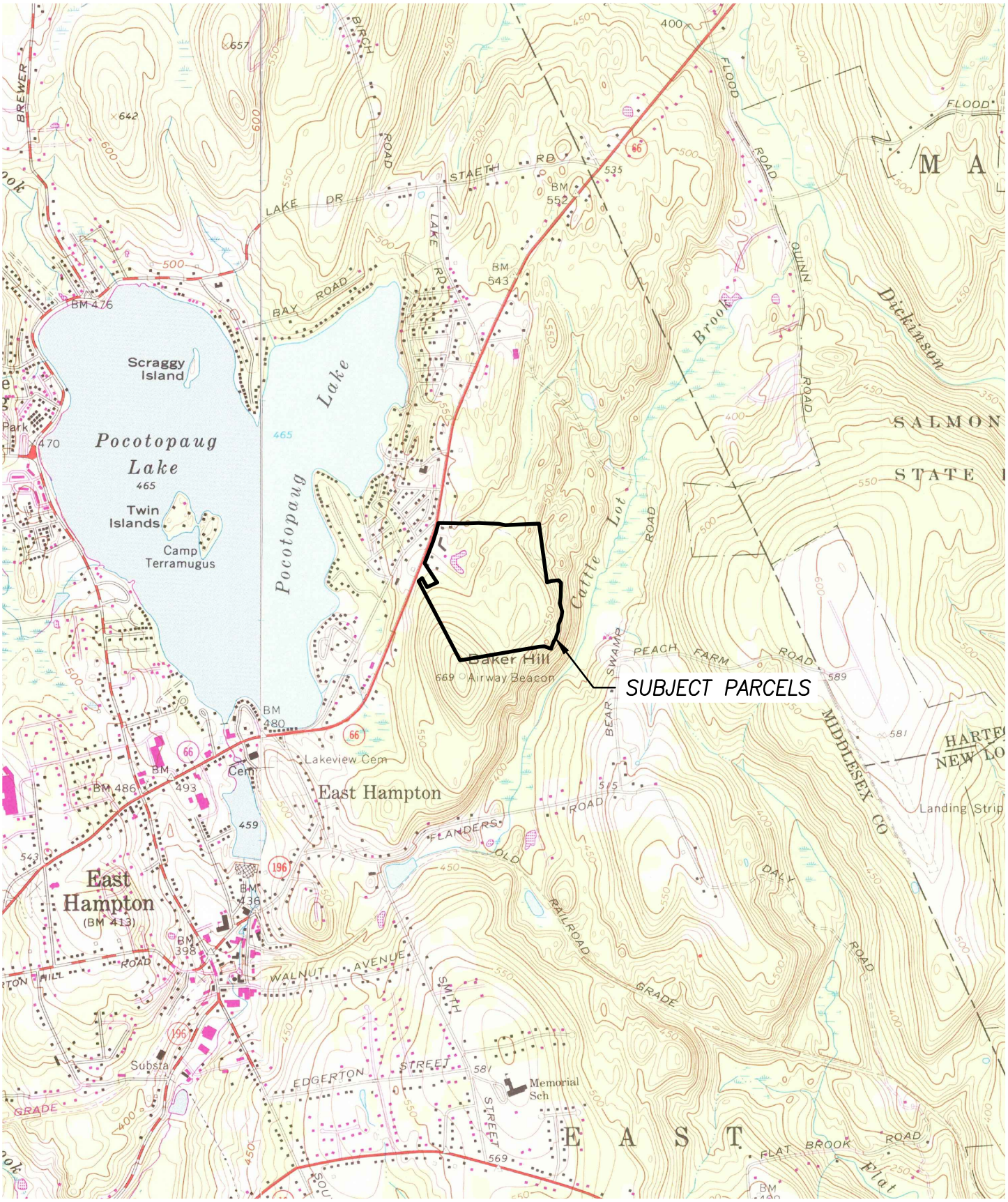
The bottom of the temporary sediment trap will be maintained 9-inches above the proposed bottom of the full build-out water quality basin to protect the infiltration capacity of the native soils from silt and over compaction due to construction equipment. The proposed underdrain system will not be installed until construction of the southern half of Market Square is complete to protect the underdrain from blockages and silt deposition.

Summary

The proposed stormwater management system provides peak rate attenuation and treatment of the stormwater runoff prior to leaving the site in accordance with the applicable requirements of the CT DEEP, CT DOT and Town of East Hampton. There will be no drainage impact to CT DOT facilities as a result of the proposed improvements depicted on the enclosed site plans.

The proposed improvements are shown on plans titled “Site Development Plan, Proposed Mixed Use Building (MS-2), Prepared for Edgewater Hill Enterprises, LLC., 000 East High Street, East Hampton, Connecticut, May 2020, Job I.D. No. 20-2795-2, Sheet 1 through Sheet 12 of 12” prepared by Boundaries LLC.

Figures



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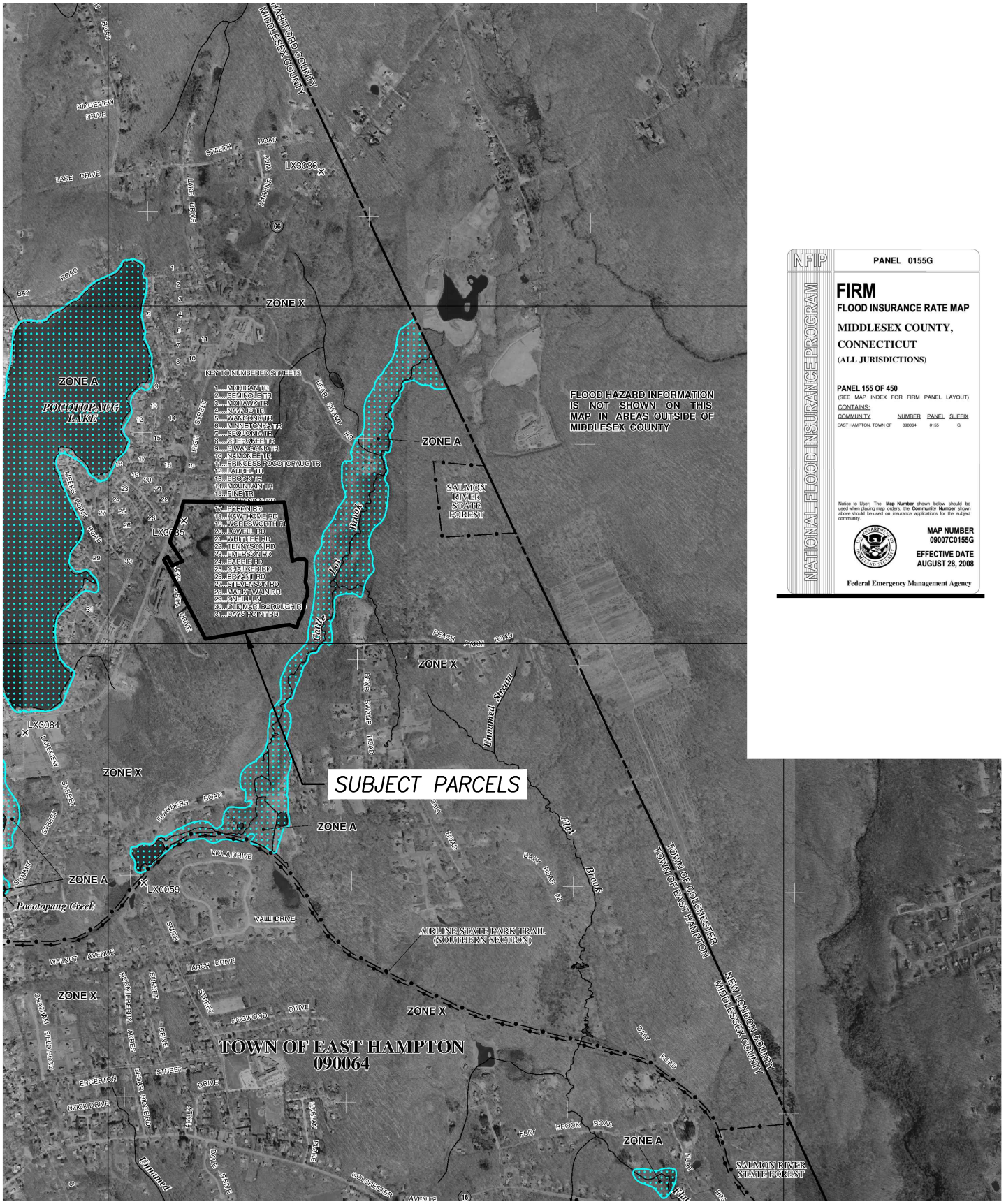
Locus Map

(Middle Haddam - 68 / Moodus - 69 Quads)

Proposed Mixed Use Building

East High Street, East Hampton, CT

SCALE:	1"=2,000'
DATE:	May 2020
JOB NO.	20-2795-2
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

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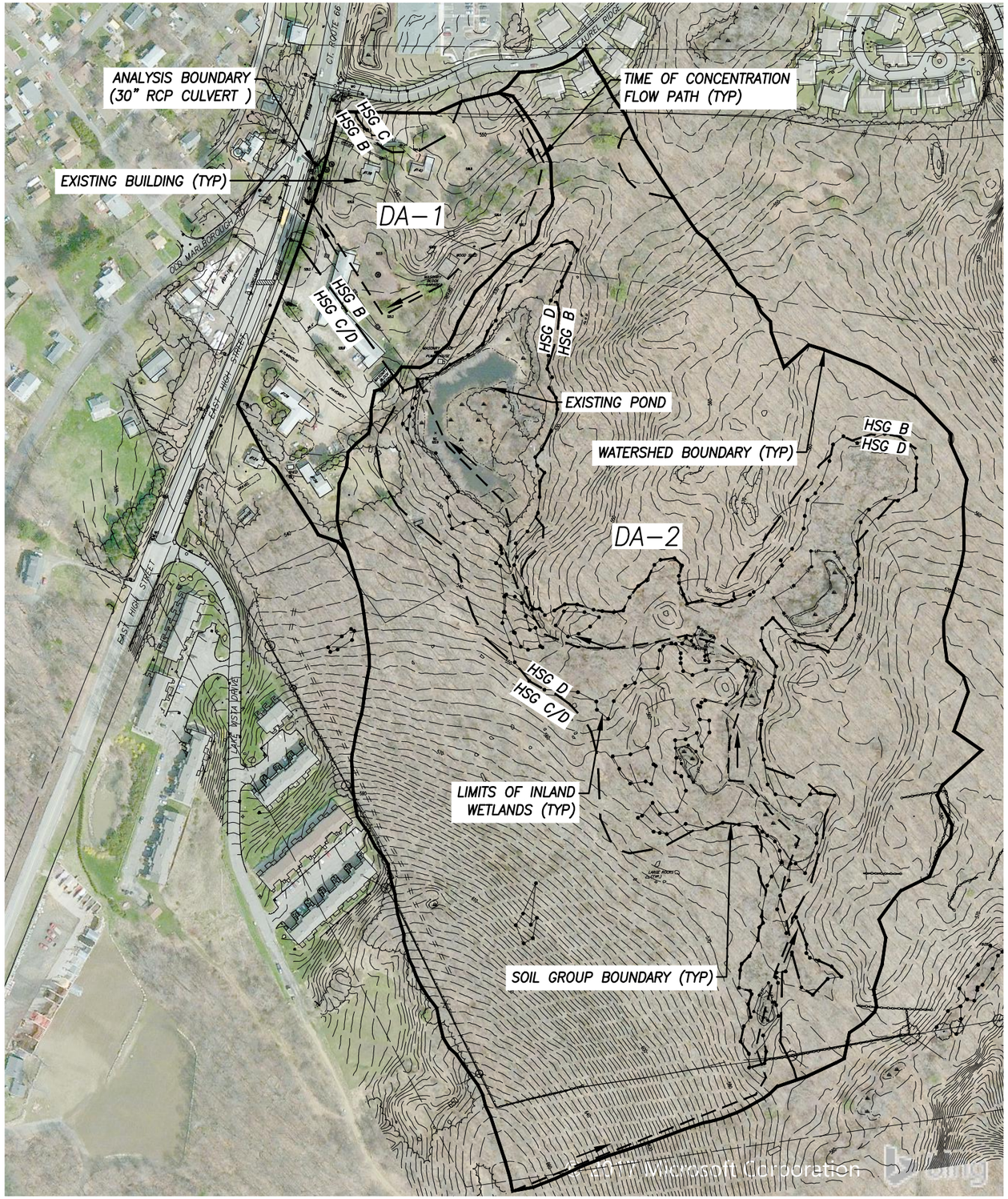
FEMA Flood Insurance Rate Map

Map 090064 Panel 155 G

Proposed Mixed Use Building

East High Street, East Hampton, CT

SCALE:	1"=2,000'
DATE:	May 2020
JOB NO.	20-2795-2
FIGURE	2



Pre-Development Conditions			
Watershed	Area (acres)	CN Value	Description
DA-1	6.763	70	Former residences, motel and associated parking lot
DA-2	45.453	66	Undeveloped land and two units of Laurel Ridge community
TOTAL	52.216	66	Former residences, motel, two units of Laurel Ridge community and undeveloped land

GRAPHIC SCALE

500 250 125 0 250

(IN FEET)
1 inch = 250 ft.

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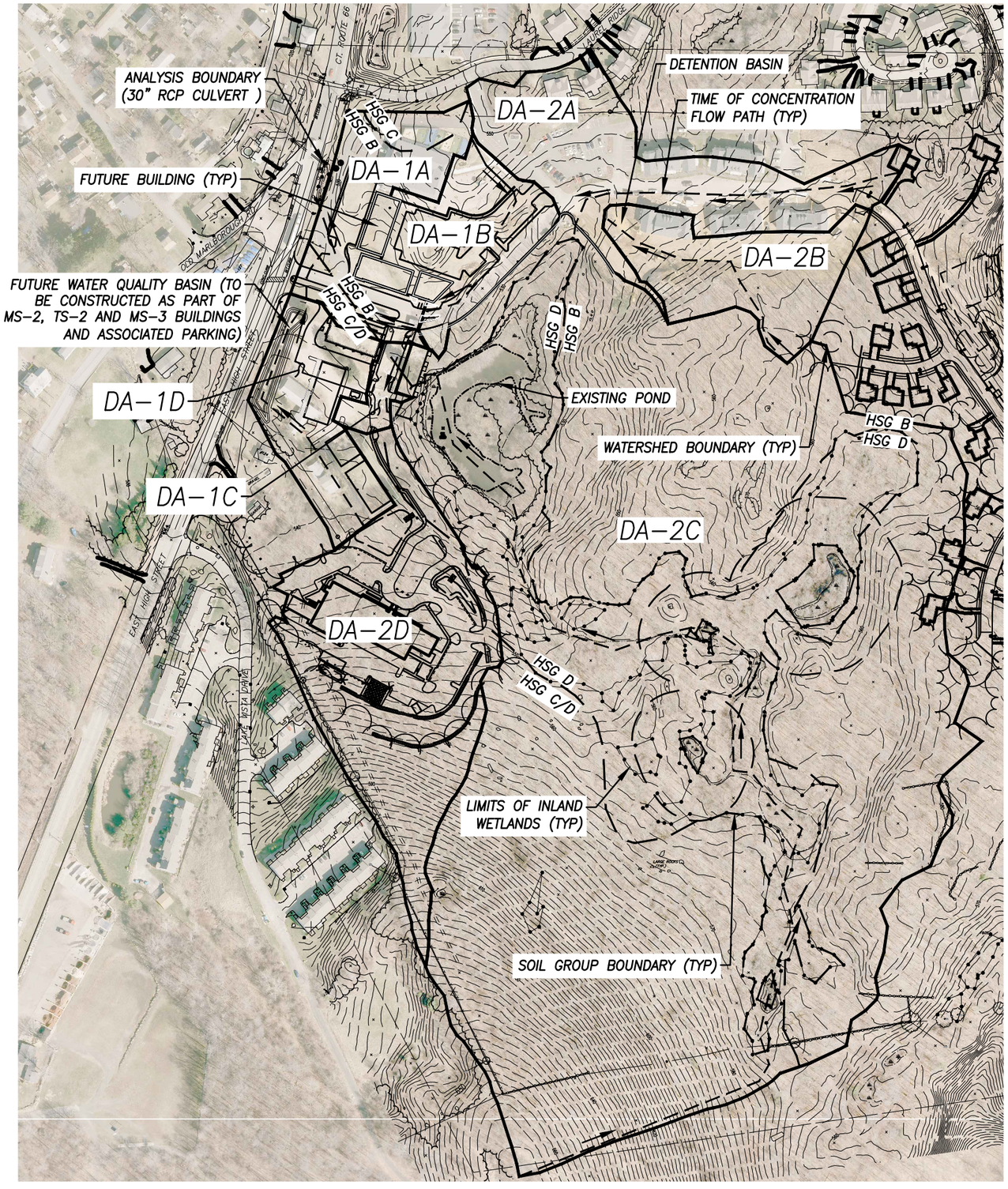
Pre-Development Conditions Watersheds
Proposed Mixed Use Building
Edgewater Hill Enterprises LLC
East High Street, East Hampton, Connecticut

SCALE: 1"=250'
DATE: May 2020

FIGURE 3



Market Square Post-Development Conditions

Watershed	Area (acres)	CN Value	Description
DA-1A	2.061	91	Existing Daycare building and parking lot
DA-1B	2.158	92	MS-1 building, proposed TS-1 building, and existing parking lot, and road
DA-1C	0.342	94	Existing road and proposed parking lot
DA-1D	1.962	93	Proposed MS-2 building, future Market Square buildings, parking, and stormwater quality basin
DA-2A	3.613	84	Existing parking lot, roadway and apartment buildings
DA-2B	2.152	72	Existing roadway and apartment buildings
DA-2C	37.862	68	Existing wooded area and wetlands (stormwater from future phases will be evaluated by phase)
DA-2D	5.658	83	Existing Town Hall and Police Department site, roadway and parking
TOTAL	55.807	73	Market Square, Daycare, Apartment Buildings, Town Hall and undisturbed areas for future phases

GRAPHIC SCALE

500 250 125 0 250

(IN FEET)
1 inch = 250 ft.

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Post-Development Conditions Watersheds
Proposed Mixed Use Building
Edgewater Hill Enterprises LLC
East High Street, East Hampton, Connecticut

SCALE: 1"=250'
DATE: May 2020
FIGURE 4

Appendix A
NRCS Web Soil Survey Soils Report

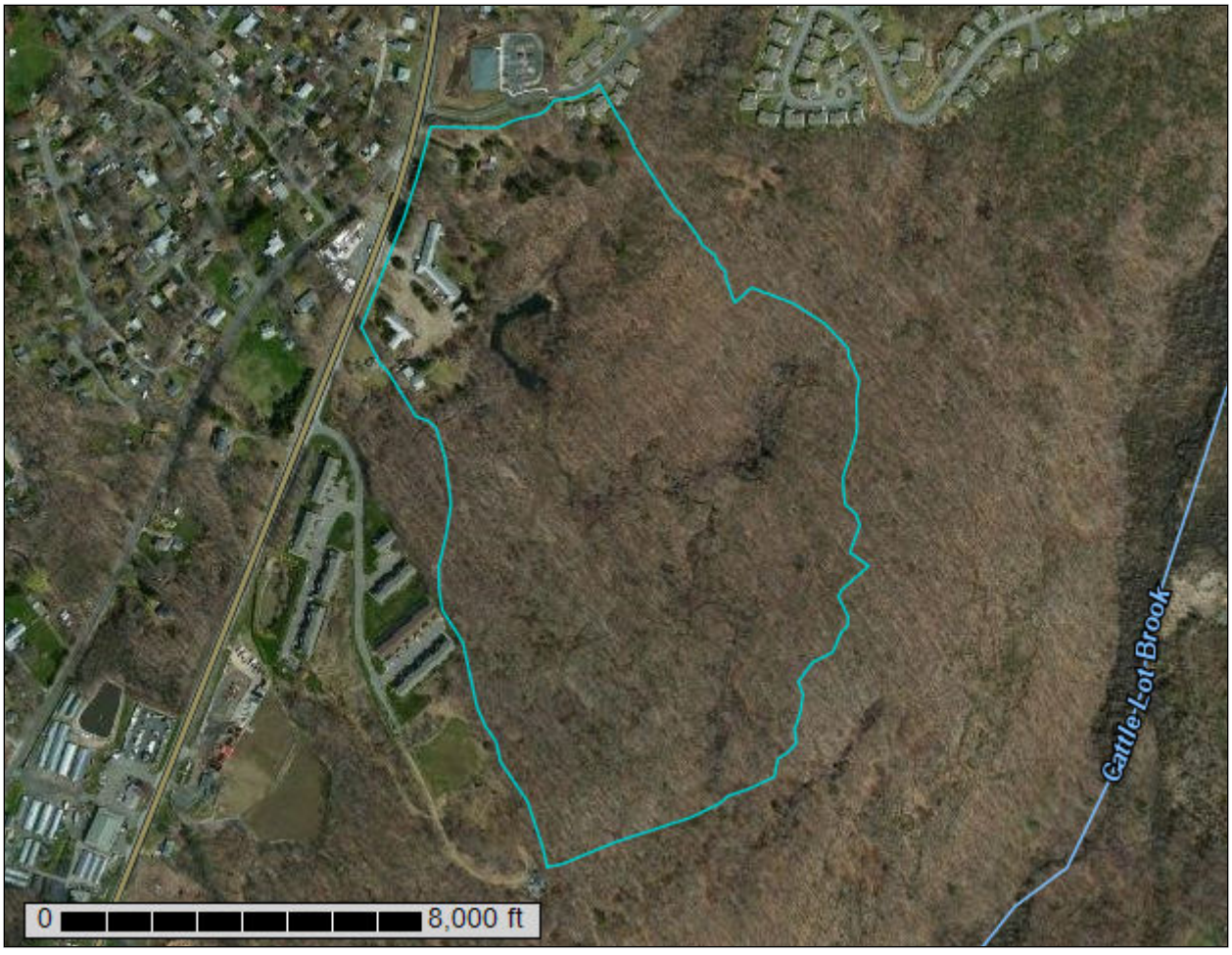
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut



April 12, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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.

Map Unit Legend

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

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut

3—Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2t2qt
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Ridgebury, extremely stony, and similar soils: 40 percent
Leicester, extremely stony, and similar soils: 35 percent
Whitman, extremely stony, and similar soils: 17 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ridgebury, Extremely Stony

Setting

Landform: Depressions, drumlins, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 6 inches: fine sandy loam
Bw - 6 to 10 inches: sandy loam
Bg - 10 to 19 inches: gravelly sandy loam
Cd - 19 to 66 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 15 to 35 inches to densic material
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Description of Leicester, Extremely Stony

Setting

Landform: Depressions, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave
Parent material: Coarse-loamy supraglacial or subglacial till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 7 inches: fine sandy loam
Bg - 7 to 18 inches: fine sandy loam
BC - 18 to 24 inches: fine sandy loam
C1 - 24 to 39 inches: gravelly fine sandy loam
C2 - 39 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Description of Whitman, Extremely Stony

Setting

Landform: Depressions, drumlins, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 1 inches: peat

A - 1 to 10 inches: fine sandy loam
Bg - 10 to 17 inches: gravelly fine sandy loam
Cdg - 17 to 61 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 7 to 38 inches to densic material
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Woodbridge, extremely stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Footslope, summit, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Swansea

Percent of map unit: 2 percent
Landform: Bogs, swamps
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

46C—Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w687
Elevation: 0 to 1,420 feet

Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Woodbridge, Very Stony

Setting

Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Paxton, very stony

Percent of map unit: 9 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex

Across-slope shape: Convex, linear
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Depressions, drumlins, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, very stony

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

Sutton, very stony

Percent of map unit: 1 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

62C—Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2wks7
Elevation: 0 to 1,310 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 50 percent
Charlton, extremely stony, and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Ridges, hills, moraines
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, crest, nose slope

Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 5 inches: fine sandy loam
Bw1 - 5 to 16 inches: fine sandy loam
Bw2 - 16 to 22 inches: gravelly fine sandy loam
2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

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

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 4 inches: fine sandy loam
Bw - 4 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Chatfield, extremely stony
Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope, nose slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Leicester, extremely stony
Percent of map unit: 5 percent
Landform: Depressions, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, extremely stony
Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

72C—Nipmuck-Brookfield complex, 3 to 15 percent slopes, very rocky

Map Unit Setting
National map unit symbol: 2svjw
Elevation: 70 to 1,310 feet
Mean annual precipitation: 46 to 56 inches

Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Nipmuck and similar soils: 50 percent
Brookfield and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nipmuck

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Side slope, crest, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy supraglacial meltout till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 7 inches: fine sandy loam
Bw1 - 7 to 17 inches: fine sandy loam
Bw2 - 17 to 23 inches: fine sandy loam
C1 - 23 to 30 inches: sandy loam
C2 - 30 to 35 inches: loamy sand
2Rj - 35 to 44 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Percent of area covered with surface fragments: 3.2 percent
Depth to restrictive feature: 20 to 39 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Brookfield

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy supraglacial meltout till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: fine sandy loam
Bw1 - 3 to 13 inches: gravelly fine sandy loam
Bw2 - 13 to 27 inches: gravelly fine sandy loam
C - 27 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 15 percent
Percent of area covered with surface fragments: 3.2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Brimfield

Percent of map unit: 5 percent
Landform: Ridges, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Rock outcrop

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

85C—Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w67f
Elevation: 0 to 1,520 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, very stony, and similar soils: 55 percent
Montauk, very stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Very Stony

Setting

Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Montauk, Very Stony

Setting

Landform: Drumlins, ground moraines, recessionial moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex

Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Woodbridge, very stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 3 percent
Landform: Depressions, drumlins, ground moraines, drainageways, hills
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, very stony

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

86D—Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w67c
Elevation: 0 to 1,400 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 55 percent
Montauk, extremely stony, and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 35 percent

Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Montauk, Extremely Stony

Setting

Landform: Drumlins, ground moraines, recessionial moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 15 to 35 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Charlton, extremely stony
Percent of map unit: 6 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony
Percent of map unit: 5 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony
Percent of map unit: 3 percent
Landform: Depressions, drumlins, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge, extremely stony
Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

284B—Paxton-Urban land complex, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2w67s
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton and similar soils: 45 percent
Urban land: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

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

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Charlton

Percent of map unit: 7 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge

Percent of map unit: 5 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Backslope, summit, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Udorthents

Percent of map unit: 5 percent
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury

Percent of map unit: 3 percent
Landform: Depressions, drumlins, ground moraines, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Hydric soil rating: Yes

308—Udorthents, smoothed

Map Unit Setting

National map unit symbol: 9lmj
Elevation: 0 to 2,000 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Down-slope shape: Convex
Across-slope shape: Linear

Typical profile

A - 0 to 5 inches: loam
C1 - 5 to 21 inches: gravelly loam
C2 - 21 to 80 inches: very gravelly sandy loam

Properties and qualities

Slope: 0 to 35 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 24 to 54 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Udorthents, wet substratum

Percent of map unit: 7 percent
Hydric soil rating: No

Unnamed, undisturbed soils

Percent of map unit: 7 percent
Hydric soil rating: No

Urban land

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

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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

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

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

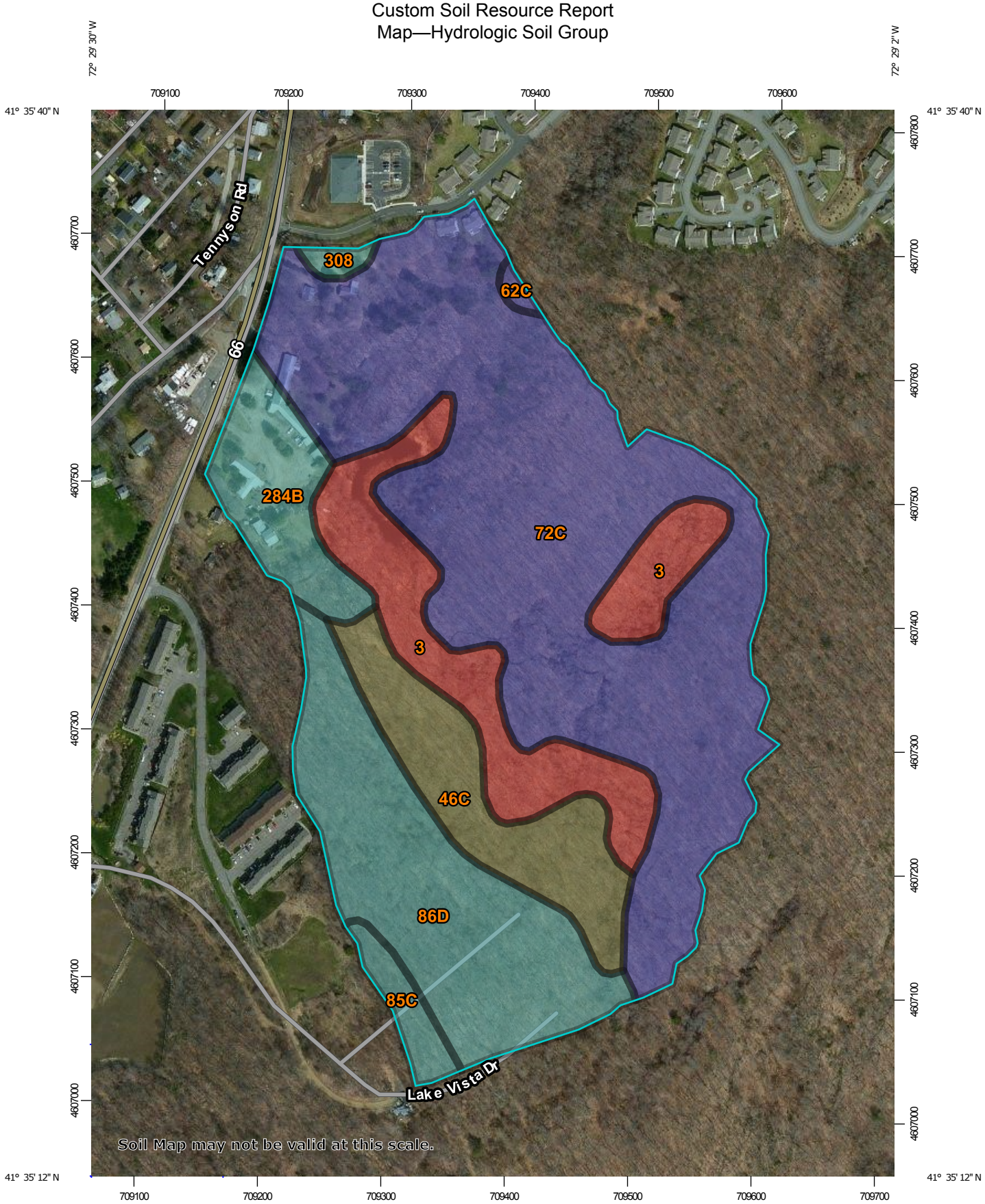
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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

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

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

Custom Soil Resource Report
Map—Hydrologic Soil Group



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

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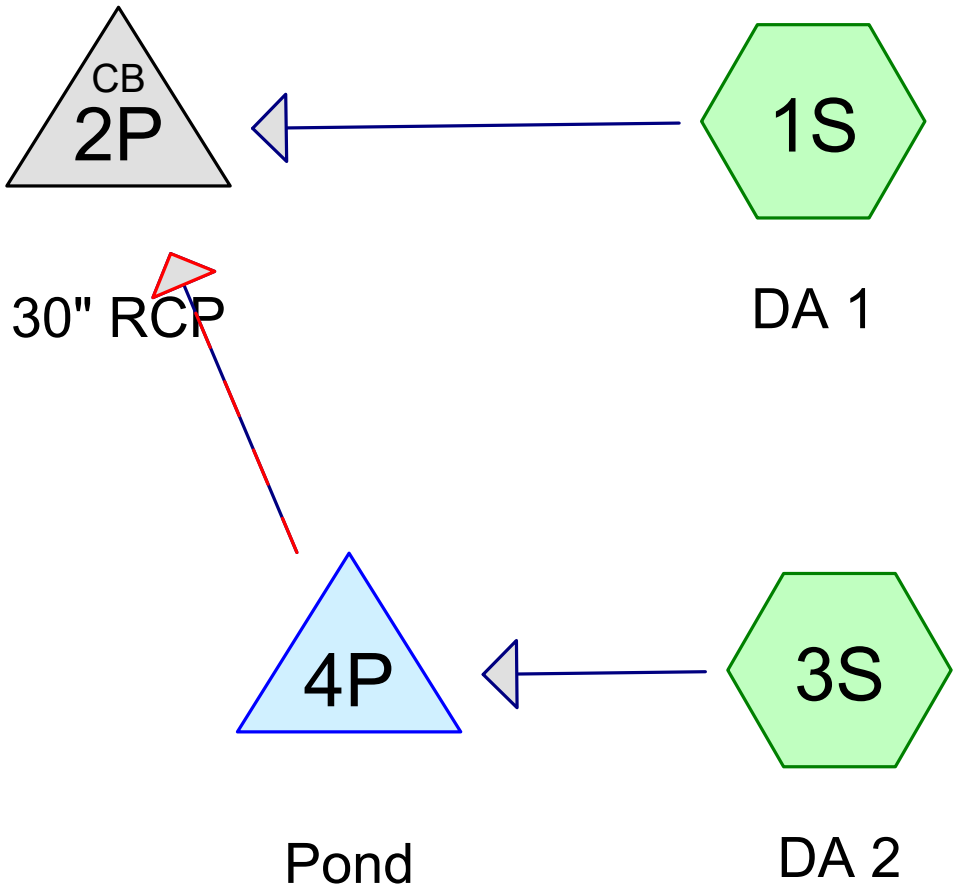
Appendix B
HydroCAD Modeling Results

Pre-Development Conditions HydroCAD Results



Subcat Reach Pond Link

Routing Diagram for Existing to RT 66
Prepared by {enter your company name here}, Printed 5/8/2020

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)
1.715	61	>75% Grass cover, Good, HSG B (1S, 3S)
1.356	74	>75% Grass cover, Good, HSG C (1S, 3S)
0.090	80	>75% Grass cover, Good, HSG D (3S)
0.076	96	Gravel surface, HSG B (1S, 3S)
0.332	96	Gravel surface, HSG C (1S, 3S)
0.977	98	Paved parking, HSG B (1S)
0.050	98	Paved parking, HSG C (1S, 3S)
0.207	98	Unconnected roofs, HSG B (1S, 3S)
0.155	98	Unconnected roofs, HSG C (1S)
0.839	98	Water Surface, 0% imp, HSG D (3S)
19.980	55	Woods, Good, HSG B (1S, 3S)
15.507	70	Woods, Good, HSG C (1S, 3S)
10.929	77	Woods, Good, HSG D (3S)
52.214	**67**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
22.956	HSG B	1S, 3S
17.401	HSG C	1S, 3S
11.858	HSG D	3S
0.000	Other	
52.214		**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	1.715	1.356	0.090	0.000	3.162	>75% Grass cover, Good	1S, 3S
0.000	0.076	0.332	0.000	0.000	0.408	Gravel surface	1S, 3S
0.000	0.977	0.050	0.000	0.000	1.027	Paved parking	1S, 3S
0.000	0.207	0.155	0.000	0.000	0.362	Unconnected roofs	1S, 3S
0.000	0.000	0.000	0.839	0.000	0.839	Water Surface, 0% imp	3S
0.000	19.980	15.507	10.929	0.000	46.417	Woods, Good	1S, 3S
0.000	**22.956**	**17.401**	**11.858**	**0.000**	**52.214**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	2P	519.92	519.62	80.0	0.0037	0.013	30.0	0.0	0.0
2	4P	522.29	520.81	440.8	0.0034	0.013	18.0	0.0	0.0

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 1S: DA 1 Runoff Area=294,524 sf 18.58% Impervious Runoff Depth=0.93"
Flow Length=1,064' Tc=26.2 min CN=70 Runoff=4.01 cfs 0.523 af

Subcatchment 3S: DA 2 Runoff Area=1,979,932 sf 0.29% Impervious Runoff Depth=0.73"
Tc=22.6 min CN=66 Runoff=20.84 cfs 2.768 af

Pond 2P: 30" RCP Peak Elev=521.10' Inflow=6.62 cfs 3.262 af
30.0" Round Culvert n=0.013 L=80.0' S=0.0037 '/' Outflow=6.62 cfs 3.262 af

Pond 4P: Pond Peak Elev=523.56' Storage=0.939 af Inflow=20.84 cfs 2.768 af
Primary=4.54 cfs 2.739 af Secondary=0.00 cfs 0.000 af Outflow=4.54 cfs 2.739 af

Total Runoff Area = 52.214 ac Runoff Volume = 3.291 af Average Runoff Depth = 0.76"
97.34% Pervious = 50.825 ac 2.66% Impervious = 1.389 ac

Summary for Subcatchment 1S: DA 1

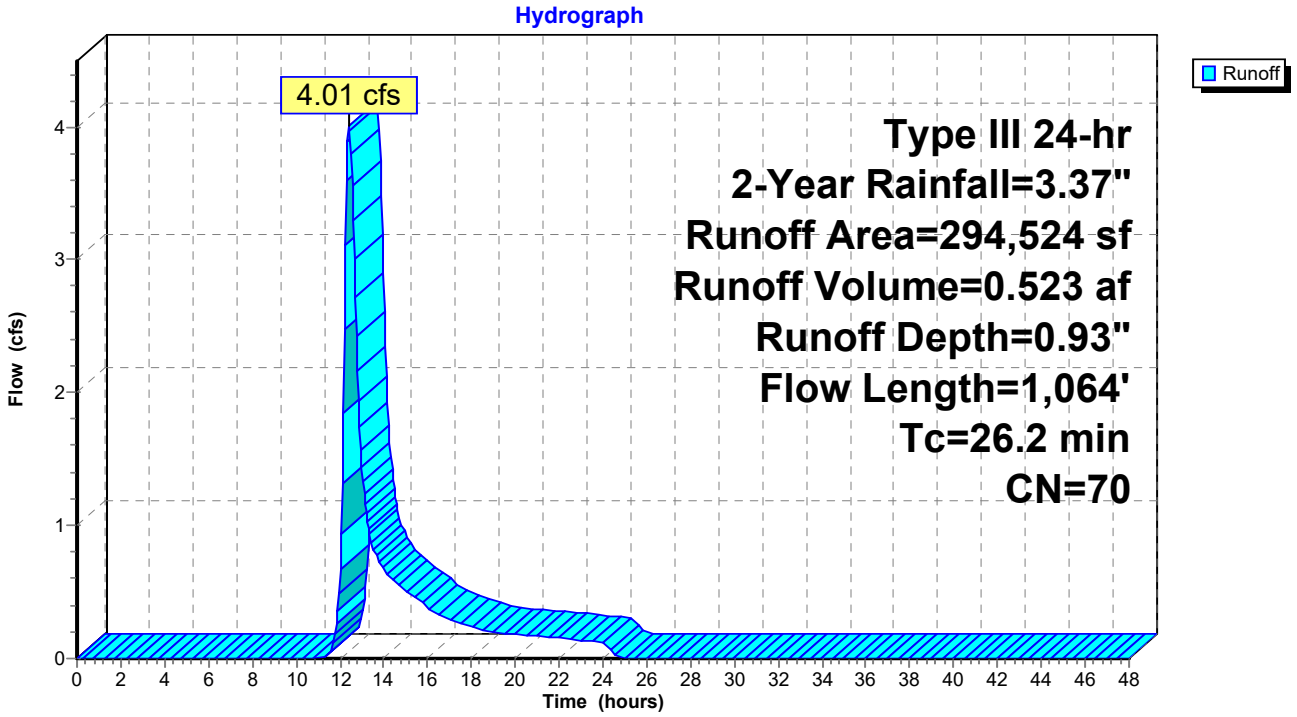
Runoff = 4.01 cfs @ 12.41 hrs, Volume= 0.523 af, Depth= 0.93"

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 (sf)	CN	Description
10,077	74	>75% Grass cover, Good, HSG C
1,575	98	Paved parking, HSG C
411	70	Woods, Good, HSG C
2,001	96	Gravel surface, HSG C
1,499	98	Unconnected roofs, HSG B
1,111	98	Unconnected roofs, HSG B
1,273	96	Gravel surface, HSG B
1,214	98	Unconnected roofs, HSG B
42,571	98	Paved parking, HSG B
1,694	96	Gravel surface, HSG B
4,509	98	Unconnected roofs, HSG C
113	98	Unconnected roofs, HSG C
2,133	98	Unconnected roofs, HSG C
12,266	96	Gravel surface, HSG C
2,876	70	Woods, Good, HSG C
1,206	70	Woods, Good, HSG C
677	70	Woods, Good, HSG C
650	70	Woods, Good, HSG C
3,876	70	Woods, Good, HSG C
641	70	Woods, Good, HSG C
4,468	55	Woods, Good, HSG B
99,615	55	Woods, Good, HSG B
62,431	61	>75% Grass cover, Good, HSG B
35,637	74	>75% Grass cover, Good, HSG C
294,524	70	Weighted Average
239,799		81.42% Pervious Area
54,725		18.58% Impervious Area
10,579		19.33% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1300	0.17		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.3	343	0.0466	1.08		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.3	434	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0183	2.18		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	147	0.0360	6.04	40.29	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
26.2	1,064	Total			

Subcatchment 1S: DA 1



Summary for Subcatchment 3S: DA 2

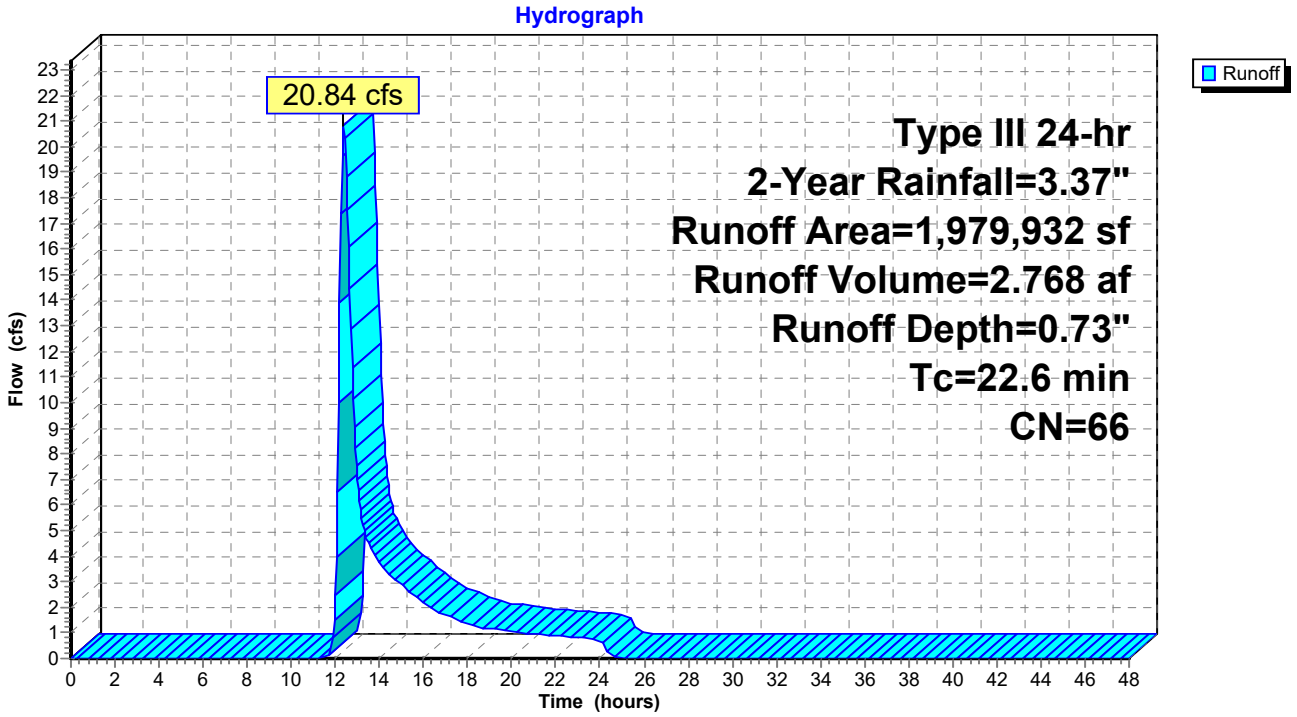
Runoff = 20.84 cfs @ 12.37 hrs, Volume= 2.768 af, Depth= 0.73"

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 (sf)	CN	Description
473,802	77	Woods, Good, HSG D
36,547	98	Water Surface, 0% imp, HSG D
3,920	80	>75% Grass cover, Good, HSG D
12,284	61	>75% Grass cover, Good, HSG B
5,184	98	Unconnected roofs, HSG B
766,264	55	Woods, Good, HSG B
663,462	70	Woods, Good, HSG C
2,265	77	Woods, Good, HSG D
1,699	70	Woods, Good, HSG C
174	96	Gravel surface, HSG C
348	96	Gravel surface, HSG B
610	98	Paved parking, HSG C
13,373	74	>75% Grass cover, Good, HSG C
1,979,932	66	Weighted Average
1,974,138		99.71% Pervious Area
5,794		0.29% Impervious Area
5,184		89.47% Unconnected

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

Subcatchment 3S: DA 2



Summary for Pond 2P: 30" RCP

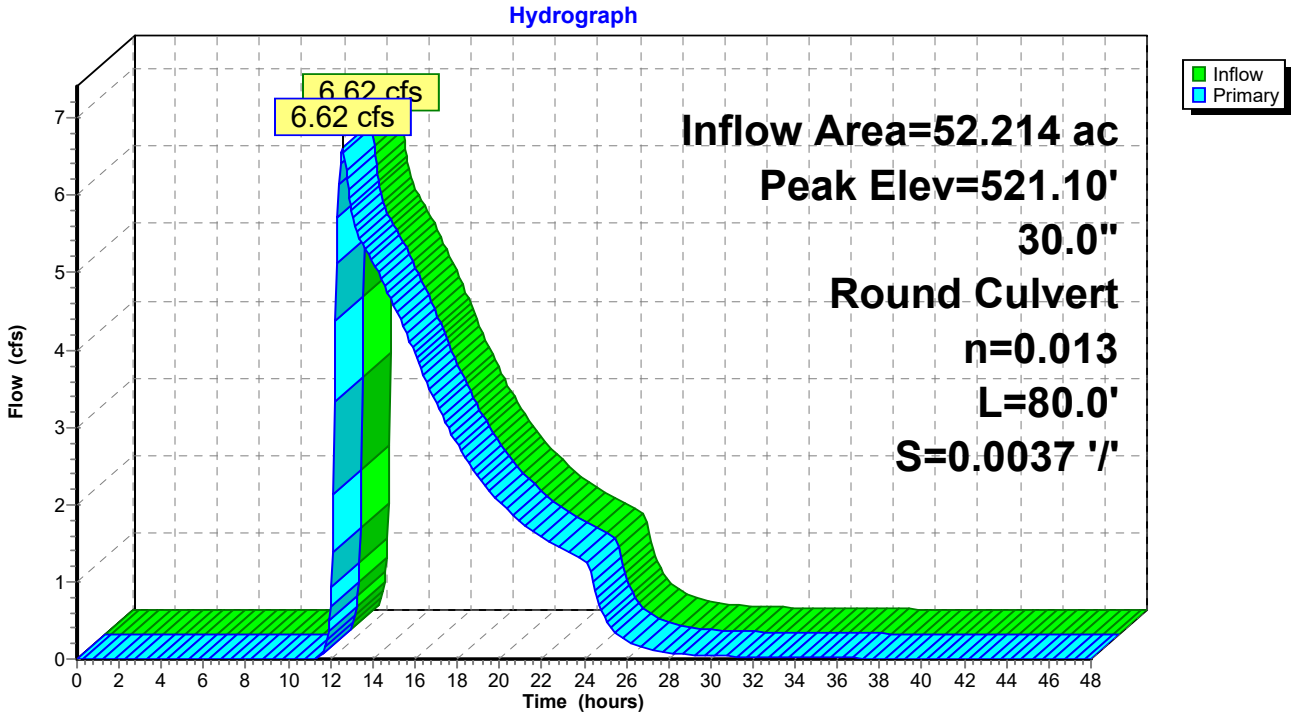
Inflow Area = 52.214 ac, 2.66% Impervious, Inflow Depth > 0.75" for 2-Year event
Inflow = 6.62 cfs @ 12.57 hrs, Volume= 3.262 af
Outflow = 6.62 cfs @ 12.57 hrs, Volume= 3.262 af, Atten= 0%, Lag= 0.0 min
Primary = 6.62 cfs @ 12.57 hrs, Volume= 3.262 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 521.10' @ 12.57 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf

Primary OutFlow Max=6.61 cfs @ 12.57 hrs HW=521.10' (Free Discharge)
1=30" RC (Barrel Controls 6.61 cfs @ 4.24 fps)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 45.453 ac, 0.29% Impervious, Inflow Depth = 0.73" for 2-Year event
Inflow = 20.84 cfs @ 12.37 hrs, Volume= 2.768 af
Outflow = 4.54 cfs @ 13.46 hrs, Volume= 2.739 af, Atten= 78%, Lag= 65.2 min
Primary = 4.54 cfs @ 13.46 hrs, Volume= 2.739 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 523.56' @ 13.46 hrs Surf.Area= 1.304 ac Storage= 0.939 af

Plug-Flow detention time= 144.0 min calculated for 2.739 af (99% of inflow)
Center-of-Mass det. time= 138.3 min (1,040.1 - 901.8)

Volume	Invert	Avail.Storage	Storage Description
#1	522.20'	10.783 af	**Pond Storage (Irregular)**Listed below

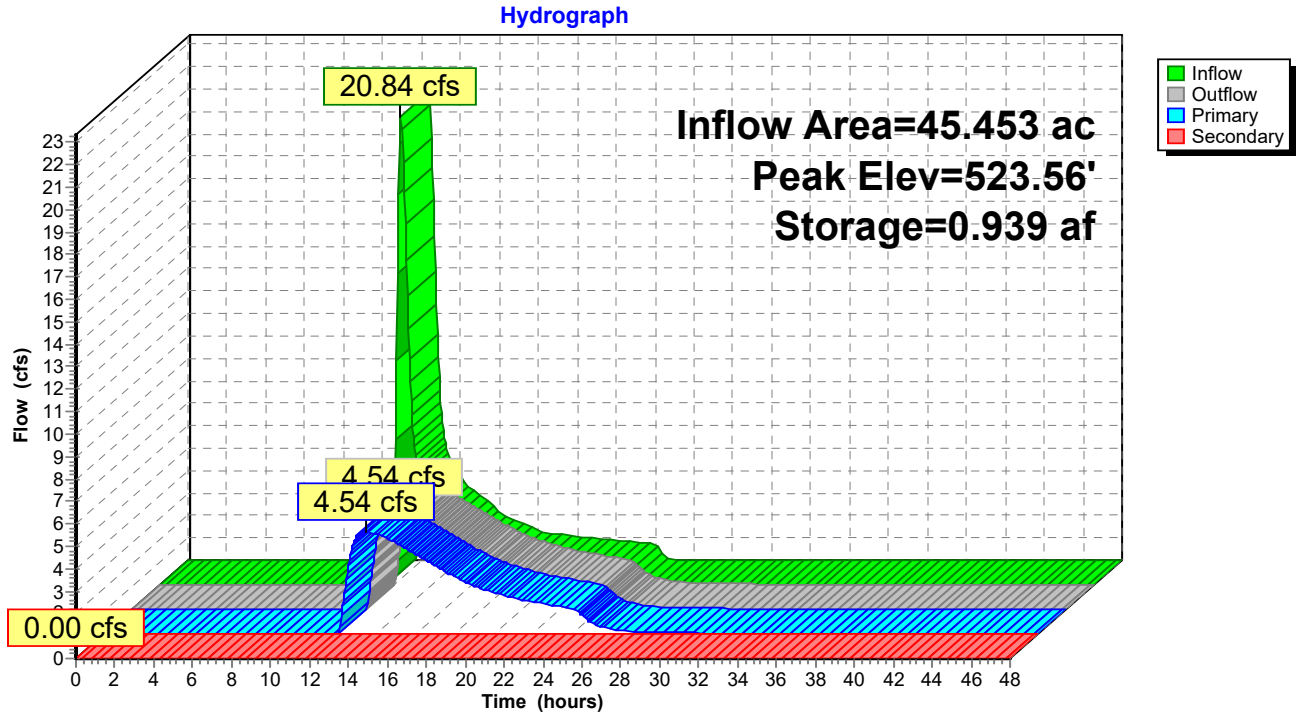
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
522.20	0.002	10.0	0.000	0.000	0.002
522.87	0.636	1,389.1	0.150	0.150	3.527
524.00	1.723	1,270.7	1.283	1.433	4.103
526.00	2.359	1,494.7	4.065	5.499	5.237
528.00	2.936	1,638.1	5.284	10.783	6.061

Device	Routing	Invert	Outlet Devices
#1	Primary	522.29'	**18.0" Round 18" RCP** L= 440.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 522.29' / 520.81' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	526.90'	**83.0' long x 15.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.54 cfs @ 13.46 hrs HW=523.56' TW=520.98' (Dynamic Tailwater)
↑—**1=18" RCP** (Barrel Controls 4.54 cfs @ 3.82 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.20' TW=519.92' (Dynamic Tailwater)
↑—**2=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond


Hydrograph
20.84 cfs
4.54 cfs
4.54 cfs
0.00 cfs
Inflow Area=45.453 ac
Peak Elev=523.56'
Storage=0.939 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

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 1S: DA 1 Runoff Area=294,524 sf 18.58% Impervious Runoff Depth=2.17"
Flow Length=1,064' Tc=26.2 min CN=70 Runoff=10.12 cfs 1.223 af

Subcatchment 3S: DA 2 Runoff Area=1,979,932 sf 0.29% Impervious Runoff Depth=1.85"
Tc=22.6 min CN=66 Runoff=60.43 cfs 7.013 af

Pond 2P: 30" RCP Peak Elev=521.93' Inflow=16.88 cfs 8.206 af
30.0" Round Culvert n=0.013 L=80.0' S=0.0037 '/' Outflow=16.88 cfs 8.206 af

Pond 4P: Pond Peak Elev=524.88' Storage=3.229 af Inflow=60.43 cfs 7.013 af
Primary=7.48 cfs 6.983 af Secondary=0.00 cfs 0.000 af Outflow=7.48 cfs 6.983 af

Total Runoff Area = 52.214 ac Runoff Volume = 8.236 af Average Runoff Depth = 1.89"
97.34% Pervious = 50.825 ac 2.66% Impervious = 1.389 ac

Summary for Subcatchment 1S: DA 1

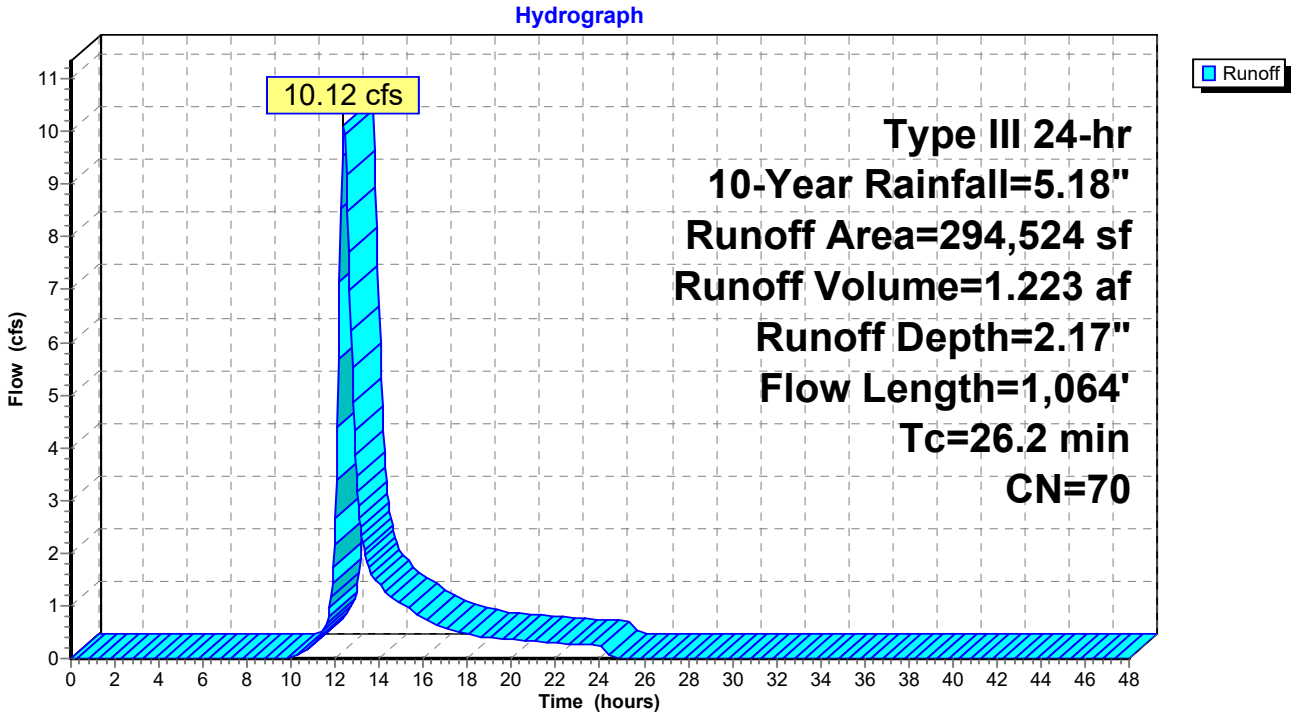
Runoff = 10.12 cfs @ 12.38 hrs, Volume= 1.223 af, Depth= 2.17"

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 (sf)	CN	Description
10,077	74	>75% Grass cover, Good, HSG C
1,575	98	Paved parking, HSG C
411	70	Woods, Good, HSG C
2,001	96	Gravel surface, HSG C
1,499	98	Unconnected roofs, HSG B
1,111	98	Unconnected roofs, HSG B
1,273	96	Gravel surface, HSG B
1,214	98	Unconnected roofs, HSG B
42,571	98	Paved parking, HSG B
1,694	96	Gravel surface, HSG B
4,509	98	Unconnected roofs, HSG C
113	98	Unconnected roofs, HSG C
2,133	98	Unconnected roofs, HSG C
12,266	96	Gravel surface, HSG C
2,876	70	Woods, Good, HSG C
1,206	70	Woods, Good, HSG C
677	70	Woods, Good, HSG C
650	70	Woods, Good, HSG C
3,876	70	Woods, Good, HSG C
641	70	Woods, Good, HSG C
4,468	55	Woods, Good, HSG B
99,615	55	Woods, Good, HSG B
62,431	61	>75% Grass cover, Good, HSG B
35,637	74	>75% Grass cover, Good, HSG C
294,524	70	Weighted Average
239,799		81.42% Pervious Area
54,725		18.58% Impervious Area
10,579		19.33% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1300	0.17		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.3	343	0.0466	1.08		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.3	434	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0183	2.18		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	147	0.0360	6.04	40.29	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
26.2	1,064	Total			

Subcatchment 1S: DA 1



Summary for Subcatchment 3S: DA 2

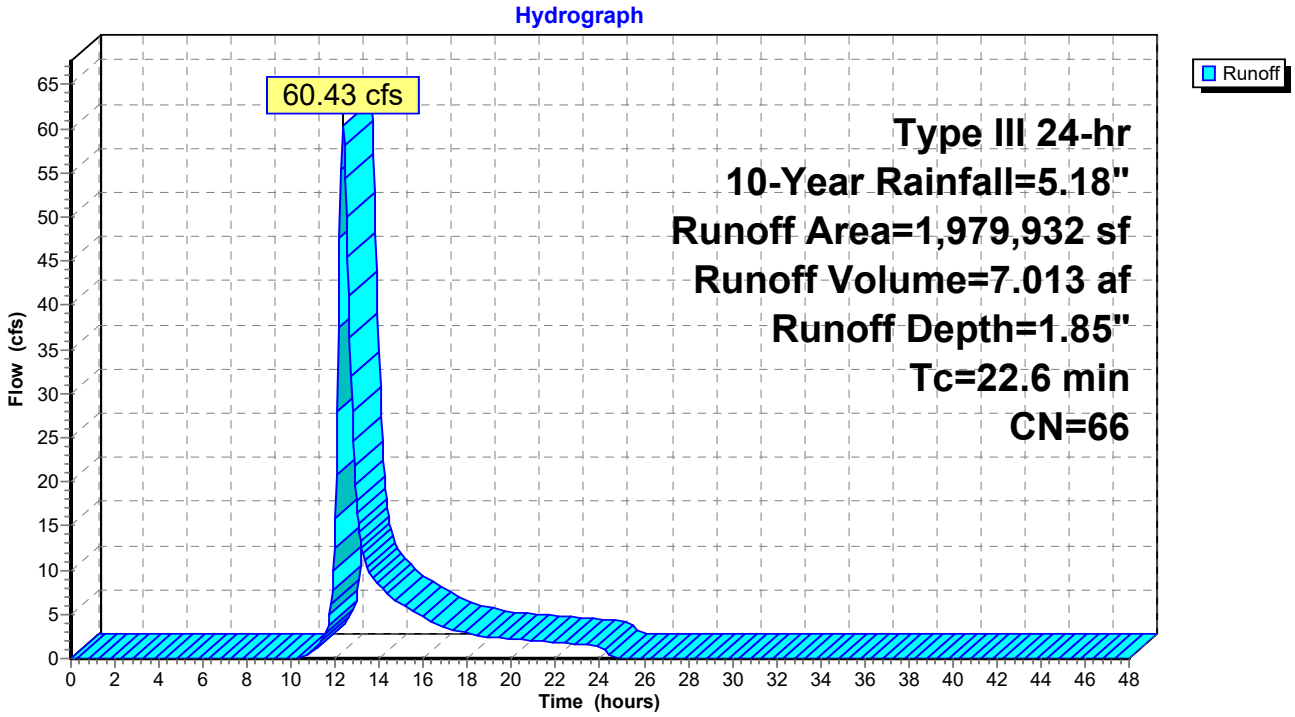
Runoff = 60.43 cfs @ 12.34 hrs, Volume= 7.013 af, Depth= 1.85"

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 (sf)	CN	Description
473,802	77	Woods, Good, HSG D
36,547	98	Water Surface, 0% imp, HSG D
3,920	80	>75% Grass cover, Good, HSG D
12,284	61	>75% Grass cover, Good, HSG B
5,184	98	Unconnected roofs, HSG B
766,264	55	Woods, Good, HSG B
663,462	70	Woods, Good, HSG C
2,265	77	Woods, Good, HSG D
1,699	70	Woods, Good, HSG C
174	96	Gravel surface, HSG C
348	96	Gravel surface, HSG B
610	98	Paved parking, HSG C
13,373	74	>75% Grass cover, Good, HSG C
1,979,932	66	Weighted Average
1,974,138		99.71% Pervious Area
5,794		0.29% Impervious Area
5,184		89.47% Unconnected

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

Subcatchment 3S: DA 2



Summary for Pond 2P: 30" RCP

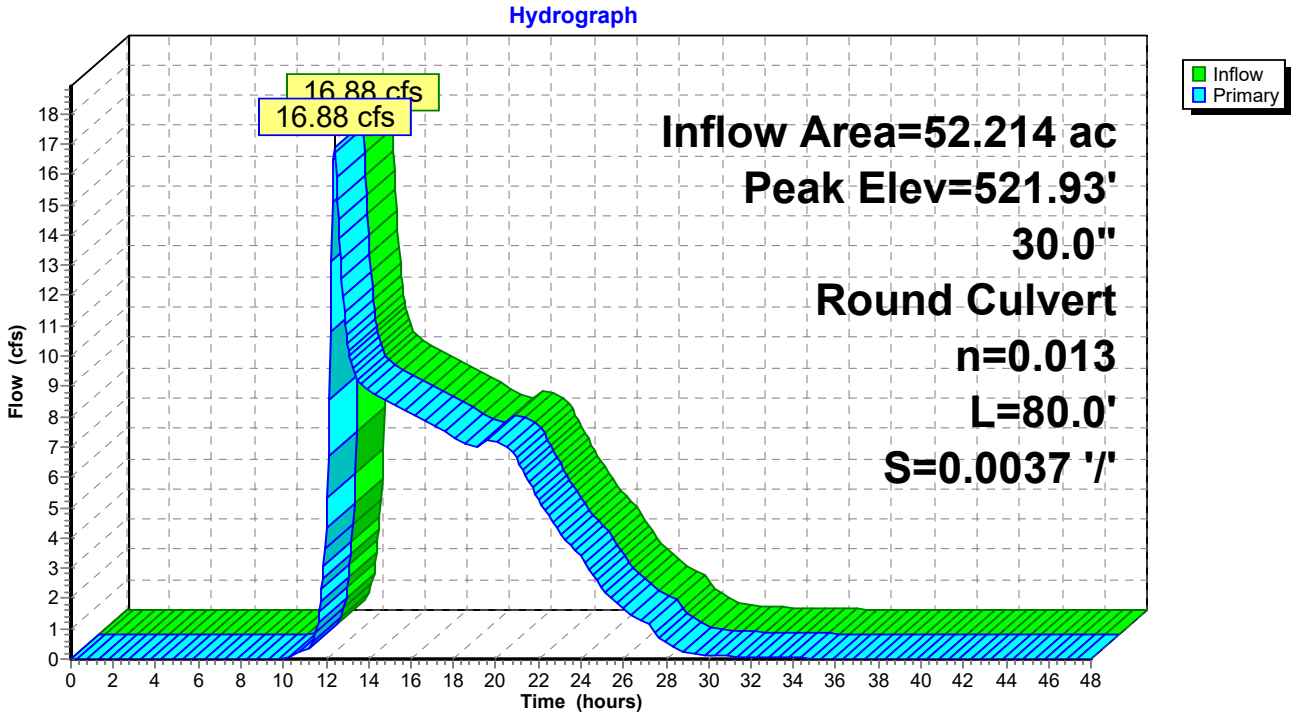
Inflow Area = 52.214 ac, 2.66% Impervious, Inflow Depth > 1.89" for 10-Year event
Inflow = 16.88 cfs @ 12.41 hrs, Volume= 8.206 af
Outflow = 16.88 cfs @ 12.41 hrs, Volume= 8.206 af, Atten= 0%, Lag= 0.0 min
Primary = 16.88 cfs @ 12.41 hrs, Volume= 8.206 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 521.93' @ 12.41 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf

Primary OutFlow Max=16.84 cfs @ 12.41 hrs HW=521.93' (Free Discharge)
↑—**1=30" RC** (Barrel Controls 16.84 cfs @ 5.45 fps)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 45.453 ac, 0.29% Impervious, Inflow Depth = 1.85" for 10-Year event
Inflow = 60.43 cfs @ 12.34 hrs, Volume= 7.013 af
Outflow = 7.48 cfs @ 14.27 hrs, Volume= 6.983 af, Atten= 88%, Lag= 116.0 min
Primary = 7.48 cfs @ 14.27 hrs, Volume= 6.983 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 524.88' @ 14.27 hrs Surf.Area= 2.004 ac Storage= 3.229 af

Plug-Flow detention time= 230.9 min calculated for 6.983 af (100% of inflow)
Center-of-Mass det. time= 228.3 min (1,099.7 - 871.4)

Volume	Invert	Avail.Storage	Storage Description
#1	522.20'	10.783 af	**Pond Storage (Irregular)**Listed below

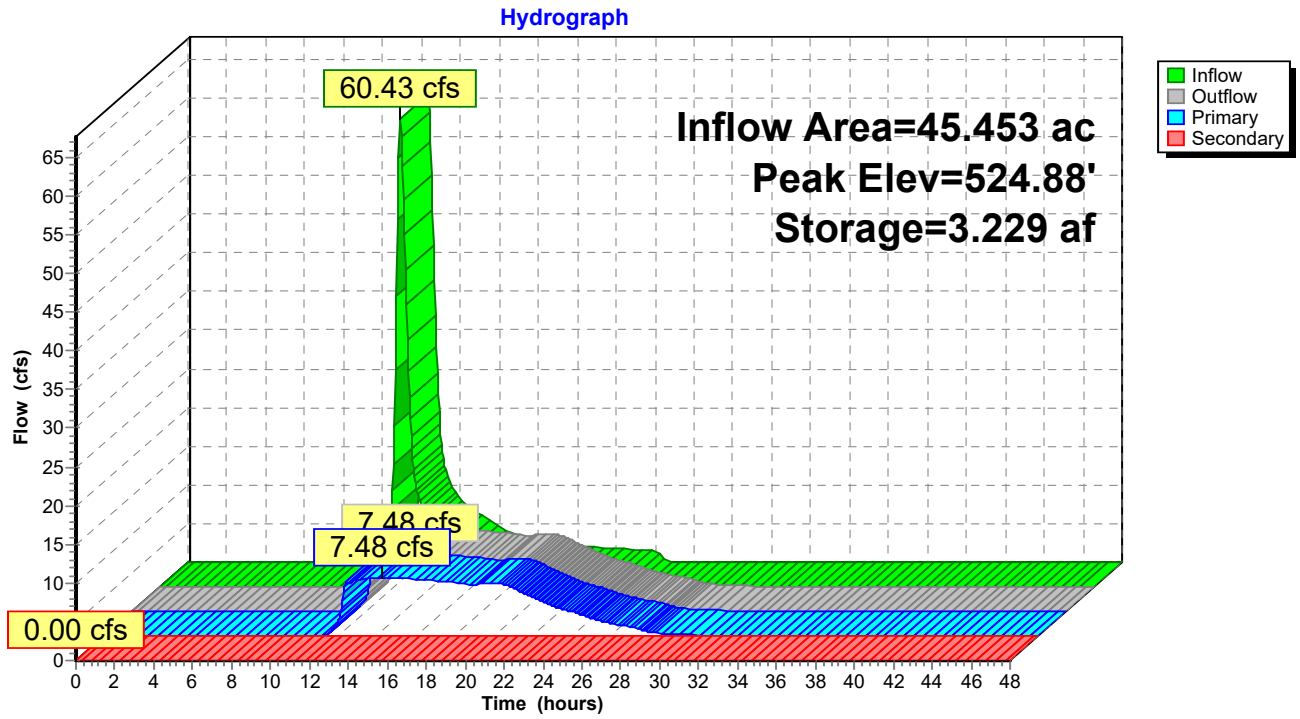
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
522.20	0.002	10.0	0.000	0.000	0.002
522.87	0.636	1,389.1	0.150	0.150	3.527
524.00	1.723	1,270.7	1.283	1.433	4.103
526.00	2.359	1,494.7	4.065	5.499	5.237
528.00	2.936	1,638.1	5.284	10.783	6.061

Device	Routing	Invert	Outlet Devices
#1	Primary	522.29'	**18.0" Round 18" RCP** L= 440.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 522.29' / 520.81' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	526.90'	**83.0' long x 15.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.48 cfs @ 14.27 hrs HW=524.88' TW=521.30' (Dynamic Tailwater)
↑—**1=18" RCP** (Barrel Controls 7.48 cfs @ 4.23 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.20' TW=519.92' (Dynamic Tailwater)
↑—**2=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond


Hydrograph
60.43 cfs
7.48 cfs
7.48 cfs
0.00 cfs
Inflow Area=45.453 ac
Peak Elev=524.88'
Storage=3.229 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
0
5
10
15
20
25
30
35
40
45
50
55
60
65
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

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 1S: DA 1 Runoff Area=294,524 sf 18.58% Impervious Runoff Depth=3.05"
Flow Length=1,064' Tc=26.2 min CN=70 Runoff=14.40 cfs 1.716 af

Subcatchment 3S: DA 2 Runoff Area=1,979,932 sf 0.29% Impervious Runoff Depth=2.66"
Tc=22.6 min CN=66 Runoff=89.03 cfs 10.093 af

Pond 2P: 30" RCP Peak Elev=522.26' Inflow=21.32 cfs 11.778 af
30.0" Round Culvert n=0.013 L=80.0' S=0.0037 '/' Outflow=21.32 cfs 11.778 af

Pond 4P: Pond Peak Elev=525.84' Storage=5.181 af Inflow=89.03 cfs 10.093 af
Primary=8.76 cfs 10.062 af Secondary=0.00 cfs 0.000 af Outflow=8.76 cfs 10.062 af

Total Runoff Area = 52.214 ac Runoff Volume = 11.809 af Average Runoff Depth = 2.71"
97.34% Pervious = 50.825 ac 2.66% Impervious = 1.389 ac

Summary for Subcatchment 1S: DA 1

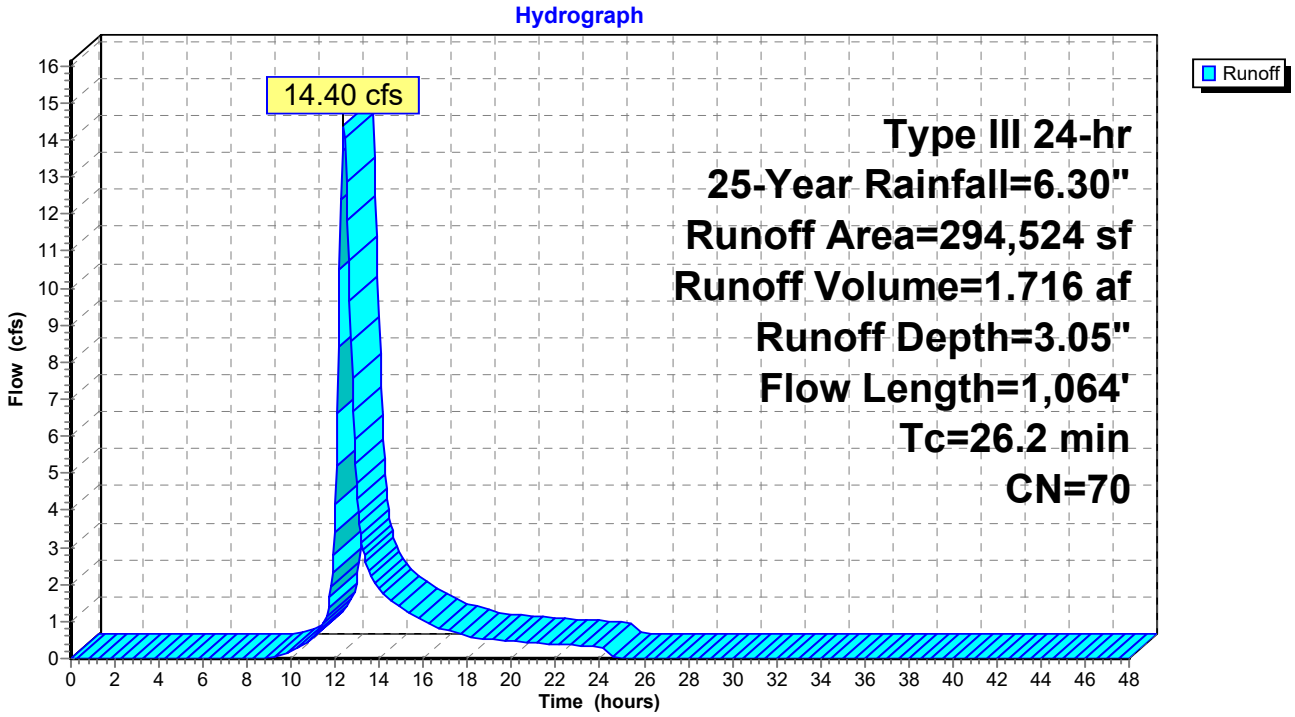
Runoff = 14.40 cfs @ 12.37 hrs, Volume= 1.716 af, Depth= 3.05"

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 (sf)	CN	Description
10,077	74	>75% Grass cover, Good, HSG C
1,575	98	Paved parking, HSG C
411	70	Woods, Good, HSG C
2,001	96	Gravel surface, HSG C
1,499	98	Unconnected roofs, HSG B
1,111	98	Unconnected roofs, HSG B
1,273	96	Gravel surface, HSG B
1,214	98	Unconnected roofs, HSG B
42,571	98	Paved parking, HSG B
1,694	96	Gravel surface, HSG B
4,509	98	Unconnected roofs, HSG C
113	98	Unconnected roofs, HSG C
2,133	98	Unconnected roofs, HSG C
12,266	96	Gravel surface, HSG C
2,876	70	Woods, Good, HSG C
1,206	70	Woods, Good, HSG C
677	70	Woods, Good, HSG C
650	70	Woods, Good, HSG C
3,876	70	Woods, Good, HSG C
641	70	Woods, Good, HSG C
4,468	55	Woods, Good, HSG B
99,615	55	Woods, Good, HSG B
62,431	61	>75% Grass cover, Good, HSG B
35,637	74	>75% Grass cover, Good, HSG C
294,524	70	Weighted Average
239,799		81.42% Pervious Area
54,725		18.58% Impervious Area
10,579		19.33% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1300	0.17		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.3	343	0.0466	1.08		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.3	434	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0183	2.18		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	147	0.0360	6.04	40.29	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
26.2	1,064	Total			

Subcatchment 1S: DA 1



Summary for Subcatchment 3S: DA 2

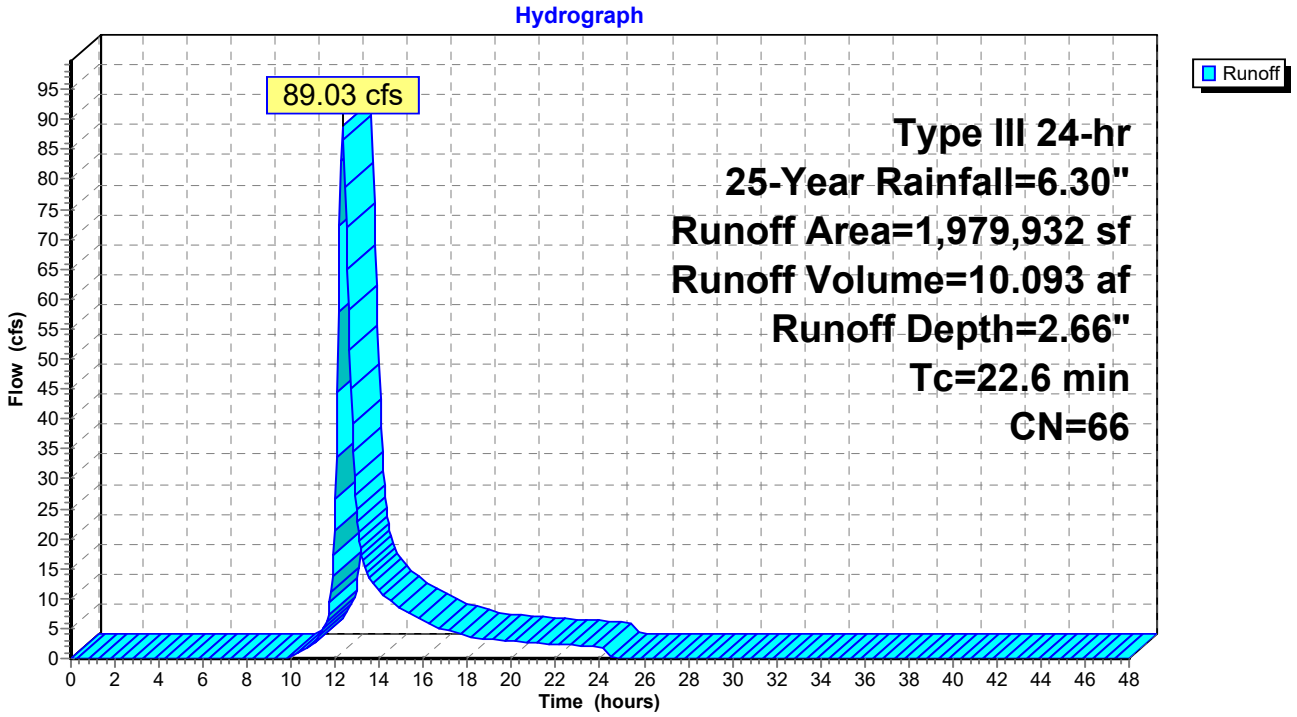
Runoff = 89.03 cfs @ 12.33 hrs, Volume= 10.093 af, Depth= 2.66"

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 (sf)	CN	Description
473,802	77	Woods, Good, HSG D
36,547	98	Water Surface, 0% imp, HSG D
3,920	80	>75% Grass cover, Good, HSG D
12,284	61	>75% Grass cover, Good, HSG B
5,184	98	Unconnected roofs, HSG B
766,264	55	Woods, Good, HSG B
663,462	70	Woods, Good, HSG C
2,265	77	Woods, Good, HSG D
1,699	70	Woods, Good, HSG C
174	96	Gravel surface, HSG C
348	96	Gravel surface, HSG B
610	98	Paved parking, HSG C
13,373	74	>75% Grass cover, Good, HSG C
1,979,932	66	Weighted Average
1,974,138		99.71% Pervious Area
5,794		0.29% Impervious Area
5,184		89.47% Unconnected

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

Subcatchment 3S: DA 2



Summary for Pond 2P: 30" RCP

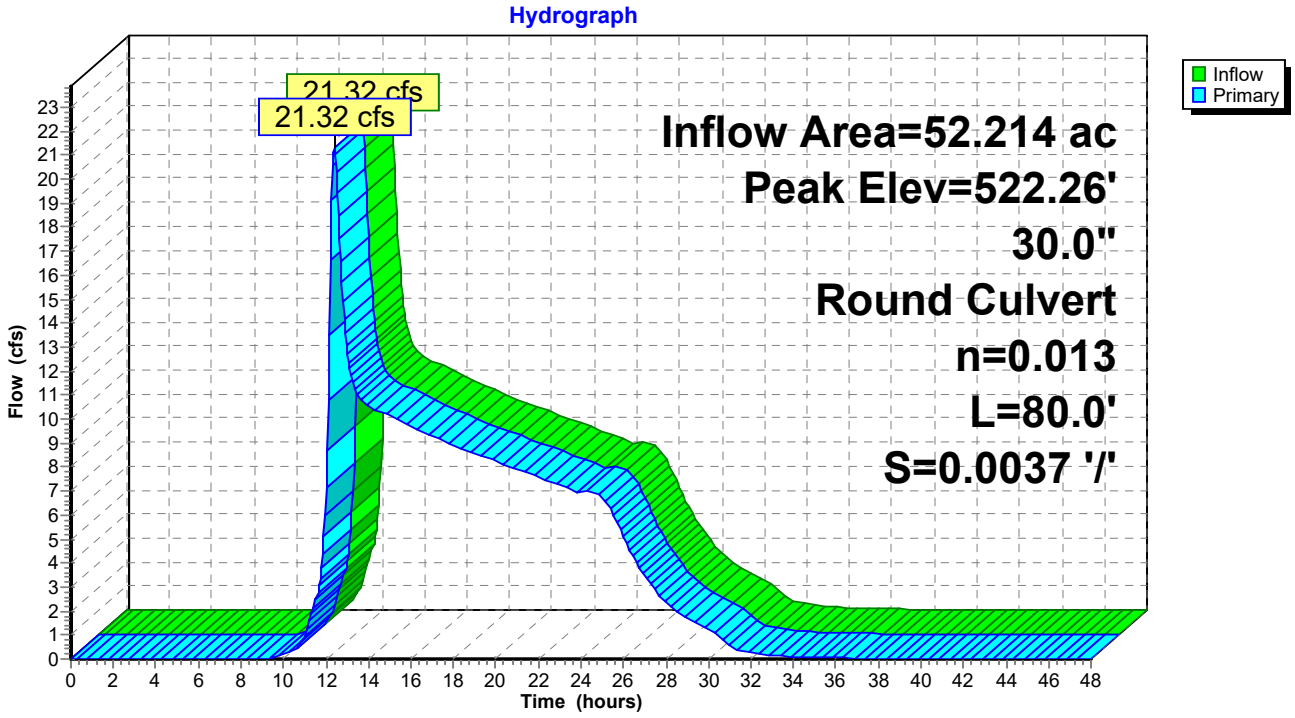
Inflow Area = 52.214 ac, 2.66% Impervious, Inflow Depth > 2.71" for 25-Year event
Inflow = 21.32 cfs @ 12.40 hrs, Volume= 11.778 af
Outflow = 21.32 cfs @ 12.40 hrs, Volume= 11.778 af, Atten= 0%, Lag= 0.0 min
Primary = 21.32 cfs @ 12.40 hrs, Volume= 11.778 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 522.26' @ 12.40 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf

Primary OutFlow Max=21.30 cfs @ 12.40 hrs HW=522.25' (Free Discharge)
1=30" RC (Barrel Controls 21.30 cfs @ 5.80 fps)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 45.453 ac, 0.29% Impervious, Inflow Depth = 2.66" for 25-Year event
Inflow = 89.03 cfs @ 12.33 hrs, Volume= 10.093 af
Outflow = 8.76 cfs @ 14.83 hrs, Volume= 10.062 af, Atten= 90%, Lag= 150.2 min
Primary = 8.76 cfs @ 14.83 hrs, Volume= 10.062 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 525.84' @ 14.83 hrs Surf.Area= 2.309 ac Storage= 5.181 af

Plug-Flow detention time= 315.4 min calculated for 10.062 af (100% of inflow)
Center-of-Mass det. time= 313.5 min (1,174.0 - 860.5)

Volume	Invert	Avail.Storage	Storage Description
#1	522.20'	10.783 af	**Pond Storage (Irregular)**Listed below

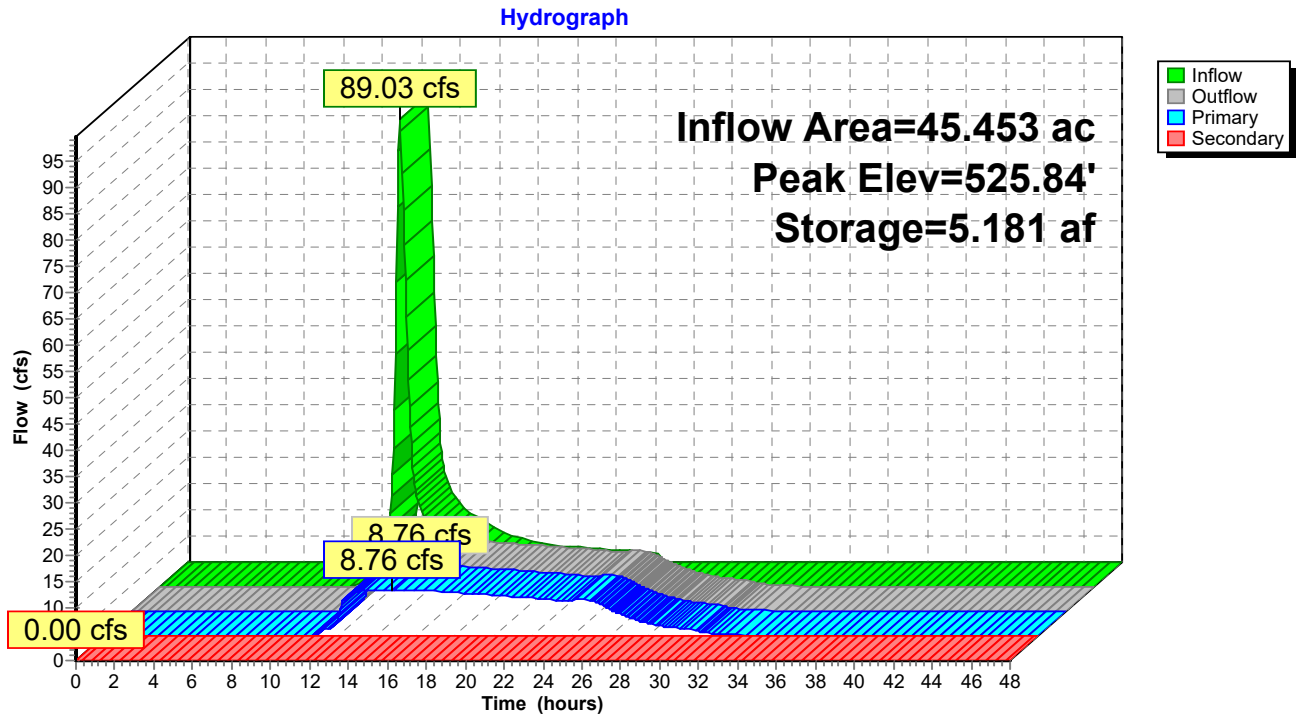
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
522.20	0.002	10.0	0.000	0.000	0.002
522.87	0.636	1,389.1	0.150	0.150	3.527
524.00	1.723	1,270.7	1.283	1.433	4.103
526.00	2.359	1,494.7	4.065	5.499	5.237
528.00	2.936	1,638.1	5.284	10.783	6.061

Device	Routing	Invert	Outlet Devices
#1	Primary	522.29'	**18.0" Round 18" RCP** L= 440.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 522.29' / 520.81' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	526.90'	**83.0' long x 15.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.76 cfs @ 14.83 hrs HW=525.84' TW=521.42' (Dynamic Tailwater)
↑—**1=18" RCP** (Barrel Controls 8.76 cfs @ 4.96 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.20' TW=519.92' (Dynamic Tailwater)
↑—**2=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond


Hydrograph
89.03 cfs
8.76 cfs
8.76 cfs
0.00 cfs
Inflow Area=45.453 ac
Peak Elev=525.84'
Storage=5.181 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95

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 1S: DA 1 Runoff Area=294,524 sf 18.58% Impervious Runoff Depth=3.74"
Flow Length=1,064' Tc=26.2 min CN=70 Runoff=17.73 cfs 2.105 af

Subcatchment 3S: DA 2 Runoff Area=1,979,932 sf 0.29% Impervious Runoff Depth=3.31"
Tc=22.6 min CN=66 Runoff=111.95 cfs 12.556 af

Pond 2P: 30" RCP Peak Elev=522.53' Inflow=24.93 cfs 14.628 af
30.0" Round Culvert n=0.013 L=80.0' S=0.0037 '/' Outflow=24.93 cfs 14.628 af

Pond 4P: Pond Peak Elev=526.51' Storage=6.834 af Inflow=111.95 cfs 12.556 af
Primary=9.54 cfs 12.523 af Secondary=0.00 cfs 0.000 af Outflow=9.54 cfs 12.523 af

Total Runoff Area = 52.214 ac Runoff Volume = 14.660 af Average Runoff Depth = 3.37"
97.34% Pervious = 50.825 ac 2.66% Impervious = 1.389 ac

Summary for Subcatchment 1S: DA 1

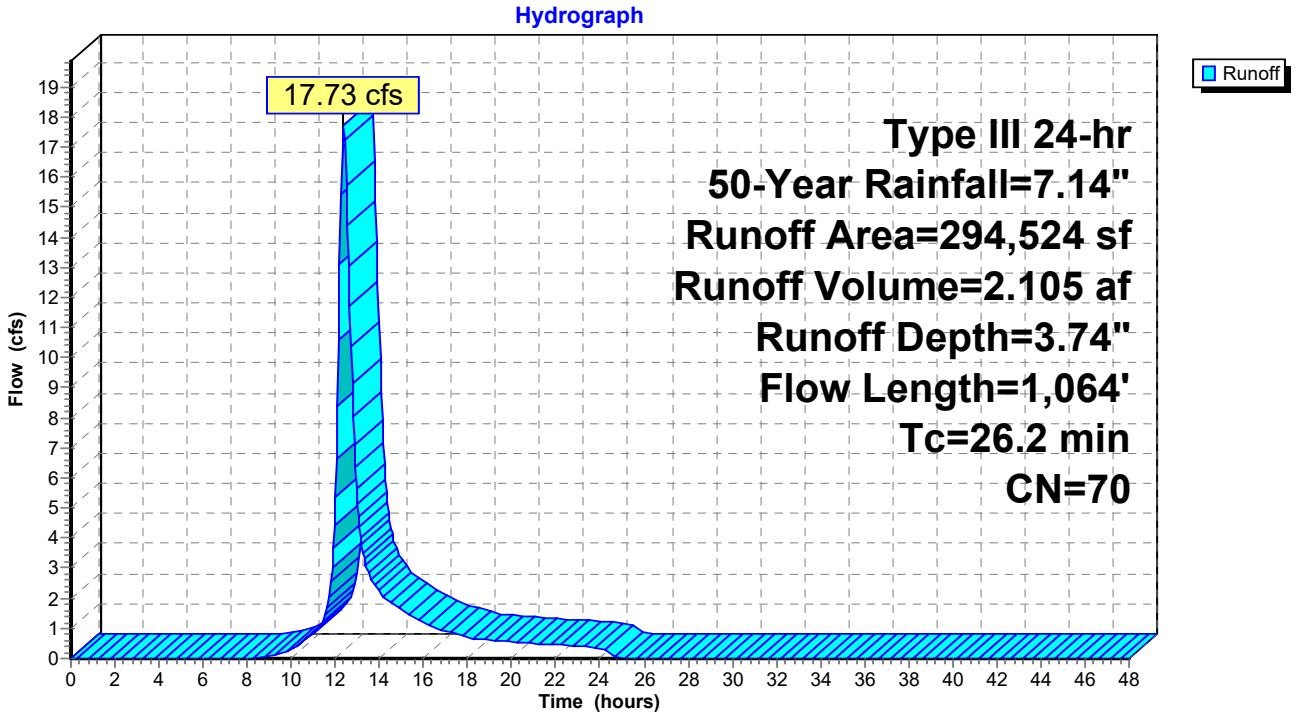
Runoff = 17.73 cfs @ 12.37 hrs, Volume= 2.105 af, Depth= 3.74"

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 (sf)	CN	Description
10,077	74	>75% Grass cover, Good, HSG C
1,575	98	Paved parking, HSG C
411	70	Woods, Good, HSG C
2,001	96	Gravel surface, HSG C
1,499	98	Unconnected roofs, HSG B
1,111	98	Unconnected roofs, HSG B
1,273	96	Gravel surface, HSG B
1,214	98	Unconnected roofs, HSG B
42,571	98	Paved parking, HSG B
1,694	96	Gravel surface, HSG B
4,509	98	Unconnected roofs, HSG C
113	98	Unconnected roofs, HSG C
2,133	98	Unconnected roofs, HSG C
12,266	96	Gravel surface, HSG C
2,876	70	Woods, Good, HSG C
1,206	70	Woods, Good, HSG C
677	70	Woods, Good, HSG C
650	70	Woods, Good, HSG C
3,876	70	Woods, Good, HSG C
641	70	Woods, Good, HSG C
4,468	55	Woods, Good, HSG B
99,615	55	Woods, Good, HSG B
62,431	61	>75% Grass cover, Good, HSG B
35,637	74	>75% Grass cover, Good, HSG C
294,524	70	Weighted Average
239,799		81.42% Pervious Area
54,725		18.58% Impervious Area
10,579		19.33% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1300	0.17		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.3	343	0.0466	1.08		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.3	434	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0183	2.18		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	147	0.0360	6.04	40.29	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
26.2	1,064	Total			

Subcatchment 1S: DA 1



Summary for Subcatchment 3S: DA 2

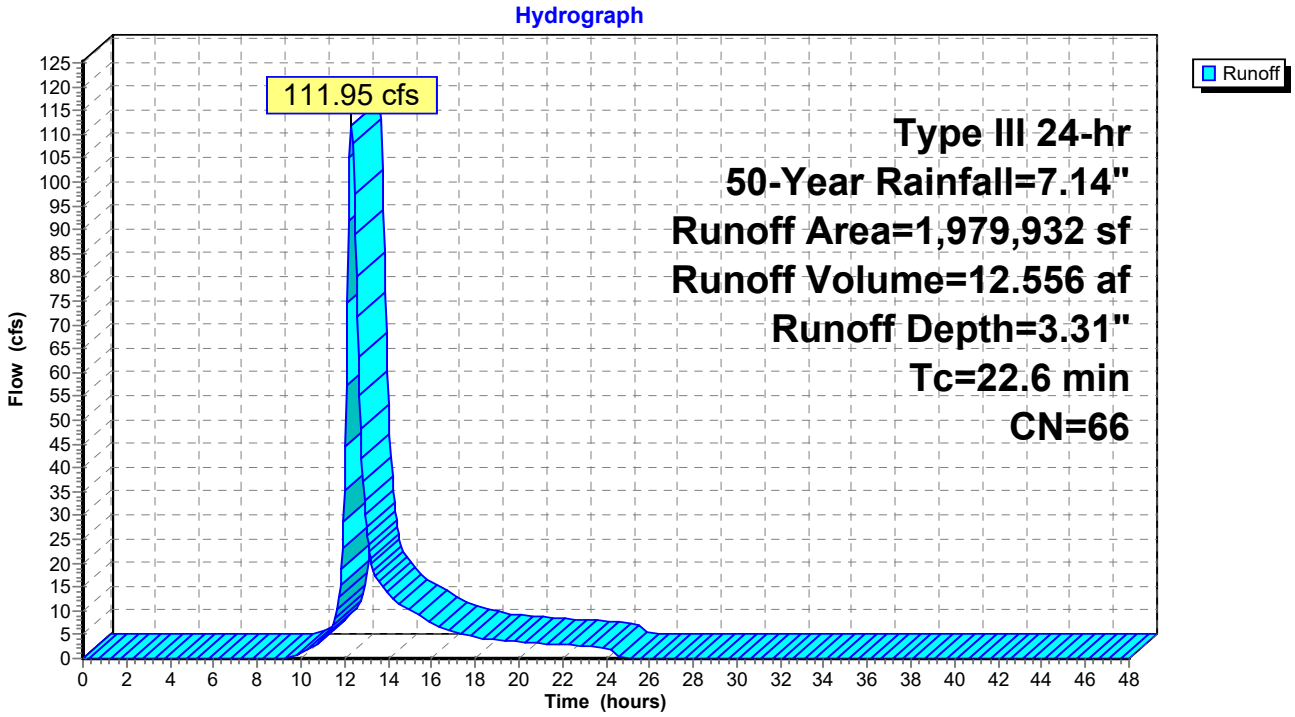
Runoff = 111.95 cfs @ 12.32 hrs, Volume= 12.556 af, Depth= 3.31"

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 (sf)	CN	Description
473,802	77	Woods, Good, HSG D
36,547	98	Water Surface, 0% imp, HSG D
3,920	80	>75% Grass cover, Good, HSG D
12,284	61	>75% Grass cover, Good, HSG B
5,184	98	Unconnected roofs, HSG B
766,264	55	Woods, Good, HSG B
663,462	70	Woods, Good, HSG C
2,265	77	Woods, Good, HSG D
1,699	70	Woods, Good, HSG C
174	96	Gravel surface, HSG C
348	96	Gravel surface, HSG B
610	98	Paved parking, HSG C
13,373	74	>75% Grass cover, Good, HSG C
1,979,932	66	Weighted Average
1,974,138		99.71% Pervious Area
5,794		0.29% Impervious Area
5,184		89.47% Unconnected

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

Subcatchment 3S: DA 2



Summary for Pond 2P: 30" RCP

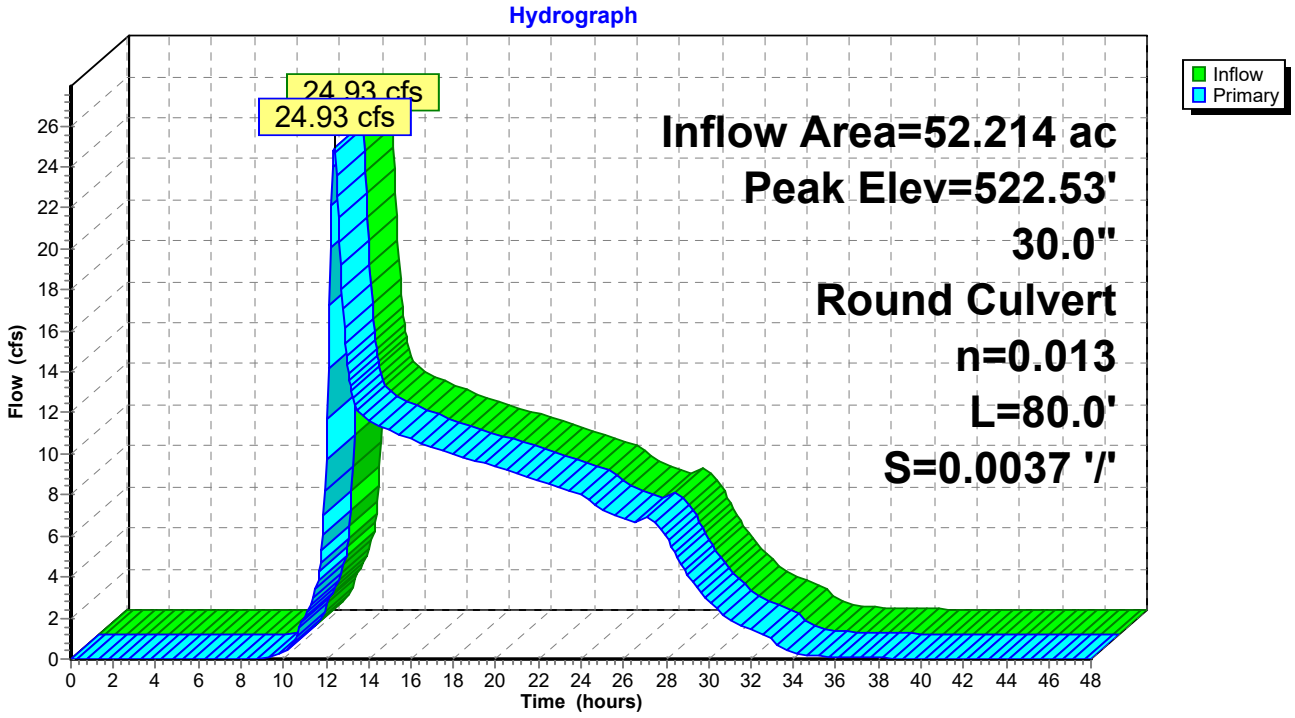
Inflow Area = 52.214 ac, 2.66% Impervious, Inflow Depth > 3.36" for 50-Year event
Inflow = 24.93 cfs @ 12.39 hrs, Volume= 14.628 af
Outflow = 24.93 cfs @ 12.39 hrs, Volume= 14.628 af, Atten= 0%, Lag= 0.0 min
Primary = 24.93 cfs @ 12.39 hrs, Volume= 14.628 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 522.53' @ 12.39 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf

Primary OutFlow Max=24.87 cfs @ 12.39 hrs HW=522.52' (Free Discharge)
1=30" RC (Barrel Controls 24.87 cfs @ 6.05 fps)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 45.453 ac, 0.29% Impervious, Inflow Depth = 3.31" for 50-Year event
Inflow = 111.95 cfs @ 12.32 hrs, Volume= 12.556 af
Outflow = 9.54 cfs @ 15.20 hrs, Volume= 12.523 af, Atten= 91%, Lag= 172.7 min
Primary = 9.54 cfs @ 15.20 hrs, Volume= 12.523 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 526.51' @ 15.20 hrs Surf.Area= 2.505 ac Storage= 6.834 af

Plug-Flow detention time= 375.7 min calculated for 12.510 af (100% of inflow)
Center-of-Mass det. time= 374.9 min (1,229.0 - 854.1)

Volume	Invert	Avail.Storage	Storage Description
#1	522.20'	10.783 af	**Pond Storage (Irregular)**Listed below

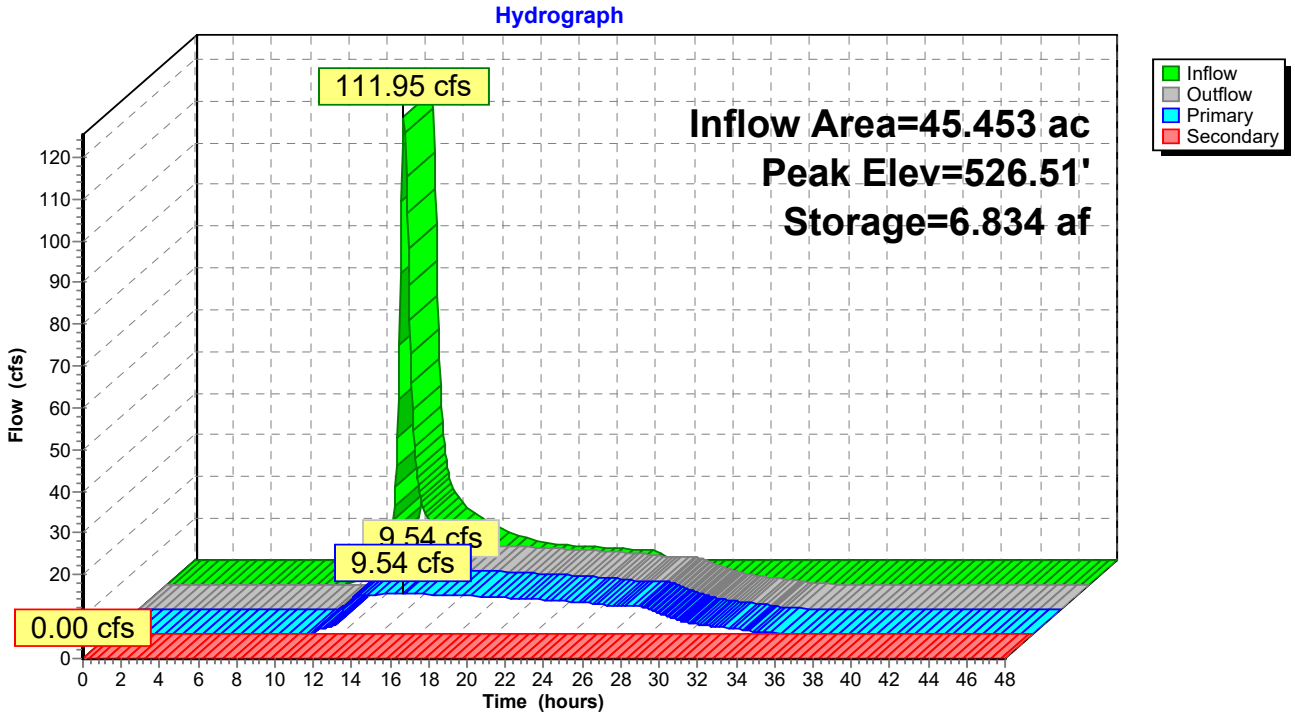
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
522.20	0.002	10.0	0.000	0.000	0.002
522.87	0.636	1,389.1	0.150	0.150	3.527
524.00	1.723	1,270.7	1.283	1.433	4.103
526.00	2.359	1,494.7	4.065	5.499	5.237
528.00	2.936	1,638.1	5.284	10.783	6.061

Device	Routing	Invert	Outlet Devices
#1	Primary	522.29'	**18.0" Round 18" RCP** L= 440.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 522.29' / 520.81' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	526.90'	**83.0' long x 15.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=9.54 cfs @ 15.20 hrs HW=526.51' TW=521.49' (Dynamic Tailwater)
↑—**1=18" RCP** (Barrel Controls 9.54 cfs @ 5.40 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.20' TW=519.92' (Dynamic Tailwater)
↑—**2=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond


Hydrograph
111.95 cfs
9.54 cfs
9.54 cfs
0.00 cfs
Inflow Area=45.453 ac
Peak Elev=526.51'
Storage=6.834 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
0 20 30 40 50 60 70 80 90 100 110 120

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 1S: DA 1 Runoff Area=294,524 sf 18.58% Impervious Runoff Depth=4.50"
Flow Length=1,064' Tc=26.2 min CN=70 Runoff=21.39 cfs 2.535 af

Subcatchment 3S: DA 2 Runoff Area=1,979,932 sf 0.29% Impervious Runoff Depth=4.04"
Tc=22.6 min CN=66 Runoff=137.19 cfs 15.304 af

Pond 2P: 30" RCP Peak Elev=522.85' Inflow=28.78 cfs 17.805 af
30.0" Round Culvert n=0.013 L=80.0' S=0.0037 '/' Outflow=28.78 cfs 17.805 af

Pond 4P: Pond Peak Elev=527.00' Storage=8.135 af Inflow=137.19 cfs 15.304 af
Primary=10.09 cfs 14.422 af Secondary=6.81 cfs 0.848 af Outflow=16.90 cfs 15.270 af

Total Runoff Area = 52.214 ac Runoff Volume = 17.839 af Average Runoff Depth = 4.10"
97.34% Pervious = 50.825 ac 2.66% Impervious = 1.389 ac

Summary for Subcatchment 1S: DA 1

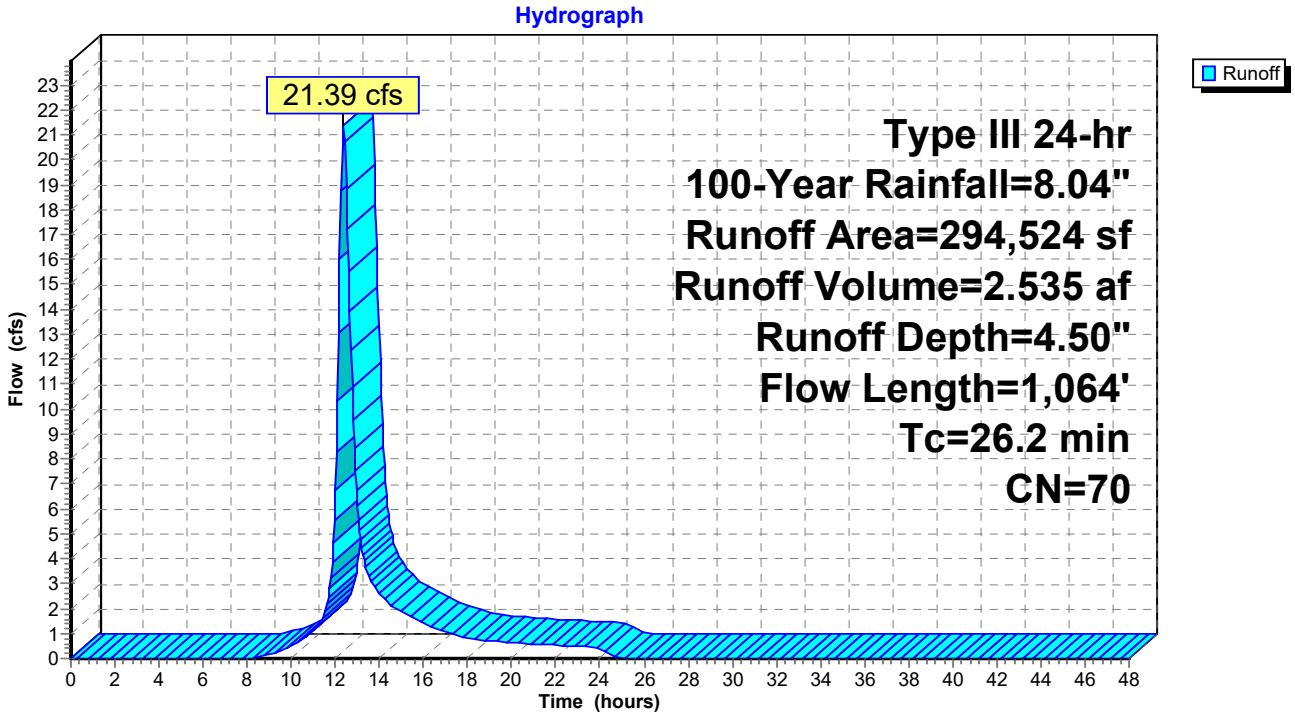
Runoff = 21.39 cfs @ 12.37 hrs, Volume= 2.535 af, Depth= 4.50"

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 (sf)	CN	Description
10,077	74	>75% Grass cover, Good, HSG C
1,575	98	Paved parking, HSG C
411	70	Woods, Good, HSG C
2,001	96	Gravel surface, HSG C
1,499	98	Unconnected roofs, HSG B
1,111	98	Unconnected roofs, HSG B
1,273	96	Gravel surface, HSG B
1,214	98	Unconnected roofs, HSG B
42,571	98	Paved parking, HSG B
1,694	96	Gravel surface, HSG B
4,509	98	Unconnected roofs, HSG C
113	98	Unconnected roofs, HSG C
2,133	98	Unconnected roofs, HSG C
12,266	96	Gravel surface, HSG C
2,876	70	Woods, Good, HSG C
1,206	70	Woods, Good, HSG C
677	70	Woods, Good, HSG C
650	70	Woods, Good, HSG C
3,876	70	Woods, Good, HSG C
641	70	Woods, Good, HSG C
4,468	55	Woods, Good, HSG B
99,615	55	Woods, Good, HSG B
62,431	61	>75% Grass cover, Good, HSG B
35,637	74	>75% Grass cover, Good, HSG C
294,524	70	Weighted Average
239,799		81.42% Pervious Area
54,725		18.58% Impervious Area
10,579		19.33% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	100	0.1300	0.17		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.3	343	0.0466	1.08		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
10.3	434	0.0100	0.70		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.0183	2.18		**Shallow Concentrated Flow, Gravel** Unpaved Kv= 16.1 fps
0.4	147	0.0360	6.04	40.29	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
26.2	1,064	Total			

Subcatchment 1S: DA 1



Summary for Subcatchment 3S: DA 2

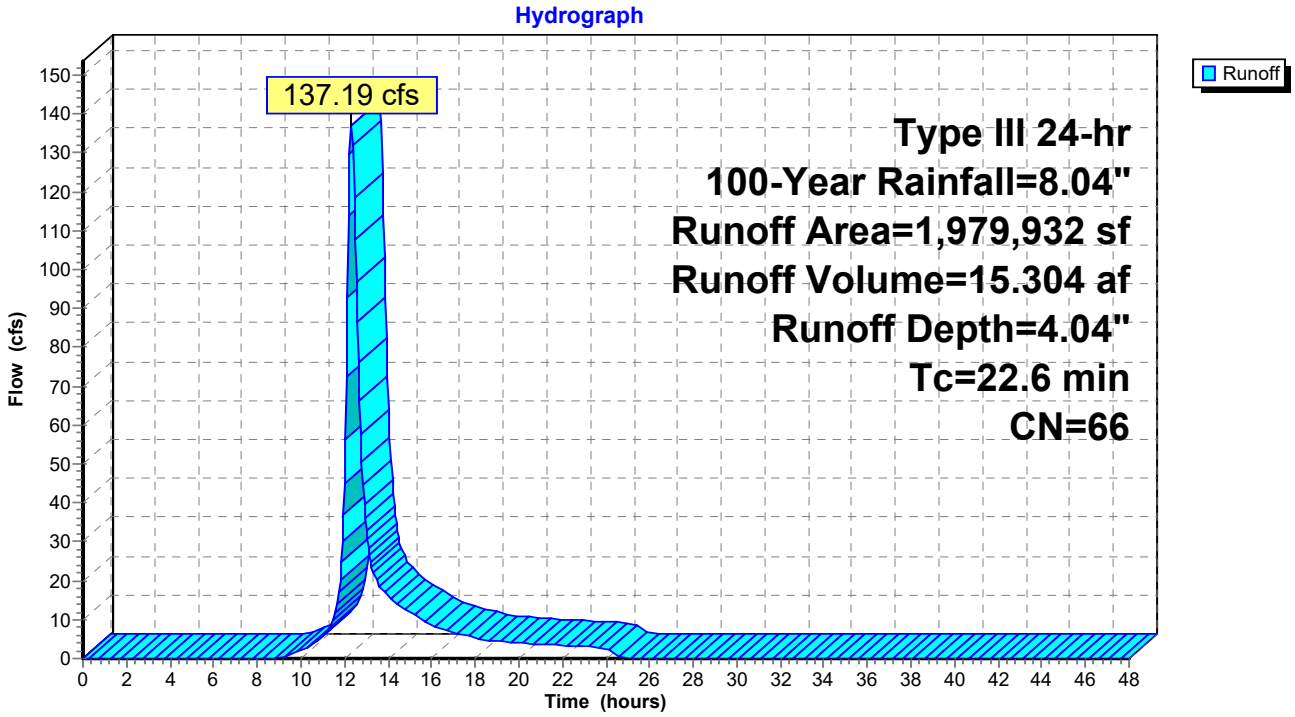
Runoff = 137.19 cfs @ 12.32 hrs, Volume= 15.304 af, Depth= 4.04"

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 (sf)	CN	Description
473,802	77	Woods, Good, HSG D
36,547	98	Water Surface, 0% imp, HSG D
3,920	80	>75% Grass cover, Good, HSG D
12,284	61	>75% Grass cover, Good, HSG B
5,184	98	Unconnected roofs, HSG B
766,264	55	Woods, Good, HSG B
663,462	70	Woods, Good, HSG C
2,265	77	Woods, Good, HSG D
1,699	70	Woods, Good, HSG C
174	96	Gravel surface, HSG C
348	96	Gravel surface, HSG B
610	98	Paved parking, HSG C
13,373	74	>75% Grass cover, Good, HSG C
1,979,932	66	Weighted Average
1,974,138		99.71% Pervious Area
5,794		0.29% Impervious Area
5,184		89.47% Unconnected

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

Subcatchment 3S: DA 2



Summary for Pond 2P: 30" RCP

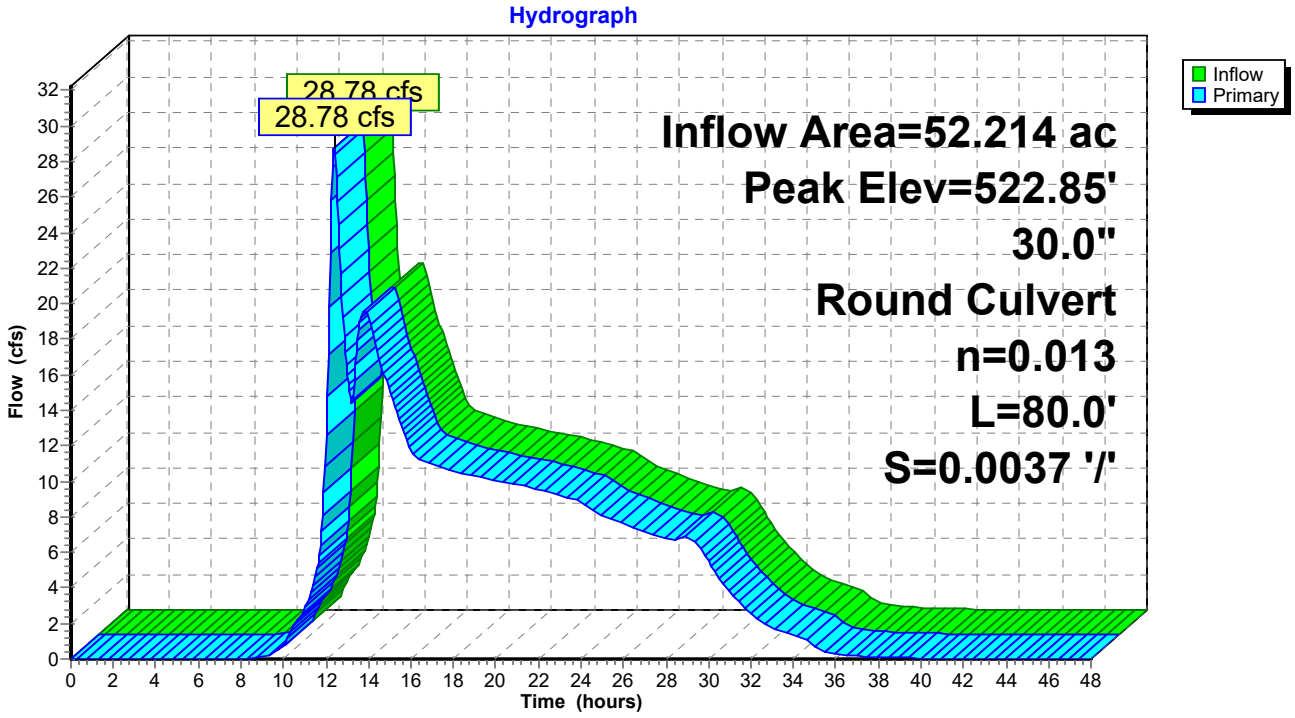
Inflow Area = 52.214 ac, 2.66% Impervious, Inflow Depth > 4.09" for 100-Year event
Inflow = 28.78 cfs @ 12.38 hrs, Volume= 17.805 af
Outflow = 28.78 cfs @ 12.38 hrs, Volume= 17.805 af, Atten= 0%, Lag= 0.0 min
Primary = 28.78 cfs @ 12.38 hrs, Volume= 17.805 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 522.85' @ 12.38 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf

Primary OutFlow Max=28.70 cfs @ 12.38 hrs HW=522.84' (Free Discharge)
1=30" RC (Barrel Controls 28.70 cfs @ 6.29 fps)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 45.453 ac, 0.29% Impervious, Inflow Depth = 4.04" for 100-Year event
Inflow = 137.19 cfs @ 12.32 hrs, Volume= 15.304 af
Outflow = 16.90 cfs @ 13.87 hrs, Volume= 15.270 af, Atten= 88%, Lag= 93.0 min
Primary = 10.09 cfs @ 13.87 hrs, Volume= 14.422 af
Secondary = 6.81 cfs @ 13.87 hrs, Volume= 0.848 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 527.00' @ 13.87 hrs Surf.Area= 2.647 ac Storage= 8.135 af

Plug-Flow detention time= 396.8 min calculated for 15.270 af (100% of inflow)
Center-of-Mass det. time= 395.4 min (1,243.8 - 848.4)

Volume	Invert	Avail.Storage	Storage Description
#1	522.20'	10.783 af	**Pond Storage (Irregular)**Listed below

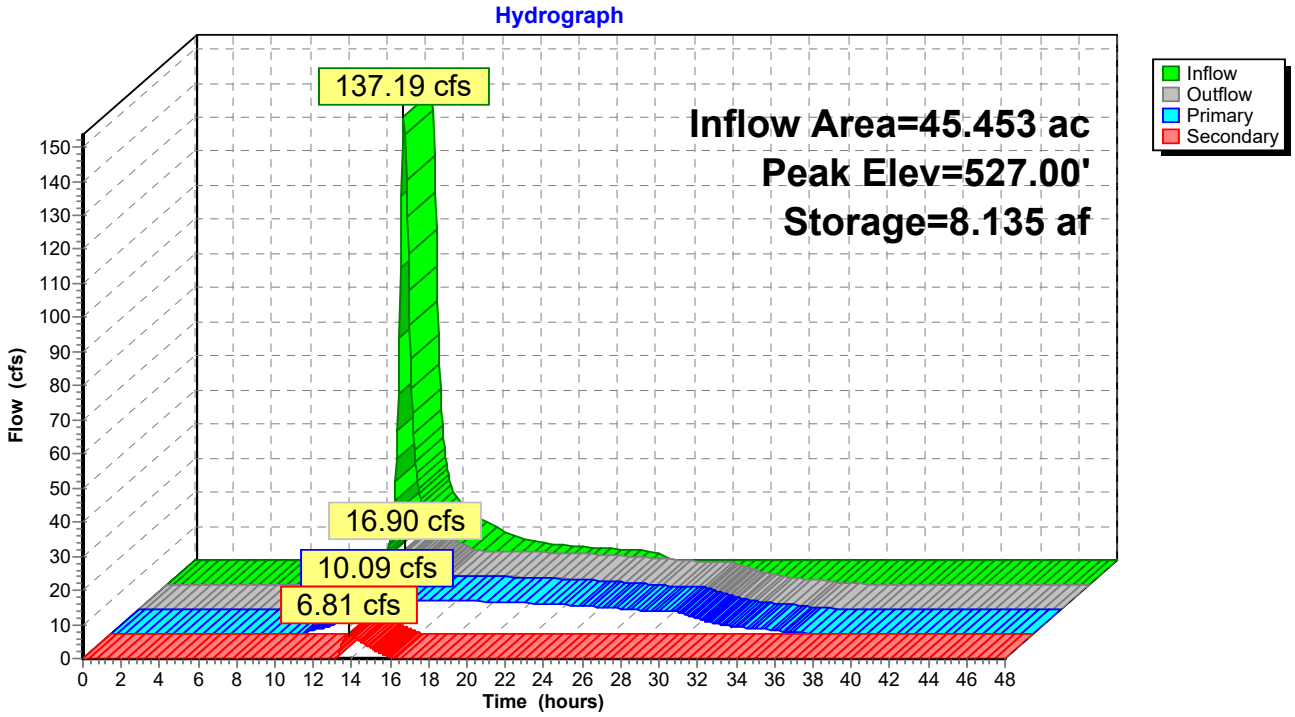
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
522.20	0.002	10.0	0.000	0.000	0.002
522.87	0.636	1,389.1	0.150	0.150	3.527
524.00	1.723	1,270.7	1.283	1.433	4.103
526.00	2.359	1,494.7	4.065	5.499	5.237
528.00	2.936	1,638.1	5.284	10.783	6.061

Device	Routing	Invert	Outlet Devices
#1	Primary	522.29'	**18.0" Round 18" RCP** L= 440.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 522.29' / 520.81' S= 0.0034 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#2	Secondary	526.90'	**83.0' long x 15.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.09 cfs @ 13.87 hrs HW=527.00' TW=522.13' (Dynamic Tailwater)
↑—**1=18" RCP** (Barrel Controls 10.09 cfs @ 5.71 fps)

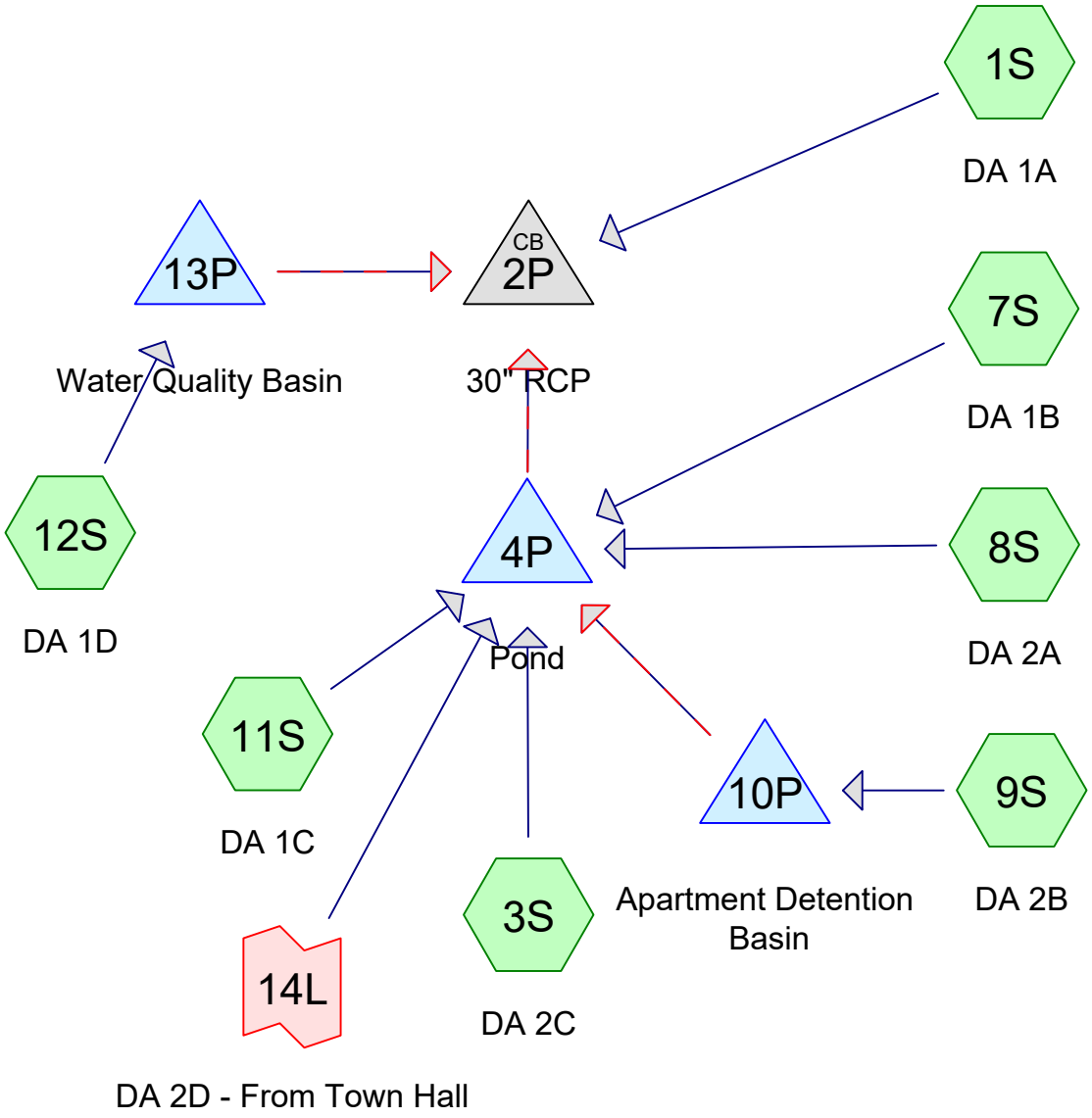
Secondary OutFlow Max=6.80 cfs @ 13.87 hrs HW=527.00' TW=522.13' (Dynamic Tailwater)
↑—**2=Overflow** (Weir Controls 6.80 cfs @ 0.84 fps)

Pond 4P: Pond


Hydrograph
137.19 cfs
16.90 cfs
10.09 cfs
6.81 cfs
Inflow Area=45.453 ac
Peak Elev=527.00'
Storage=8.135 af
Inflow
Outflow
Primary
Secondary
Flow (cfs)
Time (hours)

Post-Development Conditions

HydroCAD Results



Subcat Reach Pond Link

Routing Diagram for Market Square and Existing Development to RT 66

Prepared by {enter your company name here}, Printed 5/8/2020

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)
3.126	61	>75% Grass cover, Good, HSG B (1S, 3S, 7S, 8S, 9S)
0.559	74	>75% Grass cover, Good, HSG C (1S, 11S, 12S)
0.271	86	Newly graded area, HSG B (7S)
5.700	98	Paved parking, HSG B (1S, 3S, 7S, 8S, 9S)
2.153	98	Paved parking, HSG C (1S, 3S, 11S, 12S)
0.152	98	Roofs, HSG B (8S)
0.110	98	Roofs, HSG C (3S)
0.870	98	Unconnected roofs, HSG B (3S)
0.076	98	Water Surface, 0% imp, HSG B (9S)
0.140	98	Water Surface, 0% imp, HSG C (12S)
0.839	98	Water Surface, 0% imp, HSG D (3S)
14.726	55	Woods, Good, HSG B (3S, 8S, 9S)
11.541	70	Woods, Good, HSG C (3S)
10.670	77	Woods, Good, HSG D (3S)
50.933	**72**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
24.921	HSG B	1S, 3S, 7S, 8S, 9S
14.503	HSG C	1S, 3S, 11S, 12S
11.509	HSG D	3S
0.000	Other	
50.933		**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	3.126	0.559	0.000	0.000	3.685	>75% Grass cover, Good	1S, 3S, 7S, 8S, 9S, 11S, 12S
0.000	0.271	0.000	0.000	0.000	0.271	Newly graded area	7S
0.000	5.700	2.153	0.000	0.000	7.853	Paved parking	1S, 3S, 7S, 8S, 9S, 11S, 12S
0.000	0.152	0.110	0.000	0.000	0.262	Roofs	3S, 8S
0.000	0.870	0.000	0.000	0.000	0.870	Unconnected roofs	3S
0.000	0.076	0.140	0.839	0.000	1.055	Water Surface, 0% imp	3S, 9S, 12S
0.000	14.726	11.541	10.670	0.000	36.937	Woods, Good	3S, 8S, 9S
0.000	**24.921**	**14.503**	**11.509**	**0.000**	**50.933**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	253.0	0.0200	0.013	18.0	0.0	0.0
2	7S	0.00	0.00	167.0	0.0200	0.013	18.0	0.0	0.0
3	8S	0.00	0.00	82.0	0.0500	0.013	15.0	0.0	0.0
4	9S	0.00	0.00	108.0	0.0200	0.013	15.0	0.0	0.0
5	2P	519.92	519.62	80.0	0.0037	0.013	30.0	0.0	0.0
6	4P	520.91	520.64	110.8	0.0024	0.013	30.0	0.0	0.0
7	4P	521.46	520.91	86.8	0.0063	0.013	30.0	0.0	0.0
8	4P	521.41	521.40	157.1	0.0001	0.013	24.0	0.0	0.0
9	4P	523.45	521.82	117.9	0.0138	0.013	18.0	0.0	0.0
10	10P	536.00	534.50	75.0	0.0200	0.013	12.0	0.0	0.0
11	13P	522.50	521.75	75.0	0.0100	0.013	24.0	0.0	0.0

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 1S: DA 1A Runoff Area=2.061 ac 80.93% Impervious Runoff Depth=2.42"
Flow Length=532' Tc=11.0 min CN=91 Runoff=4.83 cfs 0.415 af

Subcatchment 3S: DA 2C Runoff Area=38.645 ac 2.85% Impervious Runoff Depth=0.78"
Flow Length=2,588' Tc=22.6 min UI Adjusted CN=67 Runoff=19.31 cfs 2.506 af

Subcatchment 7S: DA 1B Runoff Area=94,000 sf 75.97% Impervious Runoff Depth=2.51"
Flow Length=669' Tc=6.0 min CN=92 Runoff=6.05 cfs 0.452 af

Subcatchment 8S: DA 2A Runoff Area=3.613 ac 61.86% Impervious Runoff Depth=1.83"
Flow Length=740' Tc=12.1 min CN=84 Runoff=6.30 cfs 0.550 af

Subcatchment 9S: DA 2B Runoff Area=2.152 ac 30.72% Impervious Runoff Depth=1.04"
Flow Length=735' Tc=19.6 min CN=72 Runoff=1.65 cfs 0.186 af

Subcatchment 11S: DA 1C Runoff Area=14,897 sf 83.63% Impervious Runoff Depth=2.71"
Tc=6.0 min CN=94 Runoff=1.01 cfs 0.077 af

Subcatchment 12S: DA 1D Runoff Area=85,452 sf 71.00% Impervious Runoff Depth=2.61"
Tc=6.0 min CN=93 Runoff=5.66 cfs 0.427 af

Pond 2P: 30" RCP Peak Elev=521.10' Inflow=6.57 cfs 5.086 af
Primary=6.57 cfs 5.086 af Secondary=0.00 cfs 0.000 af Outflow=6.57 cfs 5.086 af

Pond 4P: Pond Peak Elev=524.63' Storage=1.899 af Inflow=30.36 cfs 4.352 af
Primary=5.50 cfs 4.245 af Secondary=0.00 cfs 0.000 af Outflow=5.50 cfs 4.245 af

Pond 10P: Apartment Detention Basin Peak Elev=536.68' Storage=228 cf Inflow=1.65 cfs 0.186 af
Primary=1.61 cfs 0.186 af Secondary=0.00 cfs 0.000 af Outflow=1.61 cfs 0.186 af

Pond 13P: Water Quality Basin Peak Elev=526.67' Storage=7,748 cf Inflow=5.66 cfs 0.427 af
Primary=0.57 cfs 0.425 af Secondary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.425 af

2-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce Inflow=3.72 cfs 0.582 af
Link R Area= 5.658 ac 40.42% Imperv. Primary=3.72 cfs 0.582 af

Total Runoff Area = 50.933 ac Runoff Volume = 4.612 af Average Runoff Depth = 1.09"
82.36% Pervious = 41.948 ac 17.64% Impervious = 8.985 ac

Summary for Subcatchment 1S: DA 1A

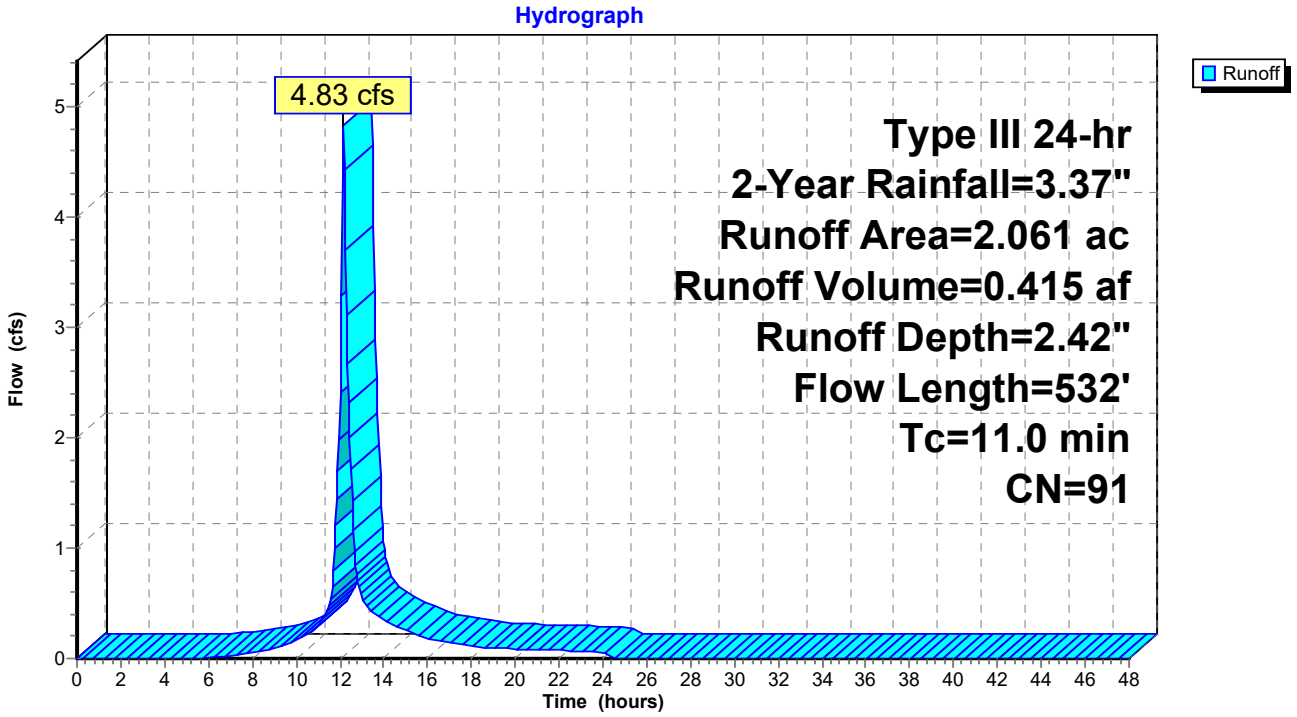
Runoff = 4.83 cfs @ 12.15 hrs, Volume= 0.415 af, Depth= 2.42"

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
0.201	98	Paved parking, HSG C
1.260	98	Paved parking, HSG B
0.207	98	Paved parking, HSG C
0.074	74	>75% Grass cover, Good, HSG C
0.319	61	>75% Grass cover, Good, HSG B
2.061	91	Weighted Average
0.393		19.07% Pervious Area
1.668		80.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	40	0.0100	0.08		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
1.7	239	0.0126	2.28		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.5	253	0.0200	8.41	14.86	**Pipe Channel, HDPE Drain** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
11.0	532	Total			

Subcatchment 1S: DA 1A



Summary for Subcatchment 3S: DA 2C

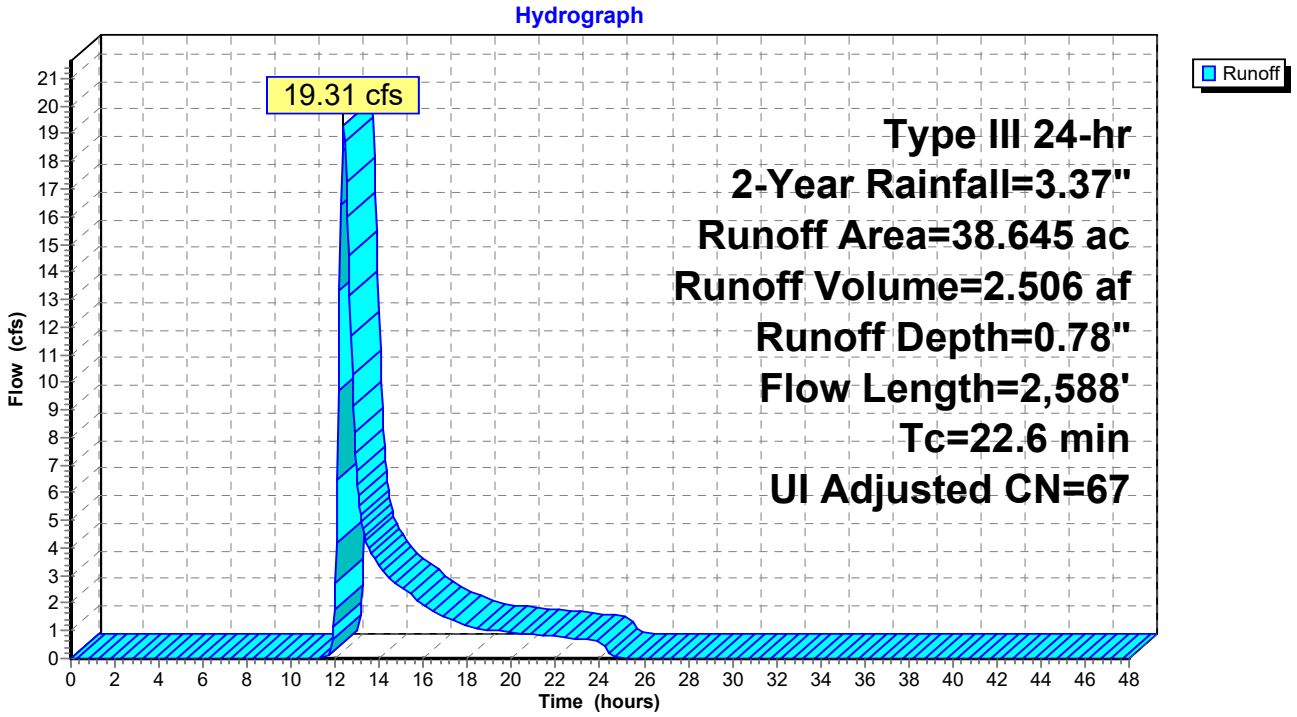
Runoff = 19.31 cfs @ 12.37 hrs, Volume= 2.506 af, Depth= 0.78"

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	Adj	Description
10.670	77		Woods, Good, HSG D
0.839	98		Water Surface, 0% imp, HSG D
13.926	55		Woods, Good, HSG B
11.541	70		Woods, Good, HSG C
0.066	98		Paved parking, HSG C
0.110	98		Roofs, HSG C
0.057	98		Paved parking, HSG B
0.566	61		>75% Grass cover, Good, HSG B
0.870	98		Unconnected roofs, HSG B
38.645	68	67	Weighted Average, UI Adjusted
37.542			97.15% Pervious Area
1.103			2.85% Impervious Area
0.870			78.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0850	0.14		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.1	598	0.1539	1.96		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
5.2	1,600	0.0262	5.16	34.37	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
0.6	290		8.02		**Lake or Reservoir, Pond** Mean Depth= 2.00'
22.6	2,588	Total			

Subcatchment 3S: DA 2C



Summary for Subcatchment 7S: DA 1B

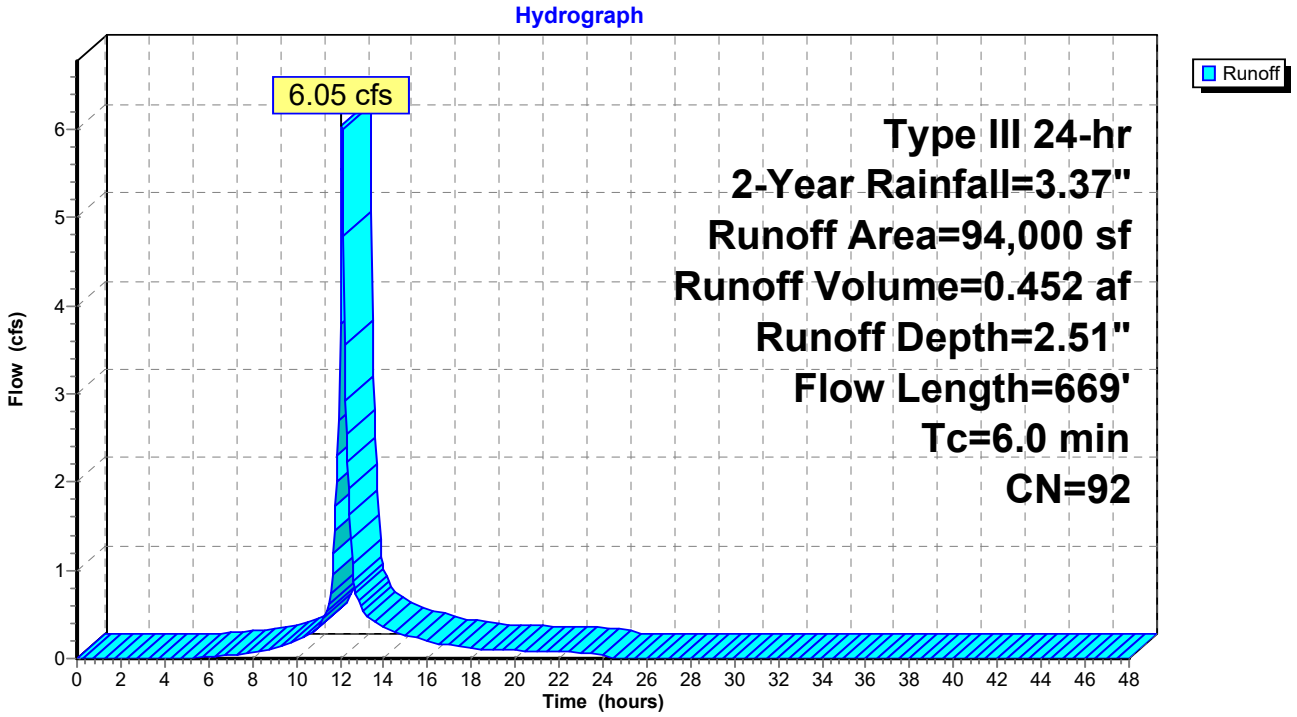
Runoff = 6.05 cfs @ 12.09 hrs, Volume= 0.452 af, Depth= 2.51"

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 (sf)	CN	Description
71,413	98	Paved parking, HSG B
11,784	86	Newly graded area, HSG B
10,803	61	>75% Grass cover, Good, HSG B
94,000	92	Weighted Average
22,587		24.03% Pervious Area
71,413		75.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.41		**Sheet Flow, Play areas** Smooth surfaces n= 0.011 P2= 3.37"
0.1	40	0.1500	6.24		**Shallow Concentrated Flow, Play areas** Unpaved Kv= 16.1 fps
2.2	362	0.0175	2.69		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.3	167	0.0200	8.41	14.86	**Pipe Channel, HDPE** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
3.8	669	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 7S: DA 1B



Summary for Subcatchment 8S: DA 2A

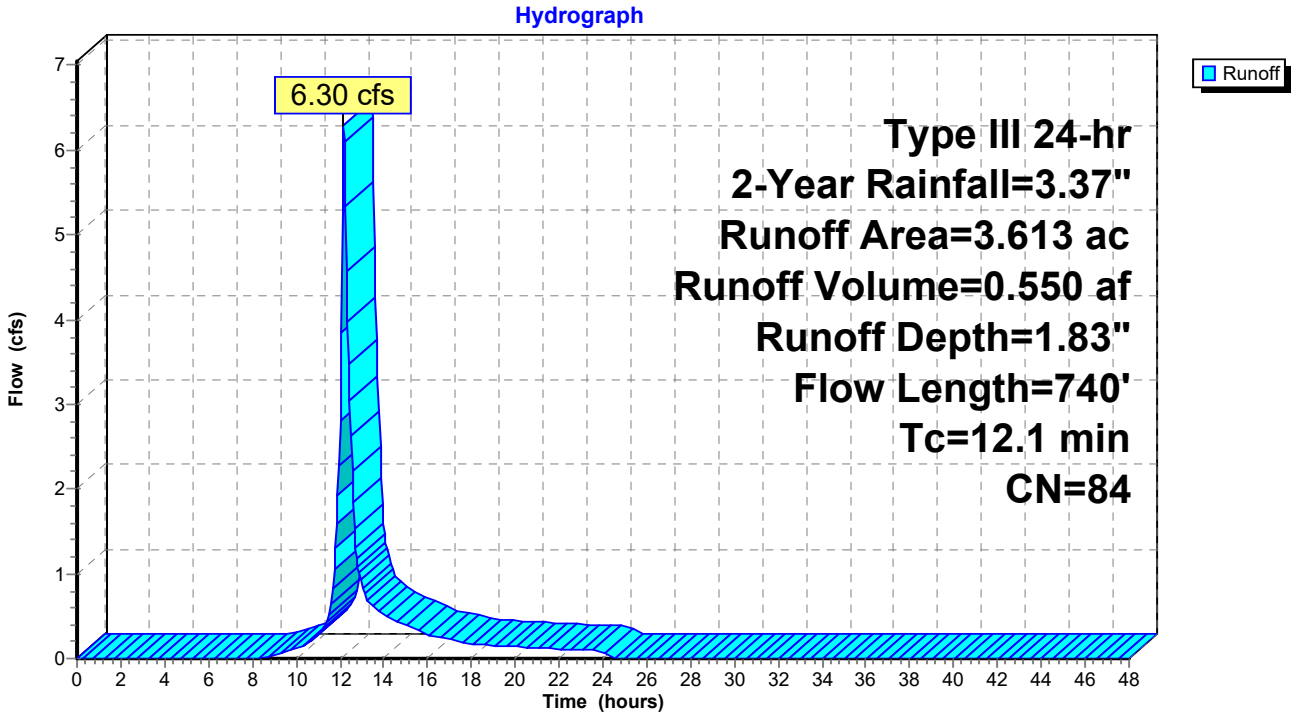
Runoff = 6.30 cfs @ 12.17 hrs, Volume= 0.550 af, Depth= 1.83"

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
1.953	98	Paved parking, HSG B
0.152	98	Roofs, HSG B
0.394	61	>75% Grass cover, Good, HSG B
0.054	55	Woods, Good, HSG B
0.930	61	>75% Grass cover, Good, HSG B
0.130	98	Paved parking, HSG B
3.613	84	Weighted Average
1.378		38.14% Pervious Area
2.235		61.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0650	0.19		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
3.3	558	0.0191	2.81		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.1	82	0.0500	11.77	14.44	**Pipe Channel, Discharge** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
12.1	740	Total			

Subcatchment 8S: DA 2A



Summary for Subcatchment 9S: DA 2B

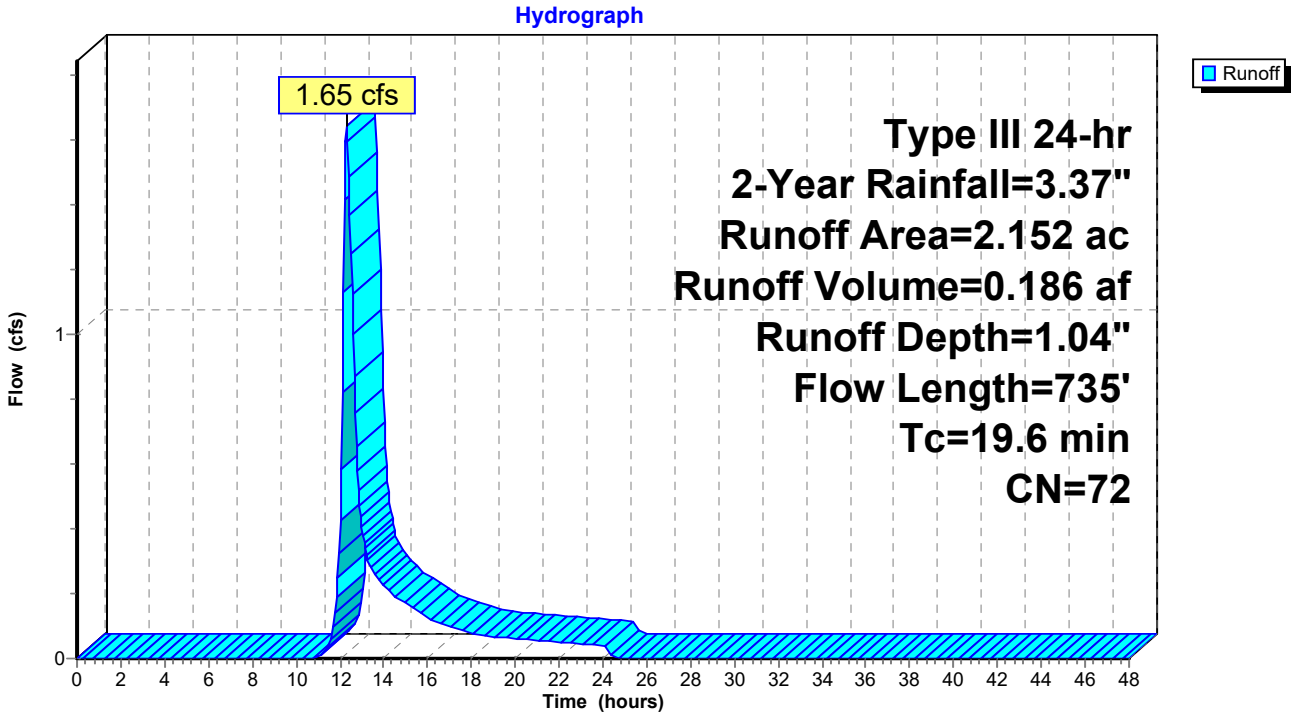
Runoff = 1.65 cfs @ 12.30 hrs, Volume= 0.186 af, Depth= 1.04"

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
0.661	98	Paved parking, HSG B
0.746	55	Woods, Good, HSG B
0.669	61	>75% Grass cover, Good, HSG B
0.076	98	Water Surface, 0% imp, HSG B
2.152	72	Weighted Average
1.491		69.28% Pervious Area
0.661		30.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0450	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
2.1	100	0.0250	0.79		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.2	38	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.8	314	0.0200	2.87		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.2	108	0.0200	7.44	9.14	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	75		5.67		**Lake or Reservoir,** Mean Depth= 1.00'
19.6	735	Total			

Subcatchment 9S: DA 2B



Summary for Subcatchment 11S: DA 1C

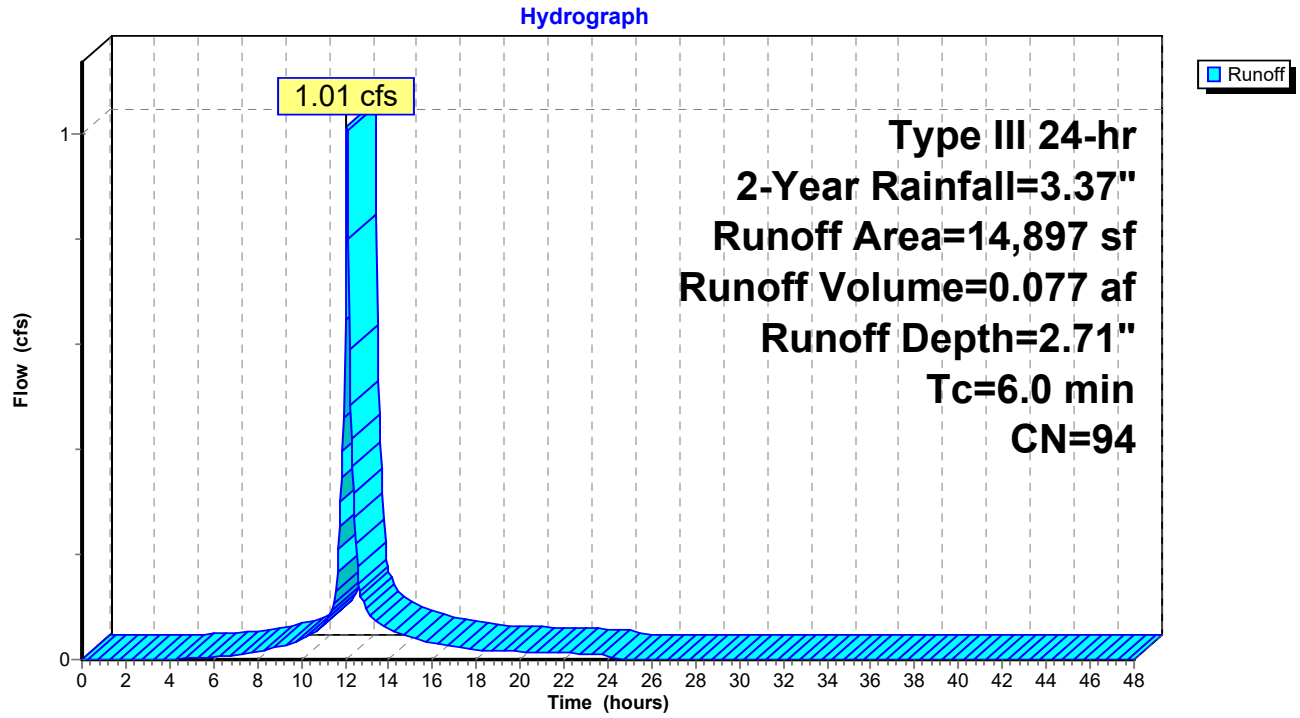
Runoff = 1.01 cfs @ 12.09 hrs, Volume= 0.077 af, Depth= 2.71"

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 (sf)	CN	Description
12,458	98	Paved parking, HSG C
2,439	74	>75% Grass cover, Good, HSG C
14,897	94	Weighted Average
2,439		16.37% Pervious Area
12,458		83.63% Impervious Area

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

Subcatchment 11S: DA 1C



Summary for Subcatchment 12S: DA 1D

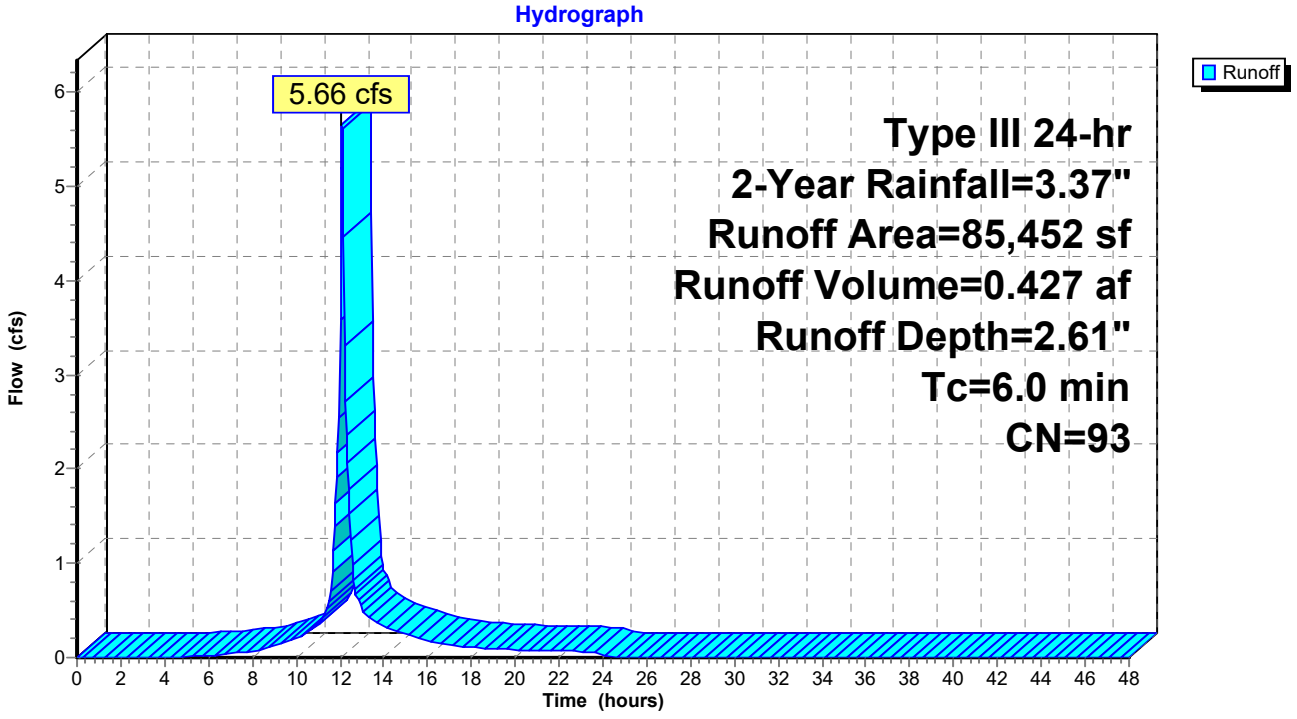
Runoff = 5.66 cfs @ 12.09 hrs, Volume= 0.427 af, Depth= 2.61"

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 (sf)	CN	Description
55,278	98	Paved parking, HSG C
6,098	98	Water Surface, 0% imp, HSG C
18,687	74	>75% Grass cover, Good, HSG C
5,389	98	Paved parking, HSG C
85,452	93	Weighted Average
24,785		29.00% Pervious Area
60,667		71.00% Impervious Area

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

Subcatchment 12S: DA 1D



Summary for Pond 2P: 30" RCP

Inflow Area = 56.590 ac, 19.92% Impervious, Inflow Depth > 1.08" for 2-Year event
Inflow = 6.57 cfs @ 12.17 hrs, Volume= 5.086 af
Outflow = 6.57 cfs @ 12.17 hrs, Volume= 5.086 af, Atten= 0%, Lag= 0.0 min
Primary = 6.57 cfs @ 12.17 hrs, Volume= 5.086 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

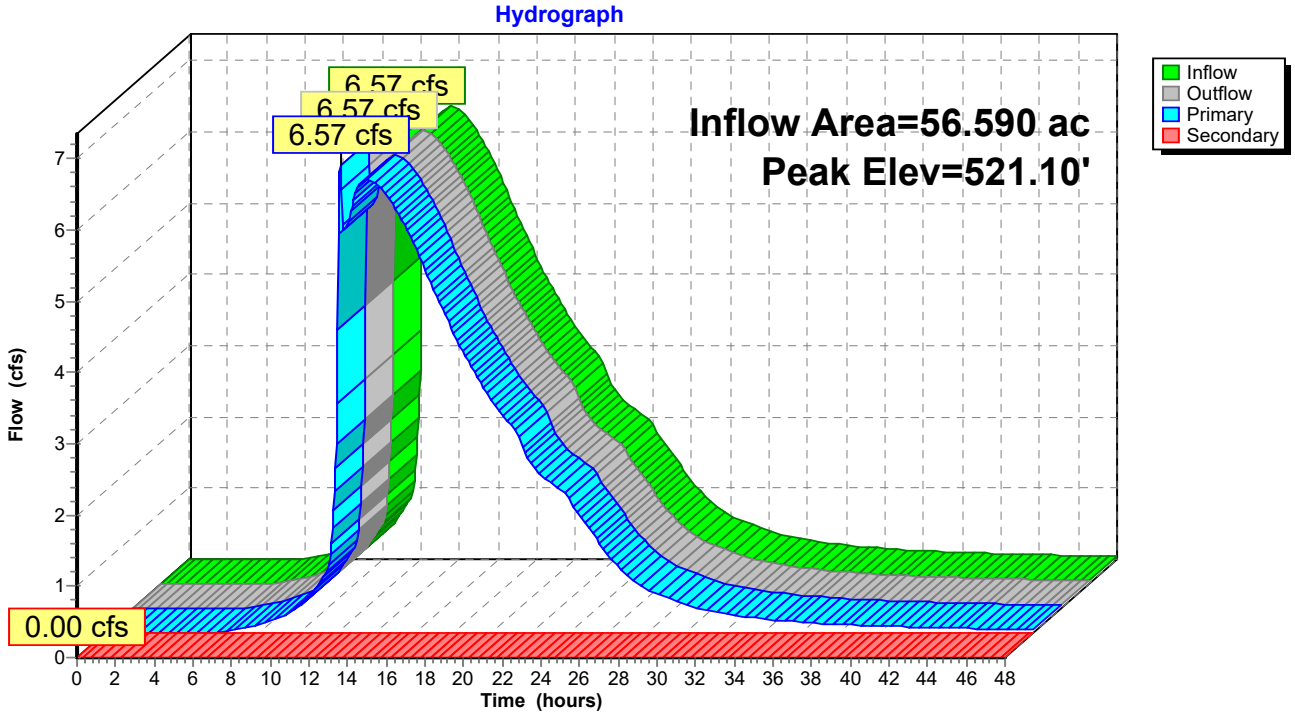
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 521.10' @ 12.17 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf
#2	Secondary	527.20'	**30.0' long x 10.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.46 cfs @ 12.17 hrs HW=521.09' (Free Discharge)
└**1=30" RC** (Barrel Controls 6.46 cfs @ 4.22 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=519.92' (Free Discharge)
└**2=Overflow** (Controls 0.00 cfs)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 52.568 ac, 15.62% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 30.36 cfs @ 12.32 hrs, Volume= 4.352 af
Outflow = 5.50 cfs @ 13.96 hrs, Volume= 4.245 af, Atten= 82%, Lag= 98.5 min
Primary = 5.50 cfs @ 13.96 hrs, Volume= 4.245 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 524.63' @ 13.96 hrs Surf.Area= 1.922 ac Storage= 1.899 af

Plug-Flow detention time= 276.6 min calculated for 4.241 af (97% of inflow)
Center-of-Mass det. time= 263.8 min (1,137.5 - 873.7)

Volume	Invert	Avail.Storage	Storage Description
#1	523.45'	16.273 af	**Pond Storage (Irregular)**Listed below

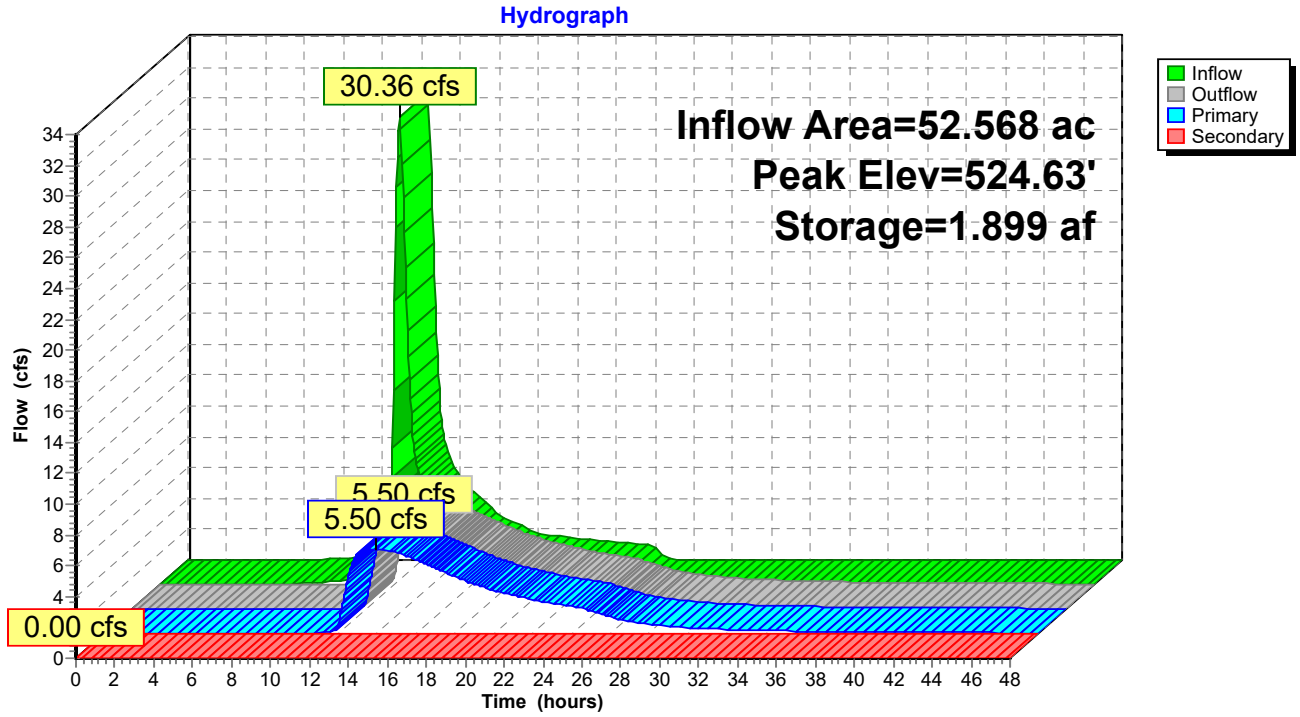
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
523.45	0.636	1,389.1	0.000	0.000	0.636
524.00	1.723	1,270.7	0.624	0.624	1.212
526.00	2.359	1,494.7	4.065	4.690	2.345
528.00	2.936	1,638.1	5.284	9.974	3.169
530.00	3.368	1,700.4	6.299	16.273	3.556

Device	Routing	Invert	Outlet Devices
#1	Primary	520.91'	**30.0" Round 30" HDPE** L= 110.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 520.91' / 520.64' S= 0.0024 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Device 1	521.46'	**30.0" Round 30" HDPE** L= 86.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.46' / 520.91' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#3	Device 2	521.41'	**24.0" Round 24" HDPE** L= 157.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.41' / 521.40' S= 0.0001 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#4	Device 3	523.45'	**18.0" Round 18" HDPE** L= 117.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 523.45' / 521.82' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Secondary	529.90'	**50.0' long x 25.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.50 cfs @ 13.96 hrs HW=524.63' TW=521.07' (Dynamic Tailwater)
└─**1=30" HDPE** (Passes 5.50 cfs of 30.23 cfs potential flow)
└─**2=30" HDPE** (Passes 5.50 cfs of 30.40 cfs potential flow)
└─**3=24" HDPE** (Passes 5.50 cfs of 15.02 cfs potential flow)
└─**4=18" HDPE** (Inlet Controls 5.50 cfs @ 3.69 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=523.45' TW=519.92' (Dynamic Tailwater)
└─**5=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond



Summary for Pond 10P: Apartment Detention Basin

Inflow Area = 2.152 ac, 30.72% Impervious, Inflow Depth = 1.04" for 2-Year event
Inflow = 1.65 cfs @ 12.30 hrs, Volume= 0.186 af
Outflow = 1.61 cfs @ 12.35 hrs, Volume= 0.186 af, Atten= 2%, Lag= 2.8 min
Primary = 1.61 cfs @ 12.35 hrs, Volume= 0.186 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 536.68' @ 12.35 hrs Surf.Area= 604 sf Storage= 228 cf

Plug-Flow detention time= 2.9 min calculated for 0.186 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (880.9 - 877.9)

Volume	Invert	Avail.Storage	Storage Description
#1	536.00'	7,026 cf	**Detention Basin (Irregular)**Listed below (Recalc)

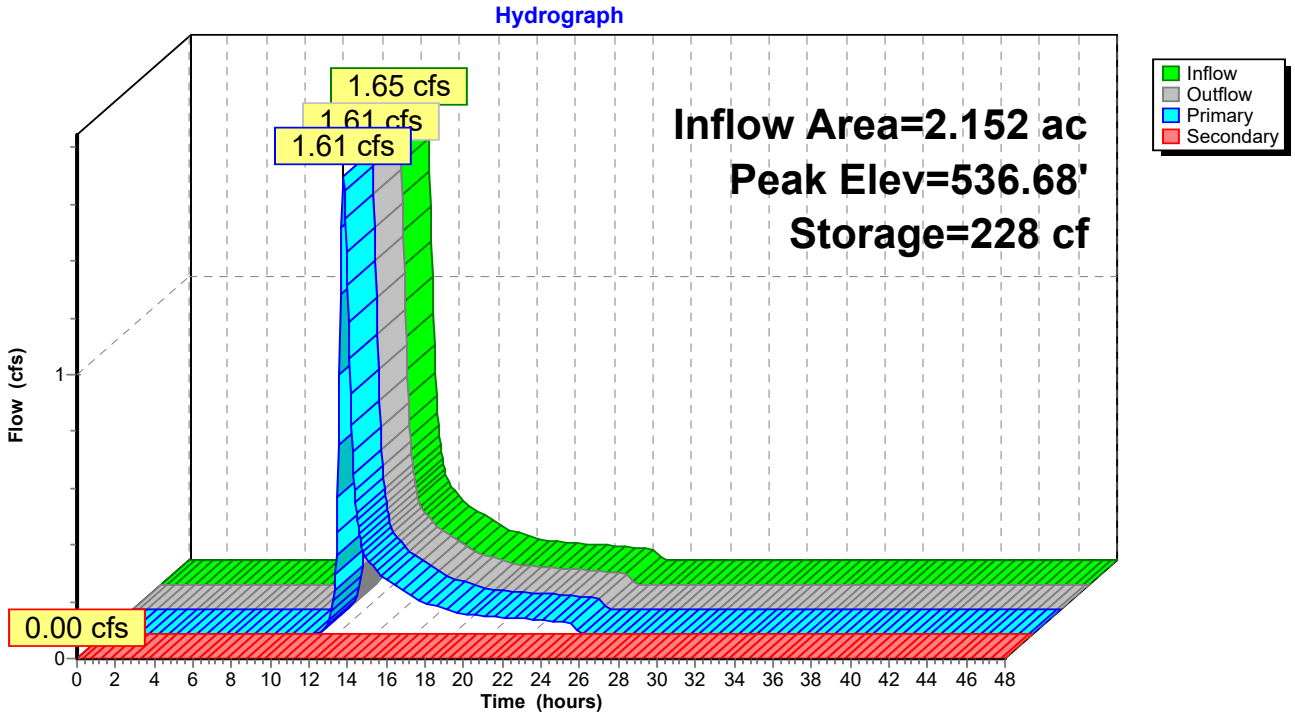
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
536.00	100	40.0	0	0	100
536.50	467	110.5	131	131	945
537.60	1,559	173.6	1,056	1,186	2,380
540.00	3,429	242.5	5,840	7,026	4,716

Device	Routing	Invert	Outlet Devices
#1	Primary	536.00'	**12.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 536.00' / 534.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	539.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.61 cfs @ 12.35 hrs HW=536.68' TW=524.18' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.61 cfs @ 2.81 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=536.00' TW=523.45' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Apartment Detention Basin



Summary for Pond 13P: Water Quality Basin

[42] Hint: Gap in defined storage above volume #1 at 524.25'

Inflow Area = 1.962 ac, 71.00% Impervious, Inflow Depth = 2.61" for 2-Year event
Inflow = 5.66 cfs @ 12.09 hrs, Volume= 0.427 af
Outflow = 0.57 cfs @ 12.90 hrs, Volume= 0.425 af, Atten= 90%, Lag= 48.7 min
Primary = 0.57 cfs @ 12.90 hrs, Volume= 0.425 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 526.67' @ 12.90 hrs Surf.Area= 5,194 sf Storage= 7,748 cf

Plug-Flow detention time= 148.7 min calculated for 0.424 af (100% of inflow)
Center-of-Mass det. time= 146.1 min (937.0 - 790.9)

Volume	Invert	Avail.Storage	Storage Description
#1	522.25'	290 cf	**2.00'W x 181.00'L x 2.00'H Underdrain Trench** 724 cf Overall x 40.0% Voids
#2	524.75'	27,446 cf	**Water Quality swale (Irregular)**Listed below (Recalc)
		27,735 cf	Total Available Storage

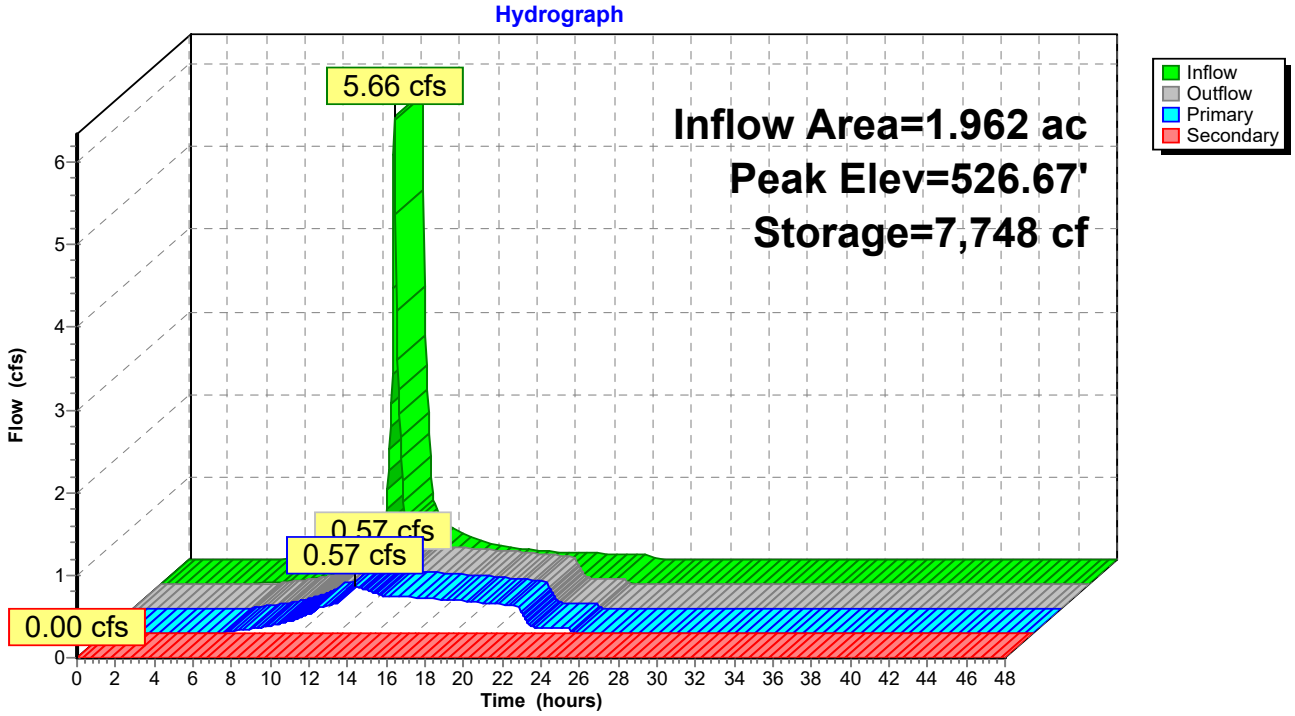
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
524.75	2,969	471.4	0	0	2,969
525.00	3,207	477.3	772	772	3,430
526.00	4,185	500.8	3,685	4,457	5,323
528.00	6,268	535.7	10,383	14,840	8,383
529.75	8,181	557.7	12,606	27,446	10,523

Device	Routing	Invert	Outlet Devices
#1	Primary	522.50'	**24.0" Round 24" HDPE** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 522.50' / 521.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	522.75'	**3.0" Vert. Underdrain** C= 0.600 Limited to weir flow at low heads
#3	Device 1	526.50'	**6.0" W x 6.0" H Vert. 6" Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	527.00'	**18.0" W x 6.0" H Vert. 18x6 Orifice** C= 0.600 Limited to weir flow at low heads
#5	Device 1	528.25'	**2.0" x 2.0" Horiz. Top of Frame X 20.00 columns** X 20 rows C= 0.600 in 48.0" x 48.0" Grate (69% open area) Limited to weir flow at low heads
#6	Secondary	528.75'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.57 cfs @ 12.90 hrs HW=526.67' TW=521.06' (Dynamic Tailwater)
└─**1=24" HDPE** (Passes 0.57 cfs of 26.92 cfs potential flow)
  └─**2=Underdrain** (Orifice Controls 0.46 cfs @ 9.38 fps)
  └─**3=6" Orifice** (Orifice Controls 0.11 cfs @ 1.31 fps)
  └─**4=18x6 Orifice** (Controls 0.00 cfs)
  └─**5=Top of Frame** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.25' TW=519.92' (Dynamic Tailwater)
└─**6=Emergency Spillway** (Controls 0.00 cfs)

Pond 13P: Water Quality Basin



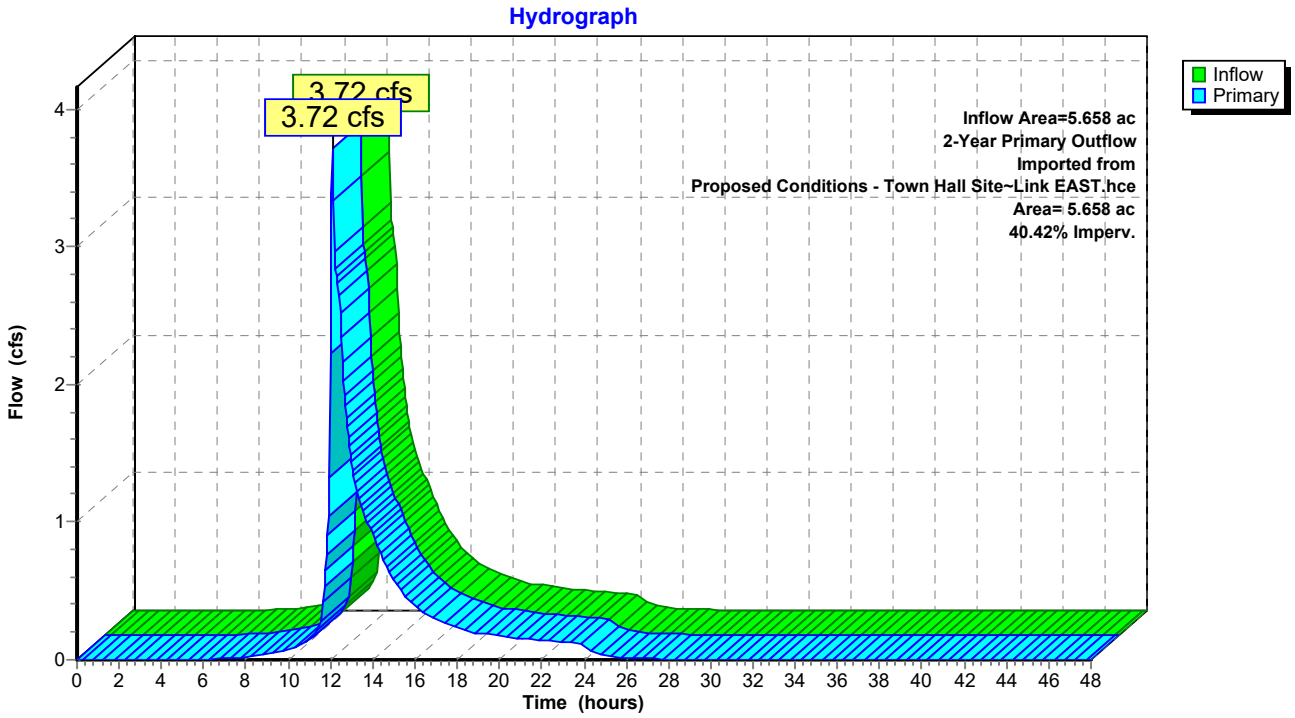
Summary for Link 14L: DA 2D - From Town Hall

Inflow Area = 5.658 ac, 40.42% Impervious, Inflow Depth = 1.23" for 2-Year event
Inflow = 3.72 cfs @ 12.10 hrs, Volume= 0.582 af
Primary = 3.72 cfs @ 12.10 hrs, Volume= 0.582 af, Atten= 0%, Lag= 0.0 min

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

2-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce

Link 14L: DA 2D - From Town Hall



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 1S: DA 1A Runoff Area=2.061 ac 80.93% Impervious Runoff Depth=4.16"
Flow Length=532' Tc=11.0 min CN=91 Runoff=8.09 cfs 0.714 af

Subcatchment 3S: DA 2C Runoff Area=38.645 ac 2.85% Impervious Runoff Depth=1.93"
Flow Length=2,588' Tc=22.6 min UI Adjusted CN=67 Runoff=53.90 cfs 6.214 af

Subcatchment 7S: DA 1B Runoff Area=94,000 sf 75.97% Impervious Runoff Depth=4.27"
Flow Length=669' Tc=6.0 min CN=92 Runoff=9.98 cfs 0.767 af

Subcatchment 8S: DA 2A Runoff Area=3.613 ac 61.86% Impervious Runoff Depth=3.44"
Flow Length=740' Tc=12.1 min CN=84 Runoff=11.77 cfs 1.034 af

Subcatchment 9S: DA 2B Runoff Area=2.152 ac 30.72% Impervious Runoff Depth=2.34"
Flow Length=735' Tc=19.6 min CN=72 Runoff=3.94 cfs 0.419 af

Subcatchment 11S: DA 1C Runoff Area=14,897 sf 83.63% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=94 Runoff=1.63 cfs 0.128 af

Subcatchment 12S: DA 1D Runoff Area=85,452 sf 71.00% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=93 Runoff=9.22 cfs 0.715 af

Pond 2P: 30" RCP Peak Elev=521.77' Inflow=14.64 cfs 11.130 af
Primary=14.64 cfs 11.130 af Secondary=0.00 cfs 0.000 af Outflow=14.64 cfs 11.130 af

Pond 4P: Pond Peak Elev=526.00' Storage=4.684 af Inflow=75.99 cfs 9.823 af
Primary=11.41 cfs 9.703 af Secondary=0.00 cfs 0.000 af Outflow=11.41 cfs 9.703 af

Pond 10P: Apartment Detention Basin Peak Elev=537.36' Storage=846 cf Inflow=3.94 cfs 0.419 af
Primary=3.50 cfs 0.419 af Secondary=0.00 cfs 0.000 af Outflow=3.50 cfs 0.419 af

Pond 13P: Water Quality Basin Peak Elev=527.40' Storage=11,563 cf Inflow=9.22 cfs 0.715 af
Primary=2.68 cfs 0.714 af Secondary=0.00 cfs 0.000 af Outflow=2.68 cfs 0.714 af

10-Ye**Link** imary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce Inflow=7.46 cfs 1.261 af
Area= 5.658 ac 40.42% Imperv. Primary=7.46 cfs 1.261 af

Total Runoff Area = 50.933 ac Runoff Volume = 9.991 af Average Runoff Depth = 2.35"
82.36% Pervious = 41.948 ac 17.64% Impervious = 8.985 ac

Summary for Subcatchment 1S: DA 1A

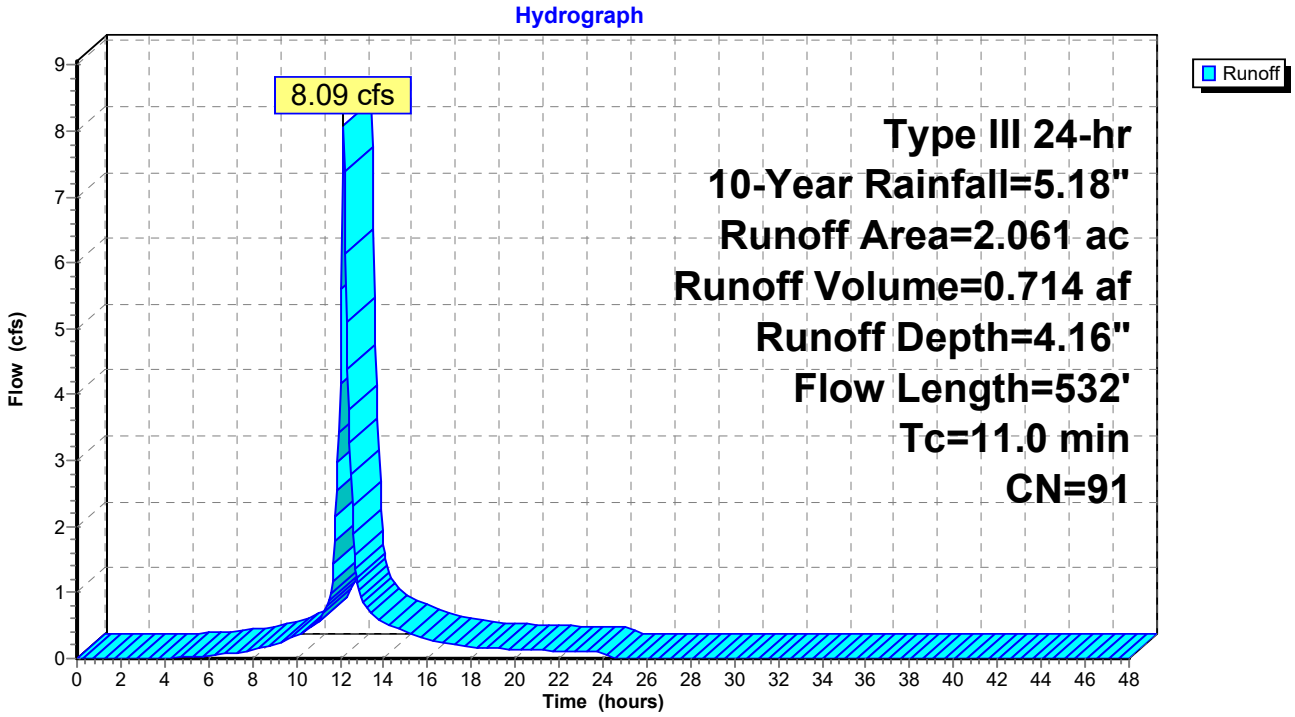
Runoff = 8.09 cfs @ 12.15 hrs, Volume= 0.714 af, Depth= 4.16"

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
0.201	98	Paved parking, HSG C
1.260	98	Paved parking, HSG B
0.207	98	Paved parking, HSG C
0.074	74	>75% Grass cover, Good, HSG C
0.319	61	>75% Grass cover, Good, HSG B
2.061	91	Weighted Average
0.393		19.07% Pervious Area
1.668		80.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	40	0.0100	0.08		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
1.7	239	0.0126	2.28		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.5	253	0.0200	8.41	14.86	**Pipe Channel, HDPE Drain** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
11.0	532	Total			

Subcatchment 1S: DA 1A



Summary for Subcatchment 3S: DA 2C

[47] Hint: Peak is 157% of capacity of segment #3

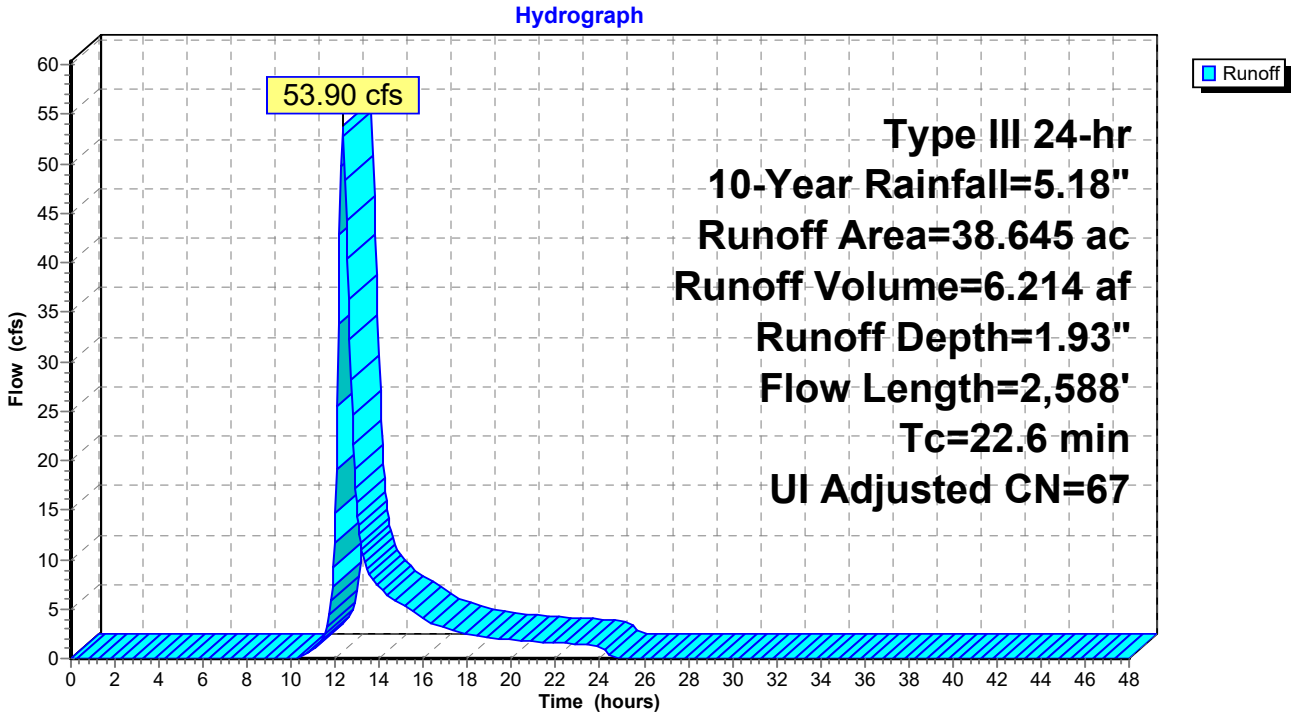
Runoff = 53.90 cfs @ 12.33 hrs, Volume= 6.214 af, Depth= 1.93"

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 10-Year Rainfall=5.18"

Area (ac)	CN	Adj	Description
10.670	77		Woods, Good, HSG D
0.839	98		Water Surface, 0% imp, HSG D
13.926	55		Woods, Good, HSG B
11.541	70		Woods, Good, HSG C
0.066	98		Paved parking, HSG C
0.110	98		Roofs, HSG C
0.057	98		Paved parking, HSG B
0.566	61		>75% Grass cover, Good, HSG B
0.870	98		Unconnected roofs, HSG B
38.645	68	67	Weighted Average, UI Adjusted
37.542			97.15% Pervious Area
1.103			2.85% Impervious Area
0.870			78.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0850	0.14		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.1	598	0.1539	1.96		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
5.2	1,600	0.0262	5.16	34.37	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
0.6	290		8.02		**Lake or Reservoir, Pond** Mean Depth= 2.00'
22.6	2,588	Total			

Subcatchment 3S: DA 2C



Summary for Subcatchment 7S: DA 1B

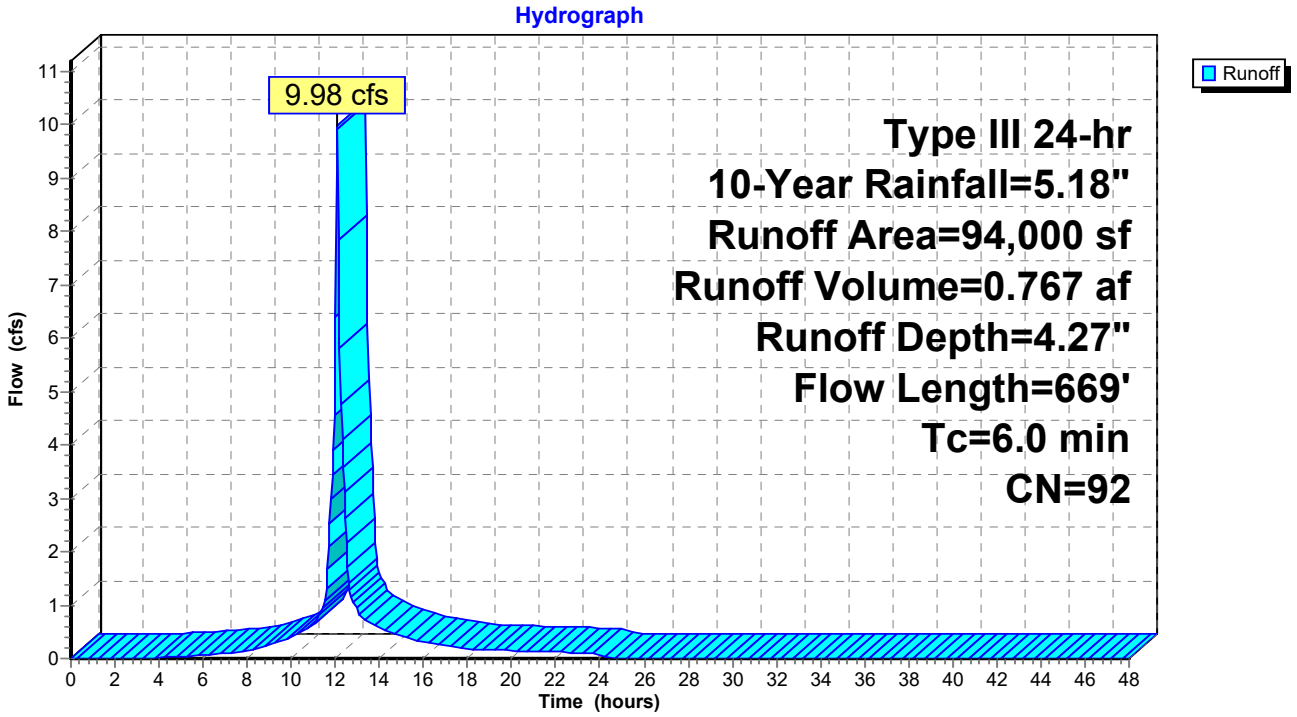
Runoff = 9.98 cfs @ 12.09 hrs, Volume= 0.767 af, Depth= 4.27"

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 (sf)	CN	Description
71,413	98	Paved parking, HSG B
11,784	86	Newly graded area, HSG B
10,803	61	>75% Grass cover, Good, HSG B
94,000	92	Weighted Average
22,587		24.03% Pervious Area
71,413		75.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.41		**Sheet Flow, Play areas** Smooth surfaces n= 0.011 P2= 3.37"
0.1	40	0.1500	6.24		**Shallow Concentrated Flow, Play areas** Unpaved Kv= 16.1 fps
2.2	362	0.0175	2.69		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.3	167	0.0200	8.41	14.86	**Pipe Channel, HDPE** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
3.8	669	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 7S: DA 1B



Summary for Subcatchment 8S: DA 2A

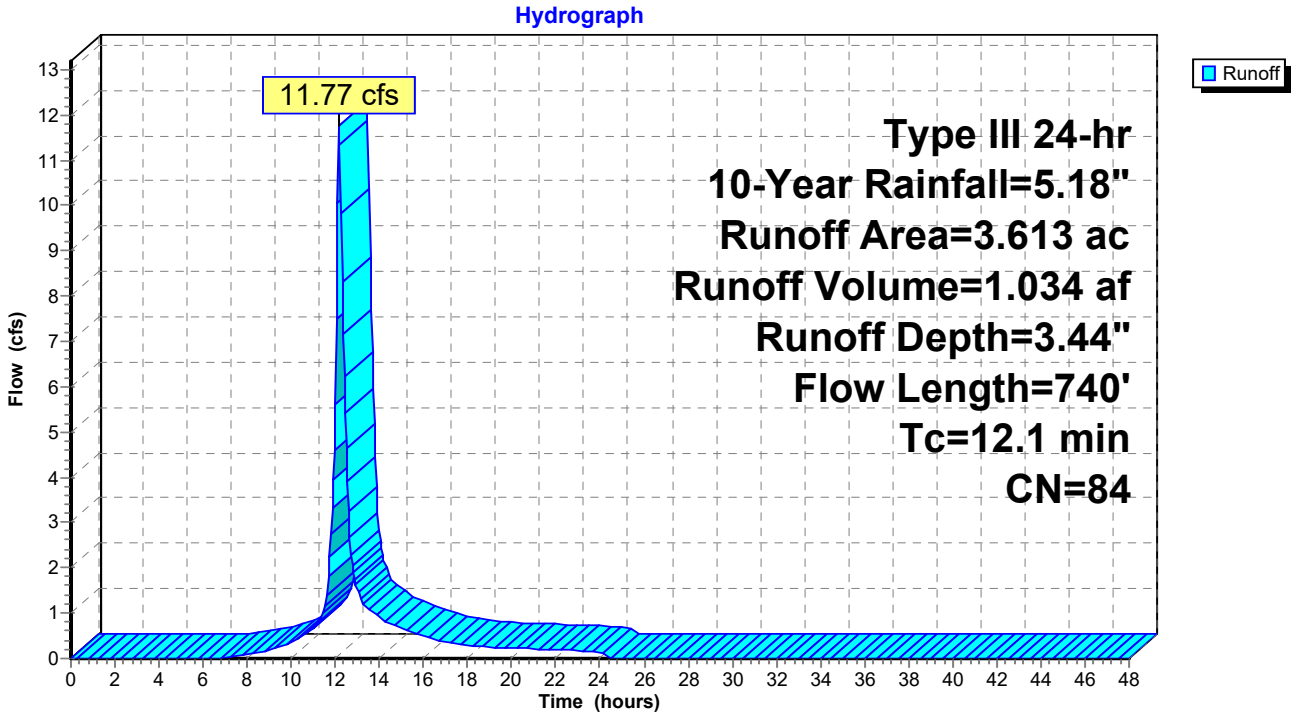
Runoff = 11.77 cfs @ 12.17 hrs, Volume= 1.034 af, Depth= 3.44"

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
1.953	98	Paved parking, HSG B
0.152	98	Roofs, HSG B
0.394	61	>75% Grass cover, Good, HSG B
0.054	55	Woods, Good, HSG B
0.930	61	>75% Grass cover, Good, HSG B
0.130	98	Paved parking, HSG B
3.613	84	Weighted Average
1.378		38.14% Pervious Area
2.235		61.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0650	0.19		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
3.3	558	0.0191	2.81		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.1	82	0.0500	11.77	14.44	**Pipe Channel, Discharge** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
12.1	740	Total			

Subcatchment 8S: DA 2A



Summary for Subcatchment 9S: DA 2B

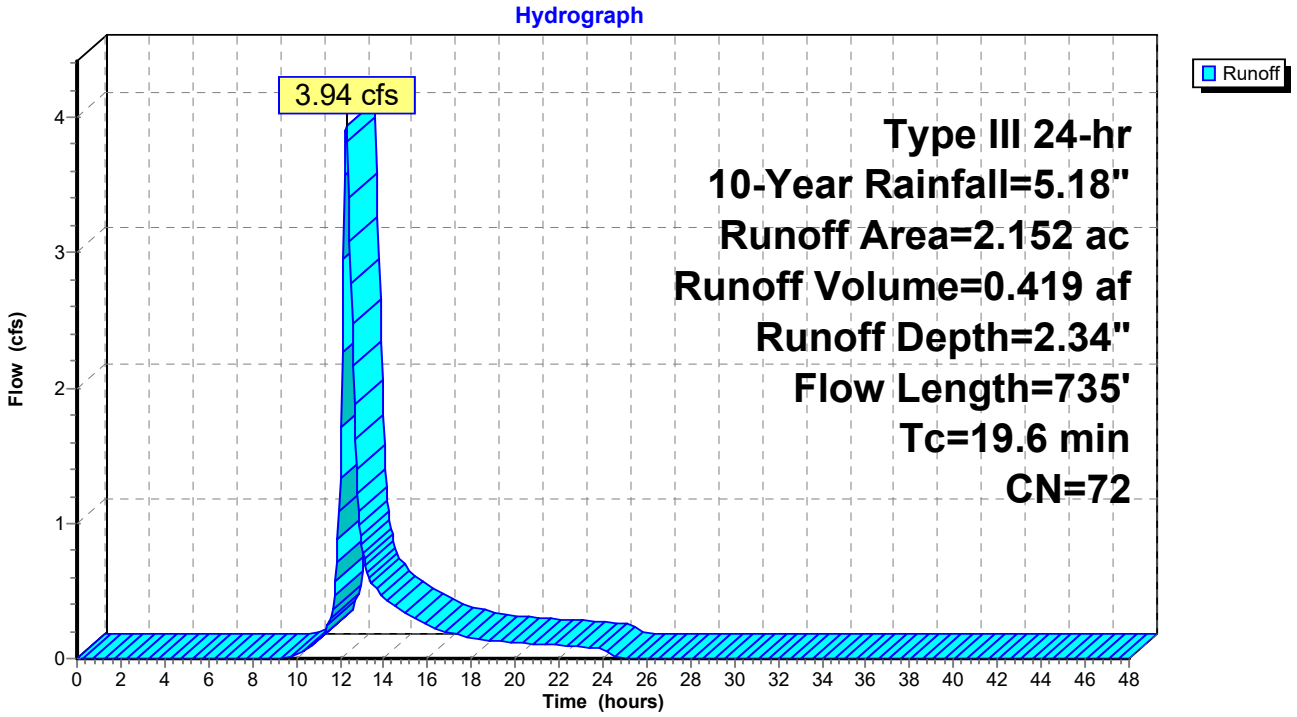
Runoff = 3.94 cfs @ 12.28 hrs, Volume= 0.419 af, Depth= 2.34"

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
0.661	98	Paved parking, HSG B
0.746	55	Woods, Good, HSG B
0.669	61	>75% Grass cover, Good, HSG B
0.076	98	Water Surface, 0% imp, HSG B
2.152	72	Weighted Average
1.491		69.28% Pervious Area
0.661		30.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0450	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
2.1	100	0.0250	0.79		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.2	38	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.8	314	0.0200	2.87		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.2	108	0.0200	7.44	9.14	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	75		5.67		**Lake or Reservoir,** Mean Depth= 1.00'
19.6	735	Total			

Subcatchment 9S: DA 2B



Summary for Subcatchment 11S: DA 1C

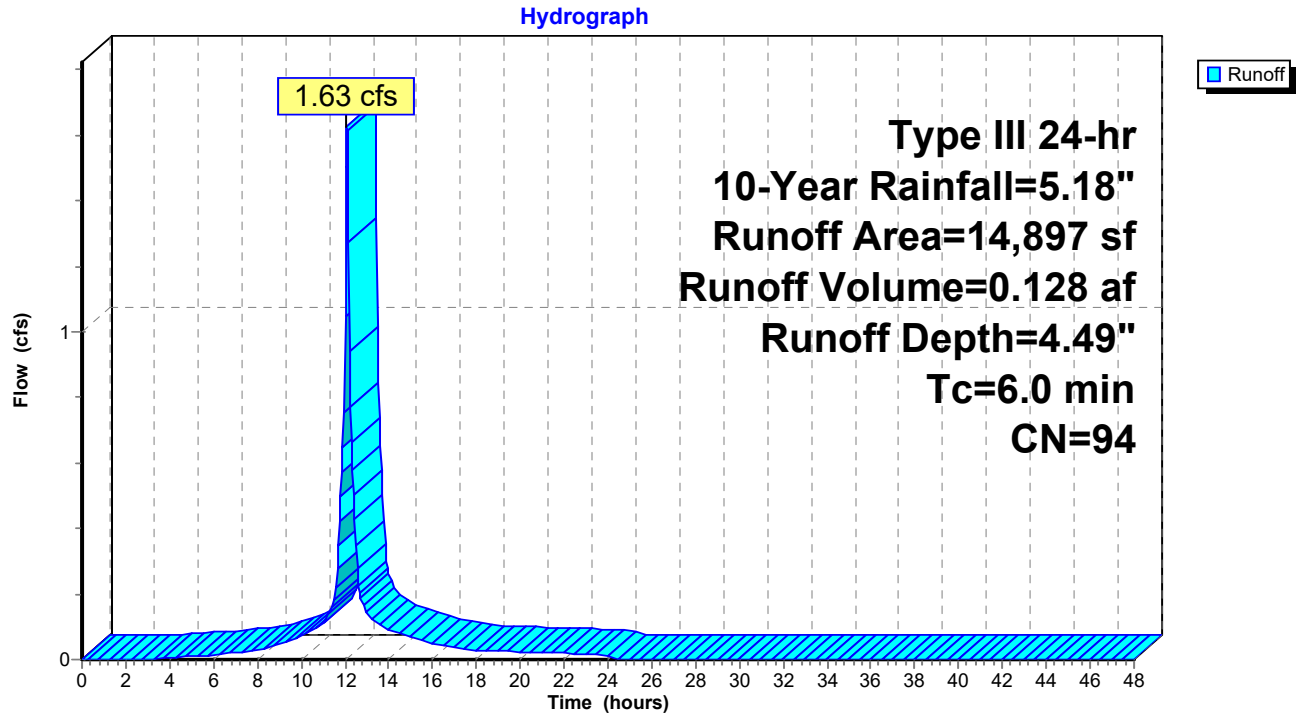
Runoff = 1.63 cfs @ 12.09 hrs, Volume= 0.128 af, Depth= 4.49"

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 (sf)	CN	Description
12,458	98	Paved parking, HSG C
2,439	74	>75% Grass cover, Good, HSG C
14,897	94	Weighted Average
2,439		16.37% Pervious Area
12,458		83.63% Impervious Area

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

Subcatchment 11S: DA 1C



Summary for Subcatchment 12S: DA 1D

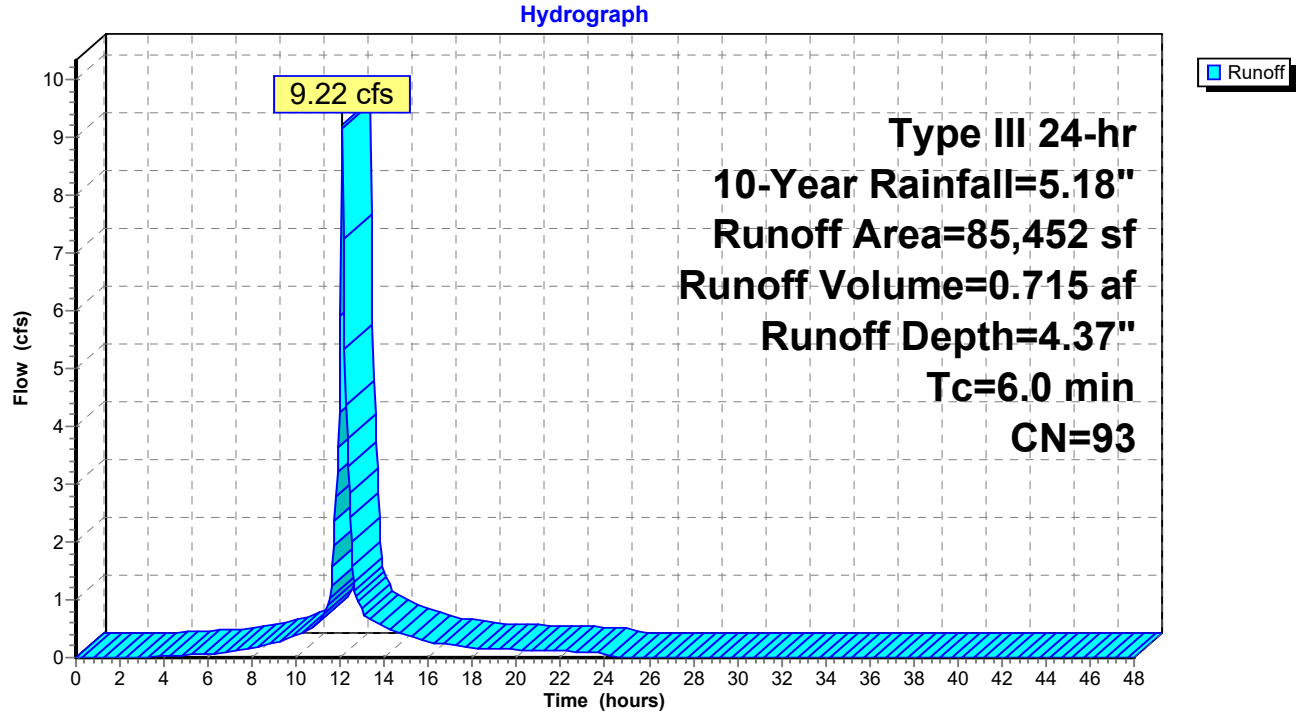
Runoff = 9.22 cfs @ 12.09 hrs, Volume= 0.715 af, Depth= 4.37"

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 (sf)	CN	Description
55,278	98	Paved parking, HSG C
6,098	98	Water Surface, 0% imp, HSG C
18,687	74	>75% Grass cover, Good, HSG C
5,389	98	Paved parking, HSG C
85,452	93	Weighted Average
24,785		29.00% Pervious Area
60,667		71.00% Impervious Area

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

Subcatchment 12S: DA 1D



Summary for Pond 2P: 30" RCP

Inflow Area = 56.590 ac, 19.92% Impervious, Inflow Depth > 2.36" for 10-Year event
Inflow = 14.64 cfs @ 12.43 hrs, Volume= 11.130 af
Outflow = 14.64 cfs @ 12.43 hrs, Volume= 11.130 af, Atten= 0%, Lag= 0.0 min
Primary = 14.64 cfs @ 12.43 hrs, Volume= 11.130 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

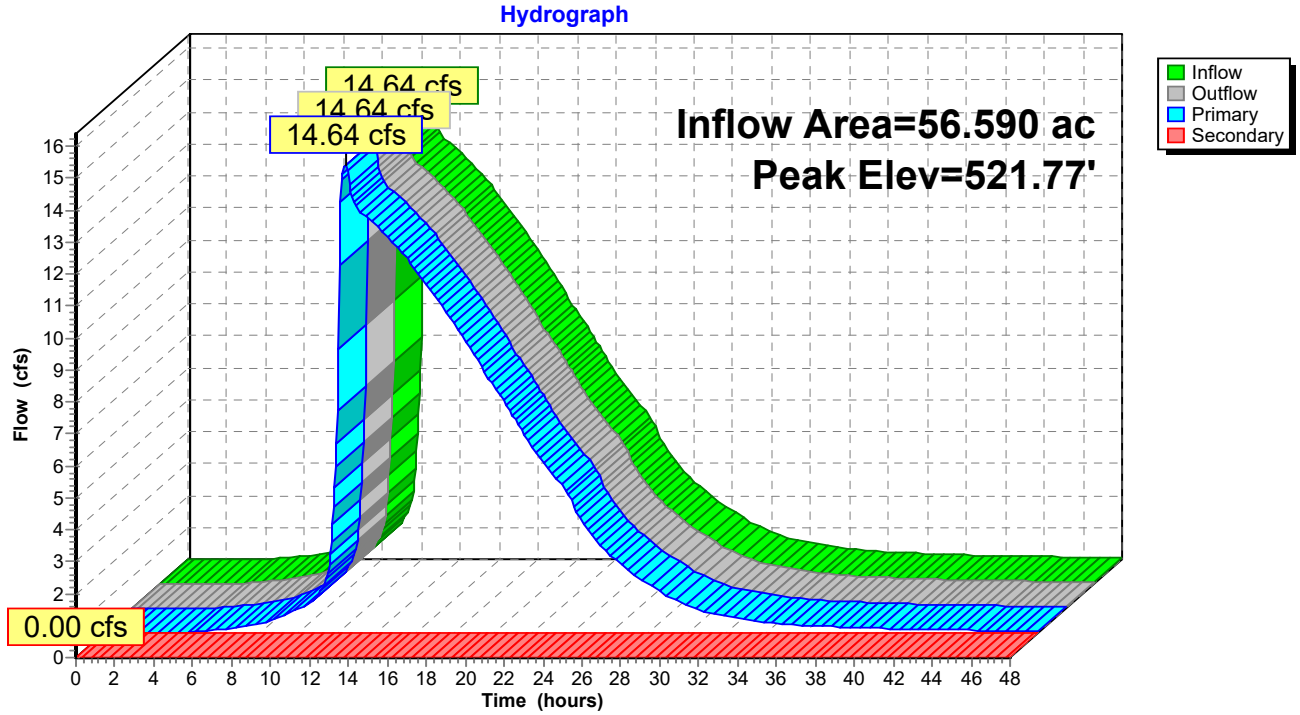
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 521.77' @ 12.43 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf
#2	Secondary	527.20'	**30.0' long x 10.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=14.62 cfs @ 12.43 hrs HW=521.76' (Free Discharge)
└**1=30" RC** (Barrel Controls 14.62 cfs @ 5.24 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=519.92' (Free Discharge)
└**2=Overflow** (Controls 0.00 cfs)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 52.568 ac, 15.62% Impervious, Inflow Depth = 2.24" for 10-Year event
Inflow = 75.99 cfs @ 12.30 hrs, Volume= 9.823 af
Outflow = 11.41 cfs @ 13.89 hrs, Volume= 9.703 af, Atten= 85%, Lag= 95.4 min
Primary = 11.41 cfs @ 13.89 hrs, Volume= 9.703 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 526.00' @ 13.89 hrs Surf.Area= 2.358 ac Storage= 4.684 af

Plug-Flow detention time= 275.4 min calculated for 9.693 af (99% of inflow)
Center-of-Mass det. time= 269.3 min (1,123.5 - 854.1)

Volume	Invert	Avail.Storage	Storage Description
#1	523.45'	16.273 af	**Pond Storage (Irregular)**Listed below

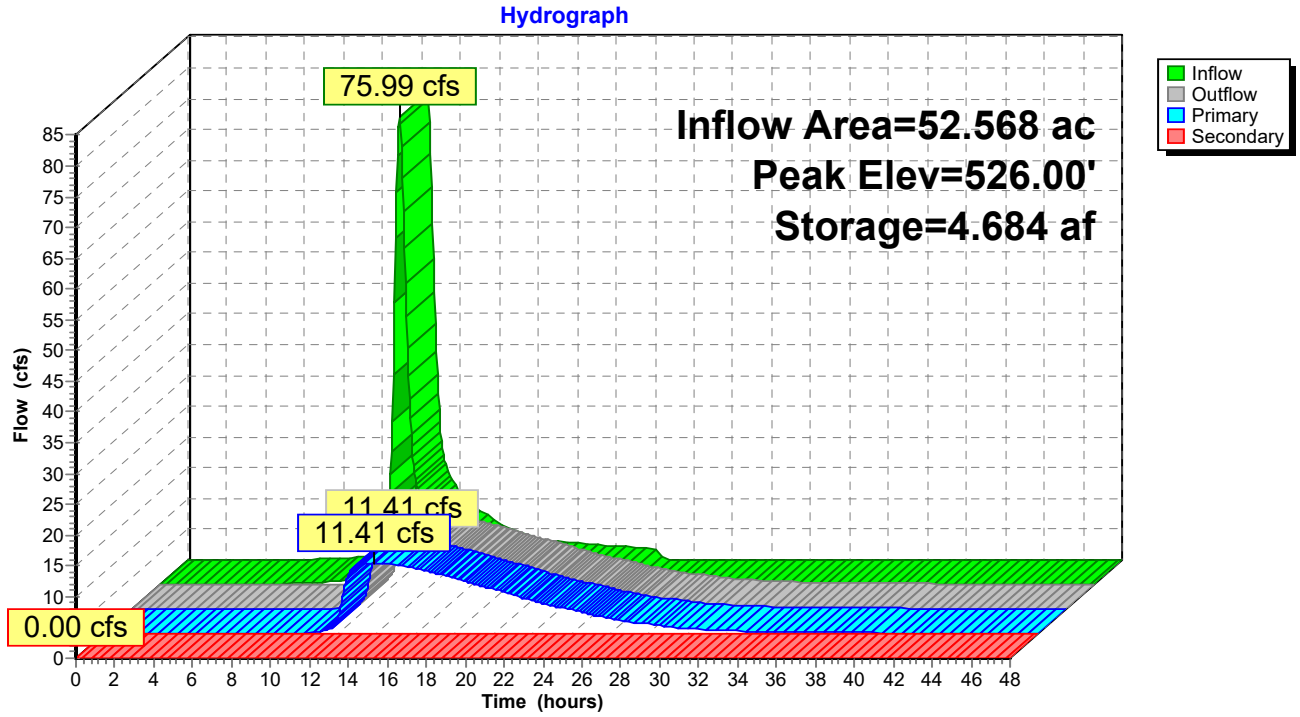
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
523.45	0.636	1,389.1	0.000	0.000	0.636
524.00	1.723	1,270.7	0.624	0.624	1.212
526.00	2.359	1,494.7	4.065	4.690	2.345
528.00	2.936	1,638.1	5.284	9.974	3.169
530.00	3.368	1,700.4	6.299	16.273	3.556

Device	Routing	Invert	Outlet Devices
#1	Primary	520.91'	**30.0" Round 30" HDPE** L= 110.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 520.91' / 520.64' S= 0.0024 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Device 1	521.46'	**30.0" Round 30" HDPE** L= 86.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.46' / 520.91' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#3	Device 2	521.41'	**24.0" Round 24" HDPE** L= 157.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.41' / 521.40' S= 0.0001 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#4	Device 3	523.45'	**18.0" Round 18" HDPE** L= 117.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 523.45' / 521.82' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Secondary	529.90'	**50.0' long x 25.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=11.41 cfs @ 13.89 hrs HW=526.00' TW=521.63' (Dynamic Tailwater)
└─**1=30" HDPE** (Passes 11.41 cfs of 41.90 cfs potential flow)
└─**2=30" HDPE** (Passes 11.41 cfs of 41.75 cfs potential flow)
└─**3=24" HDPE** (Passes 11.41 cfs of 21.85 cfs potential flow)
└─**4=18" HDPE** (Inlet Controls 11.41 cfs @ 6.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=523.45' TW=519.92' (Dynamic Tailwater)
└─**5=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond



Summary for Pond 10P: Apartment Detention Basin

Inflow Area = 2.152 ac, 30.72% Impervious, Inflow Depth = 2.34" for 10-Year event
Inflow = 3.94 cfs @ 12.28 hrs, Volume= 0.419 af
Outflow = 3.50 cfs @ 12.39 hrs, Volume= 0.419 af, Atten= 11%, Lag= 6.4 min
Primary = 3.50 cfs @ 12.39 hrs, Volume= 0.419 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 537.36' @ 12.39 hrs Surf.Area= 1,265 sf Storage= 846 cf

Plug-Flow detention time= 3.7 min calculated for 0.419 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (856.3 - 853.3)

Volume	Invert	Avail.Storage	Storage Description
#1	536.00'	7,026 cf	**Detention Basin (Irregular)**Listed below (Recalc)

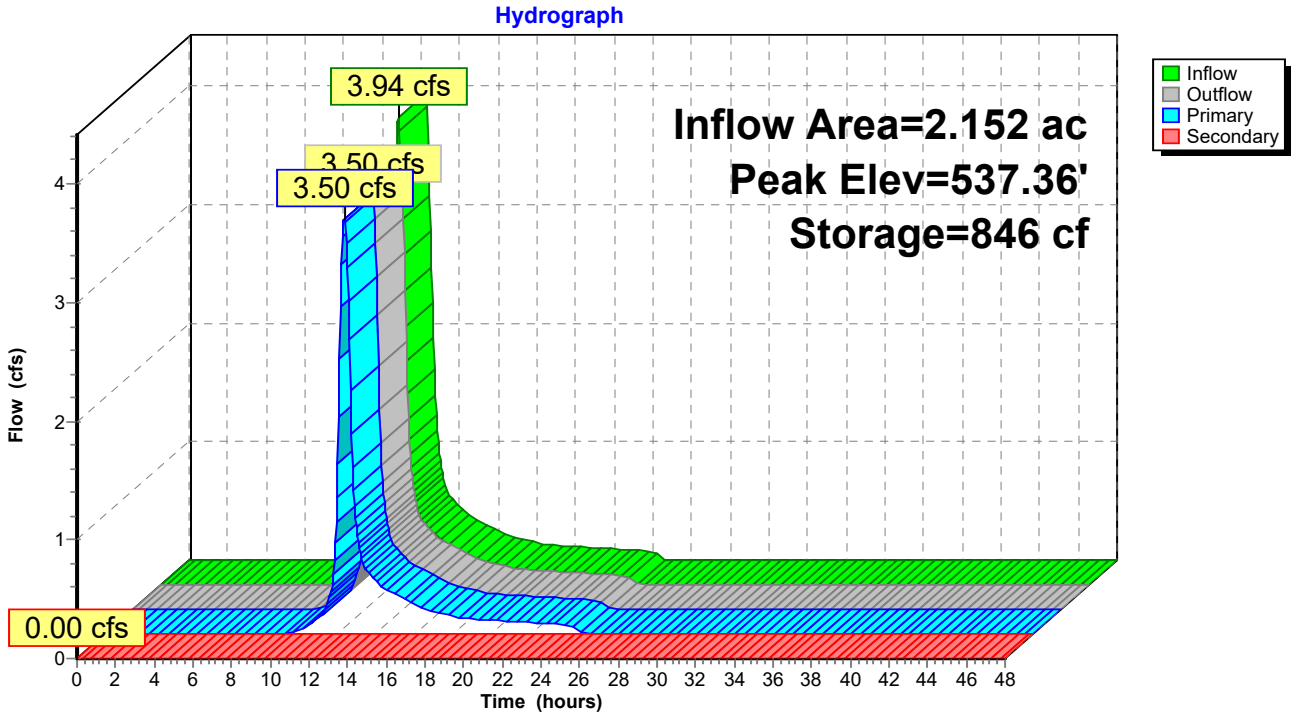
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
536.00	100	40.0	0	0	100
536.50	467	110.5	131	131	945
537.60	1,559	173.6	1,056	1,186	2,380
540.00	3,429	242.5	5,840	7,026	4,716

Device	Routing	Invert	Outlet Devices
#1	Primary	536.00'	**12.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 536.00' / 534.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	539.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.50 cfs @ 12.39 hrs HW=537.35' TW=525.09' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.50 cfs @ 4.45 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=536.00' TW=523.45' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Apartment Detention Basin



Summary for Pond 13P: Water Quality Basin

[42] Hint: Gap in defined storage above volume #1 at 524.25'

Inflow Area = 1.962 ac, 71.00% Impervious, Inflow Depth = 4.37" for 10-Year event
Inflow = 9.22 cfs @ 12.09 hrs, Volume= 0.715 af
Outflow = 2.68 cfs @ 12.42 hrs, Volume= 0.714 af, Atten= 71%, Lag= 20.1 min
Primary = 2.68 cfs @ 12.42 hrs, Volume= 0.714 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 527.40' @ 12.42 hrs Surf.Area= 5,960 sf Storage= 11,563 cf

Plug-Flow detention time= 131.2 min calculated for 0.714 af (100% of inflow)
Center-of-Mass det. time= 128.9 min (906.2 - 777.2)

Volume	Invert	Avail.Storage	Storage Description
#1	522.25'	290 cf	**2.00'W x 181.00'L x 2.00'H Underdrain Trench** 724 cf Overall x 40.0% Voids
#2	524.75'	27,446 cf	**Water Quality swale (Irregular)**Listed below (Recalc)
		27,735 cf	Total Available Storage

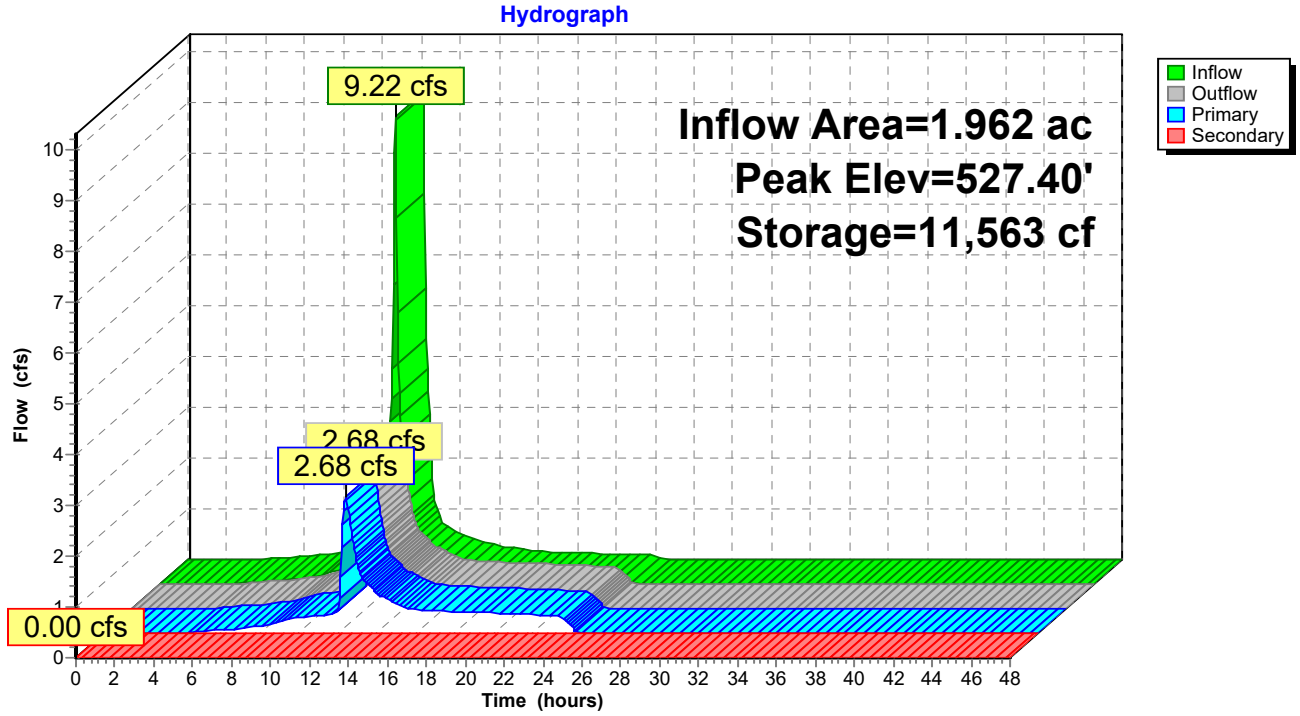
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
524.75	2,969	471.4	0	0	2,969
525.00	3,207	477.3	772	772	3,430
526.00	4,185	500.8	3,685	4,457	5,323
528.00	6,268	535.7	10,383	14,840	8,383
529.75	8,181	557.7	12,606	27,446	10,523

Device	Routing	Invert	Outlet Devices
#1	Primary	522.50'	**24.0" Round 24" HDPE** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 522.50' / 521.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	522.75'	**3.0" Vert. Underdrain** C= 0.600 Limited to weir flow at low heads
#3	Device 1	526.50'	**6.0" W x 6.0" H Vert. 6" Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	527.00'	**18.0" W x 6.0" H Vert. 18x6 Orifice** C= 0.600 Limited to weir flow at low heads
#5	Device 1	528.25'	**2.0" x 2.0" Horiz. Top of Frame X 20.00 columns** X 20 rows C= 0.600 in 48.0" x 48.0" Grate (69% open area) Limited to weir flow at low heads
#6	Secondary	528.75'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=2.67 cfs @ 12.42 hrs HW=527.40' TW=521.76' (Dynamic Tailwater)
└─**1=24" HDPE** (Passes 2.67 cfs of 29.86 cfs potential flow)
  └─**2=Underdrain** (Orifice Controls 0.50 cfs @ 10.24 fps)
  └─**3=6" Orifice** (Orifice Controls 0.96 cfs @ 3.85 fps)
  └─**4=18x6 Orifice** (Orifice Controls 1.20 cfs @ 2.02 fps)
  └─**5=Top of Frame** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.25' TW=519.92' (Dynamic Tailwater)
└─**6=Emergency Spillway** (Controls 0.00 cfs)

Pond 13P: Water Quality Basin



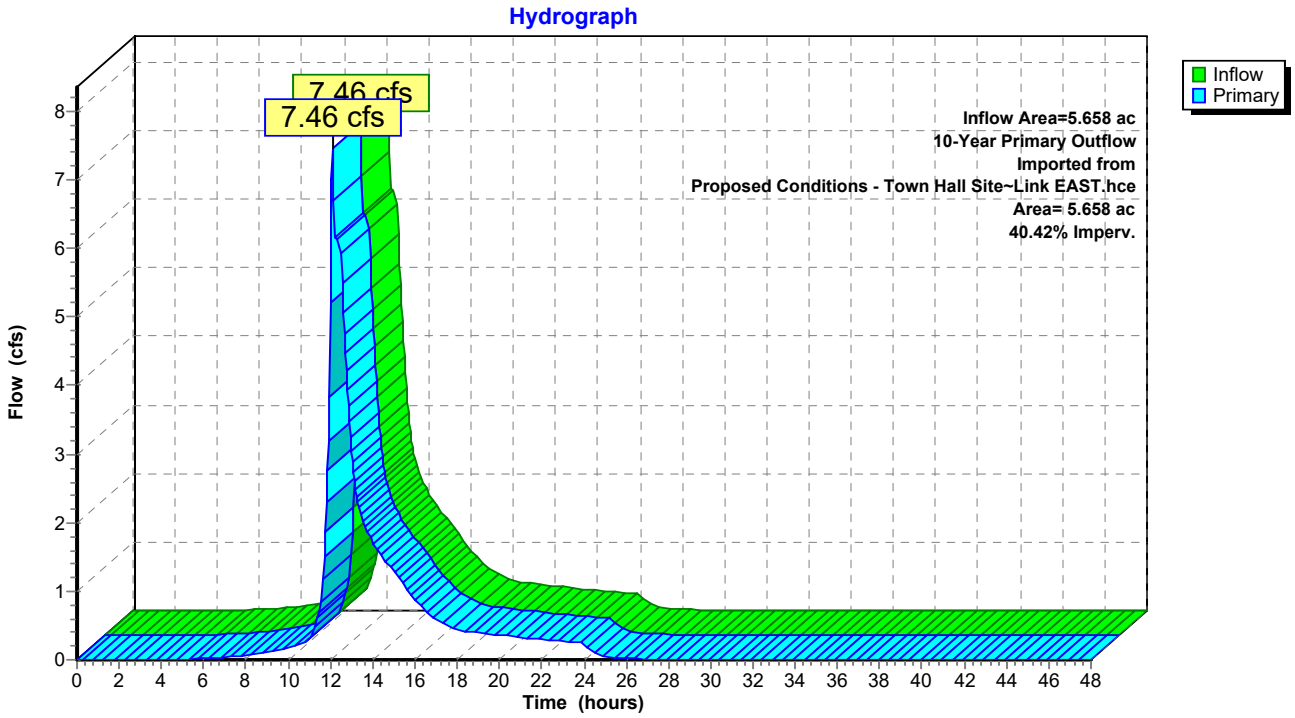
Summary for Link 14L: DA 2D - From Town Hall

Inflow Area = 5.658 ac, 40.42% Impervious, Inflow Depth = 2.67" for 10-Year event
Inflow = 7.46 cfs @ 12.09 hrs, Volume= 1.261 af
Primary = 7.46 cfs @ 12.09 hrs, Volume= 1.261 af, Atten= 0%, Lag= 0.0 min

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

10-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce

Link 14L: DA 2D - From Town Hall



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 1S: DA 1A Runoff Area=2.061 ac 80.93% Impervious Runoff Depth=5.25"
Flow Length=532' Tc=11.0 min CN=91 Runoff=10.09 cfs 0.902 af

Subcatchment 3S: DA 2C Runoff Area=38.645 ac 2.85% Impervious Runoff Depth=2.76"
Flow Length=2,588' Tc=22.6 min UI Adjusted CN=67 Runoff=78.79 cfs 8.884 af

Subcatchment 7S: DA 1B Runoff Area=94,000 sf 75.97% Impervious Runoff Depth=5.36"
Flow Length=669' Tc=6.0 min CN=92 Runoff=12.39 cfs 0.965 af

Subcatchment 8S: DA 2A Runoff Area=3.613 ac 61.86% Impervious Runoff Depth=4.48"
Flow Length=740' Tc=12.1 min CN=84 Runoff=15.22 cfs 1.348 af

Subcatchment 9S: DA 2B Runoff Area=2.152 ac 30.72% Impervious Runoff Depth=3.24"
Flow Length=735' Tc=19.6 min CN=72 Runoff=5.53 cfs 0.581 af

Subcatchment 11S: DA 1C Runoff Area=14,897 sf 83.63% Impervious Runoff Depth=5.59"
Tc=6.0 min CN=94 Runoff=2.01 cfs 0.159 af

Subcatchment 12S: DA 1D Runoff Area=85,452 sf 71.00% Impervious Runoff Depth=5.48"
Tc=6.0 min CN=93 Runoff=11.39 cfs 0.896 af

Pond 2P: 30" RCP Peak Elev=522.21' Inflow=20.72 cfs 15.345 af
Primary=20.72 cfs 15.345 af Secondary=0.00 cfs 0.000 af Outflow=20.72 cfs 15.345 af

Pond 4P: Pond Peak Elev=526.85' Storage=6.939 af Inflow=108.84 cfs 13.679 af
Primary=13.85 cfs 13.549 af Secondary=0.00 cfs 0.000 af Outflow=13.85 cfs 13.549 af

Pond 10P: Apartment Detention Basin Peak Elev=537.89' Storage=1,673 cf Inflow=5.53 cfs 0.581 af
Primary=4.47 cfs 0.581 af Secondary=0.00 cfs 0.000 af Outflow=4.47 cfs 0.581 af

Pond 13P: Water Quality Basin Peak Elev=527.73' Storage=13,496 cf Inflow=11.39 cfs 0.896 af
Primary=4.19 cfs 0.894 af Secondary=0.00 cfs 0.000 af Outflow=4.19 cfs 0.894 af

25-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce Inflow=10.76 cfs 1.742 af
Lnk Area= 5.658 ac 40.42% Imperv. Primary=10.76 cfs 1.742 af

Total Runoff Area = 50.933 ac Runoff Volume = 13.735 af Average Runoff Depth = 3.24"
82.36% Pervious = 41.948 ac 17.64% Impervious = 8.985 ac

Summary for Subcatchment 1S: DA 1A

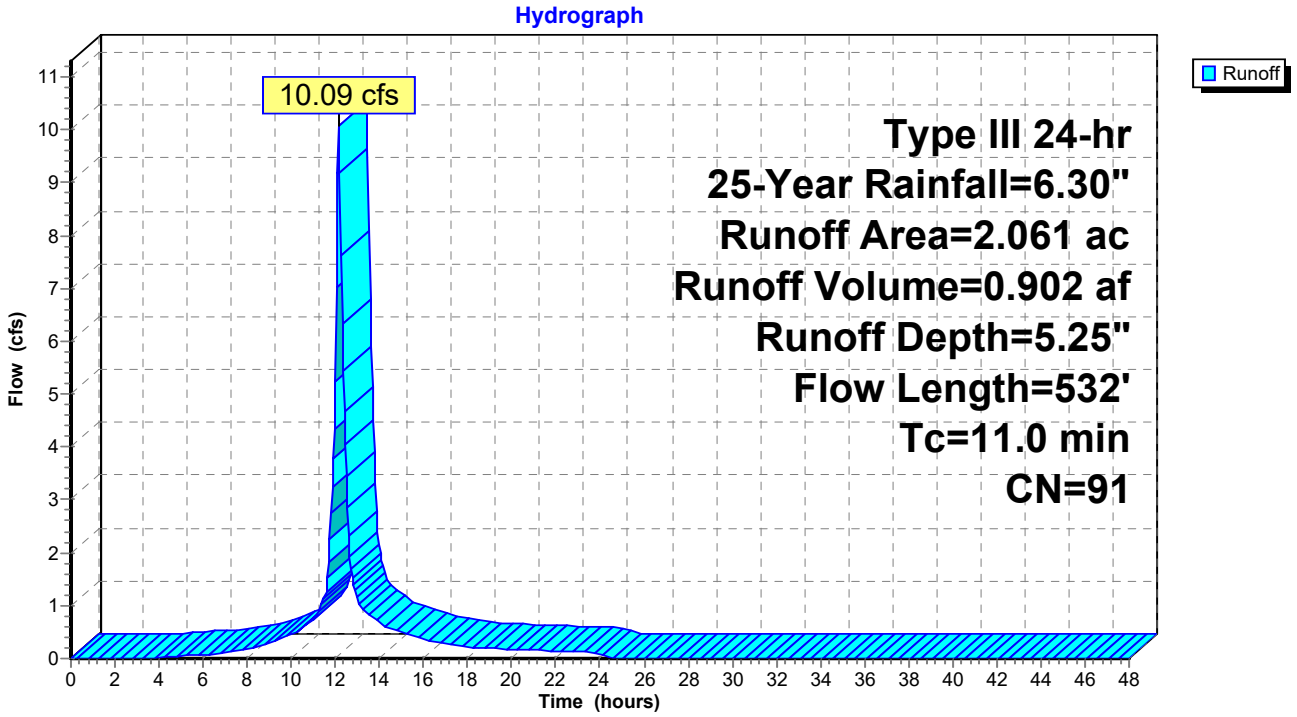
Runoff = 10.09 cfs @ 12.15 hrs, Volume= 0.902 af, Depth= 5.25"

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
0.201	98	Paved parking, HSG C
1.260	98	Paved parking, HSG B
0.207	98	Paved parking, HSG C
0.074	74	>75% Grass cover, Good, HSG C
0.319	61	>75% Grass cover, Good, HSG B
2.061	91	Weighted Average
0.393		19.07% Pervious Area
1.668		80.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	40	0.0100	0.08		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
1.7	239	0.0126	2.28		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.5	253	0.0200	8.41	14.86	**Pipe Channel, HDPE Drain** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
11.0	532	Total			

Subcatchment 1S: DA 1A



Summary for Subcatchment 3S: DA 2C

[47] Hint: Peak is 229% of capacity of segment #3

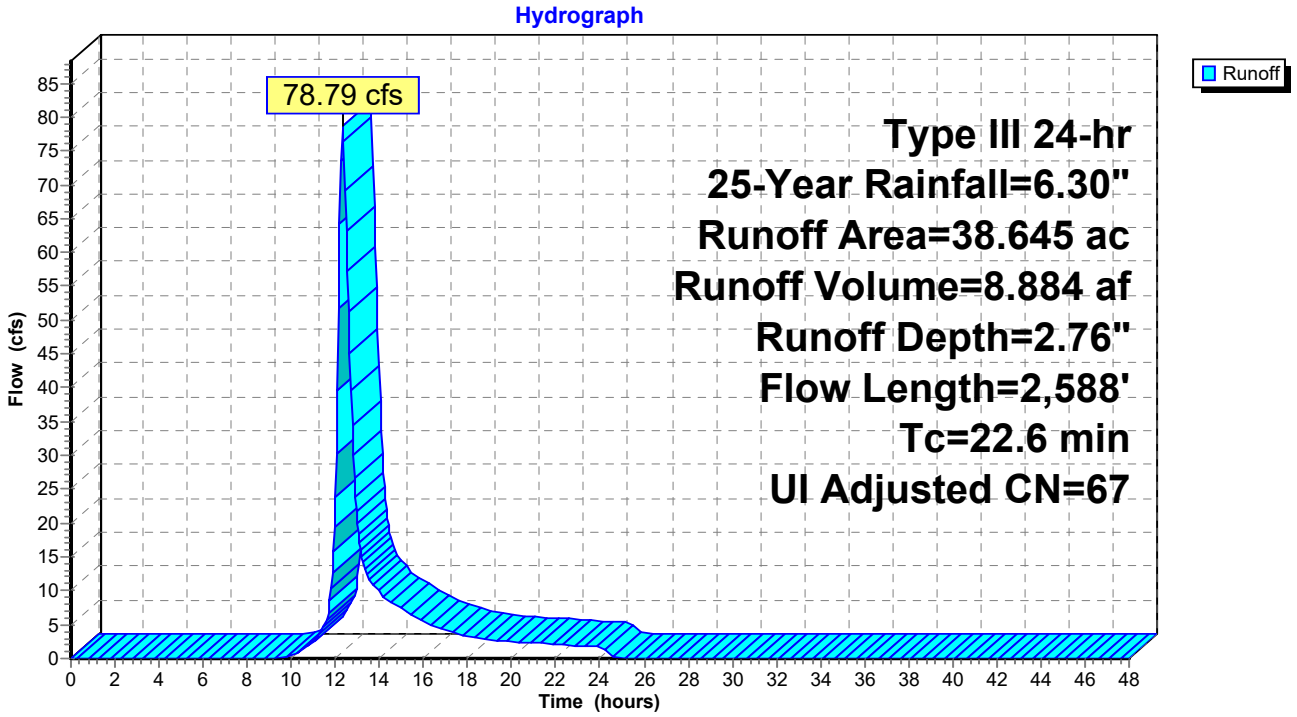
Runoff = 78.79 cfs @ 12.32 hrs, Volume= 8.884 af, Depth= 2.76"

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	Adj	Description
10.670	77		Woods, Good, HSG D
0.839	98		Water Surface, 0% imp, HSG D
13.926	55		Woods, Good, HSG B
11.541	70		Woods, Good, HSG C
0.066	98		Paved parking, HSG C
0.110	98		Roofs, HSG C
0.057	98		Paved parking, HSG B
0.566	61		>75% Grass cover, Good, HSG B
0.870	98		Unconnected roofs, HSG B
38.645	68	67	Weighted Average, UI Adjusted
37.542			97.15% Pervious Area
1.103			2.85% Impervious Area
0.870			78.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0850	0.14		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.1	598	0.1539	1.96		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
5.2	1,600	0.0262	5.16	34.37	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
0.6	290		8.02		**Lake or Reservoir, Pond** Mean Depth= 2.00'
22.6	2,588	Total			

Subcatchment 3S: DA 2C



Summary for Subcatchment 7S: DA 1B

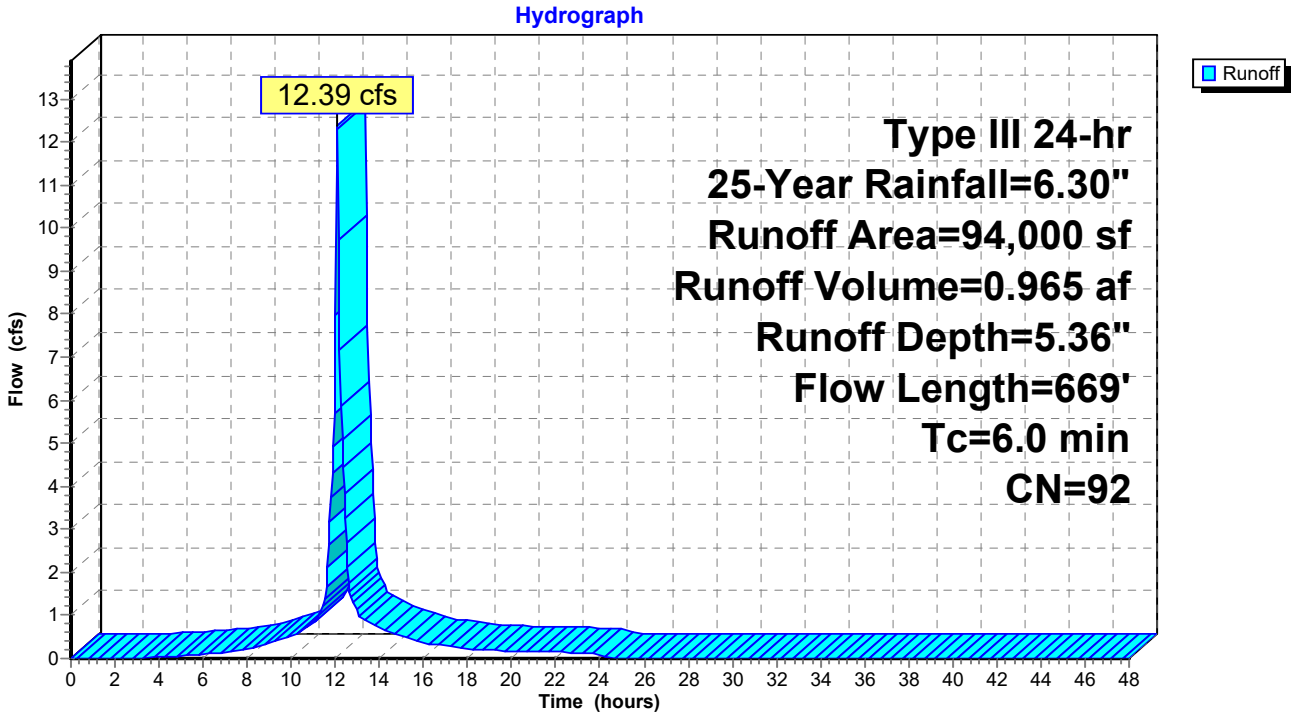
Runoff = 12.39 cfs @ 12.09 hrs, Volume= 0.965 af, Depth= 5.36"

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 (sf)	CN	Description
71,413	98	Paved parking, HSG B
11,784	86	Newly graded area, HSG B
10,803	61	>75% Grass cover, Good, HSG B
94,000	92	Weighted Average
22,587		24.03% Pervious Area
71,413		75.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.41		**Sheet Flow, Play areas** Smooth surfaces n= 0.011 P2= 3.37"
0.1	40	0.1500	6.24		**Shallow Concentrated Flow, Play areas** Unpaved Kv= 16.1 fps
2.2	362	0.0175	2.69		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.3	167	0.0200	8.41	14.86	**Pipe Channel, HDPE** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
3.8	669	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 7S: DA 1B



Summary for Subcatchment 8S: DA 2A

[47] Hint: Peak is 105% of capacity of segment #3

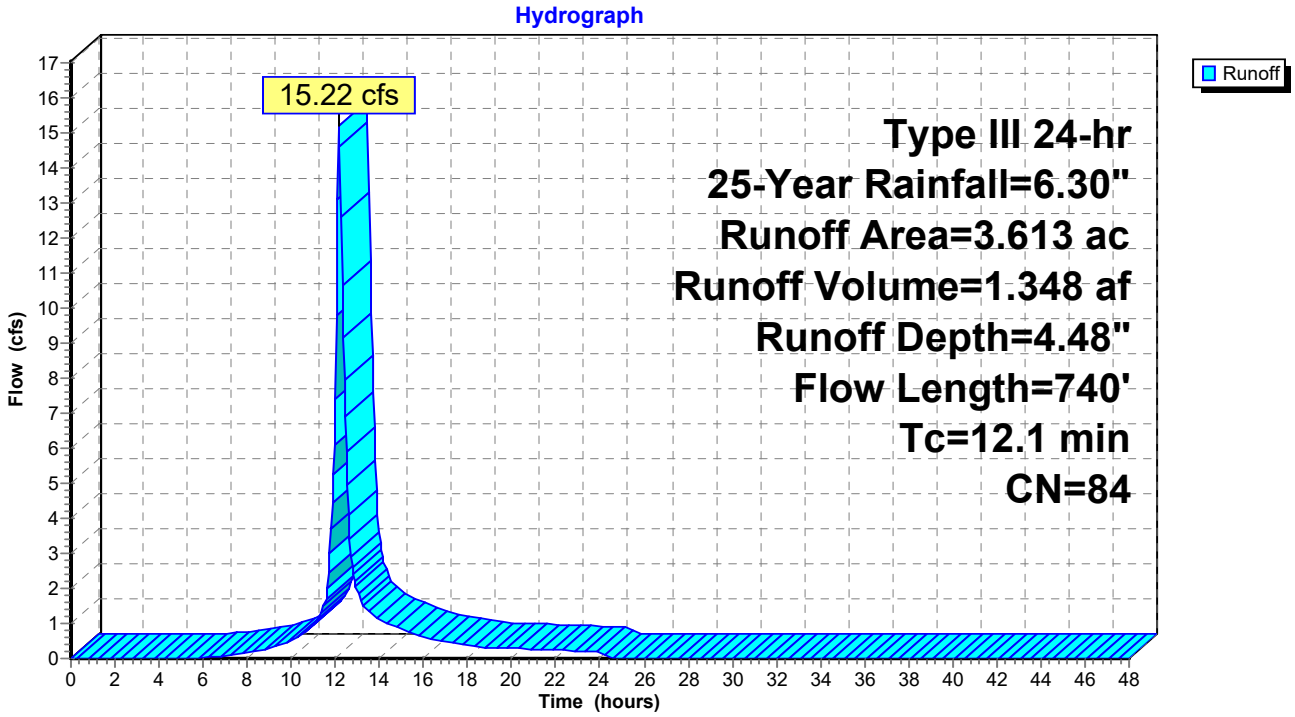
Runoff = 15.22 cfs @ 12.16 hrs, Volume= 1.348 af, Depth= 4.48"

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
1.953	98	Paved parking, HSG B
0.152	98	Roofs, HSG B
0.394	61	>75% Grass cover, Good, HSG B
0.054	55	Woods, Good, HSG B
0.930	61	>75% Grass cover, Good, HSG B
0.130	98	Paved parking, HSG B
3.613	84	Weighted Average
1.378		38.14% Pervious Area
2.235		61.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0650	0.19		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
3.3	558	0.0191	2.81		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.1	82	0.0500	11.77	14.44	**Pipe Channel, Discharge** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
12.1	740	Total			

Subcatchment 8S: DA 2A



Summary for Subcatchment 9S: DA 2B

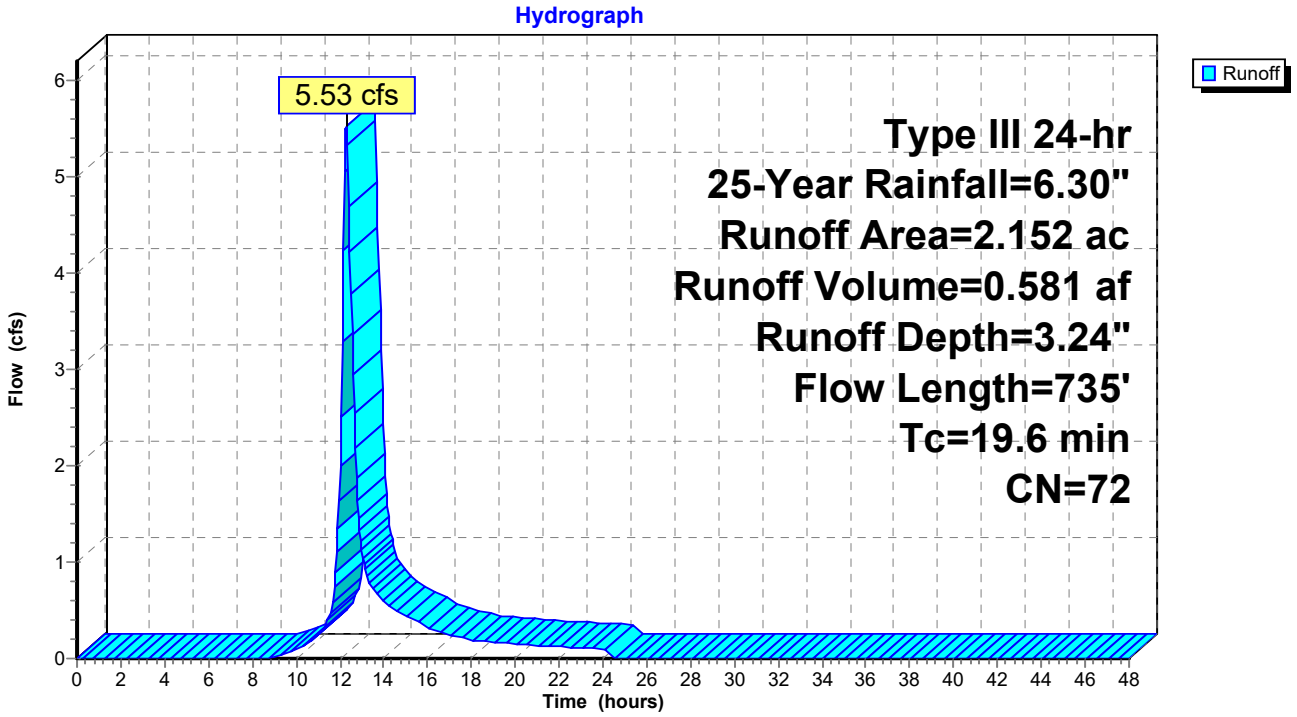
Runoff = 5.53 cfs @ 12.27 hrs, Volume= 0.581 af, Depth= 3.24"

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
0.661	98	Paved parking, HSG B
0.746	55	Woods, Good, HSG B
0.669	61	>75% Grass cover, Good, HSG B
0.076	98	Water Surface, 0% imp, HSG B
2.152	72	Weighted Average
1.491		69.28% Pervious Area
0.661		30.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0450	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
2.1	100	0.0250	0.79		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.2	38	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.8	314	0.0200	2.87		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.2	108	0.0200	7.44	9.14	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	75		5.67		**Lake or Reservoir,** Mean Depth= 1.00'
19.6	735	Total			

Subcatchment 9S: DA 2B



Summary for Subcatchment 11S: DA 1C

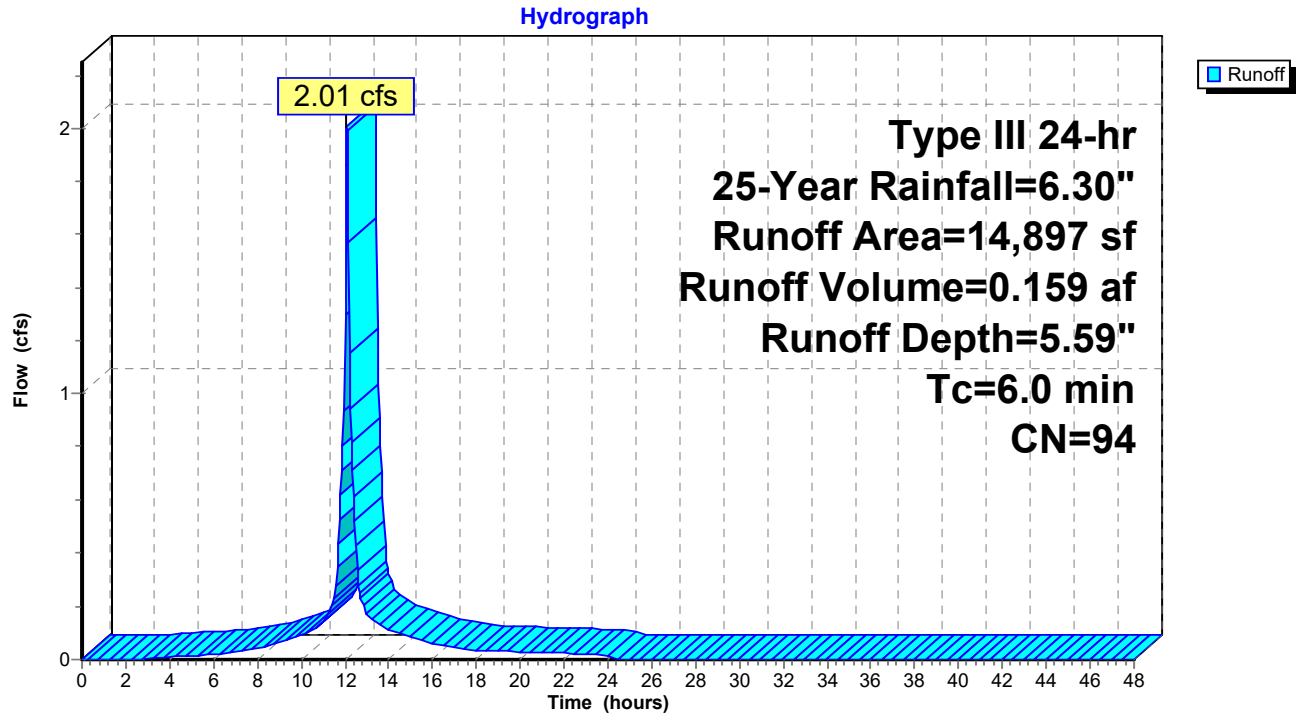
Runoff = 2.01 cfs @ 12.09 hrs, Volume= 0.159 af, Depth= 5.59"

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 (sf)	CN	Description
12,458	98	Paved parking, HSG C
2,439	74	>75% Grass cover, Good, HSG C
14,897	94	Weighted Average
2,439		16.37% Pervious Area
12,458		83.63% Impervious Area

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

Subcatchment 11S: DA 1C



Summary for Subcatchment 12S: DA 1D

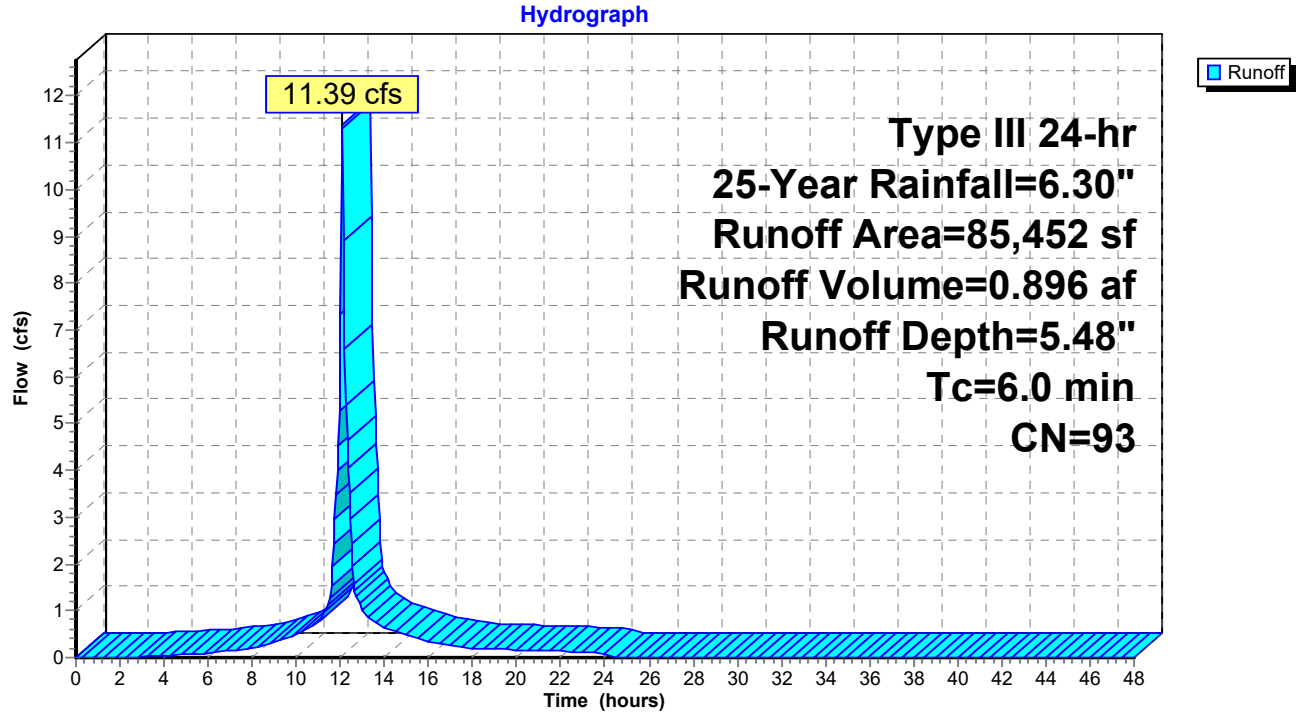
Runoff = 11.39 cfs @ 12.09 hrs, Volume= 0.896 af, Depth= 5.48"

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 (sf)	CN	Description
55,278	98	Paved parking, HSG C
6,098	98	Water Surface, 0% imp, HSG C
18,687	74	>75% Grass cover, Good, HSG C
5,389	98	Paved parking, HSG C
85,452	93	Weighted Average
24,785		29.00% Pervious Area
60,667		71.00% Impervious Area

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

Subcatchment 12S: DA 1D



Summary for Pond 2P: 30" RCP

Inflow Area = 56.590 ac, 19.92% Impervious, Inflow Depth > 3.25" for 25-Year event
Inflow = 20.72 cfs @ 12.20 hrs, Volume= 15.345 af
Outflow = 20.72 cfs @ 12.20 hrs, Volume= 15.345 af, Atten= 0%, Lag= 0.0 min
Primary = 20.72 cfs @ 12.20 hrs, Volume= 15.345 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

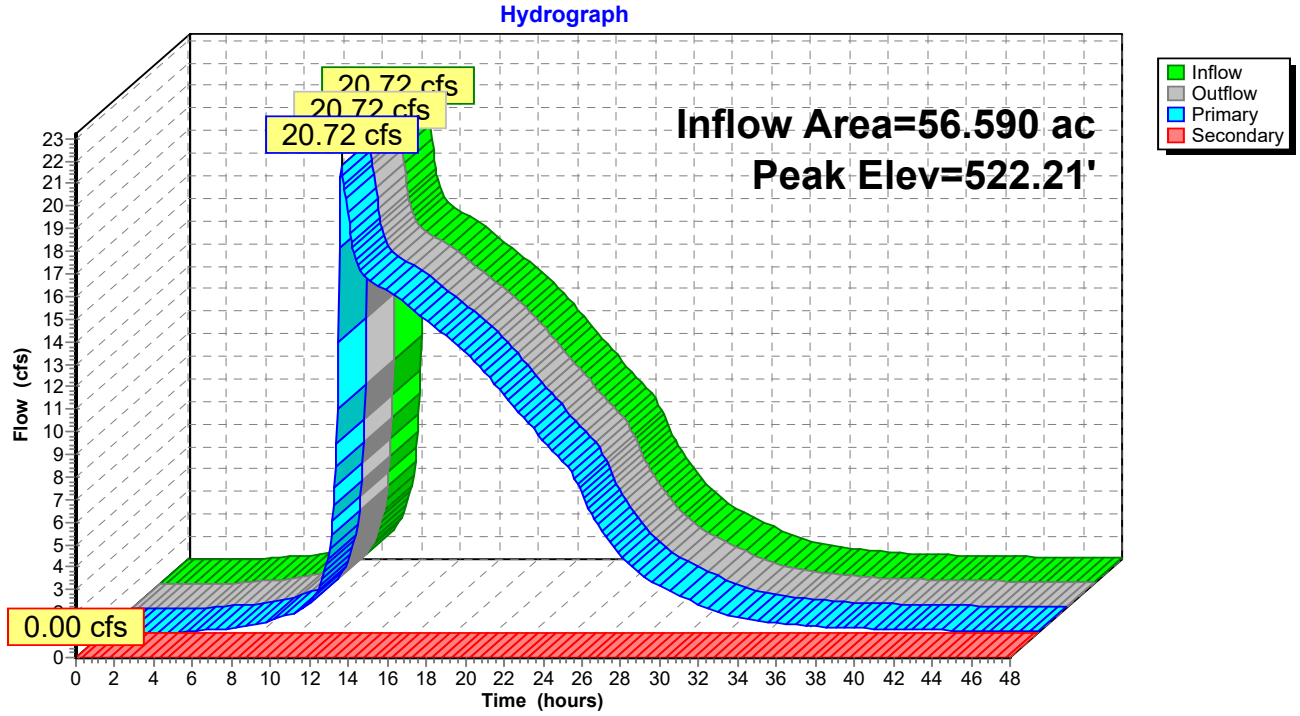
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 522.21' @ 12.20 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf
#2	Secondary	527.20'	**30.0' long x 10.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=20.71 cfs @ 12.20 hrs HW=522.21' (Free Discharge)
└**1=30" RC** (Barrel Controls 20.71 cfs @ 5.76 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=519.92' (Free Discharge)
└**2=Overflow** (Controls 0.00 cfs)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 52.568 ac, 15.62% Impervious, Inflow Depth = 3.12" for 25-Year event
Inflow = 108.84 cfs @ 12.30 hrs, Volume= 13.679 af
Outflow = 13.85 cfs @ 14.12 hrs, Volume= 13.549 af, Atten= 87%, Lag= 109.5 min
Primary = 13.85 cfs @ 14.12 hrs, Volume= 13.549 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 526.85' @ 14.12 hrs Surf.Area= 2.605 ac Storage= 6.939 af

Plug-Flow detention time= 308.1 min calculated for 13.549 af (99% of inflow)
Center-of-Mass det. time= 302.3 min (1,147.8 - 845.5)

Volume	Invert	Avail.Storage	Storage Description
#1	523.45'	16.273 af	**Pond Storage (Irregular)**Listed below

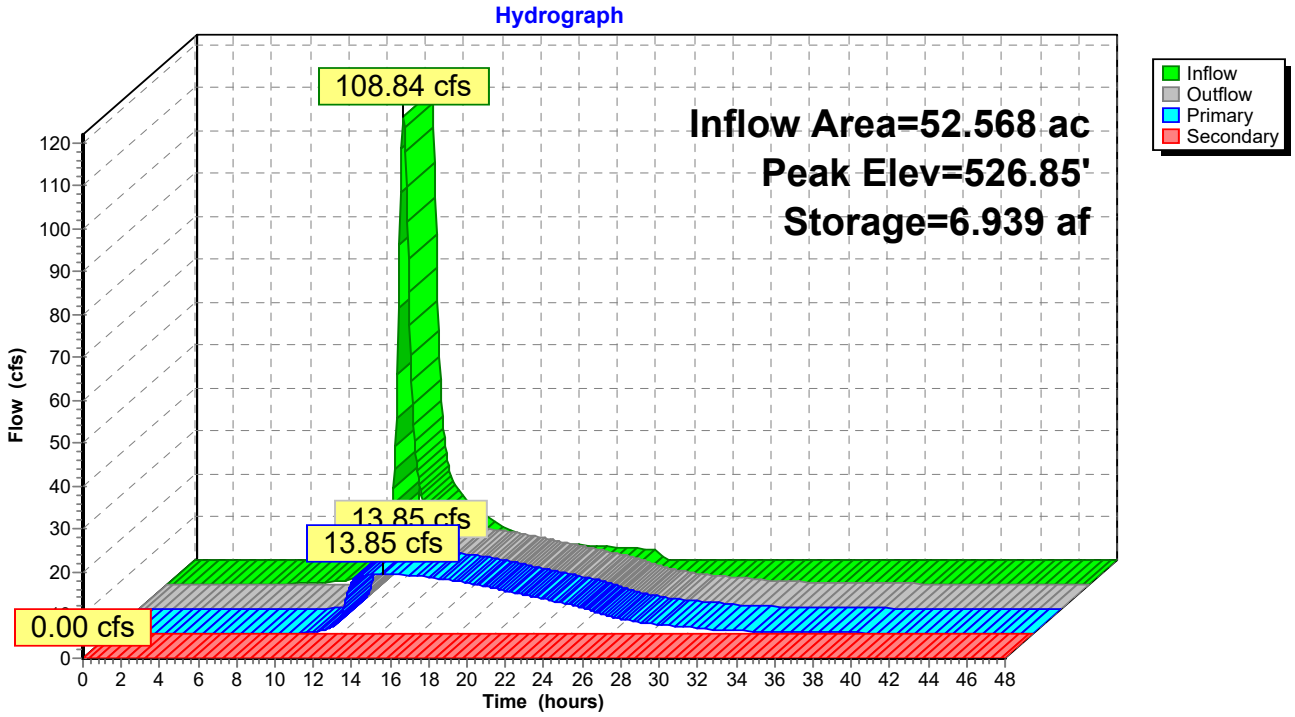
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
523.45	0.636	1,389.1	0.000	0.000	0.636
524.00	1.723	1,270.7	0.624	0.624	1.212
526.00	2.359	1,494.7	4.065	4.690	2.345
528.00	2.936	1,638.1	5.284	9.974	3.169
530.00	3.368	1,700.4	6.299	16.273	3.556

Device	Routing	Invert	Outlet Devices
#1	Primary	520.91'	**30.0" Round 30" HDPE** L= 110.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 520.91' / 520.64' S= 0.0024 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Device 1	521.46'	**30.0" Round 30" HDPE** L= 86.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.46' / 520.91' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#3	Device 2	521.41'	**24.0" Round 24" HDPE** L= 157.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.41' / 521.40' S= 0.0001 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#4	Device 3	523.45'	**18.0" Round 18" HDPE** L= 117.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 523.45' / 521.82' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Secondary	529.90'	**50.0' long x 25.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.85 cfs @ 14.12 hrs HW=526.85' TW=521.82' (Dynamic Tailwater)
└─**1=30" HDPE** (Passes 13.85 cfs of 47.75 cfs potential flow)
└─**2=30" HDPE** (Passes 13.85 cfs of 48.10 cfs potential flow)
└─**3=24" HDPE** (Passes 13.85 cfs of 25.19 cfs potential flow)
└─**4=18" HDPE** (Inlet Controls 13.85 cfs @ 7.84 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=523.45' TW=519.92' (Dynamic Tailwater)
└─**5=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond



Summary for Pond 10P: Apartment Detention Basin

Inflow Area = 2.152 ac, 30.72% Impervious, Inflow Depth = 3.24" for 25-Year event
Inflow = 5.53 cfs @ 12.27 hrs, Volume= 0.581 af
Outflow = 4.47 cfs @ 12.43 hrs, Volume= 0.581 af, Atten= 19%, Lag= 9.1 min
Primary = 4.47 cfs @ 12.43 hrs, Volume= 0.581 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 537.89' @ 12.43 hrs Surf.Area= 1,749 sf Storage= 1,673 cf

Plug-Flow detention time= 4.3 min calculated for 0.581 af (100% of inflow)
Center-of-Mass det. time= 3.6 min (847.4 - 843.8)

Volume	Invert	Avail.Storage	Storage Description
#1	536.00'	7,026 cf	**Detention Basin (Irregular)**Listed below (Recalc)

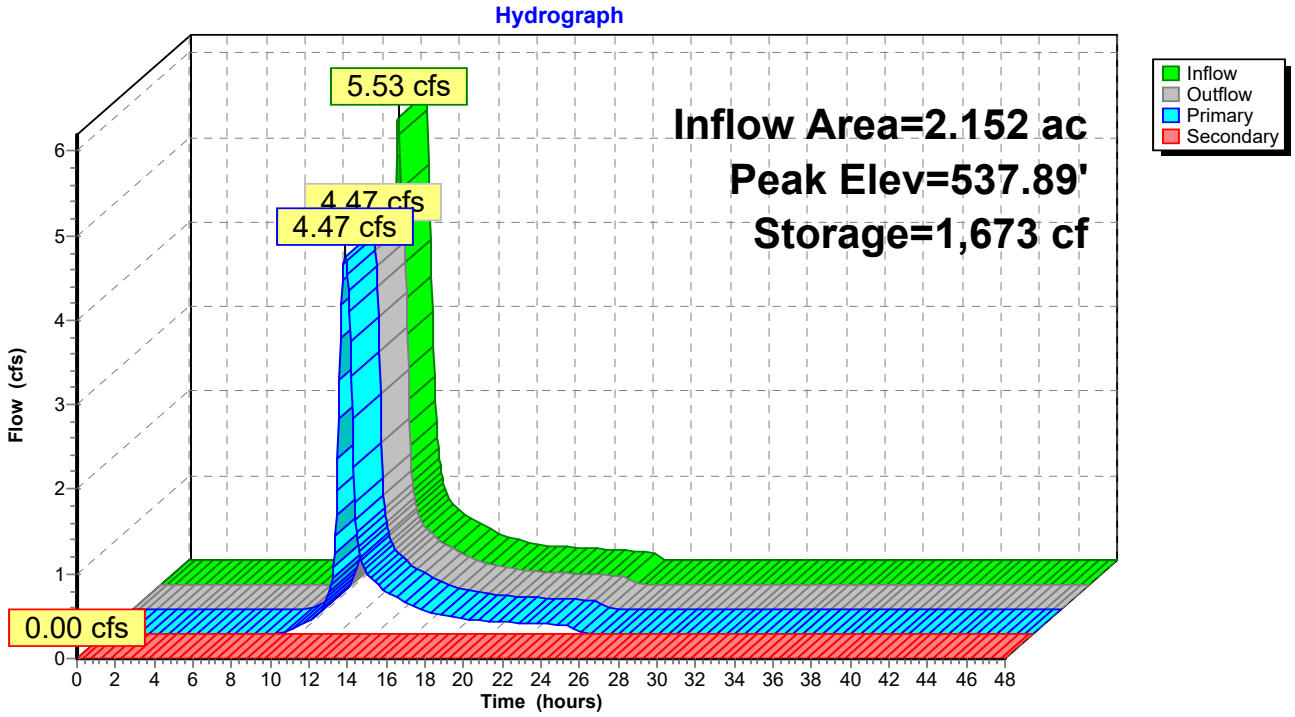
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
536.00	100	40.0	0	0	100
536.50	467	110.5	131	131	945
537.60	1,559	173.6	1,056	1,186	2,380
540.00	3,429	242.5	5,840	7,026	4,716

Device	Routing	Invert	Outlet Devices
#1	Primary	536.00'	**12.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 536.00' / 534.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	539.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.46 cfs @ 12.43 hrs HW=537.89' TW=525.89' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.46 cfs @ 5.67 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=536.00' TW=523.45' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Apartment Detention Basin



Summary for Pond 13P: Water Quality Basin

[42] Hint: Gap in defined storage above volume #1 at 524.25'

Inflow Area = 1.962 ac, 71.00% Impervious, Inflow Depth = 5.48" for 25-Year event
Inflow = 11.39 cfs @ 12.09 hrs, Volume= 0.896 af
Outflow = 4.19 cfs @ 12.34 hrs, Volume= 0.894 af, Atten= 63%, Lag= 15.2 min
Primary = 4.19 cfs @ 12.34 hrs, Volume= 0.894 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 527.73' @ 12.34 hrs Surf.Area= 6,328 sf Storage= 13,496 cf

Plug-Flow detention time= 120.4 min calculated for 0.893 af (100% of inflow)
Center-of-Mass det. time= 119.1 min (890.8 - 771.6)

Volume	Invert	Avail.Storage	Storage Description
#1	522.25'	290 cf	**2.00'W x 181.00'L x 2.00'H Underdrain Trench** 724 cf Overall x 40.0% Voids
#2	524.75'	27,446 cf	**Water Quality swale (Irregular)**Listed below (Recalc)
		27,735 cf	Total Available Storage

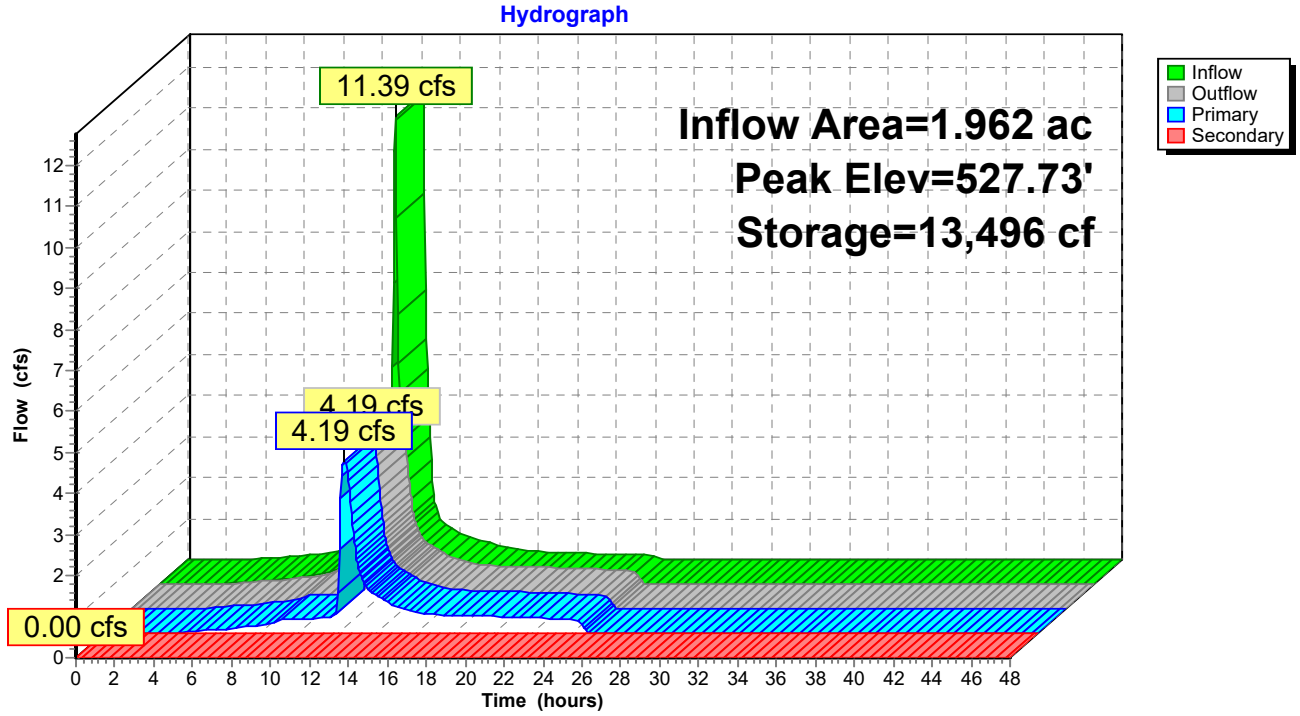
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
524.75	2,969	471.4	0	0	2,969
525.00	3,207	477.3	772	772	3,430
526.00	4,185	500.8	3,685	4,457	5,323
528.00	6,268	535.7	10,383	14,840	8,383
529.75	8,181	557.7	12,606	27,446	10,523

Device	Routing	Invert	Outlet Devices
#1	Primary	522.50'	**24.0" Round 24" HDPE** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 522.50' / 521.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	522.75'	**3.0" Vert. Underdrain** C= 0.600 Limited to weir flow at low heads
#3	Device 1	526.50'	**6.0" W x 6.0" H Vert. 6" Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	527.00'	**18.0" W x 6.0" H Vert. 18x6 Orifice** C= 0.600 Limited to weir flow at low heads
#5	Device 1	528.25'	**2.0" x 2.0" Horiz. Top of Frame X 20.00 columns** X 20 rows C= 0.600 in 48.0" x 48.0" Grate (69% open area) Limited to weir flow at low heads
#6	Secondary	528.75'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=4.19 cfs @ 12.34 hrs HW=527.73' TW=522.14' (Dynamic Tailwater)
└─**1=24" HDPE** (Passes 4.19 cfs of 31.12 cfs potential flow)
  ├─**2=Underdrain** (Orifice Controls 0.52 cfs @ 10.61 fps)
  ├─**3=6" Orifice** (Orifice Controls 1.19 cfs @ 4.76 fps)
  ├─**4=18x6 Orifice** (Orifice Controls 2.48 cfs @ 3.30 fps)
  └─**5=Top of Frame** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.25' TW=519.92' (Dynamic Tailwater)
└─**6=Emergency Spillway** (Controls 0.00 cfs)

Pond 13P: Water Quality Basin



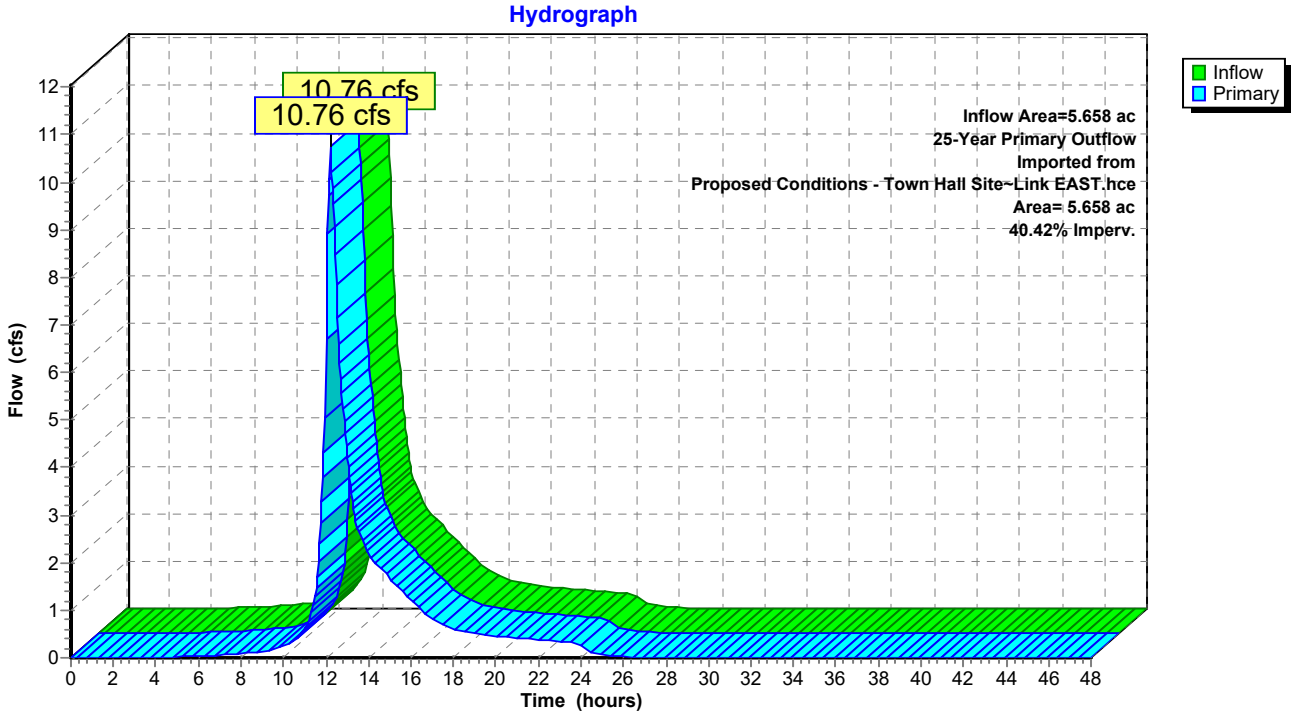
Summary for Link 14L: DA 2D - From Town Hall

Inflow Area = 5.658 ac, 40.42% Impervious, Inflow Depth = 3.70" for 25-Year event
Inflow = 10.76 cfs @ 12.20 hrs, Volume= 1.742 af
Primary = 10.76 cfs @ 12.20 hrs, Volume= 1.742 af, Atten= 0%, Lag= 0.0 min

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

25-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce

Link 14L: DA 2D - From Town Hall



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 1S: DA 1A Runoff Area=2.061 ac 80.93% Impervious Runoff Depth=6.08"
Flow Length=532' Tc=11.0 min CN=91 Runoff=11.58 cfs 1.044 af

Subcatchment 3S: DA 2C Runoff Area=38.645 ac 2.85% Impervious Runoff Depth=3.42"
Flow Length=2,588' Tc=22.6 min UI Adjusted CN=67 Runoff=98.41 cfs 11.010 af

Subcatchment 7S: DA 1B Runoff Area=94,000 sf 75.97% Impervious Runoff Depth=6.19"
Flow Length=669' Tc=6.0 min CN=92 Runoff=14.19 cfs 1.114 af

Subcatchment 8S: DA 2A Runoff Area=3.613 ac 61.86% Impervious Runoff Depth=5.27"
Flow Length=740' Tc=12.1 min CN=84 Runoff=17.81 cfs 1.588 af

Subcatchment 9S: DA 2B Runoff Area=2.152 ac 30.72% Impervious Runoff Depth=3.95"
Flow Length=735' Tc=19.6 min CN=72 Runoff=6.76 cfs 0.708 af

Subcatchment 11S: DA 1C Runoff Area=14,897 sf 83.63% Impervious Runoff Depth=6.43"
Tc=6.0 min CN=94 Runoff=2.29 cfs 0.183 af

Subcatchment 12S: DA 1D Runoff Area=85,452 sf 71.00% Impervious Runoff Depth=6.31"
Tc=6.0 min CN=93 Runoff=13.02 cfs 1.032 af

Pond 2P: 30" RCP Peak Elev=522.50' Inflow=24.63 cfs 18.644 af
Primary=24.63 cfs 18.644 af Secondary=0.00 cfs 0.000 af Outflow=24.63 cfs 18.644 af

Pond 4P: Pond Peak Elev=527.57' Storage=8.832 af Inflow=133.55 cfs 16.711 af
Primary=15.29 cfs 16.571 af Secondary=0.00 cfs 0.000 af Outflow=15.29 cfs 16.571 af

Pond 10P: Apartment Detention Basin Peak Elev=538.33' Storage=2,500 cf Inflow=6.76 cfs 0.708 af
Primary=5.12 cfs 0.708 af Secondary=0.00 cfs 0.000 af Outflow=5.12 cfs 0.708 af

Pond 13P: Water Quality Basin Peak Elev=528.01' Storage=15,213 cf Inflow=13.02 cfs 1.032 af
Primary=5.03 cfs 1.030 af Secondary=0.00 cfs 0.000 af Outflow=5.03 cfs 1.030 af

50-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce Inflow=13.98 cfs 2.108 af
Link Area= 5.658 ac 40.42% Imperv. Primary=13.98 cfs 2.108 af

Total Runoff Area = 50.933 ac Runoff Volume = 16.678 af Average Runoff Depth = 3.93"
82.36% Pervious = 41.948 ac 17.64% Impervious = 8.985 ac

Summary for Subcatchment 1S: DA 1A

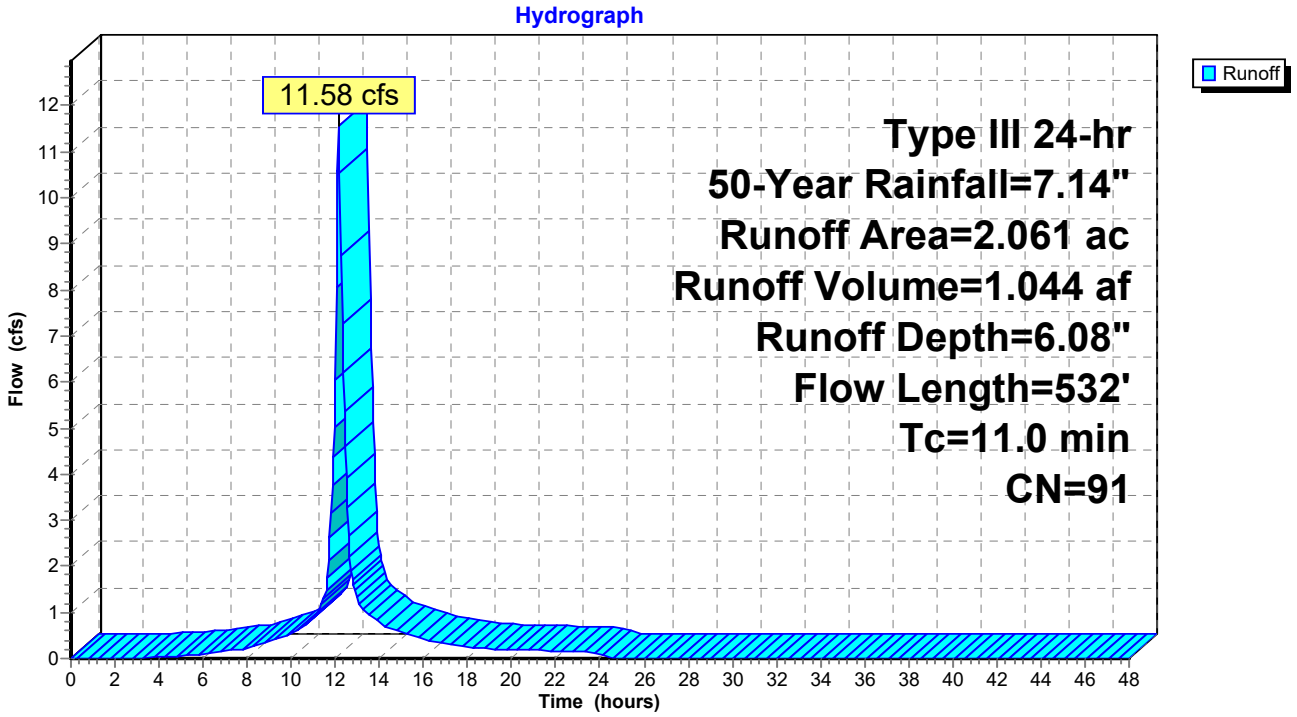
Runoff = 11.58 cfs @ 12.15 hrs, Volume= 1.044 af, Depth= 6.08"

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
0.201	98	Paved parking, HSG C
1.260	98	Paved parking, HSG B
0.207	98	Paved parking, HSG C
0.074	74	>75% Grass cover, Good, HSG C
0.319	61	>75% Grass cover, Good, HSG B
2.061	91	Weighted Average
0.393		19.07% Pervious Area
1.668		80.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	40	0.0100	0.08		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
1.7	239	0.0126	2.28		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.5	253	0.0200	8.41	14.86	**Pipe Channel, HDPE Drain** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
11.0	532	Total			

Subcatchment 1S: DA 1A



Summary for Subcatchment 3S: DA 2C

[47] Hint: Peak is 286% of capacity of segment #3

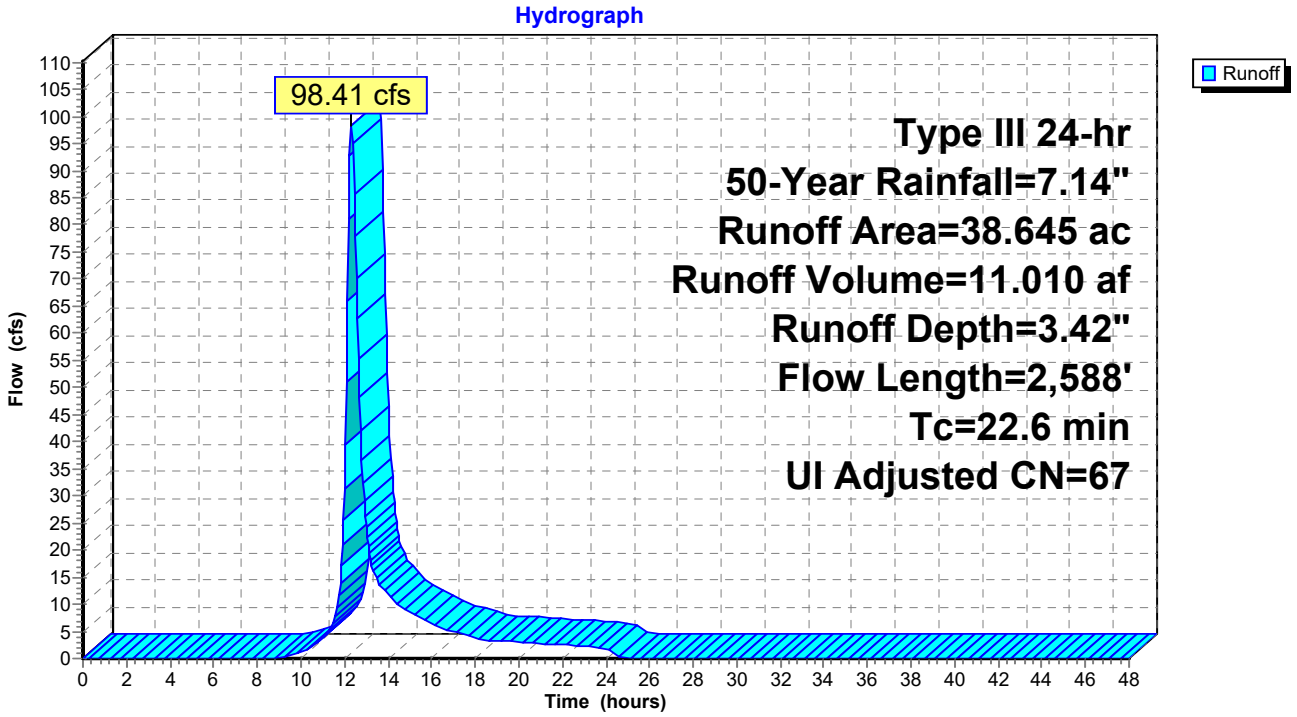
Runoff = 98.41 cfs @ 12.32 hrs, Volume= 11.010 af, Depth= 3.42"

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	Adj	Description
10.670	77		Woods, Good, HSG D
0.839	98		Water Surface, 0% imp, HSG D
13.926	55		Woods, Good, HSG B
11.541	70		Woods, Good, HSG C
0.066	98		Paved parking, HSG C
0.110	98		Roofs, HSG C
0.057	98		Paved parking, HSG B
0.566	61		>75% Grass cover, Good, HSG B
0.870	98		Unconnected roofs, HSG B
38.645	68	67	Weighted Average, UI Adjusted
37.542			97.15% Pervious Area
1.103			2.85% Impervious Area
0.870			78.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0850	0.14		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.1	598	0.1539	1.96		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
5.2	1,600	0.0262	5.16	34.37	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
0.6	290		8.02		**Lake or Reservoir, Pond** Mean Depth= 2.00'
22.6	2,588	Total			

Subcatchment 3S: DA 2C



Summary for Subcatchment 7S: DA 1B

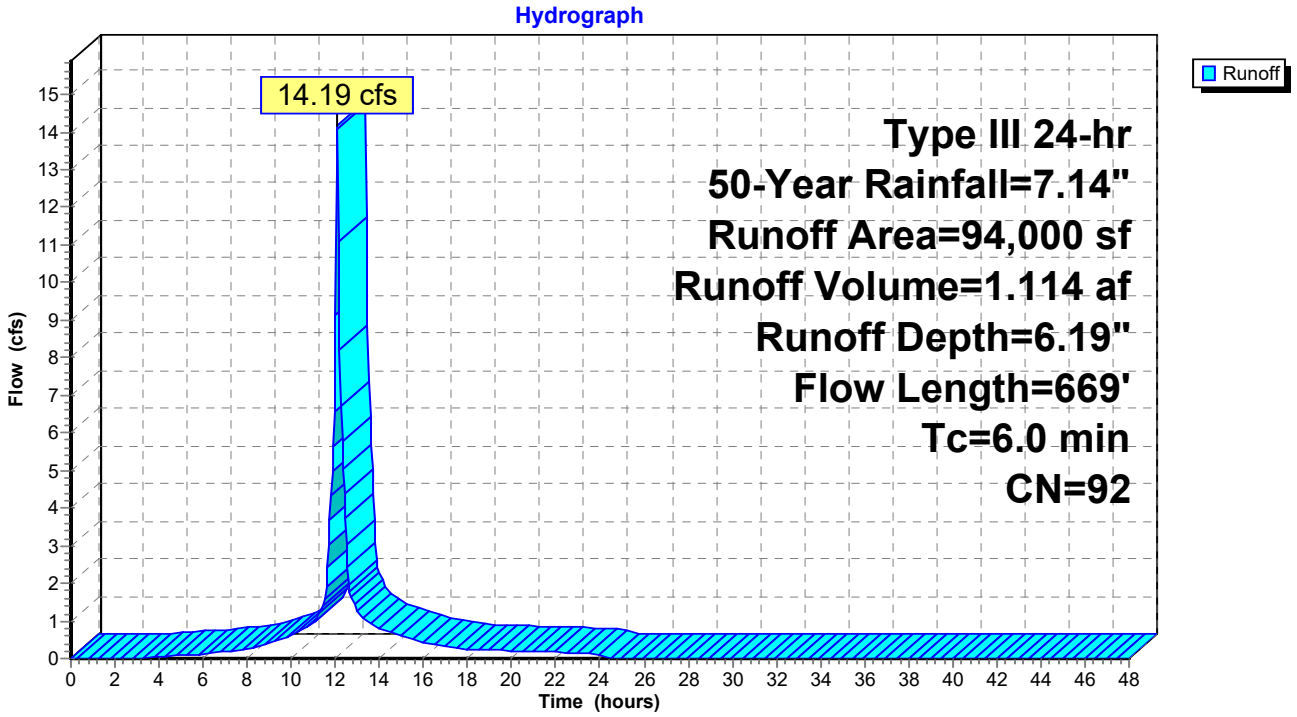
Runoff = 14.19 cfs @ 12.09 hrs, Volume= 1.114 af, Depth= 6.19"

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 (sf)	CN	Description
71,413	98	Paved parking, HSG B
11,784	86	Newly graded area, HSG B
10,803	61	>75% Grass cover, Good, HSG B
94,000	92	Weighted Average
22,587		24.03% Pervious Area
71,413		75.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.41		**Sheet Flow, Play areas** Smooth surfaces n= 0.011 P2= 3.37"
0.1	40	0.1500	6.24		**Shallow Concentrated Flow, Play areas** Unpaved Kv= 16.1 fps
2.2	362	0.0175	2.69		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.3	167	0.0200	8.41	14.86	**Pipe Channel, HDPE** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
3.8	669	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 7S: DA 1B



Summary for Subcatchment 8S: DA 2A

[47] Hint: Peak is 123% of capacity of segment #3

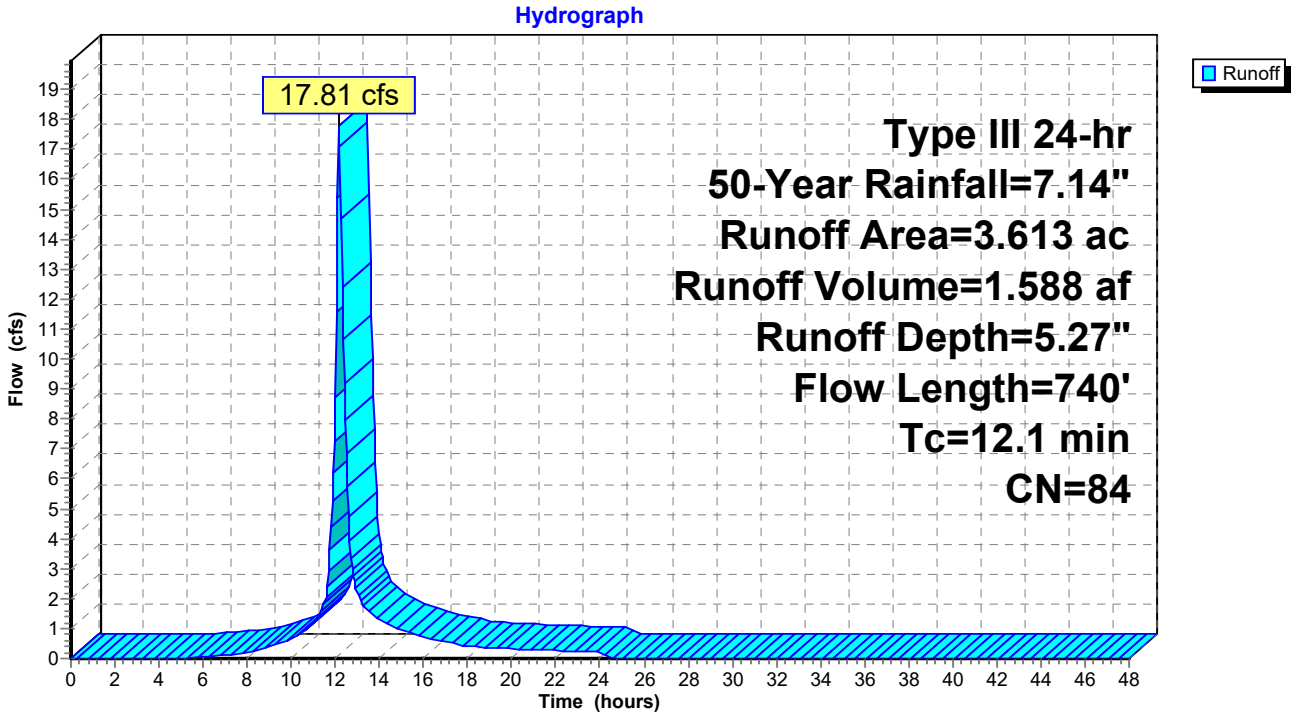
Runoff = 17.81 cfs @ 12.16 hrs, Volume= 1.588 af, Depth= 5.27"

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
1.953	98	Paved parking, HSG B
0.152	98	Roofs, HSG B
0.394	61	>75% Grass cover, Good, HSG B
0.054	55	Woods, Good, HSG B
0.930	61	>75% Grass cover, Good, HSG B
0.130	98	Paved parking, HSG B
3.613	84	Weighted Average
1.378		38.14% Pervious Area
2.235		61.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0650	0.19		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
3.3	558	0.0191	2.81		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.1	82	0.0500	11.77	14.44	**Pipe Channel, Discharge** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
12.1	740	Total			

Subcatchment 8S: DA 2A



Summary for Subcatchment 9S: DA 2B

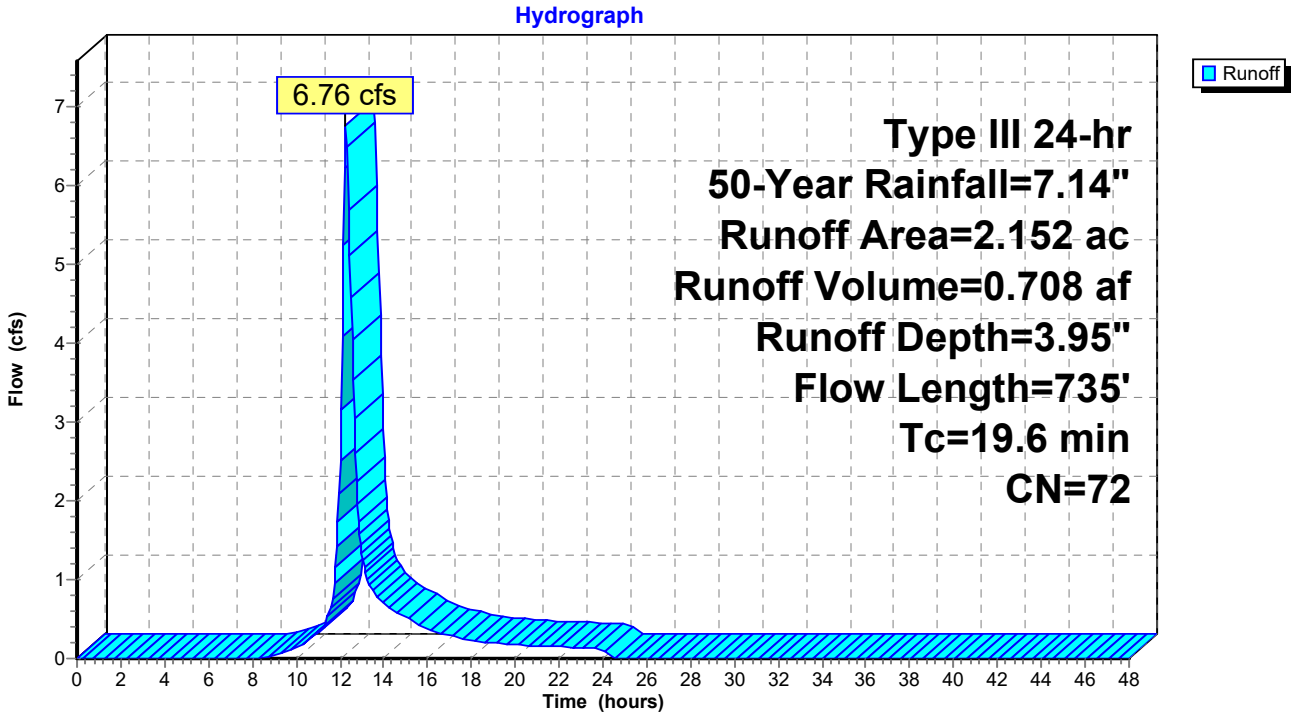
Runoff = 6.76 cfs @ 12.27 hrs, Volume= 0.708 af, Depth= 3.95"

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
0.661	98	Paved parking, HSG B
0.746	55	Woods, Good, HSG B
0.669	61	>75% Grass cover, Good, HSG B
0.076	98	Water Surface, 0% imp, HSG B
2.152	72	Weighted Average
1.491		69.28% Pervious Area
0.661		30.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0450	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
2.1	100	0.0250	0.79		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.2	38	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.8	314	0.0200	2.87		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.2	108	0.0200	7.44	9.14	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	75		5.67		**Lake or Reservoir,** Mean Depth= 1.00'
19.6	735	Total			

Subcatchment 9S: DA 2B



Summary for Subcatchment 11S: DA 1C

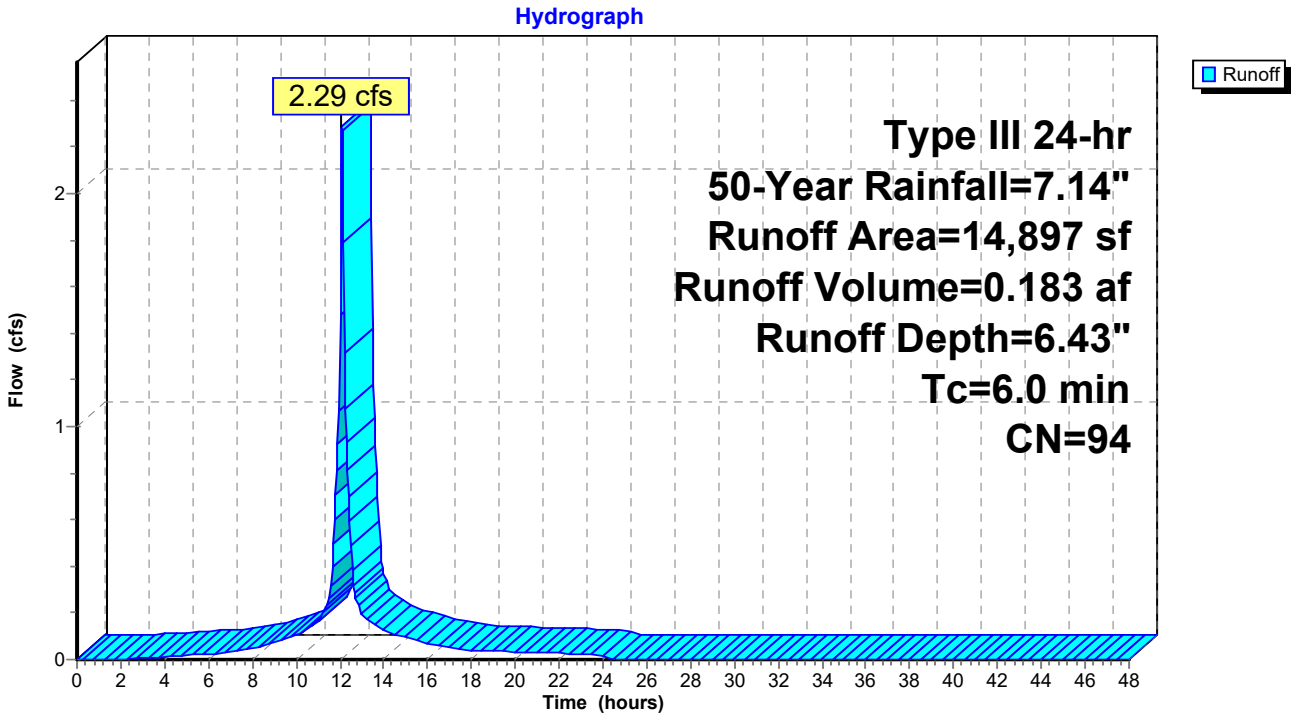
Runoff = 2.29 cfs @ 12.09 hrs, Volume= 0.183 af, Depth= 6.43"

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 (sf)	CN	Description
12,458	98	Paved parking, HSG C
2,439	74	>75% Grass cover, Good, HSG C
14,897	94	Weighted Average
2,439		16.37% Pervious Area
12,458		83.63% Impervious Area

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

Subcatchment 11S: DA 1C



Summary for Subcatchment 12S: DA 1D

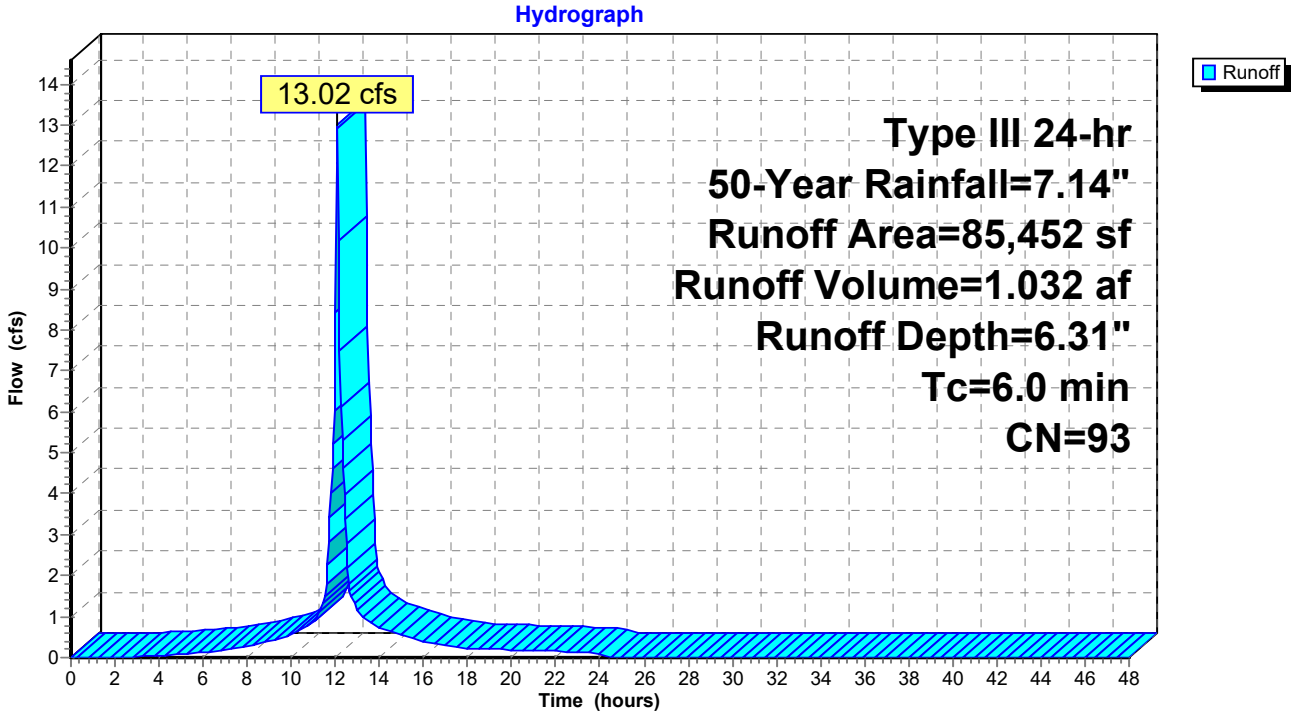
Runoff = 13.02 cfs @ 12.09 hrs, Volume= 1.032 af, Depth= 6.31"

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 (sf)	CN	Description
55,278	98	Paved parking, HSG C
6,098	98	Water Surface, 0% imp, HSG C
18,687	74	>75% Grass cover, Good, HSG C
5,389	98	Paved parking, HSG C
85,452	93	Weighted Average
24,785		29.00% Pervious Area
60,667		71.00% Impervious Area

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

Subcatchment 12S: DA 1D



Summary for Pond 2P: 30" RCP

Inflow Area = 56.590 ac, 19.92% Impervious, Inflow Depth > 3.95" for 50-Year event
Inflow = 24.63 cfs @ 12.19 hrs, Volume= 18.644 af
Outflow = 24.63 cfs @ 12.19 hrs, Volume= 18.644 af, Atten= 0%, Lag= 0.0 min
Primary = 24.63 cfs @ 12.19 hrs, Volume= 18.644 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

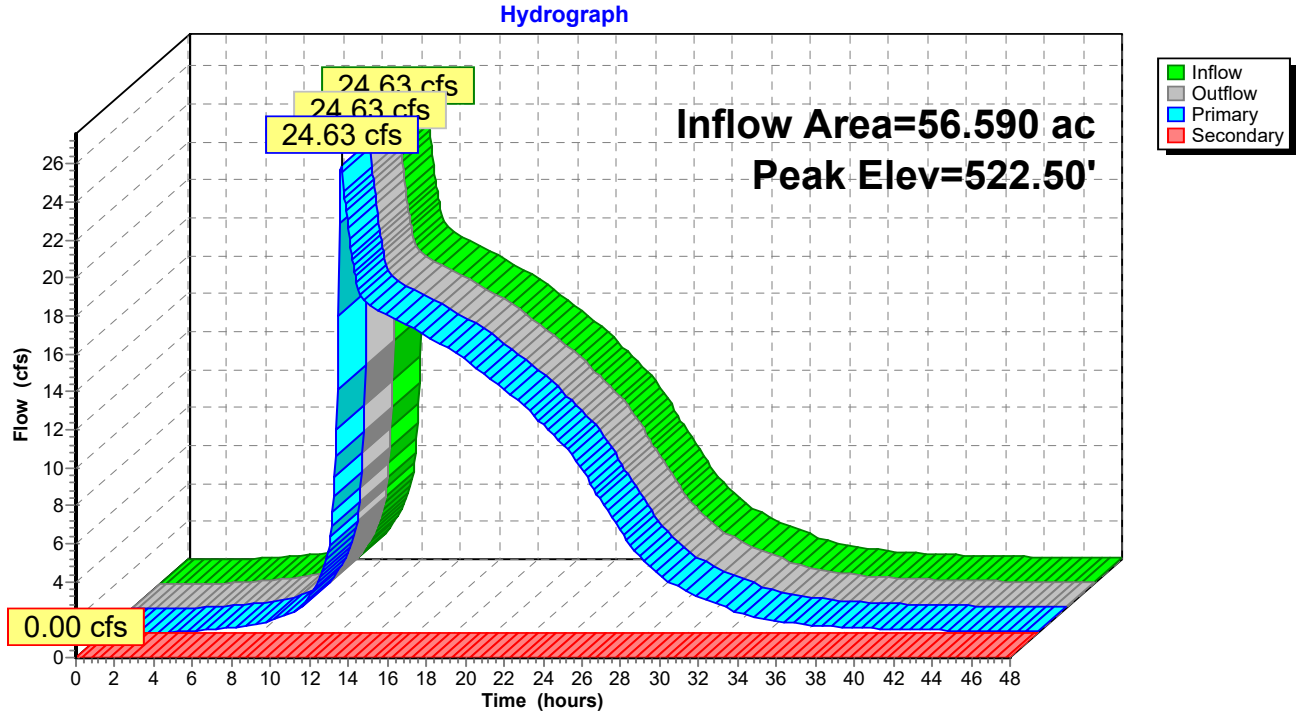
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 522.50' @ 12.19 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf
#2	Secondary	527.20'	**30.0' long x 10.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=24.53 cfs @ 12.19 hrs HW=522.50' (Free Discharge)
└**1=30" RC** (Barrel Controls 24.53 cfs @ 6.03 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=519.92' (Free Discharge)
└**2=Overflow** (Controls 0.00 cfs)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 52.568 ac, 15.62% Impervious, Inflow Depth = 3.81" for 50-Year event
Inflow = 133.55 cfs @ 12.29 hrs, Volume= 16.711 af
Outflow = 15.29 cfs @ 14.31 hrs, Volume= 16.571 af, Atten= 89%, Lag= 121.0 min
Primary = 15.29 cfs @ 14.31 hrs, Volume= 16.571 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 527.57' @ 14.31 hrs Surf.Area= 2.811 ac Storage= 8.832 af

Plug-Flow detention time= 337.6 min calculated for 16.554 af (99% of inflow)
Center-of-Mass det. time= 333.6 min (1,173.7 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	523.45'	16.273 af	**Pond Storage (Irregular)**Listed below

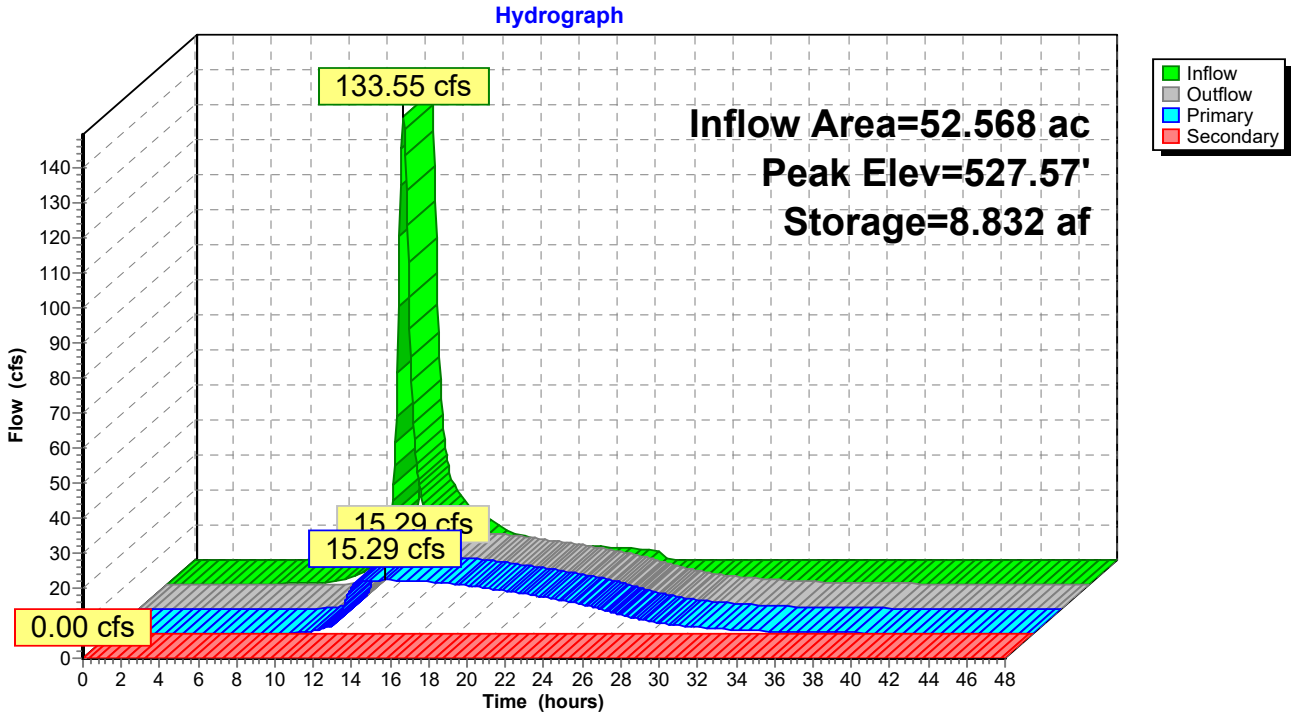
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
523.45	0.636	1,389.1	0.000	0.000	0.636
524.00	1.723	1,270.7	0.624	0.624	1.212
526.00	2.359	1,494.7	4.065	4.690	2.345
528.00	2.936	1,638.1	5.284	9.974	3.169
530.00	3.368	1,700.4	6.299	16.273	3.556

Device	Routing	Invert	Outlet Devices
#1	Primary	520.91'	**30.0" Round 30" HDPE** L= 110.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 520.91' / 520.64' S= 0.0024 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Device 1	521.46'	**30.0" Round 30" HDPE** L= 86.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.46' / 520.91' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#3	Device 2	521.41'	**24.0" Round 24" HDPE** L= 157.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.41' / 521.40' S= 0.0001 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#4	Device 3	523.45'	**18.0" Round 18" HDPE** L= 117.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 523.45' / 521.82' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Secondary	529.90'	**50.0' long x 25.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=15.29 cfs @ 14.31 hrs HW=527.57' TW=521.93' (Dynamic Tailwater)
└─**1=30" HDPE** (Passes 15.29 cfs of 52.16 cfs potential flow)
└─**2=30" HDPE** (Passes 15.29 cfs of 52.09 cfs potential flow)
└─**3=24" HDPE** (Passes 15.29 cfs of 27.68 cfs potential flow)
└─**4=18" HDPE** (Barrel Controls 15.29 cfs @ 8.65 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=523.45' TW=519.92' (Dynamic Tailwater)
└─**5=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond



Summary for Pond 10P: Apartment Detention Basin

Inflow Area = 2.152 ac, 30.72% Impervious, Inflow Depth = 3.95" for 50-Year event
Inflow = 6.76 cfs @ 12.27 hrs, Volume= 0.708 af
Outflow = 5.12 cfs @ 12.45 hrs, Volume= 0.708 af, Atten= 24%, Lag= 10.8 min
Primary = 5.12 cfs @ 12.45 hrs, Volume= 0.708 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 538.33' @ 12.45 hrs Surf.Area= 2,051 sf Storage= 2,500 cf

Plug-Flow detention time= 4.8 min calculated for 0.708 af (100% of inflow)
Center-of-Mass det. time= 4.1 min (842.3 - 838.2)

Volume	Invert	Avail.Storage	Storage Description
#1	536.00'	7,026 cf	**Detention Basin (Irregular)**Listed below (Recalc)

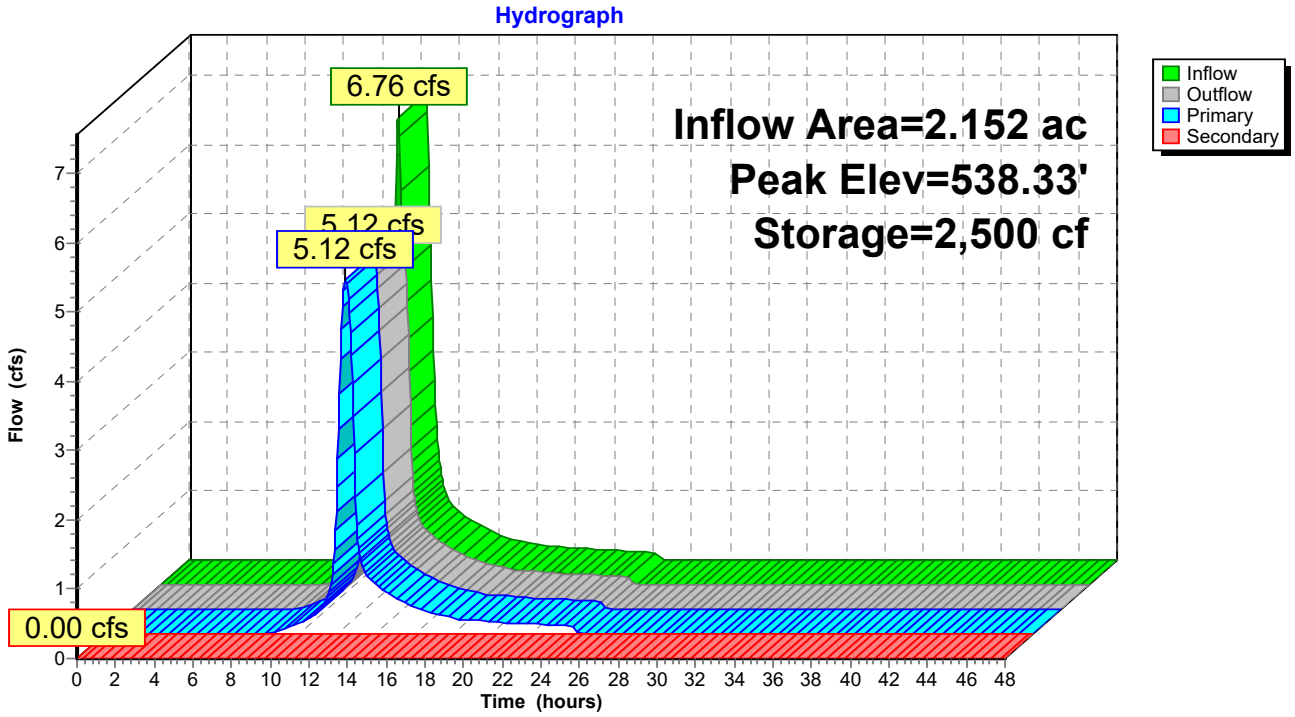
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
536.00	100	40.0	0	0	100
536.50	467	110.5	131	131	945
537.60	1,559	173.6	1,056	1,186	2,380
540.00	3,429	242.5	5,840	7,026	4,716

Device	Routing	Invert	Outlet Devices
#1	Primary	536.00'	**12.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 536.00' / 534.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	539.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.11 cfs @ 12.45 hrs HW=538.33' TW=526.44' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.11 cfs @ 6.51 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=536.00' TW=523.45' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 10P: Apartment Detention Basin



Summary for Pond 13P: Water Quality Basin

[42] Hint: Gap in defined storage above volume #1 at 524.25'

Inflow Area = 1.962 ac, 71.00% Impervious, Inflow Depth = 6.31" for 50-Year event
Inflow = 13.02 cfs @ 12.09 hrs, Volume= 1.032 af
Outflow = 5.03 cfs @ 12.32 hrs, Volume= 1.030 af, Atten= 61%, Lag= 14.0 min
Primary = 5.03 cfs @ 12.32 hrs, Volume= 1.030 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 528.01' @ 12.32 hrs Surf.Area= 6,644 sf Storage= 15,213 cf

Plug-Flow detention time= 115.9 min calculated for 1.030 af (100% of inflow)
Center-of-Mass det. time= 114.2 min (882.4 - 768.3)

Volume	Invert	Avail.Storage	Storage Description
#1	522.25'	290 cf	**2.00'W x 181.00'L x 2.00'H Underdrain Trench** 724 cf Overall x 40.0% Voids
#2	524.75'	27,446 cf	**Water Quality swale (Irregular)**Listed below (Recalc)
		27,735 cf	Total Available Storage

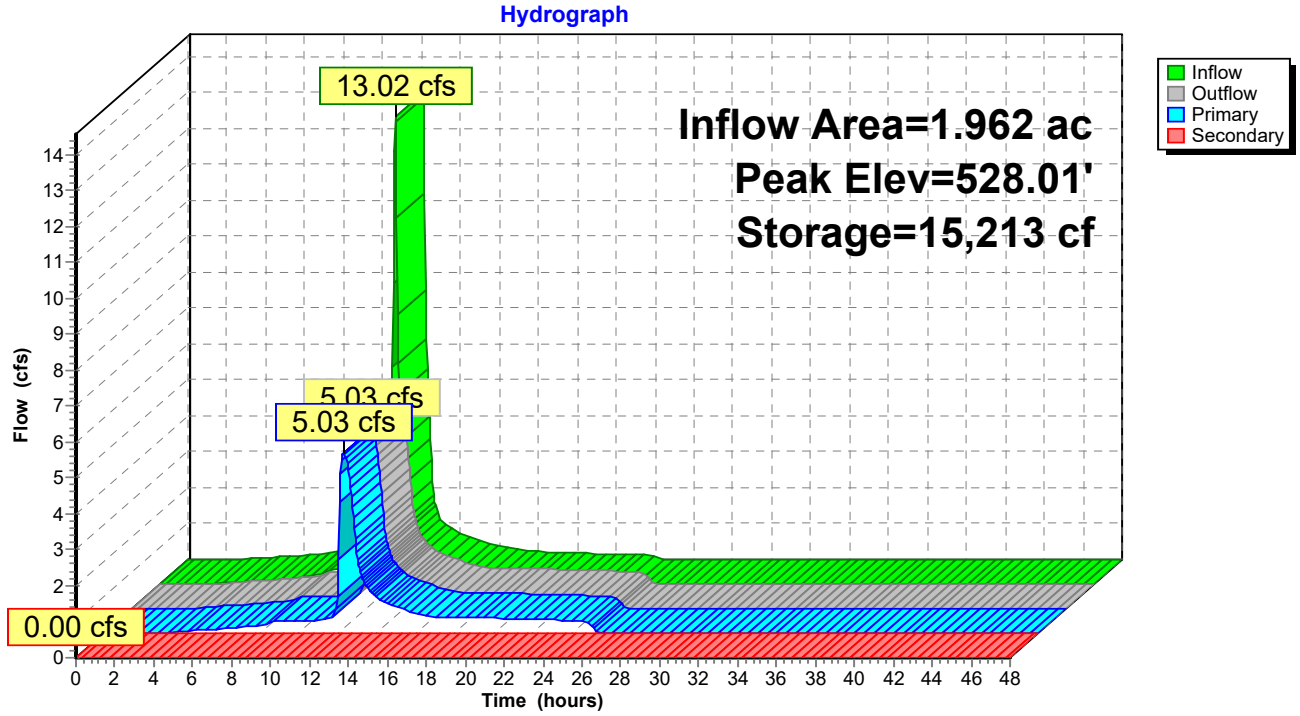
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
524.75	2,969	471.4	0	0	2,969
525.00	3,207	477.3	772	772	3,430
526.00	4,185	500.8	3,685	4,457	5,323
528.00	6,268	535.7	10,383	14,840	8,383
529.75	8,181	557.7	12,606	27,446	10,523

Device	Routing	Invert	Outlet Devices
#1	Primary	522.50'	**24.0" Round 24" HDPE** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 522.50' / 521.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	522.75'	**3.0" Vert. Underdrain** C= 0.600 Limited to weir flow at low heads
#3	Device 1	526.50'	**6.0" W x 6.0" H Vert. 6" Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	527.00'	**18.0" W x 6.0" H Vert. 18x6 Orifice** C= 0.600 Limited to weir flow at low heads
#5	Device 1	528.25'	**2.0" x 2.0" Horiz. Top of Frame X 20.00 columns** X 20 rows C= 0.600 in 48.0" x 48.0" Grate (69% open area) Limited to weir flow at low heads
#6	Secondary	528.75'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=5.02 cfs @ 12.32 hrs HW=528.01' TW=522.39' (Dynamic Tailwater)
└─**1=24" HDPE** (Passes 5.02 cfs of 32.13 cfs potential flow)
  └─**2=Underdrain** (Orifice Controls 0.54 cfs @ 10.91 fps)
  └─**3=6" Orifice** (Orifice Controls 1.35 cfs @ 5.40 fps)
  └─**4=18x6 Orifice** (Orifice Controls 3.14 cfs @ 4.18 fps)
  └─**5=Top of Frame** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.25' TW=519.92' (Dynamic Tailwater)
└─**6=Emergency Spillway** (Controls 0.00 cfs)

Pond 13P: Water Quality Basin



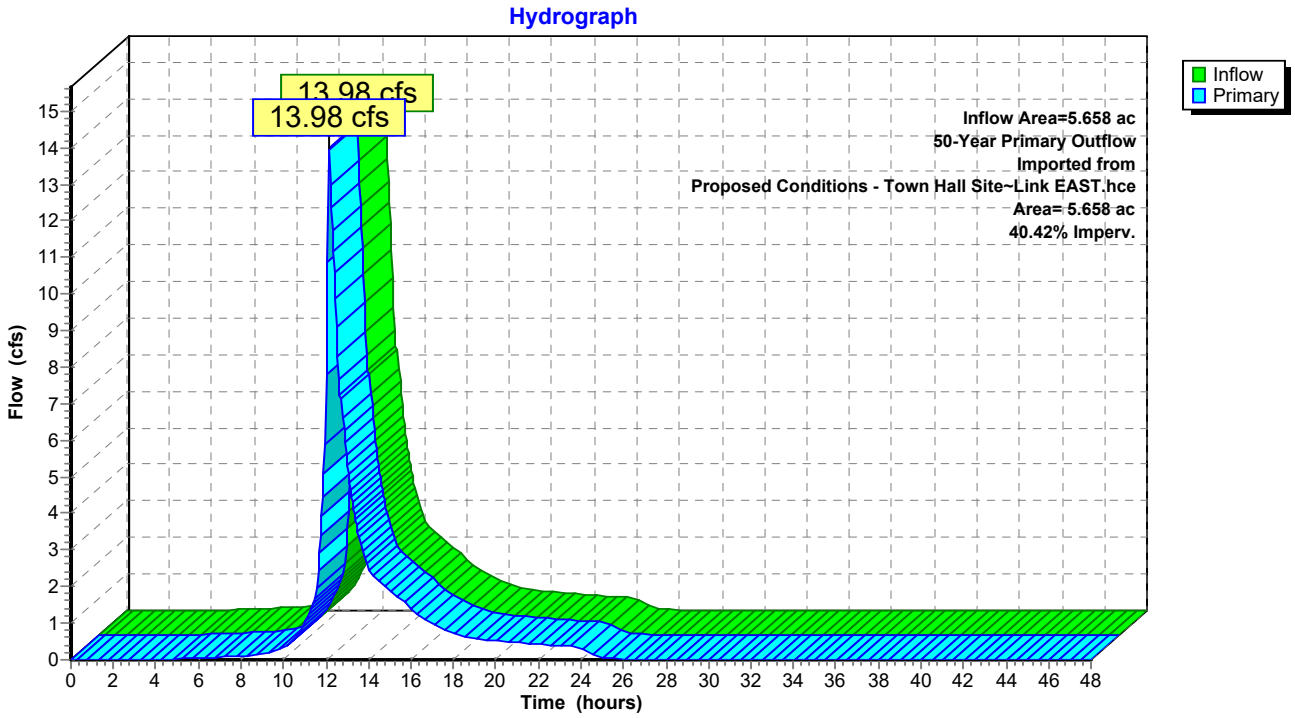
Summary for Link 14L: DA 2D - From Town Hall

Inflow Area = 5.658 ac, 40.42% Impervious, Inflow Depth = 4.47" for 50-Year event
Inflow = 13.98 cfs @ 12.13 hrs, Volume= 2.108 af
Primary = 13.98 cfs @ 12.13 hrs, Volume= 2.108 af, Atten= 0%, Lag= 0.0 min

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

50-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce

Link 14L: DA 2D - From Town Hall



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 1S: DA 1A Runoff Area=2.061 ac 80.93% Impervious Runoff Depth=6.96"
Flow Length=532' Tc=11.0 min CN=91 Runoff=13.17 cfs 1.196 af

Subcatchment 3S: DA 2C Runoff Area=38.645 ac 2.85% Impervious Runoff Depth=4.15"
Flow Length=2,588' Tc=22.6 min UI Adjusted CN=67 Runoff=120.09 cfs 13.379 af

Subcatchment 7S: DA 1B Runoff Area=94,000 sf 75.97% Impervious Runoff Depth=7.08"
Flow Length=669' Tc=6.0 min CN=92 Runoff=16.10 cfs 1.274 af

Subcatchment 8S: DA 2A Runoff Area=3.613 ac 61.86% Impervious Runoff Depth=6.13"
Flow Length=740' Tc=12.1 min CN=84 Runoff=20.57 cfs 1.847 af

Subcatchment 9S: DA 2B Runoff Area=2.152 ac 30.72% Impervious Runoff Depth=4.73"
Flow Length=735' Tc=19.6 min CN=72 Runoff=8.10 cfs 0.848 af

Subcatchment 11S: DA 1C Runoff Area=14,897 sf 83.63% Impervious Runoff Depth=7.32"
Tc=6.0 min CN=94 Runoff=2.59 cfs 0.209 af

Subcatchment 12S: DA 1D Runoff Area=85,452 sf 71.00% Impervious Runoff Depth=7.20"
Tc=6.0 min CN=93 Runoff=14.75 cfs 1.177 af

Pond 2P: 30" RCP Peak Elev=522.81' Inflow=28.38 cfs 22.280 af
Primary=28.38 cfs 22.280 af Secondary=0.00 cfs 0.000 af Outflow=28.38 cfs 22.280 af

Pond 4P: Pond Peak Elev=528.33' Storage=11.001 af Inflow=160.70 cfs 20.062 af
Primary=16.59 cfs 19.908 af Secondary=0.00 cfs 0.000 af Outflow=16.59 cfs 19.908 af

Pond 10P: Apartment Detention Basin Peak Elev=538.80' Storage=3,557 cf Inflow=8.10 cfs 0.848 af
Primary=5.74 cfs 0.848 af Secondary=0.00 cfs 0.000 af Outflow=5.74 cfs 0.848 af

Pond 13P: Water Quality Basin Peak Elev=528.29' Storage=17,015 cf Inflow=14.75 cfs 1.177 af
Primary=6.20 cfs 1.176 af Secondary=0.00 cfs 0.000 af Outflow=6.20 cfs 1.176 af

100-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce Inflow=17.21 cfs 2.505 af
Lnk Area= 5.658 ac 40.42% Imperv. Primary=17.21 cfs 2.505 af

Total Runoff Area = 50.933 ac Runoff Volume = 19.930 af Average Runoff Depth = 4.70"
82.36% Pervious = 41.948 ac 17.64% Impervious = 8.985 ac

Summary for Subcatchment 1S: DA 1A

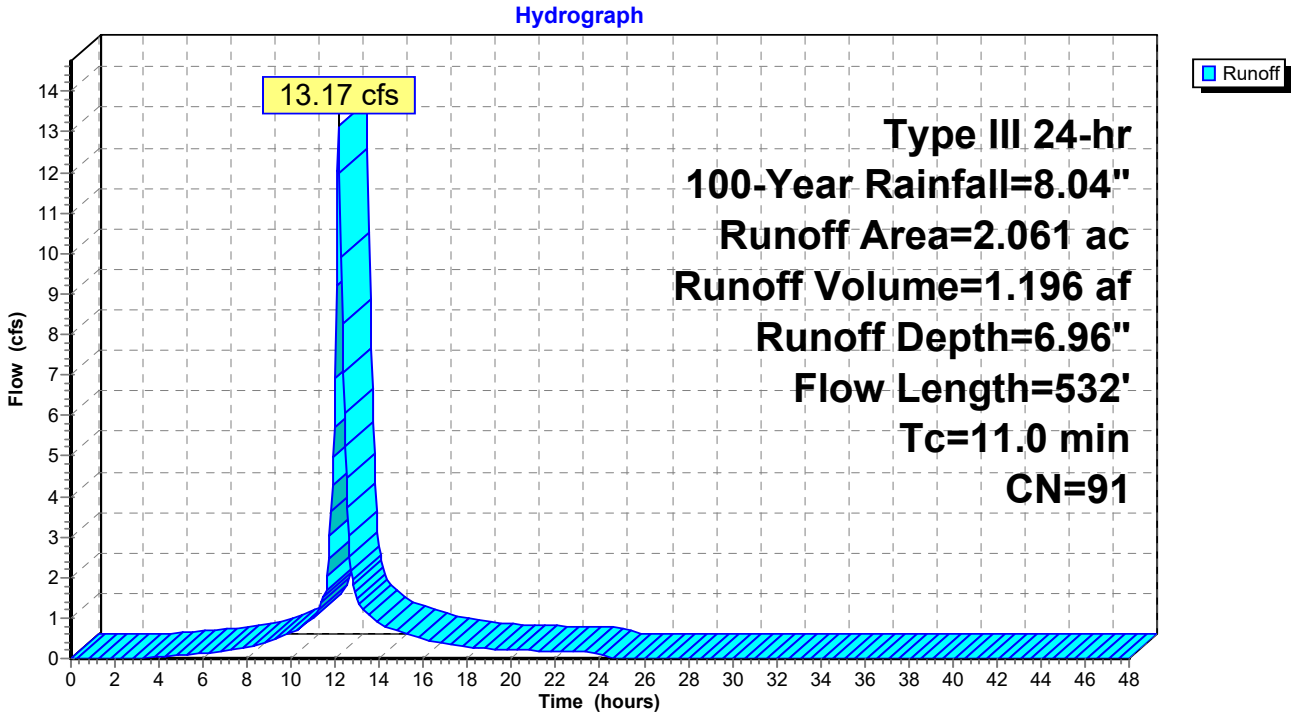
Runoff = 13.17 cfs @ 12.15 hrs, Volume= 1.196 af, Depth= 6.96"

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
0.201	98	Paved parking, HSG C
1.260	98	Paved parking, HSG B
0.207	98	Paved parking, HSG C
0.074	74	>75% Grass cover, Good, HSG C
0.319	61	>75% Grass cover, Good, HSG B
2.061	91	Weighted Average
0.393		19.07% Pervious Area
1.668		80.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	40	0.0100	0.08		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
1.7	239	0.0126	2.28		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.5	253	0.0200	8.41	14.86	**Pipe Channel, HDPE Drain** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
11.0	532	Total			

Subcatchment 1S: DA 1A



Summary for Subcatchment 3S: DA 2C

[47] Hint: Peak is 349% of capacity of segment #3

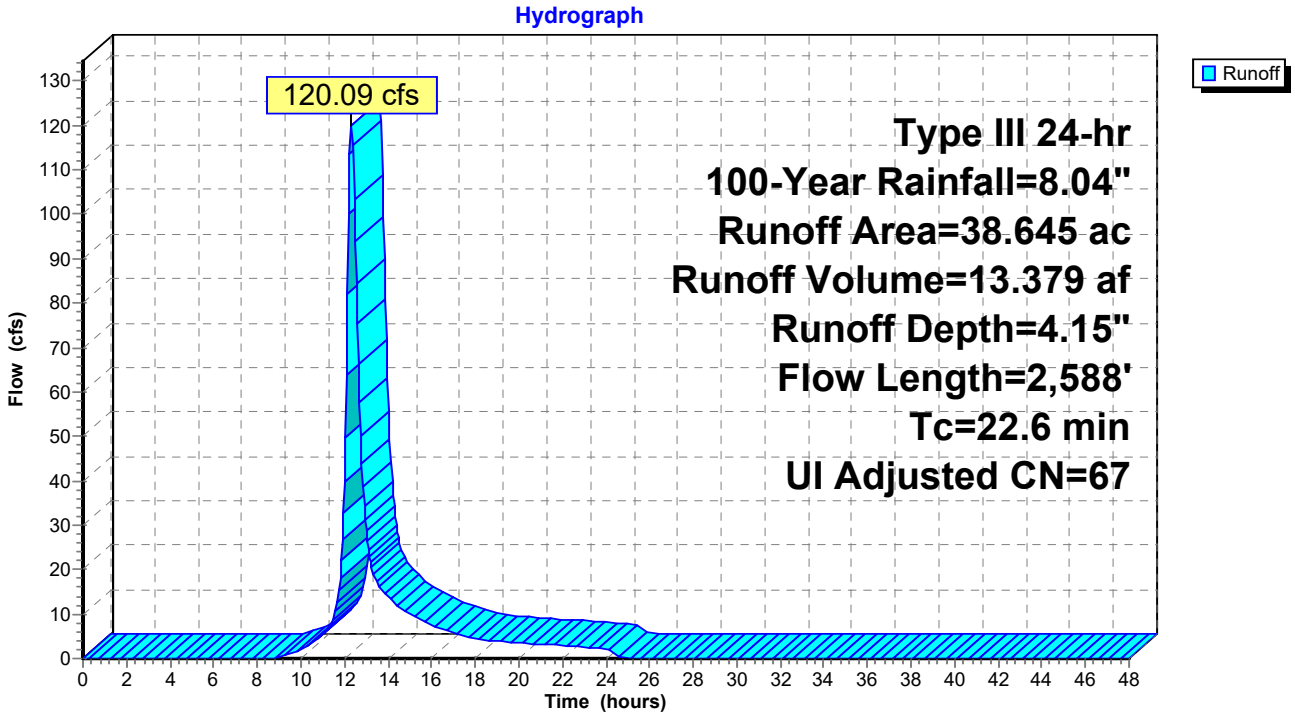
Runoff = 120.09 cfs @ 12.32 hrs, Volume= 13.379 af, Depth= 4.15"

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	Adj	Description
10.670	77		Woods, Good, HSG D
0.839	98		Water Surface, 0% imp, HSG D
13.926	55		Woods, Good, HSG B
11.541	70		Woods, Good, HSG C
0.066	98		Paved parking, HSG C
0.110	98		Roofs, HSG C
0.057	98		Paved parking, HSG B
0.566	61		>75% Grass cover, Good, HSG B
0.870	98		Unconnected roofs, HSG B
38.645	68	67	Weighted Average, UI Adjusted
37.542			97.15% Pervious Area
1.103			2.85% Impervious Area
0.870			78.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.7	100	0.0850	0.14		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
5.1	598	0.1539	1.96		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
5.2	1,600	0.0262	5.16	34.37	**Parabolic Channel, Channel** W=10.00' D=1.00' Area=6.7 sf Perim=10.3' n= 0.035 Earth, dense weeds
0.6	290		8.02		**Lake or Reservoir, Pond** Mean Depth= 2.00'
22.6	2,588	Total			

Subcatchment 3S: DA 2C



Summary for Subcatchment 7S: DA 1B

[47] Hint: Peak is 108% of capacity of segment #4

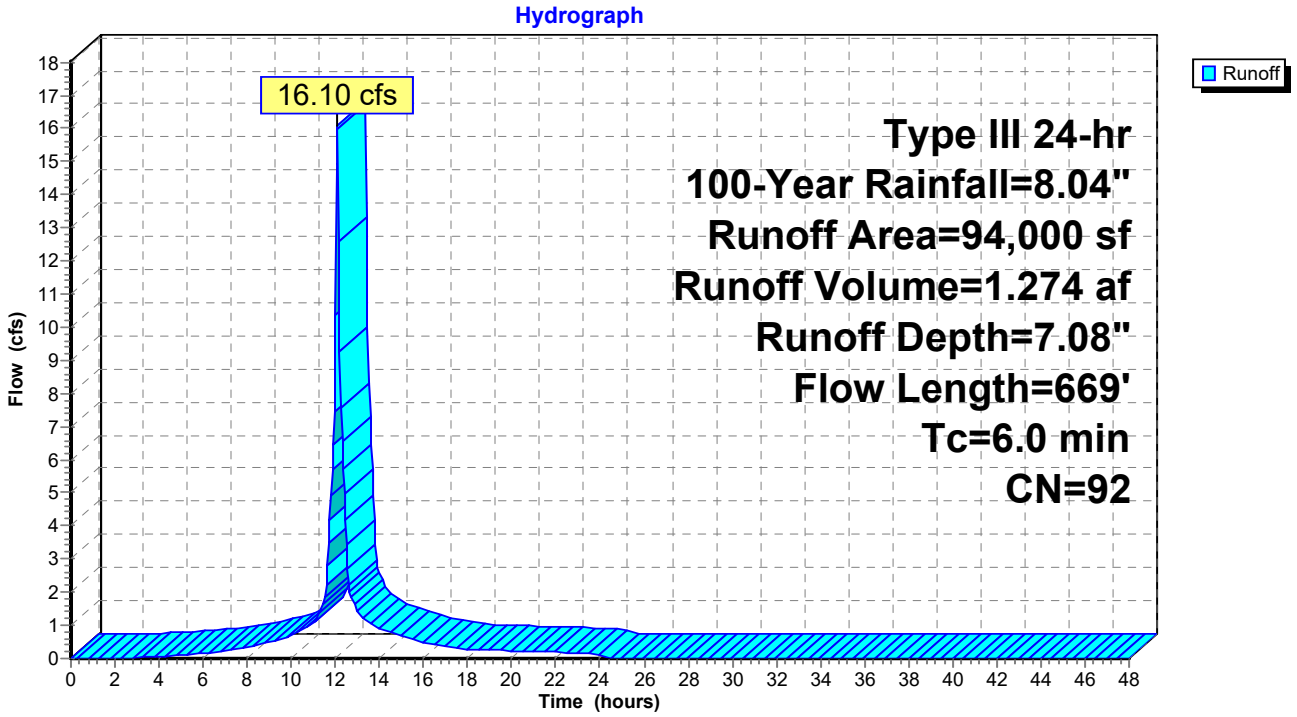
Runoff = 16.10 cfs @ 12.09 hrs, Volume= 1.274 af, Depth= 7.08"

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 (sf)	CN	Description
71,413	98	Paved parking, HSG B
11,784	86	Newly graded area, HSG B
10,803	61	>75% Grass cover, Good, HSG B
94,000	92	Weighted Average
22,587		24.03% Pervious Area
71,413		75.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.41		**Sheet Flow, Play areas** Smooth surfaces n= 0.011 P2= 3.37"
0.1	40	0.1500	6.24		**Shallow Concentrated Flow, Play areas** Unpaved Kv= 16.1 fps
2.2	362	0.0175	2.69		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.3	167	0.0200	8.41	14.86	**Pipe Channel, HDPE** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Corrugated PE, smooth interior
3.8	669	Total, Increased to minimum Tc = 6.0 min			

Subcatchment 7S: DA 1B



Summary for Subcatchment 8S: DA 2A

[47] Hint: Peak is 142% of capacity of segment #3

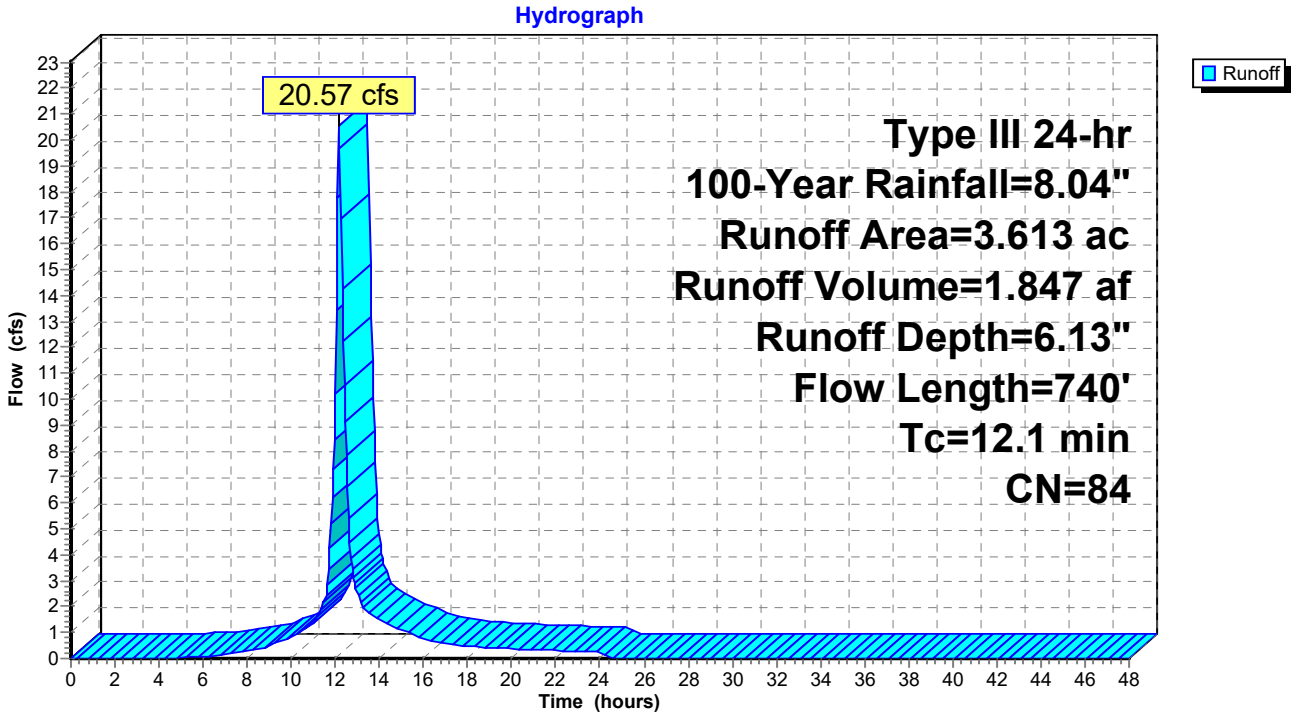
Runoff = 20.57 cfs @ 12.16 hrs, Volume= 1.847 af, Depth= 6.13"

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
1.953	98	Paved parking, HSG B
0.152	98	Roofs, HSG B
0.394	61	>75% Grass cover, Good, HSG B
0.054	55	Woods, Good, HSG B
0.930	61	>75% Grass cover, Good, HSG B
0.130	98	Paved parking, HSG B
3.613	84	Weighted Average
1.378		38.14% Pervious Area
2.235		61.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	100	0.0650	0.19		**Sheet Flow, Lawn** Grass: Dense n= 0.240 P2= 3.37"
3.3	558	0.0191	2.81		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.1	82	0.0500	11.77	14.44	**Pipe Channel, Discharge** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
12.1	740	Total			

Subcatchment 8S: DA 2A



Summary for Subcatchment 9S: DA 2B

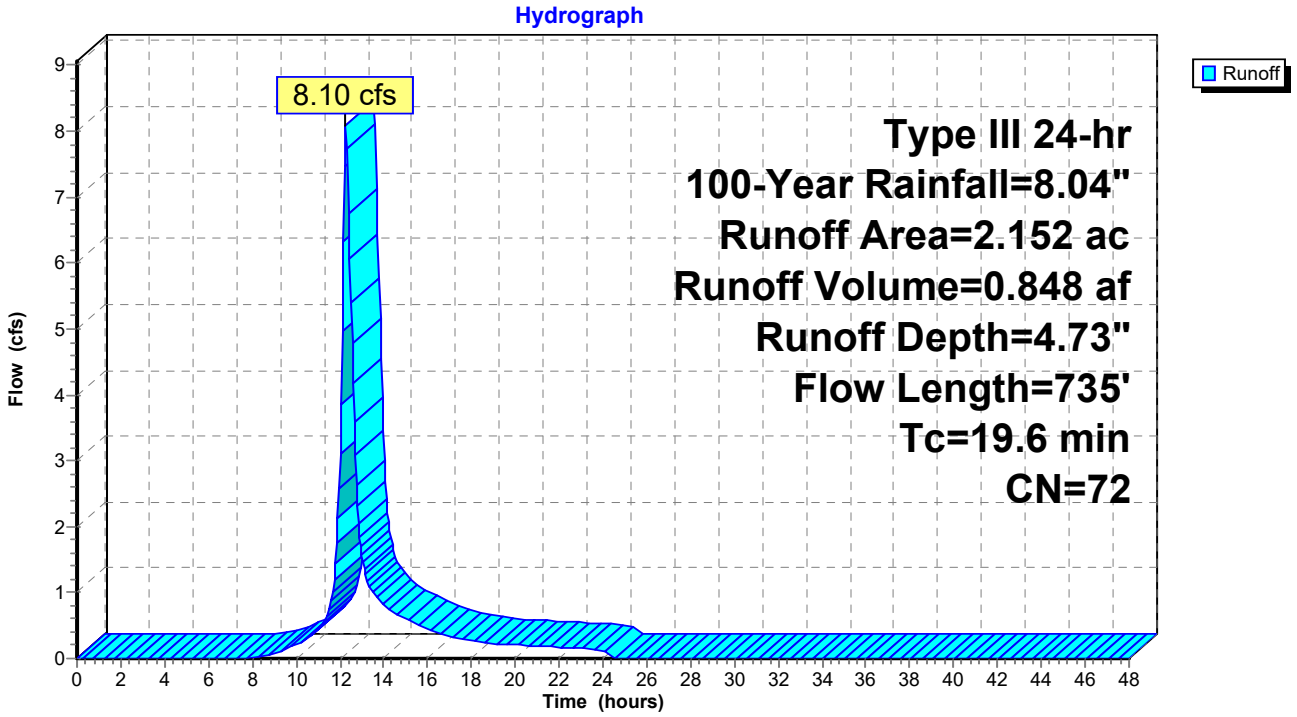
Runoff = 8.10 cfs @ 12.27 hrs, Volume= 0.848 af, Depth= 4.73"

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
0.661	98	Paved parking, HSG B
0.746	55	Woods, Good, HSG B
0.669	61	>75% Grass cover, Good, HSG B
0.076	98	Water Surface, 0% imp, HSG B
2.152	72	Weighted Average
1.491		69.28% Pervious Area
0.661		30.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.1	100	0.0450	0.11		**Sheet Flow, Woods** Woods: Light underbrush n= 0.400 P2= 3.37"
2.1	100	0.0250	0.79		**Shallow Concentrated Flow, Woods** Woodland Kv= 5.0 fps
0.2	38	0.3333	4.04		**Shallow Concentrated Flow, Grass** Short Grass Pasture Kv= 7.0 fps
1.8	314	0.0200	2.87		**Shallow Concentrated Flow, Gutter** Paved Kv= 20.3 fps
0.2	108	0.0200	7.44	9.14	**Pipe Channel, Pipe** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Corrugated PE, smooth interior
0.2	75		5.67		**Lake or Reservoir,** Mean Depth= 1.00'
19.6	735	Total			

Subcatchment 9S: DA 2B



Summary for Subcatchment 11S: DA 1C

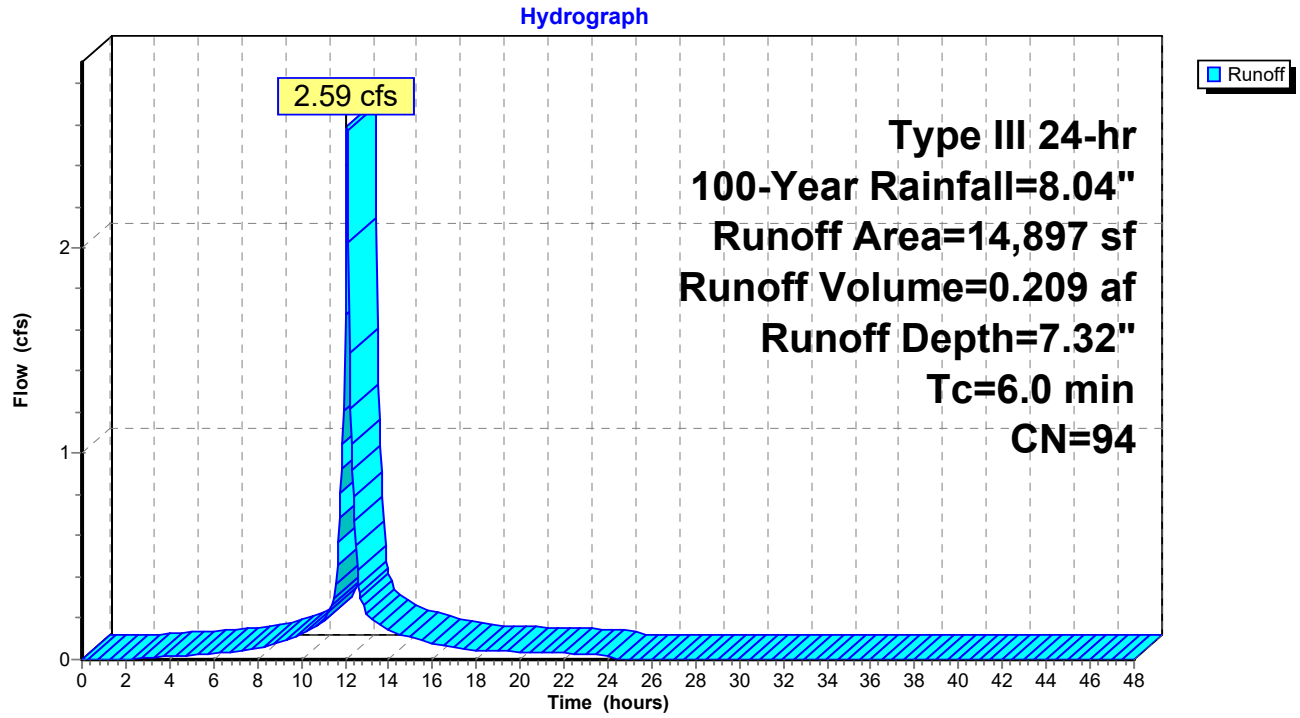
Runoff = 2.59 cfs @ 12.09 hrs, Volume= 0.209 af, Depth= 7.32"

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 (sf)	CN	Description
12,458	98	Paved parking, HSG C
2,439	74	>75% Grass cover, Good, HSG C
14,897	94	Weighted Average
2,439		16.37% Pervious Area
12,458		83.63% Impervious Area

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

Subcatchment 11S: DA 1C



Summary for Subcatchment 12S: DA 1D

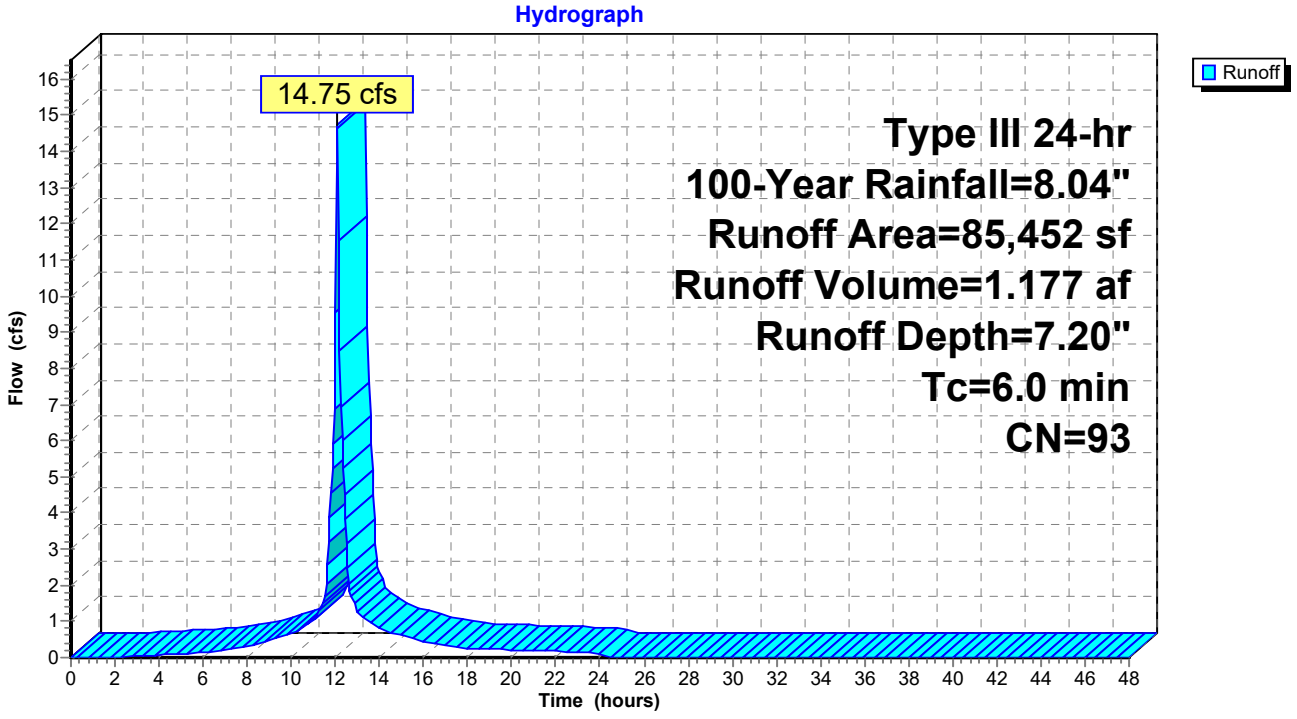
Runoff = 14.75 cfs @ 12.09 hrs, Volume= 1.177 af, Depth= 7.20"

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 (sf)	CN	Description
55,278	98	Paved parking, HSG C
6,098	98	Water Surface, 0% imp, HSG C
18,687	74	>75% Grass cover, Good, HSG C
5,389	98	Paved parking, HSG C
85,452	93	Weighted Average
24,785		29.00% Pervious Area
60,667		71.00% Impervious Area

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

Subcatchment 12S: DA 1D



Summary for Pond 2P: 30" RCP

Inflow Area = 56.590 ac, 19.92% Impervious, Inflow Depth > 4.72" for 100-Year event
Inflow = 28.38 cfs @ 12.18 hrs, Volume= 22.280 af
Outflow = 28.38 cfs @ 12.18 hrs, Volume= 22.280 af, Atten= 0%, Lag= 0.0 min
Primary = 28.38 cfs @ 12.18 hrs, Volume= 22.280 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

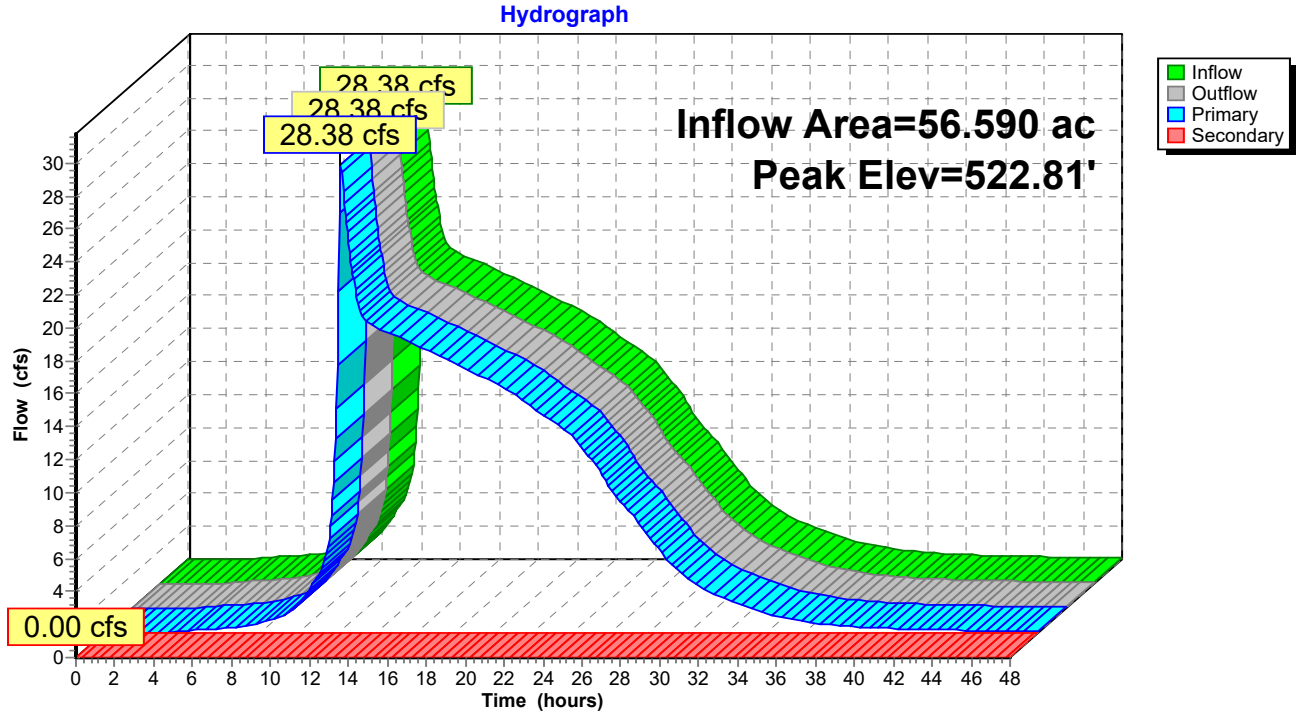
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 522.81' @ 12.18 hrs
Flood Elev= 527.20'

Device	Routing	Invert	Outlet Devices
#1	Primary	519.92'	**30.0" Round 30" RC** L= 80.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 519.92' / 519.62' S= 0.0037 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 4.91 sf
#2	Secondary	527.20'	**30.0' long x 10.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=28.28 cfs @ 12.18 hrs HW=522.80' (Free Discharge)
└**1=30" RC** (Barrel Controls 28.28 cfs @ 6.27 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=519.92' (Free Discharge)
└**2=Overflow** (Controls 0.00 cfs)

Pond 2P: 30" RCP



Summary for Pond 4P: Pond

Inflow Area = 52.568 ac, 15.62% Impervious, Inflow Depth = 4.58" for 100-Year event
Inflow = 160.70 cfs @ 12.29 hrs, Volume= 20.062 af
Outflow = 16.59 cfs @ 14.55 hrs, Volume= 19.908 af, Atten= 90%, Lag= 135.9 min
Primary = 16.59 cfs @ 14.55 hrs, Volume= 19.908 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 528.33' @ 14.55 hrs Surf.Area= 3.006 ac Storage= 11.001 af

Plug-Flow detention time= 373.9 min calculated for 19.888 af (99% of inflow)
Center-of-Mass det. time= 370.3 min (1,205.6 - 835.3)

Volume	Invert	Avail.Storage	Storage Description
#1	523.45'	16.273 af	**Pond Storage (Irregular)**Listed below

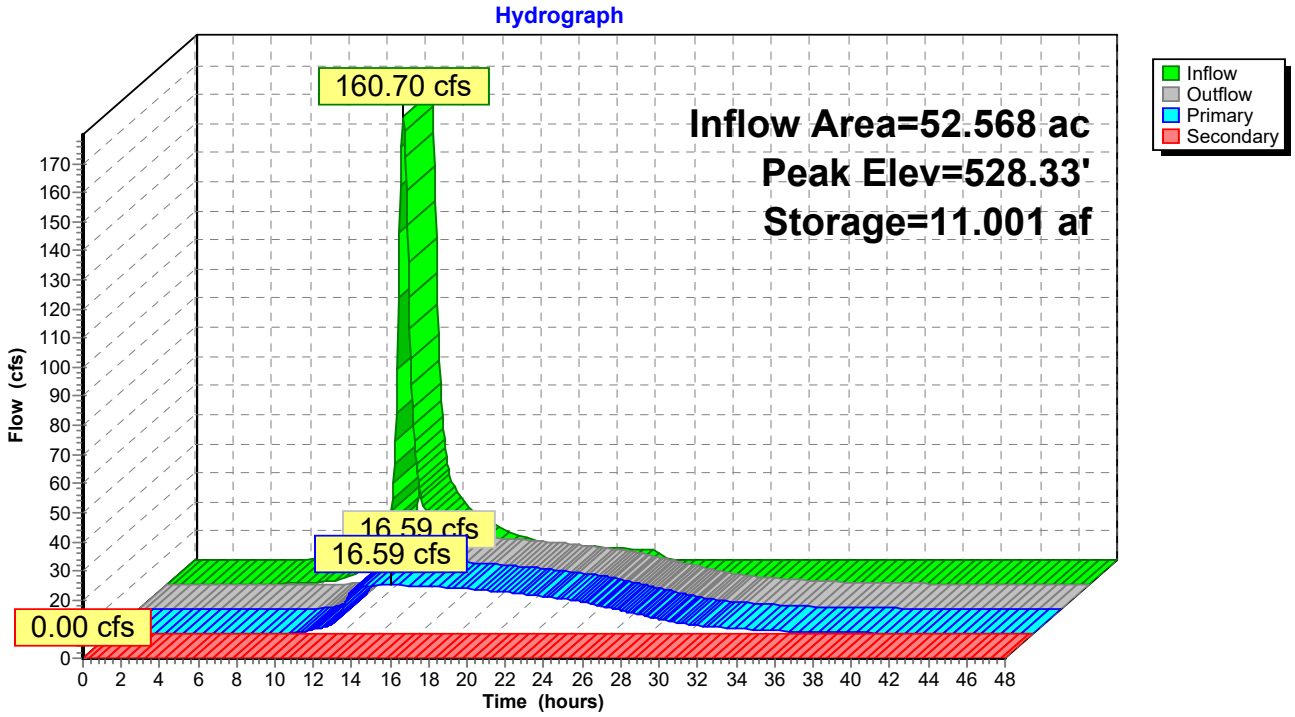
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
523.45	0.636	1,389.1	0.000	0.000	0.636
524.00	1.723	1,270.7	0.624	0.624	1.212
526.00	2.359	1,494.7	4.065	4.690	2.345
528.00	2.936	1,638.1	5.284	9.974	3.169
530.00	3.368	1,700.4	6.299	16.273	3.556

Device	Routing	Invert	Outlet Devices
#1	Primary	520.91'	**30.0" Round 30" HDPE** L= 110.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 520.91' / 520.64' S= 0.0024 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#2	Device 1	521.46'	**30.0" Round 30" HDPE** L= 86.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.46' / 520.91' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf
#3	Device 2	521.41'	**24.0" Round 24" HDPE** L= 157.1' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 521.41' / 521.40' S= 0.0001 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#4	Device 3	523.45'	**18.0" Round 18" HDPE** L= 117.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 523.45' / 521.82' S= 0.0138 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#5	Secondary	529.90'	**50.0' long x 25.0' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=16.59 cfs @ 14.55 hrs HW=528.33' TW=522.03' (Dynamic Tailwater)
└─**1=30" HDPE** (Passes 16.59 cfs of 56.45 cfs potential flow)
└─**2=30" HDPE** (Passes 16.59 cfs of 56.01 cfs potential flow)
└─**3=24" HDPE** (Passes 16.59 cfs of 30.09 cfs potential flow)
└─**4=18" HDPE** (Barrel Controls 16.59 cfs @ 9.39 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=523.45' TW=519.92' (Dynamic Tailwater)
└─**5=Overflow** (Controls 0.00 cfs)

Pond 4P: Pond



Summary for Pond 10P: Apartment Detention Basin

Inflow Area = 2.152 ac, 30.72% Impervious, Inflow Depth = 4.73" for 100-Year event
Inflow = 8.10 cfs @ 12.27 hrs, Volume= 0.848 af
Outflow = 5.74 cfs @ 12.47 hrs, Volume= 0.848 af, Atten= 29%, Lag= 12.3 min
Primary = 5.74 cfs @ 12.47 hrs, Volume= 0.848 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 538.80' @ 12.47 hrs Surf.Area= 2,407 sf Storage= 3,557 cf

Plug-Flow detention time= 4.8 min calculated for 0.847 af (100% of inflow)
Center-of-Mass det. time= 4.9 min (837.8 - 833.0)

Volume	Invert	Avail.Storage	Storage Description
#1	536.00'	7,026 cf	**Detention Basin (Irregular)**Listed below (Recalc)

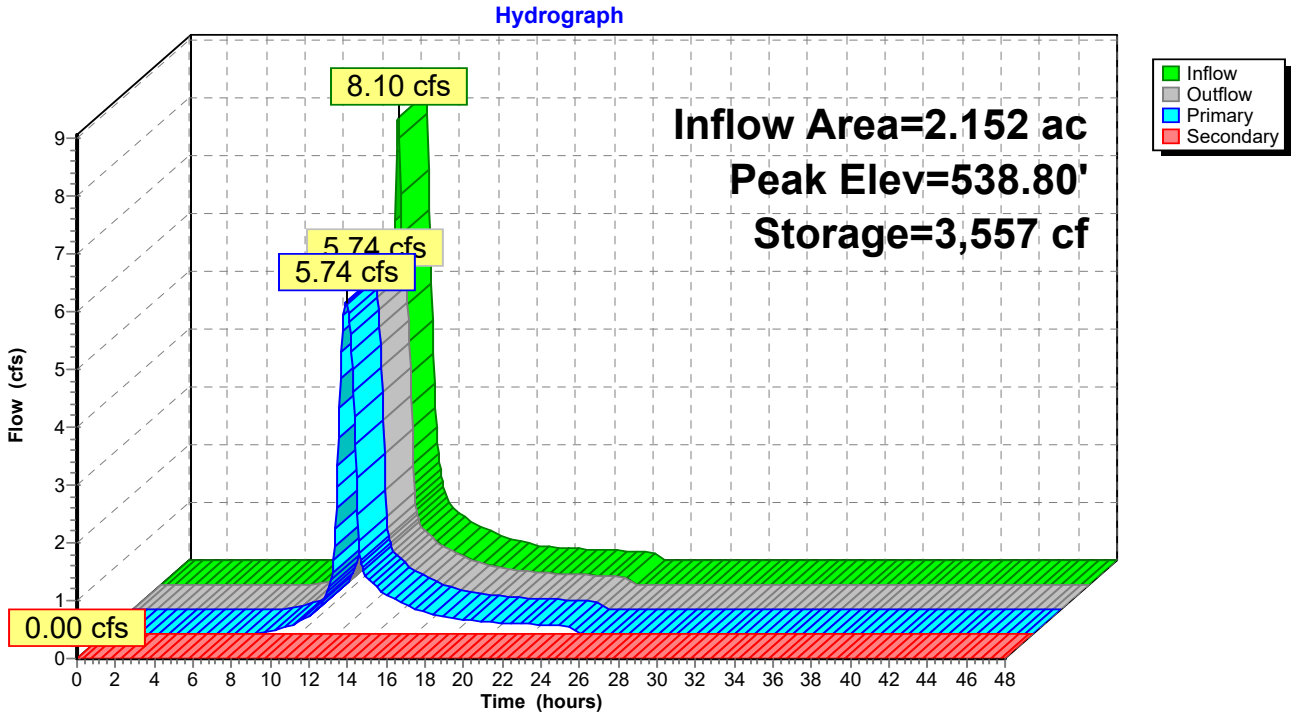
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
536.00	100	40.0	0	0	100
536.50	467	110.5	131	131	945
537.60	1,559	173.6	1,056	1,186	2,380
540.00	3,429	242.5	5,840	7,026	4,716

Device	Routing	Invert	Outlet Devices
#1	Primary	536.00'	**12.0" Round Culvert** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 536.00' / 534.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	539.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.73 cfs @ 12.47 hrs HW=538.80' TW=527.03' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.73 cfs @ 7.30 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=536.00' TW=523.45' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Apartment Detention Basin



Summary for Pond 13P: Water Quality Basin

[42] Hint: Gap in defined storage above volume #1 at 524.25'

Inflow Area = 1.962 ac, 71.00% Impervious, Inflow Depth = 7.20" for 100-Year event
Inflow = 14.75 cfs @ 12.09 hrs, Volume= 1.177 af
Outflow = 6.20 cfs @ 12.30 hrs, Volume= 1.176 af, Atten= 58%, Lag= 12.6 min
Primary = 6.20 cfs @ 12.30 hrs, Volume= 1.176 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 528.29' @ 12.30 hrs Surf.Area= 6,933 sf Storage= 17,015 cf

Plug-Flow detention time= 110.9 min calculated for 1.175 af (100% of inflow)
Center-of-Mass det. time= 110.0 min (875.3 - 765.2)

Volume	Invert	Avail.Storage	Storage Description
#1	522.25'	290 cf	**2.00'W x 181.00'L x 2.00'H Underdrain Trench** 724 cf Overall x 40.0% Voids
#2	524.75'	27,446 cf	**Water Quality swale (Irregular)**Listed below (Recalc)
		27,735 cf	Total Available Storage

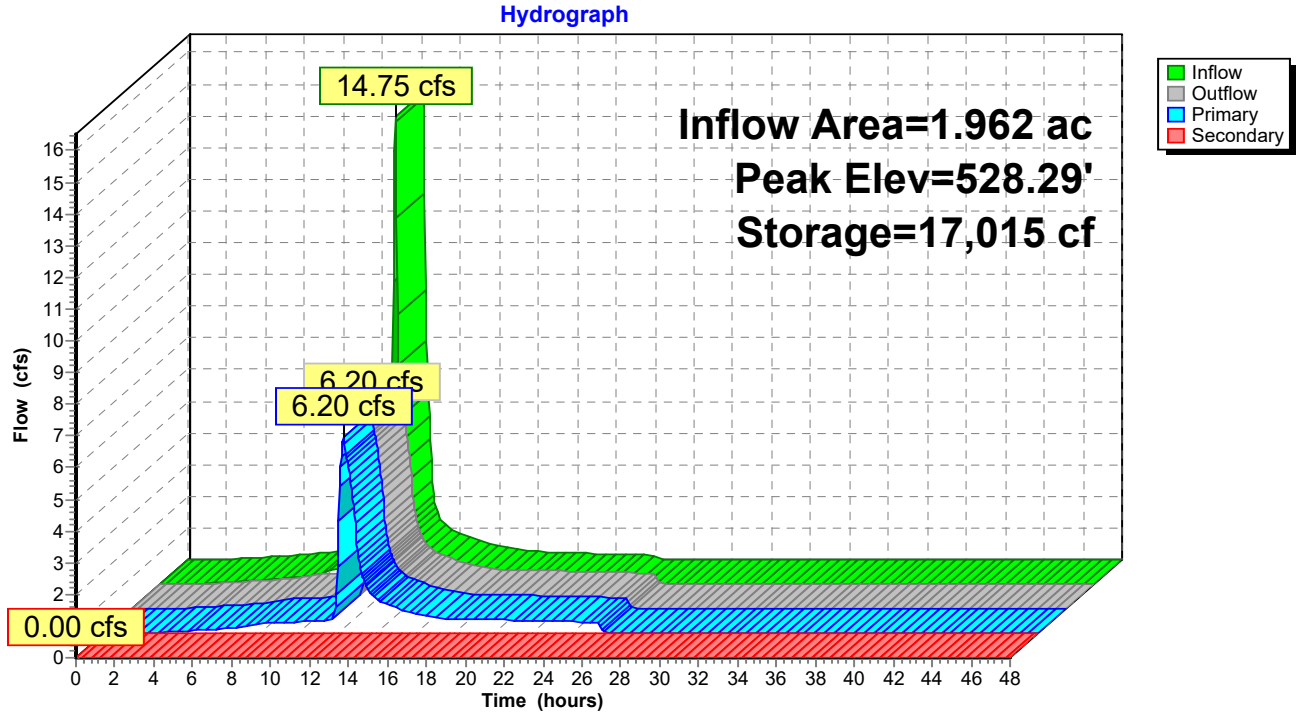
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
524.75	2,969	471.4	0	0	2,969
525.00	3,207	477.3	772	772	3,430
526.00	4,185	500.8	3,685	4,457	5,323
528.00	6,268	535.7	10,383	14,840	8,383
529.75	8,181	557.7	12,606	27,446	10,523

Device	Routing	Invert	Outlet Devices
#1	Primary	522.50'	**24.0" Round 24" HDPE** L= 75.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 522.50' / 521.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf
#2	Device 1	522.75'	**3.0" Vert. Underdrain** C= 0.600 Limited to weir flow at low heads
#3	Device 1	526.50'	**6.0" W x 6.0" H Vert. 6" Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	527.00'	**18.0" W x 6.0" H Vert. 18x6 Orifice** C= 0.600 Limited to weir flow at low heads
#5	Device 1	528.25'	**2.0" x 2.0" Horiz. Top of Frame X 20.00 columns** X 20 rows C= 0.600 in 48.0" x 48.0" Grate (69% open area) Limited to weir flow at low heads
#6	Secondary	528.75'	**10.0' long x 8.0' breadth Emergency Spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=6.19 cfs @ 12.30 hrs HW=528.29' TW=522.68' (Dynamic Tailwater)
└─**1=24" HDPE** (Passes 6.19 cfs of 33.12 cfs potential flow)
  ├─**2=Underdrain** (Orifice Controls 0.55 cfs @ 11.21 fps)
  ├─**3=6" Orifice** (Orifice Controls 1.49 cfs @ 5.97 fps)
  ├─**4=18x6 Orifice** (Orifice Controls 3.68 cfs @ 4.91 fps)
  └─**5=Top of Frame** (Weir Controls 0.46 cfs @ 0.68 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=522.25' TW=519.92' (Dynamic Tailwater)
└─**6=Emergency Spillway** (Controls 0.00 cfs)

Pond 13P: Water Quality Basin



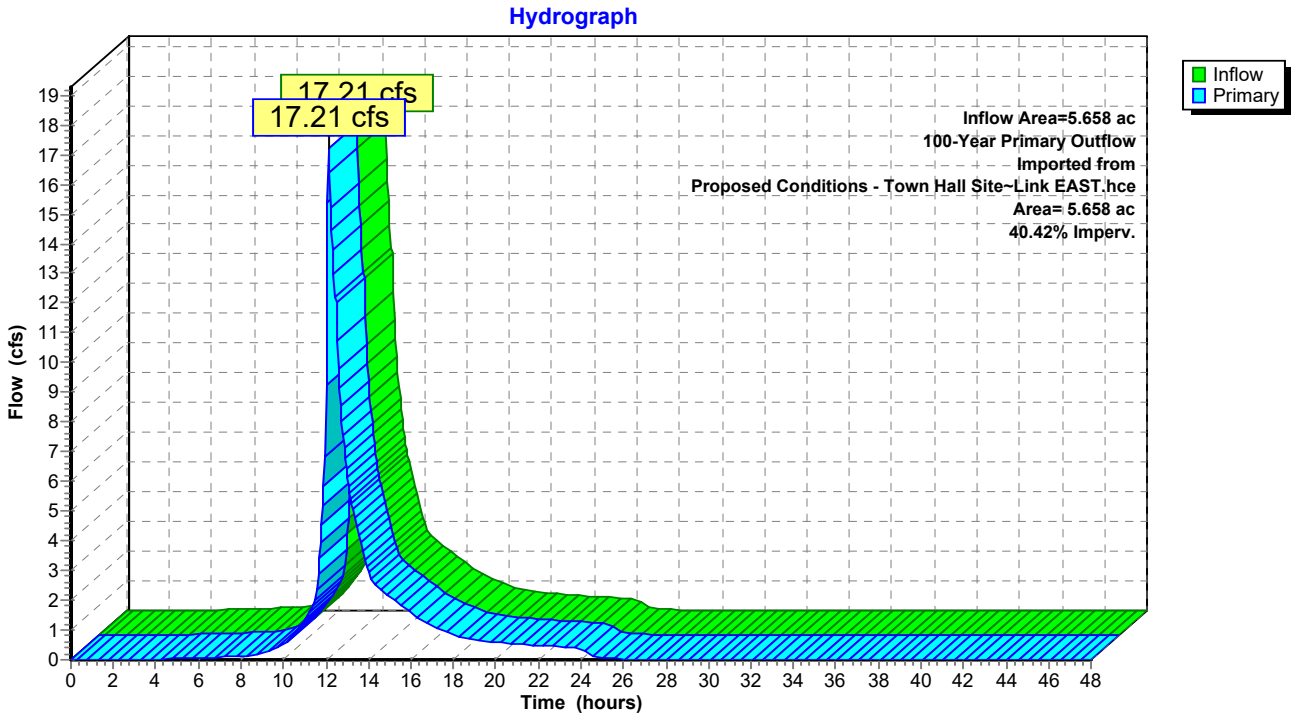
Summary for Link 14L: DA 2D - From Town Hall

Inflow Area = 5.658 ac, 40.42% Impervious, Inflow Depth = 5.31" for 100-Year event
Inflow = 17.21 cfs @ 12.11 hrs, Volume= 2.505 af
Primary = 17.21 cfs @ 12.11 hrs, Volume= 2.505 af, Atten= 0%, Lag= 0.0 min

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

100-Year Primary Outflow Imported from Proposed Conditions - Town Hall Site~Link EAST.hce

Link 14L: DA 2D - From Town Hall



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 25-year design storm minimum.

Type CL CB to Drainage Manhole (15-inch HDPE at S = 0.02)

Q=	**9.16**	**CFS**	Flow Capacity
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

C_f=	1.1	
C=	0.95	
I=	9.02	in/hour
A=	0.031	acre
Q=	**0.3**	**CFS**

CAPACITY FOR 25-YEAR EVENT (MIN)

Type CG CB to Drainage Manhole (24-inch HDPE at S=0.01)

Q=	**22.68**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	3.14	SF	Area of Pipe
R=	0.5	FT	Hydraulic Radius = A/P
S=	0.01	FT/FT	Pipe Slope
r=	1	FT	Pipe Radius
P=	6.28	FT	Pipe Perimeter

Design Flow Rate

Q= 11.39 CFS

(25-year inflow to Water Quality Basin)

CAPACITY FOR 25-YEAR EVENT (MIN)

Outlet Control Structure to DMH (24-inch HDPE at S = 0.01)

Q=	**22.68**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	3.14	SF	Area of Pipe
R=	0.5	FT	Hydraulic Radius = A/P
S=	0.01	FT/FT	Pipe Slope
r=	1	FT	Pipe Radius
P=	6.28	FT	Pipe Perimeter

Design Flow Rate

Q= 11.39 CFS

(25-year inflow to Water Quality Basin)

CAPACITY FOR 25-YEAR EVENT (MIN)

Type C CB 1 to Water Quality Basin (15-inch HDPE at S = 0.01)

Q=	**6.48**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.01	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

C_f=	1.1	
C=	0.95	
I=	9.02	in/hour
A=	0.141	acre
Q=	**1.3**	**CFS**

CAPACITY FOR 25-YEAR EVENT (MIN)

Appendix C

Pipe Sizing Calculations

Type C CB 2 to Type C CB 1 (15-inch HDPE at S = 0.01)

Q=	**6.48**	**CFS**	Flow Rate
n=	0.013		Roughness Coefficient
A=	1.23	SF	Area of Pipe
R=	0.3125	FT	Hydraulic Radius = A/P
S=	0.01	FT/FT	Pipe Slope
r=	0.625	FT	Pipe Radius
P=	3.93	FT	Pipe Perimeter

Design Flow Rate

C_f=	1.1	
C=	0.95	
I=	9.02	in/hour
A=	0.1	acre
Q=	**0.9**	**CFS**

CAPACITY FOR 25-YEAR EVENT (MIN)

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

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=	1.1	
C=	0.95	
I=	9.02	in/hour
A=	0.13	acre
Q=	**1.2**	**CFS**

CAPACITY FOR 25-YEAR EVENT (MIN)

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

Appendix C

Preformed Scour Hole Sizing Calculations

Empirical Preformed Scour Hole Equations:

Type 1: Scour Hole Depression = one-half pipe rise, m (ft)

$d_{50} = (0.0276\ R_p^2 / TW)\ (Q/R_p^{2.5})^{1.333}$ ($d_{50} = (0.0125 R_p^2/TW)\ (Q/R_p^{2.5})^{1.333}$) **(11.35)**

Type 1 and 2 preformed scour hole dimensions (See Figure 11-15)

$C = 3S_p + 6F$	Basin Length m (ft)	
$B = 2S_p + 6F$	Basin Inlet and Outlet Width m (ft)	**(11.37)**
$F = 0.5R_p$ (Type 1) or R_p (Type 2)	Basin Depression m (ft)	

Table 11-14 solves the above set of equations for Type 1 and 2 preformed scour holes for various pipe sizes.

The type of riprap required is as follows:

Modified	$d_{50} < 0.13$m (0.42 ft)
Intermediate	0.13m (0.42 ft) $< d_{50} <$ 0.20m (0.67 ft)
Standard	0.20m (0.67 ft) $< d_{50} <$ 0.38m (1.25 ft)
Special Design	0.38m (1.25 ft) $< d_{50}$

L_a = length of apron, m (ft)
S_p = inside diameter for circular sections or maximum inside pipe span for non-circular sections, m (ft)
Q = pipe (design) discharge, cms (cfs)
TW = tailwater depth, m (ft)
R_p = maximum inside pipe rise, m (ft)
Note: $S_p = R_p$ = inside diameter for circular sections

Discharge

S_P=	15	Inches	Pipe Diameter
Q=	14.8	CFS	100-year flow for watershed (conservative design)
d_{50}=	0.34	FT	Equation 11.35, Use Modified Riprap
F=	0.63	FT	Equation 11.37
C=	7.5	FT	Equation 11.37
B=	6.25	FT	Equation 11.37

Appendix C

Water Quality Volume Calculations

Water Quality Volume - Market Square (South) Full Buildout

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)

IA=	1.27	acres
I =	69.04	%
R =	0.63	
A =	1.84	acres

WQV =	0.10	acre-feet
=	**4,179.18**	**cubic feet**

6,958 cubic feet of storage provided below elevation **526.50** in Water Quality Basin

Lowest unfiltered outlet elevation = **526.50**

Appendix C

Sediment Trap and MS-2 Phase Water Quality Volume Calculations

Temporary Sediment Trap Sizing - Current Phase (MS-2 Building Only)

134 cubic yards of storage per acre of disturbed area required.

Disturbed Area =	0.7000	acres
Storage Volume Required =	93.8	cubic yards
=	2532.6	cubic feet
Storage Volume Provided =	**5,720**	cubic feet between **525.50** and **528.25** (Top of Frame)
		Orifices blocked during active construction.

Water Quality Volume - Current Phase (MS-2 Building Only)

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)

IA=	0.42	acres
I =	59.57	%
R =	0.54	
A =	0.70	acres

WQV =	0.03	acre-feet
=	**1,375.04**	**cubic feet**

1,629 cubic feet of storage provided between elevation **525.50** and **526.50**

Lowest outlet elevation = **526.50**

Time to Drain through Underdrain Filter

$$A_f = \frac{(WQV)(d)}{[(k)(t)(h+d)]}$$

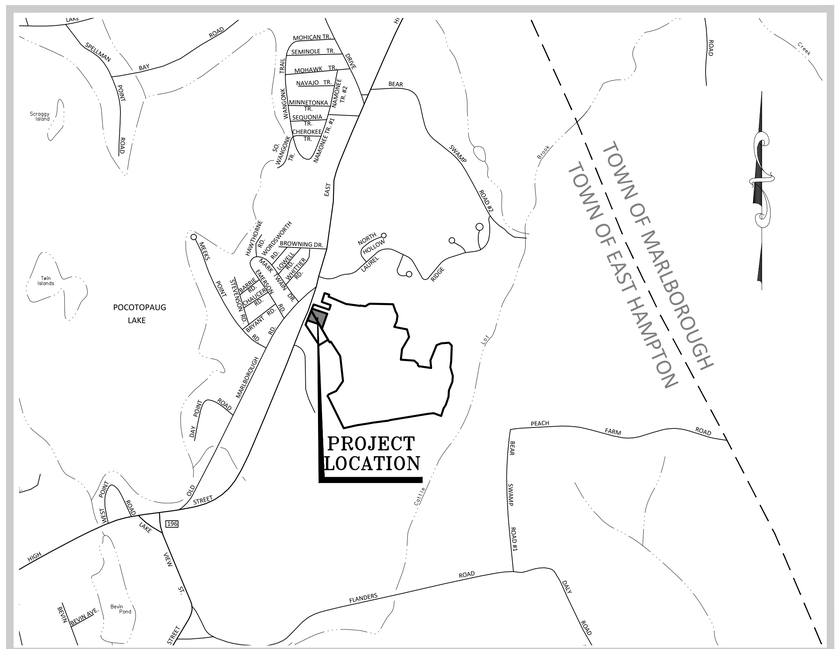
where: A_f = filter bed surface area (ft2)
WQV = water quality volume (ft3)
d = filter bed depth (ft)
k = hydraulic conductivity of filter media (ft/day)
t = time for the water quality volume to drain from the system (24 hours)
h = average height of water above filter bed during water quality design storm

Af=	145.11111	sf
WQV=	4,179.20	cf
d=	2.5	ft
k=	1	ft/day
t=	24	hours
h=	0.5	ft

Filter Surface Area Provided = 362 square feet (181 feet long x 2.0 feet wide)

Appendix D
Proposed Site Development Plans

Site Development Plan
Proposed Mixed Use Building (MS-2)
Prepared For
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66)
East Hampton, Connecticut
May 2020



Site Location Map
Scale: 1" = 1,000'

Index To Drawings

Sheet No.	Sheet Title
1	Cover Sheet
2	Improvement Location and Topographic Survey
3	Site Layout Plan
4	Site Grading Plan
5	Site Stormwater and Utilities Plan
6	Site Lighting and Landscaping Plan
7	Logistics and Erosion & Sedimentation Control Plan
8	Erosion & Sedimentation Control Notes and Details
9	Notes and Details (1)
10	Notes and Details (2)
11	Notes and Details (3)
12	Notes and Details (4)

"APPROVED BY THE TOWN OF EAST HAMPTON PLANNING AND ZONING COMMISSION"

SIGNATURE OF CHAIRMAN OR SECRETARY — DATE

"APPROVED BY THE TOWN OF EAST HAMPTON INLAND WETLANDS AND WATERCOURSES COMMISSION"

SIGNATURE OF CHAIRMAN OR SECRETARY — DATE

Applicants/Property Owners:

Edgewater Hill Enterprises, LLC
138 East High Street
East Hampton, CT 06424

Edgewater Hill Enterprises, LLC
138 East High Street
East Hampton, CT 06424

Property Info:

000 East High Street
Assessor's ID: 10A/85/5C
Area: 59.41± Acres

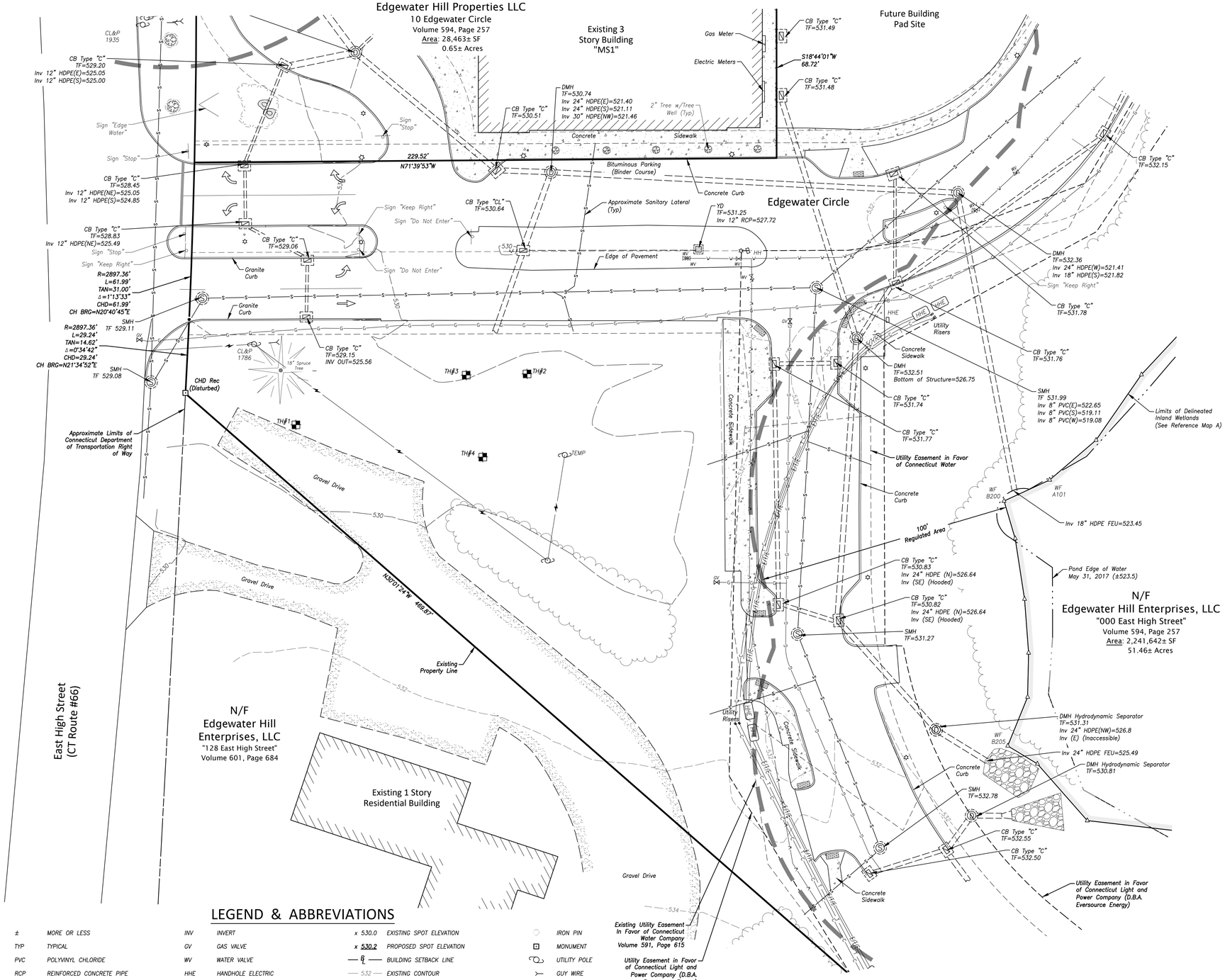
128 East High Street
Assessor's ID: 10A/85/10
Area: 1.47± Acres

FOR PERMITTING
05/15/2020

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

29102
DAVID C. McKAY, P.E. — LICENSE NO. — DATE

70016
JOHN U. FAULISE, JR. — LICENSE NO. — DATE



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.

TEST HOLE RESULTS

TEST HOLES WERE WITNESSED BY DAVID C. McKAY, P.E. OF BOUNDARIES LLC. ON MAY 8, 2020.

TH#1
0" – 6" TOPSOIL AND BROWN GRAVELLY FILL
6" – 14" REDDISH BROWN GRAVELLY FILL
14" – 28" BROWN SILTY AND GRAVELLY FILL WITH ROOTS
28" – 46" TAN TO BROWN SILTY GRAVELLY FILL WITH ORGANIC DEBRIS
46" – 84" BROWN FINE SILTY SAND WITH TRACE GRAVEL
GROUNDWATER AT 80" (FILLED TO 66" AFTER 1.5 HOURS), NO MOTTLING, NO LEDGE

TH#2
0" – 10" BROWN GRAVELLY FILL
10" – 17" REDDISH BROWN GRAVELLY FILL
17" – 48" ORGANICS AND DEMOLITION DEBRIS
GROUNDWATER AT 32", NO MOTTLING, NO LEDGE

TH#3
0" – 10" BROWN GRAVELLY FILL
10" – 14" ASPHALT
14" – 22" BROWN SILTY GRAVELLY FILL
22" – 62" BROWN TO GRAY COMPACT SILTY FILL WITH ORGANIC DEBRIS
62" – 72" ORIGINAL TOPSOIL
72" – 84" COMPACT GRAY SANDY SILT (WET)
NO GROUNDWATER, NO MOTTLING, NO LEDGE

TH#4
0" – 10" BROWN GRAVELLY FILL
10" – 18" ORANGE BROWN GRAVELLY FILL
18" – 62" COMPACT GRAY SILTY FILL WITH ORGANIC DEBRIS
62" – 69" ORIGINAL TOPSOIL
69" – 84" COMPACT GRAY SANDY SILT
GROUNDWATER AT 48", NO MOTTLING, NO LEDGE

LEGEND & ABBREVIATIONS

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

x 530.0	EXISTING SPOT ELEVATION
x 530.2	PROPOSED SPOT ELEVATION
BL	BUILDING SETBACK LINE
532	EXISTING CONTOUR
532	PROPOSED CONTOUR
	TREE LINE
E	UNDERGROUND ELECTRIC
OH	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
40 20 10 0 20
(IN FEET)
1 inch = 20 ft.

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

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

FOR PERMITTING
05/15/2020

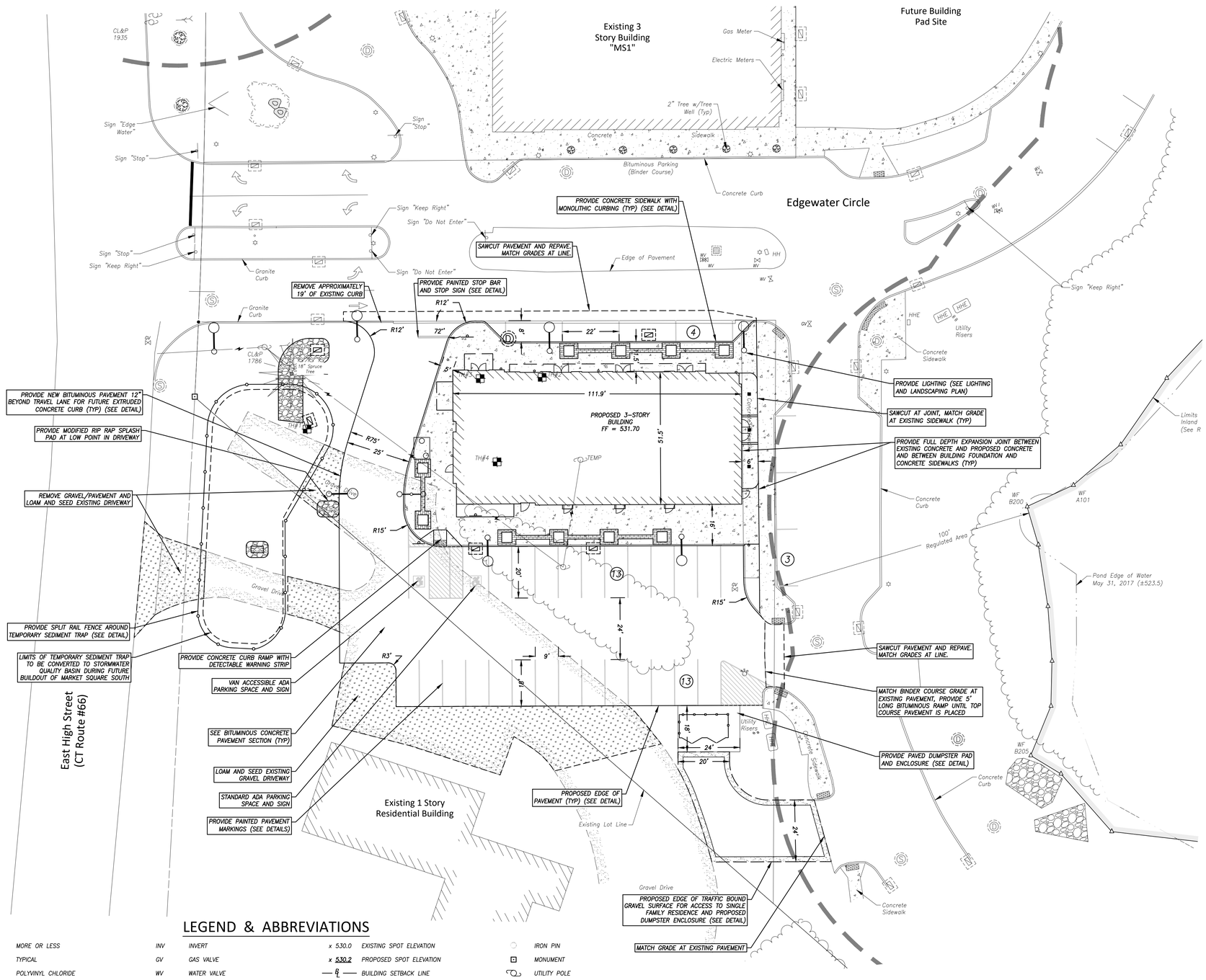
P:\CIVIL 3D PROJECTS\2020\20-2795-2 DREAM-MS2\DWG\DESIGN\2 EX-CONDITIONS.DWG

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING GIS SERVICES
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive, Gilman, CT 06351
T 860.376.2006 | www.boundariesllc.net

Site Development Plan
"Improvement Location and Topographic Survey"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66) - East Hampton, Connecticut

SCALE: 1" = 20'
DATE: May 2020
JOB I.D. NO. 20-2795-2
Revisions

SHEET NO.
2
12



ZONING COMPLIANCE

THE SITE PLAN IS SUBSTANTIALLY COMPLIANT WITH THE EDGEWATER HILL MASTER PLAN.

PARKING CALCULATION

REQUIRED PARKING SPACES ARE PROVIDED IN ACCORDANCE WITH SECTION 7.1.B OF THE TOWN OF EAST HAMPTON ZONING REGULATIONS.

MULTI-FAMILY RESIDENTIAL: 1 – 2 PER DWELLING UNIT
RETAIL: 2 – 5 PER 1,000 SF OF GFA

PROPOSED MULTI FAMILY RESIDENTIAL UNITS = 10
EXISTING MULTI FAMILY RESIDENTIAL UNITS = 2
RETAIL GFA = 4,723 SF

MINIMUM ALLOWABLE PARKING:
12 UNITS x 1 SPACE/UNIT + 4,723 SF x 2 SPACES/1,000 SF = 22 SPACES
MAXIMUM ALLOWABLE PARKING:
12 UNITS x 2 SPACES/UNIT + 4,723 SF x 5 SPACES/1,000 SF = 48 SPACES

PARKING SPACES PROVIDED:
33 SPACES (31 STANDARD SPACES, 1 ADA VAN ACCESSIBLE SPACE, 1 ADA ACCESSIBLE SPACE)

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

40 20 10 0 20

(IN FEET)
1 inch = 20 ft.

FOR PERMITTING
05/15/2020

29102
DAVID C. MCKAY, P.E. LICENSE NO. DATE

P:\CIVIL 3D PROJECTS\2020\20-2795-2 DREAM-MS2\DWG\DESIGN\3 SITE PLAN.DWG

CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING 3D MODELING
BOUNDARIES
Boundaries LLC
179 Pachaug River Drive Gilman, CT 06351
T 860.376.2006 | www.boundariesllc.net

Site Development Plan
"Site Layout Plan"
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Edgewater Hill Enterprises, LLC
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SCALE: 1" = 20'
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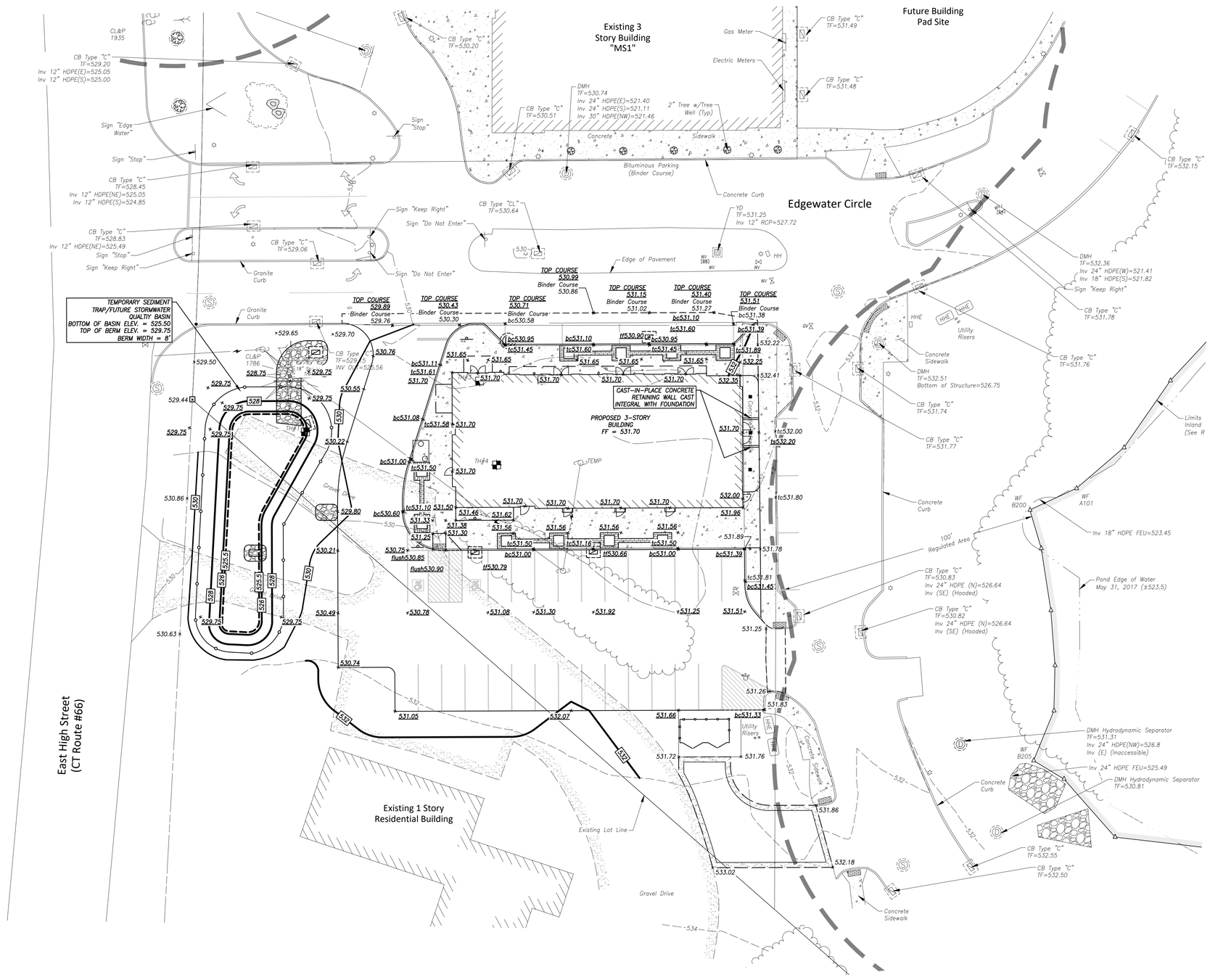
JOB I.D. NO. 20-2795-2
Revisions

SHEET NO.
3
12



GRADING NOTES

1. *THE CONTRACTOR SHALL ENSURE THAT ALL HANDICAP PARKING AREAS DO NOT EXCEED A SLOPE GREATER THAN 50:1 OR 2% AND THAT ALL CURRENT HANDICAP ACCESSIBLE BUILDING CODE CRITERIA ARE MET.*
2. *THE SITE SHALL BE GRADED USING STANDARD CONSTRUCTION PRACTICES. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL SLOPES EQUAL TO OR STEEPER THAN 3(H):1(V) IN CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.*

GRADING LEGEND

× 538.51	*EXISTING SPOT ELEVATION*
× 538.51	*PROPOSED SPOT ELEVATION*
bc	*BOTTOM OF CURB*
tc	*TOP OF CURB*
bsw	*BACK OF SIDEWALK*
tw	*TOP OF WALL*
bw	*BOTTOM OF WALL*
ts	*TOP OF STEP*
tf	*TOP OF FRAME*

GRAPHIC SCALE

40 20 10 0 20

(IN FEET)
1 inch = 20 ft.

FOR PERMITTING
05/15/2020

29102
DAVID C. MCKAY, P.E. LICENSE NO. DATE

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CIVIL ENGINEERING · LAND SURVEYING · LAND USE PLANNING · GIS SERVICES
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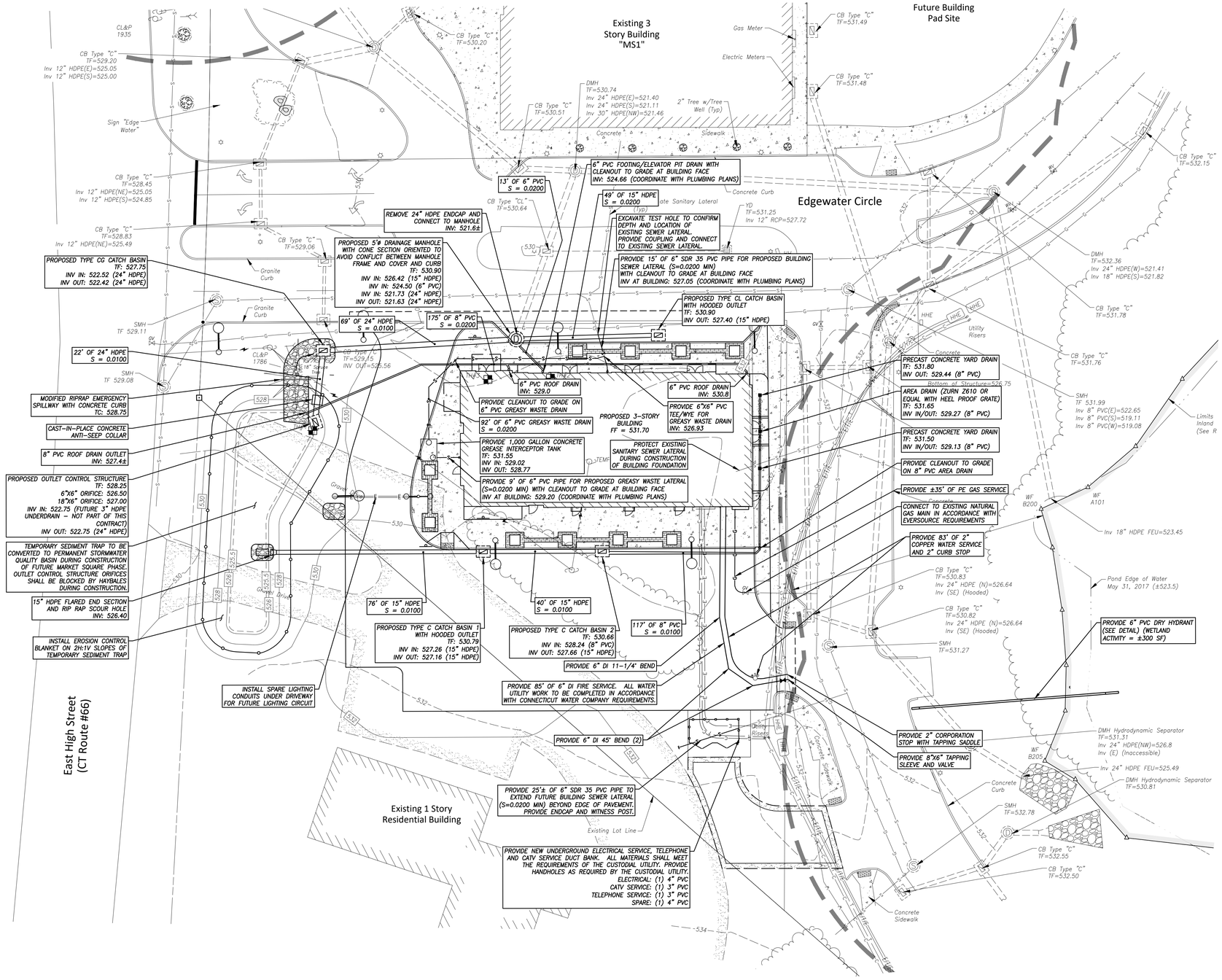
Site Development Plan
"Site Grading Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66) - East Hampton, Connecticut

SCALE: 1" = 20'
DATE: May 2020
JOB I.D. NO. 20-2795-2
Revisions

SHEET NO.
4
12



WATER MAIN INSTALLATION NOTES

1. PROJECT MUST BE BUILT TO CT WATER COMPANY SPECIFICATIONS.
2. CLASS 52 DUCTILE IRON PIPE REQUIRED.
3. COPPER AND/OR DUCTILE IRON SERVICE LATERAL MATERIAL REQUIRED.
4. GATE VALVES OPEN LEFT.
5. ALL WATER MAIN PIPING AND APPURTENANCES MUST BE POLYETHYLENE ENCASED IN ACCORDANCE WITH AWWA ANSI–AWWA C105/A21.5–99(10)
6. MEGALUG RESTRAINTS REQUIRED ON ALL FITTINGS, BENDS, OFFSETS, TEES, GATE & VALVES.
7. FIELD LOK (U.S. PIPE) OR SURE STOP 350 (MCWANE) RESTRAINING GASKETS ARE REQUIRED 2 PIPE JOINTS BEFORE AND AFTER EACH FITTING AND ON THE LAST 3 PIPE LENGTHS ON DEAD ENDS.
8. THRUST BLOCKING IS REQUIRED ON ALL BENDS, TEES, OFFSETS AND DEAD ENDS.
9. ALL WATER MAINS SHALL BE INSTALLED TO A DEPTH OF 4–FEET OF COVER BASED ON THE ROADWAY GRADE, EXCEPT AS NOTED.
10. 3–FT MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER AND ANY OTHER UTILITY/UNDERGROUND STRUCTURE. 10–FT MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER AND SEWER/SEPTIC ("SEWER") ***SLEEVE REQUIRED WHERE WATER CROSSES SEWER IF WATER IS BELOW SEWER AND/OR WHEN 18" VERTICAL SEPARATION CANNOT BE ACHIEVED WHEN WATER IS ABOVE SEWER. 4–FEET MINIMUM HORIZONTAL SEPARATION REQUIRED BETWEEN WATER MAIN AND DRAINAGE WHEN AT LIKE ELEVATIONS.
11. WATER MAINS TO BE DEFLECTED UNDER ALL STORM DRAINS UNLESS OTHERWISE NOTED OR AS DIRECTED BY A CT WATER COMPANY PROJECT MANAGER. A VERTICAL CLEARANCE OF 18" TO BE MAINTAINED BETWEEN STORM DRAIN AND WATER MAINS. THE CONTRACTOR IS RESPONSIBLE FOR PROPER COMPACTION AROUND AND UNDER EXISTING DRAINAGE FACILITIES WHICH MAY INCLUDE REMOVAL AND RESETTING TO PROPER GRADE.
12. ANGLE OF BENDS TO BE FIELD DETERMINED.
13. MAXIMUM ALLOWABLE DEFLECTION PER FULL LENGTH PUSH–ON JOINT FOR 4" TO 12" IS FIVE (5) DEGREES AND THREE (3) DEGREES FOR 14" AND GREATER DUCTILE IRON PIPE.
14. WHERE AN AIR RELIEF IS REQUIRED, CWC WILL PERFORM TAP AND INSTALL WHILE THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR THE EXCAVATION AND RESTORATION UNLESS OTHERWISE NOTED. LABOR AND MATERIALS FOR THE INSTALLATION(S) WILL BE CHARGED TO THE PROJECT.
15. ***WHEN THE INSTALLATION OF UNDERGROUND INFRASTRUCTURE DEVIATES FROM THE CT WATER COMPANY APPROVED PLAN(S), THE APPLICANT, AT HIS/HER COST, WILL BE HELD LIABLE FOR THE RELOCATION OF INFRASTRUCTURE AS REQUIRED TO THE SATISFACTION OF THE CT WATER COMPANY. FAILURE TO CORRECT ANY DEVIATION DEEMED UNACCEPTABLE TO THE CT WATER COMPANY WILL RESULT IN LITIGATION.

DRAINAGE & UTILITY NOTES

1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON FIELD LOCATIONS AND INFORMATION PROVIDED BY OTHERS. THEIR ACTUAL LOCATION MAY VARY FROM THOSE INDICATED AND ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT 800–922–4455 TO MARK OUT ALL UNDERGROUND UTILITIES A MINIMUM OF 3 BUSINESS DAYS PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. CONTRACTOR SHALL VERIFY ALL LOCATIONS, DIMENSIONS AND ELEVATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ADHERE TO ALL APPLICABLE TOWN OF EAST HAMPTON STANDARDS AND REGULATIONS.
2. THE CONTRACTOR SHALL OBTAIN, REVIEW AND ADHERE TO ALL REQUIREMENTS AND ANY CONDITIONS OF APPROVAL OF THE TOWN OF EAST HAMPTON, THE CONNECTICUT DEPARTMENT OF TRANSPORTATION, AND ALL CUSTODIAL UTILITY COMPANIES.
3. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, BONDING AND INSURANCE REQUIRED BY THE TOWN OF EAST HAMPTON, THE CONNECTICUT DEPARTMENT OF TRANSPORTATION, AND ALL CUSTODIAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR SHALL CONFORM TO ALL APPLICABLE TOWN AND/OR STATE STANDARDS AND REGULATIONS FOR ALL ROADWAY, DRAINAGE AND UTILITY WORK.
5. ALL SANITARY SEWER UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST APPLICABLE TOWN OF EAST HAMPTON WATER POLLUTION CONTROL AUTHORITY (WPCA) RULES, REGULATIONS AND SPECIFICATIONS. FOUNDATION DRAINS, SUMP PUMPS AND/OR ROOF LEADERS SHALL NOT DISCHARGE INTO THE SANITARY SEWER SYSTEM.
6. ALL DRAINAGE PIPE SHALL BE SMOOTH INTERIOR HIGH DENSITY POLYETHYLENE PIPE (HDPE) OR APPROVED EQUAL UNLESS OTHERWISE NOTED. ALL PIPE SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. A MINIMUM OF TWO FEET OF COVER SHALL BE PROVIDED OVER THE PIPE PRIOR TO ANY VEHICULAR TRAFFIC. ROOF LEADERS AND FOOTING DRAINS SHALL BE 6" (MIN.) SCHEDULE 40 PVC ASTM D1785.

UTILITY CONSTRUCTION NOTES

1. SEE CT WATER COMPANY DEVELOPER'S HANDBOOK FOR WATER SYSTEM CONSTRUCTION DETAILS.
2. SEE CT NATURAL GAS COMPANY DEVELOPER'S HANDBOOK FOR NATURAL GAS SYSTEM CONSTRUCTION DETAILS.
3. SEE EVERSOURCE, COMCAST, AND FRONTIER COMMUNICATIONS DEVELOPER'S HANDBOOKS FOR ELECTRICAL AND TELECOMMUNICATIONS CONSTRUCTION DETAILS.

STORMWATER SYSTEM OPERATION AND MAINTENANCE

1. THE PROPOSED STORMWATER MANAGEMENT SYSTEM INCLUDES DEEP SUMP CATCH BASINS, A STORMWATER BASIN, AND PREFORMED RIP RAP SCOUR HOLES.
   - 1.1. CATCH BASINS SHALL BE INSPECTED SEMI–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 BASIN SHALL BE INSPECTED SEMI–ANNUALLY FOR COLLECTED SEDIMENT AND DEBRIS AND SIGNS OF EROSION. THE STORMWATER BASIN SHALL BE CLEANED AND MOWED ANNUALLY. SEDIMENT SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.
   - 1.3. THE 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 FREQUENCY 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

40 20 10 0 20

(IN FEET)
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Site Development Plan
"Site Stormwater and Utilities Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66) - East Hampton, Connecticut

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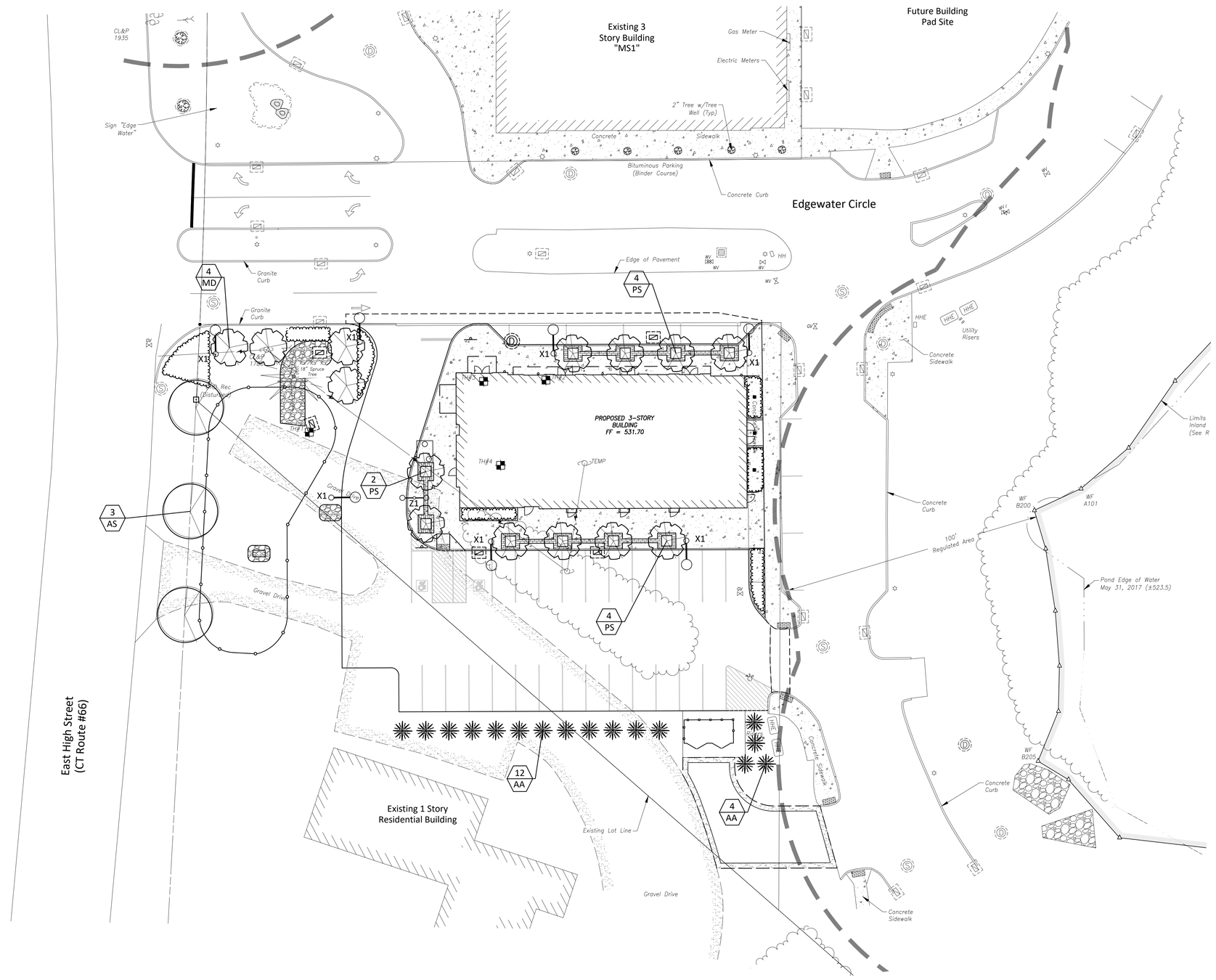

PLANT LIST

CD	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES			
AS	ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	3-3.5" CAL.
FLOWERING TREES			
MD	MALUS 'DONALD WYMAN'	DONALD WYMAN	2.5"-3" CAL.
PS	PRUNUS SARGENTII 'COLUMNARIS'	COLUMNAR SARGENT CHERRY	2-2.5" CAL.
EVERGREEN TREES			
AA	THUJA OCCIDENTALIS	AMERICAN ARBORVITAE	6' HT.

MARKET SQUARE SHRUB MASSING PALETTE

CD	BOTANICAL NAME	COMMON NAME	SIZE
SHRUBS			
BD	BUDDLEIA BLUE CHIP	BLUE CHIP BUTTERFLY BUSH	24-36" HT.
BX	BUXUS X GREEN VELVET	GREEN VELVET BOXWOOD	18-24" SPD.
CS	CORNUS SERICEA 'BAILEY'	RED TWIGGED DOGWOOD	
EE	EUONYMUS EMERALD GAIETY	VARIEGATED WINTERCREEPER	2-3' HT.
IG	ILEX GLABRA SHAMROCK	SHAMROCK INKBERRY	18-24" SPD.
IA	ILEX VERTICILLATA AFTERGLOW	AFTERGLOW WINTERBERRY	2-3' HT.
IM	ILEX VERTICILLATA JIM DANDY	MALE WINTERBERRY	2-3' HT.
PJ	PIERIS JAP. MOUNTAIN FIRE	MOUNT. FIRE ANDROMEDA	-24" SPD.
PS	PINUS STROBUS SOFT TOUCH	SOFT TOUCH DWARF PINE	18-24" SPD.
PERENNIALS, BULBS AND GRASSES			
CK	CALAMAGROSTIS KARL FOERSTER	FEATHER REED GRASS	2 GAL. 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
IV	IRIS VERSICOLOR	BLUE FLAG	2" PLUG 18" O.C.
IS	IRIS SIBERICA	SIBERIAN IRIS	5 PT. POT
LS	LEUCANTHEMUM SUPERBUM BECKY	DWARF SHASTA DAISY	5 PT. POT
LK	LIATRIS SPICATA KOBOLD	GAYFEATHER	5 PT. POT
LM	LIRIOPE MUSCARI BIG BLUE	BIG BLUE LIRIOPE	GAL. POT
NR	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW CATMINT	GAL. POT
NI	NARCISSUS ICE FOLLIES	ICE FOLLIES DAFFODIL	TOP SIZE BULBS
PV	PANICUM V. HEAVY METAL	BLUE SWITCH GRASS	2 GAL. POT
PA	PENNISETUM ALOPICUROIDES	FOUNTAIN GRASS	2 GAL. POT
PB	PHLOX SUB. EMERALD CUSHION BLUE	BLUE CREEPING PHLOX	GAL. POT
RG	RUDBECKIA F. GOLDSTRUM	BLACK EYED SUSAN	GAL. POT
SA	SEDUM NEON	NEON SEDUM	GAL. POT
SB	SEDUM BLACKJACK	BLACKJACK SEDUM	GAL. POT
SH	STACHYS B. HELENE VAN STEIN	BIG EARS LAMB'S EARS	GAL. POT
TC	TULIPA C. LADY JANE	LADY JANE SPECIES TULIP	TOP SIZE BULBS
TG	TULIPA G. RED RIDING HOOD	RED SPECIES TULIP	TOP SIZE BULBS
WW	WEIGELA FLORIDA 'WINE AND ROSES'	WINE AND ROSES WEIGLEA	3 PT. POT

LEGEND & ABBREVIATIONS

- DECIDUOUS TREES
- MARKET SHRUB MASSING
- FLOWERING TREES
- EVERGREEN TREES
- X1 — SINGLE FIXTURE OFFSET LIGHT POLE
- Z1 — DOUBLE FIXTURE OFFSET LIGHT POLE
- 1 / AS — LANDSCAPE MATERIAL IDENTIFIER

GRAPHIC SCALE

40 20 10 0 20

(IN FEET)
1 inch = 20 ft.

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CIVIL ENGINEERING LAND SURVEYING LAND USE PLANNING SOIL SCIENCE
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Site Development Plan
"Site Lighting and Landscaping Plan"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66) - East Hampton, Connecticut

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Existing 3 Story Building "MS1"

Future Building Pad Site

Edgewater Circle

East High Street (CT Route #66)

Existing 1 Story Residential Building

PROVIDE INLET PROTECTION

COORDINATE WITH EVERSOURCE TO REMOVE POLE AND EXISTING OVERHEAD UTILITIES

CLEAR AND GRUB TREES AND VEGETATION

PROVIDE AND MAINTAIN HAY BALE BARRIER AT INLET ORIFICES AND WRAP TRASH RACK IN FILTER FABRIC UNTIL UPGRADIENT STABILIZATION IS ACHIEVED.

PROVIDE CONTINUOUS SEDIMENT FENCE BARRIER AT DOWNGRADIENT LIMIT OF DISTURBANCE

PROVIDE TEMPORARY SEDIMENT TRAP TO REMAIN AFTER CONSTRUCTION
MAXIMUM CONTRIBUTING AREA = 0.7 ACRES
STORAGE VOLUME REQUIRED FOR 1.34 CY/ACRE = 93.8 CY
STORAGE VOLUME PROVIDED = 177.8 CY FROM EL. 526 TO TOP OF FRAME

AFTER STABILIZATION OF UPGRADIENT AREAS, REMOVE AND DISPOSE OF COLLECTED SEDIMENT IN SEDIMENT TRAP AND SEED WITH GRASS

PROVIDE EROSION CONTROL BLANKET ON ALL 2H:1V SLOPES

REMOVE VEGETATION AND STRIP TOPSOIL FROM PROPOSED DEVELOPMENT AREAS. STOCKPILE TOPSOIL FOR REUSE.

PROPOSED ACCESS, DRAINAGE AND LANDSCAPING EASEMENT FROM EDGEWATER HILL ENTERPRISES, LLC (128 EAST HIGH STREET) TO EDGEWATER HILL ENTERPRISES, LLC
AREA: ±10,111 SF

CLEAR AND GRUB EXISTING TREES

PROPOSED ACCESS EASEMENT FROM EDGEWATER HILL ENTERPRISES, LLC TO EDGEWATER HILL ENTERPRISES, LLC (128 EAST HIGH STREET)
AREA: ±773 SF

PROPOSED 3-STORY BUILDING
FF = 531.70

PROVIDE 24'x50' ANTI-TRACKING PAD

PROVIDE CONTINUOUS SEDIMENT FENCE BARRIER (TURBIDITY CURTAIN IN OPEN WATER) AT DOWNGRADIENT LIMIT OF DISTURBANCE

100' Regulated Area

Pond Edge of Water
May 31, 2017 (±523.5)

GRAPHIC SCALE
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(IN FEET)
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Site Development Plan
"Logistics and Erosion & Sedimentation Control Plan"
Prepared for
Edgewater Hill Enterprises, LLC
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NARRATIVE

THIS PROPOSAL INVOLVES THE CONTINUED DEVELOPMENT OF THE MASTER PLAN FOR THE EDGEWATER HILL MIXED USE DEVELOPMENT DISTRICT. THE PROPOSED PHASE INCLUDES A NEW 5,700 SQUARE FOOT, THREE STORY MIXED USE BUILDING AND SUPPORTING UTILITIES AND INFRASTRUCTURE.

PRIMARY ACCESS TO THE NEW BUILDING WILL BE VIA EDGEWATER CIRCLE, CONSTRUCTED DURING PREVIOUS PHASES OF THE DEVELOPMENT.

ON-SITE IMPROVEMENTS WILL INCLUDE: VEHICULAR ACCESS AND CIRCULATION DRIVES; VEHICLE PARKING AREAS; PEDESTRIAN SIDEWALKS; STORMWATER MANAGEMENT IMPROVEMENTS; POTABLE AND FIRE PROTECTION WATER SERVICES; SEWER, GAS AND ELECTRICAL UTILITIES; LIGHTING; AND LANDSCAPING.

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 WORK CONTEMPLATED HEREON MUST BE OBTAINED FROM THE MUNICIPAL WETLANDS AND WATERCOURSES AGENCY.

CONTINUOUS SEDIMENT BARRIERS WILL BE INSTALLED AT LOCATIONS SHOWN ON THIS PLAN PRIOR TO ANY EARTHWORK OPERATIONS. THESE MEASURES WILL BE MAINTAINED UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.

REFERENCE IS MADE TO:

1. CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, MAY 2002.
2. UNITED STATES DEPARTMENT OF AGRICULTURE (USDA), NATURAL RESOURCES CONSERVATION SERVICE (NRCS), WEB SOIL SURVEY (WSS) FOR THE STATE OF CONNECTICUT.

DEVELOPMENT SCHEDULE:

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS TO SCHEDULE A MANDATORY PRE-CONSTRUCTION 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. SITE INSPECTION PROCEDURES AND AS-BUILT DRAWINGS.

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 AND CONTRACTOR PARKING/LAYDOWN AREA.
4. ON-SITE CONSTRUCTION SEQUENCE SHALL START WITH THE MINIMUM AMOUNT OF CLEARING REQUIRED TO INSTALL GEOTEXTILE SEDIMENT FENCE, SEDIMENT AND EROSION CONTROL BERMS, AND/OR HAY/STRAW BALES AS SHOWN ON PLAN.
5. INSTALL SEDIMENT FENCE AND HAY/STRAW BALES AS SHOWN ON THE PLANS OR AS REQUIRED. CONSTRUCT TOP AND TOE OF SLOPE SWALES, TEMPORARY SEDIMENT TRAPS, WATER BARS AND CHECK DAMS AS SHOWN ON THE PLANS.
6. FOLLOWING INSTALLATION OF THE EROSION CONTROLS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR INSPECTION AND APPROVAL OF INSTALLED MEASURES. NO WORK SHALL COMMENCE UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER.

PHASE 2 – SITE PREPARATION

1. STRIP AND STOCKPILE TOPSOIL FROM PROPOSED GRADING AREAS 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. ALL STOCKPILED TOPSOIL SHALL BE SEEDED AND MULCHED WHEN IT IS TO BE STORED FOR MORE THAN 21 DAYS FROM TIME OF STOCKPILING.
2. PERFORM MASS EARTHWORK AS REQUIRED TO ESTABLISH ROUGH GRADES. ALL CUTS AND FILLS REQUIRED. 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.
3. COMPACT SUBGRADE TO 95% MAXIMUM DENSITY PRIOR TO PLACING FILL OR SUBBASE FOR PAVED AREAS.

PHASE 3 – SITE IMPROVEMENTS AND BUILDING CONSTRUCTION

1. BEGIN CONSTRUCTION OF THE BUILDING.
2. INSTALL ALL SANITARY SEWERS, WATER MAINS, STORMWATER MANAGEMENT IMPROVEMENTS, AND UTILITIES TO WITHIN 5 FEET OF THE BUILDING.
3. PREPARE SUB-BASE FOR PARKING AREAS, ACCESS AND CIRCULATION DRIVES, SLOPES AND ANY OTHER AREA OF DISTURBANCE FOR FINAL GRADING.
4. INSTALL SUB-BASE AND BASE COURSES OF GRAVEL IN SIDEWALKS, PARKING AREAS, ACCESS AND CIRCULATION DRIVES.
5. PLACE TOPSOIL WHERE REQUIRED. COMPLETE THE PERIMETER LANDSCAPE PLANTINGS AND INSTALL LIGHTING.
6. FINE GRADE, RAKE, SEED AND MULCH TO WITHIN 2 FEET OF THE CURBING.
7. UPON SUBSTANTIAL COMPLETION OF THE BUILDING, COMPLETE THE BALANCE OF SITE WORK AND STABILIZATION OF ALL OTHER DISTURBED AREAS. INSTALL FIRST COURSE OF PAVING.

PHASE 4 – FINAL SEEDING AND CLEANUP

1. 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.
2. INSTALL FINAL COURSE OF PAVEMENT ON ROADWAYS, ACCESS AND CIRCULATION DRIVES, AND PARKING AREAS.
3. ALL DISTURBED AREAS SHALL BE PREPARED WITH TOPSOIL AND SEEDED AND MULCHED ACCORDING TO THIS PLAN.
4. 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	1 WEEK
2	SITE PREPARATION	1 MONTH
3	SITE UTILITIES AND BUILDING CONSTRUCTION	6 MONTHS
4	SIDEWALKS, PAVING, FINAL SEEDING AND CLEANUP	1 MONTH

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 GUIDELINES ARE AVAILABLE ELECTRONICALLY AT 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 PRACTICABLE.

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. THE NAME AND CONTACT INFORMATION FOR THE EROSION CONTROL AGENT SHALL BE SUPPLIED TO THE MUNICIPAL ZONING OFFICIAL.

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, 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 STABILIZATION 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 OR THE MUNICIPAL ZONING OFFICIAL.

QUALIFIED PERSONNEL PROVIDED BY THE SITE CONTRACTOR SHALL INSPECT 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 0.1 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. 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 UNLESS PERMITTED BY THE LOCAL REGULATORY AUTHORITY.

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. 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 ASSURE PROPER PERFORMANCE OF EROSION CONTROL MEASURES. INSPECTION AND MAINTENANCE SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:

- INSPECT ALL SEDIMENT FENCE 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.
- 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 DOWNGRADIENT AREAS OF ALL STORMWATER DISCHARGES AND DEVELOPMENT AREAS. STABILIZE ANY ERODED AREAS IF FOUND.
- INSPECT ROADWAYS ADJACENT TO THE SITE DAILY. SWEEP OR VACUUM TO REMOVE VISIBLE ACCUMULATED SEDIMENT.

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.

INSTALLATION SCHEDULE: AS NOTED, EXCAVATED TOPSOIL WILL BE STOCKPILED ON SITE. SEDIMENT FENCE OR WOOD CHIP BERMS 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 SEDIMENT AND EROSION CONTROL 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.

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

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 1-1/2 INCHES.
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.

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 0.1 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 UP SLOPE 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 0.1 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 UP SLOPE 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 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 WATER. EACH MOBILE UNIT SHALL BE EQUIPPED WITH A POSITIVE SHUTOFF VALVE TO PREVENT OVER WATERING OF DISTURBED AREAS.

SOIL STABILIZATION

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 WILL BE REMOVED AND HAULED OFF SITE TO A LICENSED LANDFILL FACILITY. CONSTRUCTION DEBRIS, TRASH, AND TEMPORARY BMP'S WILL ALSO BE REMOVED AND ANY AREAS DISTURBED DURING REMOVAL WILL 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 WILL 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 UPLAND 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

THE RECOMMENDED SEEDING DATES ARE: APRIL 1-JUNE 15 AND AUGUST 1-SEPTEMBER 15.

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 WILL 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. MATERIAL SAFETY DATA SHEETS, A MATERIAL INVENTORY, AND EMERGENCY CONTACT INFORMATION WILL BE MAINTAINED AT THE ON-SITE PROJECT TRAILER.
4. SPILL KITS: SPILL KITS WILL 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 WILL 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 RELEASE" 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.

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, COUNTY, AND LOCAL REGULATIONS. ONLY TRASH AND CONSTRUCTION DEBRIS WILL BE PLACED IN THE DUMPSTERS. CONSTRUCTION MATERIALS WILL NOT BE BURIED ON SITE.

MAINTENANCE AND INSPECTION: THE DUMPSTERS WILL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER STORM EVENTS. THE DUMPSTER WILL 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 WILL BE STORED IN STRUCTURALLY SOUND AND SEALED SHIPPING CONTAINERS IN A DESIGNATED AREA. HAZARDOUS WASTE MATERIALS WILL BE STORED IN APPROPRIATE AND CLEARLY MARKED CONTAINERS AND SEGREGATED FROM OTHER NON-WASTE MATERIALS. SECONDARY CONTAINMENT WILL BE PROVIDED FOR ALL WASTE MATERIALS IN A DESIGNATED AREA AND WILL CONSIST OF COMMERCIALLY AVAILABLE SPILL PALLETS. ADDITIONALLY, ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS. HAZARDOUS WASTE MATERIALS WILL NOT BE DISPOSED OF INTO THE ON-SITE DUMPSTERS.

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

SANITARY WASTE:

BMP DESCRIPTION: PORTABLE TOILETS, LOCATED IN THE STAGING AREA, WILL BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE. THE TOILETS WILL BE LOCATED AWAY FROM CONCENTRATED DRAINAGE FLOW PATHS.

MAINTENANCE AND INSPECTION: SANITARY WASTE WILL 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 WILL BE DISPOSED OF IN A DESIGNATED DUMPSTER FOR RECYCLING. THE DUMPSTER WILL 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 WILL BE DEPOSITED IN THE DUMPSTER.

MAINTENANCE AND INSPECTION: THE RECYCLING DUMPSTER WILL BE INSPECTED WEEKLY. THE RECYCLING DUMPSTER WILL 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 WILL BE EMPTIED MORE FREQUENTLY.

2. DESIGNATE WASHOUT AREAS:

CONCRETE WASHOUT

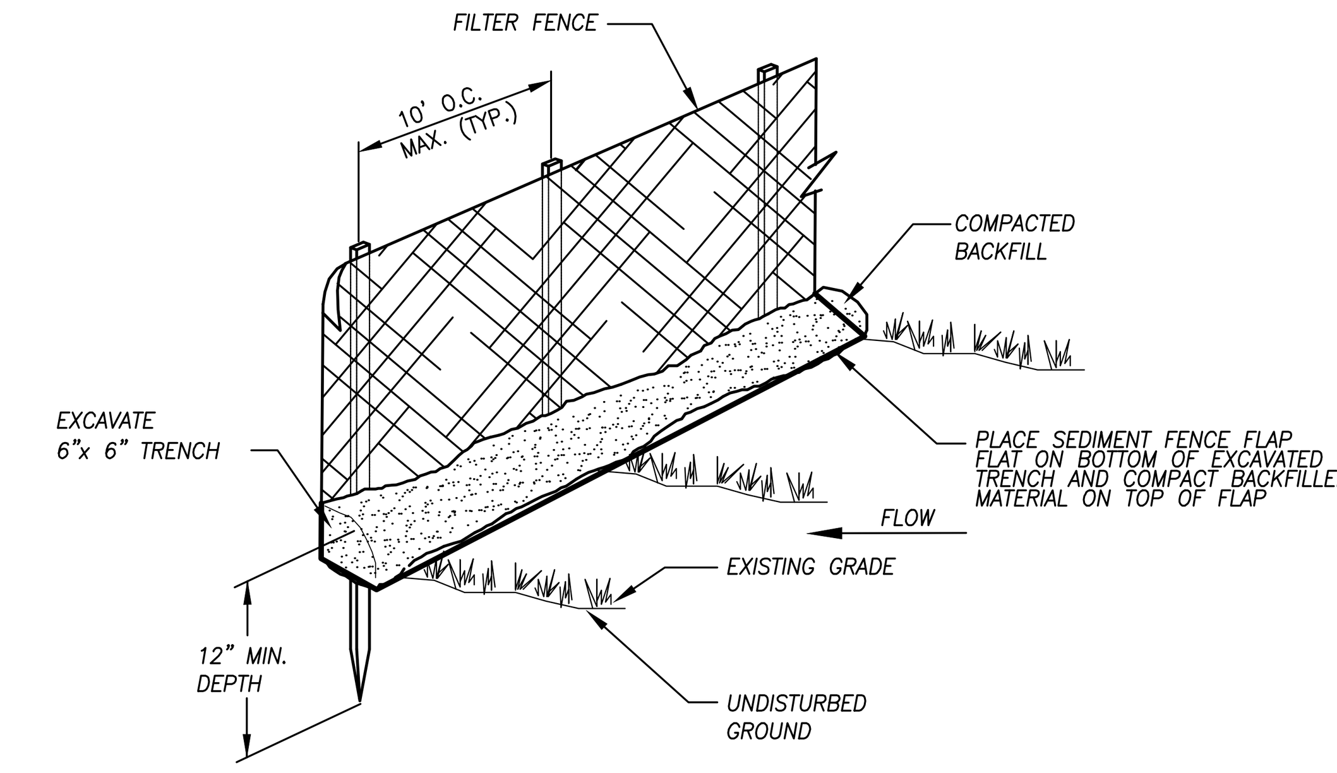
BMP DESCRIPTION: A TEMPORARY, ABOVE-GRADE CONCRETE WASHOUT AREA SHALL BE DESIGNATED. WHEN THE TEMPORARY WASHOUT AREA IS NO LONGER NEEDED FOR THE CONSTRUCTION PROJECT, THE HARDENED CONCRETE AND MATERIALS USED TO CONSTRUCT THE AREA WILL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS, AND THE AREA WILL BE STABILIZED.

INSTALLATION SCHEDULE: THE WASHOUT AREA WILL BE DESIGNATED BEFORE CONCRETE POURS OCCUR AT THE SITE.

3. VEHICLE FUELING AND MAINTENANCE PRACTICES:

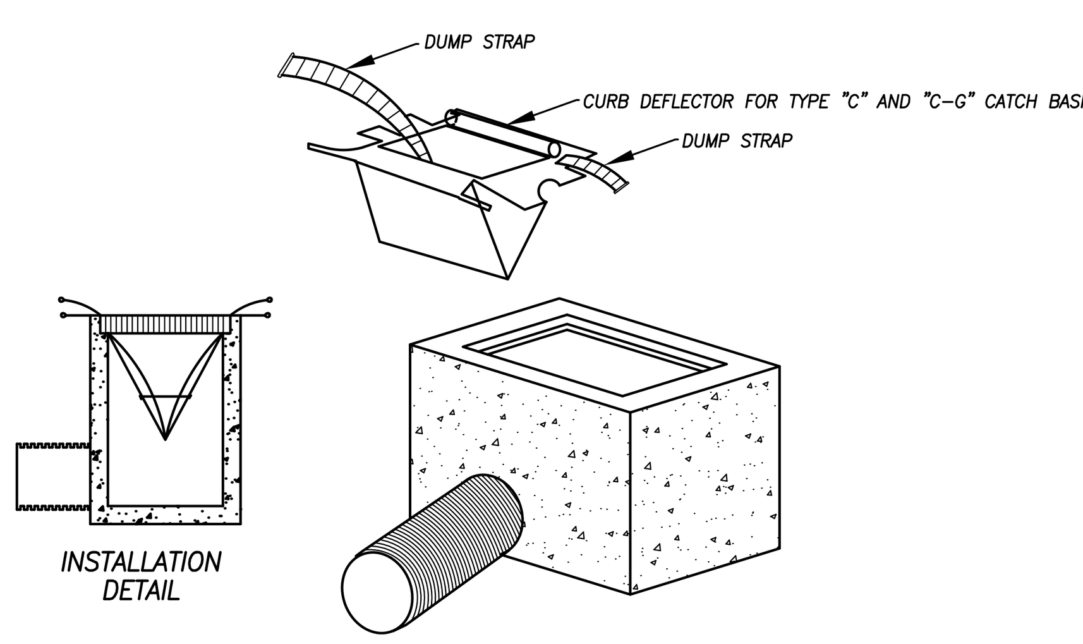
BMP DESCRIPTION: SEVERAL TYPES OF VEHICLES AND EQUIPMENT WILL BE USED ON-SITE THROUGHOUT THE PROJECT, INCLUDING GRADERS, SCRAPERS, EXCAVATORS, LOADERS, ROLLERS, TRUCKS AND TRAILERS, BACKHOES, AND FORKLIFTS. ALL MAJOR EQUIPMENT/VEHICLE FUELING WILL BE PERFORMED IN THE STAGING AREA. THIS PROPOSED ACTIVITY IS TO 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 WILL BE AVAILABLE AT THE COMBINED STAGING AND MATERIALS STORAGE AREA. FUEL WILL BE DELIVERED TO THE SITE ON AN AS NEEDED BASIS BY A FUEL DELIVERY SERVICE. FUELING OF EQUIPMENT WILL ONLY OCCUR IN DESIGNATED FUELING AREAS. NON-EMERGENCY VEHICLE MAINTENANCE INCLUDING WASHING IS PROHIBITED ON SITE.

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



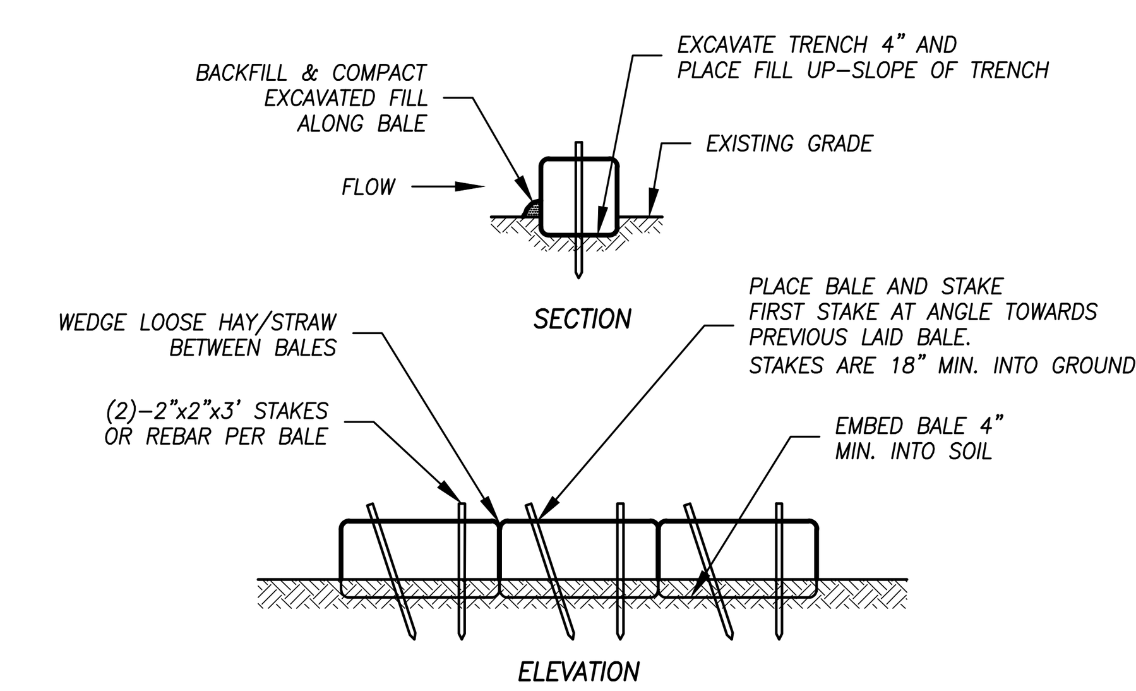
SEDIMENT FENCE DETAIL

NOT TO SCALE



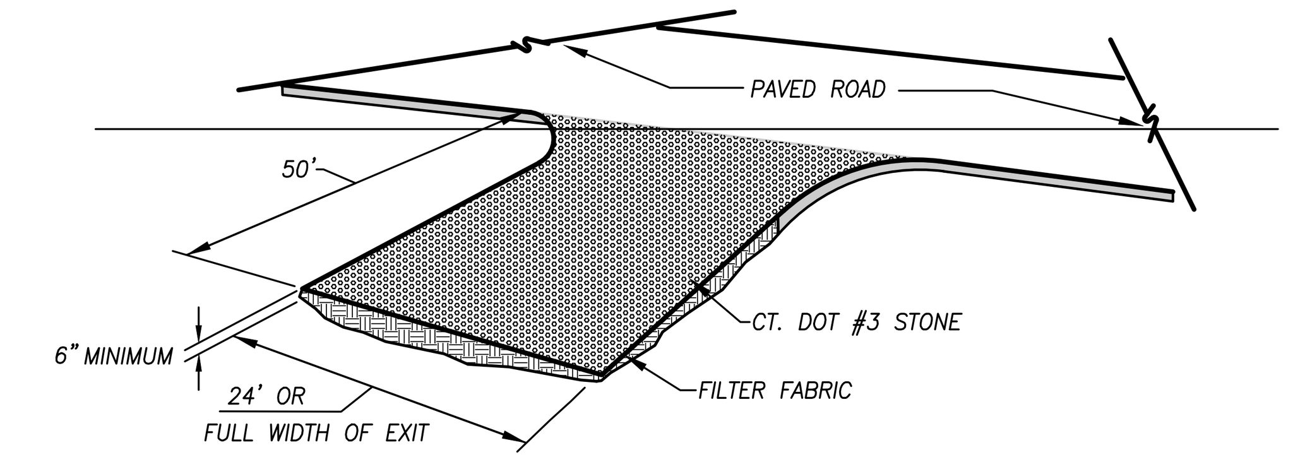
INLET SEDIMENT CONTROL DEVICE

NOT TO SCALE



HAY/STRAW BALE BARRIER DETAIL

NOT TO SCALE



ANTI-TRACKING PAD

NOT TO SCALE

FOR PERMITTING
05/15/2020

PLAN NOTES:

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.

BOUNDARIES
CIVIL ENGINEERING | LAND SURVEYING | LAND USE PLANNING | SOIL SCIENCE
Boundaries LLC
179 Pachaug River Drive, Griswold, CT 06351
T 860.376.2006 | www.boundariesllc.net

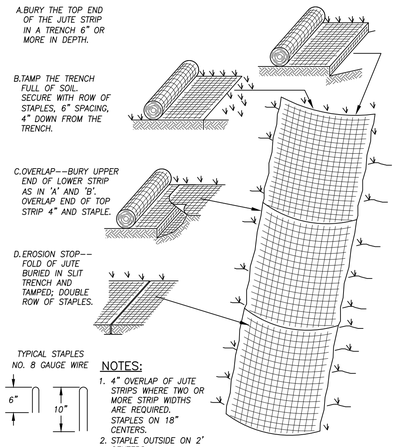
Site Development Plan
"Erosion & Sedimentation Control Notes and Details"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66) - East Hampton, Connecticut

SCALE:	As Noted
DATE:	May 2020
JOB I.D. NO.	20-2795-2
Revisions	

SHEET NO.

8

12

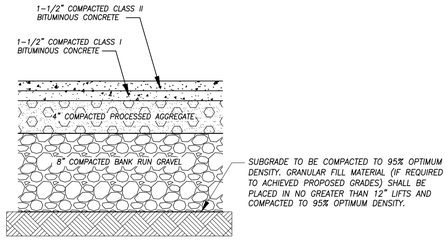


NOTES:

1. 4" OVERLAP OF JUTE STRIPS WHERE TWO OR MORE STRIP WIDTHS ARE REQUIRED. STAPLES ON 18" CENTERS.
2. STAPLE OUTSIDE ON 2' CENTERS.
3. JUTE NETTING SHALL BE INSTALLED IN ALL PERMANENT GRASS SWALES.

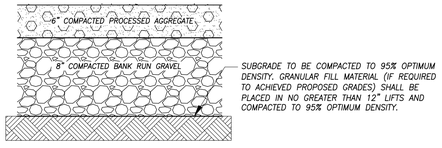
JUTE NETTING DETAIL

NOT TO SCALE



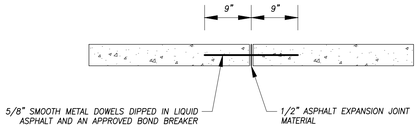
BITUMINOUS CONCRETE PAVEMENT DETAIL

NOT TO SCALE



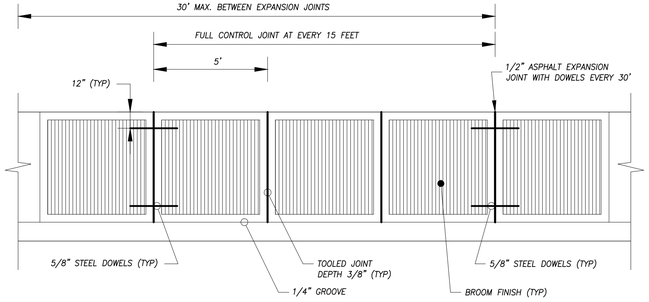
TRAFFIC BOUND GRAVEL SURFACE DETAIL

NOT TO SCALE

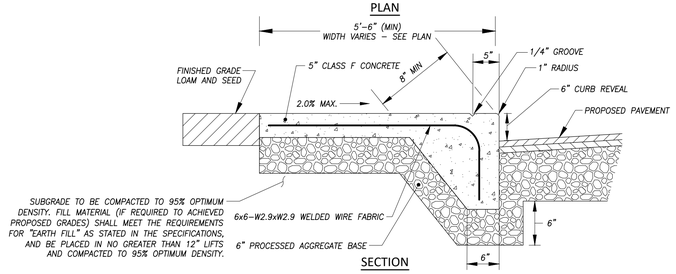


CONCRETE SIDEWALK EXPANSION JOINT DETAIL

NOT TO SCALE



PLAN



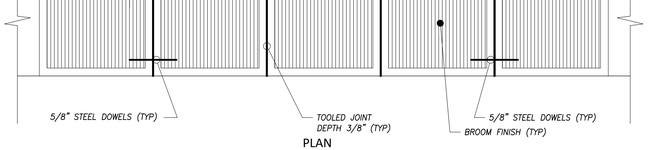
SECTION

NOTES:

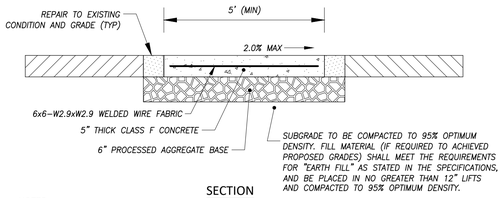
1. AT THE END OF THE DAILY POUR OF CONCRETE GALVANIZED STEEL DOWELS SHALL BE INSERTED IN THE LAST SLAB FOR THE NEXT DAY'S POUR.

CONCRETE SIDEWALK WITH MONOLITHIC CURBING DETAIL

NOT TO SCALE



PLAN



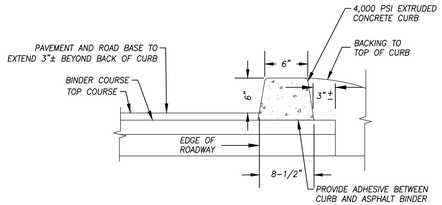
SECTION

NOTES:

1. AT THE END OF THE DAILY POUR OF CONCRETE METAL DOWELS SHALL BE INSERTED IN THE LAST SLAB FOR THE NEXT DAY'S POUR.

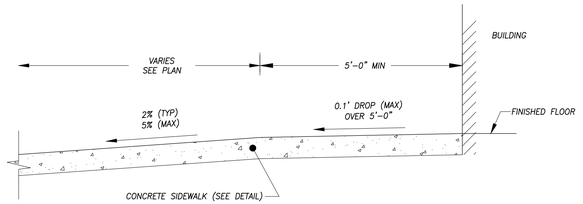
CONCRETE SIDEWALK DETAIL

NOT TO SCALE



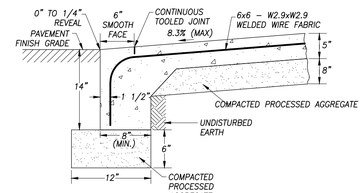
EXTRUDED CONCRETE CURB DETAIL

NOT TO SCALE

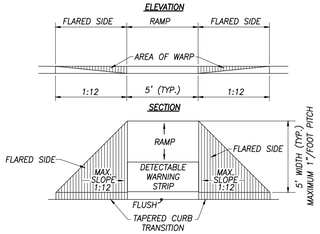


TYPICAL GRADING AT ENTRY DOORS

NOT TO SCALE



ELEVATION

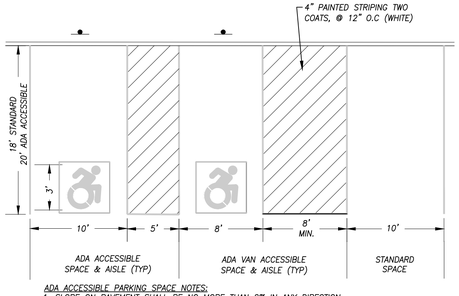


PLAN

NOTE:
ALL CONCRETE CURB RAMPS, TO PROVIDE A DETECTABLE WARNING TEXTURE AS REQUIRED BY SECTION 4.27 OF ANSI A117.1-1986

SIDEWALK RAMP DETAIL

NOT TO SCALE

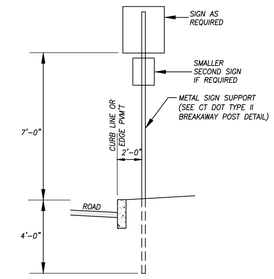


ADA ACCESSIBLE PARKING SPACE NOTES:

1. SLOPE ON PAVEMENT SHALL BE NO MORE THAN 2% IN ANY DIRECTION.
2. CROSS HATCH AISLES MAY NOT BE SHARED BETWEEN TWO SPACES OF DIFFERENT TYPE.
3. AISLE WIDTH IS 8' FOR VAN ACCESSIBLE SPACES, AND 5' FOR ALL OTHER ACCESSIBLE SPACES.
4. USE CURRENT "SPEEDY" ADA SYMBOL FOR ALL PAVEMENT MARKINGS AND SIGNS.

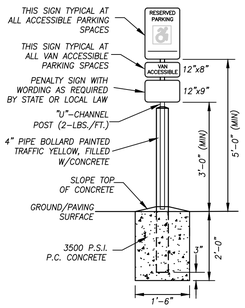
PARKING SPACE DETAILS

NOT TO SCALE



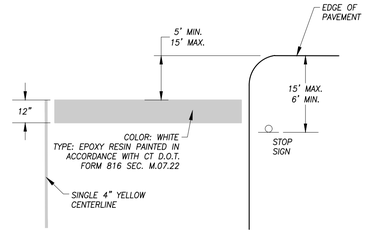
DIRECTIONAL SIGN SUPPORT DETAIL

NOT TO SCALE



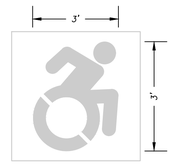
ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE



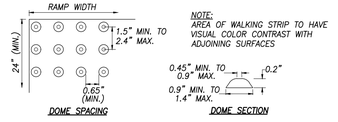
STOP BAR DETAIL

NOT TO SCALE



ACCESSIBLE PARKING SPACE SYMBOL DETAIL

NOT TO SCALE



DETECTABLE WARNING STRIP DETAIL

NOT TO SCALE

FOR PERMITTING
05/15/2020

PLAN NOTES:

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.

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Site Development Plan
"Notes and Details (1)"
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SCALE: As Noted
DATE: May 2020
JOB I.D. NO. 20-2795-2
Revisions

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9
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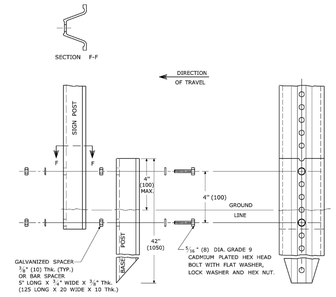
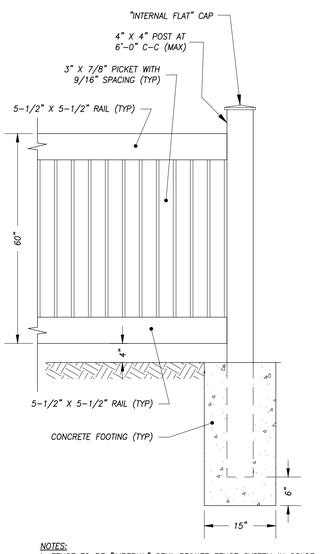


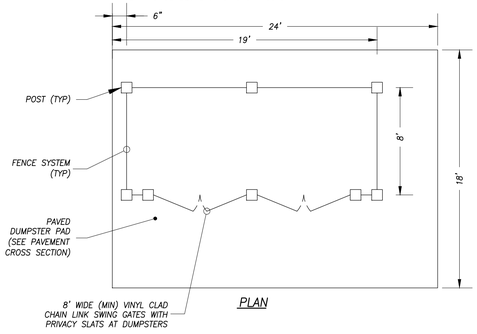
SEE CT DOT STANDARD DETAIL SHEET TR-1208_02 FOR ADDITIONAL DETAILS

CT DOT BREAKAWAY TYPE II SIGN POST DETAIL

NOT TO SCALE



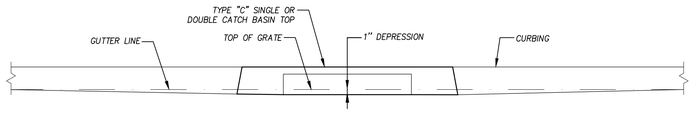
NOTES:
1. FENCE TO BE "IMPERIAL" SEMI-PRIVATE FENCE SYSTEM IN COLOR WHITE AS MANUFACTURED BY BUFF-TECH, OR APPROVED EQUAL.
2. PROVIDE EQUAL SPACING OF POSTS.



PLAN

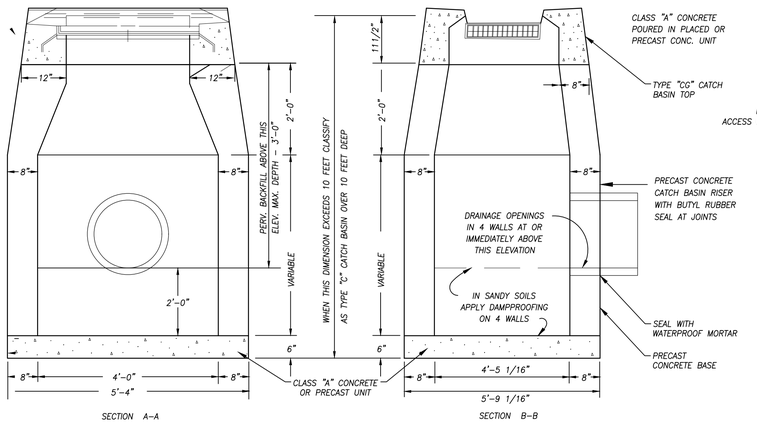
DUMPSTER ENCLOSURE DETAIL

NOT TO SCALE



TYPE "C" CATCH BASIN TOP IN A LINE OF 6" CONCRETE CURBING OR 6" STONE CURBING

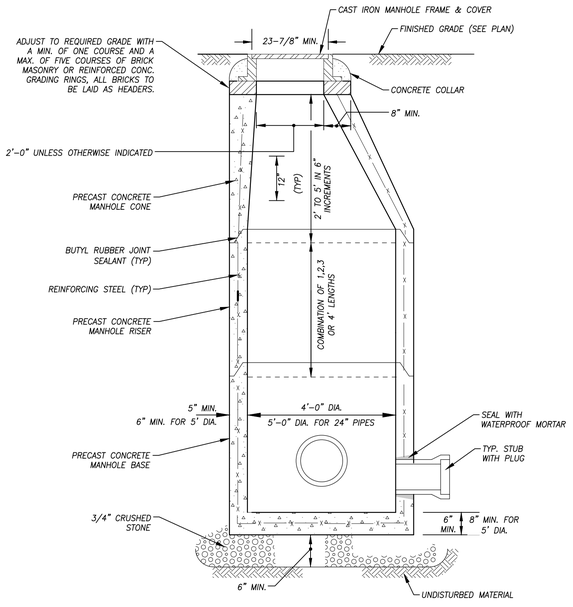
NOT TO SCALE



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.

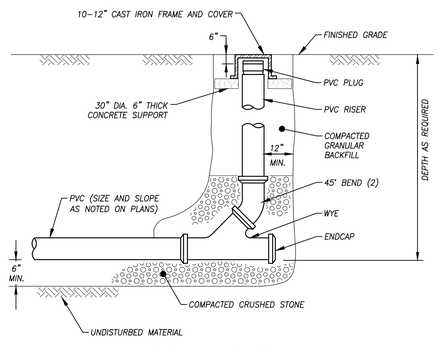
TYPE "C-G" CATCH BASIN

NOT TO SCALE



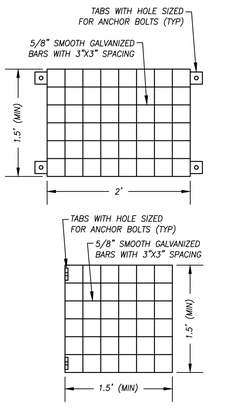
PRECAST CONCRETE STORM DRAIN MANHOLE DETAIL

NOT TO SCALE



CLEANOUT DETAIL

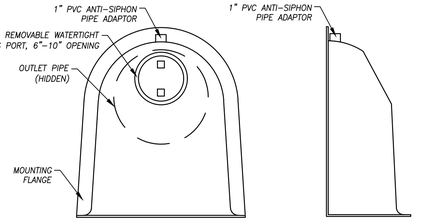
NOT TO SCALE



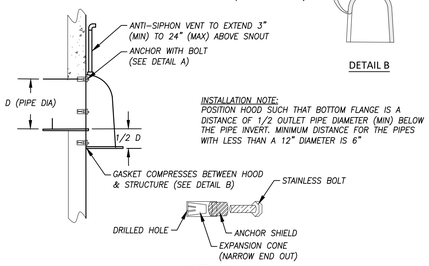
NOTES:
1. GALVANIZE TRASH RACK AFTER WELDING/FABRICATION.

TRASH RACK DETAIL

NOT TO SCALE



SNOUT OIL-WATER DEBRIS SEPERATOR

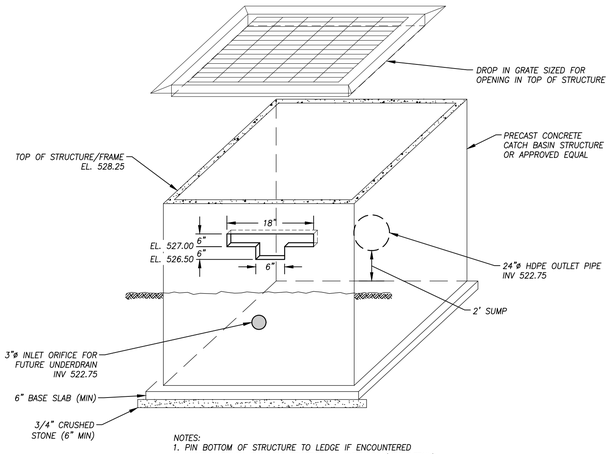


INSTALLATION NOTE:
POSITION HOOD SUCH THAT BOTTOM FLANGE IS A DISTANCE OF 1/2 OUTLET PIPE DIAMETER (MIN) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR THE PIPES WITH LESS THAN A 12" DIAMETER IS 6"

NOTES:
1. ALL HOODS AND TRAPS FOR CATCH BASINS AND OUTLET CONTROL STRUCTURES SHALL BE AS MANUFACTURED BY BEST MANAGEMENT PRODUCTS, INC., OR EQUAL.
2. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AND THE MANUFACTURER'S RECOMMENDATIONS.
3. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
4. THE HOOD SHALL BE SECURELY ATTACHED TO THE STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS PROVIDED IN THE MANUFACTURER SUPPLIED INSTALLATION KIT.

CATCH BASIN HOODED OUTLET

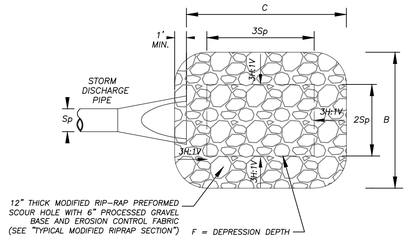
NOT TO SCALE



NOTES:
1. PIN BOTTOM OF STRUCTURE TO LEDGE IF ENCOUNTERED
2. INSTALL TRASH RACK TO PROTECT ALL ORIFICES (SEE DETAIL)

OUTLET CONTROL STRUCTURE

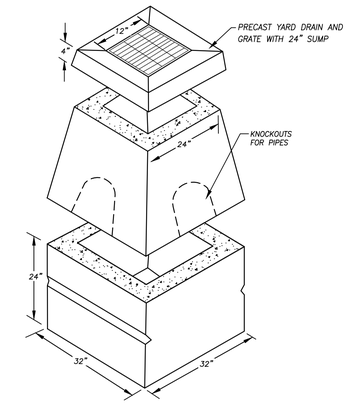
NOT TO SCALE



PIPE Sp	C	B	F	RIPRAP GRADATION
15"	7.5 FT	6.25 FT	0.625 FT	MODIFIED RIPRAP

TYPE 1 RIP RAP SCOUR HOLE DETAIL

NOT TO SCALE



NOTE: STRUCTURE TO BE SET ON 6" (MIN) OF 3/4" CRUSHED STONE.

PRECAST YARD DRAIN DETAIL

NOT TO SCALE

FOR PERMITTING
05/15/2020

PLAN NOTES:

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.

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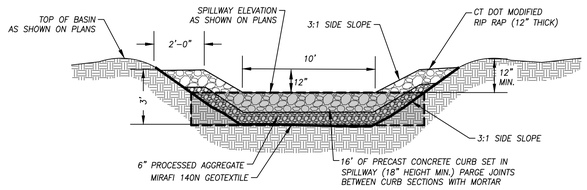
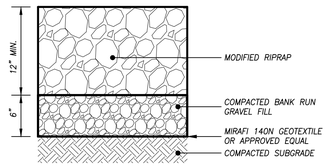


RIPRAP/BASIN SPILLWAY DETAIL

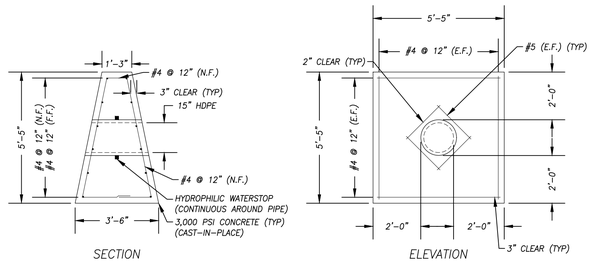
NOT TO SCALE



NOTES:
1. TO BE USED AT PIPE DISCHARGES AND EMERGENCY SPILLWAY CHANNEL.

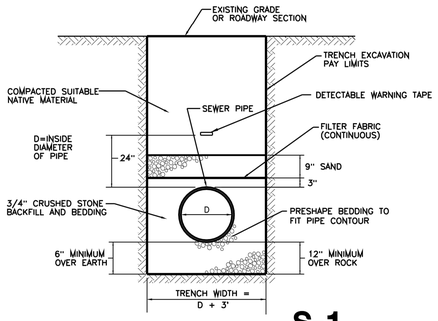
TYPICAL MODIFIED RIPRAP SECTION

NOT TO SCALE



ANTI-SEEP COLLAR DETAIL

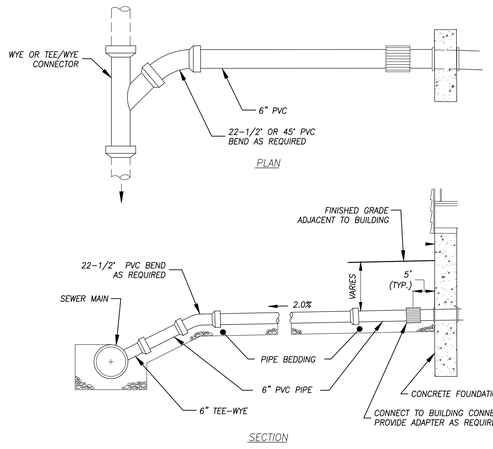
NOT TO SCALE



S-1

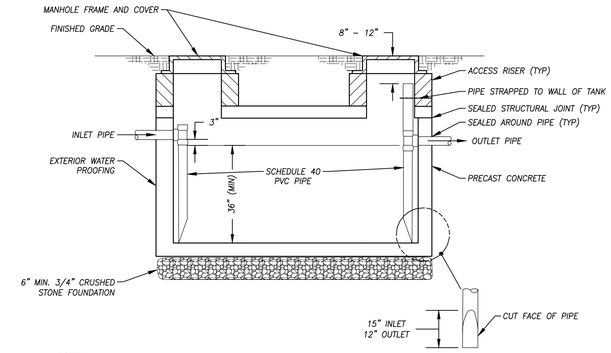
SANITARY SEWER TRENCH DETAIL

NOT TO SCALE



TYPICAL BUILDING CONNECTION DETAIL

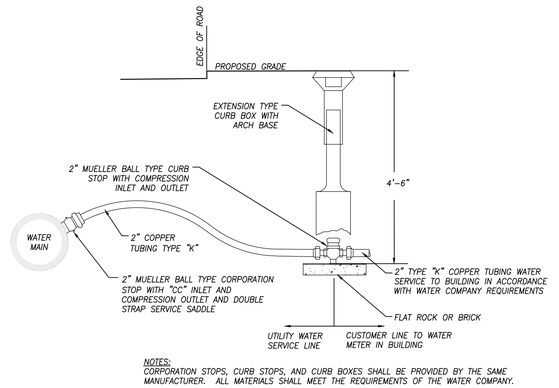
NOT TO SCALE



NOTES:
1. THE CONCRETE TANK SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI AND SHALL BE H-20 LOAD RATED WITH THE AMOUNT OF COVER SHOWN ON THE DESIGN DRAWING.
2. TANK SHALL HAVE A MINIMUM CAPACITY OF 1,000 GALLONS.
3. EXTERIOR OF THE TANK AND ACCESS RISERS SHALL BE COATED WITH A WATERPROOF SEALANT.
4. STRUCTURAL SEAM OF THE TANK SHALL BE FILLED AND COATED WITH A WATERPROOF SEALANT. THE STRUCTURAL SEAM SHALL BE LOCATED ABOVE THE LIQUID LEVEL OF THE TANK.
5. THE TANK SHALL HAVE ACCESS RISERS AND MANHOLE FRAMES AND COVERS TO FINISHED GRADES ABOVE THE INLET AND OUTLET PIPES.
6. THE INLET AND OUTLET PIPING SHALL HAVE BAFFLE TEES. THE OUTLET TEE SHALL BE EQUIPPED WITH A STAND PIPE RISER EXTENDING TO BETWEEN 8" AND 12" FROM THE MANHOLE COVER.
7. THE INCOMING PIPE SHALL ONLY INCLUDE KITCHEN WASTE PLUMBING AND NO SOURCES OF DOMESTIC WASTEWATER OR STORMWATER.

GREASE INTERCEPTOR TANK DETAIL

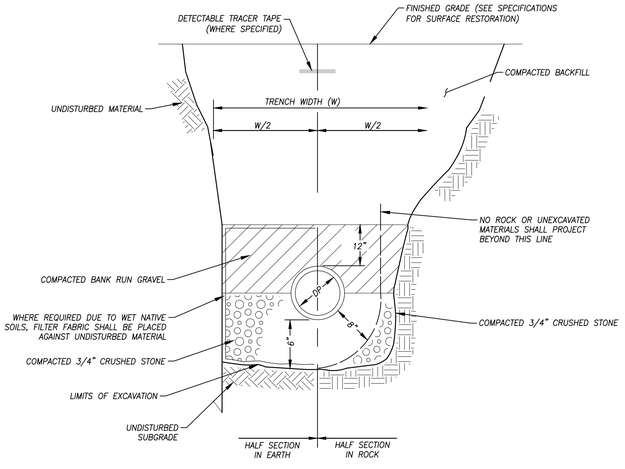
NOT TO SCALE



NOTES:
CORPORATION STOPS, CURB STOPS, AND CURB BOXES SHALL BE PROVIDED BY THE SAME MANUFACTURER. ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE WATER COMPANY.

WATER SERVICE DETAIL

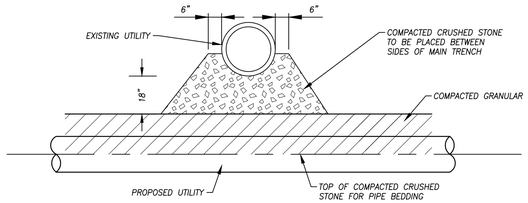
NOT TO SCALE



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

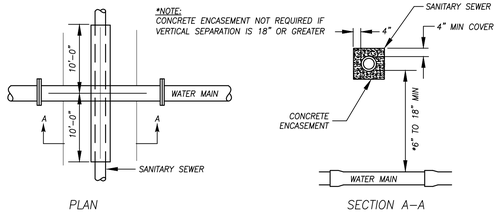
TRENCH DETAIL (STORM DRAINAGE)

NOT TO SCALE



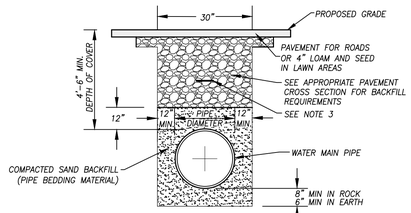
UTILITY CROSSING DETAIL

NOT TO SCALE



WATER AND SEWER CROSSING DETAIL

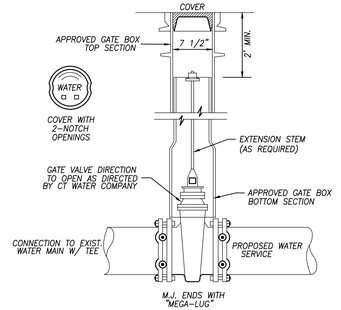
NOT TO SCALE



NOTES:
1. IF PIPE IS PLACED IN OR ON LEDGE, ALL LEDGE WITHIN 8" OF PIPE SHALL BE REMOVED AND REPLACED WITH PIPE BEDDING.
2. MINIMUM PIPE COVER SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS.
3. CONTRACTOR TO INSTALL AN UNDERGROUND FACILITY WARNING TAPE IN TRENCH WITH 24" MIN. SEPARATION ABOVE UTILITY

WATER MAIN TRENCH DETAIL

NOT TO SCALE



GATE VALVE AND GATE BOX DETAIL

NOT TO SCALE

FOR PERMITTING
05/15/2020

PLAN NOTES:

1. SEE COVER SHEET FOR ENGINEER AND SURVEYOR SIGNATURES AND SEALS.

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

Site Development Plan
"Notes and Details (3)"
Prepared for
Edgewater Hill Enterprises, LLC
000 East High Street (CT Route 66) - East Hampton, Connecticut

SCALE: As Noted
DATE: May 2020
JOB I.D. NO. 20-2795-2
Revisions

SHEET NO.
11
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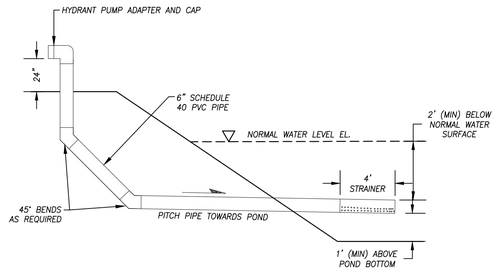
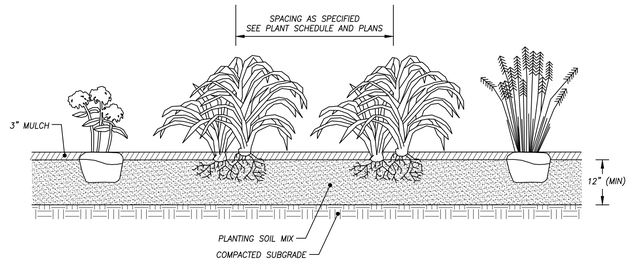


NOTE:
DRY HYDRANT TO BE INSTALLED IN ACCORDANCE WITH TOWN OF EAST HAMPTON FIRE DEPARTMENT REQUIREMENTS

TYPICAL DRY HYDRANT PROFILE

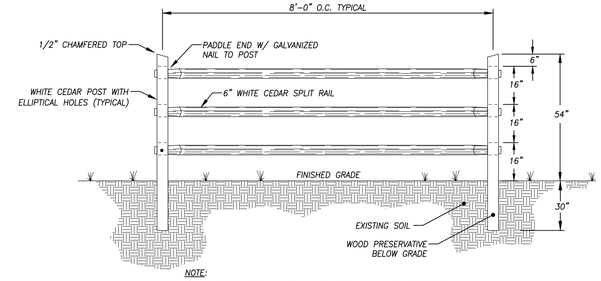
NOT TO SCALE



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

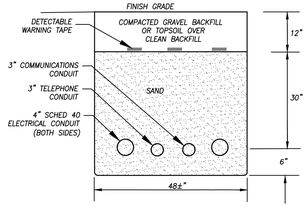
NOT TO SCALE



NOTE:
1) ALL WOOD FOR SPLIT RAIL FENCE TO BE WHITE CEDAR OR EQUAL.

SPLIT RAIL FENCE DETAIL

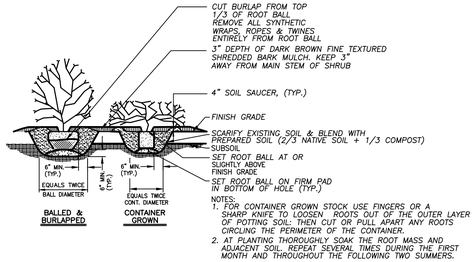
NOT TO SCALE



NOTE:
CONTRACTOR TO CONFIRM UTILITY CONDUIT REQUIREMENTS PRIOR TO CONSTRUCTION

ELECTRIC & TELECOMM TRENCH DETAIL

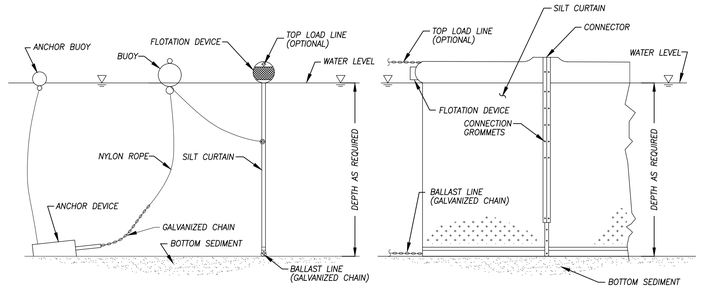
NOT TO SCALE



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.

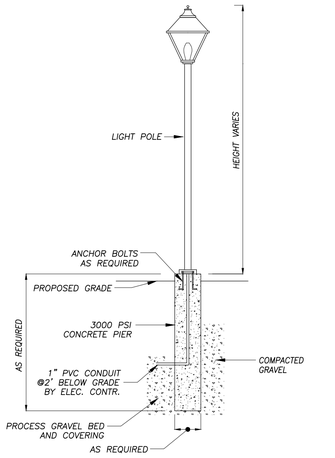
SHRUB PLANTING DETAIL

NOT TO SCALE



TURBIDITY CURTAIN DETAIL

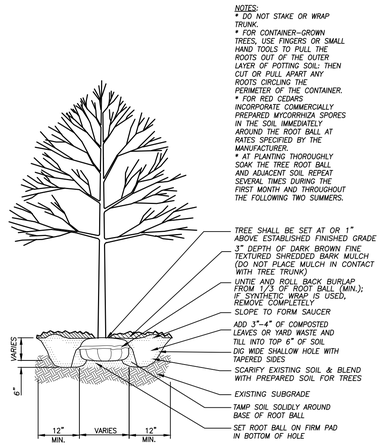
NOT TO SCALE



NOTE:
1. LIGHTING TO BE AS SHOWN ON LIGHTING PLAN.
2. BASE PLATE BOLT PATTERN PROVIDED BY LIGHTING MANUFACTURER.
3. CONCRETE PIER TO BE SIZED AS REQUIRED BY LIGHTING MANUFACTURER'S STRUCTURAL ENGINEER.

LIGHT POLE DETAIL

NOT TO SCALE



TREE PLANTING DETAIL

NOT TO SCALE

FOR PERMITTING
05/15/2020

PLAN NOTES:

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