



REGULAR MEETING – PLANNING AND ZONING COMMISSION AGENDA

**MAY 7, 2025, 6:00 PM
BY ZOOM VIRTUAL MEETING**

To allow public access, anyone may access a meeting by telephone and/or Zoom, or a recording in the City of Norwalk YouTube channel. Specific instructions and links can be found at norwalkct.gov/meetings.



Members of the public may call in to participate. Callers will not be able to see the meeting participants. All participants will be muted upon entering the meeting. To speak, dial *9 on the phone and you will be called on by the host of the meeting during the public comment section. All speakers must state their name and address. Comments must be on a topic on the agenda, and are limited to three minutes. Anyone disrupting the orderly conduct of the meeting, including by using threatening, hateful, or sexually-explicit language, will be removed. Please find the information using the link above.



Members of the public who wish to provide "live comments" may also use the Zoom meeting platform. All participants will be muted upon entering the meeting. To speak, click the "raise your hand indicator" and you will be called by the host of the meeting during the public comment section. All speakers must state their name and address. Comments must be on a topic on the agenda, and are limited to three minutes. Anyone disrupting the orderly conduct of the meeting, including by using threatening, hateful, or sexually-explicit language, will be removed. Please find the information using the link above.



Members of the public who wish to provide public comment are encouraged to submit those via email in advance of the meeting. For these comments to be included into the record, they must be submitted by 12:00 p.m. the day of the meeting. Please email Steve Kleppin, Director of Planning & Zoning, at skleppin@norwalkct.gov with the subject line "Public Comment" to provide written public comment prior to the meeting.

I. CALL TO ORDER

II. ROLL CALL

III. REVIEW AND ACTION ON APPLICATIONS

- A. #2025-38 Special Appropriation - City of Norwalk - 98 South Main Street - Special Appropriation request for \$583,668 in Special Capital Appropriation funds to the Recreation and Parks Department for the development and construction of the Norwalk Community Recreation Center at 98 South Main Street - Report & recommended action**
- B. #2025-25 CAM - Robert E. Stephens - 36 Dock Road - Demolish an existing house and construct a new single-family residence with associated improvements adjacent to tidal waters and wetlands - Report & recommended action**

IV. PUBLIC HEARINGS

- A. **#2025-15 R/SP - Norwalk Center, LLC & The Auto Collective - 10 Norden Place (District 3, Block 17, Lot 40) - Zoning regulation text amendment application to amend Article 4 and Article 9 to create a "Car Club" use within the SD-LI zoning district and special permit application for a +/- 137,000sf Car Club within an existing building - Public hearing, report & recommended action**
- B. **#2025-23 R/SP - Glazer Group, LLC - 1E River Road (5-44-18-BARN) - Proposed zoning regulation text amendment to Article 4 regarding the CD-1L zone and the Silvermine Tavern District Overlay zone to permit specific commercial uses in conjunction with a special permit application to allow for meetings, recreational activities, community gatherings/events, and special events within an existing historic structure - Public hearing, report & recommended action**
- C. **#2025-08 R - Planning & Zoning Commission - Zoning Regulation Text Amendment(s) to Articles 4, 6, 8 and 9 regarding changes to the flood hazard zone regulations for buffer areas and construction methodology for residential flood compliance; maximum building heights for the SD-LI and SD-HI zones, rear setbacks for the SD-MC zone; Frontage requirements for Watercourse Lots; requiring a site plan review application for changes in use that exceed a certain size; how Trade or Vocational Schools are permitted; changes to Indoor & outdoor storage of passenger motor vehicles, Motor Vehicle Storage, Warehouse and Warehousing uses; Workforce Housing incentives and income buffers; clarification on mailings required for public notice; amending the definitions of Story, Lowest Floor and Motor Vehicle Body Shop and adding definitions of Unfinished Area and Finished (Habitable) Area - Public hearing, report & recommended action**

V. ACCEPTANCE OF MINUTES

- A. **April 9, 2025, and April 16, 2025**

VI. COMMENTS OF DIRECTOR

VII. COMMENTS OF COMMISSIONERS

VIII. ADJOURNMENT



CITY OF NORWALK
Alan Lo, Buildings and Facilities Manager
alo@norwalkct.gov P: 203-854-7877
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

TO : MAYOR HARRY RILLING
JARED SCHMITT, CHIEF FINANCIAL OFFICER

FROM: ALAN LO, BUILDINGS AND FACILITIES MANAGER

RE : **NORWALK COMMUNITY RECREATION CENTER –
EXTERIOR WALLS MOISTURE ISSUES**

DATE: APRIL 24, 2025

The renovation and expansion of the city owned 98 South Main Street community center into the new Norwalk Community Center began in early February 2025. Our Construction Manager – Newfield Construction, has completed the interior demolition, miscellaneous hazardous material remediation and site clearing in March. Unfortunately, we encountered significant water/moisture damages to the exterior walls of the building which were not anticipated nor budgeted for as part of the project.

The design scope of the project includes the removal of the sheet rock and existing insulation around building perimeter walls in order to provide improved energy efficiency. Attached is a full report on what we found, proposed corrective measures and projected costs.

The current project budget is \$15,580,647 which breaks down as follows to include hard and soft costs

- State DECD - \$ 1,200,000
- City GGP funds - \$ 1,226,647
- ARPA funds - \$ 6,374,000
- HUD funds - \$ 1,830,000 (excl. \$170,000 for YMCA -FF&E)
- 2024-25 Capital Budget - \$ 4,950,000

Total project budget- \$15,580,647

Newfield Construction's contract amount is \$13,913,803. The Common Council had approved an Owner Contingency for a total not to exceed \$423,329.00 which is approximately 3% of construction cost. The projected cost for corrective measures total \$583,668 and I would like to request a Special Capital Appropriation in the same amount with funds from the completed bathroom improvement project at the middle schools. The allocation of these special appropriation funds will allow the project to maintain the current contingency allowance for the duration of the project.

ACTION REQUESTED:

- a. Recommend the allocation of \$583,668 in Special Capital Appropriation funds to the Recreation and Parks Department for the development and construction of the Norwalk Community Recreation Center at 98 South Main Street as identified herein this memo and attached documentation. Current acct. #09256030 5777 C0719**
- b. Recommend the reduction in the amount of \$583,668 from the balance in the middle schools bathroom improvement capital budget Acct. #09225010 5777 C0807**

Cc: Barbara Smyth, Chair, LU&BM Committee
Greg Burnett, Chair, Finance Committee
Tom Livingston, Chief-of-Staff
Robert Stowers, Director, Rec. and Parks Dept.
Tom Ellis, Budget Director

Status Report: Norwalk Community Recreation Center

Alan Lo 4/21/25

Narrative of project and current challenges.....

The renovation scope for the existing 98 South Main Street building is to create an attractive street front façade along South Main Street while the interior of the building is gutted to accommodate the new recreation programs. The exterior brick veneer appears to be in good condition and the project required the removal of the sheetrock on the inside face of the exterior walls and the installation of new insulation material and sheetrock to improve energy efficiency.

Since our groundbreaking ceremony, our construction manager, Newfield Construction, has substantially completed the demolition of the building interior and miscellaneous hazardous material remediation. They are currently working on the layout of the interior building systems and walls as well as trenching the floor to install below floor utilities. During the demolition process of the perimeter walls in mid-March, we discovered that water/moisture penetration into the exterior wall had created substantial damage to the sheathing, brick tie-backs and interior metal stud walls. Additionally, mold conditions were discovered inside the exterior wall system throughout the building. These issues were not anticipated and the costs for the corrective measures are not budgeted in the overall project budget. Below is summary of the issues with documentation of the conditions, proposed corrective measures and anticipated costs.



Demolition Began March 2025

Initial findings at this time

- Water penetration through brick veneer
- Black mold on wall insulation.
- Studs and brick veneer ties were found to be rusted and broken off
- Metal studs with water damage

Largest risk

- East Wall being unstable/unsafe

Problem Area Found

Exterior Brick/Wall Stability:

- Water infiltration through exterior wall damaged the existing structure
- Existing wall sheathing damaged and/or has mold growth
- Structural integrity of the existing brick veneer wall is compromised due to rusted/absent brick ties
- Existing interior metal stud walls rusted/damaged from water infiltration



Highly deteriorated
and missing veneer
ties

Highly deteriorated
light gage framing and
exterior wall sheathing



Daylight visible thru the
mortar joints

Problem Area Found



Black Mold:

- Found within the bathrooms behind tile
- Was found in sheetrock after insulation was removed
- Testing was completed by an Environmental Consultant
- Results came back positive and a remediation plan was developed

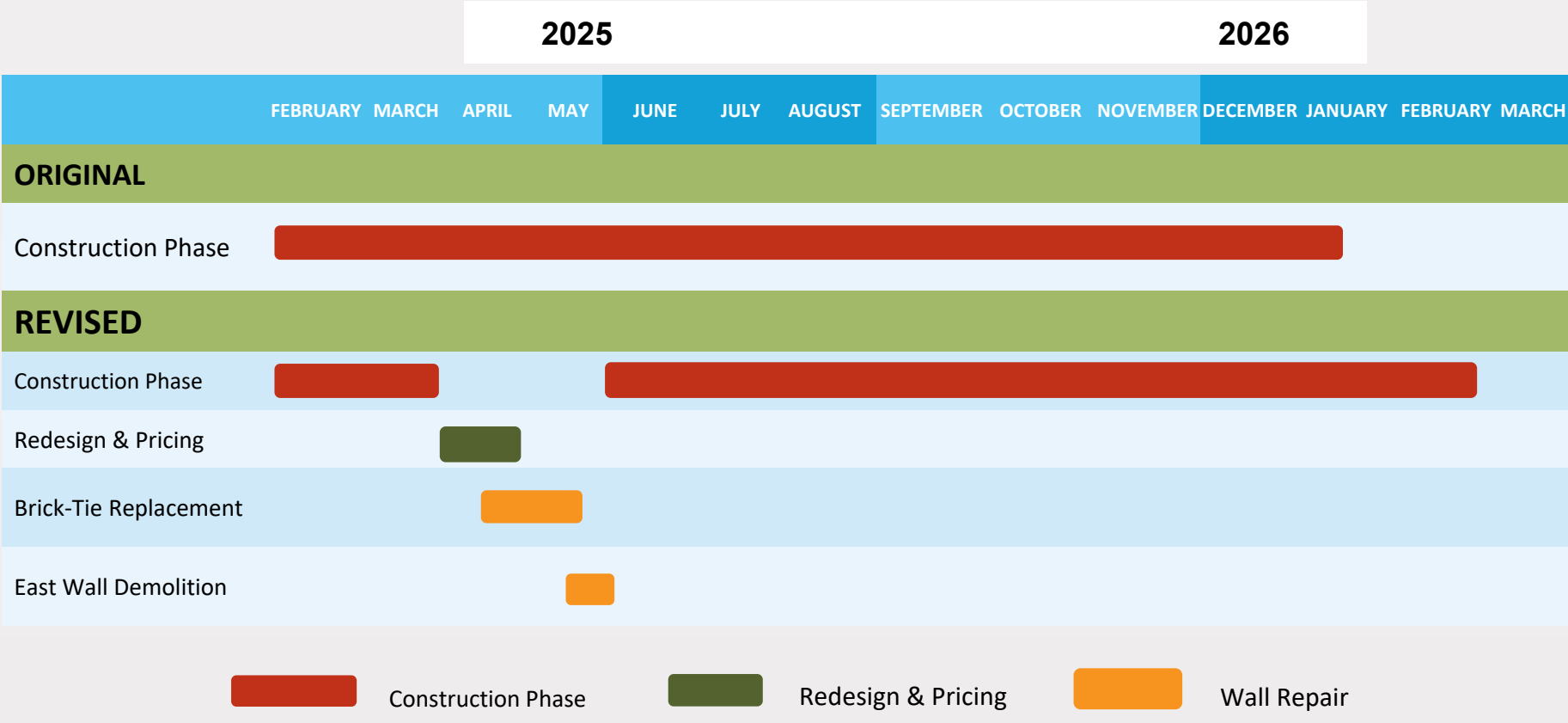
Necessary Corrective Measures

• Repoint brick wall to stop water infiltration	\$ 215,000
• Apply spray foam insulation to act as moisture barrier	\$ 55,000
• Demolish damaged East elevation brick walls	\$ 15,000
• Replace studs on East elevation that are damaged	\$ 45,000
• Remove all existing exterior sheathing	\$ 62,227
• Install new brick ties on North, South, and West Wall	\$ 111,933
• Environmental mold remediation plan from consultant	\$ 3,300
• Increased design and schedule impacts of staffing:	
○ Newfield Construction CM Fee, staffing	\$ 55,708
○ Architect and Engineer Design services	\$ 20,500

TOTAL

\$583,668

Project Schedule Revision



NEXT STEPS

1. Request for special capital appropriation.
2. Request increase to contingency allowance for Newfield Construction's contract through Land Use & Building Management Committee for Common Council approval.



Planning & Zoning Commission

APPLICATION FOR COASTAL SITE PLAN REVIEW

Application must be accompanied by two (2) printed and one (1) digital set of all documents, and appropriate filing fee. Filing Fee: \$310.00 for single or two family use; \$810.00 for all other uses.

Date Stamp

Application Completion Date:

Official Receipt Date:

Fee Paid:

1. Property Address: 36 Dock Road 2. D/B/L/U: 5/84/100/0

3. Proposed Work: Demolition of Existing Residence and Construction of New Single Family Residence. 4. Zone: CD-1S

5. Applicant Identification:

Applicant Name: Robert S. Stephens
Address: 140 West End Ave, Apt. 11C, New York, NY 10023
Phone Number: 917-579-0874 Email: scott@rstephens.com
Interest in Property: ☒ fee simple ☐ option ☐ lessee ☐ easement ☐ other (specify): _____
List primary contact for correspondence *if other than applicant* (Agent or Attorney):
Name: McChord Engineering Associates, Inc.
Address: 1 Grumman Hill Road, Wilton, CT 06897
Business Phone: 203-834-0569 Email: tnelson@mcchordengineering.com

6. Property Owner, if different than applicant:

Owner Name: Same as applicant.
Address: _____
Phone Number: _____ Email: _____

7. Project Information:

Please check the appropriate box to identify the plan or application that has resulted in this Coastal Site Plan Review:

- ☒ Coastal Site Plan for Zoning Compliance/Zoning Permit
- ☐ Subdivision or Resubdivision Application
- ☐ Special Permit or Special Exception Application
- ☐ Site Plan Review Application
- ☐ Variance Application
- ☐ Municipal Project (CGS Section 8-24)

6. Project Site Plans:

Please provide project site plans that clearly and accurately depict the following information, and check the appropriate boxes to indicate that the plans are included in this application:

- ☒ Project location
- ☒ Existing and proposed conditions, including buildings and topography
- ☒ All coastal resources on and contiguous to the site
- ☒ High tide line [as defined in CGS Section 22a-359(c)] and mean high water mark elevation contours (for parcels abutting coastal waters and/or tidal wetlands only)
- ☒ Soil erosion and sediment controls
- ☒ Storm water management & treatment practices
- ☒ Ownership and type of use on adjacent properties
- ☒ Reference datum (i.e., National Geodetic Vertical Datum, Mean Sea Level, etc.)
- ☒ Landscaping and planting plan (existing & proposed)
- ☒ Utility Plan (existing & proposed: water, drainage, sanitary sewers, electric & gas lines)
- ☒ Easements (utility, sight preservation, conservation, pedestrian)

7. Site Information:

a) Street Address or Geographical Description:

36 Dock Road, Norwalk, CT

b) Is project or activity proposed at a waterfront site (includes tidal wetlands frontage)? ☒ YES ☐ NO

c) Name of on-site, adjacent, or downstream coastal, tidal, or navigable waters, if applicable:

Village Creek

d) Identify and describe the existing land use in and adjacent to the site. Include description of any existing structures and significant features on the project site:

The existing site is developed with a single family residence, detached garage, driveway, lawn and landscaped area. The adjacent properties are also developed with single family residences.

e) Indicate the area of the project site: 0.545 acres or 23,725 square feet

f) Check the appropriate box below to indicate total land area of disturbance of the project or activity (please also see Question #9 regarding proposed stormwater best management practices):

- ☐ Project or activity will disturb five (5) or more total acres of land area on the site. *Registration for CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities required.*
- ☒ Project or activity will disturb land, but less than five (5) total acres of land area would be disturbed. *A soil erosion and sedimentation control plan must be submitted.*
- ☐ Project or activity will not disturb any land area.

g) Does the project include a shoreline flood and erosion control structure as defined in CGS section 22a-109(d)?

☐ Yes ☒ No

8. Description of Proposed Project or Activity:

Describe the proposed project or activity including its purpose and related activities such as site clearing, grading, demolition, and other site preparations; percentage of increase or decrease in impervious cover over existing conditions resulting from the project; phasing, timing and method of proposed construction; and new uses and changes from existing uses (*attach additional pages if necessary*):

The proposed project consists of the demolition of the existing single family residence and subsequent construction of a new single family residence in approximately the same location. The existing detached garage and driveway will remain. A new septic system is proposed in the lawn area adjacent to the house. A stormwater management system is proposed to control runoff from the proposed roof area. Selective tree clearing is proposed adjacent to the new residence, but the majority of the existing trees will remain. The impervious coverage on the property will increase from 5,290sf to 7,234sf, an increase of 37%. No work is proposed within the flood hazard zones. The project is anticipated to commence in the summer of 2025 and should take approximately 1 year to complete.

9. Description of Proposed Stormwater Best Management Practices:

Describe the stormwater best management practices that will be utilized to ensure that the volume of runoff generated by the first inch of rainfall is retained on-site, especially if the site or stormwater discharge is adjacent to tidal wetlands. If runoff cannot be retained on-site, describe the site limitations that prevent such retention and identify how stormwater will be treated before it is discharged from the site. Also demonstrate that the loadings of total suspended solids from the site will be reduced by 80 percent on an average annual basis, and that post-development stormwater runoff rates and volumes will not exceed pre-development runoff rates and volumes (*attach additional pages if necessary*):

The majority of new impervious surfaces will be captured and treated by the proposed stormwater management system. Roof leaders from the new residence will direct roof runoff to an underground detention system located to the west of the house. The existing driveway and garage will continue to sheet flow towards Dock Road, matching existing drainage patterns. The detention system consists of 4 units of Cultec Recharger 280HD units surrounded by crushed stone with a total storage capacity of 341 cubic feet. During typical storm events, the underground detention systems will allow stormwater to infiltrate into the underlying soils and there will be no surface discharge. The underground detention is sized to accommodate the Water Quality Volume (WQV) from the captured area. The WQV consists of the runoff from the initial 1.3" of runoff, also known as the "first flush", and is generally considered to contain the majority of pollutants. Collecting the first flush and allowing it to infiltrate into the soils provides filtration of the runoff and is an effective means of stormwater renovation. The detention system will also remove 90% of total suspended solids (TSS) from the captured runoff.

10. Identification of Applicable Coastal Resources and Coastal Resource Policies:

Identify the coastal resources and associated policies that apply to the project by placing a check mark in the appropriate box(es) in the following table.

Coastal Resources	On-site	Adjacent	Off-site but within the influence of project	Not Applicable
General Coastal Resources* - Definition: CGS Section 22a-93(7); Policy: CGS Section 22a-92(a)(2)	☒	☐	☐	☐
Beaches & Dunes - Definition: CGS Section 22a-93(7)(C); Policies: CGS Sections 22a-92-(b)(2)(C) and 22a-92(c)(1)(K)	☐	☐	☐	☒
Bluffs & Escarpments - Definition: CGS Section 22a-93(7)(A); Policy: CGS Section 22a-92(b)(2)(A)	☐	☐	☐	☒
Coastal Hazard Area - Definition: CGS Section 22a-93(7)(H); Policies: CGS Sections 22a-92(a)(2), 22a-92(a)(5), 22a-92(b)(2)(F), 22a-92(b)(2)(J), and 22a-92(c)(2)(B)	☒	☐	☐	☐
Coastal Waters, Estuarine Embayments, Nearshore Waters, Offshore Waters - Definition: CGS Sections 22a-93(5), 22a-93(7)(G), and 22a-93(7)(K), and 22a-93(7)(L) respectively; Policies: CGS Sections 22a-92(a)(2) and 22a-92(c)(2)(A)	☐	☐	☐	☒
Developed Shorefront - Definition: CGS Section 22a-93(7)(I); Policy: 22a-92(b)(2)(G)	☐	☐	☐	☒
Freshwater Wetlands and Watercourses - Definition: CGS Section 22a-93(7)(F); Policy: CGS Section 22a-92(a)(2)	☐	☐	☐	☒
Intertidal Flats - Definition: CGS Section 22a-93(7)(D); Policies: 22a-92(b)(2)(D) and 22a-92(c)(1)(K)	☐	☐	☐	☒
Islands - Definition: CGS Section 22a-93(7)(J); Policy: CGS Section 22a-92(b)(2)(H)	☐	☐	☐	☒
Rocky Shorefront - Definition: CGS Section 22a-93(7)(B); Policy: CGS Section 22a-92(b)(2)(B)	☐	☐	☐	☒
Shellfish Concentration Areas - Definition: CGS Section 22a-93(7)(N); Policy: CGS Section 22a-92(c)(1)(I)	☐	☐	☐	☒
Shorelands - Definition: CGS Section 22a-93(7)(M); Policy: CGS Section 22a-92(b)(2)(I)	☒	☐	☐	☐
Tidal Wetlands - Definition: CGS Section 22a-93(7)(E); Policies: CGS Sections 22a-92(a)(2), 22a-92(b)(2)(E), and 22a-92(c)(1)(B)	☐	☒	☐	☐

* General Coastal Resource policy is applicable to all proposed activities

11. Consistency with Applicable Coastal Resource Policies and Standards:

Describe the location and condition of the coastal resources identified in Question #10 and explain how the proposed project or activity is consistent with all of the applicable coastal resource policies and standards; also see adverse impacts assessment in Question #14 below (*attach additional pages if necessary*):

Coastal Hazard Area - The western edge of the property is within the AE Flood Zone (elev. 13) and the VE Flood Zone (elev. 17) and the eastern edge of the property is within the AE Flood Zone (elev. 13). No work is proposed within any of the flood zones and all structures are above flood elevations. This is consistent with the policy to "insure that development proceeds in such a manner that hazards to life and property are minimized".

Shorelands - The redevelopment of the property maintains the existing residential use and meets the applicable zoning regulations. This is consistent with the policy to "regulate shoreland use and development in a manner which minimizes adverse impacts upon adjacent coastal systems and resources".

Tidal Wetlands - Tidal wetlands are located off-site to the west within Village Creek. The project has proposed soil and erosion controls to protect coastal resources during construction, will maintain a vegetated buffer from the coastal resources, and provides water quality treatment of post construction runoff. This is consistent with the policy "to preserve tidal wetlands and to prevent the despoliation and destruction thereof in order to maintain their vital natural functions"

12. Identification of Applicable Coastal Use and Activity Policies and Standards:

Identify all coastal policies and standards in or referenced by CGS Section 22a-92 applicable to the proposed project or activity:

- ☒ General Development* - CGS Sections 22a-92(a)(1), 22a-92(a)(2), and 22a-92(a)(9)
- ☒ Water-Dependent Uses** - CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A); Definition CGS Section 22a-93(16)
- ☐ Ports and Harbors - CGS Section 22a-92(b)(1)(C)
- ☐ Coastal Structures and Filling - CGS Section 22a-92(b)(1)(D)
- ☐ Dredging and Navigation - CGS Sections 22a-92(c)(1)(C) and 22a-92(c)(1)(D)
- ☐ Boating - CGS Section 22a-92(b)(1)(G)
- ☐ Fisheries - CGS Section 22a-92(c)(1)(I)
- ☐ Coastal Recreation and Access - CGS Sections 22a-92(a)(6), 22a-92(c)(1)(j) and 22a-92(c)(1)(K)
- ☐ Sewer and Water Lines - CGS Section 22a-92(b)(1)(B)
- ☐ Fuel, Chemicals and Hazardous Materials - CGS Sections 22a-92(b)(1)(C), 22a-92(b)(1)(E) and 22a-92(c)(1)(A)
- ☐ Transportation - CGS Sections 22a-92(b)(1)(F), 22a-92(c)(1)(F), 22a-92(c)(1)(G), and 22a-92(c)(1)(H)
- ☐ Solid Waste - CGS Section 22a-92(a)(2)
- ☐ Dams, Dikes and Reservoirs - CGS Section 22a-92(a)(2)
- ☐ Cultural Resources - CGS Section 22a-92(b)(1)(J)
- ☐ Open Space and Agricultural Lands - CGS Section 22a-92(a)(2)

* General Development policies are applicable to all proposed activities

** Water-dependent Use policies are applicable to all activities proposed at waterfront sites, including those with tidal wetlands frontage.

13. Consistency With Applicable Coastal Use Policies and Standards:

Explain how the proposed activity or use is consistent with all of the applicable coastal use and activity policies and standards identified in Question #12. **For projects proposed at waterfront sites (including those with tidal wetlands frontage),** particular emphasis should be placed on the evaluation of the project's consistency with the water-dependent use policies and standards contained in CGS Sections 22a-92(a)(3) and 22a-92(b)(1)(A) -- also see adverse impacts assessment in Question #15 below (attach additional pages if necessary):

The redevelopment of the property maintains the existing residential use and meets the applicable zoning regulations. The development is consistent with the adjacent properties and neighborhood. The project has been designed to minimize site impact and preserve the coastal resources.

14. Identification of Potential Adverse Impacts on Coastal Resources: *(Must be completed for ALL projects.)*

Identify the adverse impact categories below that apply to the proposed project or activity.

The 'applicable' column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(15). If an adverse impact **may result** from the proposed project or activity, please use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Coastal Resources	Applicable	Not Applicable
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☒
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☒
Degrading existing circulation patterns of coastal water through the significant alteration of patterns of tidal exchange or flushing rates, freshwater input, or existing basin characteristics and channel contours - CGS Section 22a-93(15)(B)	☐	☒
Degrading natural or existing drainage patterns through the significant alteration of groundwater flow and recharge and volume of runoff - CGS Section 22a-93(15)(D)	☐	☒
Degrading natural erosion patterns through the significant alteration of littoral transport of sediments in terms of deposition or source reduction - CGS Section 22a-93(15)(C)	☐	☒
Degrading visual quality through significant alteration of the natural features of vistas and view points - CGS Section 22a-93(15)(F)	☐	☒
Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity - CGS Section 22a-93(15)(A)	☐	☒
Degrading or destroying essential wildlife, finfish, or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat - CGS Section 22a-93(15)(G)	☐	☒
Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions - CGS Section 22a-93(15)(H)	☐	☒
Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones - CGS Section 22a-93(15)(E)	☐	☒

15. Identification of Potential Adverse Impacts on Water-dependent Uses: (Complete only if the project/activity is proposed at a waterfront site.)

- a) Identify the adverse impact categories below that apply to the proposed project or activity. The applicable column **must** be checked if the proposed activity has the **potential** to generate any adverse impacts as defined in CGS Section 22a-93(17). If an adverse impact **may result** from the proposed project or activity, use Question #16 to describe what project design features may be used to eliminate, minimize, or mitigate the potential for adverse impacts.

Potential Adverse Impacts on Future Water-dependent Development Opportunities and Activities	Applicable	Not Applicable
Locating a non-water-dependent use at a site physically suited for or planned for location of a water-dependent use - CGS Section 22a-93(17)	☐	☒
Replacing an existing water-dependent use with a non-water-dependent use - CGS Section 22a-93(17)	☐	☒
Siting a non-water-dependent use which would substantially reduce or inhibit existing public access to marine or tidal waters - CGS Section 22a-93(17)	☐	☒

- b) Identification of existing and/or proposed Water-dependent Uses:

Describe the features or characteristics of the proposed activity or project that qualify as water-dependent uses as defined in CGS Section 22a-93(16). If general public access to coastal waters is provided, please identify the legal mechanisms used to ensure public access in perpetuity, and describe any provisions for parking or other access to the site and proposed amenities associated with the access (e.g., boardwalk, benches, trash receptacles, interpretative signage, etc.) *:

The current and proposed use of the property as a single family residence is not a water-dependent use. The development is consistent with the adjacent properties and neighborhood. Additionally, the property is too small and too steep to be reasonably considered for a water-dependent use.

*If there are no water-dependent use components, describe how the project site is not appropriate for the development of a water-dependent use.

16. Mitigation of Potential Adverse Impacts:

Explain how all potential adverse impacts on coastal resources and/or future water-dependent development opportunities and activities identified in Questions #14 & #15 have been avoided, eliminated, or minimized (*attach additional pages if necessary*):

No adverse impacts to coastal resources are anticipated and there is no direct impact to coastal resources as a result of the proposed project. Soil and erosion controls, including silt fence, will be employed to protect coastal resources during construction. Site disturbance will be minimized by preserving the existing driveway and garage as well as constructing the new house in approximately the same location as the existing house. A dense wooded area adjacent to Village Creek will be preserved to provide a vegetated buffer between the development and the tidal wetlands. A stormwater management system will be installed in order to treat runoff from the new house

17. Remaining Adverse Impacts:

Explain why any remaining adverse impacts resulting from the proposed activity or use have not been mitigated and why the project as proposed is consistent with the Connecticut Coastal Management Act (*attach additional pages if necessary*):

There are no remaining adverse impacts. The nature of the proposed development in conjuncture with the proposed mitigation measures should eliminate adverse impacts to coastal resources. The proposed project is consistent with the rights of private property owner and the capability of the land to support development without significantly disrupting either the natural environment or sound economic growth and is therefore consistent with the Connecticut Coastal Management Act.

By signing this application, the applicant or his/her agent certifies that they are familiar with the information provided in this application and are aware of the penalties for obtaining a permit through deception or by submission of inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspection of the subject property by the Commissioners and designated staff of the Commission or consultants to the Commission, at reasonable times, during the pendency of the application.

Applicant's Signature: See attached letter of authorization.

DATE: _____

Agent's Signature: _____

Thomas Nelson, P.E.
McChord Engineering Associates, Inc

DATE: 3/19/25

Robert S. Stephens
36 Dock Road,
Norwalk, CT 06854

February 21, 2025

Planning & Zoning Commission
Norwalk City Hall
125 East Avenue
Room 129
Norwalk, CT 06856

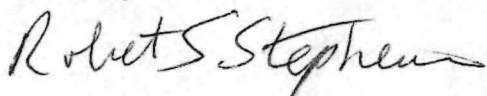
Re: Application for Coastal Site Plan Review
36 Dock Road, Norwalk
Map 5, Block 84, Lot 100

To Whom It May Concern,

I hereby authorize McChord Engineering Associates, Inc. (MEA), to act as agent in regard to the referenced Application for Coastal Site Plan Review and authorize all activities associated with the proposed site development at the subject property.

I hereby consent to all necessary and proper inspections of the property by the Commissioners and designated agents of the Commission or consultants to the Commission, at all reasonable times, both before and after a final decision has been rendered.

Sincerely,

A handwritten signature in black ink that reads "Robert S. Stephens". The signature is written in a cursive, flowing style.

Robert S. Stephens

GIS map_36 DOCK RD - Norwalk - Regional Map Viewer - MapGeo_files



Norwalk Information

ID 103-5-84-100-0
Site Address 36 DOCK RD
Owner STEPHENS ROBERT S & DHUANE G TRUSTEES
Co-Owner -
Owner Address 36 DOCK RD

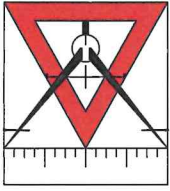


MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

ID	Site Address	Owner Name	Co-Owner Name	Owner Address	Owner City	Owner State	Owner Zip
103-5-84-101-0	34 DOCK RD	ALLEN CARL &	ALLEN SHELLY	8 AVENUE OF PINES	SAVANNAH	GA	31406-7552
103-5-84-102-0	32 DOCK RD	PETERSEN TERESA &	MACDONNELL CHRISTOPHER	32 DOCK RD	NORWALK	CT	06854
103-5-84-111-0	35 SPLITROCK RD	GILLIS SUSHILA TRUSTEE		35 SPLITROCK RD	NORWALK	CT	06854-4713
103-5-84-123-0	21 OUTER RD	VILLAGE CREEK HOME OWNERS INC -		1 OUTER RD	NORWALK	CT	06854-4704
103-5-84-132-0	37 SPLITROCK RD	HUGHES MELANIE		37 SPLITROCK RD	NORWALK	CT	06854-4713
103-5-84-99-0	38 DOCK RD	MCINTYRE CHRISTOPHER &	MCINTYRE NATALIE	38 DOCK RD	NORWALK	CT	06854-0000



McChord Engineering Associates, Inc.

Civil Engineers and Land Planners

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

March 25, 2025

Melanie Hughes
37 Splitrock Rd
Norwalk, Ct 06854-4713

To Whom it May Concern:

Be advised that ROBERT S STEPHENS has submitted a Coastal Site Plan Application for property located at the following address:

36 DOCK RD
NORWALK CT 06854
Property ID: 5-84-100-0

The proposal is for the demolition of the existing single family residence and construction of a new single family residence. You are being notified because your property abuts the property or is located directly across the street from the subject parcel. The application is on file in the Planning & Zoning Office located at City Hall, 125 East Avenue, Room 129, Norwalk, Connecticut 06856. The application materials can be reviewed on the City webpage at <https://www.norwalkct.gov/1746/Pending-Application-Materials>.

If you have any questions regarding this application, you can email the staff person noted on the pending application webpage or you can call the Planning & Zoning Office at (203) 854-7780.

Sincerely,

McChord Engineering Associates, Inc.

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

7022 3330 0001 6181 4867

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☐ Return Receipt (electronic)	\$0.00	
☐ Certified Mail Restricted Delivery	\$0.00	
☐ Adult Signature Required	\$0.00	
☐ Adult Signature Restricted Delivery	\$0.00	

Postage \$0.73
Total Postage and Fees \$5.58

Sent To Allen, Carl + Allen, Shelly
Street and Apt. No., or PO Box No. 8 Avenue of Pines
City, State, ZIP+4® Savannah, GA 31406-7552

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (electronic)	\$0.00	
☐ Certified Mail Restricted Delivery	\$0.00	
☐ Adult Signature Required	\$0.00	
☐ Adult Signature Restricted Delivery	\$0.00	

Postage \$0.73
Total Postage and Fees \$5.58

Sent To McIntire, Christopher + Natalie
Street and Apt. No., or PO Box No. 38 Dock Road
City, State, ZIP+4® Norwalk, CT 06854-0000

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Adult Signature Required	\$0.00	
☐ Adult Signature Restricted Delivery	\$0.00	

Postage \$0.73
Total Postage and Fees \$5.58

Sent To Gillis, Sushita Trustee
Street and Apt. No., or PO Box No. 35 Splitrock Road
City, State, ZIP+4® Norwalk, CT 06854-4713

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Return Receipt (electronic)	\$0.00	
☐ Certified Mail Restricted Delivery	\$0.00	
☐ Adult Signature Required	\$0.00	
☐ Adult Signature Restricted Delivery	\$0.00	

Postage \$0.73
Total Postage and Fees \$5.58

Sent To Petersen, Teresa + MacDermott, Christopher
Street and Apt. No., or PO Box No. 32 Dock Road
City, State, ZIP+4® Norwalk, CT 06854

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Certified Mail Restricted Delivery	\$0.00	
☐ Adult Signature Required	\$0.00	
☐ Adult Signature Restricted Delivery	\$0.00	

Postage \$0.73
Total Postage and Fees \$5.58

Sent To Hughes, Melanie
Street and Apt. No., or PO Box No. 35 Splitrock Road
City, State, ZIP+4® Norwalk, CT 06854-4713

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Adult Signature Required	\$0.00	
☐ Adult Signature Restricted Delivery	\$0.00	

Postage \$0.73
Total Postage and Fees \$5.58

Sent To Village Creek Homeowners Inc
Street and Apt. No., or PO Box No. 1 Outer Road
City, State, ZIP+4® Norwalk, CT 06854-4704

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



320 Post Road, #180-200, Darien CT 06820
connect@bridgerAAD.com | (203) 680-8142
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Building Code Information :

2022 Connecticut State Building Code
(with State of CT 2022 Amendments)

2021 International Building Code
2017 ICC/ANSI A117.1 Accessible and Usable Buildings
and Facilities
2021 International Existing Building Code
2021 International Plumbing Code
2021 International Mechanical Code
2021 International Energy Conservation Code
2020 NFPA 70, National Electrical Code, of the National Fire Protection Association Inc.
2021 International Swimming Pool and Spa Code
2021 International Residential Code

*Note: All construction to meet or exceed all State & Local Building Codes & Regulations.

Drawing Sheet List :

Sheet No. Sheet Title

Architectural Drawings :

Main House

- | | |
|------|--------------------------------------|
| A0.1 | Concept Site Plan & Location Map |
| A1.0 | Floor Plan: Foundation |
| A1.1 | Floor Plan: First Floor |
| A1.2 | Floor Plan: Second Floor |
| A1.3 | Roof Plan |
| A2.1 | Exterior Elevation- East |
| A2.2 | Exterior Elevation- West |
| A2.3 | Exterior Elevation- South |
| A2.3 | Exterior Elevation- North |
| A3.1 | Building Section - Longitudinal |
| A3.2 | Building Section - Longitudinal |
| A3.3 | Building Section - Longitudinal |
| A3.4 | Building Section - Ladrudinal |
| A4.1 | Window Schedule |
| A4.2 | Door Schedule |
| A5.1 | RCP/Lighting & Power: First Floor |
| A5.2 | RCP/Lighting & Power: Second Floor |
| A6.1 | Interior Elevations (reference only) |
| A6.2 | Interior Elevations (reference only) |

New Private Residence for Robert & Dhuane
Stephens
New Residence
36 Dock Road
Norwalk, CT 06854

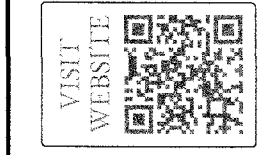
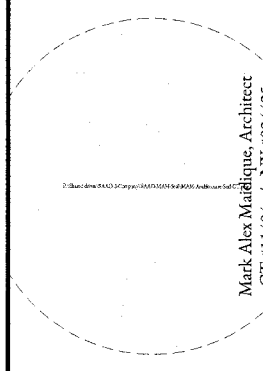
PROGRESS SET - NOT FOR CONSTRUCTION

COVER

Date
2025/02/28
Revisions

Project
24-36DOC

New Private Residence for Robert & Dhuane Stephens
New Residence
36 Dock Road
Norwalk, CT 06854



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SITE WORK

1. Strip site of existing topsoil and stockpile for re-use in landscaping. All trees, so designated, shall be protected from damage from construction processes and machines.
2. Excavate fill and regrade site to finish grades noted on plans. Spread uniform layer of existing topsoil over entire regraded area. Provide fences, barricades, and/or lights around all open trenches, excavations and other hazards.
3. Backfilling operations are the responsibility of the contractor. Foundation walls shall be adequately braced before backfilling. All backfill materials shall be approved granular materials compacted to 90% proctor density.
4. Rough grade around the building to an elevation 6" below the proposed finished grades. Stockpiled topsoil shall be screened to remove all stones, roots, branches, etc. and shall be spread over all disturbed earth areas to a minimum depth of 6". Any remaining topsoil shall be left for the Owner's use.
5. Provide 4" perforated foundation drain in 12" crushed stone or gravel with a layer of salt hay over.
6. Grade for driveway with 4" Item-4 and 2-course bitumen surface.
7. Provide concrete walks, patios and/or other site amenities as part of the "Concrete" section.

CONCRETE WORK

1. All concrete for slabs and footings shall develop 3,000 PSI in 28 days.
2. All footings shall be formed to meet sizes indicated on drawings and/or details.
3. Welded-wire-mesh shall be 6x6, 10 / 10, conforming to ASTM specifications A-185.
4. Poured footings shall be placed on undisturbed soil, regardless of elevations shown or noted on drawings.
5. Concrete slabs shall be poured on 6" of compacted gravel. Finish surface with wood float. Pitch walks away from building and wet down by hose to check for proper drainage.
6. Use ½" expansion joint material abutting vertical and horizontal elements.

MASONRY WORK

1. Mortar shall be freshly prepared and uniformly mixed and shall conform to ASTM specifications 270.
2. Grout shall be of fluid consistency.
3. Masonry units shall be sound, dry, clean and free from cracks. Concrete blocks shall be grade "A" load-bearing, carefully laid up in full cement mortar joints. All exposed joints shall be carefully tooled and mortar droppings cleaned up.

FOUNDATION NOTES

1. Building footings to be 3,000 PSI, 28 day minimum concrete, 3" cover between reinforcement and earth.
2. Use ½" expansion joint material abutting walls and slabs.
3. Concrete to be 3,000 PSI, 28 day air-entrained if exposed to freezing.
4. Reinforcement bars are to be deformed per ASTM A-615, GD 60. All steel per ASTM A-36. Welded-wire-mesh per ASTM A-189. Anchor bolts per ASTM A-307.
5. Foundation wall shall be dampproof as required with one coat of asphaltic preparation. Apply over one coat of ½" cement stucco in case of concrete block walls.
6. Steel pipe columns shall be per ASTM A-501 or A-36.
7. DESIGN LOAD:
FIRST FLOOR 40 PSF Live load / 20 PSF Dead load
SECOND FLOOR 30 PSF Live load / 20 PSF Dead load
ROOF 40 PSF Live load / 10 PSF Dead load
SOIL BORING 1.5 TSF (to be verified in field.)

DOORS, WINDOWS+GLASS

1. All doors shall be equipped with hardware and shall be sealed top, bottom and all sides, operating snug and smooth.
2. Exterior doors and transoms shall be wood-framed with paint finish by Andersen Series 400 or equal (unless noted otherwise on door schedule). Doors and transoms shall have insulated, low-E glass panels, properly operating hardware and butt hinges, aluminum saddles and locks with cylinders.
3. Interior doors shall be solid-core wood doors or panel doors with trim and frames by Morgan or equal. Doors, as marked for fire-rating, shall be hollow metal with insulation or "B" label wood doors with steel frame.
4. All windows shall be Pella or equal (unless noted otherwise on window schedule) and shall be caulked and weatherstripped, sealed on all edges and surfaces and shall be operating snug and smooth. Operating windows shall be double-hung or as shown on plans and window schedule.
5. All glazing for windows shall be insulated, low-E glass panels.

PLUMBING

1. The Contractor shall provide for and install plumbing and related fixtures. All work shall comply with state and local ordinances. Terminal hookup of all fixtures is required. Contractor shall install and check all pressure reducing valves and other safety devices prior to operation of the system.
2. Provide hot and cold water supply in copper and soil and waste in PVC.
3. All plumbing fixtures to be Kohler or equal, installed in unmarred condition and protected to completion of work.
4. All plumbing work to be done by a plumber licensed to do work in the project location.
5. Individual shut-off valves at each fixture

ELECTRICAL

1. The Contractor using these drawings shall comply with all laws, ordinances and regulations bearing on the scope and conduct of the work. All work shall be installed in strict accordance with the requirements of the National Board of Fire Underwriter's Code, the local public service company, and all other authorities having jurisdiction.
2. All exterior lighting shall comply with local and state building codes.
3. All switches shall be located 4'-0" to center of plate above the finished floor, and 6" to the centerline of plate from door bucks or nearest corner, unless otherwise noted on the drawings.
4. All fluorescent lamps shall be furnished by the contractor and shall be cool white bulbs.
5. All electrical work shall be performed by an electrician licensed to do work in the project location.

FINISHES

1. All exterior walls and interior partitions shall have 1/2" thick gypsum wallboard and shall be taped, filled (three coats) and sanded smooth. Use 5/8" fire-rate gypsum wallboard in garage and as necessary for code. Provide metal corner beads and other gypsum wallboard accessories as required.
2. Ceramic tile by American Olean or equal. Color, sizes and patterns to be as directed by Owner and shall be color coordinated with plumbing fixtures.
3. All ceilings shall be 1/2" thick gypsum wallboard and 5/8" thick fire-rated wallboard in garage and utility areas or as noted.
4. Painting:

Interior Partitions:	Prime and one coat, latex flat
Interior Trim:	Prime and paint, latex semi-gloss
Wood flooring:	Three coats polyurethane
5. All painting and staining shall be of the highest quality workmanship, free of runs and sags, with straight cuts. Paint and/or stain shall be applied as recommended by the manufacturer, with all coats on any one surface by the same manufacturer.

CARPENTRY WORK

1. Framing of the entire project shall be erected plumb, level, and true, securely nailed. Joists, studs and rafters shall be doubled around all openings. All flush headers shall be connected with metal hangers.
2. Framing lumber for joists, etc. shall be douglas fir, #2, maximum moisture content at 19% on delivery, base Fb=875 PSI, Fb=1,100 PSI for repetitive members.
3. Cats, bridging, etc. to be hemlock fir, framing grade, 19% moisture content.
4. Wall sheathing, where framed out, shall be $\frac{1}{2}$ " exterior grade CDX plywood. Roof decking shall be $\frac{1}{2}$ " exterior grade CDX plywood. Subflooring shall be $\frac{3}{4}$ " tongue-and-groove, CDX plywood, minimum of 5 plies for tile and carpet, and $\frac{1}{2}$ " CDX plywood, minimum of 3 plies for hardwood flooring. Plywood to be glued and screwed to structure.
5. All wood which comes in contact with concrete or masonry or which is exposed to exterior conditions shall be pressure-treated, unless otherwise specifically treated with alternate protective measures.
6. Wood blocking shall be solid and match the depth of main members. Framing shown on plans is for structural purposes only. All blocking and members required by applicable code(s) are in addition to members shown.
7. Bridging on all floor joists shall be at intervals not to exceed 8'-0" spans.
8. Siding shall be per elevations.
9. Interior trim shall be stock sections and shall be neatly fitted, mitered and complete.

PROOF NOTES

1. All posts to rafters to bear on posts below or beams as indicated on plans to solid bearing below.
2. Provide aluminum gutters and leaders as required. Connect leaders to drywell.
3. Provide 2"x6" collar ties at 48" O.C. (typical). 2"x8" collar ties at 16" O.C. at tray ceilings.
4. Flash all roof/roof and all wall/roof connections. Counterflash as required (typical). Flash all chimney/roof connections. Counterflash as required.
5. NSV = Non-structural valley, 2"x12" valley plate.
6. Provide Ice and water shield, minimum 3' at all eaves and at all valleys.

THERMAL+MOISTURE

1. Insulation shall be fiberglass batts with kraft paper backing or, in lieu of backing, 6 mil polyvinyl vapor barrier (unless noted otherwise in drawings). Provide insulation per code.

Ceiling/Roof	R-60
Exterior Walls	R-30 / 20+5ci / 13+10ci / 0+20ci
Floor	R-30
Basement Walls	R-15ci / 19 / 13+5ci
Crawl Space	R-15ci / 19 / 13+5ci
2. Properly flash roof, eaves, doors and windows with aluminum flashing, 20 oz. or self-adhesive flashing tape at head, jams & sill (sill tape to run 6" up each jamb). See details.
3. Caulk all exterior joints, including windows, doors, and in particular between dissimilar materials. Caulking shall be permanent, elastic compound capable of holding paint.

GENERAL

1. All work shall comply with state and local codes and ordinances, and shall be done to the highest standards of craftsmanship by journeymen of the respective trades.
2. The Contractor shall present the building to the owner for acceptance, clean and ready for occupancy. All glass shall be cleaned and polished, floors swept broom clean and exterior hand raked free of trash and debris.
3. The Contractor shall carry builder's risk "All Risk" insurance to cover the cost of this work and all worker's compensation as required by local requirements.
4. The Contractor shall maintain the job clear of trash and debris. All waste materials shall be removed from the site prior to substantial completion and prior to final acceptance.
5. The Contractor shall visit the site and become familiar with all conditions. All written figures (notes and dimensions) on the floor plans or specifications shall take precedence over any drawn figures (elevations). Do no scale plans. All dimensions must be verified by the contractor before starting construction. Any discrepancies on the plans or the specifications must be reported to the architect prior to starting any work.

FRAMING NOTES

1. Fasten all multiple-sawn lumber beams together with two rows of 16d nails 12" O.C., one row top and one row bottom. Fasten all multiple-laminate veneer lumber beams with two rows ½" Ø thru-bolts 16" O.C. one row 2" from bottom, and one row 2" from top.
2. Cross bridging or solid blocking is to be provided between all floor joists and ceiling joists at the following frequency:

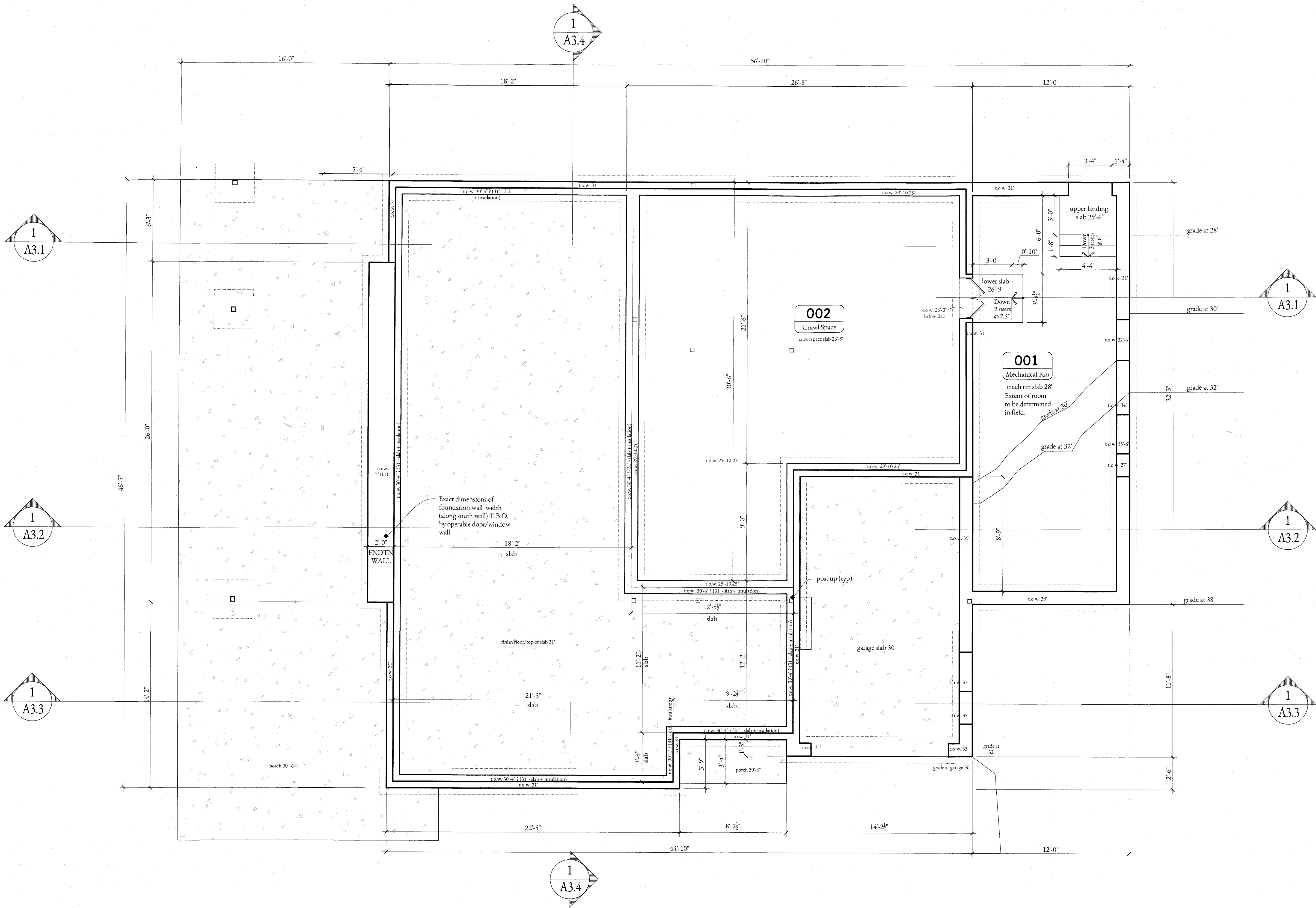
0'-8':	Not required
8'-16':	One row at mid-span
16'-24':	Two rows at ⅔ spans
3. Double all framing under parallel partitions (typical).
4. All exterior walls to be framed with 2"x6" (nominal) studs at 16" O.C. All interior walls to be framed with 2"x4" studs at 16" O.C. unless noted otherwise.
5. All 2"x ceiling joists indicated to be Douglas Fir #2 or better.
6. All ceiling and floor joists to be sized and spaced as indicated.
7. **HEADER SCHEDULE:**

Up to 4':	(2) 1½"x9½" LVL
4' to 8':	(2) 1½"x11½" LVL
8' to 12':	(3) 1¼"x11½" LVL
8. Windows to be Andersen Series 400 Wood units, with pop-in grilles. See plans and elevations for sizes.

SCALE

Foundation Plan

1/4" = 1' - 0"



DRAWING LEGEND

Wall, wood stud UON

Profile above

Window (Double-hung, casement or fixed)

Door, swinging

Door, bifold

Door, pocket - casd opening

Door, surface mounted slider (barn-style)

Millwork & custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD

To Be Determined

UON

Unless Otherwise Noted

TYP

Typical

EX

Existing

WIC

Walk-in Closet

BRIDGER AAD

ARCHITECTURE - APPROVALS - DEVELOPMENT

320 Post Road, #180-200, Darien CT 06820

connect@bridgerAAD.com | (203) 680-8142

bridgerAAD.com

VISIT WEBSITE

Mark this building. Address: CT 06820 / 20 (Photos)

PROGRESS SET - NOT FOR CONSTRUCTION

Date: 2025/02/28

Revisions: ---

Project: 24-36DOC

New Private Residence for Robert & Dhuane Stephens

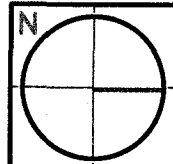
New Residence

36 Dock Road

Norwalk, CT 06854

A1.0

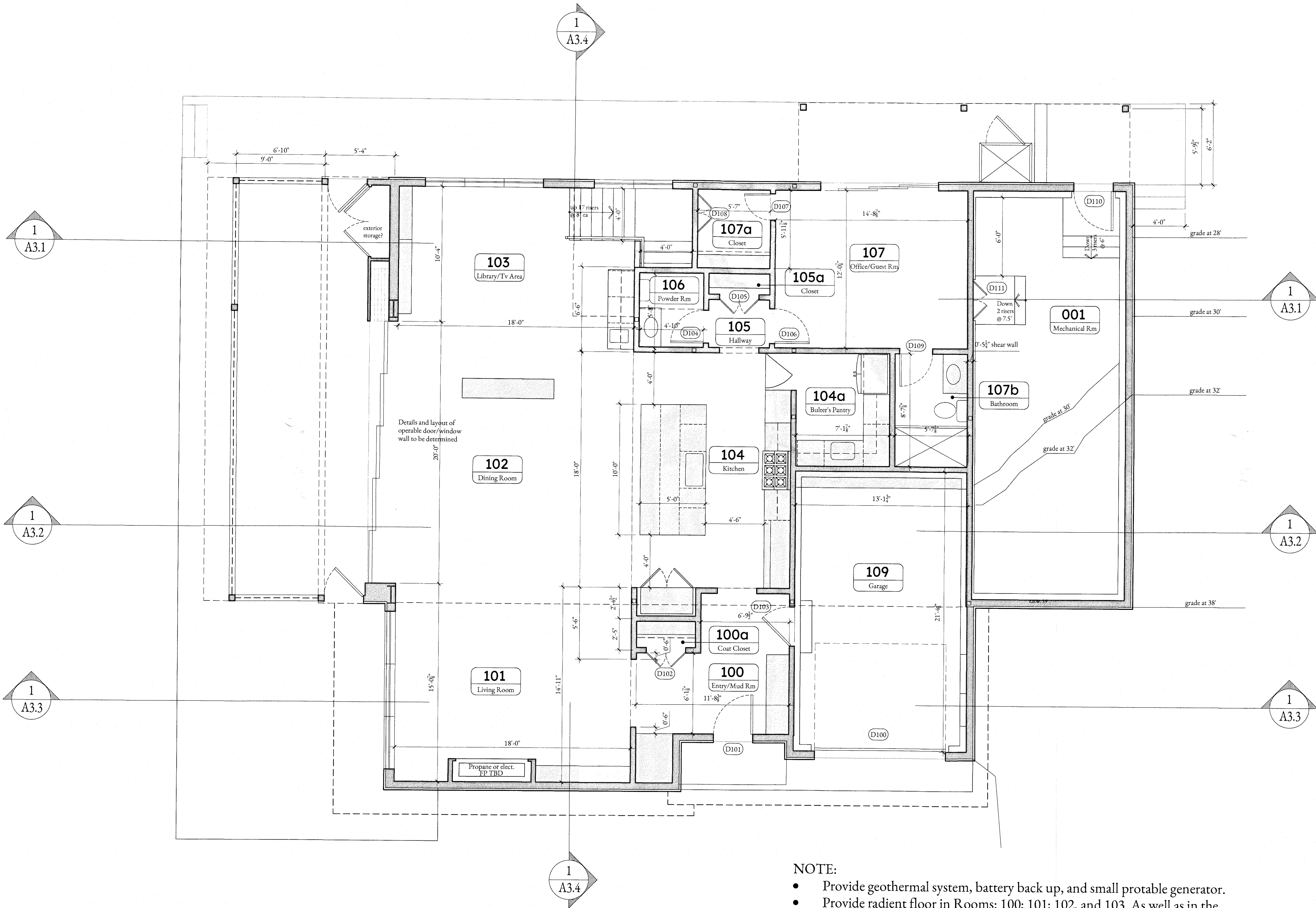
Page 28 of 1735



SCALE

First Floor Plan

1/4" = 1' - 0"



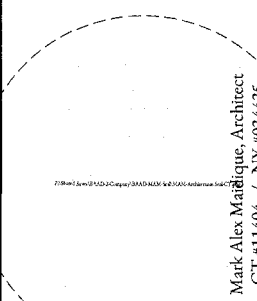
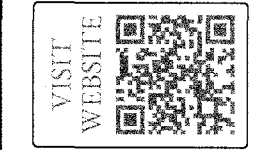
- NOTE:
- Provide geothermal system, battery back up, and small portable generator.
 - Provide radiant floor in Rooms: 100; 101; 102, and 103. As well as in the Garage 109 and Mechanical Room 001
 - Provide driveway melt.

DRAWING LEGEND

	Wall, wood stud UON
	Profile above
	Window (Double-hung, casement or fixed)
	Door, swinging
	Door, bifold
	Door, pocket - cased opening
	Door, surface mounted slider (barn-style)
	Millwork and custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD	To Be Determined
UON	Unless Otherwise Noted
TYP	Typical
EX	Existing
WIC	Walk-in Closet

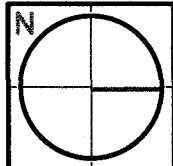


PROGRESS SET - NOT FOR CONSTRUCTION

New Private Residence for Robert & Dhuane Stephens
New Residence
36 Dock Road
Norwalk, CT 06854

Date
2025/02/28
Revisions
Project
24-36DOC

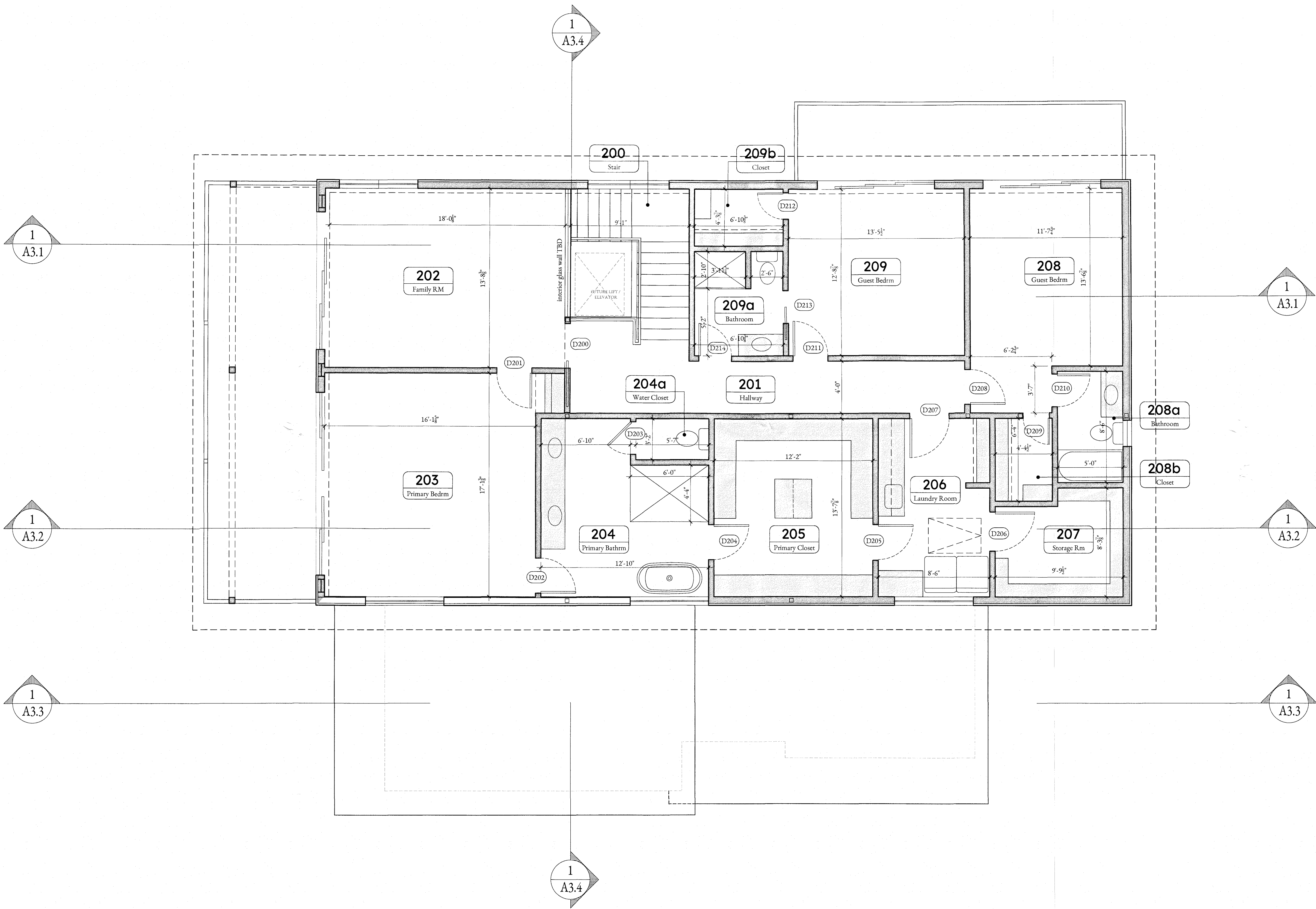
A1.1



Second Floor Plan

SCALE

1/4" = 1' - 0"



DRAWING LEGEND

	Wall, wood stud UON
	Profile above
	Window (Double-hung, casement or fixed)
	Door, swinging
	Door, bifold
	Door, pocket - cased opening
	Door, surface mounted slider (barn-style)
	Millwork & custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD	To Be Determined
UON	Unless Otherwise Noted
TYP	Typical
EX	Existing
WIC	Walk-in Closet

PROGRESS SET - NOT FOR CONSTRUCTION

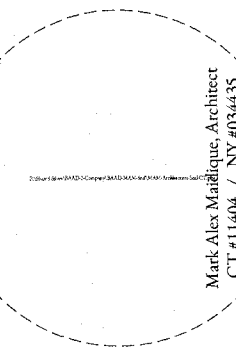
New Private Residence for Robert & Dhuane Stephens
New Residence
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Date: 2025/02/28
Revisions: ----
Project: 24-36DOC

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bridgerAAD.com

VISIT WEBSITE

Mark Allen Mathias, Architect
CT #11606 NY #000453



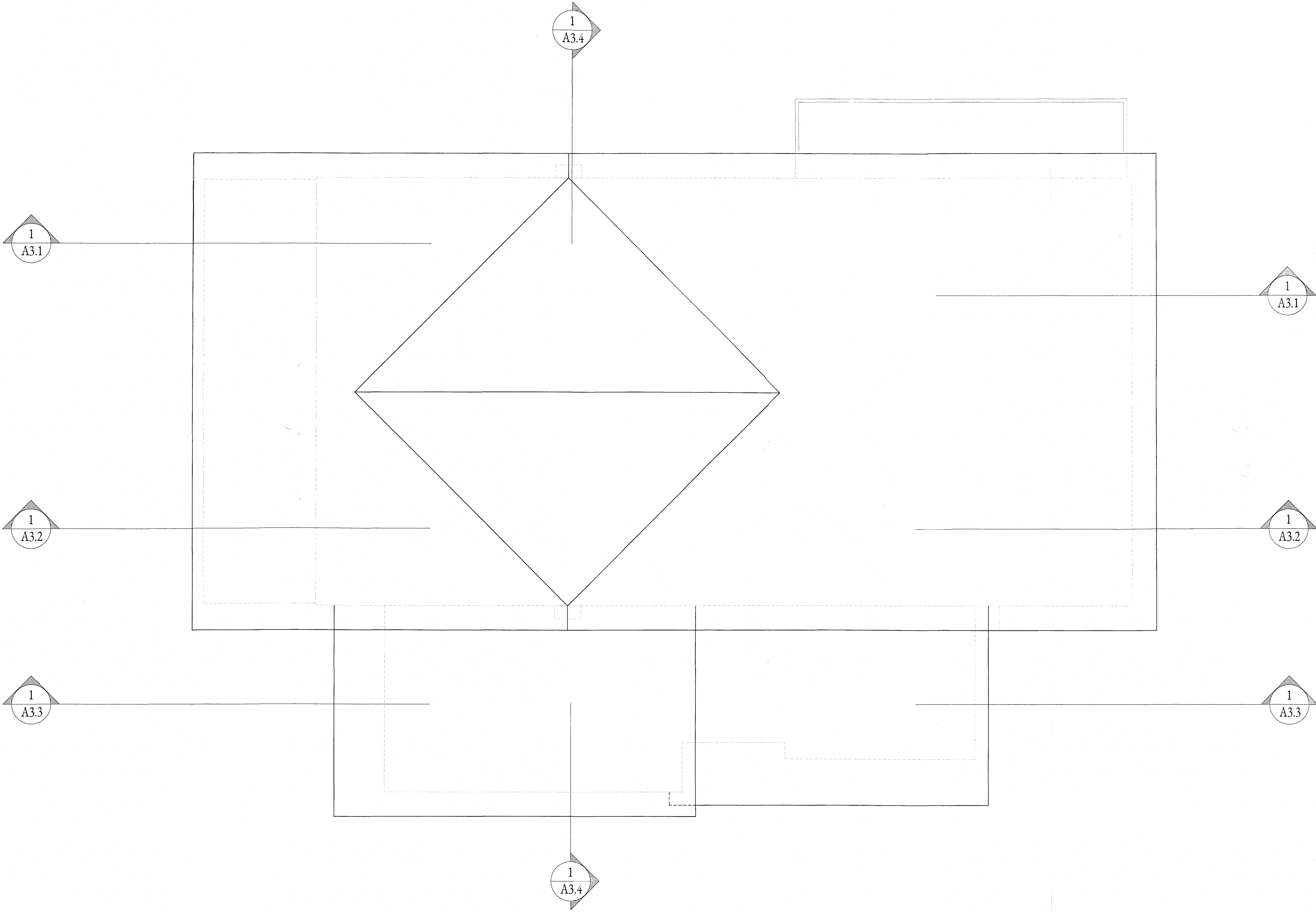
A1.2

N

SCALE

Roof Plan

1/4" = 1' - 0"



ABBREVIATIONS	
TBD	To Be Determined
UON	Unless Otherwise Noted
TYP	Typical
EX	Existing
WIC	Walk-in Closet

DRAWING LEGEND	
	Wall, wood stud UON
	Profile above
	Window (Double-hung, casement or fixed)
	Door, swinging
	Door, bifold
	Door, pocket - cased opening
	Door, surface mounted slider (barn-style)
	Millwork & custom built-ins (design by others) shown shaded.

PROGRESS SET - NOT FOR CONSTRUCTION

A1.3

Date
2025/02/28

Revisions

Project
24-36DOC

New Private Residence for Robert & Dhuane Stephens

New Residence

36 Dock Road

Norwalk, CT 06854

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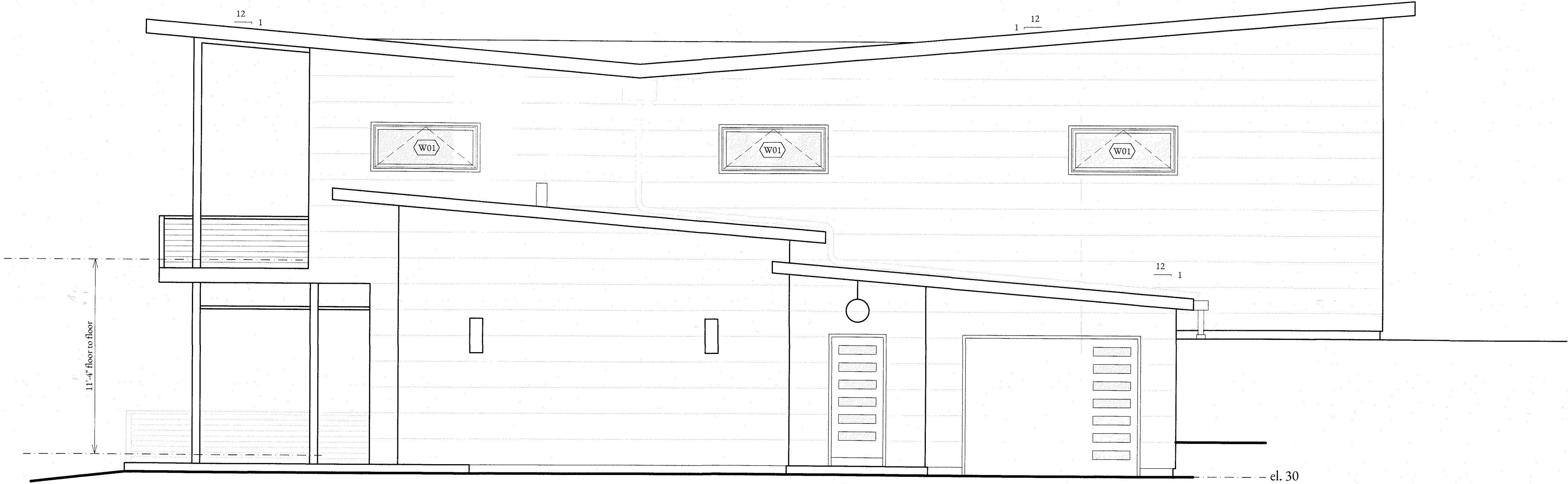
Mark Aida Wallace, Architect

CT #11049 / NY #04045

SCALE

1/4" = 1' - 0"

East Elevation



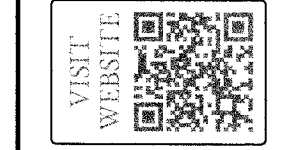
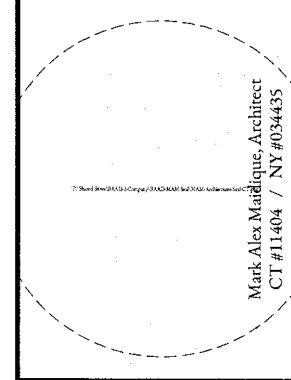
PROGRESS SET - NOT FOR CONSTRUCTION

A2.1

Date
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Revisions

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West Elevation

SCALE 1/4" = 1' - 0"



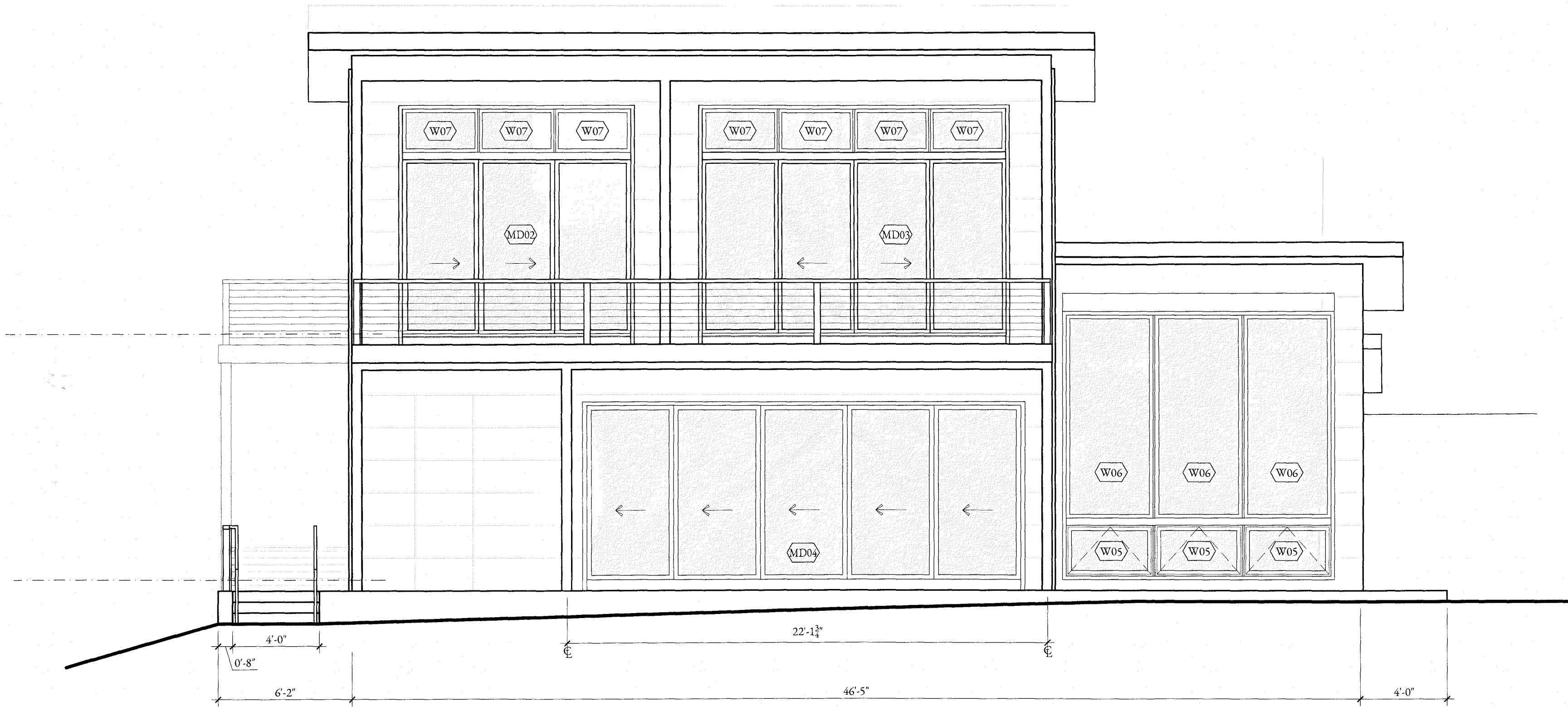
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A2.2	Date 2025/02/28	New Private Residence for Robert & Dhuane Stephens
	Revisions -----	New Residence 36 Dock Road Norwalk, CT 06854
	Project 24-36DOC	

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South Elevation

SCALE1/4" = 1' - 0"



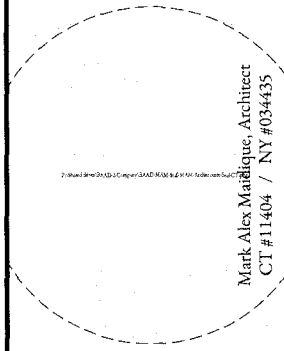
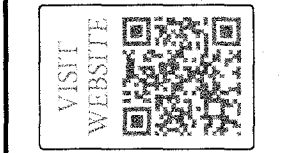
PROGRESS SET - NOT FOR CONSTRUCTION

A2.3

New Private Residence for Robert & Dhuane Stephens
New Residence
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Norwalk, CT 06854

Date
2025/02/28
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Project
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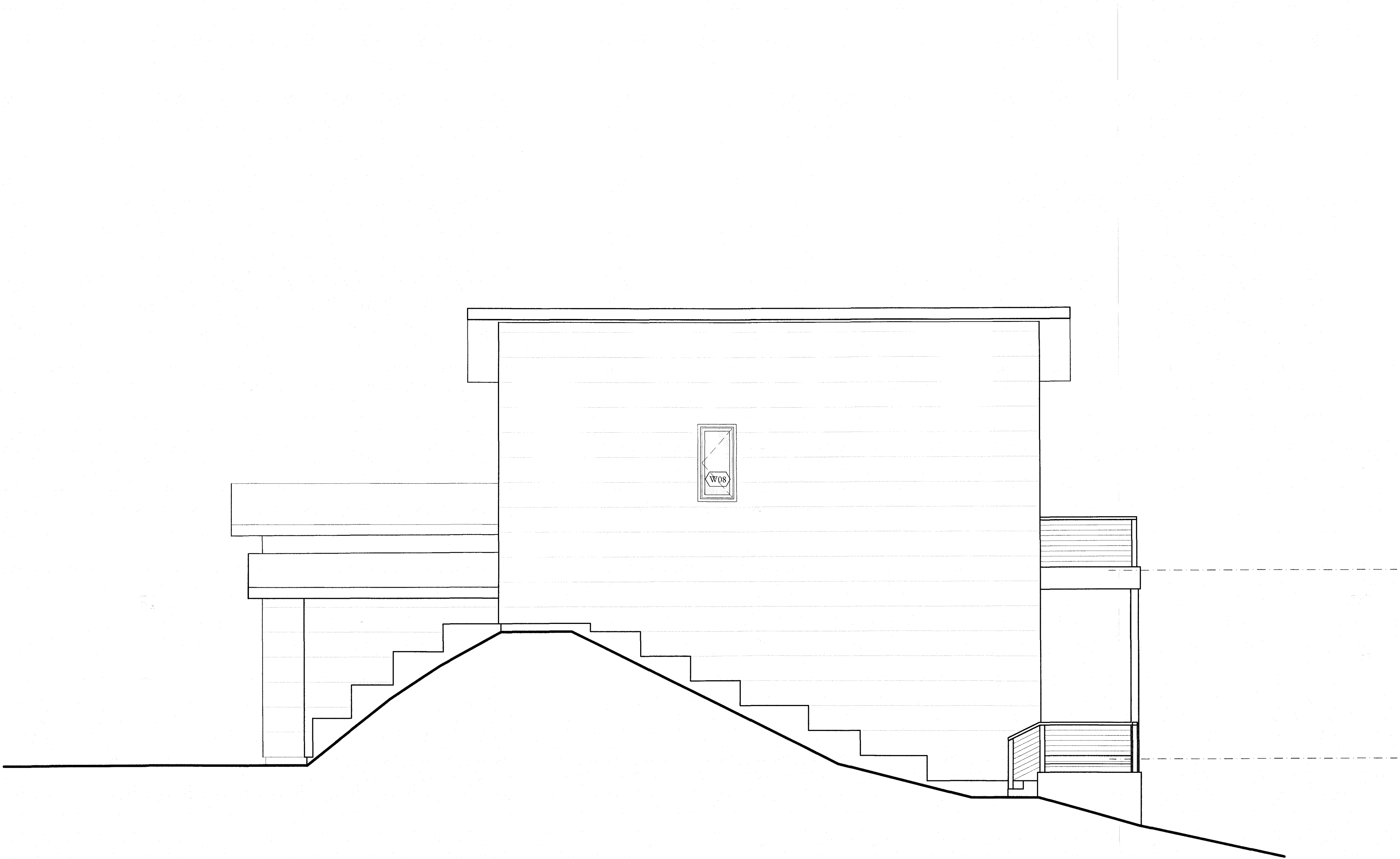


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SCALE

North Elevation

1/4" = 1' - 0"



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A2.4	Date 2025/02/28 Revisions ---- Project 24-36DOC	New Private Residence for Robert & Dhuane Stephens New Residence 36 Dock Road Norwalk, CT 06854	
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Building Section
SCALE 3/8" = 1' - 0"

PROGRESS SET - NOT FOR CONSTRUCTION

A3.1

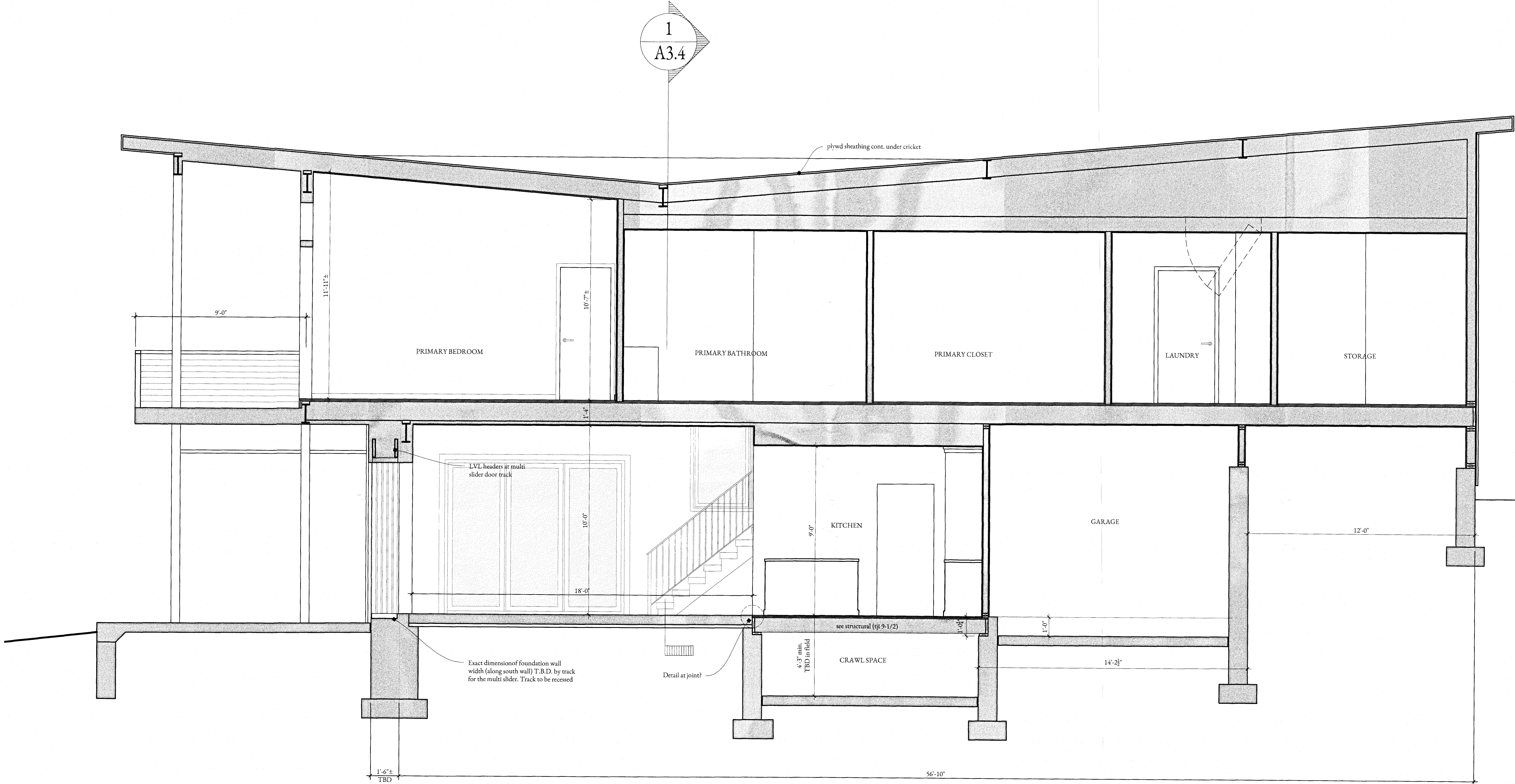
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New Private Residence for Robert & Dhuane Stephens
New Residence
36 Dock Road
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Building Section
SCALE 3/8" = 1' - 0"

PROGRESS SET - NOT FOR CONSTRUCTION

A3.2

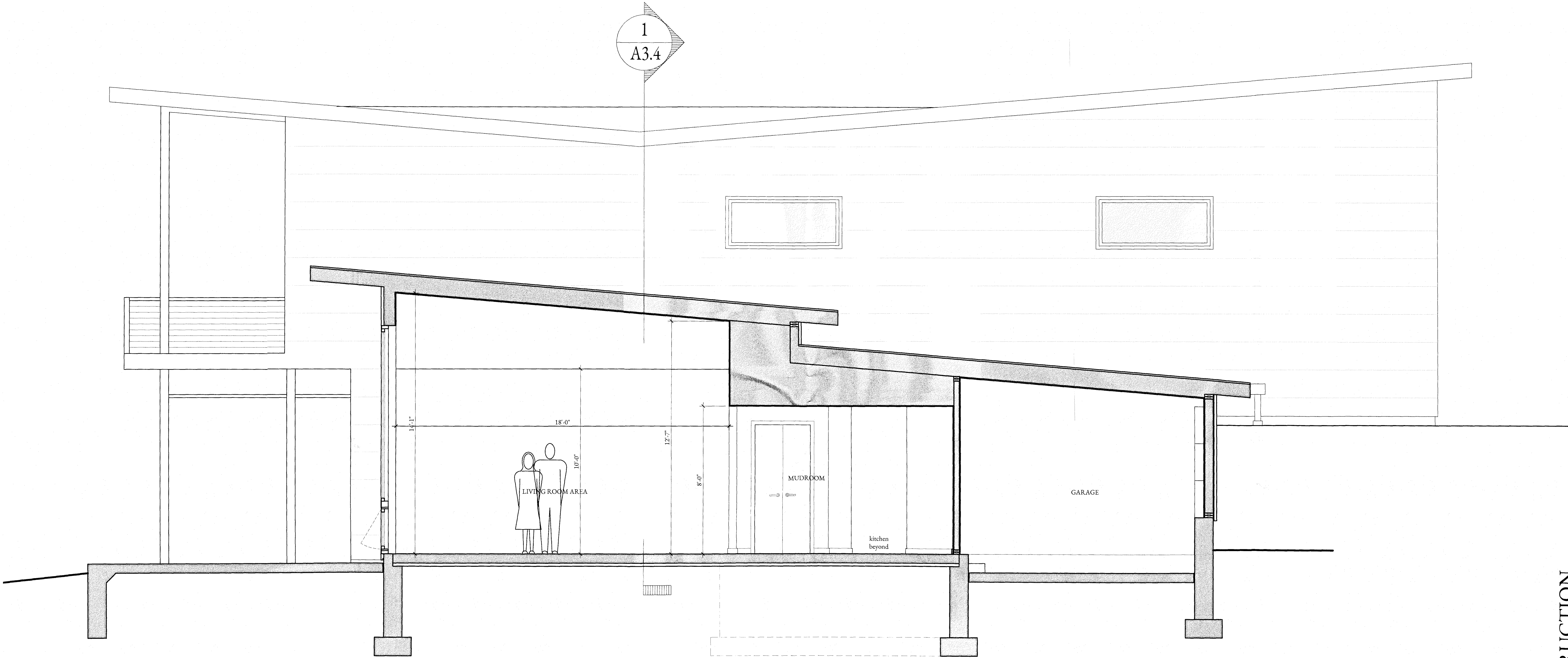
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New Private Residence for Robert & Dhuane Stephens
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Mark Allen Architects
CT 06854 / NY 06854

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Building Section

SCALE

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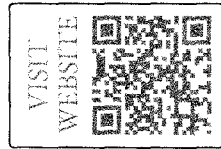
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A3.3

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New Residence
36 Dock Road
Norwalk, CT 06854



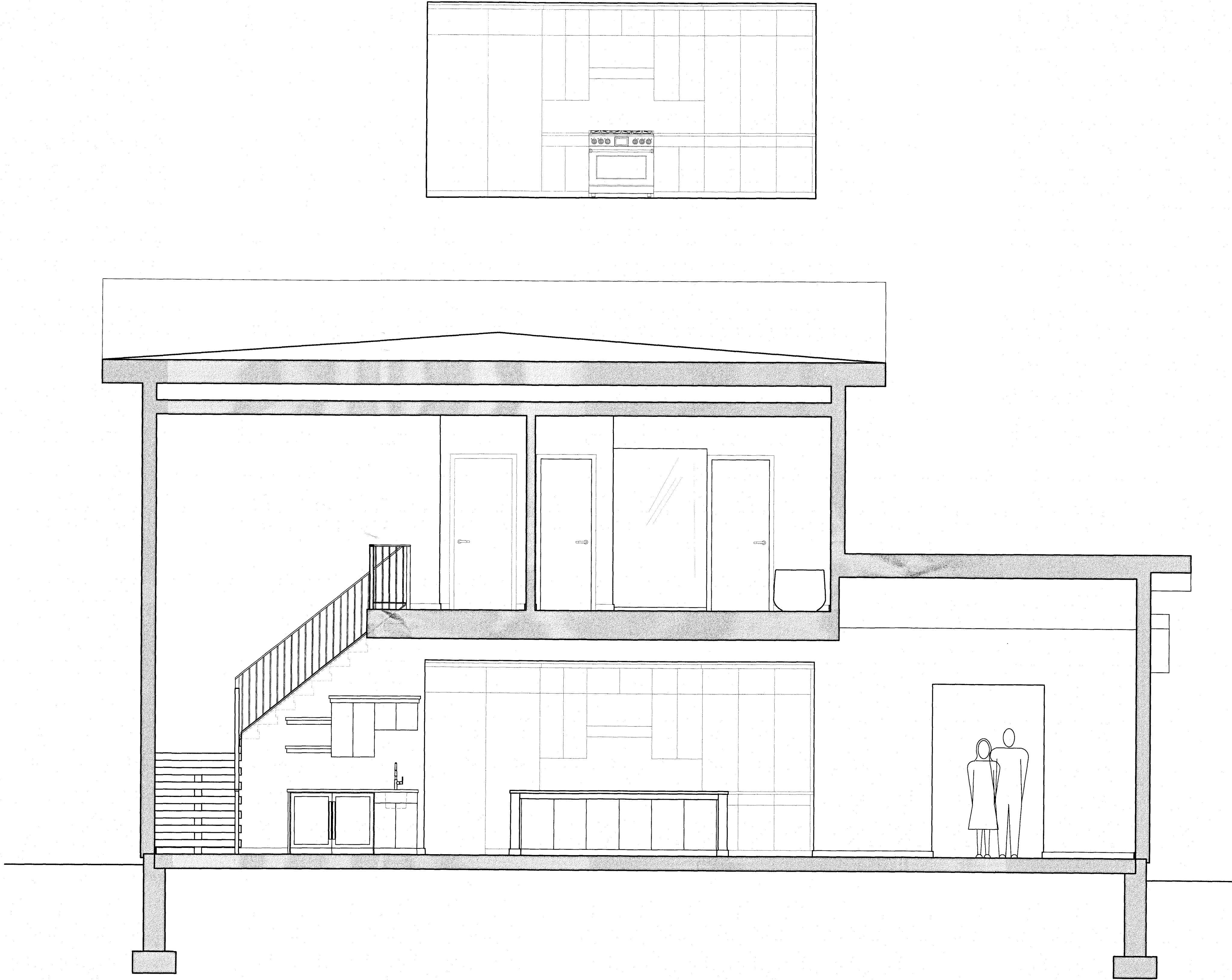
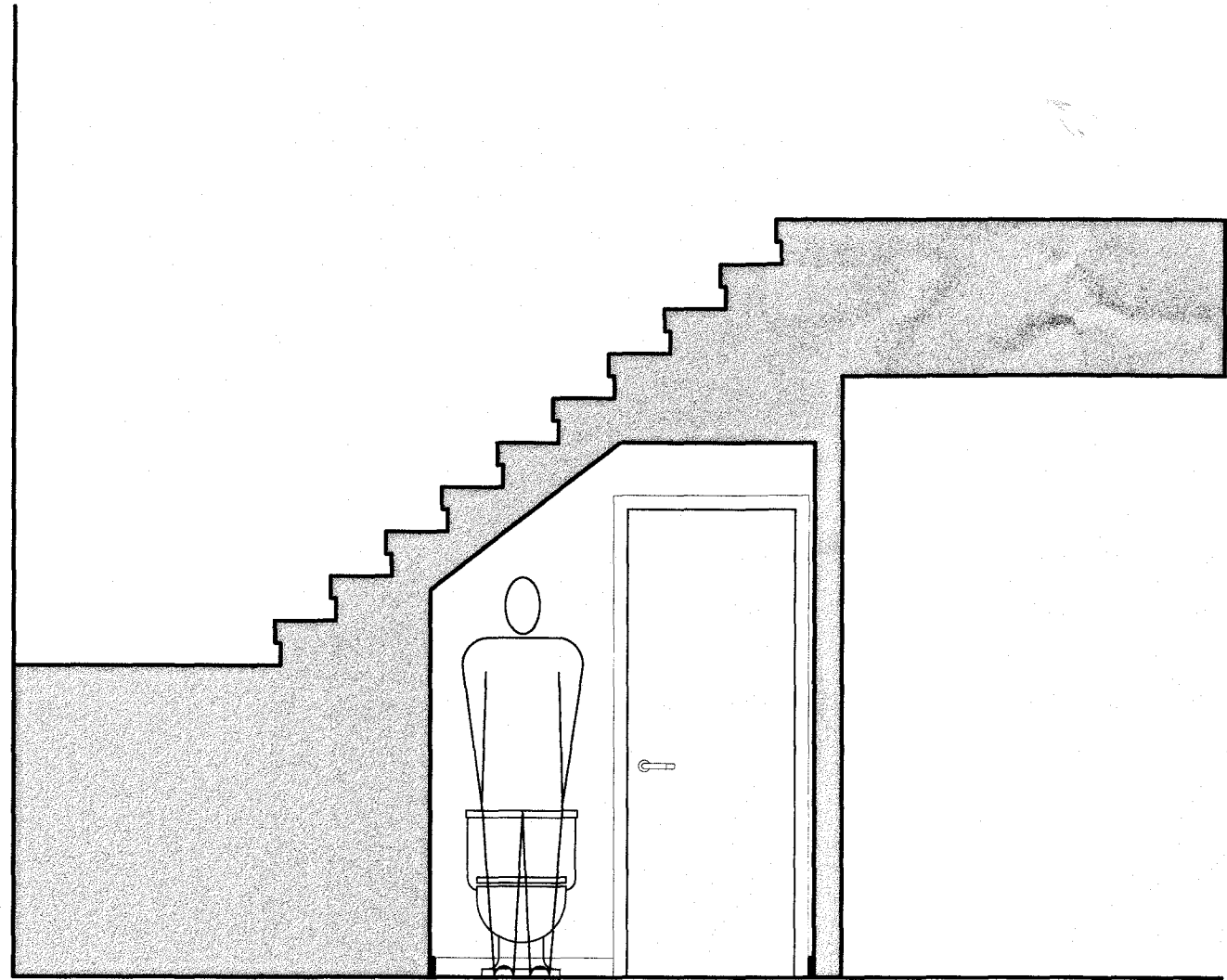
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SCALE

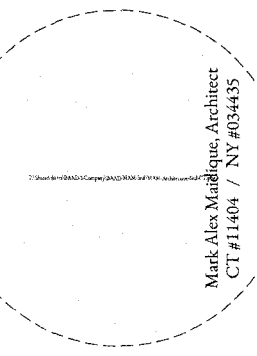
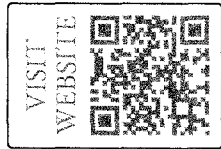
3/8" = 1' - 0"

Building Section

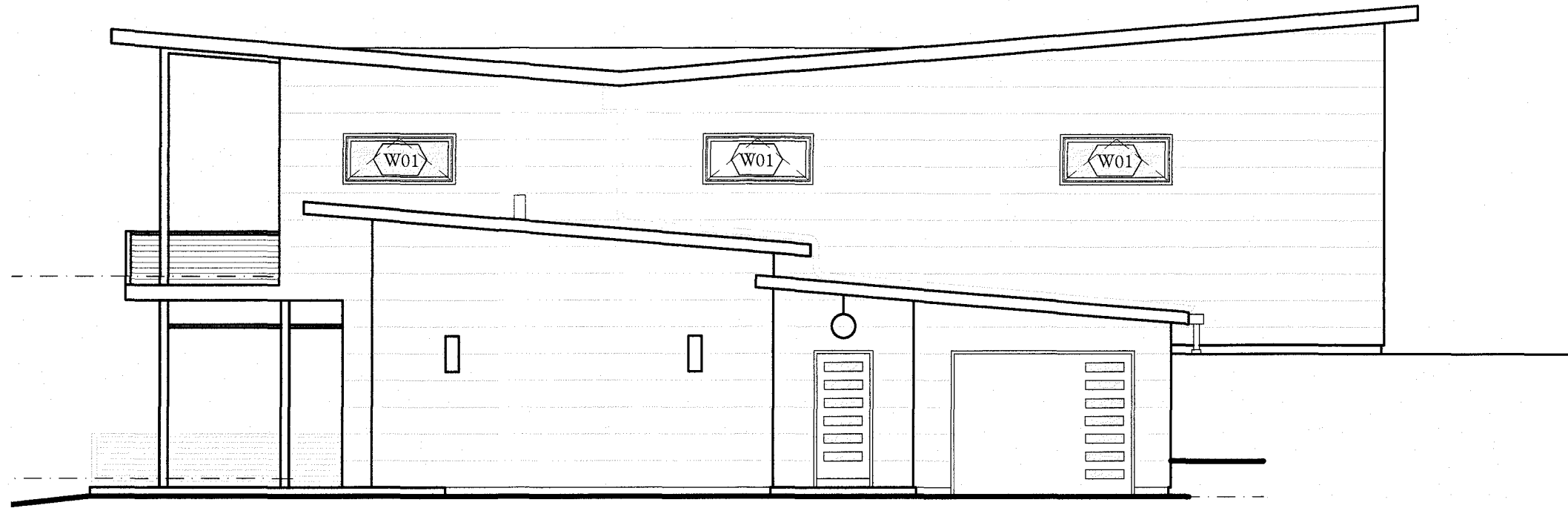


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A3.4	Date 2025/02/28	Revisions ---	Project 24-36DOC	New Private Residence for Robert & Dhuane Stephens New Residence 36 Dock Road Norwalk, CT 06854	
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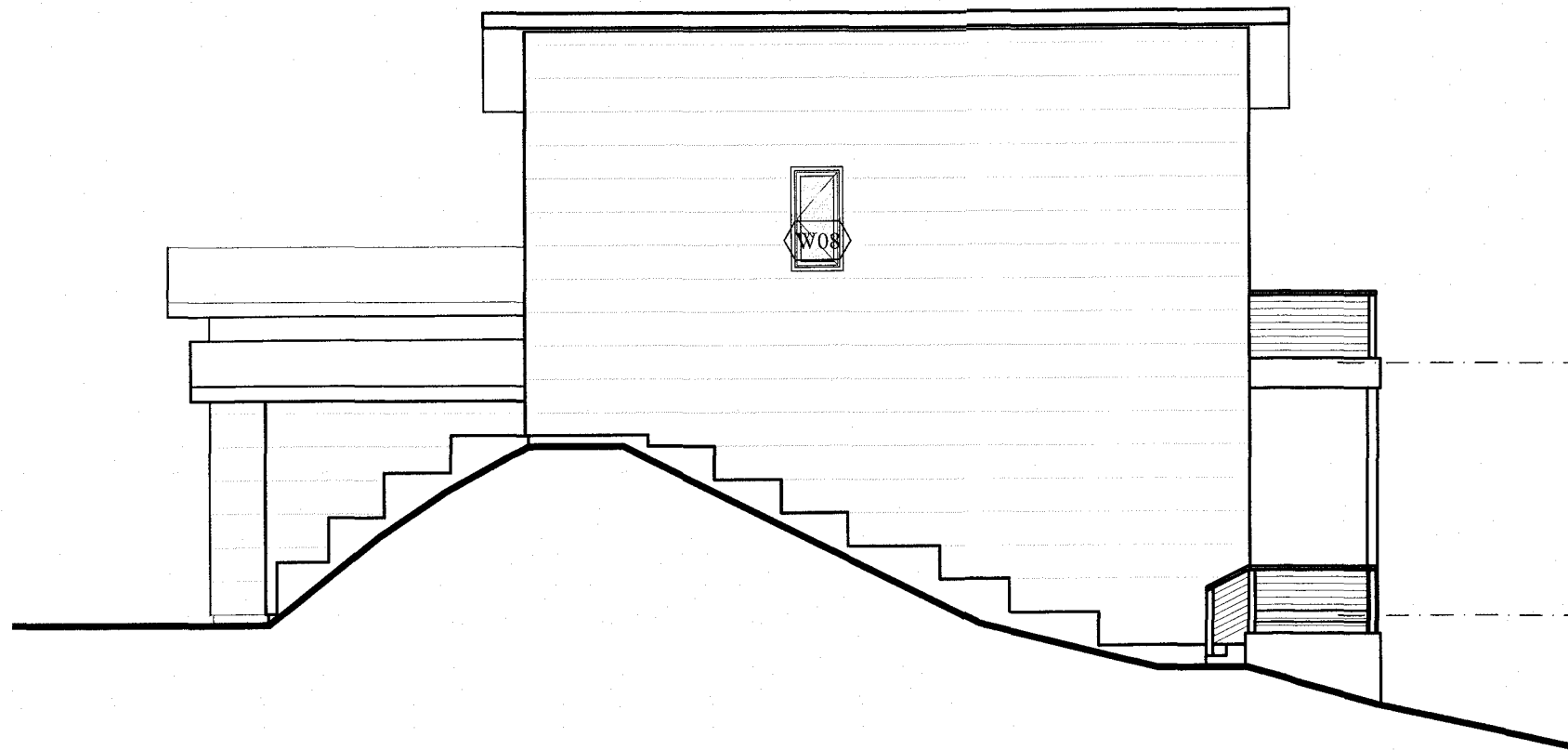
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East Elevation



West Elevation



North Elevation



South Elevation

[illegible]



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Building Code Information :

2022 Connecticut State Building Code
(with State of CT 2022 Amendments)

2021 International Building Code
2017 ICC/ANSI A117.1 Accessible and Usable Buildings
and Facilities

2021 International Existing Building Code
2021 International Plumbing Code
2021 International Mechanical Code
2021 International Energy Conservation Code
2020 NFPA 70, National Electrical Code, of the National Fire Protection Association Inc.
2021 International Swimming Pool and Spa Code
2021 International Residential Code

*Note: All construction to meet or exceed all State & Local Building Codes & Regulations.

Drawing Sheet List :

Sheet No. Sheet Title

Architectural Drawings :

Main House

A0.1 Concept Site Plan & Location Map

A1.0 Floor Plan: Foundation
A1.1 Floor Plan: First Floor
A1.2 Floor Plan: Second Floor
A1.3 Roof Plan

A2.1 Exterior Elevation- East
A2.2 Exterior Elevation- West
A2.3 Exterior Elevation- South
A2.3 Exterior Elevation- North
A3.1 Building Section - Longitudinal
A3.2 Building Section - Longitudinal
A3.3 Building Section - Longitudinal
A3.4 Building Section - Ladtitudinal

A4.1 Window Schedule
A4.2 Door Schedule

A5.1 RCP/Lighting & Power: First Floor
A5.2 RCP/Lighting & Power: Second Floor

A6.1 Interior Elevations (reference only)
A6.2 Interior Elevations (reference only)

New Private Residence for Robert & Dhuane
Stephens

New Residence

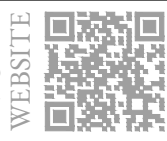
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Drawn
2025/02/28

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2025/04/28

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COVER

SITE WORK J

- Strip site of existing topsoil and stockpile for re-use in landscaping. All trees, so designated, shall be protected from damage from construction processes and machines.
- Excavate fill and regrade site to finish grades noted on plans. Spread uniform layer of existing topsoil over entire regraded area. Provide fences, barricades, and/or lights around all open trenches, excavations and other hazards.
- Backfilling operations are the responsibility of the contractor. Foundation walls shall be adequately braced before backfilling. All backfill materials shall be approved granular materials compacted to 90% proctor density.
- Rough grade around the building to an elevation 6" below the proposed finished grades. Stockpiled topsoil shall be screened to remove all stones, roots, branches, etc. and shall be spread over all disturbed earth areas to a minimum depth of 6". Any remaining topsoil shall be left for the Owner's use.
- Provide 4" perforated foundation drain in 12" crushed stone or gravel with a layer of salt hay over.
- Grade for driveway with 4" Item-4 and 2-course bitumen surface.
- Provide concrete walks, patios and/or other site amenities as part of the "Concrete" section.

CONCRETE WORK K

- All concrete for slabs and footings shall develop 3,000 PSI in 28 days.
- All footings shall be formed to meet sizes indicated on drawings and/or details.
- Welded-wire-mesh shall be 6x6, 10 / 10, conforming to ASTM specifications A-185.
- Poured footings shall be placed on undisturbed soil, regardless of elevations shown or noted on drawings.
- Concrete slabs shall be poured on 6" of compacted gravel. Finish surface with wood float. Pitch walks away from building and wet down by hose to check for proper drainage.
- Use ½" expansion joint material abutting vertical and horizontal elements.

MASONRY WORK L

- Mortar shall be freshly prepared and uniformly mixed and shall conform to ASTM specifications 270.
- Grout shall be of fluid consistency.
- Masonry units shall be sound, dry, clean and free from cracks. Concrete blocks shall be grade "A" load-bearing, carefully laid up in full cement mortar joints. All exposed joints shall be carefully tooled and mortar droppings cleaned up.

FOUNDATION NOTES M

- Building footings to be 3,000 PSI, 28 day minimum concrete, 3" cover between reinforcement and earth.
- Use ½" expansion joint material abutting walls and slabs.
- Concrete to be 3,000 PSI, 28 day air-entrained if exposed to freezing.
- Reinforcement bars are to be deformed per ASTM A-615, GD 60. All steel per ASTM A-36. Welded-wire-mesh per ASTM A-189. Anchor bolts per ASTM A-307.
- Foundation wall shall be dampproof as required with one coat of ashpaltic preparation. Apply over one coat of ½" cement stucco in case of concrete block walls.
- Steel pipe columns shall be per ASTM A-501 or A-36.
- DESIGN LOAD:

FIRST FLOOR	40 PSF Live load / 20 PSF Dead load
SECOND FLOOR	30 PSF Live load / 20 PSF Dead load
ROOF	40 PSF Live load / 10 PSF Dead load
SOIL BORING	1.5 TSF (to be verified in field.)

DOORS, WINDOWS+GLASS F

- All doors shall be equipped with hardware and shall be sealed top, bottom and all sides, operating snug and smooth.
- Exterior doors and transoms shall be wood-framed with paint finish by Andersen Series 400 or equal (unless noted otherwise on door schedule). Doors and transoms shall have insulated, low-E glass panels, properly operating hardware and butt hinges, aluminum saddles and locks with cylinders.
- Interior doors shall be solid-core wood doors or panel doors with trim and frames by Morgan or equal. Doors, as marked for fire-rating, shall be hollow metal with insulation or "B" label wood doors with steel frame.
- All windows shall be Pella or equal (unless noted otherwise on window schedule) and shall be caulked and weatherstripped, sealed on all edges and surfaces and shall be operating snug and smooth. Operating windows shall be double-hung or as shown on plans and window schedule.
- All glazing for windows shall be insulated, low-E glass panels.

PLUMBING G

- The Contractor shall provide for and install plumbing and related fixtures. All work shall comply with state and local ordinances. Terminal hookup of all fixtures is required. Contractor shall install and check all pressure reducing valves and other safety deviced prior to operation of the system.
- Provide hot and cold water supply in copper and soil and waste in PVC.
- All plumbing fixtures to be Kohler or equal, installed in unmarred condition and protected to completion of work.
- All plumbing work to be done by a plumber licensed to do work in the project location.
- Individual shut-off valves at each fixture

ELECTRICAL H

- The Contractor using these drawings shall comply with all laws, ordinances and regulations bearing on the scope and conduct of the work. All work shall be installed in strict accordance with the requirements of the National Board of Fire Underwriter's Code, the local public service company, and all other authorities having juristicition.
- All exterior lighting shall comply with local and state building codes.
- All switches shall be located 4'-0" to center of plate above the finished floor, and 6" to the centerline of plate from door bucks or nearest corner, unless otherwise noted on the drawings.
- All flourescent lamps shall be furnished by the contractor and shall be cool white bulbs.
- All electrical work shall be performed by an electrician licensed to do work in the project location.

FINISHES I

- All exterior walls and interior partitions shall have ½" thick gypsum wallboard and shall be taped, filled (three coats) and sanded smooth. Use ⅝" fire-rate gypsum wallboard in garage and as necessary for code. Provide metal corner beads and other gypsum wallboard accessories as required.
- Ceramic tile by American Olean or equal. Color, sizes and patterns to be as directed by Owner and shall be color coordinated with plumbing fixtures.
- All ceilings shall be ½" thick gypsum wallboard and ⅝" thick fire-rated wallboard in garage and utility areas or as noted.
- Painting:

Interior Partitions:	Prime and one coat, latex flat
Interior Trim:	Prime and paint, latex semi-gloss
Wood flooring:	Three coats polyurethane
- All painting and staining shall be of the highest quality workmanship, free of runs and sags, with straight cuts. Paint and/or stain shall be applied as recommended by the manufacturer, with all coats on any one surface by the same manufacturer.

CARPENTRY WORK C

- Framing of the entire project shall be erected plumb, level, and true, securely nailed. Joists, studs and rafters shall be doubled around all openings. All flush headers shall be connected with metal hangers.
- Framing lumber for joists, etc. shall be douglas fir, #2, maximum moisture content at 19% on delivery, base Fb=875 PSI, Fb=1,100 PSI for repetitive members.
- Cats, bridging, etc. to be hemlock fir, framing grade, 19% moisture content.
- Wall sheathing, where framed out, shall be ½" exterior grade CDX plywood. Roof decking shall be ½" exterior grade CDX plywood. Subflooring shall be ¾" tongue-and-groove, CDX plywood, minimum of 5 plies for tile and carpet, and ½" CDX plywood, minimum of 3 plies for hardwood flooring. Plywood to be glued and screwed to structure.
- All wood which comes in contact with concrete or masonry or which is exposed to exterior conditions shall be pressure-treated, unless otherwise specifically treated with alternate protective measures.
- Wood blocking shall be solid and match the depth of main members. Framing shown on plans is for structural purposes only. All blocking and members required by applicable code(s) are in addition to members shown.
- Briding on all floor joists shall be at intervals not to exceed 8'-0" spans.
- Siding shall be per elevations.
- Interior trim shall be stock sections and shall be neatly fitted, mitered and complete.

ROOF NOTES D

- All posts to rafters to bear on posts below or beams as indicated on plans to solid bearing below.
- Provide aluminum gutters and leaders as required. Connect leaders to drywell.
- Provide 2"x6" collar ties at 48" O.C. (typical). 2"x8" collar ties at 16" O.C. at tray ceilings.
- Flash all roof/roof and all wall/roof connections. Counterflash as required (typical). Flash all chimney/roof connections. Counterflash as required.
- NSV = Non-structural valley, 2"x12" valley plate.
- Provide Ice and water shield, minimum 3' at all eaves and at all valleys.

THERMAL+MOISTURE E

- Insulation shall be fiberglass batts with kraft paper backing or, in lieu of backing, 6 mil polyvinyl vapor barrier (unless noted otherwise in drawings). Provide insulation per code.

Ceiling/Roof	R-60
Exterior Walls	R-30 / 20+5ci / 13+10ci / 0+20ci
Floor	R-30
Basement Walls	R-15ci / 19 / 13+5ci
Crawl Space	R-15ci / 19 / 13+5ci
- Properly flash roof, eaves, doors and windows with aluminum flashing, 20 oz. or self-adhesive flashing tape at head, jambs & sill (sill tape to run 6" up each jamb). See details.
- Caulk all exterior joints, including windows, doors, and in particular between dissimilar materials. Caulking shall be permanent, elastic compound capable of holding paint.

GENERAL A

- All work shall comply with state and local codes and ordinances, and shall be done to the highest standards of craftsmanship by journeymen of the respective trades.
- The Contractor shall present the building to the owner to the owner for acceptance, clean and ready for occupancy. All glass shall be cleaned and polished, floors swept broom clean and exterior hand raked free of trash and debris.
- The Contractor shall carry builder's risk "All Risk" insurance to cover the cost of this work and all worker's compensation as required by local requirements.
- The Contractor shall maintain the job clear of trash and debris. All waste materials shall be removed from the site prior to substantial completion and prior to final acceptance.
- The Contractor shall visit the site and become familiar with all conditions. All written figures (notes and dimensions) on the floor plans or specifications shall take precedence over any drawn figures (elevations). Do no scale plans. All dimensions must be verified by the contractor before starting construction. Any discrepancies on the plans or the specifications must be reported to the architect prior to starting any work.

FRAMING NOTES B

- Fasten all multiple-sawn lumber beams together with two rows of 16d nails 12" O.C., one row top and one row bottom. Fasten all multiple-laminate veneer lumber beams with two rows ½"Ø thru-bolts 16" O.C. one row 2" from bottom, and one row 2" from top.

0'-8':	Not required
8'-16':	One row at mid-span
16'-24':	Two rows at ⅔ points
- Double all framing under parallel partitions (typical).
- All exterior walls to be framed with 2"x6" (nominal) studs at 16' O.C. All interior walls to be framed with 2"x4" studs at 16" O.C. unless noted otherwise.
- All 2"x ceiling joists indicated to be Douglas Fir #2 or better.
- All ceiling and floor joists to be sized and spaced as indicated.
- HEADER SCHEDULE:

Up to 4':	(2) 1¾"x9½" LVL
4' to 8':	(2) 1¾"x11¾" LVL
8' to 12':	(3) 1¾"x11¾" LVL
- Windows to be Andersen Series 400 Wood units, with pop-in grilles. See plans and elevations for sizes.

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New Residence

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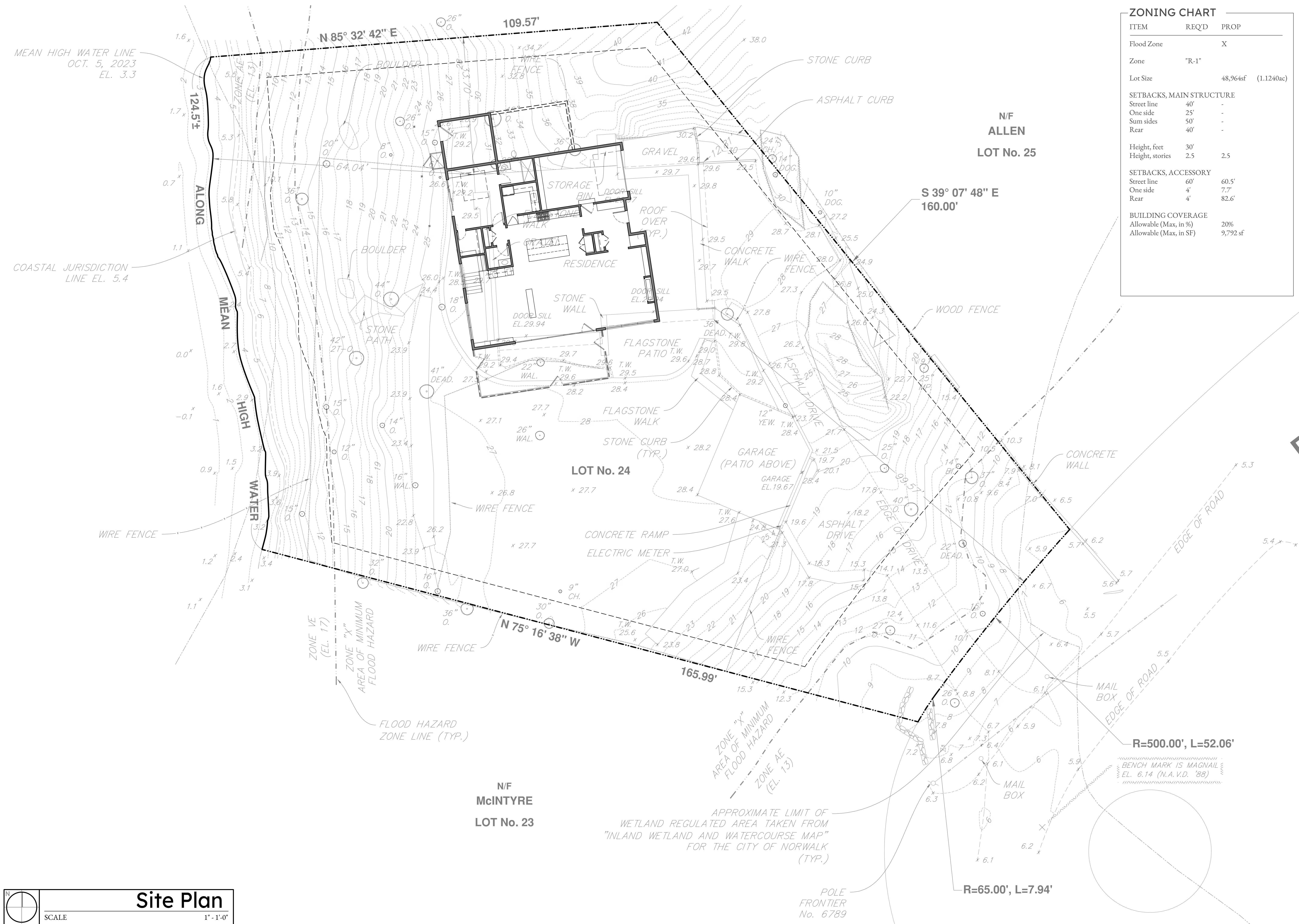
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Revisions: 2025/04/28

Project: 24-36DOC

A0.0



ZONING CHART		
ITEM	REQ'D	PROP
Flood Zone		X
Zone	"R-1"	
Lot Size		48,964sf (1.1240ac)
SETBACKS, MAIN STRUCTURE		
Street line	40'	-
One side	25'	-
Sum sides	50'	-
Rear	40'	-
Height, feet	30'	
Height, stories	2.5	2.5
SETBACKS, ACCESSORY		
Street line	60'	60.5'
One side	4'	7.7'
Rear	4'	82.6'
BUILDING COVERAGE		
Allowable (Max, in %)		20%
Allowable (Max, in SF)		9,792 sf

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	Revisions	2025/04/28	
	Project	24-36DOC	New Residence 36 Dock Road Norwalk, CT 06854

SCALE

Site Plan

1" = 1'-0"



ZONING CHART		
ITEM	REQ'D	PROP
Flood Zone		X
Zone	"R-1"	
Lot Size		48,964sf (1.1240ac)
SETBACKS, MAIN STRUCTURE		
Street line	40'	-
One side	25'	-
Sum sides	50'	-
Rear	40'	-
Height, feet	30'	
Height, stories	2.5	2.5
SETBACKS, ACCESSORY		
Street line	60'	60.5'
One side	4'	7.7'
Rear	4'	82.6'
BUILDING COVERAGE		
Allowable (Max, in %)		20%
Allowable (Max, in SF)		9,792 sf

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Mid-Alex Malique, Architect
CT #11109 / NY #01438

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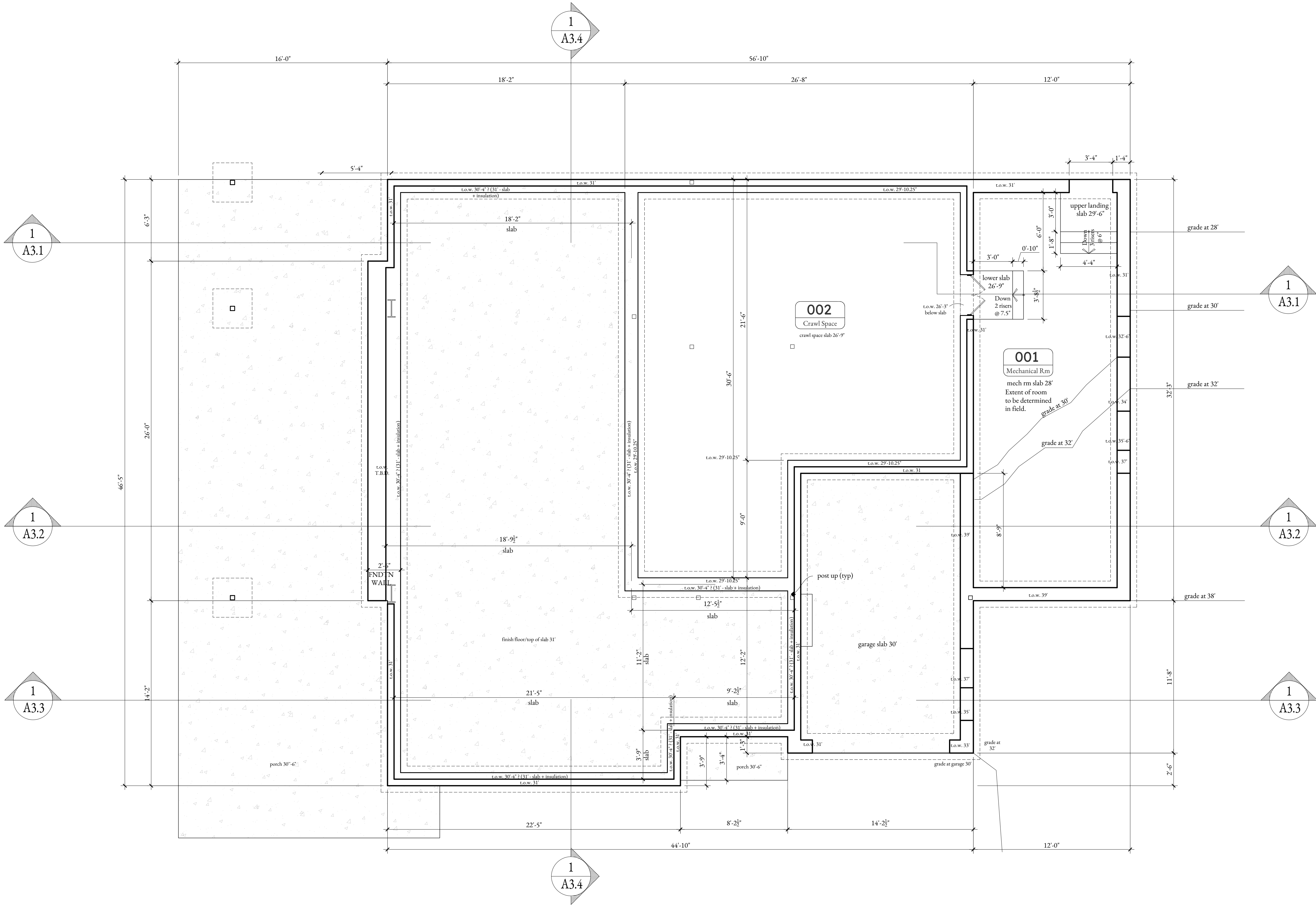
C1.1

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SCALE

Foundation Plan

1/4" = 1' - 0"



DRAWING LEGEND

Wall, wood stud UON

Profile above

Window (Double-hung, casement or fixed)

Door, swinging

Door, bifold

Door, pocket - cased opening

Door, surface mounted slider (barn-style)

Millwork & custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD

To Be Determined

UON

Unless Otherwise Noted

TYP

Typical

EX

Existing

WIC

Walk-in Closet

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CT #11189 / NY #01438

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A1.0

New Private Residence for Robert & Dhuane Stephens

New Residence

36 Dock Road

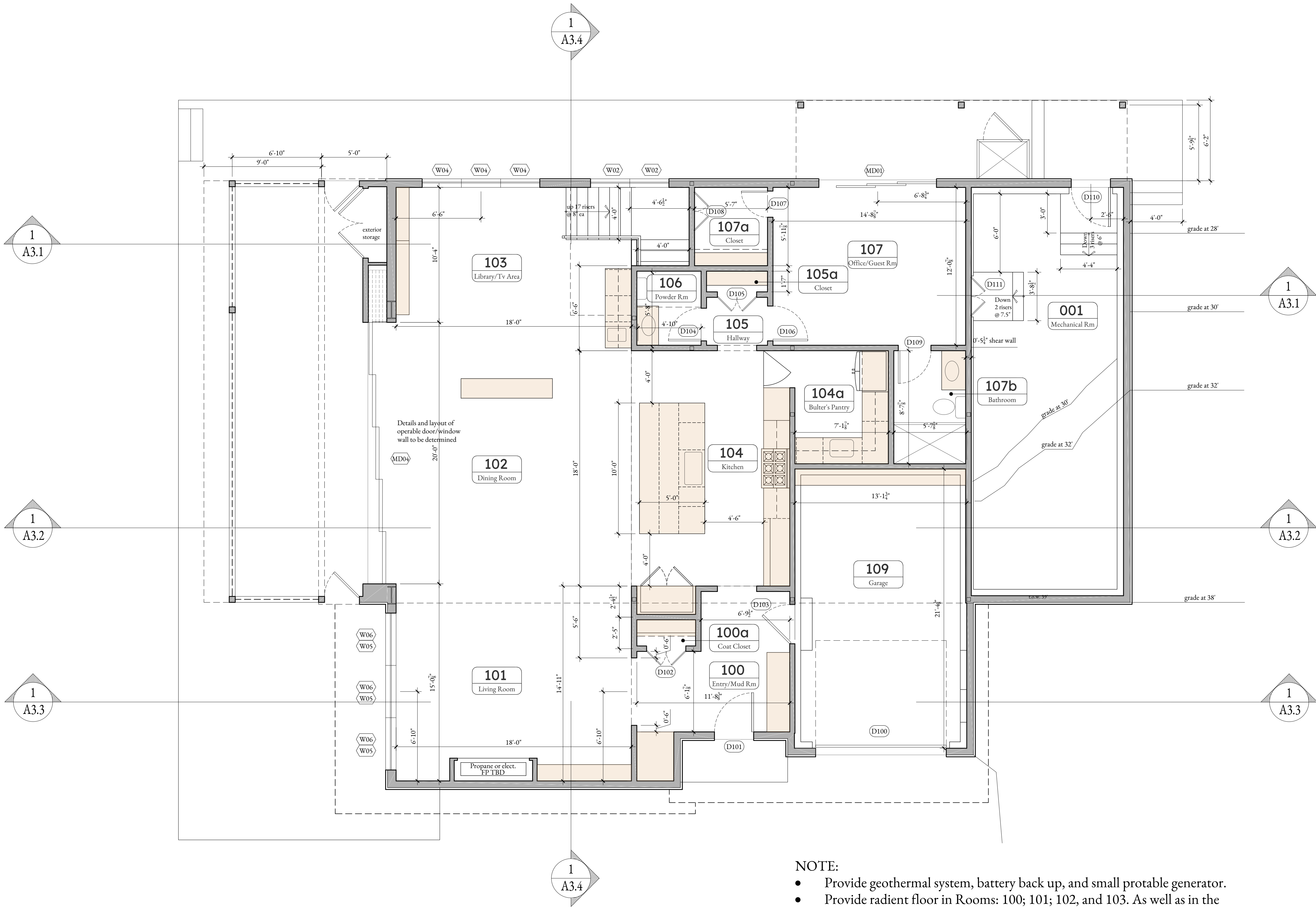
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SCALE

First Floor Plan

1/4" = 1' - 0"



- NOTE:
- Provide geothermal system, battery back up, and small protable generator.
 - Provide radiant floor in Rooms: 100; 101; 102, and 103. As well as in the Garage 109 and Mechanical Room 001
 - Provide driveway melt.

DRAWING LEGEND

Wall, wood stud UON

Profile above

Window (Double-hung, casement or fixed)

Door, swinging

Door, bifold

Door, pocket - cased opening

Door, surface mounted slider (barn-style)

Millwork & custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD

To Be Determined

UON

Unless Otherwise Noted

TYP

Typical

EX

Existing

WIC

Walk-in Closet

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Mark Alex Maidique, Architect

CT #11104 - N.Y. #01438

Date

2025/02/28

Revisions

2025/04/28

Project

24-36DOC

New Private Residence for Robert & Dhuane Stephens

New Residence

36 Dock Road

Norwalk, CT 06854

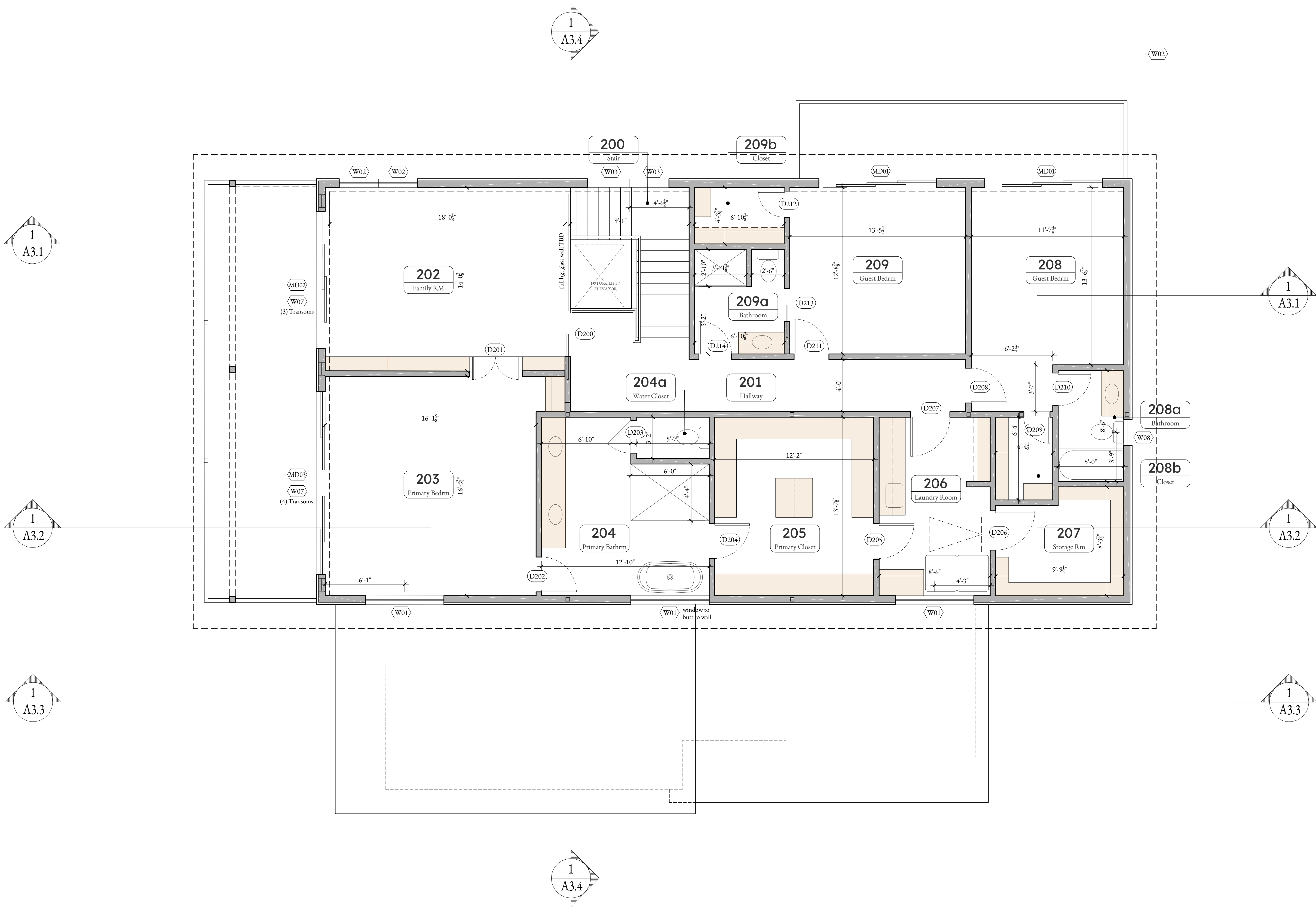
A1.1

Page 47 of 1735

SCALE

Second Floor Plan

1/4" = 1' - 0"



DRAWING LEGEND

Wall, wood stud UON

Profile above

Window (Double-hung, casement or fixed)

Door, swinging

Door, bifold

Door, pocket - cased opening

Door, surface mounted slider (barn-style)

Millwork & custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD

UON

TYP

EX

WIC

To Be Determined

Unless Otherwise Noted

Typical

Existing

Walk-in Closet

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Maidee Maidique, Architect

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A1.2

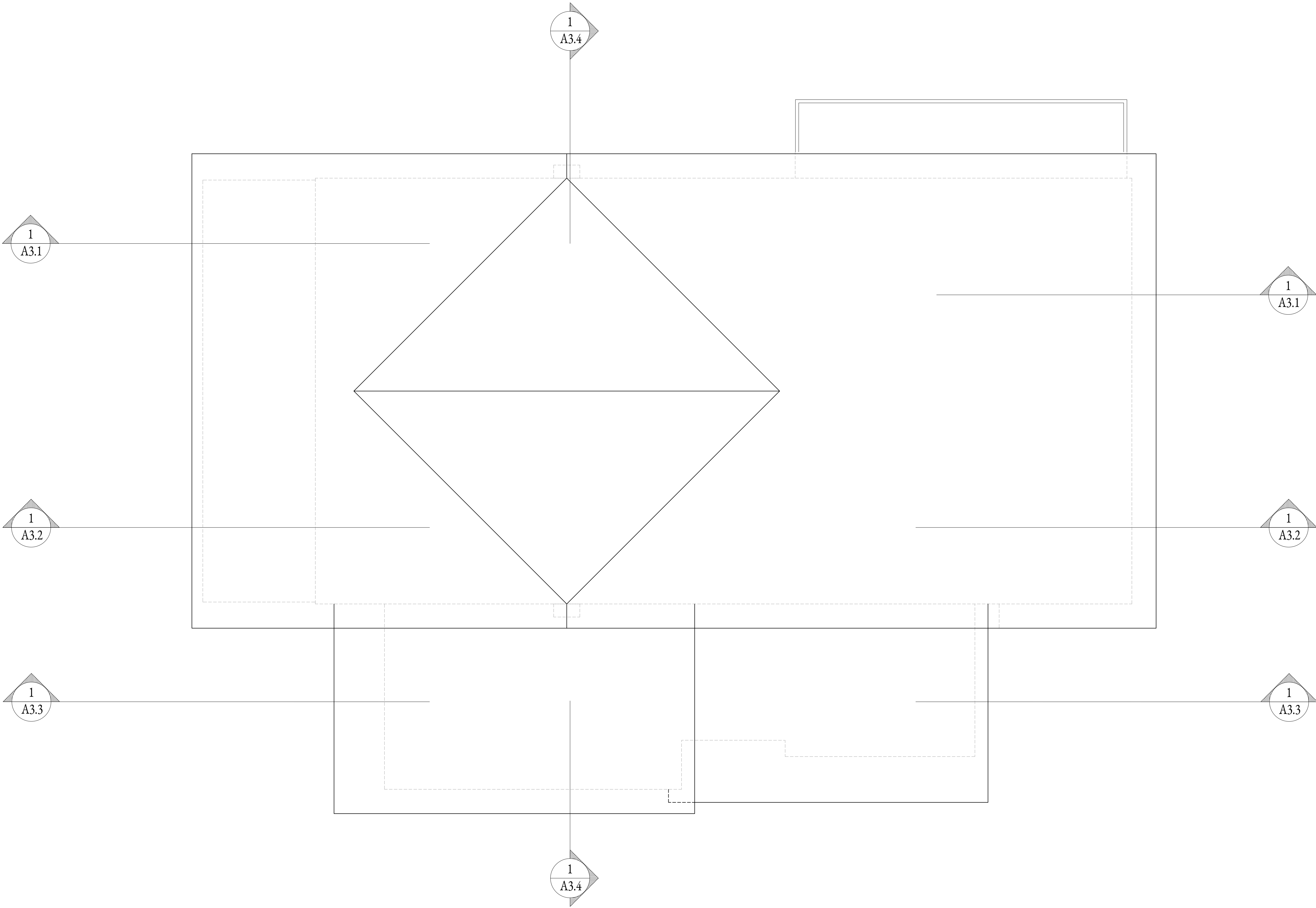
Page 48 of 1735

N

SCALE

1/4" = 1' - 0"

Roof Plan



DRAWING LEGEND

Wall, wood stud UON

Profile above

Window (Double-hung, casement or fixed)

Door, swinging

Door, bifold

Door, pocket - cased opening

Door, surface mounted slider (barn-style)

Millwork & custom built-ins (design by others) shown shaded.

ABBREVIATIONS

TBD

To Be Determined

UON

Unless Otherwise Noted

TYP

Typical

EX

Existing

WIC

Walk-in Closet

A1.3

Date

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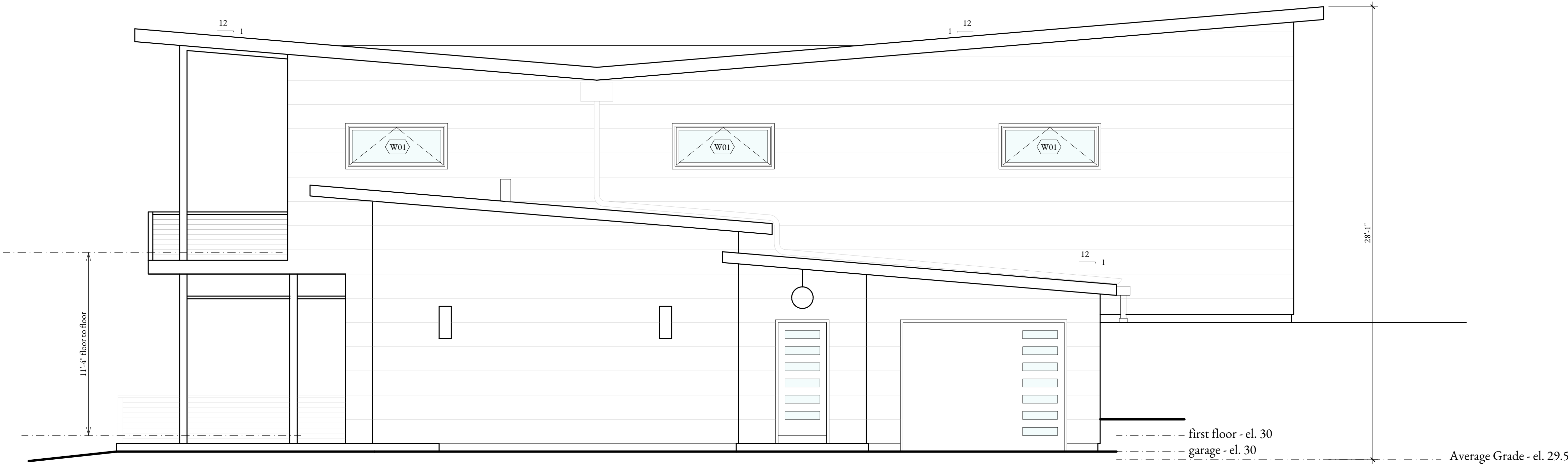
Maidee Maidique, Architect

CT #11104 / NY #01438

SCALE

1/4" = 1' - 0"

East Elevation

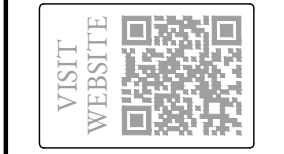


A2.1

Date
2025/02/28
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West Elevation

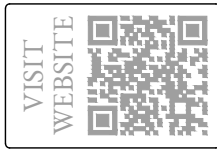
SCALE

1/4" = 1' - 0"

Date
2025/02/28
Revisions
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A2.2



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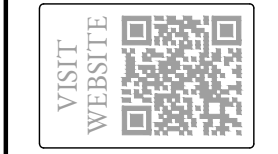
South Elevation

SCALE1/4" = 1' - 0"



Date
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Revisions
2025/04/28
Project
24-36DOC

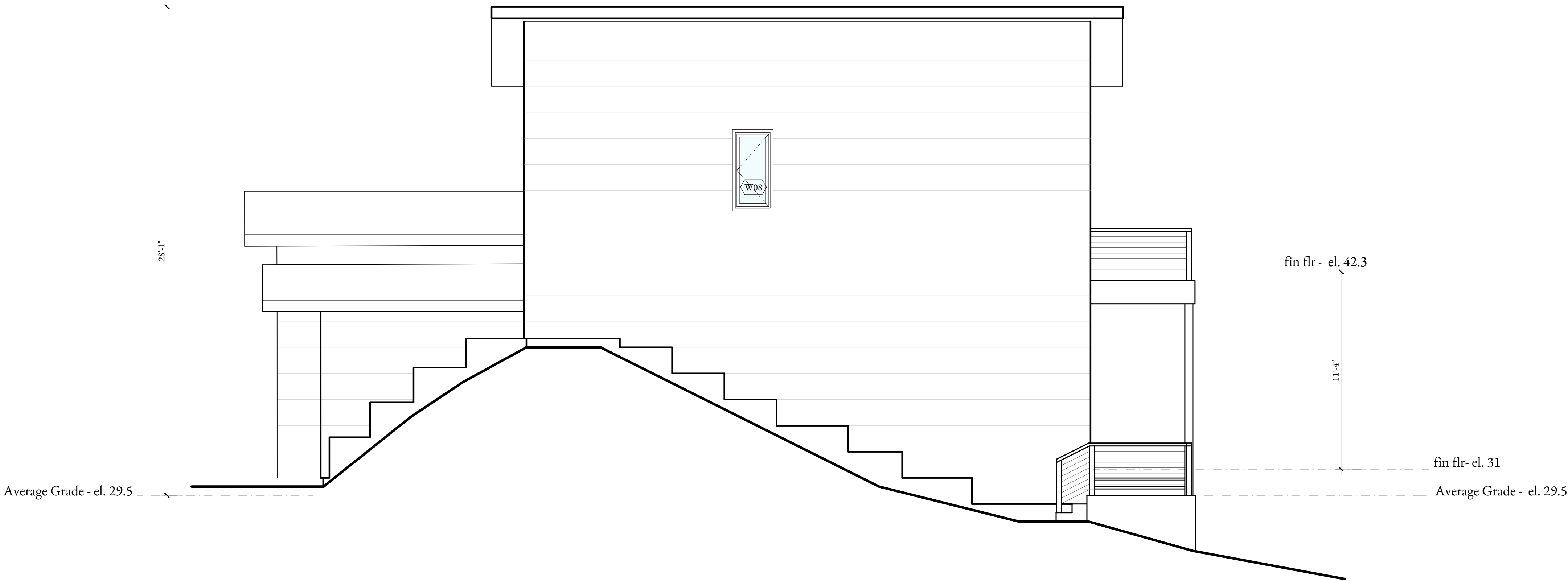
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North Elevation

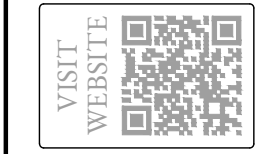
SCALE1/4" = 1' - 0"



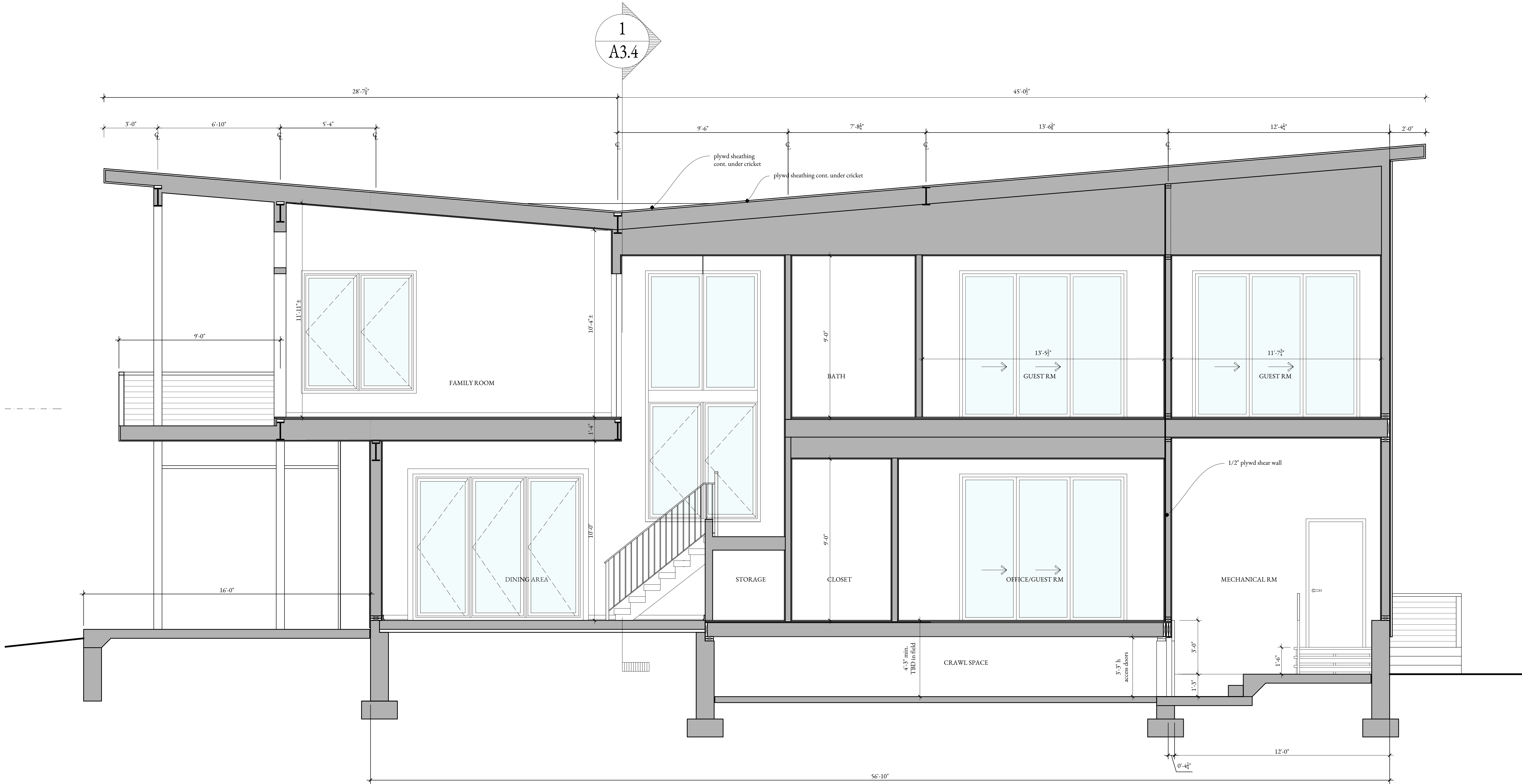
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Date
2025/02/28
Revisions
2025/04/28
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Building Section
SCALE 3/8" = 1' - 0"

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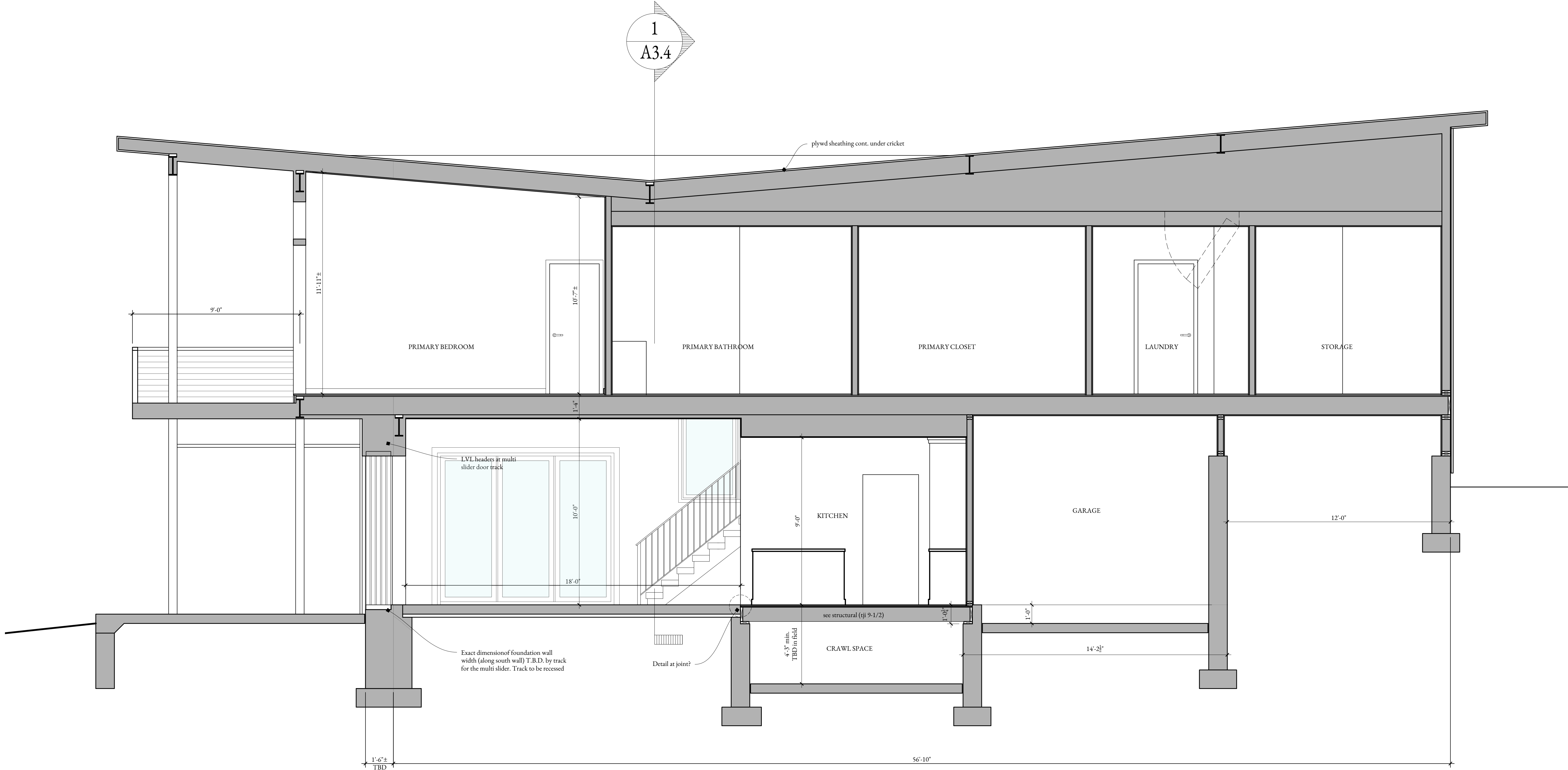
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Drawn
2025/02/28

Revisions
2025/04/28

Project
24-36DOC

A3.1



Building Section

SCALE

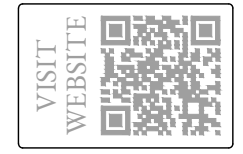
3/8" = 1' - 0"

Date
2025/02/28
Revisions
2025/04/28
Project
24-36DOC

A3.2

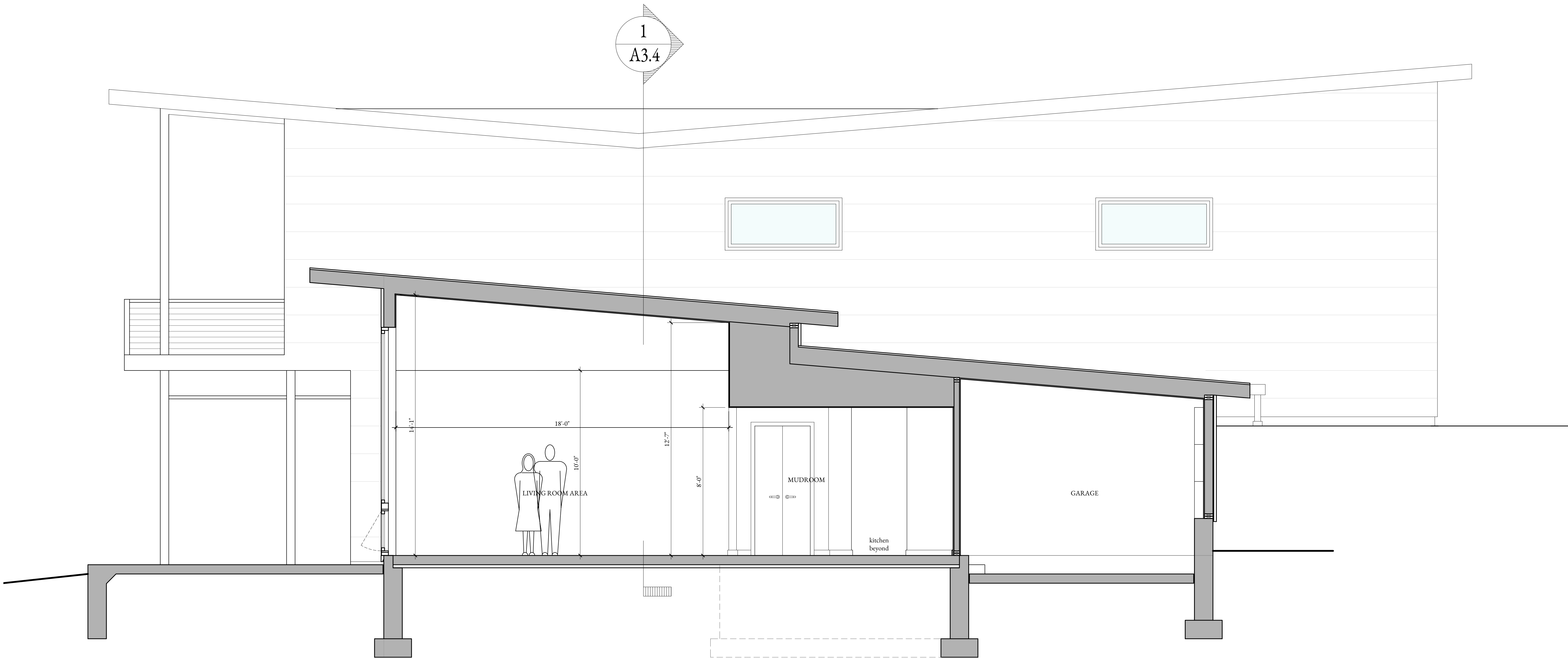
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Building Section
SCALE 3/8" = 1' - 0"

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Norwalk, CT 06854

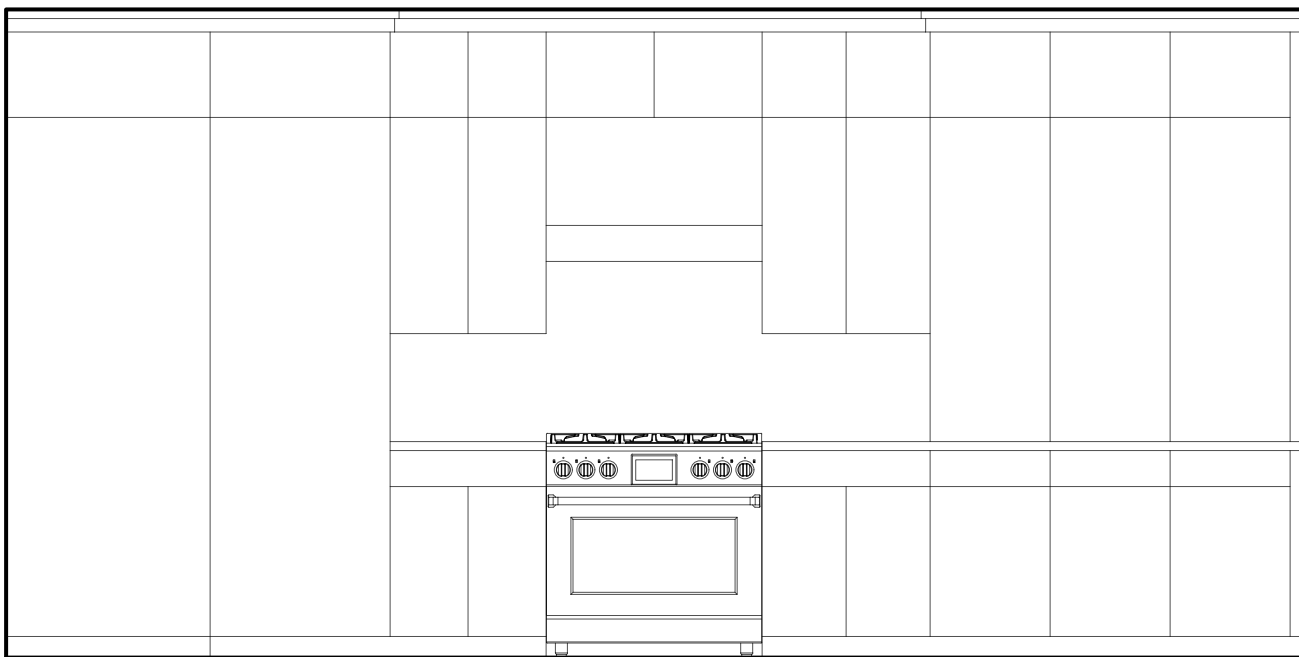
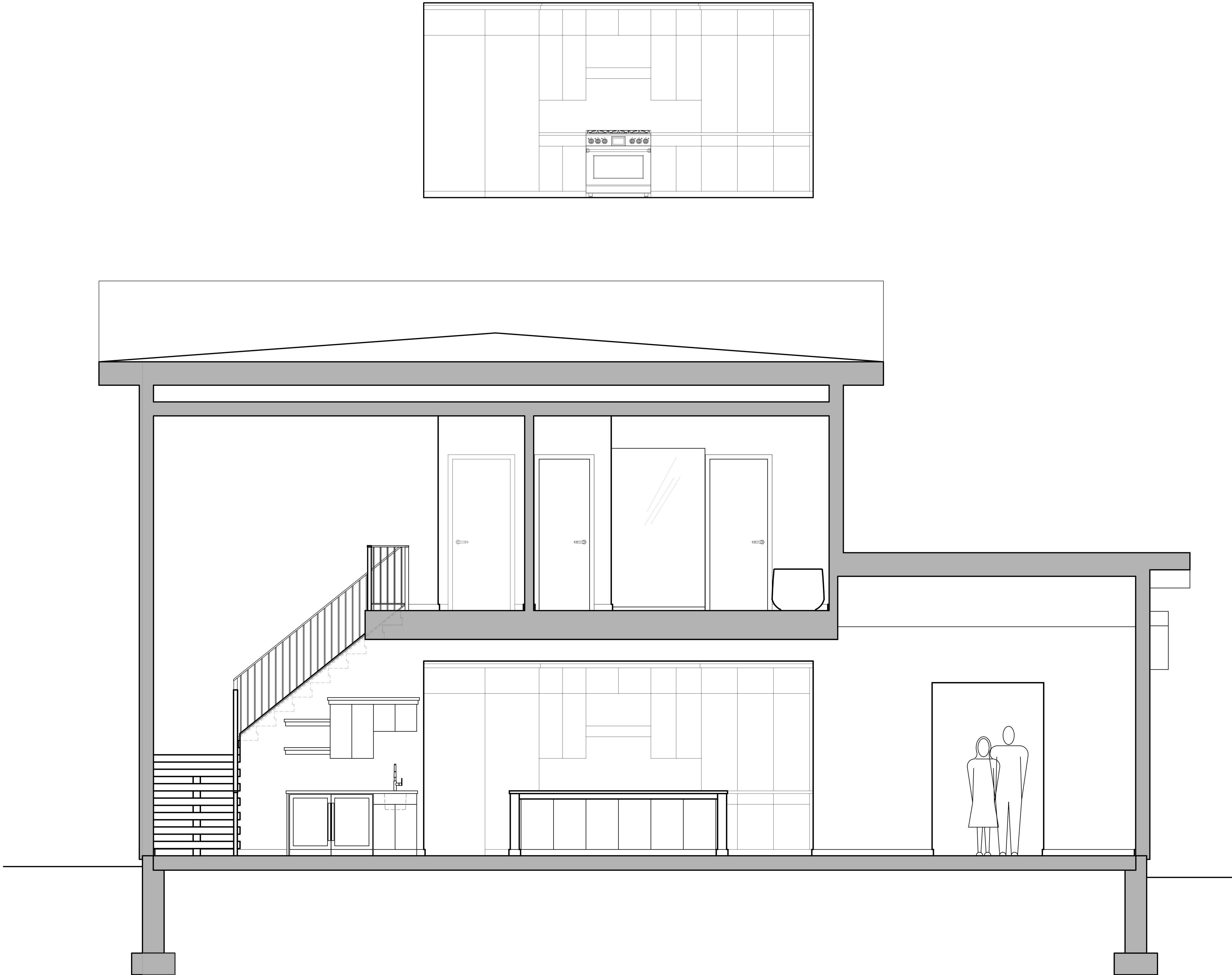
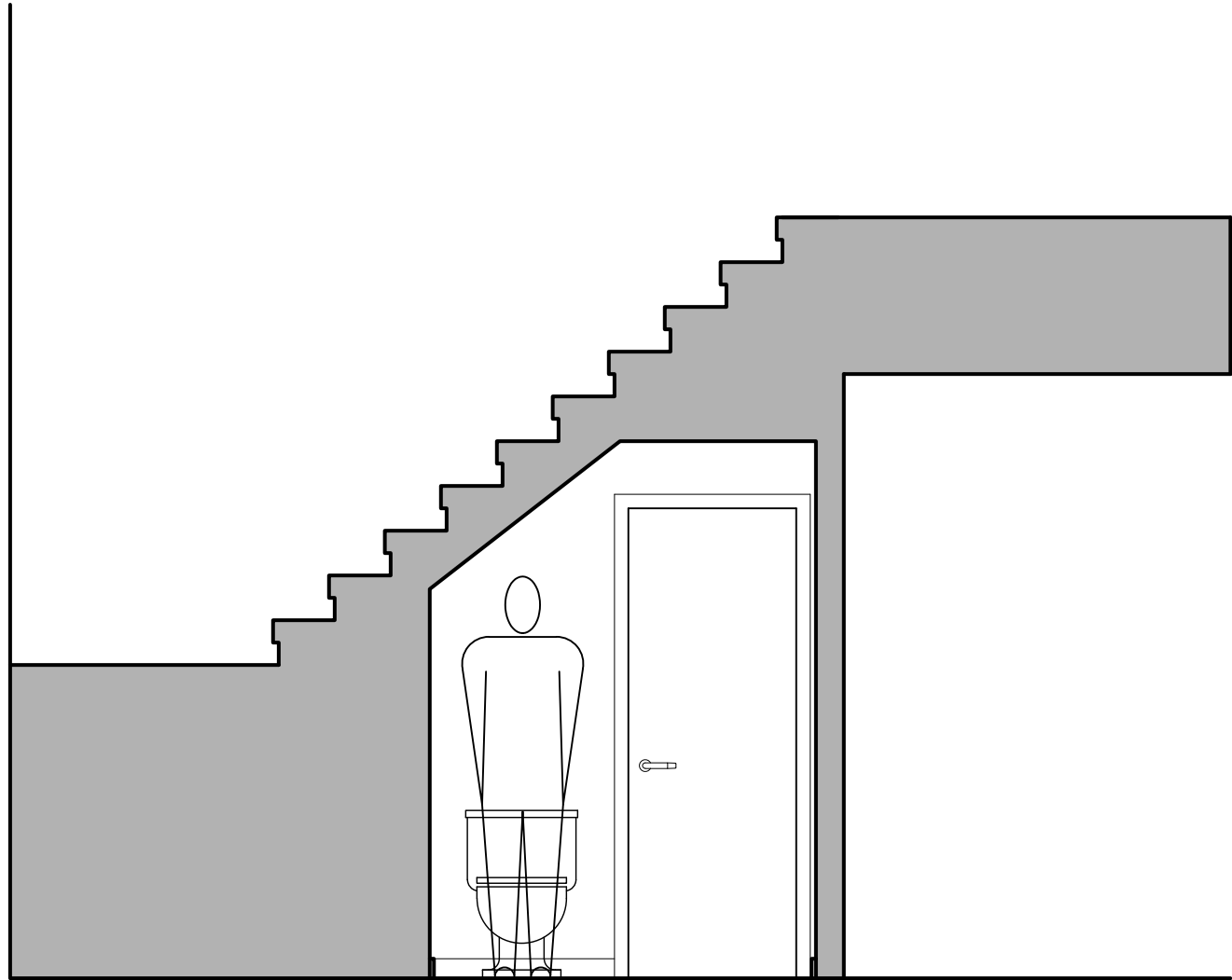
Date: 2025/02/28
Revisions: 2025/04/28
Project: 24-36DOC

A3.3

SCALE

3/8" = 1' - 0"

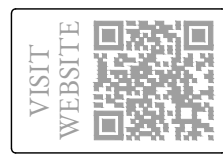
Building Section



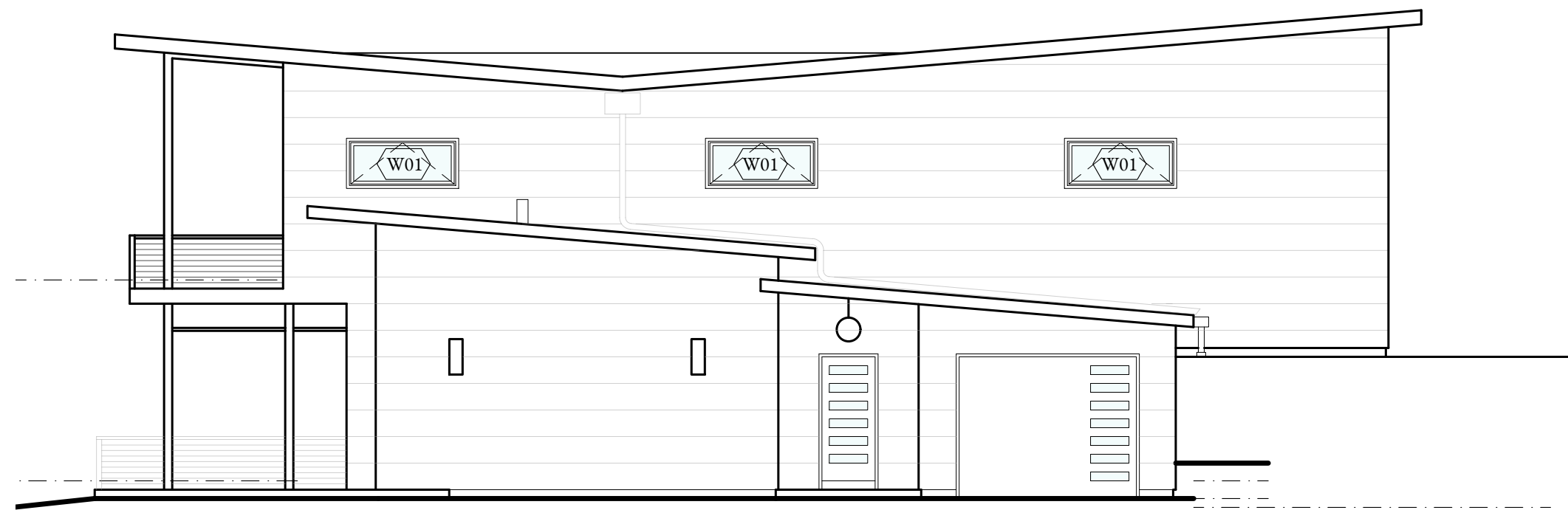
A3.4

Date
2025/02/28
Revisions
2025/04/28
Project
24-36DOC

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New Residence
36 Dock Road
Norwalk, CT 06854



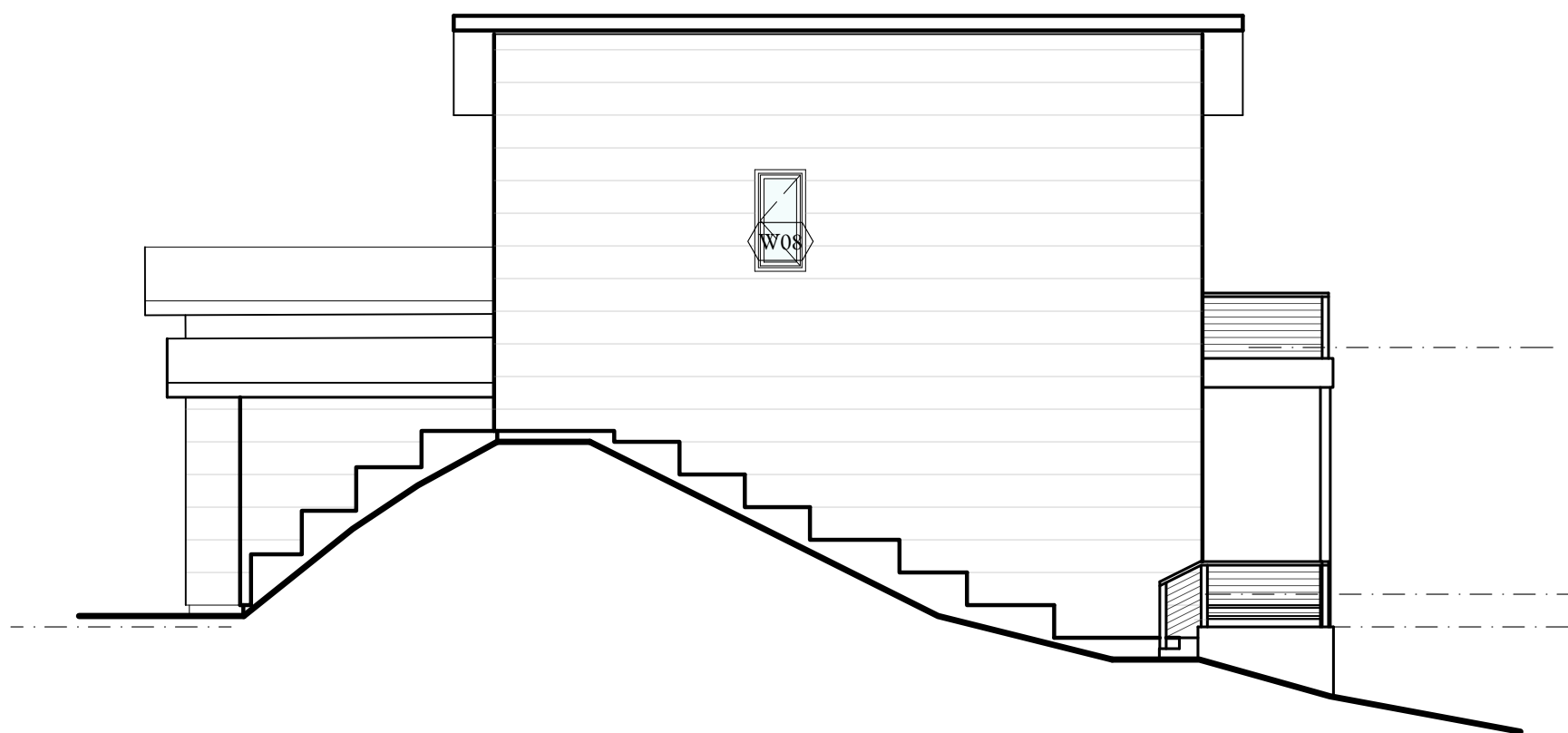
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East Elevation



West Elevation



North Elevation

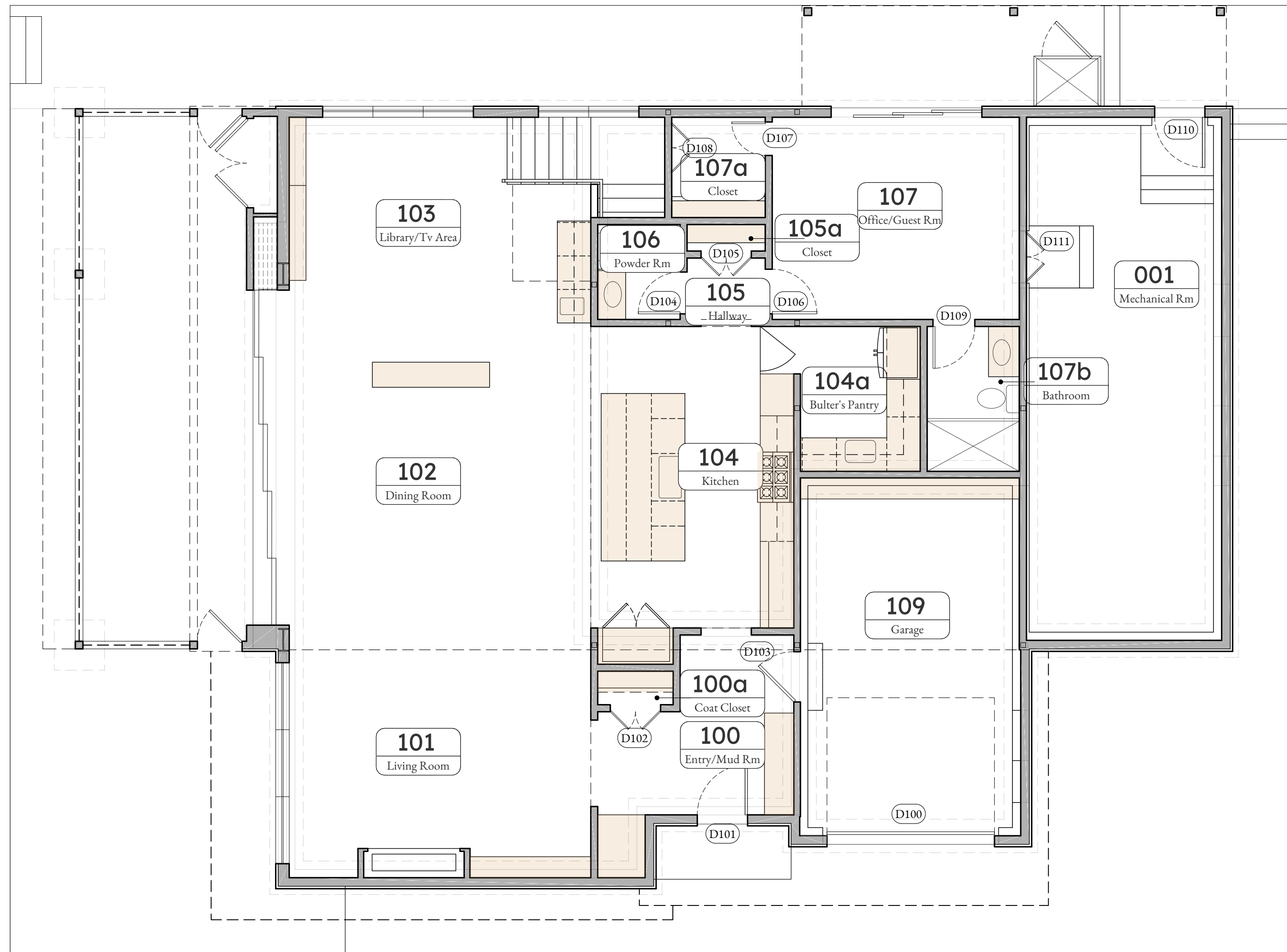


South Elevation

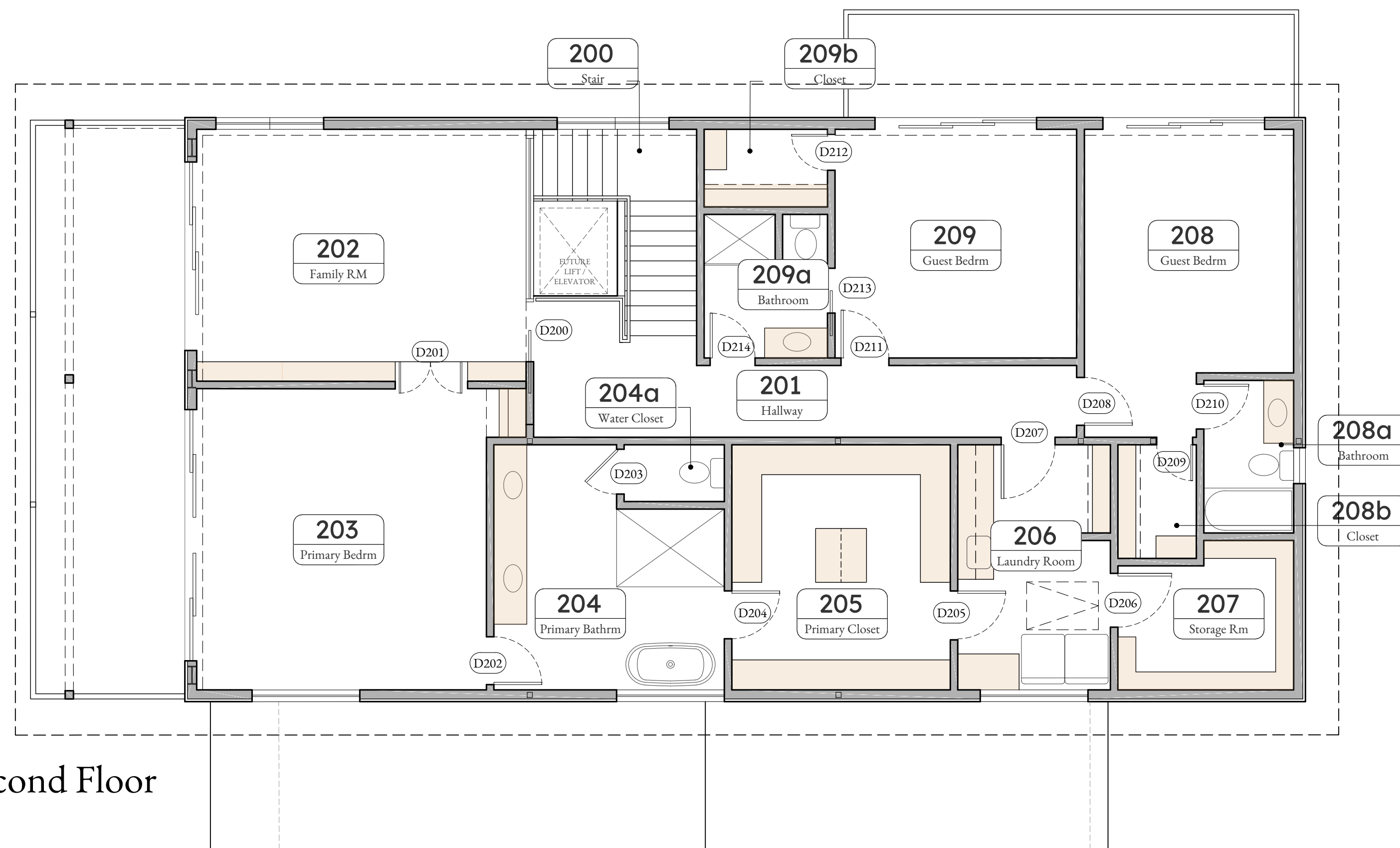
Window Schedule:												
Window Number	Count	Width	Height	Wall Stud Thickness	Operation	Safety Glass	Egress	Location/Room #	Head (MH)	Sill (MH)	Screens (Y or N)	Notes/Specification
W01	3	6'-0"	2'-6"	2x6	Crank-out Awning	no	no	203, 204; 206	8'-0" aff	5'-6" aff	Y	
W02	4	3'-0"	6'-6"	2x6	Crank-out Casement	yes	no	200; 202	8'-0" aff*	1'-6" aff *	Y	* see Note 2 below. (At stair 200: 7'-6" head/1'-0" sill) (2) mulled pairs
W03	3	3'-0"	6'-6"	2x6	Fixed	no	no	200	14'-8" aff	6'-2" aff	N	mulled pair at upper landing
W04	1	3'-0"	7'-10**	2x6	Crank-out Casement	no	no	103	8'-0" aff	2' aff *	Y	mulled. *Exact sill hgt and overall height TBD
W05	3	4'-0"	2'-4**	2x6	Crank-out Awning	yes	no	101	8'-0" aff	0'-6" aff	Y	mulled. *Exact sill hgt TBD
W06	3	4'-0"	9'-4**	2x6	Fixed	no	no	101	12'-4" aff	TBD	N	mulled. *Exact overall height TBD
W07	7	3'-6"	2'-0"	2x6	Fixed (transoms over sliders)	no	no	202; 203	10'-4" aff	8'-4" aff*	N	(3) mulled transoms over MD02 (4) mulled transoms over MD03 horizontal mull TBD
W08	1	2'-0"	4'-4"	2x6	Crank-out Casement	no	no	203	8'-0" aff	3'-8" aff	Y	
DOORS:		Overall Width	Overall Height	Wall Stud Thickness	Operation	Safety Glass	Egress	Location	Hardware / Locking			Notes/Specification
MD01	3	9"-0"	8'-0"	2x6	3-36" panel multi-slider (XXO)	yes	yes	107; 208; 209	yes - per mfg options			
MD02	1	10'-6"	8'-0"	2x6	3-42" panel multi-slider (XXO)	yes	yes	202	yes - per mfg options			with transoms W07
MD03	1	14'-0"	8'-0"	2x6	4+42" panel multi-slider OX-XO)	yes	yes	203	yes - per mfg options			with transoms W07
MD04	1	20'-24"	8'-0"	2x6	5-48" panel multi-slider pocket	yes	yes	102	yes - per mfg options			

Window Notes:

- Windows & Door shown here are Marvin - "Modern". All windows to meet Coastal Wind Requirements.
- Provide window opening control device that meets the ASTM F2090 Standard for windows with sill heights less than 24" a.f.f. and exterior sill height is greater than 7'-0" above finished grade.



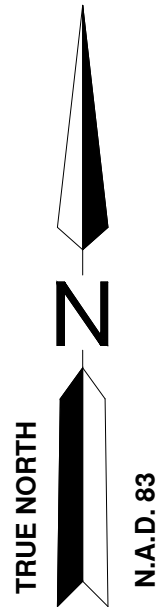
First Floor



Second Floor

Door Schedule

[illegible]



LEGEND: -

2T. 2 TRUNKS
BL. BIRCH
CH. CHERRY
DOG. DOGWOOD
MP. MAPLE
O. OAK
WAL. WALNUT
YEW YEW TREE

EL. ELEVATION
N.A.V.D. NORTH AMERICAN VERTICAL DATUM
T.W. TOP OF WALL

134 CONTOUR LINE
LEGE
OVERHEAD WIRES
RETAINING WALL
x148.9 SPOT ELEVATION
TREE

NOTES:

- FLOOD ZONES AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) FOR THE CITY OF NORWALK, COMMUNITY No. 90012, PANEL No. 533 G. EFFECTIVE DATE: JULY 8, 2013.
- ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM (N.A.V.D. 1988) ESTABLISHED BY MULTIPLE (RTK) REAL TIME KINEMATIC OBSERVATIONS OF DIFFERENT (SV) SPACE VEHICLE CONSTELLATIONS UTILIZING THE (NOAA) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (CORS) CONTINUOUSLY OPERATING STATIONS BY FIELD SURVEY CREW ON SEPT. 13, 2023.
- HORIZONTAL CONTROL USING THE NORTH AMERICAN DATUM (NAD83), CONNECTICUT STATE PLANE COORDINATE SYSTEM WAS ESTABLISHED BY MULTIPLE (RTK) REAL TIME KINEMATIC OBSERVATIONS OF DIFFERENT (SV) SPACE VEHICLE CONSTELLATIONS UTILIZING THE (NOAA) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (CORS) CONTINUOUSLY OPERATING STATIONS BY FIELD SURVEY CREW ON SEPT. 13, 2023.
- CONNECTICUT STATE PLANE NAD 83 BEARINGS VARY FROM ORIGINAL PUBLISHED MAP BY 12° 11' 18" DECLINATION.
- APPROXIMATE LIMIT OF WETLAND REGULATED AREA AS SHOWN ON "INLAND WETLAND AND WATERCOURSE MAP" FOR THE CITY OF NORWALK, ON FILE AT THE NORWALK TOWN HALL. EFFECTIVE: FEBRUARY 1, 2010.

REFERENCE IS MADE TO SECTION 60A-3 OF THE NORWALK INLAND WETLAND & WATERCOURSES REGULATIONS.
- PROPERTY IS IN THE NORWALK COASTAL AREA MANAGEMENT ZONE AS SHOWN ON "COASTAL AREA MANGEMENT JURISDICTION" MAP FOR NORWALK, CT.
- PROPERTY IS SERVICED BY PRIVATE SEPTIC SYSTEM(S) AND MUNICIPAL WATER SUPPLY.
- REFERENCE IS MADE TO MAP No. 3112 ON FILE IN THE NORWALK LAND RECORDS.
- BOUNDARY DETERMINATION/OPINION IS BASED ON A DEPENDENT RESURVEY.
- EASEMENTS, RESTRICTIONS, AGREEMENTS AND/OR COVENANTS, IS ANY EXIST, HAVE NOT BEEN RESEARCHED OR PLOTTED HEREON.
- THE TOPOGRAPHIC INFORMATION DEPICTED HEREON WAS ACQUIRED BY FIELD SURVEY ON SEPT. 13-15, OCT. 5 & 17, 2023.

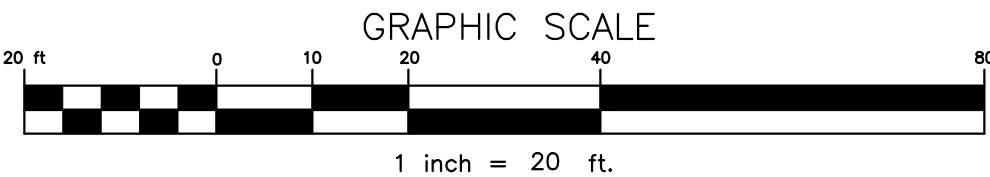
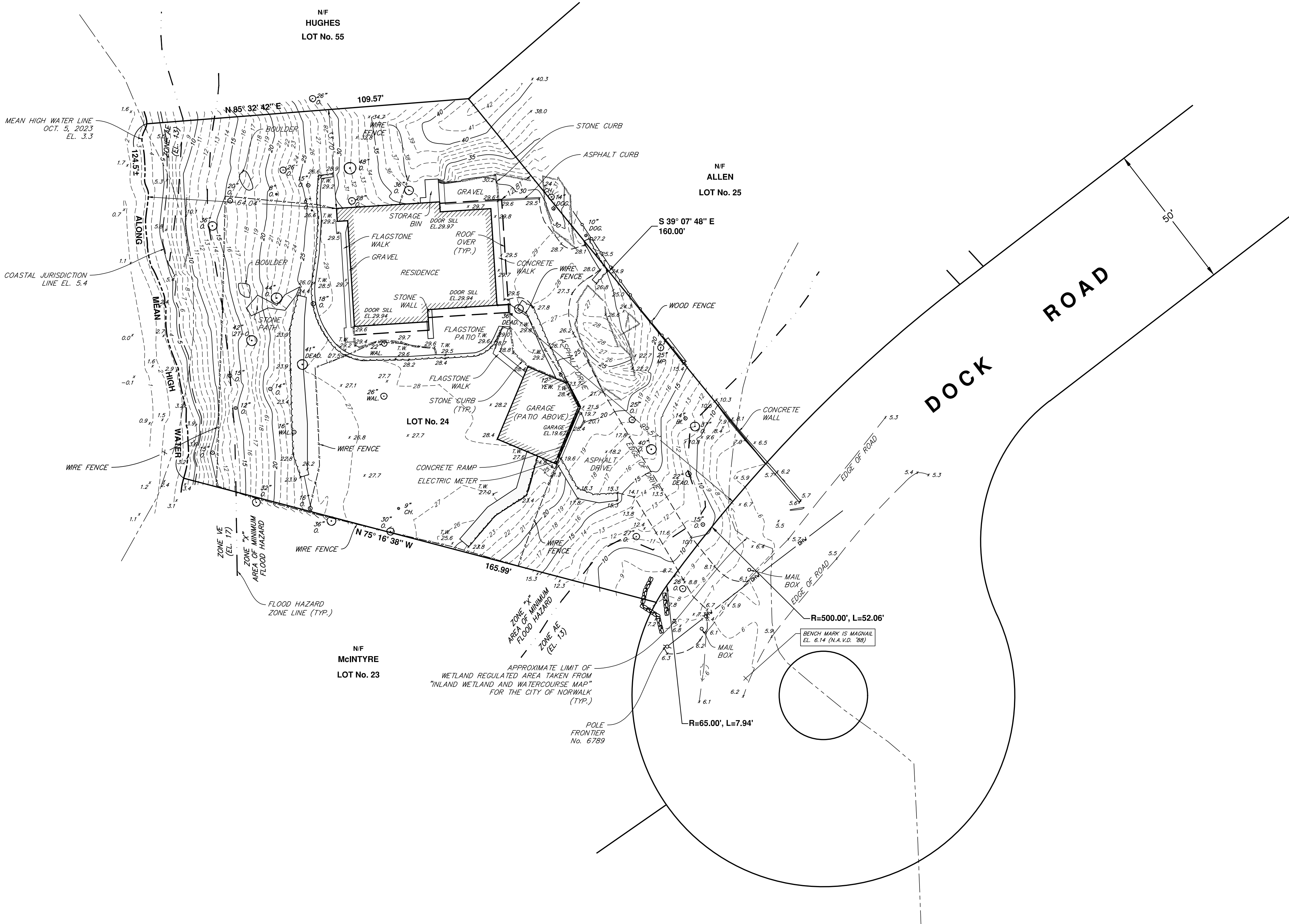
S.E. MINOR & Co., Inc. TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE WETLAND BOUNDARY AS DETERMINED BY THE SOIL SCIENTIST.

THE TOPOGRAPHIC AND VERTICAL CLASSES OF ACCURACY FOR THIS SURVEY ARE IN ACCORDANCE WITH THE STANDARDS OF A CLASS "T-2" SURVEY AS DEFINED IN "THE RECOMMENDED STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT." EFFECTIVE JUNE 26, 1996.

ZONING LOCATION RE-SURVEY IN ACCORDANCE WITH A CLASS A-2 SURVEY AS SET FORTH IN STATE OF CONNECTICUT REGULATIONS SECTION 20-300b-1 THROUGH SECTION 20-300b-20.

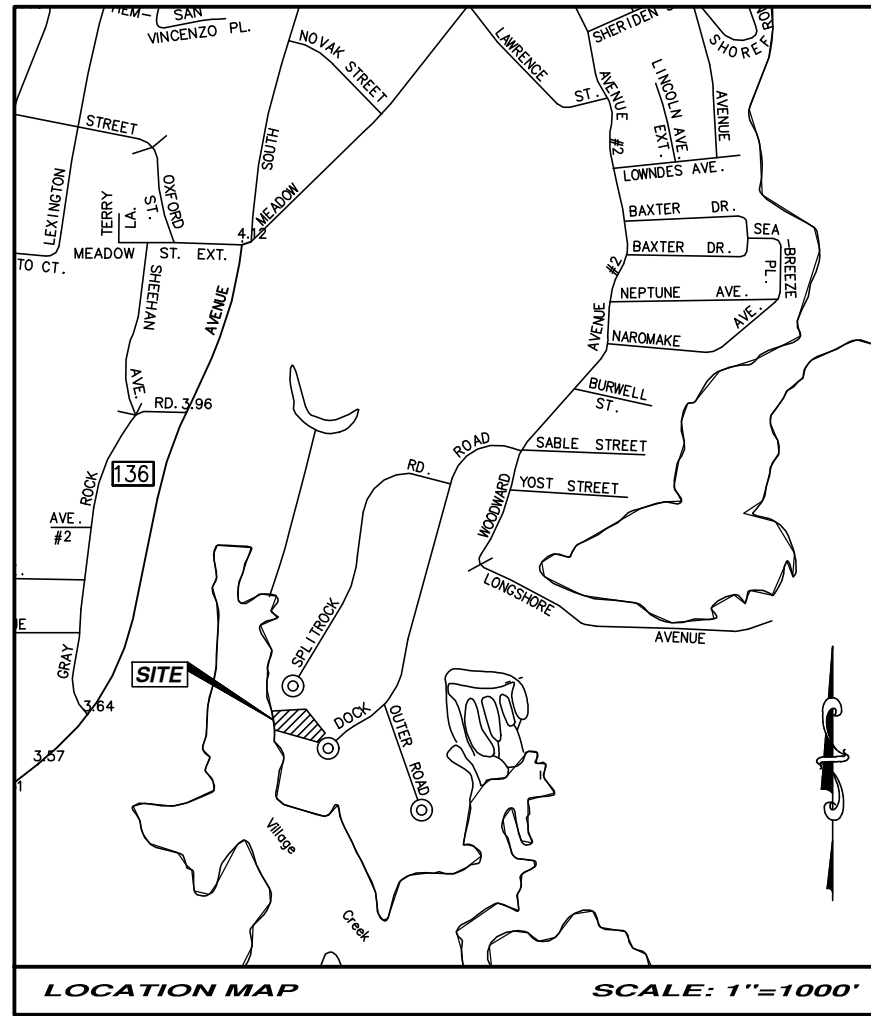
TO MY KNOWLEDGE AND BELIEF, THIS MAP IS "SUBSTANTIALLY CORRECT" AS NOTED HEREON.

BY: _____ FOR: _____



AREA = 23,725 SQ. FT.
ZONE: B RESIDENCE

SCALE: 1 IN. = 20 FT.



TAX I.D. 5-84-100-0

TOPOGRAPHIC SURVEY
ON PROPERTY OF
SCOTT STEPHENS
36 DOCK ROAD
NORWALK, CONN.

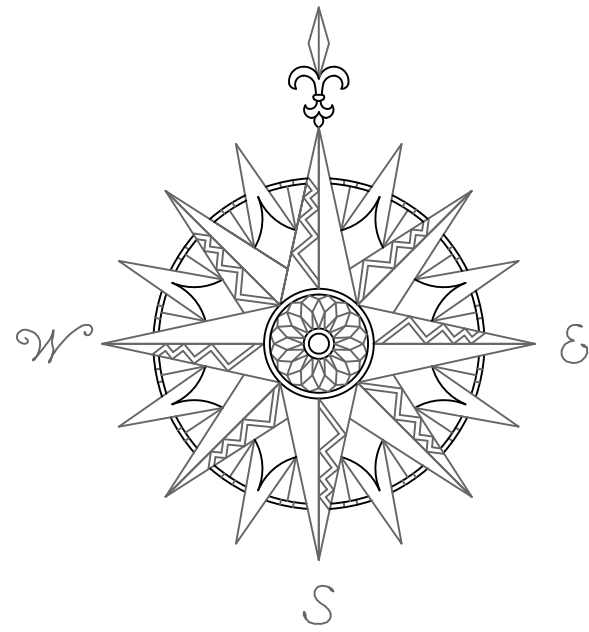
PARCEL I.D. 25905

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203-869-0136
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FILE NO. NORWALK
COMPARED C.F.S. & P.J.W.

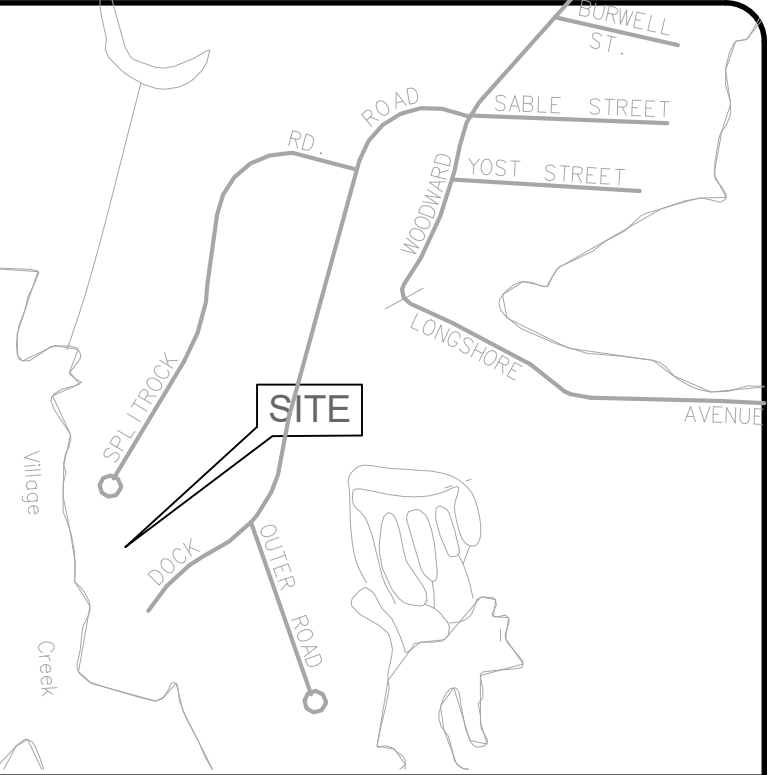


NOTES:

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20, AS REVISED.
2. THE TYPE OF SURVEY PERFORMED IS A ZONING LOCATION SURVEY.
3. THE BOUNDARY DETERMINATION CATEGORY IS RESURVEY.
4. THIS MAP CONFORMS TO HORIZONTAL ACCURACY CLASS A-2.
5. THIS MAP CONFORMS TO VERTICAL ACCURACY CLASS V-2.
6. THIS MAP CONFORMS TO TOPOGRAPHIC ACCURACY CLASS T-2.
7. BEARINGS ON THIS MAP ARE BASED ON REF. MAP #1 BELOW.
8. ELEVATIONS ON THIS MAP ARE BASED ON NAVD 88 DATUM.
9. THE UNDERGROUND UTILITIES SHOWN ON THIS MAP HAVE BEEN LOCATED BOTH FROM FIELD SURVEY INFORMATION AND FROM EXISTING DRAWINGS NOTED HEREON. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES ON THIS MAP, EITHER CURRENT OR ABANDONED ALTHOUGH EVERY ATTEMPT WAS MADE TO ACCURATELY DEPICT ALL UNDERGROUND UTILITIES. THERE IS NO GUARANTEE TO THE EXACT LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS MAP.
10. THIS PARCEL IS KNOWN AS BLOCK 84 LOT 100 ON ASSESSOR'S MAP 5.
11. THE SUBJECT PROPERTY IS PARTIALLY LOCATED IN A FLOOD ZONE 'VE' WITH BFE OF 17' AND FLOOD ZONE 'AE' WITH BFE OF 13' AS DEPICTED ON THE SURVEY AND AS SHOWN ON FEMA FLOOD MAP 09001C0533G DATED JULY 8, 2013.
12. THE MEAN HIGH WATER IS THE PROPERTY LINE ALONG VILLAGE CREEK AND IS AT ELEVATION 3.3'. THE LINE AS DEPICTED IS FROM FIELD CONDITIONS NOVEMBER 2024.

MAP REFERENCES:

1. "TOPOGRAPHIC SURVEY ON PROPERTY OF SCOTT STEPHENS 36 DOCK ROAD NORWALK, CONN." SCALE: 1"=20' OCT. 23, 2023 BY: S.E. MINOR & CO., INC.
2. "VILLAGE CREEK AT NORWALK, CONN. DEVELOPED BY VILLAGE CREEK CORPORATION" SCALE: 1"=80' 1949 N.L.R. #3112



LOCATION MAP
NTS

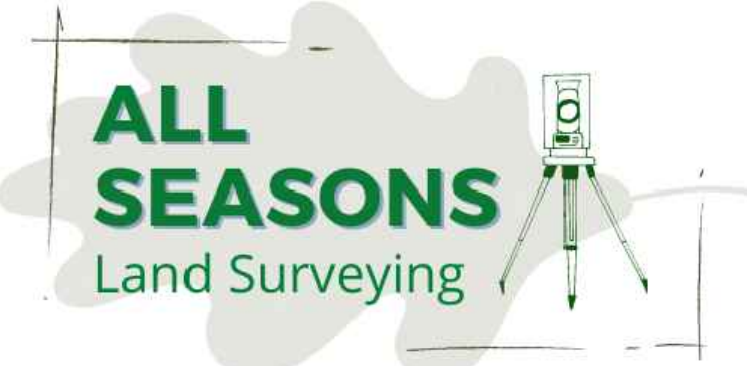
NORWALK ZONE TABLE CD-1S DISTRICT			
STANDARDS	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	6,250 SF	23,597 SF	23,597 SF
MIN. WIDTH	50'	59.87'	59.87'
SETBACKS:			
FRONT YARD	30'	54.3'	54.3'
SIDE YARD	6'	17.9'	17.9'
REAR YARD	15'	34.4'	17.4'
MAX IMPER. AREA	35 %	19.0 %	27.6 %
DRIVE MIN. WIDTH.	8'	> 8'	> 8'
MAX. BLDG. HGT.	2 1/2 STORIES	2 STORIES	2 STORIES
" " " "	24' TO EAVE	< 24'	< 24'

LEGEND

	PROPERTY LINE
	BUILDING SETBACK LINE
	EXISTING CONTOUR
	FEMA FLOOD LINE
	C.U. LINE
	WATER VALVE
	EXISTING WATER MAIN
	EXISTING STONE WALL
	EXISTING FENCE
	UTILITY POLE
	IRON PIN
	ELECTRIC MANHOLE

ZONING LOCATION SURVEY
PROPOSED HOUSE
PREPARED FOR
ROBERT STEPHENS
36 DOCK ROAD
NORWALK, CONNECTICUT

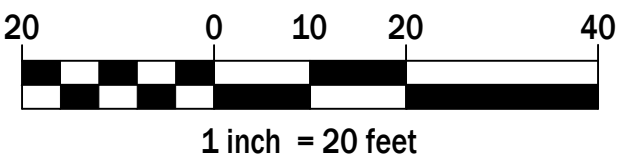
COPYRIGHT © 2024
SCALE: 1" = 20' NOVEMBER 22, 2024
REVISED: NOVEMBER 26, 2024 - MODIFY PROPOSED HOUSE
MARCH 5, 2025 - GENERAL REVISIONS
MARCH 6, 2025 - REVISE TO CD-1S ZONE
PROJ. NO.: 0957



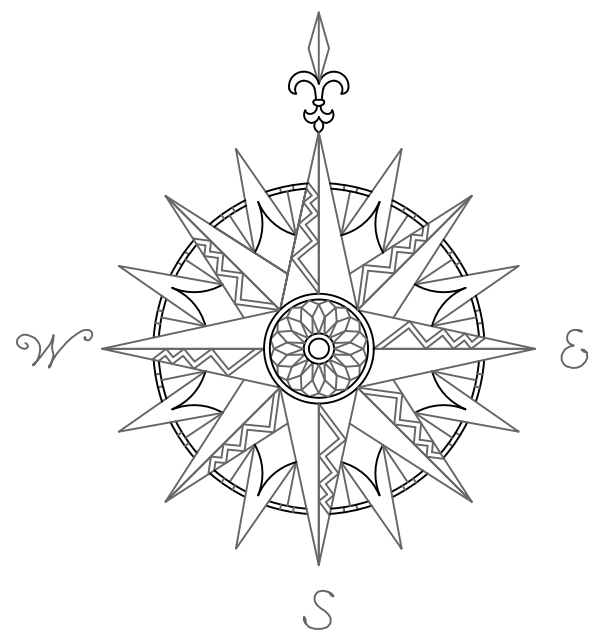
LAND SURVEYING - LAND PLANNING
44 Fair Street Wallingford, CT 06492
1 John Street Millerton, NY 12546
Phone: (860) 274-5053
dan@allseasonslandsurveying.com
allseasonslandsurveying.com

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP AND SURVEY ARE SUBSTANTIALLY CORRECT AS NOTED HEREON.
THIS MAP IS NOT VALID UNLESS IT BEARS THE LIVE SIGNATURE AND SEAL OF THE UNDERSIGNED LAND SURVEYOR.

DANIEL C. LAFERRIERE
LICENSED LAND SURVEYOR, REG# 70492



1 inch = 20 feet

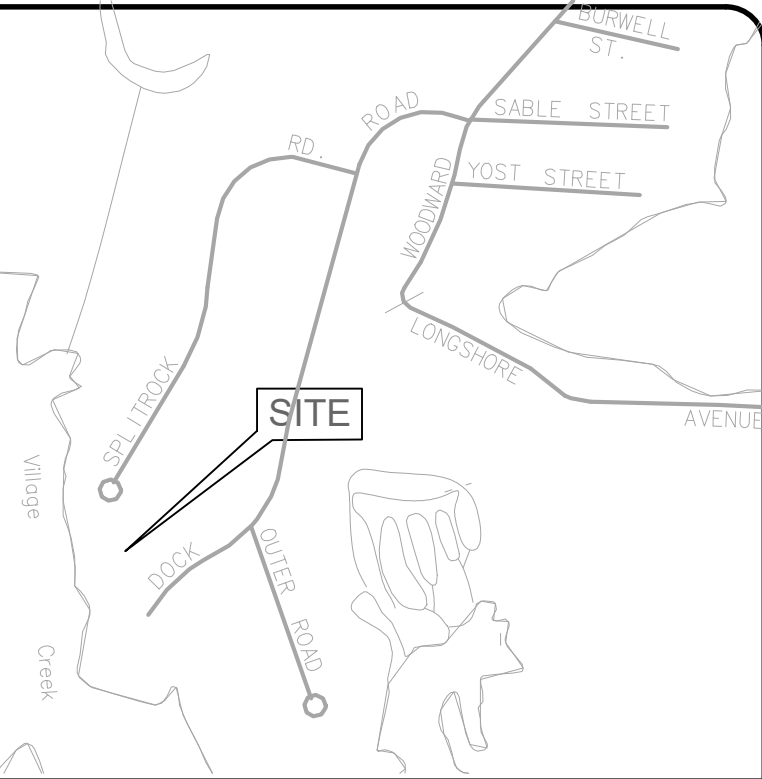


NOTES:

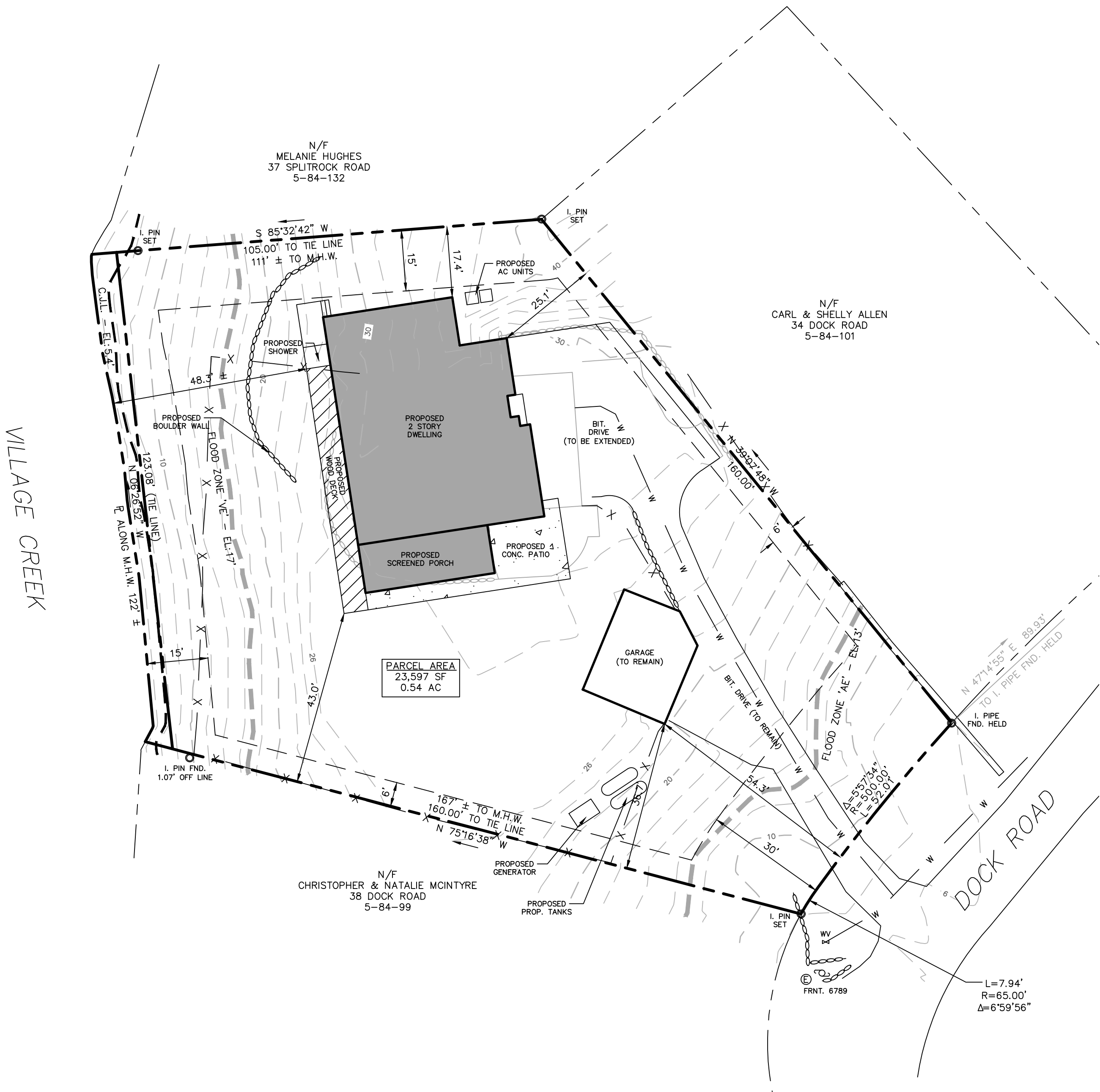
1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20, AS REVISED.
2. THE TYPE OF SURVEY PERFORMED IS A ZONING LOCATION SURVEY.
3. THE BOUNDARY DETERMINATION CATEGORY IS RESURVEY.
4. THIS MAP CONFORMS TO HORIZONTAL ACCURACY CLASS A-2.
5. THIS MAP CONFORMS TO VERTICAL ACCURACY CLASS V-2.
6. THIS MAP CONFORMS TO TOPOGRAPHIC ACCURACY CLASS T-2.
7. BEARINGS ON THIS MAP ARE BASED ON REF. MAP #1 BELOW.
8. ELEVATIONS ON THIS MAP ARE BASED ON NAVD 88 DATUM.
9. THE UNDERGROUND UTILITIES SHOWN ON THIS MAP HAVE BEEN LOCATED BOTH FROM FIELD SURVEY INFORMATION AND FROM EXISTING DRAWINGS NOTED HEREON. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES ON THIS MAP, EITHER CURRENT OR ABANDONED. ALTHOUGH EVERY ATTEMPT WAS MADE TO ACCURATELY DEPICT ALL UNDERGROUND UTILITIES, THERE IS NO GUARANTEE TO THE EXACT LOCATION OF UNDERGROUND UTILITIES SHOWN ON THIS MAP.
10. THIS PARCEL IS KNOWN AS BLOCK 84 LOT 100 ON ASSESSOR'S MAP 5.
11. THE SUBJECT PROPERTY IS PARTIALLY LOCATED IN A FLOOD ZONE 'VE' WITH BFE OF 17' AND FLOOD ZONE 'AE' WITH BFE OF 13' AS DEPICTED ON THE SURVEY AND AS SHOWN ON FEMA FLOOD MAP 09001C0533G DATED JULY 8, 2013.
12. THE MEAN HIGH WATER IS THE PROPERTY LINE ALONG VILLAGE CREEK AND IS AT ELEVATION 3.3'. THE LINE AS DEPICTED IS FROM FIELD CONDITIONS NOVEMBER 2024.

MAP REFERENCES:

1. "TOPOGRAPHIC SURVEY ON PROPERTY OF SCOTT STEPHENS 36 DOCK ROAD NORWALK, CONN."
SCALE: 1"=20' OCT. 23, 2023 BY: S.E. MINOR & CO., INC.
2. "VILLAGE CREEK AT NORWALK, CONN. DEVELOPED BY VILLAGE CREEK CORPORATION" SCALE: 1"=80' 1949 N.L.R. #3112



LOCATION MAP
NTS



NORWALK ZONE TABLE CD-1S DISTRICT			
STANDARDS	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT SIZE	6,250 SF	23,597 SF	23,597 SF
MIN. WIDTH	50'	59.87'	59.87'
SETBACKS:			
FRONT YARD	30'	54.3'	54.3'
SIDE YARD	6'	17.9'	17.9'
REAR YARD	15'	34.4'	17.4'
MAX IMPER. AREA	35 %	19.0 %	27.6 %
DRIVE MIN. WIDTH	8'	> 8'	> 8'
MAX. BLDG. HGT.	2 1/2 STORIES	2 STORIES	2 STORIES
" " " "	24' TO EAVE	< 24'	< 24'
MAX. BUILDING COVERAGE	25 %	10.2 %	15.8 %

LEGEND

- PROPERTY LINE
- BUILDING SETBACK LINE
- EXISTING CONTOUR
- FEMA FLOOD LINE
- C/L LINE
- WATER VALVE
- EXISTING WATER MAIN
- EXISTING STONE WALL
- EXISTING FENCE
- UTILITY POLE
- IRON PIN
- ELECTRIC MANHOLE

ZONING LOCATION SURVEY
PROPOSED HOUSE
PREPARED FOR
ROBERT STEPHENS
36 DOCK ROAD
NORWALK, CONNECTICUT

COPYRIGHT © 2024
SCALE: 1" = 20' NOVEMBER 22, 2024
REVISED: NOVEMBER 26, 2024 - MODIFY PROPOSED HOUSE
MARCH 5, 2025 - GENERAL REVISIONS
MARCH 6, 2025 - REVISE TO CD-1S ZONE
PROJ. NO.: 0957

ALL
SEASONS
Land Surveying

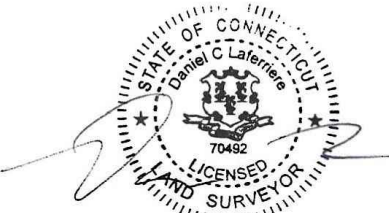


LAND SURVEYING - LAND PLANNING

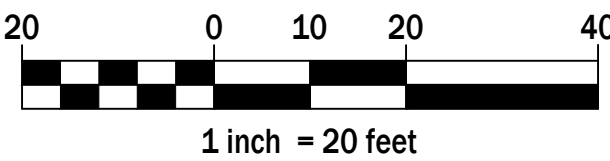
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Wallingford, CT 06492
1 John Street
Millerton, NY 12546

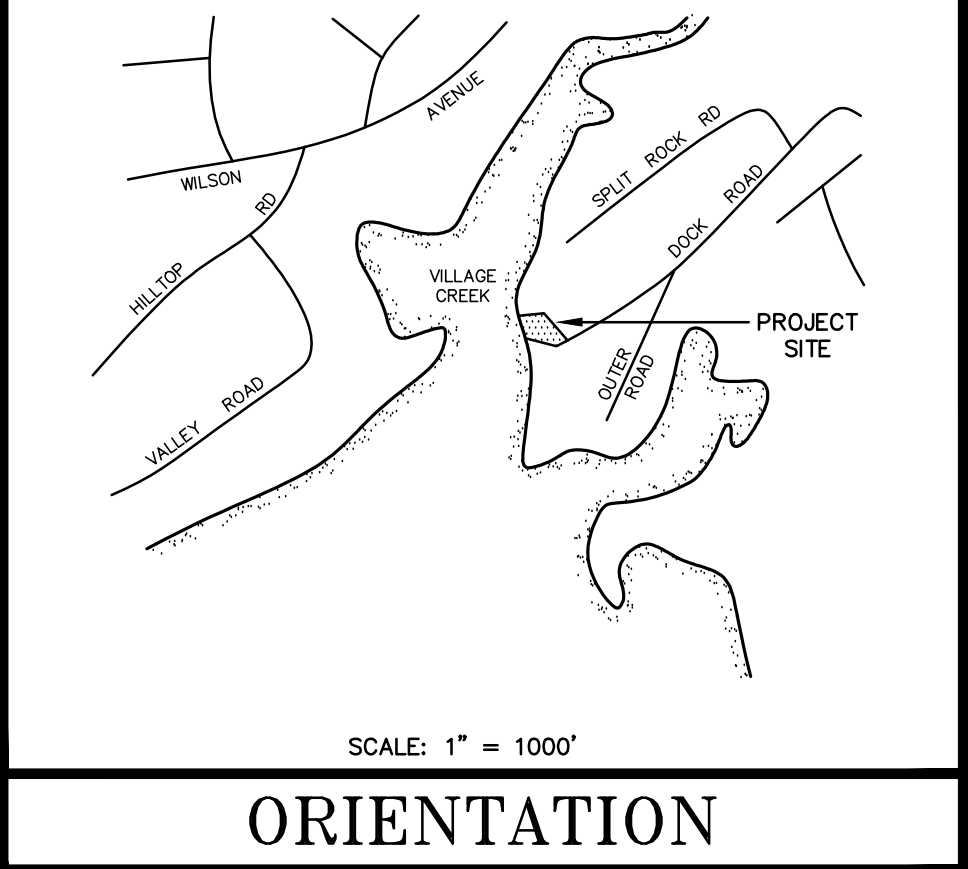
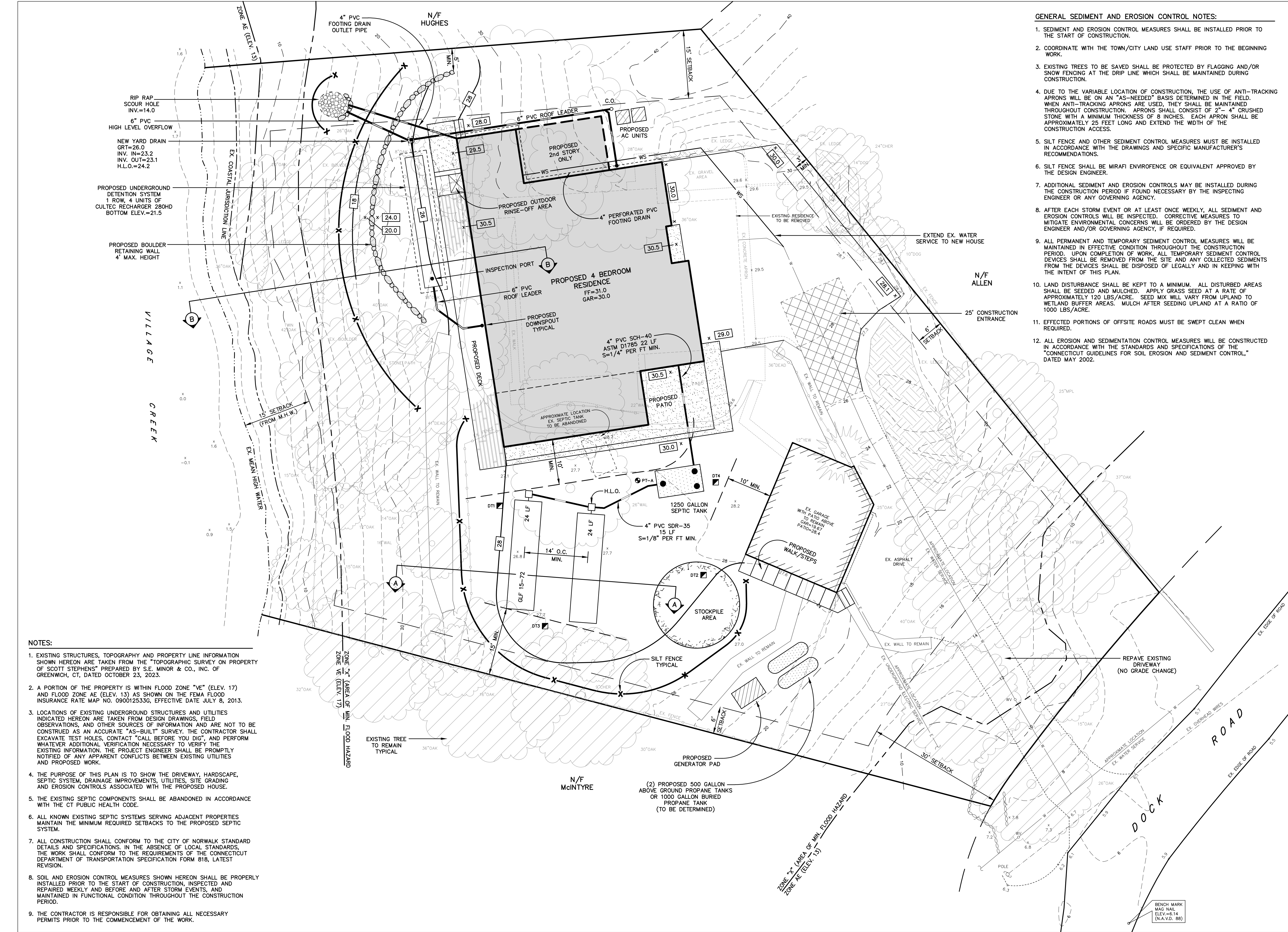
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DANIEL C. LAFERRIERE
LICENSED LAND SURVEYOR, REG# 70492





LEGEND

EXISTING	ITEM	PROPOSED
	DRAIN	
	STORM SEWER	
	DEEP TEST	
	PERCOLATION TEST	
	CONTOUR	
	SPOT ELEVATION	
	SILT FENCE	
	DOUBLE SILT FENCE	
	TREE TO REMAIN	
	POLE	

ELEVATIONS:

GARAGE	:30.0
F.F. HOUSE	:31.0
HOUSE SEWER OUT (INV.)	:28.8
SEPTIC TANK IN (INV.)	:28.25
SEPTIC TANK OUT (INV.)	:28.0
* 1st FIELD (INV. AT DB) (GLF BOTTOM)	:27.8
	:26.5
2nd FIELD (INV. AT DB) (GLF BOTTOM)	:27.3
	:26.0
* PROVIDE OVERFLOW BETWEEN FIELDS	
AREA = 23,725 SF	

THIS DRAWING AND DETAILS ON IT, AS AN INSTRUMENT OF SERVICE, IS THE PROPERTY OF THE ENGINEER AND MAY BE USED FOR THIS SPECIFIC PROJECT AND SHALL NOT BE LOANED, COPIED OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.

NO.	DATE	REVISIONS AND SUBMISSIONS
1	3-3-25	ISSUED FOR MUNICIPAL APPROVAL

SIGNATURE: _____

DRAWING NO: _____

McChord Engineering Associates, Inc.
Civil Engineers and Land Planners
1 Grumman Hill Road
Wilton, CT 06897 (203) 834-0569

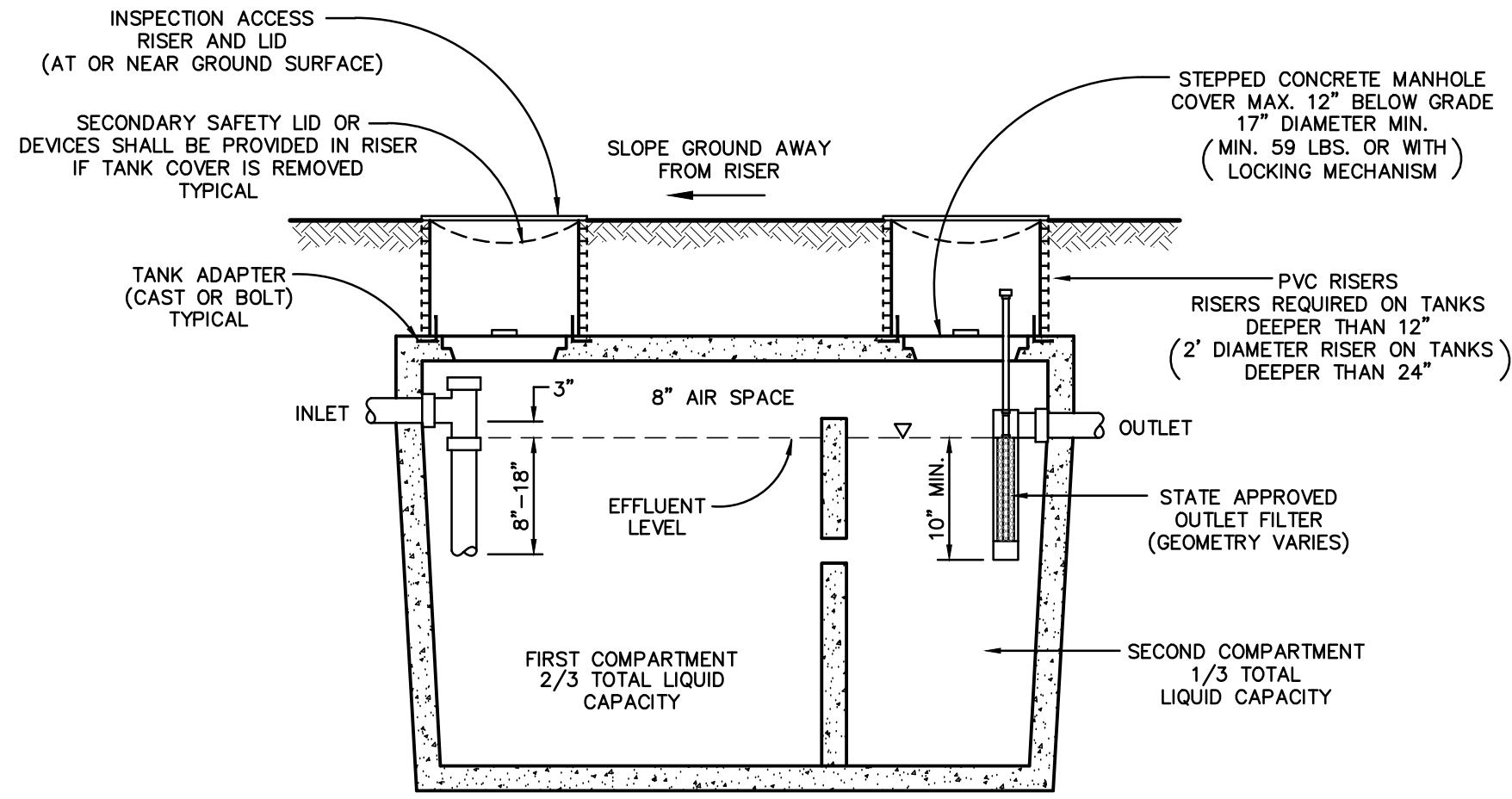
PLAN PREPARED FOR
SCOTT STEPHENS
NORWALK, CONNECTICUT

SEPTIC SYSTEM/SITE DEVELOPMENT PLAN
36 DOCK ROAD
NORWALK, CONNECTICUT

JOB NO: 2364A-1
DRAWN BY: DRS
SCALE: 1" = 10'
DATE: MARCH 3, 2025
CHECKED BY: TSN

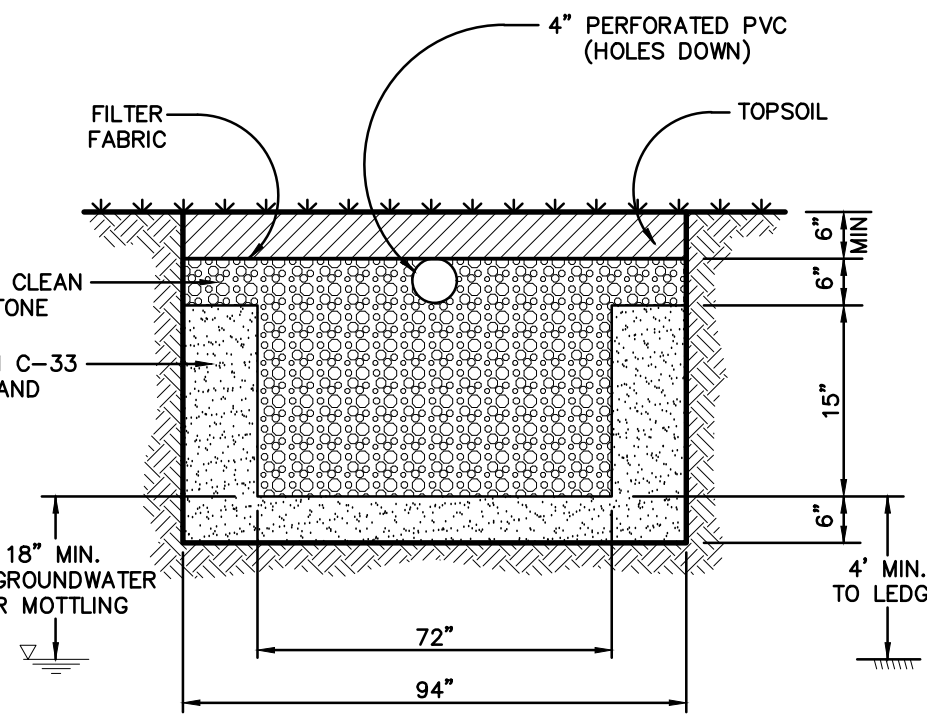
SE1

SHEET 1 OF 2



TYPICAL SEPTIC TANK DETAIL

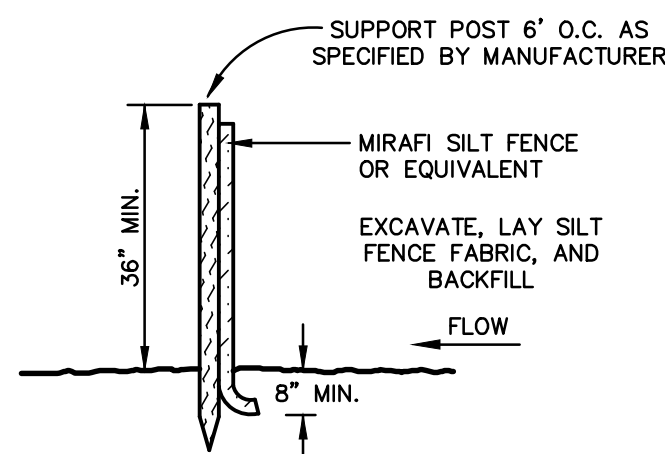
N.T.S.



NOTES: 1. INSTALLATION MUST BE SUPERVISED BY A REPRESENTATIVE OF GREENLEACH.
2. USE GREENLEACH SYSTEM WITHOUT FILTER FABRIC COVERED CARDBOARD.

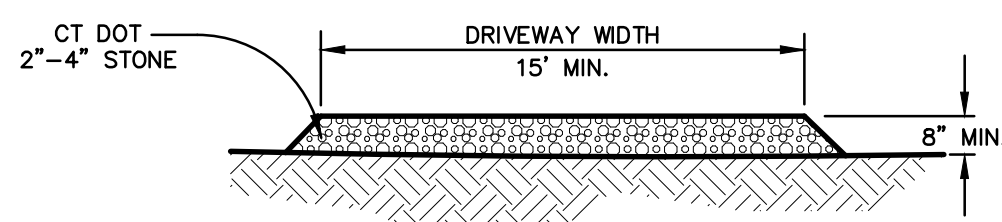
GREENLEACH GLF 15-72

N.T.S.



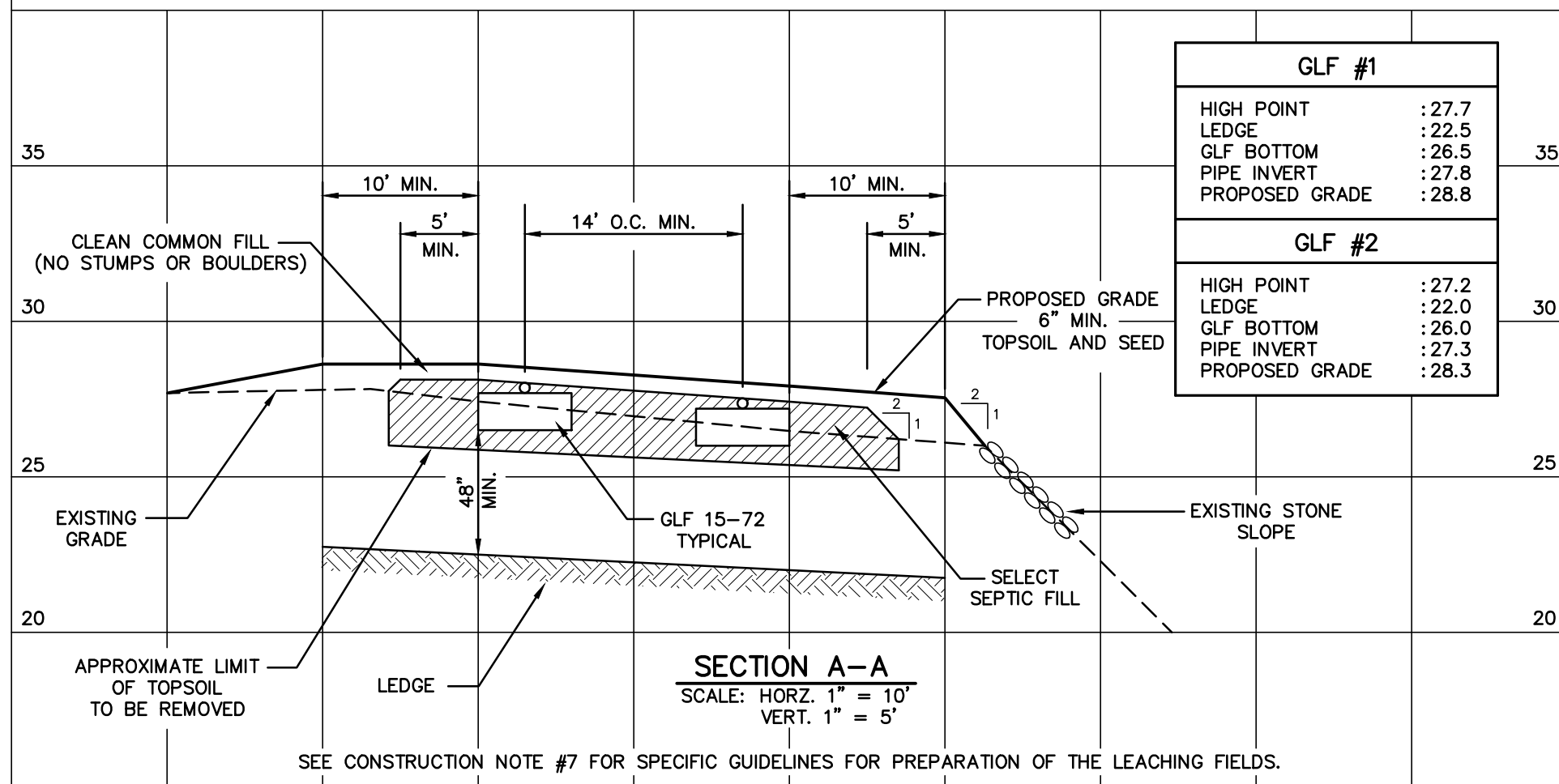
SILT FENCE DETAIL

N.T.S.



CONSTRUCTION ENTRANCE DETAIL

N.T.S.

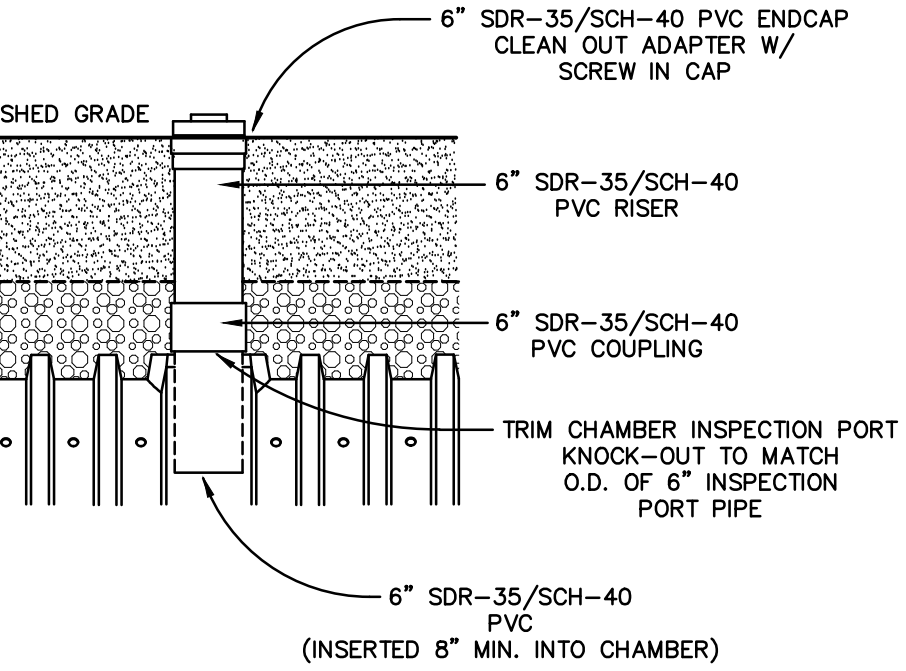
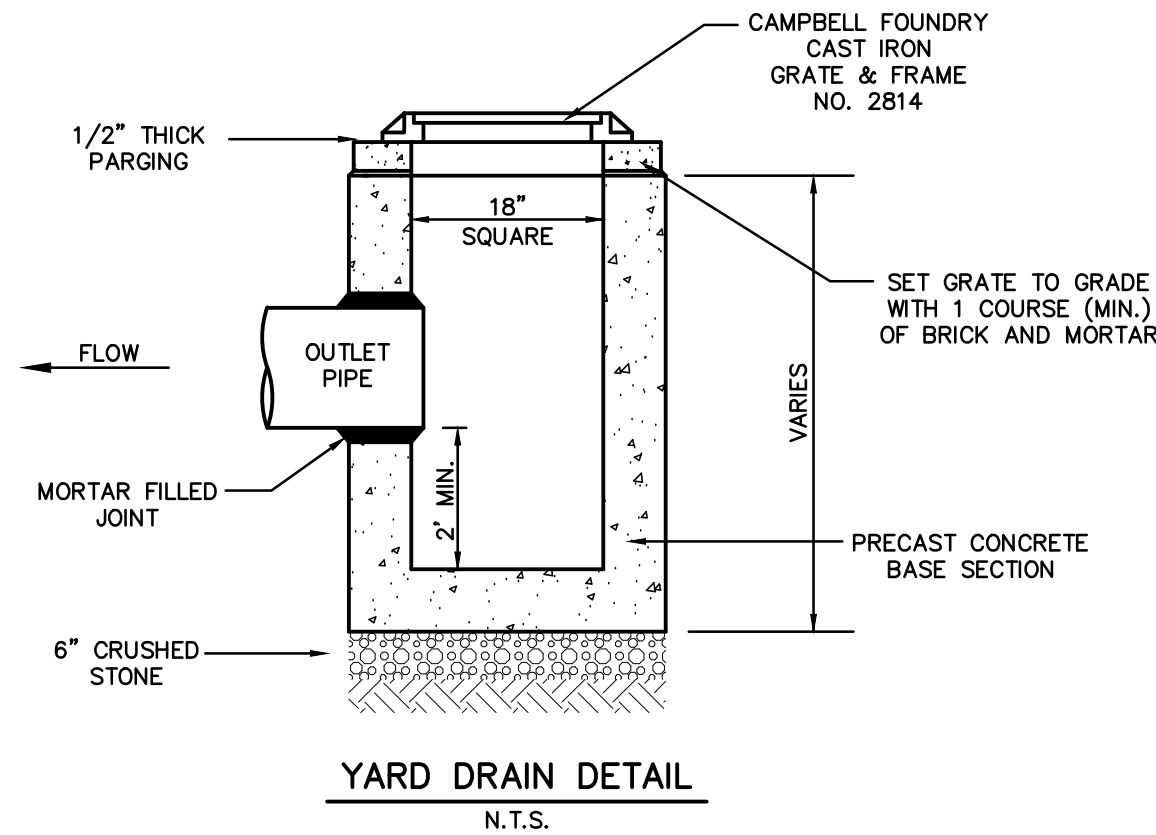


SECTION A-A

SCALE: HORIZ. 1" = 10'

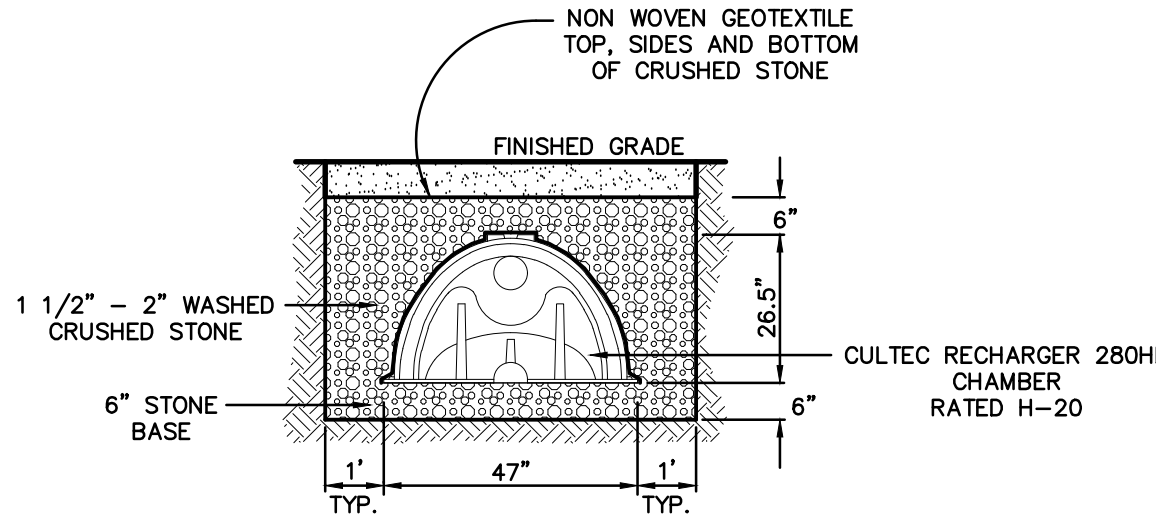
VERT. 1" = 5'

SEE CONSTRUCTION NOTE #7 FOR SPECIFIC GUIDELINES FOR PREPARATION OF THE LEACHING FIELDS.



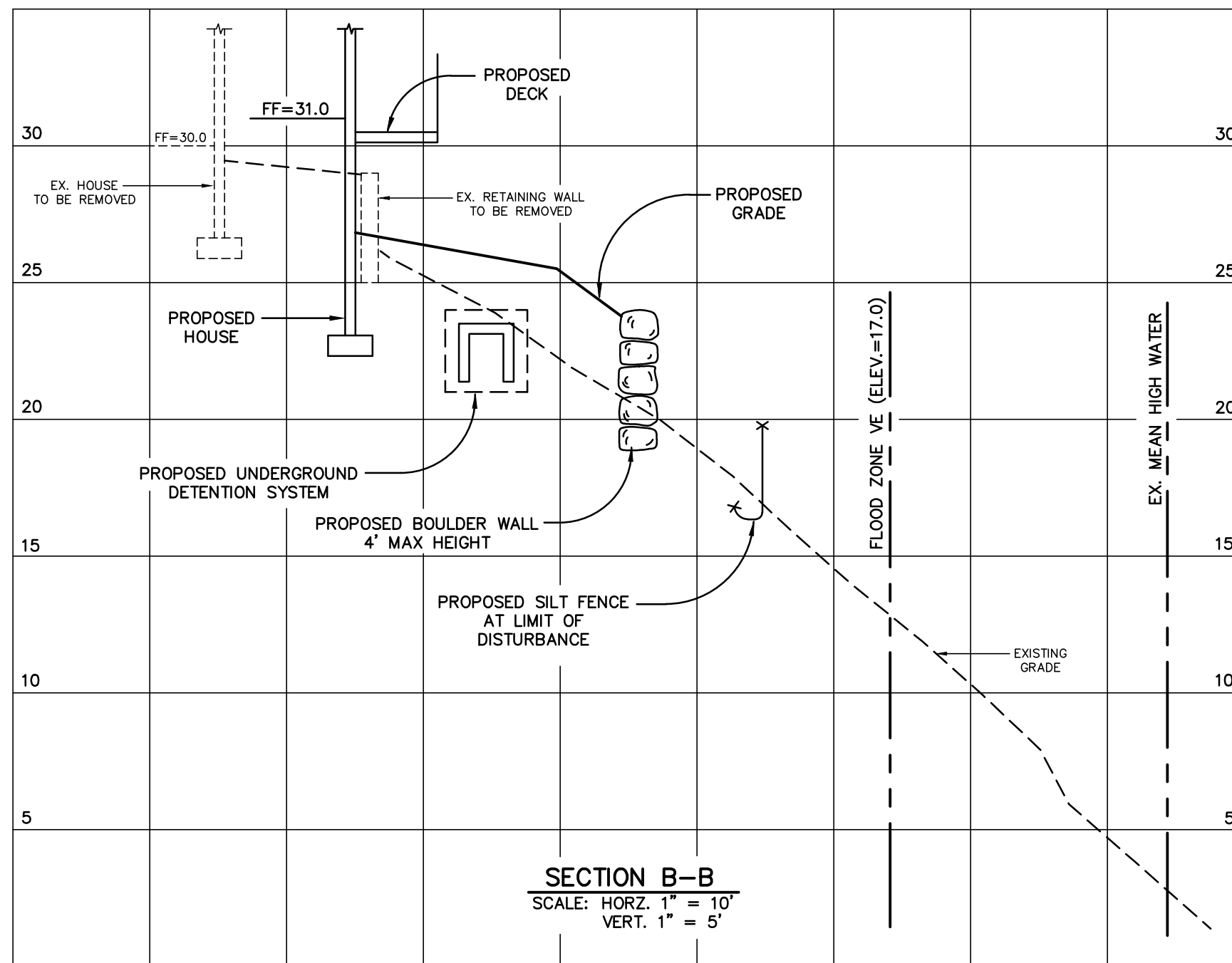
CULTEC INSPECTION PORT DETAIL

N.T.S.



CULTEC RECHARGER 280HD
HEAVY DUTY CHAMBER SYSTEM

N.T.S.



SECTION B-B

SCALE: HORIZ. 1" = 10'

VERT. 1" = 5'

DESIGN CRITERIA:

- PERCOLATION RATE: PT-A = 1:10
 - DESIGN RATE FOR PRIMARY SYSTEM: 1:10
 - DESIGN RATE FOR RESERVE SYSTEM: N/A
- MINIMUM LEACHING SYSTEM SPREAD (MLSS):
 - HYDRAULIC FACTOR (HF)
 - HYDRAULIC GRADIENT = 16.7%
 - DEPTH OF RESTRICTIVE LAYER = 57" (AVERAGE DT1 AND 3)
 - HYDRAULIC FACTOR = 10'
 - FLOW FACTOR (FF): 4 BEDROOM = 1.75
 - PERCOLATION FACTOR (PF): 1:10 = 1.0
 - MINIMUM LEACHING SYSTEM SPREAD = 10' x 1.75 x 1.0 = 17.5'
 - LEACHING SYSTEM SPREAD PROVIDED = 24'
- SYSTEM DESCRIPTION:
 - NUMBER OF BEDROOMS: 4
 - REQUIRED LEACHING AREA: 577.5 SF @ 12.1 SF/LF = 48 LF
 - SYSTEM COMPONENTS: 1250 GALLON SEPTIC TANK AND 48 LF OF GLF 15-72.
 - TOTAL FIELDS PROPOSED:
 - PRIMARY SYSTEM: 2 x 24 LF = 48 LF @ 12.1 SF/LF = 580.8 SF
 - RESERVE SYSTEM: N/A
- DEPTH OF SYSTEM CONTROL: LEDGE @ 62" IN DEEP TEST 3 WILL CONTROL THE DEPTH OF THE SYSTEM.

DEEP TEST AND PERCOLATION TEST DATA:

DEEP TEST 1	DEEP TEST 2	DEEP TEST 3
0"-19" FILL 19"-25" TOPSOIL 25"-52" RED BROWN SILTY FINE SANDY LOAM SOMEWHAT COMPACT 52"-71" TAN SILTY FINE SANDY LOAM SOMEWHAT COMPACT NO MOTTLING LEDGE @ 71" NO GROUNDWATER RESTRICTIVE @ 71-19-52"	0"-12" TOPSOIL 12"-29" BROWN GRAVELLY FINE SANDY LOAM NO MOTTLING LEDGE @ 29" NO GROUNDWATER	0"-8" TOPSOIL 8"-37" BROWN GRAVELLY FINE SANDY LOAM WITH COBBLES 37"-62" GREY BROWN GRAVELLY SANDY LOAM NO MOTTLING LEDGE @ 62" NO GROUNDWATER ROOTS TO 48"
DEEP TEST 4	PERCOLATION TEST A	
0"-9" TOPSOIL 9"-47" RED BROWN SILTY FINE SANDY LOAM 47"-70" GREY BROWN GRAVELLY SANDY LOAM NO MOTTLING LEDGE @ 70" NO GROUNDWATER	DEPTH: 29" TIME DEPTH DROP 10:49 11" - 11:00 18 7/8" 7 7/8" 11:10 20 3/4" 1 7/8" 11:20 23" 2 1/4" DESIGN RATE: 1:10	

NOTE: ALL DEEP AND PERCOLATION TESTS WERE PERFORMED BY S.E. MINOR ON OCTOBER 12, 2023 AND WITNESSED BY THE NORWALK HEALTH DEPARTMENT.

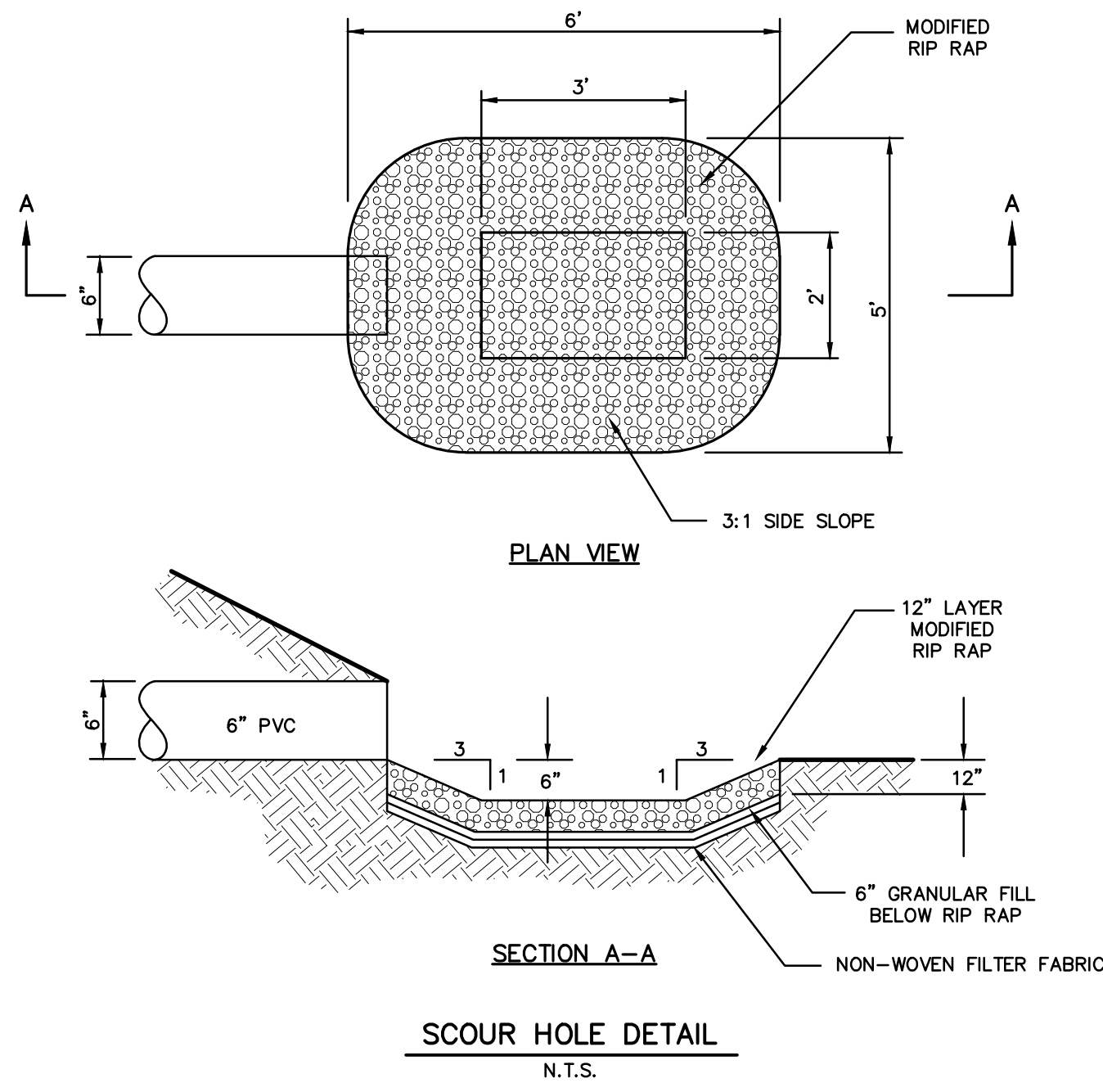
CONSTRUCTION NOTES:

- SUBSURFACE SEWAGE DISPOSAL SYSTEM MATERIALS AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO THE STATE OF CONNECTICUT AND LOCAL HEALTH CODE STANDARDS AND SPECIFICATIONS, AS WELL AS ACCEPTED STANDARDS OF GOOD WORKMANSHIP.
- FINAL INSPECTION AND AS-BUILT DRAWINGS SHALL BE MADE IN ACCORDANCE WITH STATE AND LOCAL CODES. THE DESIGN ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF SYSTEM COMPLETION. INSPECTION OF THE SYSTEM SHALL OCCUR AS SOON AS POSSIBLE TO PREVENT DAMAGE AND IT SHALL BE COVERED WITHIN TWO WORKING DAYS OF THE SANITARIAN'S INSPECTION.
- THE WASTE LINE FROM THE HOUSE/BUILDING TO THE SEPTIC TANK SHALL BE NO LESS THAN 4" DIAMETER CAST IRON PIPE (ASTM A-74) OR A PVC SCHEDULE 40 (ASTM D1785), WITH RUBBER COMPRESSION GASKETS OR SOLVENT WELD JOINTS AND SHALL BE PITCHED WITH A MINIMUM SLOPE OF 1/4" PER FOOT.
- ALL SOLID DISTRIBUTION PIPING SHALL BE TIGHT JOINT 4" DIAMETER PVC (ASTM D3034 SDR 35). THESE LINES SHALL LIE ON UNDISTURBED OR COMPACTED SOIL.
- THE SEPTIC TANK SHALL HAVE A MINIMUM CAPACITY OF 1250 GALLONS AND CONTAIN TWO COMPARTMENTS. THE TANK SHALL BE INSTALLED LEVEL AND BE SET UPON AT LEAST 6" OF CRUSHED STONE OR GRAVEL, AND BE EQUIPPED WITH A 30" RISER SECTION TO GRADE, FOR ACCESS. SEPTIC TANKS INDICATED ARE MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC. OF TORRINGTON, CT. AN EQUIVALENT TANK IS ACCEPTABLE.
- DISTRIBUTION BOXES ARE MODEL DB 4 AS MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC. OF TORRINGTON, CONNECTICUT. BOXES SHALL BE SET UPON AT LEAST 6" OF CRUSHED STONE OR GRAVEL. EQUIVALENT BOXES ARE ACCEPTABLE.
- THE CONTRACTOR SHALL REMOVE FROM THE AREA OF THE SEPTIC SYSTEM ALL TOPSOIL AND ALL OTHER ORGANIC MATERIALS, TREE TRUNKS, AND DEBRIS; AND SHALL SCARIFY AND RAKE THE EXPOSED SURFACE TO ENSURE A GOOD BOND BETWEEN THE EXISTING SUBSOIL AND THE SELECT FILL.
- SELECT FILL SHALL MEET CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATION M.02.06-1B AS FOLLOWS:

SIEVE	% PASSING	WET SIEVE	DRY SIEVE
#4	100	100	100
#10	70-100	70-100	70-100
#40	10-50 *	10-50 *	10-75
#100	0-20	0-20	0-5
#200	0-5	0-5	0-2.5

* PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND #200 SIEVE DOES NOT EXCEED 5%.

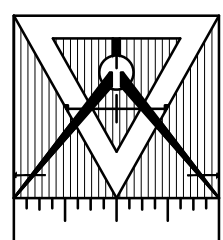
THE FILL SHALL ALSO BE ACCEPTABLE TO THE LOCAL HEALTH DEPARTMENT.
- THE FIRST 6" OF SELECT FILL SHALL BE HARROWED INTO THE EXISTING SOIL. THEREAFTER, IT SHALL BE PLACED IN 12" LIFTS AND MECHANICALLY COMPACTED. COMPACTION SHALL BE AT LEAST 90%-95% OF THAT DETERMINED BY A MODIFIED OPTIMUM COMPACTION TEST PERFORMED IN ACCORDANCE WITH ASTM D1557. SELECT FILL SHALL BE PLACED TO A POINT AT LEAST 5' FROM THE EDGE OF THE TRENCH, AND COMMON FILL TO A POINT 10' FROM THE EDGE OF THE TRENCH. IN CASES WHERE THE DEPTH OF FILL EXCEEDS 12" ABOVE THE EXISTING GRADE, THE TRENCH SHALL BE NOTCHED INTO THE EXISTING SOIL AT LEAST 12" AND FILLED WITH SELECT FILL.
- FINAL GRADING, INCLUDING THE 6" TOPSOIL LAYER, SHALL BE COMPLETED AS SOON AS POSSIBLE AFTER FINAL INSPECTION. CARE SHALL BE TAKEN TO PREVENT THE PONDING OF SURFACE WATER ON OR NEAR ANY PART OF THE SYSTEM.
- PROPOSED SEPTIC SYSTEM LOCATIONS MAY NOT BE SHIFTED WITHOUT OBTAINING WRITTEN PERMISSION FROM THE DESIGN ENGINEER AND LOCAL SANITARIAN.
- NO PART OF THE SEPTIC TANK OR LEACHING TRENCHES SHALL BE WITHIN 75' OF ANY WELL. THERE IS NO APPARENT INTERFERENCE BETWEEN THE WELLS OR SEPTIC SYSTEMS ON ADJACENT PROPERTIES AND THOSE PROPOSED ON THIS PLAN.
- SURFACE AND GROUNDWATER DRAINS SHALL BE PLACED UP GRADIENT AND AT LEAST 25' FROM THE SEPTIC SYSTEM. WHEN DRAINS ARE REQUIRED TO BE DOWN GRADIENT, THEY MUST BE AT LEAST 50' FROM THE SEPTIC SYSTEM. ALL DRAINS AND ROOF LEADERS SHALL DISCHARGE AWAY FROM THE SEPTIC SYSTEM.
- SOIL AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS INDICATED ON THE PLAN AND MAINTAINED DURING CONSTRUCTION, UNTIL THE SITE IS STABILIZED.
- THIS DESIGN IS BASED UPON THE USE OF CONVENTIONAL BATHTUBS WITH A CAPACITY UNDER 100 GALLONS. IF A LARGER BATH/TUB IS TO BE INSTALLED THE LEACHING AREA AND SEPTIC TANK SIZES MUST BE INCREASED TO COMPLY WITH SECTION VII.F OF THE TECHNICAL STANDARDS. ADDITIONALLY, THE SYSTEM HAS NOT BEEN DESIGNED TO ACCEPT EFFLUENT FROM WHIRLPOOL BACKWASH, WATER SOFTENER BACKWASH OR GARBAGE DISPOSALS.
- THIS DESIGN IS BASED UPON THE INSTALLATION OF THE SEPTIC SYSTEM IN UNCOMPACTED NATURAL SOIL. ALTHOUGH THE CONTRACTOR IS RESPONSIBLE FOR PREPARING THE SITE, THE USE OF HEAVY EQUIPMENT IN THE PROPOSED SEPTIC AREA IS PROHIBITED TO AVOID OVER COMPACTION OF THE NATIVE SOIL.
- THIS DESIGN CONFORMS TO APPLICABLE CODES AND ACCEPTED PRACTICE. NO OTHER WARRANTY IS EXPRESSED OR IMPLIED.
- McCHORD ENGINEERING ASSOCIATES, INC. ASSUMES NO RESPONSIBILITY FOR SEPTIC SYSTEM SITE PREPARATION, LOCATION, OR INVERT ELEVATIONS IN COMPLIANCE WITH THE APPROVED PLAN, UNLESS IT SUPERVISES EACH PHASE OF SYSTEM INSTALLATION.
- PRIOR TO CONSTRUCTION A SURVEYOR LICENSED IN THE STATE OF CONNECTICUT SHALL STAKE OUT THE PROPOSED SEPTIC SYSTEM AND PROVIDE BENCHMARK ELEVATIONS.



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NO.	DATE	REVISIONS AND SUBMISSIONS
1	3-3-25	ISSUED FOR MUNICIPAL APPROVAL

SIGNATURE: _____ DRAWING NO: _____

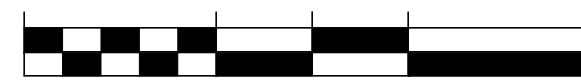


McChord Engineering Associates, Inc.
Civil Engineers and Land Planners
1 Grumman Hill Road
Wilton, CT 06897 (203) 834-0569

PLAN PREPARED FOR
SCOTT STEPHENS
NORWALK, CONNECTICUT

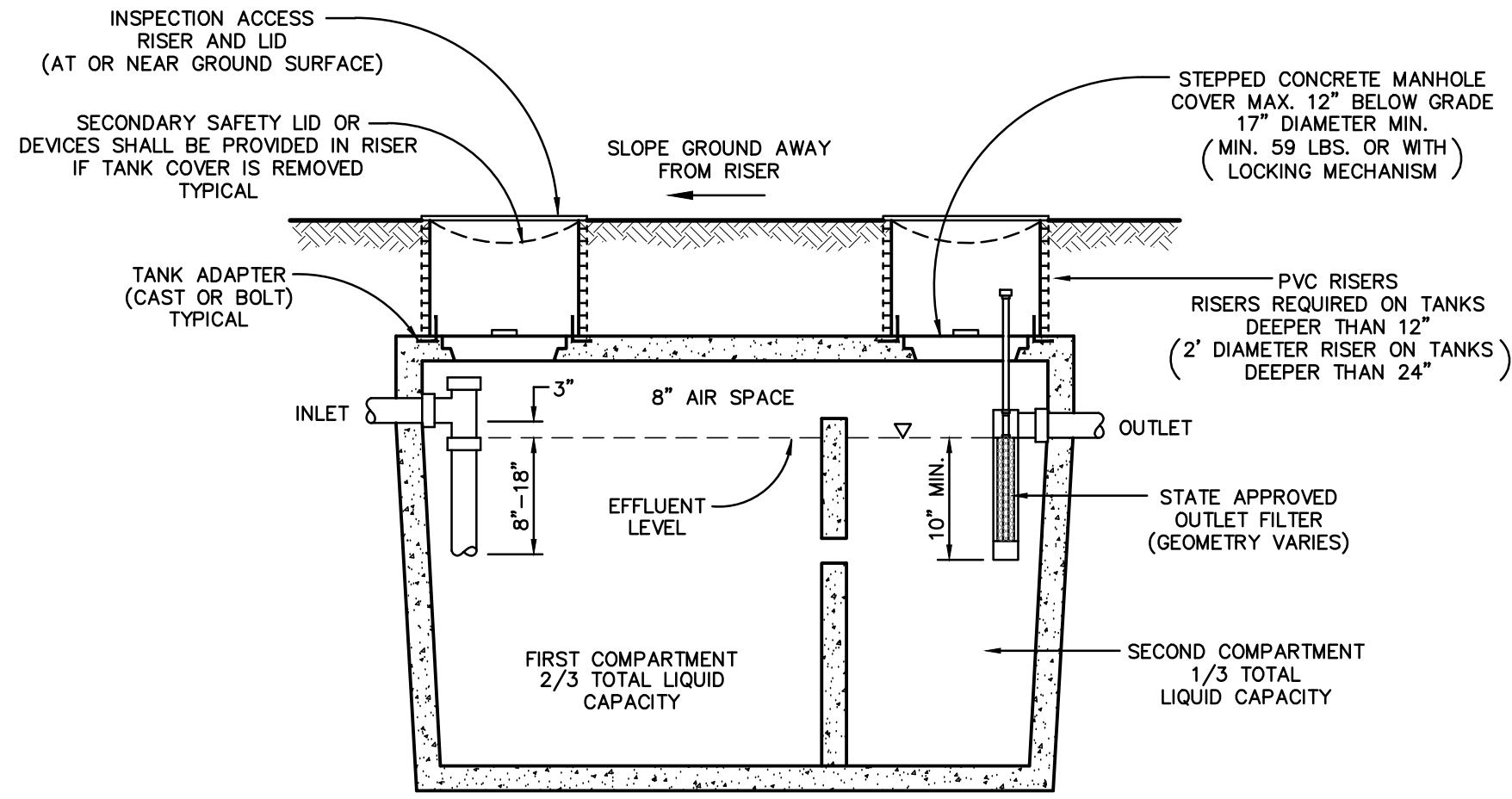
CONSTRUCTION NOTES AND DETAILS
36 DOCK ROAD
NORWALK, CONNECTICUT

JOB NO: 2364A-1
DRAWN BY: DRS
SCALE: AS SHOWN
DATE: MARCH 3, 2025
CHECKED BY: TSN



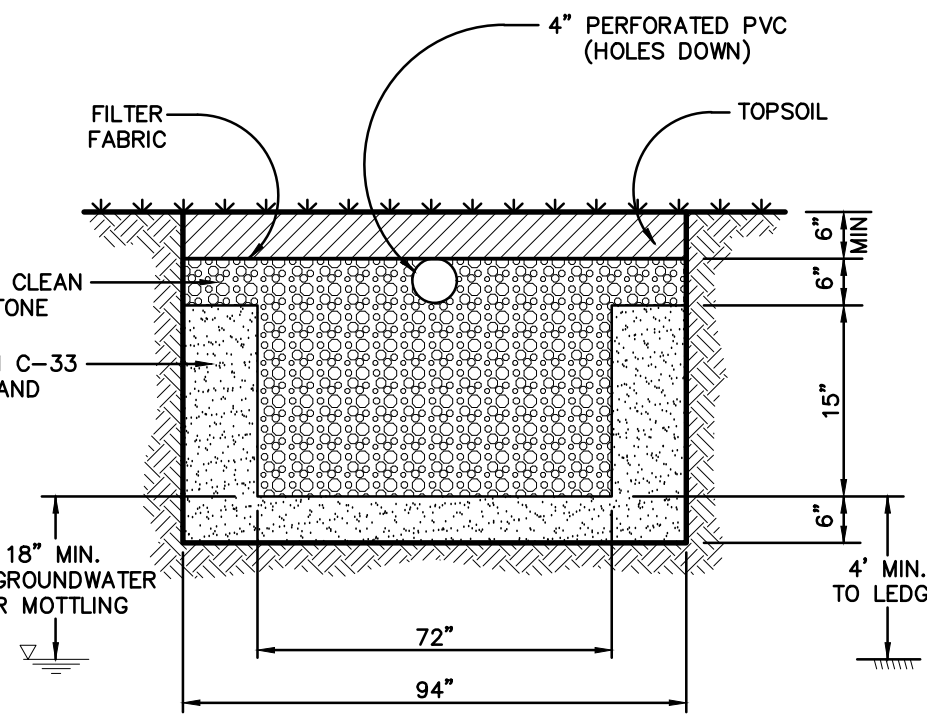
THIS PRINT IS INVALID WITHOUT EMBOSSED OR LIVE RED SEAL

SHEET 2 OF 2



TYPICAL SEPTIC TANK DETAIL

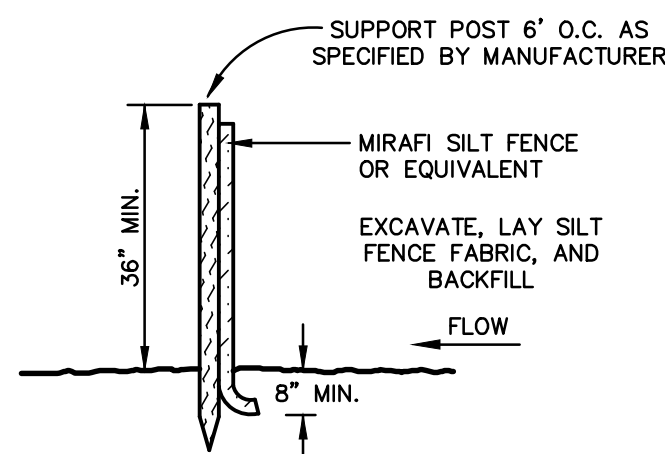
N.T.S.



NOTES: 1. INSTALLATION MUST BE SUPERVISED BY A REPRESENTATIVE OF GREENLEACH.
2. USE GREENLEACH SYSTEM WITHOUT FILTER FABRIC COVERED CARDBOARD.

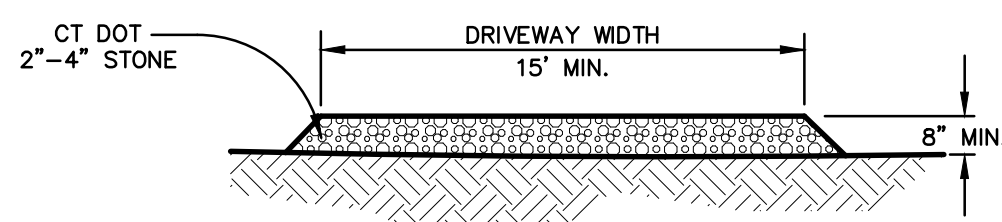
GREENLEACH GLF 15-72

N.T.S.



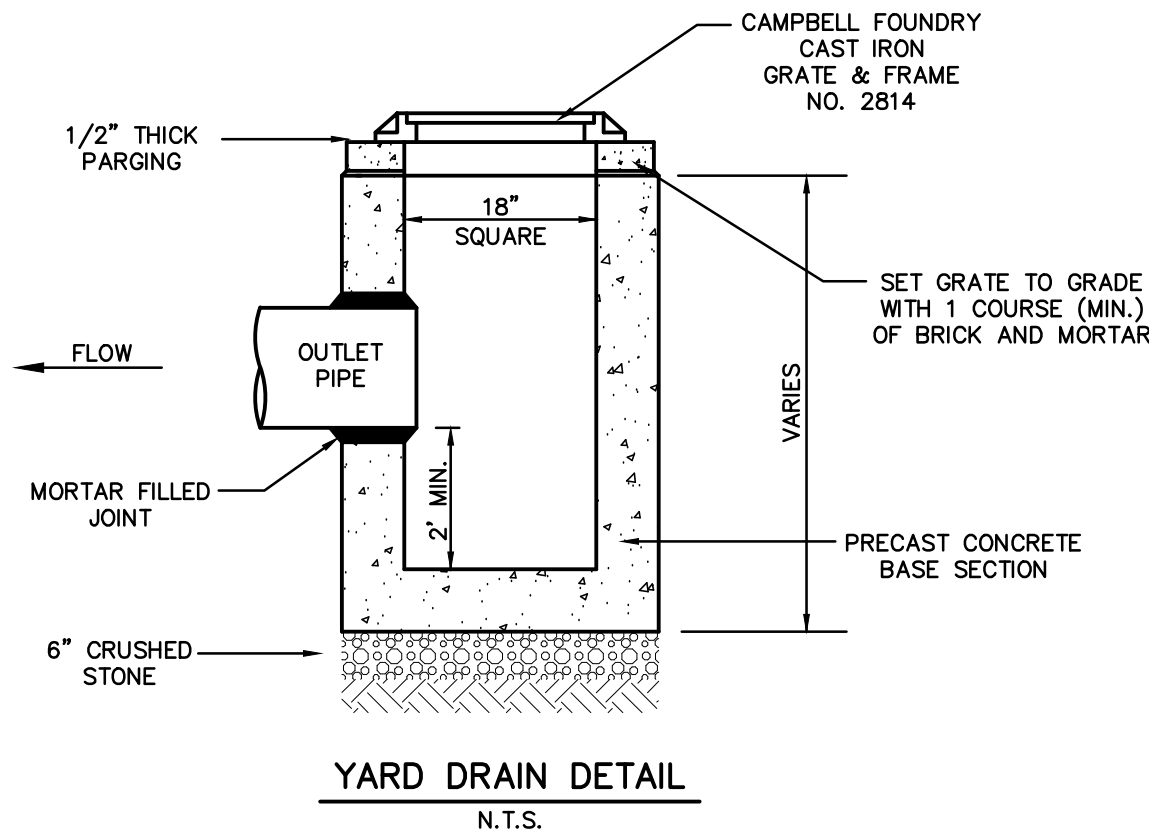
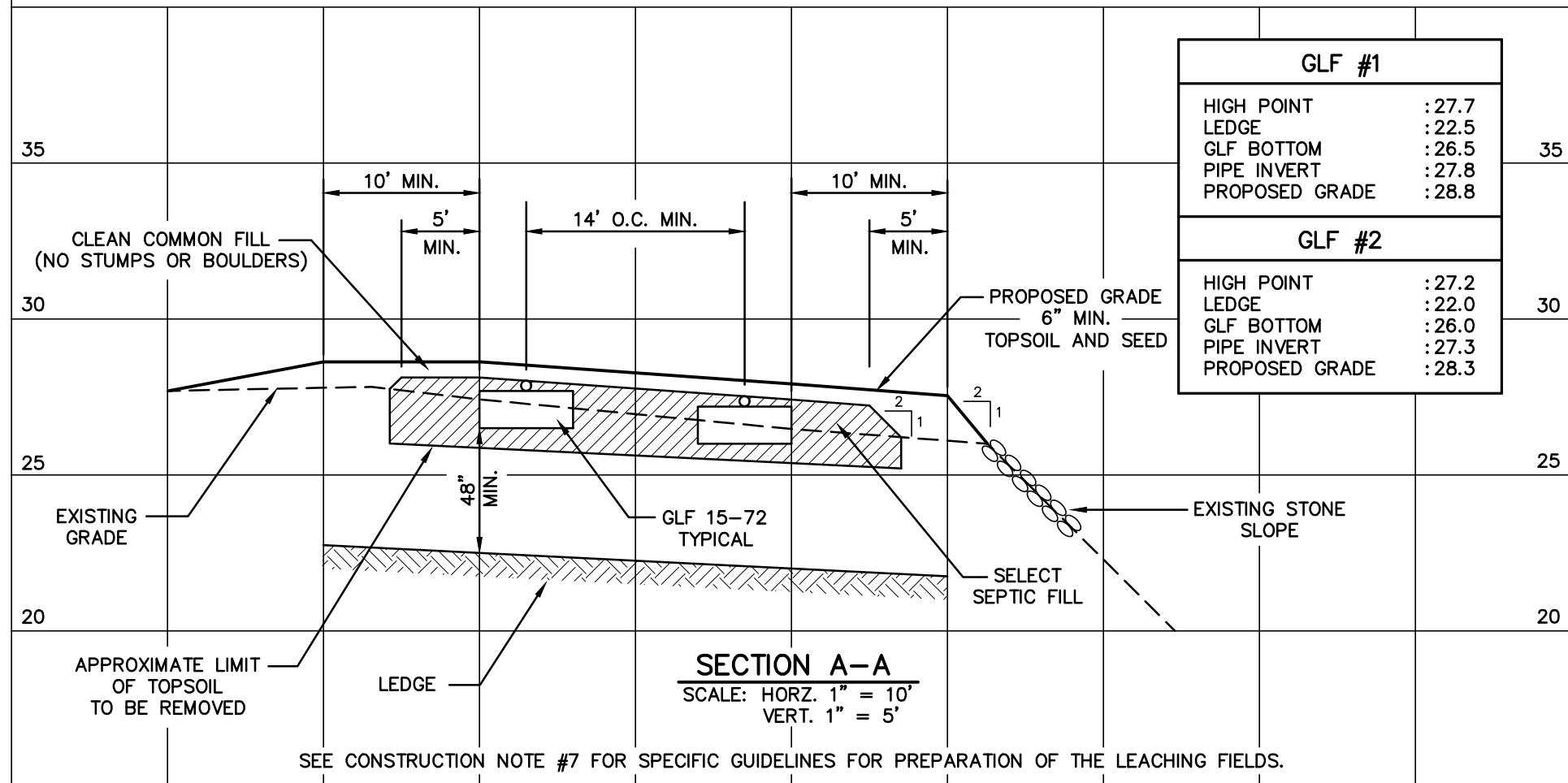
SILT FENCE DETAIL

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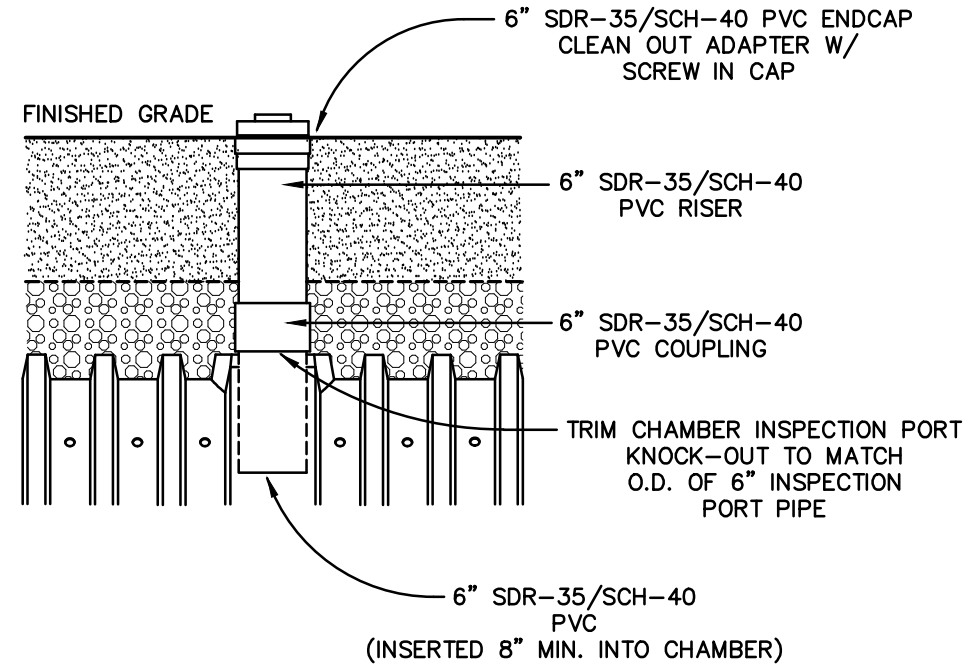
CONSTRUCTION ENTRANCE DETAIL

N.T.S.



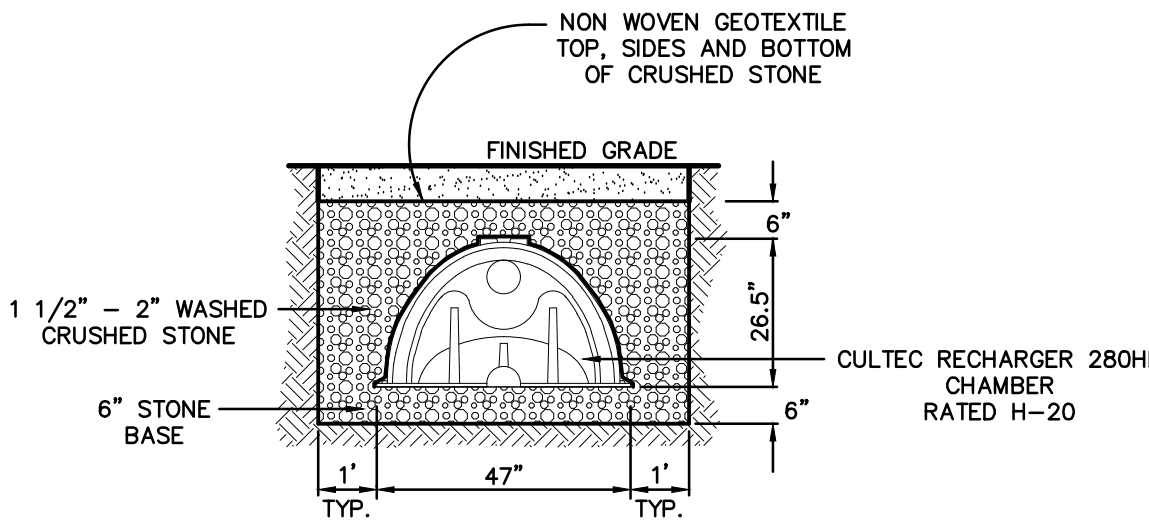
YARD DRAIN DETAIL

N.T.S.



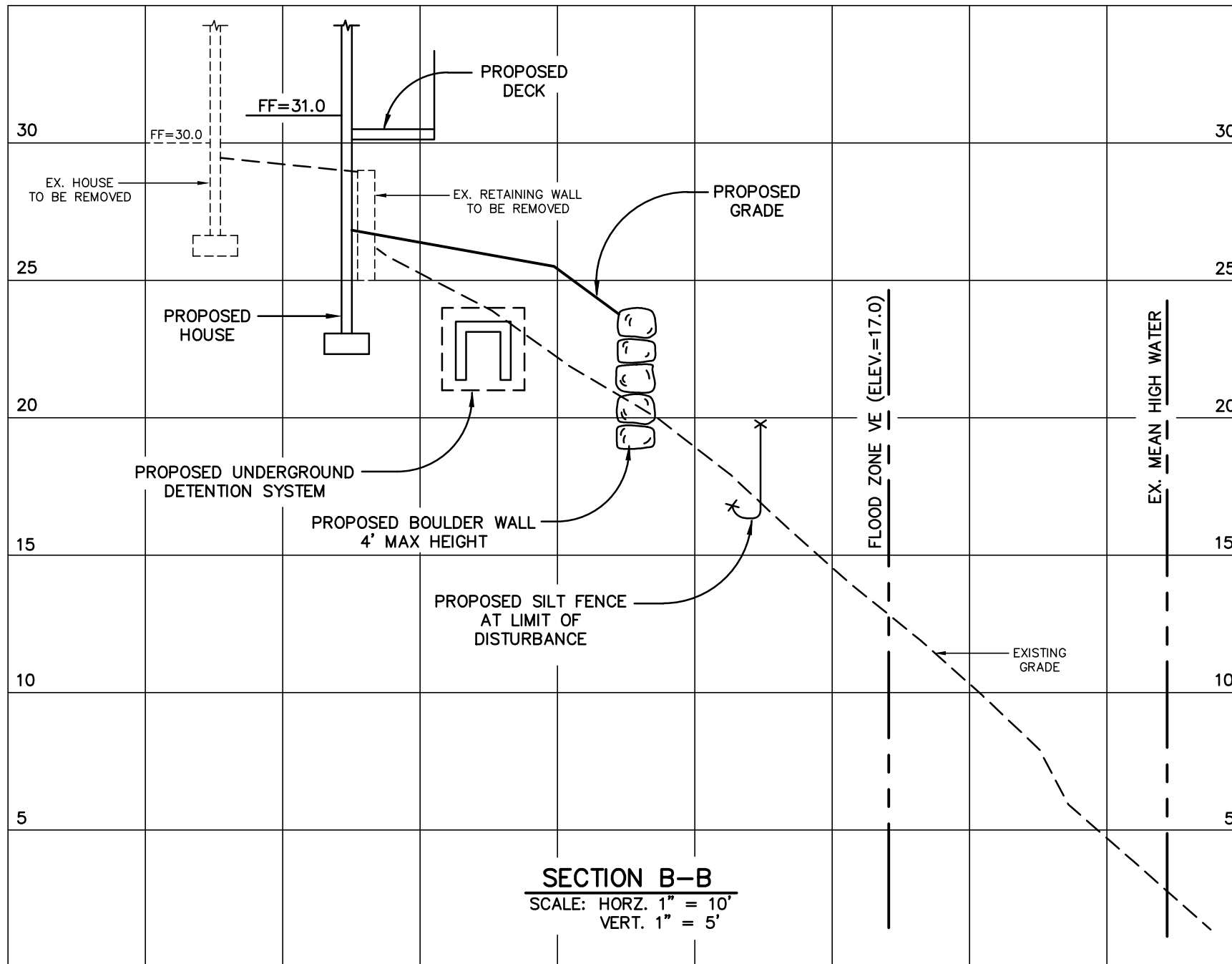
CULTEC INSPECTION PORT DETAIL

N.T.S.



CULTEC RECHARGER 280HD
HEAVY DUTY CHAMBER SYSTEM

N.T.S.



DESIGN CRITERIA:

- PERCOLATION RATE: PT-A = 1:10
 - DESIGN RATE FOR PRIMARY SYSTEM: 1:10
 - DESIGN RATE FOR RESERVE SYSTEM: N/A
- MINIMUM LEACHING SYSTEM SPREAD (MLSS):
 - HYDRAULIC FACTOR (HF)
 - HYDRAULIC GRADIENT = 16.7%
 - DEPTH OF RESTRICTIVE LAYER = 57" (AVERAGE DT1 AND 3)
 - HYDRAULIC FACTOR = 10'
 - FLOW FACTOR (FF): 4 BEDROOM = 1.75
 - PERCOLATION FACTOR (PF): 1:10 = 1.0
 - MINIMUM LEACHING SYSTEM SPREAD = 10' x 1.75 x 1.0 = 17.5'
 - LEACHING SYSTEM SPREAD PROVIDED = 24'
- SYSTEM DESCRIPTION:
 - NUMBER OF BEDROOMS: 4
 - REQUIRED LEACHING AREA: 577.5 SF @ 12.1 SF/LF = 48 LF
 - SYSTEM COMPONENTS: 1250 GALLON SEPTIC TANK AND 48 LF OF GLF 15-72.
 - TOTAL FIELDS PROPOSED:
 - PRIMARY SYSTEM: 2 x 24 LF = 48 LF @ 12.1 SF/LF = 580.8 SF
 - RESERVE SYSTEM: N/A
- DEPTH OF SYSTEM CONTROL: LEDGE @ 62" IN DEEP TEST 3 WILL CONTROL THE DEPTH OF THE SYSTEM.

DEEP TEST AND PERCOLATION TEST DATA:

DEEP TEST 1	DEEP TEST 2	DEEP TEST 3
0"-19" FILL 19"-25" TOPSOIL 25"-52" RED BROWN SILTY FINE SANDY LOAM SOMEWHAT COMPACT 52"-71" TAN SILTY FINE SANDY LOAM SOMEWHAT COMPACT NO MOTTLING LEDGE @ 71" NO GROUNDWATER RESTRICTIVE @ 71-19-52"	0"-12" TOPSOIL 12"-29" BROWN GRAVELLY FINE SANDY LOAM NO MOTTLING LEDGE @ 29" NO GROUNDWATER	0"-8" TOPSOIL 8"-37" BROWN GRAVELLY FINE SANDY LOAM WITH COBBLES 37"-62" GREY BROWN GRAVELLY SANDY LOAM NO MOTTLING LEDGE @ 62" NO GROUNDWATER ROOTS TO 48"

DEEP TEST 4	PERCOLATION TEST A
0"-9" TOPSOIL 9"-47" RED BROWN SILTY FINE SANDY LOAM 47"-70" GREY BROWN GRAVELLY SANDY LOAM NO MOTTLING LEDGE @ 70" NO GROUNDWATER	DEPTH: 29" TIME DEPTH DROP 10:49 11" - 11:00 18 7/8" 7 7/8" 11:10 20 3/4" 1 7/8" 11:20 23" 2 1/4" DESIGN RATE: 1:10

NOTE: ALL DEEP AND PERCOLATION TESTS WERE PERFORMED BY S.E. MINOR ON OCTOBER 12, 2023 AND WITNESSED BY THE NORWALK HEALTH DEPARTMENT.

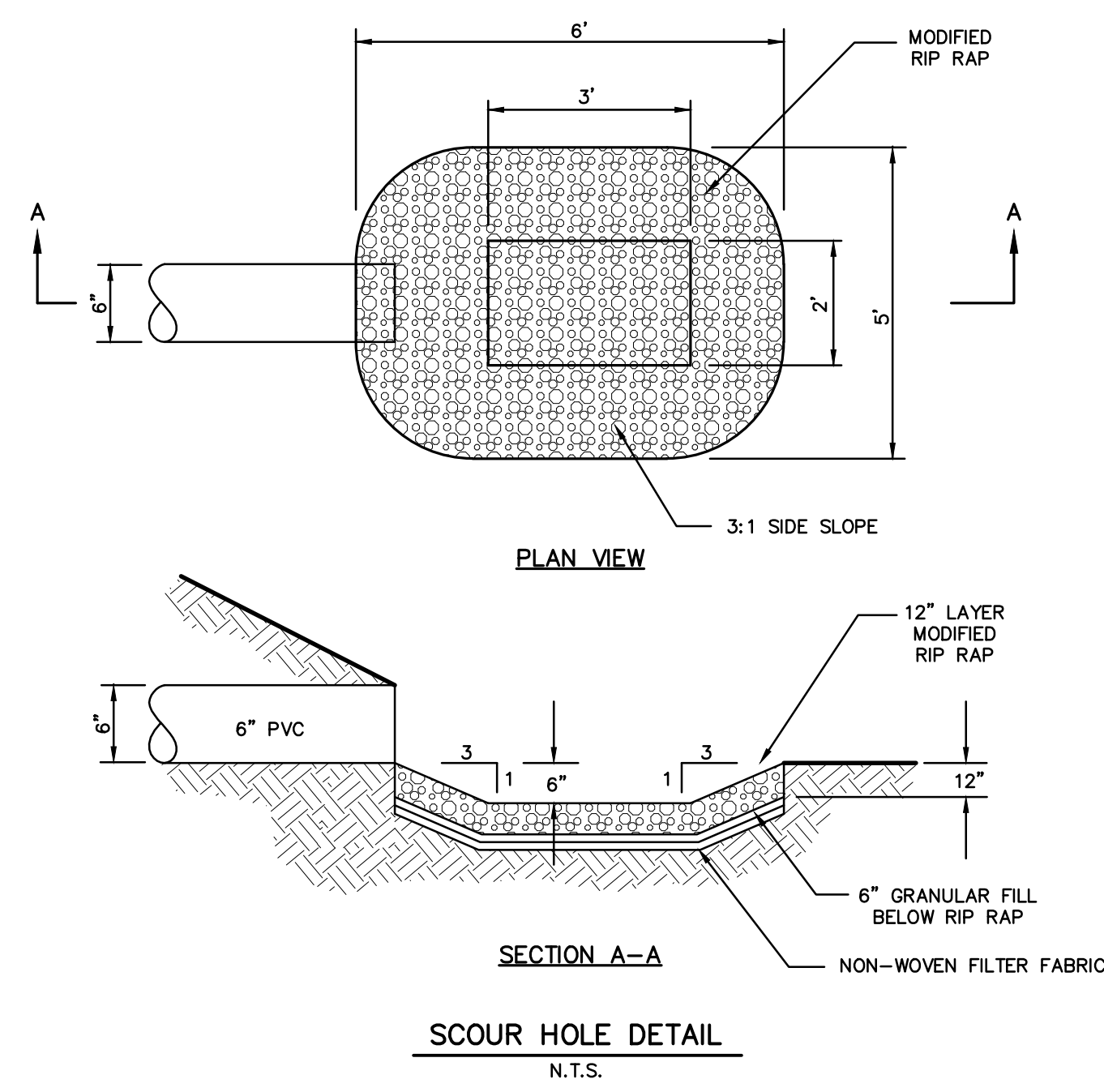
CONSTRUCTION NOTES:

- SUBSURFACE SEWAGE DISPOSAL SYSTEM MATERIALS AND CONSTRUCTION TECHNIQUES SHALL CONFORM TO THE STATE OF CONNECTICUT AND LOCAL HEALTH CODE STANDARDS AND SPECIFICATIONS, AS WELL AS ACCEPTED STANDARDS OF GOOD WORKMANSHIP.
- FINAL INSPECTION AND AS-BUILT DRAWINGS SHALL BE MADE IN ACCORDANCE WITH STATE AND LOCAL CODES. THE DESIGN ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF SYSTEM COMPLETION. INSPECTION OF THE SYSTEM SHALL OCCUR AS SOON AS POSSIBLE TO PREVENT DAMAGE AND IT SHALL BE COVERED WITHIN TWO WORKING DAYS OF THE SANITARIAN'S INSPECTION.
- THE WASTE LINE FROM THE HOUSE/BUILDING TO THE SEPTIC TANK SHALL BE NO LESS THAN 4" DIAMETER CAST IRON PIPE (ASTM A-74) OR A PVC SCHEDULE 40 (ASTM D1785), WITH RUBBER COMPRESSION GASKETS OR SOLVENT WELD JOINTS AND SHALL BE PITCHED WITH A MINIMUM SLOPE OF 1/4" PER FOOT.
- ALL SOLID DISTRIBUTION PIPING SHALL BE TIGHT JOINT 4" DIAMETER PVC (ASTM D3034 SDR 35). THESE LINES SHALL LIE ON UNDISTURBED OR COMPACTED SOIL.
- THE SEPTIC TANK SHALL HAVE A MINIMUM CAPACITY OF 1250 GALLONS AND CONTAIN TWO COMPARTMENTS. THE TANK SHALL BE INSTALLED LEVEL AND BE SET UPON AT LEAST 6" OF CRUSHED STONE OR GRAVEL, AND BE EQUIPPED WITH A 30" RISER SECTION TO GRADE, FOR ACCESS. SEPTIC TANKS INDICATED ARE MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC. OF TORRINGTON, CT. AN EQUIVALENT TANK IS ACCEPTABLE.
- DISTRIBUTION BOXES ARE MODEL DB 4 AS MANUFACTURED BY RICHARD SEPTIC SYSTEMS, INC. OF TORRINGTON, CONNECTICUT. BOXES SHALL BE SET UPON AT LEAST 6" OF CRUSHED STONE OR GRAVEL. EQUIVALENT BOXES ARE ACCEPTABLE.
- THE CONTRACTOR SHALL REMOVE FROM THE AREA OF THE SEPTIC SYSTEM ALL TOPSOIL AND ALL OTHER ORGANIC MATERIALS, TREE TRUNKS, AND DEBRIS; AND SHALL SCARIFY AND RAKE THE EXPOSED SURFACE TO ENSURE A GOOD BOND BETWEEN THE EXISTING SUBSOIL AND THE SELECT FILL.
- SELECT FILL SHALL MEET CONNECTICUT DEPARTMENT OF TRANSPORTATION SPECIFICATION M.02.06-1B AS FOLLOWS:

SIEVE	% PASSING	WET SIEVE	DRY SIEVE
#4	100	100	100
#10	70-100	70-100	70-100
#40	10-50 *	10-50 *	10-75
#100	0-20	0-5	0-5
#200	0-5	0-2.5	0-2.5

* PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND #200 SIEVE DOES NOT EXCEED 5%.

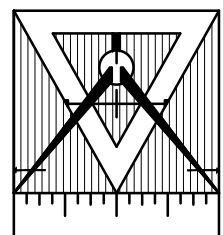
THE FILL SHALL ALSO BE ACCEPTABLE TO THE LOCAL HEALTH DEPARTMENT.
- THE FIRST 6" OF SELECT FILL SHALL BE HARROWED INTO THE EXISTING SOIL. THEREAFTER, IT SHALL BE PLACED IN 12" LIFTS AND MECHANICALLY COMPACTED. COMPACTION SHALL BE AT LEAST 90%-95% OF THAT DETERMINED BY A MODIFIED OPTIMUM COMPACTION TEST PERFORMED IN ACCORDANCE WITH ASTM D1557. SELECT FILL SHALL BE PLACED TO A POINT AT LEAST 5' FROM THE EDGE OF THE TRENCH, AND COMMON FILL TO A POINT 10' FROM THE EDGE OF THE TRENCH. IN CASES WHERE THE DEPTH OF FILL EXCEEDS 12" ABOVE THE EXISTING GRADE, THE TRENCH SHALL BE NOTCHED INTO THE EXISTING SOIL AT LEAST 12" AND FILLED WITH SELECT FILL.
- FINAL GRADING, INCLUDING THE 6" TOPSOIL LAYER, SHALL BE COMPLETED AS SOON AS POSSIBLE AFTER FINAL INSPECTION. CARE SHALL BE TAKEN TO PREVENT THE PONDING OF SURFACE WATER ON OR NEAR ANY PART OF THE SYSTEM.
- PROPOSED SEPTIC SYSTEM LOCATIONS MAY NOT BE SHIFTED WITHOUT OBTAINING WRITTEN PERMISSION FROM THE DESIGN ENGINEER AND LOCAL SANITARIAN.
- NO PART OF THE SEPTIC TANK OR LEACHING TRENCHES SHALL BE WITHIN 75' OF ANY WELL. THERE IS NO APPARENT INTERFERENCE BETWEEN THE WELLS OR SEPTIC SYSTEMS ON ADJACENT PROPERTIES AND THOSE PROPOSED ON THIS PLAN.
- SURFACE AND GROUNDWATER DRAINS SHALL BE PLACED UP GRADIENT AND AT LEAST 25' FROM THE SEPTIC SYSTEM. WHEN DRAINS ARE REQUIRED TO BE DOWN GRADIENT, THEY MUST BE AT LEAST 50' FROM THE SEPTIC SYSTEM. ALL DRAINS AND ROOF LEADERS SHALL DISCHARGE AWAY FROM THE SEPTIC SYSTEM.
- SOIL AND EROSION CONTROL MEASURES SHALL BE INSTALLED AS INDICATED ON THE PLAN AND MAINTAINED DURING CONSTRUCTION, UNTIL THE SITE IS STABILIZED.
- THIS DESIGN IS BASED UPON THE USE OF CONVENTIONAL BATHTUBS WITH A CAPACITY UNDER 100 GALLONS. IF A LARGER BATH/HOT TUB IS TO BE INSTALLED THE LEACHING AREA AND SEPTIC TANK SIZES MUST BE INCREASED TO COMPLY WITH SECTION VII.F OF THE TECHNICAL STANDARDS. ADDITIONALLY, THE SYSTEM HAS NOT BEEN DESIGNED TO ACCEPT EFFLUENT FROM WHIRLPOL BACKWASH, WATER SOFTENER BACKWASH OR GARBAGE DISPOSALS.
- THIS DESIGN IS BASED UPON THE INSTALLATION OF THE SEPTIC SYSTEM IN UNCOMPACTED NATURAL SOIL. ALTHOUGH THE CONTRACTOR IS RESPONSIBLE FOR PREPARING THE SITE, THE USE OF HEAVY EQUIPMENT IN THE PROPOSED SEPTIC AREA IS PROHIBITED TO AVOID OVER COMPACTION OF THE NATIVE SOIL.
- THIS DESIGN CONFORMS TO APPLICABLE CODES AND ACCEPTED PRACTICE. NO OTHER WARRANTY IS EXPRESSED OR IMPLIED.
- McCHORD ENGINEERING ASSOCIATES, INC. ASSUMES NO RESPONSIBILITY FOR SEPTIC SYSTEM SITE PREPARATION, LOCATION, OR INVERT ELEVATIONS IN COMPLIANCE WITH THE APPROVED PLAN, UNLESS IT SUPERVISES EACH PHASE OF SYSTEM INSTALLATION.
- PRIOR TO CONSTRUCTION A SURVEYOR LICENSED IN THE STATE OF CONNECTICUT SHALL STAKE OUT THE PROPOSED SEPTIC SYSTEM AND PROVIDE BENCHMARK ELEVATIONS.



THIS DRAWING AND DETAILS ON IT, AS AN INSTRUMENT OF SERVICE, IS THE PROPERTY OF THE ENGINEER AND MAY BE USED FOR THIS SPECIFIC PROJECT AND SHALL NOT BE LOANED, COPIED OR REPRODUCED WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.

1 3-3-25 ISSUED FOR MUNICIPAL APPROVAL
NO. DATE REVISIONS AND SUBMISSIONS

SIGNATURE: DRAWING NO:



McChord Engineering Associates, Inc.
Civil Engineers and Land Planners
1 Grumman Hill Road
Wilton, CT 06897 (203) 834-0569

PLAN PREPARED FOR
SCOTT STEPHENS
NORWALK, CONNECTICUT

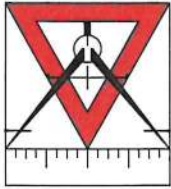
CONSTRUCTION NOTES AND DETAILS
36 DOCK ROAD
NORWALK, CONNECTICUT

JOB NO: 2364A-1
DRAWN BY: DRS
SCALE: AS SHOWN
DATE: MARCH 3, 2025
CHECKED BY: TSN



THIS PRINT IS INVALID WITHOUT EMBOSSED OR LIVE RED SEAL

SHEET 2 OF 2



McChord Engineering Associates, Inc.

Civil Engineers and Land Planners

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

March 3, 2025

Planning & Zoning Commission
Norwalk City Hall
125 East Ave.
Room 129
Norwalk, CT 06856

Re: Engineering Summary
Proposed Site Development
36 Dock Road, Norwalk, CT
D/B/L: 5/84/100

Dear Commissioners:

This office has been commissioned by Robert S. Stephens to prepare the site engineering for the proposed site development of 36 Dock Road. The project requires a P&Z application for "Coastal Site Plan Review", "Single & Two Family Residential Development" and "Filling, Excavation, and/or Grading". The following is an engineering summary of the existing property, proposed development, and regulated activity.

The property is 23,725 square feet and is located in Norwalk's CD-1S Zone. It is located on the west side of Dock Road at the south end of the street. Village Creek is located just west of the property and contains tidal wetlands. The property is partially within the AE flood zone (elev. 13.0) and the VE flood zone (elev. 17.0) as depicted on the FEMA Flood Insurance Rate Map No. 09001C0533G.

The site is currently developed with a single family residence, detached garage, driveway, patios, lawn and landscape areas. The western edge of the property along Village creek is woodland. There is also a number of mature trees along the edge of the property. Topography on the site consists of steep slopes up to a plateau in the middle of the lot around the house. The western side of the property drains towards Village Creek, while the eastern side of the property drains towards Dock Road.

The proposed site development includes the demolition of the existing house and subsequent construction of a new 4 bedroom house. The new house is located in approximately the same location as the existing house, helping to minimize site disturbance associated with the new construction. The existing detached garage and driveway will remain. A new septic system is proposed in the existing lawn area to the south of the house. Propane tanks and a generator are proposed to the south of the garage. The existing underground electric and water service will be extended to the new house. A stormwater management system is proposed to control runoff from the house.

The site development has also been designed to preserve most of the existing mature trees. Only the large trees immediately adjacent to the new house will be removed. The woodland buffer along Village

Creek will also remain. Preservation of the existing trees on the site provides a number of benefits to the project. The vegetated buffer along Village Creek provides filtration and promotes infiltration of runoff from the yard areas. This will serve to protect the coastal resource of the tidal wetlands located within Village Creek. Additionally, preservation of the trees minimizes earth disturbance associated with the project. This is especially critical given the steep slopes on the lot. Preserving the dense root mass associated with the mature trees serves to stabilize the steep slopes and mitigate erosion potential from the site.

The proposed stormwater management system maintains existing drainage patterns on the site. Runoff from the new house will be captured by roof leaders and conveyed to an underground detention system located to the west of the house. The underground detention system consists of 4 units of Cultec Recharger 280HD units surrounded by crushed stone with a storage capacity of approximately 341 cubic feet. During typical storm events, the underground detention systems will allow stormwater to infiltrate into the underlying soils and there will be no surface discharge. A high level overflow pipe will provide relief during extreme storm events and discharges to a rip rap scour hole. The scour hole will reinforce the soils to prevent erosion from the pipe discharge.

The existing driveway and detached garage will continue to sheet flow towards Dock Road. Shallow ledge, steep slopes and mature trees in this area inhibit the ability to add stormwater detention. Portions of this runoff flow through the wooded areas on both sides of the driveway, providing a vegetated flow path that will provide filtration and promote infiltration of the driveway runoff.

Detailed information on the size and configuration of the proposed stormwater management measures is available on the most recent revision of the "Septic System/Site Development Plan" prepared for 36 Dock Road by this office. A Stormwater Facilities Maintenance Plan is attached.

The stormwater management system was designed with an emphasis on stormwater quality since the subject property is located in a coastal area. Treating the runoff from the captured impervious surfaces will improve the water quality of the runoff from the site. The underground detention is sized to accommodate the Water Quality Volume (WQV) from the captured area. The WQV consists of the runoff from the initial 1.3" of runoff, also known as the "first flush", and is generally considered to contain the majority of pollutants. Collecting the first flush and allowing it to infiltrate into the soils provides filtration of the runoff and is an effective means of stormwater renovation. The methods outlined in the Connecticut Stormwater Quality Manual were used to determine the WQV. The proposed detention system has sufficient capacity to treat the water quality volume from the impervious surfaces that drain to it. An analysis is attached.

Some filling is proposed to accommodate the septic system and detention system. An effort was made to minimize filling in order to protect the mature trees on the property. A boulder retaining wall was also utilized for the detention system to minimize impact to the existing steep slopes. Only minimal excavation will be required for the house construction. The house foundation is a combination of slab on grade and crawl space in order to reduce excavation. Proposed grading will be 4:1 max within the setbacks and 3:1 elsewhere, although some of the existing slopes are steeper. No additional common fill material will need to be imported to the site. Only clean, granular sand and gravel necessary for the septic, drainage and foundations will be imported to the site. Topsoil will be stockpiled and reused on the property.

All new construction is located outside of the AE and VE flood zones. The entire house, including the crawl space and all mechanicals, will be elevated significantly higher than the AE flood zone (elev.

13.0). The proposed first floor elevation is 31.0, garage elevation is 30.0, and craw space elevation is 26.7. Additionally, all exterior mechanical equipment are located outside and above the flood elevations, including the new AC units, generator and propane tanks.

Soil and erosion controls, including silt fence and anti-tracking apron, will be employed to protect Village Creek and down-gradient properties during construction. These controls will remain in place until the site is stabilized and permanent vegetative cover has been established.

The proposed development of 36 Dock Road has been designed to renovate stormwater runoff, minimize the risk of flood damage, minimize earthwork, and prevent erosion. Additionally, reuse of the existing detached garage and driveway and preservation of mature trees on the site will serve to minimize site disturbance and maintain vegetated buffers. It is the opinion of this office that the proposed site development will have no adverse impacts to the adjacent properties, Village Creek or any coastal resources.

Sincerely,



Thomas Nelson, P.E.
President

Attachments

36 Dock Road



Norwalk Information

ID 103-5-84-100-0
Site Address 36 DOCK RD
Owner STEPHENS ROBERT S & DHUANE G TRUSTEES
Co-Owner -
Owner Address 36 DOCK RD



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Regional Map Viewer makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Print map scale is approximate.
Critical layout or measurement activities should not be done using this resource.

Water Quality Volume Computation

36 Dock Road, Norwalk, CT

Catchment Area:

Treatment System	House	Driveway	Patio	Walk	Lawn	Woods	Total Area
New Detention	2,783	0	71	0	0	0	2,854

Water Quality Volume:

Treatment System	P (in)	A, Area (ft ²)	Imperv. Area (ft ²)	I % Imperv.	R Runoff Coeff.	WQV (ft ³)
New Detention	1.3	2,854	2,854	100.0	0.950	294

Treatment System Volume:

Treatment System	System Description	Volume Provided (ft ³)
New Detention	4 Units Cultec Recharger 280HD in Crushed Stone	341

$$WQV = \frac{(P)(R)(A)}{12}$$

where:

WQV = water quality volume (cubic feet)

P = 1.3 inches (90th percentile rainfall event)

R = volumetric runoff coefficient = 0.05+0.009(I)

I = post-development impervious area (percent) after application of non-structural LID

site planning and design strategies and before application of structural stormwater BMPs

A = post-development total drainage area of site or design point (square feet)



1-800-4-CULTEC
 custerservice@cultec.com

Founder of Plastic Chamber Technology
 Stormwater and Septic Solutions
 Since 1986



Prepared For:

36 Dock Road

Project Information:

Stevens Residence

36 Dock Road

Norwalk

CT

Zip

Date:

March 03, 2024

Engineer:

Thomas Nelson, P.E.

McChord Engineering

1 Grumman Hill Road

Wilton

CT

06897

203-834-0569

Calculations Performed By:

Thomas Nelson, P.E.

McChord Engineering

Input Given Parameters

Unit of Measure

English

Recharger 280HD

Stone Porosity

40.0%

Number of Header Systems

1 Header

Stone Depth Above Chamber

6 inches

Stone Depth Below Chamber

6 inches

Workable Bed Depth

4.00 feet

Max. Bed Width

6.00 feet

Storage Volume Required

294.00 cu. feet



Chamber Specifications

Height

26.5 inches

Width

47.00 inches

Length

8.00 feet

Installed Length

7.00 feet

Bare Chamber Volume

42.55 cu. feet

Installed Chamber Volume

64.46 cu. feet

Image for visual reference only May not reflect selected model.

Bed Depth

4.13 feet

Bed Width

5.92 feet

Storage Volume Provided

341.16 cu. feet

Materials List

Recharger 280HD Stormwater System by CULTEC, Inc.

Approx. Unit Count - not for construction

Actual Number of Chambers Required

Starter Chambers

Intermediate Chambers

End Chambers

4

4

1

2

1

pieces

pieces

pieces

pieces

pieces

HVLV FC-24

CULTEC No. 410™ Filter Fabric

CULTEC No. 20L Polyethylene Liner

Stone

Volume of Excavation

0

73.79

5.92

15.27

28.02

pieces

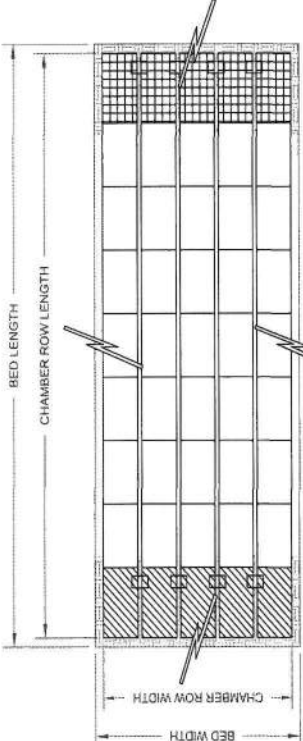
sq. yards

feet

cu. yards

cu. yards

Bed Detail



Number of Rows Wide

Number of Chambers Long

Chamber Row Width

Chamber Row Length

Bed Width

Bed Length

Bed Area Required

1

4

3.92

29.00

5.92

31.00

183.42

pieces

pieces

feet

feet

feet

feet

sq. feet

Bed detail for reference only. Not project specific. Not to scale. Use CULTEC StormGenie to output project specific detail.



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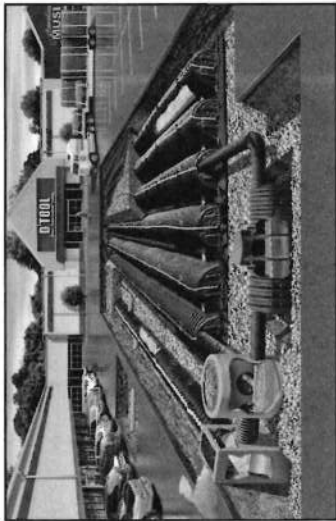
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custservice@cultec.com

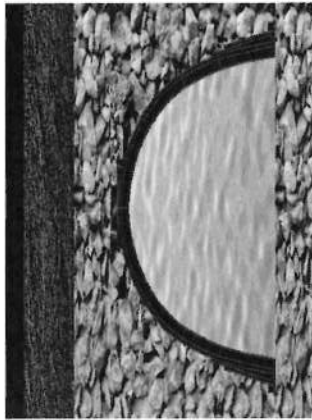
Project Name: Stevens Residence

Date: March 03, 2024

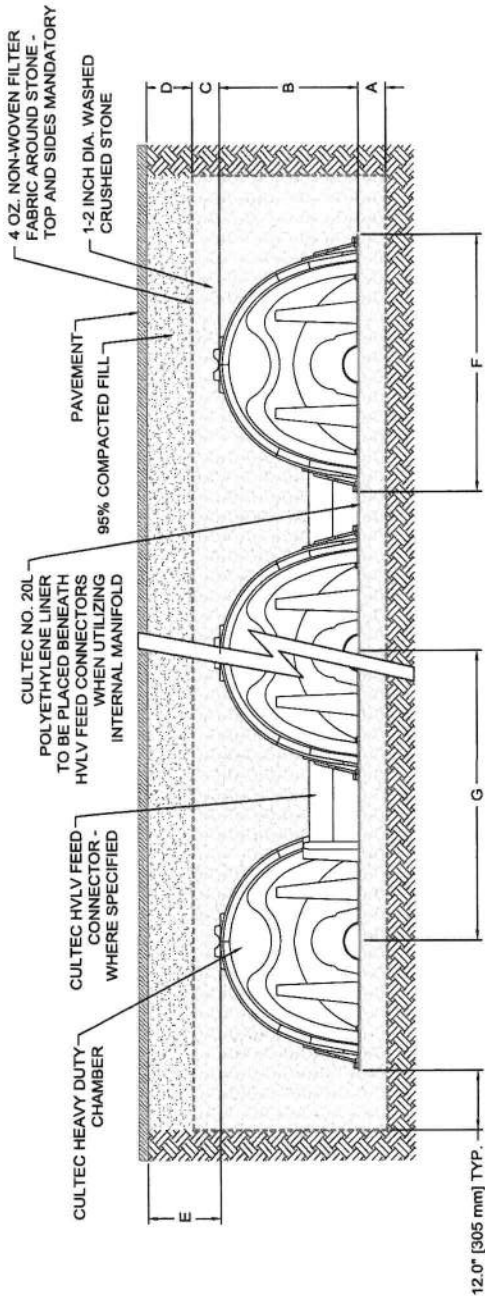
Cross Section Detail



Recharger 280HD	
Pavement	3 inches
95% Compacted Fill	8 inches
Stone Above	6 inches
Chamber Height	26.5 inches
Stone Below	6 inches
Effective Depth	38.5 inches
Bed Depth	49.5 inches



Conceptual graphic only. Not job specific.



A	Depth of Stone Base	6.0 inches
B	Chamber Height	26.5 inches
C	Depth of Stone Above Units	6.0 inches
D	Depth of 95% Compacted Fill	8.0 inches
E	Max. Depth of Cover Allowed Above Crown of Chamber	12.0 feet
F	Chamber Width	47.0 inches
G	Center to Center Spacing	4.33 feet

Breakdown of Storage Provided by Recharger 280HD Stormwater System	
Chambers	176.29 cu. feet
Feed Connectors	0.00 cu. feet
Stone	164.87 cu. feet
Total Storage Provided	341.16 cu. feet

Stormwater Facilities Maintenance Plan

36 Dock Road, Norwalk, CT

Scope:

The purpose of the Stormwater Facilities Maintenance Plan is to ensure that the proposed stormwater components installed for the development at 36 Dock Road are maintained in operational condition throughout the life of the home. The service procedures associated with this plan shall be performed as required by the parties legally responsible for their maintenance.

Description of Stormwater Facilities:

The proposed stormwater facilities are designed to collect, convey, detain and treat the runoff from the site in order to minimize adverse impacts to adjoining property owners and downstream drainage systems. A description of the stormwater facilities are as follows:

1. **Roof Leaders/Gutters:** Roof leaders (also known as downspouts) from the house will convey roof runoff collected by the roof gutters to the underground detention chambers.
2. **Yard Drain:** The yard drain is located at the inlet of the detention chamber for inspection and maintenance. It is equipped with a sump designed to capture sediment and debris from the runoff.
3. **Underground Detention Chambers:** The underground detention system consists of a series of Cultec Recharger chambers which provide storage volume for the stormwater runoff. Stormwater in the underground detention system is designed to infiltrate into the underlying soils. The underground detention system overflows via a pipe in yard drain at the inlet of the system.
4. **Scour Hole:** The scour hole is located at the outlet of the detention overflow and the footing drain. It is lined with rip-rap in order to reinforce the soils and prevent erosion from the pipe discharge.

Recommended Frequency of Service:

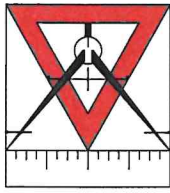
All of the stormwater components installed for this property should be checked periodically and kept in full working order. Ultimately the frequency of inspection and service cleaning depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, trash, etc.); however it is recommended that each facility be inspected and cleaned a minimum of two times a year. The guidelines for the timing of service include early spring after the winter season and late fall after the leaves have fallen from the trees.

Service Procedures:

Service can be performed by the homeowner, landscape contractor or handyman since no specialized equipment is required. Specific service procedures for the stormwater facilities are as follows:

1. **Roof Leaders/Gutters:** Roof gutters shall be inspected twice a year during the spring and fall service inspections to ensure that roof leaders are kept free of leaves and debris that could clog the detention chambers. At a minimum, leaves should be cleaned from the gutters during the fall service inspection.
2. **Yard Drain:** All drains shall be inspected and cleaned twice a year during the spring and fall service inspections. The cleaning shall include both removal of sediment from the sumps and removal of any trash and/or debris from the grate.
3. **Underground Detention Chambers:** Functionality of the underground detention chambers ultimately depends on keeping sediment and debris out of the chambers. This is accomplished through proper maintenance of the roof leaders and gutters. These components should be maintained as described above, but more frequent maintenance may be required if excessive accumulation of debris is observed.
4. **Scour Hole:** The scour hole shall be inspected and cleaned twice a year during the spring and fall service inspections. The cleaning shall include removal of sediment and debris from the rip-rap. Additional rip-rap shall be added downslope if erosion is noted.

Revision Date: 3/3/25



McChord Engineering Associates, Inc.
Civil Engineers and Land Planners

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

Finished Grade Worksheet

36 Dock Road, Norwalk, CT

Sample Point*	Existing Grade	Proposed Grade
1	29.6	30.0
2	29.6	29.8
3	29.6	29.8
4	29.6	29.8
5	29.5	29.7
6	29.5	29.4
7	29.5	29.1
8	29.5	28.8
9	29.5	28.5
10	29.5	28.8
11	29.6	29.0
12	29.6	29.5
13	29.6	30.0
14	29.6	30.4
15	28.3	30.4
16	28.2	30.0
17	28.1	29.8
18	28.0	29.5
19	28.0	29.2
20	28.0	28.9
21	27.7	28.7
22	27.5	28.5
23	27.2	28.3
24	27.0	28.1
25	27.0	27.5
26	26.5	27.0
27	26.5	26.5
28	26.5	26.5

Sample Point*	Existing Grade	Proposed Grade
29	26.5	26.5
30	26.0	26.0
31	25.0	25.0
32	25.0	25.0
33	25.0	25.8
34	24.6	25.8
35	24.0	26.0
36	23.6	26.0
37	23.0	26.0
38	22.5	26.0
39	22.2	26.0
40	21.8	26.0
41	22.2	26.0
42	22.0	26.0
43	23.0	26.5
44	25.3	27.2
45	27.5	28.0
46	29.5	29.5
47	31.8	31.8
48	34.0	34.0
49	35.8	35.8
50	37.7	37.7
51	38.8	38.8
52	40.0	40.0
53	40.0	40.0
54	38.0	38.0
55	36.0	36.0
56	33.0	33.0

*Sample Points Taken at 5' Intervals Along a Line 10' Outside of the Proposed House. See Dwg. No. SK-1

Existing Average Grade

Tot. Points = 56
Sum Elev.'s = 1602.1
Avg. Grade = 28.6
(sum elev's/total points)

Proposed Average Grade

Tot. Points = 56
Sum Elev.'s = 1649.9
Avg. Grade = 29.5
(sum elev's/total points)

Finished Grade =	<u>29.5</u>
(maximum of 3' above existing grade)	

Civil Engineers and Land Planners
1 Grumman Hill Road
Wilton, CT 06897 (203) 834-0569

JOB No. 2364A-1

SCALE: 1" = 10'

DATE: 4-15-25

DWG. No.

1-KS



CITY OF NORWALK
Planning and Zoning

www.norwalkct.gov

P: 203-854-7780

Norwalk City Hall
Room 129
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

March 27, 2025

McChord Engineering Associates, Inc.
c/o Thomas Nelson, P.E.
1 Grumman Hill Road
Wilton, CT 06854

Re: 36 Dock Road
Preliminary Review of Application #2025-25 CAM
Demolish an existing house and construct a new single-family residence with associated site improvements adjacent to tidal waters and wetlands.

Dear Mr. Nelson:

I have preliminarily reviewed the referenced plans. Tentatively, the Commission is scheduled to review the application at their May 7, 2025, meeting. The below reflects my initial comments and the Commission may continue their review of the application at their regularly scheduled meetings that follow.

Please submit or comment on the following.

- 1) Please provide proof of mailings for the initial neighbor notification.
- 2) The zoning chart should be revised to include building coverage (25% max) separate from impervious surface coverage.
- 3) The proposed average grade should be calculated and depicted on the plans, and the proposed height of the structure should be depicted on the architectural elevations.
- 4) Can the proposed patio be made of a pervious material instead of concrete?
- 5) The application form states the majority of new impervious surfaces will be captured and treated by the proposed stormwater management system- why won't all new impervious surfaces be captured? Would it be feasible to have all stormwater treated on-site so that there is no discharge into the tidal wetland?

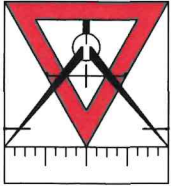
- 6) Accessory structures must be located at least 20' behind the (30') front setback. The generator and A/C units comply, however the propane tanks do not. Please either relocate them to comply or confirm they will be buried. The new steps for the existing garage also must comply, and they measure to be exactly 20' from the front setback as proposed.
- 7) How many trees are proposed to be removed? Is it feasible to offset this number by planting new trees?
- 8) I have referred this application to the Conservation Office and Harbor Management Commission. Please provide comments/approvals from the Health Department, DPW, WPCA etc. The link to the webpage can be found [here](#).

The application is still being reviewed and requests for further information or clarification may be forthcoming. Please email (amelia.williams@norwalkct.gov) or call (203-854-7259) if you have any questions regarding your application or the application process.

Sincerely,



Amelia Williams
Land Use Planner



McChord Engineering Associates, Inc.
Civil Engineers and Land Planners

1 Grumman Hill Road
Wilton, CT 06897
(203) 834-0569

April 22, 2025

Ms. Amelia Williams
Land Use Planner
Norwalk City Hall
125 East Ave.
Room 129
Norwalk, CT 06856

Re: Response to Preliminary Review Comments
Application #2025-25 CAM
36 Dock Road, Norwalk, CT

Dear Ms. Williams:

In response to the Preliminary Review Comments received from your office for the referenced project dated May 27, 2025, the following items have been revised:

- “Septic System/Site Development Plan” prepared by McChord Engineering Associates, dated March 3, 2025 and last revised April 17, 2025.
- “Zoning Location Survey” prepared by All Seasons Land Surveying, dated November 22, 2024 and last revised March 6, 2025.

Below please find our responses to the comments:

- 1) *Please provide proof of mailings for the initial neighbor notification.*
RESPONSE: Mailings for the initial neighbor notification were sent on 3/26/25. Proof of mailings have been provided.
- 2) *The zoning chart should be revised to include building coverage (25% max) separate from impervious surface coverage.*
RESPONSE: The Zoning Location Survey has been revised to show the building coverage separately from the impervious surface coverage. The proposed building coverage is below 25%.
- 3) *The proposed average grade should be calculated and depicted on the plans, and the proposed height of the structure should be depicted on the architectural elevations.*
RESPONSE: The Finished Grade has been calculated by this office and determined to be elevation 29.5. Calculations are shown on the attached Finished Grade Worksheet. Revised architectural elevations will be forthcoming.
- 4) *Can the proposed patio be made of a pervious material instead of concrete?*
RESPONSE: The proposed patio is integrated into the foundation of the new home, making it very difficult to be made of pervious material. Runoff from the patio will sheet flow onto the adjacent lawn area, providing a vegetated flow path that will provide filtration and promote infiltration.

- 5) *The application form states the majority of new impervious surfaces will be captured and treated by the proposed stormwater management system- why won't all new impervious surfaces be captured? Would it be feasible to have all stormwater treated on-site so that there is no discharge into the tidal wetland?*
RESPONSE: Shallow ledge, steep slopes, mature trees and the septic system all limit the available area for stormwater management on the property. Runoff from the entire house will be captured and treated by the proposed underground detention system. Runoff from the proposed patio area is difficult to capture due to the adjacent septic system. However, this patio runoff will sheet flow onto the adjacent lawn area, providing a vegetated flow path that will provide filtration and promote infiltration. The existing wooded buffer along the tidal wetlands will also remain. There is no direct stormwater discharge to the tidal wetlands. The combination of the underground detention system and the vegetated buffers will provide treatment of site runoff prior to discharge to the tidal wetlands.
- 6) *Please Accessory structures must be located at least 20' behind the (30') front setback. The generator and A/C units comply, however the propane tanks do not. Please either relocate them to comply or confirm they will be buried. The new steps for the existing garage also must comply, and they measure to be exactly 20' from the front setback as proposed.*
RESPONSE: An underground propane tank will be used if there is no ledge in this area, however that will not be verified until construction activities begin. Therefore, the above ground propane tanks have been relocated on the Plan to comply with the additional 20' setback.
- 7) *How many trees are proposed to be removed? Is it feasible to offset this number by planting new trees?*
RESPONSE: An effort was made to maintain as many trees as possible on the site. A total of 11 large trees are proposed to be removed to facilitate the construction of the new house and septic system. These trees were already much closer to the existing residence than is typical. They will not have survive the root disturbance associated with the demolition of the existing house and construction of the new house and septic. The Plan has been revised to show four (4) proposed native trees along the northern property line. The specific species will be determined by a landscape professional.
- 8) *Please provide comments/approvals from the Health Department, DPW, WPCA etc.*
RESPONSE: The Health Department has reviewed and approved the plans. WPCA should not need to review these plans since it is not served by municipal sewer. We are awaiting comments from DPW at this time.

Please feel free to contact our office with any questions or concerns.

Sincerely,



Thomas Nelson, P.E.
President

Attachments.



MEMORANDUM

April 29th, 2025

TO: Planning and Zoning Commission – Galen Wells, Chair

FROM: Amelia Williams, Land Use Planner

SUBJECT: #2025 - 25 CAM – Robert E. Stephens – 36 Dock Road – Demolish an existing house and construct a new single-family residence with associated site improvements adjacent to tidal waters and wetlands.

District: 5 **Block:** 84 **Lot:** 100 **Zone:** CD-1S

ZONING HISTORY:

The .54-acre property currently consists of a two-story single-family residence constructed in 1951 and a detached garage. The garage is non-conforming with the current regulations, and it is proposed to remain as is. The site is very sloped and contains ledge and trees within the sloped area, so the building envelope will not change drastically. There is an existing wall that will remain which separates the building envelope from a steep slope that leads to Village Creek. All but the western most portion of the property is landward of the Limit of Moderate Wave Action (LiMWA) and only small portions of the property are in flood zones; no site work is proposed in these areas.

PROPOSED USE/STRUCTURE:

The applicant is proposing to demolish the existing residence and construct a new single family residence with a deck, porch, patio, septic system, and associated utilities (generator, A/C units, propane tanks). Eleven trees will be removed for the new construction, and the applicant proposes to plant four new native trees along the northern property line to mitigate this. There will be no grade change of more than one (1) foot, from existing to proposed, within five (5) feet of the side and rear property lines and that the slope will not exceed a ratio of 3:1 anywhere on the site and 4:1 within the Yard setback as required by the regulations. The amount of impervious surface and building coverage proposed will increase from existing but comply with the maximums allowed. The driveway will remain as-is within the front setback and will be extended near the new house. An underground stormwater detention system is proposed as well as a new retaining wall to the west of it.

STAFF COMMENTS:

- The applicant sufficiently addressed concerns outlined in Staff's preliminary review letter.
- The sediment and erosion controls, including stockpile area, are adequate for the work proposed.

- The existing wooded buffer between the house and tidal wetland appears sufficient to filter stormwater in addition to the proposed detention system.
- Staff believes the proposal is consistent with the goals and policies of the Connecticut Coastal Management Act.

SIGN-OFFS: Department approvals/comments have been received from the Conservation Office, Harbor Management Commission, and the Health Department. DPW comments have yet to be received.

ZONING BOARD OF APPEALS: No variances were needed for this proposal.

VIOLATIONS: There are no zoning violations currently on the property.

The following resolutions are offered:

DRAFT RESOLUTION TO APPROVE

BE IT RESOLVED that application #2025 - 25 CAM – Robert E. Stephens – 36 Dock Road – Demolish an existing house and construct a new single-family residence with associated site improvements adjacent to tidal waters and wetlands be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:
 - a. Per site development plan dated 3/3/2025 and revised 4/17/2025 prepared by McChord Engineering Associates, Inc., Wilton, CT
 - b. Per architectural plans dated 2/28/2025 and revised 4/28/2025 prepared by Bridger AAD, Darien, CT
 - c. Per zoning location survey dated 11/22/2024 and revised 3/6/2025 prepared by All Seasons Land Surveying, Millerton, NY
2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and
3. That a permit is obtained from the Department of Public Works regarding City storm-water management requirements; and
4. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and
5. That any additional needed soil sedimentation and erosion controls be installed at the direction of Staff; and
6. That any changes to the plans be reviewed by Staff prior to implementation; and
7. That any above ground utilities comply with setbacks; and

8. That all plantings be implemented prior to COZC; and
9. That all plantings be maintained, and any dead plantings must be replaced in accordance with the approved planting plan; and
10. Nothing in this permit shall obviate the requirements for the applicant to obtain any other assents, permits or licenses required by law or regulation by the City of Norwalk, State of Connecticut, or the Government of the United States, including any approval required by the Connecticut Department of Environmental Protection and U.S. Army Corps of Engineers- obtaining such assents, permits or licenses is the sole responsibility of the applicant; and

BE IT FURTHER RESOLVED that this proposal complies with all applicable coastal resource and use policies and with all applicable sections of the Zoning Regulations for the City of Norwalk; and

BE IT FURTHER RESOLVED that this the preceding conditions and modifications of this application are integral to the Commission's approval because, if not for those conditions and modifications, the Commission would have denied this application.

BE IT FURTHER RESOLVED that the effective date of this approval shall be May 16th, 2025.

You must obtain a zoning approval and a building permit prior to any work on the site.

DRAFT RESOLUTION TO DENY

BE IT RESOLVED that application #2025 - 25 CAM – Robert E. Stephens – 36 Dock Road – Demolish an existing house and construct a new single-family residence with associated site improvements adjacent to tidal waters and wetlands as shown on the site development plan dated 3/3/2025 and revised 4/17/2025 prepared by McChord Engineering Associates, Inc., Wilton, CT, architectural plans dated 2/28/2025 and revised 4/28/2025 prepared by Bridger AAD, Darien, CT, and zoning location survey dated 11/22/2024 and revised 3/6/2025 prepared by All Seasons Land Surveying, Millerton, NY be **DENIED** subject to the following reasons:

- 1.
- 2.

BE IT FURTHER RESOLVED that the effective date of this denial shall be May 16th, 2025.



Special Permit Application

City of Norwalk Planning & Zoning Commission

Phone: 203-854-7780

www.norwalkct.gov

Date Received:

Per Section 8.4.8 of the Norwalk Zoning Regulations, Special Permits are for Uses, Buildings, or Structures that are considered to be generally appropriate in the applicable District, but because of their potential for impacts with Adjacent Uses, Buildings, or Structures, require individual review for specific locations.

1. Address of Subject Property(s):

10 Norden Place, Norwalk, CT

2. District: 3 Block: 17 Lot(s): 40 3. Zone: SD-LI, Overlay/Village District: None

4. Historic Structure(s): ☒ No ☐ Yes 5. Flood Hazard Zone: ☒ No ☐ Yes, Flood Zone(s) No

6. Coastal Area Management Zone: ☒ No ☐ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: _____

7. Existing Use of Property:

See Schedule A attached hereto and made a part hereof.

8. Proposed Use of Property as Identified per Table 4.3.9.A: Building, Lot & Building Site Principal Uses:

Car club for storage of privately-owned automobiles and accessory gatherings and events for car club.

See Schedule A attached hereto and made a part hereof.

Applicant Information

Applicant Name: Norwalk Center, LLC and The Auto Collective

Billing Address: 10 Norden Place, Norwalk, CT 06855

Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com

Signature: Carmody Torrance Sandak & Hennessey LLP Their attorneys

Property Owner Information and Authorization

Owner of Record: Norwalk Center, LLC

Billing Address: 45 Main Street, Suite 800, Brooklyn, NY 11201

Phone Number: c/o Elizabeth Suchy, Esq. - 203-252-2656 Email: c/o Elizabeth Suchy, Esq. - esuchy@carmodylaw.com

Signature: Carmody Torrance Sandak & Hennessey LLP Its attorneys

*By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.

NORWALK CENTER, LLC AND THE AUTO COLLECTIVE
10 NORDEN PLACE, NORWALK, CT
APPLICATION FOR SPECIAL PERMIT
NARRATIVE
SCHEDULE A

BACKGROUND

Norwalk Center, LLC (hereinafter “Norwalk Center”) is the owner of real property with the improvements thereon located at 10 Norden Place in Norwalk, CT (the “Property”) totaling 33± acres. Generally bounded by other developed property to the east, Courville Nurseries and Metro-North Railroad to the south, Norden Place to the west, and an accessway to a rear lot to the north, the Property is designated as Tax Lot 40 Unit A in Block 17 of the Third Taxing District and is zoned SD-LI. I-95 is located to the north of the drive aisle that leads to the data center on the Property and the Halstead multi-family development on an adjoining property to the east. (Refer to “Aerial Plan (Drawing Title C0.02)” dated February 19, 2025 prepared by Tighe & Bond, “Property Survey, ALTA/NSPS Land Title Survey 10 Norden Place – Unit A Norwalk, Connecticut Prepared for Norwalk Center, LLC Scale: 1”=80 Ft.” [“Survey”] dated August 28, 2023 and “Resubdivision Map of Revised Lot 2, Maps 12681A & 12681B Depicting Proposed Parcels 1A, 1B & Lot 2 10 Norden Place Norwalk, Connecticut Prepared for Courville Nursery Property Scale: 1”=80Ft.” [“Resubdivision Map”] dated January 16, 2024, both prepared by Seymour Surveying, all attached hereto and made a part hereof).

Initially, the Property was approximately 80 acres. Around 2006,¹ the prior owners sold half of the Property (40 acres) to Norwalk Center, which in 2013, received approvals for and constructed a 167,691± sq.ft. data recovery center on the easternmost five (5) ± acres of the site (Unit B). In 2024, a site plan application for the use and occupancy of interior and exterior space by Metro North for a transportation maintenance facility approved by the Planning & Zoning Commission (“Commission”).² In addition, the Commission approved a subdivision application in 2024 which created a three (3) acre lot which was purchased and currently used by Courville Nurseries.

The Property (Unit A) is improved with a 635,430± sq.ft. building, formerly the headquarters of and a manufacturing site for Northrup Grumman-Norden Systems, a national defense contractor, which operated three (3), round-the-clock shifts at the height of operation and production, employing nearly 3,000 people daily across three (3) shifts. Today, the building is largely vacant, but had been the site of Tauck Worldwide Tours, Pepperidge Farms, and Katharine Gibbs secretarial school, among other tenants.

There is also an existing 9,000± sq.ft. test building in the southeast section of the Property. Further, the Property is improved with more than 1,000 parking spaces, interior driveways, sidewalks, landscaped areas, etc. Adjacent to the Metro-North Railroad tracks, there is a 0.99±

¹The prior owners received approvals in 2009 to construct a 200+ unit multi-family development which is owned and operated today by Avalon.

²The 2024 site plan approval is under appeal by both Norwalk Center, the successful applicant, and the adjoining multi-family property owner.

acre parcel that is occupied via a temporary easement by the State of Connecticut Department of Transportation, which uses that area for staging purposes in connection with the Walk Bridge project.

REQUEST

Norwalk Center, as owner, and The Auto Collective, as prospective tenant, (hereinafter, the “Applicants”), jointly file this application for special permit³ in connection with the proposed use and occupancy of 137,000± sq.ft. of interior space in the existing northeastern section of existing building on the Property for a car club. Specifically, the Applicants seek approval for the use and occupancy of 84,600± sq.ft. within the building for the storage of approximately 420 privately-owned, luxury motor vehicles.⁴ Vehicles will be driven to the site individually by owners and not on flatbeds or tractor trailer transport, and then stored on dual-level stacks. Approximately 15-20 vehicles will be checked out on a monthly basis by owners. (Refer to “Overall Site Plan (Drawing Number C1.00),” “Conceptual Layout (Drawing Number C1.01),” and “Conceptual Layout (Drawing Number C2.01)” all dated February 19, 2025 prepared by Tighe & Bond, attached hereto and made a part hereof).

In addition, the Applicants propose approximately 20,800 sq.ft. of event space for members and their guests, such as Formula One watch parties and other private gatherings. There is also 26,450± sq.ft. earmarked for a members’ club area, along with 5,300 sq.ft. set aside as a more intimate members’ lounge which could be reserved by members for board meetings and smaller gatherings. The Applicants will also seek to obtain a café liquor permit from the State of Connecticut Department of Consumer Protection – Liquor Division. No additions to the existing structure are proposed and all existing parking spaces will generally remain unchanged. Minor renovations to the northern building elevation are proposed to accommodate a vehicular ramp to two (2) new overhead doors so that members can drive their vehicles into the building. (Refer to “Overall Site Plan (Drawing Number C1.00),” “Site Plan (Drawing Number C1.01),” and “Drainage, Grading and Soil Erosion and Sediment Control Plan (Drawings Number C2.01 and C2.02)” all dated February 19, 2025 prepared by Tighe & Bond and “Proposed Main Level Floor Plan & Exterior Elevation (Drawing A2.01),” “Details – 1 (Drawing Number C3.01),” “Details – 2 (Drawing Number C3.02),” and “Perspective Views (Drawing A2.02)” all dated 2.19.25 prepared by Kenneth Boroson Architects, attached hereto and made a part hereof).

This application is submitted pursuant to the Sections 4.3.9.A, 4.3.9.G and 8.4.8G of the City of Norwalk Zoning Regulations (“zoning regulations”). In connection therewith, the Applicants submit that the application meets or exceeds the general conditions and standards for this use as set forth in Sec. 8.4.8G.2 (a-o) as follows:

- (a) Density of use and bulk of buildings. The existing structure complies with the density of use and bulk of buildings requirements for the SD-LI zone (Refer to Overall Site Plan, Survey, and Resubdivision map, all attached hereto and made a part hereof). No additions to the structure are proposed.

³An application for zone text amendment is simultaneously submitted herewith.

⁴A similar facility is North American Motor Car, located on Miry Brook Road in Danbury (<https://northamericanmotorcar.com>).

- (b) All proposed uses for which a site plan is required shall provide for ingress and egress to the site which does not adversely impact the normal flow of traffic or normal safe conditions of the roadways. Site plans shall be referred to the Department of Public Works (DPW) and the Transportation, Mobility and Parking Department (TMP) for review and recommendations. The Property is served by two (2) existing driveways, the configurations of which will not change. The use of the building and Property along with the traffic analyses and parking requirements generated by and parking resources provided for the storage of motor vehicles and accessory club uses have been forwarded to TMP and DPW for review and comment. (Refer to Overall Site Plan, Site Plan, Conceptual Layouts, Survey, Resubdivision Map, and "Traffic Evaluation Letter" February 13, 2025 dated prepared by TPD, Inc. ("Traffic Report"), attached hereto and made a part hereof).
- (c) The Commission may require such reasonable improvements as may be necessary to accommodate traffic increases caused by the proposed development to maintain existing levels of service to improve traffic safety. A traffic impact analysis, as specified, below may be required from the applicant to determine the extent of necessary improvements. The Applicants conducted a traffic analysis for the proposed use. The result of the analysis revealed that "... the proposed auto storage facility is expected to generate less traffic volume than previously approved use for the site. As such, the proposed project will not have a significant negative impact on the site circulation or traffic flows on the adjacent public roads." (Traffic Report p. 5).
- (d) Availability of mass transit facilities and provision of sidewalks, with a minimum clearance of five (5') feet without obstructions. A five-foot-wide concrete sidewalk exists along both sides of Norden Place. (Refer to Survey and Resubdivision Map). Wheels Bus Route 7 has stops on Norden Place and at the Halstead multi-family development. The East Norwalk Train Station is located about one mile away to the west
- (e) Availability and compatibility of utilities. The Property is and will continue to be served by city water and sewer. Stormwater runoff from where a small, landscaped area is being converted to pavement, will be collected by an inlet water quality structure, and routed to a lined detention system with filter. This will utilize a treatment train approach and incorporate low impact development systems to treat the water quality flow, remove total suspended solids, and reduce peak flow. (Refer to Survey, Resubdivision Map, Overall Site Plan, Conceptual Layout, and Engineering Report, all attached hereto and made a part hereof).
- (f) Adverse impact from noise, odor, fumes, dust and artificial lighting. With the exception of infrequent displays of some of the luxury vehicles outdoors, all activity and events will occur within the building, so there will not be any impact from noise, odor, fumes, dust, or artificial lighting. Further, no building additions or other site improvements are proposed as part of this application.

- (g) Signs of size and design that are in harmony with the neighborhood. Limited wall and ground signage is proposed at this time, which comply with signage regulations set forth in the zoning regulations.
- (h) Adequacy of yards and open space, screening and buffering. Yards and open space, screening and buffering for the site comply with city zoning regulations for the SD-LI zone. Any irregularities or inconsistencies with the SD-LI are legally nonconforming conditions that will continue. (Refer to zoning data chart on Overall Site Plan, attached hereto and made a part hereof).
- (i) Impact on neighborhood properties, as compared to uses and structures permitted as a matter of right. The proposed interior use of the Property as a private, luxury motor vehicle storage facility with an accessory members' club is compatible and consistent with other uses in the vicinity including multi-family residential, commercial landscape business, office, and other uses. With the exception of events for members, most of which will occur indoors, use of the square footage dedicated to vehicle storage is not expected to have impacts on the neighborhood. Vehicles will be driven to the site by owners and no automotive repair will occur inside the building or on the grounds.
- (j) Existing land use in the area. The area surrounding the property is generally developed with single- and multi-family residential complexes, assisted living facility, data center, and nursery business.
- (k) Proximity of community facilities. Various retail, restaurant, and other public venues exist near the site. The East Norwalk Train Station, East Norwalk branch of the Norwalk Public Library, and various restaurants are within one (1) mile of the site. Calf Pasture Beach, Taylor Farm, and Shady Beach are within two (2) miles of the site.
- (l) Compliance with the Zoning Code and Plan of Development (POCD). The proposed automotive storage use is permitted by special permit with limitations per the new zoning regulations adopted in December 2023 and made effective February 19, 2024. The Applicants submit herewith a zone text amendment application to add car club as a use permitted by special permit, which reflects the goal of the Plan of Conservation and Development to allow Norwalk to evolve and meet the changing demands and needs. (POCD p. 223). The proposed use also addresses the POCD goal of repurposing and renovating old buildings and preventing stagnation. (POCD p. 223).
- (m) Utilization of green infrastructure and other sustainability measures. Low impact development measures have been proposed to handle stormwater runoff. (Refer to "Engineering Report" dated February 19, 2025 prepared by Tighe & Bond, attached hereto and made a part hereof).

- (n) Conservation of wetlands, watercourses and other ecologically viable lands. Inland wetlands and watercourses exist on the Property, but no regulated activity is planned anywhere within the wetlands, watercourses, or upland review areas, so there will be no impact to wetlands, watercourses, and other ecologically viable lands.
- (o) No zoning violation exists on the property. There are no known zoning violations on the property.

February 25, 2025

Steven Kleppin
Director
City of Norwalk
Department of Planning & Zoning
125 East Avenue
Norwalk, CT 06851

***Re: Norwalk Center, LLC and The Auto Collective – 10 Norden Place, Norwalk, CT
Applications for Zone Text Amendment and Special Permit – proposed car club***

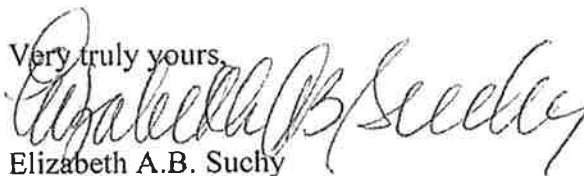
Dear Mr. Kleppin:

This firm represents Norwalk Center, LLC, owner of 33± acres of real property with the improvements thereon located at 10 Norden Place in Norwalk, CT (District 3, Block 17, Lot 40) and The Auto Collective. Our clients herewith submit Applications for Zone Text Amendment and Special Permit for the use and occupancy of 137,000± sq.ft. of space in the northeast section of the existing building as a car club for the storage of private vehicles with associated lounge, club, and event space.

Enclosed please find one (1) original and three (3) copies of the applications, three (3) copies of the civil and architectural plans, three (3) copies of the traffic and engineering reports, along with other documents. The filing fee has been paid. The applications, plans, and reports will be emailed to your attention.

Copies of the applications and supporting documentation will be delivered to the following for review and sign-off: Department of Public Works, Fire Department, Transportation/Mobility/Parking, Water Pollution Control Authority, Health Department and South Norwalk Electric & Water. This firm will follow up with these departments and commissions in upcoming weeks.

Should you have any questions or require additional information, please do not hesitate to contact me. Kindly advise when the enclosed applications will be scheduled for receipt and preliminary review by the City of Norwalk Planning & Zoning Commission.

Very truly yours,

Elizabeth A.B. Suchy

EABS
Enclosures

{S7617111}

PLANNING & ZONING COMMISSION
125 EAST AVENUE
P.O. BOX 5125
NORWALK, CONNECTICUT 06856-5125

REQUIREMENTS FOR SUBMISSION OF ZONING AMENDMENT APPLICATION

APPLICATION INFORMATION (3 HARD COPIES AND A DIGITAL COPY REQUIRED)

1. **Fee: \$1,060.00**
Submitted herewith.
2. **Applicant's name and address**
Norwalk Center, LLC & The Auto Collective
45 Main Street
Brooklyn, NY 11201
3. **Street address of applicant's property affected by proposed amendment and district, block and lot number. Applications for amendments which are accompanied by a site plan, special permit or zone change shall list all adjoining property owners and all property owners directly across the street from the subject property.**
10 Norden Place
Norwalk, Connecticut 06855
Assessor's Map No. 22SE, 22SW
District 3, Block 17, Lot 40
See Schedule A list of abutting property owners attached hereto and made a part hereof.
4. **Provide the text of the proposed amendment, including appropriate article, section and paragraph references, and a written narrative with reasons for the requested change in the zoning regulations and the effect upon other similarly zoned areas of the city, if such change were approved.**
See Schedules B & C attached hereto and made a part hereof.
5. **Provide a zoning history of the property and its adjacent area, beginning in 1929, and the current Plan of Development category for the property.**
See Schedule D attached hereto and made a part hereof.
6. **Provide dates of any previous zoning amendments or map changes, special exceptions, and/or variances requested for same property or portion thereof, including the file name and number and a copy of any variances(s) requested and granted.**
See Schedule D attached hereto and made a part hereof.

7. **Provide maps of area in the vicinity of the applicant's property and all other properties with 500' radius (1" = 100') showing:**

- a. **Current zoning of all property**
- b. **All other property within 500' radius owned by the applicant**
- c. **All properties that will become nonconforming uses as a result of the requested change.**

Refer to "500' Property Abutters Map" dated January 13, 2025 prepared by Tighe & Bond, attached hereto and made a part hereof as Schedule E. Three (3) copies submitted herewith.

8. **Provide a map of the city showing all zones affected by the zoning amendment including a calculation of the areas involved.**

Refer to highlighted copies of City of Norwalk Zoning Map attached hereto and made a part hereof as Schedule F. Three (3) copies submitted herewith.

9. **PUBLIC ACT NO. 95-320 requires that approval of building applications be withheld when taxes are delinquent for a property. Please stop at the Tax Collector's Office (Rom 105) to get written confirmation of your tax status before submitting an application for zoning approval. Copies of the form are available in the Planning & Zoning and Tax Collector's Offices.**

Submitted herewith.

10. **Notice Requirements.**

If the amendment is accompanied by a site plan or special permit application, the applicant shall notify by certified mail, return receipt requested at least ten (10) days prior to the public hearing, the owners of land which abut or are directly across the street from the area affected by the amendment or site plan. The names of the owners shall be taken from the latest Tax Assessor records. When a condominium is located within, across the street, or abuts the subject parcel, notification may be sent to the condominium association in lieu of the individual unit owners. Evidence of certified mailings shall be submitted by the application on or before the public hearing date.

11. **Traffic & Drainage Reports: Applicants which will have a significant impact upon drainage or traffic conditions shall include the following information, computed on the basis of any of the uses the zoning would allow, calculated on the maximum development potential of the site, and upon the contemplated development, if any. (Eleven copies required).**

Refer to "Traffic Letter Report" dated February 13, 2025 prepared by TPD Inc., attached hereto and made a part hereof. A new stormwater detention system is proposed in the northern section of the Property in the area of the entrance to the car club space. (Refer to "Engineering Report" dated February 19, 2025 prepared by Tighe & Bond, attached hereto.)

Respectfully submitted this the 25th day of February 2025.

Norwalk Center, LLC & The Auto Collective

By 

Carmody Torrance Sandak & Hennessey LLP

Elizabeth A.B. Suchy, Esq.

1055 Washington Boulevard, 4th Floor

Stamford, CT 06901

Phone: (203) 425-4200

Fax: (203) 325-8608

Counsel for the Applicant

NORWALK CENTER, LLC AND THE AUTO COLLECTIVE
10 NORDEN PLACE, NORWALK, CT
APPLICATION FOR ZONE TEXT AMENDMENT
LIST OF PROPERTY OWNERS WITHIN 100' OF SUBJECT PROPERTY
SCHEDULE A

1.
3/17/144
Norden Place Owner, LLC
8 Norden Place
Norwalk, CT 06855

2.
Norden Place Owner, LLC
c/o DSF Advisors, LLC
341 Newbury Street, 4th Floor
Boston, MA 02115-2710

3.
3/17/40A
Norwalk Center, LLC
10 Norden Place #A
Norwalk, CT 06855

4.
Norwalk Center, LLC
One International Place, Suite 1840
c/o Ryan
Boston, MA 02110

5.
3/17/40B
Capitol DC Assets LLC
10 Norden Place #B
Norwalk, CT 06855

6.
Capitol DC Assets LLC
5 Bryant Park, 28th Floor
New York, NY 10018

7.
3/17/34/52
Kevin M. Adamcik & Frances E. Adamcik
11 Norden Place, Unit #52
Norwalk, CT 06855

8.
3/17/34/22
Leonardo A. Arana
11 Norden Place, Unit #22
Norwalk, CT 06855-1448

9.
3/17/34/15
Guerlyth Aranzazu
11 Norden Place, Unit #15
Norwalk, CT 06855

10.
3/17/34/8
Melissa Hammett
11 Norden Place, Unit #8
Norwalk, CT 06855-1446

11.
3/17/34/49
Charles D. Bush & Dollie M. Bush
11 Norden Place, Unit #49
Norwalk, CT 06855

12.
3/17/34/42
John F. Cadavid & Carmen C. Cadavid
11 Norden Place, Unit #42
Norwalk, CT 06855

13.
3/17/34/23
Maynely A. Rodriguez
Eddy De Jesus Lopez
11 Norden Place, Unit #23
Norwalk, CT 06855

14.
3/17/34/16
Roy Calitri
11 Norden Place, Unit #16
Norwalk, CT 06855

15.
Roy Calitri
c/o Schutte
8986 36th Street SE
Ada, MI 49301

16.
3/17/34/44
Denise M. Carter-Stanley
11 Norden Place, Unit #44
Norwalk, CT 06855

17.
3/17/34/36
John J. Carvajal & Gloria Carvajal
11 Norden Place, Unit #36
Norwalk, CT 06855

18.
3/17/34/4
Marcy Demby
11 Norden Place, Unit #4
Norwalk, CT 06855-1416

19.
3/17/34/6
Catherine Dormeville
11 Norden Place, Unit #6
Norwalk, CT 06855

20.
3/17/34/12
Cynthia A. Frank
11 Norden Place, Unit #12
Norwalk, CT 06855

21.
3/17/34/31
Dennis Fulton & Deborah Fulton
11 Norden Place, Unit #31
Norwalk, CT 06855

22.
3/17/34/53
John M. Gabriele
11 Norden Place, Unit #53
Norwalk, CT 06855

23.
3/17/34/26
Aleyda Gonzalez
11 Norden Place, Unit #32
Norwalk, CT 06855

24.
3/17/34/35
Aldwin Gordon
11 Norden Place, Unit #35
Norwalk, CT 06855

25.
3/17/34/43
Raul Hernandez & Marina Hernandez
11 Norden Place, Unit #43
Norwalk, CT 06855

26.
3/17/34/32
Tina M. Hickman
11 Norden Place, Unit #32
Norwalk, CT 06855

27.
3/17/34/1
Cesar A. Jimenez & Gloria E. Jimenez
11 Norden Place, Unit #1
Norwalk, CT 06855-1416

28.
3/17/34/25
Ashiq M. Khan & Azra P. Khan
11 Norden Place, Unit #25
Norwalk, CT 06855

29.
3/17/34/17
Hernando Ledesma & Ligia Ledesma
11 Norden Place, Unit #17
Norwalk, CT 06855

30.
3/17/34/27
Irene Lopez
11 Norden Place, Unit #27
Norwalk, CT 06855

31.
3/17/34/41
Aileen V. Mahoney
11 Norden Place, Unit #41
Norwalk, CT 06855-1448

32.
3/17/34/7
Camille A. Maitland
11 Norden Place, Unit #7
Norwalk, CT 06855

33.
3/17/34/45
Leober S. Montenegro
11 Norden Place, Unit #45
Norwalk, CT 06855

34.
3/17/34/19
Doris E. Moreno & Anamilena Moreno
11 Norden Place, Unit #19
Norwalk, CT 06855

35.
3/17/34/18
Ludy Cristina Morales
11 Norden Place, Unit #18
Norwalk, CT 06855

36.
3/17/34/30
Marjorie Leclerc
11 Norden Place, Unit #30
Norwalk, CT 06855

37.
3/17/34/11
Rose Cecilia Paccha
11 Norden Place, Unit #11
Norwalk, CT 06855

38.
3/17/34/3
Germain Pierre
11 Norden Place, Unit #3
Norwalk, CT 06855

39.
3/17/34/5
Alba N. Ramirez
11 Norden Place, Unit #5
Norwalk, CT 06855

40.
3/17/34/48
Barbara Sanders
11 Norden Place, Unit #48
Norwalk, CT 06855

41.
3/17/34/47
Marvin Sanders & Tamara L. Sanders
11 Norden Place, Unit #47
Norwalk, CT 06855-1447

42.
3/17/34/34
Windmon Sanders
11 Norden Place, Unit #34
Norwalk, CT 06855

43.
3/17/34/51
Amanda Seroff
11 Norden Place, Unit #51
Norwalk, CT 06855

44.
3/17/34/21
Aura Serrano
11 Norden Place, Unit #21
Norwalk, CT 06855

45.
3/17/34/9
Robert E. Stringfellow & Stephanie O. Sellers
11 Norden Place, Unit #9
Norwalk, CT 06855-1416

46.
3/17/34/20
Deborah M. Tegano
11 Norden Place, Unit #20
Norwalk, CT 06855-1448

47.
3/17/34/46
Marquise Sanders
11 Norden Place, Unit #46
Norwalk, CT 06855

48.
3/17/34/39
Valentin A. Todeschini & Gerarda N. Todeschini
11 Norden Place, Unit #39
Norwalk, CT 06855

49.
3/17/34/2
Judith Tome
11 Norden Place, Unit #2
Norwalk, CT 06855

50.
Judith Tome
11 Norden Place, Unit #15
Norwalk, CT 06855

51.
3/17/34/10
Erica M. Torres
11 Norden Place, Unit #10
Norwalk, CT 06855-1446

52.
3/17/34/24
Barry Turner
11 Norden Place, Unit #24
Norwalk, CT 06855

53.
3/17/34/14
Sandra M. Uribio & Eduardo Jose Meza
11 Norden Place, Unit #14
Norwalk, CT 06855

54.
3/17/34/33
Enrique Vazquez
11 Norden Place, Unit #33
Norwalk, CT 06855

55.
3/17/34/29
John F. Walters & Kim B. Walters
11 Norden Place, Unit #29
Norwalk, CT 06855

56.
3/17/34/40
Gerard Watt
11 Norden Place, Unit #40
Norwalk, CT 06855

57.
3/17/34/13
Kathy N. Williams
11 Norden Place, Unit #13
Norwalk, CT 06855-1416

58.
3/17/34/50
Lee C. Williams
11 Norden Place, Unit #50
Norwalk, CT 06855

59.
Metro North
Ron Bottacari
347 Madison Avenue
New York, NY 10022

60.
David Willard
525 Water Street
Bridgeport, CT 06601

61.
Seth Cummins, Esq.
347 Madison Avenue
New York, NY 10017

62.
Susan Sarch
Metro North Railroad
420 Lexington Avenue, 11th Floor
New York, NY 10170

63.
Penn Central
Metro-North Railroad – Suburban Station
4 Penn Central Plaza – Floor 1200
Philadelphia, PA 19103

64.
Penn Central
Metro-North Railroad
4 Penn Central Plaza – Floor 1200
Philadelphia, PA 19103

65.
State of Connecticut Dept. of Transportation
Julie Thomas
Office of Rail – Union Station – 4th Floor West
50 Union Ave.
New Haven, CT 06519

66.
State of Connecticut Dept. of Transportation
Julie Thomas
4 Brewery Street
New Haven, CT 06519

67.
State of Connecticut Dept. of Transportation
Robert Ike
2800 Berlin Turnpike
P.O. Box 317546
Newington, CT 06131

68.
Amy Martinez, Transportation Principal Property Agent
Department of Transportation
Appraisals/Property Management Division
2800 Berlin Turnpike
P.O. BOX 317546
Newington, CT 06131-7546

69.
Sheila Mary Sopper
Director, Real Estate Development & Operations
National Railroad Passenger Corporation (AMTRAK)
30th Street Station, Floor 5S
2955 Market Street
Philadelphia, PA 19104

70.
Theodore Smigelski
Connecticut Department of Transportation
Office of Rail - Property Management Unit
Component Change Out Building - 4th Floor
4 Brewery Street
New Haven, CT 06519

71.
Alan Warner
Senior Manager, Real Estate Development
National Railroad Passenger Corporation (AMTRAK)
30th Street Station - 5S-014 - Box 25
2955 Market Street
Philadelphia, PA 19104

72.
State of Connecticut Dept of Transportation
Carl Rosa
Office of Rail - Union Station - 4th Floor West
50 Union Ave
New Haven, CT 06519

73.
3/17/34/28
Shaun Lonergan
11 Norden Place, Unit #28
Norwalk, CT 06855

74.
Shaun Lonergan
3 Roxbury Road
Norwalk, CT 06855

75.
3/17/34/37
Jeannie V. Thompson
11 Norden Place, Unit #37
Norwalk, CT 06855

76.
3/17/34/38
Patricia E. Jefferson
11 Norden Place, Unit #38
Norwalk, CT 06855

77.
3/22/7/1
Charles D. Fortune, Trustee
16 Heron Road
Norwalk, CT 06855

78.
3/19/45
Demetrios Apazidis & Diane Apazidis
36 Triangle Street
Norwalk, CT 06855

79.
Demetrios Apazidis & Diane Apazidis
2 Arrowhead Court
Norwalk, CT 06851-1801

80.
3/19/31
Maria Bilardi
6 Hermany Court
Norwalk, CT 06855

81.
3/22/7/2
Robert Wehrmann & Dani Wehrmann
18 Heron Road, Unit 2
Norwalk, CT 06855

82.
3/22/7/3
John A. Paul & Sara A. Paul
20 Heron Road, Unit 3
Norwalk, CT 06855

83.
3/22/7/4
Alan Lipset
22 Heron Road, Unit 4
Norwalk, CT 06855

84.
3/22/7/5
Paul A. Banks & Amy F. Banks
24 Heron Road, Unit 5
Norwalk, CT 06851

85.
3/22/7/6
Luisa Y. Fairborne & Henry Chapman
2 Heron Court, Unit 6
Norwalk, CT 06855

86.
3/22/7/7
Paul A. Merolla & Nancy C. Merolla
4 Heron Court, Unit 7
Norwalk, CT 06855

87.
3/22/7/8
Beatrice A. Montaudy
6 Heron Court, Unit 8
Norwalk, CT 06855

88.
3/22/7/9
Matthew Hardenbergh & Valerie Hardenbergh
5 Heron Court, Unit 9
Norwalk, CT 06855

89.
3/22/7/10
Christina L. Olson
3 Heron Court, Unit 10
Norwalk, CT 06855

90.
3/22/7/11
Charles W. Mulford & Katherine Mulford
1 Heron Court
Norwalk, CT 06855

91.
3/22/7/12
Susan Lacorte & Joseph J. Catalano
9 Swale Road #12
Norwalk, CT 06855

92.
3/22/7/13
Eugene R. Bauchner, Co-Trustee &
Roberta N. Bauchner, Co-Trustee
8 Swale Road #13
Norwalk, CT 06855

93.
3/22/7/14
Robert E. Dohm, Trustee
31 Heron Road #14
Norwalk, CT 06855-1604

94.
3/22/7/15
Margaret L. Breines & Marshall Breines
29 Heron Road #15
Norwalk, CT 06855

95.
3/22/7/16
Medard Thomas & Lourz Kristine Thomas
27 Heron Road #16
Norwalk, CT 06855

96.
3/22/7/17
Donald B. Fries & Melissa Ciotoli
25 Heron Road #17
Norwalk, CT 06855

97.
3/22/7/18
Stephen Binet & Lynda Binet
23 Heron Road, Unit 18
Norwalk, CT 06855

98.
3/22/7/19
Doreen Bray & James Regnier
21 Heron Road #19
Norwalk, CT 06855

99.
3/22/7/20
John E. Karr & Patricia M. Russo
19 Heron Road #20
Norwalk, CT 06855-1604

100.
3/22/7/21
Daniel Magnanimo
17 Heron Road, Unit 21
Norwalk, CT 06855

101.
3/22/7/22
Marla S. Daniels & Scott A. Daniels
15 Heron Road, Unit 22
Norwalk, CT 06855

102.
Courville Holding Company, LLC
10 Norden Place
Norwalk, CT 06855

103.
Courville Holding Company, LLC
c/o Richard Courville
455 Stonehouse Road
Trumbull, CT 06611

**NORWALK CENTER, LLC AND THE AUTO COLLECTIVE
10 NORDEN PLACE, NORWALK, CT
APPLICATION FOR ZONE TEXT AMENDMENT
PROPOSED TEXT
SCHEDULE B**

1. Add to Section 9.3 “Defined Terms”

Car Club – a membership-based organization where classic, vintage and other passenger motor vehicles are stored and displayed inside a building including on racks, along with accessory space for members and member-sponsored events along with members’ lounge and club space which may include the service of food and alcohol. Outdoor storage of and repairs to vehicles shall be prohibited.

2. Add to Table 4.3.9.A

Car Club – use permitted by special permit

3. Add to Sec. 4.3.12 “Parking”

Parking for car club

Storage of motor vehicles – 1 space per 5,000 sq.ft. of useable floor area plus 1 space per employee; accessory event, lounge and club space – 1 space per 500 sq.ft. usable floor area.

**NORWALK CENTER, LLC AND THE AUTO COLLECTIVE
10 NORDEN PLACE, NORWALK, CT
APPLICATION FOR ZONE TEXT AMENDMENT
NARRATIVE – REASONS FOR REQUESTED AMENDMENT
SCHEDULE C**

I. BACKGROUND

Norwalk Center, LLC (hereinafter “Norwalk Center”) is the owner of real property with the improvements thereon located at 10 Norden Place in Norwalk, CT (the “Property”) totaling 33± acres. Generally bounded by other developed property to the east, Metro-North Railroad and Courville Nurseries to the south, Norden Place to the west, and an accessway to a rear lot to the north, the Property is designated as Tax Lot 40 Unit A in Block 17 of the Third Taxing District. The Property is zoned Special District-Limited Industrial (SD-LI).¹ I-95 is located to the north of a drive aisle on adjoining property that leads to a data center on Unit B of the Property and the Halstead multi-family development on an adjoining property to the east. (Refer to “Aerial Plan (Drawing Title C0.02)” dated February 19, 2025 prepared by Tighe & Bond, “Property Survey ALTA/NSPS Land Title Survey 10 Norden Place – Unit A Norwalk, Connecticut Prepared for Norwalk Center, LLC Scale: 1”=80 Ft.” [“Survey”] dated August 28, 2023 and “Resubdivision Map of Revised Lot 2, Maps 12681A & 12681B Depicting Proposed Parcels 1A, 1B & Lot 2 10 Norden Place Norwalk, Connecticut Prepared for Courville Nursery Property Scale: 1”=80Ft.” [“Resubdivision Map”] dated January 16, 2024, both prepared by Seymour Surveying.

The Property is improved with a 635,430± sq.ft. building, formerly the headquarters of and a manufacturing site for Northrup Grumman-Norden Systems, a national defense contractor, which operated three (3), round-the-clock shifts at the height of operation and production, employing nearly 3,000 people daily across three (3) shifts. Today, the building is largely vacant, but had been the site of Tauck Worldwide Tours, Pepperidge Farms, and Katharine Gibbs secretarial school, among other tenants. Around 2006,² the prior owners sold half of the Property (40 acres) to Norwalk Center, which in 2013, received approvals for and constructed a 167,691± sq.ft. data recovery center on the easternmost five (5) ± acres of the site. There is also an existing 9,000± sq.ft. test building in the southeast section of the Property. In 2024, Norwalk Center received approvals for the adaptive reuse of 113,500± sq.ft. within the building for a transportation maintenance terminal to be used and occupied by the rail and culverts division of the Metropolitan Transportation Authority (MTA). Further, the Property is improved with more than 1,000 parking spaces, interior driveways, sidewalks, landscaped areas, etc. Adjacent to the Metro-North Railroad tracks, there is a 0.99± acre parcel that is occupied via easement by the State of Connecticut Department of Transportation, which uses that area for staging purposes, and a 3.0-acre parcel recently conveyed to Courville Nurseries as a result of a subdivision approved in 2024.

¹Refer to zoning history of property, attached hereto.

²The prior owners received approvals in 2009 to construct a 200+ unit multi-family development which is owned and operated today by Avalon.

II. PROPOSAL

Norwalk Center and The Auto Collective (hereinafter, the “Applicants”) propose an amendment to the Zoning Regulations of the City of Norwalk (“zoning regulations”) to permit membership-based car clubs with accessory place of assembly, event, lounge, and club space in the SD-LI zone by special permit. Indoor motor vehicle storage is already permitted in the SD-LI zone by special permit,³ but that use does not necessarily include the concept of a car club with the associated accessory club uses. For comparative purposes, the proposed use is similar to North American Motor Car on Miry Brook Road in Danbury (www.northamericanmotorcar.com).

No new structures or additions to the existing structure at 10 Norden Place are required for this use. Instead, the car club tenancy would occur entirely within the existing building, occupying approximately 137,000± gross square feet. The majority of the space – 84,600 sq.ft. – would be dedicated to storage of vehicles in a rack system. In the proposed square footage, about 420 vehicles could be accommodated. The Applicants propose about 20,800± sq.ft. of event space, where the club could host parties, movie and other screenings, and hold member and member-sponsored gatherings. Typically, these events would be on weekends. About 26,450± sq.ft. would be dedicated to the car club itself for members’ use along with 5,370± sq.ft. for a lounge. Food and beverages, including alcohol, would be served in the car club space. (Refer to “Site Plan (Drawing Number C1.01)” dated February 19, 2025 prepared by Tighe & Bond, and “Proposed Main Level Floor Plan & Exterior Elevation (Drawing A2.01)” and “Perspective Views (Drawing A2.02)” both dated 2.19.25 prepared by Kenneth Boroson Architects, attached hereto and made a part hereof).

Vehicles to be stored at the car club would be driven to the site by the owners and not by large, multi-vehicle car carrier transport vehicles. Further, no vehicles would be permitted to be stored outdoors, and no automotive repair work would be conducted on the vehicles within the car club space.

This is a reasonable and rational amendment that addresses several issues. First, the proposed car club use and parking requirements make clear what the Applicants propose within the building. Secondly, the proposed use will provide much-needed space for auto owners to securely store their vehicles, to gather with other car enthusiasts, and to have space for events available to club members and members’ guests. The proposed text amendment is consistent with overarching goals of the City of Norwalk’s advisory Plan of Conservation & Development (POCD), which was adopted by the Common Council in October 2019, and which became effective in December 2019. Notably, the POCD recognized that “[h]ealthy, vibrant cities are constantly evolving in big and small ways to remain desirable by meeting changing demands.” (POCD Ch. 12, p. 223). The adaptive reuse of a portion of the former Norden building addresses this goal and also the recommendation that “[i]n healthy cities, new uses emerge, old buildings are renovated and repurposed and new buildings are built.” (Id.). Therefore, consideration and adoption of the proposed new use reduces the POCD’s concern that “[i]f a place always stays the same, it risks stagnation and slowly being left behind.” (Id.)

³An application for special permit is submitted simultaneously herewith.

When considering an amendment to zoning regulations a Zoning Commission acts in a legislative capacity and is therefore “ . . . free to amend its regulations whenever time, experience and responsible planning for contemporary or future conditions reasonably indicate the need for a change.” Konigsberg v. Board of Aldermen of the City of New Haven, 283 Conn. 553, 582-583 (2007). Moreover, such legislative discretion is wide and liberal. Id.

**NORWALK CENTER LLC AND THE AUTO COLLECTIVE
10 NORDEN PLACE, NORWALK, CT
APPLICATION FOR ZONE TEXT AMENDMENT
ZONING HISTORY
SCHEDULE D**

District 3, Block 17, Lot 40, Unit A

Zoning History 10 Norden Place

October 1929: The property was zoned as B Residence in its entirety

April 1959: The property was partially rezoned to Light Industrial #1 and Research & Development along the Norden Place frontage

April 1991: The Industrial #1 portion of the property was rezoned to the Restricted Industrial zone; the frontage along Norden Place frontage remained as Research & Development

October 2022: Property rezoned to Industrial #2

February 2024: Property rezoned to SD-LI

Various amendments to the R&D, RI, Industrial #1 zone were approved over the past 50 years, and current and prior owners have applied for and obtained approvals for various site plan and special permit uses including a data recovery center, transportation maintenance facility, and others. An application for a warehouse distribution facility was withdrawn several years ago.

[illegible]

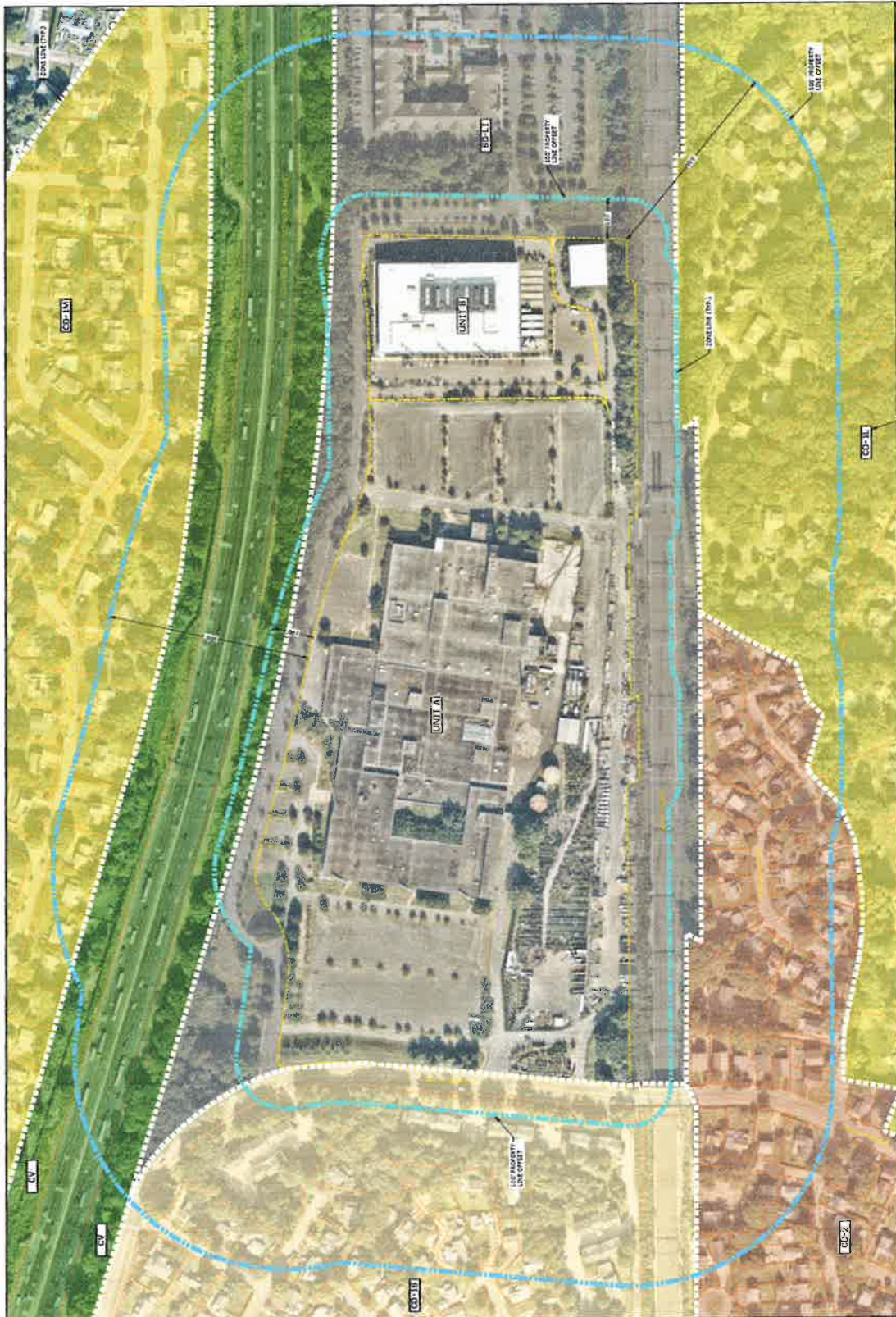
DATE	TIME	LOCATION

THE AUTO COLLECTIVE
CONCEPTUAL LAYOUTS

THE AUTO COLLECTIVE 10 HUNTER PLACE NORWICH, CT 06460	NEW NUMBER 811 A
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507	PROPERTY ADJUTERS	MAP
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AM.01

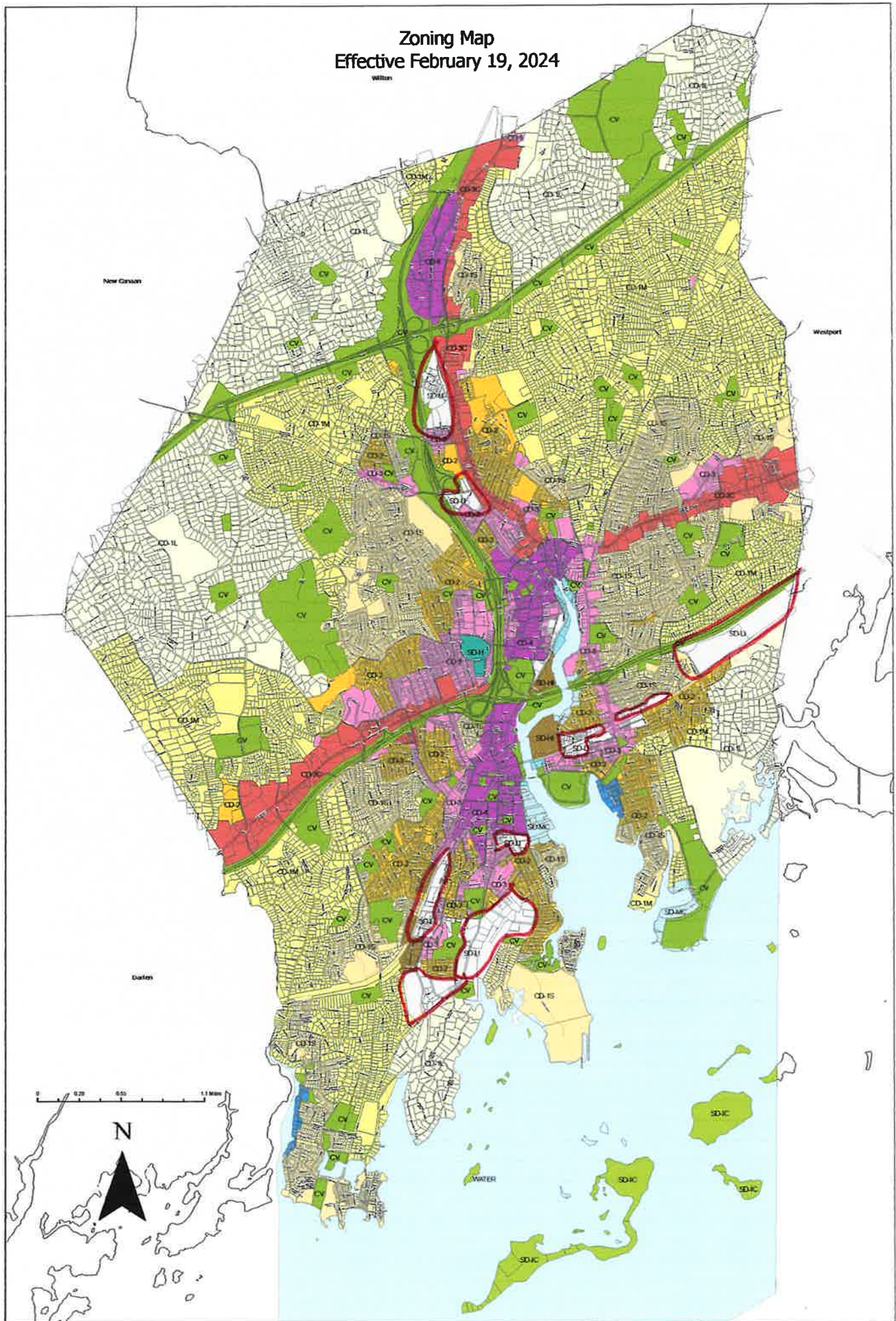


MAP REFERENCE:

1. MAP COMPILED FROM AVAILABLE SOURCES:
- A. SITE PROPERTY LINE TO 25' FROM SITE CLAYVAY MAPPING.
- B. PROPERTY BOUNDARIES TAKEN FROM AVAILABLE NORMAL CDS MAPPING.
- C. AERIAL PHOTOGRAPHS TAKEN FROM THE BROWN ONLINE MAPPING SERVICE.

Received 2002-02-20

Zoning Map
Effective February 19, 2024





THE AUTO COLLECTIVE
WAREHOUSE AND STORAGE FACILITY
10 NORDEN PLACE NORWALK, CT 06855

FEBRUARY 19, 2025

ARCHITECT'S PROJECT NUMBER:
2024.021



ZONING SUBMISSION
FEBRUARY 19, 2025

PROJECT TEAM				DRAWING LIST	SITE LOCATION
<u>Architect:</u> Kenneth Boroson Architects, LLC 315 Peck Street New Haven, CT 06513 Contacts: Grant Wright, Project Manager gwright@kbarch.com Phone: (203) 624-0662 Fax: (203) 562-1732 Kenneth Boroson ARCHITECTS	<u>Civil Engineers:</u> Tighe & Bond 213 Court Street, Suite 1100 Middletown, CT 06457 Contacts: Erik Lindquist, Senior PM elindquist@tighebond.com Phone: (860) 852-5219 Tighe&Bond	<u>Owner:</u> Norden Place KB LLC 100 Challenger Road, Suite 401 Ridgefield Park, NJ 07660-1801 Contacts: Craig Benerofe cbenerofe@nordenplace.com Phone: (917) 495-7601 BENEROFE PROPERTIES KABR GROUP	<u>Zoning Attorney:</u> Carmody Torrance Sandak & Hennessey LLP 1055 Washington Blvd., 4th Floor Stamford, CT 06901-2218 Contacts: Elizabeth A.B. Suchy esuchy@carmsandak.com Phone: (203) 252-2656 CARMODY TORRANCE SANDAK & HENNESSEY LLP	<u>GENERAL</u> A0.00 COVERSHEET A0.01 PROJECT INFORMATION SHEET <u>CIVIL</u> C0.01 GENERAL NOTES, LEGEND, AND ABBREVIATIONS C0.02 AERIAL PLAN C1.00 OVERALL SITE PLAN C1.01 SITE PLAN C2.01 DRAINAGE, GRADING, AND SOIL EROSION AND SEDIMENT CONTROL PLAN C2.02 SOIL EROSION AND SEDIMENT CONTROL NOTES, NARRATIVE, AND DETAILS C3.01 DETAILS - 1 C3.02 DETAILS - 2 <u>ARCHITECTURAL</u> A2.01 PROPOSED MAIN LEVEL FLOOR PLAN & EXTERIOR ELEVATION A2.02 PERSPECTIVE VIEWS	PROJECT LOCATION

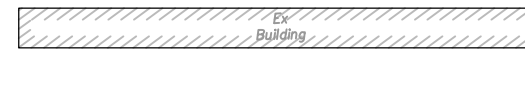
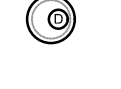
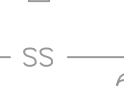
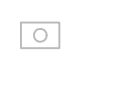
GENERAL NOTES

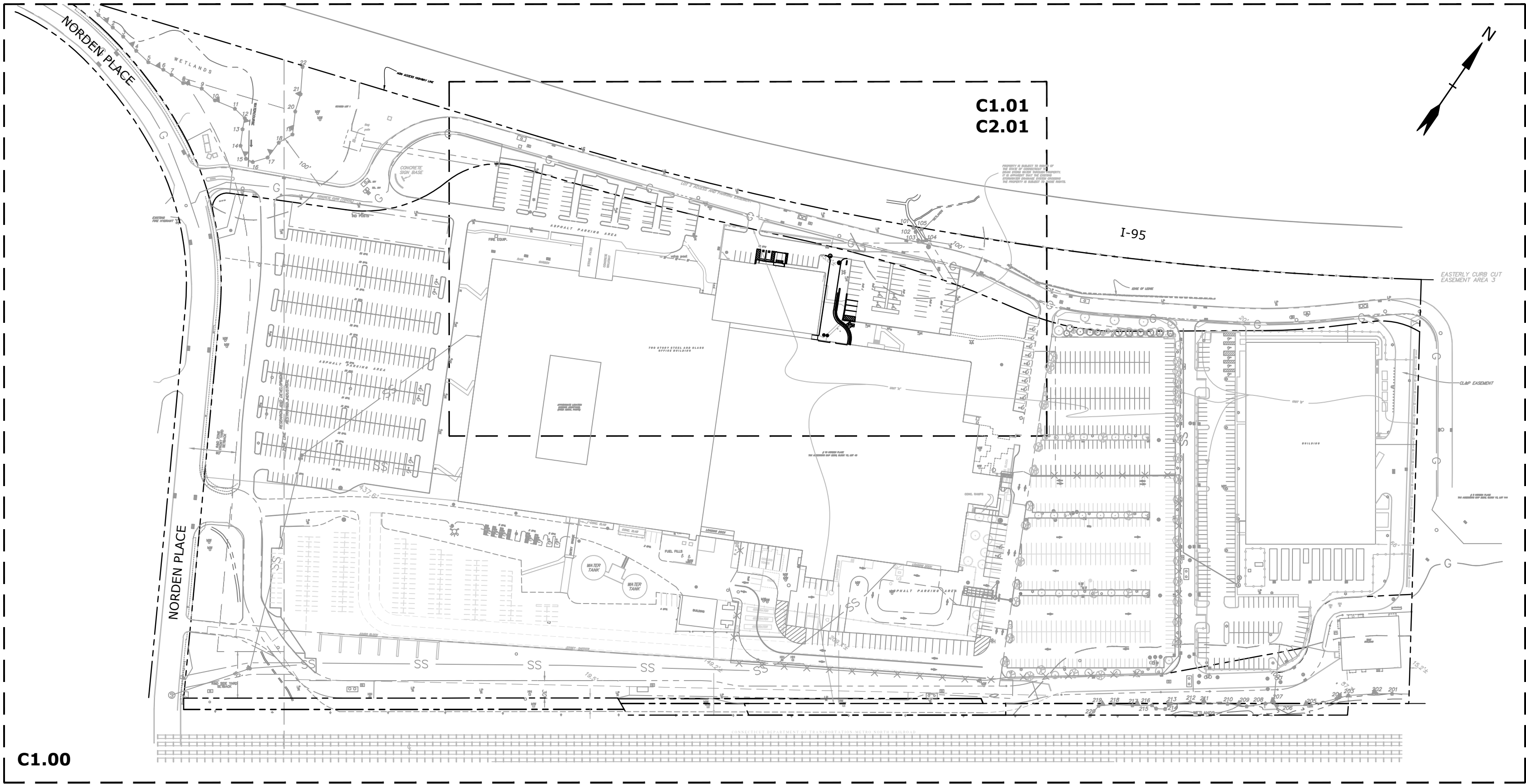
- UTILITY LOCATIONS SHOWN HEREON WERE PLOTTED FROM INFORMATION SUPPLIED BY RESPECTIVE UTILITY COMPANIES AND DATA OBTAINED FROM FIELD SURVEYS AND AS-BUILT DRAWINGS. THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION SHOWN ON THESE DRAWINGS IS NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE FOR HIMSELF, THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES WHICH MAY AFFECT HIS CONSTRUCTION OPERATIONS. THE CONTRACTOR MUST ADEQUATELY PROTECT AND SUPPORT UTILITIES AND HE SHALL BE RESPONSIBLE FOR ALL DAMAGE INCURRED AT NO EXPENSE TO THE OWNER. ANYONE USING UTILITY INFORMATION AND DATA PROVIDED HEREIN SHALL CONTACT "CALL BEFORE YOU DIG", 1-800-922-4455 OR WWW.CBYD.COM, 72 HOURS IN ADVANCE TO VERIFY THE LOCATION OF UTILITIES PRIOR TO STARTING CONSTRUCTION.
- REFERENCE IS MADE TO THE SURVEY ENTITLED "PROPERTY & TOPOGRAPHIC SURVEY 10 NORDEN PLACE" PREPARED FOR NORWALK CENTER LLC, PREPARED BY WILLIAM W. SEYMOUR & ASSOCIATES, P.C., DATED MARCH 19, 2019 AND SUPPLEMENTED DECEMBER 12, 2023.
- IT IS THE RESPONSIBILITY OF EACH BIDDER IN EVALUATING THESE PLANS TO MAKE EXAMINATIONS IN THE FIELD BY VARIOUS METHODS AND OBTAIN NECESSARY INFORMATION FROM AVAILABLE RECORDS, UTILITY COMPANIES, AND INDIVIDUALS AS TO THE LOCATION OF SUBSURFACE STRUCTURES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE DRAWINGS, SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE OWNER'S REPRESENTATIVE SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.
- AT ALL LOCATIONS WHERE THE CONTRACTOR IS REQUIRED TO REMOVE EXISTING PAVEMENT AREAS (WHICH ARE NOT TO BE RECONSTRUCTED) FOR THE INSTALLATION OF THE PROPOSED UTILITIES, THE PAVEMENT SHALL BE REPAIRED AS SHOWN ON THE CONTRACT DRAWINGS.
- AS CONSTRUCTION IS COMPLETED, THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS, ETC. AND RESTORE OR REPLACE ANY DAMAGE TO LANDSCAPING.
- AREAS OUTSIDE THE PROJECT AREA DISTURBED BY CONSTRUCTION SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER AND SHALL BE GRADED TO MEET PROPOSED CONSTRUCTION AS DIRECTED BY THE OWNER'S REPRESENTATIVE. COST FOR THIS WORK SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL PROCURE ALL THE NECESSARY PERMITS AND LICENSES, AT THE TIME REQUIRED, PAY ALL THE CHARGES AND FEES, AND GIVE NOTICES AS NECESSARY AND DUE IN CONNECTION WITH THE LAWFUL EXECUTION OF THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- ALL UTILITY BOXES, FRAMES, AND GRATES, ETC. AFFECTED BY THE CONSTRUCTION ACTIVITIES SHALL BE RESET/RECONSTRUCTED TO THE PROPER GRADE. ALL COST RELATED TO SUCH WORK SHALL BE CONSIDERED INCLUDED IN THE BID PRICE.
- EXCAVATION OF ANY TYPE SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT UNDERGROUND UTILITIES OR STRUCTURES ARE NOT DAMAGED. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY FOR ANY DAMAGE INCURRED DURING EXCAVATION OPERATIONS. ALL EXCAVATION SHALL BE IN CONFORMANCE WITH THE LATEST OSHA REQUIREMENTS.
- ALL DRIVEWAYS, ROADS, STAIRS, AND SIDEWALKS DISTURBED BY THE CONSTRUCTION TO REMAIN SHALL BE RETURNED TO THEIR ORIGINAL CONDITION OR BETTER AND SHALL BE GRADED TO MEET THE PROPOSED CONSTRUCTION AS DIRECTED BY THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL SUFFICIENTLY COVER ALL DISTURBED AREAS AT THE END OF EACH WORK DAY TO AVOID ANY RISK OF INJURY TO PEDESTRIAN OR VEHICULAR TRAFFIC. THE CONTRACTOR SHALL INSTALL TEMPORARY SUPPORT SYSTEMS OVER TRENCH EXCAVATIONS THAT ARE TAMPER RESISTANT AND SAFE FOR VEHICULAR AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL INSTALL BARRICADES TO PROTECT AGAINST PEDESTRIAN ACCESS. THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE TEMPORARY SAFETY MEASURES BY THE OWNER'S REPRESENTATIVE. ALL MAINTENANCE AND PROTECTION OF BOTH PEDESTRIAN AND VEHICULAR TRAFFIC ARE INCLUDED IN THE LUMP SUM BID PRICE FOR THIS PROJECT.
- ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFIRM TO THE CITY OF NORWALK DPW REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION, FORM 819, 2024, AND ADDENDA AND AS SUPPLEMENTED IN THE SPECIAL PROVISIONS. FORM 819 IS AVAILABLE FOR VIEWING ON THE CTDOT WEBSITE WWW.CT.GOV.DOT/SITE UNDER THE "PUBLICATIONS" TAB.
- ALL DISTURBED AREAS NOT PROVIDED WITH SPECIFIC SITE IMPROVEMENTS (PAVING, CONCRETE SIDEWALK, LANDSCAPING, ETC.) SHALL HAVE TOPSOIL INSTALLED AND TURF ESTABLISHED.
- THE LOCATIONS OF ALL UNDERGROUND UTILITIES INSTALLED OR FOUND DURING CONSTRUCTION SHALL BE MEASURED FROM PERMANENT SURFACE FEATURES AND INDICATED BY THE CONTRACTOR ON RECORD DRAWINGS.
- THE CONTRACTOR SHALL COMPLETE ALL WORK SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER, WILL NOT BE DAMAGED. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN, OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER, THE DAMAGED MATERIALS SHALL BE REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
- AFTER CONSTRUCTION IS COMPLETED, THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, DEBRIS, EQUIPMENT, ETC. AND RESTORE OR REPAIR ANY DAMAGE TO LANDSCAPING AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL EXCAVATE AND LEGALLY DISPOSE OF OFF-SITE ANY EXCESS PAVEMENT, BASE AND COLD RECLAIMED BASE. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR THE PROJECT AND AT NO ADDITIONAL COST TO THE OWNER.
- ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE OWNER'S REPRESENTATIVE TO MEET EXISTING CONDITIONS.

STANDARD ABBREVIATIONS

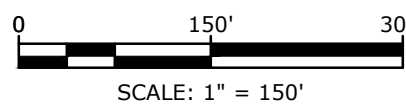
@	AT
ABDN(D)	ABANDON(ED)
AC	ACRE/AIR CONDITIONING
AOBE	AS ORDERED BY THE ENGINEER
BSMT	BASEMENT
BCLC	BITUMINOUS CONCRETE LIP CURBING
BOW	BACK OF WALK
BL	BASELINE
BW	BOTTOM OF WALL
BIT	BITUMINOUS
BC	BOTTOM OF CURB
BLDG	BUILDING
BOT	BOTTOM
CATV	CABLE TELEVISION
CIP	CAST IRON PIPE
CB	CATCH BASIN
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CL&P	CONNECTICUT LIGHT & POWER
CTDEEP	CONNECTICUT DEPT. OF ENERGY & ENV. PROTECTION
CTDOT	CONNECTICUT DEPT. OF TRANSPORTATION
CONC	CONCRETE
CO	CLEAN-OUT
CPP	CORRUGATED POLYETHYLENE PIPE
CY	CUBIC YARDS
DIP	DUCTILE IRON PIPE
DWG	DRAWING
E	EAST/ELECTRIC
EOP	EDGE OF PAVEMENT
ELEC	ELECTRIC
EL/ELEV	ELEVATION
EMH	ELECTRIC MANHOLE
EX/EXIST	EXISTING
EG	EXISTING GRADE
FF	FIRST FLOOR
G	GAS
GEN	GENERATOR
GG	GAS GATE
GRC	GALVANIZED RIGID CONDUIT
HC	HANDICAP
HYD	HYDRANT
IN	INCHES
INC	INCORPORATED
INV	INVERT
L	LENGTH OF CURVE
LT	LEFT
LOC	LOCATION
LP	LIGHT POLE
MAX	MAXIMUM
MIN	MINIMUM
MH	MANHOLE
MISC	MISCELLANEOUS
MON	MONUMENT
NIC	NOT IN CONTRACT
N	NORTH
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
N/F	NOW OR FORMERLY
OH	OVERHEAD
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCPP	PERFORATED CORRUGATED POLYETHYLENE
PED	PEDESTRIAN
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PS	PARKING SPACES
PVC	POLYVINYL CHLORIDE
R	RADIUS
REV	REVISION
ROW	RIGHT OF WAY

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE	---	---
PROPERTY SETBACK LINE	---	---
UTILITY EASEMENT	---	---
SAWCUT	---	---
MONITORING WELL		
BORING LOCATION		
MINOR CONTOUR	---115---	---115---
MAJOR CONTOUR	---120---	---120---
SPOT ELEVATION	106.8	99.5
TREES		
TREE LINE	---	
EDGE OF PAVEMENT	---	---
CURB LINE	---	---
RETAINING WALL	---	---
CONCRETE WALK	---	---
EXTERIOR STAIRS	---	---
BUILDING		
FENCE	---	---
SIGN & SIGN POST	+	
BOLLARD		
HANDICAP PARKING		
PARKING PAINT LINE	---	---
WETLAND BOUNDARY	---	---
WETLAND FLAG		
WETLAND SETBACK	---	---
HEAD WALL	---	---
STORM SEWER	---	---
STORM MANHOLE		
CATCH BASIN		
SANITARY SEWER	SS	SS
SANITARY LATERAL	6" PVC	6" PVC
SANITARY MANHOLE		
WATER MAIN	PW	PW
WATER VALVE		
WATER METER		
HYDRANT		
GAS MAIN	G	G
GAS GATE		
GAS METER		
TEL-DATA - BURIED	T	T
ELECTRICAL - BURIED	E	E
OVERHEAD WIRES	---	---
ELECTRIC MANHOLE		
TEL-DATA/CATV MANHOLE		
UTILITY POLE		
LIGHT		
SILT SACK		S.S. 
BITUMINOUS CONCRETE PAVEMENT		---
EXTERIOR STORAGE AREA		---
WHEEL STOP		---



SHEET INDEX
1" = 150'



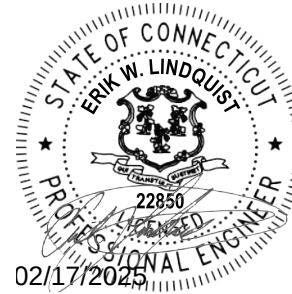
Kenneth
Borson
ARCHITECTS

315 Peck Street
New Haven, CT 06513
p: 203.624.0662 • f: 203.562.1732
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1000 Bridgeport Avenue
Suite 320
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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME
THE AUTO COLLECTIVE

CONCEPTUAL LAYOUT

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

SDE NUMBER
N/A

DRAWING TITLE
GENERAL NOTES, LEGEND,
AND ABBREVIATIONS

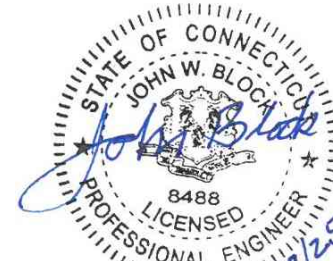
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AS SHOWN	ZNH

FILENAME	DATE
AS128-01-C-001-GENR.dwg	FEBRUARY 19, 2025

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NO.	DATE	REVISION

PROJECT NAME
THE AUTO COLLECTIVE

CONCEPTUAL LAYOUT

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

SHEET NUMBER
N/A

DRAWING TITLE
AERIAL PLAN

SCALE	DRAWN BY
AS SHOWN	ZNH
FILENAME	DATE

DRAWING NUMBER

C0.02



Last Saved: 2/17/2025
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 Tighe & Bond 251A5128 The Auto Collective (001) Drawings\AutoCAD\Sheet\A5128-01-C-100-SITE.dwg

ZONE: INDUSTRIAL NO. 2
 MAP: DISTRICTS 5 & 3
 LOT AREA: 1,620,868 SF (37.21 ACRES)

	REQUIRED	EXISTING	PROPOSED
MAXIMUM HEIGHT	4 STORIES & 65 FEET	4 STORIES / 53'-11"	4 STORIES / 53'-11"
MINIMUM HEIGHT	N/A	-	-
MINIMUM SIZE OF PLOT (AREA)	5,000 SF	1,620,868 SF (37.21 AC)	1,620,868 SF
MINIMUM SIZE OF PLOT (WIDTH)	50 FEET	1102.5 FT	1102.5 FT
FRONT YARD SETBACK	35'-0" FROM CENTERLINE	437.6 FT	437.6 FT
SIDE YARD SETBACK	NONE (10'-0" MIN WHEN PROVIDED)	20 FT	20 FT
AGGREGATE SIDE YARD SETBACK	N/A	229.8 FT	229.8 FT
REAR YARD SETBACK	10'-0"	66 FT	66 FT
MAX. BUILDING AREA (COVERAGE):	50%	27%	27%
MAX BUILDINGS AND PARKING (COVERAGE):	90%	68.6%	69.2%
LOADING SPACES	2 SP. PLUS 1 SP. PER 100,000 SF	8	8
OFFICE		241,128 SF	149,190 SF
VACANT SCHOOL		64,545 SF	64,545 SF
INDUSTRIAL / MANUFACTURING USE*		216,255 SF	170,973 SF
CAR CLUB			52,620 SF
CAR CLUB STORAGE			84,600 SF
TRANSPORTATION MAINTENANCE TERMINAL		113,500 SF	113,500 SF
EXISTING DATA CENTER		167,691 SF	167,691 SF
EXISTING TEST CENTER		9,046 SF	9,046 SF
TOTAL BUILDING AREA		803,119 SF	803,119 SF
PERCENT OF OFFICE USE		30%	30%

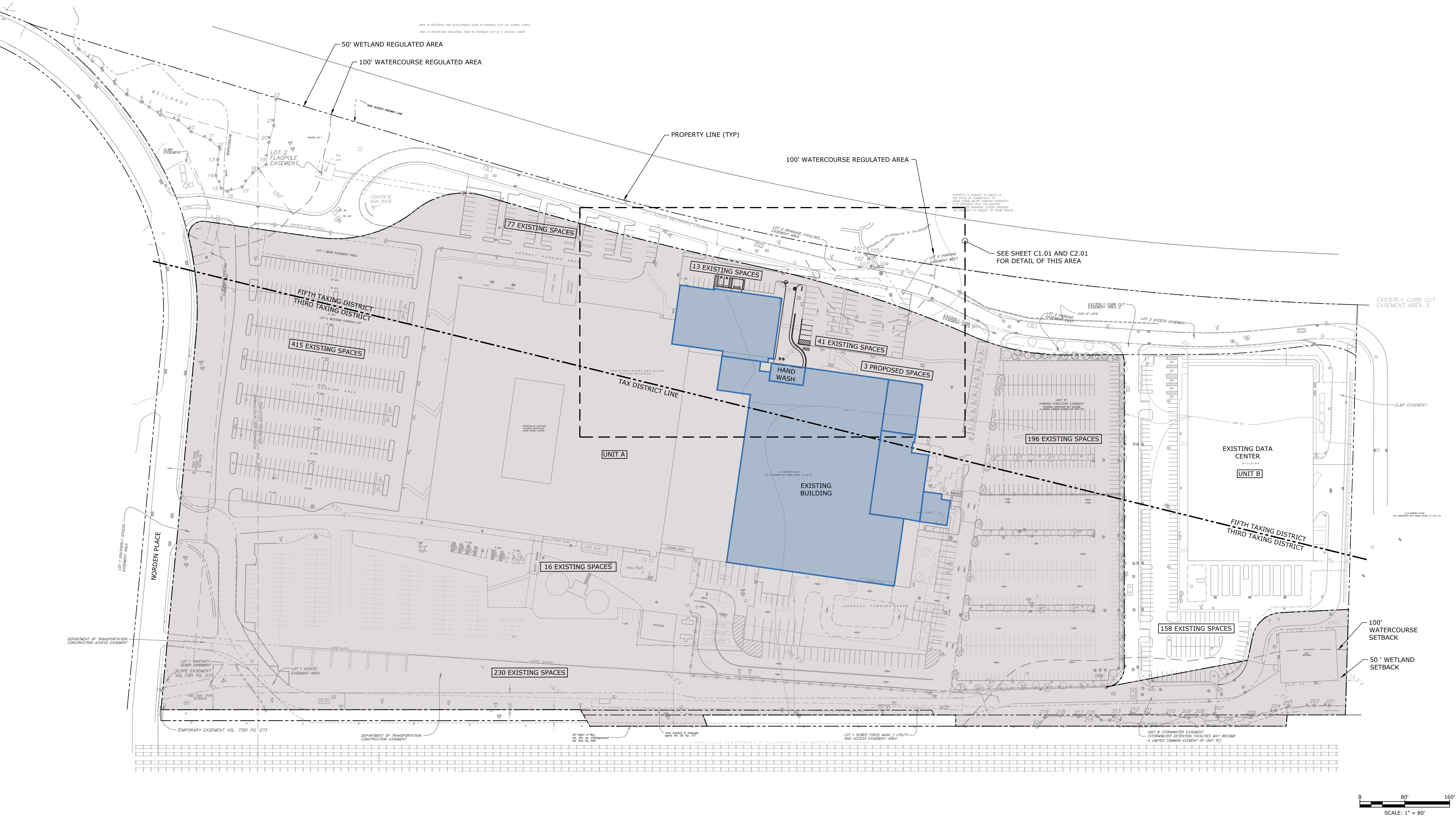
USE	PARKING ANALYSIS				
VACANT: OFFICE (1 SPACE / 370 SF)	149,190 GFA	HISTORIC ALLOCATION	403	REQUIRED	EXISTING
VACANT: SCHOOL (PREVIOUSLY APPROVED, SEE NOTE 2)	64,545 GFA		261	-	
VACANT: INDUSTRIAL / MANUFACTURING (1 SPACE / 1,600 SF + 3 SPACES / 1,000 SF ANS.)	170,973 SF		107	-	
CAR CLUB (1 SPACE / 500 SF)	52,620 GFA			105	
CAR CLUB STORAGE (1 SPACE / 5,000 SF)	84,600 GFA			17	
TRANSPORTATION MAINTENANCE TERMINAL	113,500 GFA			184	
DATA CENTER (1 SPACE / 1,200 SF)	167,691 GFA			140	
TOTAL	803,119 GFA			446	1,150
					1,149

NOTES:

- EXISTING PARKING COUNT IS BASED ON "TOPOGRAPHIC & ZONING LOCATION SURVEY 10 NORDEN PLACE" PREPARED BY WILLIAM W. SEYMOUR & ASSOCIATES, P.C. ON MARCH 19, 2019.
- PREVIOUSLY APPROVED VALUES ARE TAKEN FROM "ARCHITECTURAL SITE PLAN" PREPARED BY PERKINS EASTMAN ON DECEMBER 17, 2013.

OVERALL SITE PLAN LEGEND

PROPERTY LINE	---
WETLAND BOUNDARY	~ ~ ~ ~ ~
WATERCOURSE	— — — — —
WETLAND FLAG	⊗
10 NORDEN PLACE - UNIT A	=====



OVERALL SITE PLAN NOTES

- REFERENCE IS MADE TO THE SURVEY ENTITLED "PROPERTY & TOPOGRAPHIC SURVEY 10 NORDEN PLACE" PREPARED FOR NORWALK CENTER LLC, PREPARED BY WILLIAM W. SEYMOUR & ASSOCIATES, P.C., DATED MARCH 19, 2019 AND SUPPLEMENTED DECEMBER 12, 2023.
- WETLAND LINES DEPICTED WERE STAKED IN THE FIELD BY CHRISTOPHER P. ALLAN, PROFESSIONAL REGISTERED SOIL SCIENTIST, PROFESSIONAL WETLAND SCIENTIST.

Kenneth Boroson ARCHITECTS

315 Peck Street
 New Haven, CT 06513
 p: 203.624.0662 • f: 203.562.1732
 www.kbarch.com

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NO.	DATE	REVISION
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ISSUE/REVISION

PROJECT NAME
THE AUTO COLLECTIVE

CONCEPTUAL LAYOUT

BUILDING NAME & ADDRESS
 THE AUTO COLLECTIVE
 10 NORDEN PLACE
 NORWALK, CT 06855

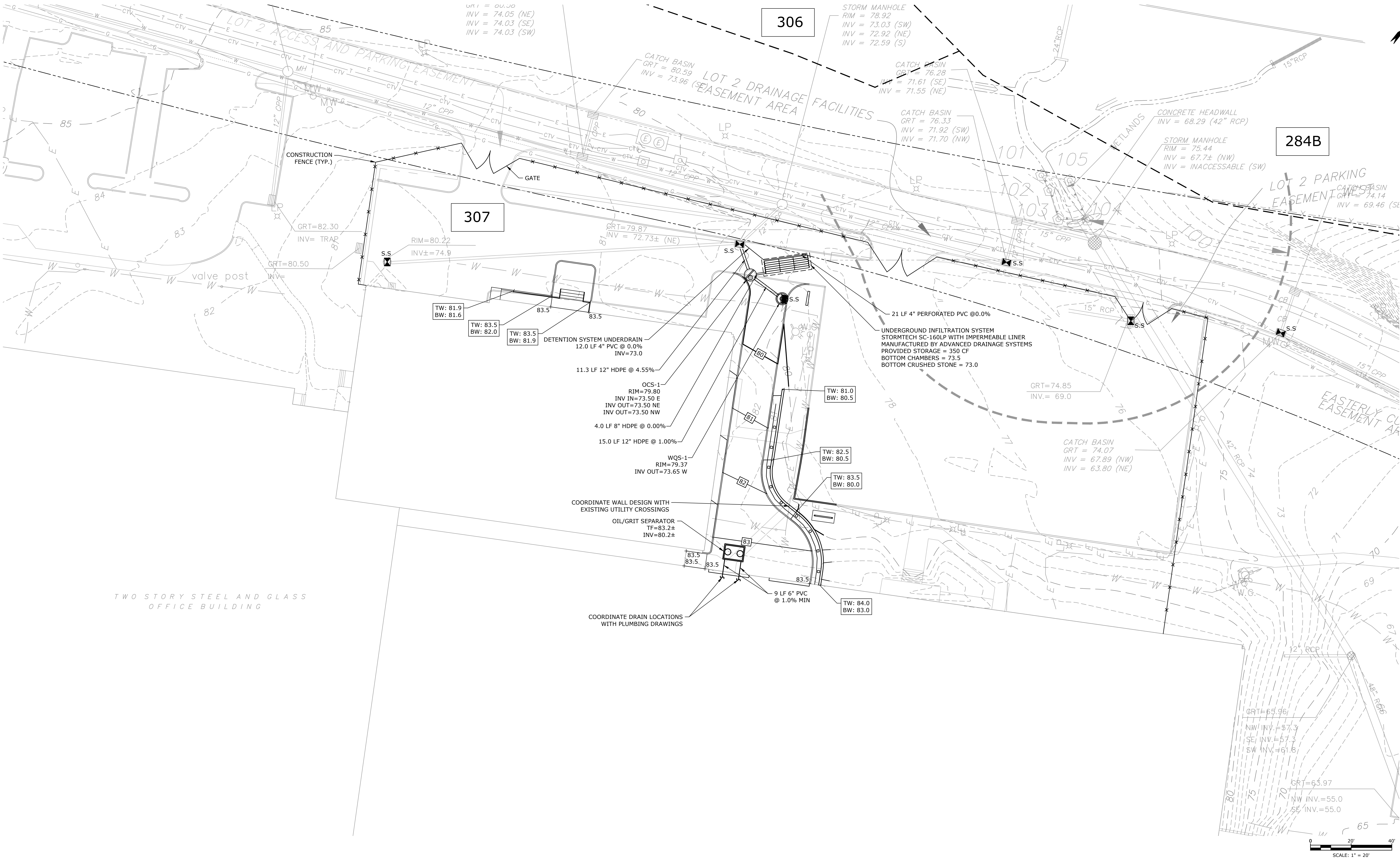
PROJECT NUMBER
2024.021

SEE NUMBER
N/A

DRAWING TITLE
 OVERALL SITE PLAN

SCALE	DRAWN BY
AS SHOWN	ZNH
FILENAME	DATE
A5128-01-C-100-SITE.dwg	FEBRUARY 19, 2025
DRAWING NUMBER	

C1.00



STORMWATER MANAGEMENT PLAN NOTES

1. THE MANHOLE FRAME AND COVER SHALL BE CENTERED ON THE PRECAST OPENING. UNDER NO CIRCUMSTANCES WILL AN OFFSET FRAME AND COVER BE ACCEPTABLE. PRIOR TO FINAL PAVING, THE CONTRACTOR SHALL CHECK ALL MANHOLE STRUCTURES TO ASSURE THE FRAME AND COVER IS CENTERED ON THE PRECAST OPENING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL WORK REQUIRED TO CENTER FRAME AND COVER.
2. ALL PIPES AND FITTINGS SPECIFIED AS HDPE SHALL BE ADS N-12 WT (WATERTIGHT) PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, HILLIARD, OHIO.
3. THE CONTRACTOR SHALL MAINTAIN EXISTING STORM SEWER FLOWS BY PUMPING OR OTHER MEANS APPROVED BY THE OWNER'S REPRESENTATIVE DURING CONSTRUCTION OF THE PROPOSED STORM SEWER IN LOCATIONS WHERE STORM SEWER ARE BEING INSTALLED, REPLACED OR RELOCATED.

DRAINAGE, GRADING, SOIL EROSION AND SEDIMENTATION CONTROL LEGEND

MINOR CONTOUR	
MAJOR CONTOUR	
SPOT ELEVATION	
SILT SACK	
SOIL TYPE BOUNDARY	
100' FT WATERCOURSE SETBACK	
MANHOLE	
DRAINAGE PIPE	
HYDRODYNAMIC SEPARATOR	
CONSTRUCTION FENCE	

SOIL IDENTIFICATION LEGEND

URBAN LAND	
UDORTHERNTS-URBAN LAND	
PAXTON-URBAN LAND	

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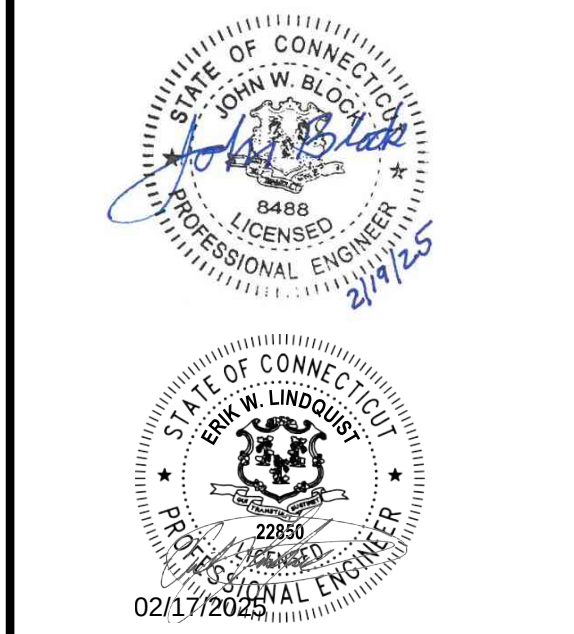
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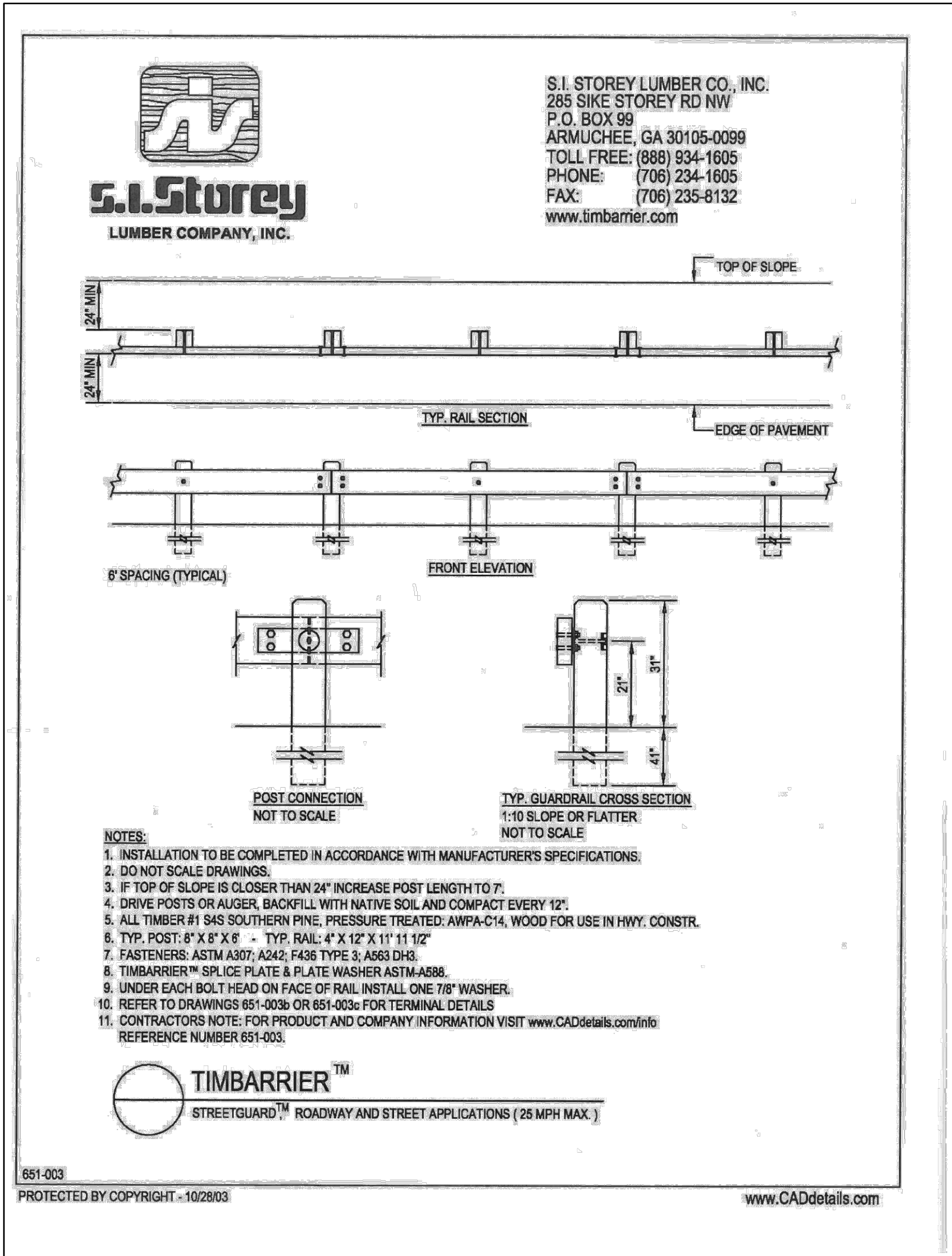
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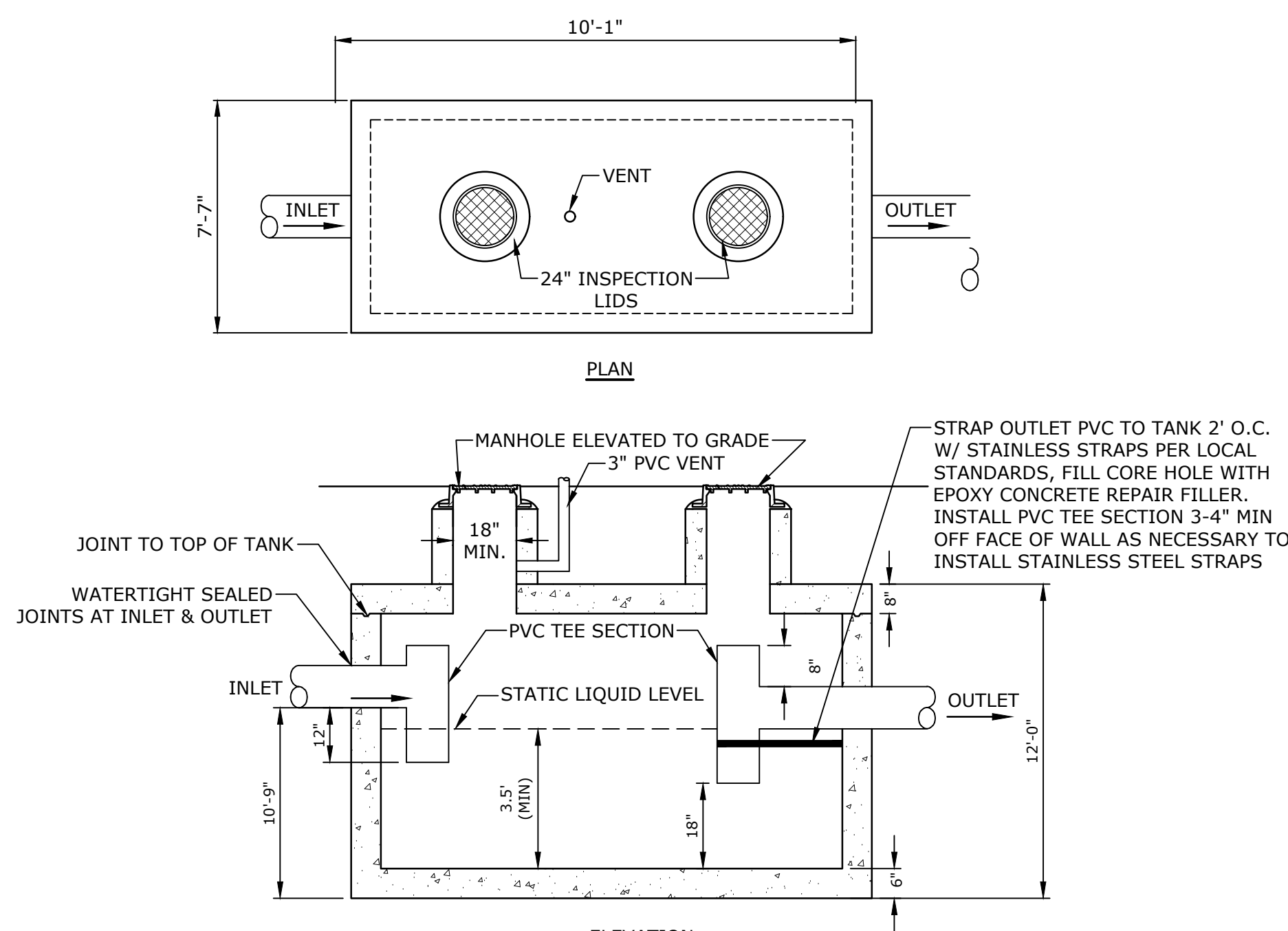
NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME THE AUTO COLLECTIVE	
CONCEPTUAL LAYOUT	
BUILDING NAME & ADDRESS THE AUTO COLLECTIVE 10 NORDEN PLACE NORWALK, CT 06855	
PROJECT NUMBER 2024.021	SSE NUMBER N/A

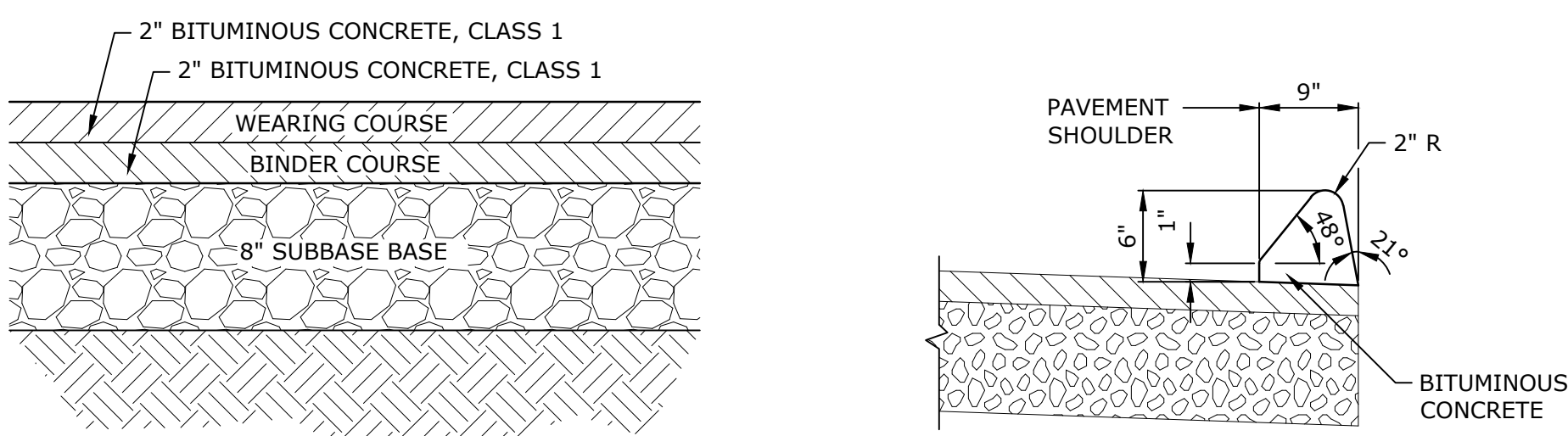
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AS SHOWN	2NH
FILENAME A5128-01-C-201-STRM.dwg	DATE FEBRUARY 19, 2025
DRAWING NUMBER C2.01	



OR APPROVED EQUAL
TIMBER GUIDE RAIL
NO SCALE

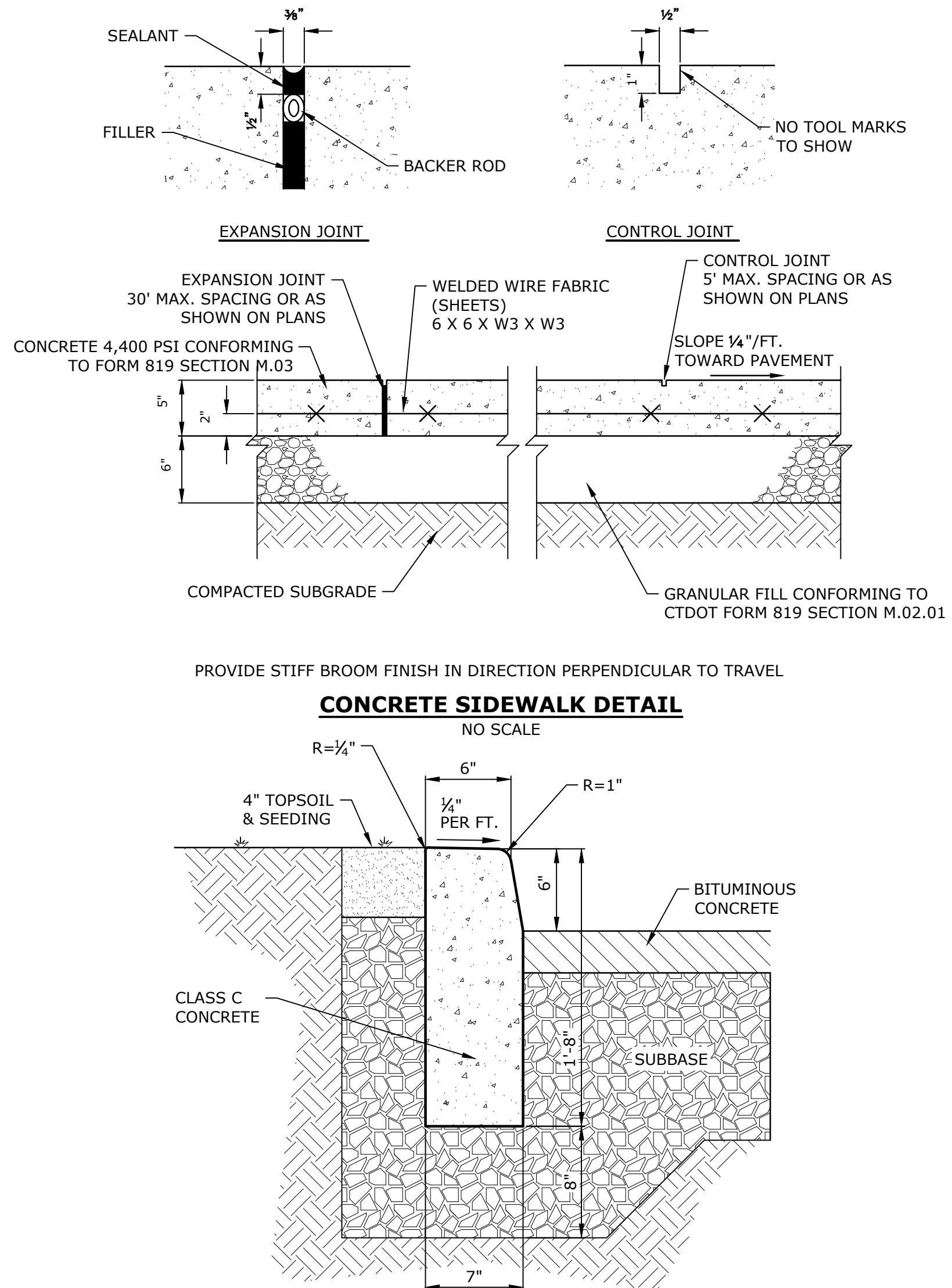


OIL/GRIT SEPARATOR
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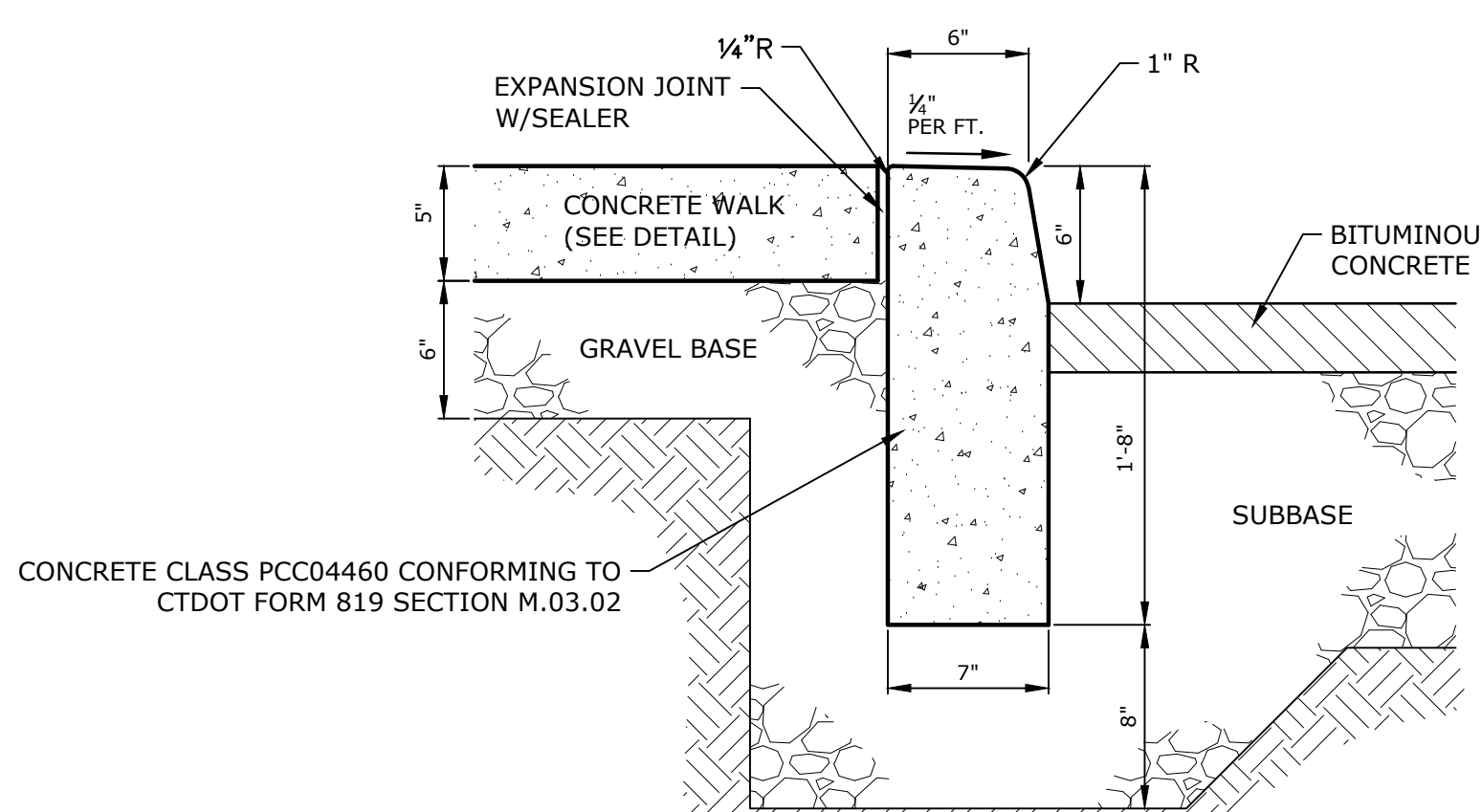
PARKING LOT PAVEMENT
NO SCALE

BITUMINOUS CONCRETE LIP CURBING
NO SCALE



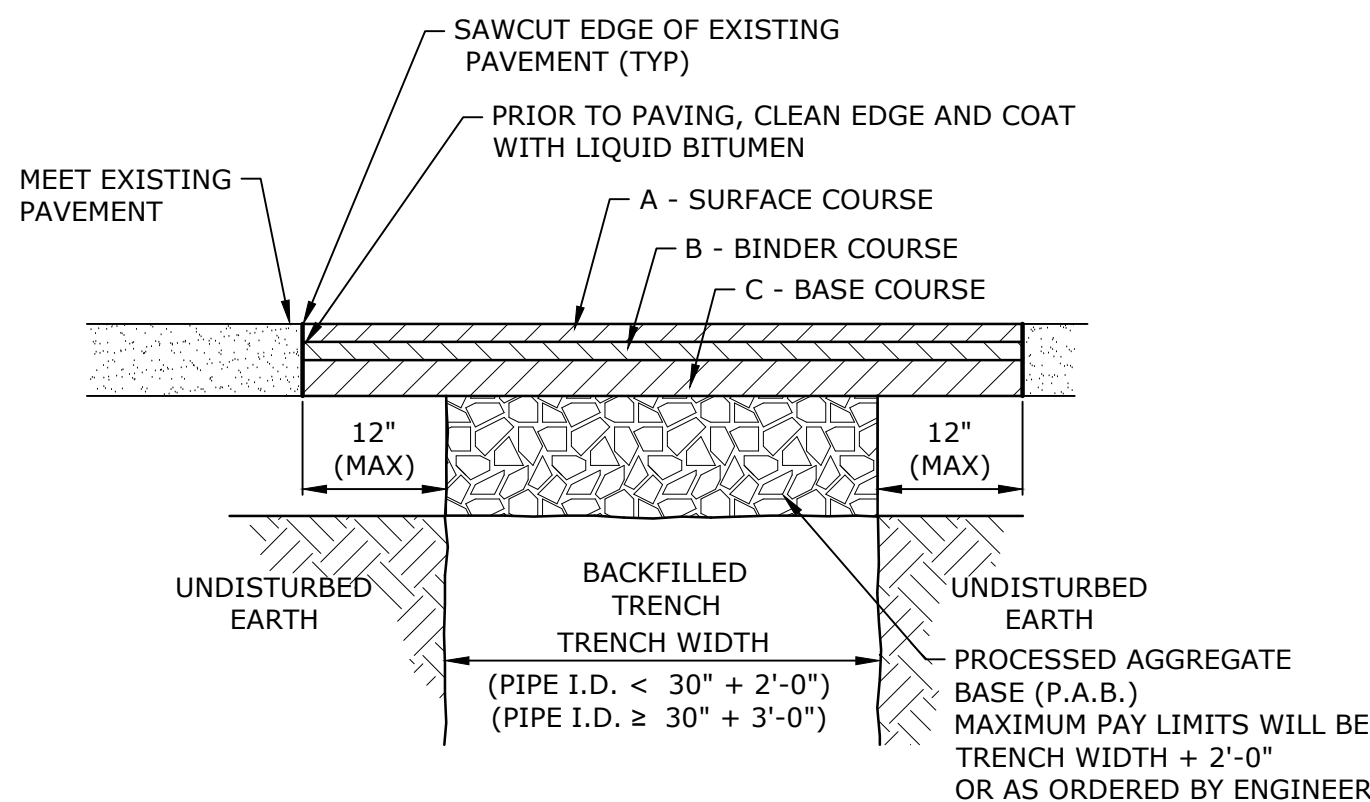
- NOTES:
1. CONSTRUCT CURBING IN SECTIONS NOT TO EXCEED 10 FEET IN LENGTH, SUCH THAT THE CURBING JOINTS ALIGN WITH JOINTS IN THE CONCRETE PAVEMENT SLAB. NO SECTION SHALL BE LESS THAN 6 FEET IN LENGTH.

CONCRETE CURB ADJACENT TO GRASS
NO SCALE



- NOTES:
1. CONSTRUCT CURBING IN SECTIONS NOT TO EXCEED 10 FEET IN LENGTH, SUCH THAT THE CURBING JOINTS ALIGN WITH JOINTS IN THE CONCRETE PAVEMENT SLAB. NO SECTION SHALL BE LESS THAN 6 FEET IN LENGTH.

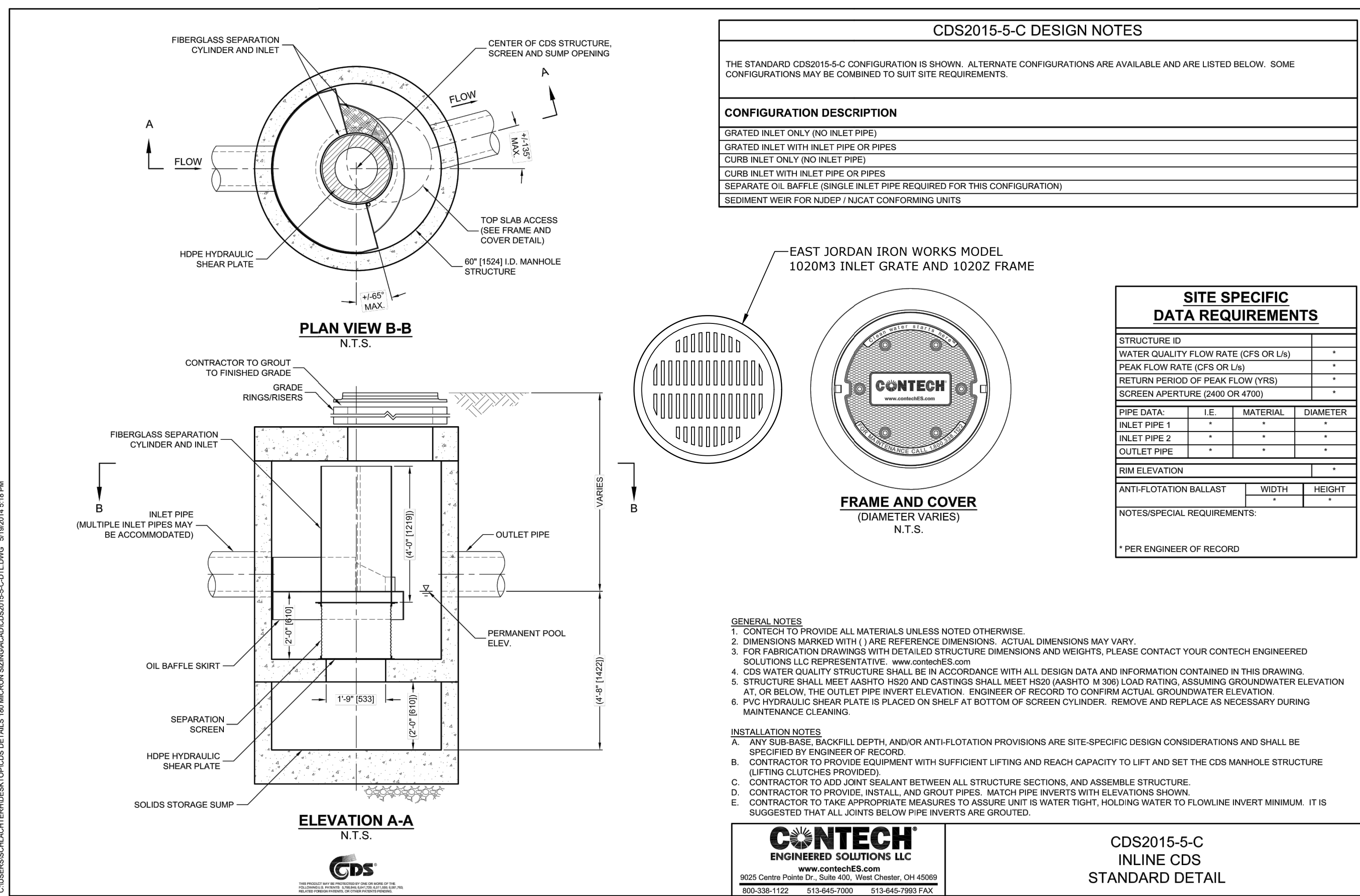
CONCRETE CURB AND CONCRETE SIDEWALK
NO SCALE



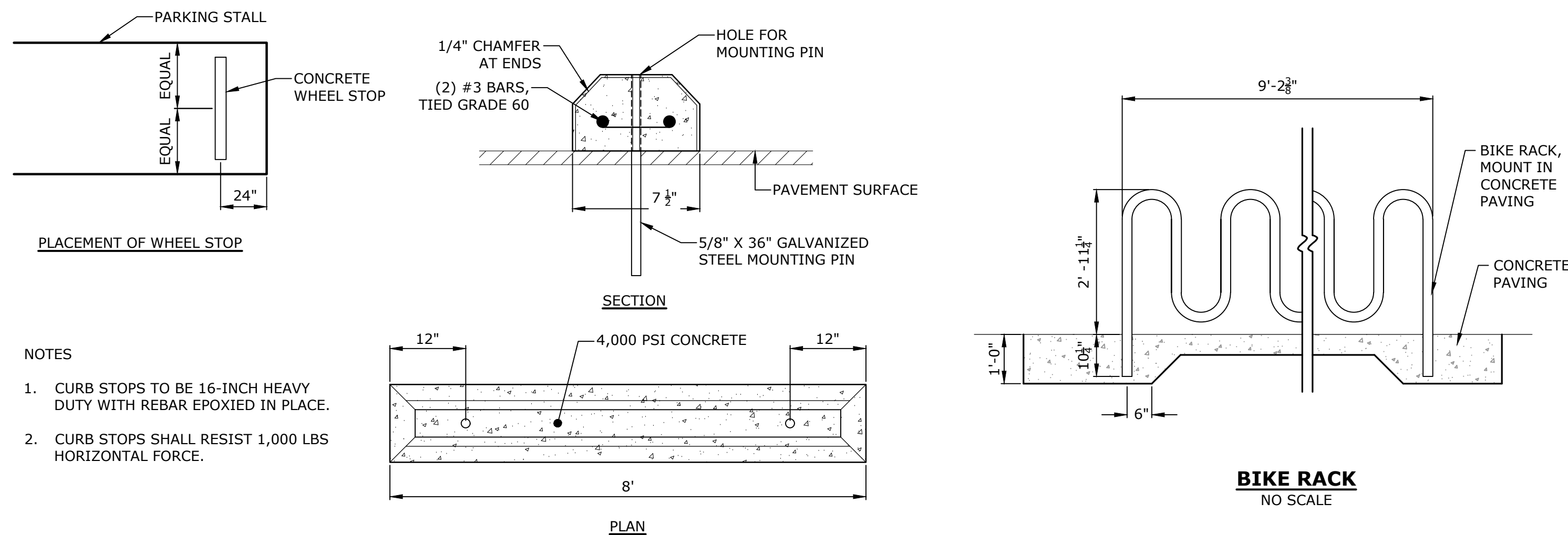
STONE SIZE	SUPERPAVE MIX				ALLOWABLE UNCOMPACTED THICKNESS PER LIFT
	A	B	C	D	
MAJOR ARTERIAL	0.375	0.50	1.00	P.A.B.	
MINOR ARTERIAL	1-1/2"	2"	3"	12"	
COLLECTOR	1-1/2"	1-1/2"	3"	12"	
LOCAL	3"			12"	

CLASS	MARSHALL MIX				ALLOWABLE UNCOMPACTED THICKNESS PER LIFT
	A	B	C	D	
MAJOR ARTERIAL	CL 2	CL 1.1	CL 4	P.A.B.	
MINOR ARTERIAL	1-1/2"	2"	3"	12"	
COLLECTOR	1-1/2"	1-1/2"	3"	12"	
LOCAL	1-1/2"	1-1/2"		12"	

PAVEMENT REPAIR (CITY OF NORWALK)
NO SCALE

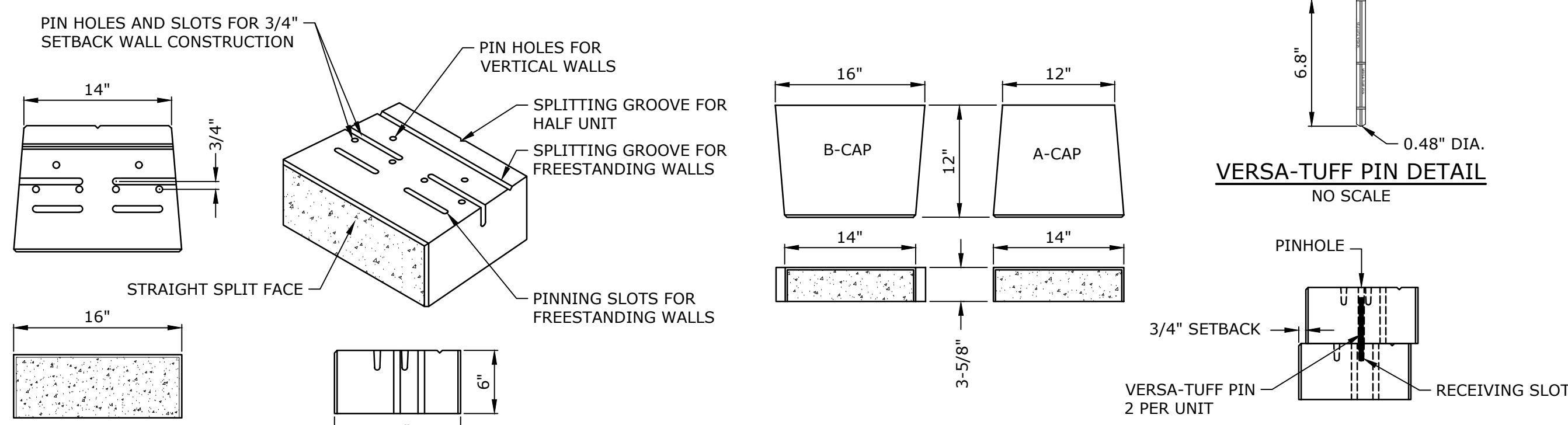


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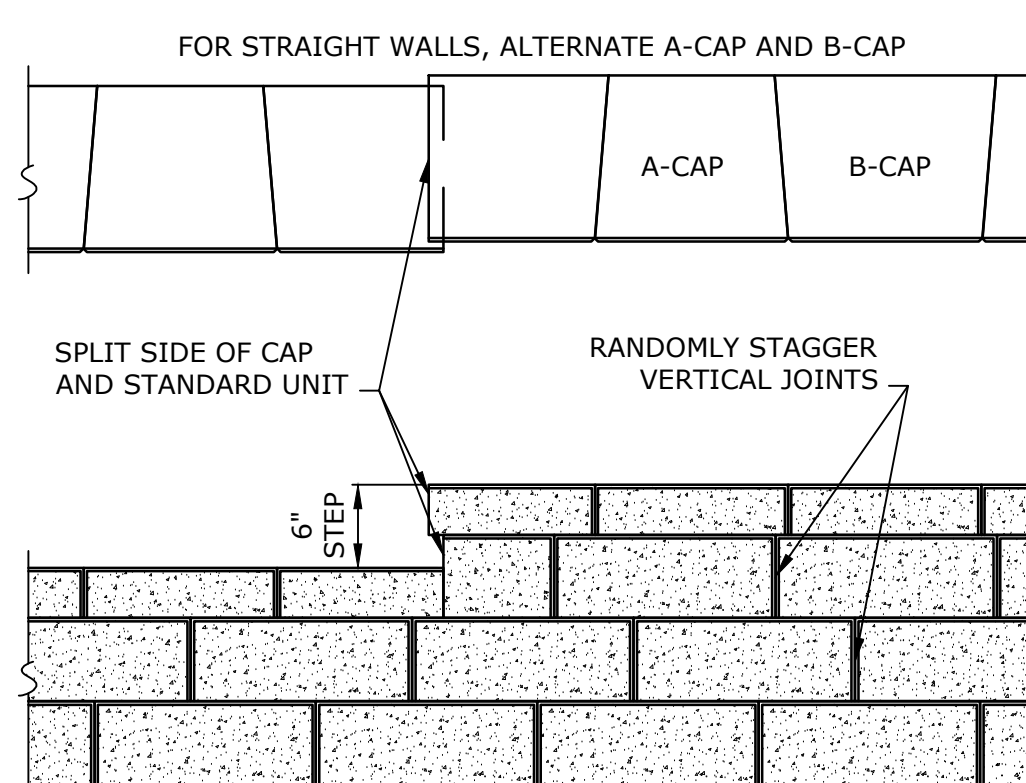


- NOTES
1. CURB STOPS TO BE 16-INCH HEAVY DUTY WITH REBAR EPOXIED IN PLACE.
 2. CURB STOPS SHALL RESIST 1,000 LBS HORIZONTAL FORCE.

CONCRETE WHEEL STOP DETAIL
NO SCALE



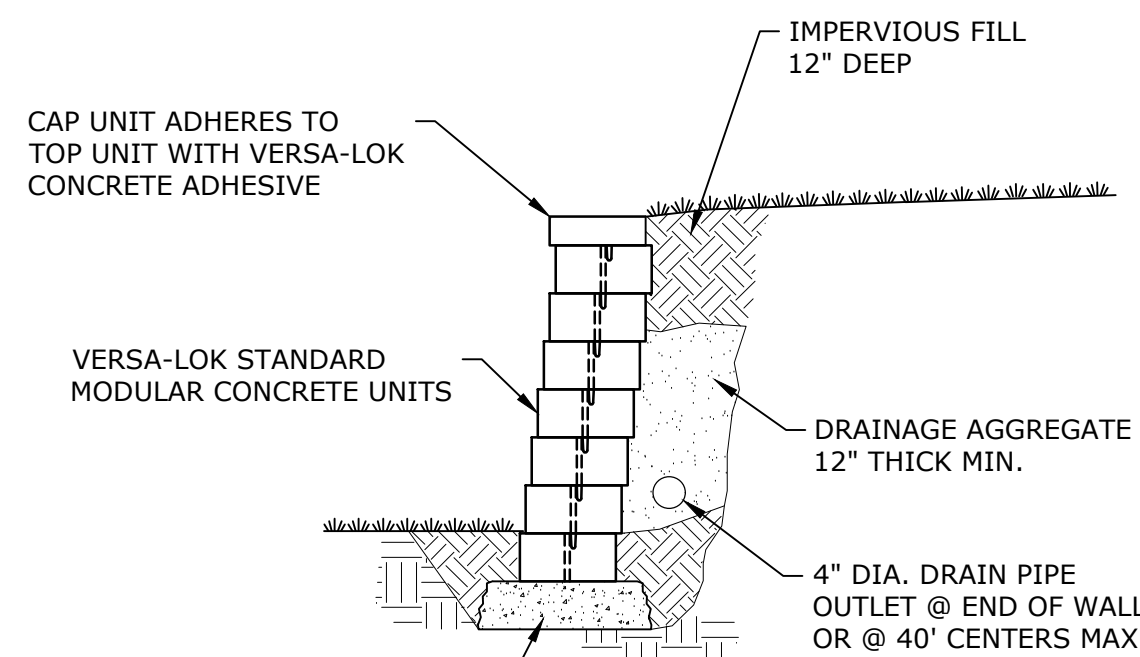
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NO SCALE



CAPPING DETAIL - PROFILE
NO SCALE

VERSA-LOK CAP UNITS
NO SCALE

VERSA-LOK WALL PINNING DETAIL
NO SCALE



TYPICAL SECTION-UNREINFORCED RETAINING WALL
NO SCALE

Kenneth Boroson ARCHITECTS
315 Peck Street
New Haven, CT 06513
p: 203.624.0662 • f: 203.562.1732
www.kbarch.com

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

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NO.	DATE	REVISION
-----	------	----------

PROJECT NAME
THE AUTO COLLECTIVE

CONCEPTUAL LAYOUT

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

SHEET NUMBER
N/A

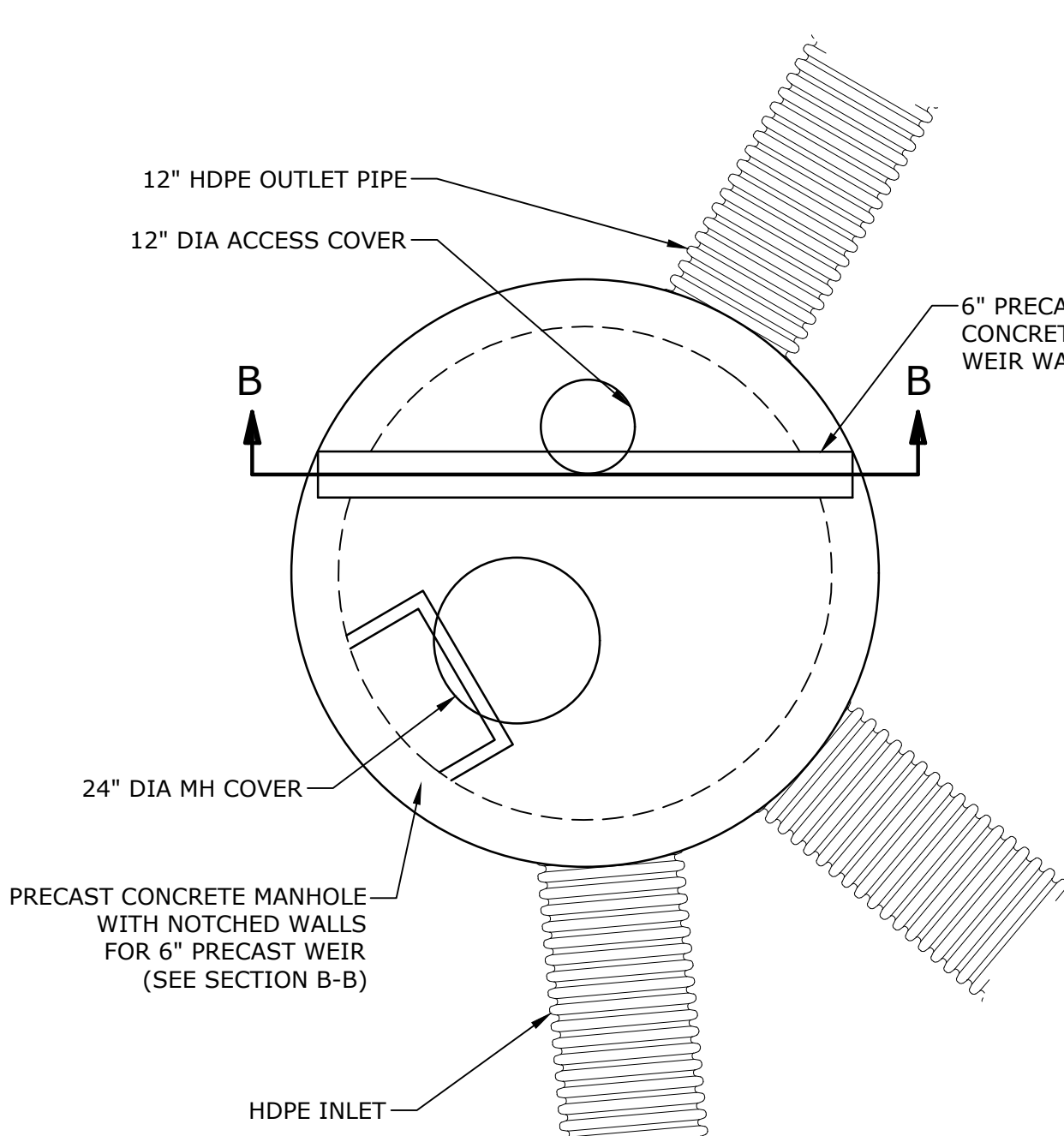
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DETAILS - 1

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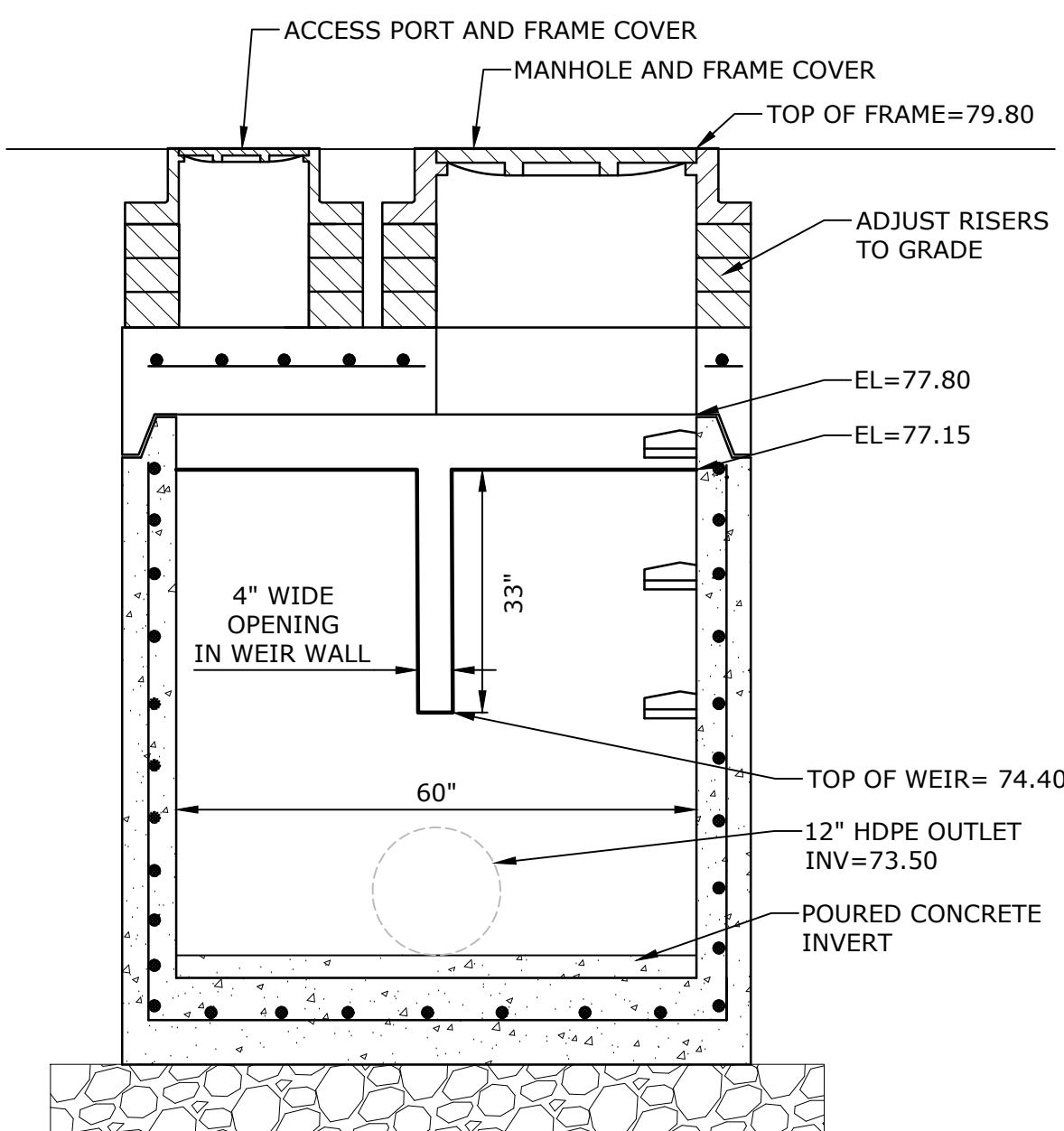
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DRAWING NUMBER
FEBRUARY 19, 2025

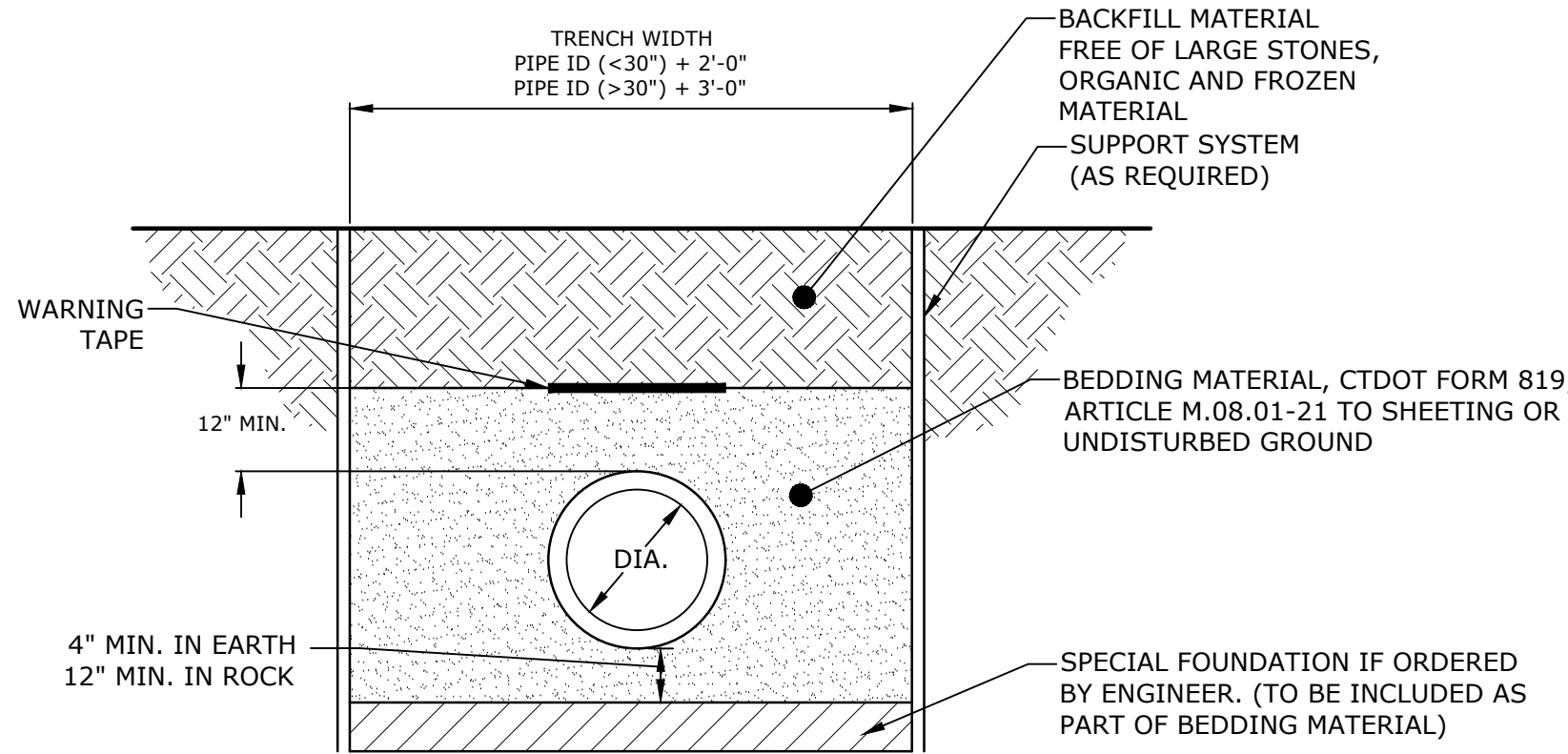
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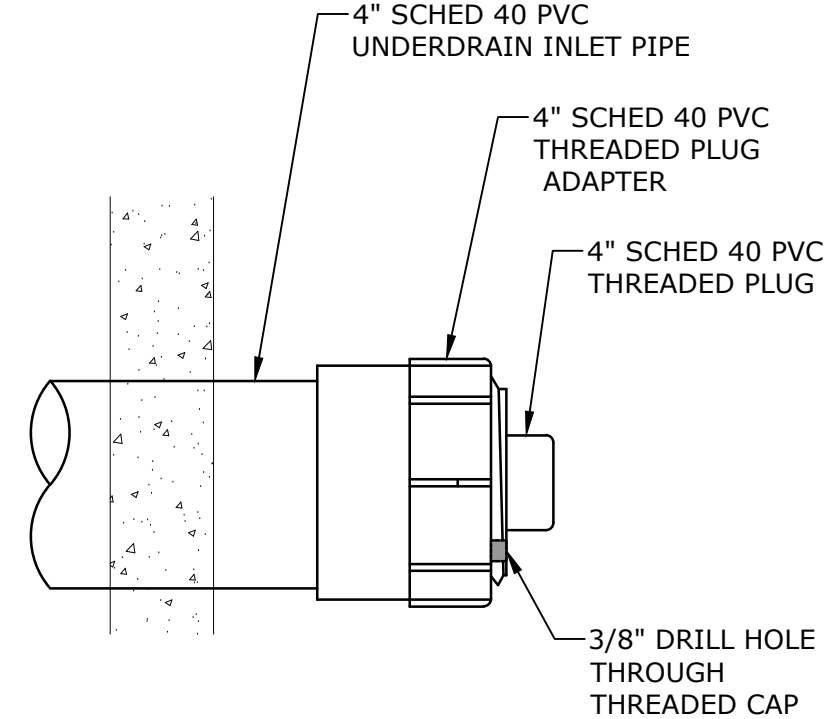
OUTLET CONTROL STRUCTURE
NO SCALE



SECTION B-B



HDPE TRENCH BEDDING
NO SCALE



UNDERDRAIN CAP ENLARGEMENT
NO SCALE



SC-160LP STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH SC-160LP.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED, AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (4 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER; 2) MAXIMUM PERMANENT (75-YR) COVER LOAD; AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1/2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, A) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LB/FT²; THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 8.2.3 OF ASTM F2418; AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73°F / 22°C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.85 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

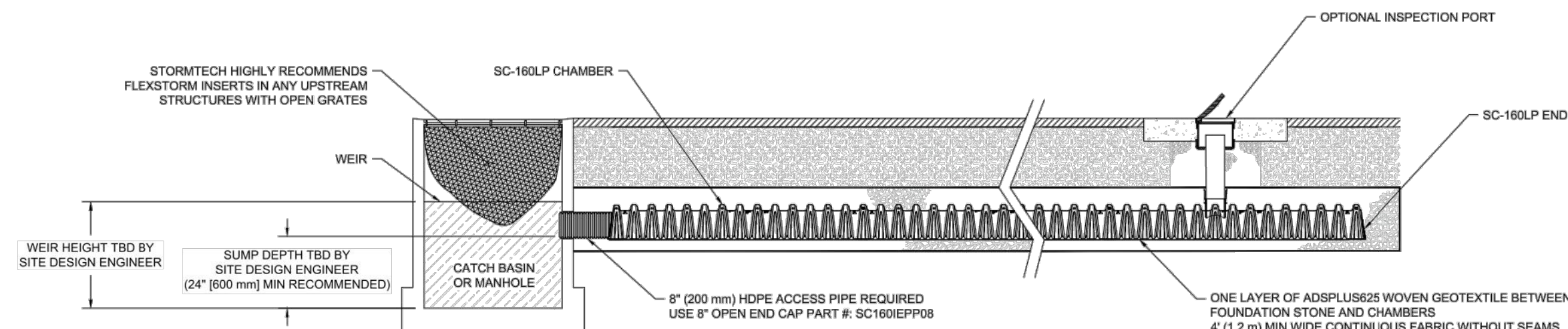
IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-160LP SYSTEM

- STORMTECH SC-160LP CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-160LP CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
- FOUNDATION STONE AND EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE; AASHTO M43 #3, 3/4", 4, 407, 5, 96, OR 57.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- THE DEPTH OF FOUNDATION STONE SHALL BE DETERMINED BASED ON THE SUBGRADE BEARING CAPACITY PROVIDED BY THE SITE DESIGN ENGINEER.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES CONCERNING CHAMBER FOUNDATION DESIGN AND SUBGRADE BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- CHAMBERS SHALL BE INSTALLED "TOE TO TOE"; NO ADDITIONAL SPACING BETWEEN ROWS IS REQUIRED.
- STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONES/ROCKS LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- AOS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-160LP CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER-TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-160LP CONSTRUCTION GUIDE".
- FULL 30" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

CONTACT STORMTECH AT 1-888-882-2684 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



SC-160LP ISOLATOR ROW PLUS DETAIL
NO SCALE

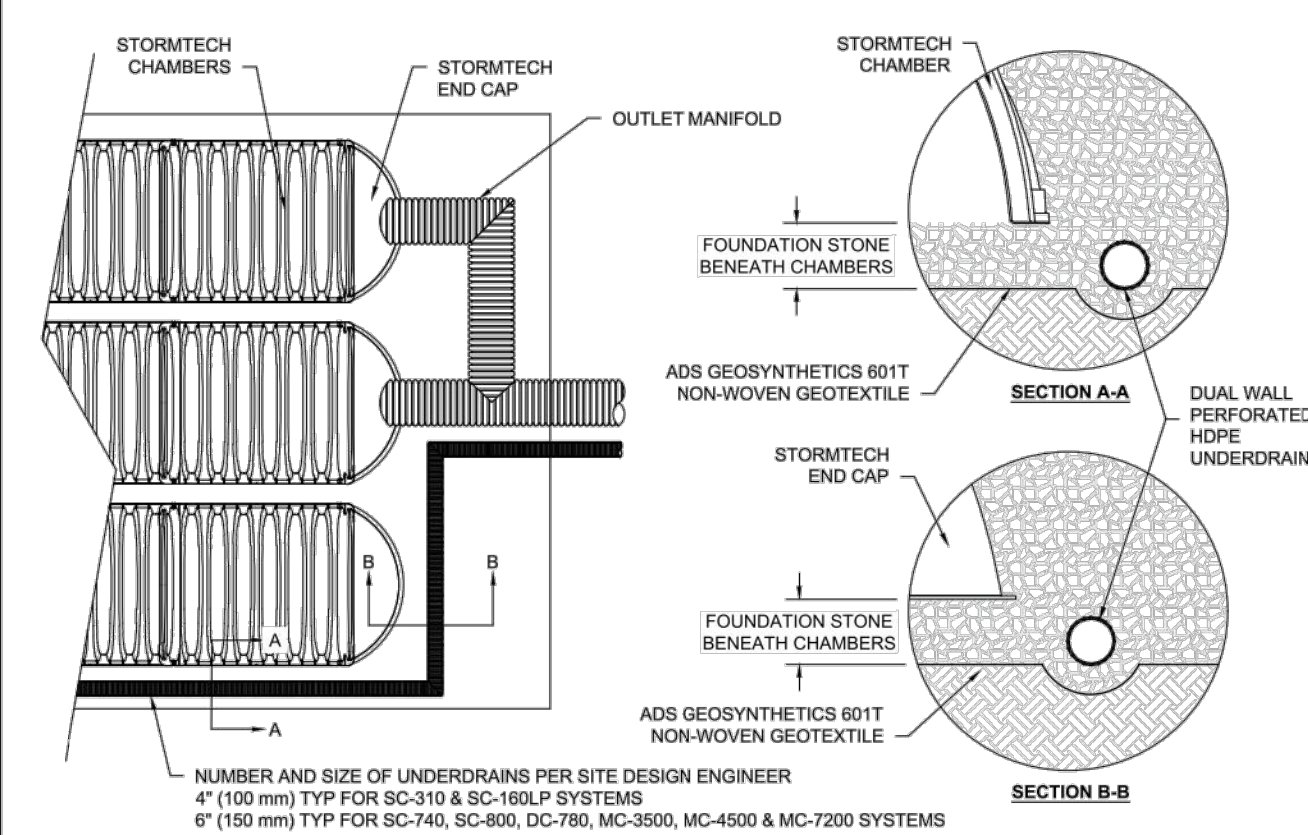
INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT).
 - REMOVE OPEN LID ON NYLOPLAST INLINE DRAIN.
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED.
 - USING A FLASHLIGHT AND STAIN ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG.
 - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL).
 - IF SEDIMENT IS AT OR ABOVE 3" (90 mm) PROCEED TO STEP 2; IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS.
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE.
 - REMOVE OPEN LID ON CAMERA MANHOLE.
 - IF SEDIMENT IS AT OR ABOVE 3" (90 mm) PROCEED TO STEP 2; IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED.
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKLASH WATER IS CLEAN.
 - VACUUM STRUCTURE SLUMP AS REQUIRED.
- STEP 3) REPLACE ALL COVERS, GRATINGS, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

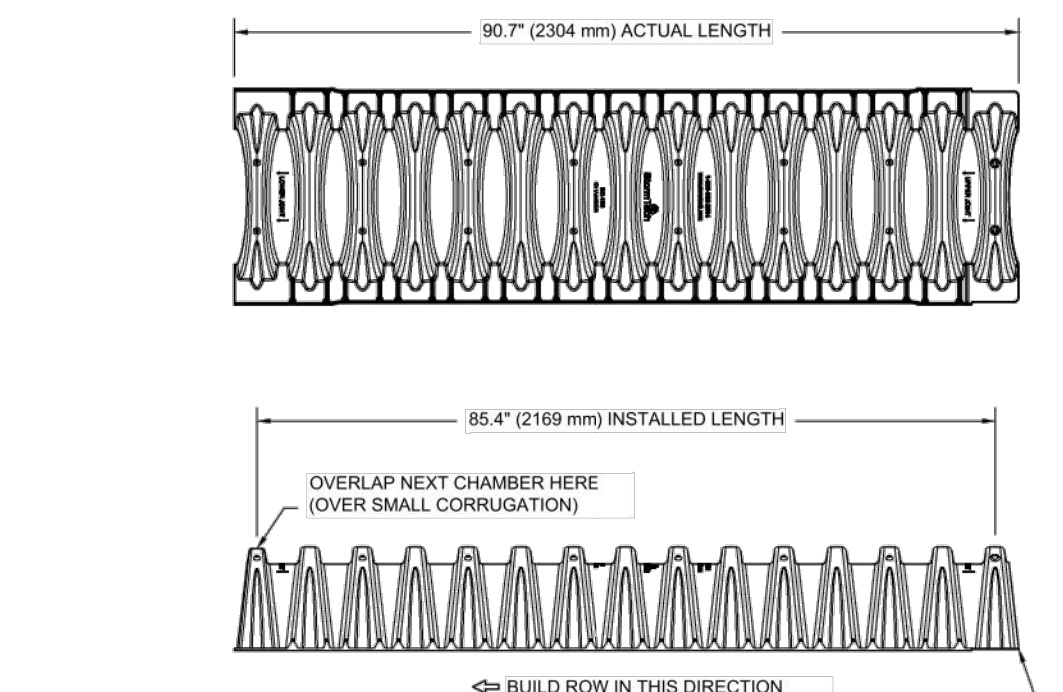
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACUUMING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

UNDERGROUND DETENTION SYSTEM
NO SCALE



UNDERDRAIN DETAIL
NO SCALE

4 4" PVC INSPECTION PORT DETAIL (SC SERIES CHAMBER)

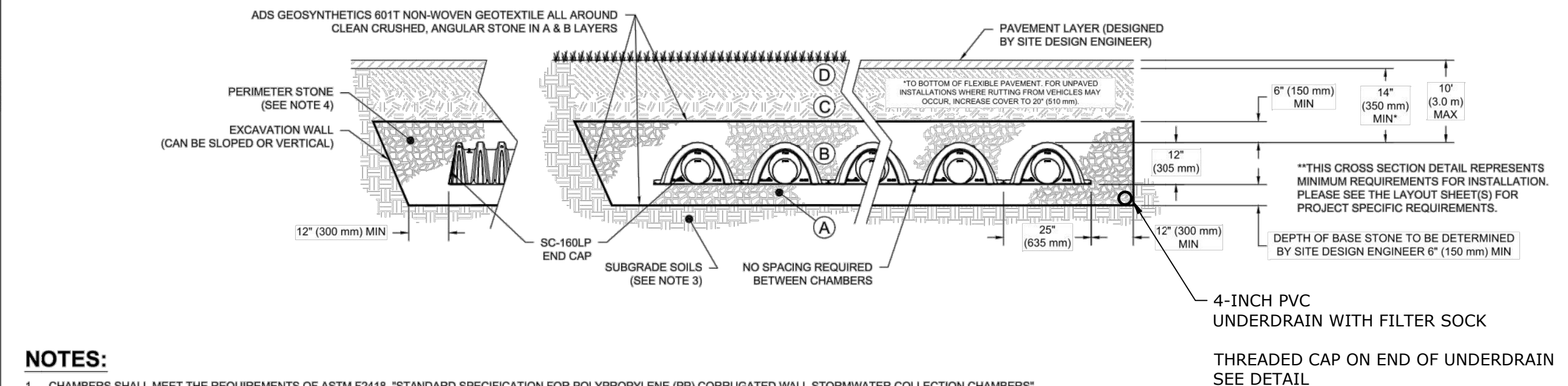


SC-160LP TECHNICAL SPECIFICATIONS
NO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 12' STARTS FROM THE TOP OF THE 12' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBGRADE MAY BE PART OF THE 12' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 12' STARTS FROM THE TOP OF THE EMBEDMENT STONE (A LAYER) TO 12" (300 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBGRADE MAY BE A PART OF THE C LAYER.	AASHTO M145 A-1, A-2.4, A-3 OR AASHTO M457 3, 387, 4, 487, 5, 56, 57, 6, 67, 68, 7, 78, 8, 88, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 98% PROCTOR DENSITY FOR WELL-GRADED MATERIAL, AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCES NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A LAYER) TO THE C LAYER ABOVE.	CDOT FORM 819, ARTICLE K.08.02 No. 6	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT BOTTOM OF THE CHAMBER.	CDOT FORM 819, ARTICLE K.08.02 No. 6	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{1,2}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - CHAMBERS SHALL BE DESIGNED, TESTED, AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (4 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER; 2) MAXIMUM PERMANENT (75-YR) COVER LOAD; AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
 - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1/2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, A) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 8.2.3 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 400 LB/FT²; AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73°F / 22°C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.



SC-160LP CROSS SECTION DETAIL
NO SCALE

DRAWN: JLM DATE: 01/09/24
REVIEWED: JLM PROJECT NO:
REV: NOT TO SCALE

SC-160LP
STANDARD DETAILS

StormTech®
Chamber System
888-882-2684 | WWW.STORMTECH.COM

4640 TRUEMAN BLVD
HILLIARD, OH 43026

ADS
Advanced Drainage Systems, Inc.

SHEET
1

Kenneth Boroson ARCHITECTS
315 Peck Street
New Haven, CT 06513
p: 203.624.0662 • f: 203.562.1732
www.kbarch.com

Tighe & Bond
1000 Bridgeport Avenue
Suite 320
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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME
THE AUTO COLLECTIVE

CONCEPTUAL LAYOUT

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

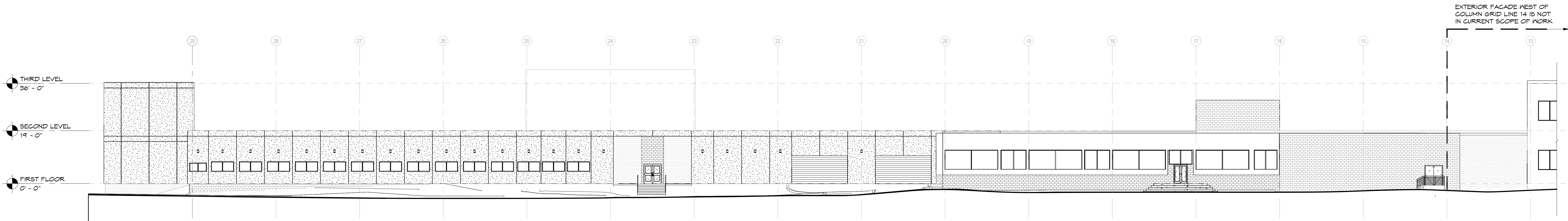
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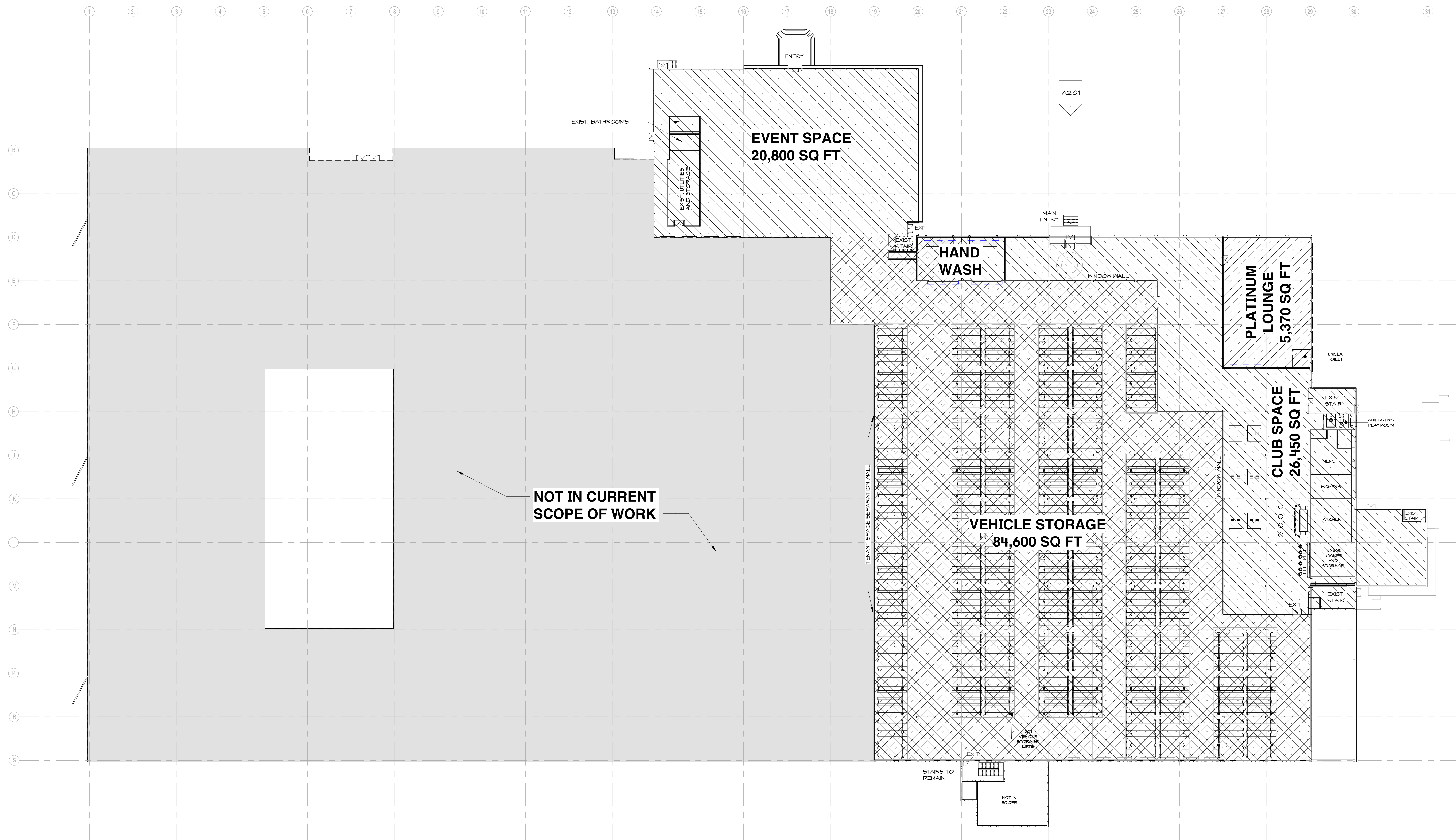
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AS SHOWN	ZJH
FILENAME	DATE
A5128-01-C-301-DET-02.dwg	FEBRUARY 19, 2025

DRAWING NUMBER

C3.02



1 MAIN ENTRANCE - NORTH ELEVATION
A2.01 SCALE: 1/16" = 1'-0"



2 PROPOSED MAIN LEVEL FLOOR PLAN
A2.01 SCALE: 1/32" = 1'-0"

Kenneth
Borson
ARCHITECTS

315 Peck Street
New Haven, CT 06513
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THE AUTO COLLECTIVE

ZONING SUBMISSION

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

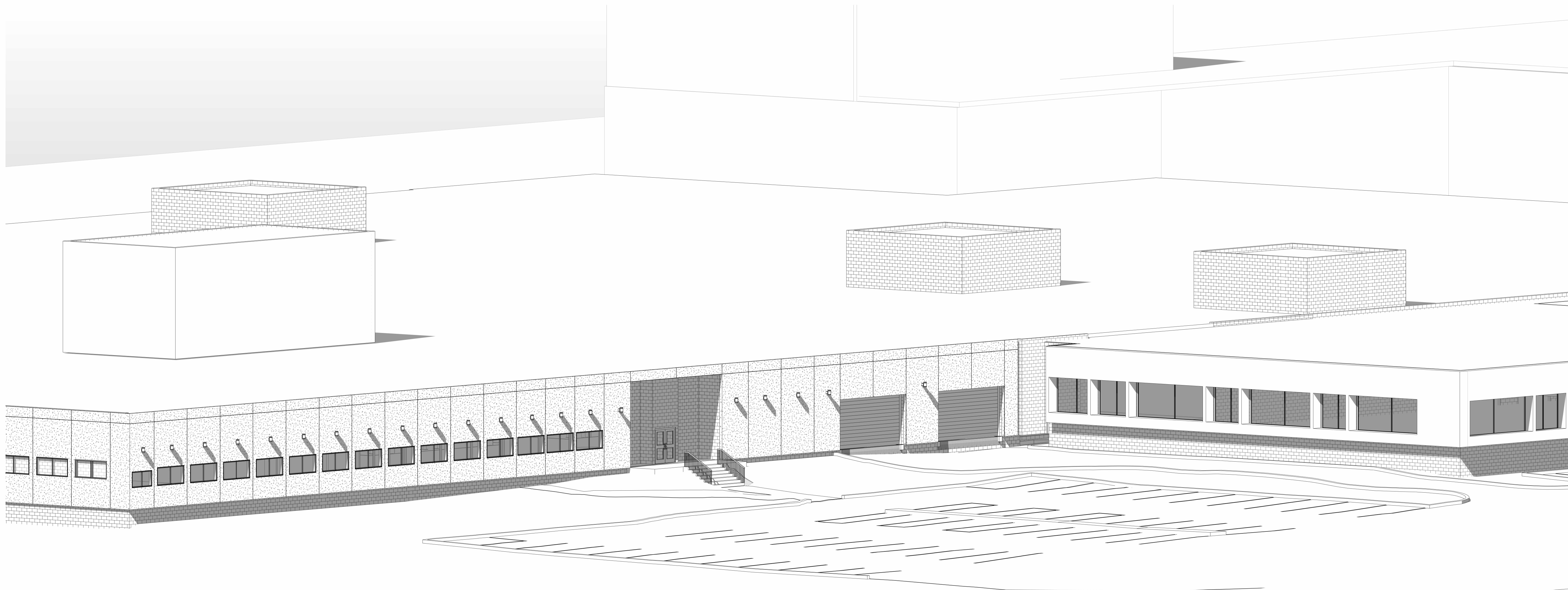
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DRAWING TITLE
PROPOSED MAIN LEVEL
FLOOR PLAN & EXTERIOR
ELEVATION

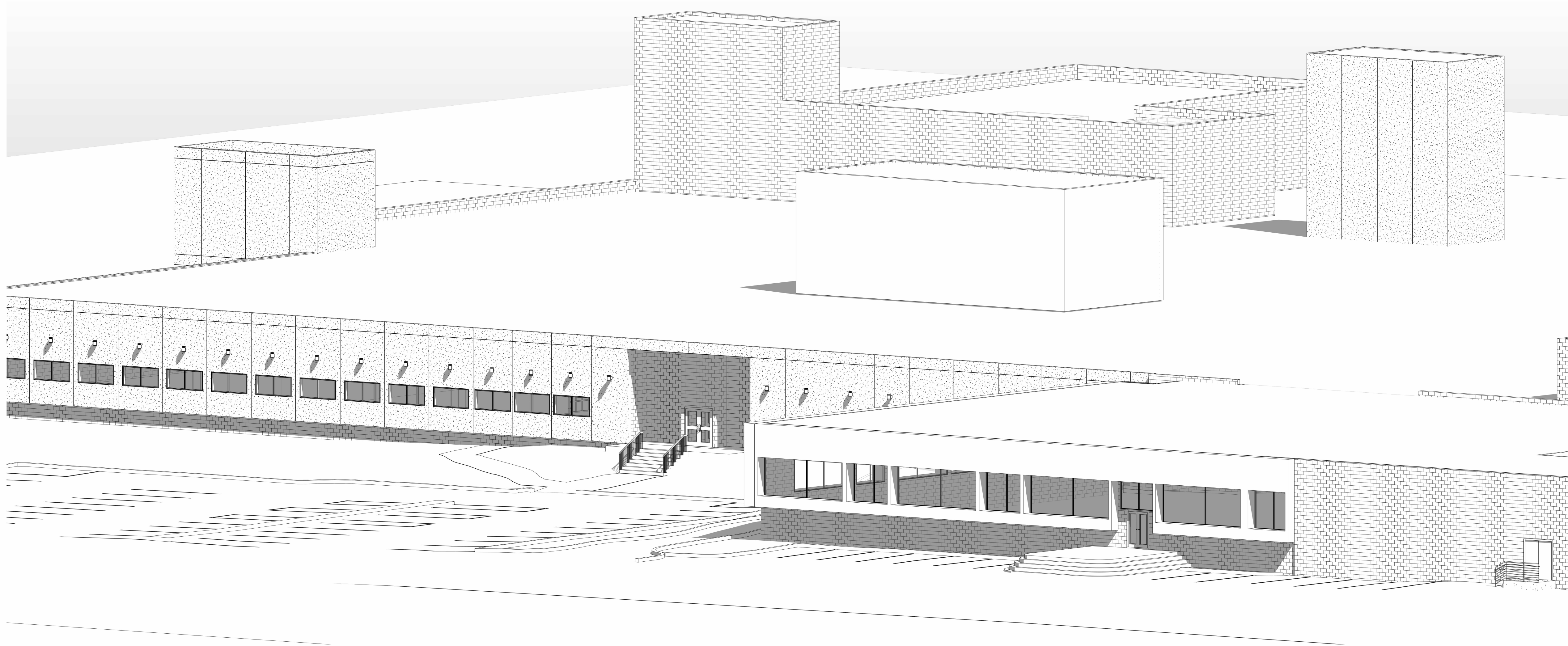
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FILENAME	DATE
FILE	FEBRUARY 19, 2025

DRAWING NUMBER

A2.01



1 MAIN ENTRANCE - PERSPECTIVE VIEW
A2.02 / SCALE:



2 EVENT SPACE ENTRANCE - PERSPECTIVE VIEW
A2.02 / SCALE:

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NO.	DATE	REVISION

PROJECT NAME
THE AUTO COLLECTIVE

ZONING SUBMISSION

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORWICH PLACE
NORWALK, CT 06855

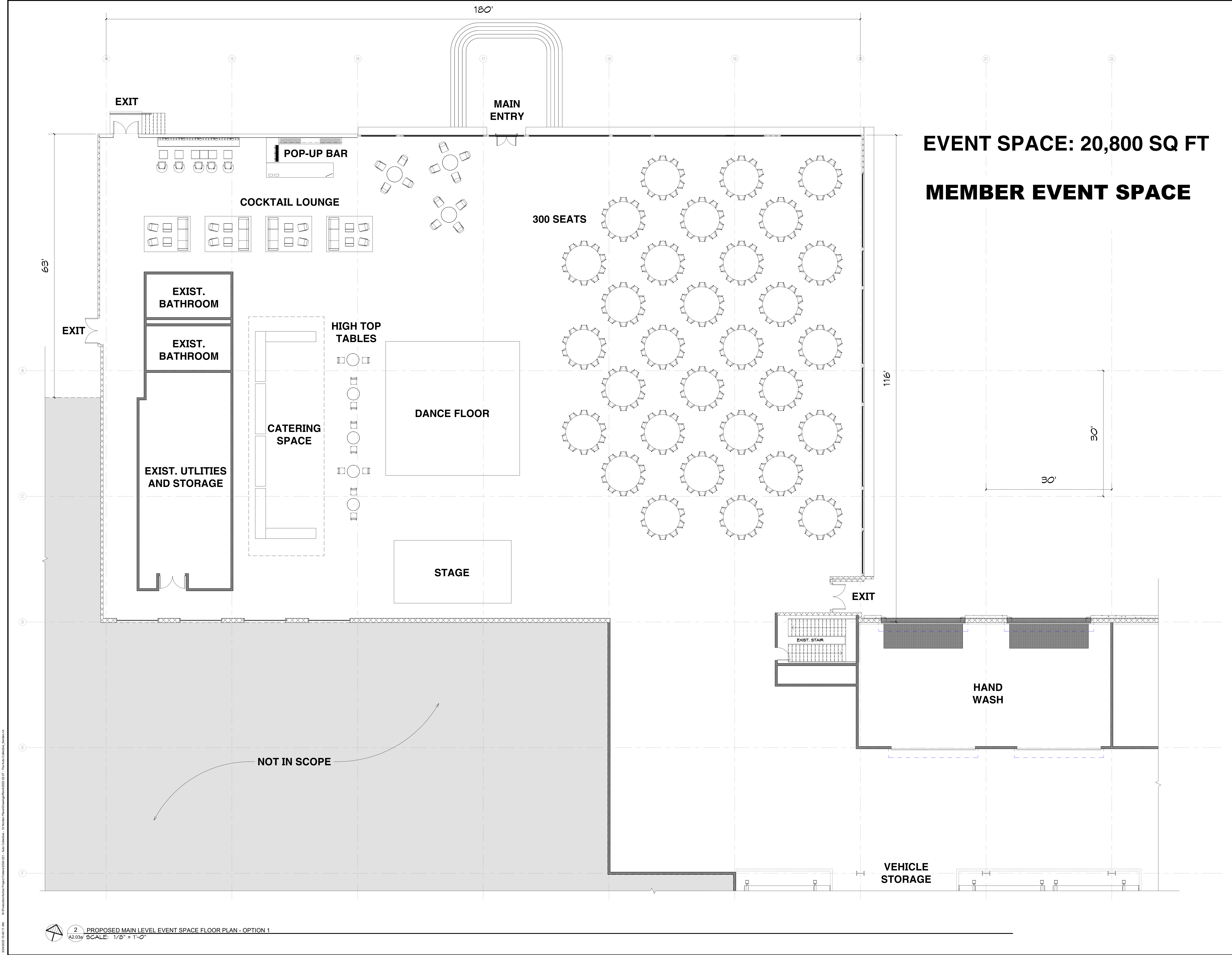
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SIDE NUMBER
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DRAWING TITLE
PERSPECTIVE VIEWS

SCALE	DRAWN BY: AKV/GX
FILENAME	DATE
FILE	FEBRUARY 19, 2025
DRAWING NUMBER	

A2.02



EVENT SPACE: 20,800 SQ FT
MEMBER EVENT SPACE

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PROJECT NAME
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ZONING SUBMISSION

BUILDING NAME & ADDRESS
THE AUTO COLLECTIVE
10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

SIDE NUMBER
N / A

DRAWING TITLE
PROPOSED MAIN LEVEL
EVENT SPACE FLOOR
PLAN - OPTION 1

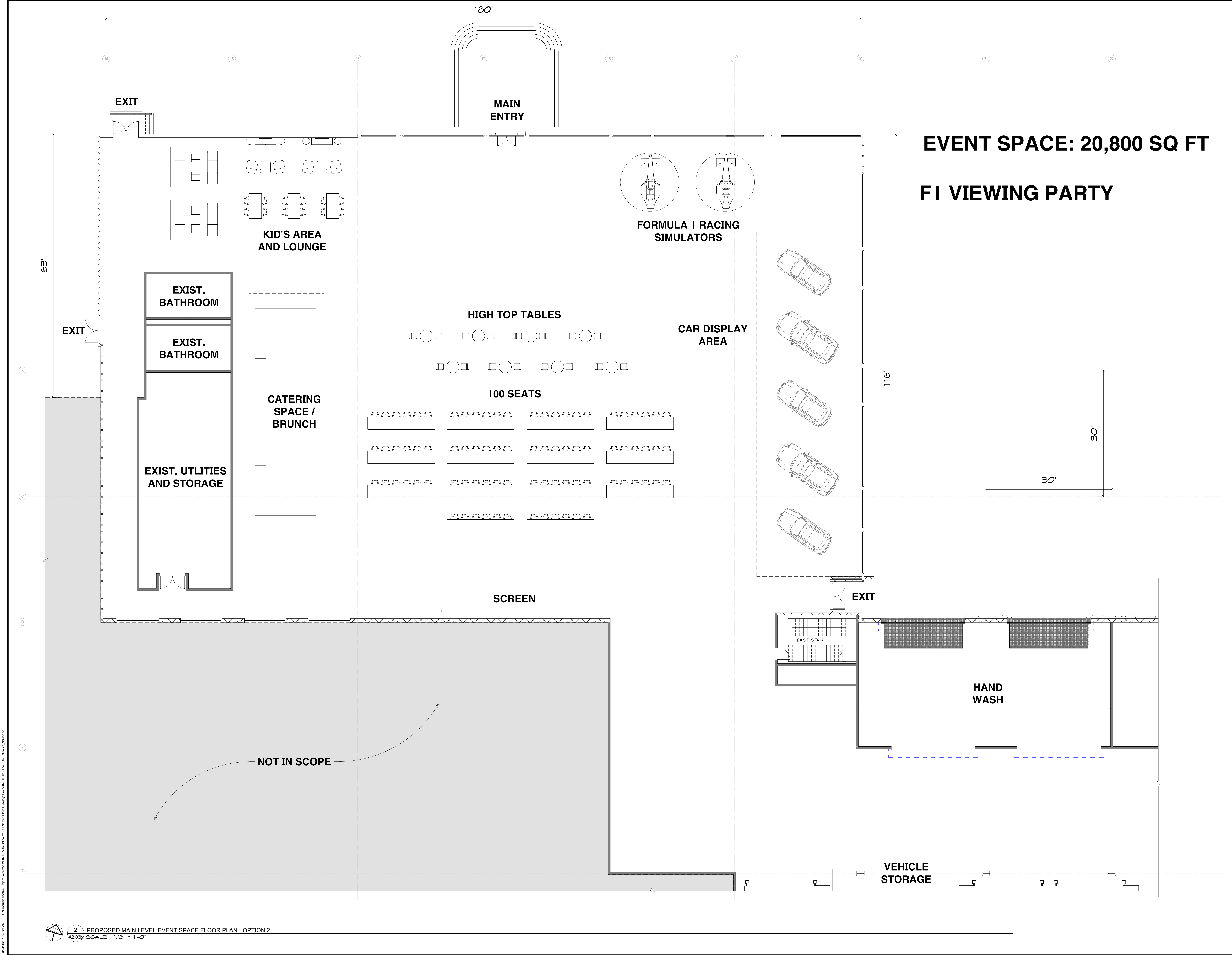
SCALE
1/8" = 1'-0"

FILENAME
FILE

DRAWING NUMBER
A2.03a

DRAWN BY
AKV/GJR

DATE
MARCH 24, 2025



Kenneth Boroson
ARCHITECTS
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New Haven, CT 06513
p: 203.624.0662 • f: 203.562.1732
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10 NORDEN PLACE
NORWALK, CT 06855

PROJECT NUMBER
2024.021

SHEET NUMBER
N / A

DRAWING TITLE
**PROPOSED MAIN LEVEL
EVENT SPACE FLOOR
PLAN - OPTION 2**

SCALE
1/8" = 1'-0"

FILENAME
FILE

DRAWN BY
AKV/GK

DATE
MARCH 24, 2025

DRAWING NUMBER
A2.03b

AUTO COLLECTIVE

FAIRFIELD COUNTY

Proposed schedule of events at the Auto Collective for July 2025.

Tuesday, July 1, 2025

Wednesday, July 2, 2025

Thursday, July 3, 2025

Friday, July 4, 2025

- July 4th BBQ Lunch and kids movie day with RC car races
 - 150 members & guests
 - 12noon to 3pm
- Dinner and viewing of F1 British Grand Prix Practice
 - 20 members & guests
 - 7pm to 10pm

Saturday, July 5, 2025

- Lunch and viewing of F1 British Grand Prix Qualifying
 - 40 members & guests
 - 12pm to 2pm

Sunday, July 6, 2025

- Brunch and viewing of F1 British Grand Prix Race
 - 60 members & guests
 - 12pm to 4pm

Monday, July 7, 2025

Tuesday, July 8, 2025

Wednesday, July 9, 2025

- Dinner and movie night for members, Top Gun. Load up an F-14 on our simulator
 - 30 members and guests
 - 6pm to 9pm

Thursday, July 10, 2025

Friday, July 11, 2025

- Dinner and member event viewing of new F1 Movie
 - 75 members and guests
 - 7pm to 10pm

Saturday, July 12, 2025

- Member's kids' event, slot car races and lunch
 - 50 members and 50 kids
 - 12pm to 5pm

Sunday, July 13, 2025

- Member sponsored event – wedding anniversary party
 - 300 guests of member
 - 2pm to 6pm

Monday, July 14, 2025

Tuesday, July 15, 2025

- STEM Racing practice training event for local student teams
 - 20 students and guests
 - 1pm to 4pm

Wednesday, July 16, 2025

Thursday, July 17, 2025

AUTO COLLECTIVE

FAIRFIELD COUNTY

- Member's 60th birthday party dinner
 - 50 guests of member
 - 6pm to 10pm

Friday, July 18, 2025

- Breakfast meetup before driving up to Berkshires for weekend trip
 - 20 members and guests
 - 8am to 10am

Saturday, July 19, 2025

- British car enthusiasts showcase and fish and chips truck indoors
 - 50 members and guests
 - 12 to 4pm

Sunday, July 20, 2025

- BBQ lunch for members and viewing of Czech MotoGP Race
 - 80 members and guests
 - 12pm to 3pm

Monday, July 21, 2025

Tuesday, July 22, 2025

- Members' kid movie night and pizza party, Cars
 - 20 kids
 - 5pm to 8pm

Wednesday, July 23, 2025

Thursday, July 24, 2025

- Members' F1 simulator competition of Spa Belgium Grand Prix and dinner
 - 40 members and guests
 - 7pm to 10pm

Friday, July 25, 2025

- Dinner and viewing of F1 Spa Belgian Grand Prix Practice
 - 20 members & guests
 - 7pm to 10pm

Saturday, July 26, 2025

- Lunch and viewing of F1 Spa Belgian Grand Prix Practice
 - 40 members & guests
 - 12pm to 2pm

Sunday, July 27, 2025

- Brunch and viewing of F1 Spa Belgium Grand Prix Race
 - 60 members & guests
 - 12pm to 4pm

Monday, July 28, 2025

Tuesday, July 29, 2025

Wednesday, July 30, 2025

Thursday, July 31, 2025

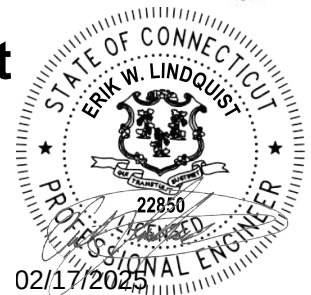
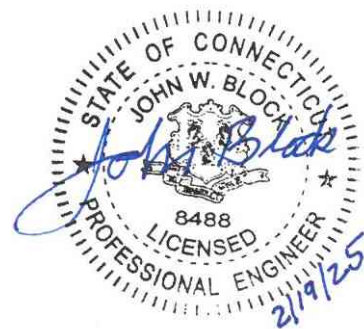


10 Norden Place
Norwalk, CT

Engineering Report

The Auto Collective
2269 Post Road
Fairfield, CT 06824

February 19 2025



Tighe&Bond

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Section 1

Introduction and Site Conditions

The Auto Collective is proposing to redevelop and reuse a portion of the existing building on the Unit A portion of Lot 2 of 10 Norden Place. The project proposes conversion of approximately 137,200 square feet of the existing Norden Building to a Car Club. The Auto Collective will occupy the upper level of the eastern end of the building and access the space from the north through the existing building entries. Two new overhead doors will be added with a ramp to allow for vehicular access to the storage space. The site access will remain the same as under existing conditions, with no changes to the existing parking. Please refer to **Figure 1**, Site Location Map in **Appendix A**.

The proposed project includes the renovation of the building, construction of a car ramp and site retaining wall and rough grading of ramp, sidewalk and curbing. Stormwater management improvements are proposed to provide stormwater quality and attenuate peak flow associated with the minor increase in impervious cover associated with site improvements.

The drainage calculations have been prepared in accordance with the City of Norwalk Drainage Manual June 1, 2017 requirements, the Connecticut Department of Transportation Drainage Manual, and the Connecticut Department of Energy and Environmental Protection 2024 Stormwater Quality Manual. **Appendix A**, "Checklist and Guidelines" from the City of Norwalk Drainage Manual has been completed and included in this report.

The drainage calculations include a hydrologic analysis of the existing conditions and the proposed development. More specifically, the calculations include an analysis of the on-site drainage design and stormwater management measures and their performance in handling peak flow attenuation and improving water quality. Lastly, the report includes the proposed soil erosion and sedimentation control measures incorporated during construction and operation and maintenance of the drainage and stormwater management systems.

1.1 Existing Conditions

The project site is 37.2 acres and is located on the east side of Norden Place south of I-95 and north of the Metro North railroad. The site is currently occupied by a 635,428 square foot office/manufacturing building, a 9,046 square foot test building at the east side of the site and a 167,691 square foot Data Center. Access to the site is from Norden Place.

Most of the existing site is impervious, consisting of buildings, parking lots, sidewalks and driveways, with some wooded and landscaped areas around the perimeter of the site.

10 Norden Place lies within a watershed that extends north of I-95 to Strawberry Hill Avenue and King Street. The area north of I-95 drains southerly and the flow is conveyed under the expressway through culverts that discharge to the north side of the Norden park site. These stormwater discharges convey runoff across the site through a number of culverts and channels that ultimately collect in a large wetland channel area

along the north side of the railroad embankment. The wetland is drained through three existing culverts running under the Metro North railroad embankment.

The site generally slopes from north to south. Runoff from the existing site is collected by a series of catch basins and is conveyed through storm drainage pipe that discharges to the wetland area along the north side of the Metro North railroad embankment. These outfalls are shown and labelled on the Existing Watershed Map WM-01 in **Appendix C**.

1.2 Proposed Conditions

The proposed development will renovate portions of the existing building to support the Car Club. In addition to the building renovations, portions of the site's driveway and parking will be reconfigured to accommodate a vehicular ramp to two new overhead doors on the north side of the building.

Stormwater runoff patterns will be largely unchanged. Currently, runoff sheet flows directly to catch basins or into vegetated water quality swales with underground lined detention systems and filter media. Each system discharges into the sites stormwater network where they are conveyed south towards the railroad culverts and downstream wetlands.

Runoff immediately north of the building where a small landscaped area is being converted to pavement will be collected by an inlet water quality structure and routed to a lined detention system with filter media similar to the existing water quality swales. The stormwater collection system will utilize a "treatment train" approach and include low impact development systems to treat the Water Quality Flow, remove total suspended solids and reduce peak flow.

There are no proposed changes to the sanitary sewer, water, electric, tel-com, or gas services.

1.3 Soils Identification

The majority of existing soil on the site is designated as **Map Unit 307, "Urban Land"** as described in the USDA Natural Resource Conservation Service, Web Soil Survey. Urban Land soil type is classified as Hydrologic Group D. Group D soils have a 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 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. Other **"Urban Land"** soils on site (**Map Unit 306**) fall into Group B soils, which have a higher infiltration rate. These soils mainly make up the northern and southern boundaries of the site along I-95 and the Metro North Railroad tracks.

Another additional soil on site consists of **Map Unit 284B, "Paxton-Urban Land."** This soil is classified as Group C. **Map Unit 284B** lies in the northern boundaries of the site along I-95.

Section 2 Stormwater Management

2.1 Existing Conditions Analysis

The watershed was modeled and analyzed using HydroCAD stormwater modeling system. The program was used to develop runoff hydrographs for individual drainage areas, routing the hydrographs within the watershed and combining them to calculate peak flows, volume of runoff and peak flood elevations.

Impervious and pervious areas, weighted curve numbers, and times of concentration were calculated for each watershed and input into a hydraulic model to determine the project's peak flow as part of the comparative hydrology analysis.

Precipitation depths were computed from NOAA's Atlas 14 Point Precipitation Frequency Estimates online utility. Precipitation depths are indicated in **Table 2-1** below, while the NOAA Atlas 14 output appears in **Appendix B**.

Table 2-1
24-hour Duration Precipitation Depths

	Frequency					
	2 year	5 year	10 year	25 year	50 year	100 year
Depth (in.)	3.48	4.49	5.33	6.48	7.34	8.26

The purpose of this analysis was to determine peak flows and the extent of ponding within the existing wetland channel area adjacent to the railroad and to determine if the proposed development would cause increased flows downstream.

We utilized the project survey, available as-built facility and City mapping, and field observations to prepare an existing conditions drainage plan showing the existing drainage facilities on-site.

The pre-development and post-development hydrologic analysis was carried out by generating HydroCAD computer models using the following data:

1. Soil Cover.
2. Ground Cover.
3. Ground Slopes.
4. Degree, Density and Type of Development
5. Location and extent of wetlands, including swamps and ponds.
6. Time of concentration, travel time, lag time.

7. Controlled discharge structures, pipes and channel.

2.2 Existing Conditions Hydrology

To properly analyze the existing watershed with the HydroCAD program, the project site was divided into various watershed areas. Please refer to the "Existing Watershed Map" showing the delineated watershed labelled WM-01 located in **Appendix C**

The soil types were identified and classified using the USDA Natural Resource Conservation Service, Online Web Soil Survey. Using this data, CN values were determined by evaluating land uses within the watershed and then taking a weighted average. The calculated CN values are shown in **Appendix C**.

The time of concentration was determined for each watershed area using the method outlined in the Connecticut Department of Transportation Drainage Manual, Section 6.C. When determining the time of concentration three hundred feet was the maximum length used for overland flow, beyond that it is assumed that the flow becomes channelized. The calculated time of concentrations are included in **Appendix C**.

An explanation of the watershed model is as follows: Subbasins 5, 6, 7, 8, 9 and 10 flow to the westerly railroad Culvert 1. When the capacity of Culvert 1 is exceeded, the excess runoff overflows through a channel that parallels the railroad tracks to the central railroad Culvert 2. This flow is joined by runoff from 8 Norden Place and flows through Culvert 2. When the capacity of Culvert 2 is exceeded the runoff overflows to the large wetland area to the southeast and outlets through Culvert 3.

Storm runoff flows for each subarea were established and the resulting hydrographs generated by the computer model were progressively routed and combined to establish a peak flow at the design discharge points. The design points were located at each of the watershed's unique outfalls affected by the proposed improvements, including the Railroad Culvert 1 (Design Point #1), Railroad Culvert 2 (Design Point #2), AND Railroad Culvert 3 (Design Point #3).

To determine the watershed flow characteristics for a wide range of rainfalls, flows resulting from the 2-year, 10-year, 25-year, 50-year, and 100-year, 24-hour rainfalls were analyzed. The results of this analysis are shown in Table 2-2 for Existing conditions.

Table 2-2
Existing Conditions Stormwater Discharges (CFS)

Design Location	Description	Storm Frequency (Years)				
		2	10	25	50	100
RR Culvert 1	Culvert Flow	40.49	47.57	52.77	57.17	61.92
	Weir Overflow	40.91	78.60	100.68	117.09	133.65
	Total	81.52	126.25	153.54	174.33	195.77
RR Culvert 2	Culvert Flow	28.26	31.55	33.81	35.32	37.06
	Weir Overflow	48.69	149.31	206.25	250.27	306.73
	Total	77.19	181.04	240.12	285.78	343.99
RR Culvert 3	Culvert Flow (Total)	26.06	44.37	51.44	58.61	64.79

An abridged version of the HydroCAD output for the existing conditions analysis is included in the printed version of the report in **Appendix C**. For the full version of the computer output, see the digital version of the Engineering Report.

2.2.1 Floodplain Management

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) 09001C0532G for Fairfield County, effective July 8, 2013, shows the project site is not inside the 100-year floodplain, as shown in **Figure 2** in **Appendix A**.

2.3 Proposed Site Hydrologic and Hydraulic Analysis

The proposed drainage and stormwater management system will utilize an inlet water quality structure to capture and convey runoff to an underground lined detention system. Infiltration is not being practiced on this portion of the site due to contaminated soils. Infiltration practices could promote the migration of these contaminants if runoff were to be introduced. These areas are currently maintained beneath impervious pavement and will remain so as part of the proposed development plan. The drainage patterns of the remainder of the site will remain unchanged.

Underground detention is proposed to collect and treat runoff. The system is sized to attenuate peak flows and treat the water quality volume associated with the conversion of a small landscaped area into a paved exterior storage area. Runoff from this area is collected in a hydrodynamic separator with a grate top and then routed to underground chambers encased in a filter media and wrapped with an impermeable liner. An underdrain and outlet structure will control flows and slowly release them back to the existing piped system on site. The hydrodynamic separator is sized to treat the area's Water Quality Flow (WQF). See Figure WM-02 and the WQF calculations in **Appendix D** for more information.

Overall, peak flows are reduced for the site's design points RR Culvert 1 and RR Culvert 2. The drainage structures and pipes have been sized to convey the 25-year storm. The hydrodynamic separator has been sized to treat the Water Quality Flow (WQF) as calculated using the Connecticut Department of Energy and Environmental Protection 2023 Stormwater Quality Manual and the City of Norwalk, CT Drainage Manual.

Table 2-3a shows the proposed peak discharges at design locations. Table 2-3b below shows the peak discharge from existing to proposed for the 2, 10, 25, 50 and 100-year storm events.

Table 2-3a
Proposed Stormwater Discharges (CFS)

Design Location	Description	Storm Frequency (Years)				
		2	10	25	50	100
RR Culvert 1	Culvert Flow	40.48	47.53	52.73	57.15	61.91
	Weir Overflow	40.86	78.41	100.53	117.03	133.63
	Total	81.46	126.02	153.33	174.22	195.77
RR Culvert 2	Culvert Flow	28.26	31.55	33.80	35.31	37.05
	Weir Overflow	48.68	149.11	205.98	249.96	306.36
	Total	77.18	180.82	239.84	285.46	343.61
RR Culvert 3	Culvert Flow (Total)	26.06	44.37	51.45	58.61	64.79

Table 2-3b
Comparative Stormwater Discharges (CFS)

Design Location	Condition	Runoff Discharge (CFS)				
		2	10	25	50	100
RR Culvert 1	Existing	81.52	126.25	153.54	174.33	195.77
	Proposed	81.46	126.02	153.33	174.22	195.77
	Change	-0.07%	-0.18%	-0.14%	-0.06%	0.0%
RR Culvert 2	Existing	77.19	181.04	240.12	285.78	343.99
	Proposed	77.18	180.82	239.84	285.46	343.61
	Change	-0.01%	-0.12%	-0.12%	-0.11%	-0.11%
RR Culvert 3	Existing	26.06	44.37	51.45	58.61	64.79
	Proposed	26.06	44.37	51.45	58.61	64.79
	Change	0.0%	0.0%	0.00%	0.0%	0.0%

Table 2-3c below shows the comparison in volumetric runoff from existing to proposed for the 2, 10, 25, 50 and 100-year storm events.

Table 2-3c
Existing and Proposed Conditions Stormwater Volumetric Runoff (cu.ft)

Design Location	Condition	Volumetric Runoff (ac Ft)				
		2	10	25	50	100
RR Culvert 1	Existing	633,451	1,110,863	1,419,122	1,653,470	1,902,933
	Proposed	633,951	1,111,450	1,419,742	1,654,109	1,903,589
	Change	+0.08%	+0.05%	+0.04%	+0.04%	+0.03%
RR Culvert 2	Existing	816,612	1,776,893	2,419,547	2,939,592	3,495,923
	Proposed	816,760	1,777,066	2,419,731	2,939,779	3,496,111
	Change	+0.02%	+0.01%	+0.01%	+0.01%	+0.01%
RR Culvert 3	Existing	281,059	915,423	1,392,990	1,800,384	2,255,405
	Proposed	281,128	915,549	1,393,192	1,800,528	2,255,626
	Change	+0.02%	+0.01%	+0.01%	+0.01%	+0.01%

The proposed site improvements will slightly increase volumetric runoff to RR Culvert 1 due to the increase in impervious coverage on-site (Net increase of 3,560 square feet) and an inability to infiltrate stormwater. The proposed project will not increase peak flow or exacerbate flooding conditions downstream.

A shortened version of the HydroCAD output for the proposed conditions analysis is included in the printed version of the report in **Appendix C**. For the full version of the computer output, see the digital version of the Engineering Report

2.4 Method of Hydrology and Hydraulic Analysis

The following storm drainage design criteria were used for all pipe systems:

1. Design storm rainfall data was based on the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) precipitation frequency estimates for the Northeastern States including Connecticut. NOAA Atlas 14 Volume 10 as outlined in the CTDOT Engineering Bulletin "Precipitation Frequency Estimates" dated November 3, 2015.

2. Comparative hydrology for existing and proposed conditions was analyzed for the 2, 10, 25 and 100-year storm events.
3. Piped storm drainage system and the outlets are designed for a 25-year storm event.
4. Minimum time of concentration = 5 minutes.
5. For rational peak flow calculations, runoff coefficients were as follows:
 - a. Impervious (Pavement/Roof) areas = 0.90
 - b. Gravel Areas/Porous Pavers = 0.50
 - c. Landscaped areas = 0.30
6. For hydrograph calculations, SCS Curve Numbers were as follows:
 - a. Impervious (Pavement/Roof) areas = 98
 - b. Gravel Areas/Porous Pavers = 75
 - c. Pervious Soils = 68
7. Minimum diameter pipes, excluding roof leaders, underdrains and foundation drains = 10 inches
8. Minimum pipe slope = 1.0%
9. The storm water management Plan for the site is designed to treat the Water Quality Volume, remove Total Suspended Solids and promote groundwater recharge while reducing peak flow
10. Watershed areas delineated using polylines in AutoCAD Civil 3D 2021.
11. Comparative hydrology analyzed using HydroCAD 10.00-20 software.
12. Storm drainage system analyzed using AutoCAD Civil 3D 2021 Hydraflow Storm Sewers Extension Version 10.40 by Autodesk software.

Runoff computations, storm sewer calculations and existing and proposed conditions are included in the **Appendix C and D**

2.5 Low Impact Development and Best Management Practices

The stormwater management plan for the proposed site has been designed to remove a high percentage of sediments in accordance with the 2024 Connecticut Stormwater Quality Manual by the Connecticut Department of Energy and Environmental Protection.

The stormwater management plan for this site uses "Best Management Practices ("BMPs")" to meet or exceed the Connecticut DEEP's goal of 80% removal of total suspended solids and other pollutants.

The BMPs include:

Underground Detention: Underground detention serves to reduce peak flow rates. The proposed stormwater management system consists of open bottom chambers encased in a filter media and wrapped in an impermeable liner.

Hydrodynamic Separators: Hydrodynamic separators serve as pretreatment and help prevent transport of oils and sediment from the proposed drainage system. The proposed storm sewers utilize Contech CDS stormwater quality structures in an inline configuration prior to discharge through site outfalls. The Contech CDS units have been sized in accordance with the 2024 CTDEEP Stormwater Quality Manual. Sizing is based on the calculated 25-year design proposed flow and Standard Details provided in **Appendix E** and the project drawings.

2.6 Stormwater Maintenance and Inspection Schedule

The initial inspection will be made during an intense rainfall to check the adequacy of the piping, hydrodynamic separator, and system outlets.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, yard drains, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand and debris from catch basins as necessary and dispose of legally.

Hydrodynamic Separator: The Contech CDS unit (hydrodynamic separator) will be skimmed and oil and scum removed. In a separate operation, silt, sand and sediment will be removed. Once the structure is cleaned of debris, the chamber will be refilled with clean water to prevent wash through of debris and oil during next storm event.

Pavement: Paved areas shall be swept periodically by the Owner to clean trash and other debris. The Owner will sweep paved areas on its property in the spring to remove winter accumulations of road sand.

Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

Underground Detention: The underground detention system will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control manhole will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

A Maintenance and Inspection Plan, including forms and checklists, for the proposed project can be found in **Appendix F**.

Section 3 Site Utility Services

3.1 Water and Fire Protection Services

The site is located within the franchise area of the City of Norwalk First District Water Department. Water is supplied to the existing office building and Data Center by the First District Water Department from a main in Norden Place. No modifications to the sites water service are proposed as part of the proposed development plan.

3.2 Electric Service

The site is bisected by a Tax District Line, with the Fifth Taxing District to the north and the Third Taxing District to the south. Electric service to the site is currently provided by Eversource Electric and the Third Taxing District Electric Company. Underground electric lines are located in Norden Place and provide service to the existing office building, Data Center and Test building. No modifications to the sites electric service are proposed as part of the proposed development plan.

3.3 Tel-Data/CATV Services

Underground telephone vaults and conduit are located on the driveways to the site and transition to overhead telephone lines which are located on Norden Place. Existing tel-data and CATV services are provided to the existing facility by Altice off Norden Place. No modifications to the sites tel-data service are proposed as part of the proposed development plan.

3.3 Gas Service

Eversource Energy provides gas to the site and maintains an existing intermediate pressure gas main in Norden Place. No modifications to the sites gas service is proposed as part of the proposed development plan.

3.4 Sanitary Sewer Service

The existing 635,428 square foot building discharges sanitary flows to a manhole located in the southwest corner of the site that outlets into a sanitary manhole in Norden Place. Flow from this manhole is conveyed approximately 840 lineal feet westerly by an existing 12-inch sewer to the intersection of Woodside Avenue and North Bridge Street.

The 115,098 square foot Data Center discharges into a shared sanitary sewer force main with Avalon that discharges along the northern site driveway to Norden Place. At this point the force main flows in a northwest direction and discharges into the sanitary sewer in Strawberry Hill Avenue.

An oil grit separator will be provided outside the building in front of the overhead doors intended to treat discharge from the vehicular hand wash area. The oil grit separator will collect flow from this area and discharge it back into the existing sanitary piping network within the building. The oil/grit separator will need a permit from CTDEEP, which will be coordinated after local approval.

The existing 635,428 square foot office building currently discharges an average daily flow of 81,200 gallons per day. See following Table:

Table 3-1 – Projected Wastewater Flow from Existing Building

Building Use	Flow Estimate Factor	Quantity	Unit Flow Factor (gpd/1,000 SF)	Total Flow (gpd)
Office Building	Square Foot	241,128	200	48,225
Manufacturing	Square Foot	216,255	100	21,625
Vacant School	Square Foot	64,545	0	0
Transportation Maintenance	Square Foot	113,500	100	11,350
Total		Total Average Daily Flow		81,200
		Peaking Factor = 2		
		Total Maximum Daily Flow		162,400

The proposed sanitary sewer discharge from the proposed office, manufacturing, transportation maintenance building and car club was based on the following:

Table 3-2 – Projected Wastewater Flow from Proposed Office Building

Building Use	Flow Estimate Factor	Quantity	Unit Flow Factor (gpd/1,000 SF)	Total Flow (gpd)
Office Building	Square Foot	149,190	200	29,838
Manufacturing	Square Foot	170,973	100	19,097
Vacant School	Square Foot	64,545	0	0
Transportation Maintenance	Square Foot	113,500	100	11,350
Car Club	Square Foot	52,620	100	5,262
Car Club Storage	Square Foot	84,600	100	8,460
Total		Total Average Daily Flow		74,007
		Peaking Factor = 2 (Office)		
		Total Maximum Daily Flow		148,014

¹ Unit flow factor selected based on published guidelines.

The proposed redevelopment is not expected to increase sanitary sewer flows.

Section 4

Soil Erosion and Sedimentation Control

4.1 Soil Erosion and Sedimentation Control Narrative

The stormwater management measures will address the stormwater quality once the site has been constructed and stabilized. Sedimentation and erosion control measures will be installed during construction which will minimize adverse impacts from construction activities.

All sedimentation and erosion control measures proposed for this development have been designed in accordance with the "2024 Connecticut Guidelines for Soil Erosion and Sedimentation Control" as published by the Connecticut council on soil erosion and water conservation. Additional guidelines have also been followed that are available from the Connecticut Department of Energy and Environmental Protection as recommended for sedimentation control during construction activities.

Listed below are the erosion control narrative and the erosion control notes.

General:

The proposed development is entitled "The Auto Collective" in Norwalk, Connecticut.

Estimated Construction Schedule:

Project start: Spring 2025

Project completion: Fall 2025

Erosion control narrative refers to drawings C2.01 to C2.02.

The proposed site development will consist of excavation, construction of a car ramp and site retaining wall and rough grading of ramp, sidewalk and curbing. Stormwater management improvements are proposed with an underground detention system. Soil disturbance on site shall be kept to the minimum extent practical. Sediment in exposed areas will be managed with inlet protection (silt sacks) and periodic sweeping to protect downstream drainage systems.

The development is located at 10 Norden Place in Norwalk, Connecticut.

4.2 Soil Erosion and Sedimentation Control Notes

1. All Sedimentation and Erosion Control measures shall be constructed in accordance with the Standards and Specifications of the "2023 Connecticut Guidelines for Soil Erosion and Sediment Control", and all amendments and addenda thereto as published by the Connecticut Department of Energy and Environmental Protection.
2. Land disturbance shall be kept to the minimum necessary for construction operations.

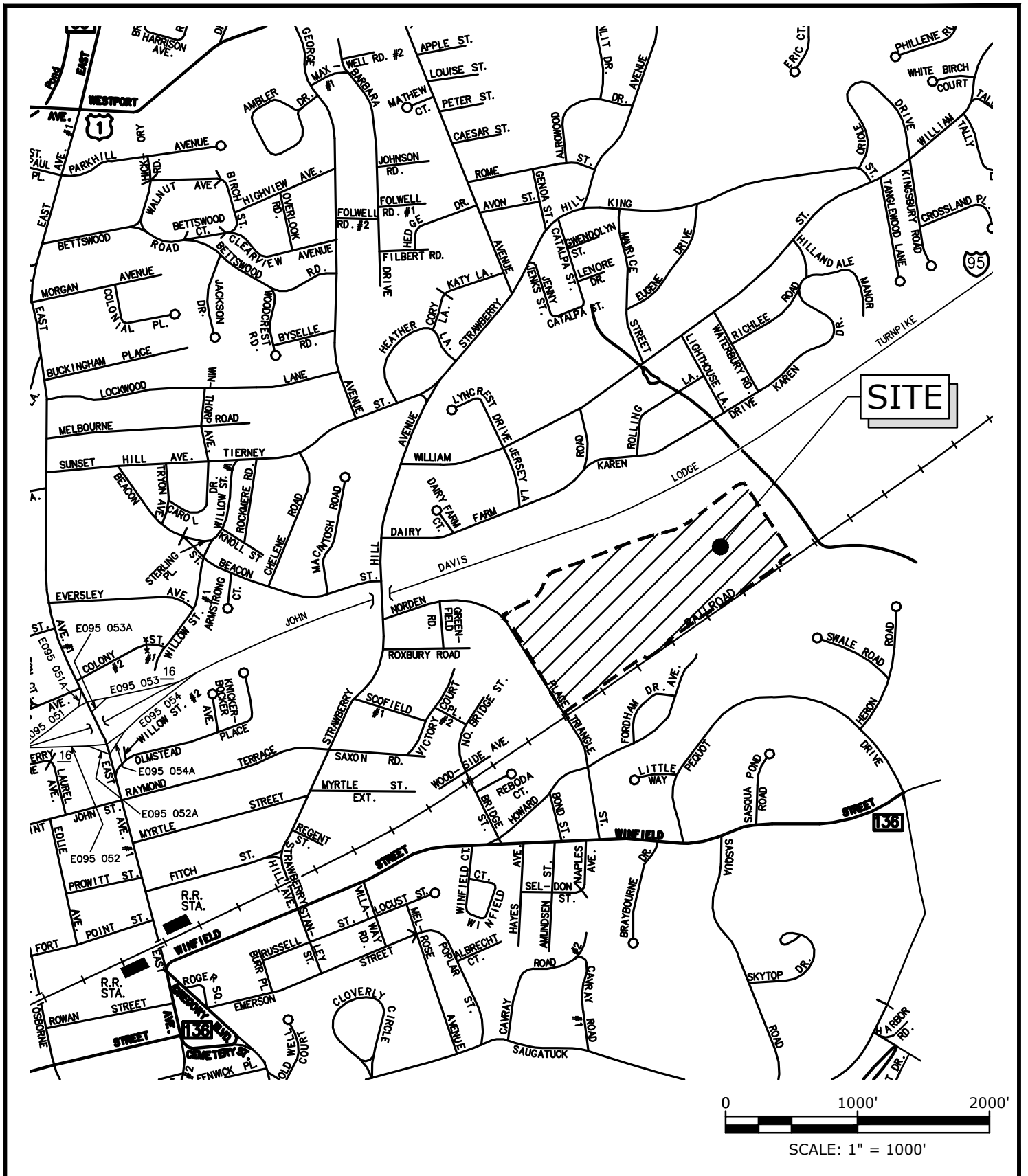
3. All erosion control measures shall be installed as shown on the plan and elsewhere as ordered by the Engineer or the City.
4. All catch basins shall be protected with a silt sacks, haybale ring, silt fence or block and stone inlet protection throughout the construction period and until all disturbed areas are thoroughly stabilized.
5. Whenever possible, erosion and sediment control measures shall be installed prior to construction. See "Erosion Control Narrative".
6. Additional control measures shall be installed during the construction period as ordered by the Engineer.
7. All sedimentation and erosion control measures shall be maintained in effective condition throughout the construction period.
8. Sediment removed shall be disposed of off-site or in a manner as required by the Engineer.
9. The Contractor shall be responsible for construction and maintenance of all control measures throughout the construction period.
10. The Contractor shall utilize approved methods/materials for preventing the blowing and movement of dust from exposed soil surfaces onto adjacent properties and site areas.
11. The Contractor shall maintain a supply of silt fence/haybales and anti-tracking crushed stone on site for emergency repairs.
12. All drainage structures shall be periodically inspected weekly by the construction Contractor and cleaned to prevent the build-up of silt.
13. The Contractor shall carefully coordinate the placement of erosion control measures with the phasing of construction.
14. Keep all paved roadways clean. Sweep before forecasted storms.
15. Treat all unpaved surface with 4" minimum of topsoil prior to final stabilization.
16. Haybale barriers and silt fencing shall be installed along the toe of critical cut and fill slopes.
17. The Contractor shall notify the City of Norwalk's environmental official prior to the installation of erosion controls, cutting of trees, or any excavation.
18. All trucks leaving the site must be covered.
19. Some control measures are permanent. These structures shall be cleaned and replenished at the end of construction. Locations of the permanent control structures are shown on the drainage plans.
20. All sedimentation and erosion controls shall be checked weekly and/or after each rain fall event. Necessary repairs shall be made without delay.

21. Prior to any forecasted rainfall, erosion and sediment controls shall be inspected and repaired as necessary.
22. After all disturbed areas have been stabilized, erosion controls may be removed once authorization to do so has been secured from the town. Disturbed areas shall be seeded and mulched.

4.3 Construction Sequence

1. Flag the limits of construction.
2. Hold preconstruction meeting. Remember to Call Before You Dig 1-800-922-4455.
3. Install perimeter erosion and sediment controls and inlet protection in accordance with the Sedimentation and Erosion Control Plan.
4. Sawcut and reclaim all pavement and remove curbing as shown on the plans.
5. Construct site retaining walls and build up site grades.
6. Install oil/grit separator and piping.
7. Install water quality systems and associated drainage network. Grade the area around the storm drainage as necessary.
8. Install all curbing in all pavement areas and sidewalk.
9. Upon substantial completion of the site improvements complete the balance of the site work and stabilization of all other disturbed areas.
10. Install first course of paving.
11. When all other work has been completed, repair and sweep all paved areas for the final course of pavement. Inspect the erosion controls and clean as needed.
12. Install surface course of pavement.
13. After site is stabilized, remove temporary erosion and sediment controls (e.g. geotextile silt fences and haybales).

APPENDIX A



NORDEN DEVELOPMENT
NORWALK, CT
SITE LOCATION MAP

NORTH 
1" = 1000'

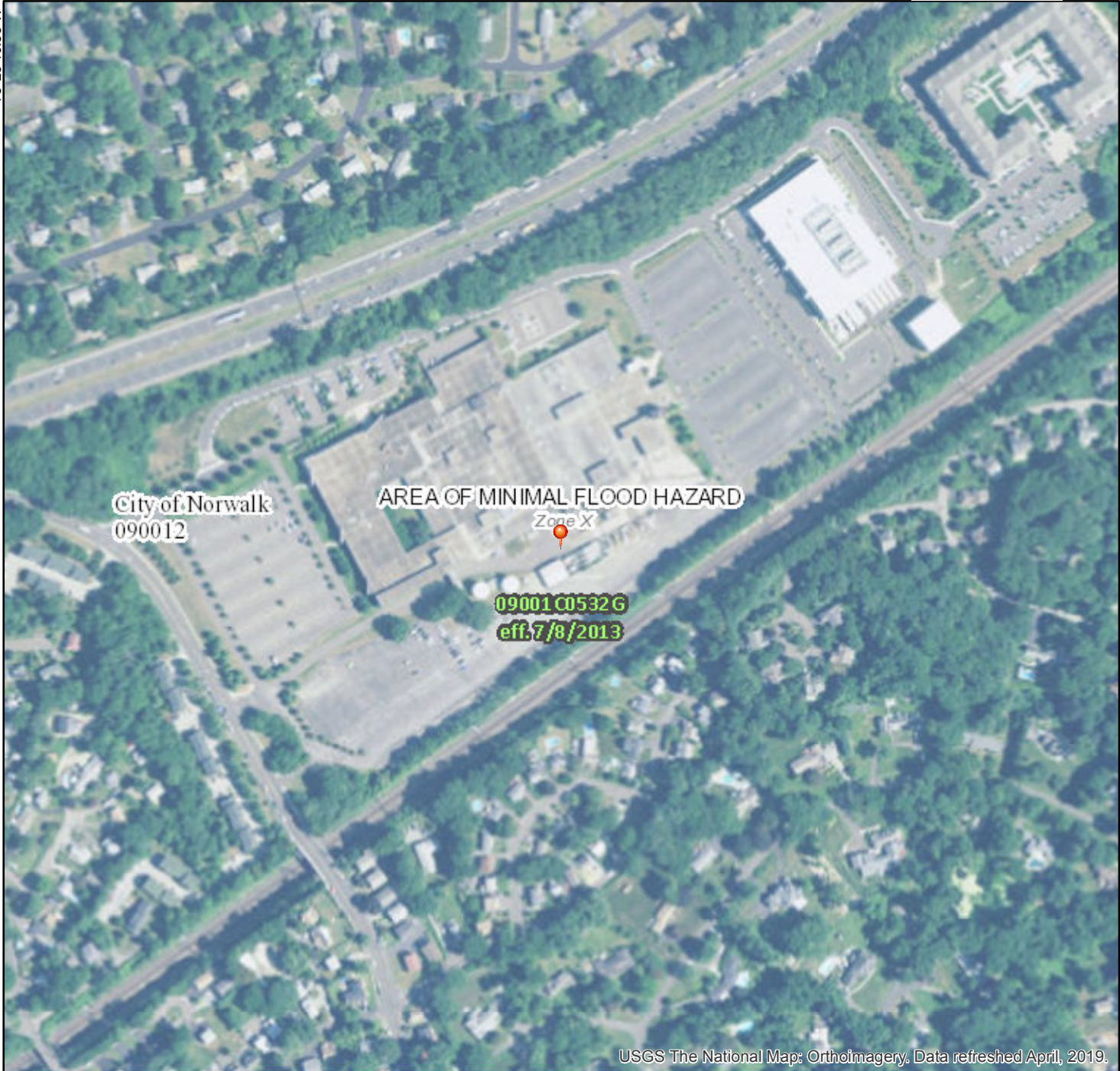
FIGURE 1

Tighe & Bond
Engineers | Environmental Specialists

National Flood Hazard Layer FIRMette



41°6'53.20"N



USGS The National Map: Orthoimagery. Data refreshed April, 2019. 41°6'26.09"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/9/2019 at 9:59:12 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Stormwater System Design Plan and Report Checklist for Submission

Project narrative including:

[Provide page number where located]

<u>1-1</u>	Common address of site
<u>1-1</u>	Project name
<u>1-1</u>	Legal description of site
<u>APPENDIX A</u>	Vicinity map
<u>1-1</u>	Description of past, present, and proposed uses of the site
<u>2-3</u>	Description of the proposed drainage system, including: - o LID elements incorporated in the design - o water quality treatments - o how impervious surfaces have been minimized to the extent practical - o outfall or discharge location (open watercourse versus existing downstream drainage system)
<u>2-5</u>	Description of how zero increase in rate of runoff is met through the design, including a table documenting existing and proposed peak flows from the site for the 50, 10, 4, 2, and 1 percent annual chance events

Cover sheet with drawing index: (only required if not submitted with the Site Plan review)

<u>ALL SHEETS</u>	Title block - Title shall include type of submittal from Site Development Review Request.
<u>C0.01</u>	Legend
<u>ALL SHEETS</u>	North arrow
<u>C1.00</u>	Property boundary of subject property (including parcels or portions thereof, of abutting land in roadways within 100 feet of the property boundary)
<u>APPENDIX A</u>	Site location map (recommended scale 1" = 1,000') with north arrow

Existing conditions map(s) detailing:

[Provide page number where located]

<u>SURVEY</u>	Base mapping for the Storm Drainage Plan shall consist of an existing conditions survey prepared in accordance with the Minimum Standards for Surveys and Maps in the State of Connecticut. The class of survey shall be A-2 and T-2 and shall be represented as such on the map. The base map shall be sealed and signed by a Professional Land Surveyor licensed in the State of Connecticut.
<u>SURVEY</u>	The plan shall indicate the scale of the drawing and if possible be at a scale of 1" = 20' or 1" = 40'.
<u>SURVEY</u>	The plan shall depict the existing topography at contour intervals of 2 feet for the site and at a minimum of 100 feet beyond the property limits of the subject property.
<u>SURVEY</u>	Topography that is flatter than 2 percent requires additional spot elevations, and the contour interval shall be a 1-foot contour interval instead of a 2-foot contour interval.
<u>SURVEY</u>	The plan shall show all required spot elevations.
<u>SURVEY</u>	The plan shall indicate the referenced or assumed elevation datum (the FEMA datum shall be used for sites located within a Flood Hazard Zone).
<u>SURVEY</u>	The plan shall have one permanent benchmark on the site within 100 feet of the proposed construction work area on the site.
<u>SURVEY</u>	The plan shall include roads, buildings, driveways, parking areas, patios, walks, walls, other structures on the property, storm drainage, sanitary sewers, subsurface sewage disposal systems (septic systems), curbs, sidewalks, trees, retaining walls, utilities such as water, gas, and electric etc.
<u>SURVEY</u>	The plan shall show the locations of stormwater discharges.
<u>SURVEY</u>	The plan shall show wetlands, perennial, intermittent streams.
<u>SURVEY</u>	The plan shall show vegetation and the proposed limits of clearing and disturbance.
<u>N/A</u>	The plan shall show the locations of deep test and infiltration tests.

- SURVEY The plan shall show resource protection areas such as wetlands, lakes, ponds, and other setbacks (stream buffer zones, drinking water well setbacks, septic system setbacks, etc.).
- SURVEY The plan shall show utilities and easements.
- SURVEY The plan shall show the location of FEMA floodplain and floodway limits and the relationship of the site to upstream and downstream properties and drainage systems.
- N/A The plan shall show existing channel modifications (e.g., bridge or culvert installations).
- SURVEY The plan shall show existing peak-flow attenuation facilities.

Proposed conditions map(s) detailing:

[Provide page number where located]

- ALL SHEETS The plan shall indicate the scale of the drawing and if possible be at a scale of 1" = 20' or 1" = 40'.
- C2.01 The plan shall depict the proposed topography at contour intervals of 2 feet for the site and at a minimum of 100 feet beyond the property limits of the subject property.
- C2.01 Topography that is flatter than 2 percent requires additional spot elevations, and the contour interval shall be a 1-foot contour interval instead of a 2-foot contour interval.
- C2.01 The plan shall show all required spot elevations.
- C1.01 - C1.02 The plan shall show proposed roads, buildings, driveways, parking areas, and other impervious surfaces.
- C2.01 The plan shall show proposed utilities (e.g., water, sewer, gas, electric) and utility easements.
- C2.01 The plan shall show proposed storm drain infrastructure (e.g., inlets, manholes, storm drains).
- N/A The plan shall show proposed channel modifications (e.g., bridge or culvert installations).
- C2.01 The plan shall show temporary and permanent conveyance systems (grass channels, swales, ditches, storm drains, etc.) building grades, dimensions, and directions of flow.
- C2.01 The plan shall show the location, size, maintenance access, and limits of disturbance of proposed structural stormwater management practices and low impact development (treatment practices, flood control facilities, stormwater diversion structures, etc.).
- C1.01 The plan shall show final landscaping plans for structural stormwater management practices and site revegetation (if no structural items are proposed, this portion of the plan may be signed by a licensed landscape architect or other environmental professional).
- C2.01 The plan shall show locations of nonstructural stormwater management practices (i.e., source controls).
- N/A The plan shall show the excavation and fill quantities in a table if required by the Director.
- ALL SHEETS The plan shall be sealed and signed by a Professional Engineer licensed in the State of Connecticut.

Existing conditions hydrologic analysis including:

[Provide page number where located]

- APPENDIX C Existing conditions map
- APPENDIX C Delineation of each of the existing drainage areas and subwatersheds found on the development site (e.g., size, soil types, land cover characteristics)
- APPENDIX C Delineation of any off-site drainage areas that contribute stormwater runoff to the development site (e.g., size, soil types, land cover characteristics)
- APPENDIX C Calculation of the stormwater runoff rates (cfs) and volumes (ft³) generated, under existing conditions, in each of the drainage areas found on the development site
- APPENDIX C Calculation of the stormwater runoff rates (cfs) and volumes (ft³) generated, under existing conditions, in each of the off-site drainage areas that contribute stormwater runoff to the development site
- APPENDIX C Documentation (e.g., model diagram) and calculations showing how the existing conditions hydrologic analysis was completed

Proposed conditions hydrologic analysis, which includes:

[Provide page number where located]

- APPENDIX D Proposed conditions map
- APPENDIX D Delineation of each of the proposed drainage areas found on the development site (e.g., size, soil types, land cover characteristics)
- APPENDIX D Delineation of the proposed conditions of any off-site drainage areas that contribute stormwater runoff to the development site (e.g., size, soil types, land cover characteristics)
- APPENDIX D Calculation of the stormwater runoff rates (cfs) and volumes (ft³) generated, under proposed conditions, in each of the drainage areas found on the development site
- APPENDIX D Calculation of the stormwater runoff rates (cfs) and volumes (ft³) generated, under proposed conditions, in each of the off-site drainage areas that contribute stormwater runoff to the development site
- APPENDIX D Design computations of any detention or retention systems proposed as part of the project
- APPENDIX D Documentation (e.g., model diagram) and calculations showing how the proposed conditions hydrologic analysis was completed

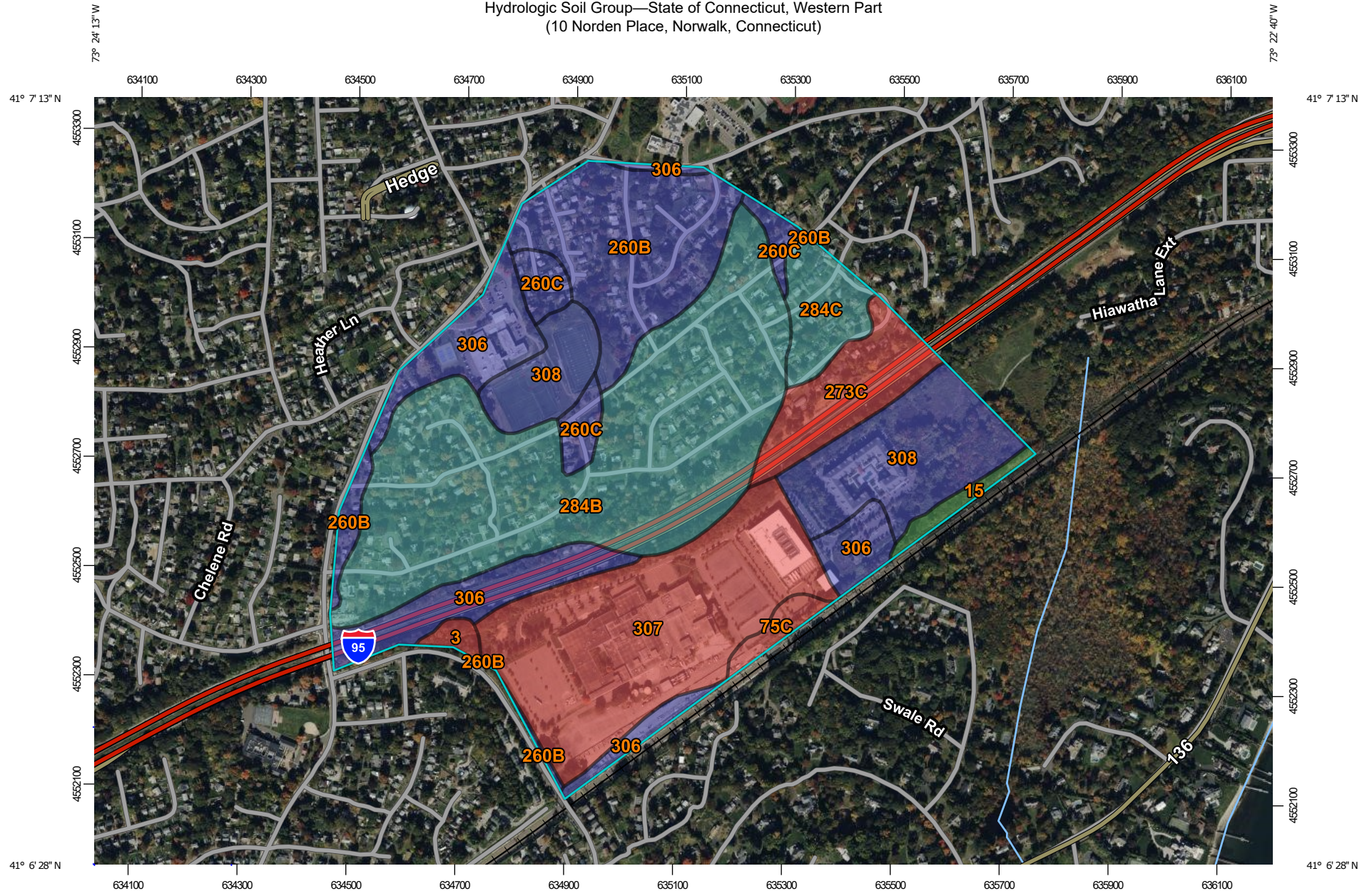
Postconstruction drainage system design computations including:

[Provide page number where located]

- APPENDIX D Drainage diagrams indicating design/analysis points and all stormwater features
- APPENDIX D Subwatershed mapping to each inlet structure
- APPENDIX D Tailwater used in the drainage system analysis
- APPENDIX D Analysis of the receiving drainage system if discharge is to an existing system
- APPENDIX D Computations supporting design of the drainage system including pipe capacity and hydraulic grade line determinations
- APPENDIX D Table of watershed areas, times of concentration, and runoff coefficients for each subwatershed area
- APPENDIX D Profiles of drainage conveyance systems showing proposed structures, proposed grade, flow depth, hydraulic grade line, pipe and channel slopes, soil profiles in swales, bedding details, subdrain details, and types of construction materials
- NA Indicate the discharge location of all building roof leaders. If a building will discharge to more than one discharge location, these locations need to be indicated along with the pertinent area of contributing rooftop.
- N/A Gutter flow analysis for applications that propose new roads or improvements to existing public roads

APPENDIX B

Hydrologic Soil Group—State of Connecticut, Western Part (10 Norden Place, Norwalk, Connecticut)



Map Scale: 1:9,890 if printed on A landscape (11" x 8.5") sheet.

0 100 200 400 600 Meters

0 450 900 1800 2700 Feet

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



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

1/18/2024
Page 1 of 4
Page 146 of 1735

Hydrologic Soil Group—State of Connecticut, Western Part
(10 Norden Place, Norwalk, Connecticut)

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.

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, Western Part

Survey Area Data: Version 1, Sep 15, 2023

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	1.2	0.6%
15	Scarboro muck, 0 to 3 percent slopes	A/D	2.0	0.9%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	2.2	1.0%
260B	Charlton-Urban land complex, 3 to 8 percent slopes	B	26.0	12.2%
260C	Charlton-Urban land complex, 8 to 15 percent slopes	B	6.3	3.0%
273C	Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes	D	11.1	5.2%
284B	Paxton-Urban land complex, 3 to 8 percent slopes	C	66.5	31.2%
284C	Paxton-Urban land complex, 8 to 15 percent slopes	C	7.3	3.4%
306	Udorthents-Urban land complex	B	24.3	11.4%
307	Urban land	D	40.4	19.0%
308	Udorthents, smoothed	B	25.7	12.1%
Totals for Area of Interest			212.9	100.0%

Description

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

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

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

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

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

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

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

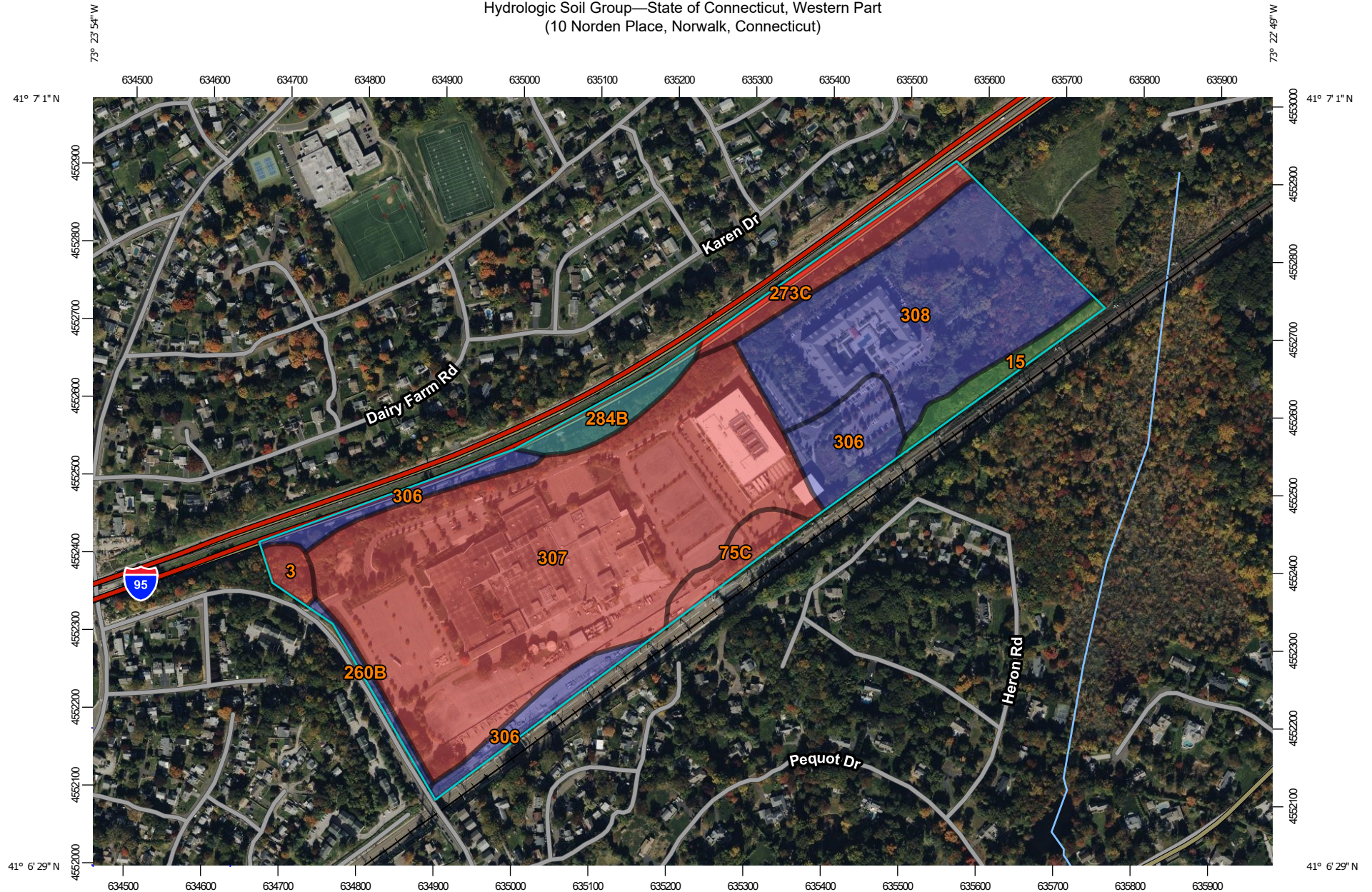
Rating Options

Aggregation Method: Dominant Condition

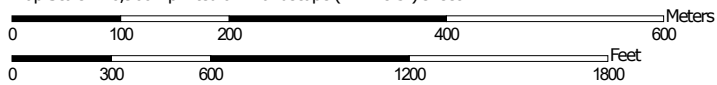
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—State of Connecticut, Western Part (10 Norden Place, Norwalk, Connecticut)



Map Scale: 1:6,960 if printed on A landscape (11" x 8.5") sheet.



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



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

Hydrologic Soil Group—State of Connecticut, Western Part
(10 Norden Place, Norwalk, Connecticut)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

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 B
 B/D
 C
 C/D
 D
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Soil Rating Points

 A
 A/D
 B
 B/D

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 C/D
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Water Features

 Streams and Canals

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Background

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Web Soil Survey URL:

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

Soil Survey Area: State of Connecticut, Western Part

Survey Area Data: Version 1, Sep 15, 2023

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

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

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	0.9	1.2%
15	Scarboro muck, 0 to 3 percent slopes	A/D	1.8	2.3%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	1.9	2.5%
260B	Charlton-Urban land complex, 3 to 8 percent slopes	B	0.7	0.9%
273C	Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes	D	3.3	4.3%
284B	Paxton-Urban land complex, 3 to 8 percent slopes	C	2.1	2.7%
306	Udorthents-Urban land complex	B	7.5	9.7%
307	Urban land	D	40.4	52.5%
308	Udorthents, smoothed	B	18.4	23.9%
Totals for Area of Interest			76.9	100.0%

Description

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



NOAA Atlas 14, Volume 10, Version 3
Location name: Norwalk, Connecticut, USA*
Latitude: 41.1115°, Longitude: -73.3913°
Elevation: 70 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.365 (0.294-0.453)	0.426 (0.342-0.529)	0.525 (0.421-0.655)	0.607 (0.482-0.762)	0.719 (0.550-0.941)	0.805 (0.601-1.08)	0.893 (0.641-1.24)	0.987 (0.672-1.41)	1.12 (0.728-1.66)	1.22 (0.772-1.85)
10-min	0.517 (0.416-0.642)	0.603 (0.484-0.749)	0.743 (0.594-0.926)	0.859 (0.683-1.08)	1.02 (0.779-1.33)	1.14 (0.850-1.53)	1.26 (0.909-1.75)	1.40 (0.952-2.00)	1.58 (1.03-2.35)	1.73 (1.09-2.62)
15-min	0.609 (0.490-0.756)	0.709 (0.570-0.881)	0.873 (0.698-1.09)	1.01 (0.803-1.27)	1.20 (0.916-1.57)	1.34 (1.00-1.80)	1.49 (1.07-2.06)	1.64 (1.12-2.35)	1.86 (1.21-2.76)	2.03 (1.29-3.09)
30-min	0.846 (0.681-1.05)	0.986 (0.793-1.23)	1.22 (0.972-1.52)	1.41 (1.12-1.76)	1.67 (1.27-2.18)	1.87 (1.39-2.50)	2.07 (1.48-2.86)	2.28 (1.55-3.26)	2.56 (1.67-3.81)	2.78 (1.76-4.22)
60-min	1.08 (0.872-1.34)	1.26 (1.02-1.57)	1.56 (1.25-1.94)	1.80 (1.43-2.26)	2.14 (1.63-2.79)	2.40 (1.78-3.20)	2.66 (1.90-3.66)	2.92 (1.99-4.17)	3.27 (2.13-4.85)	3.53 (2.23-5.36)
2-hr	1.38 (1.12-1.70)	1.64 (1.32-2.02)	2.06 (1.66-2.55)	2.41 (1.93-3.00)	2.89 (2.22-3.76)	3.25 (2.44-4.33)	3.63 (2.62-5.02)	4.04 (2.76-5.75)	4.62 (3.02-6.82)	5.08 (3.23-7.67)
3-hr	1.58 (1.29-1.94)	1.89 (1.54-2.32)	2.40 (1.94-2.96)	2.82 (2.26-3.50)	3.40 (2.62-4.41)	3.83 (2.89-5.09)	4.28 (3.12-5.93)	4.80 (3.28-6.80)	5.53 (3.62-8.14)	6.14 (3.90-9.22)
6-hr	1.99 (1.63-2.43)	2.40 (1.96-2.92)	3.06 (2.49-3.74)	3.60 (2.91-4.44)	4.36 (3.39-5.64)	4.92 (3.74-6.52)	5.52 (4.05-7.61)	6.21 (4.26-8.75)	7.22 (4.74-10.6)	8.06 (5.14-12.0)
12-hr	2.46 (2.03-2.98)	2.97 (2.44-3.60)	3.79 (3.10-4.61)	4.47 (3.64-5.47)	5.41 (4.23-6.95)	6.11 (4.66-8.04)	6.85 (5.06-9.40)	7.72 (5.32-10.8)	9.00 (5.92-13.1)	10.1 (6.44-14.9)
24-hr	2.86 (2.37-3.44)	3.48 (2.88-4.19)	4.49 (3.70-5.43)	5.33 (4.36-6.48)	6.48 (5.11-8.29)	7.34 (5.64-9.61)	8.26 (6.14-11.3)	9.35 (6.46-13.0)	11.0 (7.24-15.8)	12.3 (7.92-18.2)
2-day	3.12 (2.60-3.72)	3.87 (3.23-4.63)	5.10 (4.24-6.12)	6.13 (5.05-7.40)	7.54 (5.98-9.59)	8.58 (6.64-11.2)	9.71 (7.27-13.2)	11.1 (7.69-15.3)	13.2 (8.72-18.9)	15.0 (9.63-21.9)
3-day	3.32 (2.78-3.94)	4.14 (3.47-4.93)	5.50 (4.58-6.57)	6.62 (5.48-7.96)	8.16 (6.50-10.4)	9.31 (7.23-12.1)	10.5 (7.93-14.3)	12.1 (8.38-16.6)	14.4 (9.53-20.5)	16.3 (10.5-23.8)
4-day	3.52 (2.96-4.18)	4.39 (3.69-5.22)	5.82 (4.86-6.94)	7.00 (5.81-8.40)	8.63 (6.88-10.9)	9.84 (7.66-12.7)	11.1 (8.39-15.1)	12.7 (8.86-17.5)	15.1 (10.1-21.5)	17.2 (11.1-25.0)
7-day	4.15 (3.51-4.90)	5.10 (4.30-6.02)	6.64 (5.58-7.86)	7.91 (6.60-9.44)	9.67 (7.75-12.1)	11.0 (8.58-14.1)	12.4 (9.33-16.6)	14.0 (9.82-19.1)	16.5 (11.0-23.4)	18.6 (12.1-26.9)
10-day	4.79 (4.06-5.63)	5.78 (4.89-6.79)	7.39 (6.23-8.72)	8.73 (7.31-10.4)	10.6 (8.48-13.2)	11.9 (9.34-15.2)	13.4 (10.1-17.8)	15.1 (10.6-20.5)	17.6 (11.7-24.7)	19.6 (12.7-28.2)
20-day	6.73 (5.75-7.85)	7.83 (6.68-9.14)	9.63 (8.18-11.3)	11.1 (9.38-13.1)	13.2 (10.6-16.2)	14.7 (11.6-18.5)	16.3 (12.3-21.3)	18.1 (12.8-24.3)	20.4 (13.7-28.6)	22.3 (14.5-31.9)
30-day	8.36 (7.17-9.71)	9.55 (8.18-11.1)	11.5 (9.79-13.4)	13.1 (11.1-15.4)	15.3 (12.4-18.7)	17.0 (13.3-21.2)	18.7 (14.0-24.2)	20.5 (14.5-27.4)	22.8 (15.4-31.7)	24.6 (16.0-35.0)
45-day	10.4 (8.96-12.0)	11.7 (10.1-13.5)	13.8 (11.8-16.0)	15.5 (13.2-18.2)	17.9 (14.5-21.8)	19.8 (15.6-24.5)	21.6 (16.2-27.7)	23.4 (16.6-31.2)	25.7 (17.4-35.6)	27.4 (17.9-38.8)
60-day	12.1 (10.5-14.0)	13.5 (11.6-15.6)	15.7 (13.5-18.2)	17.6 (15.0-20.5)	20.1 (16.3-24.3)	22.1 (17.4-27.3)	24.0 (18.0-30.6)	25.8 (18.4-34.3)	28.1 (19.1-38.8)	29.8 (19.4-42.0)

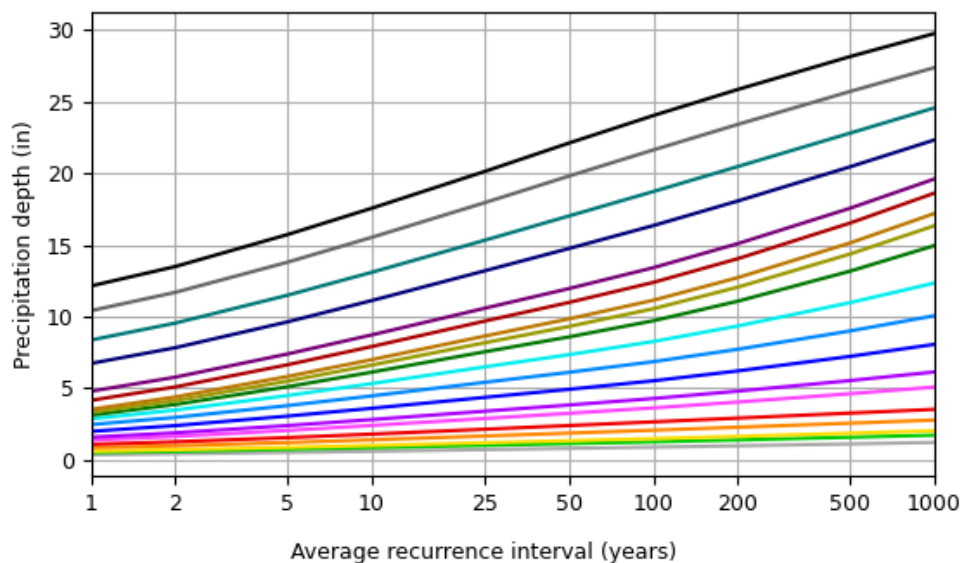
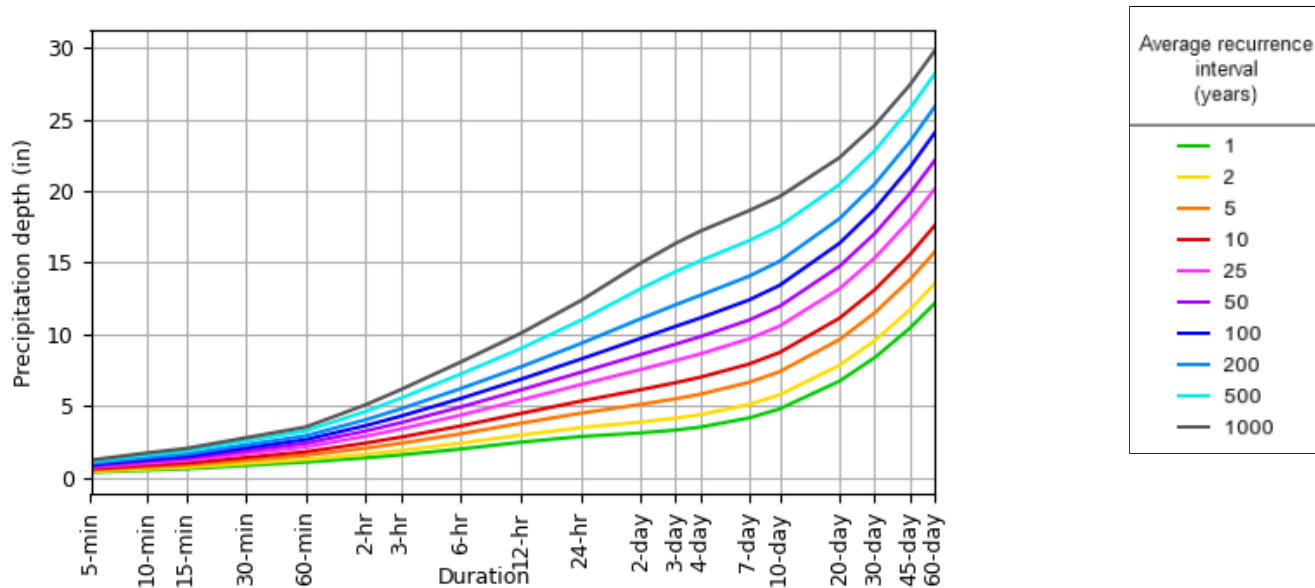
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

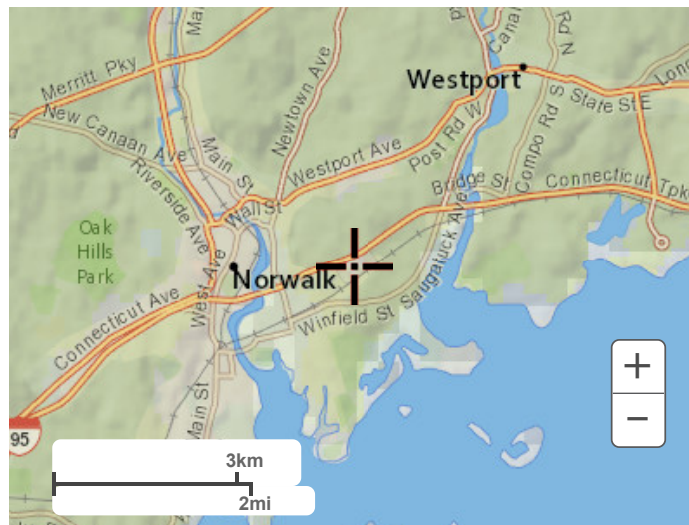
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 41.1115°, Longitude: -73.3913°

[Back to Top](#)**Maps & aeriels****Small scale terrain**



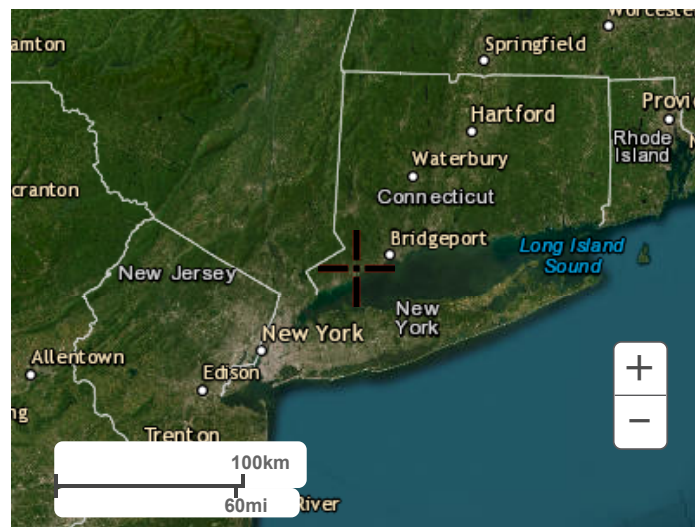
Large scale terrain



Large scale map



Large scale aerial



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[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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APPENDIX C

LEGEND

WATERSHED BOUNDARY



EXISTING PIPE SYSTEM



WATERSHED CATCHMENT AREA
IMPACTED BY PROJECT



Tighe&Bond

1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

THE AUTO
COLLECTIVE

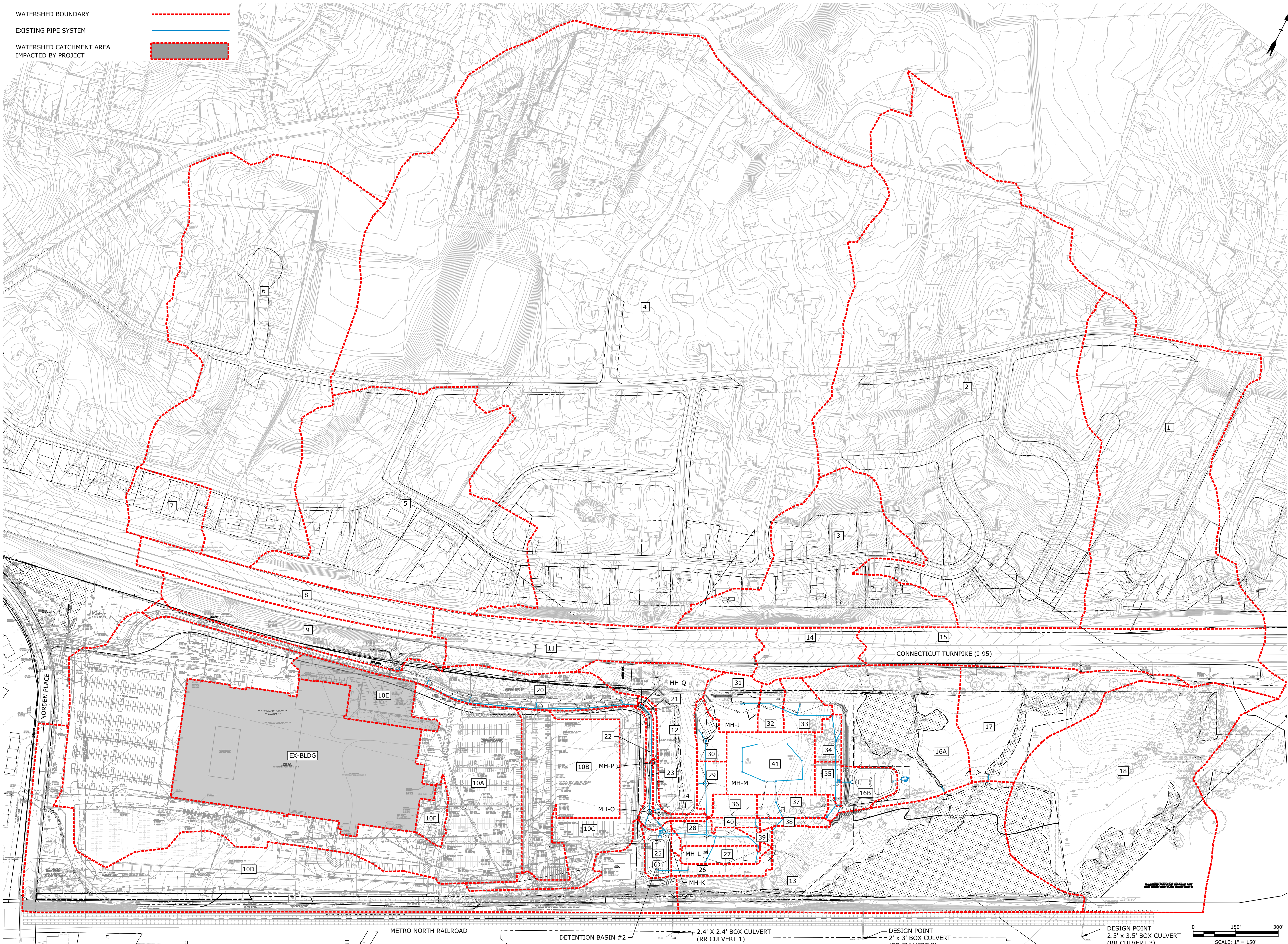
Norwalk, CT

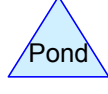
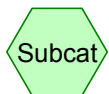
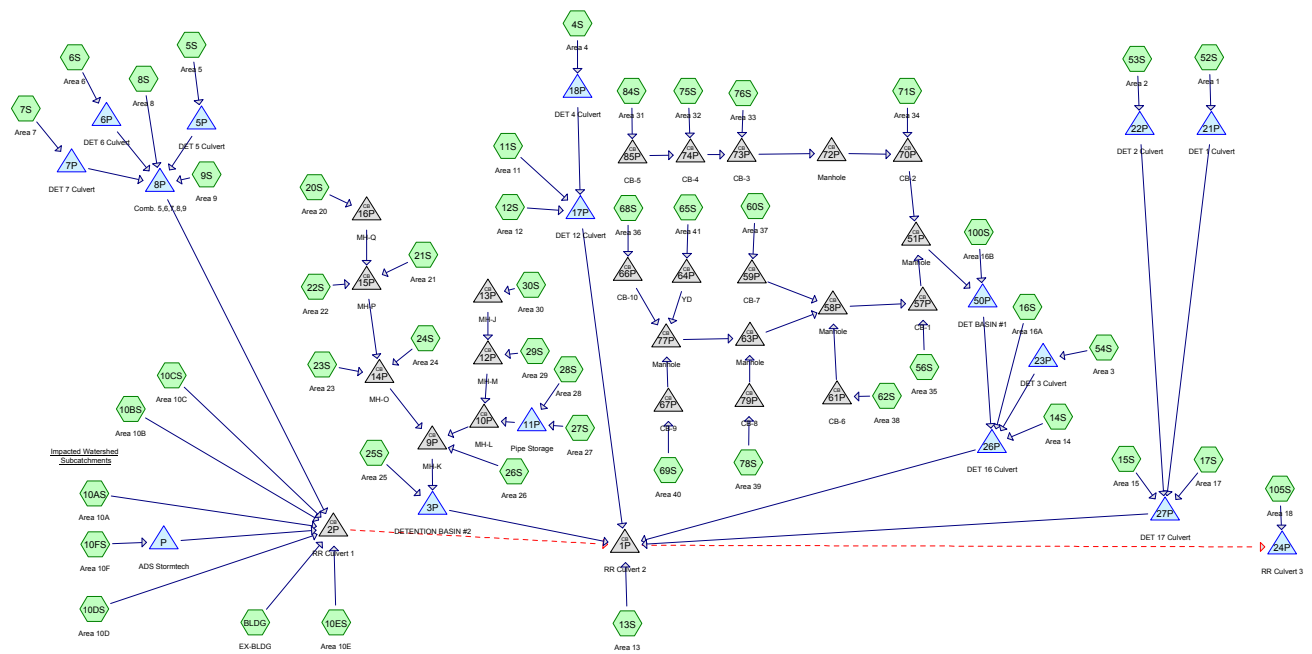
MARK	DATE	DESCRIPTION
PROJECT NO:	AS128-001	
DATE:	01/13/2025	
FILE:	AS128-01-EX-WM.dwg	
DRAWN BY:	JCB	
CHECKED:	EWL	
APPROVED:	JWB	

EXISTING
WATERSHED MAP

SCALE: AS SHOWN

WM-01





Routing Diagram for Existing Conditions
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Existing Conditions

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,994,177	70	1/2 acre lots, 25% imp, HSG B (4S, 52S, 53S, 54S)
2,083,910	80	1/2 acre lots, 25% imp, HSG C (4S, 52S, 53S, 54S)
293,159	85	1/2 acre lots, 25% imp, HSG D (4S, 53S)
451,151	79	50-75% Grass cover, Fair, HSG C (7S, 10AS, 10DS, 10ES)
25,265	84	50-75% Grass cover, Fair, HSG D (7S)
596,598	61	>75% Grass cover, Good, HSG B (4S, 5S, 10BS, 10CS)
524,593	74	>75% Grass cover, Good, HSG C (4S, 5S, 9S, 11S, 14S, 15S, 16S, 21S, 22S, 23S, 25S, 26S, 27S, 28S, 30S, 60S, 62S, 65S, 68S, 69S, 100S)
135,297	80	>75% Grass cover, Good, HSG D (4S, 5S, 9S, 24S)
6,534	89	Gravel roads, HSG C (16S)
404,672	71	Meadow, non-grazed, HSG C (6S)
1,293,688	98	Paved parking & roofs (5S, 6S, 8S, 10BS, 10CS, 11S, 14S, 15S, 17S, 20S, 21S, 22S, 23S, 24S, 26S, 27S, 28S, 29S, 30S, 56S, 60S, 62S, 65S, 68S, 69S, 71S, 75S, 76S, 78S, 84S)
304,179	98	Paved parking, HSG C (10DS, 10ES, 105S)
537,922	98	Paved roads w/curbs & sewers, HSG C (10AS, 10FS)
360,328	98	Roofs, HSG B (BLDG)
485,171	70	Woods, Good, HSG C (12S, 13S, 16S, 17S, 20S, 75S, 76S, 84S, 105S)
991,295	77	Woods, Good, HSG D (6S, 12S, 13S, 16S, 17S, 105S)
10,487,941	80	TOTAL AREA

Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 4S: Area 4

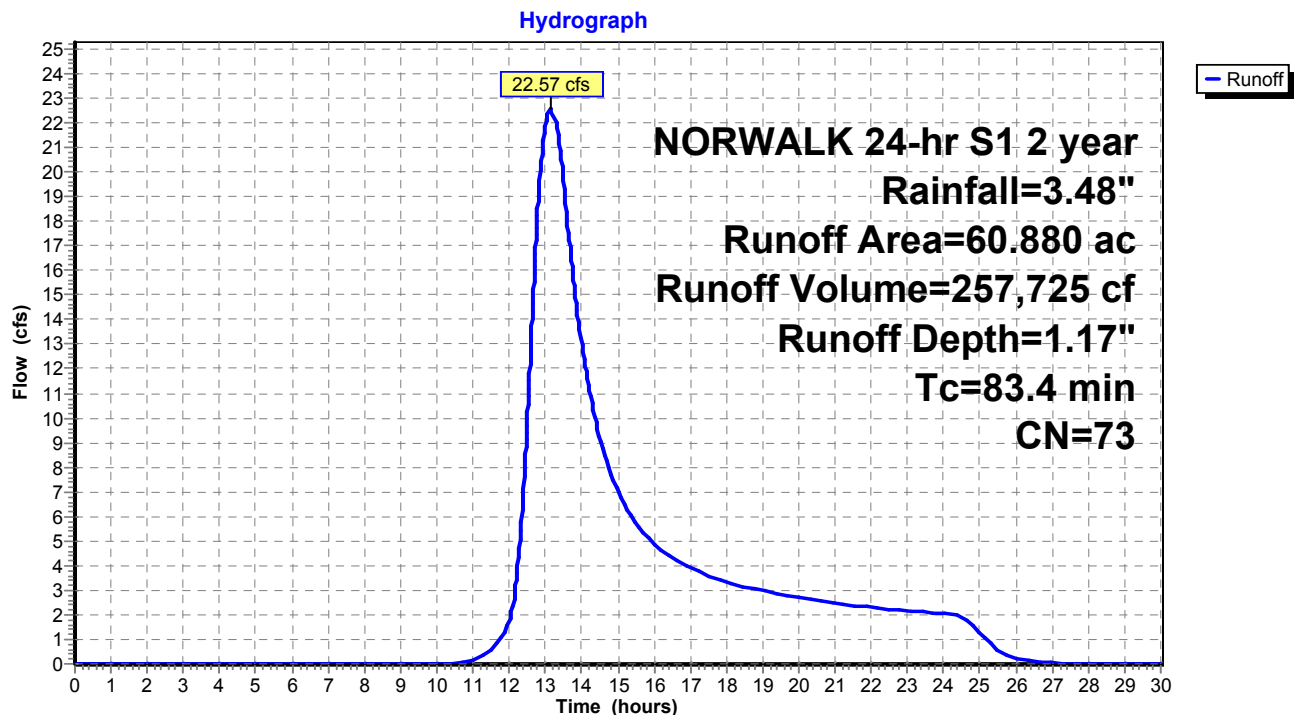
Runoff = 22.57 cfs @ 13.15 hrs, Volume= 257,725 cf, Depth= 1.17"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 5S: Area 5

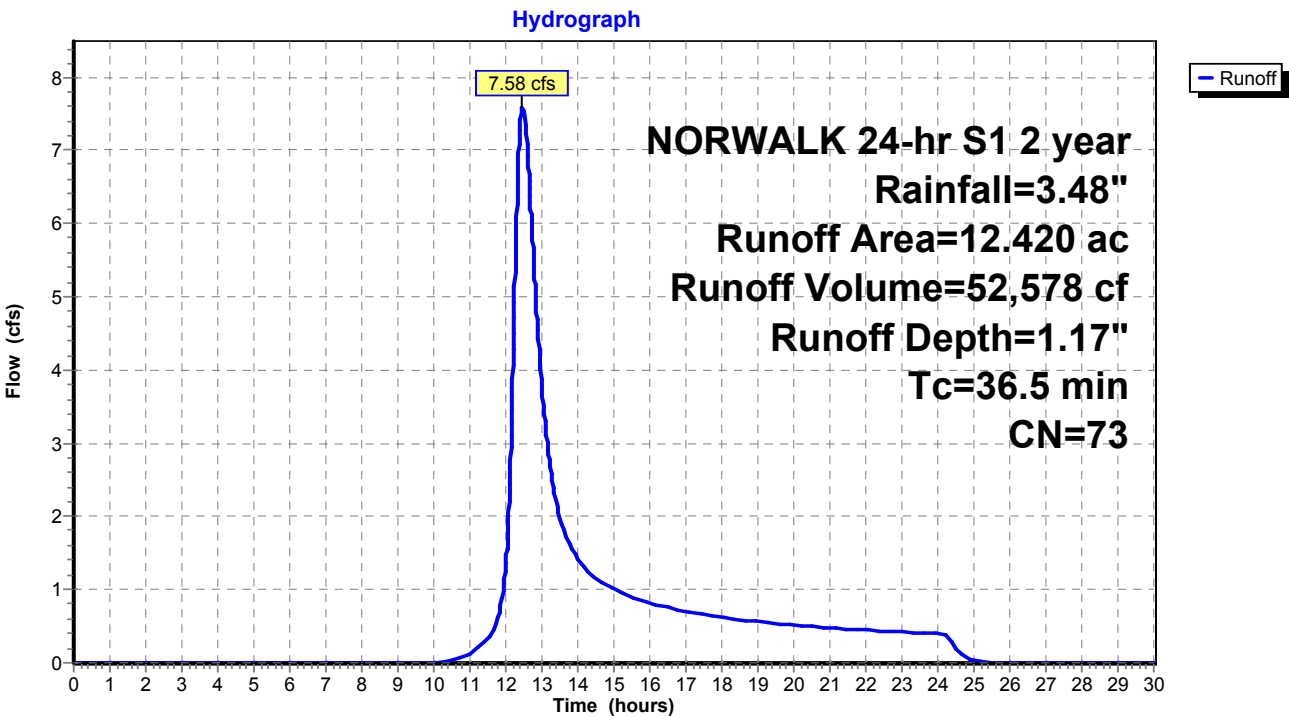
Runoff = 7.58 cfs @ 12.46 hrs, Volume= 52,578 cf, Depth= 1.17"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 6S: Area 6

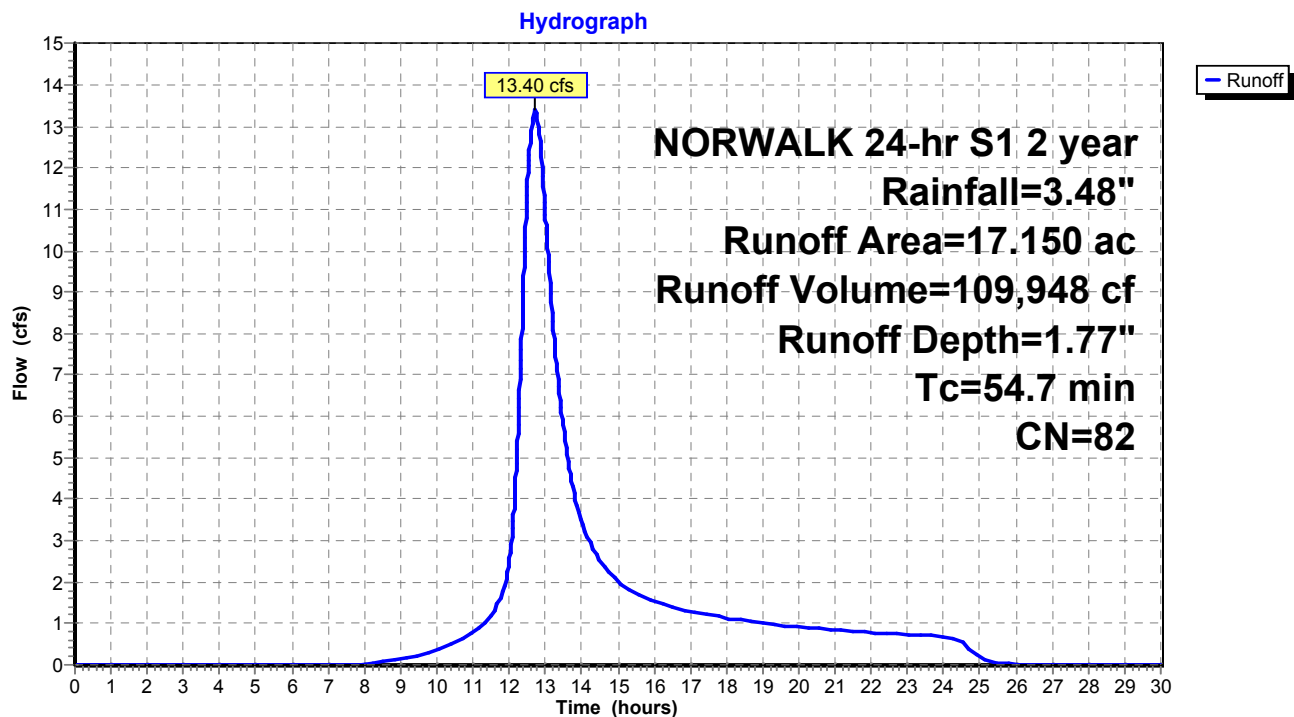
Runoff = 13.40 cfs @ 12.70 hrs, Volume= 109,948 cf, Depth= 1.77"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 7S: Area 7

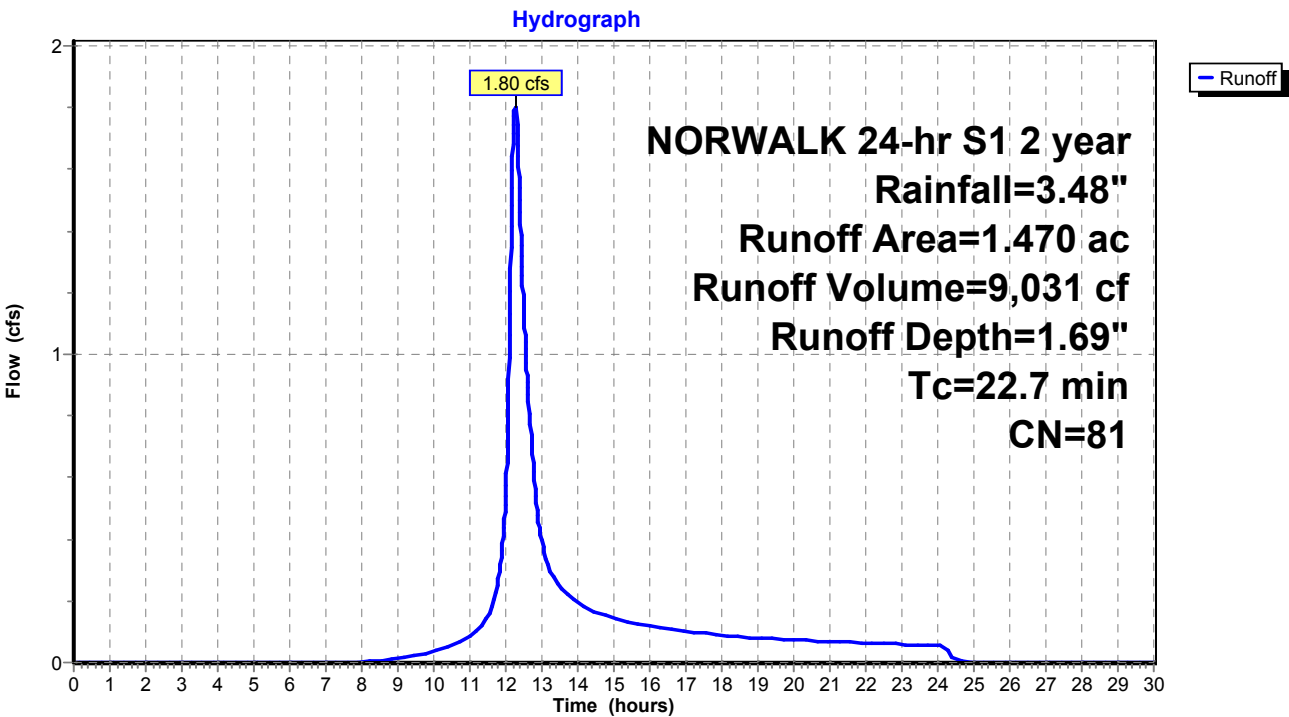
Runoff = 1.80 cfs @ 12.27 hrs, Volume= 9,031 cf, Depth= 1.69"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 8S: Area 8

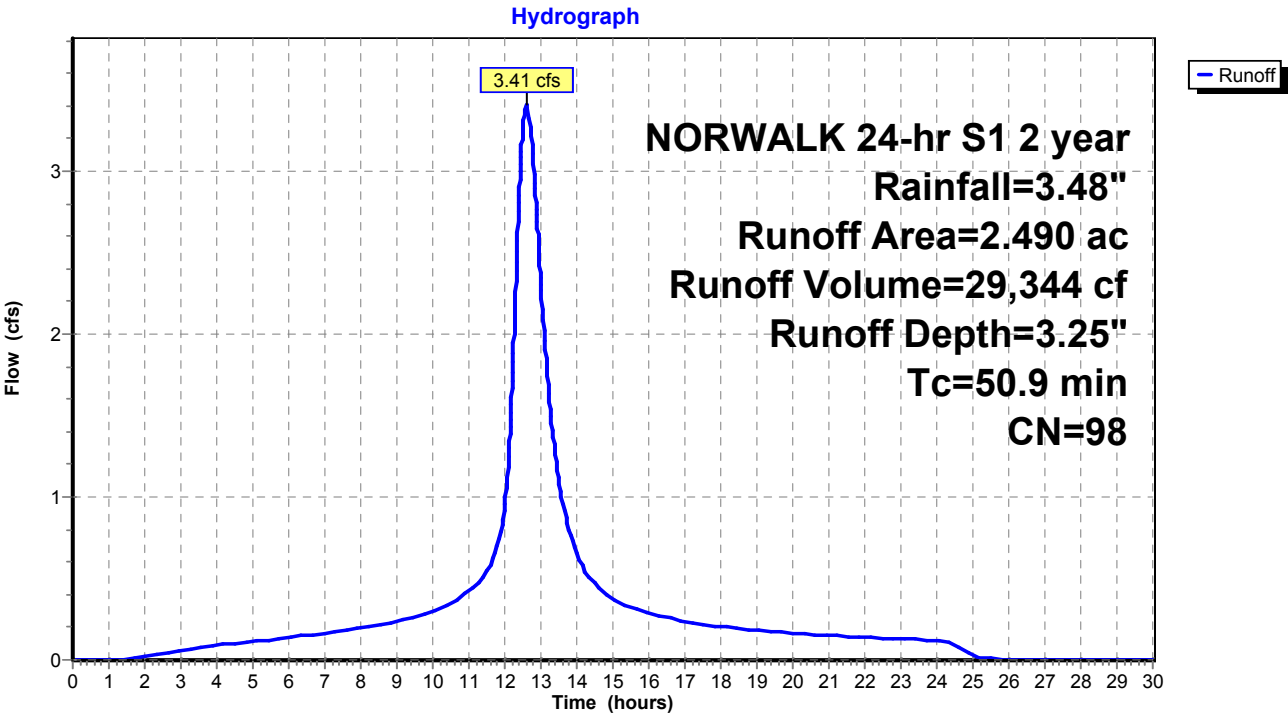
Runoff = 3.41 cfs @ 12.61 hrs, Volume= 29,344 cf, Depth= 3.25"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 9S: Area 9

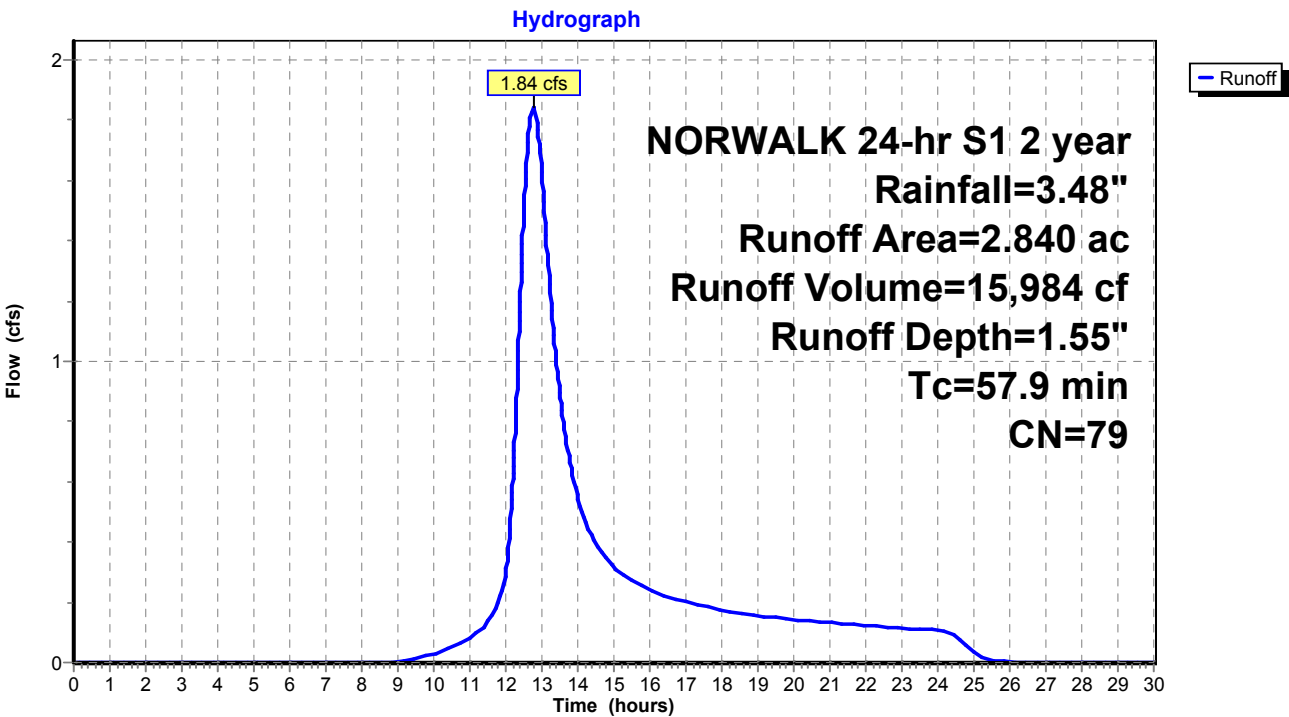
Runoff = 1.84 cfs @ 12.75 hrs, Volume= 15,984 cf, Depth= 1.55"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10AS: Area 10A

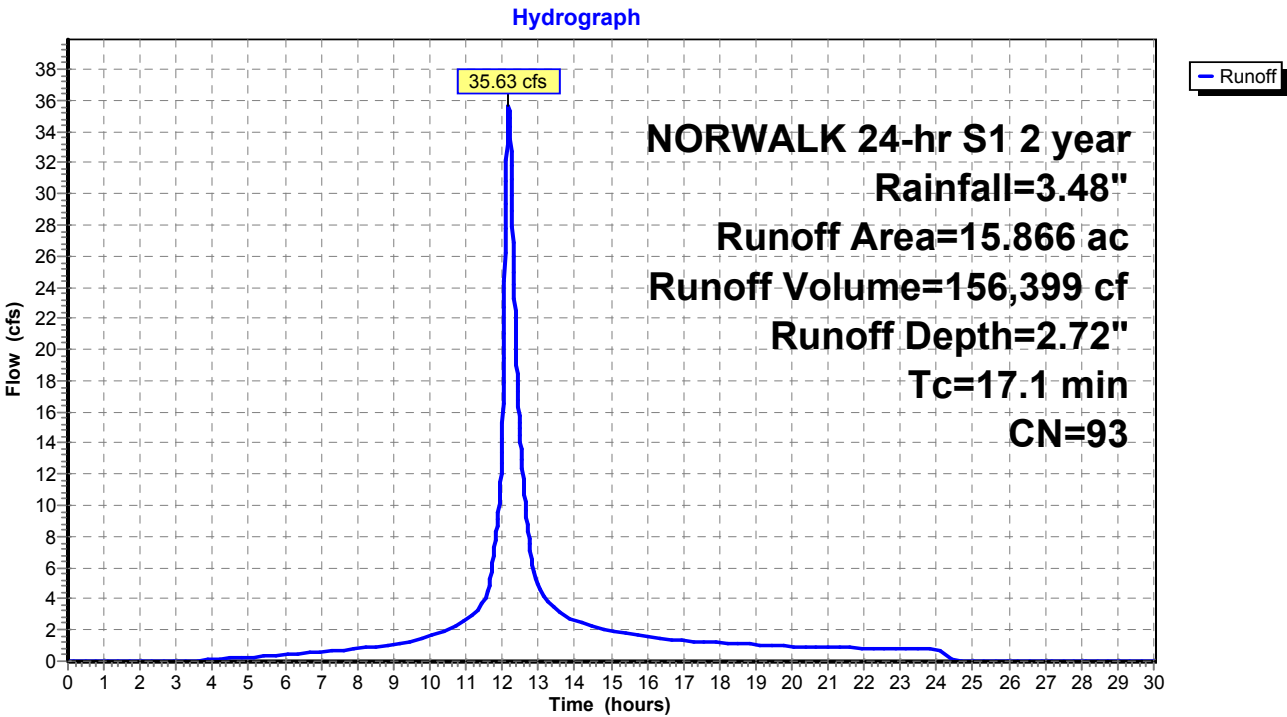
Runoff = 35.63 cfs @ 12.18 hrs, Volume= 156,399 cf, Depth= 2.72"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10BS: Area 10B

Runoff = 14.18 cfs @ 12.03 hrs, Volume= 38,439 cf, Depth= 3.03"
Routed to Pond 2P : RR Culvert 1

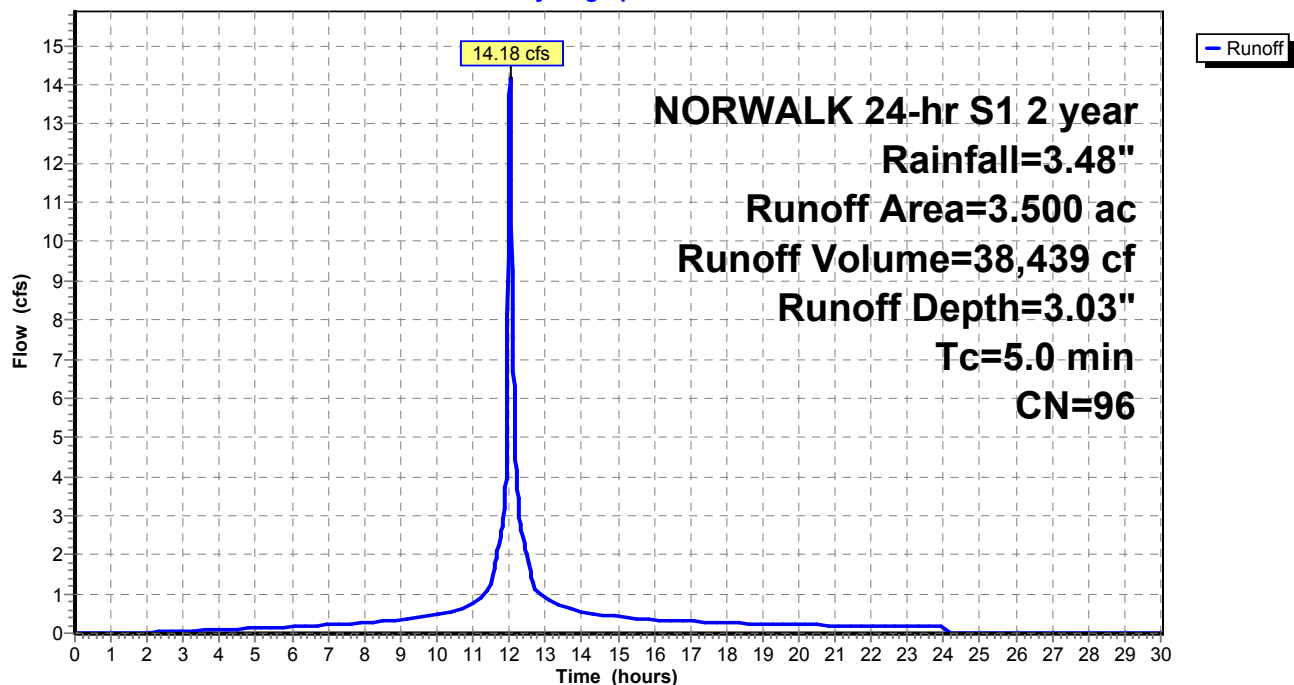
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B

Hydrograph



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10CS: Area 10C

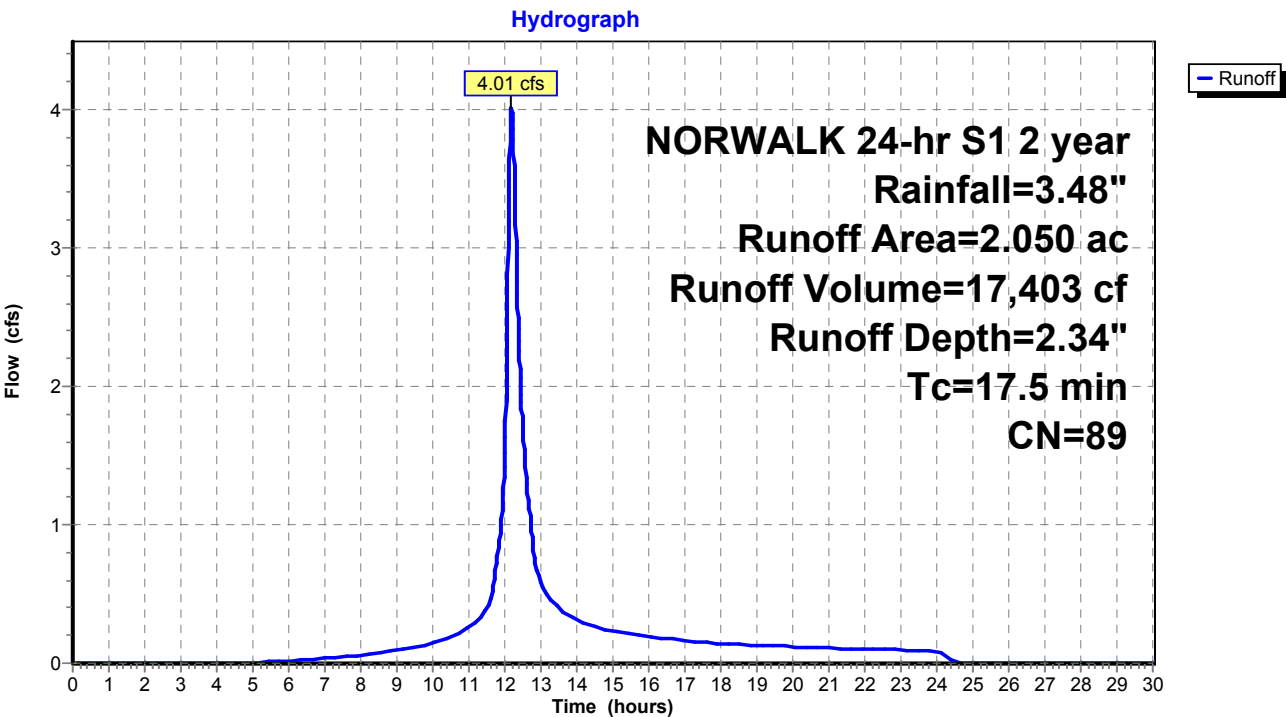
Runoff = 4.01 cfs @ 12.19 hrs, Volume= 17,403 cf, Depth= 2.34"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10DS: Area 10D

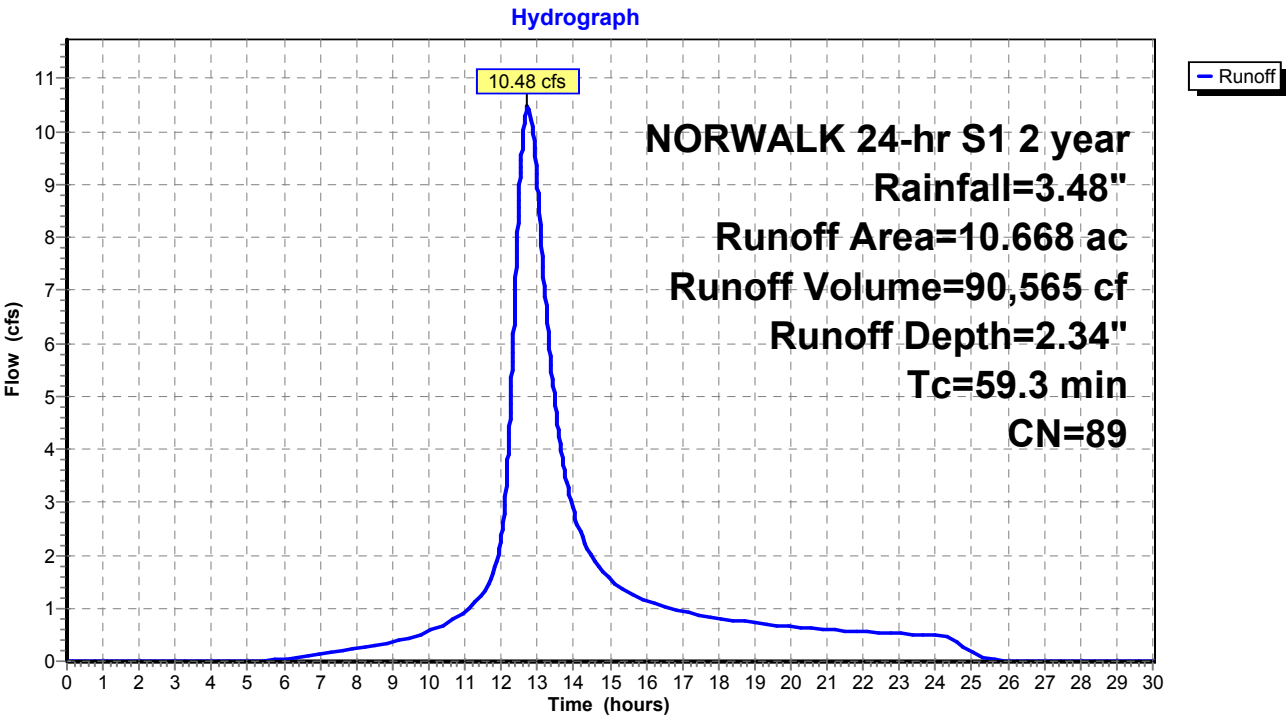
Runoff = 10.48 cfs @ 12.72 hrs, Volume= 90,565 cf, Depth= 2.34"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10ES: Area 10E

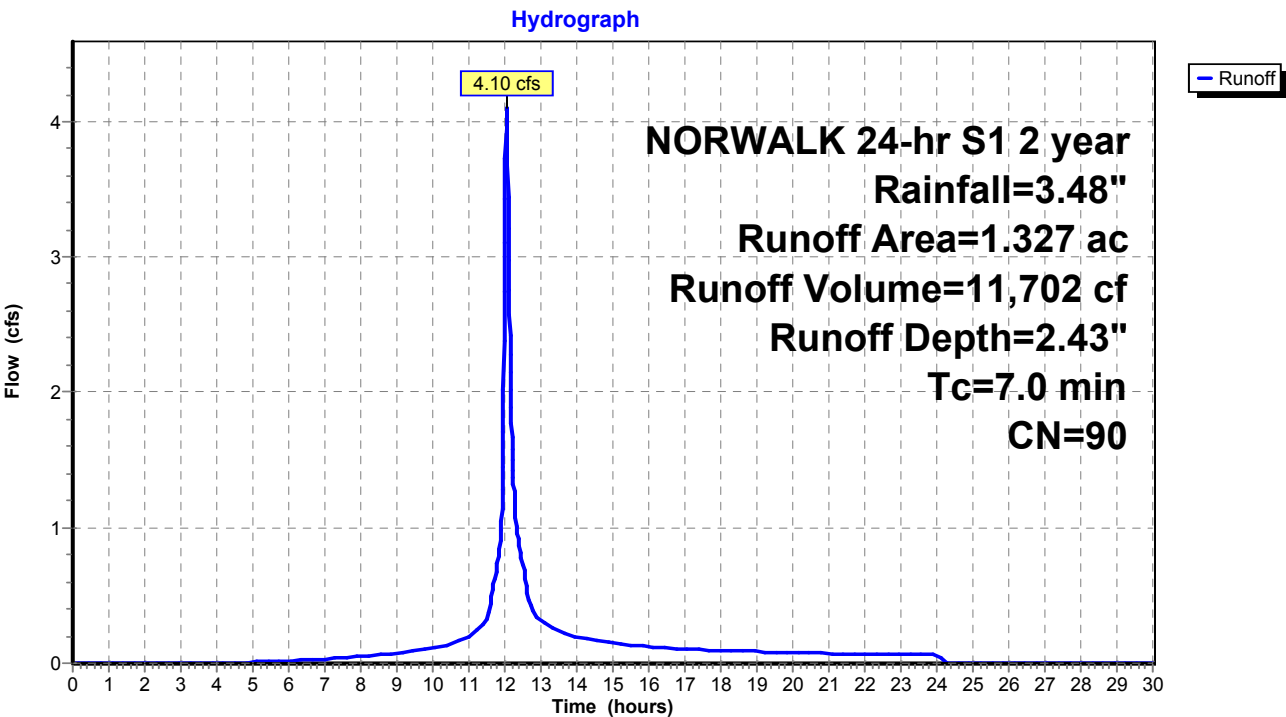
Runoff = 4.10 cfs @ 12.05 hrs, Volume= 11,702 cf, Depth= 2.43"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.798	98	Paved parking, HSG C
0.529	79	50-75% Grass cover, Fair, HSG C
1.327	90	Weighted Average
0.529		39.86% Pervious Area
0.798		60.14% Impervious Area

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

Subcatchment 10ES: Area 10E



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10FS: Area 10F

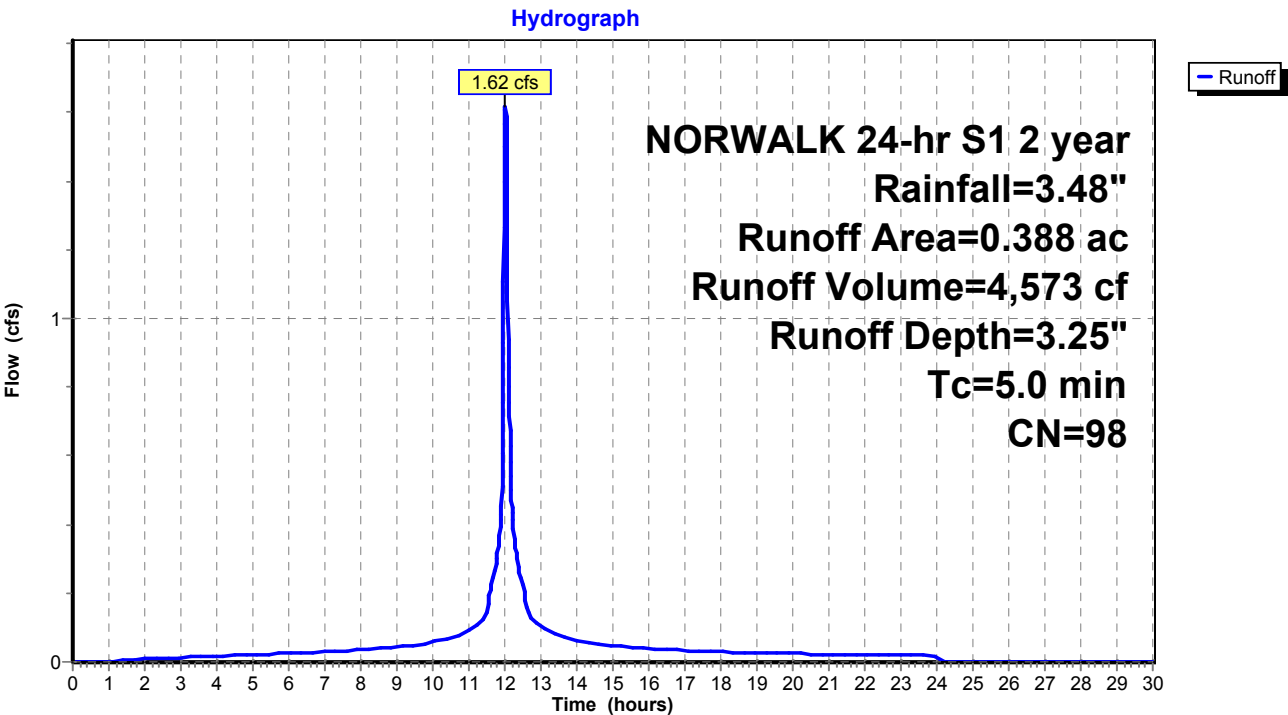
Runoff = 1.62 cfs @ 12.03 hrs, Volume= 4,573 cf, Depth= 3.25"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 11S: Area 11

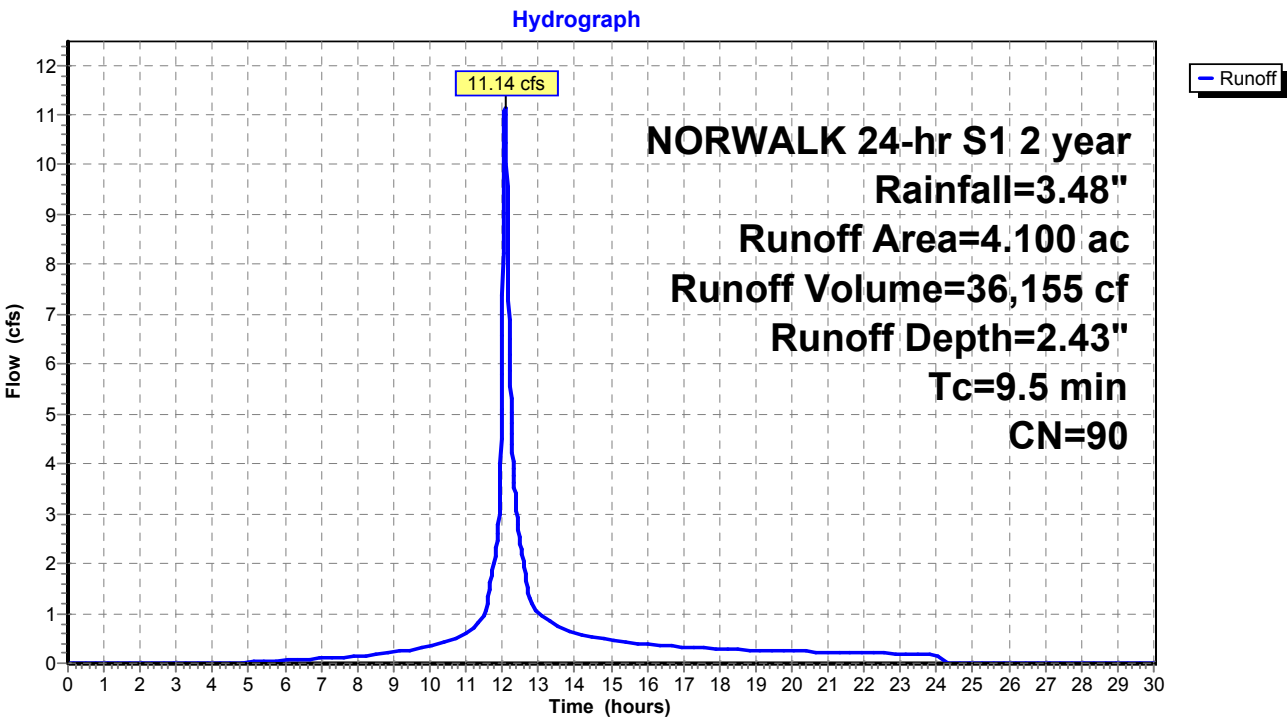
Runoff = 11.14 cfs @ 12.08 hrs, Volume= 36,155 cf, Depth= 2.43"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 12S: Area 12

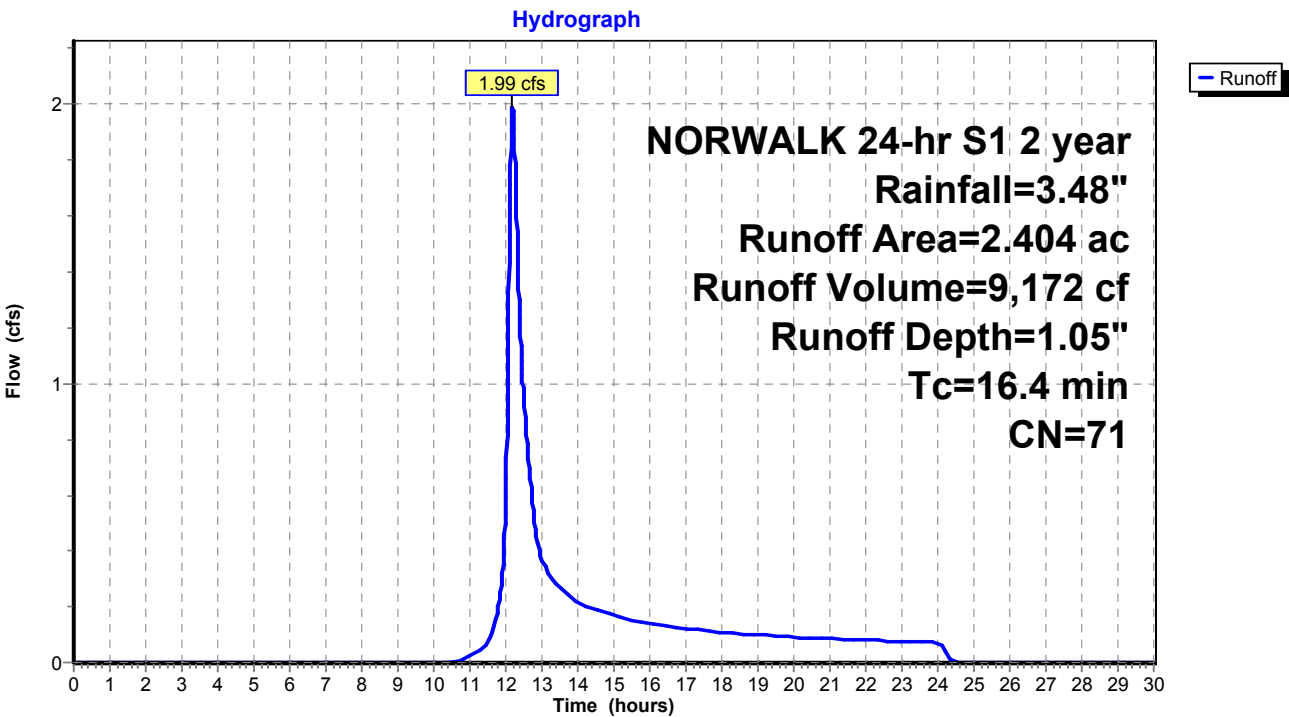
Runoff = 1.99 cfs @ 12.19 hrs, Volume= 9,172 cf, Depth= 1.05"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 13S: Area 13

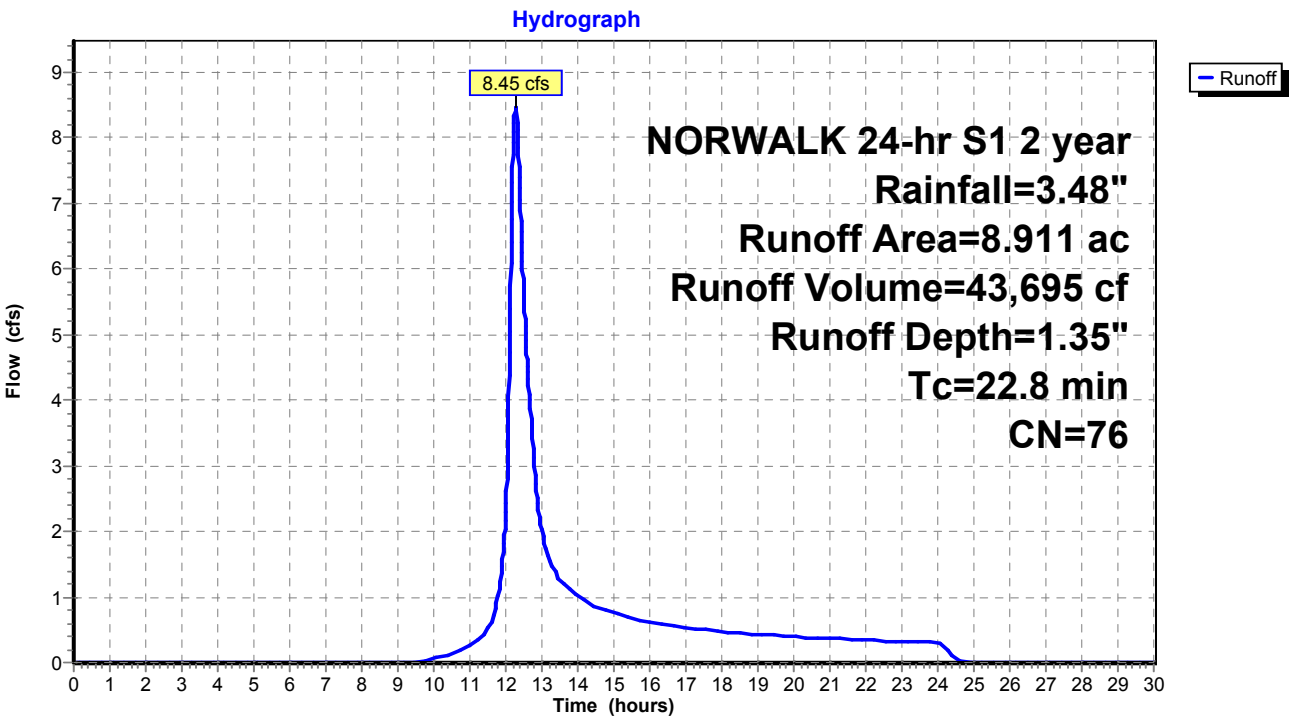
Runoff = 8.45 cfs @ 12.28 hrs, Volume= 43,695 cf, Depth= 1.35"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 14S: Area 14

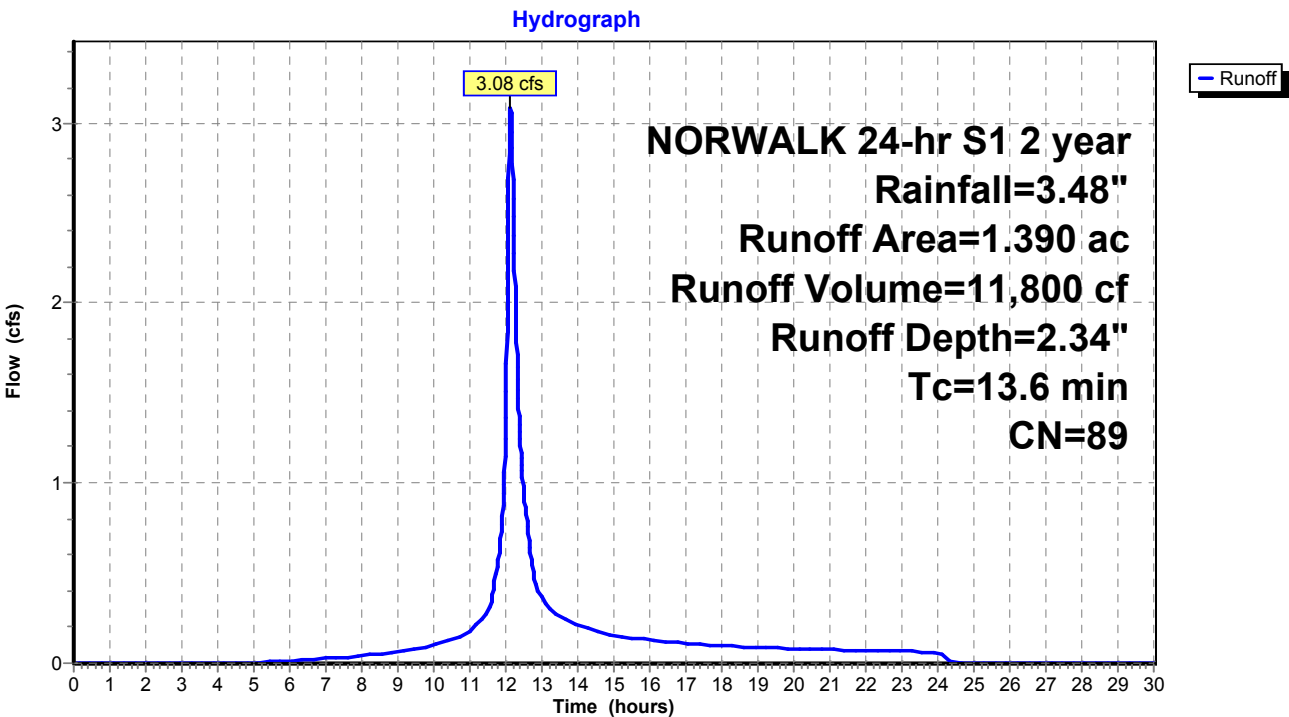
Runoff = 3.08 cfs @ 12.13 hrs, Volume= 11,800 cf, Depth= 2.34"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 15S: Area 15

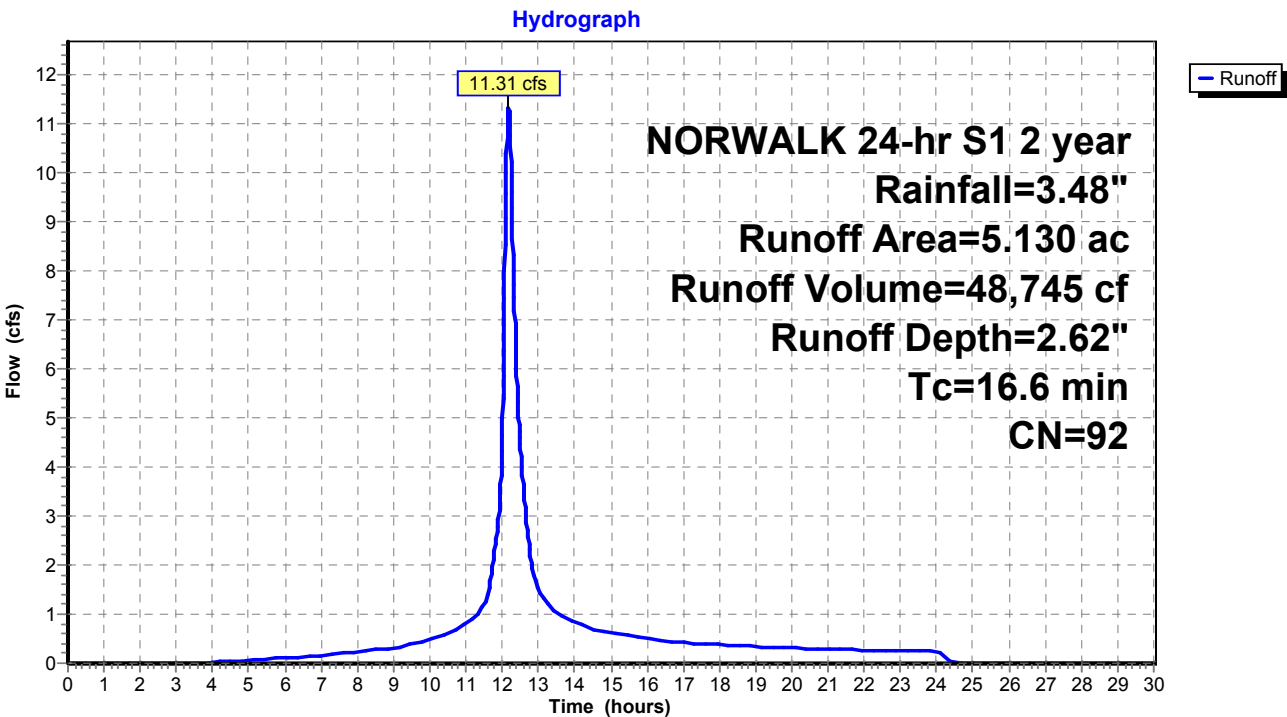
Runoff = 11.31 cfs @ 12.17 hrs, Volume= 48,745 cf, Depth= 2.62"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 16S: Area 16A

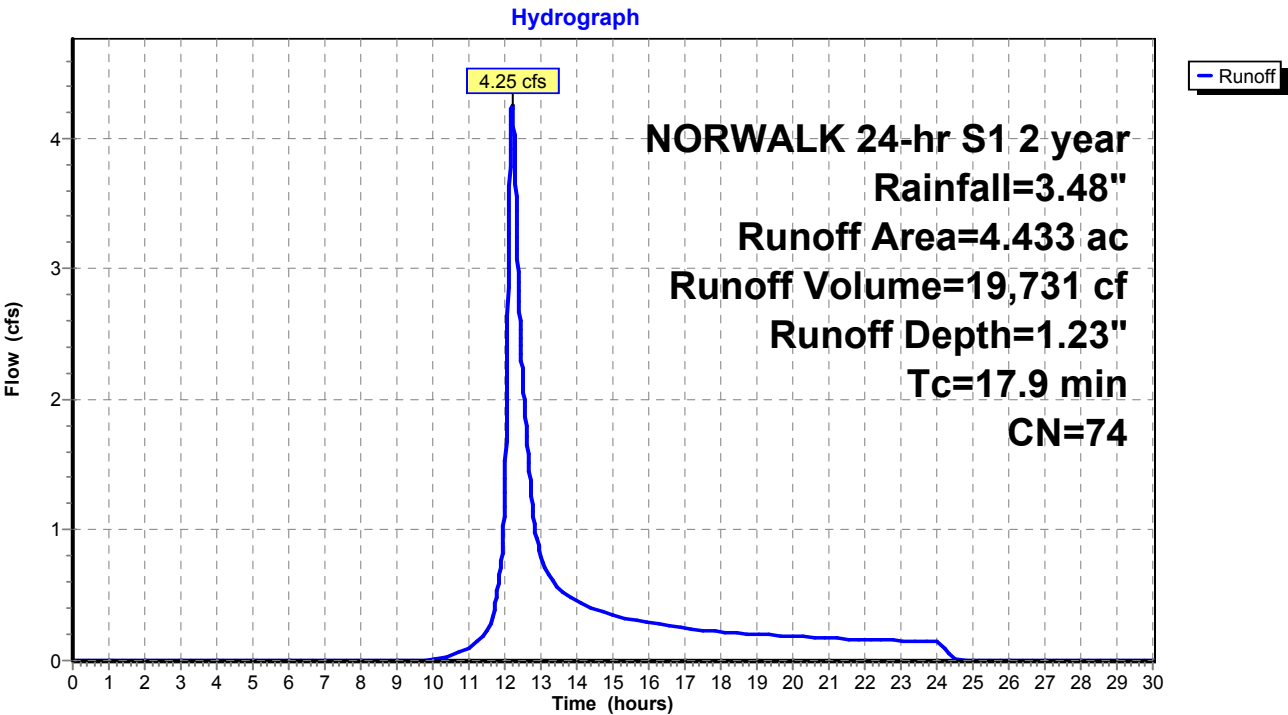
Runoff = 4.25 cfs @ 12.21 hrs, Volume= 19,731 cf, Depth= 1.23"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 17S: Area 17

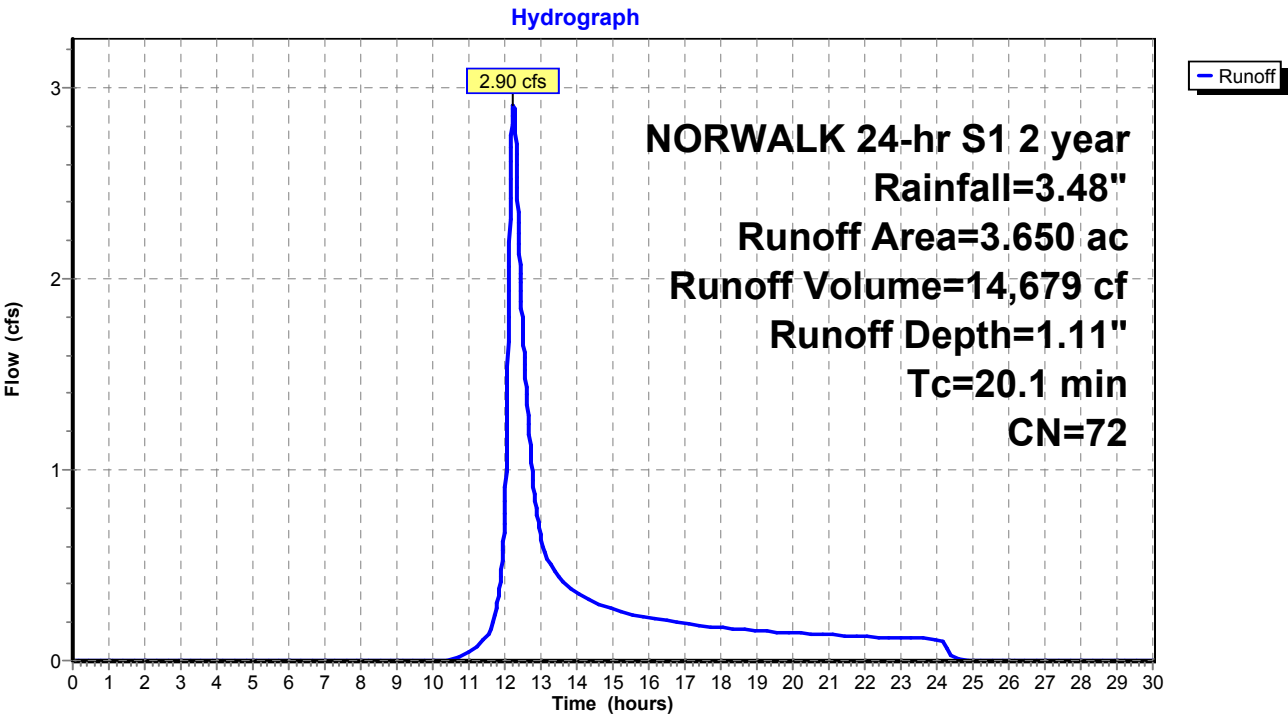
Runoff = 2.90 cfs @ 12.24 hrs, Volume= 14,679 cf, Depth= 1.11"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 20S: Area 20

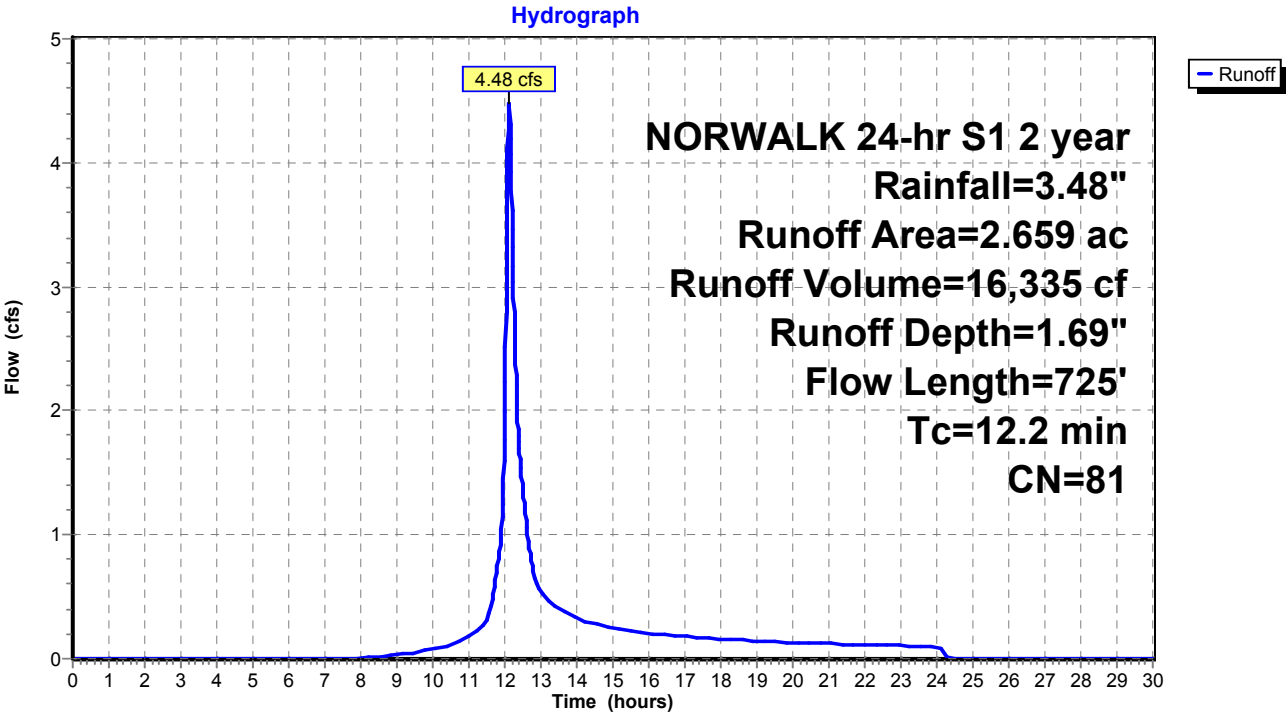
Runoff = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf, Depth= 1.69"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 21S: Area 21

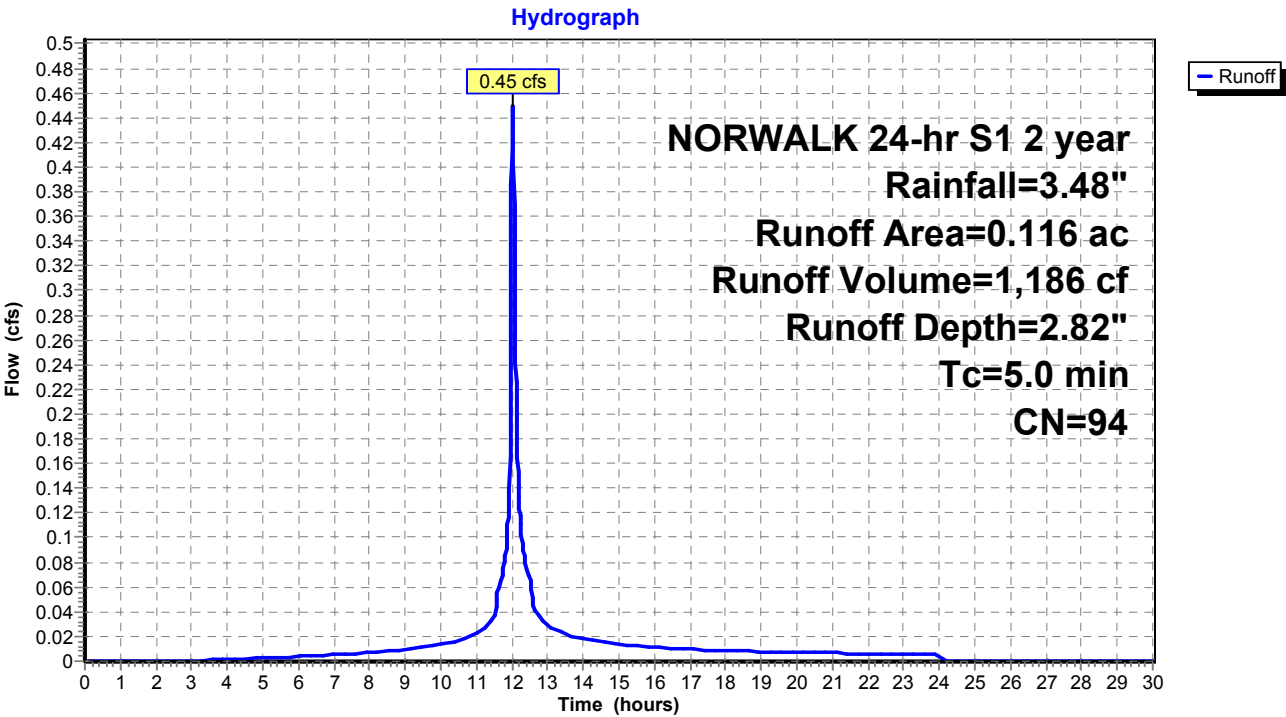
Runoff = 0.45 cfs @ 12.03 hrs, Volume= 1,186 cf, Depth= 2.82"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 22S: Area 22

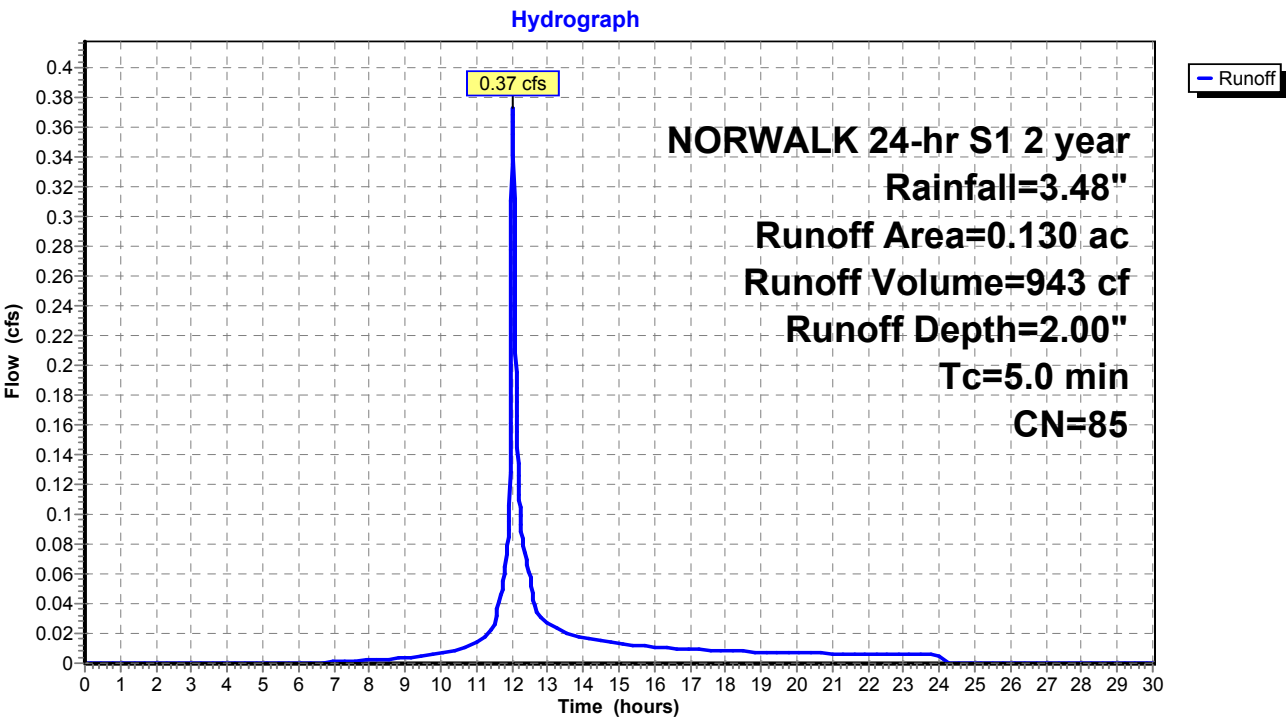
Runoff = 0.37 cfs @ 12.03 hrs, Volume= 943 cf, Depth= 2.00"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 23S: Area 23

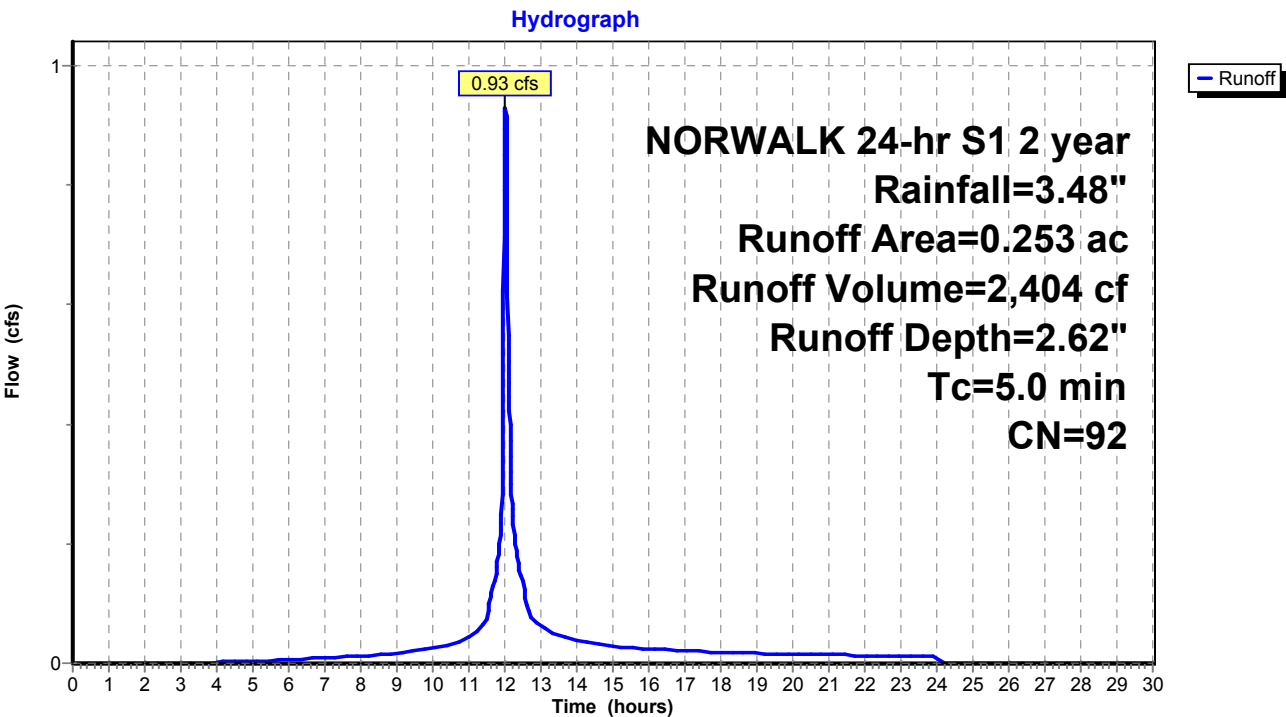
Runoff = 0.93 cfs @ 12.03 hrs, Volume= 2,404 cf, Depth= 2.62"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 24S: Area 24

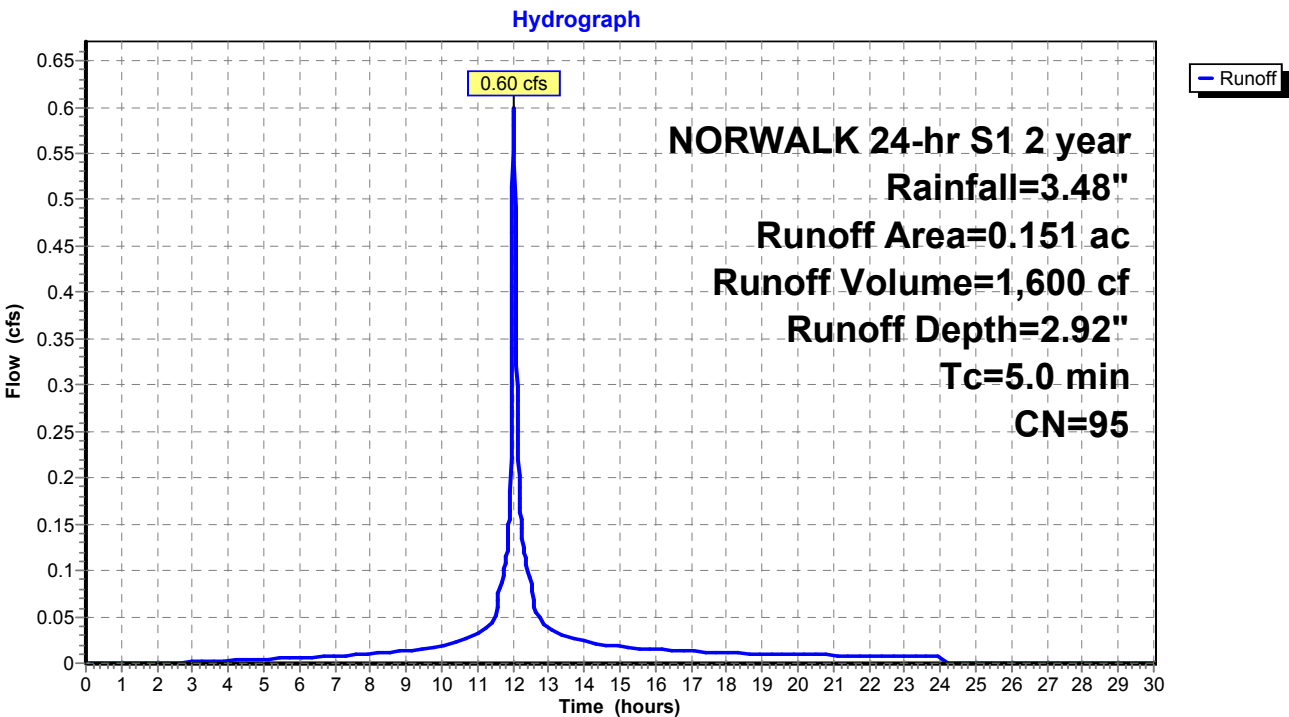
Runoff = 0.60 cfs @ 12.03 hrs, Volume= 1,600 cf, Depth= 2.92"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 25S: Area 25

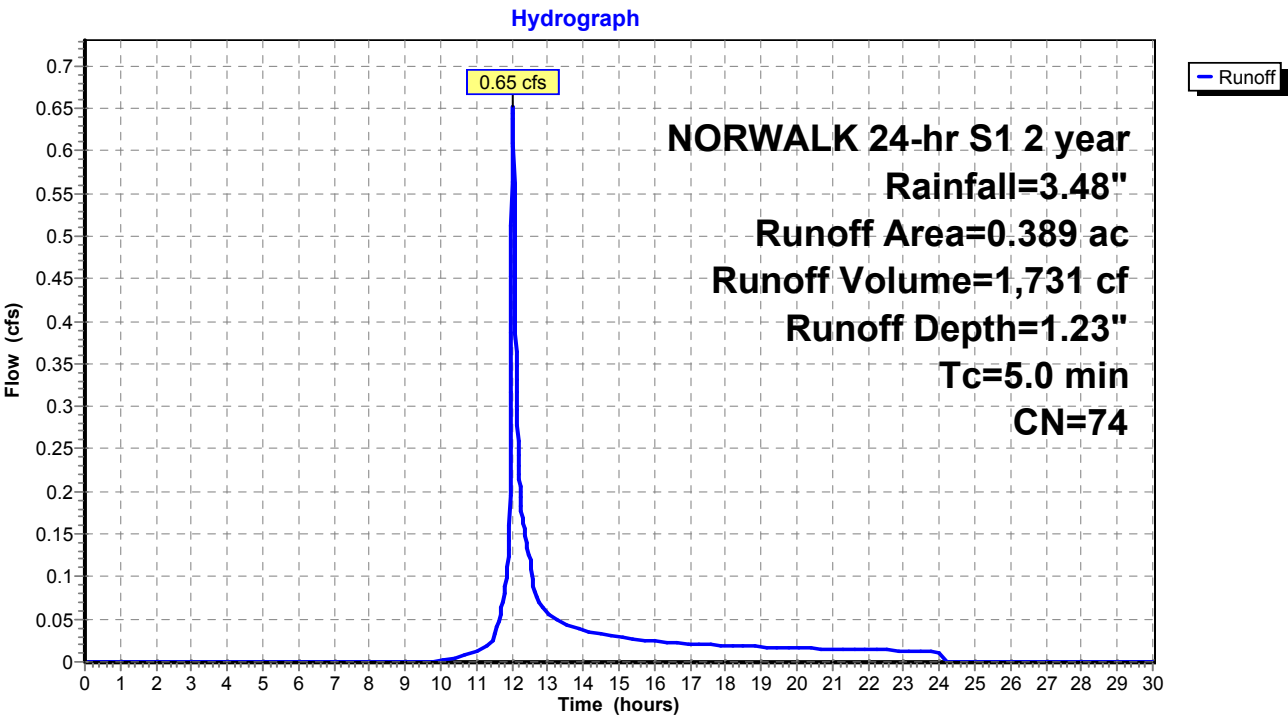
Runoff = 0.65 cfs @ 12.03 hrs, Volume= 1,731 cf, Depth= 1.23"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 26S: Area 26

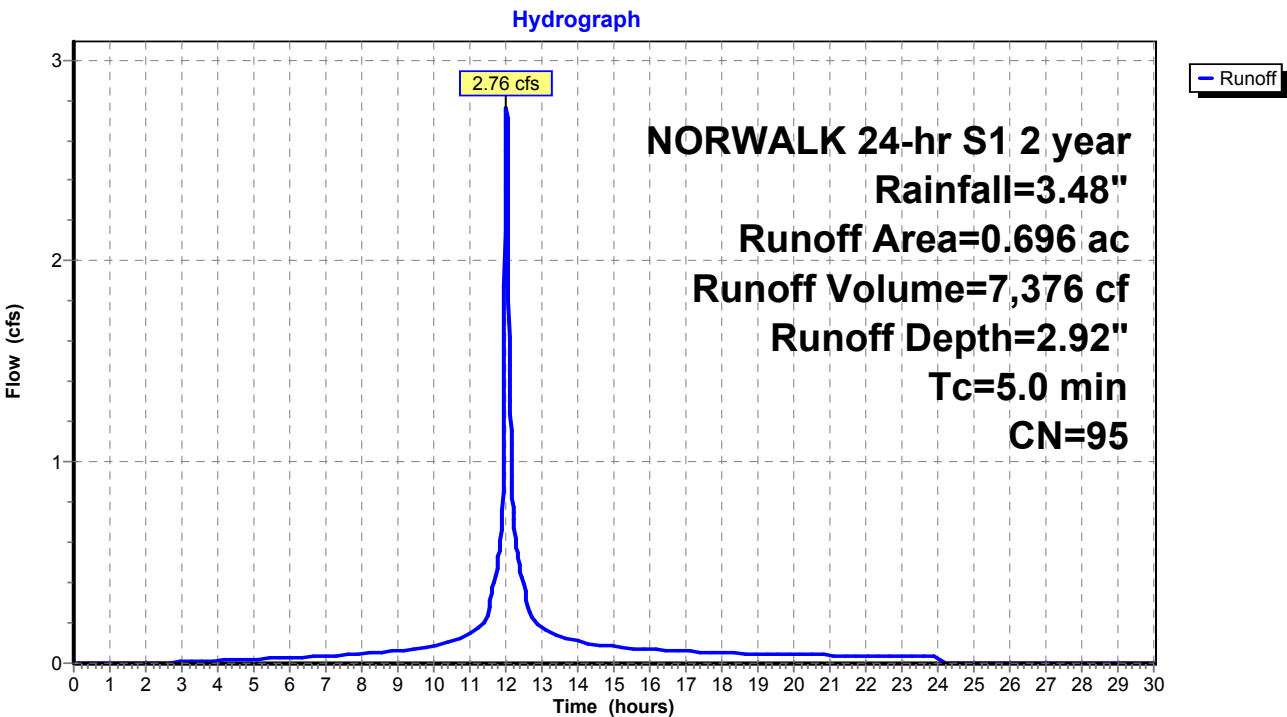
Runoff = 2.76 cfs @ 12.03 hrs, Volume= 7,376 cf, Depth= 2.92"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 27S: Area 27

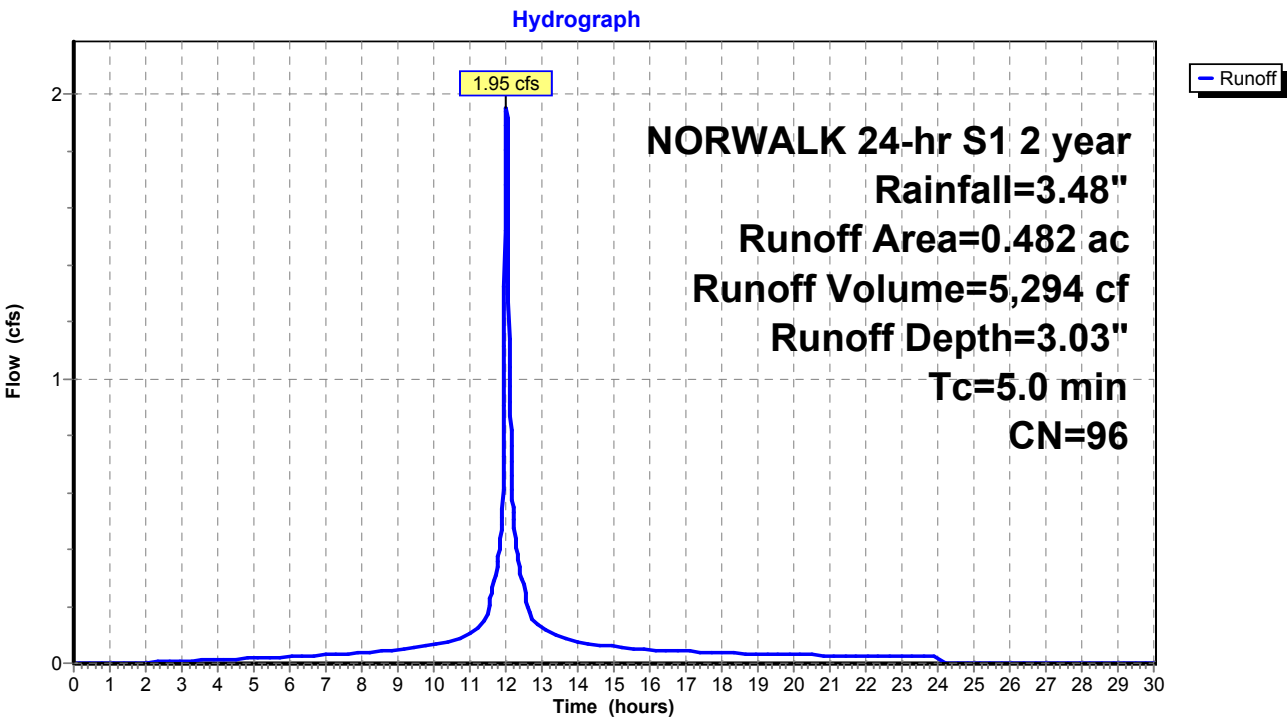
Runoff = 1.95 cfs @ 12.03 hrs, Volume= 5,294 cf, Depth= 3.03"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 28S: Area 28

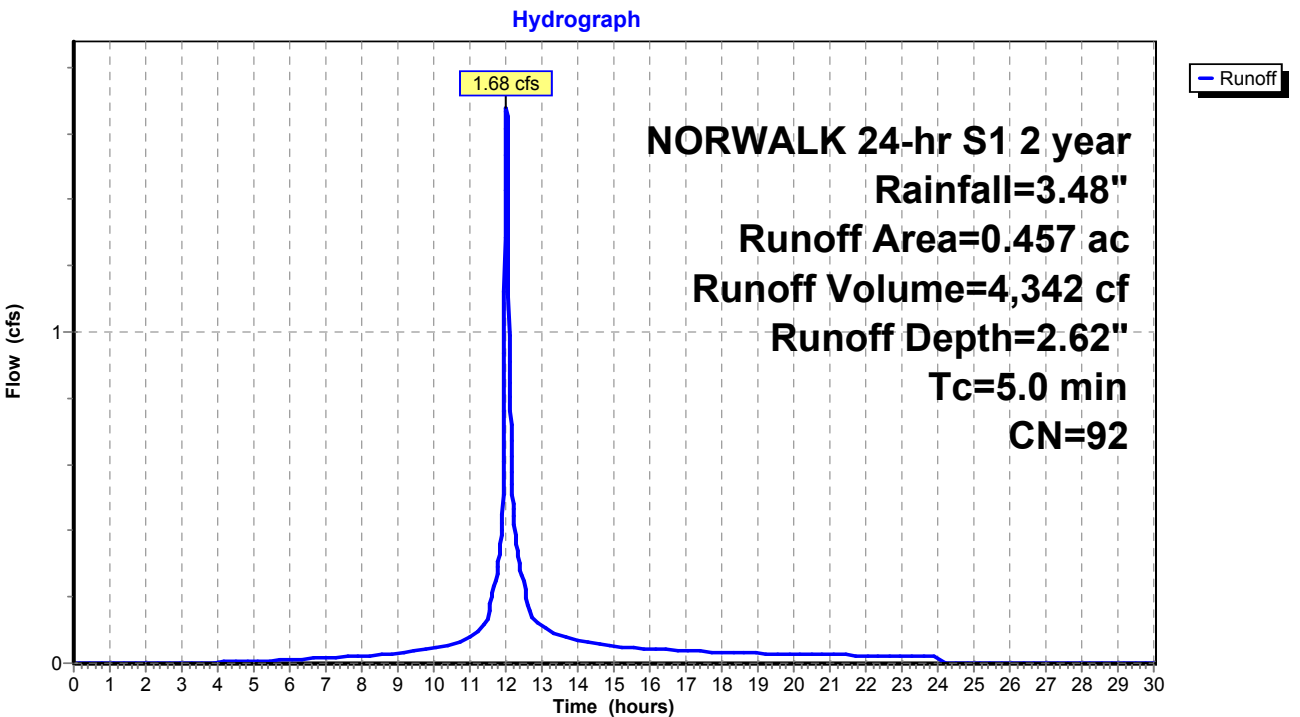
Runoff = 1.68 cfs @ 12.03 hrs, Volume= 4,342 cf, Depth= 2.62"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 29S: Area 29

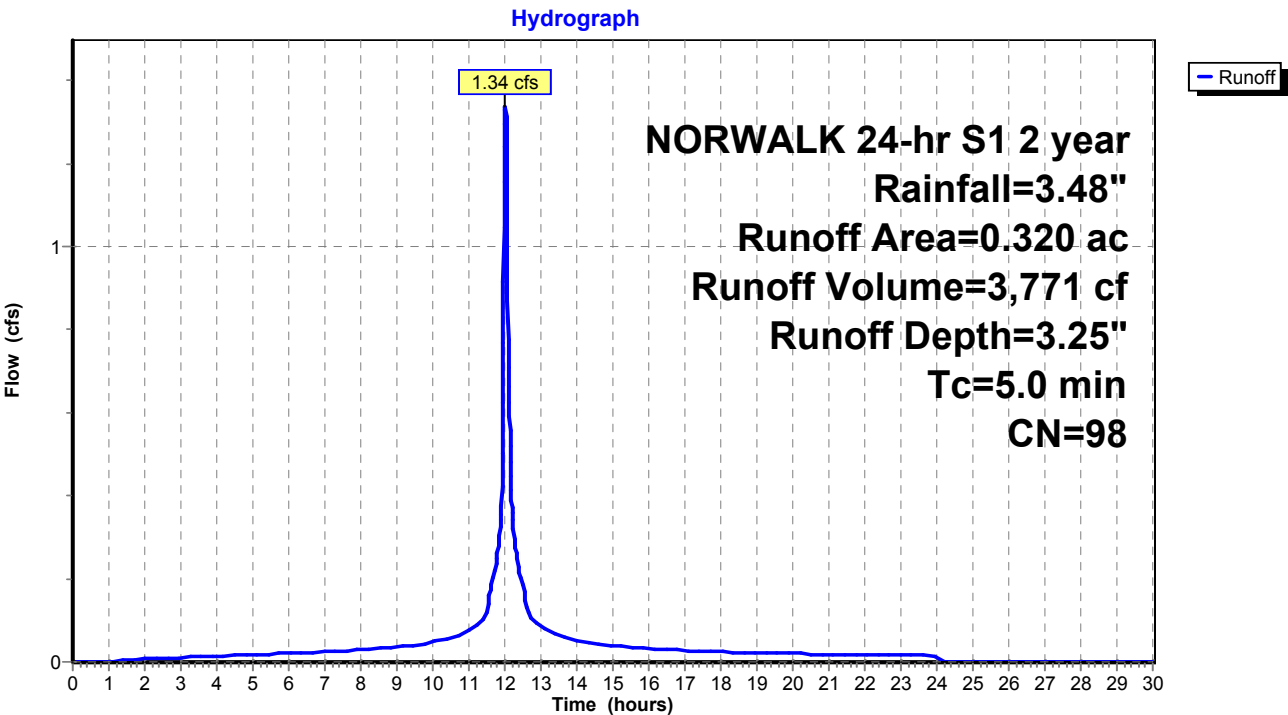
Runoff = 1.34 cfs @ 12.03 hrs, Volume= 3,771 cf, Depth= 3.25"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 30S: Area 30

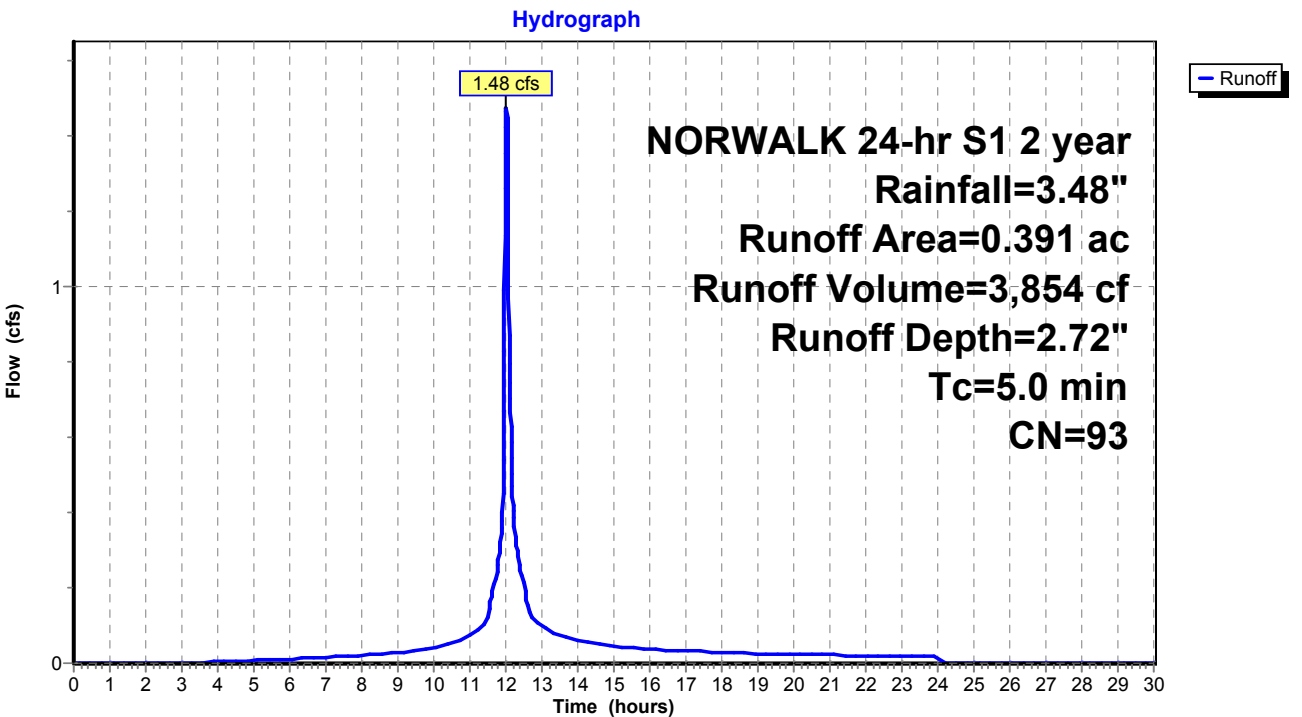
Runoff = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf, Depth= 2.72"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 52S: Area 1

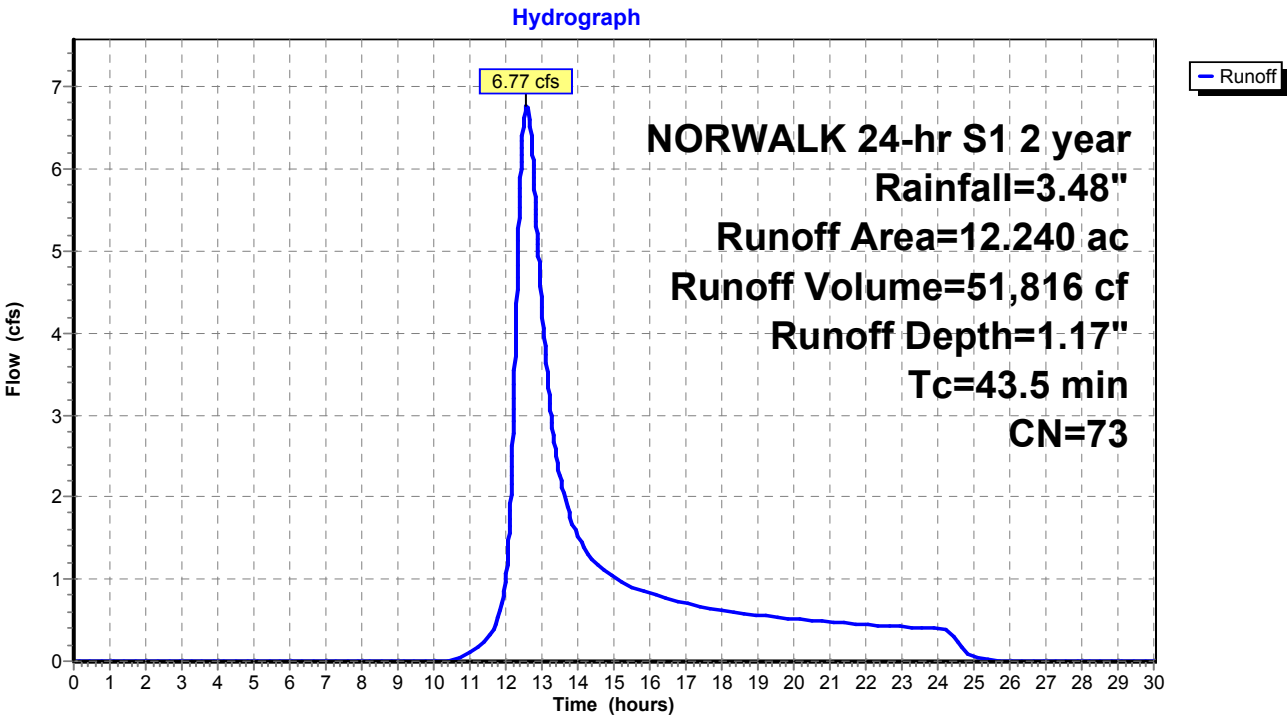
Runoff = 6.77 cfs @ 12.57 hrs, Volume= 51,816 cf, Depth= 1.17"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 53S: Area 2

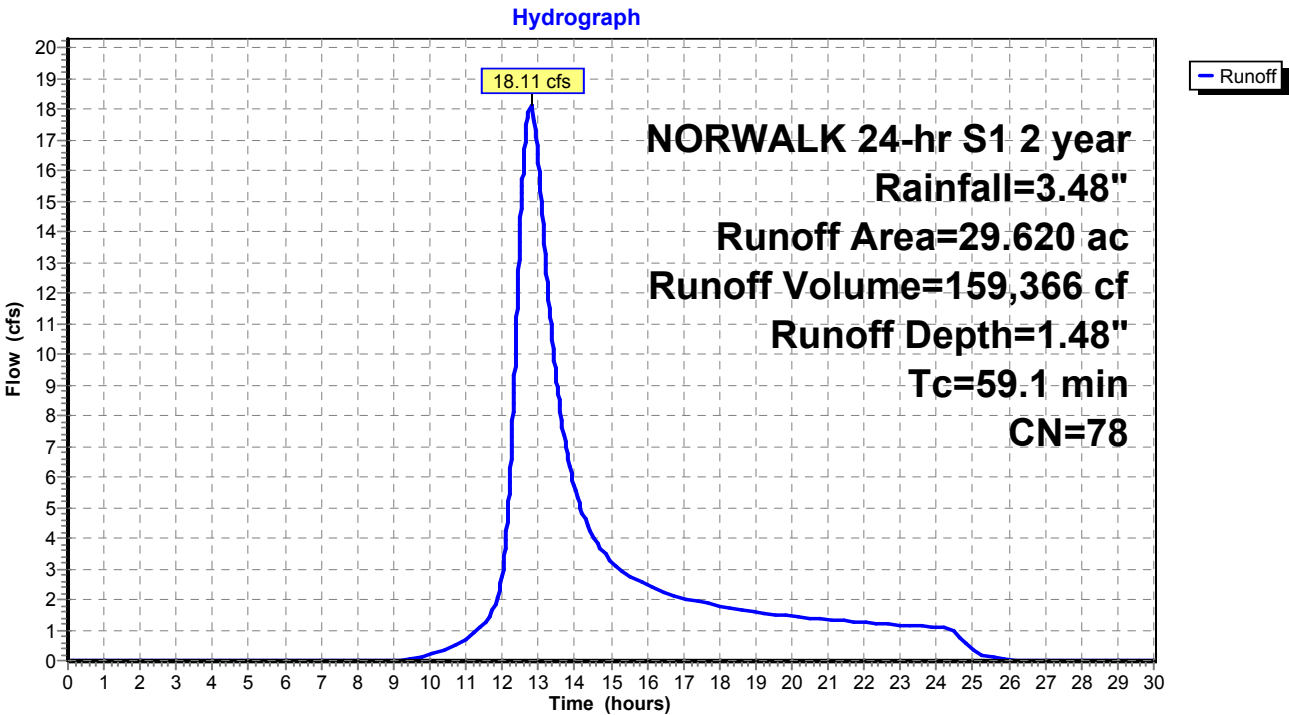
Runoff = 18.11 cfs @ 12.80 hrs, Volume= 159,366 cf, Depth= 1.48"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 54S: Area 3

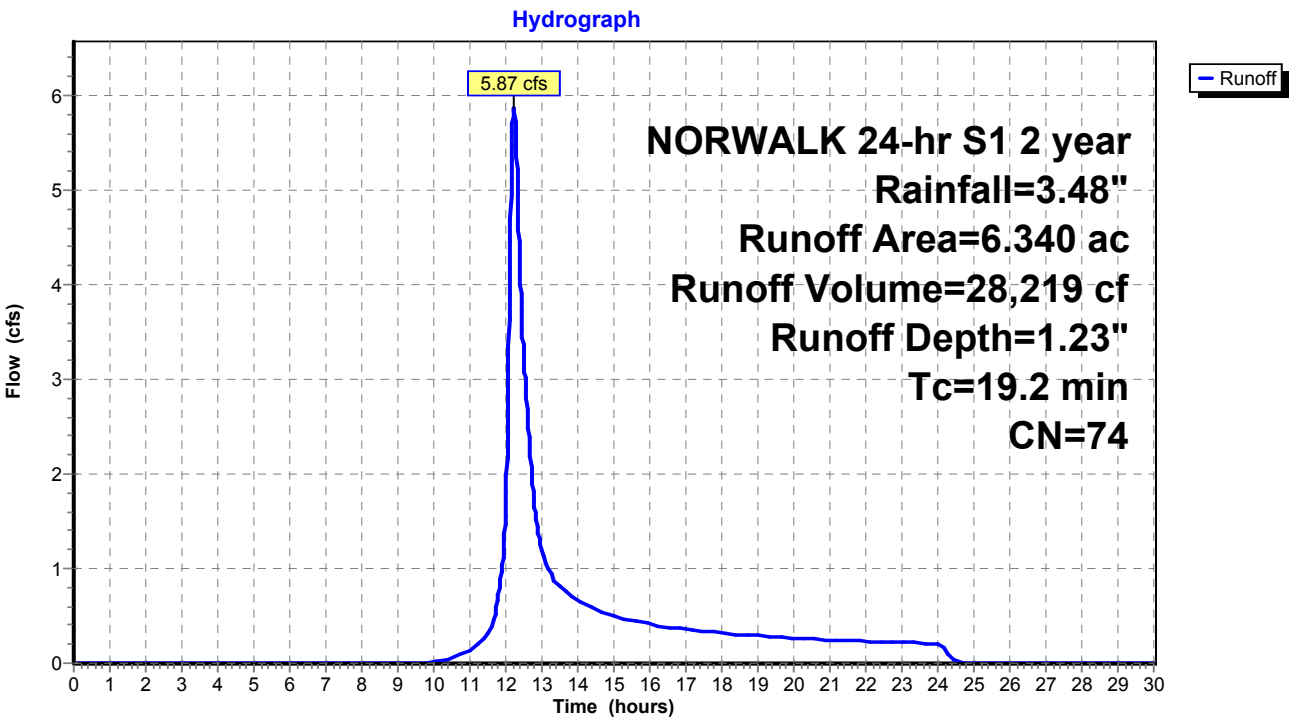
Runoff = 5.87 cfs @ 12.23 hrs, Volume= 28,219 cf, Depth= 1.23"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"
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Summary for Subcatchment 56S: Area 35

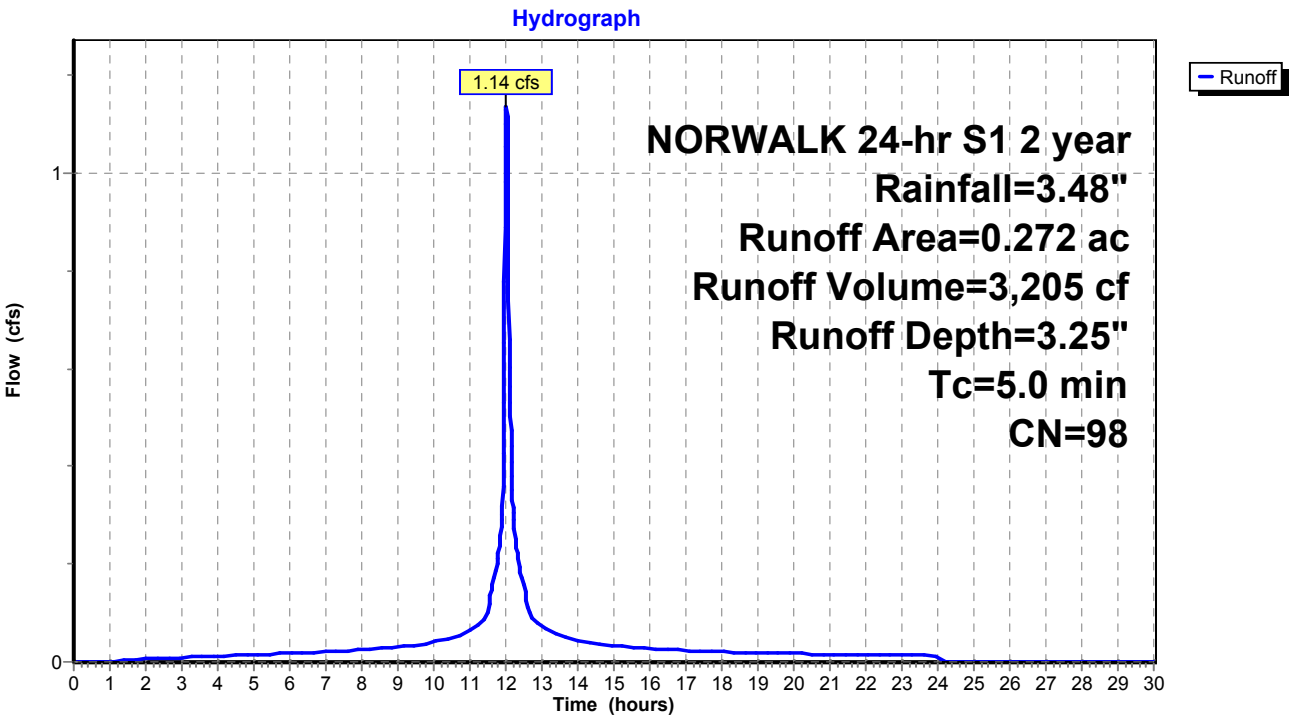
Runoff = 1.14 cfs @ 12.03 hrs, Volume= 3,205 cf, Depth= 3.25"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 60S: Area 37

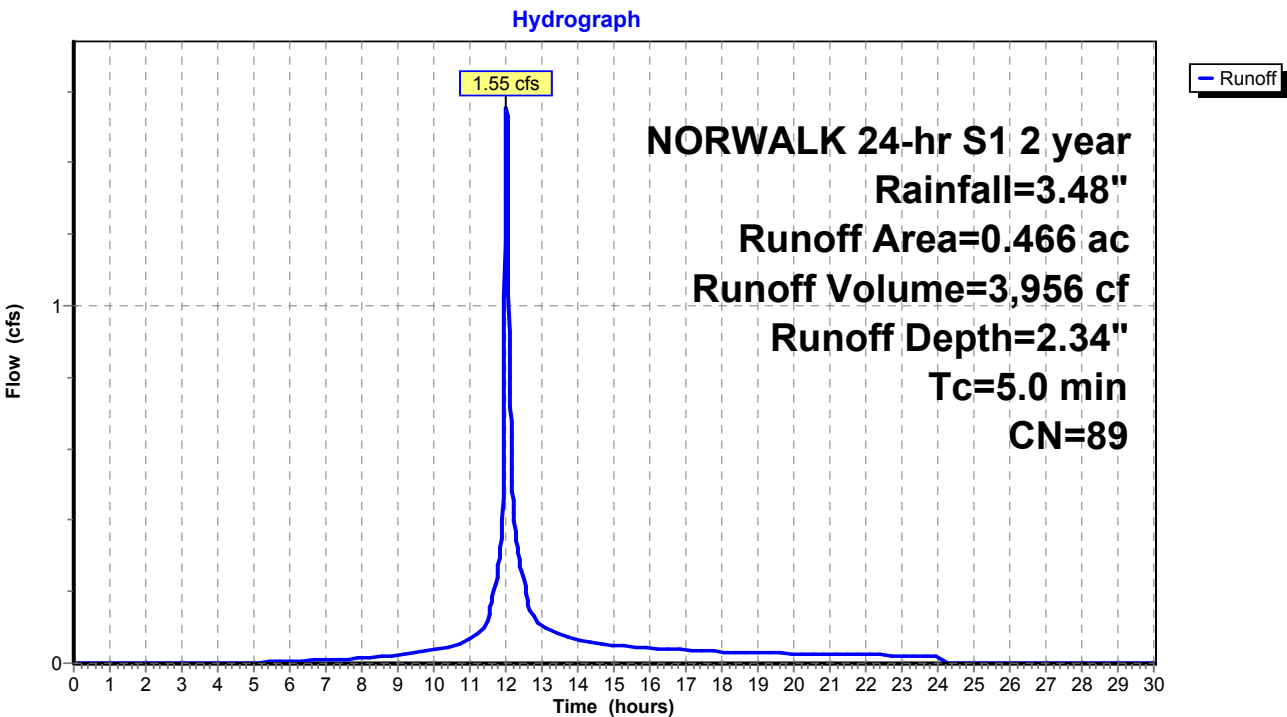
Runoff = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf, Depth= 2.34"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 62S: Area 38

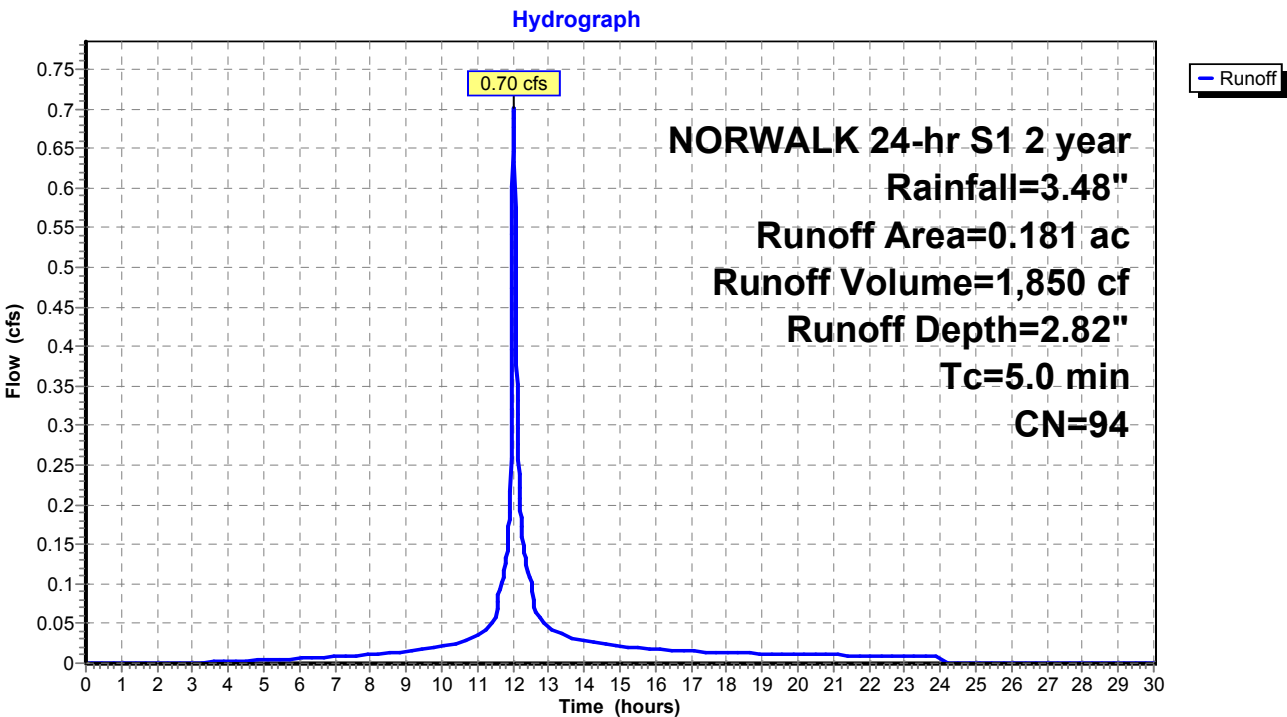
Runoff = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf, Depth= 2.82"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 65S: Area 41

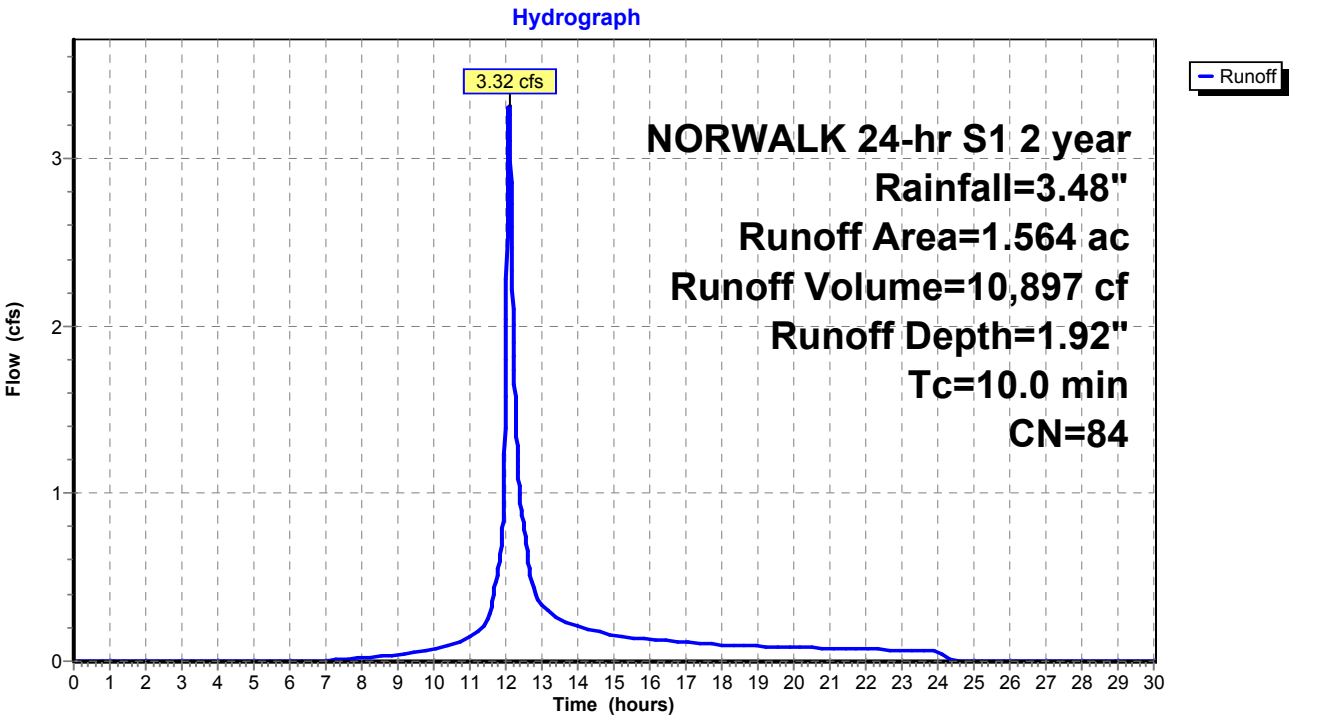
Runoff = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf, Depth= 1.92"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 68S: Area 36

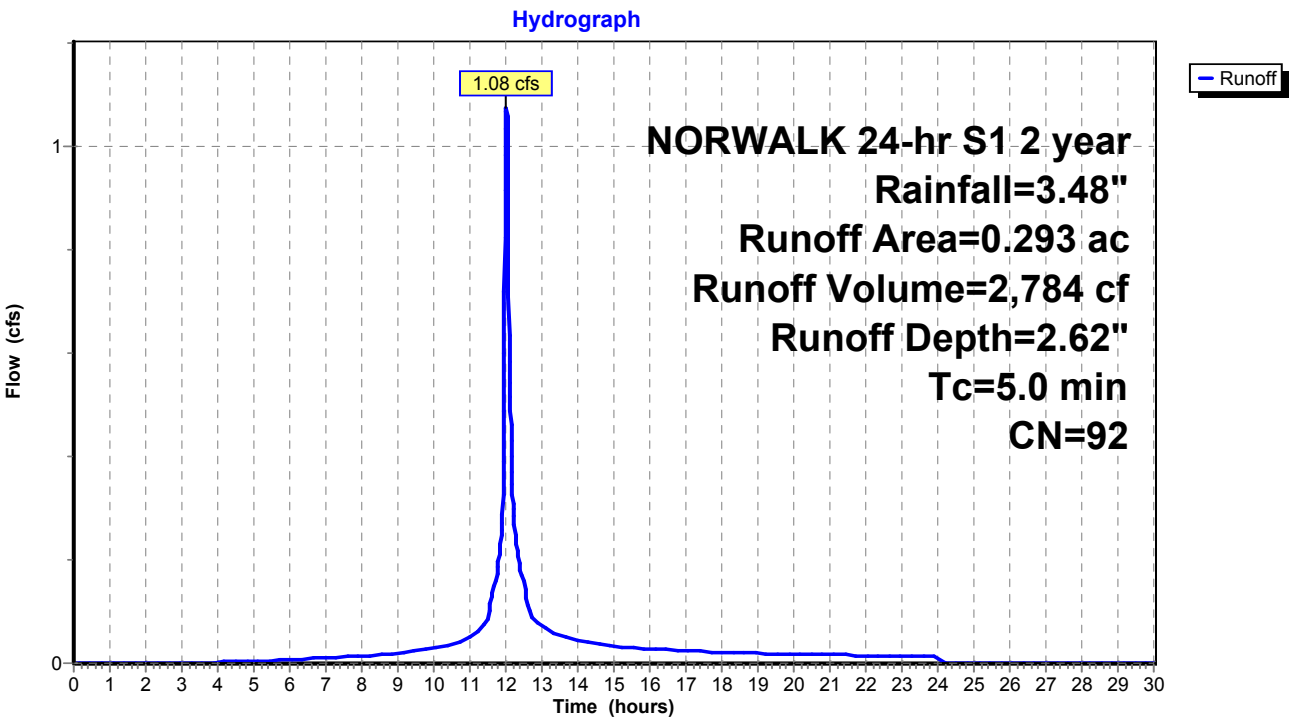
Runoff = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf, Depth= 2.62"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 69S: Area 40

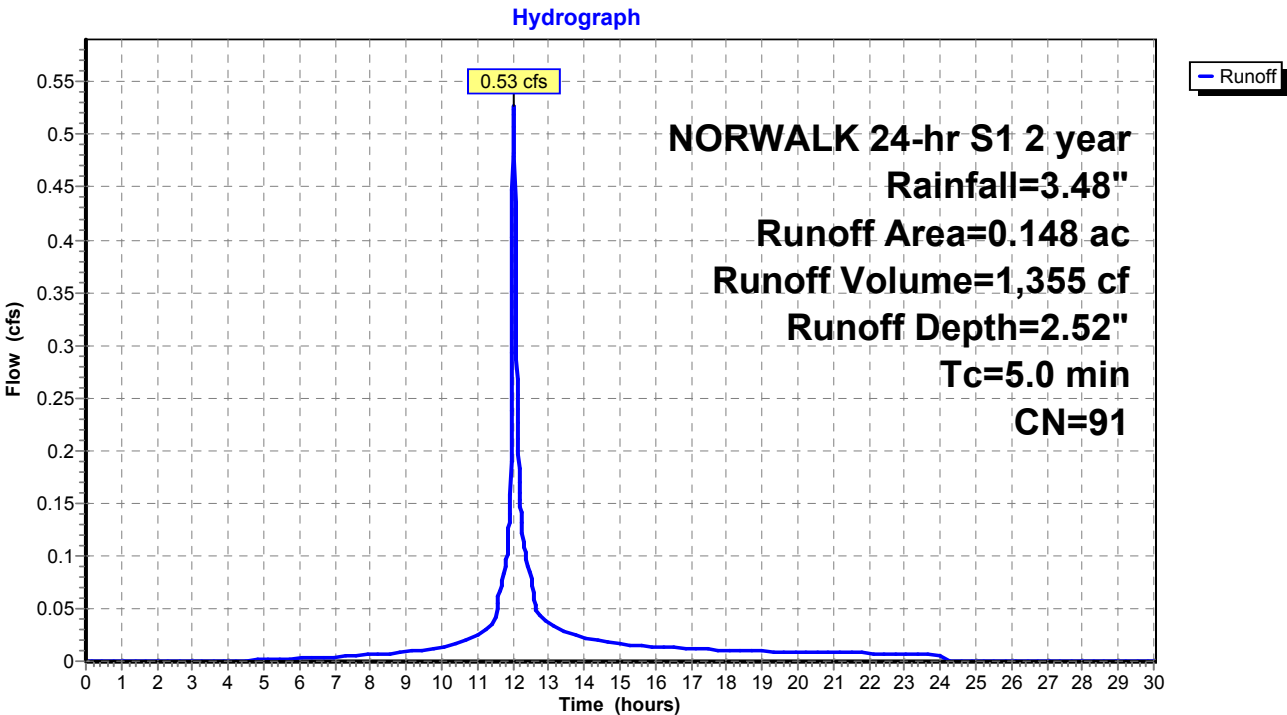
Runoff = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf, Depth= 2.52"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 71S: Area 34

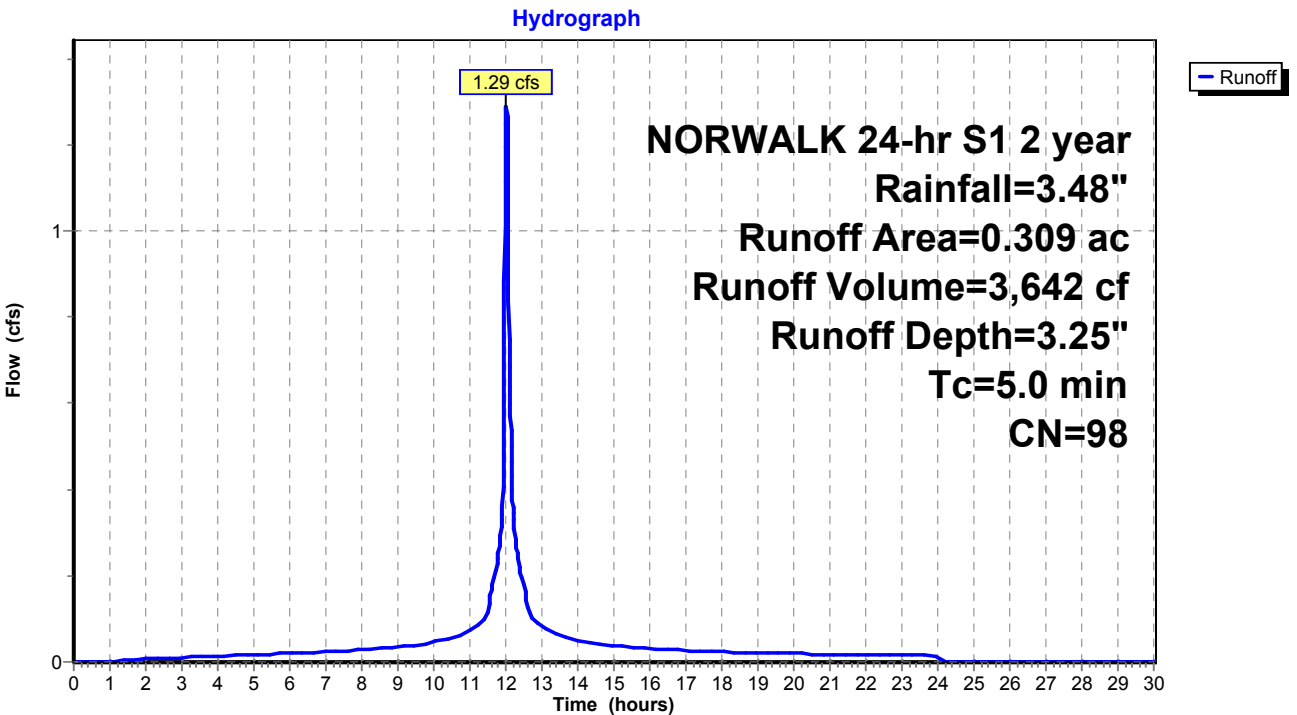
Runoff = 1.29 cfs @ 12.03 hrs, Volume= 3,642 cf, Depth= 3.25"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 75S: Area 32

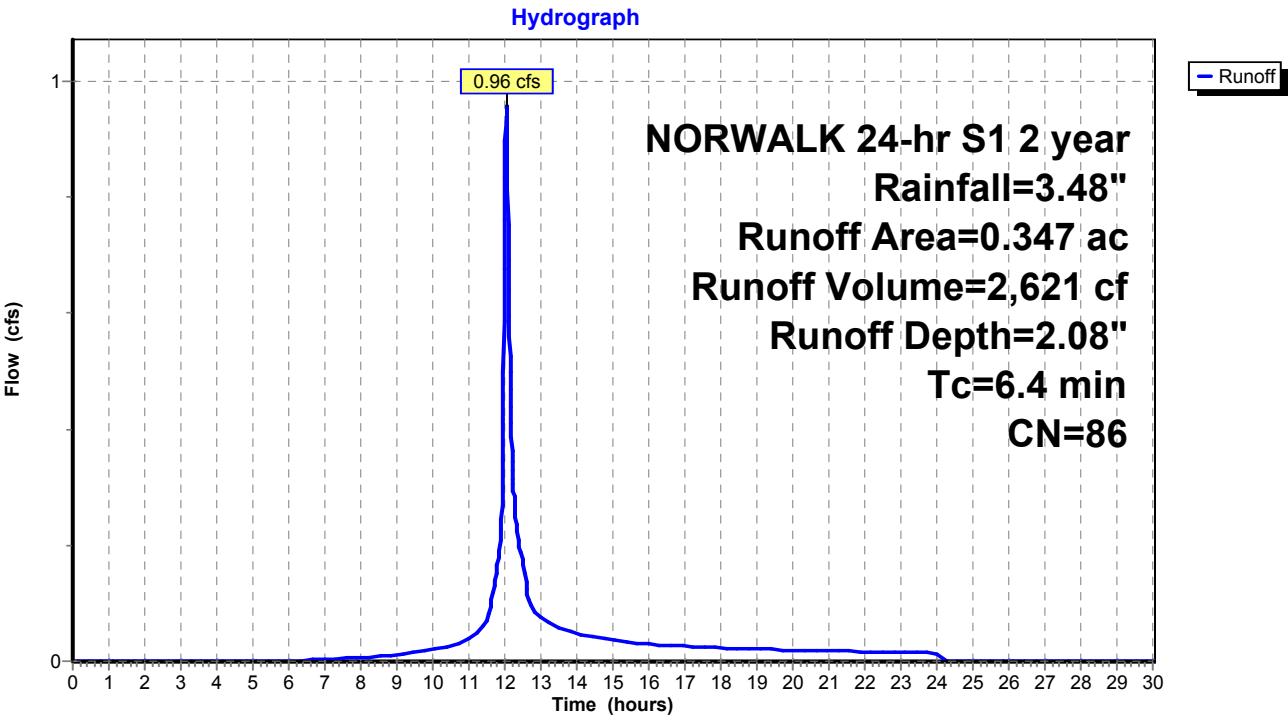
Runoff = 0.96 cfs @ 12.04 hrs, Volume= 2,621 cf, Depth= 2.08"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 76S: Area 33

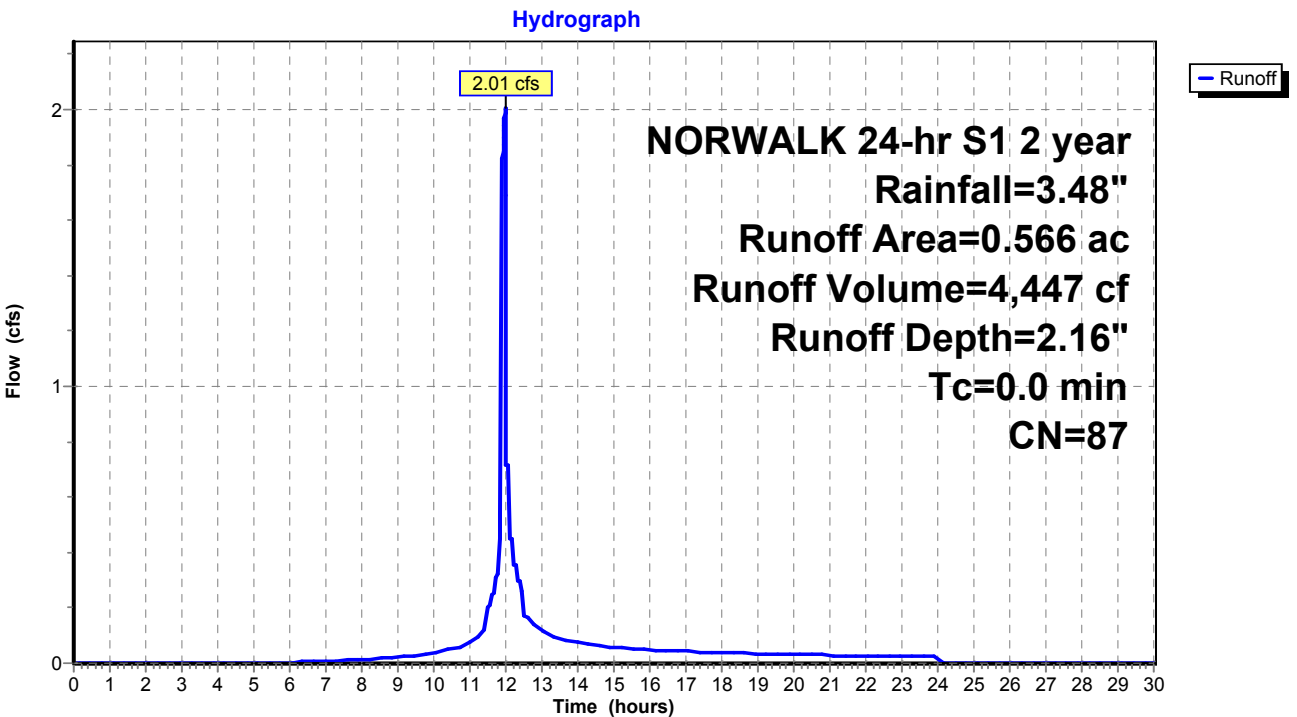
Runoff = 2.01 cfs @ 11.99 hrs, Volume= 4,447 cf, Depth= 2.16"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 78S: Area 39

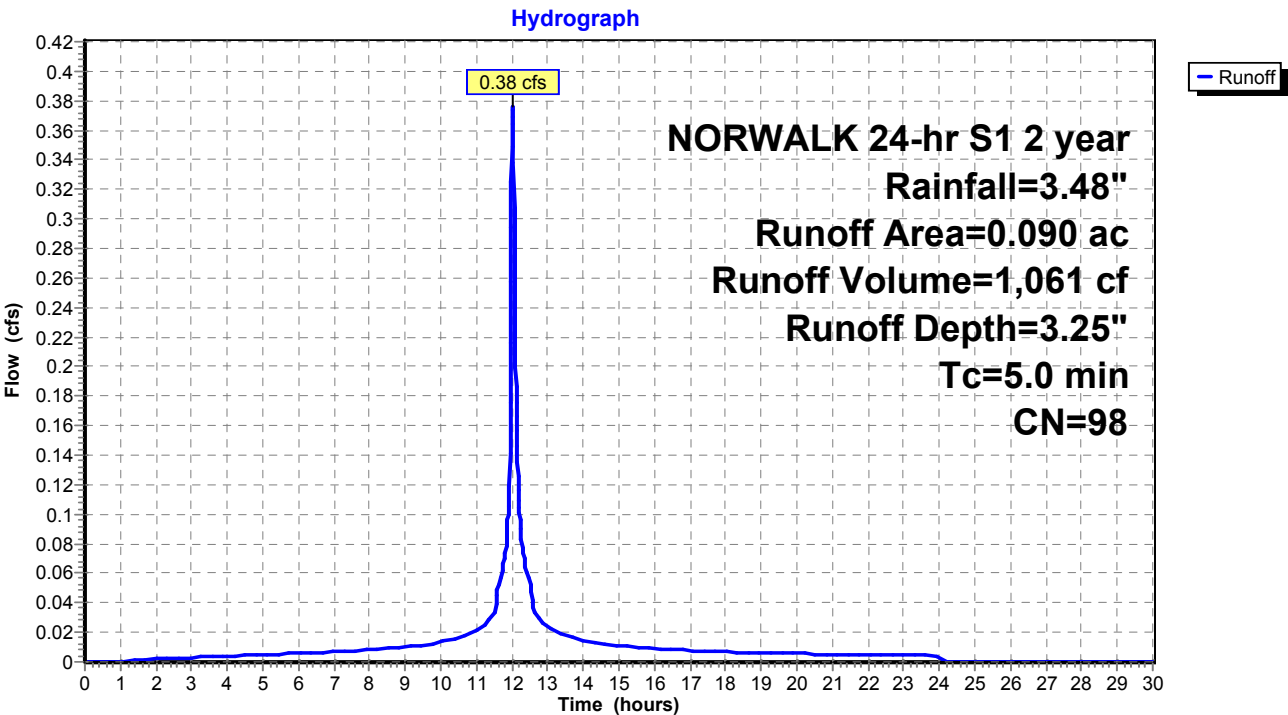
Runoff = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf, Depth= 3.25"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 84S: Area 31

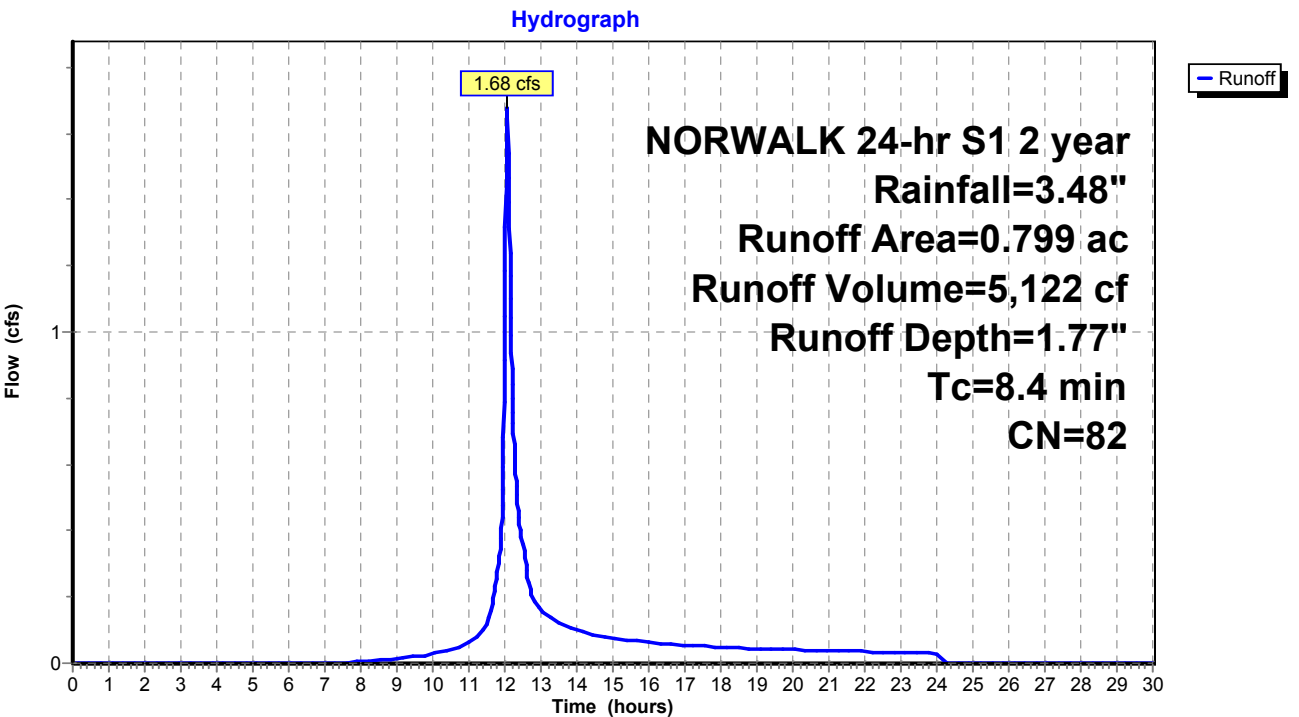
Runoff = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf, Depth= 1.77"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 100S: Area 16B

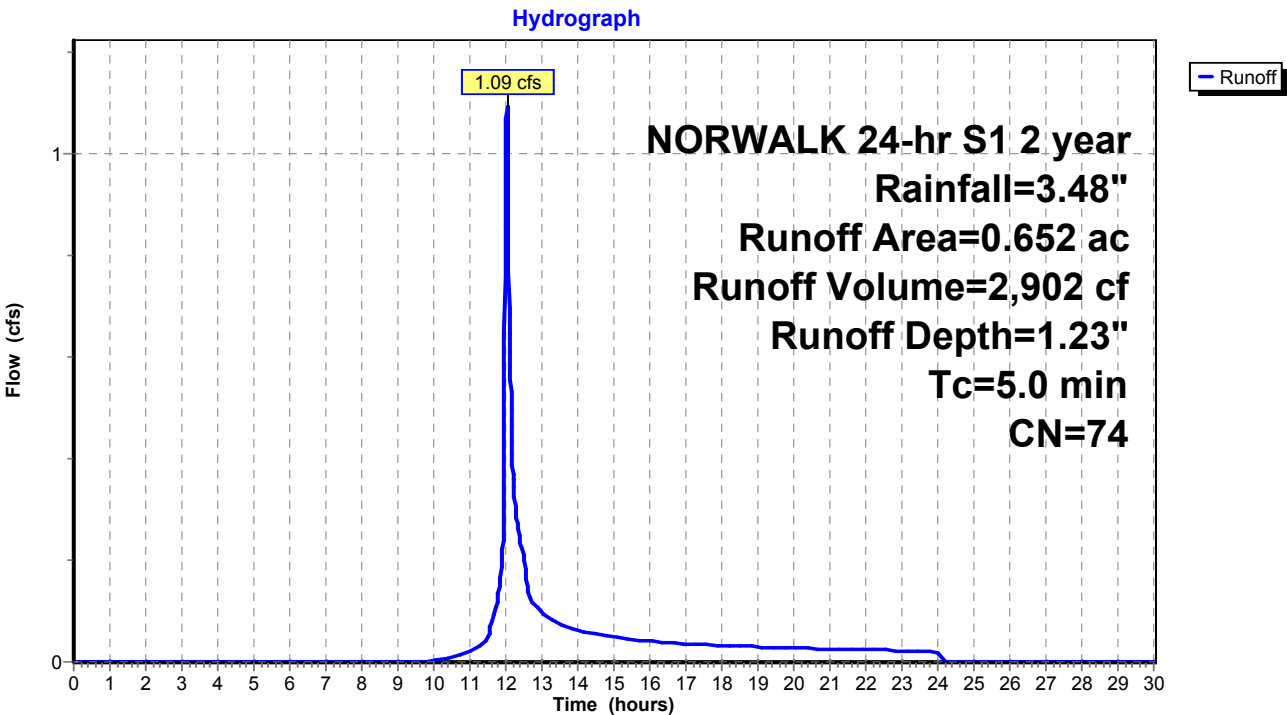
Runoff = 1.09 cfs @ 12.03 hrs, Volume= 2,902 cf, Depth= 1.23"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 105S: Area 18

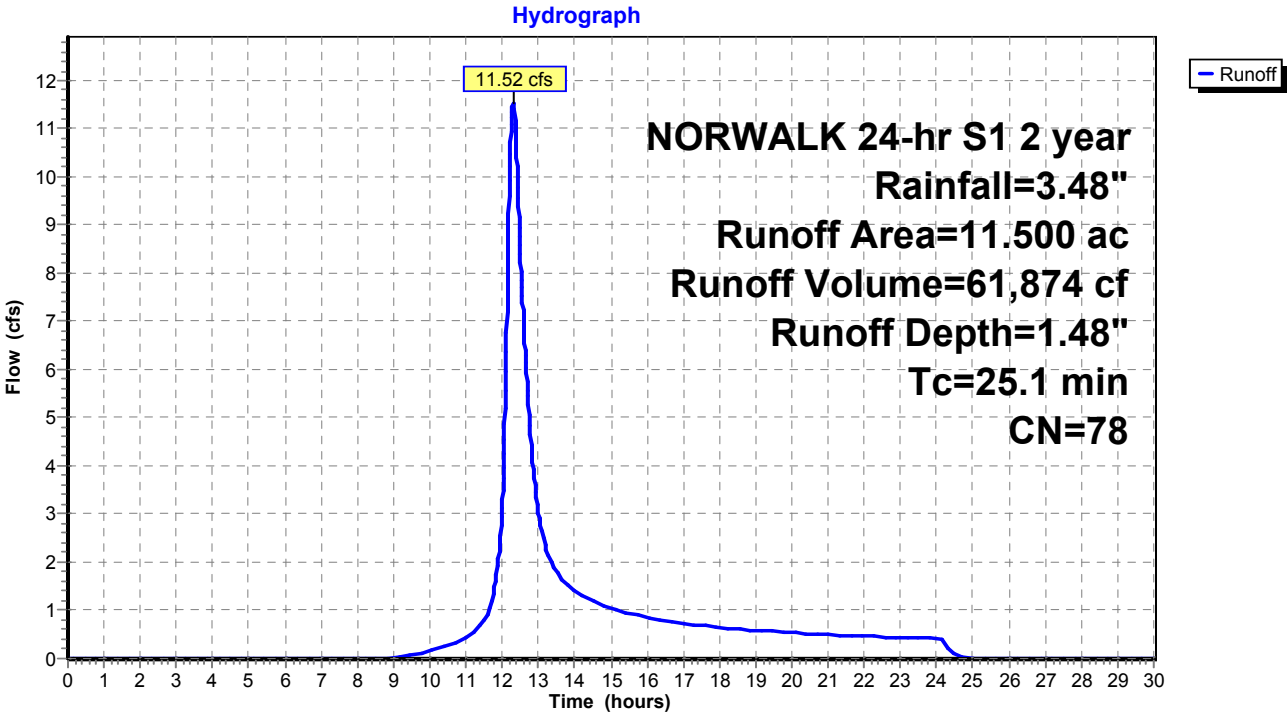
Runoff = 11.52 cfs @ 12.30 hrs, Volume= 61,874 cf, Depth= 1.48"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment BLDG: EX-BLDG

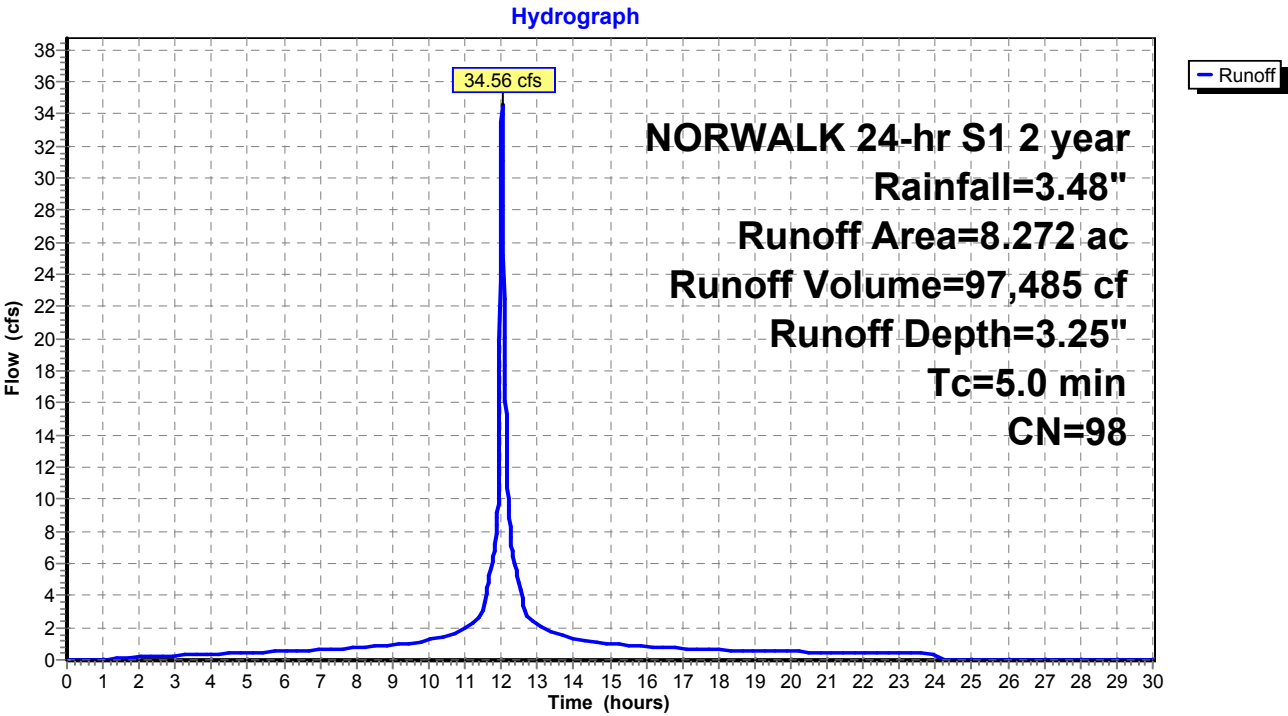
Runoff = 34.56 cfs @ 12.03 hrs, Volume= 97,485 cf, Depth= 3.25"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 1.49" for 2 year event
Inflow = 77.19 cfs @ 12.35 hrs, Volume= 816,612 cf
Outflow = 77.19 cfs @ 12.35 hrs, Volume= 816,612 cf, Atten= 0%, Lag= 0.0 min
Primary = 28.26 cfs @ 12.35 hrs, Volume= 597,427 cf
Secondary = 48.92 cfs @ 12.35 hrs, Volume= 219,185 cf
Routed to Pond 24P : RR Culvert 3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 13.38' @ 12.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 ' / Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

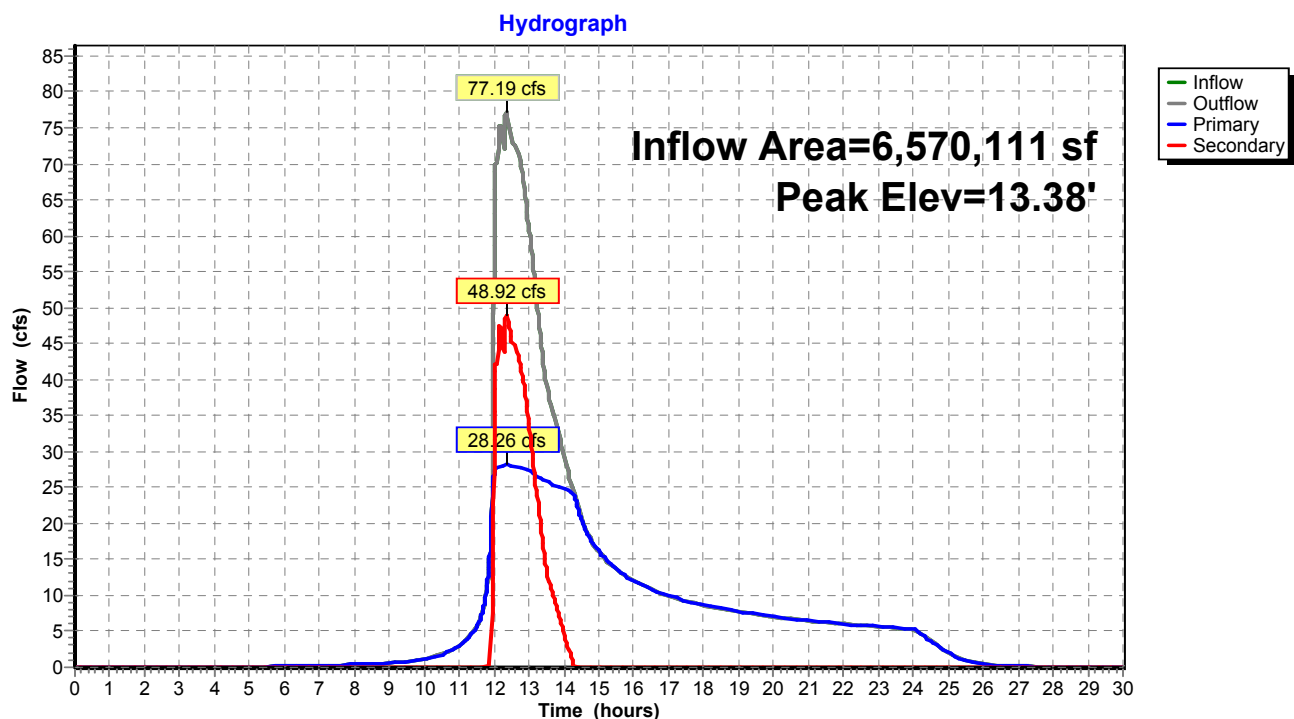
Primary OutFlow Max=28.26 cfs @ 12.35 hrs HW=13.38' (Free Discharge)

↑**2=Culvert** (Barrel Controls 28.26 cfs @ 4.86 fps)

Secondary OutFlow Max=48.69 cfs @ 12.35 hrs HW=13.38' (Free Discharge)

↑**1=Custom Weir/Orifice** (Weir Controls 48.69 cfs @ 2.56 fps)

Pond 1P: RR Culvert 2



Existing Conditions

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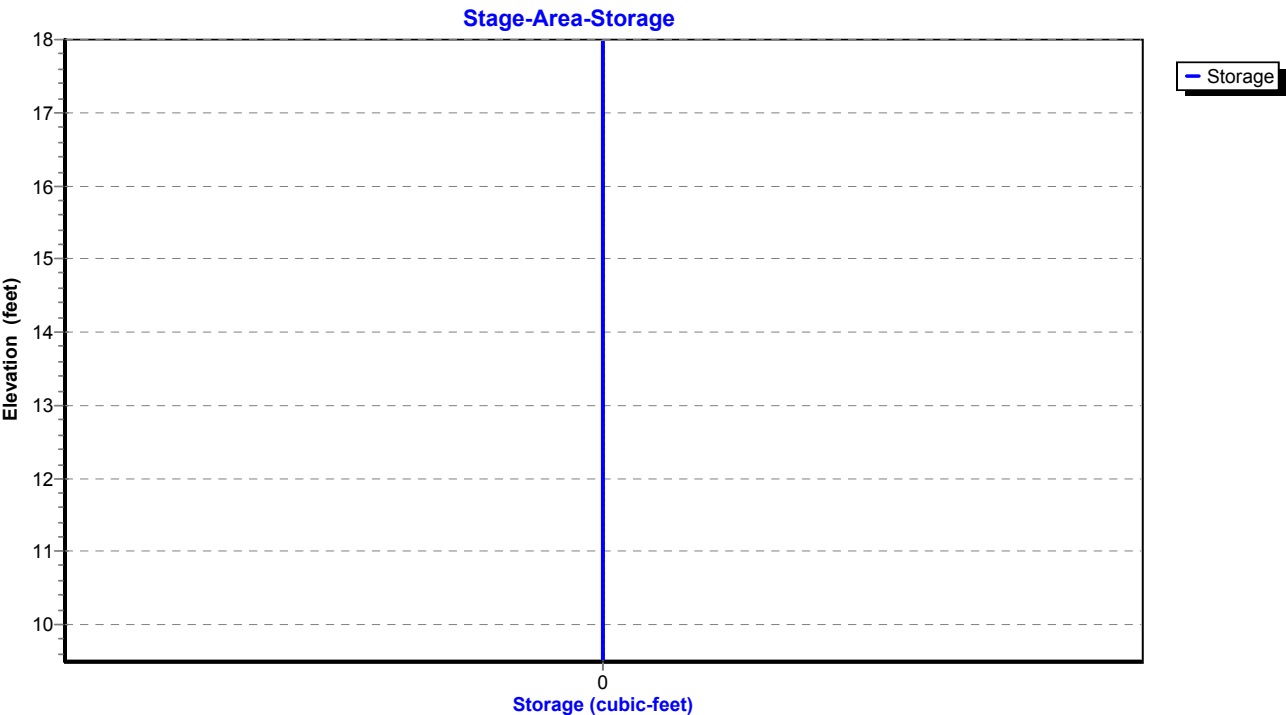
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 1P: RR Culvert 2



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.57% Impervious, Inflow Depth = 2.22" for 2 year event
Inflow = 81.52 cfs @ 12.04 hrs, Volume= 633,451 cf
Outflow = 81.52 cfs @ 12.04 hrs, Volume= 633,451 cf, Atten= 0%, Lag= 0.0 min
Primary = 40.51 cfs @ 12.04 hrs, Volume= 541,336 cf
Secondary = 41.00 cfs @ 12.04 hrs, Volume= 92,115 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 28.39' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

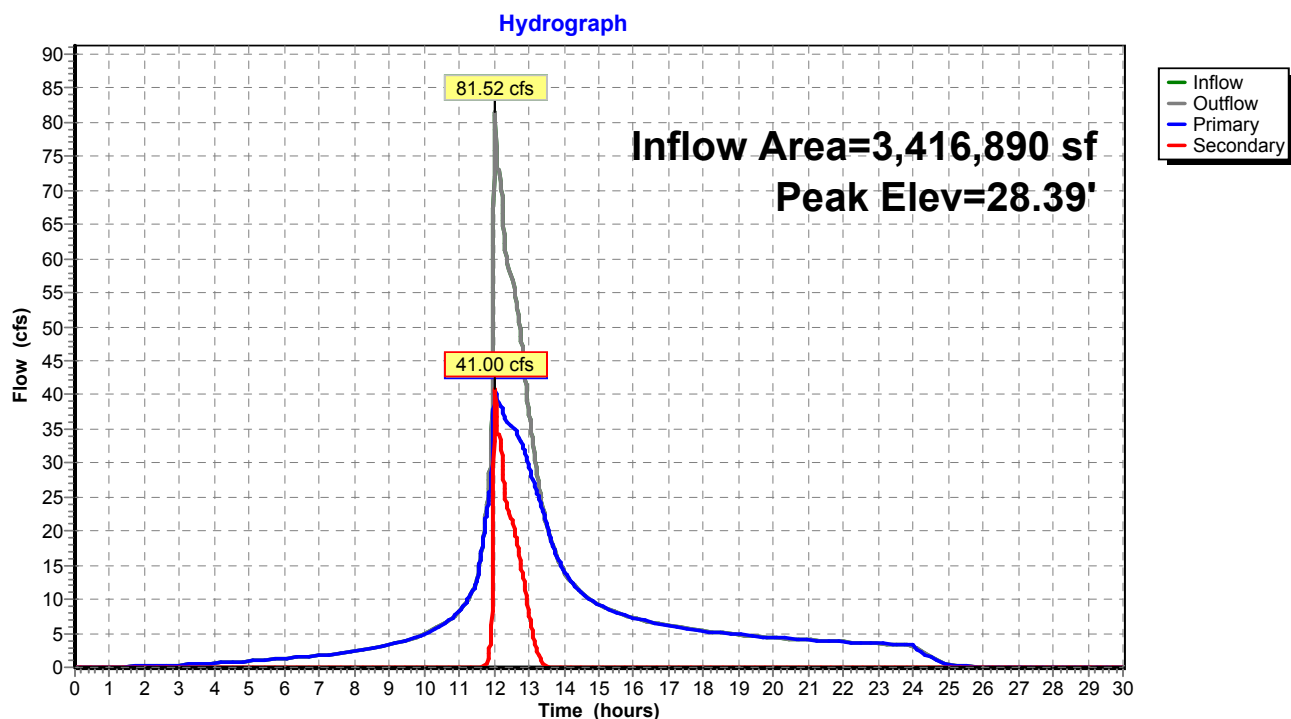
Primary OutFlow Max=40.49 cfs @ 12.04 hrs HW=28.39' (Free Discharge)

↑1=Culvert (Inlet Controls 40.49 cfs @ 7.03 fps)

Secondary OutFlow Max=40.91 cfs @ 12.04 hrs HW=28.39' (Free Discharge)

↑2=Custom Weir/Orifice (Weir Controls 40.91 cfs @ 4.91 fps)

Pond 2P: RR Culvert 1



Existing Conditions

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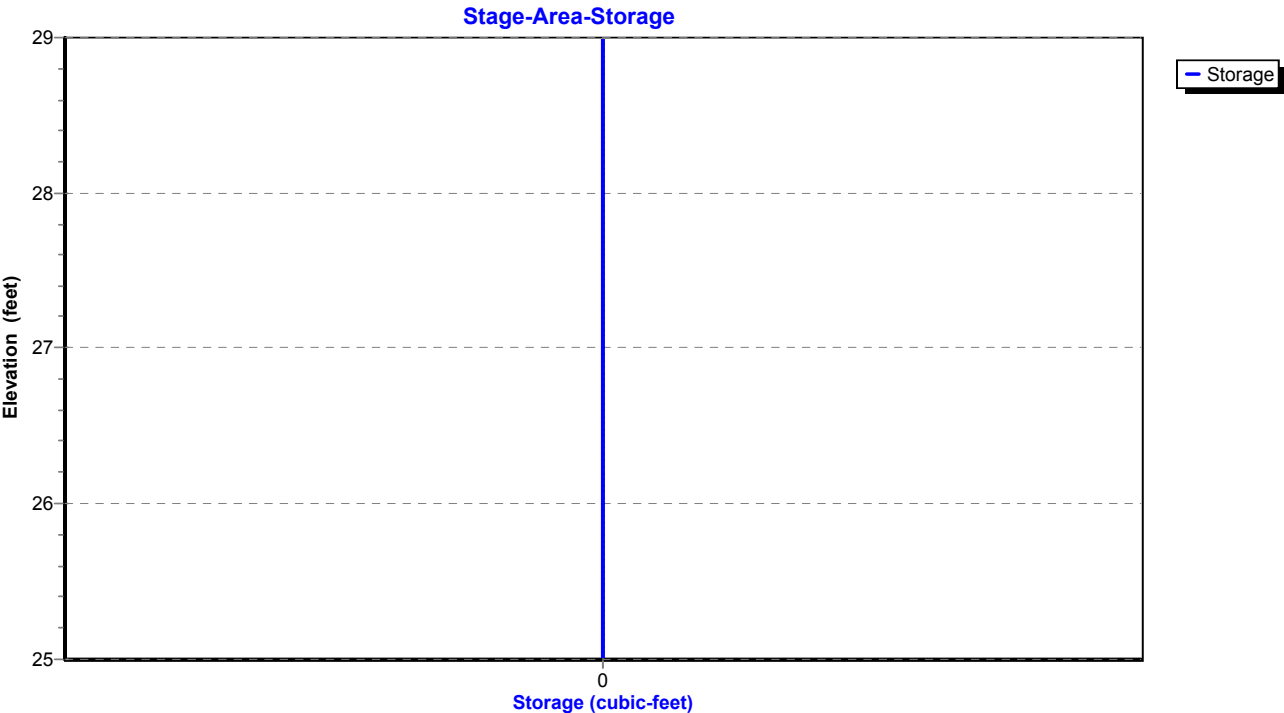
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 2P: RR Culvert 1



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 1.85" for 2 year event
Inflow = 14.48 cfs @ 12.03 hrs, Volume= 40,587 cf
Outflow = 1.64 cfs @ 12.68 hrs, Volume= 24,876 cf, Atten= 89%, Lag= 38.8 min
Primary = 1.64 cfs @ 12.68 hrs, Volume= 24,876 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 47.80' @ 12.68 hrs Surf.Area= 8,253 sf Storage= 21,479 cf

Plug-Flow detention time= 303.4 min calculated for 24,868 cf (61% of inflow)
Center-of-Mass det. time= 175.6 min (994.5 - 819.0)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.64 cfs @ 12.68 hrs HW=47.80' (Free Discharge)

1=Culvert (Passes 1.64 cfs of 14.87 cfs potential flow)
2=Orifice/Grate (Orifice Controls 1.64 cfs @ 3.05 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Existing Conditions

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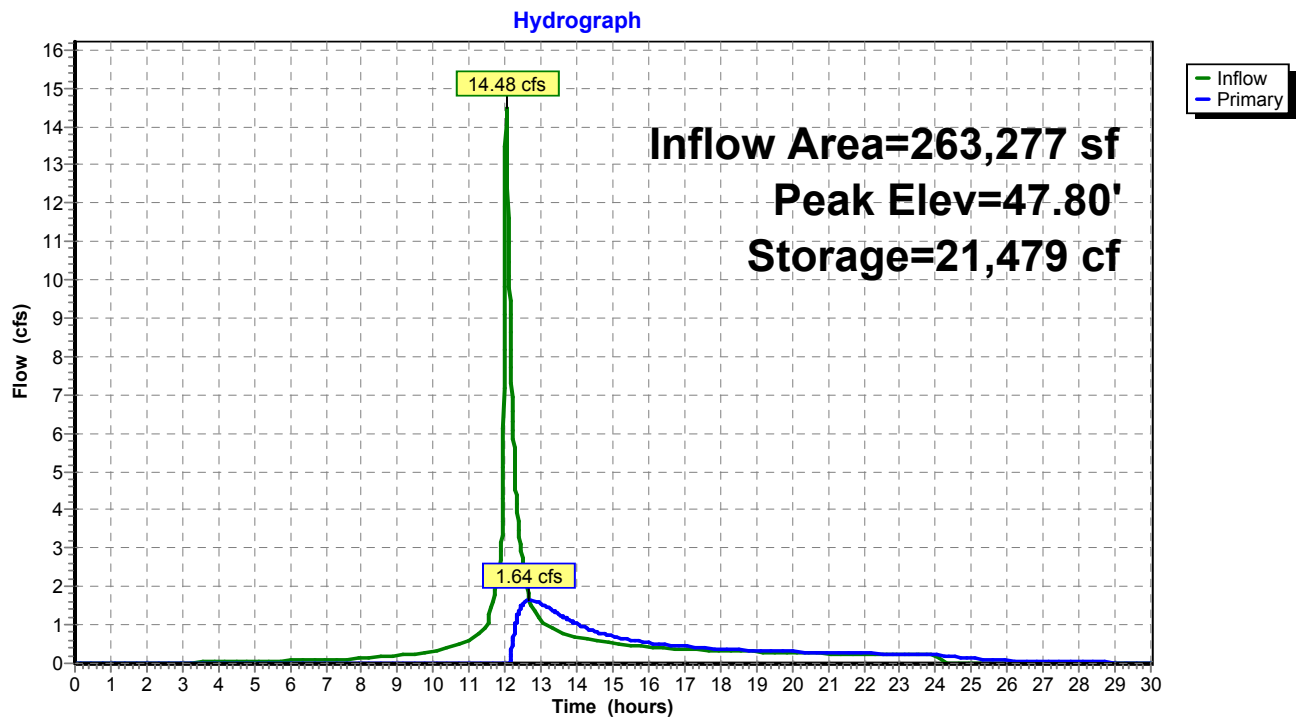
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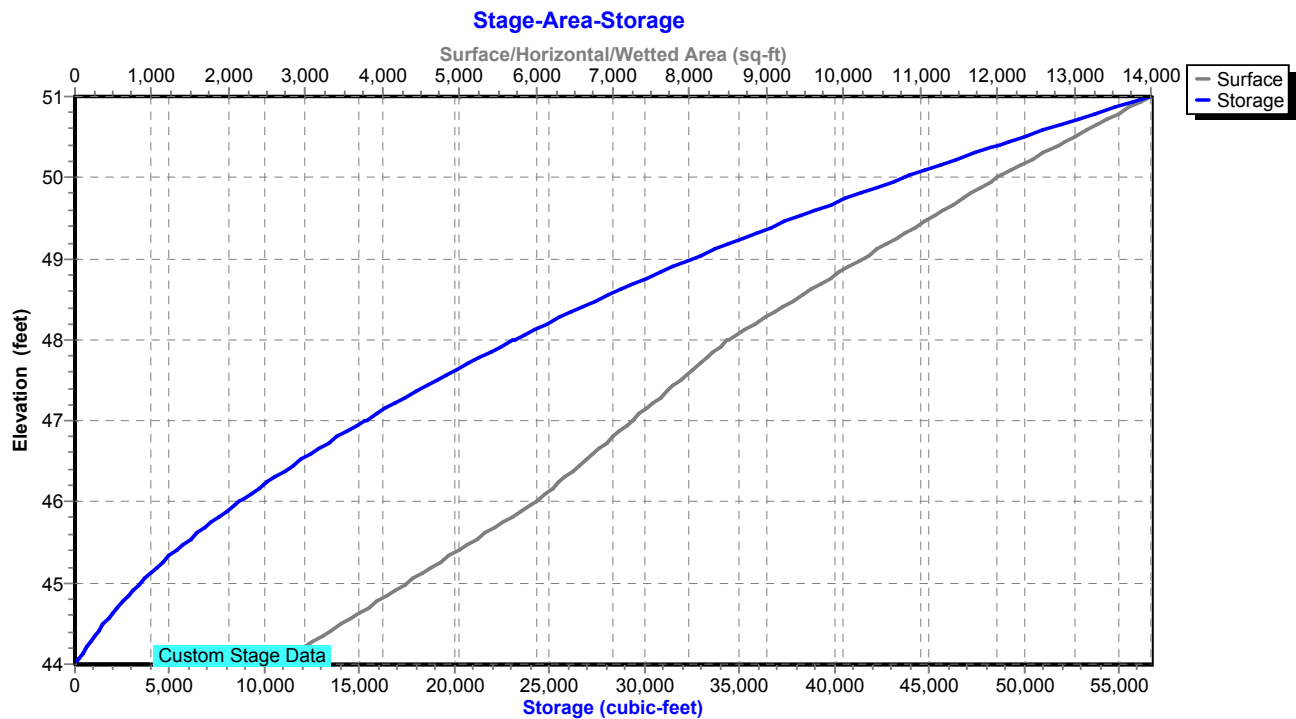
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 1.17" for 2 year event
 Inflow = 7.58 cfs @ 12.46 hrs, Volume= 52,578 cf
 Outflow = 7.30 cfs @ 12.56 hrs, Volume= 52,577 cf, Atten= 4%, Lag= 6.1 min
 Primary = 7.30 cfs @ 12.56 hrs, Volume= 52,577 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 79.24' @ 12.56 hrs Storage= 1,910 cf

Plug-Flow detention time= 7.6 min calculated for 52,577 cf (100% of inflow)

Center-of-Mass det. time= 7.6 min (922.0 - 914.4)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=7.30 cfs @ 12.56 hrs HW=79.24' (Free Discharge)↑**1=Culvert** (Inlet Controls 7.30 cfs @ 3.56 fps)

Existing Conditions

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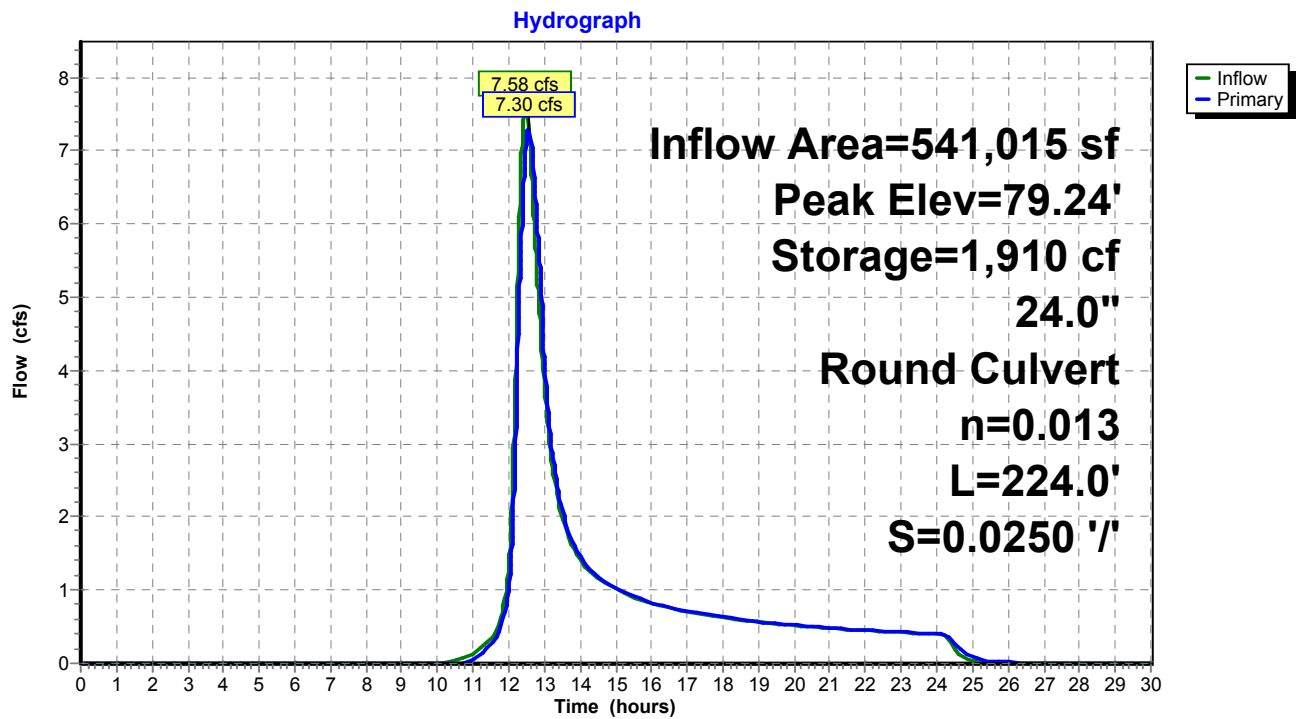
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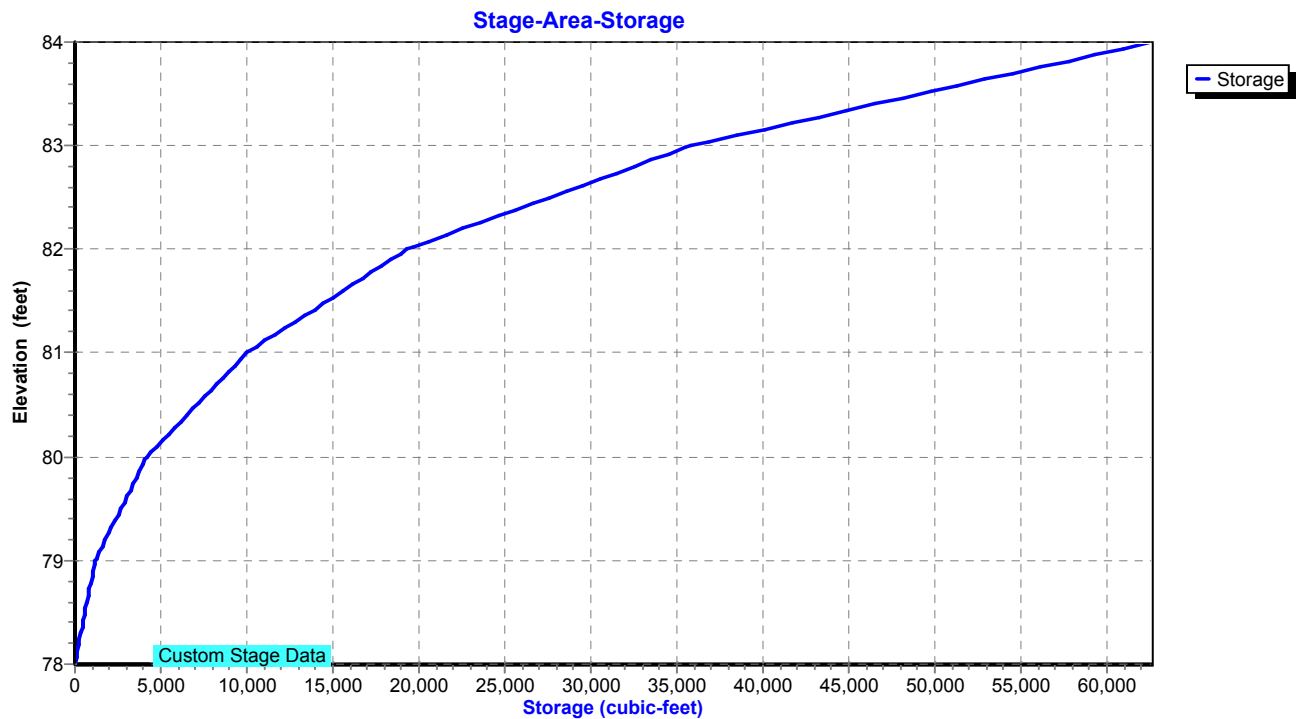
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Pond 5P: DET 5 Culvert



Pond 5P: DET 5 Culvert



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 1.77" for 2 year event
 Inflow = 13.40 cfs @ 12.70 hrs, Volume= 109,948 cf
 Outflow = 13.38 cfs @ 12.71 hrs, Volume= 109,948 cf, Atten= 0%, Lag= 0.7 min
 Primary = 13.38 cfs @ 12.71 hrs, Volume= 109,948 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 90.10' @ 12.71 hrs Storage= 212 cf

Plug-Flow detention time= 0.5 min calculated for 109,912 cf (100% of inflow)
 Center-of-Mass det. time= 0.5 min (897.8 - 897.4)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=13.38 cfs @ 12.71 hrs HW=90.10' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 13.38 cfs @ 4.04 fps)

Existing Conditions

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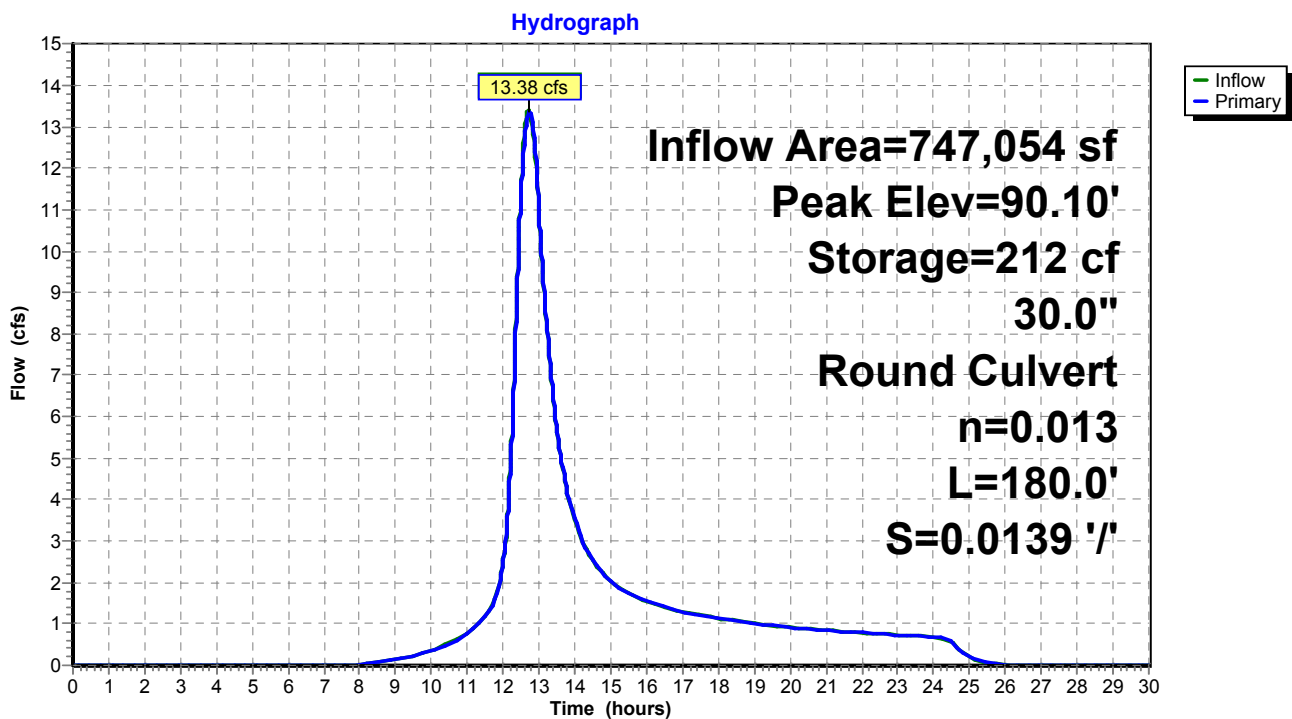
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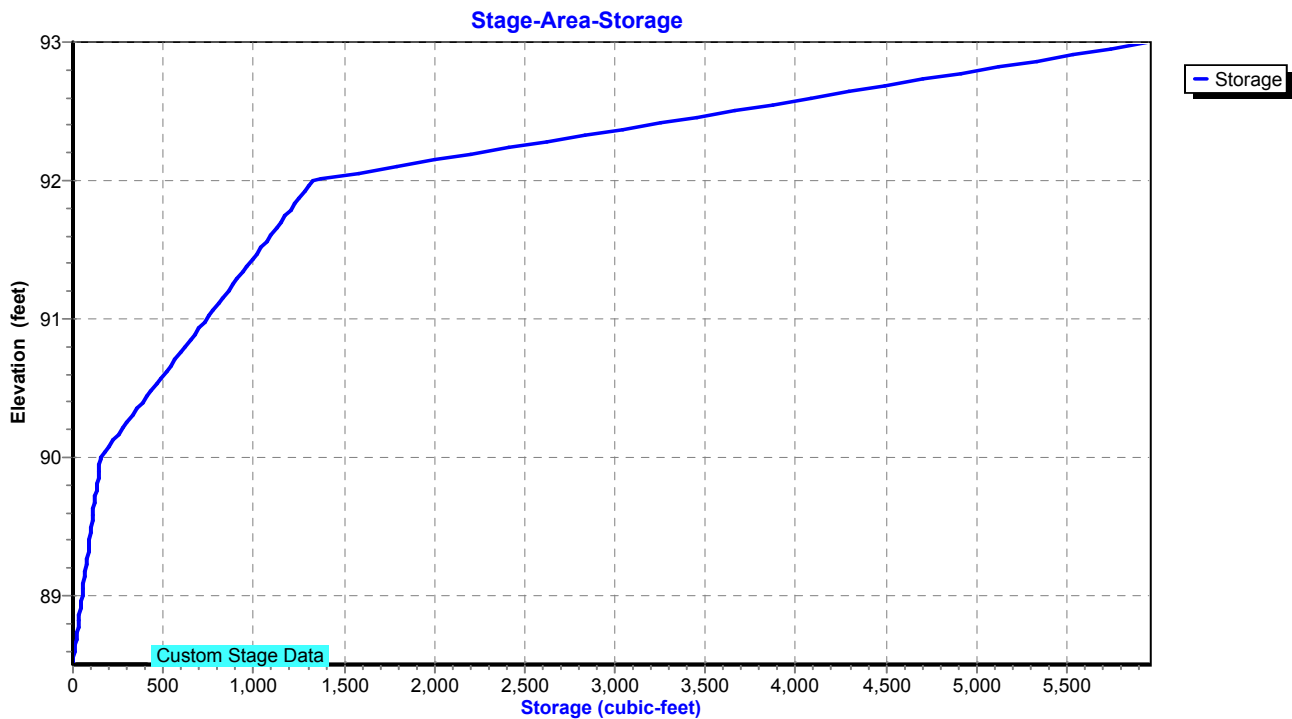
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 1.69" for 2 year event
Inflow = 1.80 cfs @ 12.27 hrs, Volume= 9,031 cf
Outflow = 1.35 cfs @ 12.43 hrs, Volume= 9,031 cf, Atten= 25%, Lag= 9.9 min
Primary = 1.35 cfs @ 12.43 hrs, Volume= 9,031 cf
Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.08' @ 12.43 hrs Storage= 557 cf

Plug-Flow detention time= 4.8 min calculated for 9,031 cf (100% of inflow)

Center-of-Mass det. time= 4.8 min (876.3 - 871.5)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.35 cfs @ 12.43 hrs HW=93.08' (Free Discharge)

↑**1=Culvert** (Inlet Controls 1.35 cfs @ 2.43 fps)

Existing Conditions

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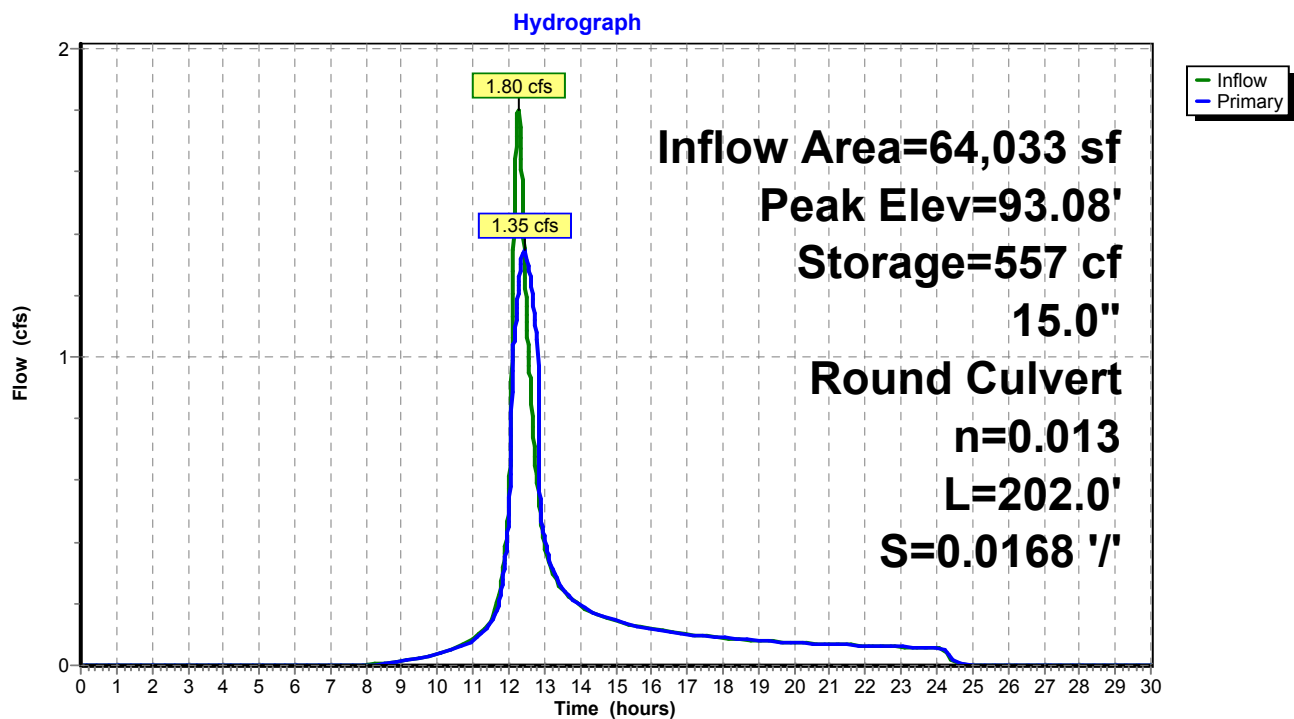
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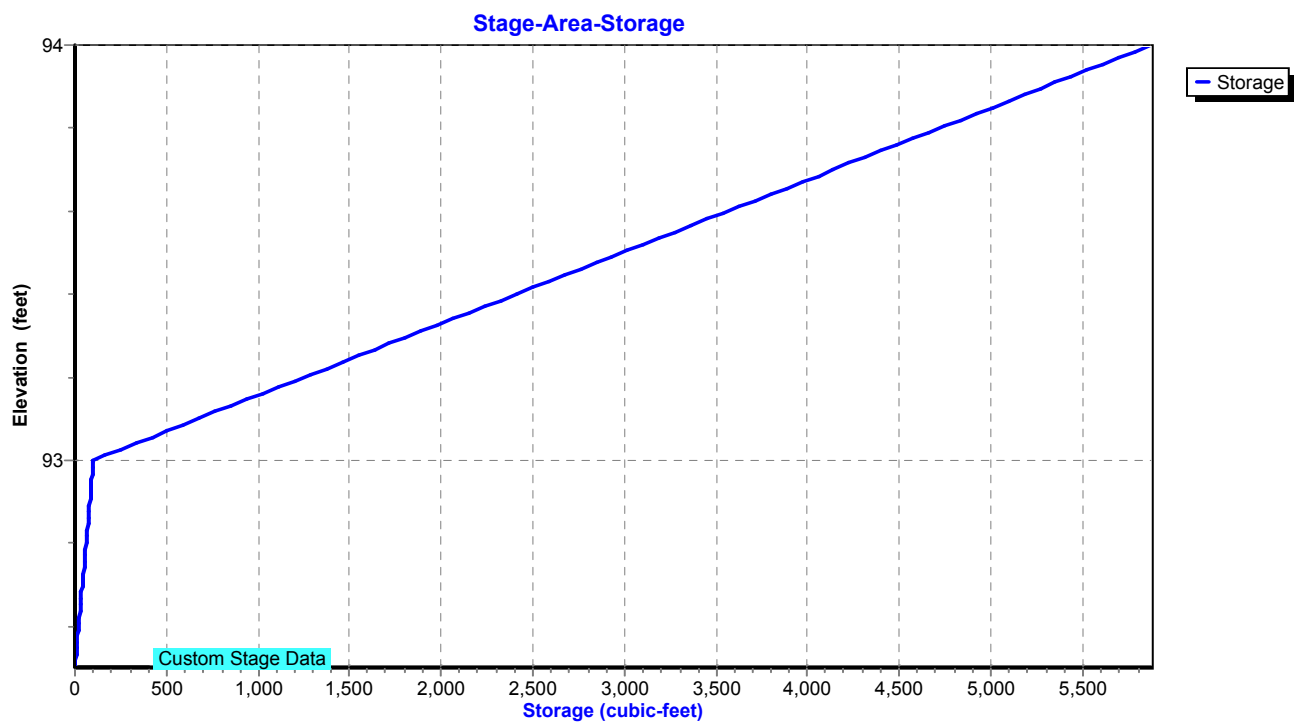
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 1.64" for 2 year event
 Inflow = 26.57 cfs @ 12.65 hrs, Volume= 216,885 cf
 Outflow = 26.57 cfs @ 12.65 hrs, Volume= 216,885 cf, Atten= 0%, Lag= 0.0 min
 Primary = 26.57 cfs @ 12.65 hrs, Volume= 216,885 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 70.37' @ 12.65 hrs Storage= 39 cf

Plug-Flow detention time= 0.1 min calculated for 216,885 cf (100% of inflow)
 Center-of-Mass det. time= 0.1 min (890.4 - 890.3)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=26.56 cfs @ 12.65 hrs HW=70.37' (Free Discharge)

↑**1=Culvert** (Inlet Controls 26.56 cfs @ 4.77 fps)

Existing Conditions

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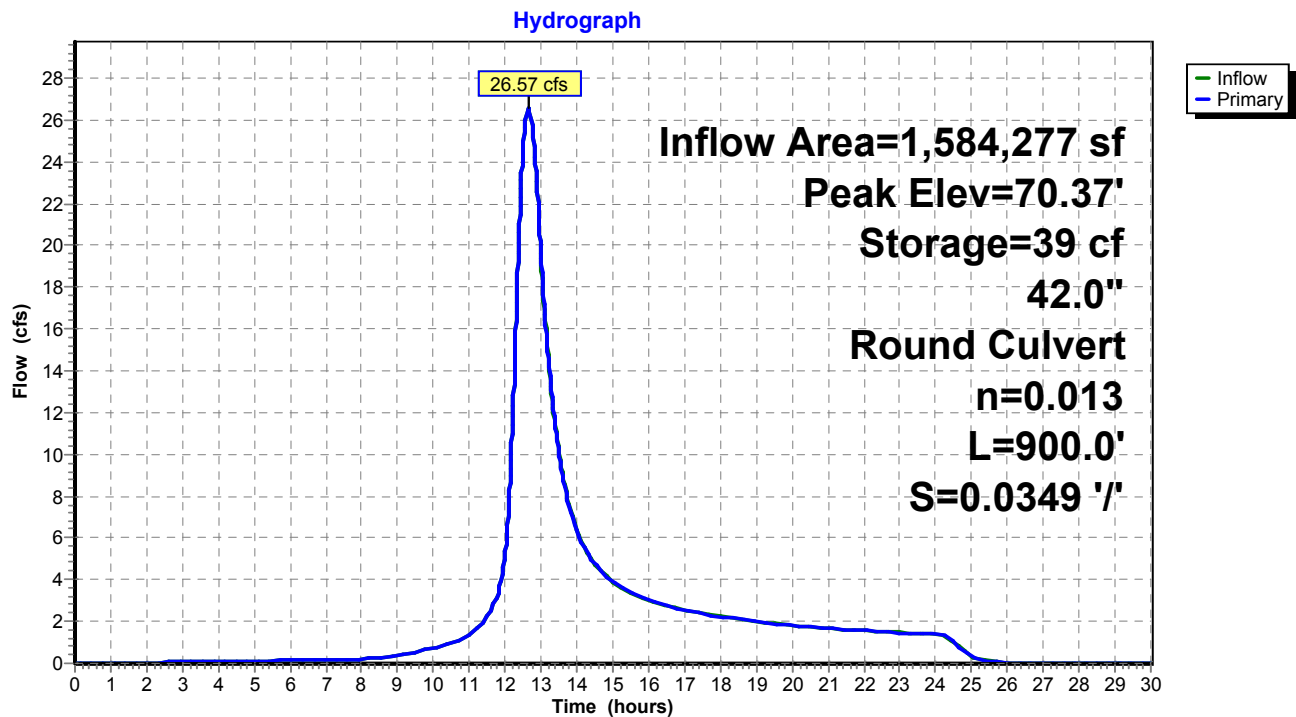
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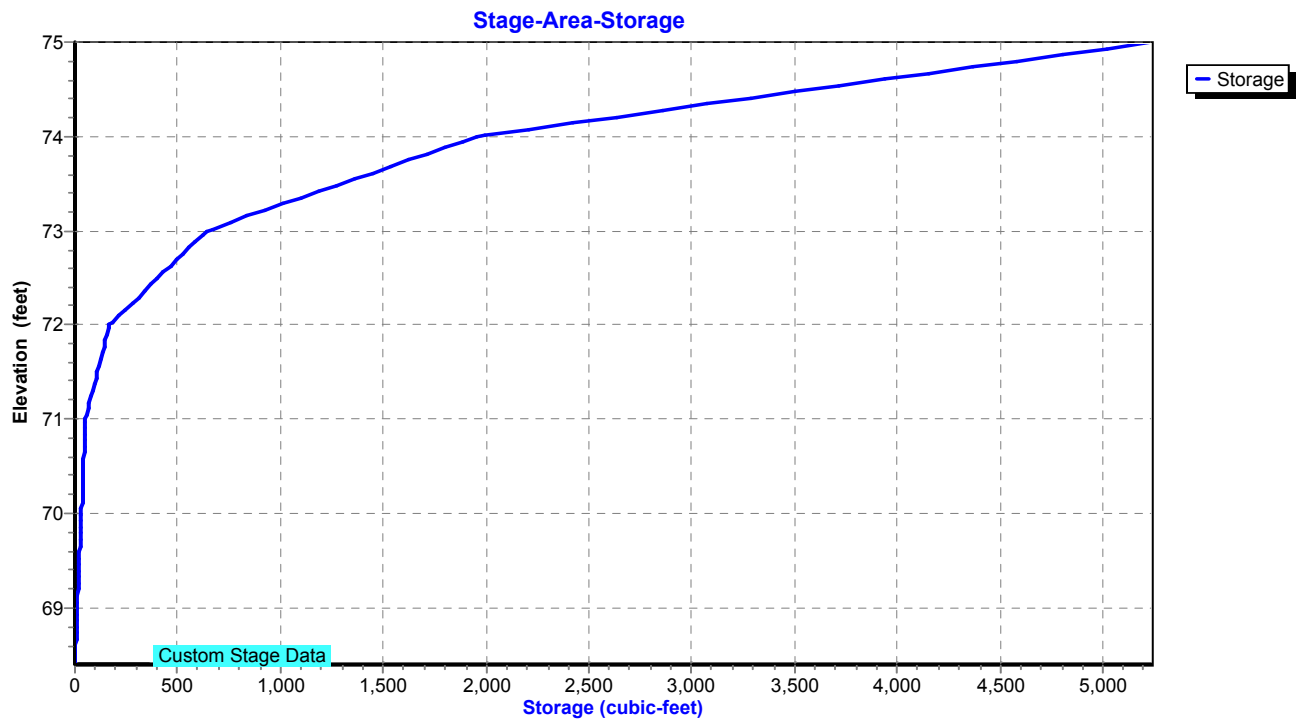
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 9P: MH-K

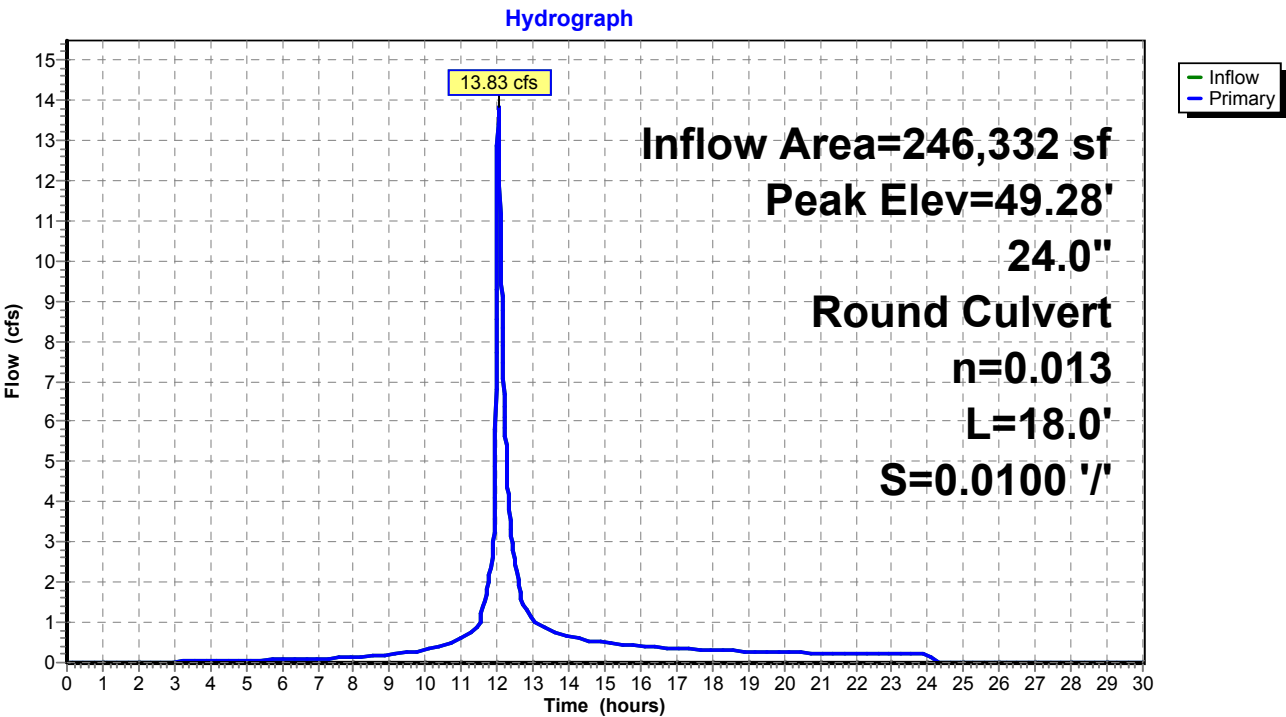
Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 1.89" for 2 year event
Inflow = 13.83 cfs @ 12.03 hrs, Volume= 38,855 cf
Outflow = 13.83 cfs @ 12.03 hrs, Volume= 38,855 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.83 cfs @ 12.03 hrs, Volume= 38,855 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.28' @ 12.03 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=13.79 cfs @ 12.03 hrs HW=49.28' (Free Discharge)
1=Culvert (Barrel Controls 13.79 cfs @ 5.21 fps)

Pond 9P: MH-K



Existing Conditions

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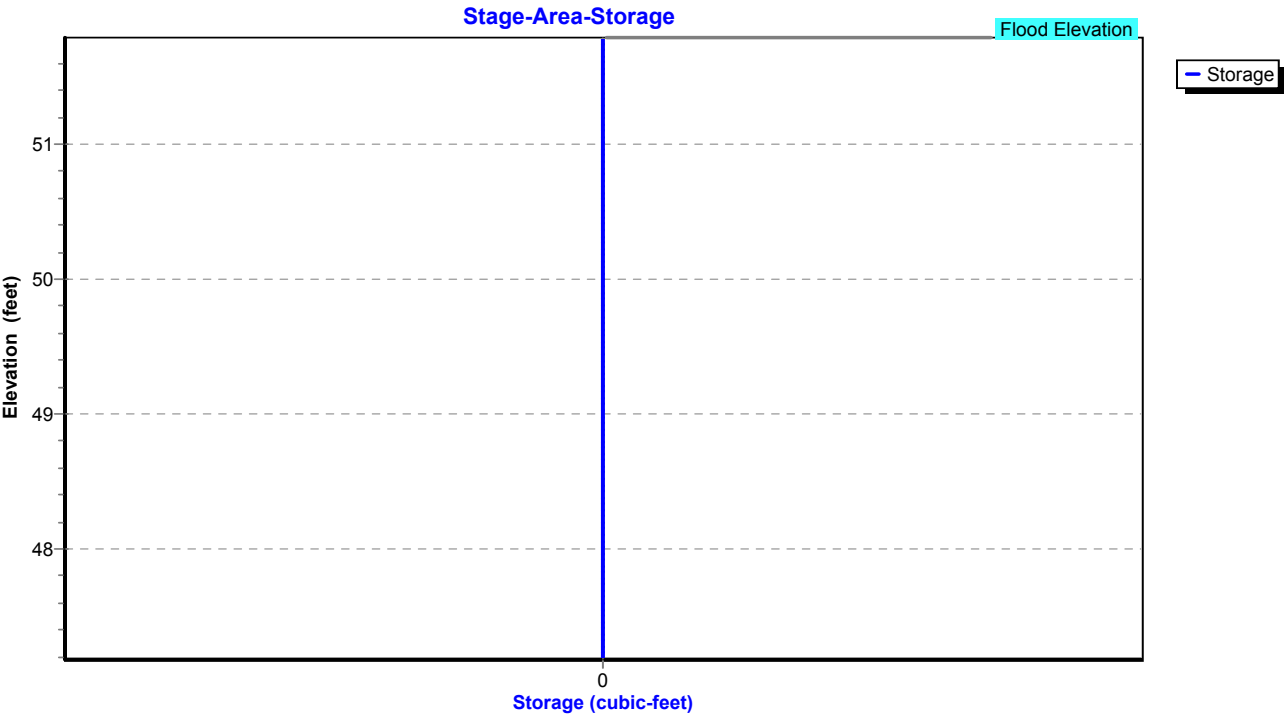
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Pond 9P: MH-K



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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 1.50" for 2 year event
Inflow = 5.92 cfs @ 12.03 hrs, Volume= 9,011 cf
Outflow = 5.92 cfs @ 12.03 hrs, Volume= 9,011 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.92 cfs @ 12.03 hrs, Volume= 9,011 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 49.34' @ 12.03 hrs

Flood Elev= 53.00'

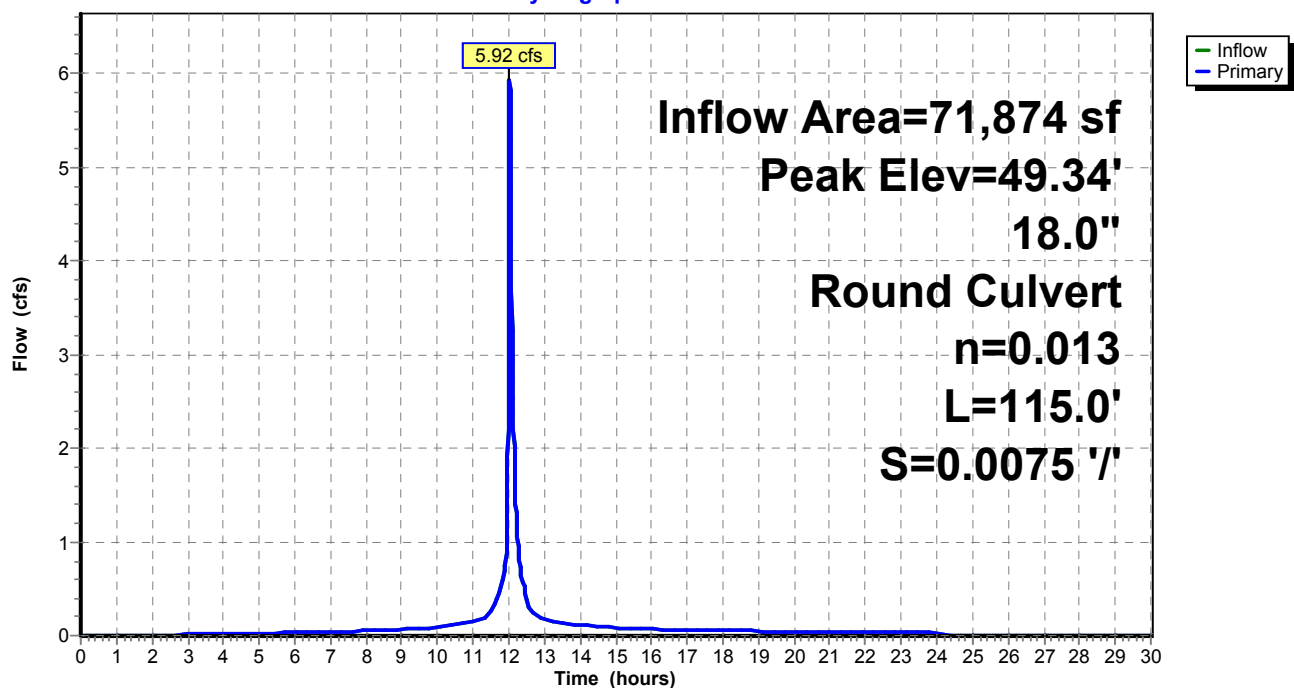
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.90 cfs @ 12.03 hrs HW=49.34' (Free Discharge)

↑1=Culvert (Barrel Controls 5.90 cfs @ 4.85 fps)

Pond 10P: MH-L

Hydrograph



Existing Conditions

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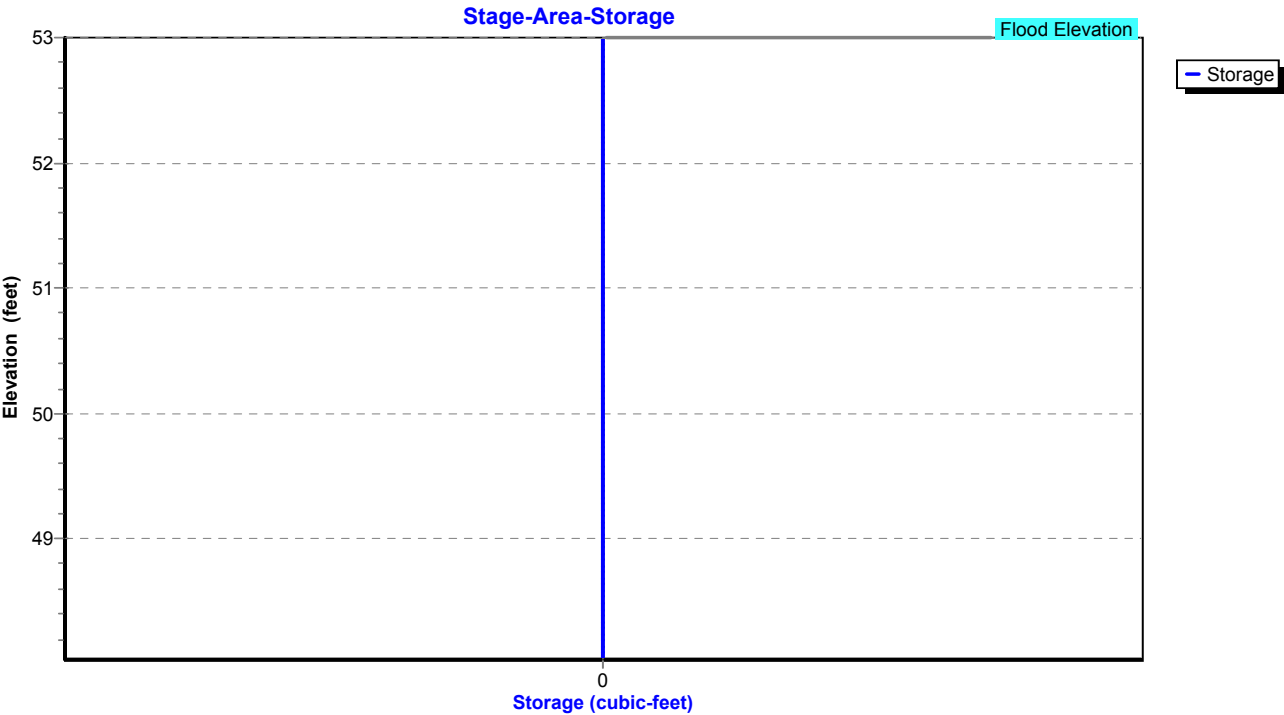
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Pond 10P: MH-L



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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 2.83" for 2 year event
Inflow = 3.63 cfs @ 12.03 hrs, Volume= 9,636 cf
Outflow = 3.11 cfs @ 12.03 hrs, Volume= 1,386 cf, Atten= 14%, Lag= 0.0 min
Primary = 3.11 cfs @ 12.03 hrs, Volume= 1,386 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 49.68' @ 12.03 hrs Storage= 0.081 af

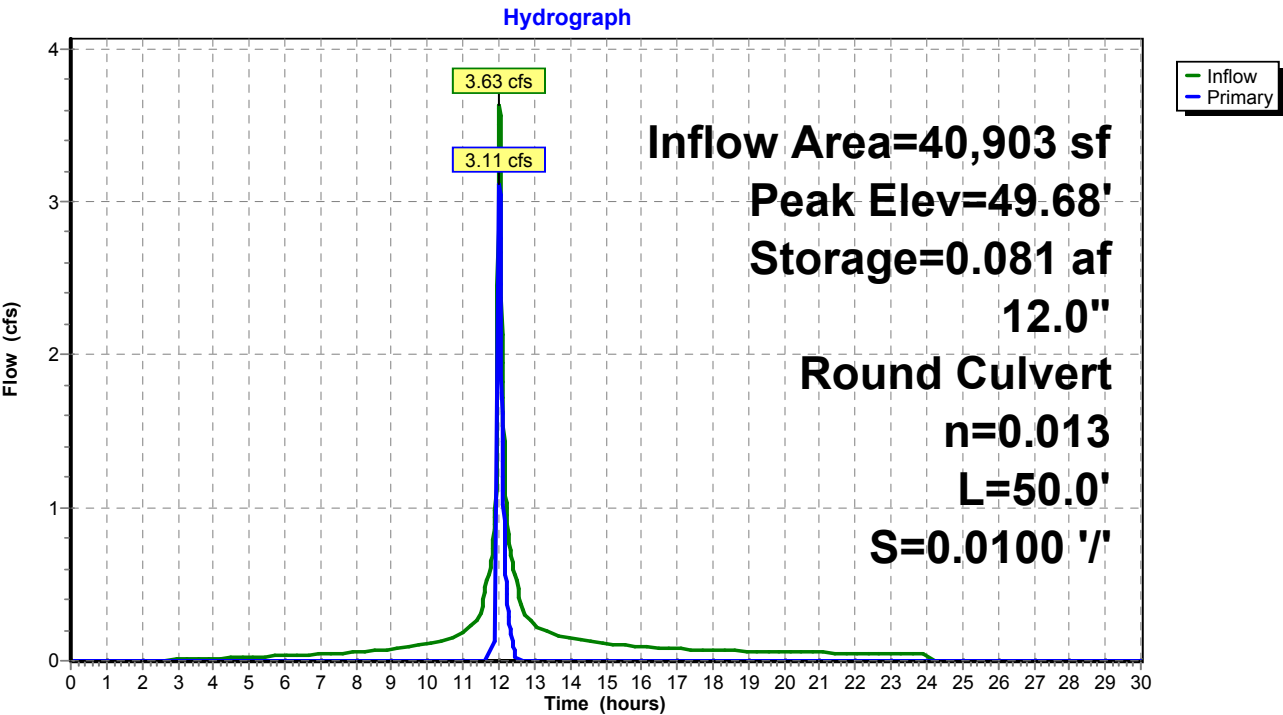
Plug-Flow detention time= 233.3 min calculated for 1,385 cf (14% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.10 cfs @ 12.03 hrs HW=49.67' (Free Discharge)
1=Culvert (Inlet Controls 3.10 cfs @ 3.94 fps)

Pond 11P: Pipe Storage



Existing Conditions

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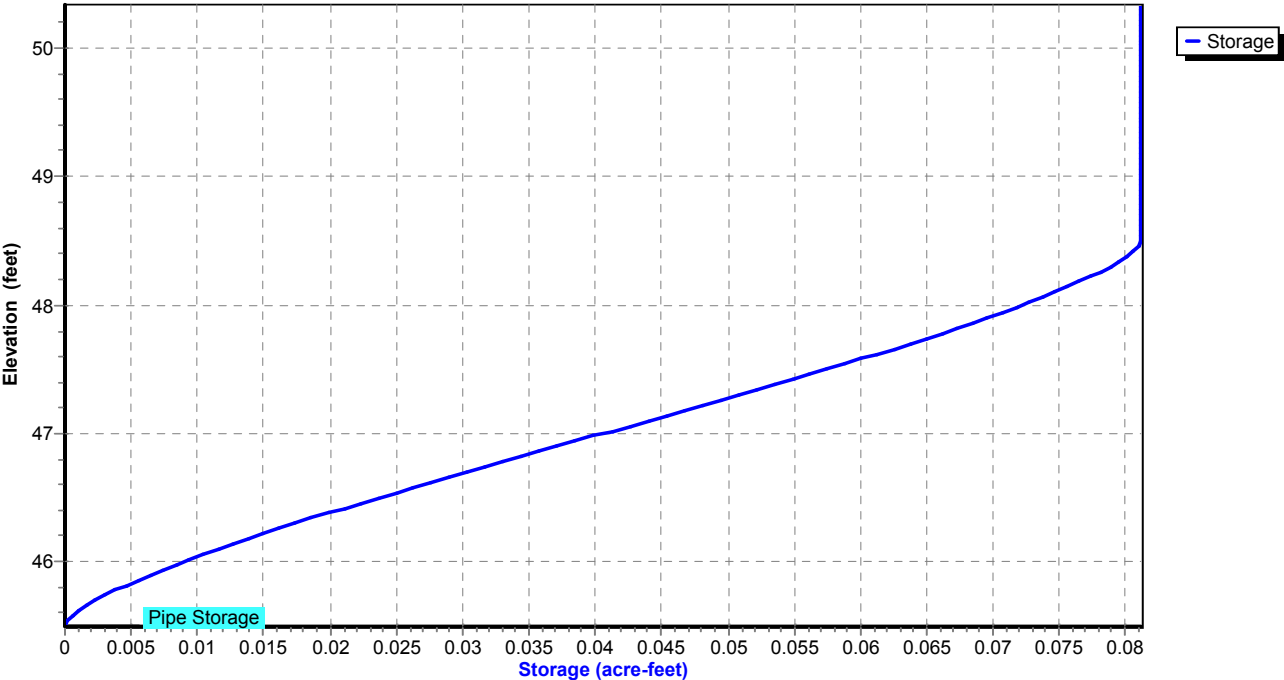
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Pond 11P: Pipe Storage

Stage-Area-Storage



Existing Conditions

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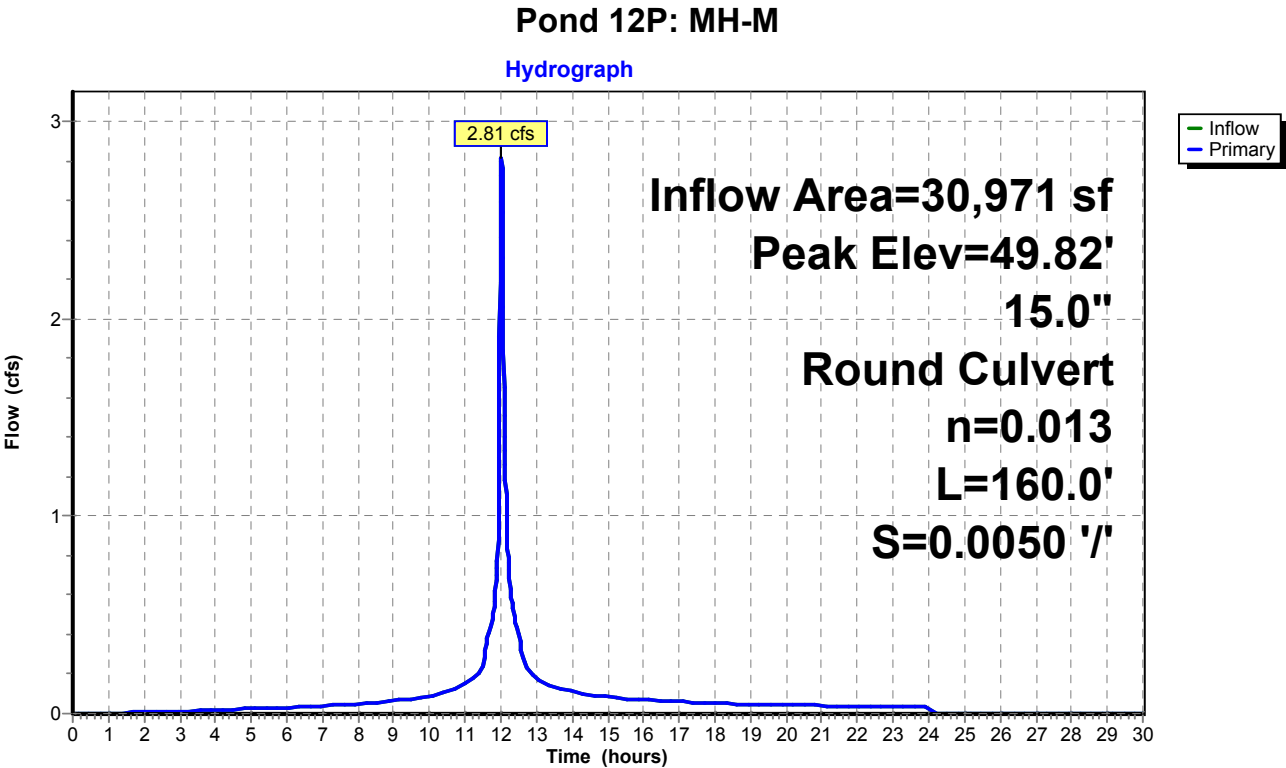
Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 2.95" for 2 year event
Inflow = 2.81 cfs @ 12.03 hrs, Volume= 7,625 cf
Outflow = 2.81 cfs @ 12.03 hrs, Volume= 7,625 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.81 cfs @ 12.03 hrs, Volume= 7,625 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.82' @ 12.03 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.80 cfs @ 12.03 hrs HW=49.82' (Free Discharge)
1=Culvert (Barrel Controls 2.80 cfs @ 3.75 fps)



Existing Conditions

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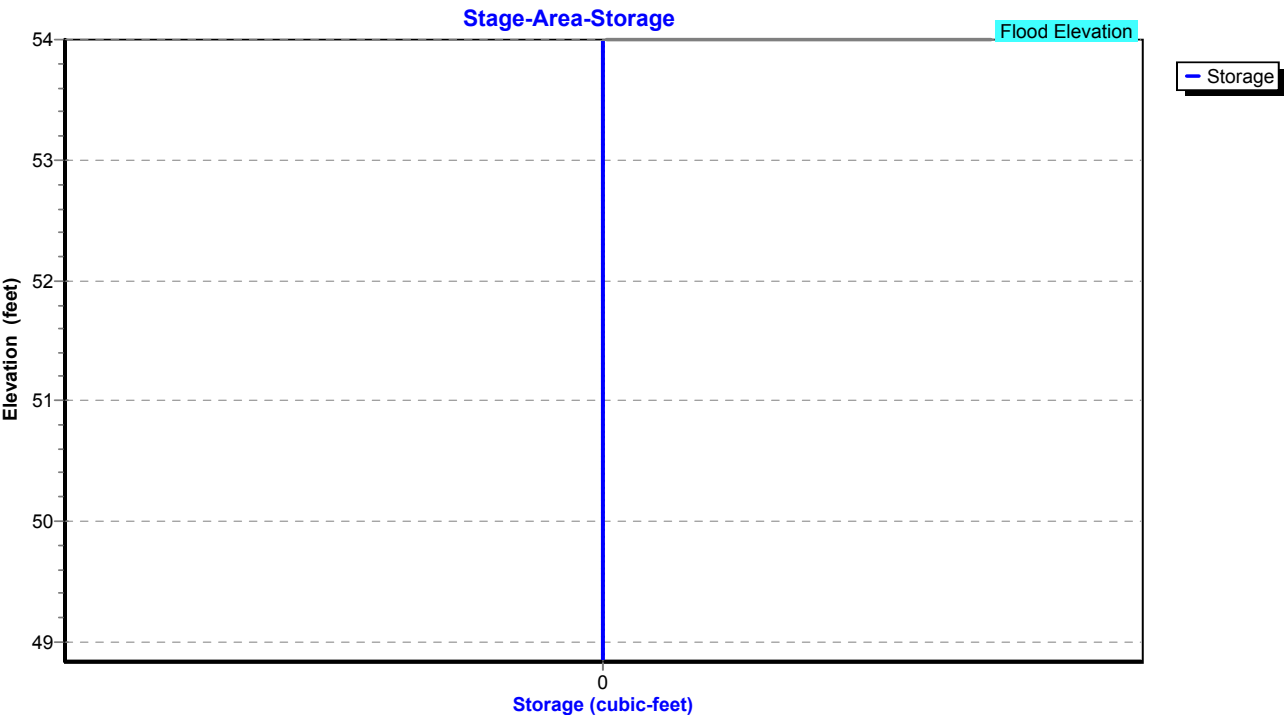
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 2.72" for 2 year event
Inflow = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf
Outflow = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.32' @ 12.03 hrs

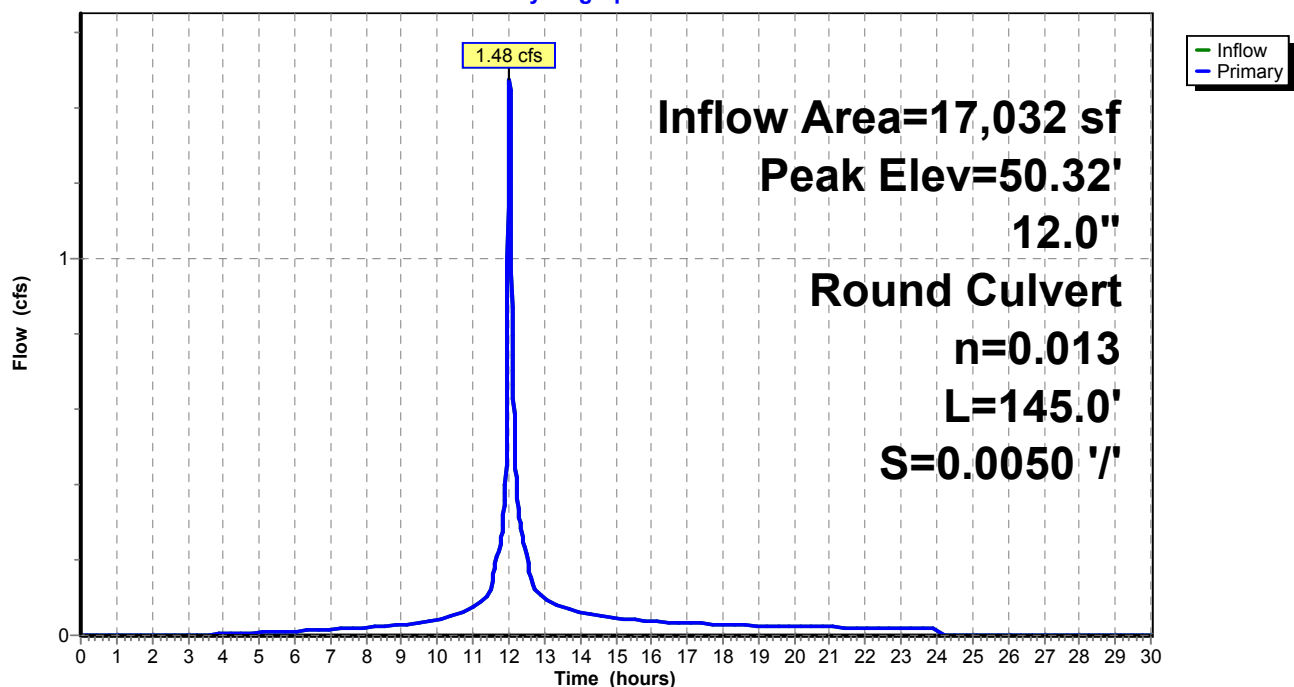
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.47 cfs @ 12.03 hrs HW=50.32' (Free Discharge)

↑1=Culvert (Barrel Controls 1.47 cfs @ 3.23 fps)

Pond 13P: MH-J

Hydrograph



Existing Conditions

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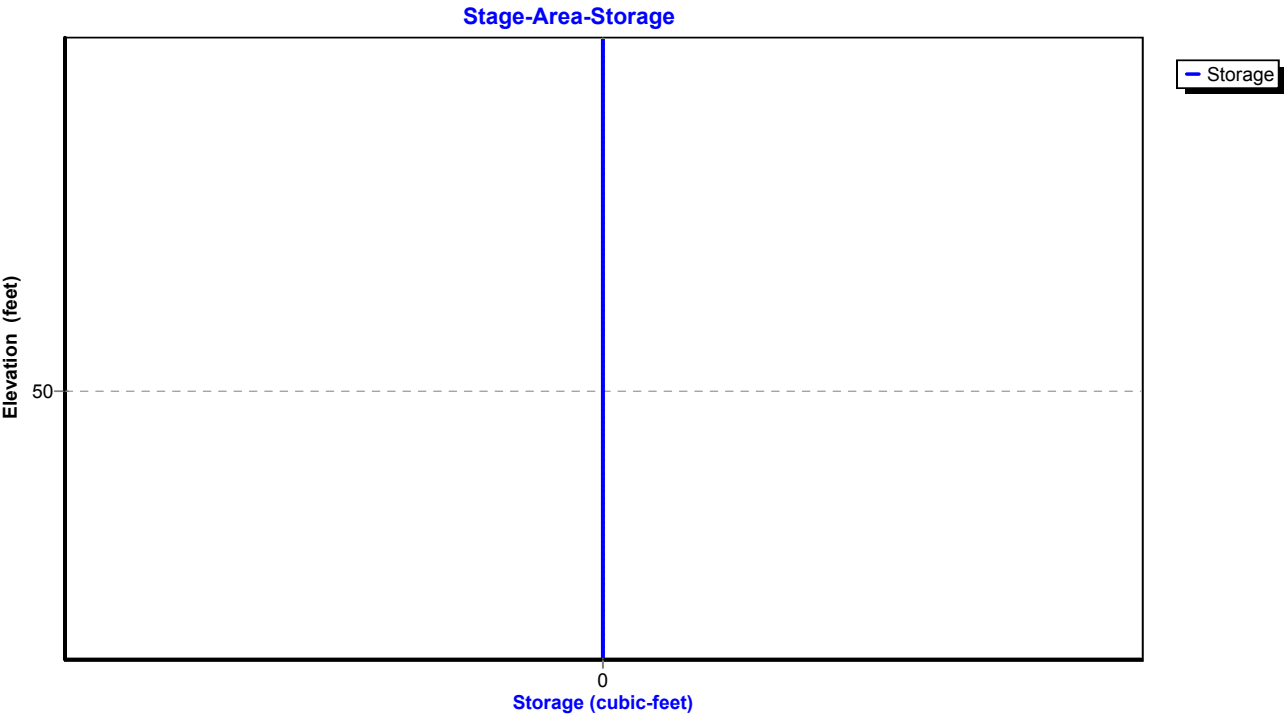
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 13P: MH-J



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Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 1.87" for 2 year event
Inflow = 5.66 cfs @ 12.10 hrs, Volume= 22,468 cf
Outflow = 5.66 cfs @ 12.10 hrs, Volume= 22,468 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.66 cfs @ 12.10 hrs, Volume= 22,468 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 49.19' @ 12.10 hrs

Flood Elev= 51.80'

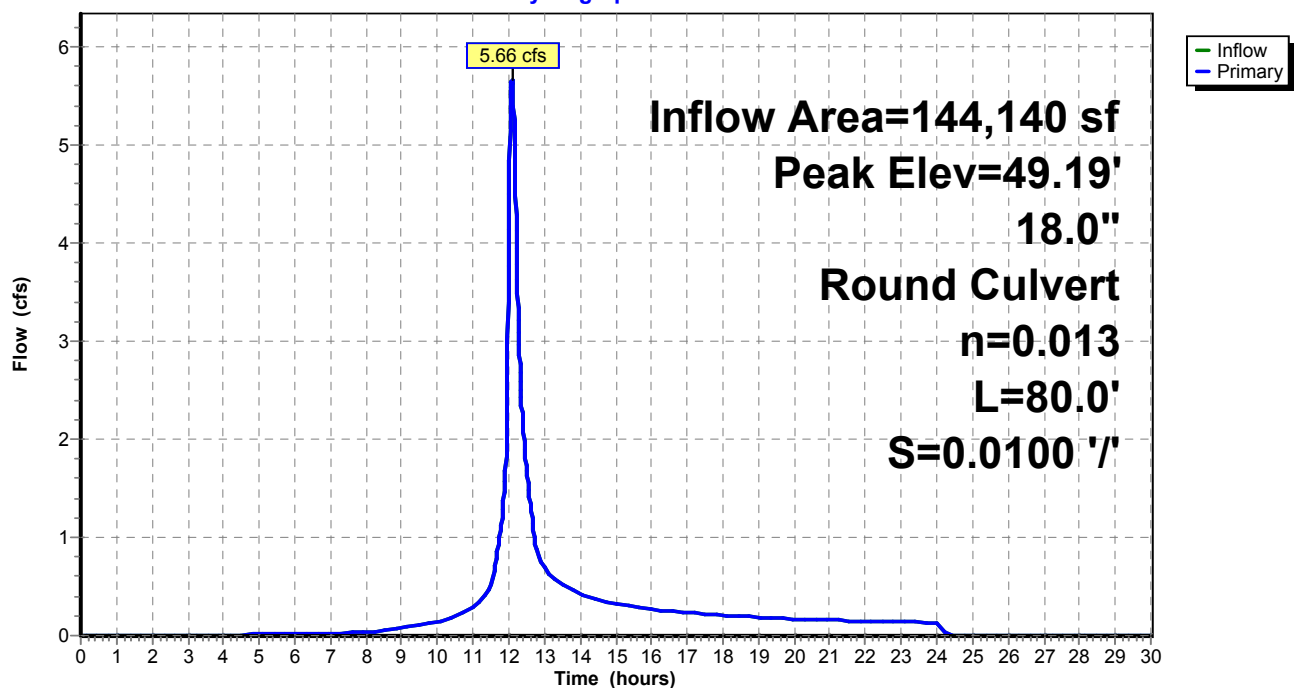
Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.66 cfs @ 12.10 hrs HW=49.19' (Free Discharge)

↑1=Culvert (Barrel Controls 5.66 cfs @ 5.07 fps)

Pond 14P: MH-O

Hydrograph



Existing Conditions

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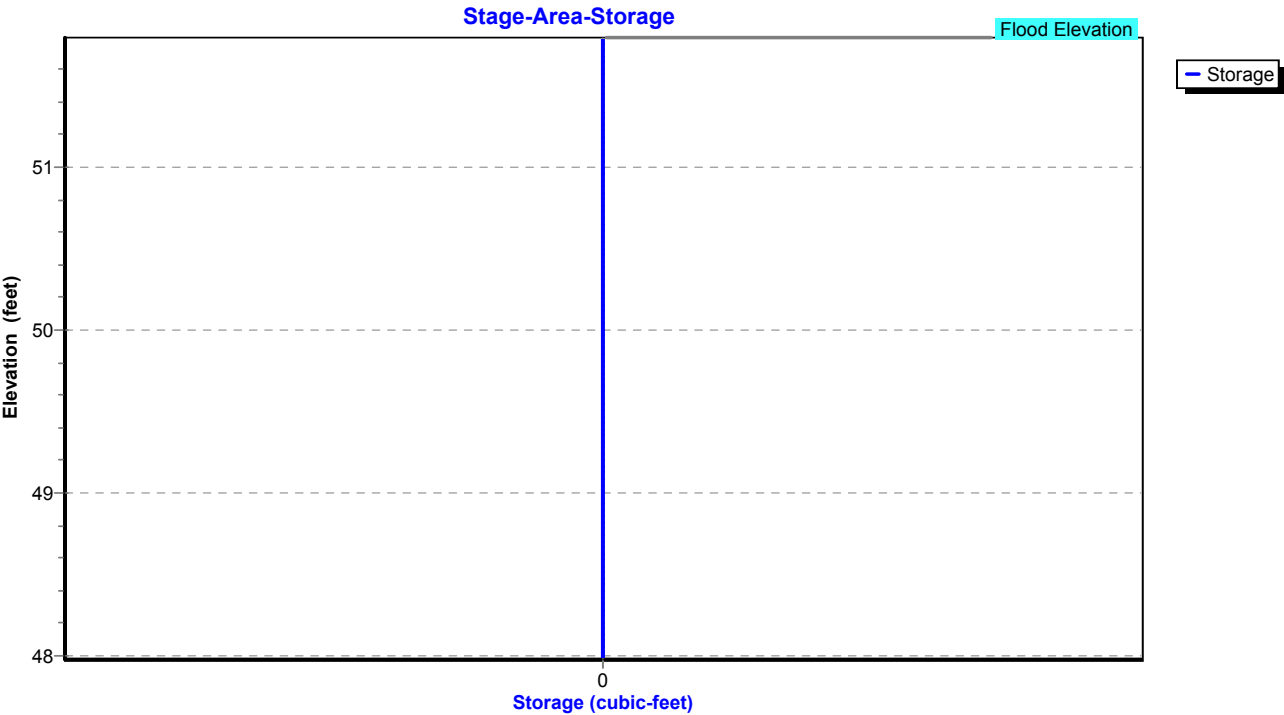
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Pond 14P: MH-O



Existing Conditions

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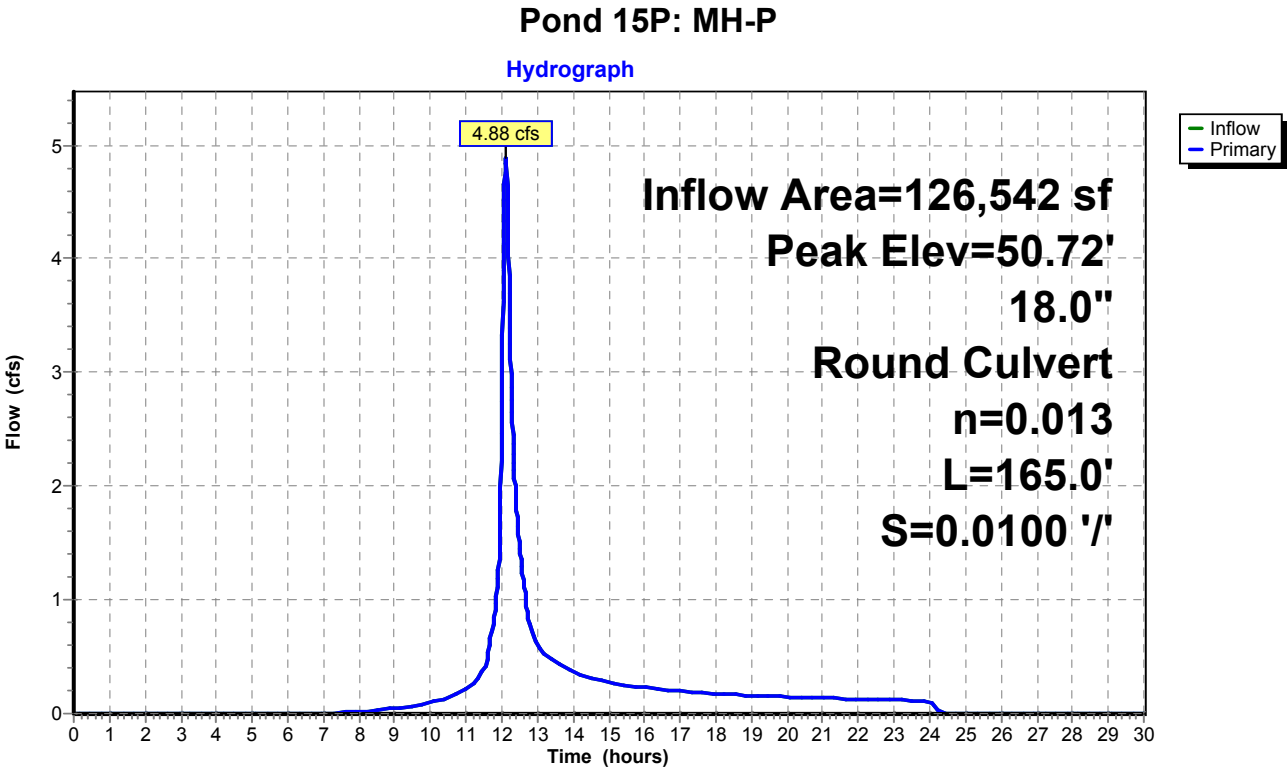
Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 1.75" for 2 year event
Inflow = 4.88 cfs @ 12.11 hrs, Volume= 18,464 cf
Outflow = 4.88 cfs @ 12.11 hrs, Volume= 18,464 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.88 cfs @ 12.11 hrs, Volume= 18,464 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.72' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.88 cfs @ 12.11 hrs HW=50.72' (Free Discharge)
1=Culvert (Inlet Controls 4.88 cfs @ 3.55 fps)



Existing Conditions

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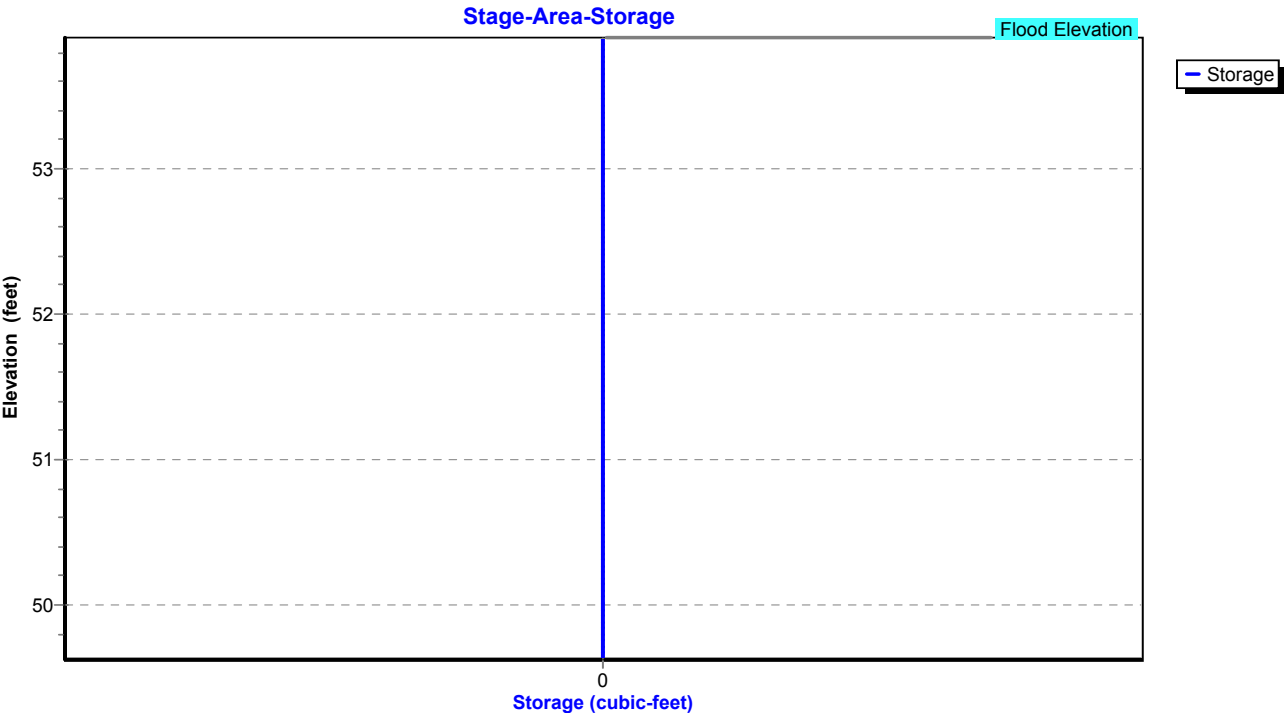
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Pond 15P: MH-P



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Summary for Pond 16P: MH-Q

Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 1.69" for 2 year event
Inflow = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf
Outflow = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.47' @ 12.12 hrs

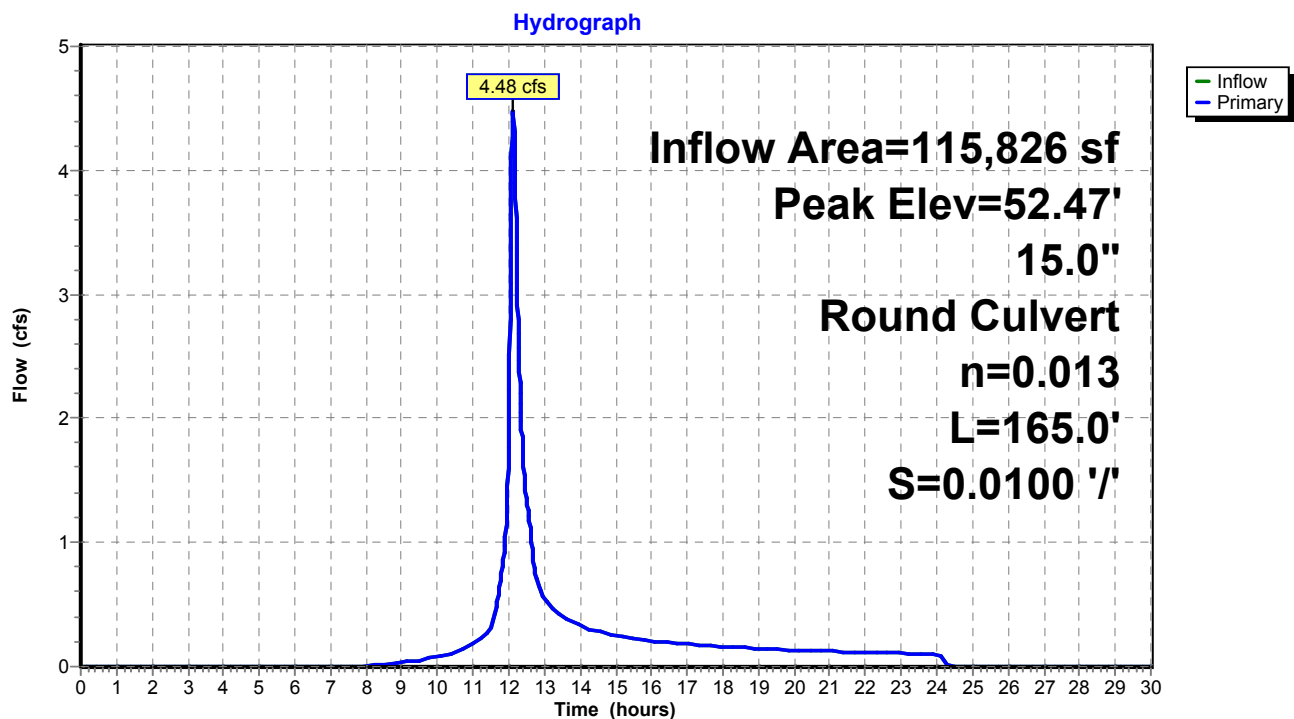
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.48 cfs @ 12.12 hrs HW=52.47' (Free Discharge)

↑1=Culvert (Inlet Controls 4.48 cfs @ 3.72 fps)

Pond 16P: MH-Q



Existing Conditions

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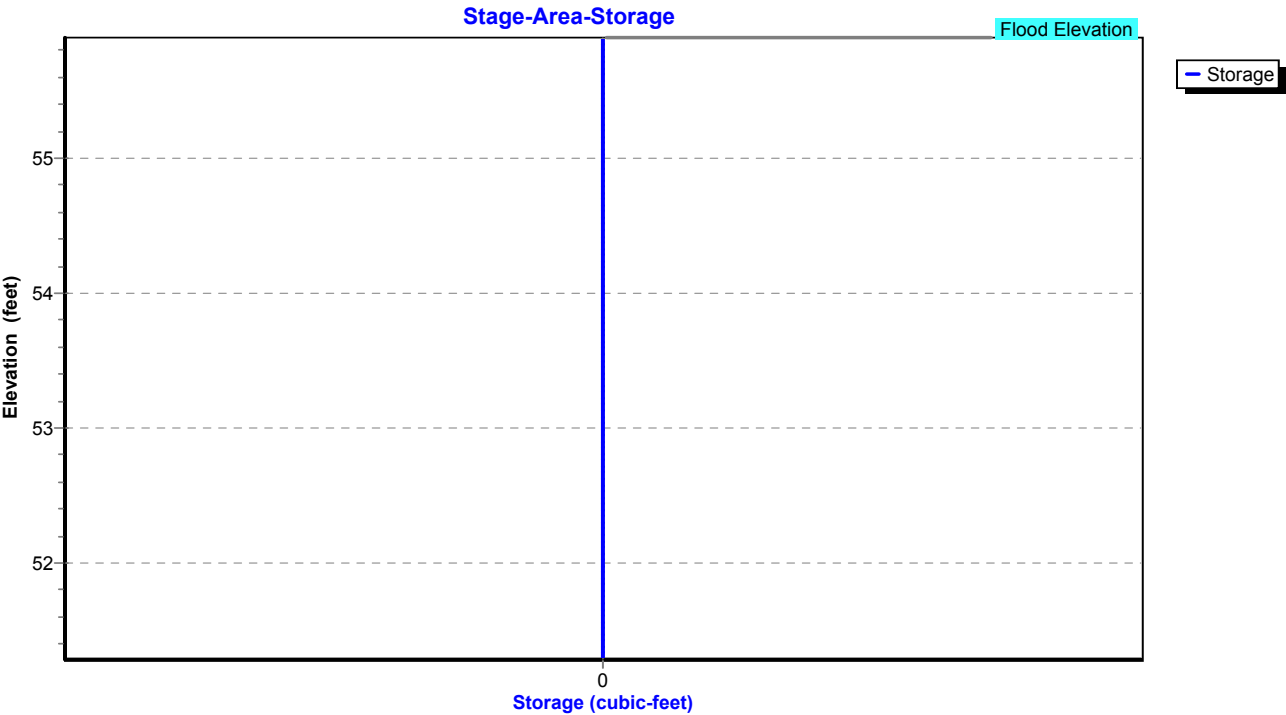
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Pond 16P: MH-Q



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 1.24" for 2 year event
 Inflow = 23.83 cfs @ 13.08 hrs, Volume= 303,052 cf
 Outflow = 23.81 cfs @ 13.14 hrs, Volume= 303,052 cf, Atten= 0%, Lag= 3.5 min
 Primary = 23.81 cfs @ 13.14 hrs, Volume= 303,052 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 45.48' @ 13.14 hrs Surf.Area= 1,989 sf Storage= 1,956 cf

Plug-Flow detention time= 1.8 min calculated for 302,951 cf (100% of inflow)
 Center-of-Mass det. time= 1.8 min (941.7 - 939.9)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=23.81 cfs @ 13.14 hrs HW=45.48' (Free Discharge)

↑**1=Culvert** (Inlet Controls 23.81 cfs @ 4.41 fps)

Existing Conditions

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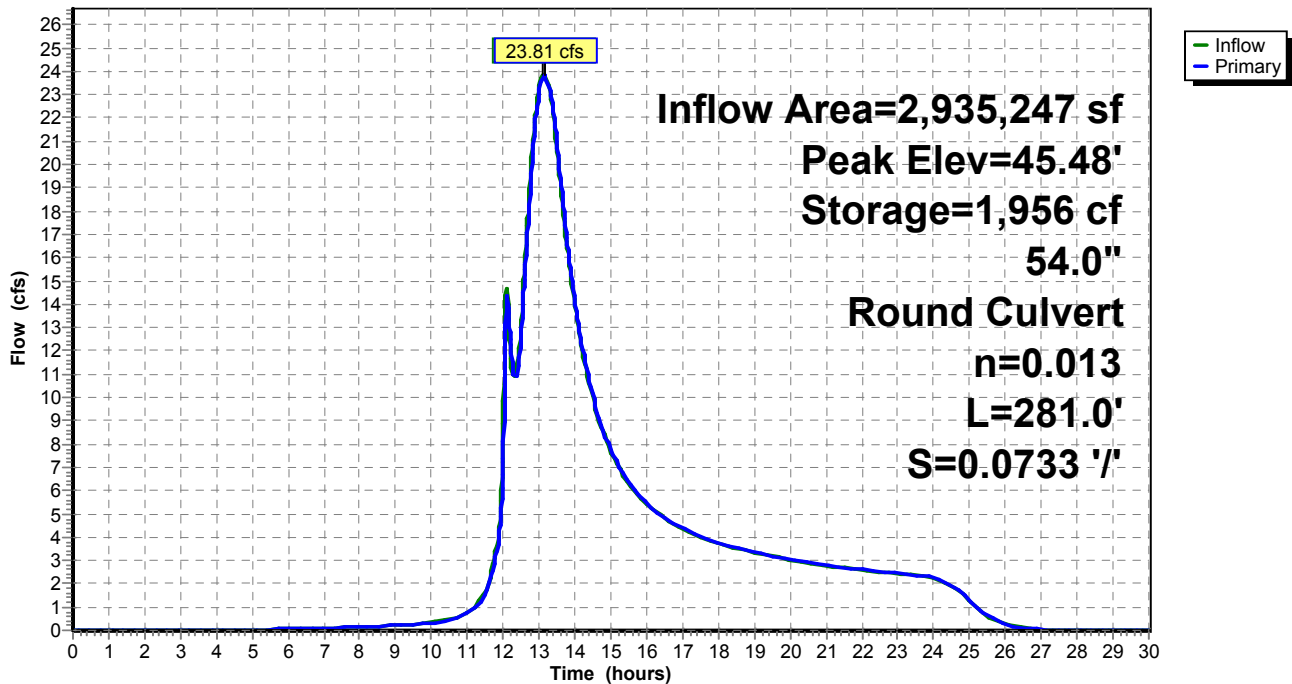
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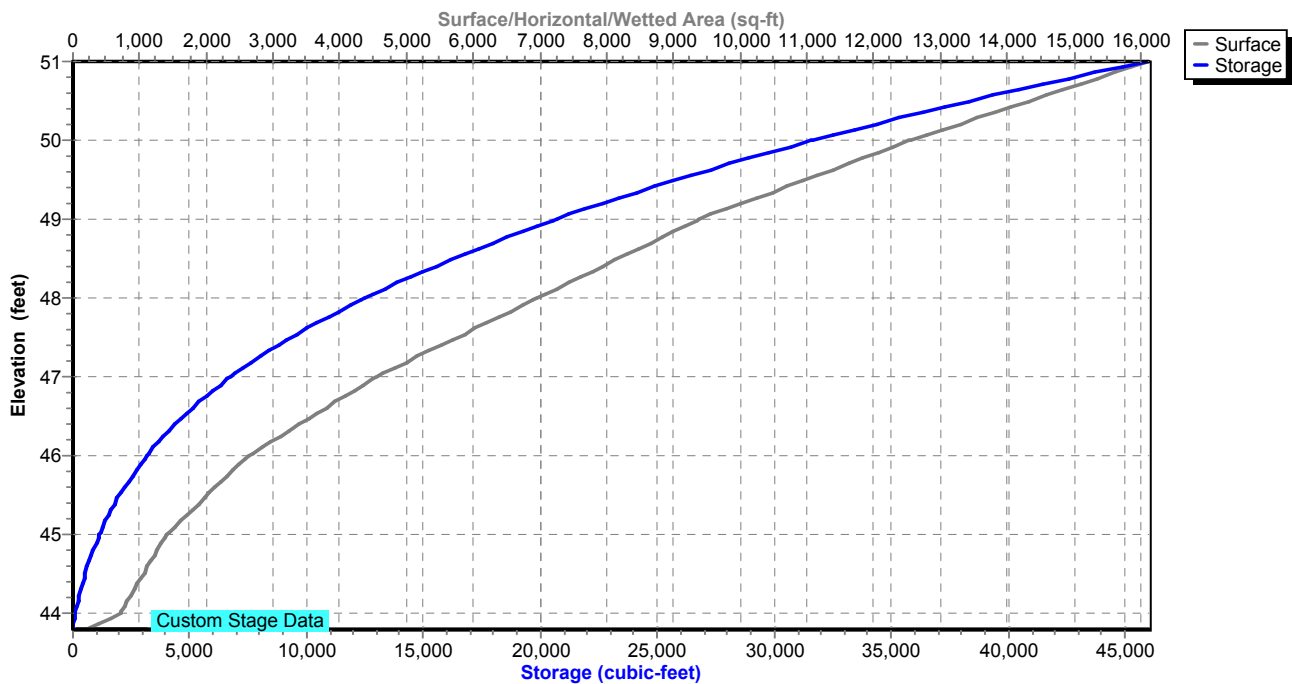
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 1.17" for 2 year event
 Inflow = 22.57 cfs @ 13.15 hrs, Volume= 257,725 cf
 Outflow = 22.57 cfs @ 13.16 hrs, Volume= 257,725 cf, Atten= 0%, Lag= 0.1 min
 Primary = 22.57 cfs @ 13.16 hrs, Volume= 257,725 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 63.92' @ 13.16 hrs Surf.Area= 191 sf Storage= 193 cf

Plug-Flow detention time= 0.1 min calculated for 257,640 cf (100% of inflow)
 Center-of-Mass det. time= 0.1 min (958.1 - 957.9)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=22.57 cfs @ 13.16 hrs HW=63.92' (Free Discharge)

↑**1=Culvert** (Inlet Controls 22.57 cfs @ 4.72 fps)

Existing Conditions

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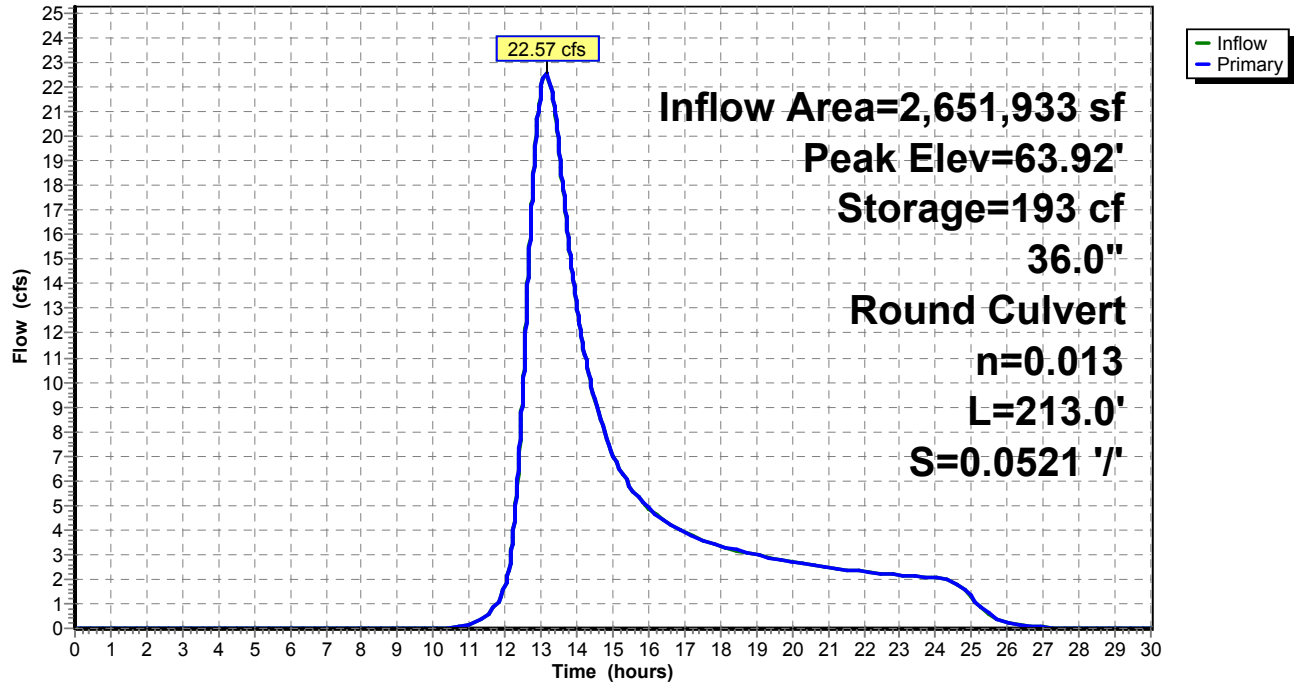
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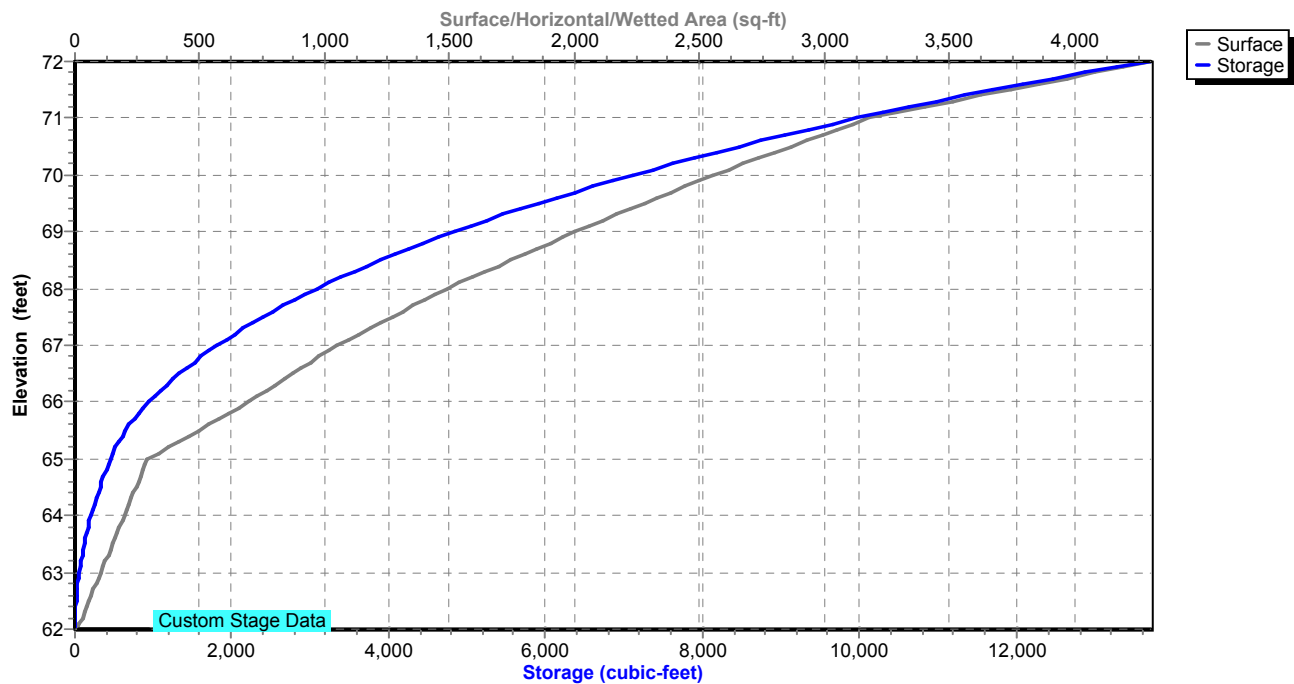
Pond 18P: DET 4 Culvert

Hydrograph



Pond 18P: DET 4 Culvert

Stage-Area-Storage



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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 1.17" for 2 year event
 Inflow = 6.77 cfs @ 12.57 hrs, Volume= 51,816 cf
 Outflow = 6.77 cfs @ 12.58 hrs, Volume= 51,816 cf, Atten= 0%, Lag= 0.6 min
 Primary = 6.77 cfs @ 12.58 hrs, Volume= 51,816 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 38.14' @ 12.58 hrs Surf.Area= 250 sf Storage= 173 cf

Plug-Flow detention time= 0.6 min calculated for 51,799 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (921.5 - 920.9)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=6.77 cfs @ 12.58 hrs HW=38.14' (Free Discharge)

↑**1=Culvert** (Inlet Controls 6.77 cfs @ 3.64 fps)

Existing Conditions

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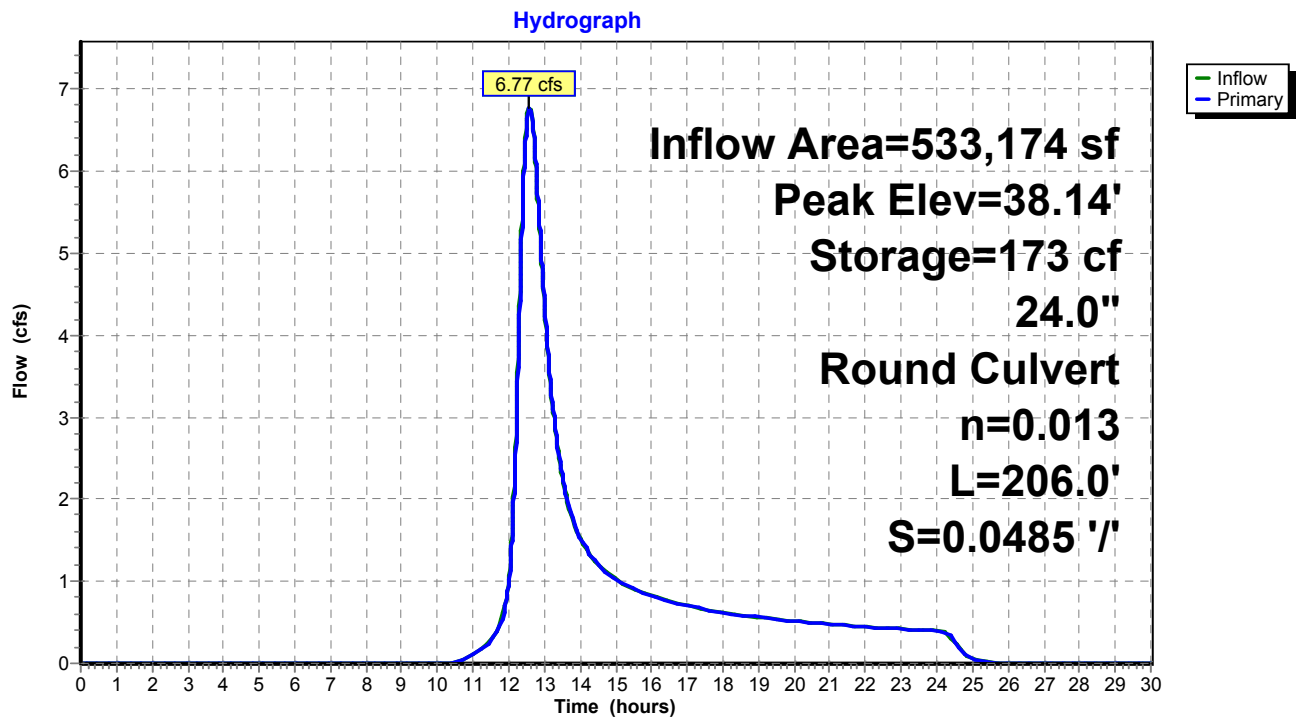
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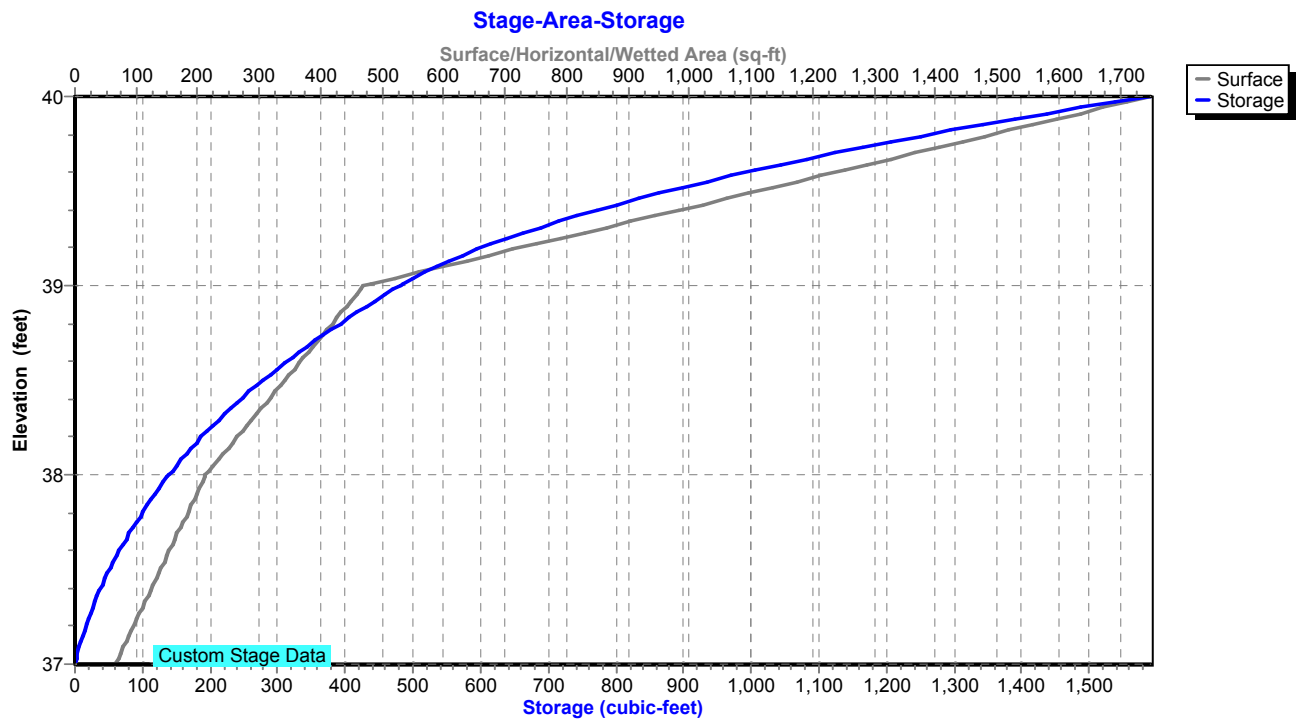
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 1.48" for 2 year event
Inflow = 18.11 cfs @ 12.80 hrs, Volume= 159,366 cf
Outflow = 17.77 cfs @ 12.87 hrs, Volume= 159,366 cf, Atten= 2%, Lag= 4.1 min
Primary = 17.77 cfs @ 12.87 hrs, Volume= 159,366 cf
Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 36.63' @ 12.87 hrs Surf.Area= 4,908 sf Storage= 3,972 cf

Plug-Flow detention time= 3.8 min calculated for 159,366 cf (100% of inflow)
Center-of-Mass det. time= 3.7 min (920.4 - 916.7)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=17.77 cfs @ 12.87 hrs HW=36.63' (Free Discharge)
↑**1=Culvert** (Inlet Controls 17.77 cfs @ 4.61 fps)

Existing Conditions

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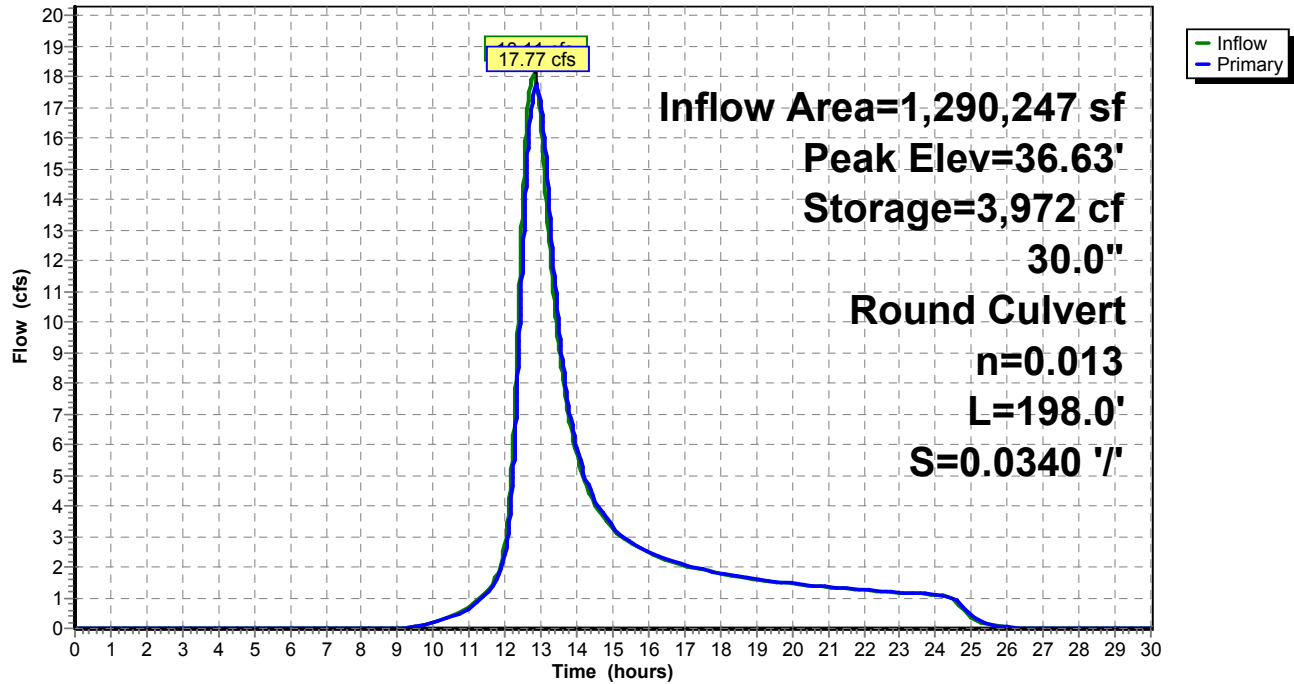
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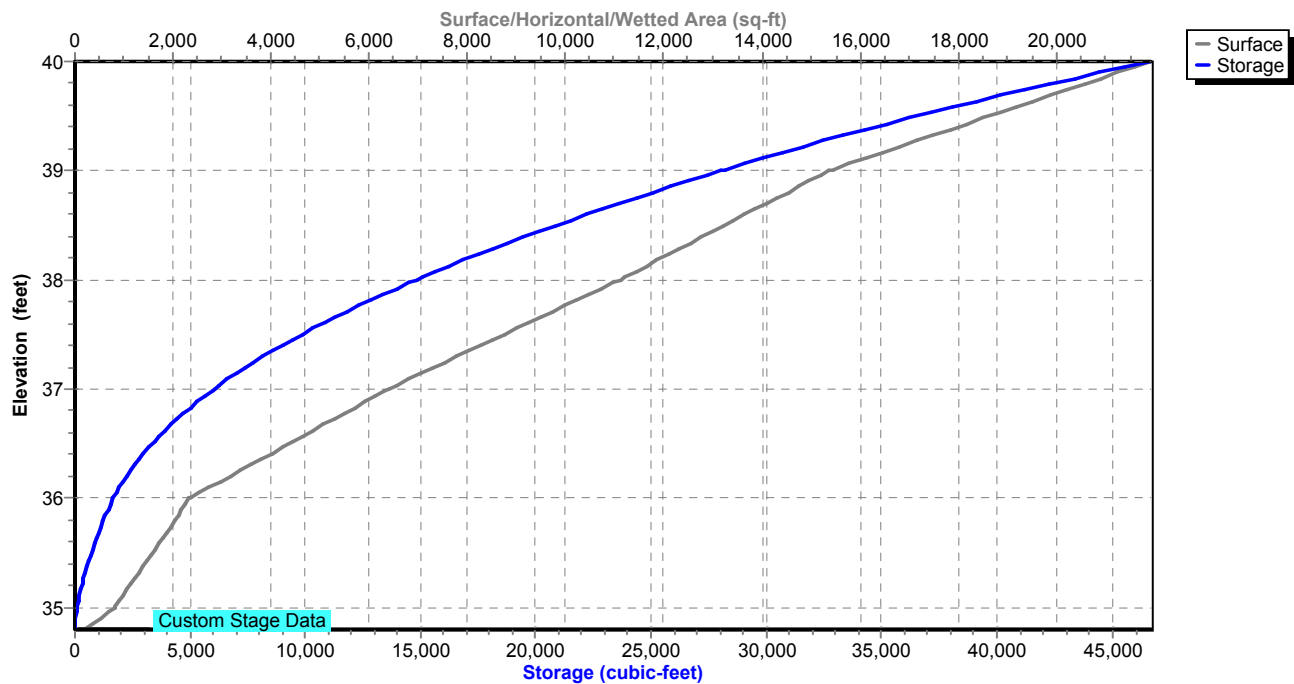
Pond 22P: DET 2 Culvert

Hydrograph



Pond 22P: DET 2 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 1.23" for 2 year event
Inflow = 5.87 cfs @ 12.23 hrs, Volume= 28,219 cf
Outflow = 5.85 cfs @ 12.24 hrs, Volume= 28,219 cf, Atten= 0%, Lag= 0.7 min
Primary = 5.85 cfs @ 12.24 hrs, Volume= 28,219 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 43.55' @ 12.24 hrs Surf.Area= 404 sf Storage= 218 cf

Plug-Flow detention time= 0.6 min calculated for 28,209 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (895.2 - 894.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=5.84 cfs @ 12.24 hrs HW=43.55' (Free Discharge)
↑**1=Culvert** (Inlet Controls 5.84 cfs @ 3.49 fps)

Existing Conditions

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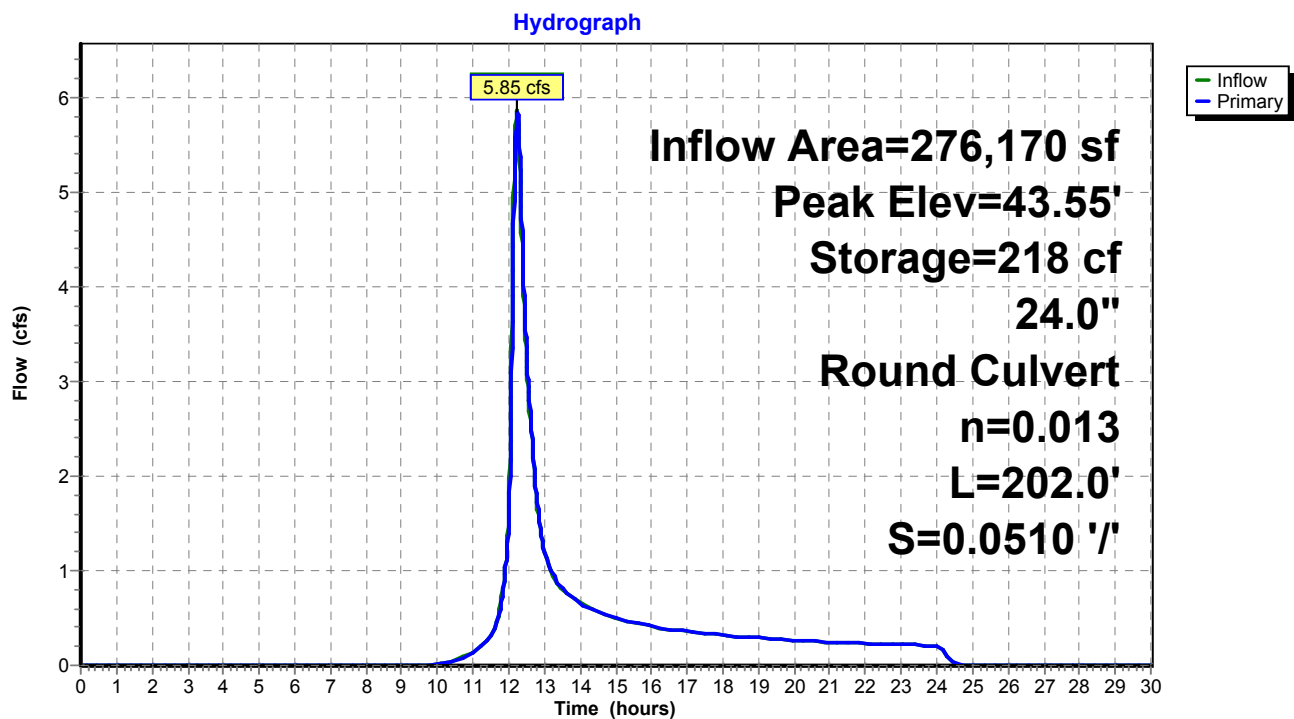
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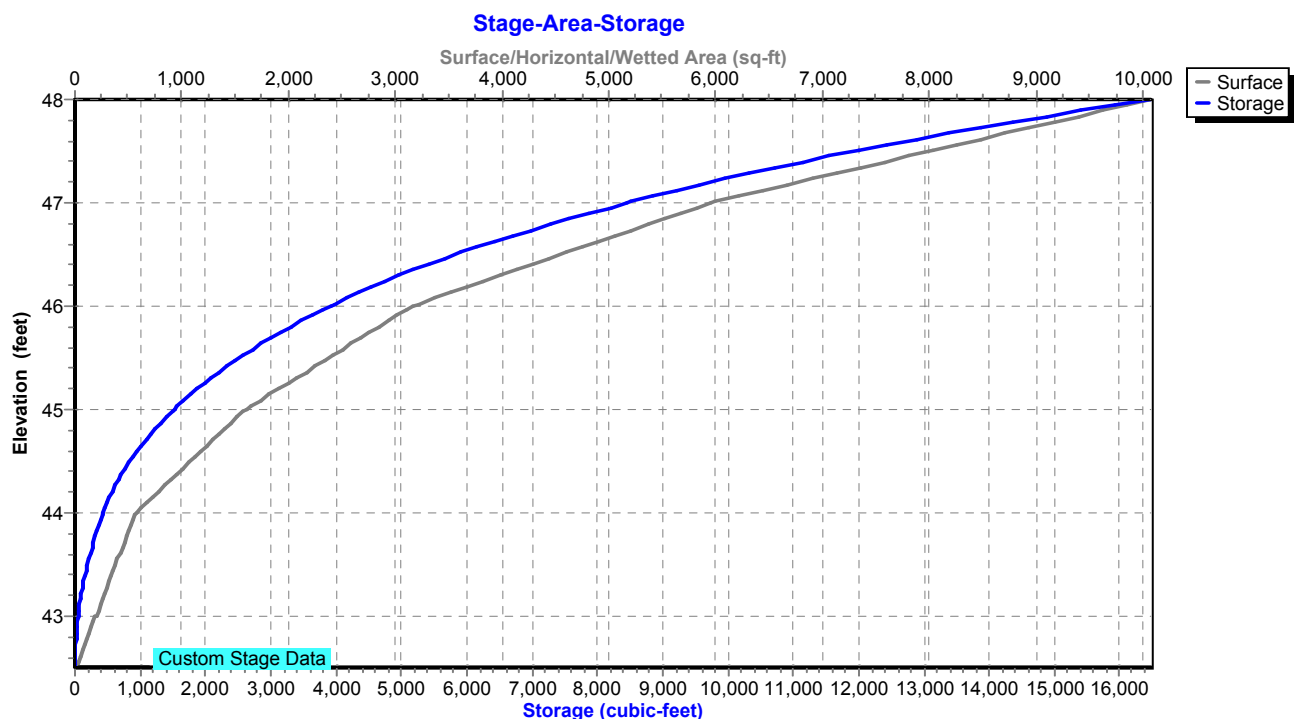
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 6.73" for 2 year event
 Inflow = 60.22 cfs @ 12.34 hrs, Volume= 281,059 cf
 Outflow = 26.06 cfs @ 13.23 hrs, Volume= 281,025 cf, Atten= 57%, Lag= 53.4 min
 Primary = 26.06 cfs @ 13.23 hrs, Volume= 281,025 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 11.18' @ 13.23 hrs Storage= 109,080 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 43.8 min (834.3 - 790.4)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 '/' Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=26.06 cfs @ 13.23 hrs HW=11.18' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 26.06 cfs @ 4.51 fps)

Existing Conditions

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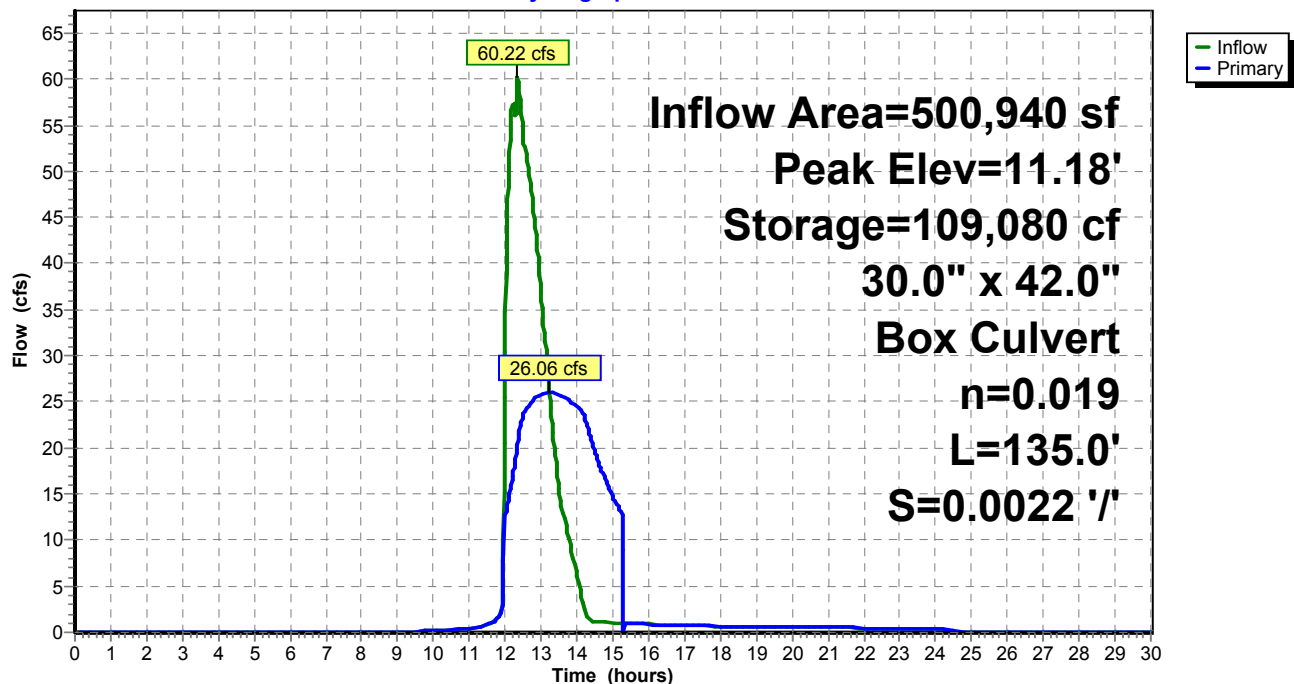
NORWALK 24-hr S1 2 year Rainfall=3.48"

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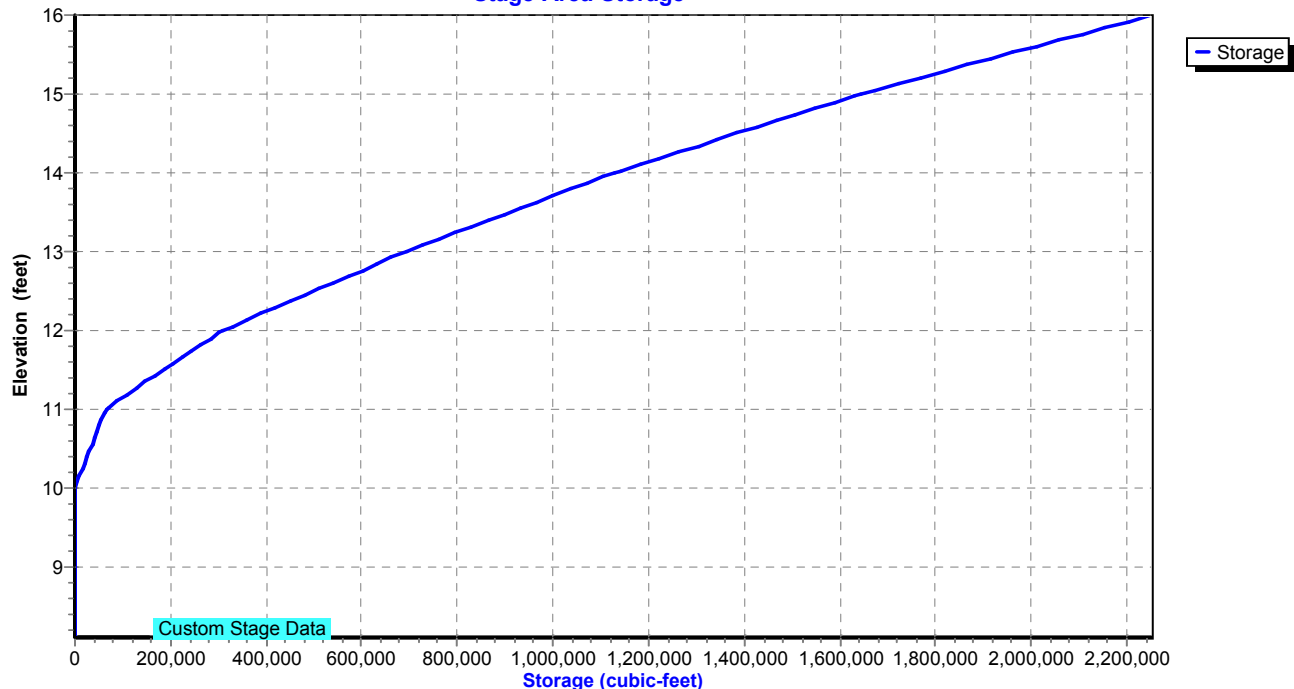
Pond 24P: RR Culvert 3

Hydrograph



Pond 24P: RR Culvert 3

Stage-Area-Storage



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 1.21" for 2 year event
Inflow = 12.60 cfs @ 12.20 hrs, Volume= 78,326 cf
Outflow = 11.13 cfs @ 12.29 hrs, Volume= 78,268 cf, Atten= 12%, Lag= 5.5 min
Primary = 11.13 cfs @ 12.29 hrs, Volume= 78,268 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 19.27' @ 12.29 hrs Surf.Area= 1,296 sf Storage= 1,177 cf

Plug-Flow detention time= 1.0 min calculated for 78,242 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (940.0 - 939.7)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' S= 0.0691 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=11.13 cfs @ 12.29 hrs HW=19.27' (Free Discharge)

1=Culvert (Inlet Controls 11.13 cfs @ 9.07 fps)

2=Custom Weir/Orifice (Controls 0.00 cfs)

Existing Conditions

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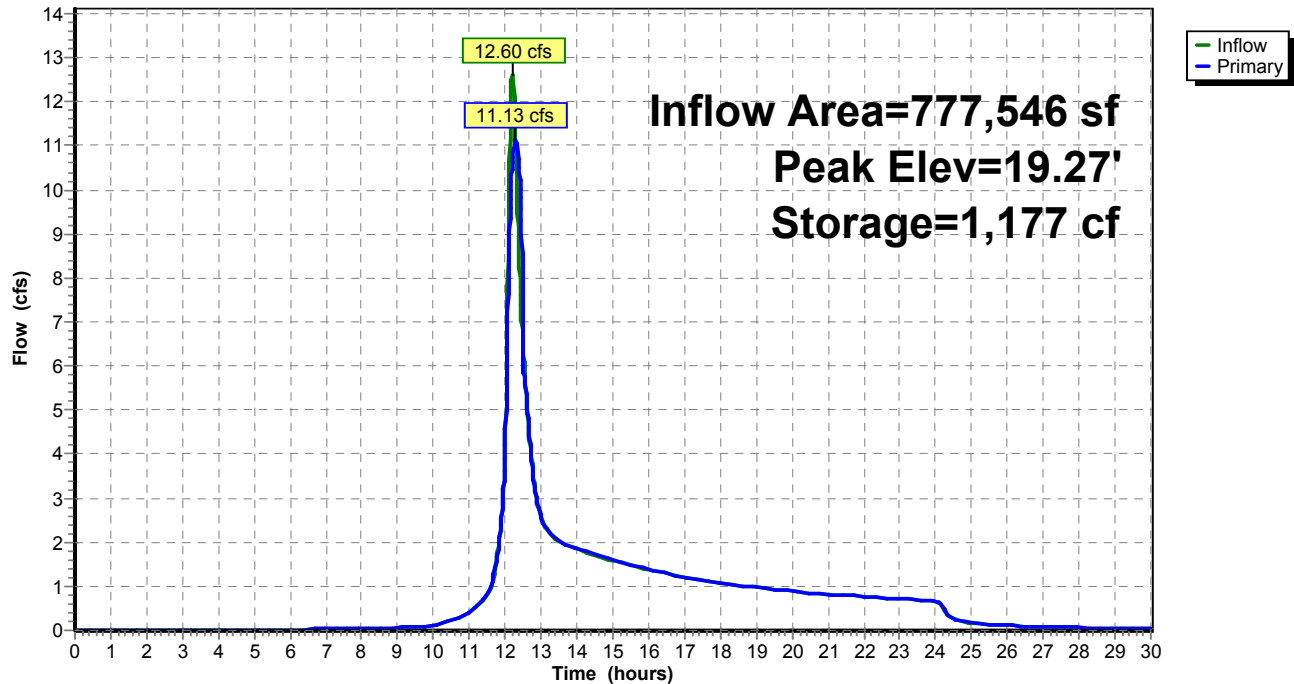
NORWALK 24-hr S1 2 year Rainfall=3.48"

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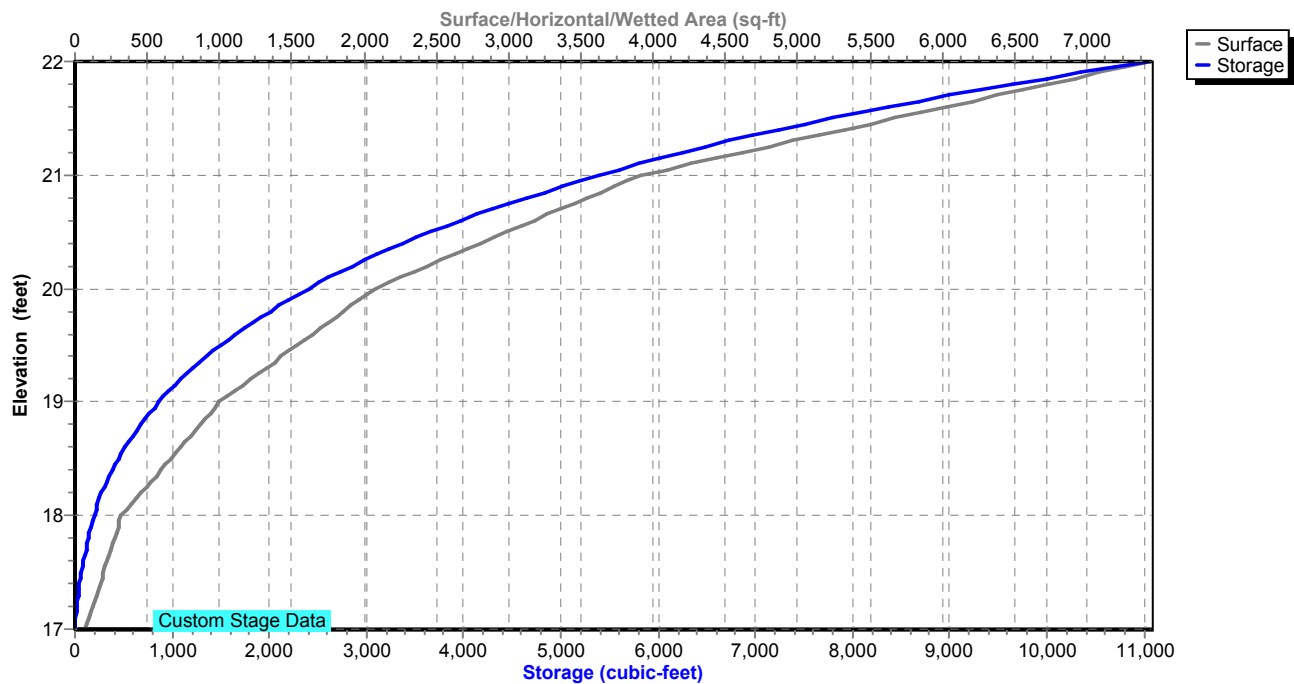
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 1.49" for 2 year event
Inflow = 26.93 cfs @ 12.69 hrs, Volume= 274,605 cf
Outflow = 26.92 cfs @ 12.71 hrs, Volume= 274,605 cf, Atten= 0%, Lag= 1.0 min
Primary = 26.92 cfs @ 12.71 hrs, Volume= 274,605 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 18.65' @ 12.71 hrs Surf.Area= 9,465 sf Storage= 9,371 cf

Plug-Flow detention time= 4.0 min calculated for 274,514 cf (100% of inflow)
Center-of-Mass det. time= 4.0 min (905.0 - 901.0)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=26.60 cfs @ 12.71 hrs HW=18.65' (Free Discharge)

1=Culvert (Inlet Controls 13.72 cfs @ 7.76 fps)

2=Custom Weir/Orifice (Weir Controls 12.88 cfs @ 1.31 fps)

Existing Conditions

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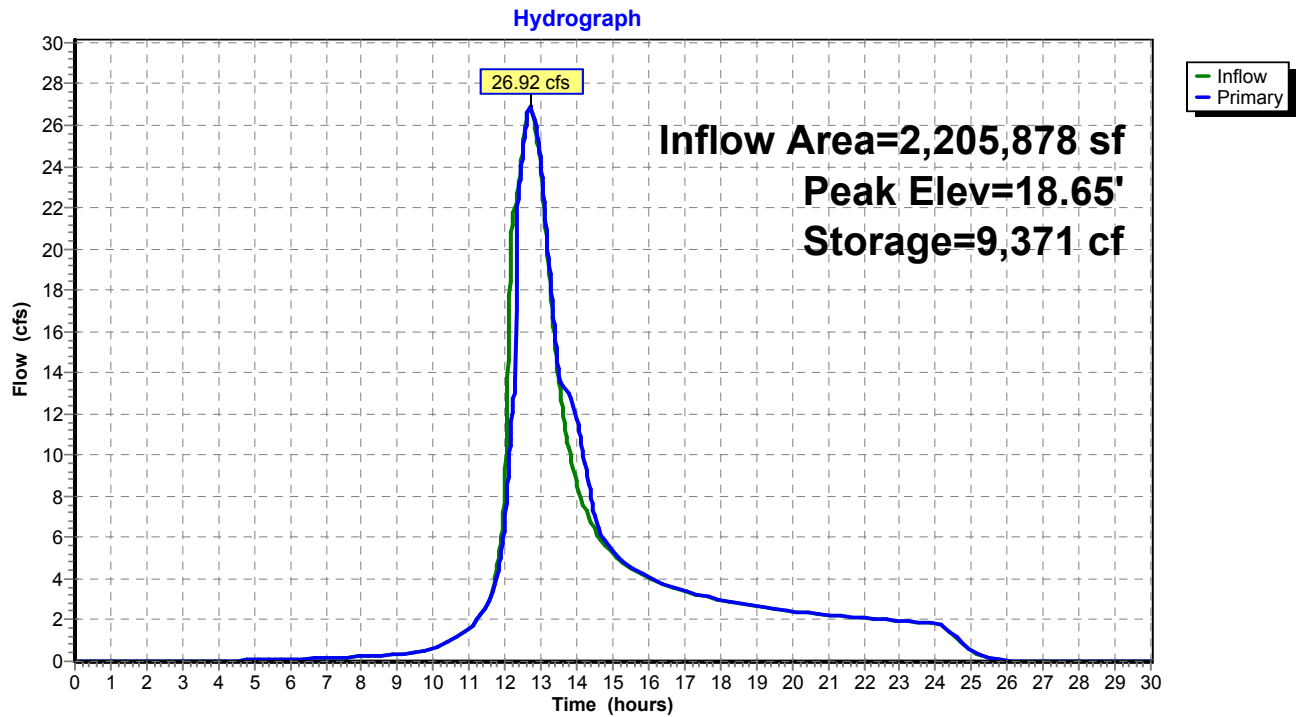
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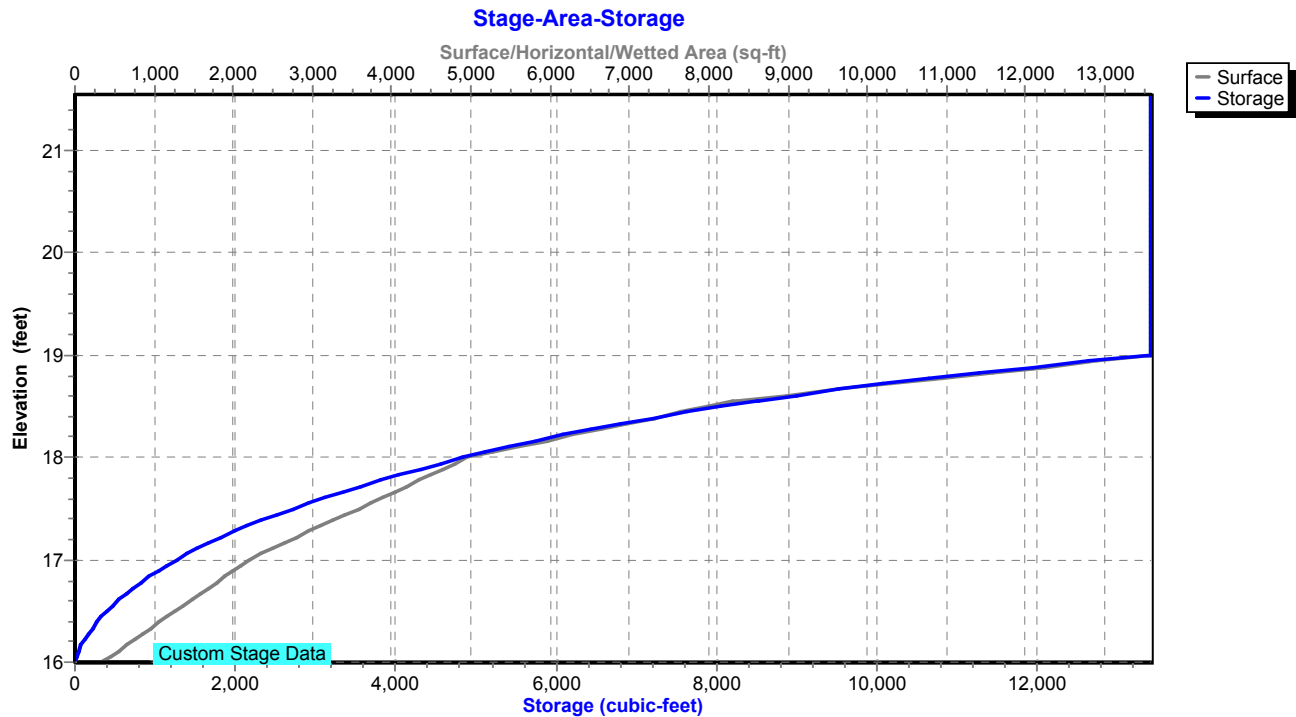
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 2.12" for 2 year event
Inflow = 13.50 cfs @ 12.04 hrs, Volume= 43,842 cf
Outflow = 0.59 cfs @ 14.92 hrs, Volume= 18,576 cf, Atten= 96%, Lag= 173.1 min
Primary = 0.59 cfs @ 14.92 hrs, Volume= 18,576 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 26.88' @ 14.92 hrs Surf.Area= 13,327 sf Storage= 29,140 cf

Plug-Flow detention time= 460.0 min calculated for 18,576 cf (42% of inflow)
Center-of-Mass det. time= 304.5 min (1,126.9 - 822.5)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / S= 0.0333 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.59 cfs @ 14.92 hrs HW=26.88' (Free Discharge)

1=Culvert (Passes 0.59 cfs of 12.43 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.59 cfs @ 2.11 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Existing Conditions

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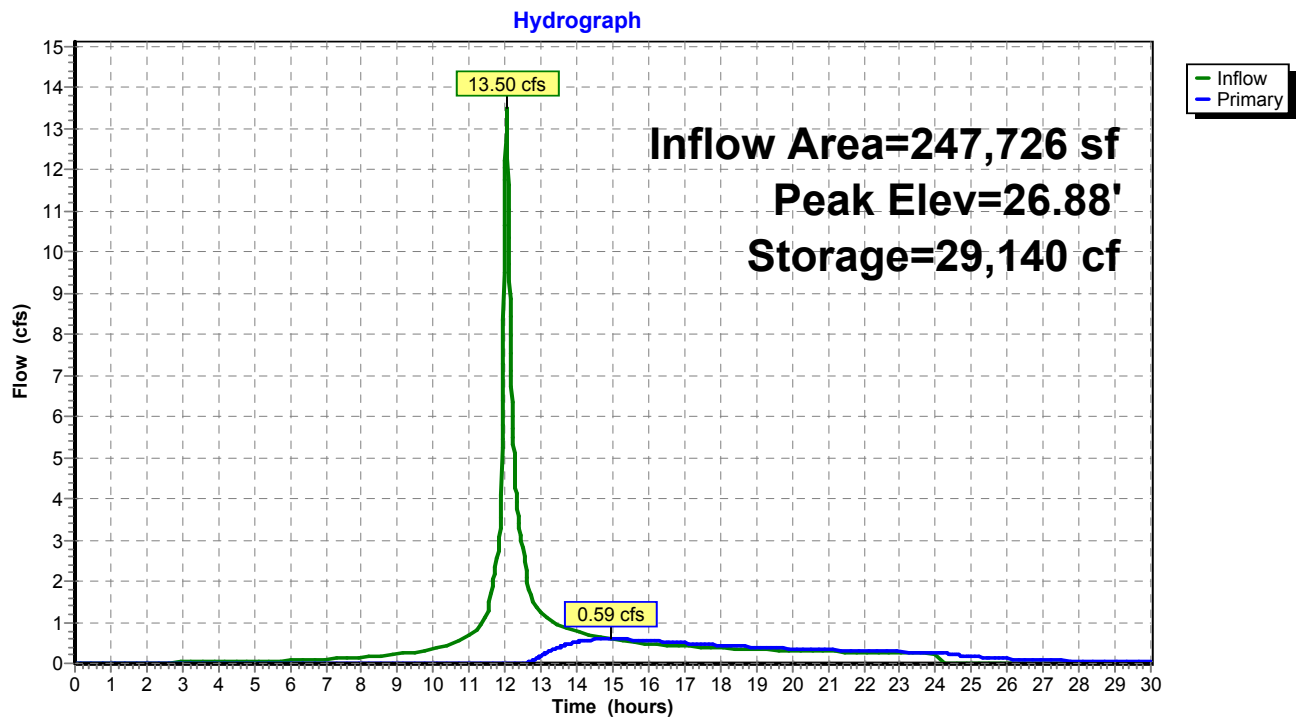
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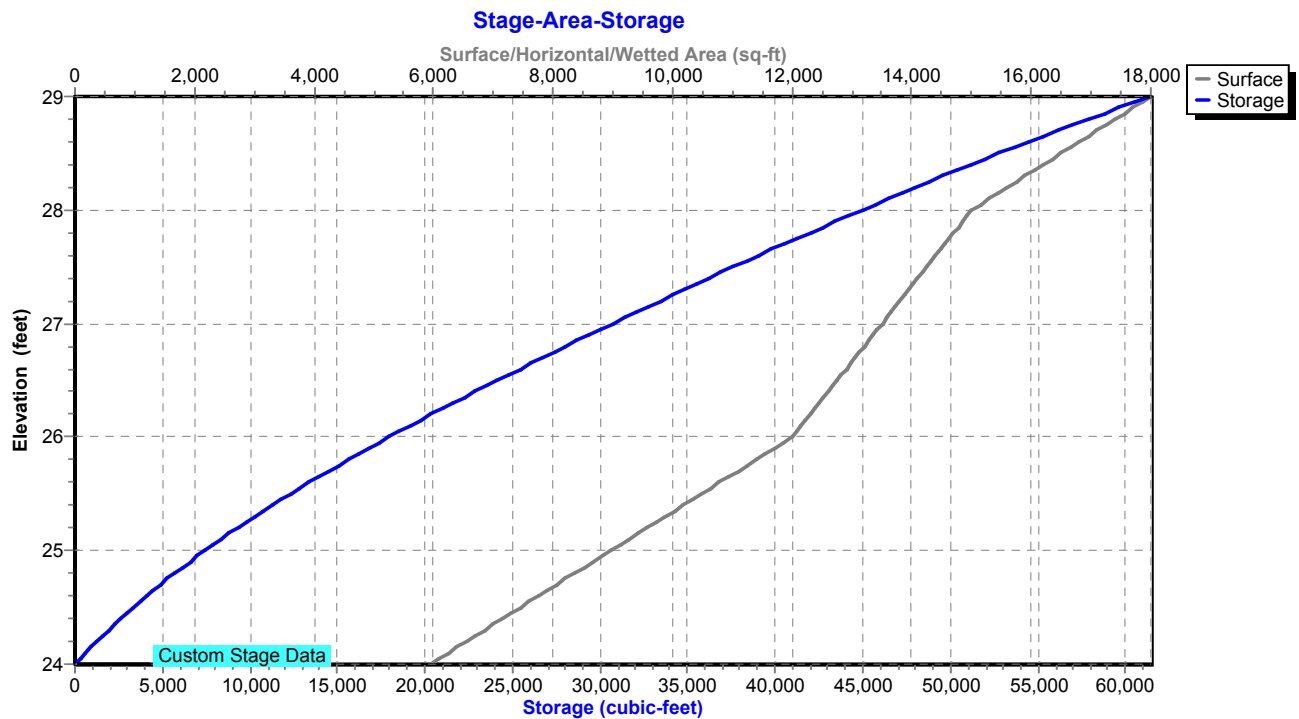
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 2.24" for 2 year event
Inflow = 12.42 cfs @ 12.04 hrs, Volume= 40,940 cf
Outflow = 12.42 cfs @ 12.04 hrs, Volume= 40,940 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.42 cfs @ 12.04 hrs, Volume= 40,940 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 45.68' @ 12.04 hrs

Flood Elev= 51.00'

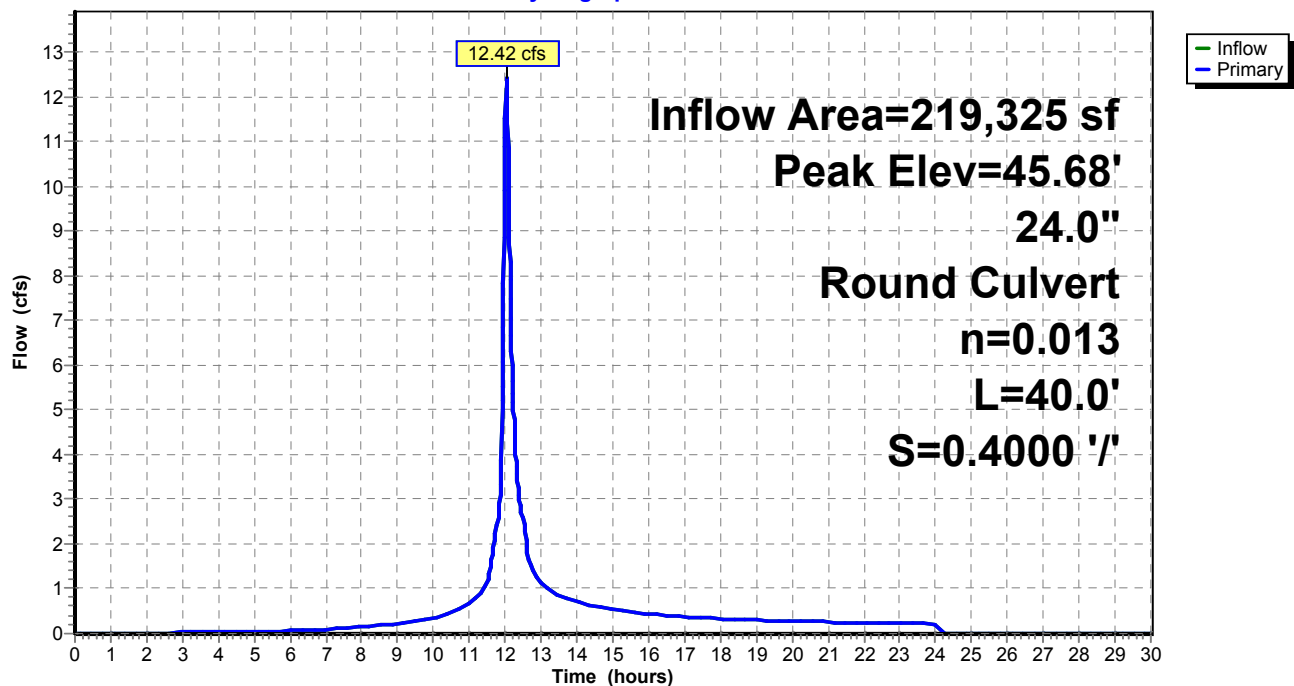
Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.42 cfs @ 12.04 hrs HW=45.68' (Free Discharge)

↑1=Culvert (Inlet Controls 12.42 cfs @ 4.41 fps)

Pond 51P: Manhole

Hydrograph



Existing Conditions

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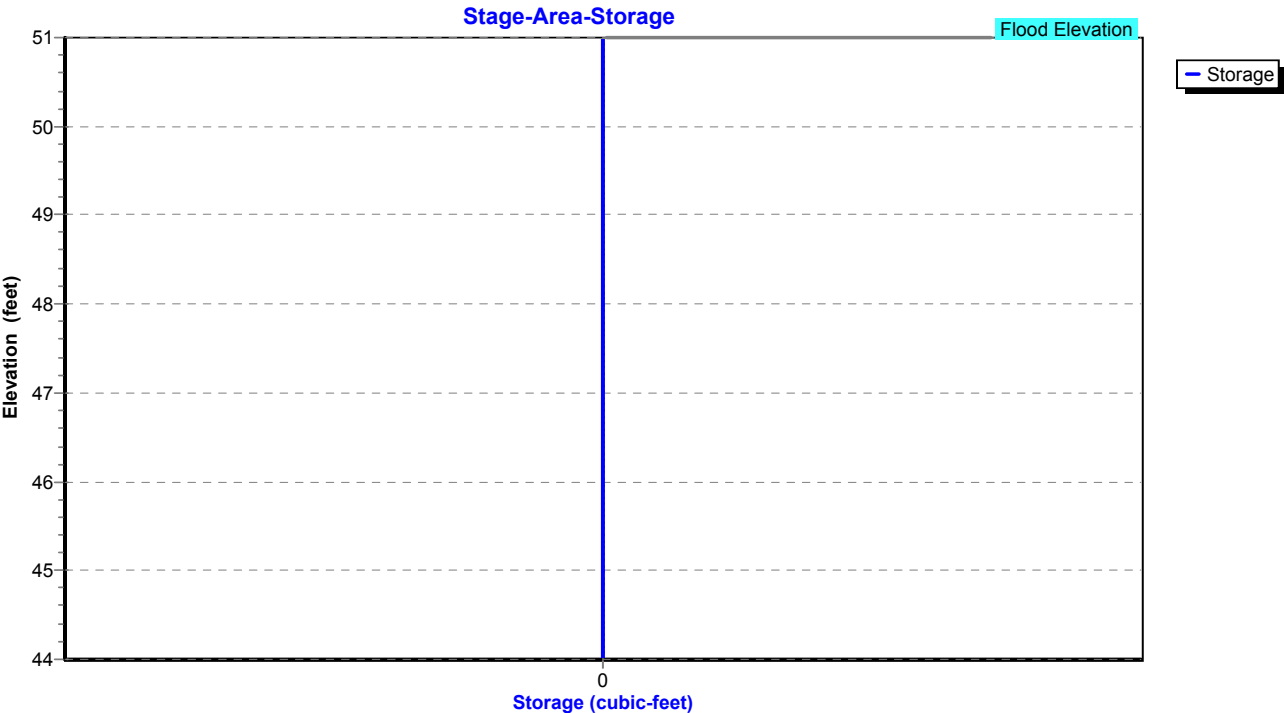
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Pond 51P: Manhole



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Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 2.29" for 2 year event
Inflow = 7.96 cfs @ 12.04 hrs, Volume= 25,108 cf
Outflow = 7.96 cfs @ 12.04 hrs, Volume= 25,108 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.96 cfs @ 12.04 hrs, Volume= 25,108 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 45.77' @ 12.04 hrs

Flood Elev= 49.00'

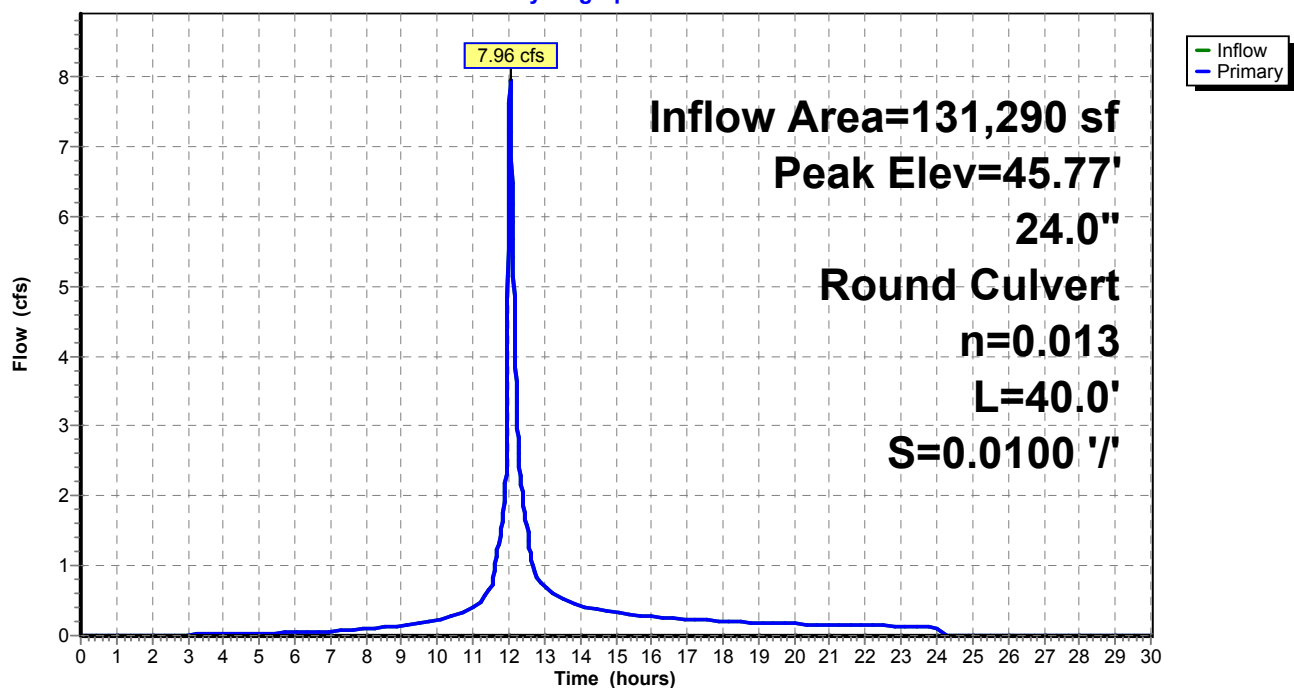
Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=7.94 cfs @ 12.04 hrs HW=45.77' (Free Discharge)

↑1=Culvert (Barrel Controls 7.94 cfs @ 4.90 fps)

Pond 57P: CB-1

Hydrograph



Existing Conditions

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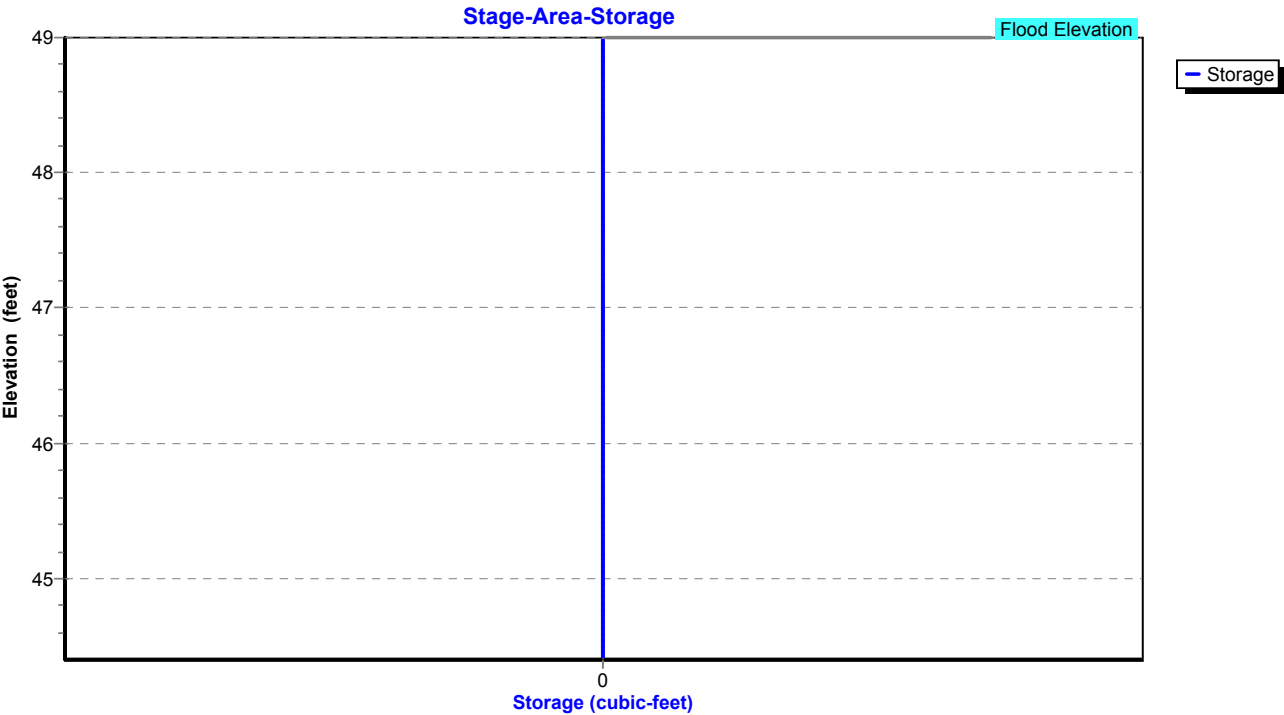
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Pond 57P: CB-1



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Summary for Pond 58P: Manhole

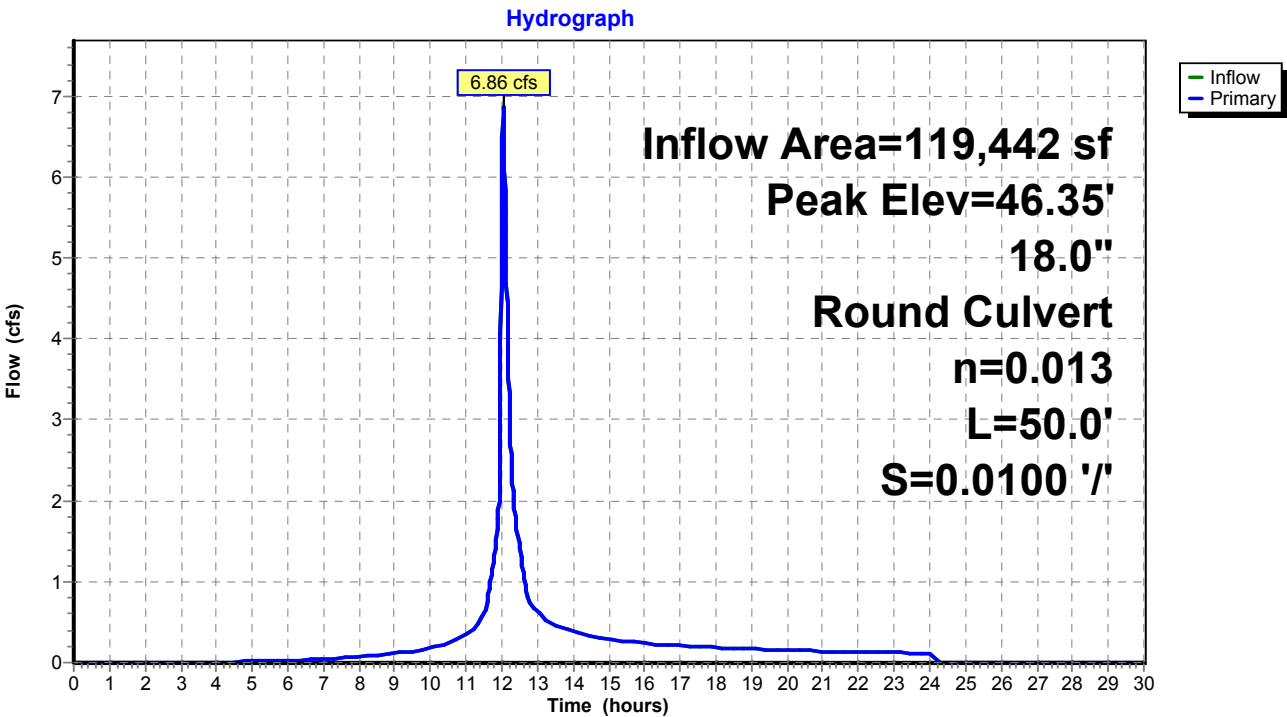
Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 2.20" for 2 year event
Inflow = 6.86 cfs @ 12.04 hrs, Volume= 21,903 cf
Outflow = 6.86 cfs @ 12.04 hrs, Volume= 21,903 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.86 cfs @ 12.04 hrs, Volume= 21,903 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.35' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=6.85 cfs @ 12.04 hrs HW=46.35' (Free Discharge)
1=Culvert (Barrel Controls 6.85 cfs @ 5.00 fps)

Pond 58P: Manhole



Existing Conditions

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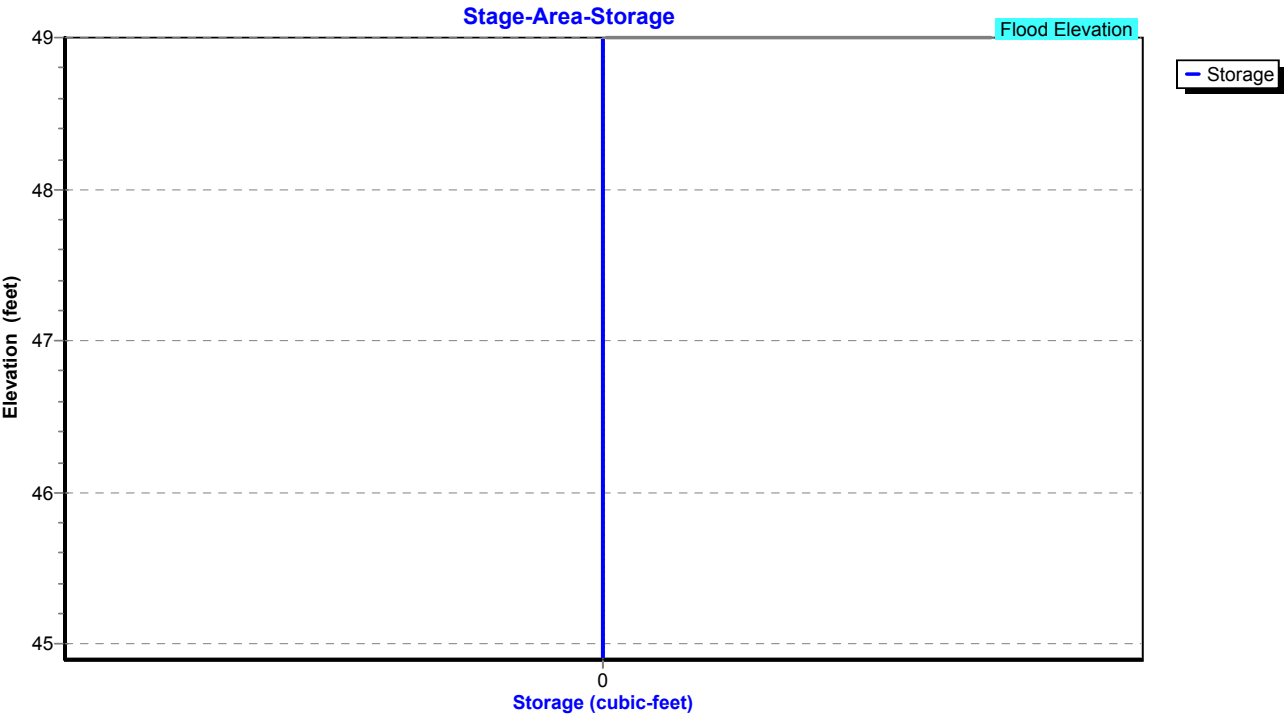
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Pond 58P: Manhole



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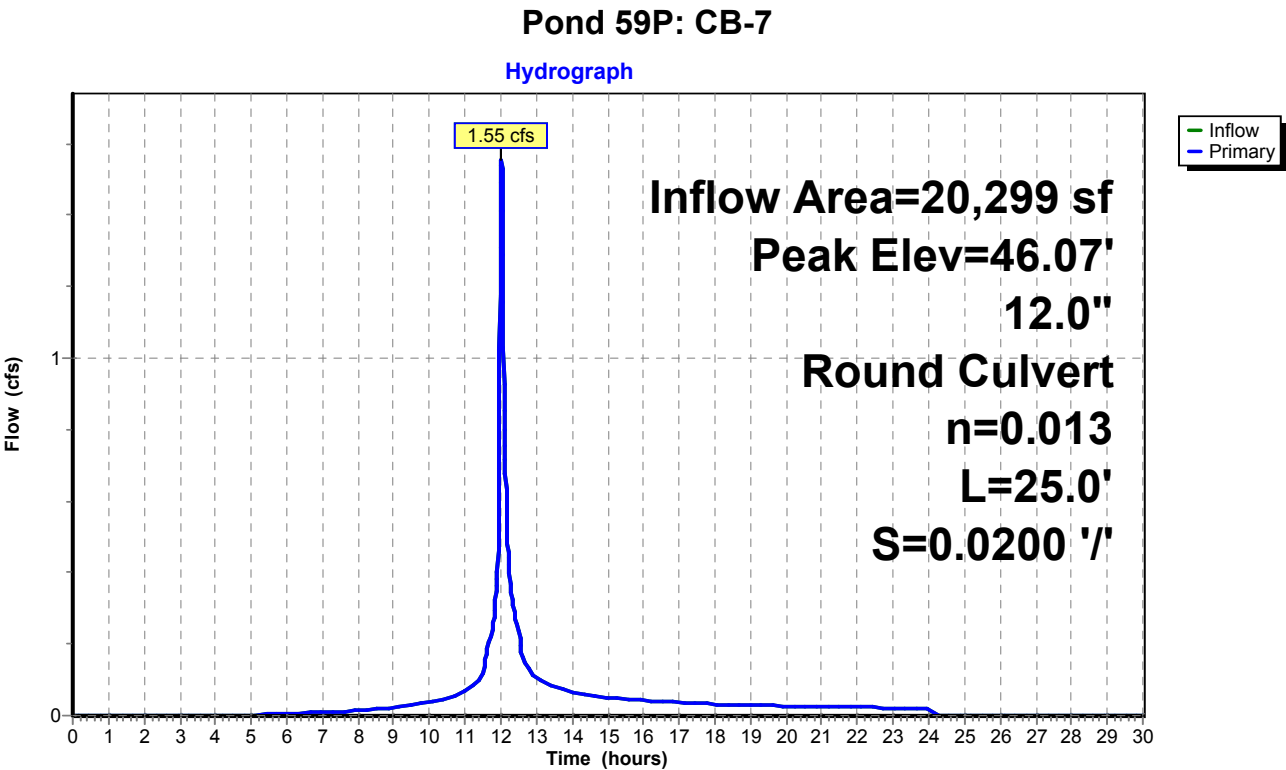
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 2.34" for 2 year event
Inflow = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf
Outflow = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.07' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.55 cfs @ 12.03 hrs HW=46.07' (Free Discharge)
↑1=Culvert (Inlet Controls 1.55 cfs @ 2.78 fps)



Existing Conditions

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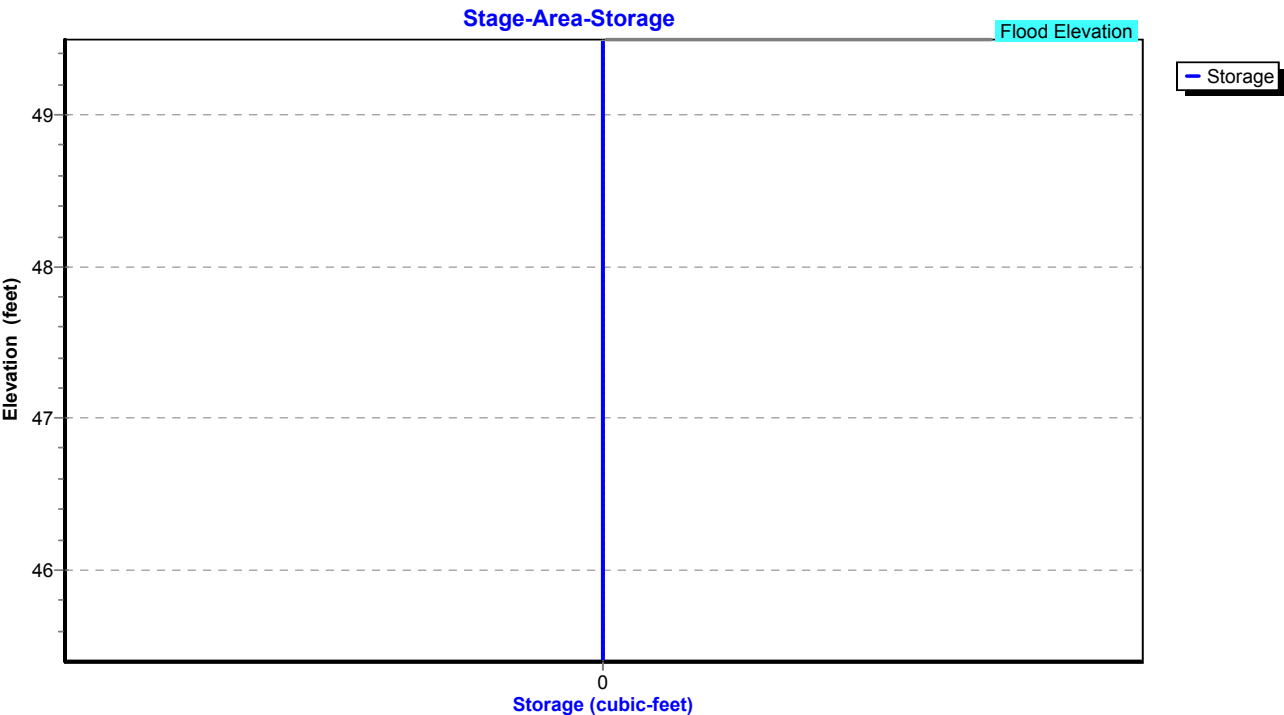
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Pond 59P: CB-7



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Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 2.82" for 2 year event
Inflow = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf
Outflow = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 45.53' @ 12.03 hrs

Flood Elev= 49.00'

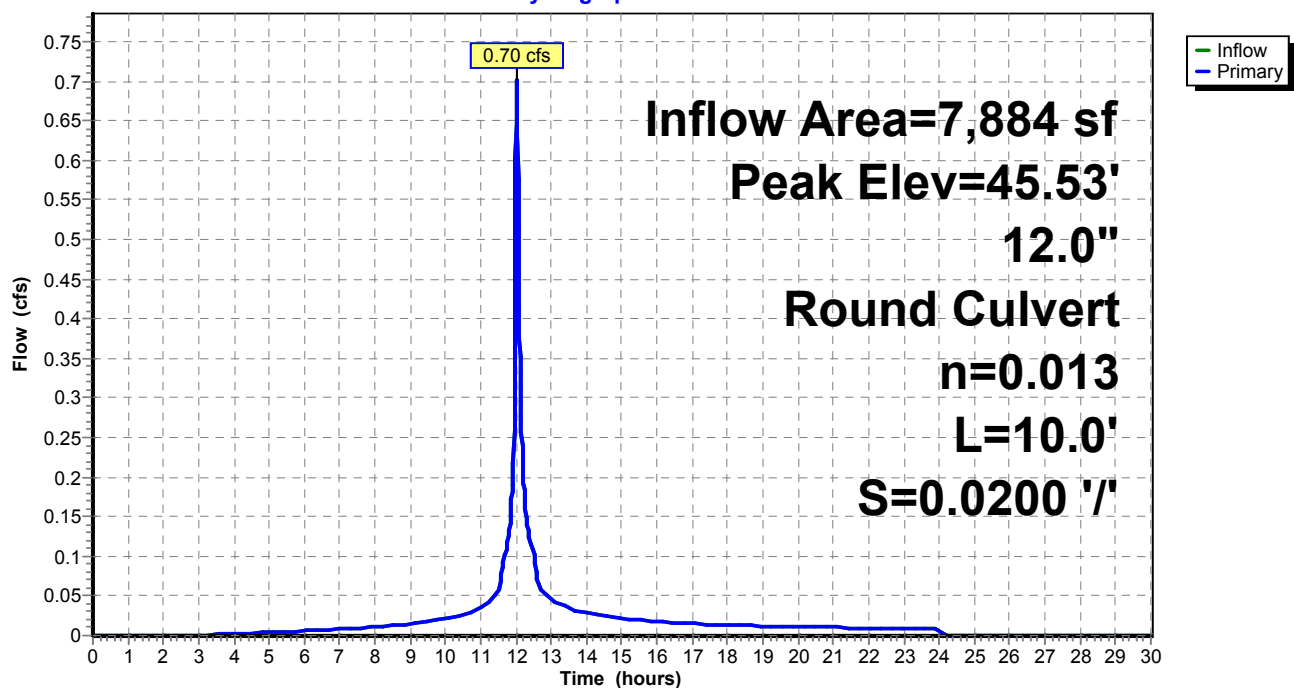
Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.03 hrs HW=45.53' (Free Discharge)

↑1=Culvert (Barrel Controls 0.70 cfs @ 3.17 fps)

Pond 61P: CB-6

Hydrograph



Existing Conditions

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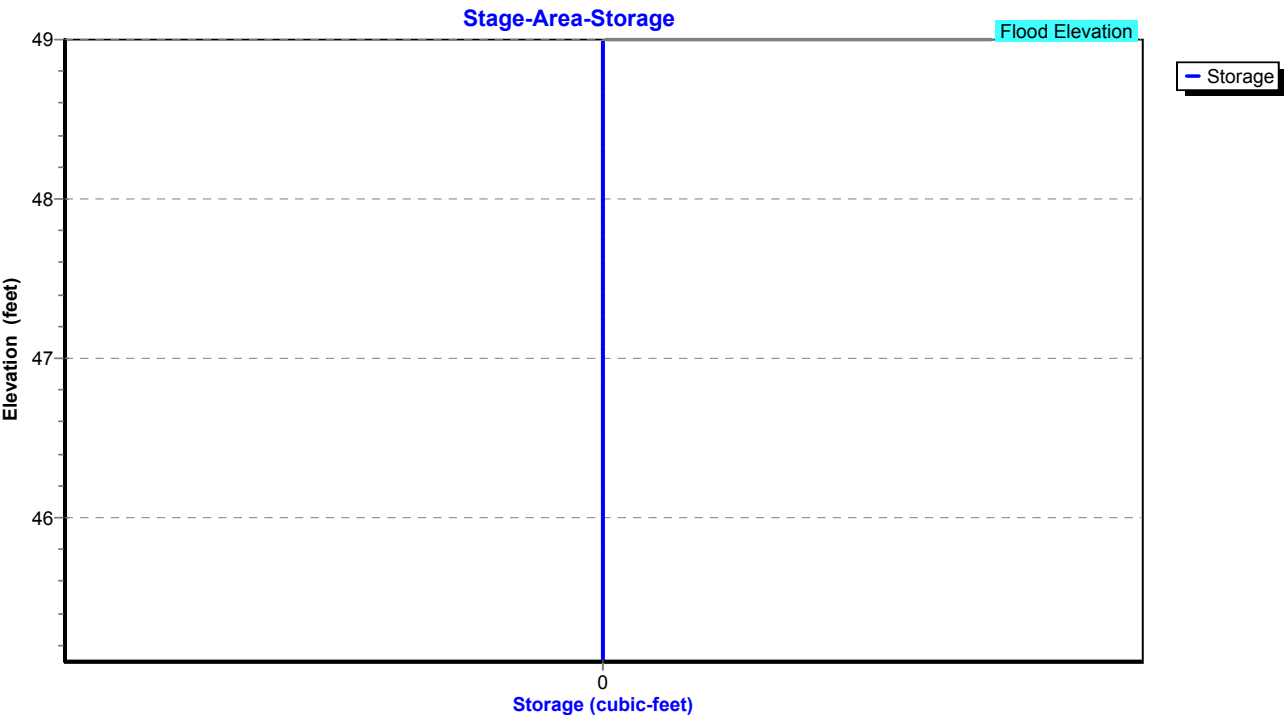
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Pond 61P: CB-6



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 2.12" for 2 year event
Inflow = 4.76 cfs @ 12.06 hrs, Volume= 16,097 cf
Outflow = 4.76 cfs @ 12.06 hrs, Volume= 16,097 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.76 cfs @ 12.06 hrs, Volume= 16,097 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.47' @ 12.06 hrs

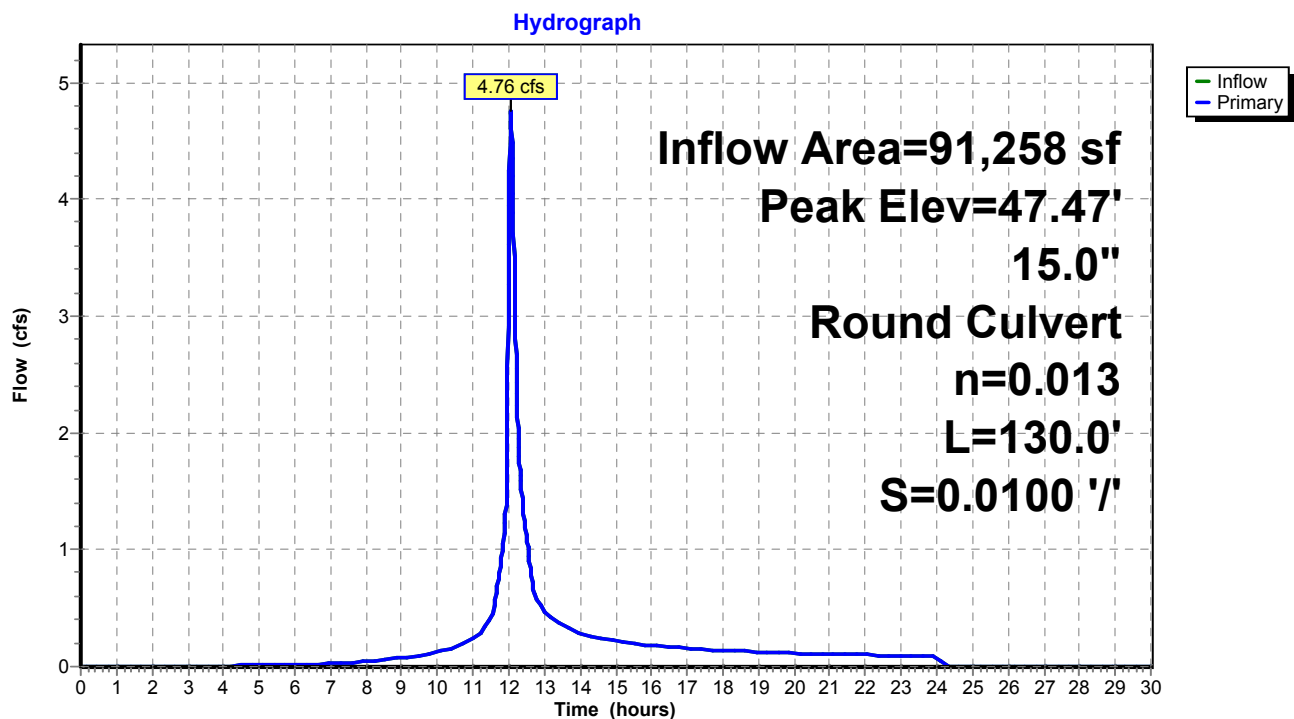
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.75 cfs @ 12.06 hrs HW=47.47' (Free Discharge)

↑1=Culvert (Inlet Controls 4.75 cfs @ 3.87 fps)

Pond 63P: Manhole



Existing Conditions

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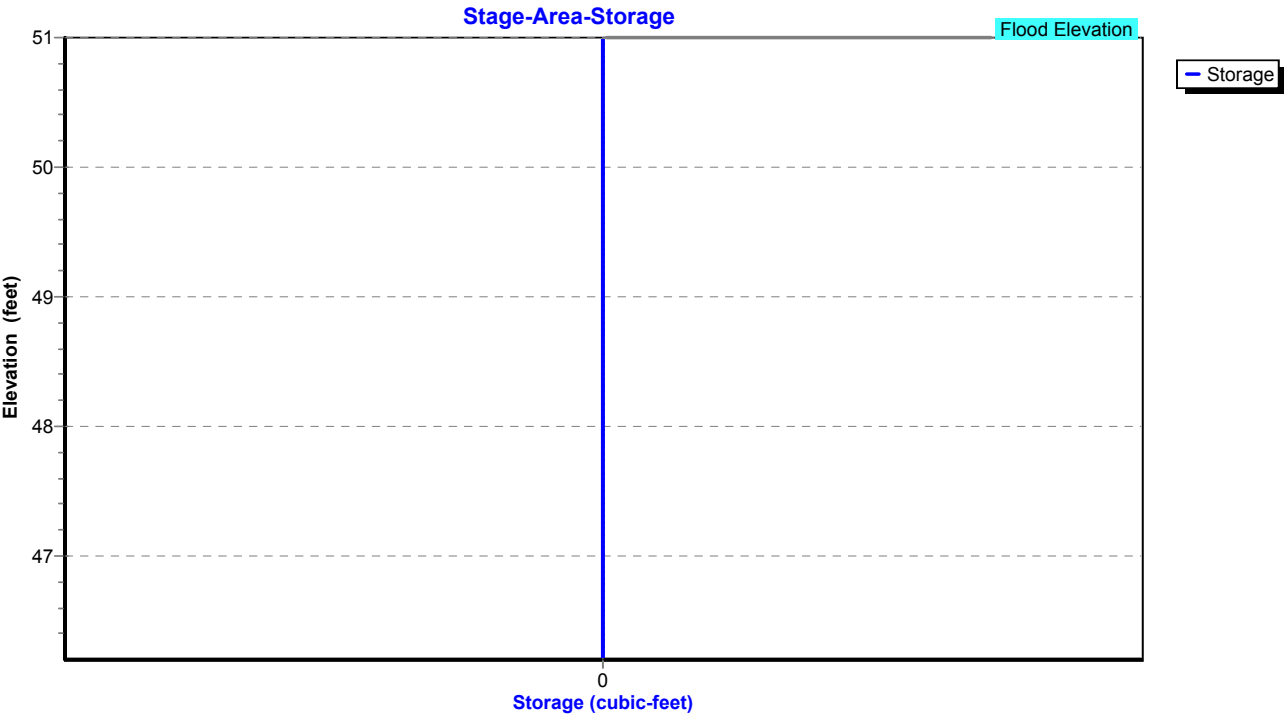
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Pond 63P: Manhole



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Summary for Pond 64P: YD

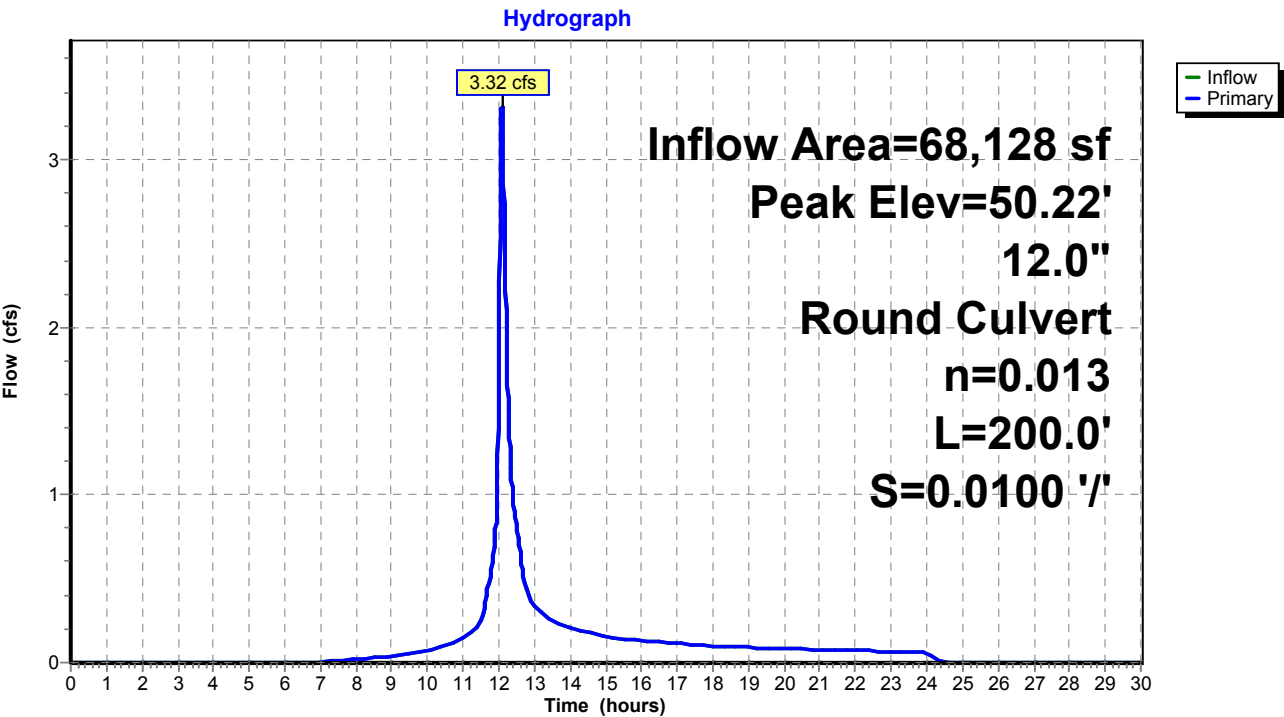
Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 1.92" for 2 year event
Inflow = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf
Outflow = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.22' @ 12.09 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.31 cfs @ 12.09 hrs HW=50.22' (Free Discharge)
↑1=Culvert (Inlet Controls 3.31 cfs @ 4.22 fps)

Pond 64P: YD



Existing Conditions

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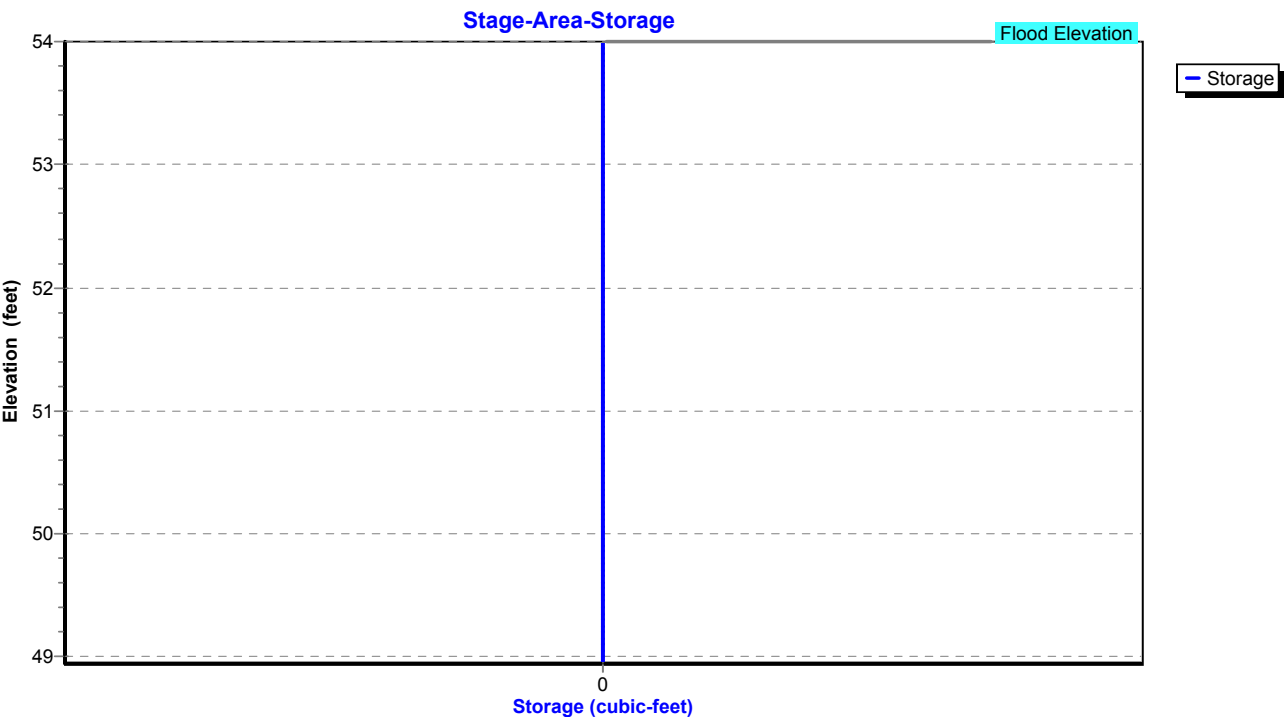
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Pond 64P: YD



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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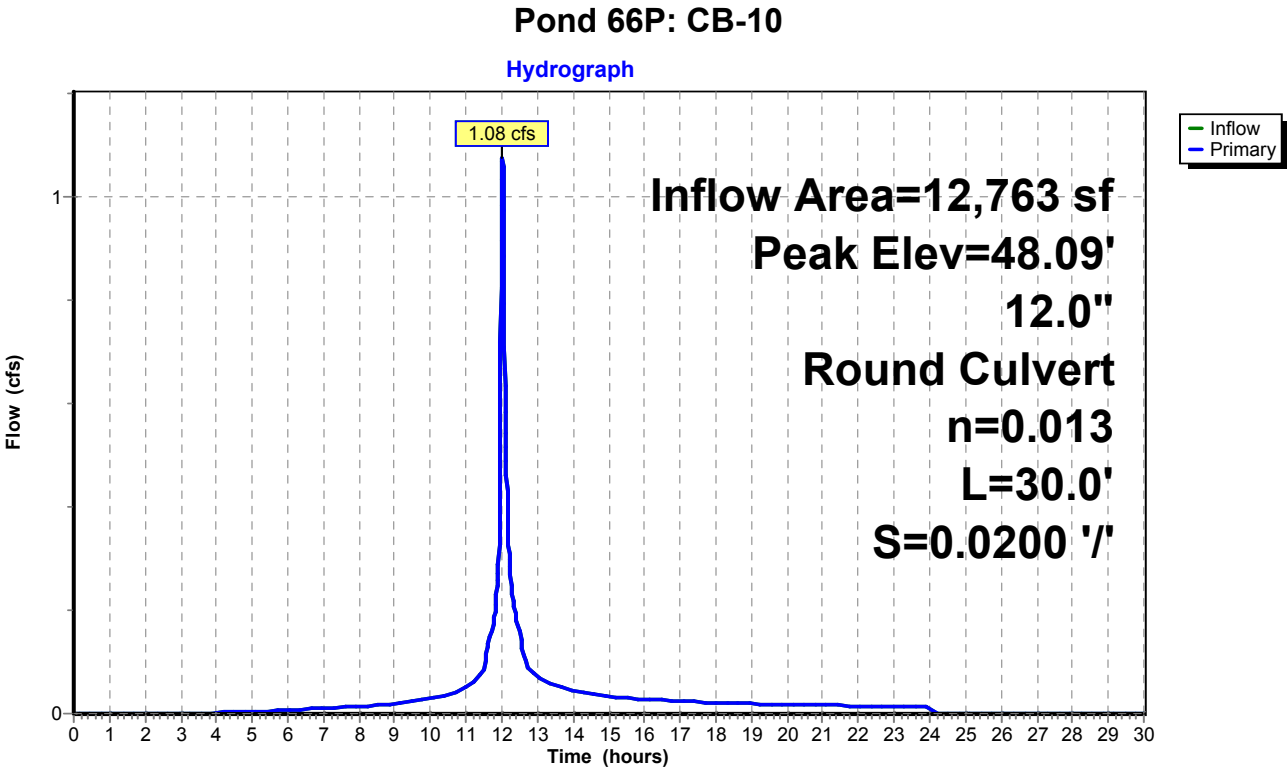
Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 2.62" for 2 year event
Inflow = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf
Outflow = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.09' @ 12.03 hrs
Flood Elev= 53.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.07 cfs @ 12.03 hrs HW=48.09' (Free Discharge)
1=Culvert (Inlet Controls 1.07 cfs @ 2.49 fps)



Existing Conditions

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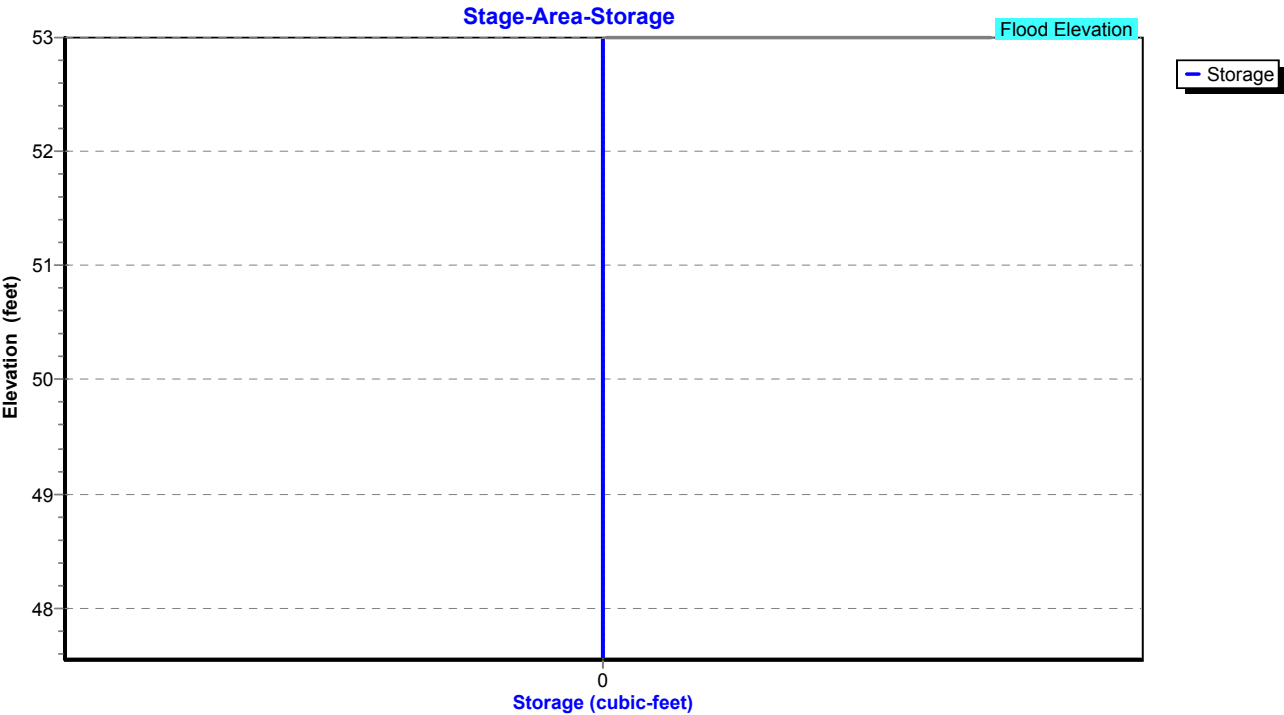
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Pond 66P: CB-10



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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 2.52" for 2 year event
Inflow = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf
Outflow = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.52' @ 12.03 hrs

Flood Elev= 52.00'

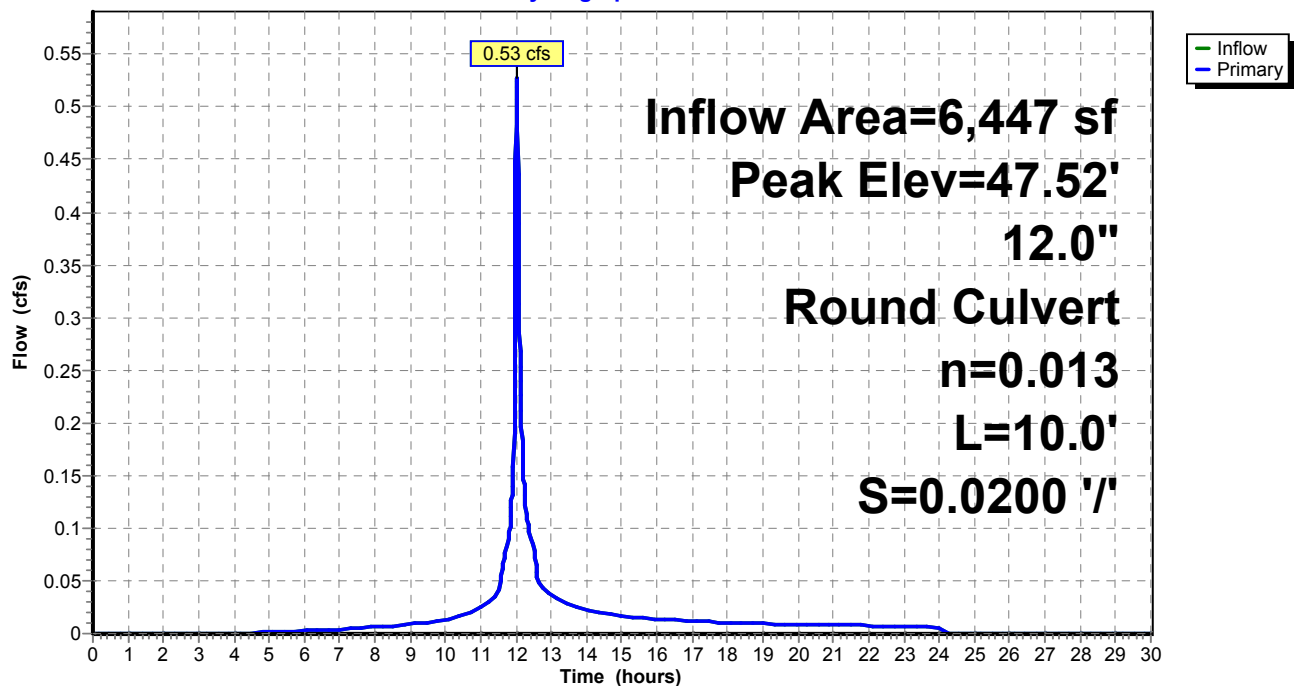
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.52 cfs @ 12.03 hrs HW=47.51' (Free Discharge)

↑1=Culvert (Barrel Controls 0.52 cfs @ 3.01 fps)

Pond 67P: CB-9

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

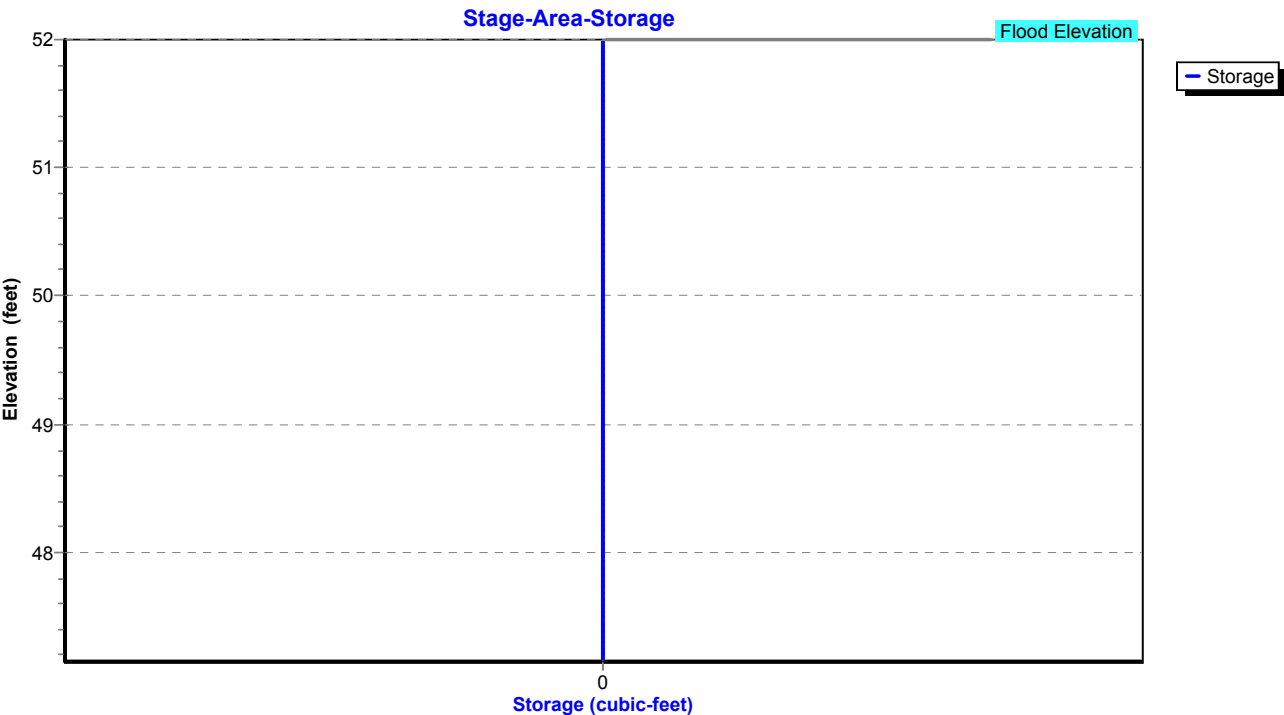
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 67P: CB-9



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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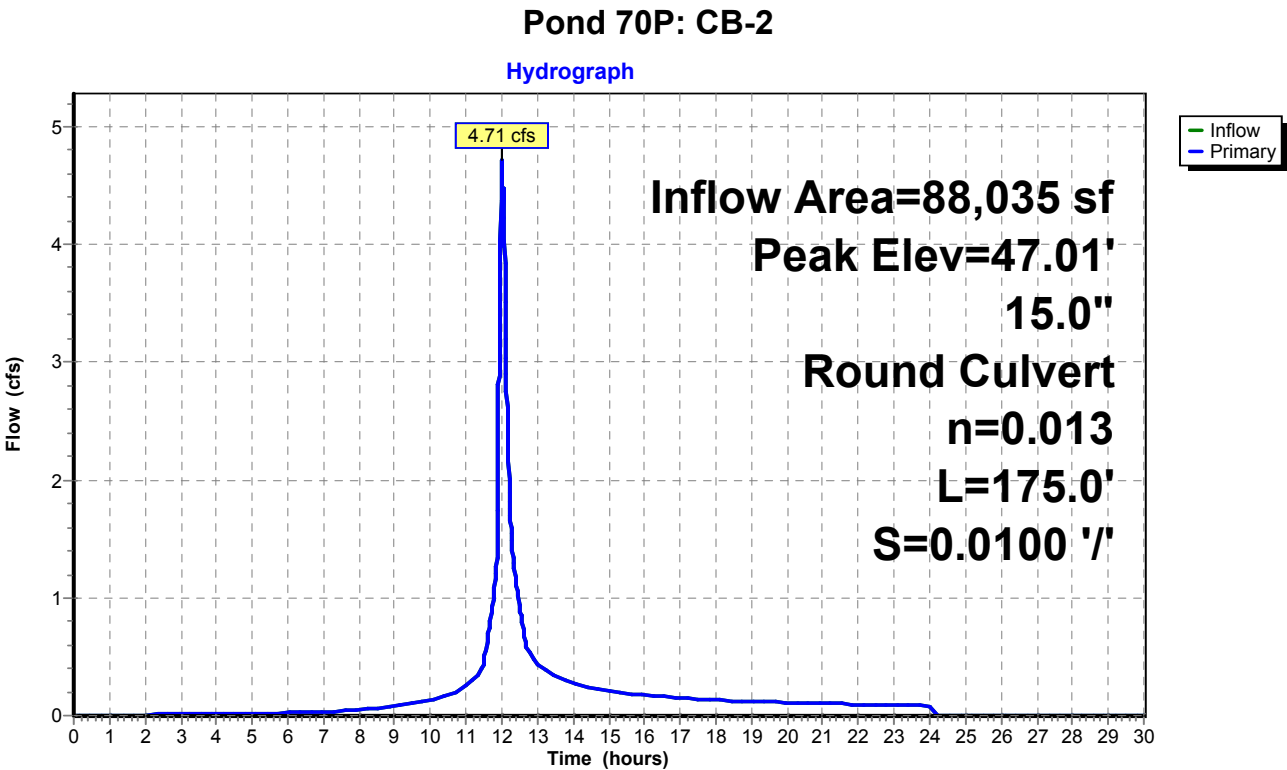
Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 2.16" for 2 year event
Inflow = 4.71 cfs @ 11.99 hrs, Volume= 15,832 cf
Outflow = 4.71 cfs @ 11.99 hrs, Volume= 15,832 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.71 cfs @ 11.99 hrs, Volume= 15,832 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.01' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.70 cfs @ 11.99 hrs HW=47.01' (Free Discharge)
↑1=Culvert (Inlet Controls 4.70 cfs @ 3.83 fps)



Existing Conditions

Prepared by Tighe & Bond

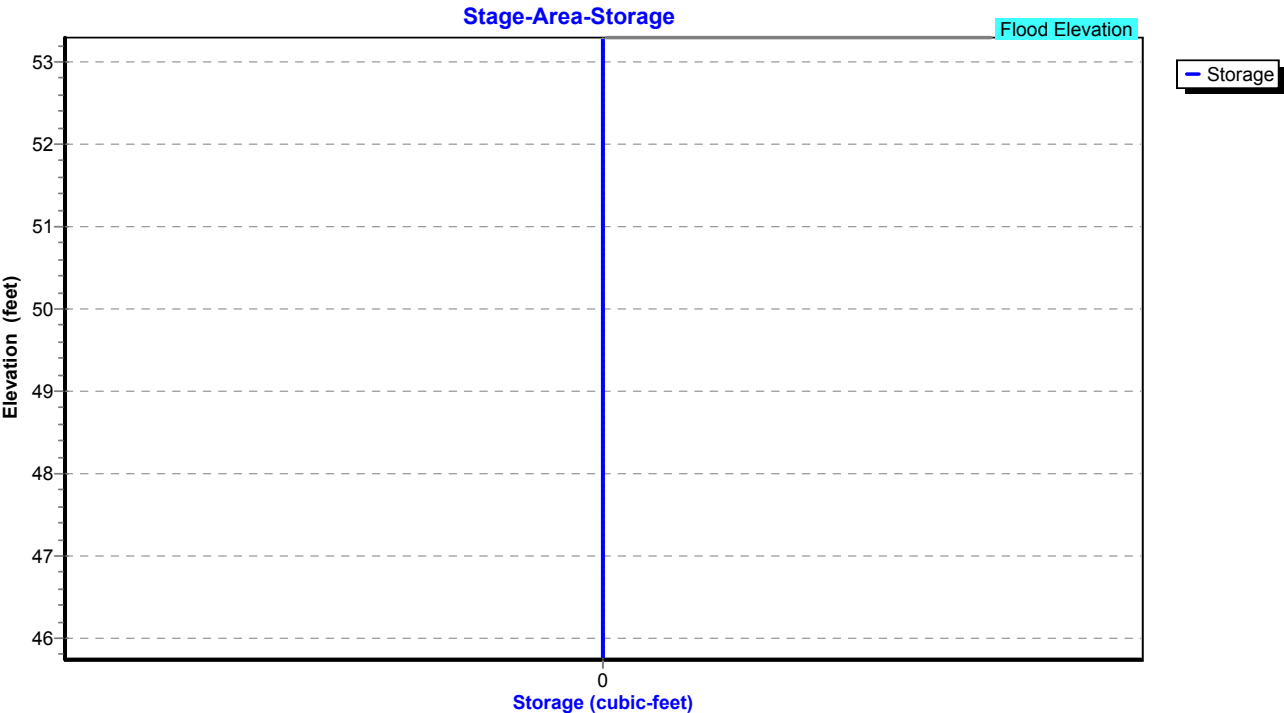
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Pond 70P: CB-2



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 72P: Manhole

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 1.96" for 2 year event
Inflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Outflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.60' @ 11.99 hrs

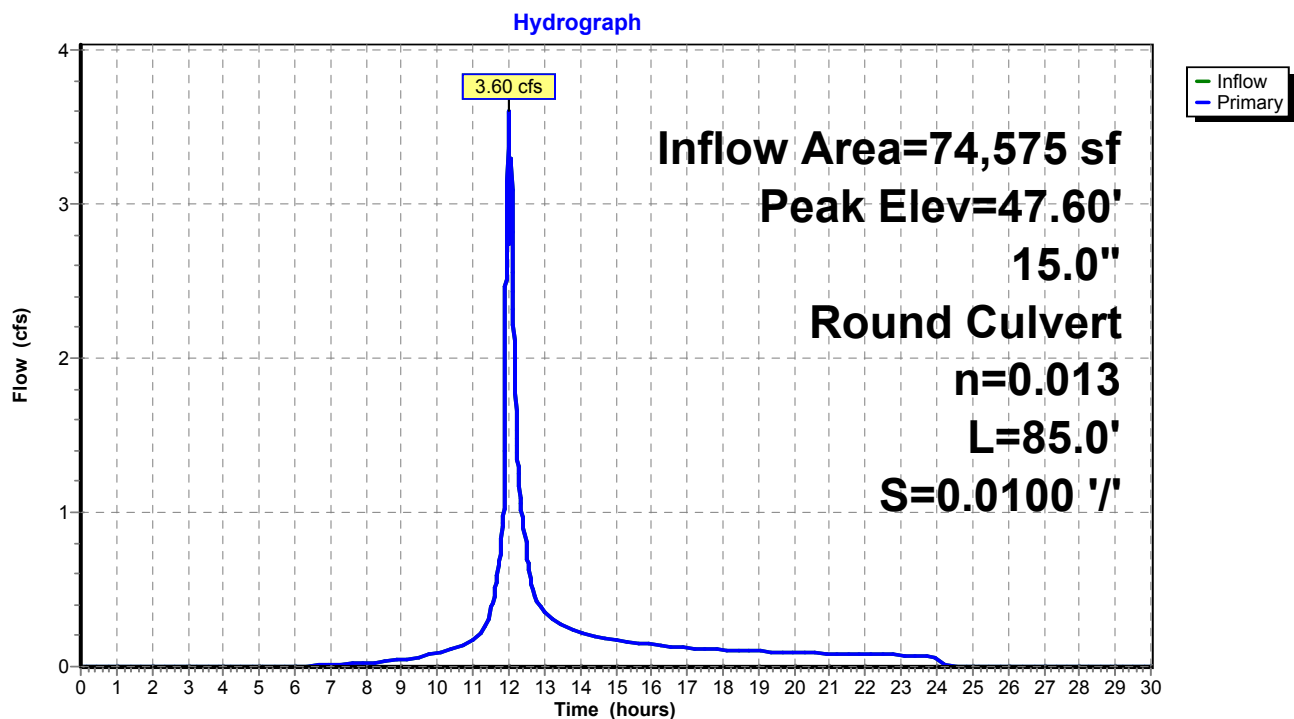
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.56 cfs @ 11.99 hrs HW=47.60' (Free Discharge)

↑1=Culvert (Inlet Controls 3.56 cfs @ 3.40 fps)

Pond 72P: Manhole



Existing Conditions

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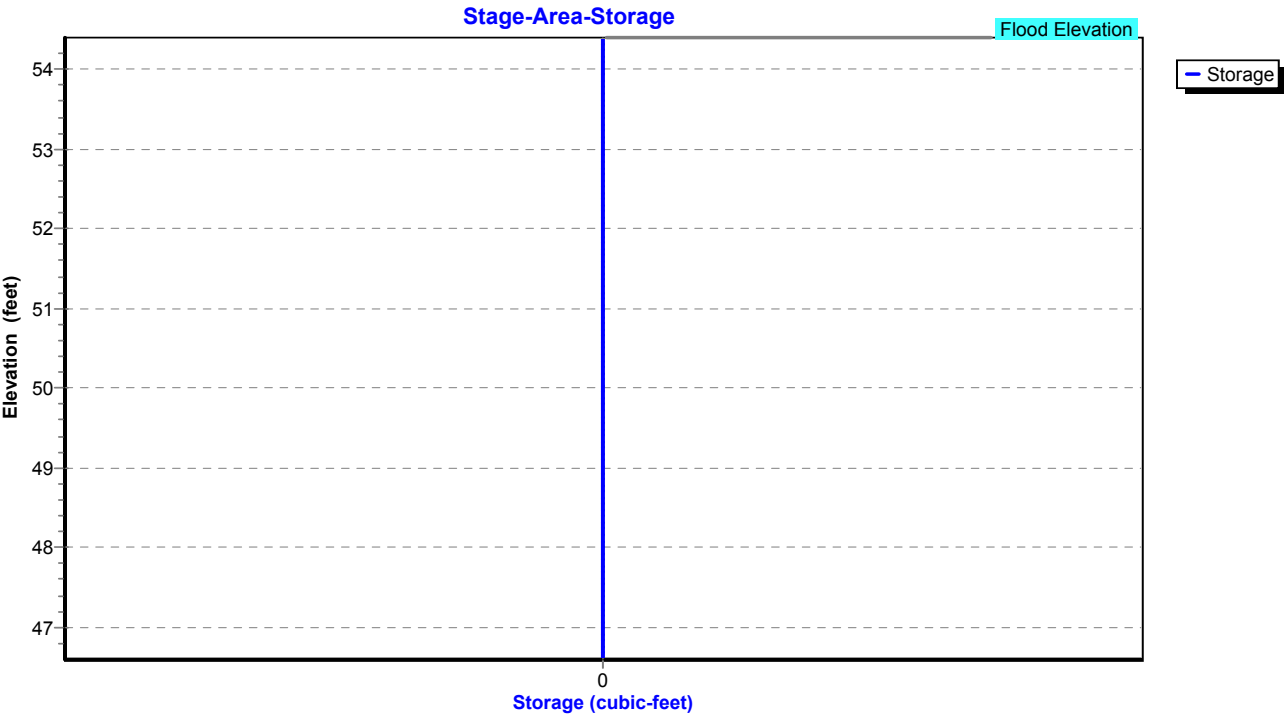
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 72P: Manhole



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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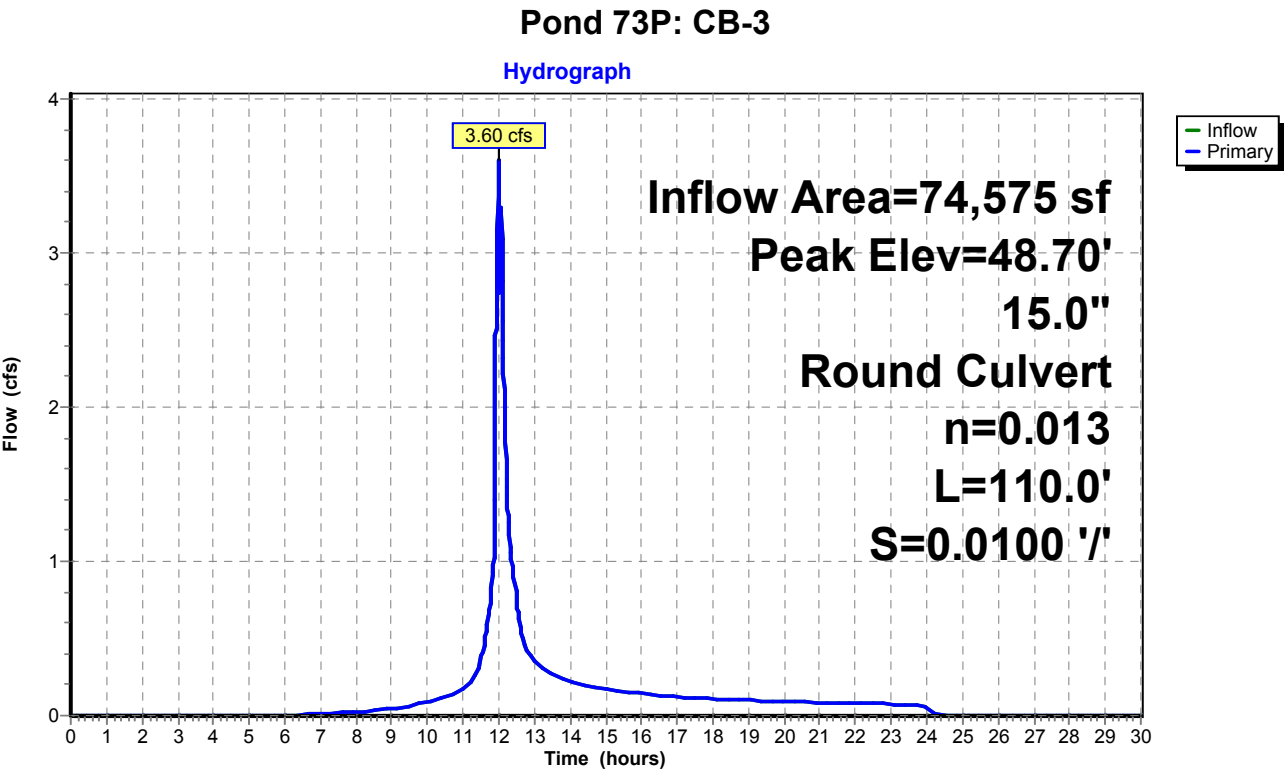
Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 1.96" for 2 year event
Inflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Outflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.70' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.56 cfs @ 11.99 hrs HW=48.70' (Free Discharge)
1=Culvert (Inlet Controls 3.56 cfs @ 3.40 fps)



Existing Conditions

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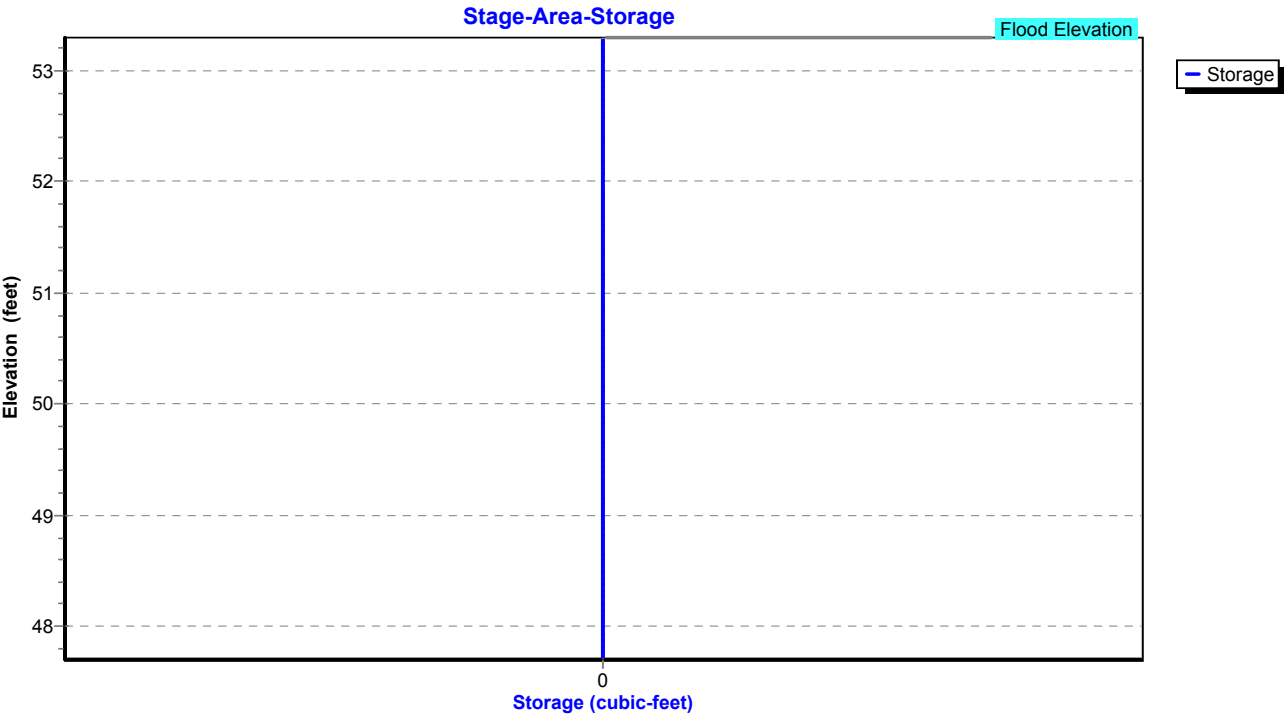
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Pond 73P: CB-3



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Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 1.86" for 2 year event
Inflow = 2.59 cfs @ 12.06 hrs, Volume= 7,743 cf
Outflow = 2.59 cfs @ 12.06 hrs, Volume= 7,743 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.59 cfs @ 12.06 hrs, Volume= 7,743 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.01' @ 12.06 hrs

Flood Elev= 53.70'

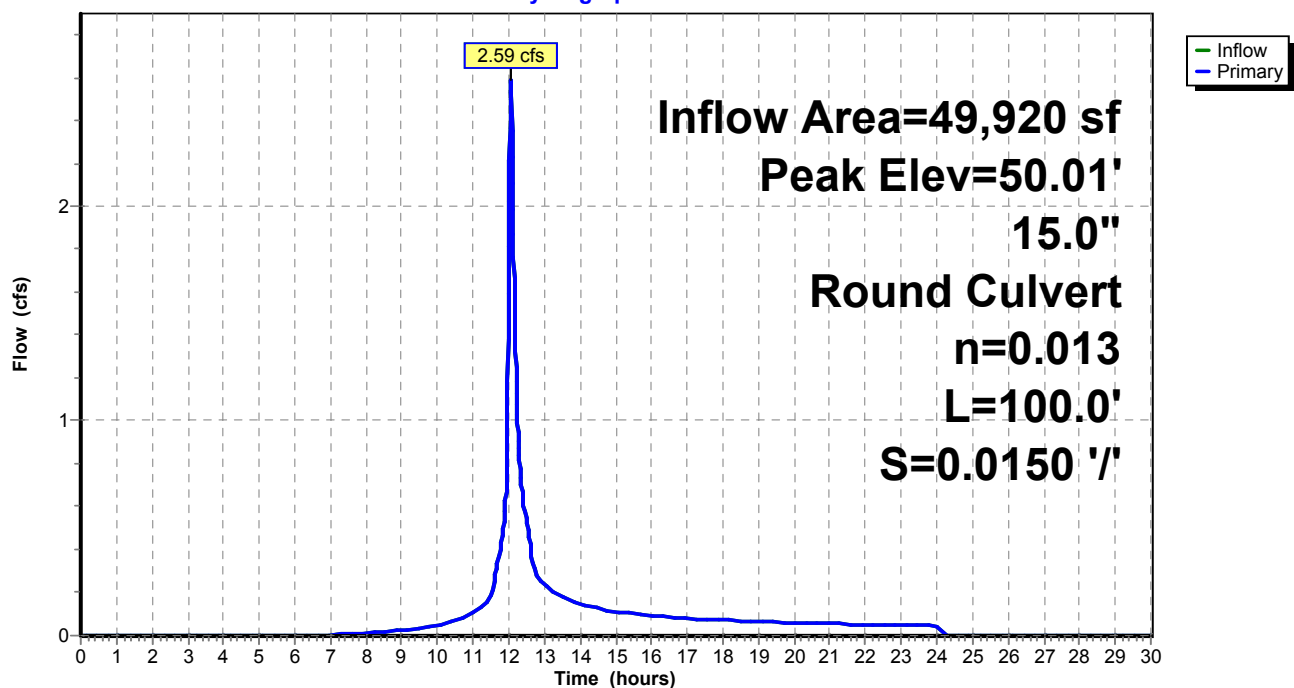
Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.58 cfs @ 12.06 hrs HW=50.01' (Free Discharge)

↑1=Culvert (Inlet Controls 2.58 cfs @ 3.07 fps)

Pond 74P: CB-4

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

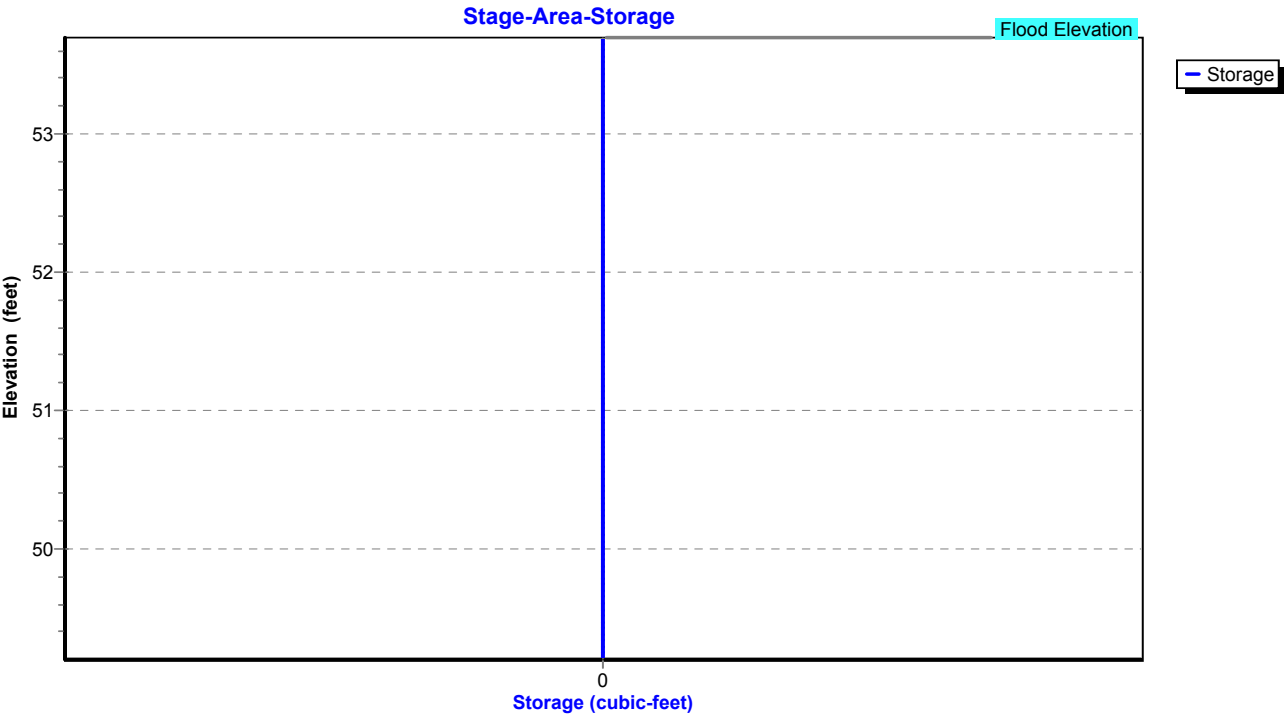
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 74P: CB-4



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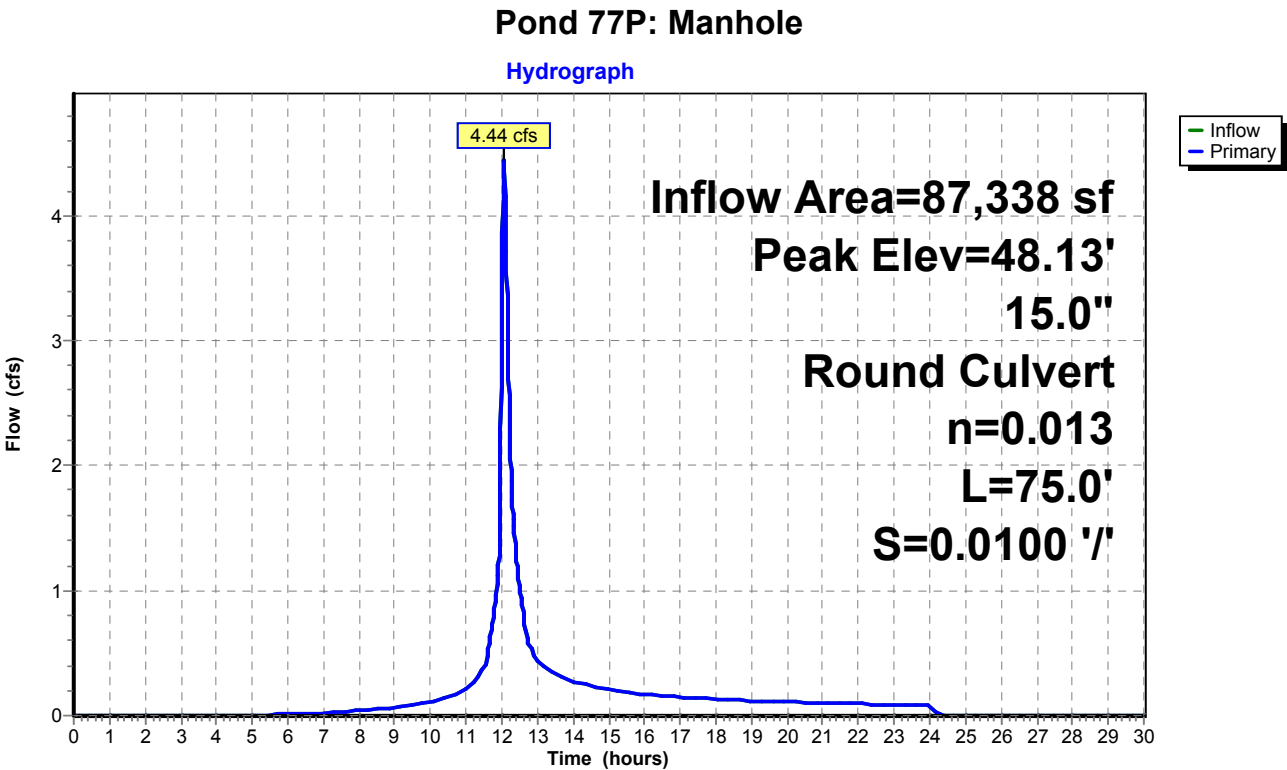
Summary for Pond 77P: Manhole

Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 2.07" for 2 year event
Inflow = 4.44 cfs @ 12.06 hrs, Volume= 15,036 cf
Outflow = 4.44 cfs @ 12.06 hrs, Volume= 15,036 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.44 cfs @ 12.06 hrs, Volume= 15,036 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.13' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.45 cfs @ 12.06 hrs HW=48.13' (Free Discharge)
1=Culvert (Inlet Controls 4.45 cfs @ 3.70 fps)



Existing Conditions

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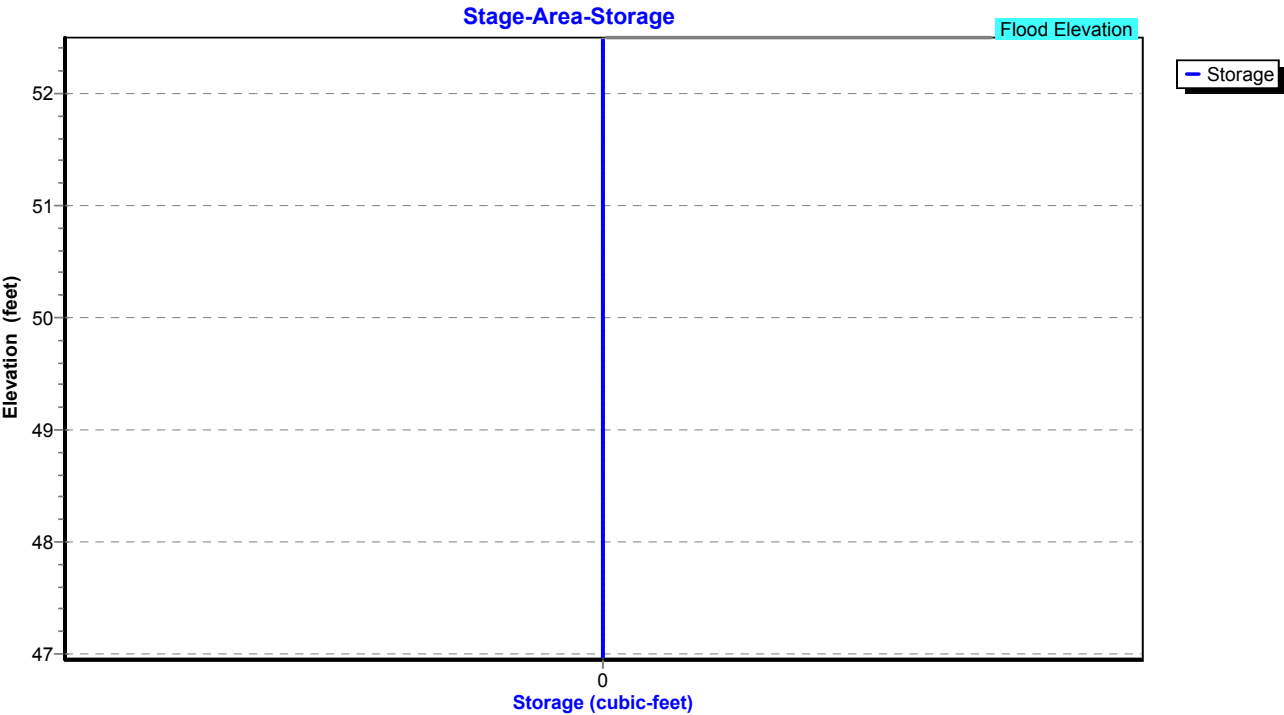
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Pond 77P: Manhole



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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 3.25" for 2 year event
Inflow = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf
Outflow = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.50' @ 12.03 hrs

Flood Elev= 52.50'

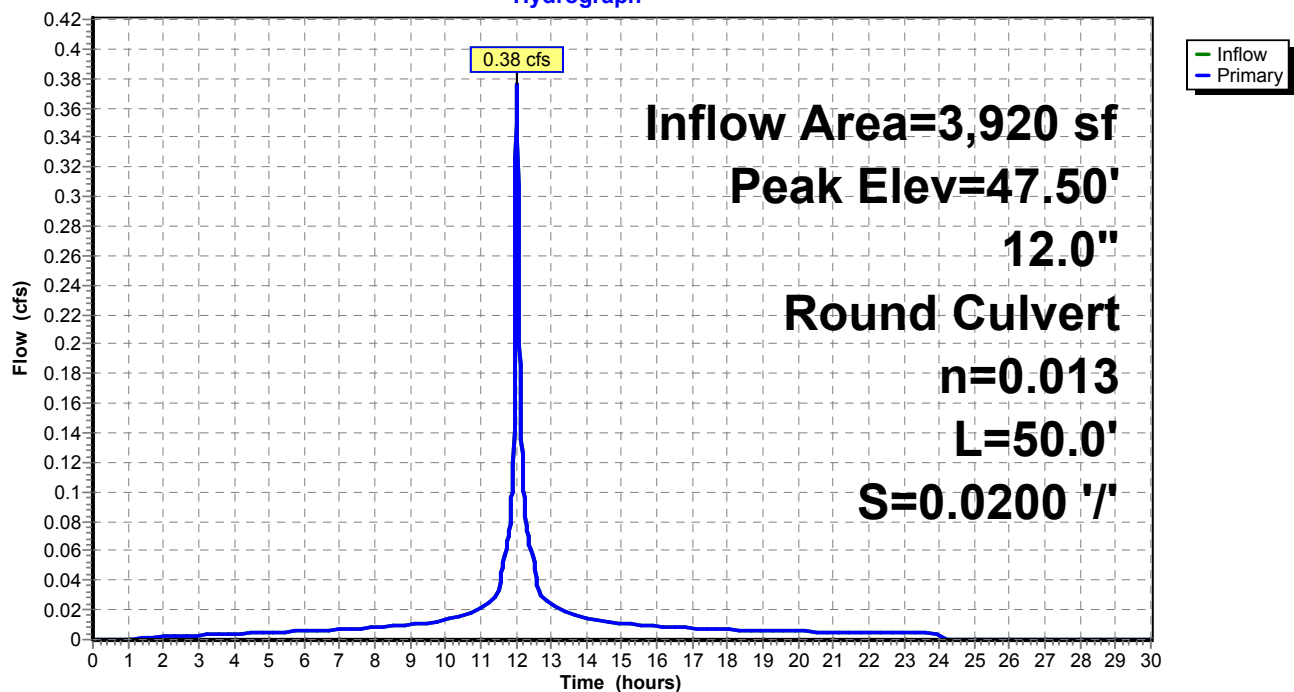
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.03 hrs HW=47.50' (Free Discharge)

↑1=Culvert (Inlet Controls 0.37 cfs @ 1.87 fps)

Pond 79P: CB-8

Hydrograph



Existing Conditions

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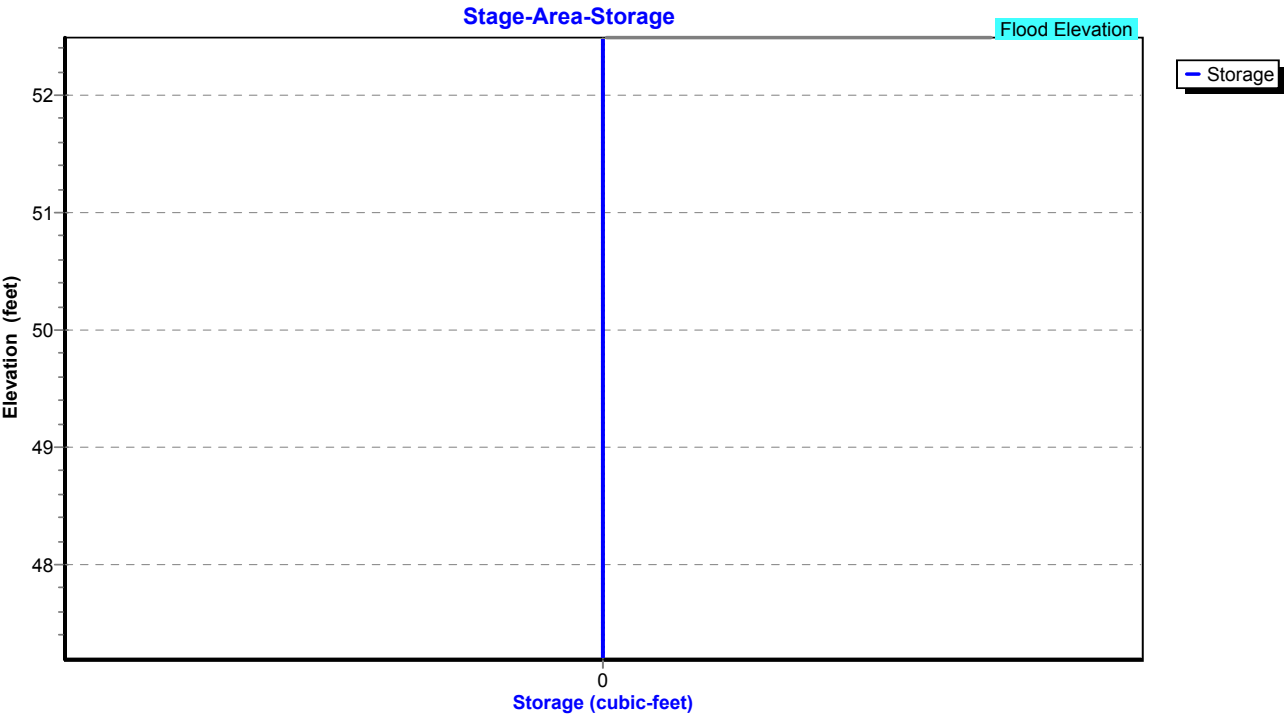
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 79P: CB-8



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Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 1.77" for 2 year event
Inflow = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf
Outflow = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.90' @ 12.07 hrs

Flood Elev= 53.30'

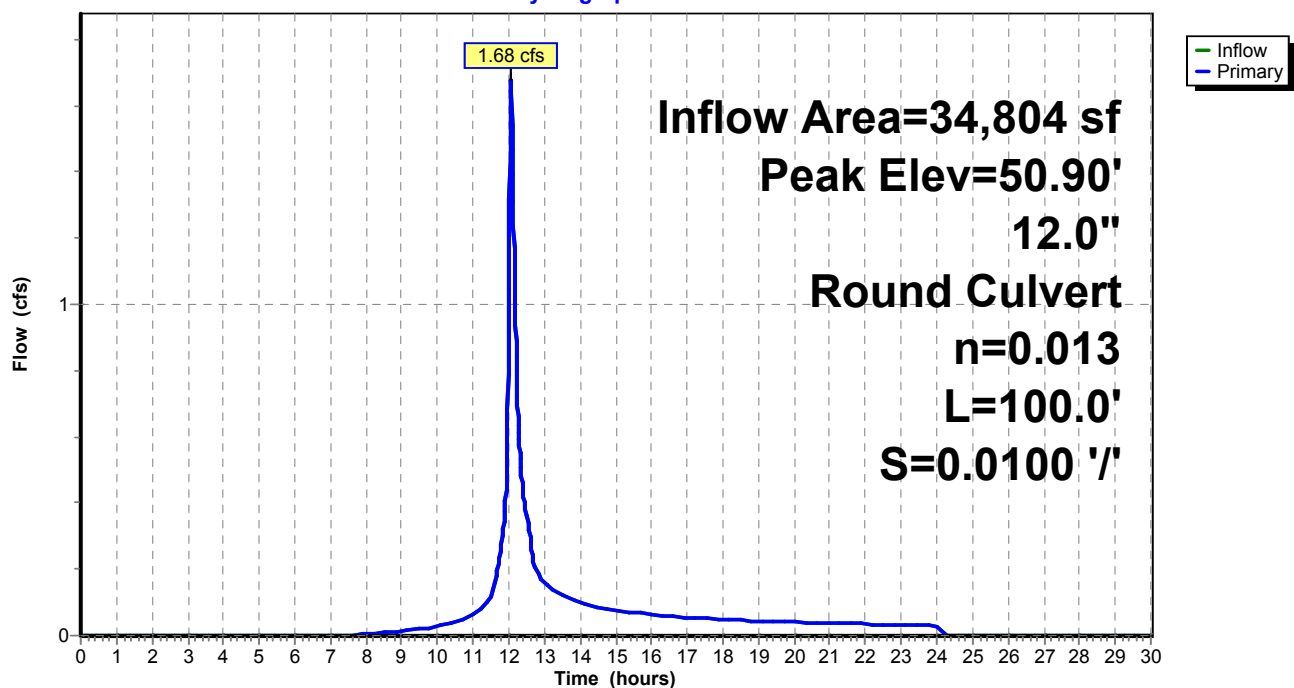
Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.67 cfs @ 12.07 hrs HW=50.90' (Free Discharge)

↑1=Culvert (Inlet Controls 1.67 cfs @ 2.85 fps)

Pond 85P: CB-5

Hydrograph



Existing Conditions

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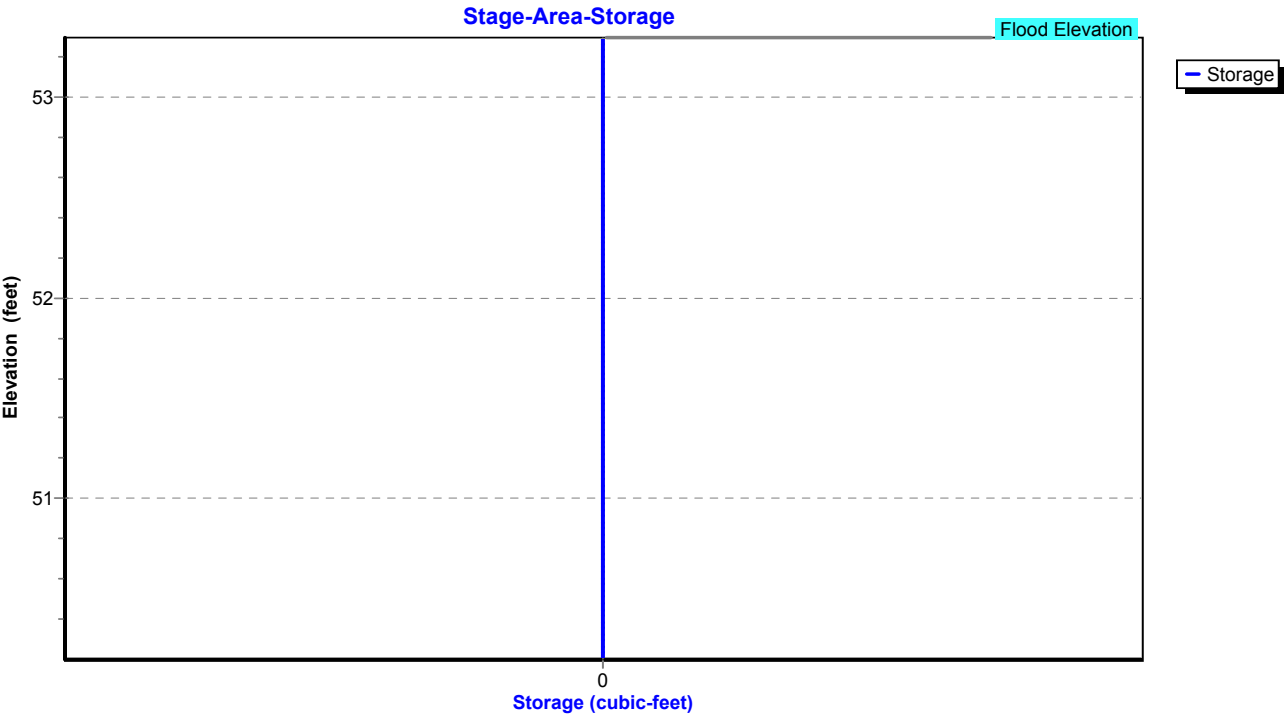
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 85P: CB-5



Existing Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 3.25" for 2 year event
Inflow = 1.62 cfs @ 12.03 hrs, Volume= 4,573 cf
Outflow = 0.50 cfs @ 12.18 hrs, Volume= 4,573 cf, Atten= 69%, Lag= 9.4 min
Primary = 0.50 cfs @ 12.18 hrs, Volume= 4,573 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 52.90' @ 12.18 hrs Surf.Area= 749 sf Storage= 770 cf

Plug-Flow detention time= 18.2 min calculated for 4,571 cf (100% of inflow)

Center-of-Mass det. time= 18.2 min (773.9 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.50 cfs @ 12.18 hrs HW=52.90' (Free Discharge)

- 1=Culvert (Passes 0.50 cfs of 3.83 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.50 cfs @ 5.69 fps)
- 3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Existing Conditions

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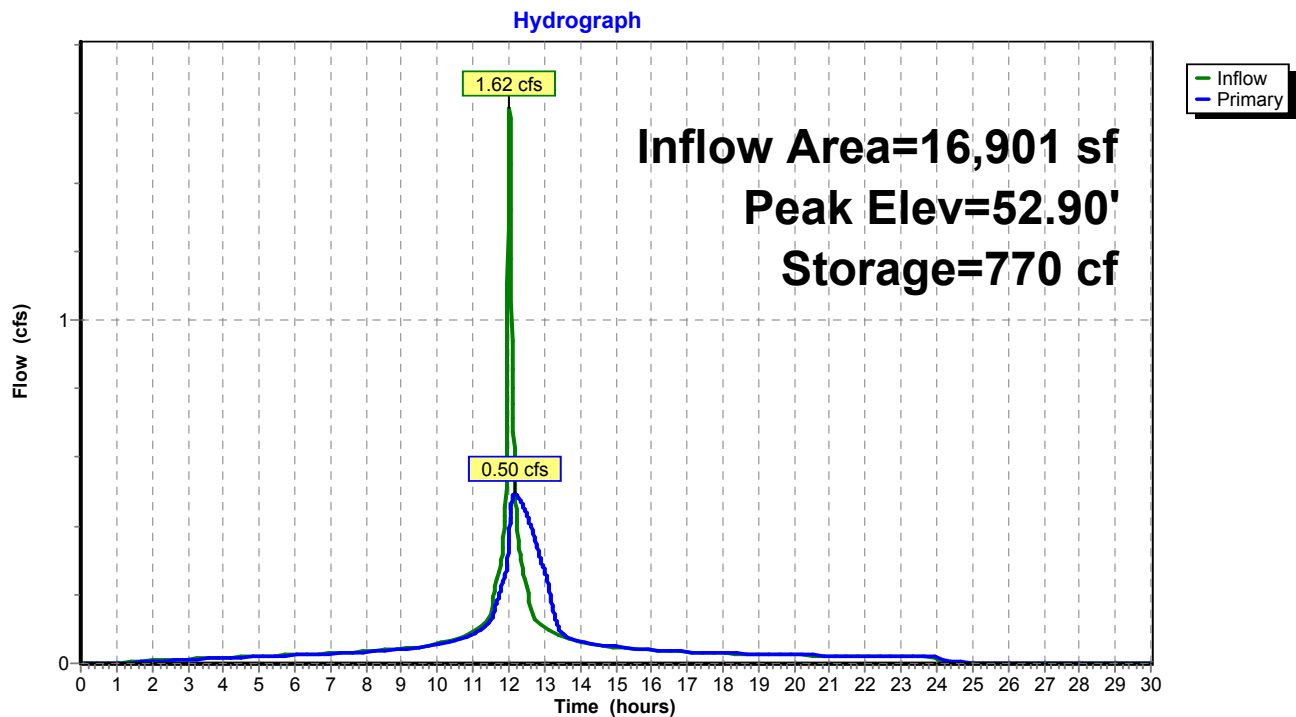
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NORWALK 24-hr S1 2 year Rainfall=3.48"

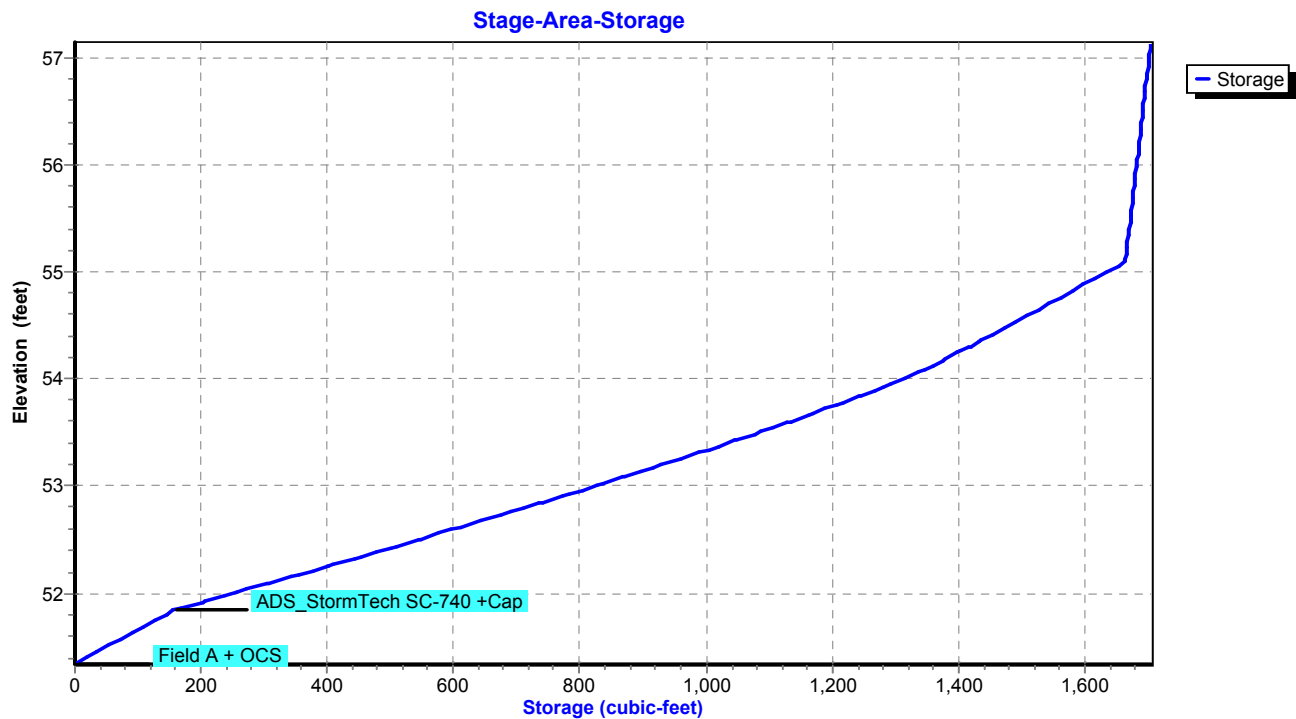
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 4S: Area 4

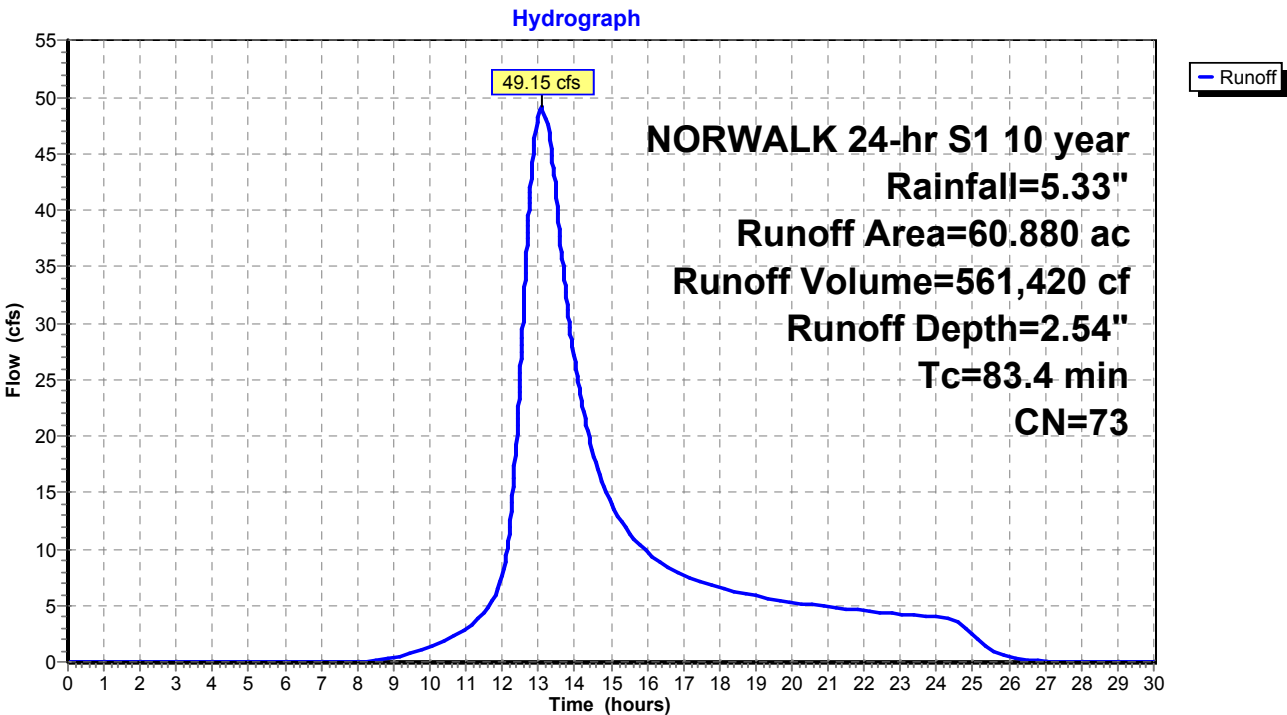
Runoff = 49.15 cfs @ 13.07 hrs, Volume= 561,420 cf, Depth= 2.54"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 5S: Area 5

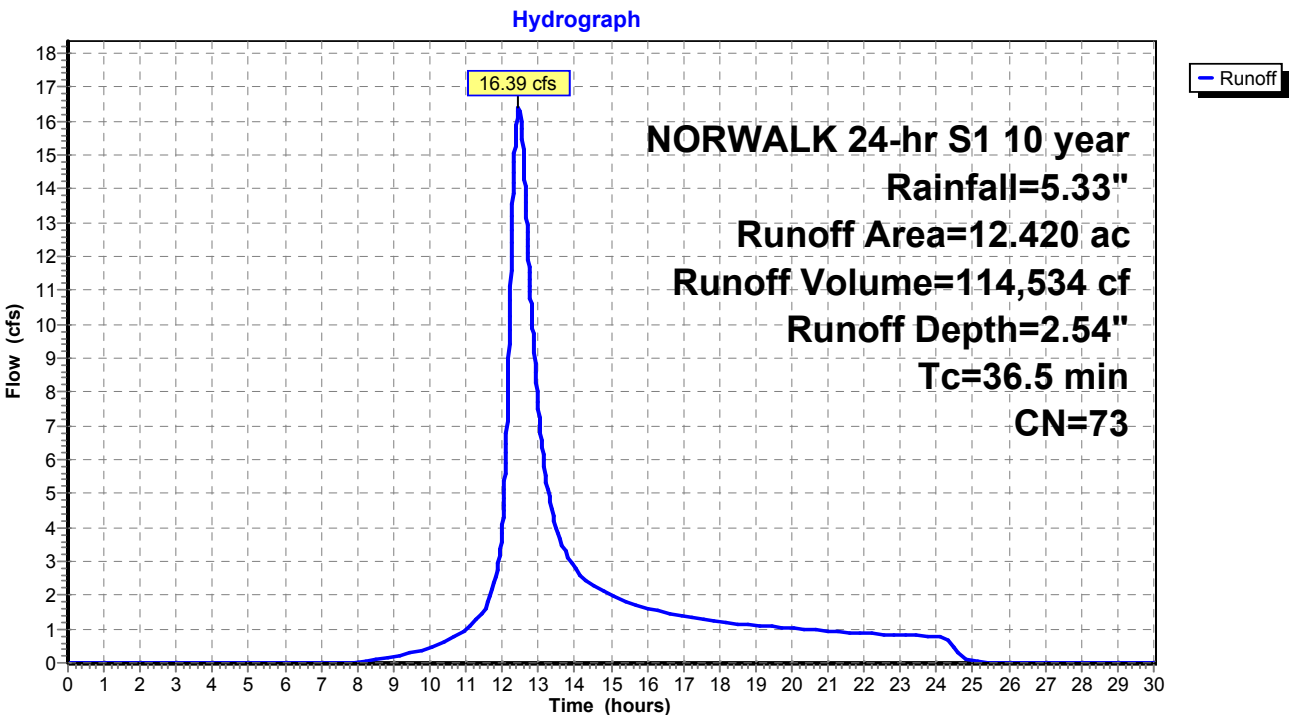
Runoff = 16.39 cfs @ 12.45 hrs, Volume= 114,534 cf, Depth= 2.54"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 6S: Area 6

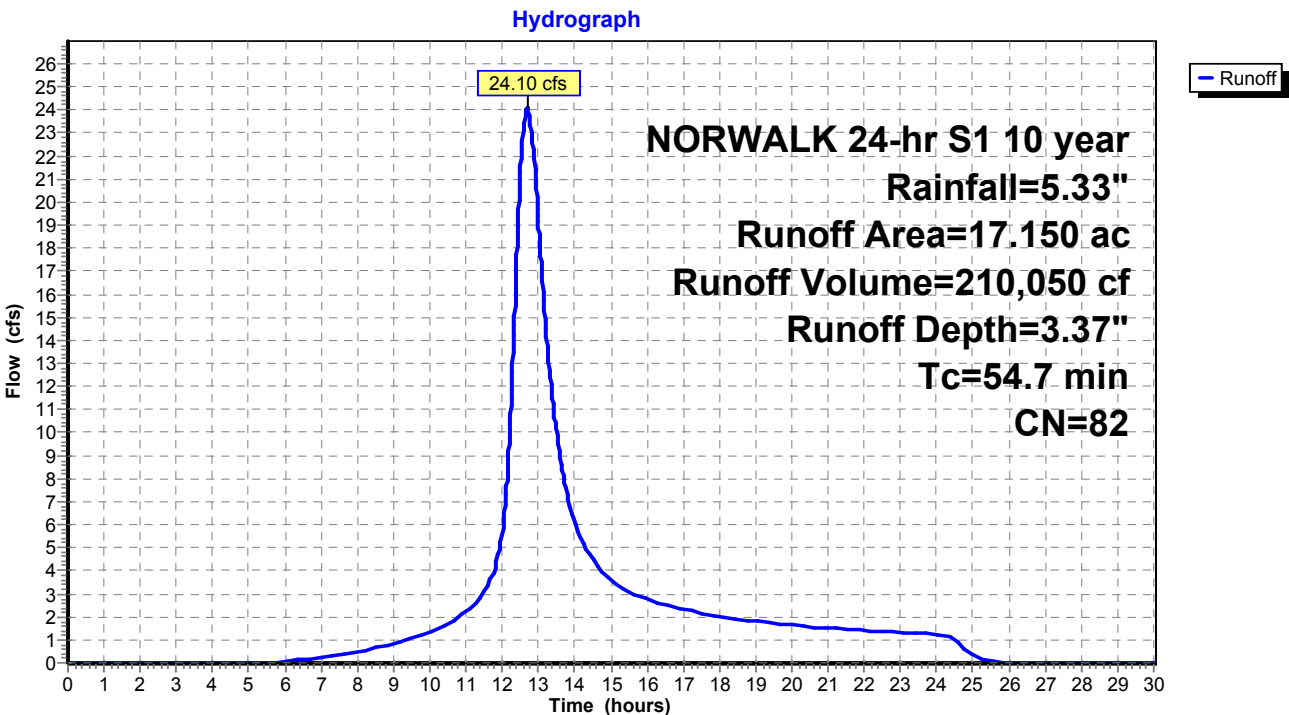
Runoff = 24.10 cfs @ 12.70 hrs, Volume= 210,050 cf, Depth= 3.37"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 7S: Area 7

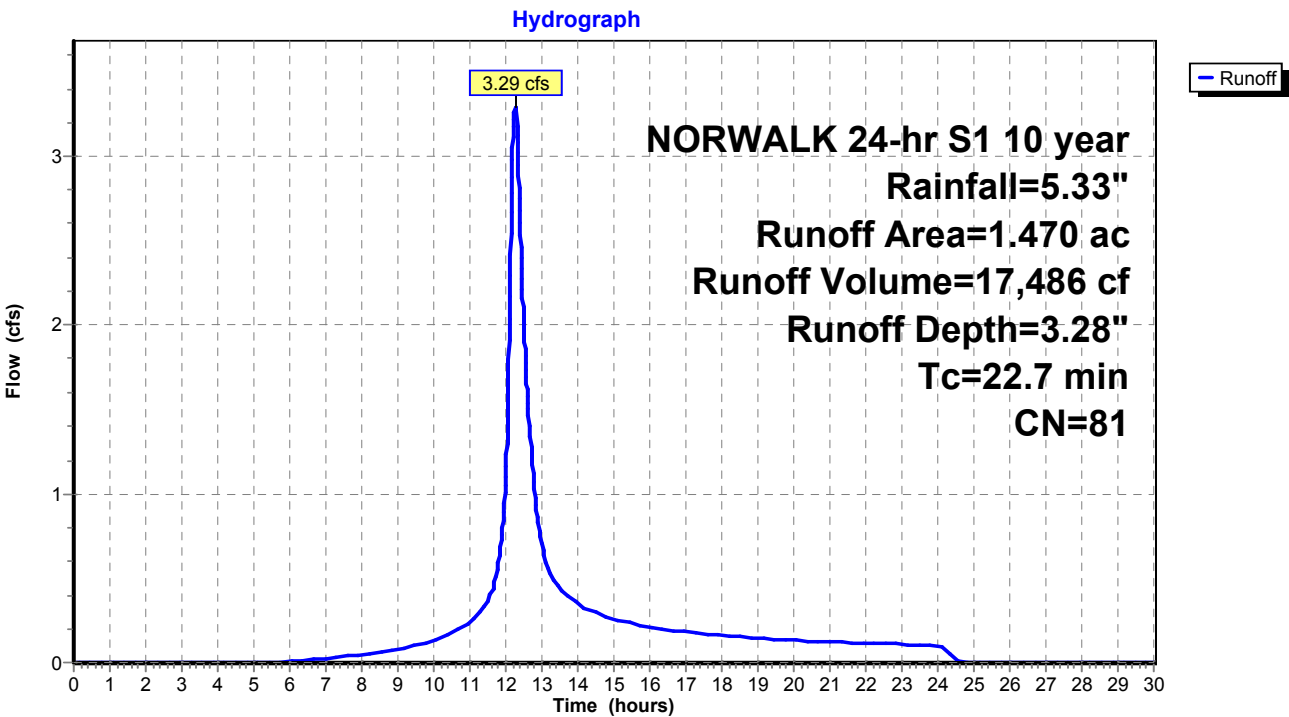
Runoff = 3.29 cfs @ 12.26 hrs, Volume= 17,486 cf, Depth= 3.28"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 8S: Area 8

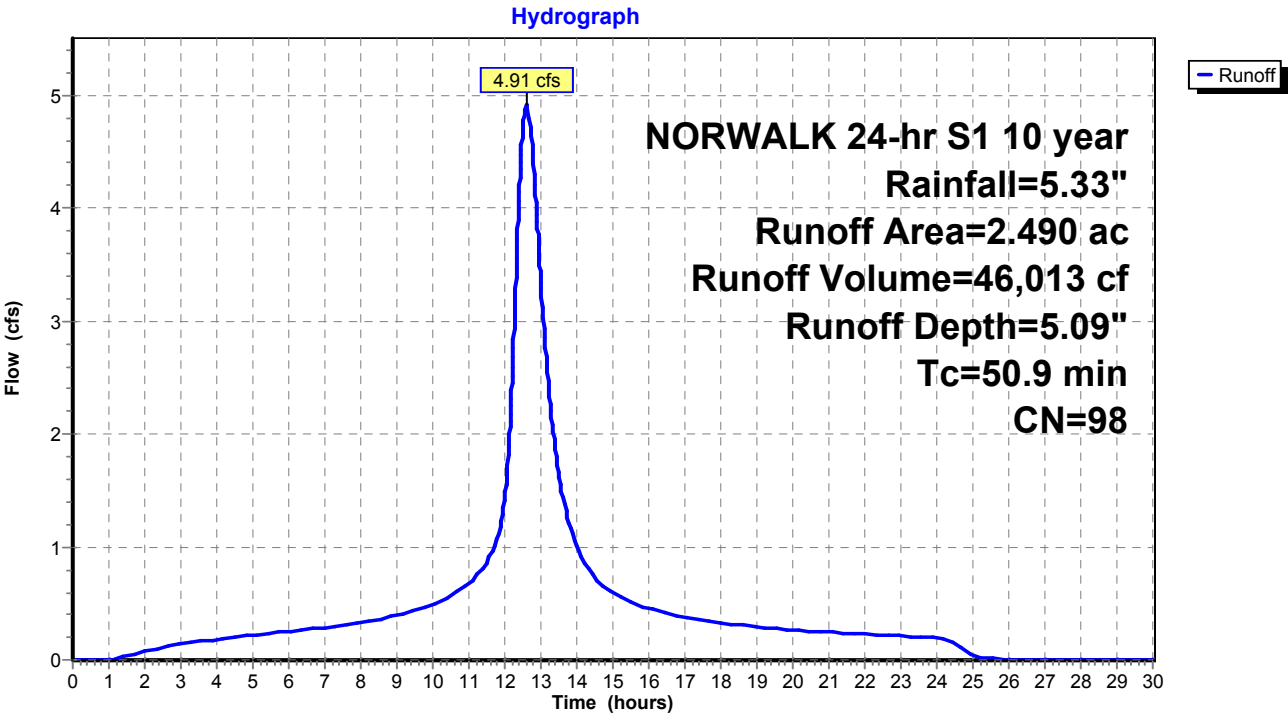
Runoff = 4.91 cfs @ 12.61 hrs, Volume= 46,013 cf, Depth= 5.09"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 9S: Area 9

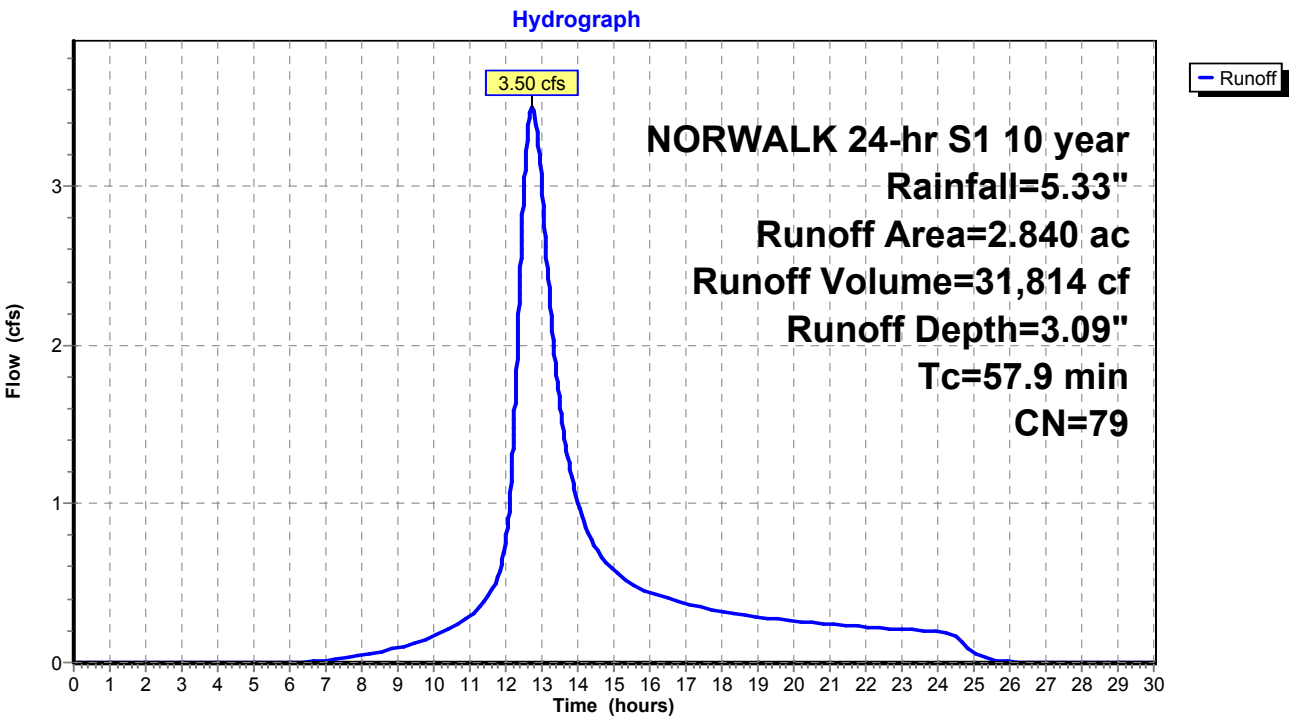
Runoff = 3.50 cfs @ 12.74 hrs, Volume= 31,814 cf, Depth= 3.09"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 10AS: Area 10A

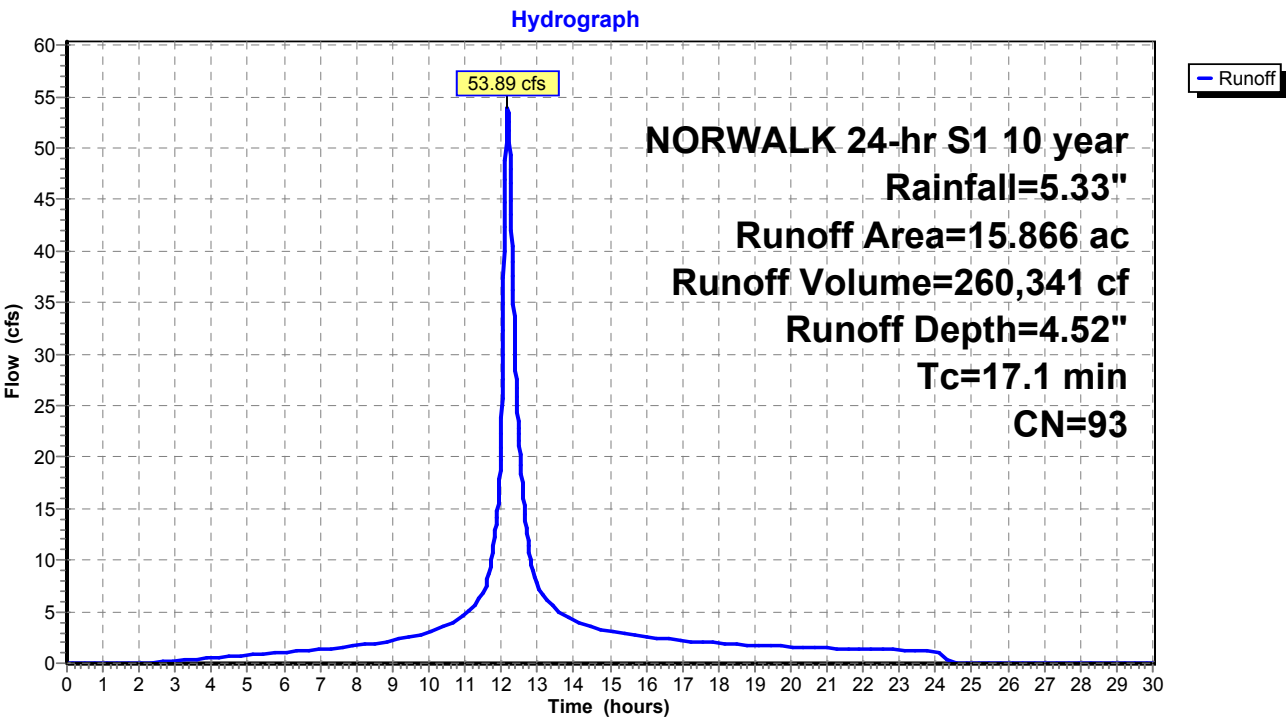
Runoff = 53.89 cfs @ 12.18 hrs, Volume= 260,341 cf, Depth= 4.52"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 10BS: Area 10B

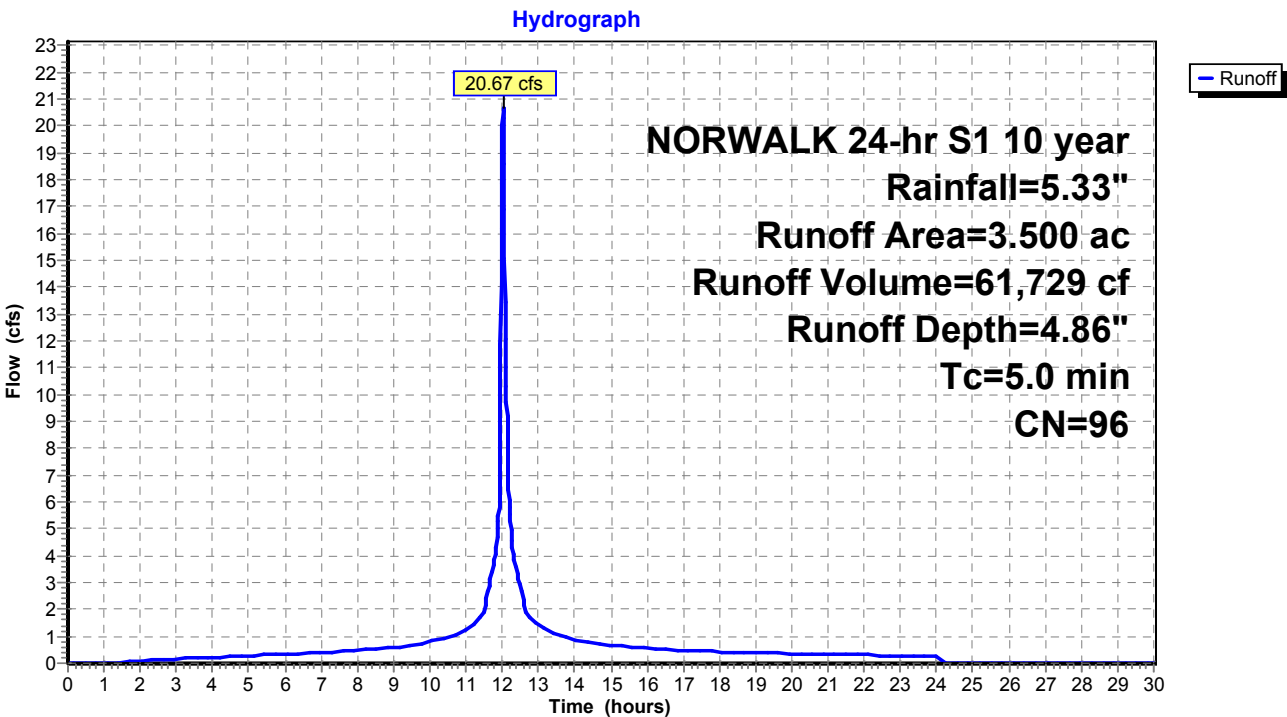
Runoff = 20.67 cfs @ 12.03 hrs, Volume= 61,729 cf, Depth= 4.86"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 10CS: Area 10C

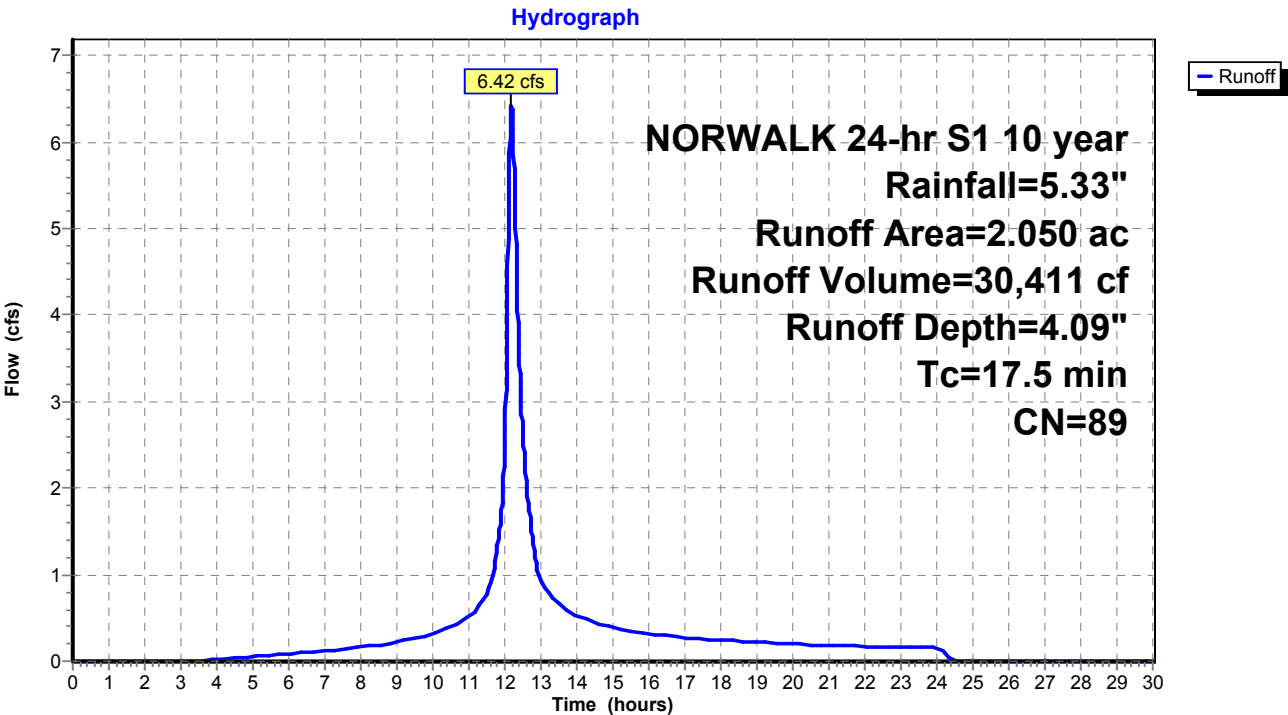
Runoff = 6.42 cfs @ 12.19 hrs, Volume= 30,411 cf, Depth= 4.09"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 10DS: Area 10D

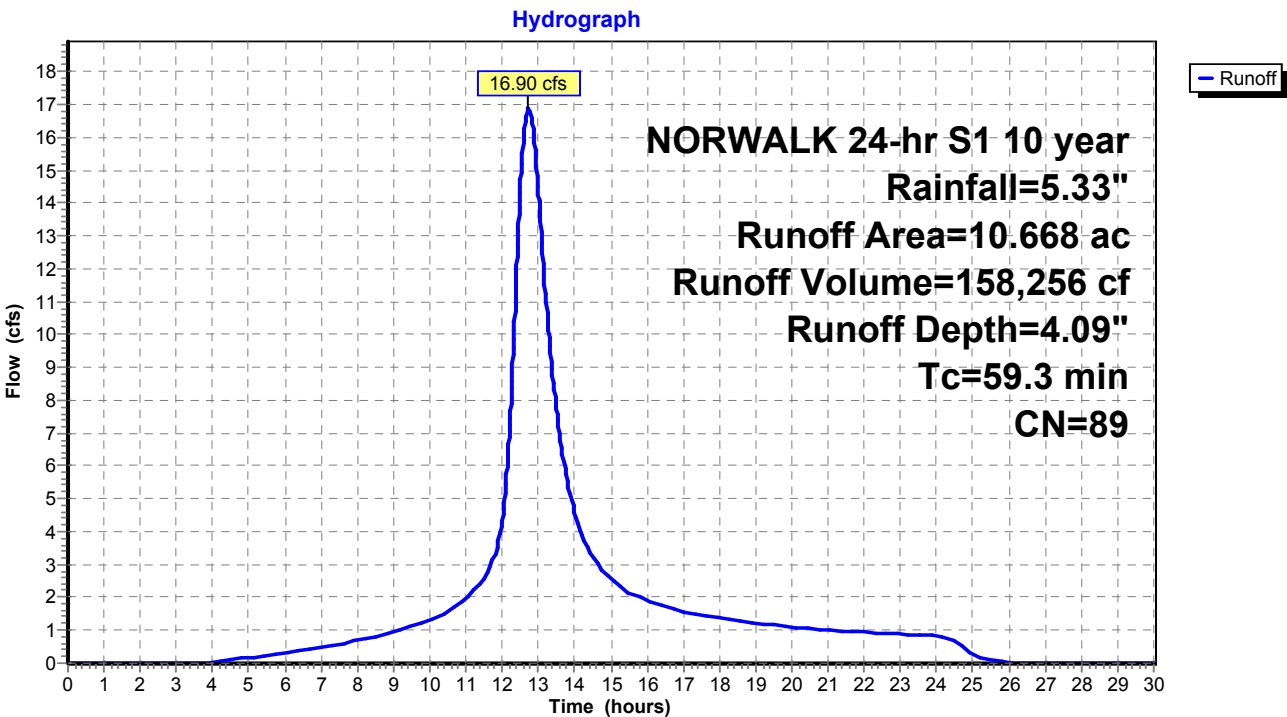
Runoff = 16.90 cfs @ 12.72 hrs, Volume= 158,256 cf, Depth= 4.09"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 10ES: Area 10E

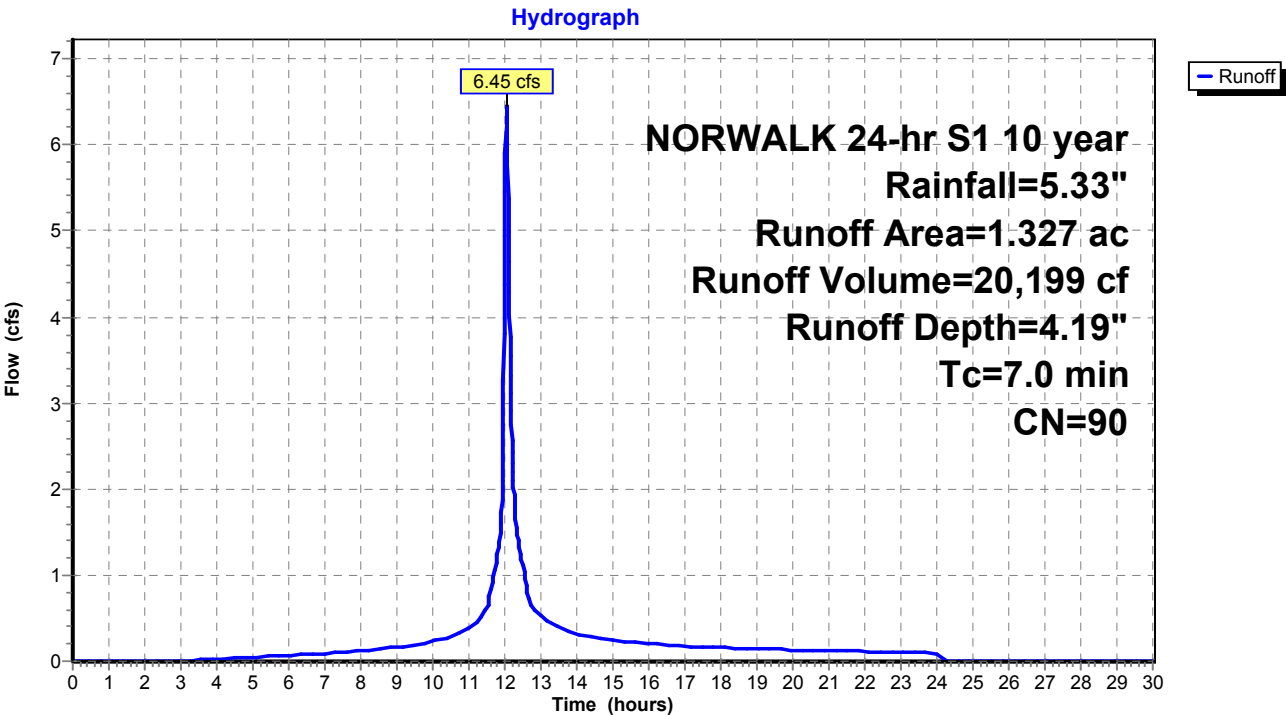
Runoff = 6.45 cfs @ 12.05 hrs, Volume= 20,199 cf, Depth= 4.19"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.798	98	Paved parking, HSG C
0.529	79	50-75% Grass cover, Fair, HSG C
1.327	90	Weighted Average
0.529		39.86% Pervious Area
0.798		60.14% Impervious Area

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

Subcatchment 10ES: Area 10E



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"
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Summary for Subcatchment 10FS: Area 10F

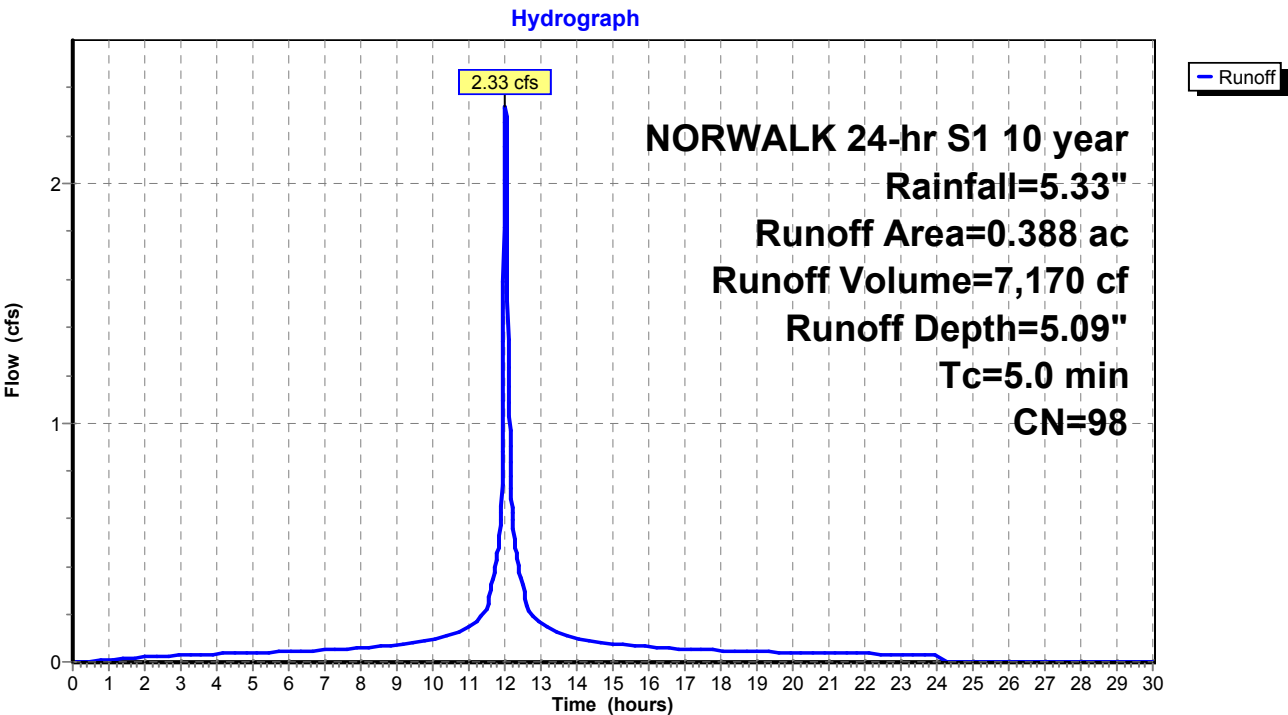
Runoff = 2.33 cfs @ 12.03 hrs, Volume= 7,170 cf, Depth= 5.09"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 11S: Area 11

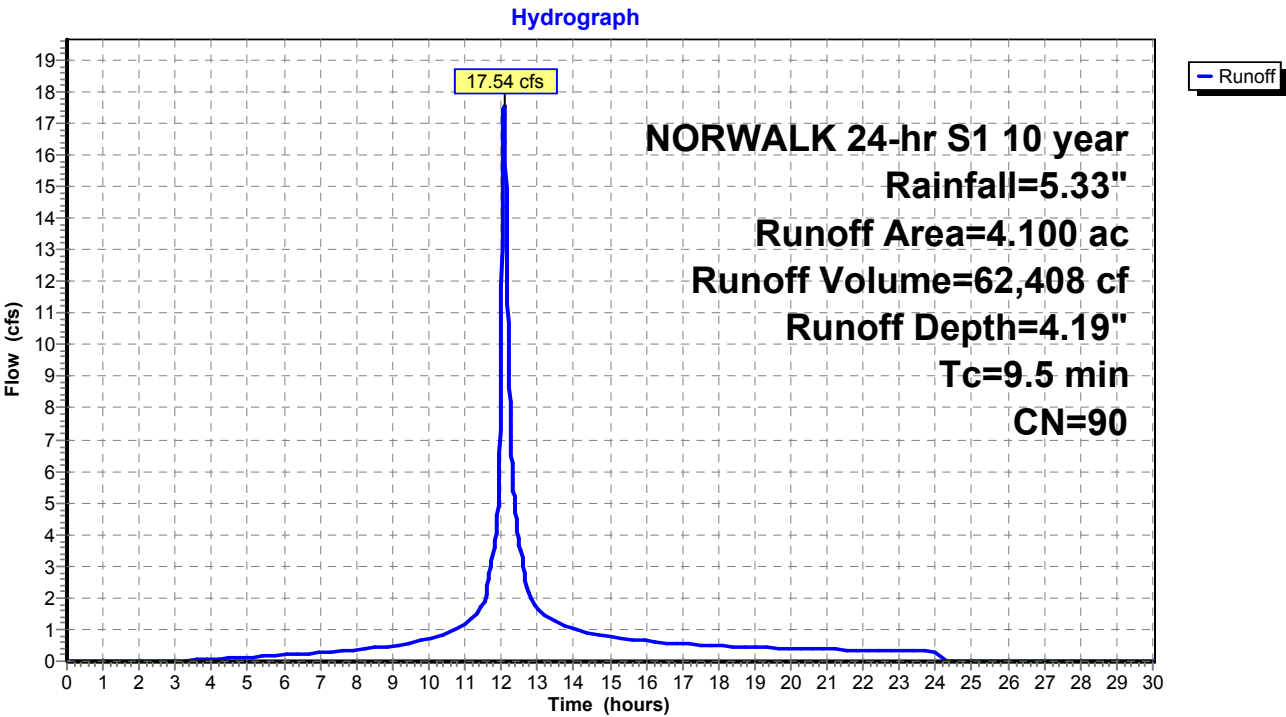
Runoff = 17.54 cfs @ 12.08 hrs, Volume= 62,408 cf, Depth= 4.19"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 12S: Area 12

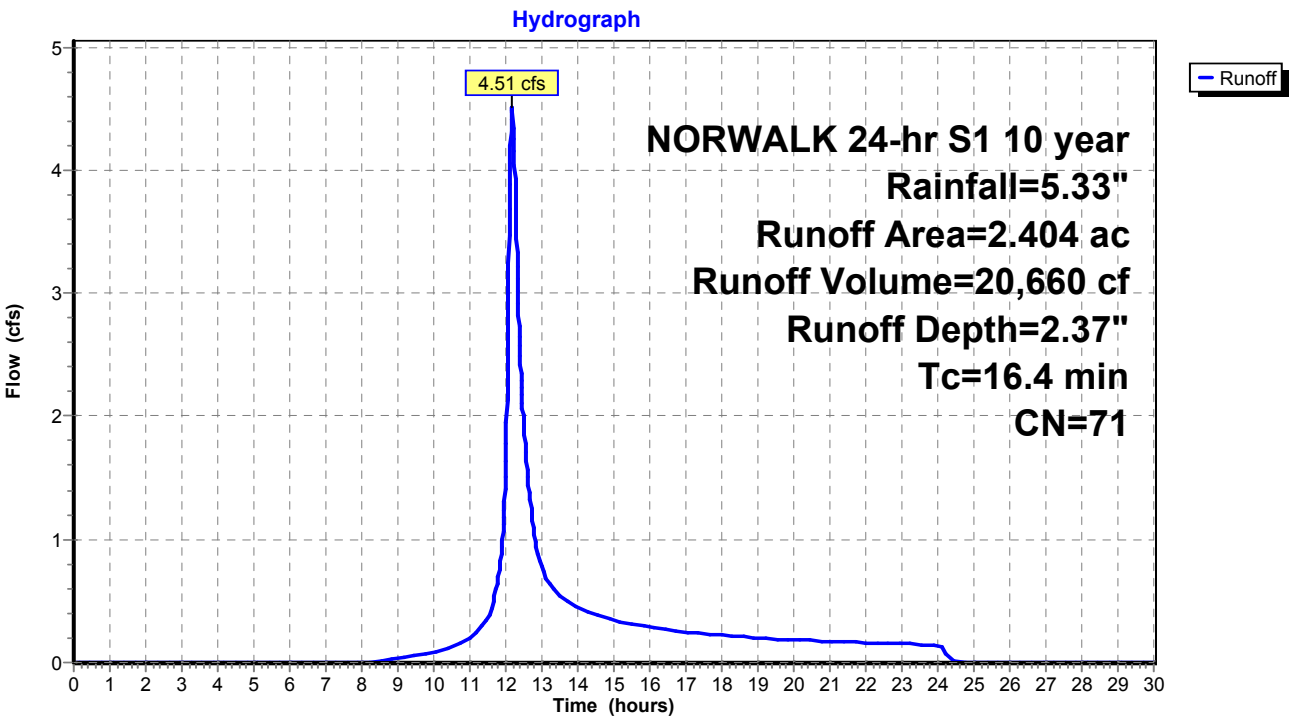
Runoff = 4.51 cfs @ 12.18 hrs, Volume= 20,660 cf, Depth= 2.37"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 13S: Area 13

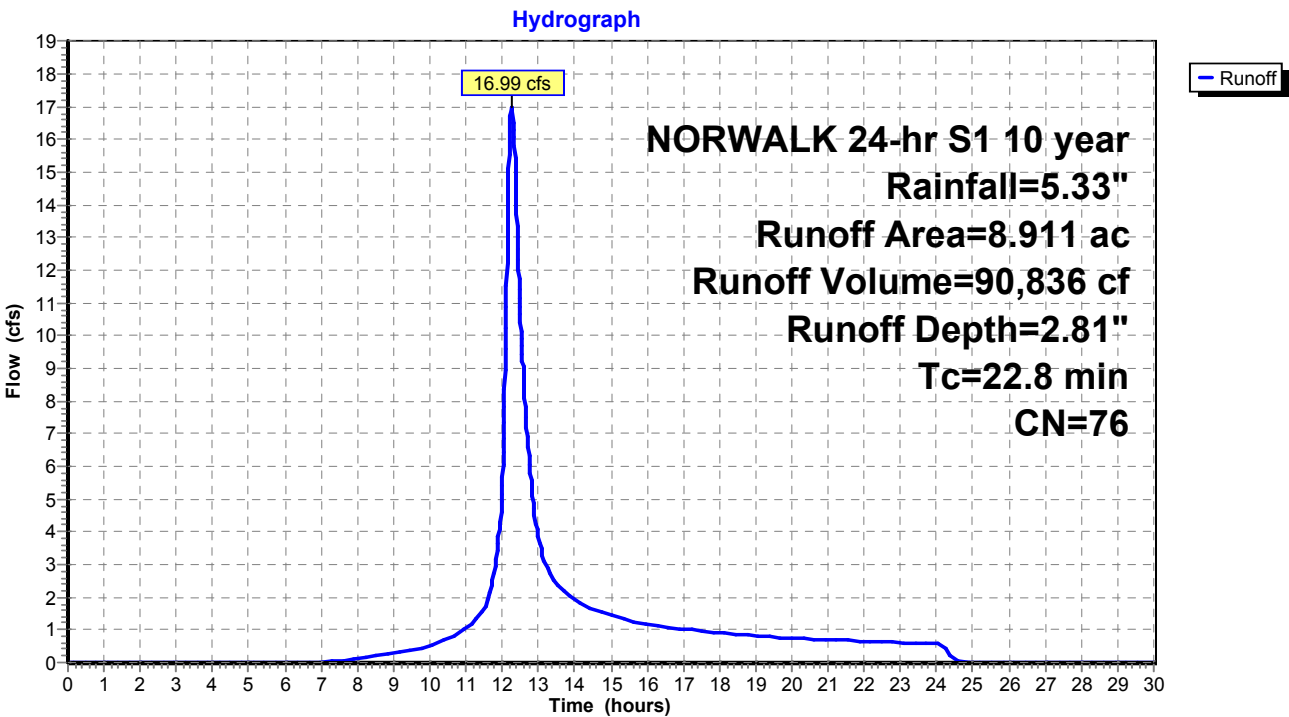
Runoff = 16.99 cfs @ 12.26 hrs, Volume= 90,836 cf, Depth= 2.81"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 14S: Area 14

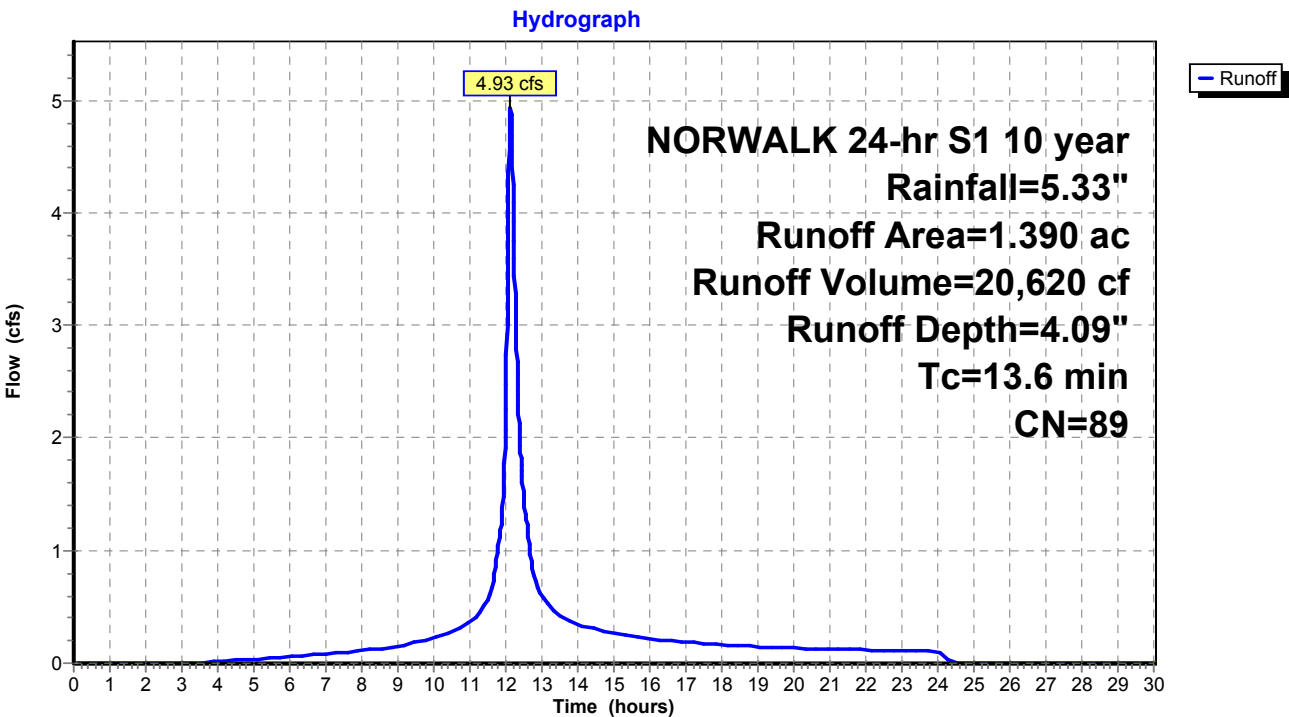
Runoff = 4.93 cfs @ 12.13 hrs, Volume= 20,620 cf, Depth= 4.09"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 15S: Area 15

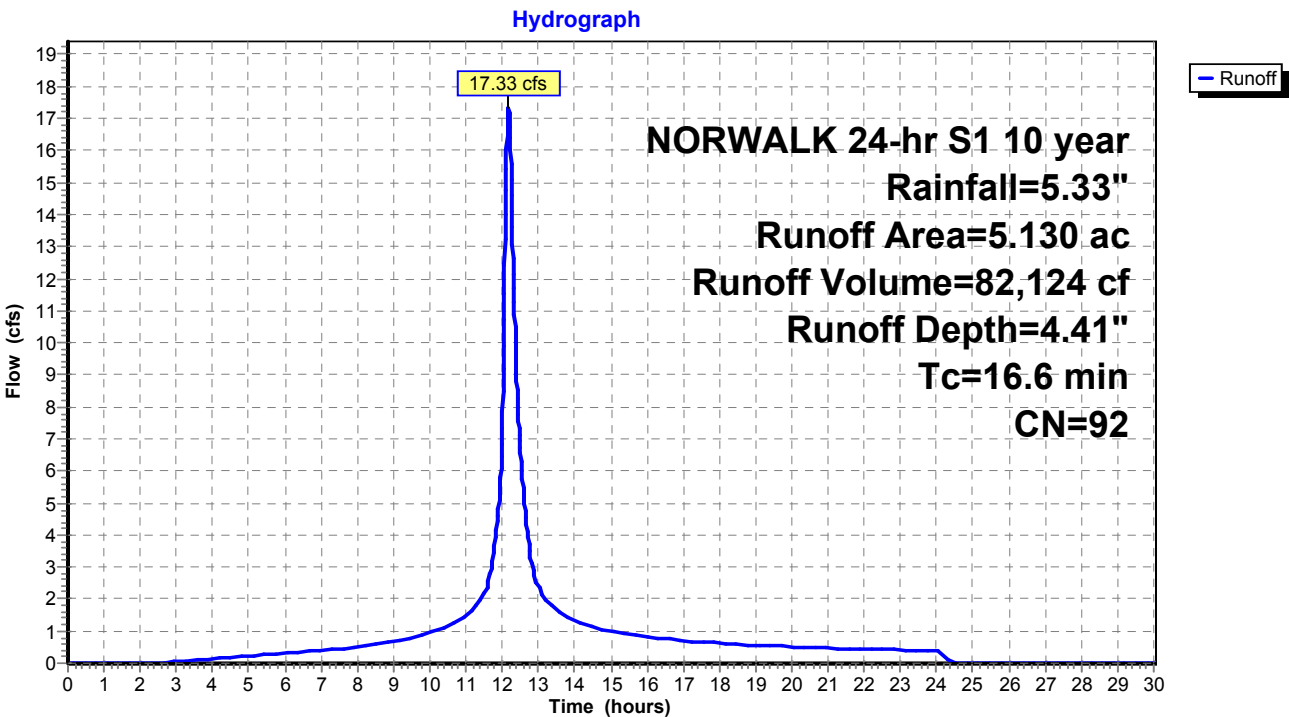
Runoff = 17.33 cfs @ 12.17 hrs, Volume= 82,124 cf, Depth= 4.41"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 16S: Area 16A

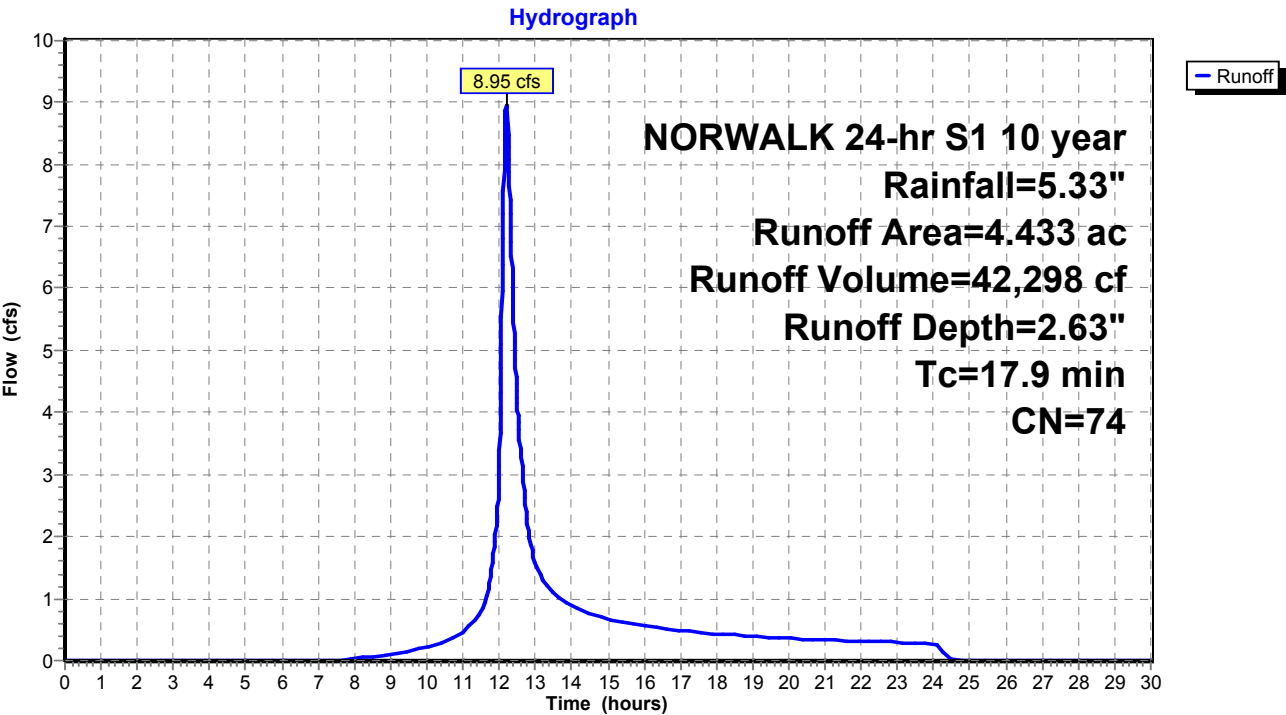
Runoff = 8.95 cfs @ 12.20 hrs, Volume= 42,298 cf, Depth= 2.63"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 17S: Area 17

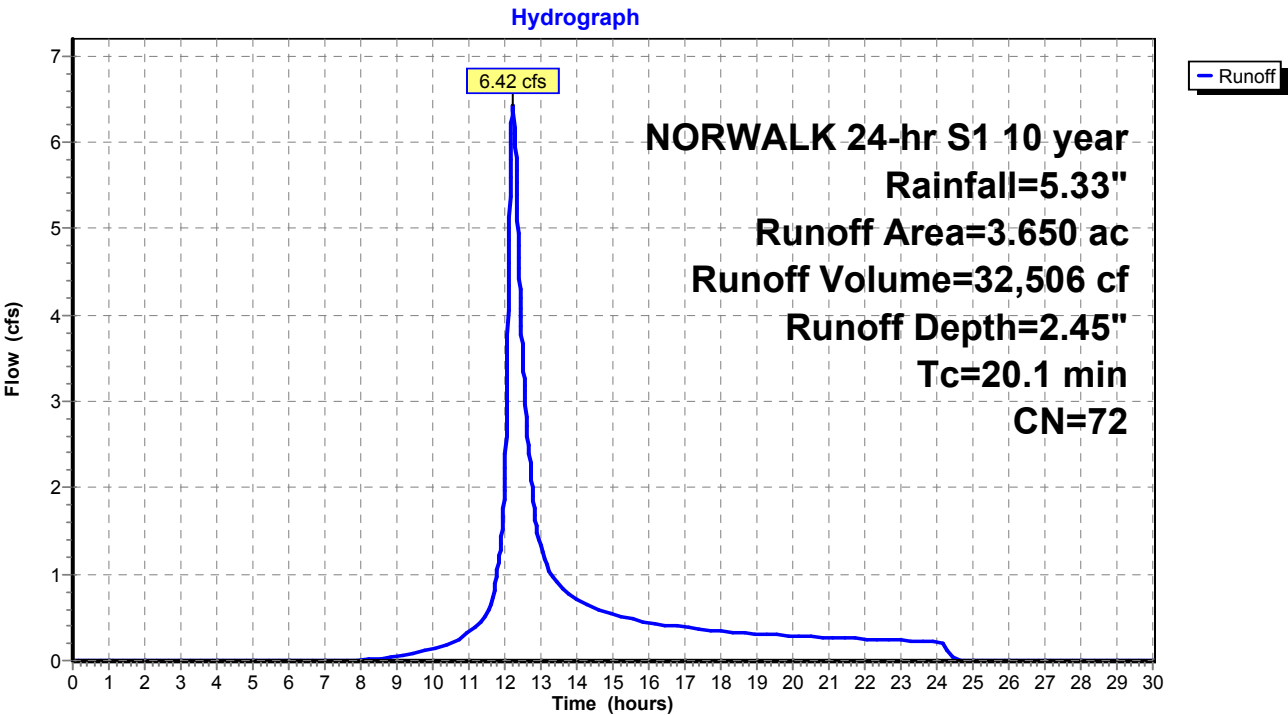
Runoff = 6.42 cfs @ 12.22 hrs, Volume= 32,506 cf, Depth= 2.45"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 20S: Area 20

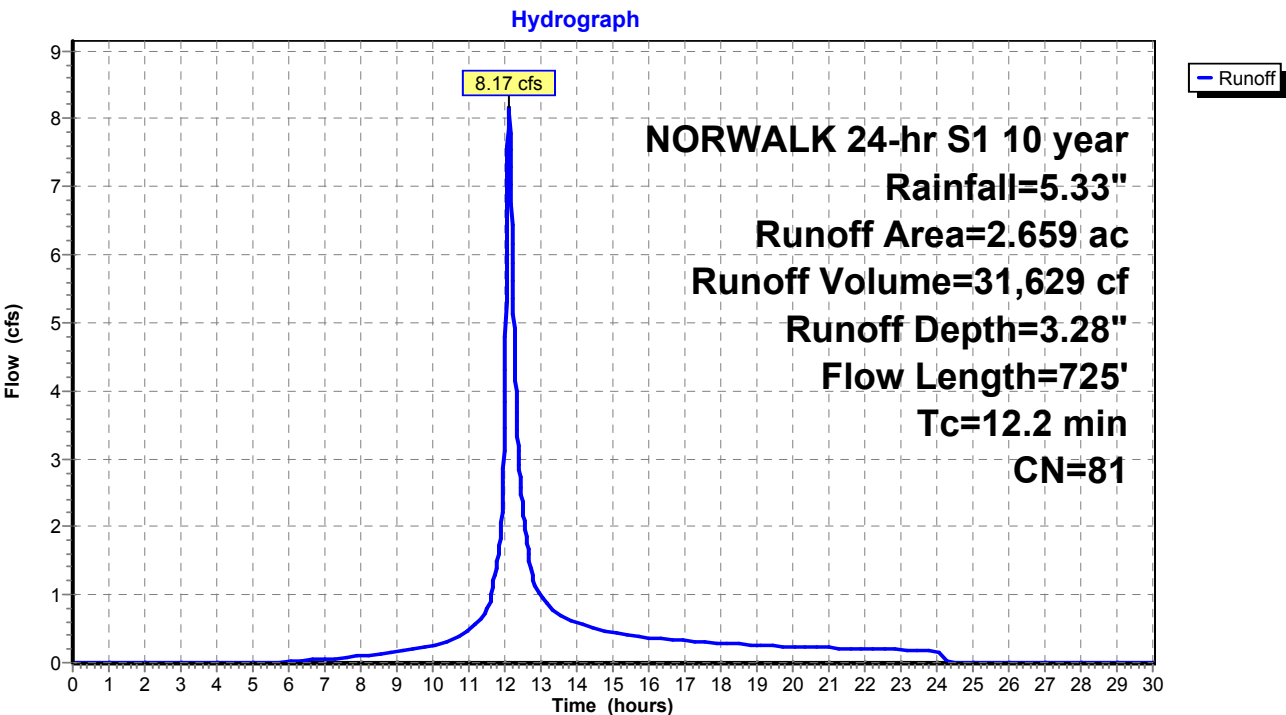
Runoff = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf, Depth= 3.28"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 21S: Area 21

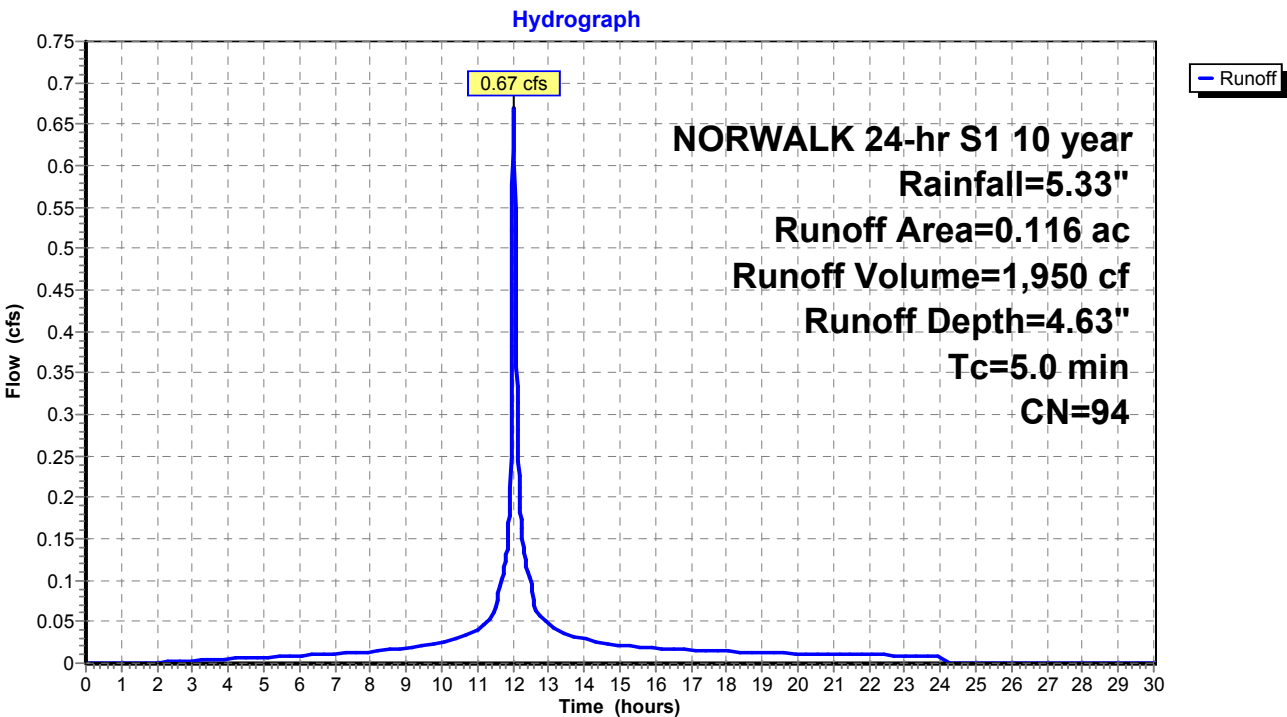
Runoff = 0.67 cfs @ 12.03 hrs, Volume= 1,950 cf, Depth= 4.63"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 22S: Area 22

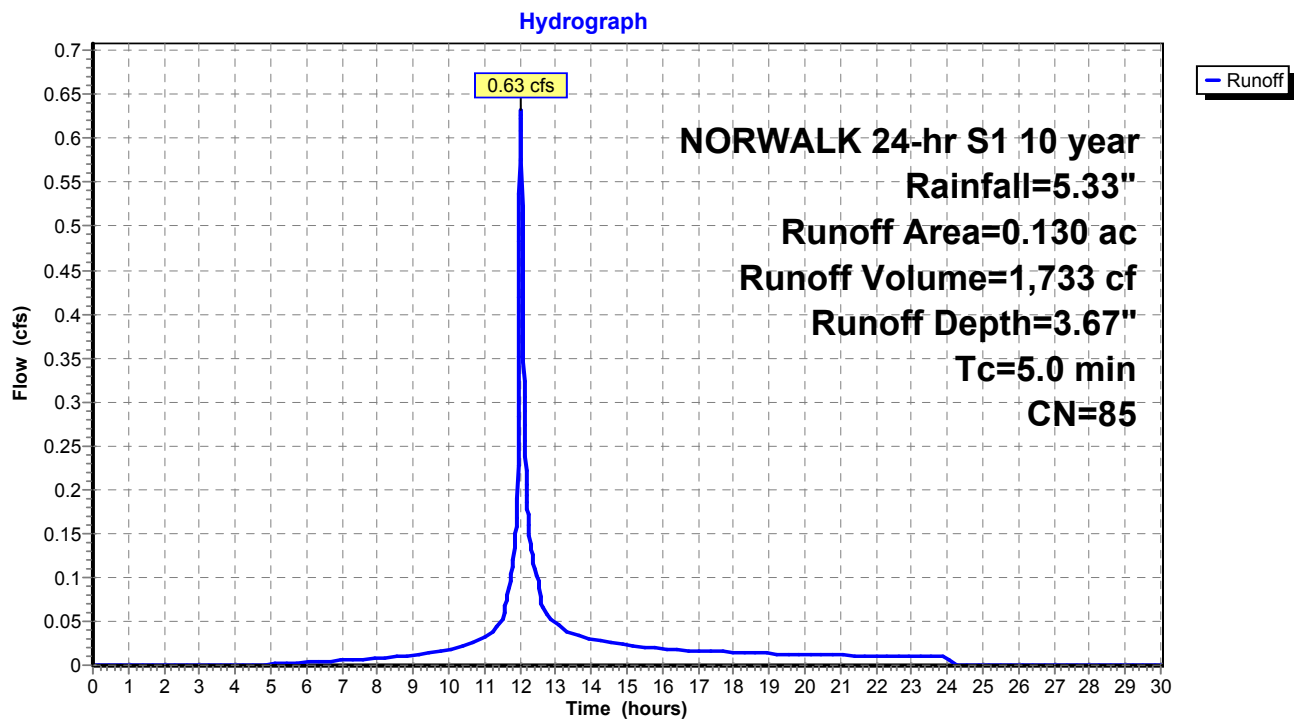
Runoff = 0.63 cfs @ 12.03 hrs, Volume= 1,733 cf, Depth= 3.67"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 23S: Area 23

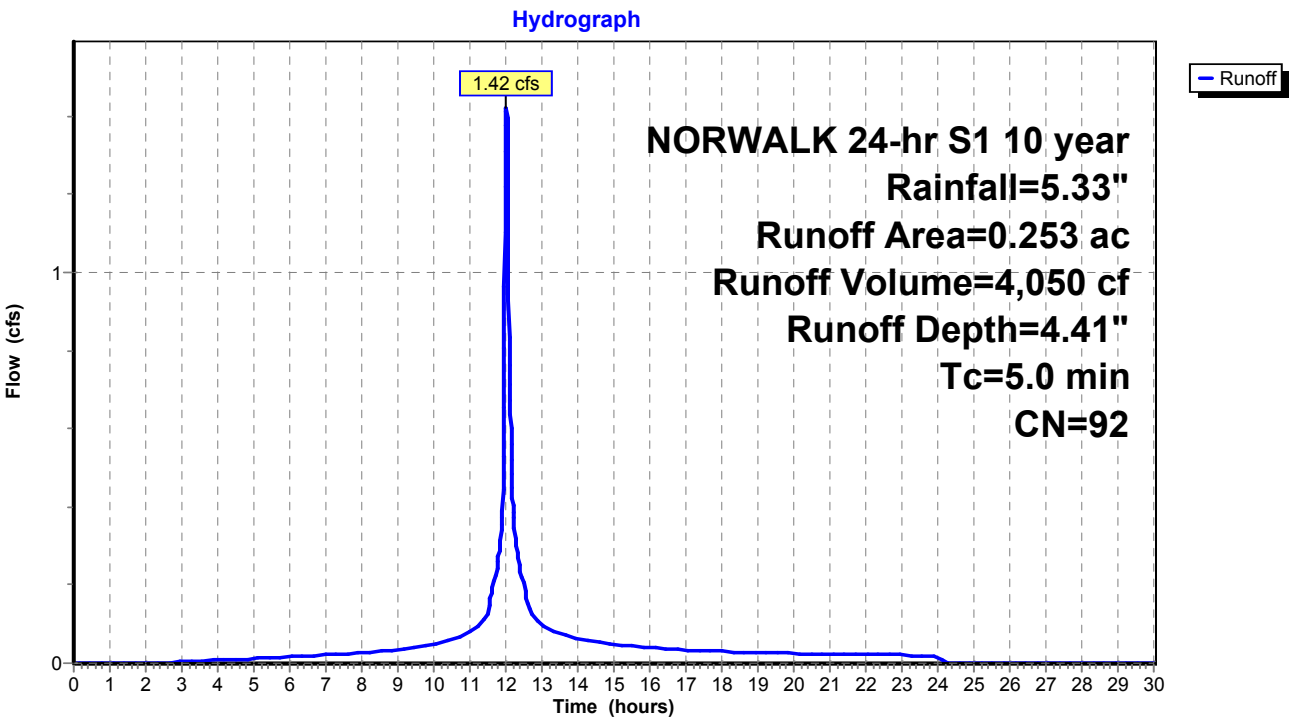
Runoff = 1.42 cfs @ 12.03 hrs, Volume= 4,050 cf, Depth= 4.41"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 24S: Area 24

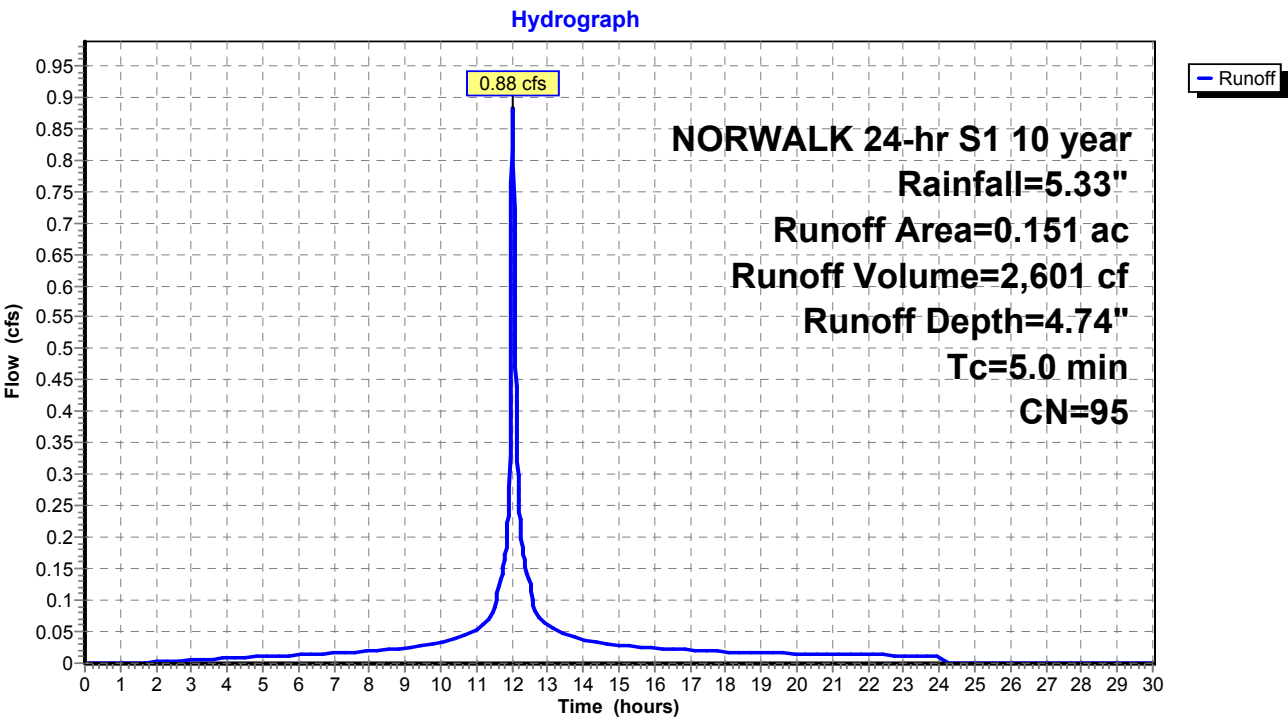
Runoff = 0.88 cfs @ 12.03 hrs, Volume= 2,601 cf, Depth= 4.74"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 25S: Area 25

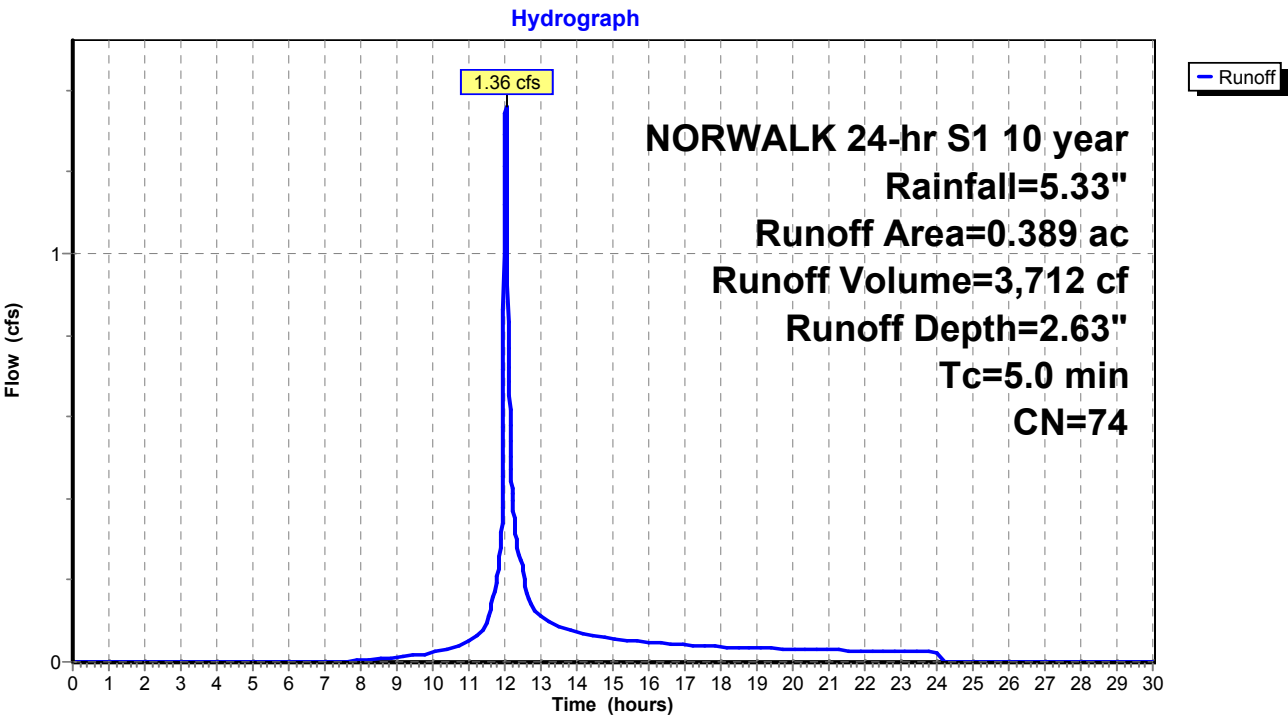
Runoff = 1.36 cfs @ 12.03 hrs, Volume= 3,712 cf, Depth= 2.63"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 26S: Area 26

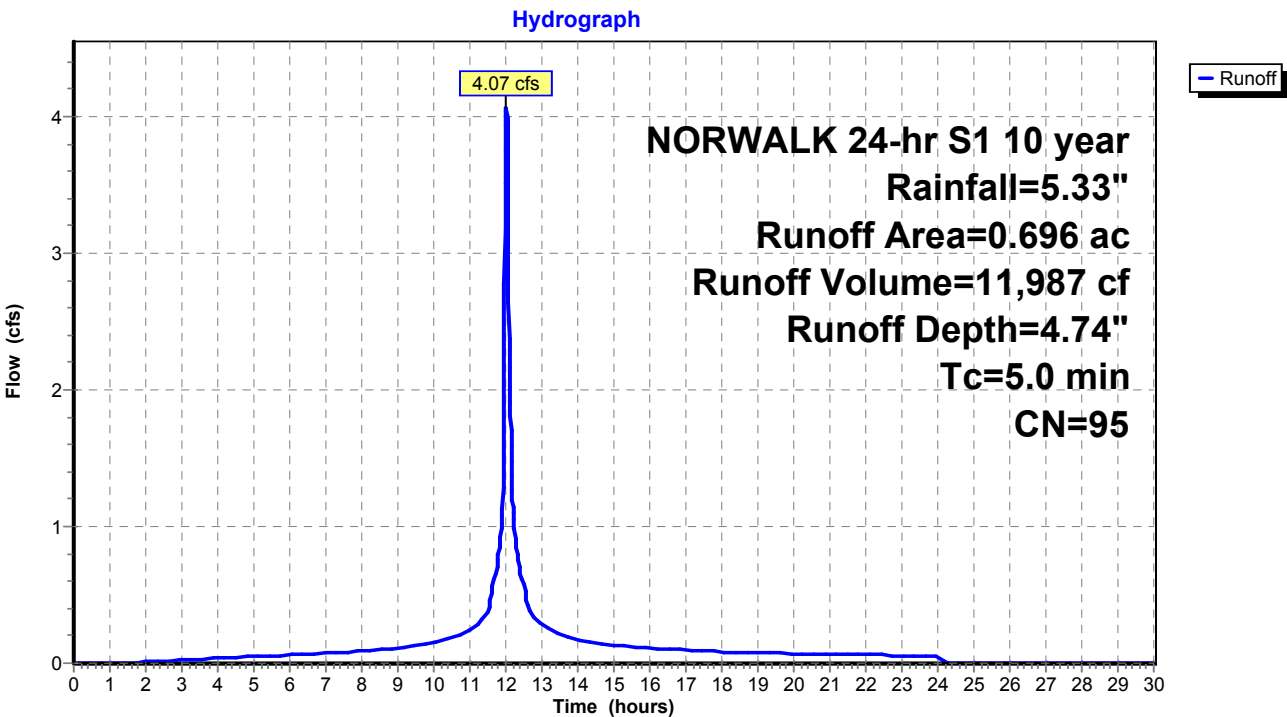
Runoff = 4.07 cfs @ 12.03 hrs, Volume= 11,987 cf, Depth= 4.74"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 27S: Area 27

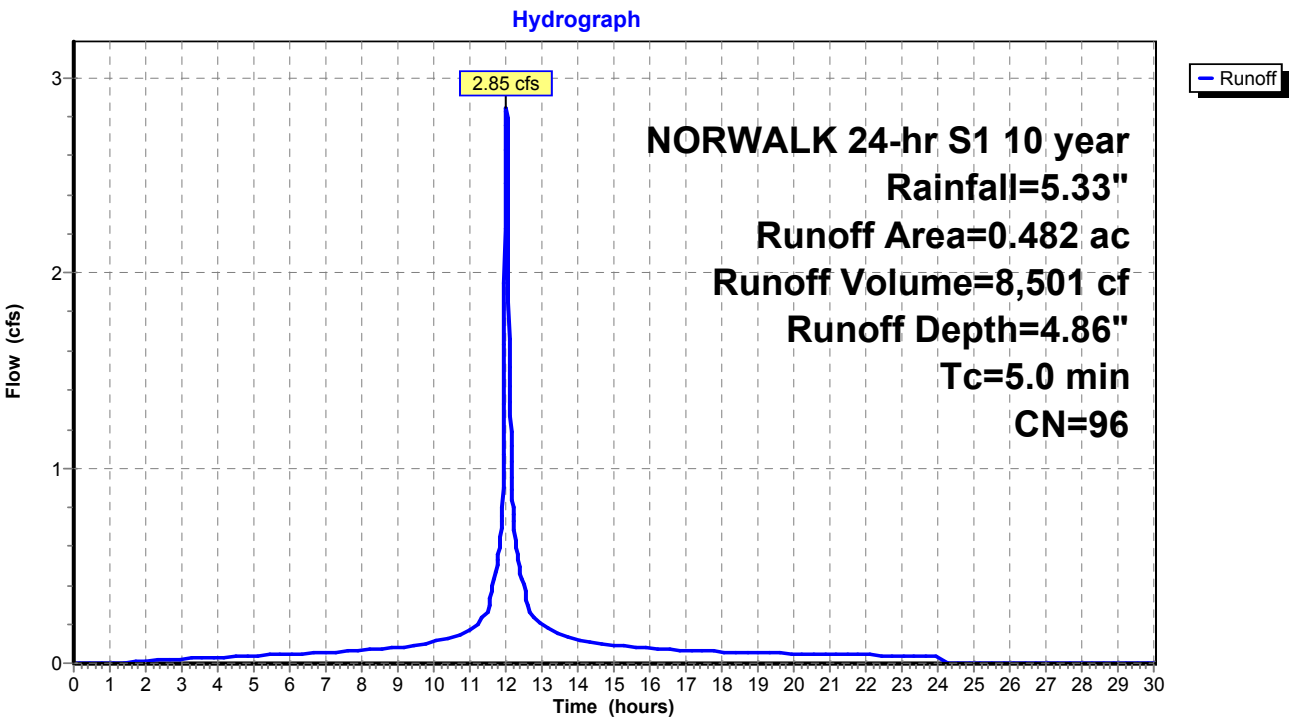
Runoff = 2.85 cfs @ 12.03 hrs, Volume= 8,501 cf, Depth= 4.86"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 28S: Area 28

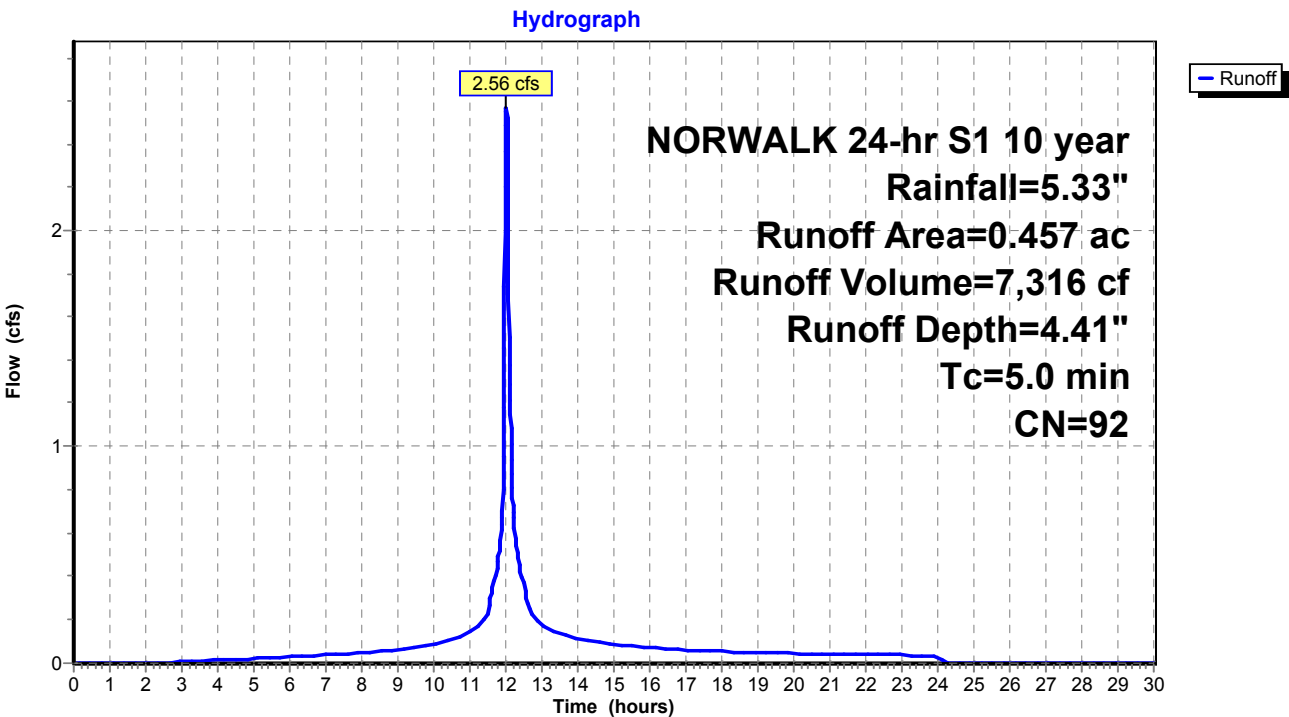
Runoff = 2.56 cfs @ 12.03 hrs, Volume= 7,316 cf, Depth= 4.41"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 29S: Area 29

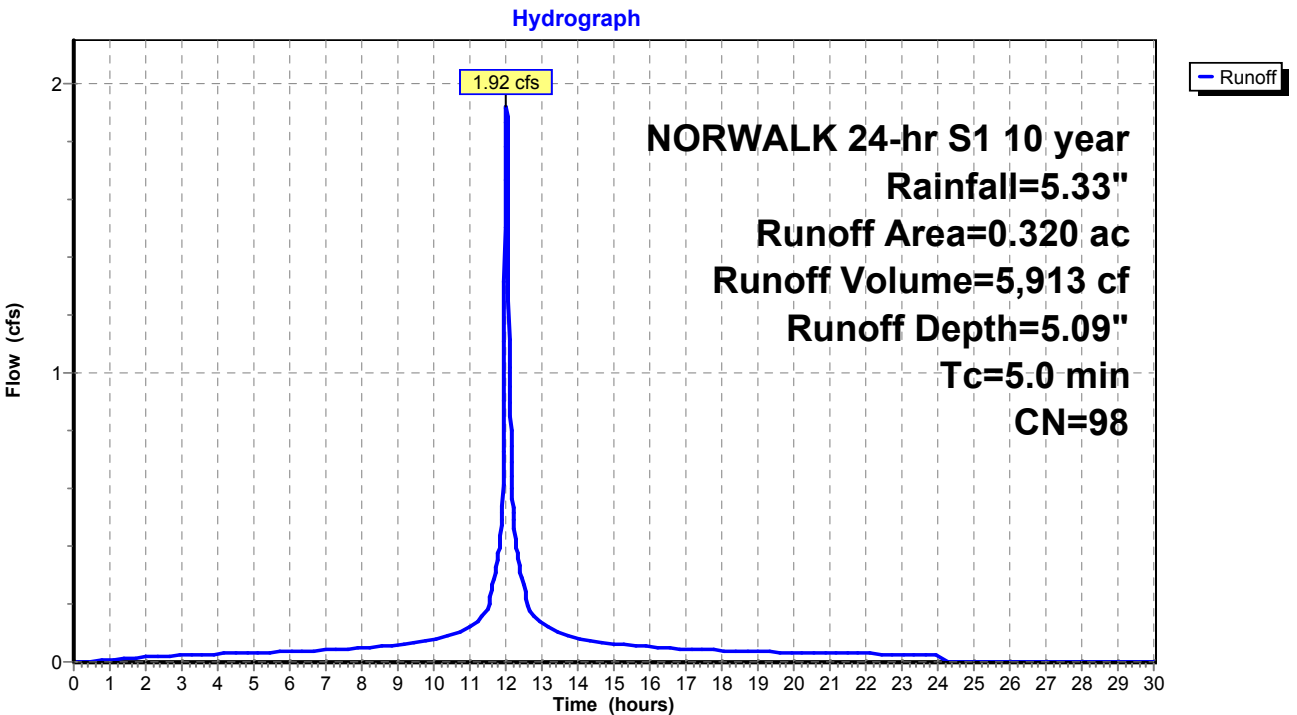
Runoff = 1.92 cfs @ 12.03 hrs, Volume= 5,913 cf, Depth= 5.09"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 30S: Area 30

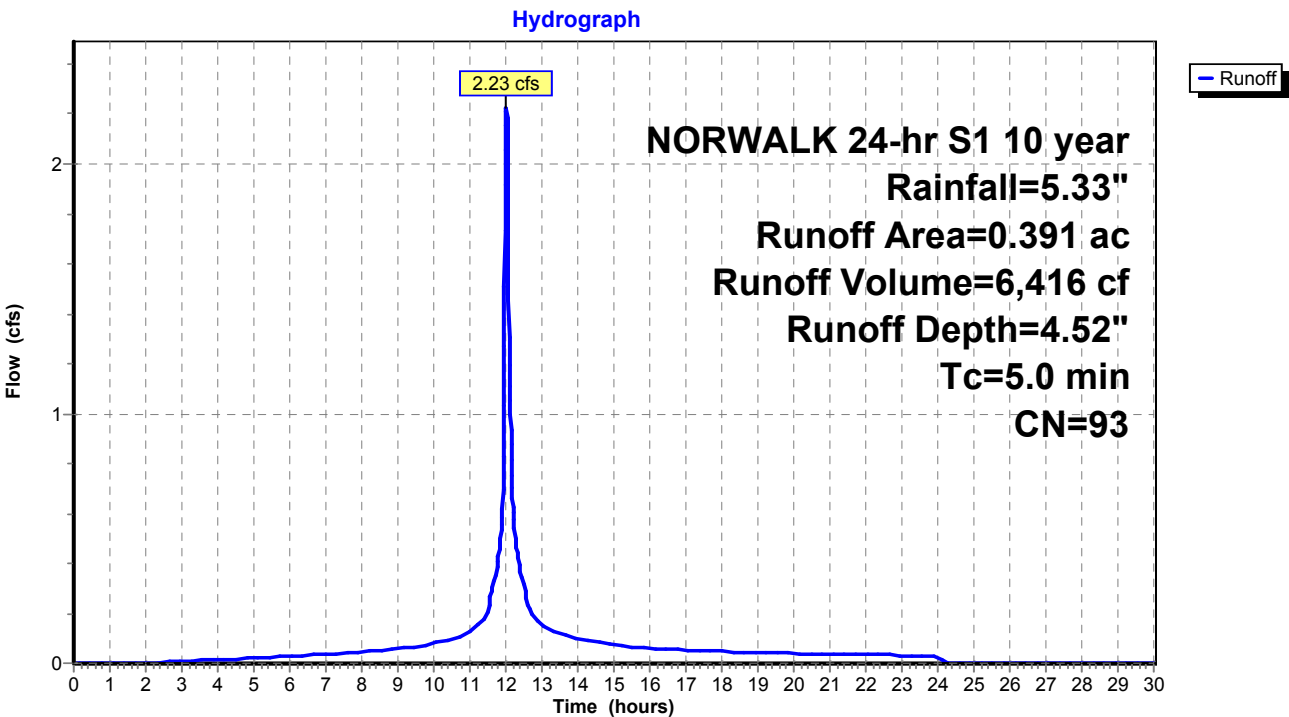
Runoff = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf, Depth= 4.52"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 52S: Area 1

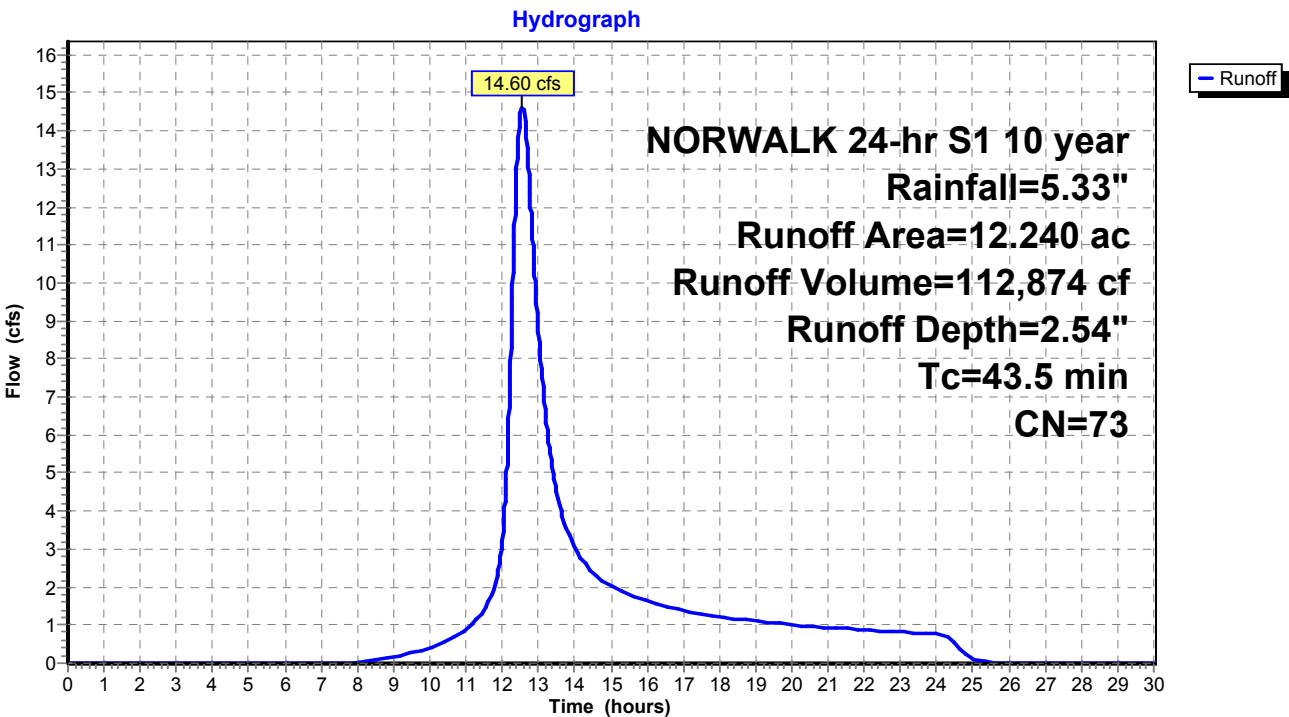
Runoff = 14.60 cfs @ 12.53 hrs, Volume= 112,874 cf, Depth= 2.54"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 53S: Area 2

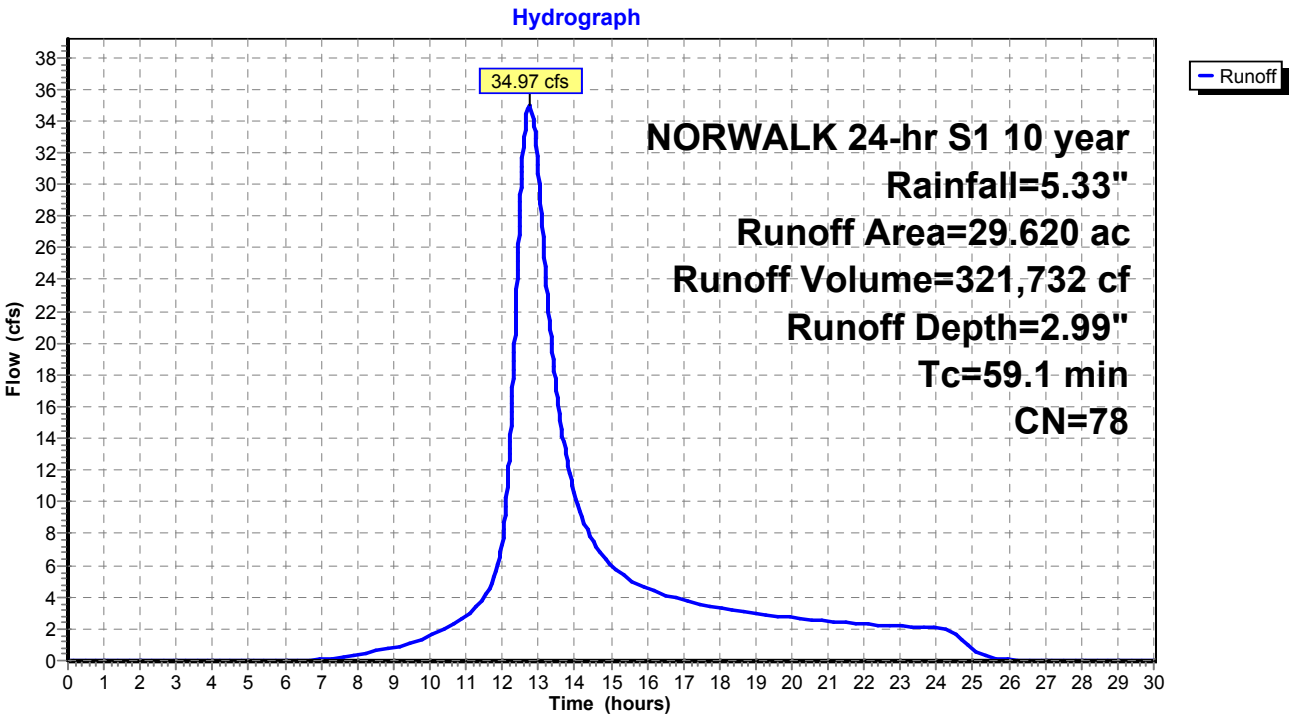
Runoff = 34.97 cfs @ 12.74 hrs, Volume= 321,732 cf, Depth= 2.99"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 54S: Area 3

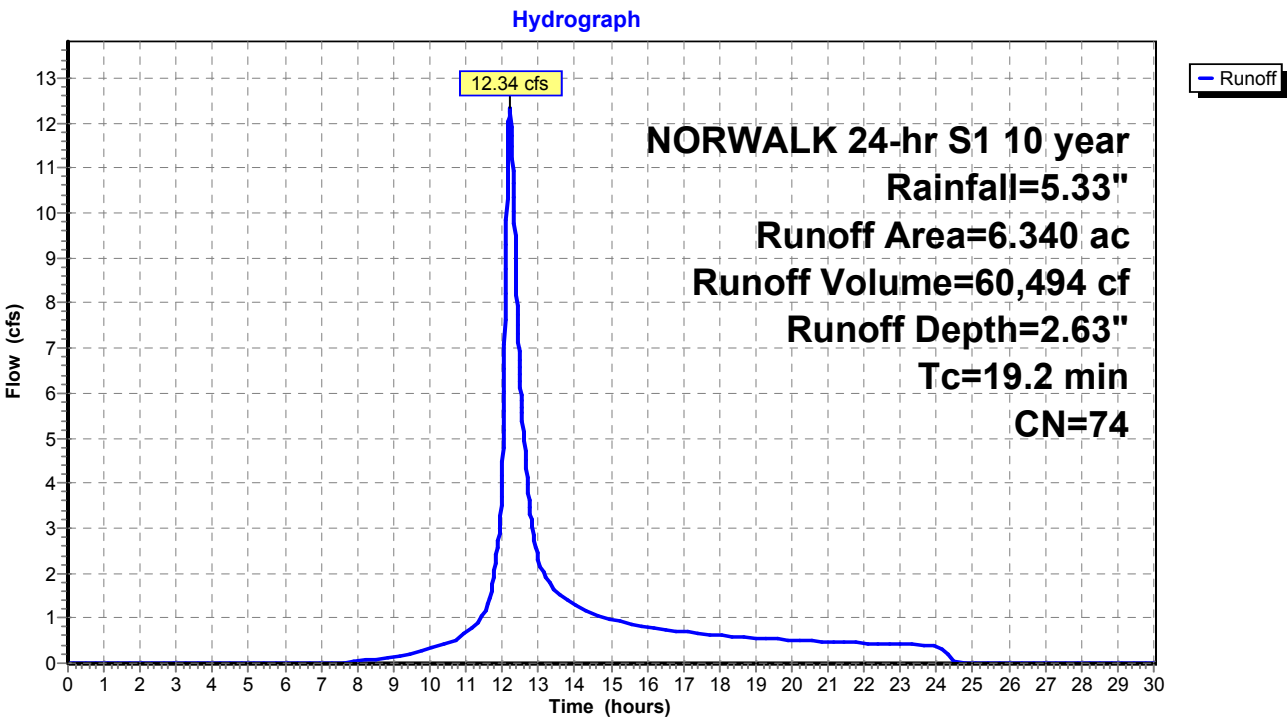
Runoff = 12.34 cfs @ 12.22 hrs, Volume= 60,494 cf, Depth= 2.63"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 56S: Area 35

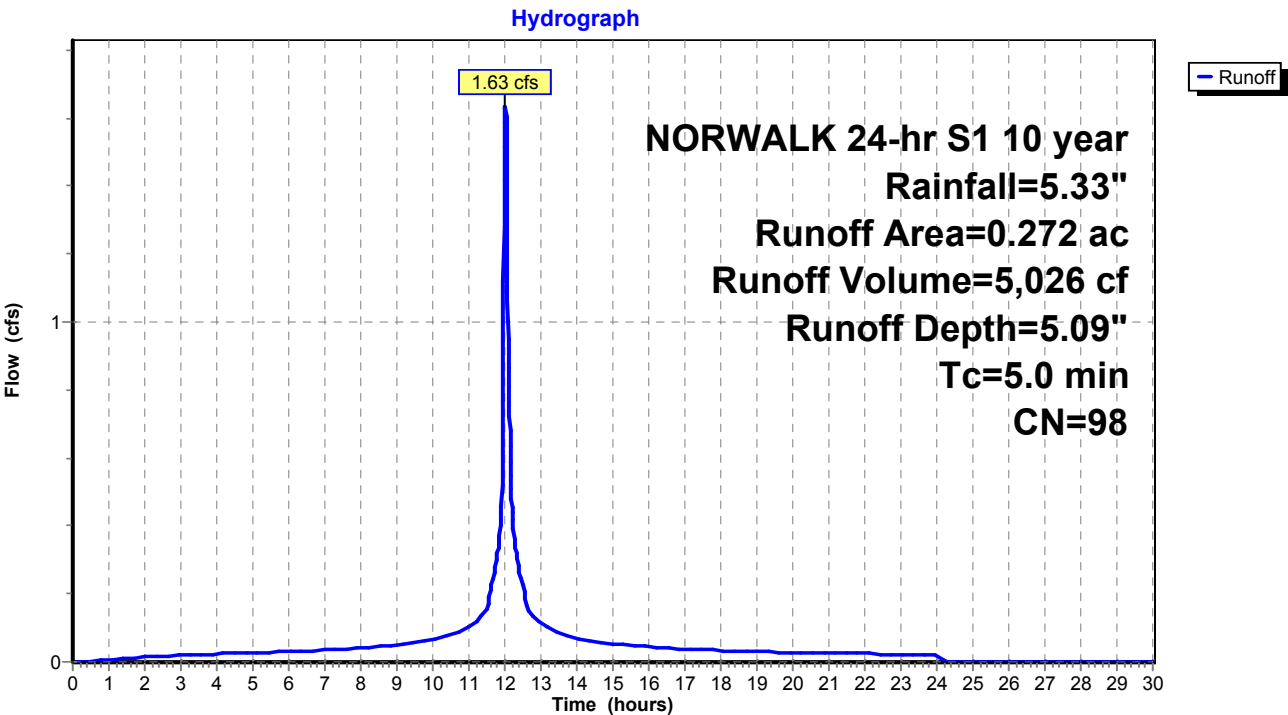
Runoff = 1.63 cfs @ 12.03 hrs, Volume= 5,026 cf, Depth= 5.09"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 60S: Area 37

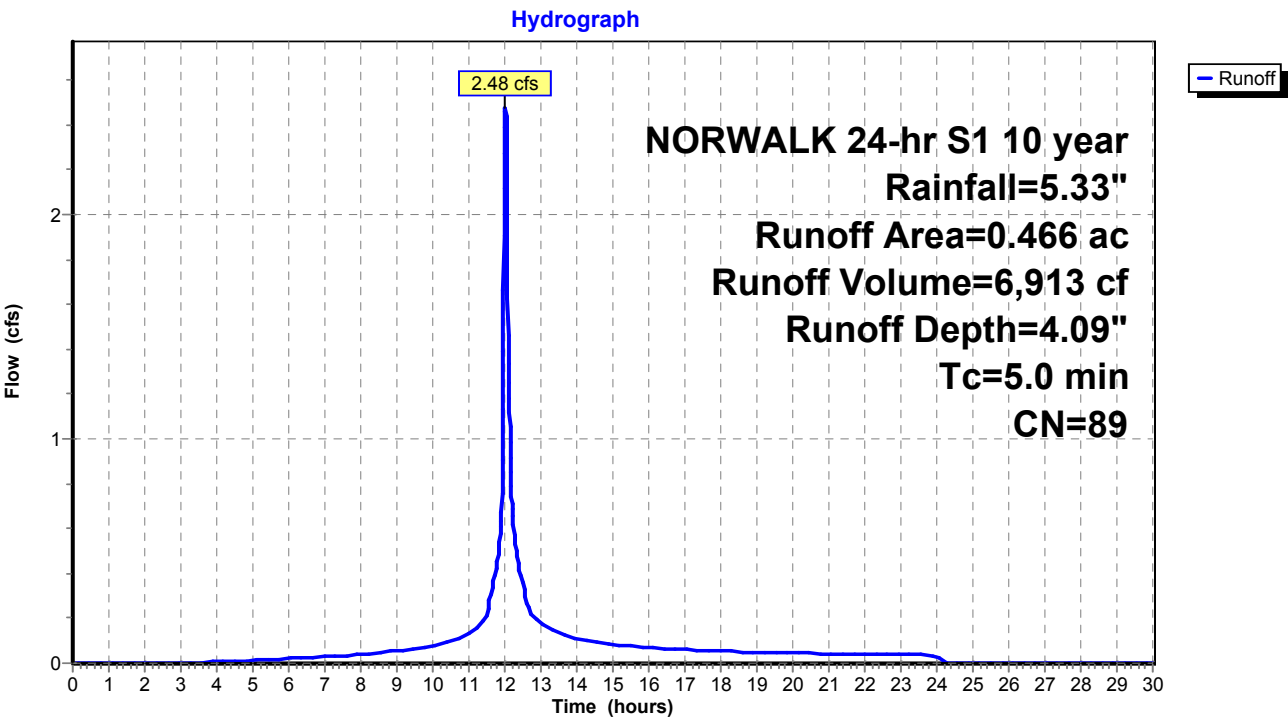
Runoff = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf, Depth= 4.09"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 62S: Area 38

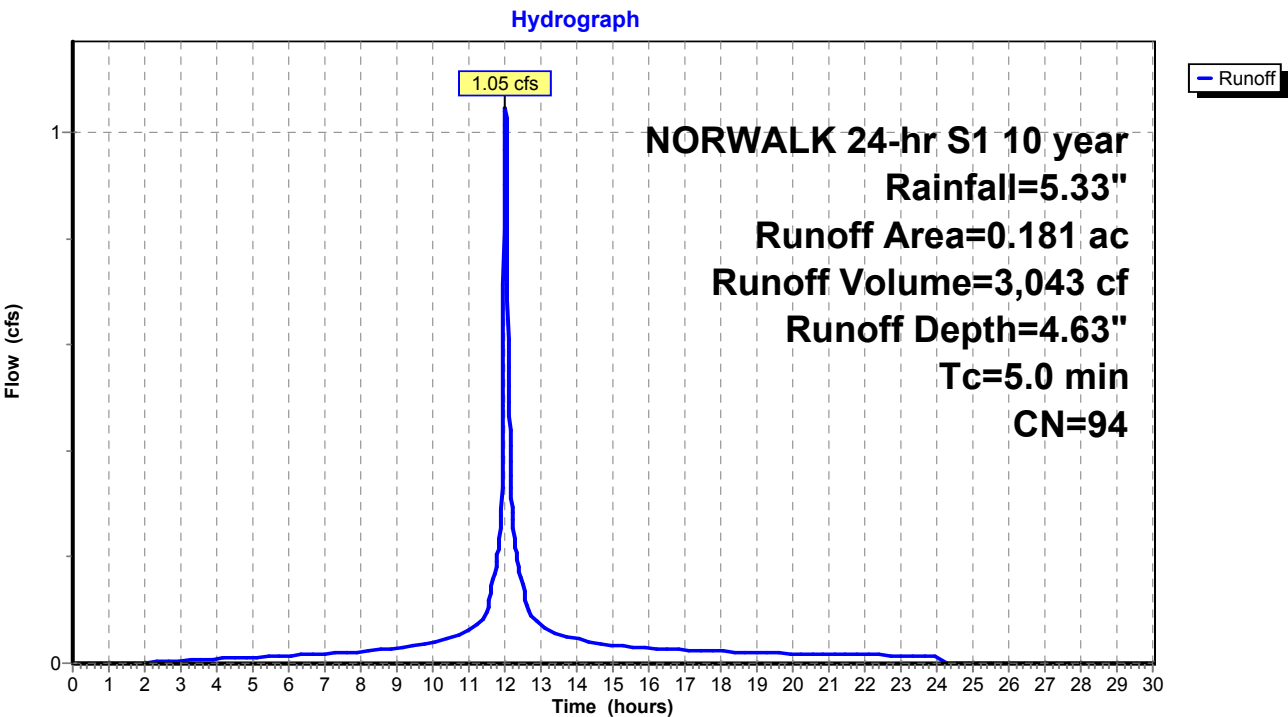
Runoff = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf, Depth= 4.63"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 65S: Area 41

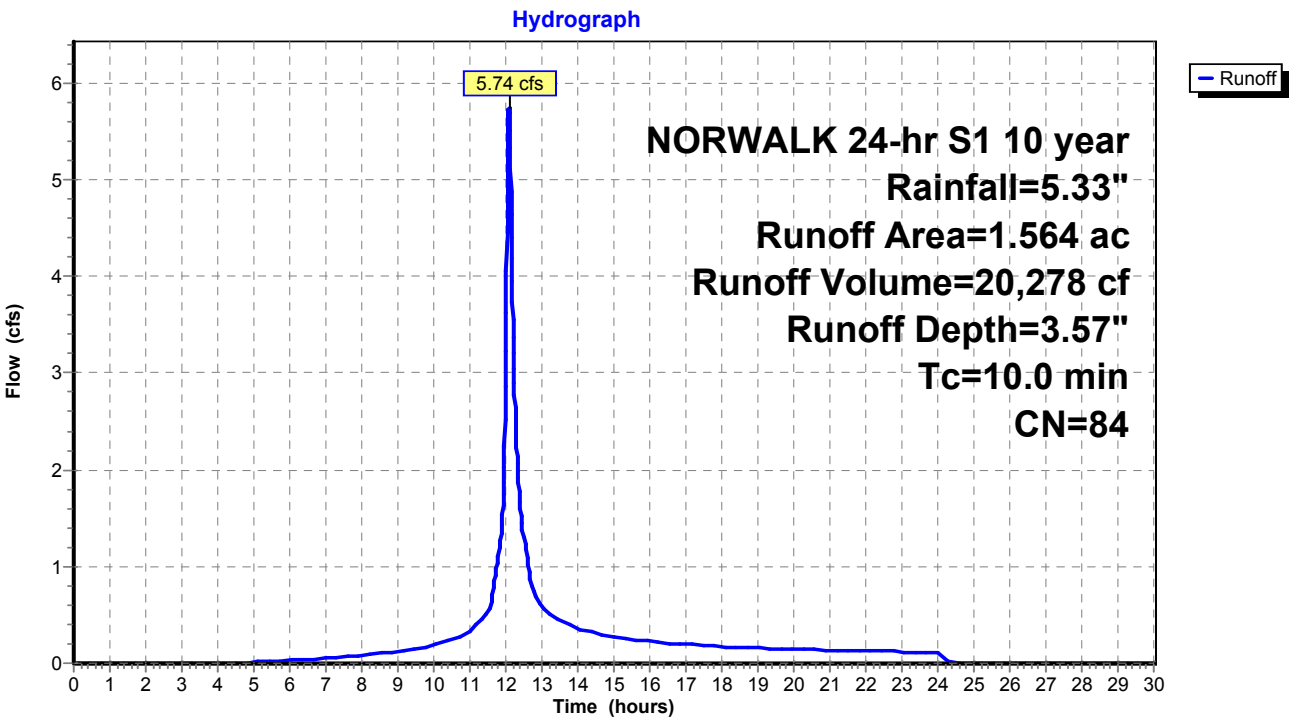
Runoff = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf, Depth= 3.57"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 68S: Area 36

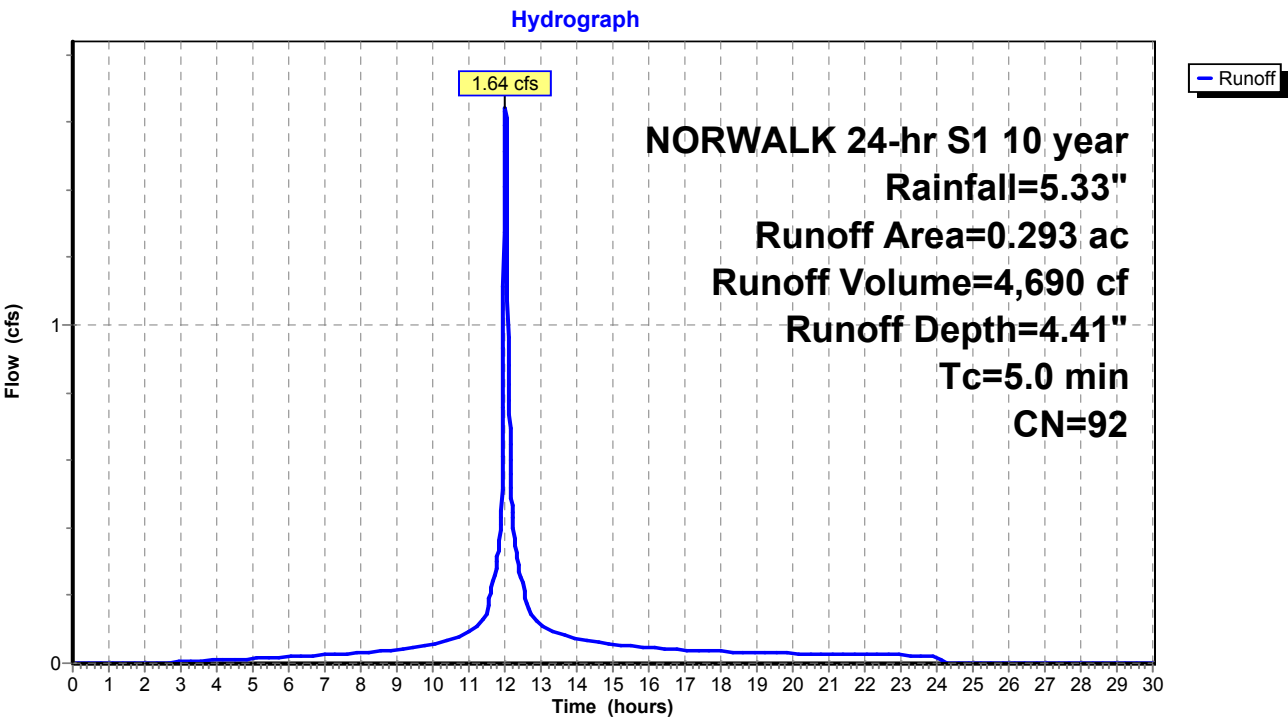
Runoff = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf, Depth= 4.41"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 69S: Area 40

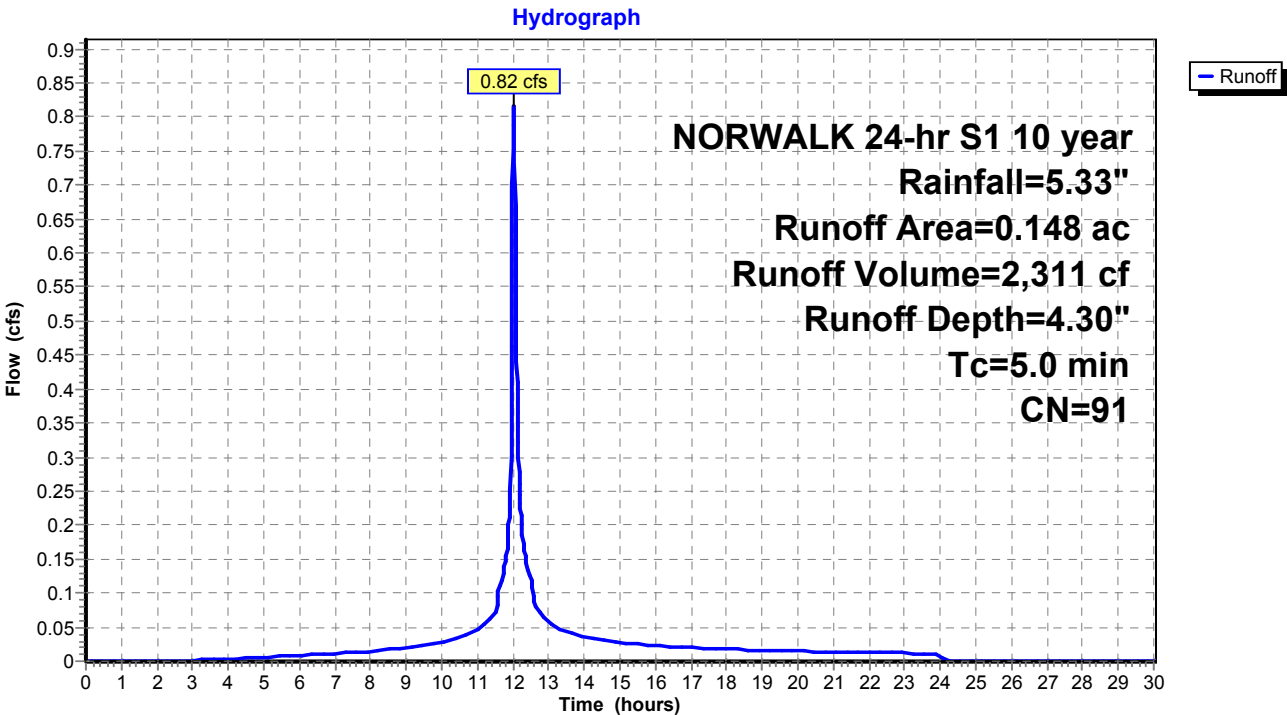
Runoff = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf, Depth= 4.30"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"
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Summary for Subcatchment 71S: Area 34

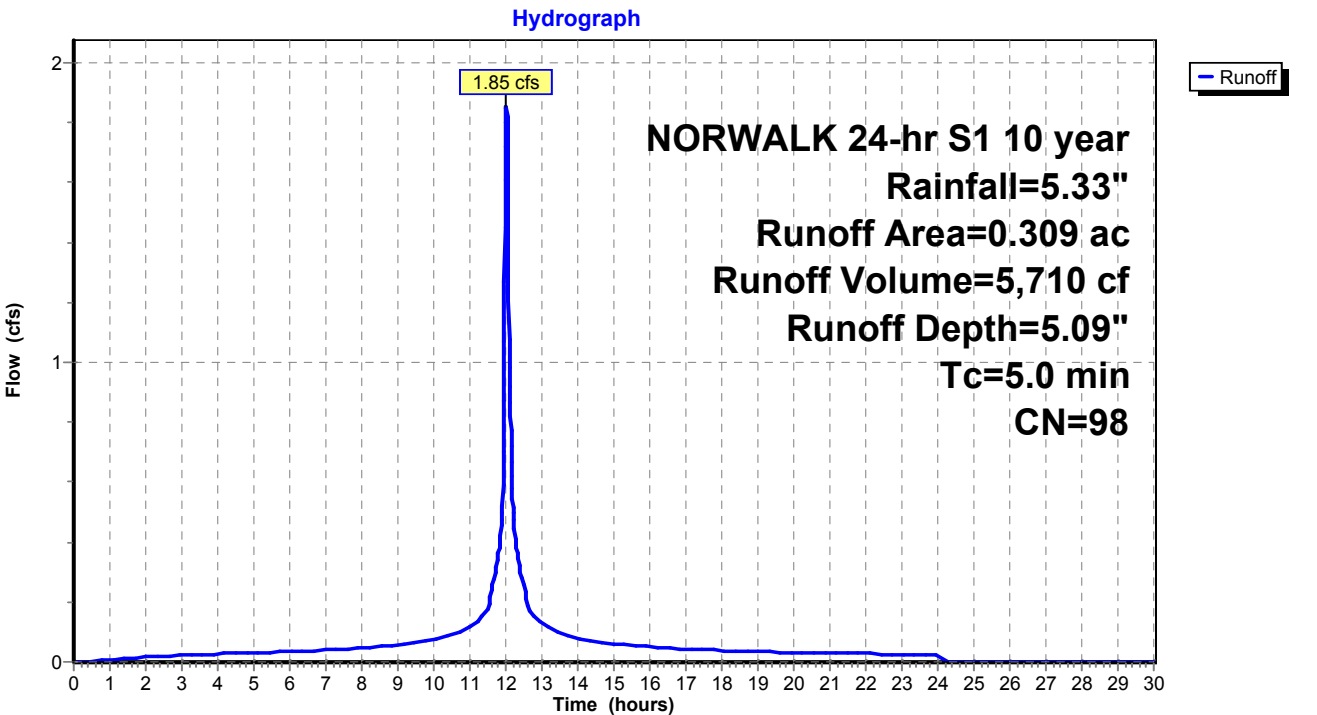
Runoff = 1.85 cfs @ 12.03 hrs, Volume= 5,710 cf, Depth= 5.09"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 75S: Area 32

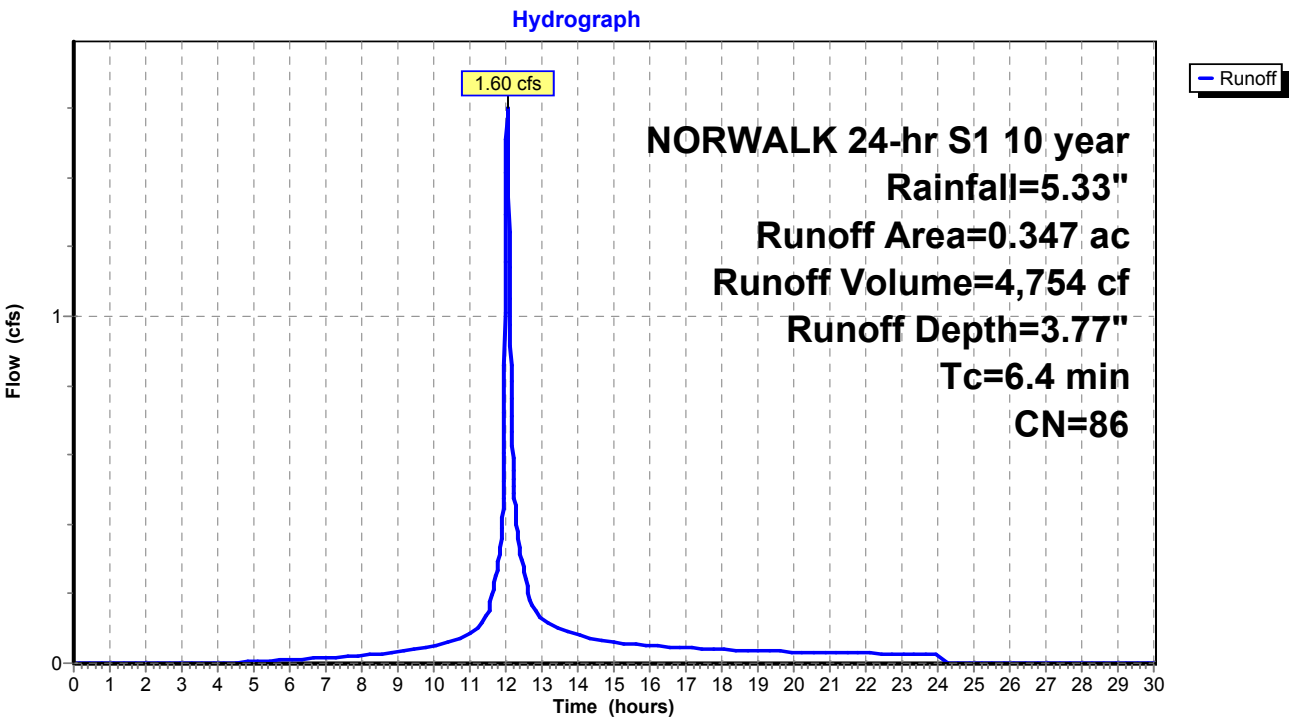
Runoff = 1.60 cfs @ 12.04 hrs, Volume= 4,754 cf, Depth= 3.77"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 76S: Area 33

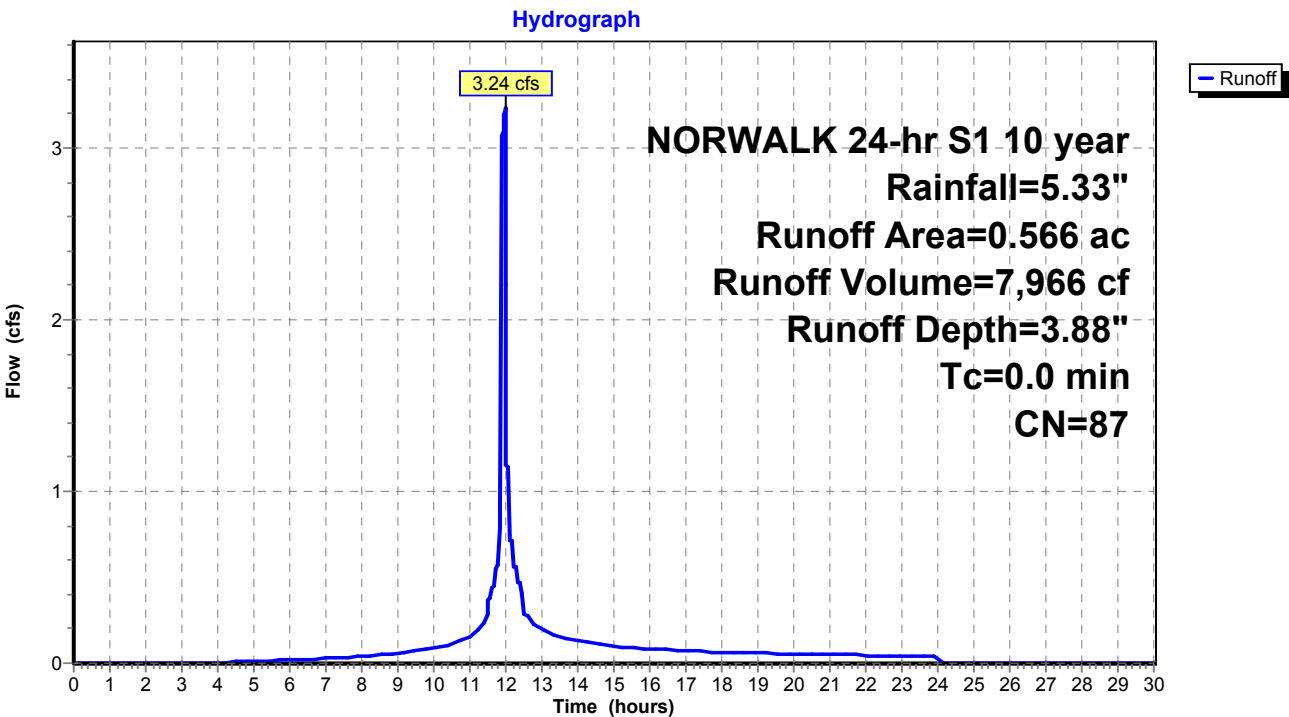
Runoff = 3.24 cfs @ 11.99 hrs, Volume= 7,966 cf, Depth= 3.88"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 78S: Area 39

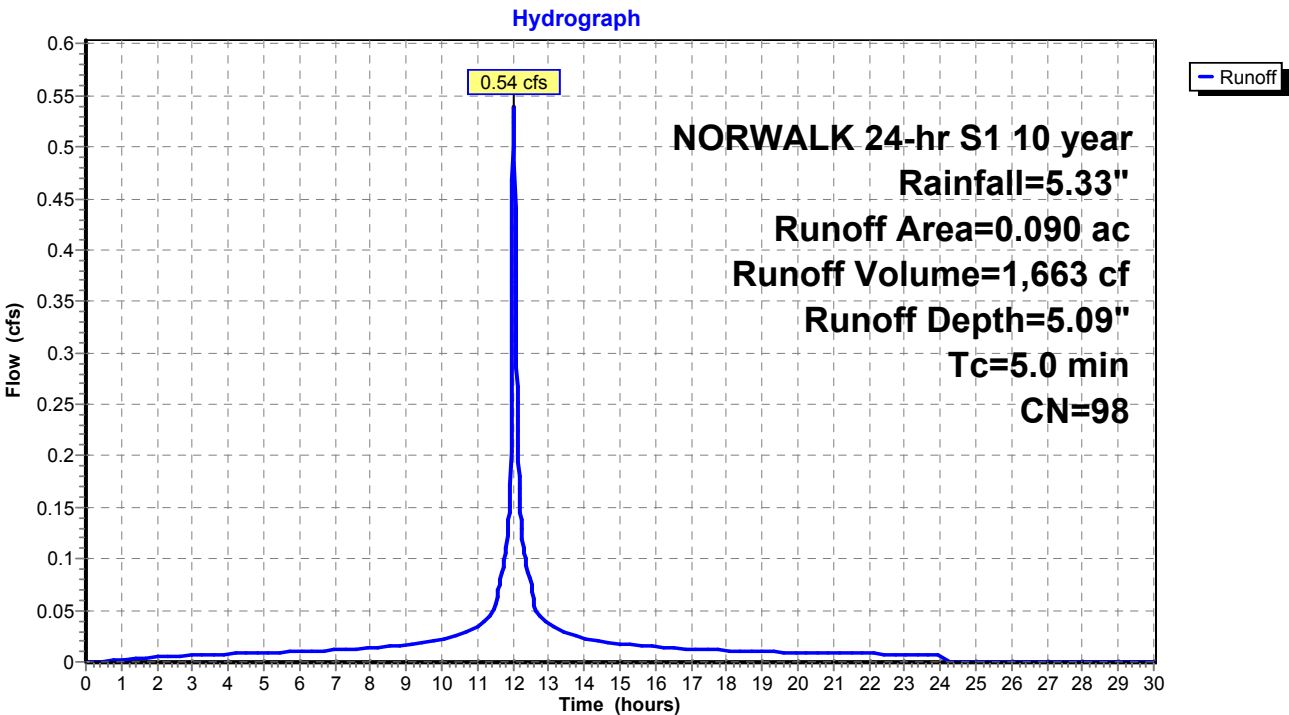
Runoff = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf, Depth= 5.09"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 84S: Area 31

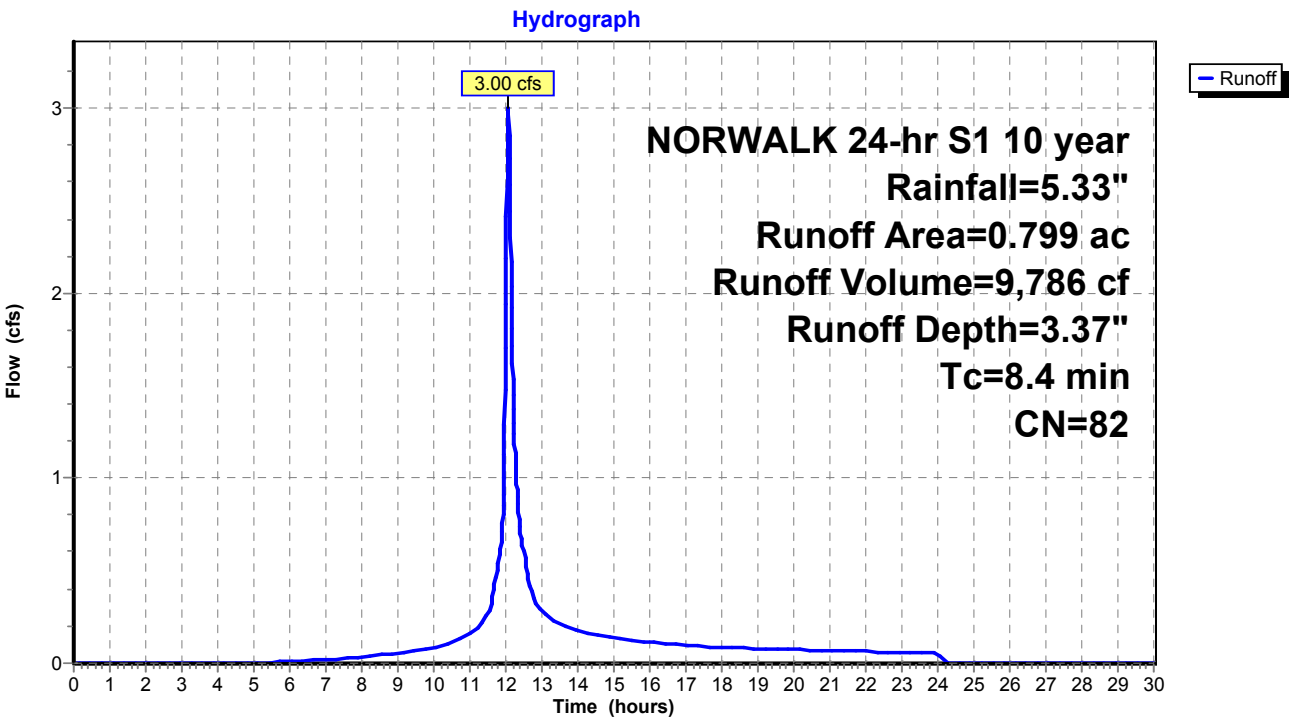
Runoff = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf, Depth= 3.37"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 100S: Area 16B

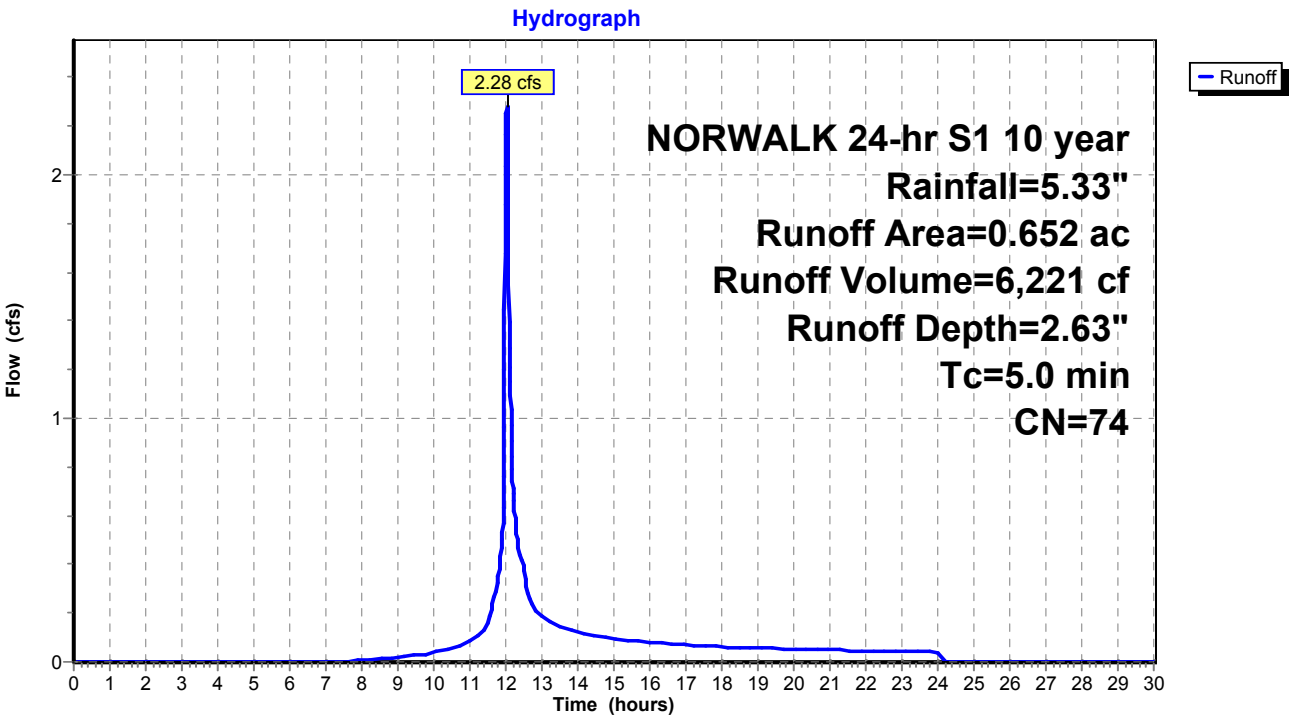
Runoff = 2.28 cfs @ 12.03 hrs, Volume= 6,221 cf, Depth= 2.63"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 105S: Area 18

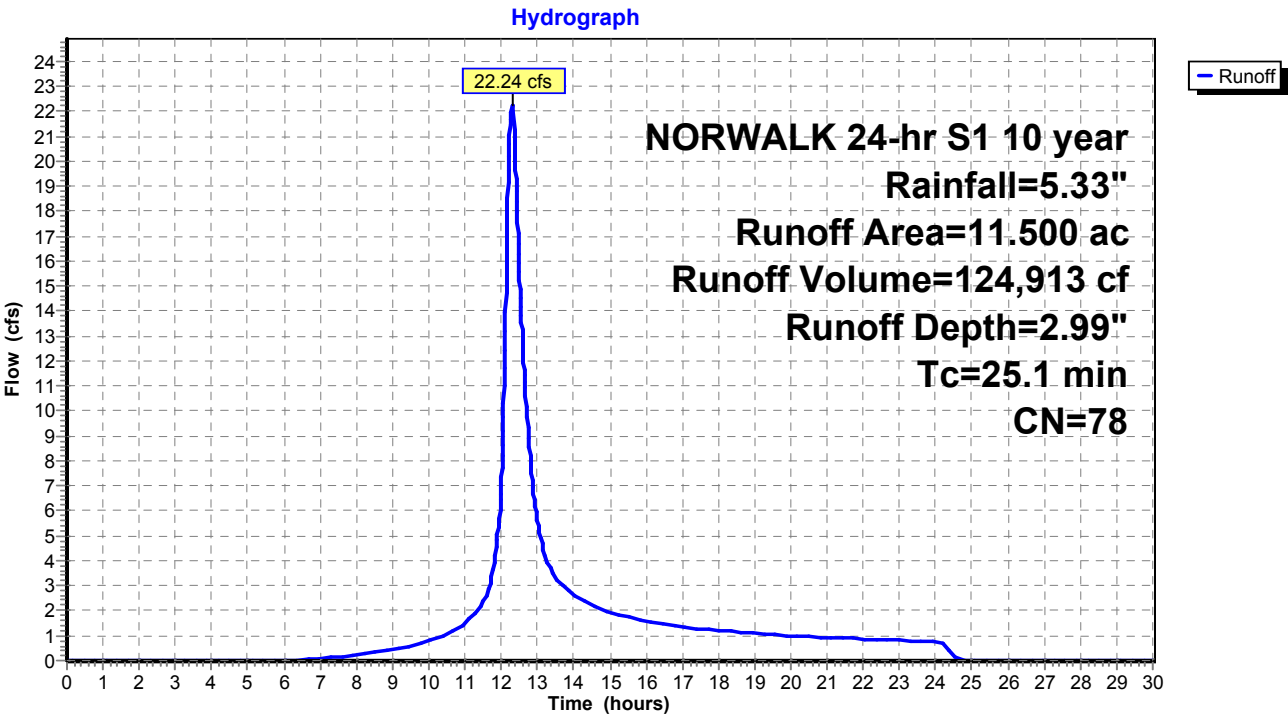
Runoff = 22.24 cfs @ 12.30 hrs, Volume= 124,913 cf, Depth= 2.99"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"
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Summary for Subcatchment BLDG: EX-BLDG

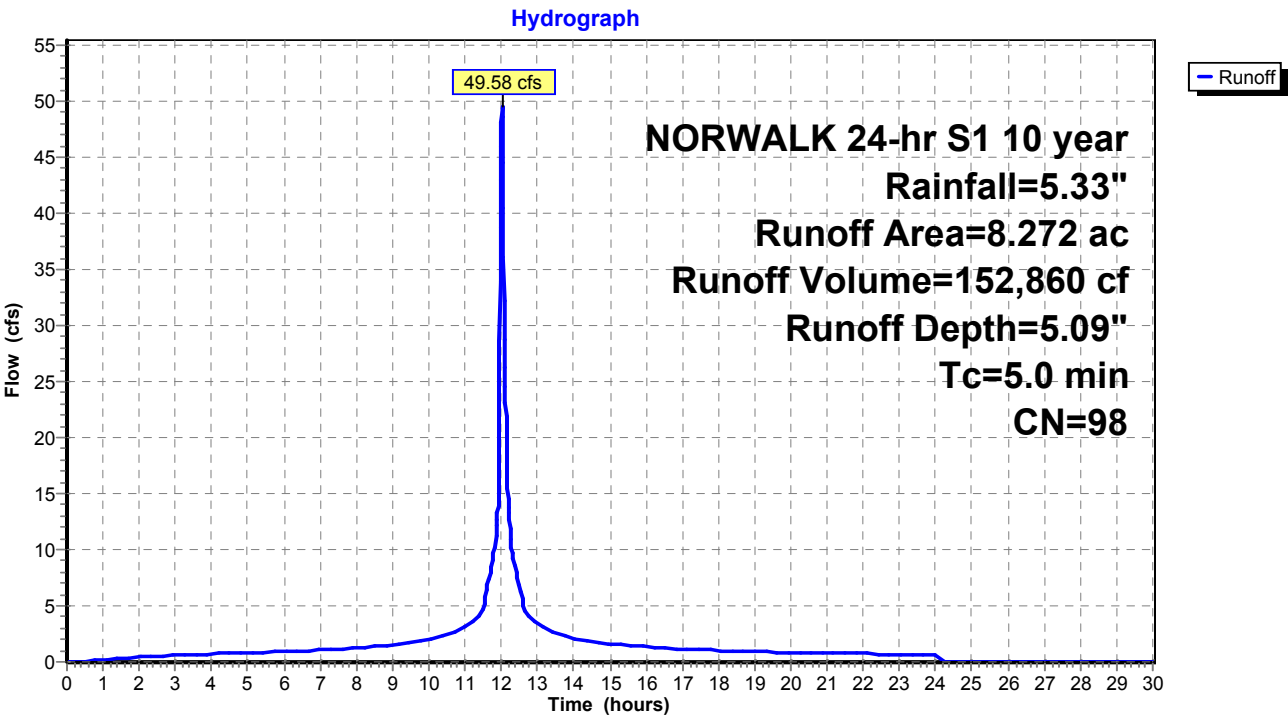
Runoff = 49.58 cfs @ 12.03 hrs, Volume= 152,860 cf, Depth= 5.09"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 3.25" for 10 year event
Inflow = 181.04 cfs @ 12.21 hrs, Volume= 1,776,893 cf
Outflow = 181.04 cfs @ 12.21 hrs, Volume= 1,776,893 cf, Atten= 0%, Lag= 0.0 min
Primary = 31.55 cfs @ 12.21 hrs, Volume= 986,384 cf
Secondary = 149.48 cfs @ 12.21 hrs, Volume= 790,510 cf
Routed to Pond 24P : RR Culvert 3

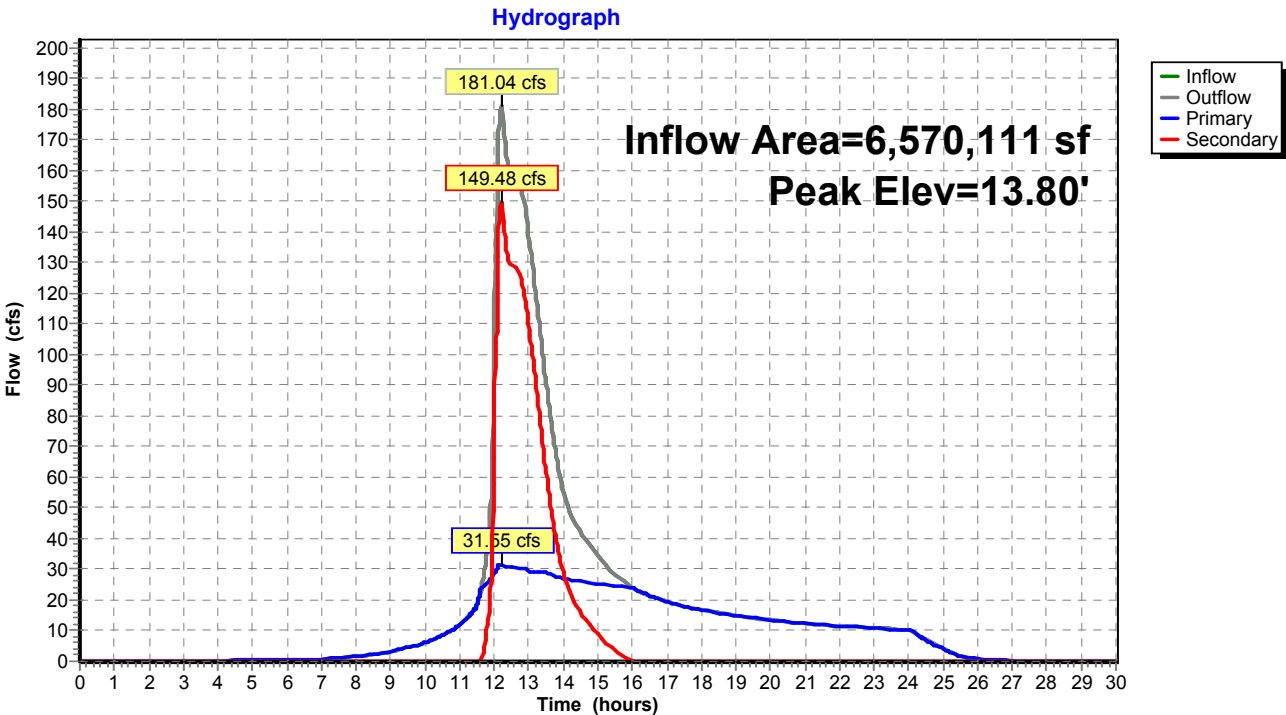
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 13.80' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 ' / Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

Primary OutFlow Max=31.55 cfs @ 12.21 hrs HW=13.80' (Free Discharge)
↑2=Culvert (Barrel Controls 31.55 cfs @ 5.26 fps)

Secondary OutFlow Max=149.31 cfs @ 12.21 hrs HW=13.80' (Free Discharge)
↑1=Custom Weir/Orifice (Weir Controls 149.31 cfs @ 3.73 fps)

Pond 1P: RR Culvert 2



Existing Conditions

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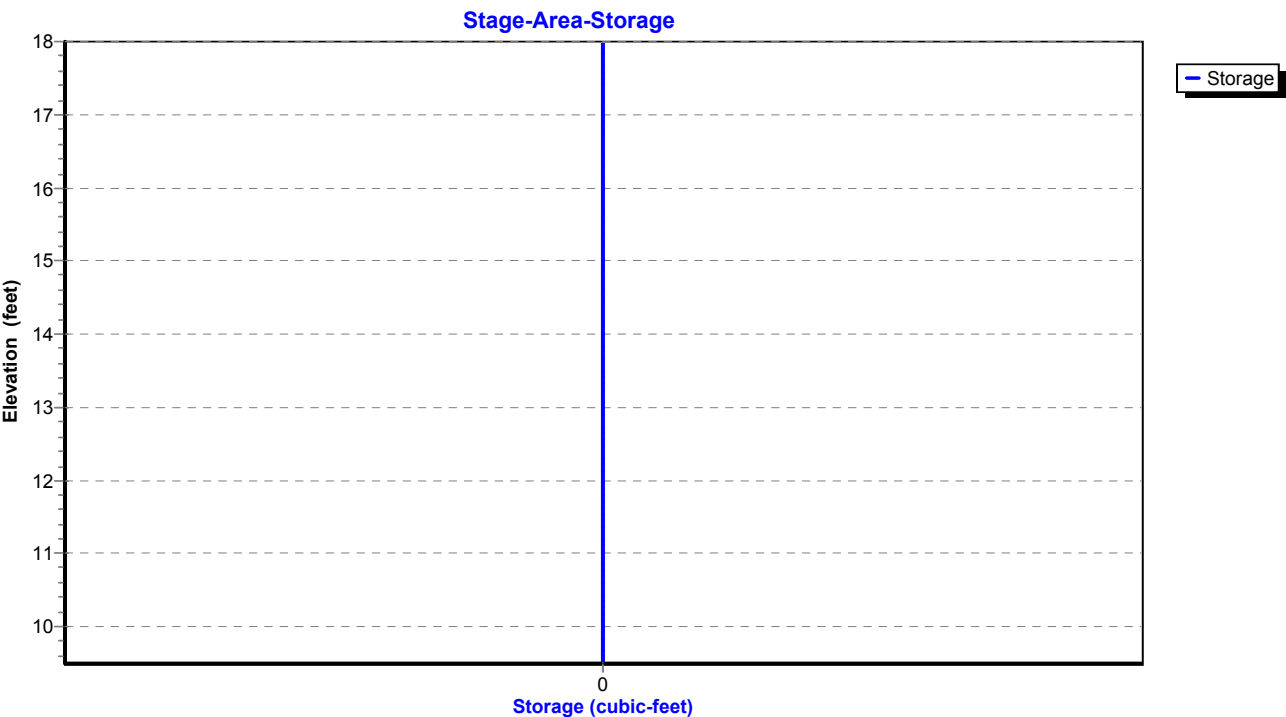
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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Pond 1P: RR Culvert 2



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.57% Impervious, Inflow Depth = 3.90" for 10 year event
Inflow = 126.25 cfs @ 12.04 hrs, Volume= 1,110,863 cf
Outflow = 126.25 cfs @ 12.04 hrs, Volume= 1,110,863 cf, Atten= 0%, Lag= 0.0 min
Primary = 47.58 cfs @ 12.04 hrs, Volume= 866,224 cf
Secondary = 78.67 cfs @ 12.04 hrs, Volume= 244,639 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 29.18' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

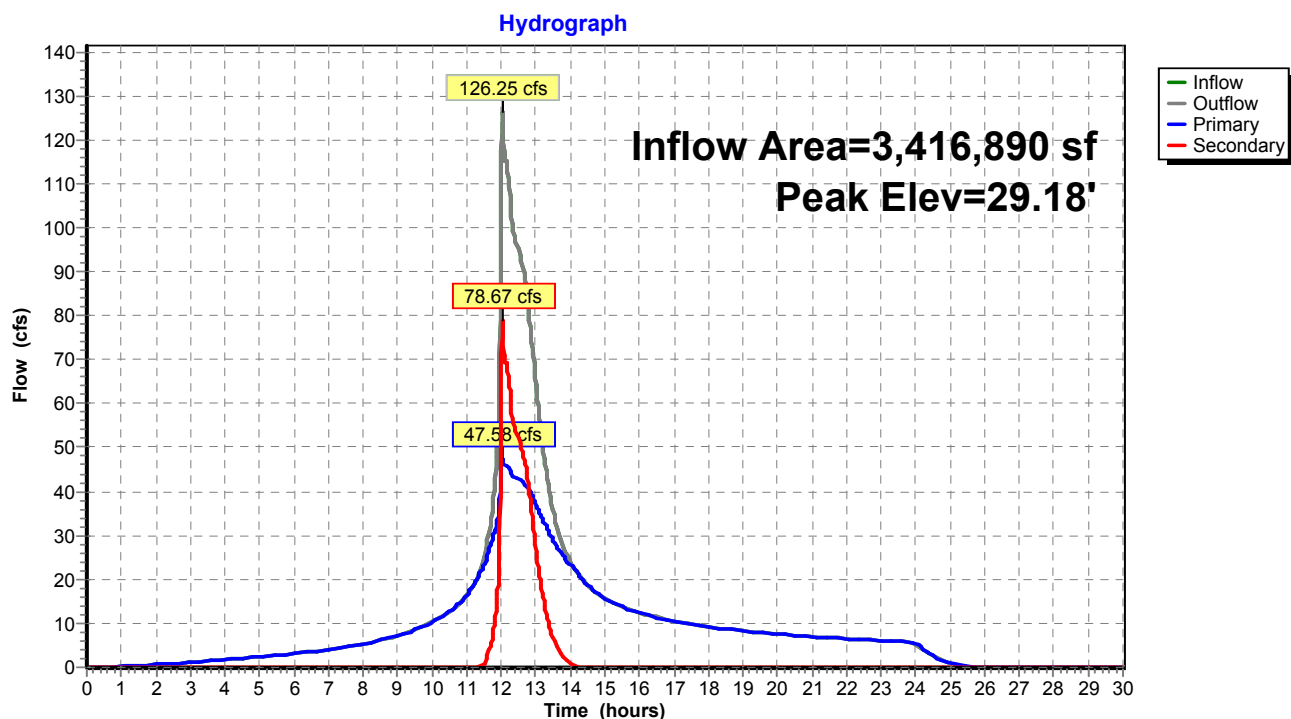
Primary OutFlow Max=47.57 cfs @ 12.04 hrs HW=29.18' (Free Discharge)

↑**1=Culvert** (Inlet Controls 47.57 cfs @ 8.26 fps)

Secondary OutFlow Max=78.60 cfs @ 12.04 hrs HW=29.18' (Free Discharge)

↑**2=Custom Weir/Orifice** (Orifice Controls 78.60 cfs @ 6.55 fps)

Pond 2P: RR Culvert 1



Existing Conditions

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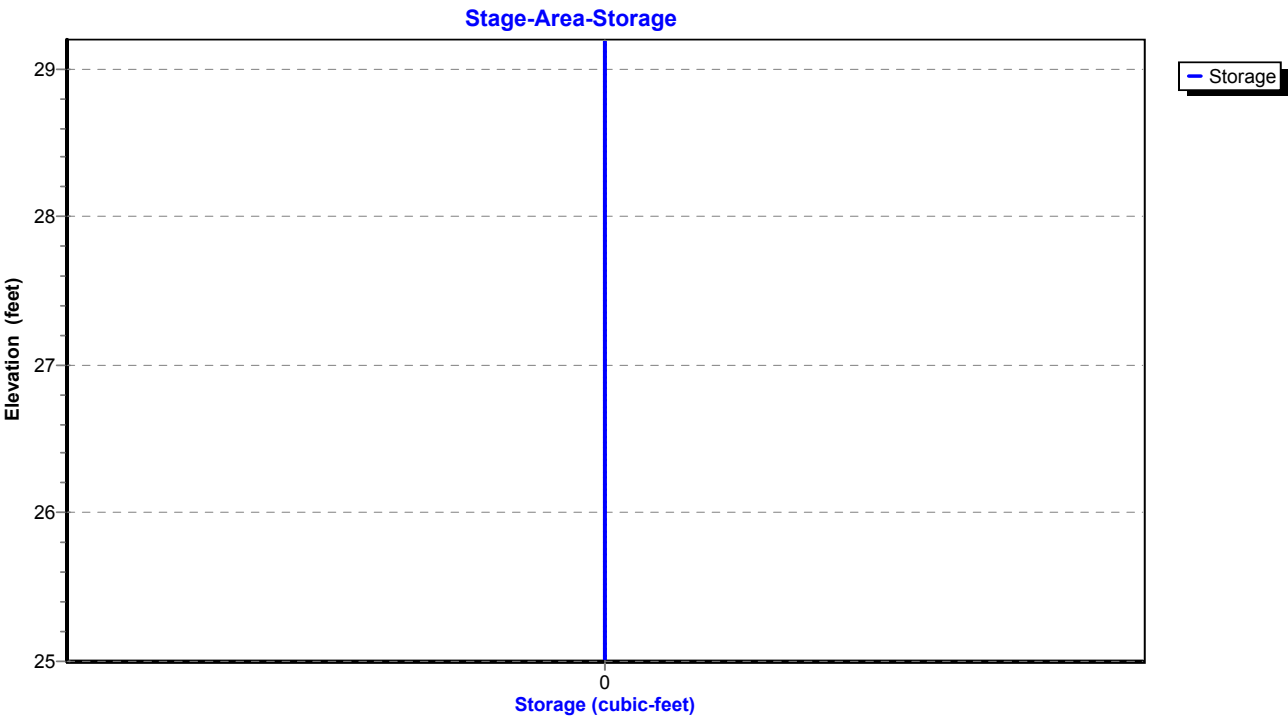
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Pond 2P: RR Culvert 1



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 3.97" for 10 year event
Inflow = 24.01 cfs @ 12.03 hrs, Volume= 87,093 cf
Outflow = 3.87 cfs @ 12.61 hrs, Volume= 71,317 cf, Atten= 84%, Lag= 34.6 min
Primary = 3.87 cfs @ 12.61 hrs, Volume= 71,317 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 49.59' @ 12.61 hrs Surf.Area= 11,287 sf Storage= 38,892 cf

Plug-Flow detention time= 221.3 min calculated for 71,317 cf (82% of inflow)
Center-of-Mass det. time= 133.8 min (961.3 - 827.5)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.87 cfs @ 12.61 hrs HW=49.59' (Free Discharge)

1=Culvert (Passes 3.87 cfs of 18.72 cfs potential flow)
2=Orifice/Grate (Orifice Controls 3.87 cfs @ 7.10 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Existing Conditions

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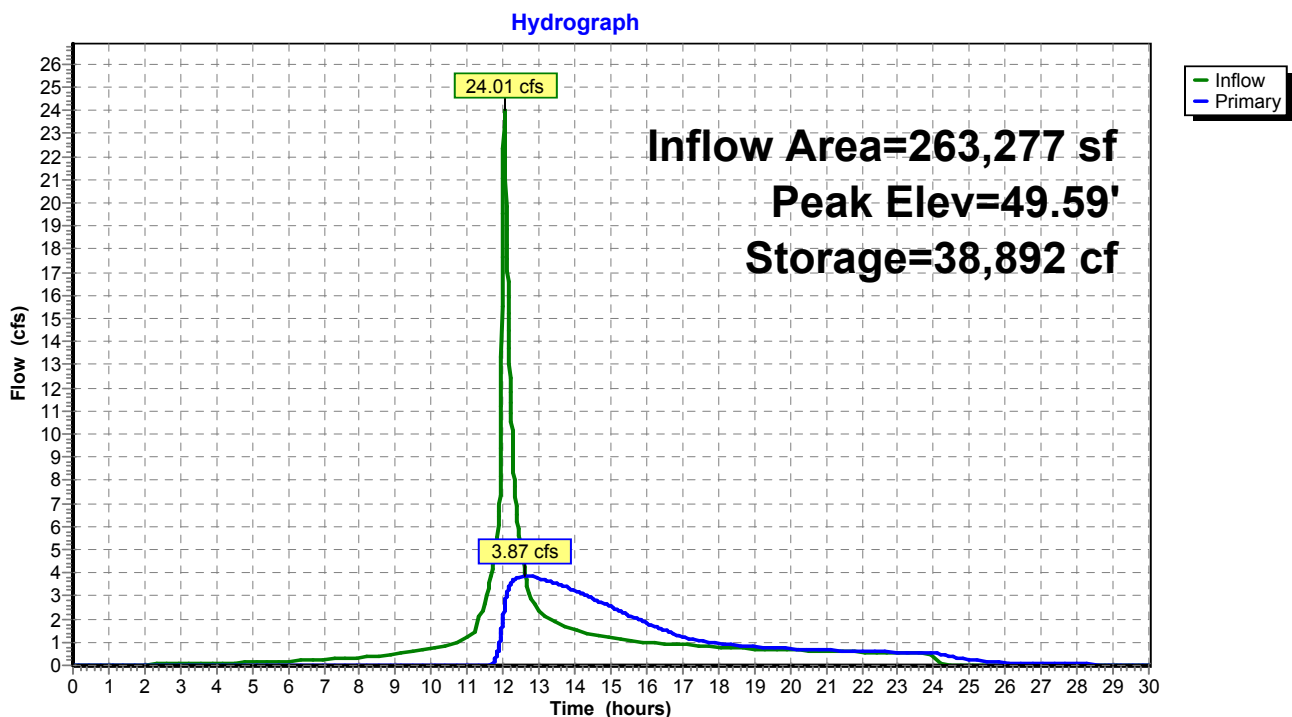
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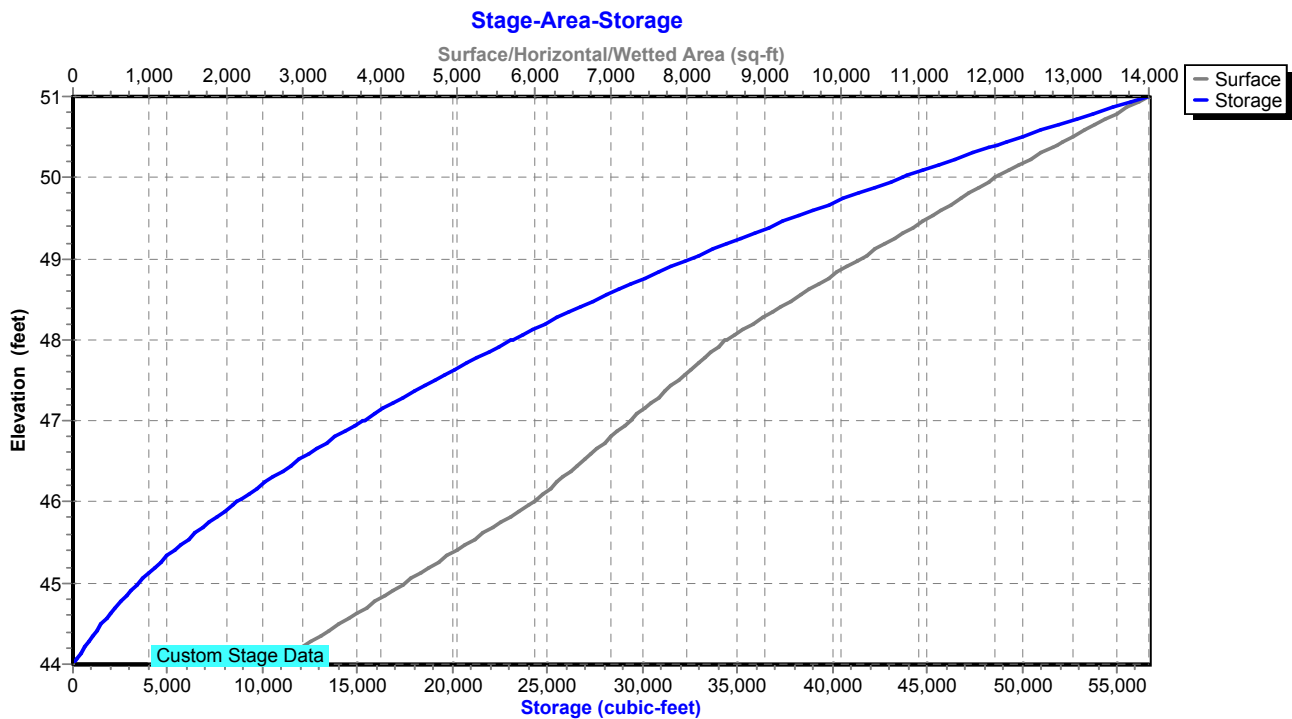
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 2.54" for 10 year event
 Inflow = 16.39 cfs @ 12.45 hrs, Volume= 114,534 cf
 Outflow = 14.99 cfs @ 12.58 hrs, Volume= 114,533 cf, Atten= 9%, Lag= 8.0 min
 Primary = 14.99 cfs @ 12.58 hrs, Volume= 114,533 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 80.12' @ 12.58 hrs Storage= 4,872 cf

Plug-Flow detention time= 6.2 min calculated for 114,533 cf (100% of inflow)

Center-of-Mass det. time= 6.2 min (897.9 - 891.7)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=14.99 cfs @ 12.58 hrs HW=80.12' (Free Discharge)↑**1=Culvert** (Inlet Controls 14.99 cfs @ 4.77 fps)

Existing Conditions

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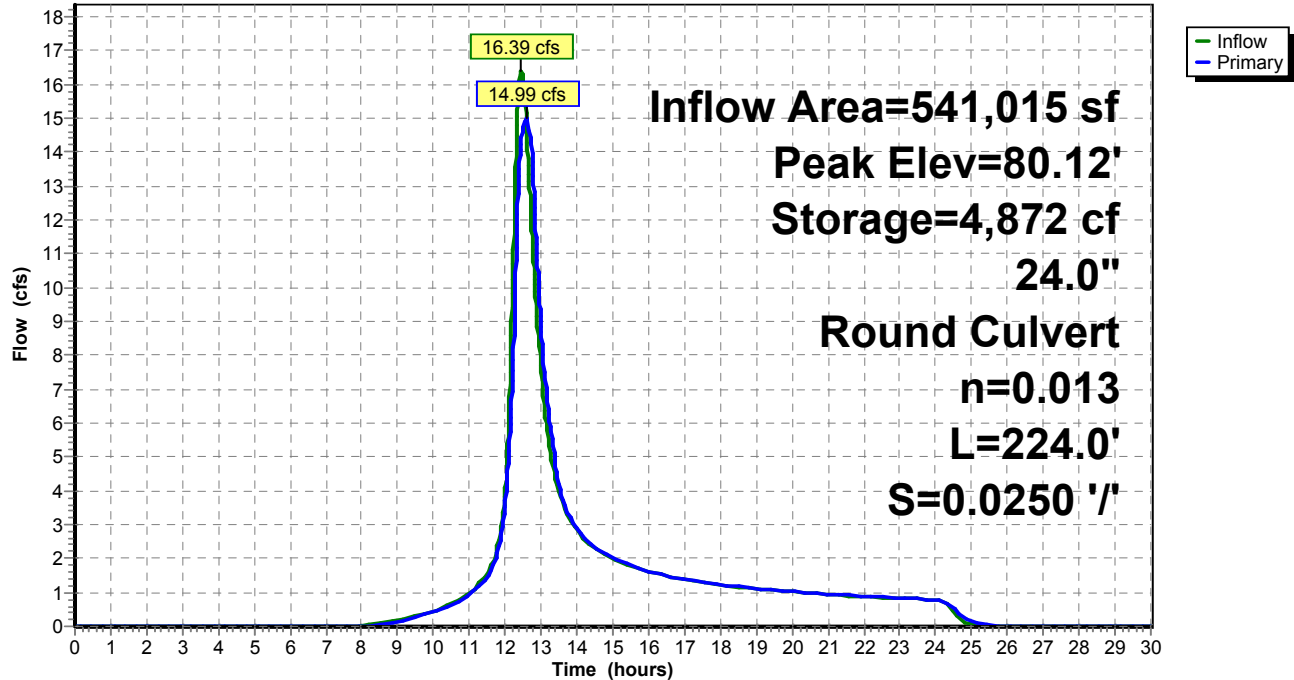
NORWALK 24-hr S1 10 year Rainfall=5.33"

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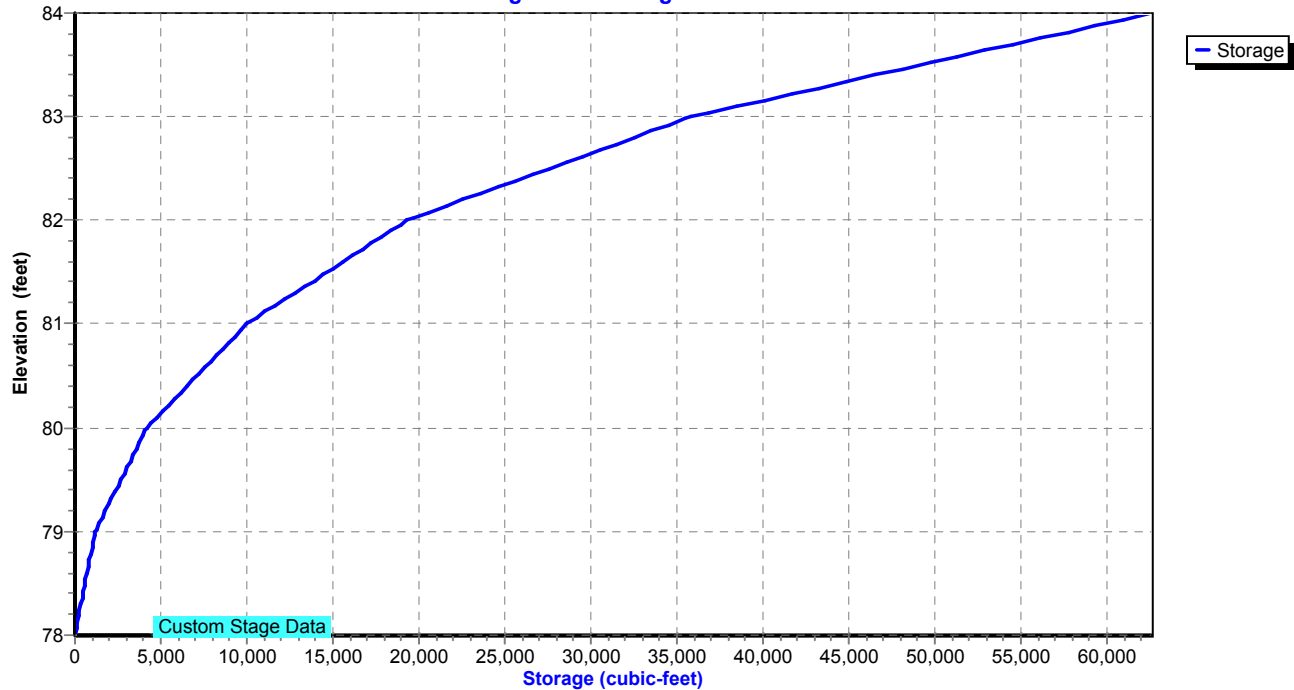
Pond 5P: DET 5 Culvert

Hydrograph



Pond 5P: DET 5 Culvert

Stage-Area-Storage



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 3.37" for 10 year event
 Inflow = 24.10 cfs @ 12.70 hrs, Volume= 210,050 cf
 Outflow = 24.05 cfs @ 12.71 hrs, Volume= 210,050 cf, Atten= 0%, Lag= 0.7 min
 Primary = 24.05 cfs @ 12.71 hrs, Volume= 210,050 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 90.91' @ 12.71 hrs Storage= 689 cf

Plug-Flow detention time= 0.4 min calculated for 210,050 cf (100% of inflow)

Center-of-Mass det. time= 0.4 min (878.6 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=24.06 cfs @ 12.71 hrs HW=90.91' (Free Discharge)↑ **1=Culvert** (Inlet Controls 24.06 cfs @ 4.96 fps)

Existing Conditions

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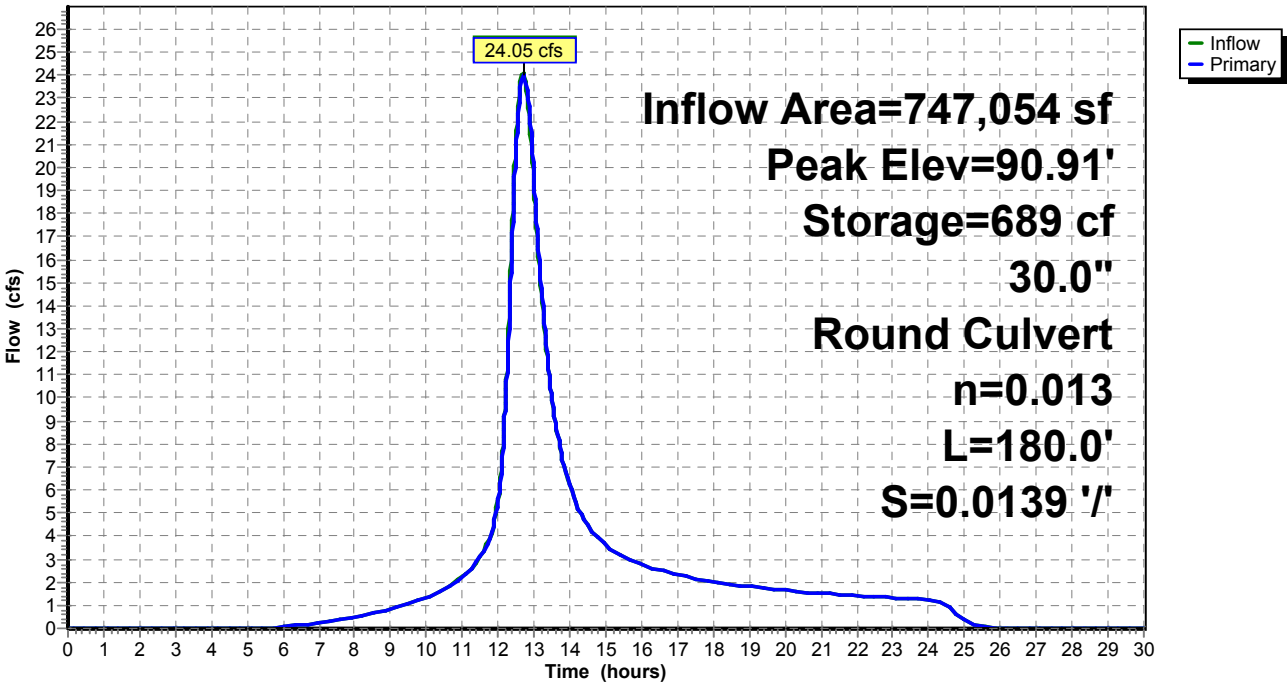
NORWALK 24-hr S1 10 year Rainfall=5.33"

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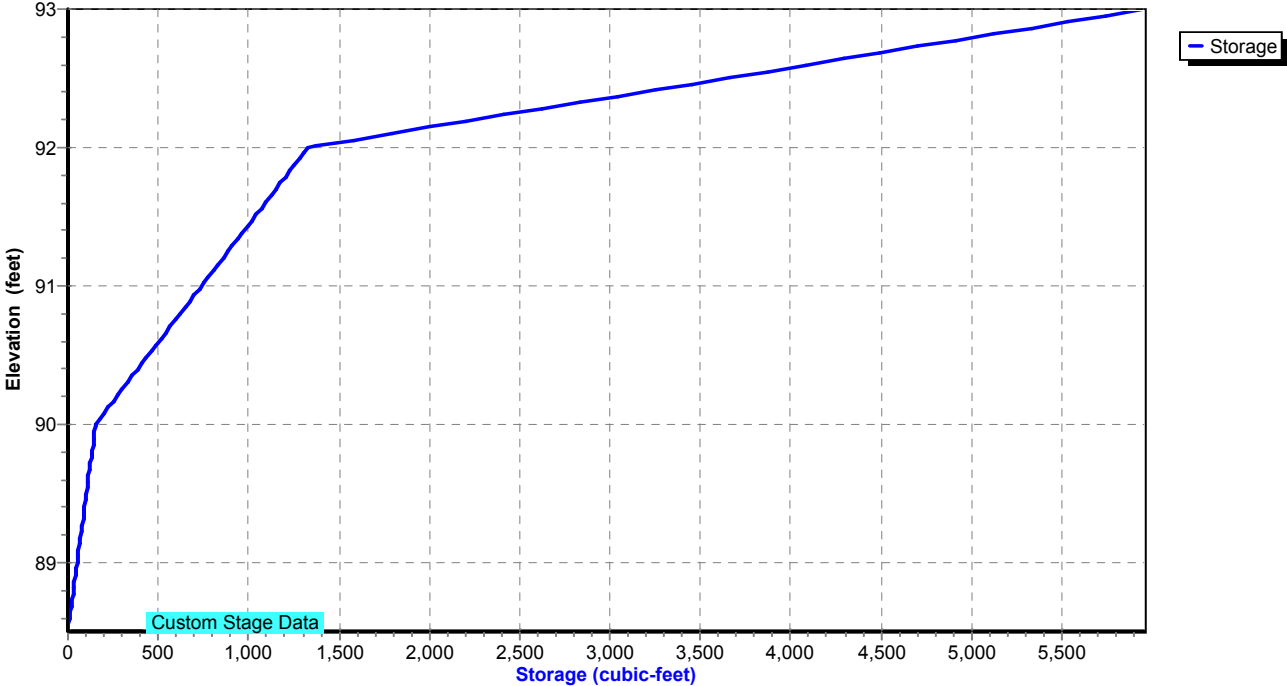
Pond 6P: DET 6 Culvert

Hydrograph



Pond 6P: DET 6 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 3.28" for 10 year event
 Inflow = 3.29 cfs @ 12.26 hrs, Volume= 17,486 cf
 Outflow = 2.21 cfs @ 12.46 hrs, Volume= 17,486 cf, Atten= 33%, Lag= 12.1 min
 Primary = 2.21 cfs @ 12.46 hrs, Volume= 17,486 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.27' @ 12.46 hrs Storage= 1,651 cf

Plug-Flow detention time= 6.0 min calculated for 17,480 cf (100% of inflow)

Center-of-Mass det. time= 6.1 min (858.1 - 852.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.21 cfs @ 12.46 hrs HW=93.27' (Free Discharge)↑ **1=Culvert** (Inlet Controls 2.21 cfs @ 2.80 fps)

Existing Conditions

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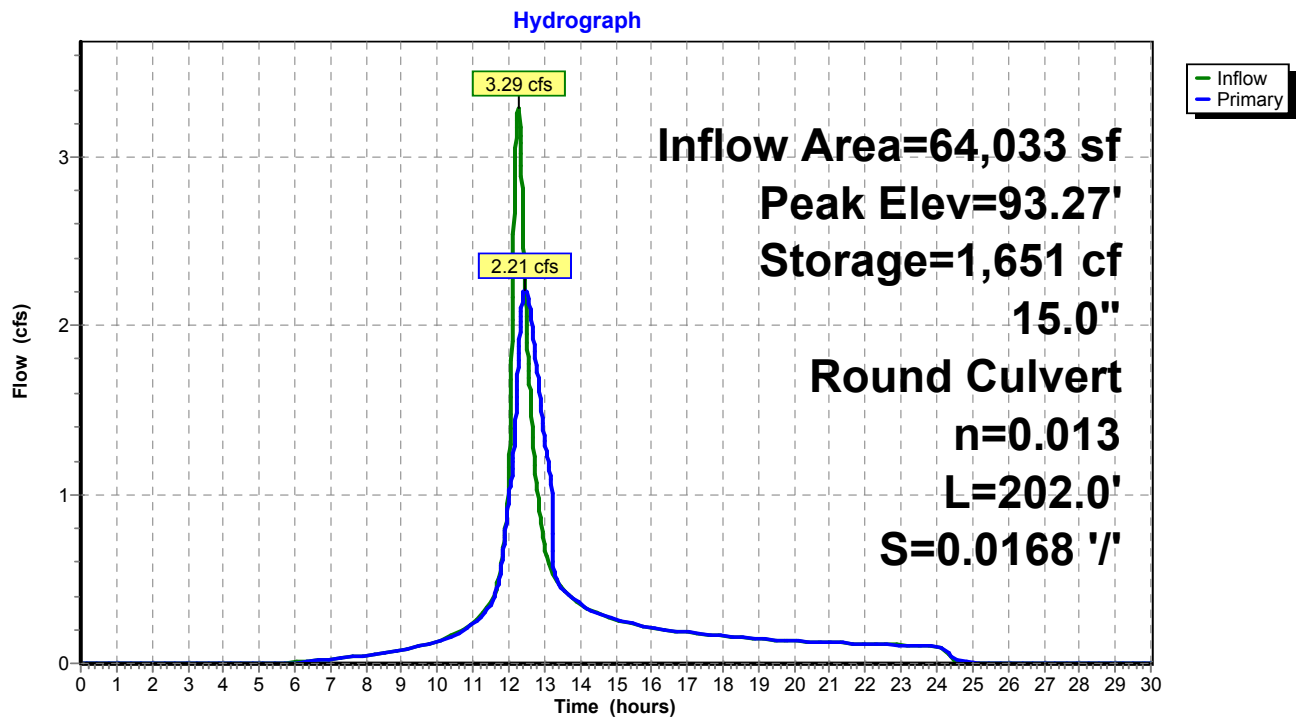
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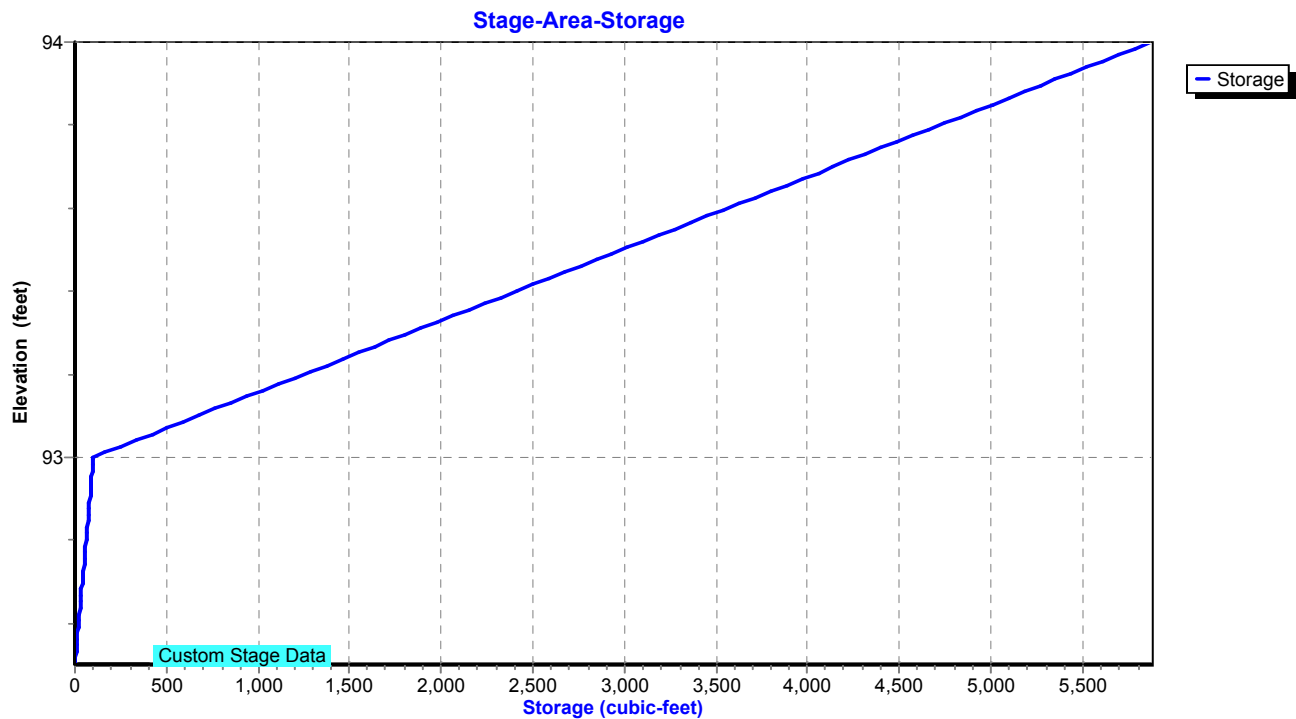
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 3.18" for 10 year event
 Inflow = 48.91 cfs @ 12.65 hrs, Volume= 419,897 cf
 Outflow = 48.91 cfs @ 12.66 hrs, Volume= 419,897 cf, Atten= 0%, Lag= 0.1 min
 Primary = 48.91 cfs @ 12.66 hrs, Volume= 419,897 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 71.28' @ 12.66 hrs Storage= 85 cf

Plug-Flow detention time= 0.0 min calculated for 419,757 cf (100% of inflow)
 Center-of-Mass det. time= 0.0 min (874.3 - 874.3)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / S= 0.0349 ' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=48.91 cfs @ 12.66 hrs HW=71.28' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 48.91 cfs @ 5.78 fps)

Existing Conditions

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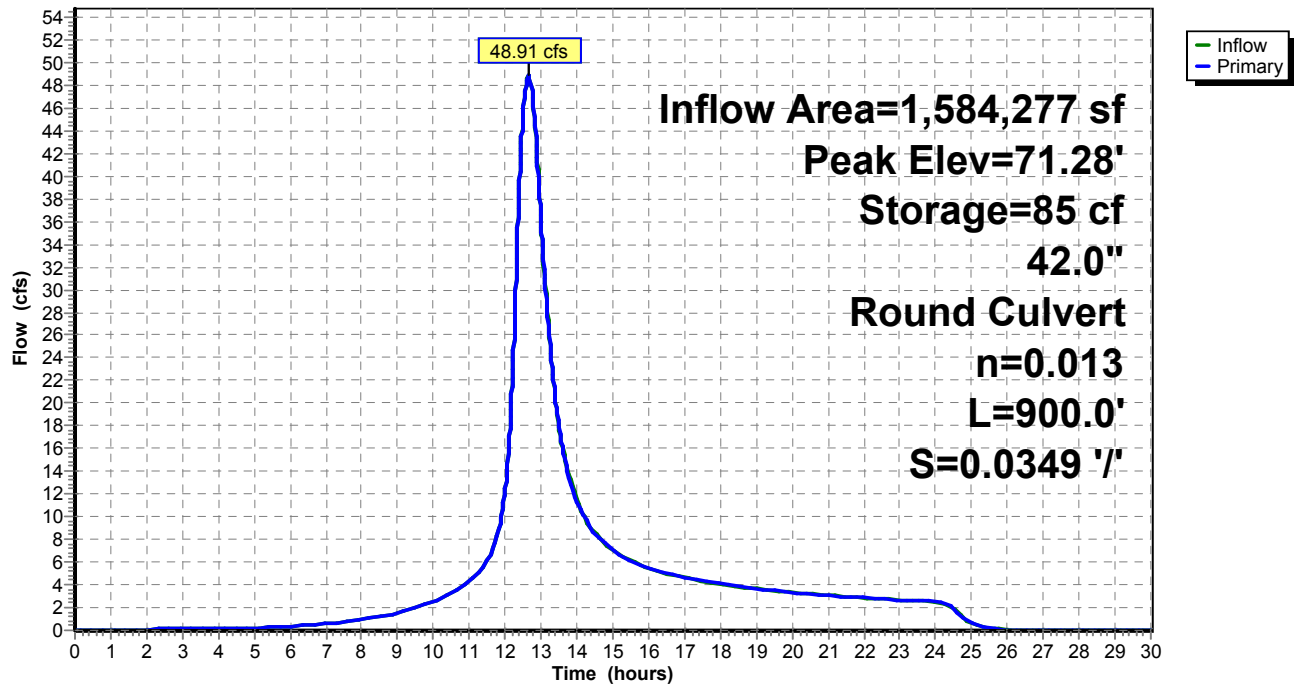
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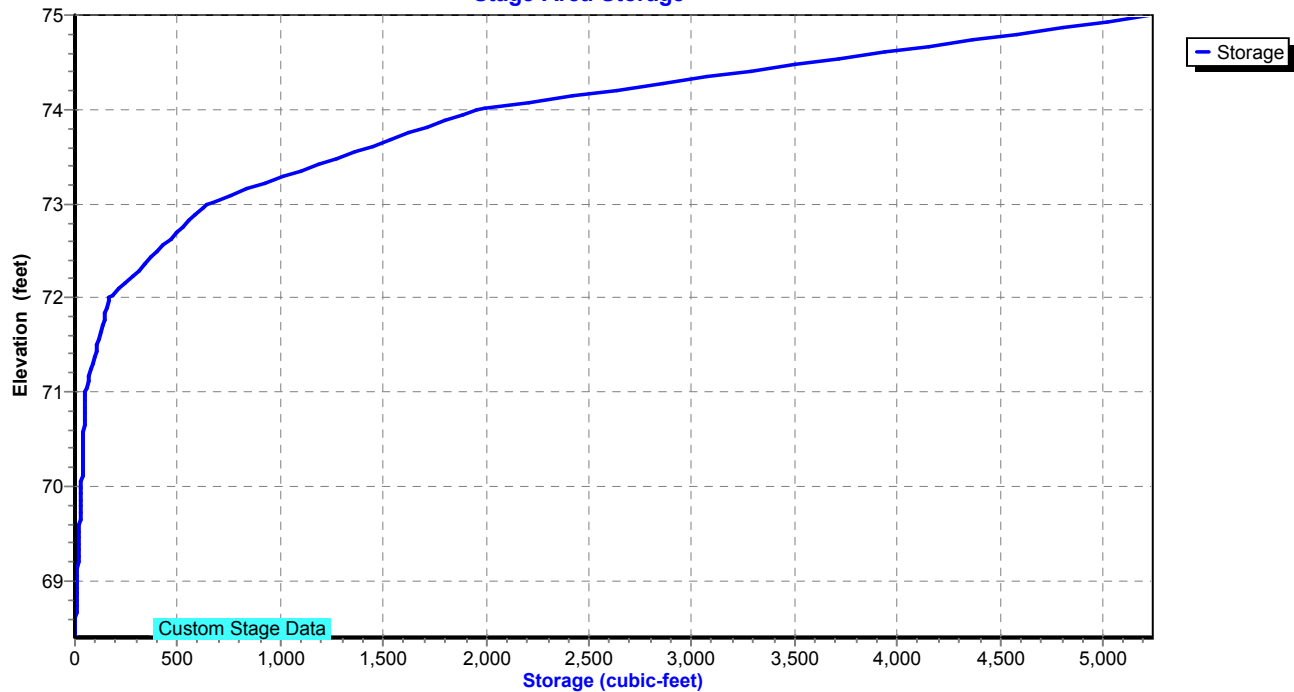
Pond 8P: Comb. 5,6,7,8,9

Hydrograph



Pond 8P: Comb. 5,6,7,8,9

Stage-Area-Storage



Existing Conditions

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Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 4.06" for 10 year event
Inflow = 22.66 cfs @ 12.03 hrs, Volume= 83,382 cf
Outflow = 22.66 cfs @ 12.03 hrs, Volume= 83,382 cf, Atten= 0%, Lag= 0.0 min
Primary = 22.66 cfs @ 12.03 hrs, Volume= 83,382 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.42' @ 12.03 hrs

Flood Elev= 51.80'

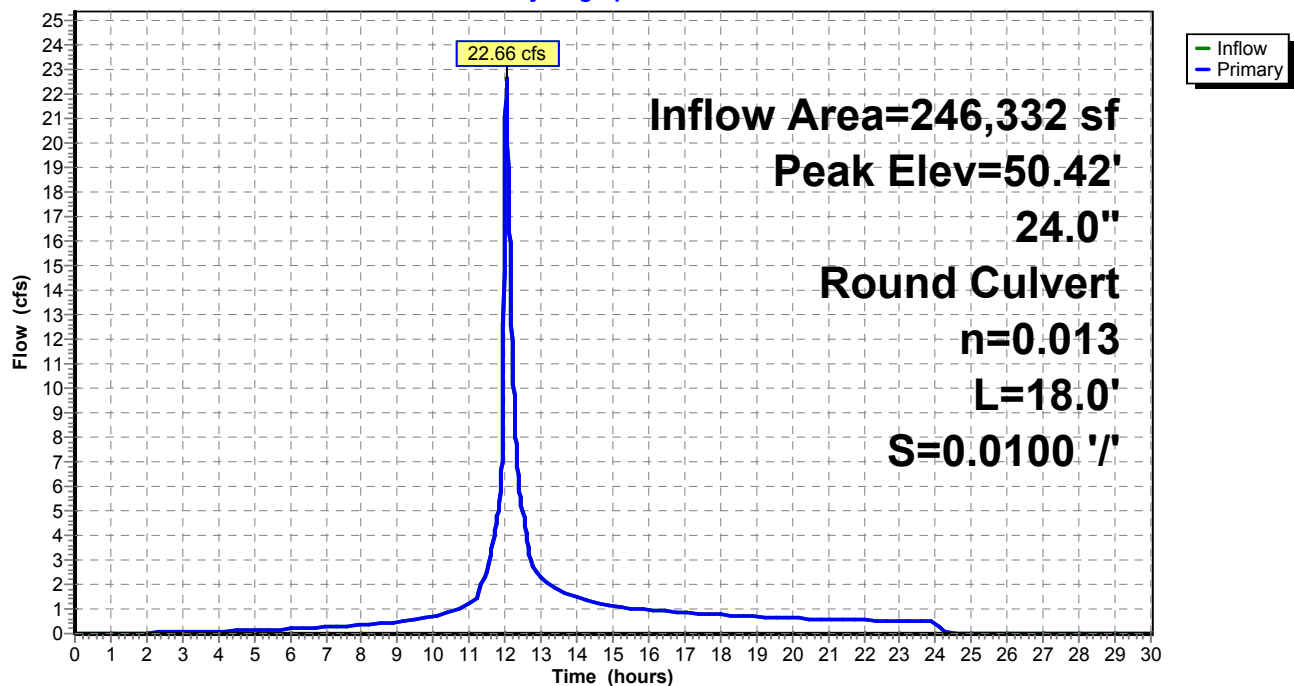
Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=22.59 cfs @ 12.03 hrs HW=50.41' (Free Discharge)

↑1=Culvert (Inlet Controls 22.59 cfs @ 7.19 fps)

Pond 9P: MH-K

Hydrograph



Existing Conditions

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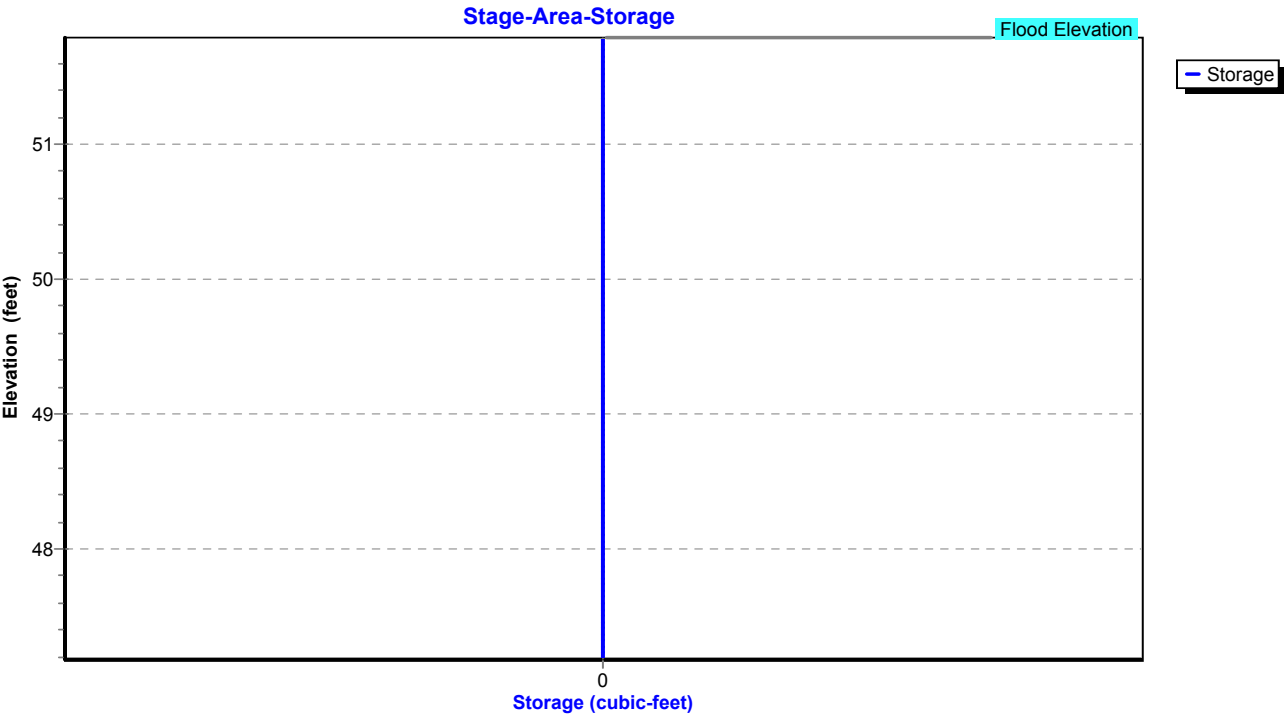
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Pond 9P: MH-K



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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 4.91" for 10 year event
Inflow = 9.67 cfs @ 12.03 hrs, Volume= 29,431 cf
Outflow = 9.67 cfs @ 12.03 hrs, Volume= 29,431 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.67 cfs @ 12.03 hrs, Volume= 29,431 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.36' @ 12.03 hrs

Flood Elev= 53.00'

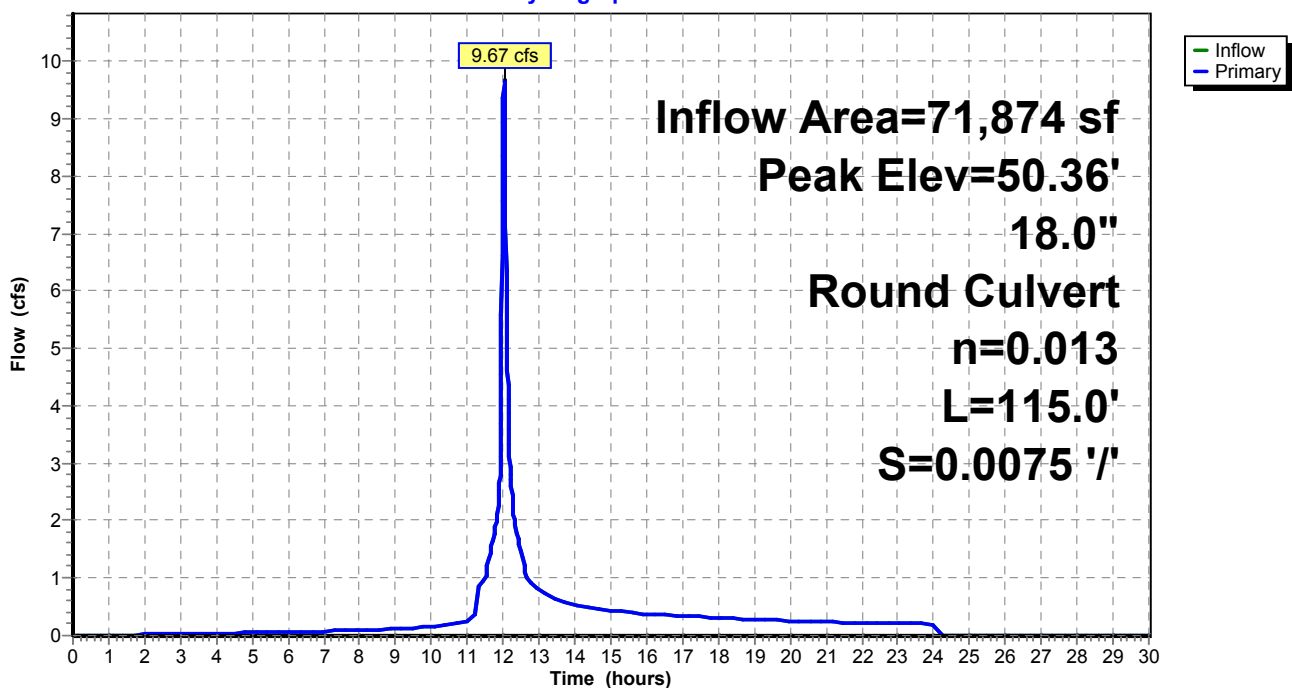
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=9.63 cfs @ 12.03 hrs HW=50.34' (Free Discharge)

↑1=Culvert (Barrel Controls 9.63 cfs @ 5.45 fps)

Pond 10P: MH-L

Hydrograph



Existing Conditions

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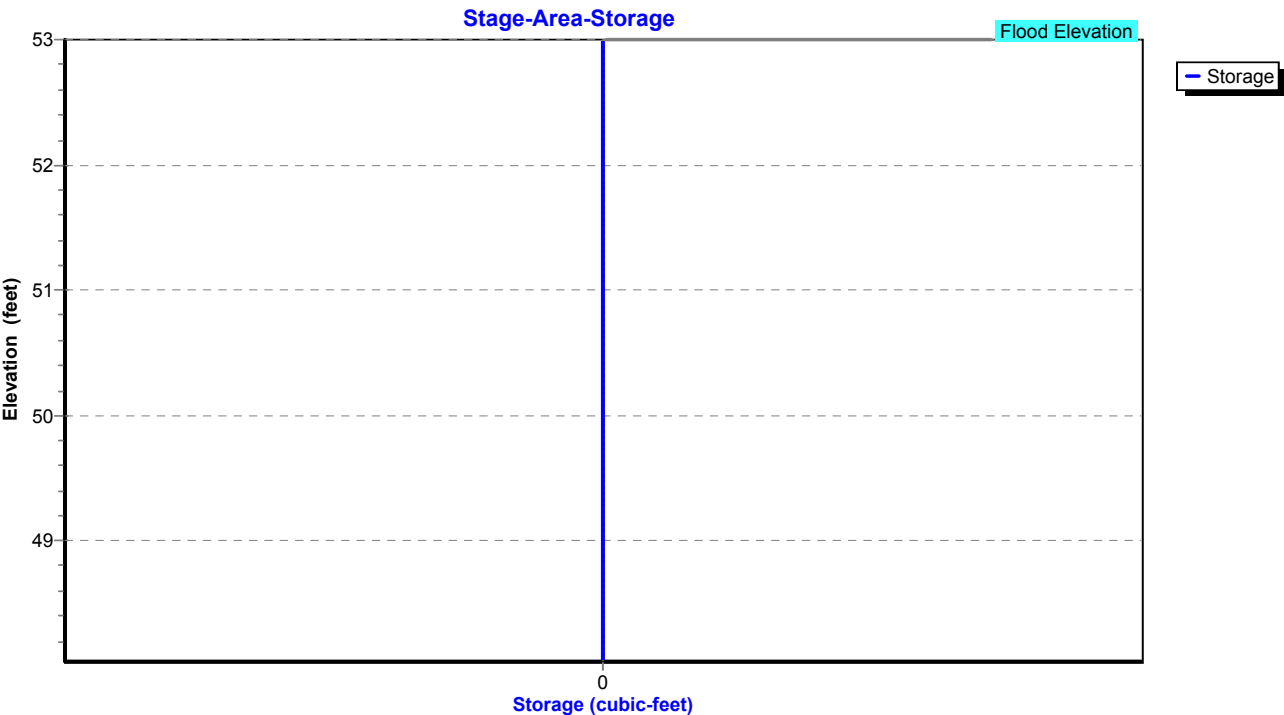
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Pond 10P: MH-L



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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 4.64" for 10 year event
Inflow = 5.41 cfs @ 12.03 hrs, Volume= 15,817 cf
Outflow = 5.53 cfs @ 12.03 hrs, Volume= 17,102 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.53 cfs @ 12.03 hrs, Volume= 17,102 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 51.36' @ 12.03 hrs Storage= 0.081 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 126.1 min (901.5 - 775.4)

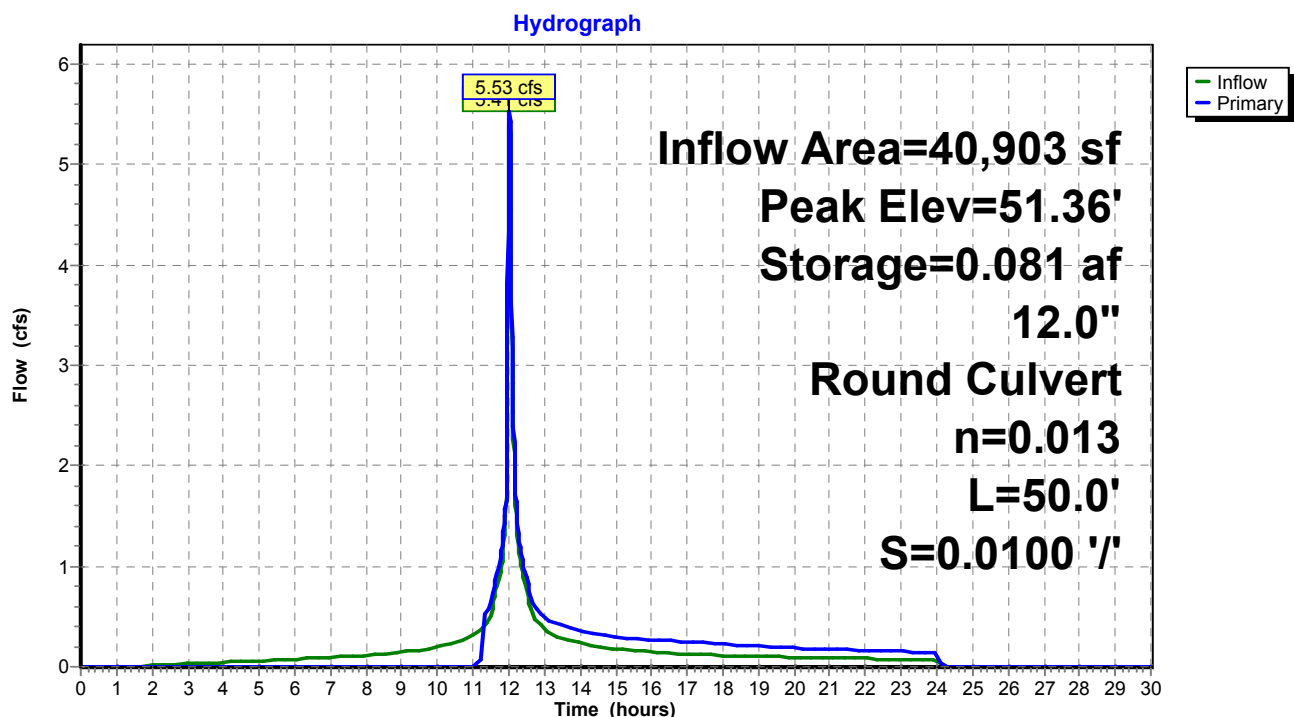
Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=5.51 cfs @ 12.03 hrs HW=51.34' (Free Discharge)

←1=Culvert (Barrel Controls 5.51 cfs @ 7.01 fps)

Pond 11P: Pipe Storage



Existing Conditions

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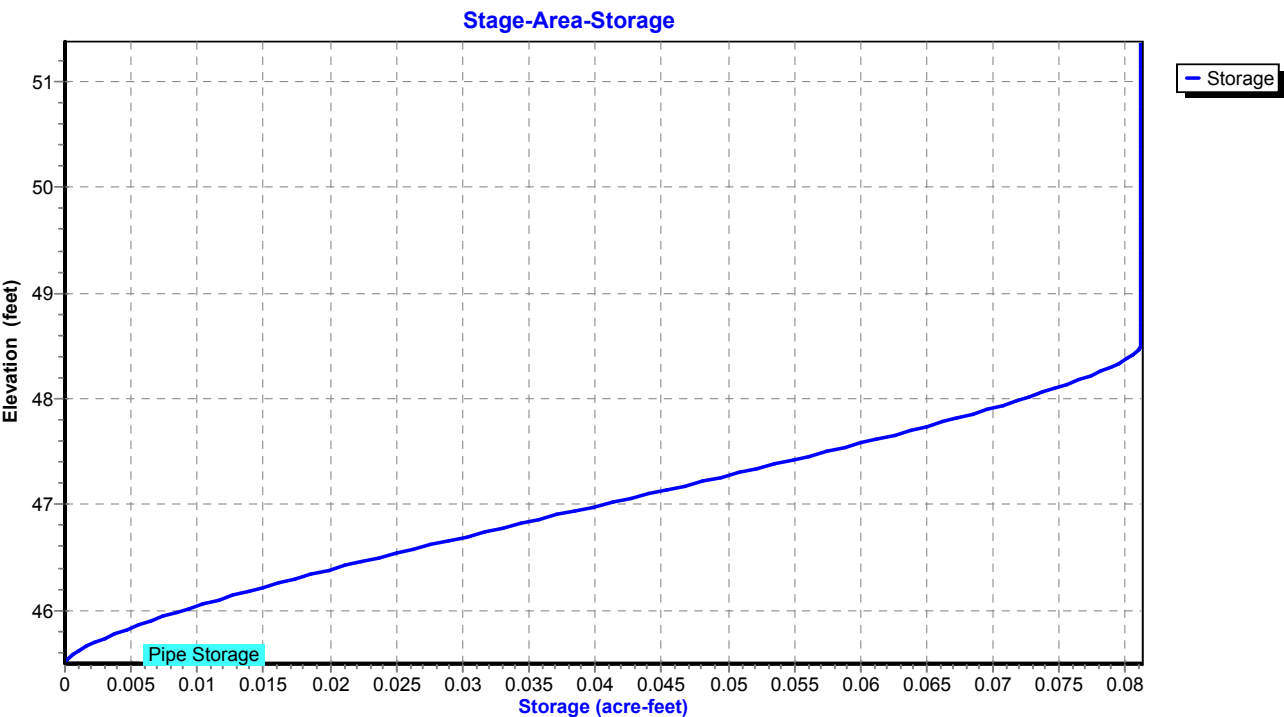
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Pond 11P: Pipe Storage



Existing Conditions

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Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 4.78" for 10 year event
Inflow = 4.14 cfs @ 12.03 hrs, Volume= 12,329 cf
Outflow = 4.14 cfs @ 12.03 hrs, Volume= 12,329 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.14 cfs @ 12.03 hrs, Volume= 12,329 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.13' @ 12.03 hrs

Flood Elev= 54.00'

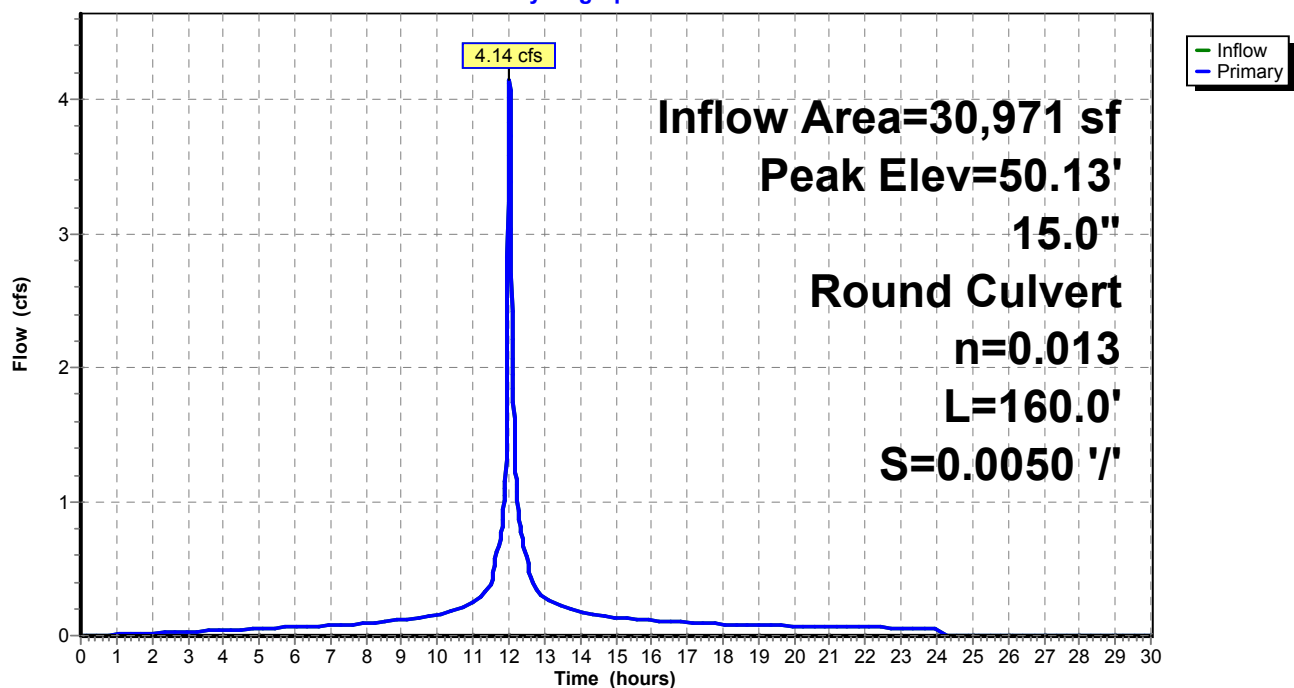
Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.13 cfs @ 12.03 hrs HW=50.13' (Free Discharge)

↑1=Culvert (Barrel Controls 4.13 cfs @ 4.06 fps)

Pond 12P: MH-M

Hydrograph



Existing Conditions

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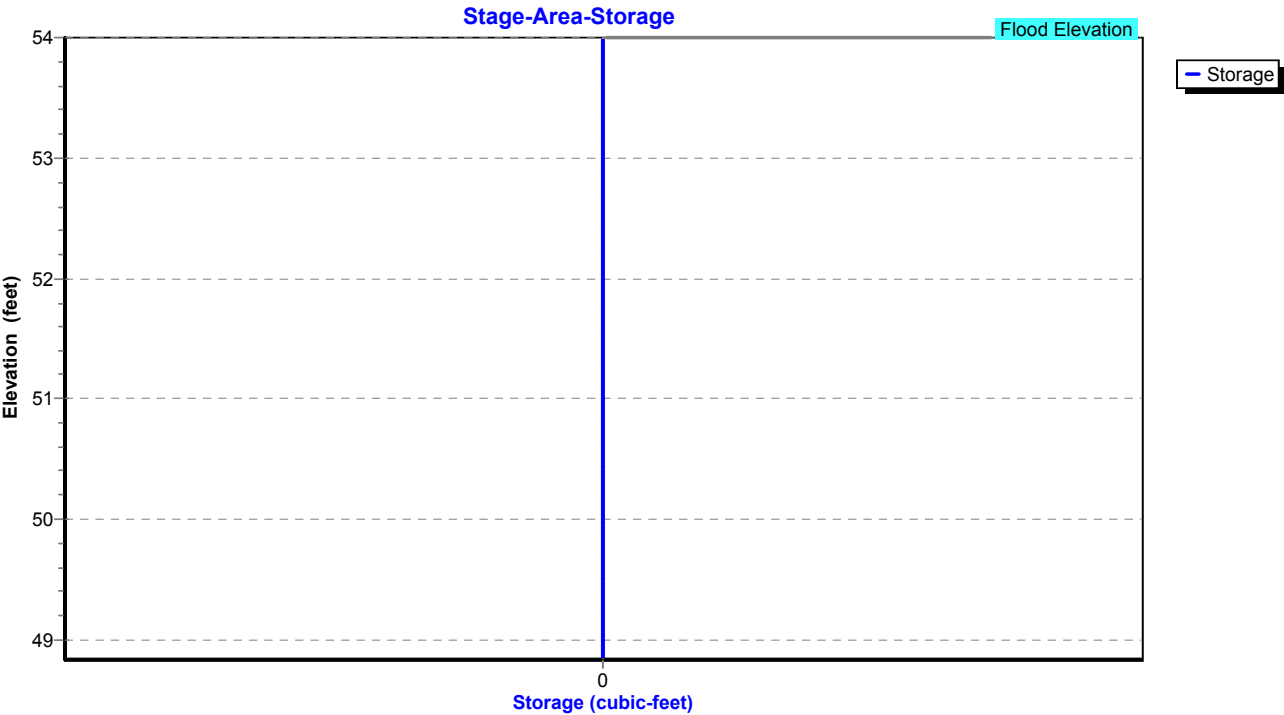
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 4.52" for 10 year event
Inflow = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf
Outflow = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.57' @ 12.03 hrs

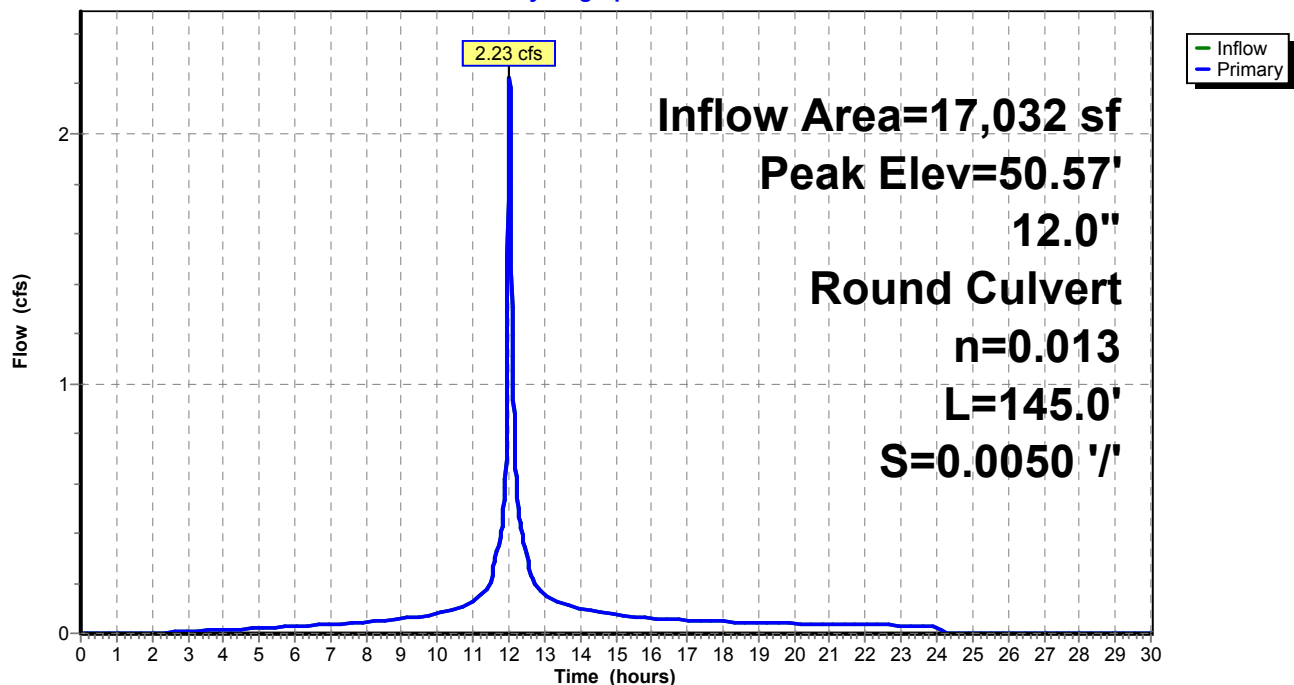
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.22 cfs @ 12.03 hrs HW=50.56' (Free Discharge)

↑1=Culvert (Barrel Controls 2.22 cfs @ 3.53 fps)

Pond 13P: MH-J

Hydrograph



Existing Conditions

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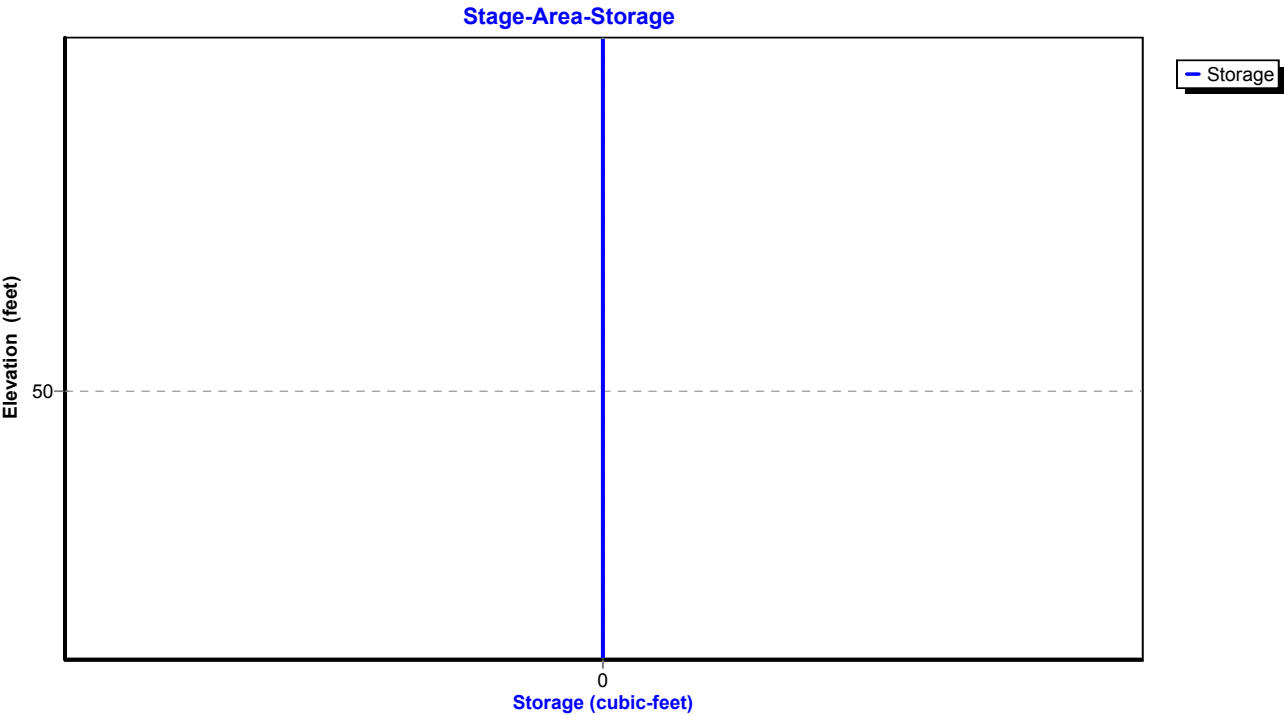
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Pond 13P: MH-J



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Summary for Pond 14P: MH-O

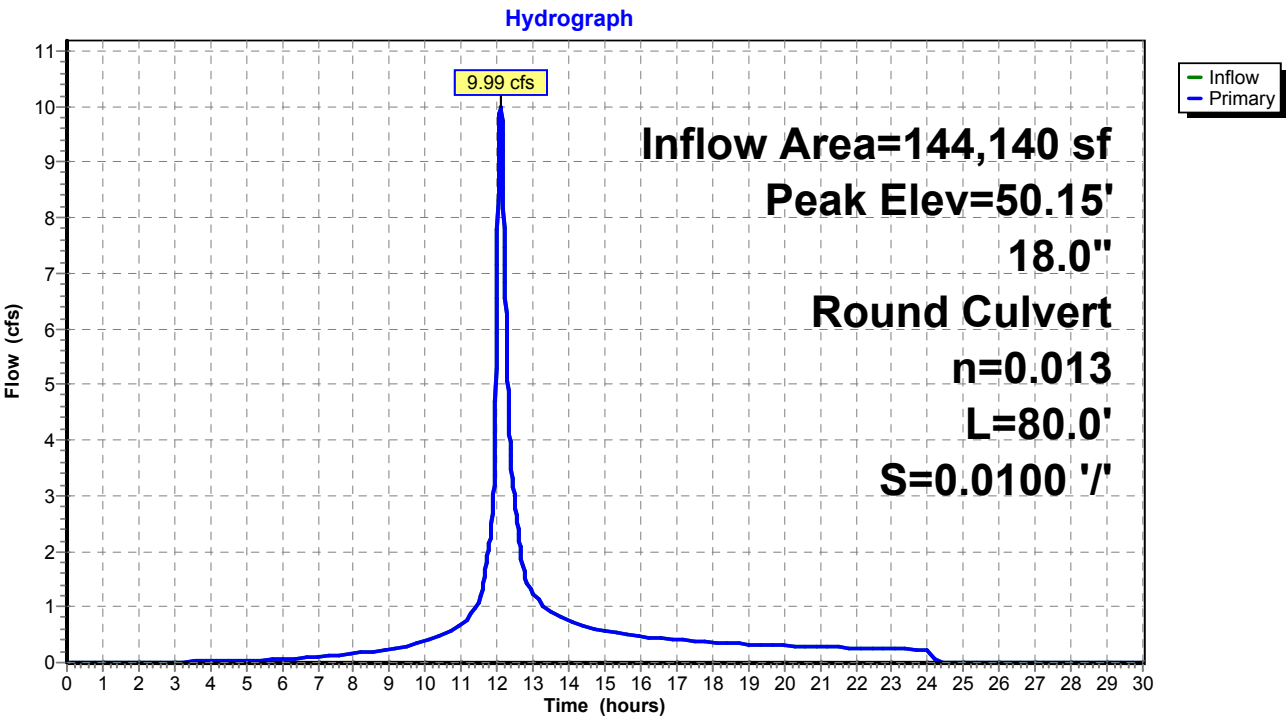
Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 3.49" for 10 year event
Inflow = 9.99 cfs @ 12.10 hrs, Volume= 41,963 cf
Outflow = 9.99 cfs @ 12.10 hrs, Volume= 41,963 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.99 cfs @ 12.10 hrs, Volume= 41,963 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.15' @ 12.10 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=9.98 cfs @ 12.10 hrs HW=50.15' (Free Discharge)
1=Culvert (Barrel Controls 9.98 cfs @ 5.65 fps)

Pond 14P: MH-O



Existing Conditions

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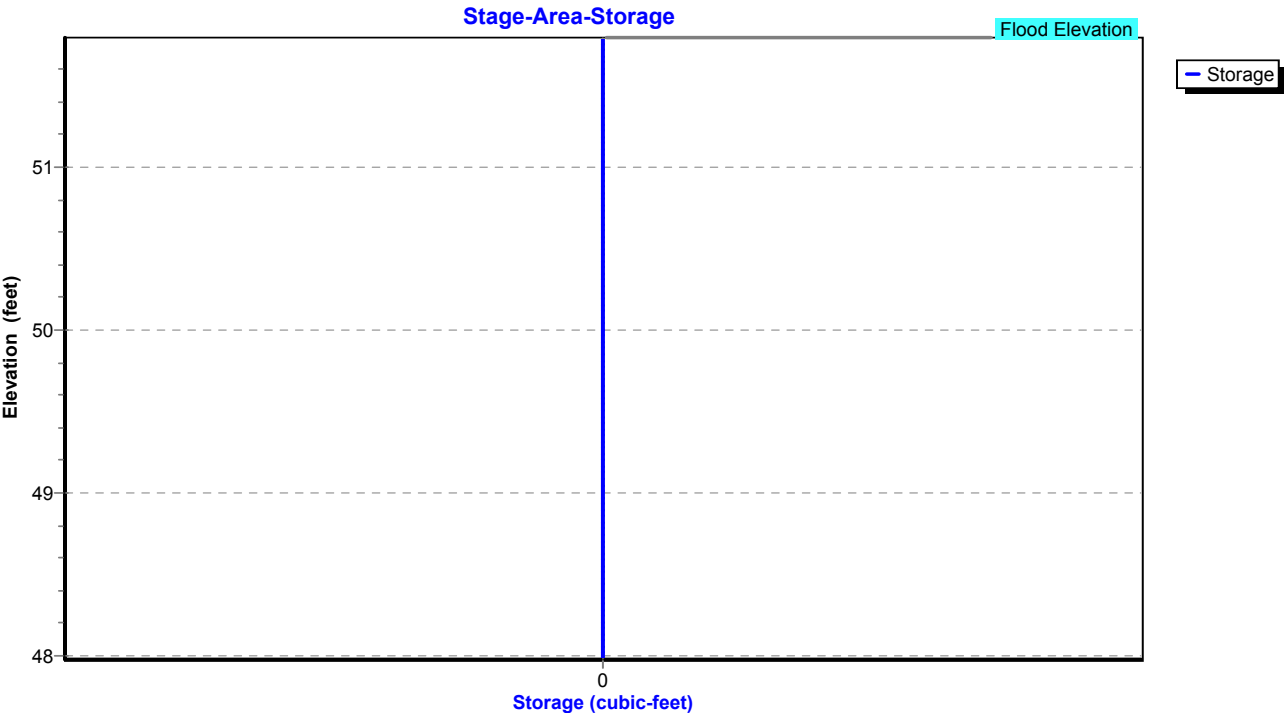
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Pond 14P: MH-O



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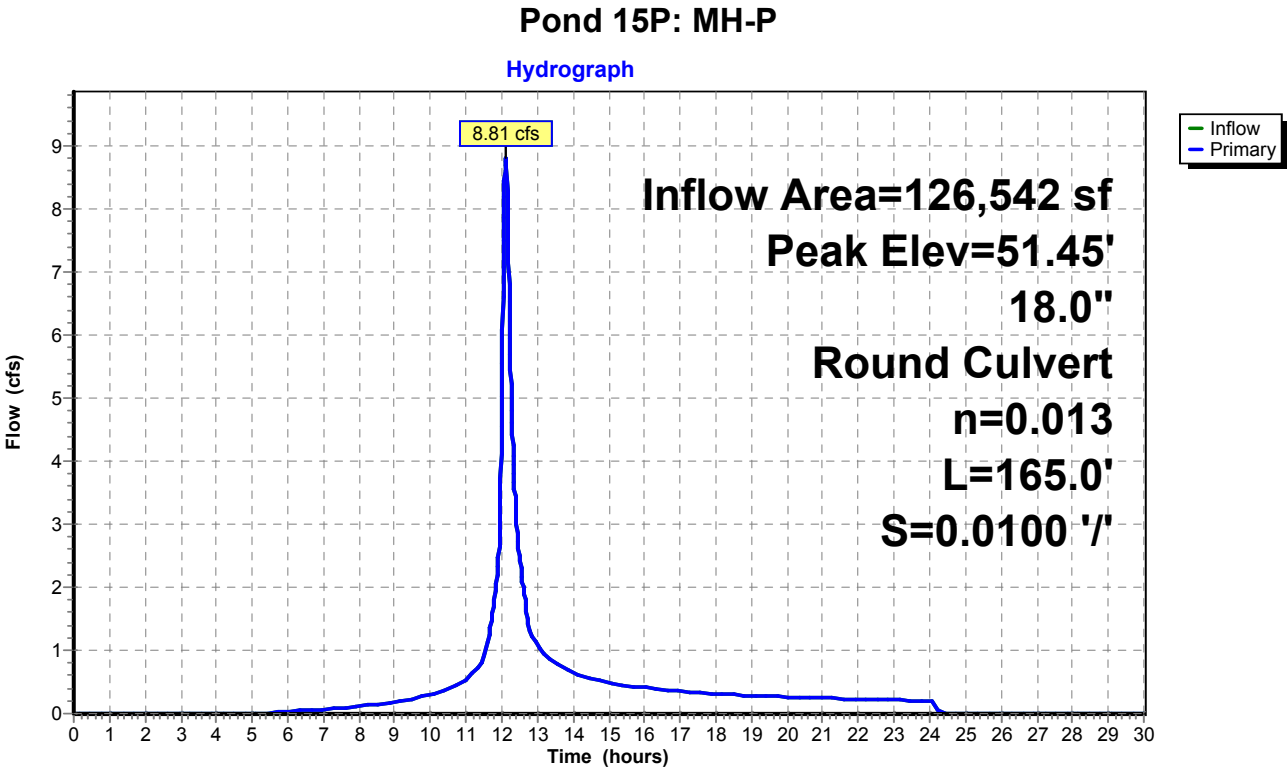
Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 3.35" for 10 year event
Inflow = 8.81 cfs @ 12.11 hrs, Volume= 35,313 cf
Outflow = 8.81 cfs @ 12.11 hrs, Volume= 35,313 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.81 cfs @ 12.11 hrs, Volume= 35,313 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.45' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=8.81 cfs @ 12.11 hrs HW=51.45' (Free Discharge)
1=Culvert (Inlet Controls 8.81 cfs @ 4.98 fps)



Existing Conditions

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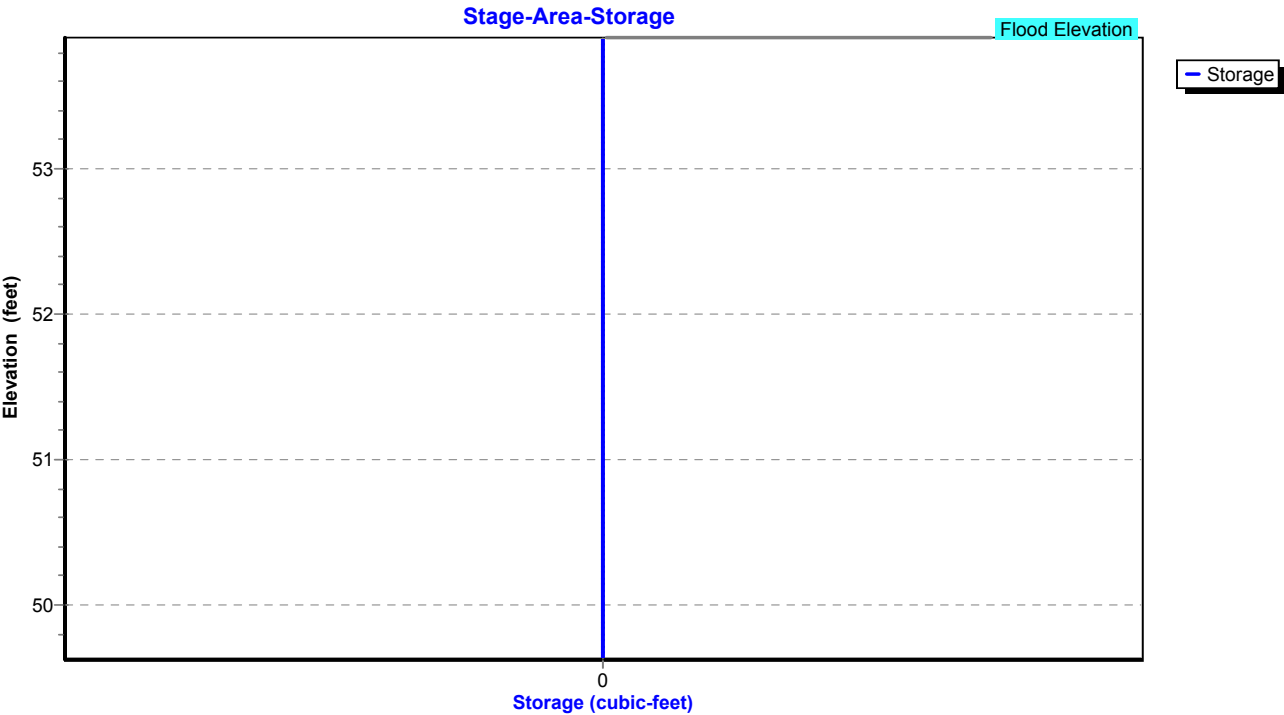
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Pond 15P: MH-P



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Summary for Pond 16P: MH-Q

Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 3.28" for 10 year event
Inflow = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf
Outflow = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 54.56' @ 12.12 hrs

Flood Elev= 55.90'

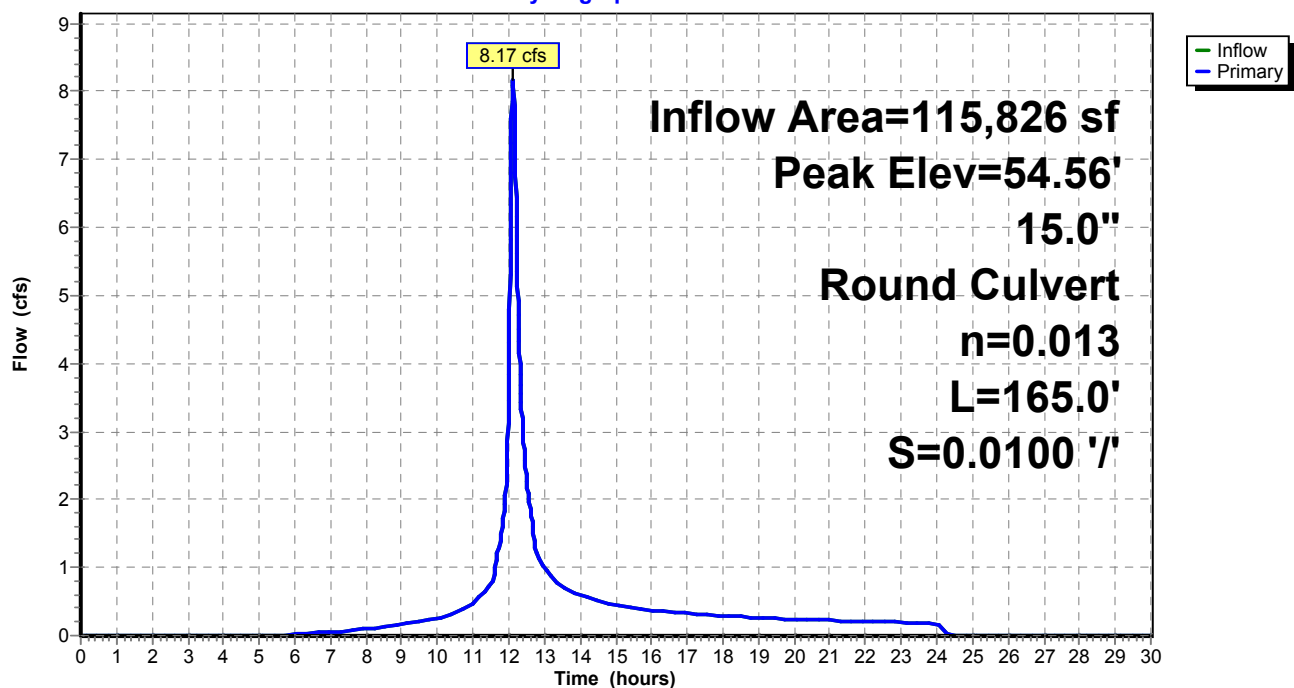
Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=8.16 cfs @ 12.12 hrs HW=54.55' (Free Discharge)

↑1=Culvert (Barrel Controls 8.16 cfs @ 6.65 fps)

Pond 16P: MH-Q

Hydrograph



Existing Conditions

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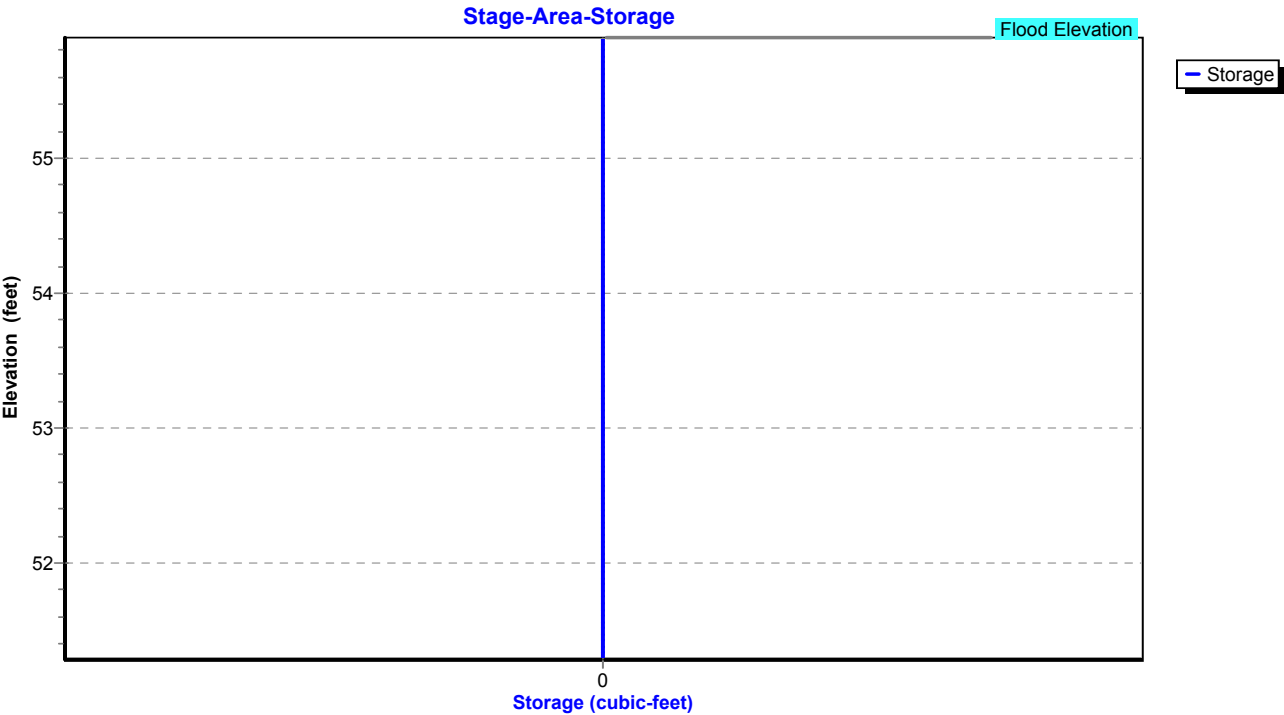
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Pond 16P: MH-Q



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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 2.63" for 10 year event
 Inflow = 51.37 cfs @ 13.08 hrs, Volume= 644,488 cf
 Outflow = 51.26 cfs @ 13.11 hrs, Volume= 644,488 cf, Atten= 0%, Lag= 1.6 min
 Primary = 51.26 cfs @ 13.11 hrs, Volume= 644,488 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 46.37' @ 13.11 hrs Surf.Area= 3,343 sf Storage= 4,273 cf

Plug-Flow detention time= 1.6 min calculated for 644,488 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (922.4 - 920.8)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=51.25 cfs @ 13.11 hrs HW=46.37' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 51.25 cfs @ 5.46 fps)

Existing Conditions

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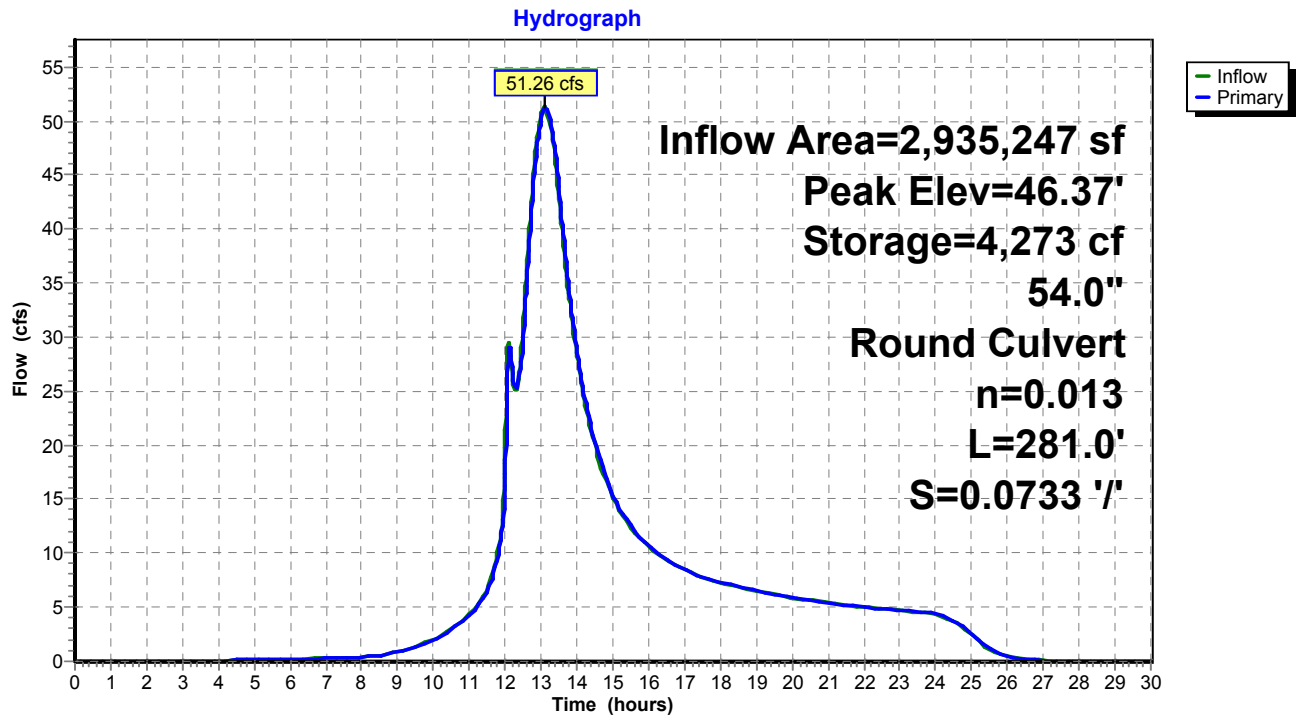
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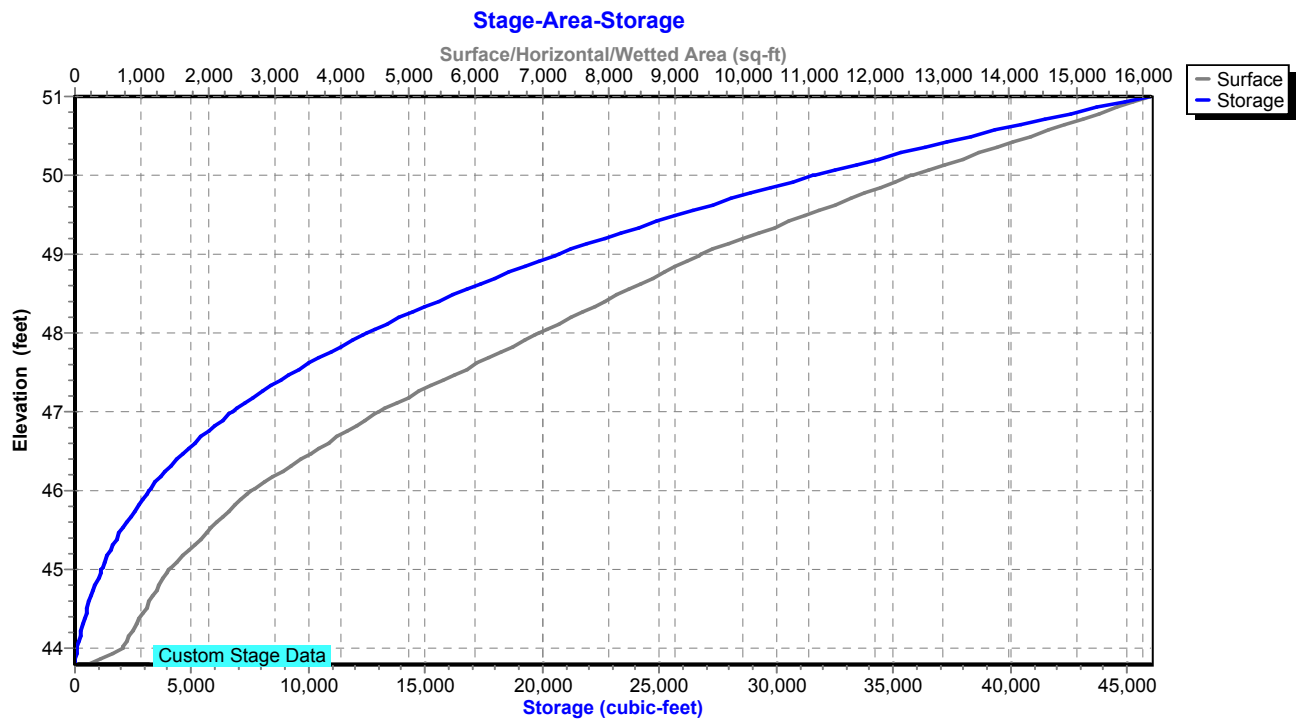
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Pond 17P: DET 12 Culvert



Pond 17P: DET 12 Culvert



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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 2.54" for 10 year event
 Inflow = 49.15 cfs @ 13.07 hrs, Volume= 561,420 cf
 Outflow = 49.10 cfs @ 13.08 hrs, Volume= 561,420 cf, Atten= 0%, Lag= 0.8 min
 Primary = 49.10 cfs @ 13.08 hrs, Volume= 561,420 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 65.58' @ 13.08 hrs Surf.Area= 526 sf Storage= 691 cf

Plug-Flow detention time= 0.2 min calculated for 561,233 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (935.4 - 935.3)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=49.09 cfs @ 13.08 hrs HW=65.58' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 49.09 cfs @ 6.95 fps)

Existing Conditions

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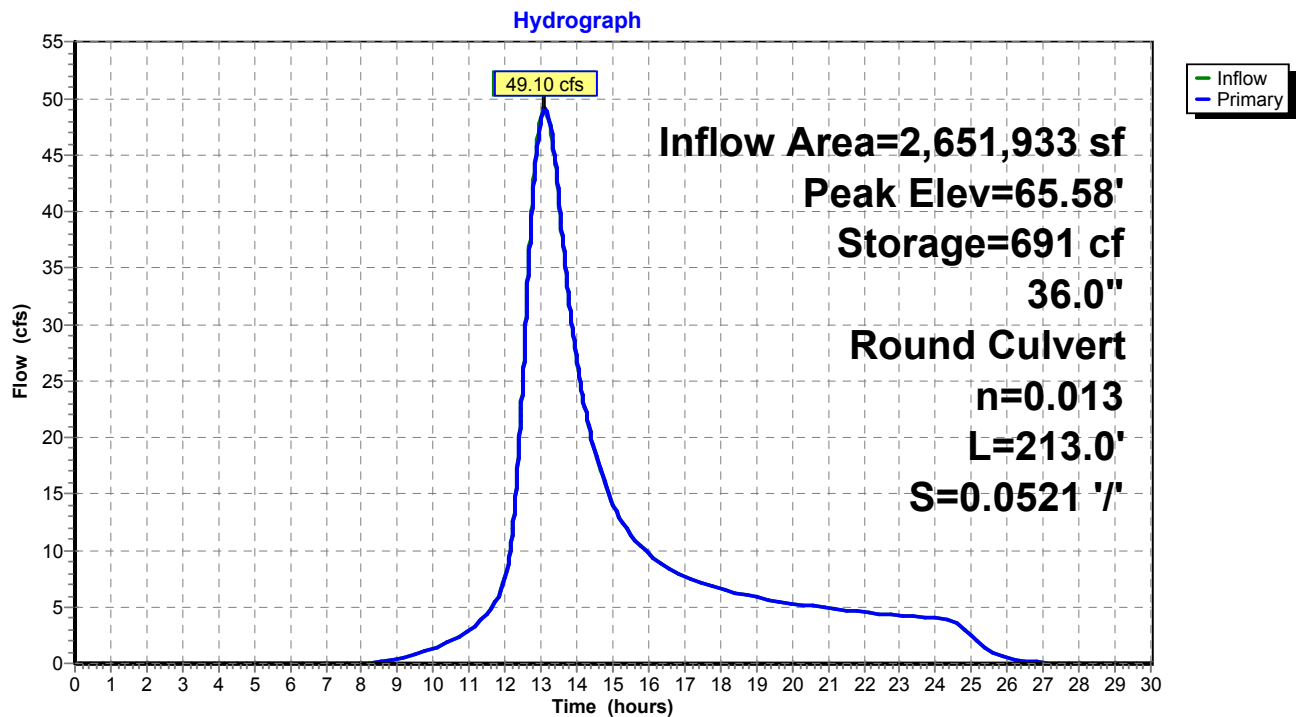
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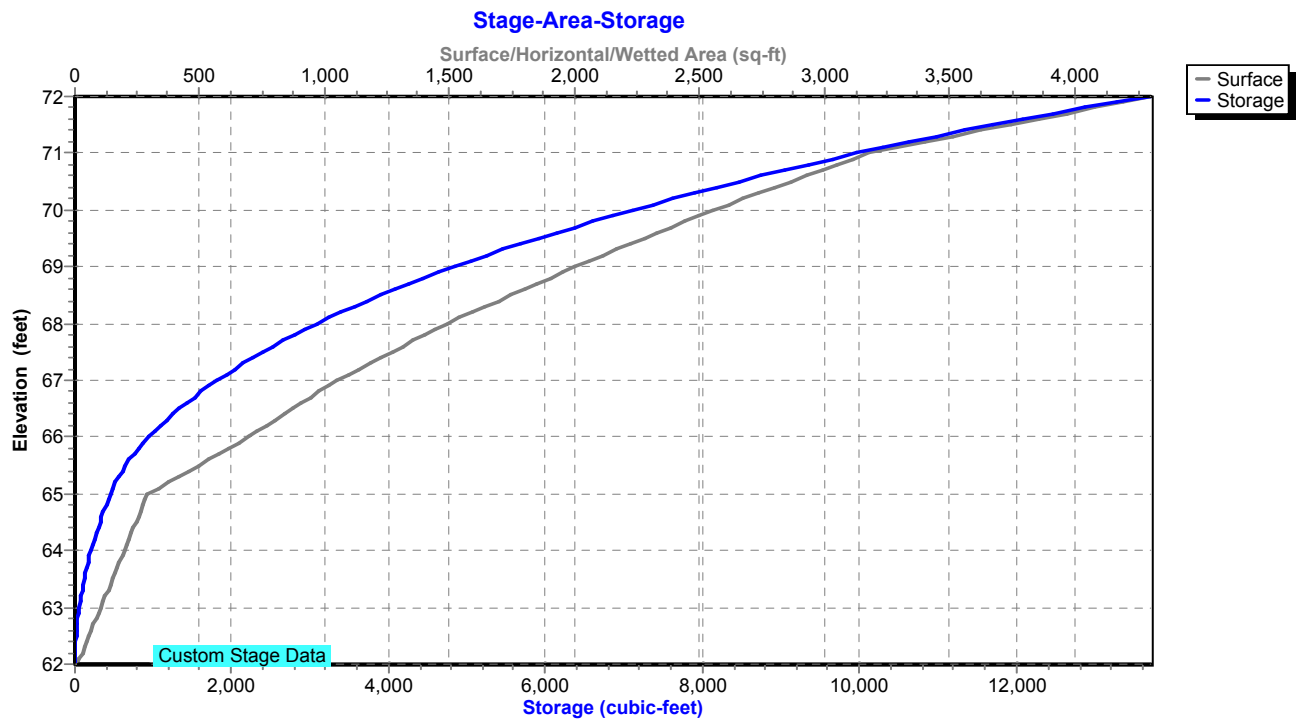
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Pond 18P: DET 4 Culvert



Pond 18P: DET 4 Culvert



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 2.54" for 10 year event
 Inflow = 14.60 cfs @ 12.53 hrs, Volume= 112,874 cf
 Outflow = 14.59 cfs @ 12.56 hrs, Volume= 112,874 cf, Atten= 0%, Lag= 2.1 min
 Primary = 14.59 cfs @ 12.56 hrs, Volume= 112,874 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 38.92' @ 12.56 hrs Surf.Area= 448 sf Storage= 442 cf

Plug-Flow detention time= 0.5 min calculated for 112,837 cf (100% of inflow)
 Center-of-Mass det. time= 0.5 min (898.8 - 898.2)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=14.59 cfs @ 12.56 hrs HW=38.92' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 14.59 cfs @ 4.71 fps)

Existing Conditions

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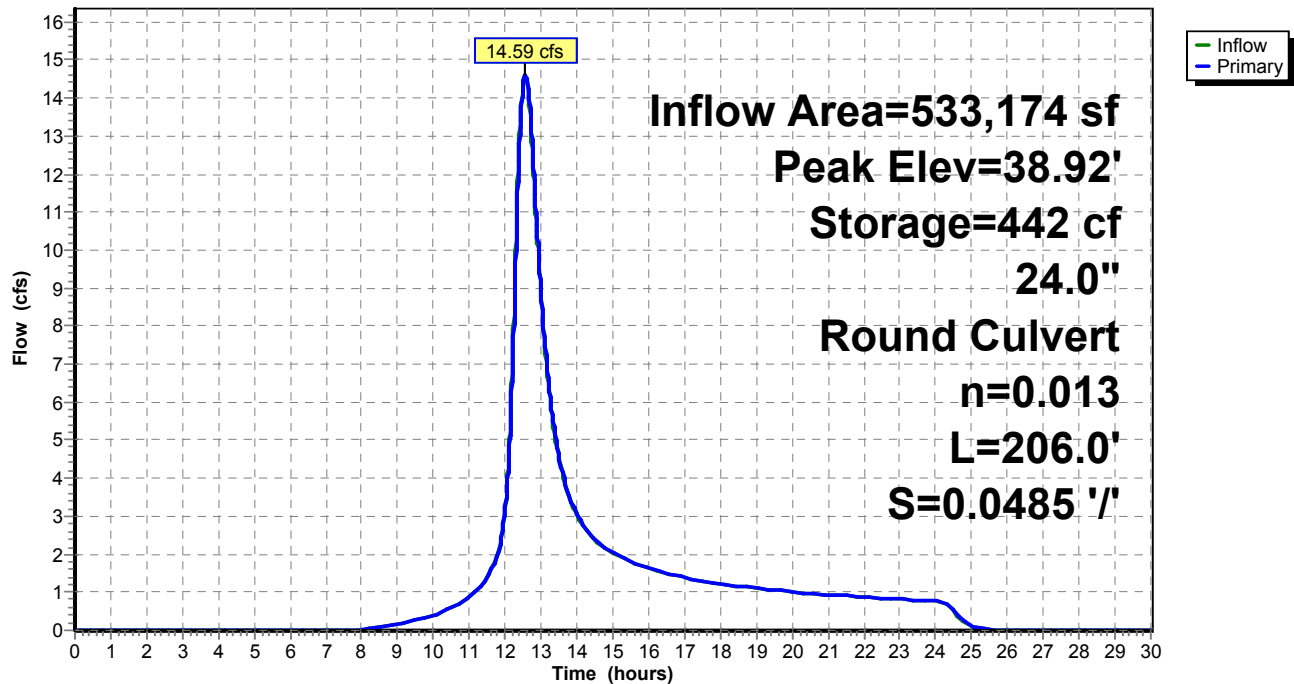
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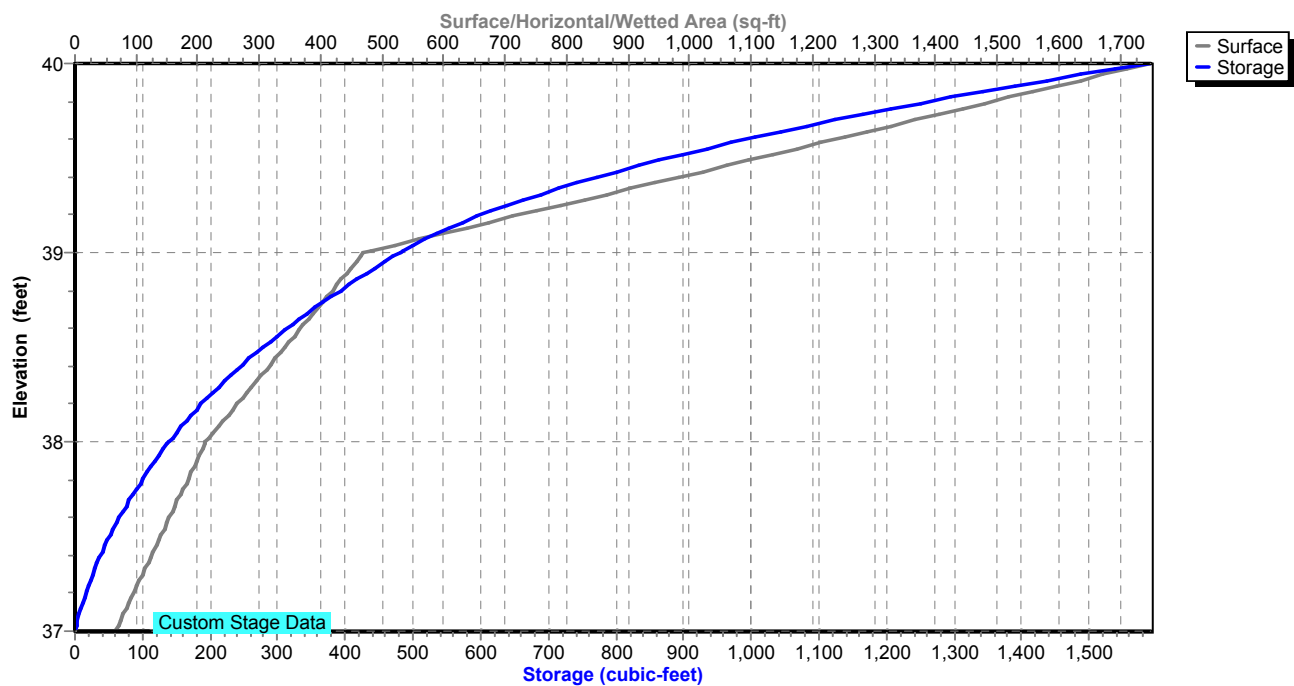
Pond 21P: DET 1 Culvert

Hydrograph



Pond 21P: DET 1 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 2.99" for 10 year event
 Inflow = 34.97 cfs @ 12.74 hrs, Volume= 321,732 cf
 Outflow = 31.92 cfs @ 12.96 hrs, Volume= 321,732 cf, Atten= 9%, Lag= 13.0 min
 Primary = 31.92 cfs @ 12.96 hrs, Volume= 321,732 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 37.87' @ 12.96 hrs Surf.Area= 10,516 sf Storage= 13,440 cf

Plug-Flow detention time= 4.4 min calculated for 321,732 cf (100% of inflow)
 Center-of-Mass det. time= 4.4 min (900.6 - 896.2)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=31.92 cfs @ 12.96 hrs HW=37.87' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 31.92 cfs @ 6.50 fps)

Existing Conditions

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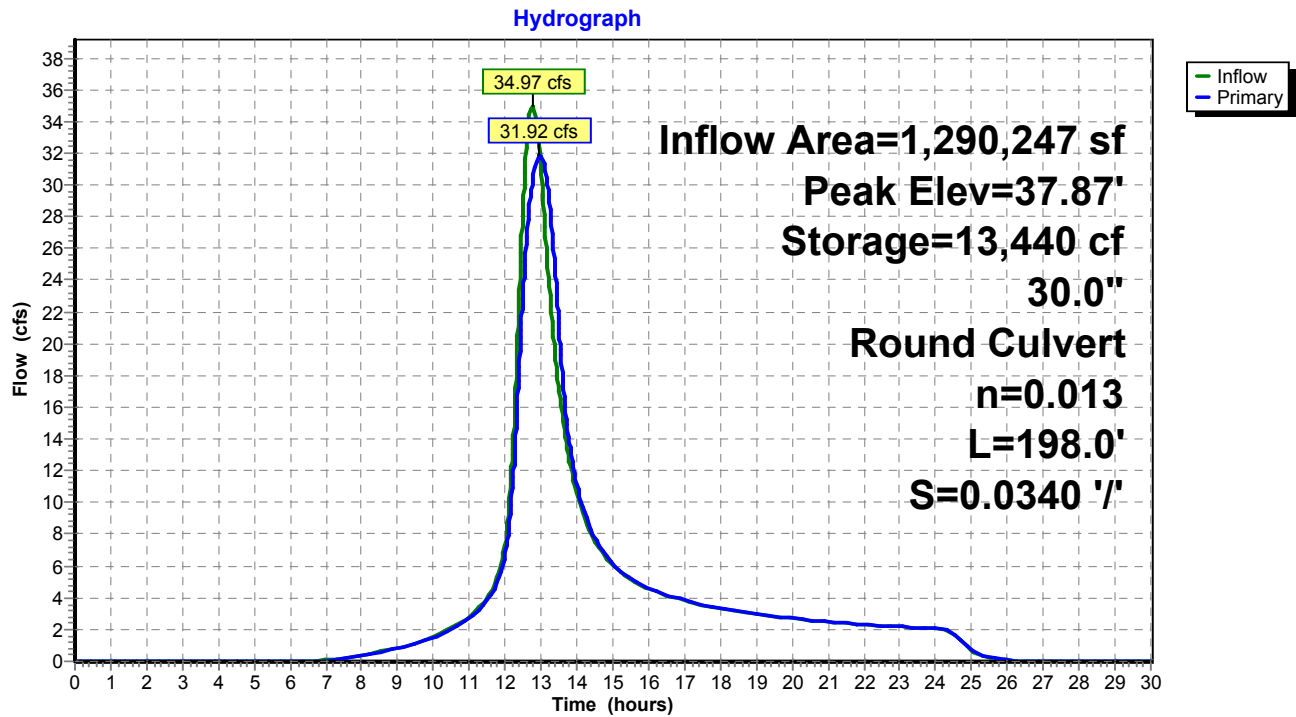
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NORWALK 24-hr S1 10 year Rainfall=5.33"

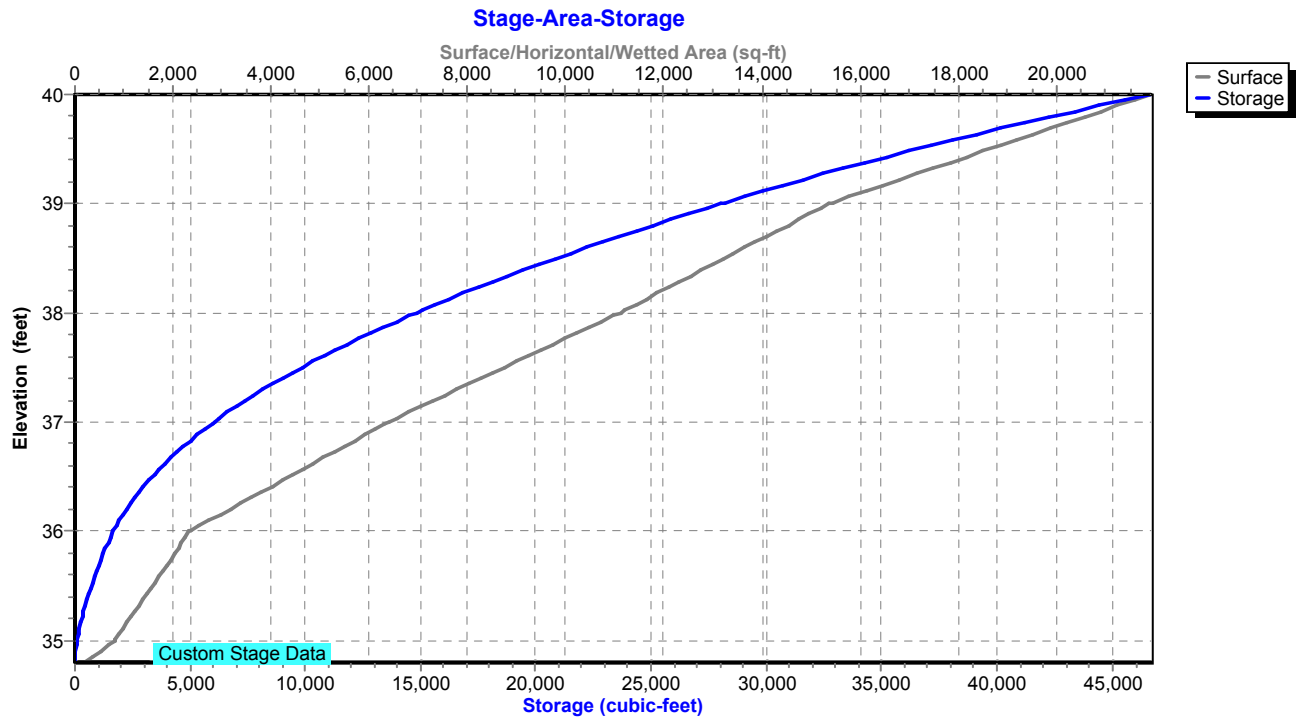
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Pond 22P: DET 2 Culvert



Pond 22P: DET 2 Culvert



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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 2.63" for 10 year event
 Inflow = 12.34 cfs @ 12.22 hrs, Volume= 60,494 cf
 Outflow = 12.24 cfs @ 12.24 hrs, Volume= 60,494 cf, Atten= 1%, Lag= 1.0 min
 Primary = 12.24 cfs @ 12.24 hrs, Volume= 60,494 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 44.16' @ 12.24 hrs Surf.Area= 739 sf Storage= 543 cf

Plug-Flow detention time= 0.6 min calculated for 60,474 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (873.1 - 872.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.24 cfs @ 12.24 hrs HW=44.16' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 12.24 cfs @ 4.39 fps)

Existing Conditions

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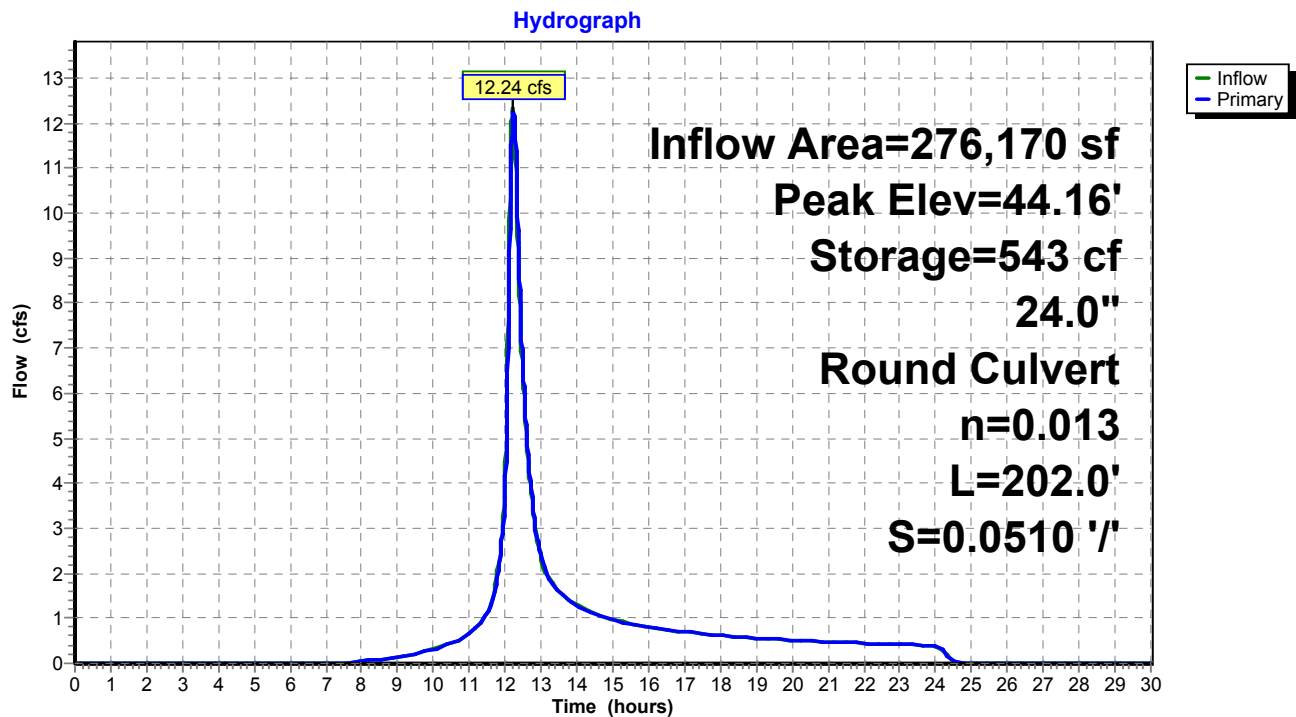
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NORWALK 24-hr S1 10 year Rainfall=5.33"

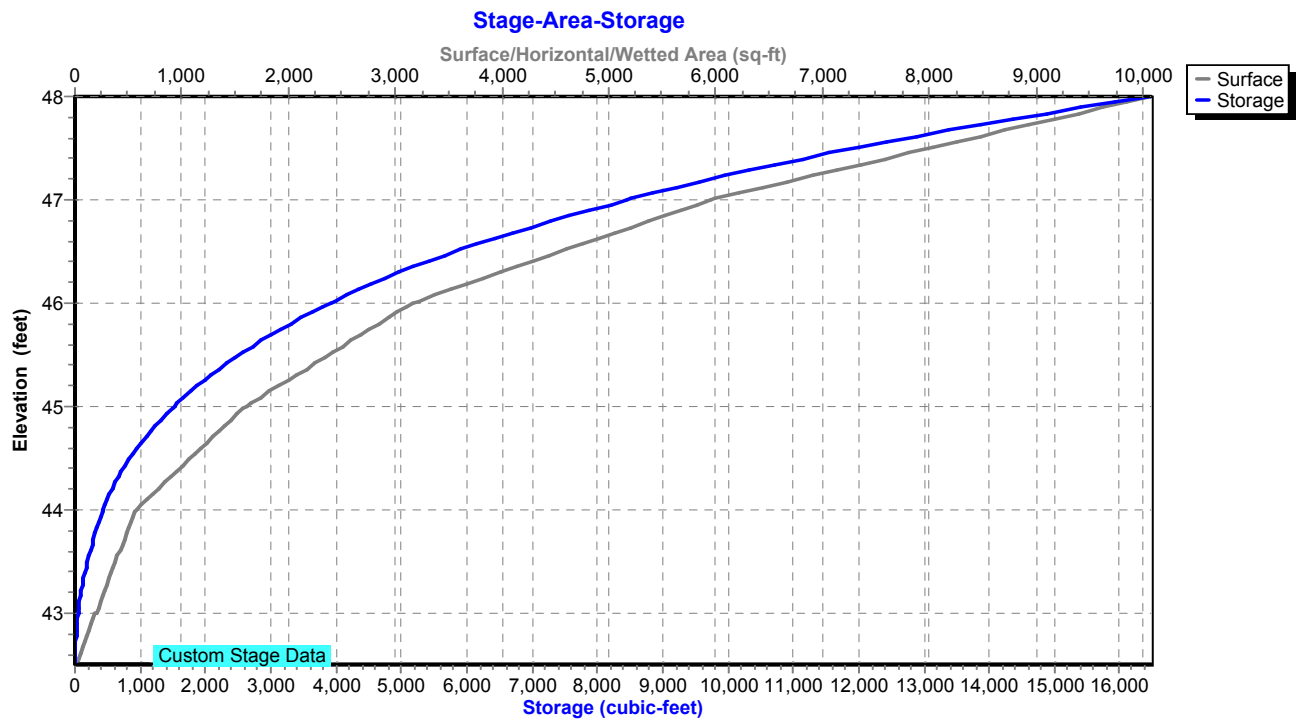
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 21.93" for 10 year event
 Inflow = 169.98 cfs @ 12.22 hrs, Volume= 915,423 cf
 Outflow = 44.37 cfs @ 13.75 hrs, Volume= 915,427 cf, Atten= 74%, Lag= 92.0 min
 Primary = 44.37 cfs @ 13.75 hrs, Volume= 915,427 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 12.50' @ 13.75 hrs Storage= 502,876 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 127.1 min (915.3 - 788.2)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=44.37 cfs @ 13.75 hrs HW=12.50' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 44.37 cfs @ 5.37 fps)

Existing Conditions

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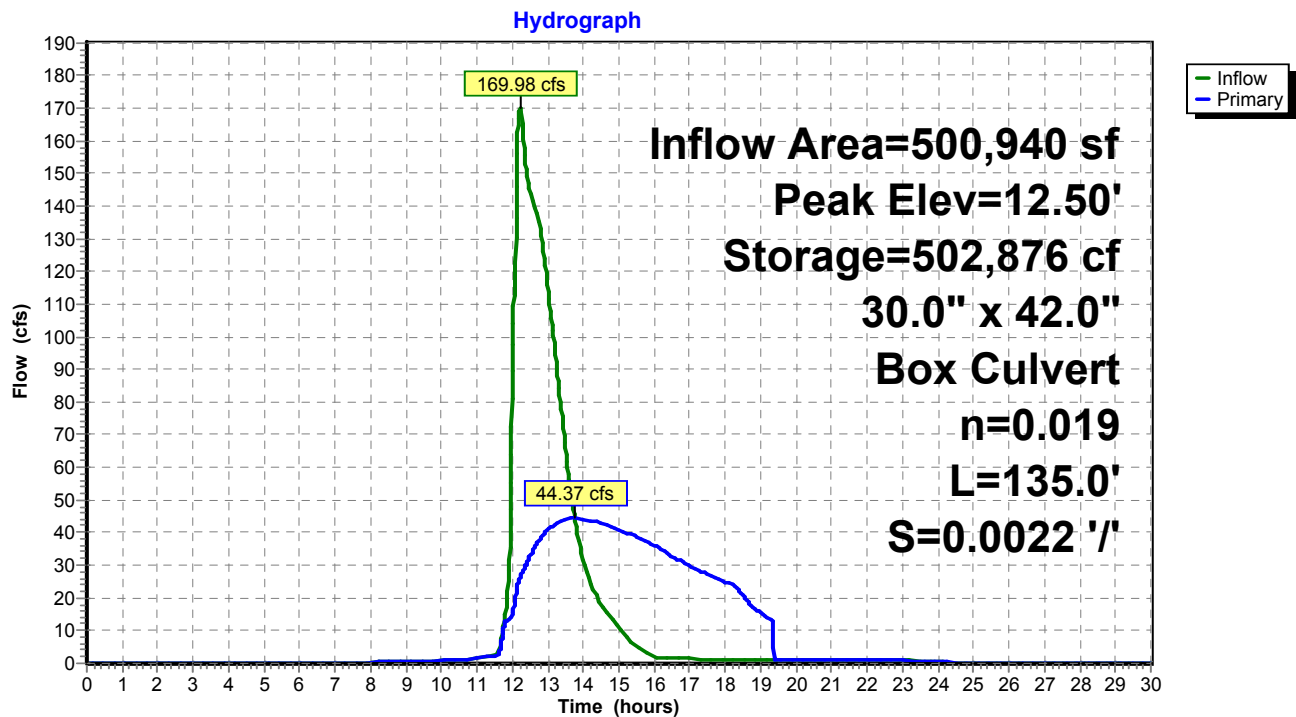
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NORWALK 24-hr S1 10 year Rainfall=5.33"

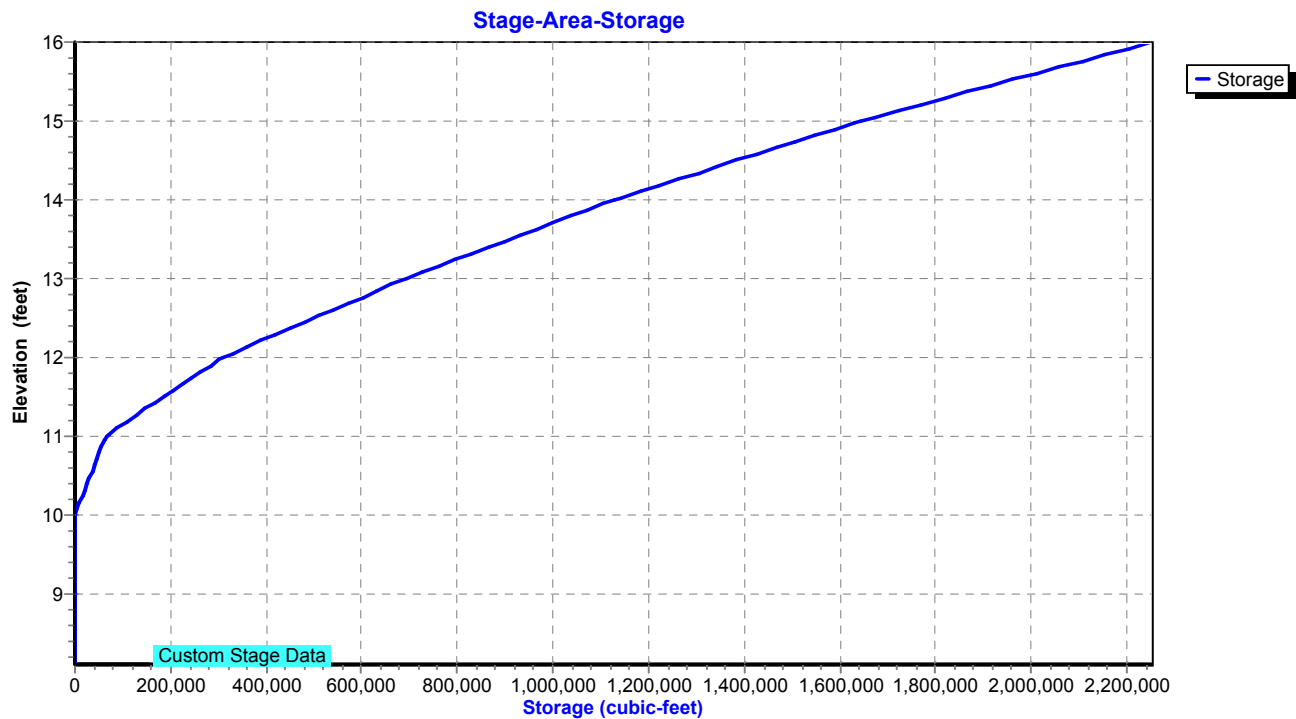
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Pond 24P: RR Culvert 3



Pond 24P: RR Culvert 3



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 2.72" for 10 year event
Inflow = 27.61 cfs @ 12.21 hrs, Volume= 176,385 cf
Outflow = 27.60 cfs @ 12.21 hrs, Volume= 176,377 cf, Atten= 0%, Lag= 0.1 min
Primary = 27.60 cfs @ 12.21 hrs, Volume= 176,377 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 20.07' @ 12.21 hrs Surf.Area= 2,197 sf Storage= 2,544 cf

Plug-Flow detention time= 0.7 min calculated for 176,318 cf (100% of inflow)
Center-of-Mass det. time= 0.7 min (900.9 - 900.3)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=26.93 cfs @ 12.21 hrs HW=20.07' (Free Discharge)

1=Culvert (Inlet Controls 12.31 cfs @ 10.03 fps)
2=Custom Weir/Orifice (Weir Controls 14.61 cfs @ 1.08 fps)

Existing Conditions

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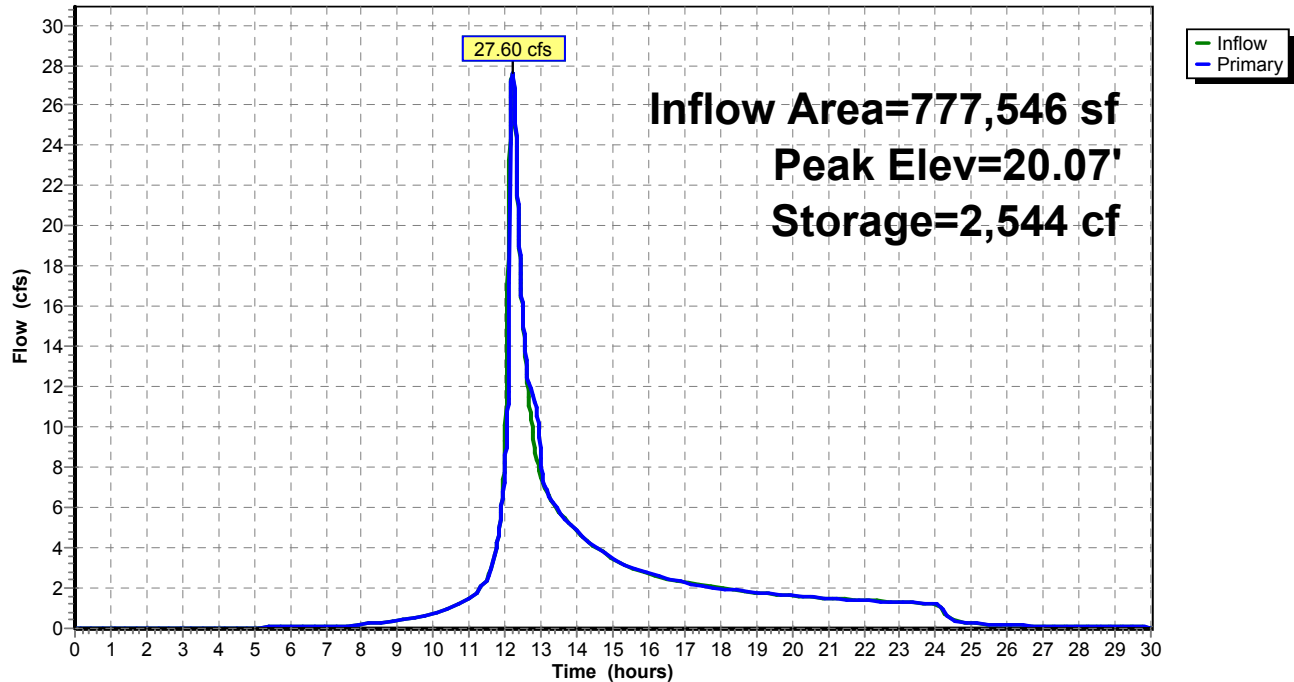
NORWALK 24-hr S1 10 year Rainfall=5.33"

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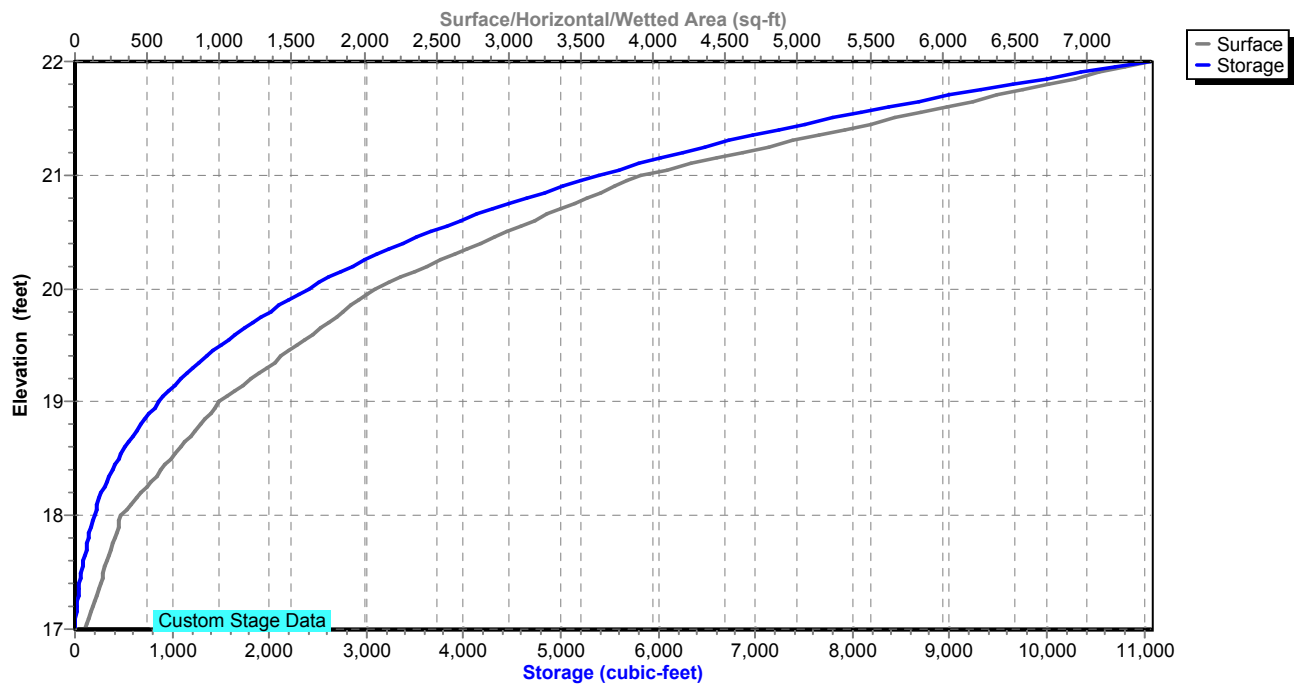
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 2.99" for 10 year event
Inflow = 49.31 cfs @ 12.66 hrs, Volume= 549,236 cf
Outflow = 49.30 cfs @ 12.67 hrs, Volume= 549,236 cf, Atten= 0%, Lag= 0.6 min
Primary = 49.30 cfs @ 12.67 hrs, Volume= 549,236 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 18.74' @ 12.67 hrs Surf.Area= 10,562 sf Storage= 10,309 cf

Plug-Flow detention time= 3.7 min calculated for 549,053 cf (100% of inflow)
Center-of-Mass det. time= 3.7 min (887.6 - 883.9)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=49.04 cfs @ 12.67 hrs HW=18.74' (Free Discharge)

1=Culvert (Inlet Controls 13.96 cfs @ 7.90 fps)

2=Custom Weir/Orifice (Weir Controls 35.08 cfs @ 1.82 fps)

Existing Conditions

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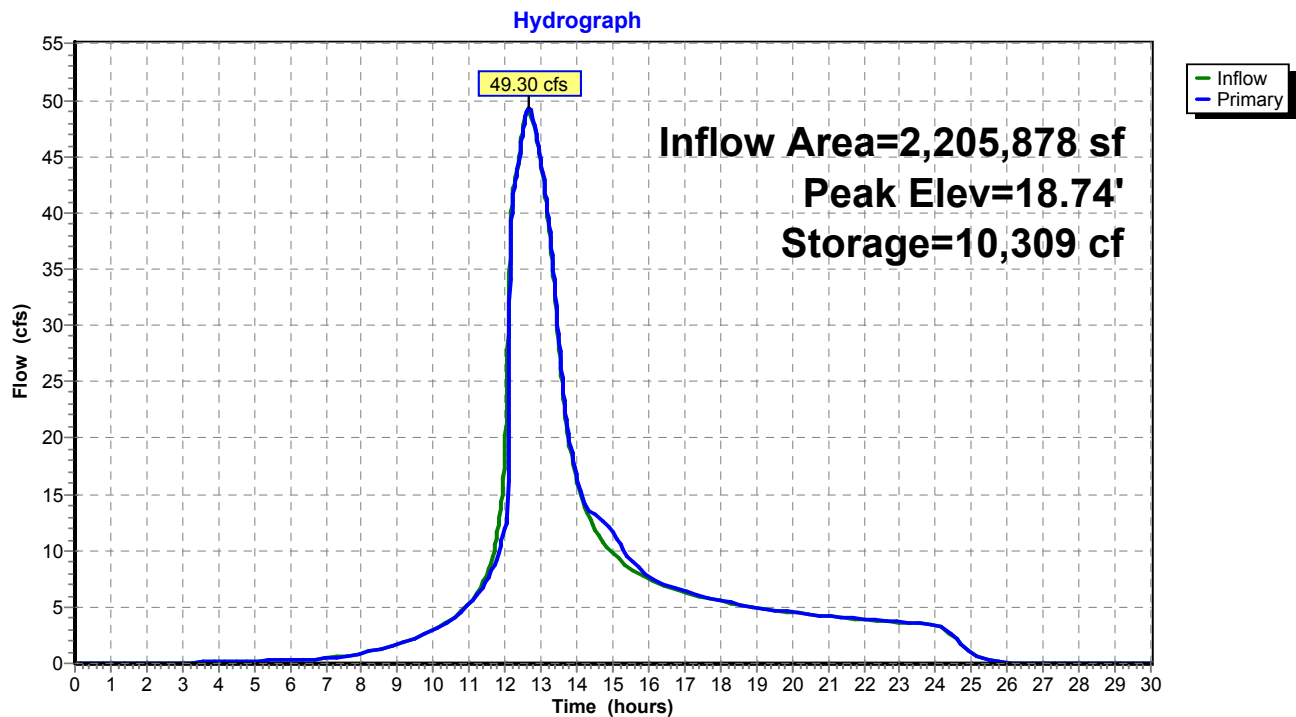
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NORWALK 24-hr S1 10 year Rainfall=5.33"

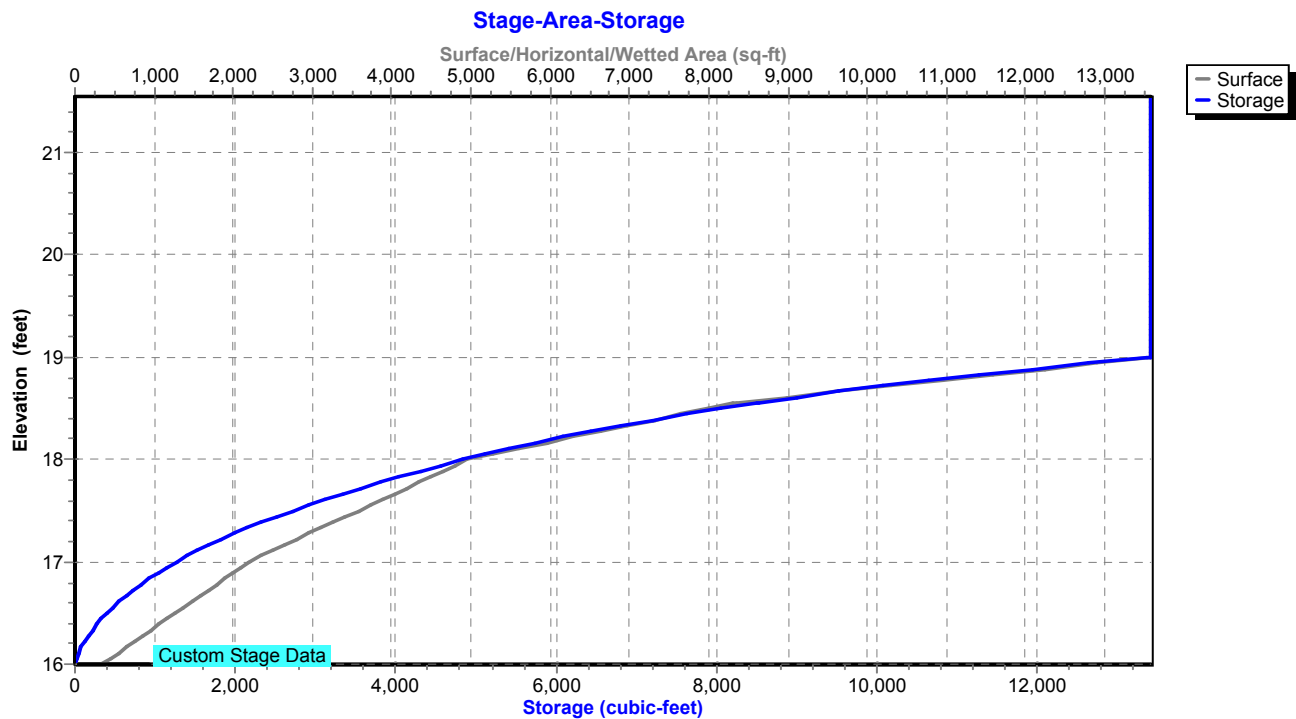
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 3.80" for 10 year event
Inflow = 22.29 cfs @ 12.04 hrs, Volume= 78,362 cf
Outflow = 3.14 cfs @ 12.63 hrs, Volume= 52,973 cf, Atten= 86%, Lag= 35.6 min
Primary = 3.14 cfs @ 12.63 hrs, Volume= 52,973 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 27.69' @ 12.63 hrs Surf.Area= 14,532 sf Storage= 40,335 cf

Plug-Flow detention time= 303.9 min calculated for 52,973 cf (68% of inflow)
Center-of-Mass det. time= 180.2 min (989.0 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / S= 0.0333 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.14 cfs @ 12.63 hrs HW=27.69' (Free Discharge)

1=Culvert (Passes 3.14 cfs of 14.58 cfs potential flow)
2=Orifice/Grate (Orifice Controls 3.14 cfs @ 3.99 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Existing Conditions

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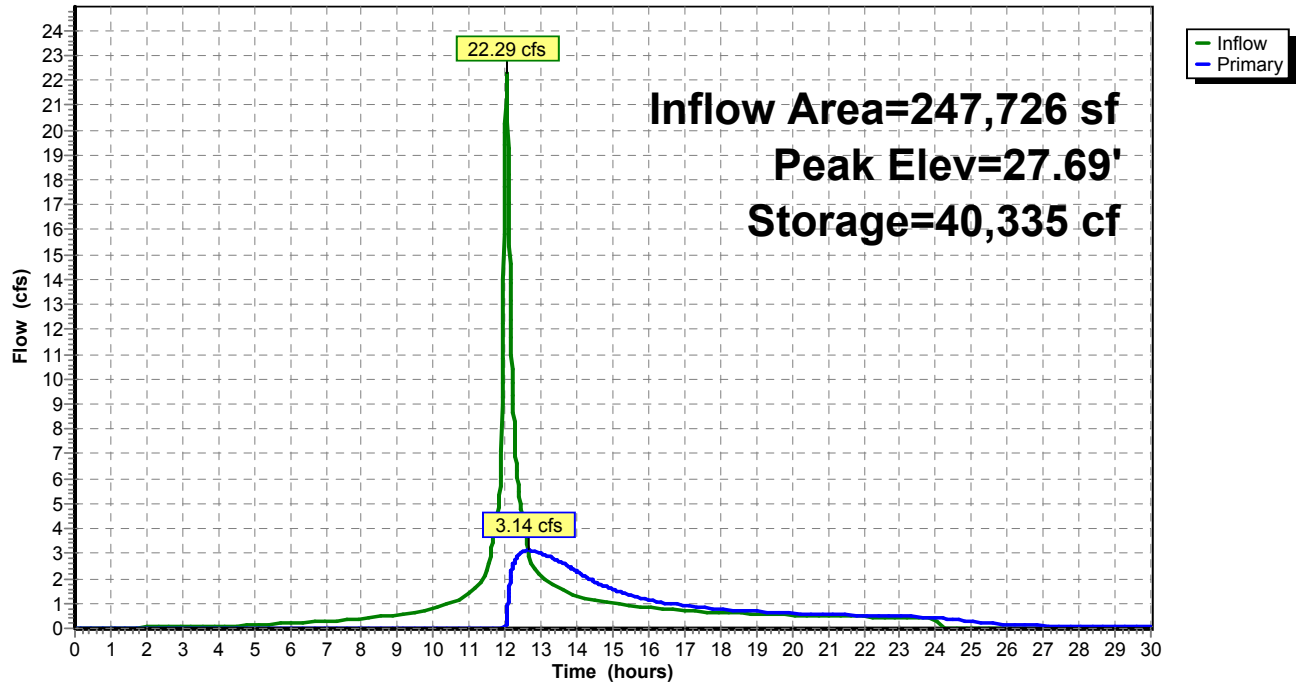
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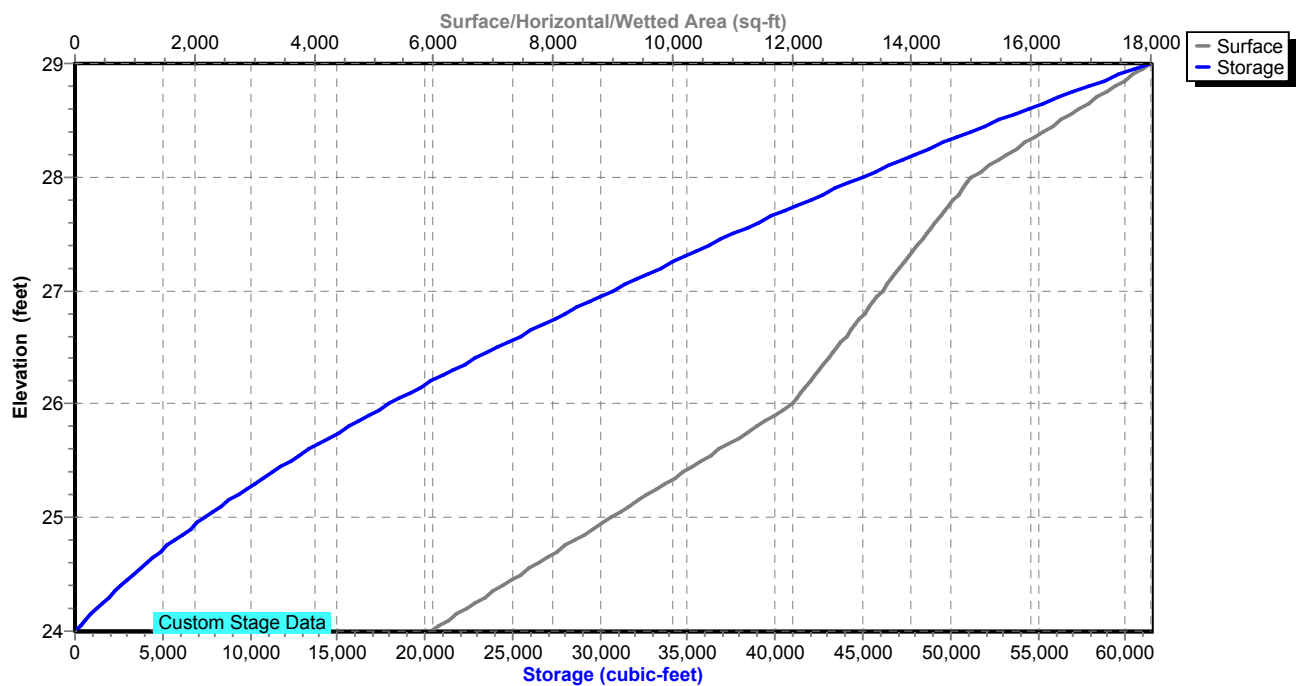
Pond 50P: DET BASIN #1

Hydrograph



Pond 50P: DET BASIN #1

Stage-Area-Storage



Existing Conditions

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Summary for Pond 51P: Manhole

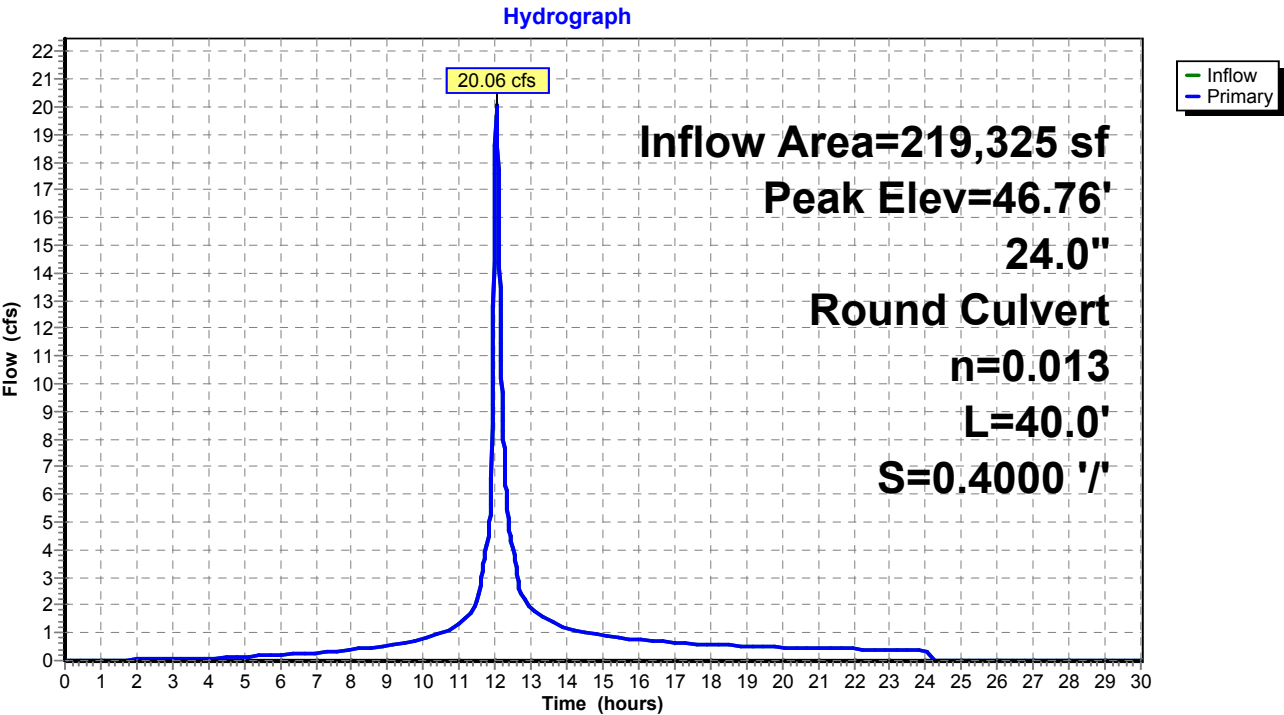
Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 3.95" for 10 year event
Inflow = 20.06 cfs @ 12.04 hrs, Volume= 72,141 cf
Outflow = 20.06 cfs @ 12.04 hrs, Volume= 72,141 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.06 cfs @ 12.04 hrs, Volume= 72,141 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.76' @ 12.04 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=20.04 cfs @ 12.04 hrs HW=46.76' (Free Discharge)
1=Culvert (Inlet Controls 20.04 cfs @ 6.38 fps)

Pond 51P: Manhole



Existing Conditions

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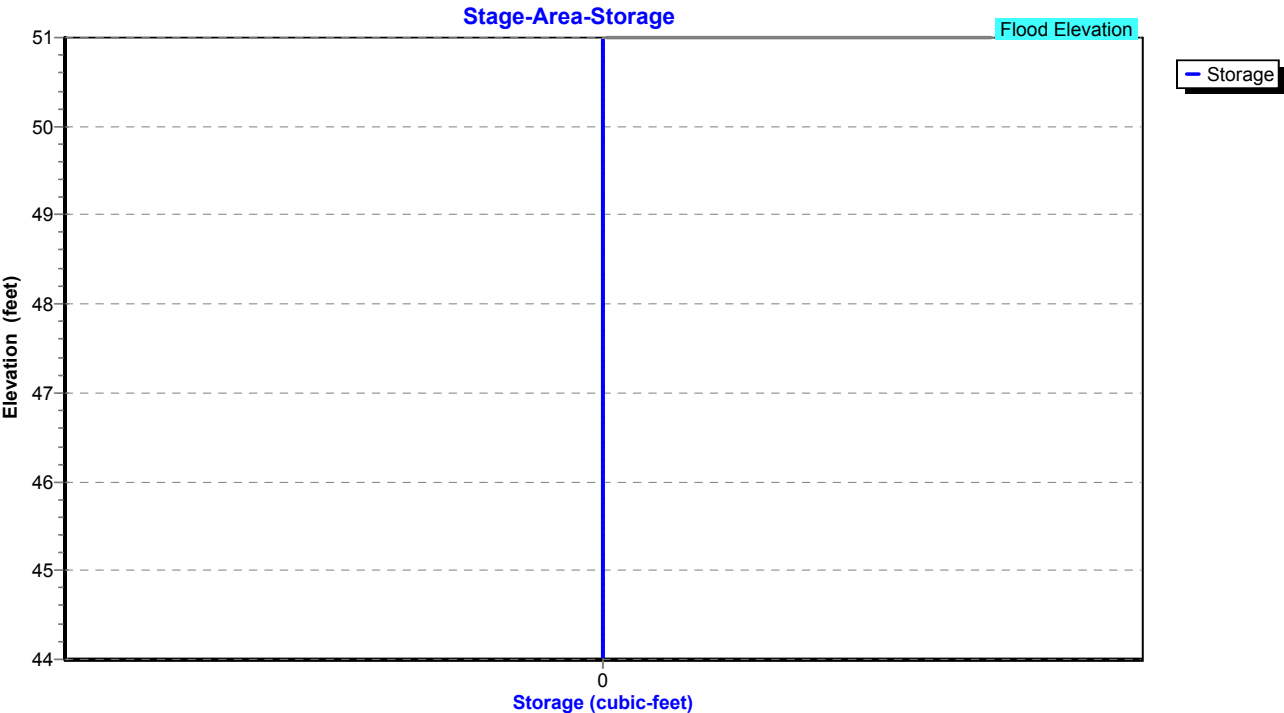
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Pond 51P: Manhole



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Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 4.01" for 10 year event
Inflow = 12.72 cfs @ 12.04 hrs, Volume= 43,925 cf
Outflow = 12.72 cfs @ 12.04 hrs, Volume= 43,925 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.72 cfs @ 12.04 hrs, Volume= 43,925 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 46.26' @ 12.04 hrs

Flood Elev= 49.00'

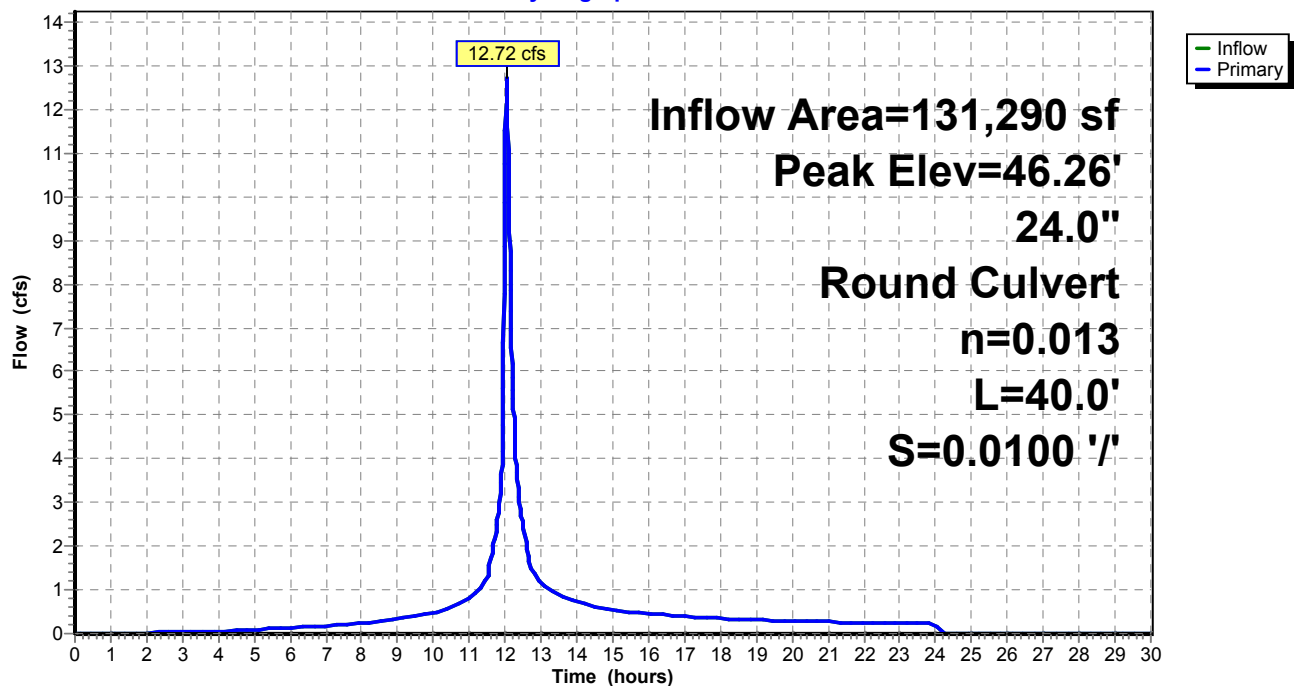
Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.70 cfs @ 12.04 hrs HW=46.26' (Free Discharge)

↑1=Culvert (Barrel Controls 12.70 cfs @ 5.42 fps)

Pond 57P: CB-1

Hydrograph



Existing Conditions

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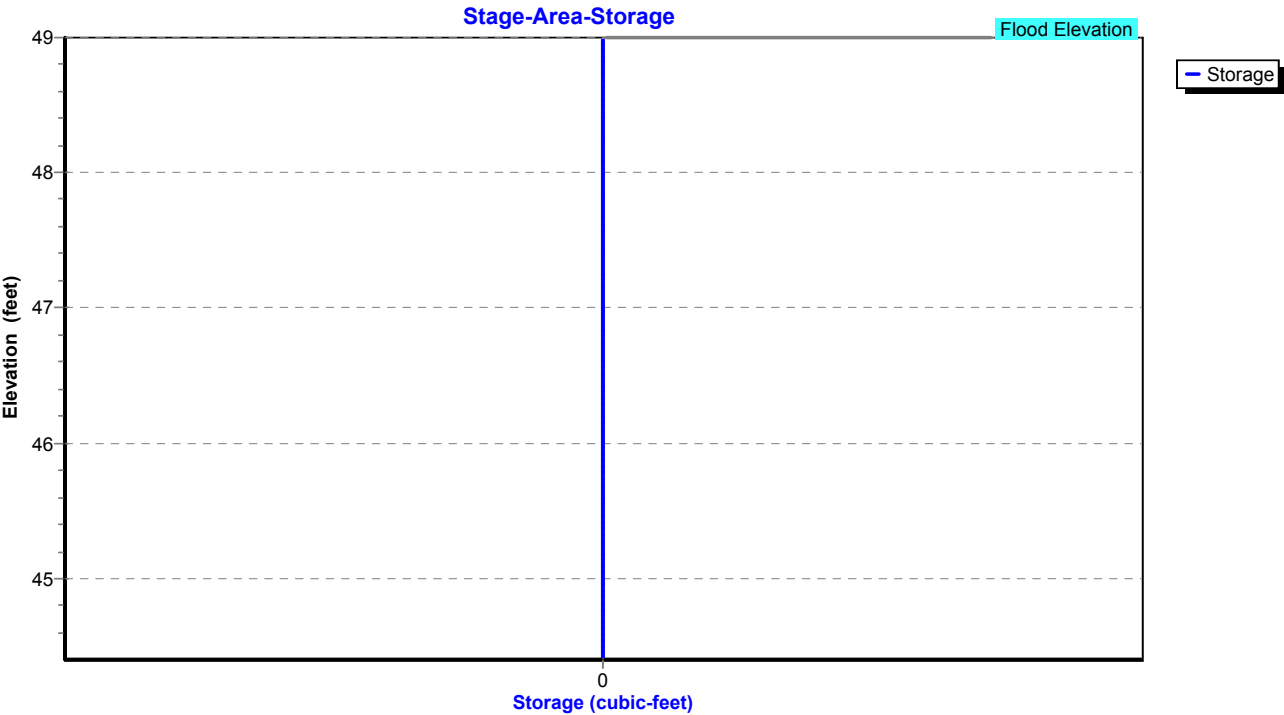
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Pond 57P: CB-1



Existing Conditions

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Summary for Pond 58P: Manhole

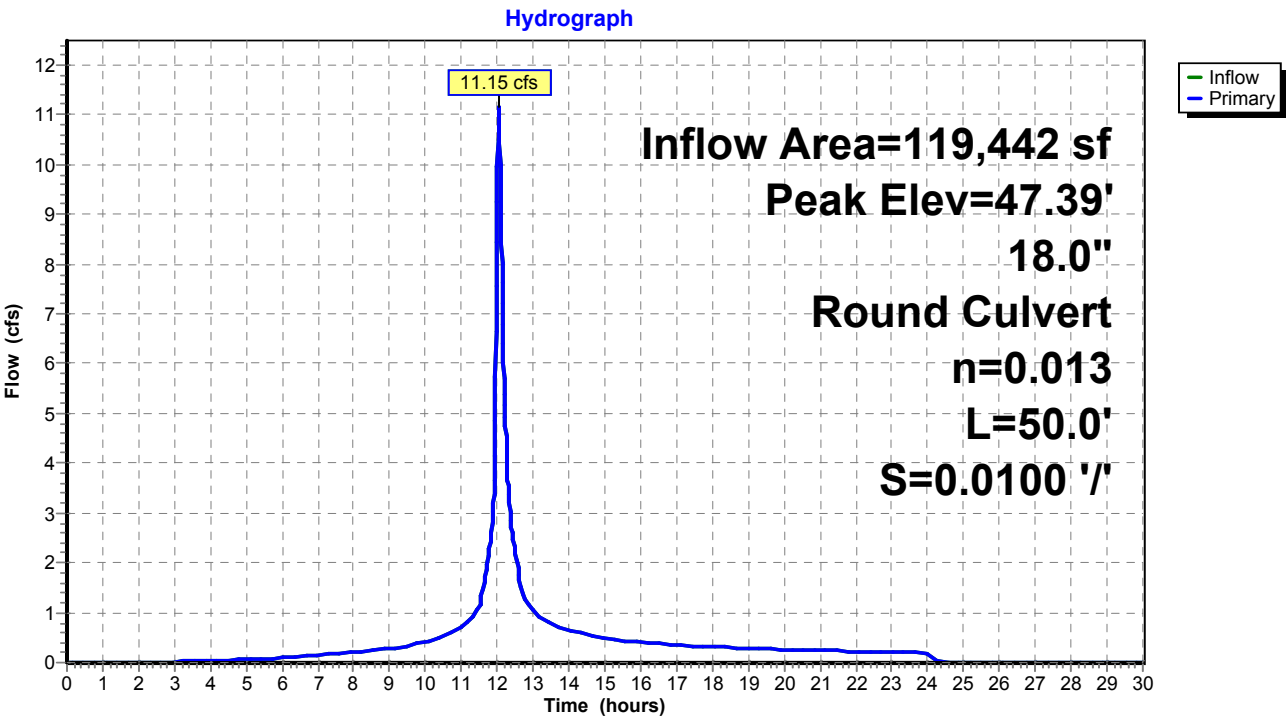
Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 3.91" for 10 year event
Inflow = 11.15 cfs @ 12.04 hrs, Volume= 38,899 cf
Outflow = 11.15 cfs @ 12.04 hrs, Volume= 38,899 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.15 cfs @ 12.04 hrs, Volume= 38,899 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.39' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=11.13 cfs @ 12.04 hrs HW=47.39' (Free Discharge)
1=Culvert (Barrel Controls 11.13 cfs @ 6.30 fps)

Pond 58P: Manhole



Existing Conditions

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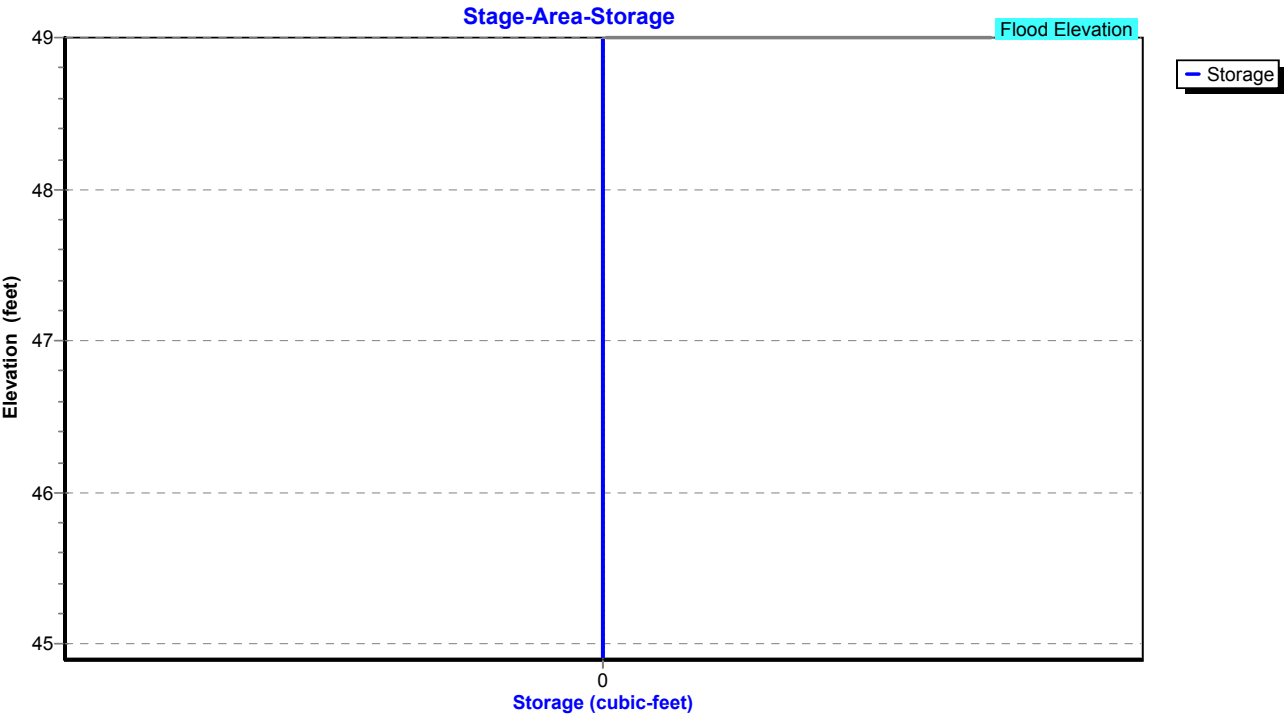
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Pond 58P: Manhole



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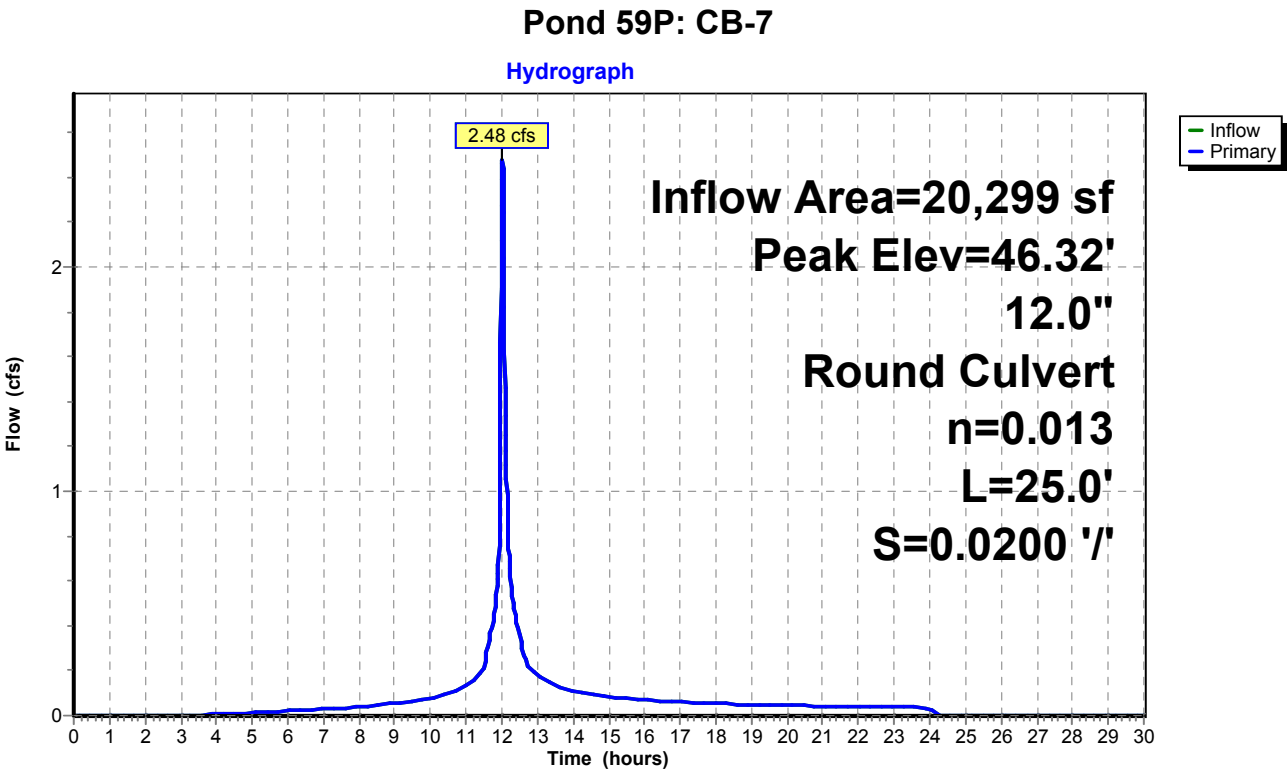
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 4.09" for 10 year event
Inflow = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf
Outflow = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.32' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.47 cfs @ 12.03 hrs HW=46.32' (Free Discharge)
↑1=Culvert (Inlet Controls 2.47 cfs @ 3.27 fps)



Existing Conditions

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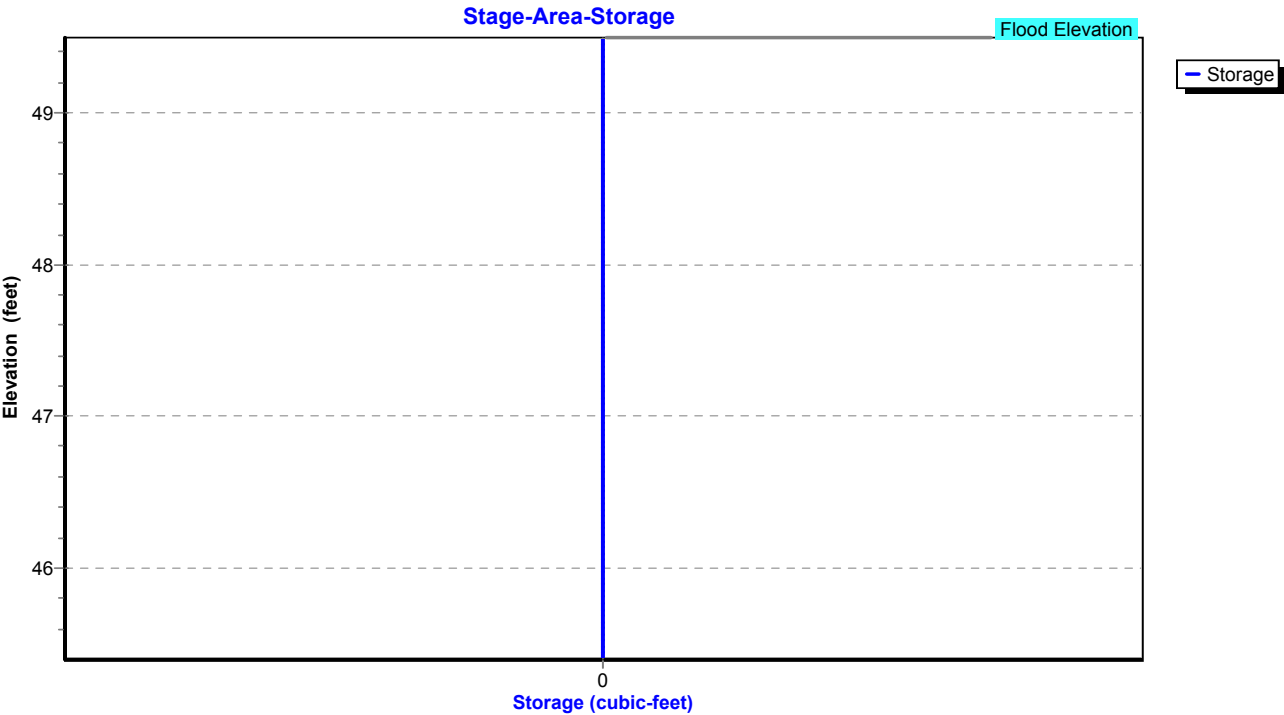
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Pond 59P: CB-7



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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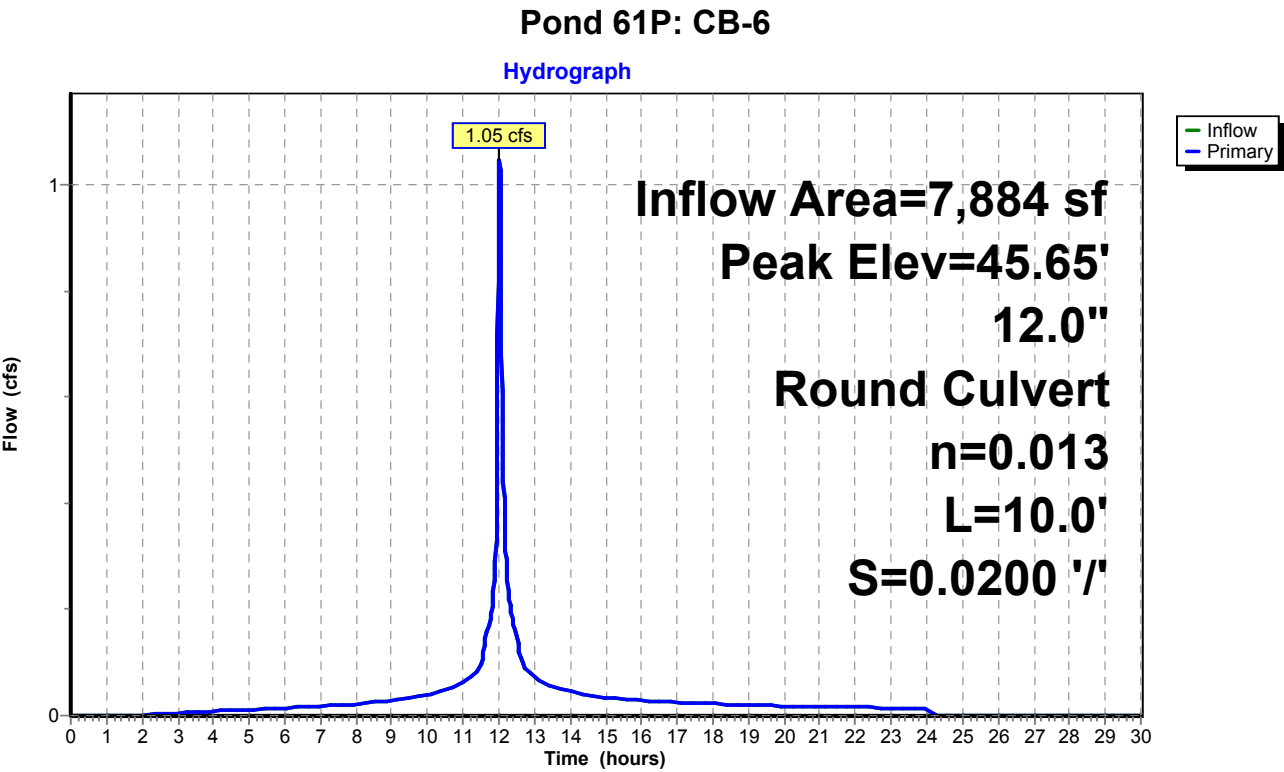
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 4.63" for 10 year event
Inflow = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf
Outflow = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.65' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.03 hrs HW=45.65' (Free Discharge)
1=Culvert (Barrel Controls 1.04 cfs @ 3.41 fps)



Existing Conditions

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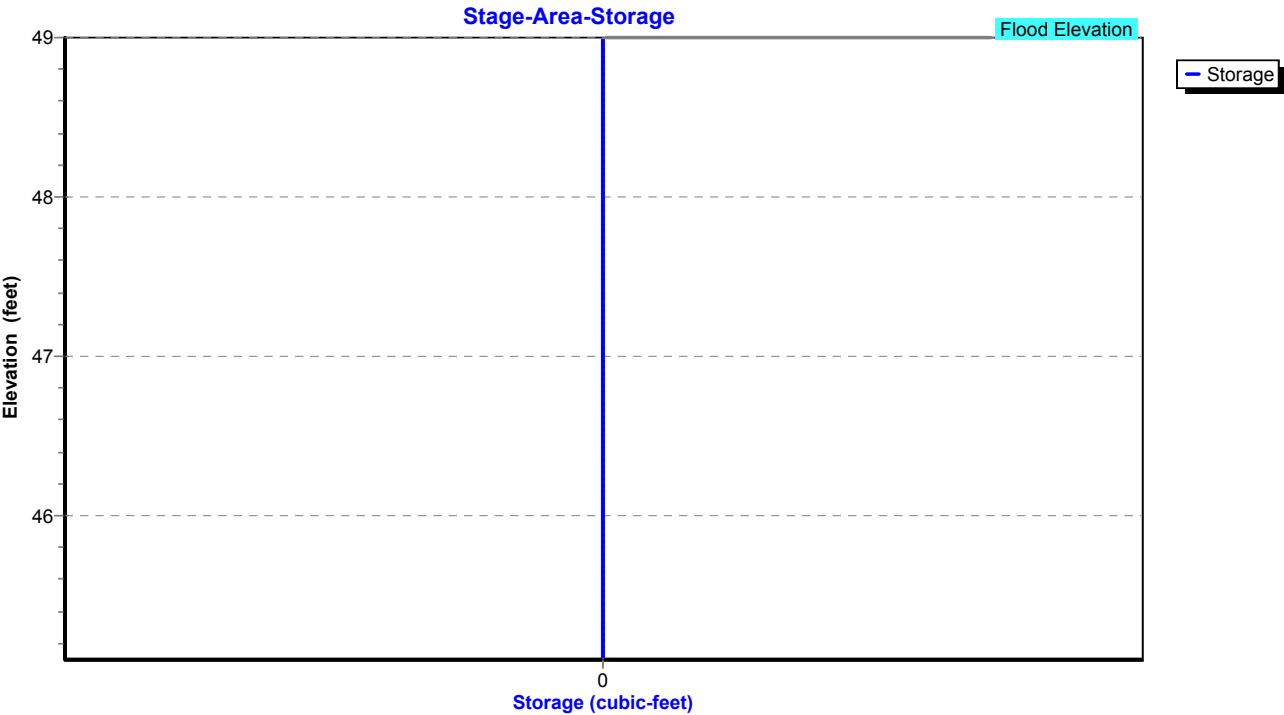
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Pond 61P: CB-6



Existing Conditions

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Summary for Pond 63P: Manhole

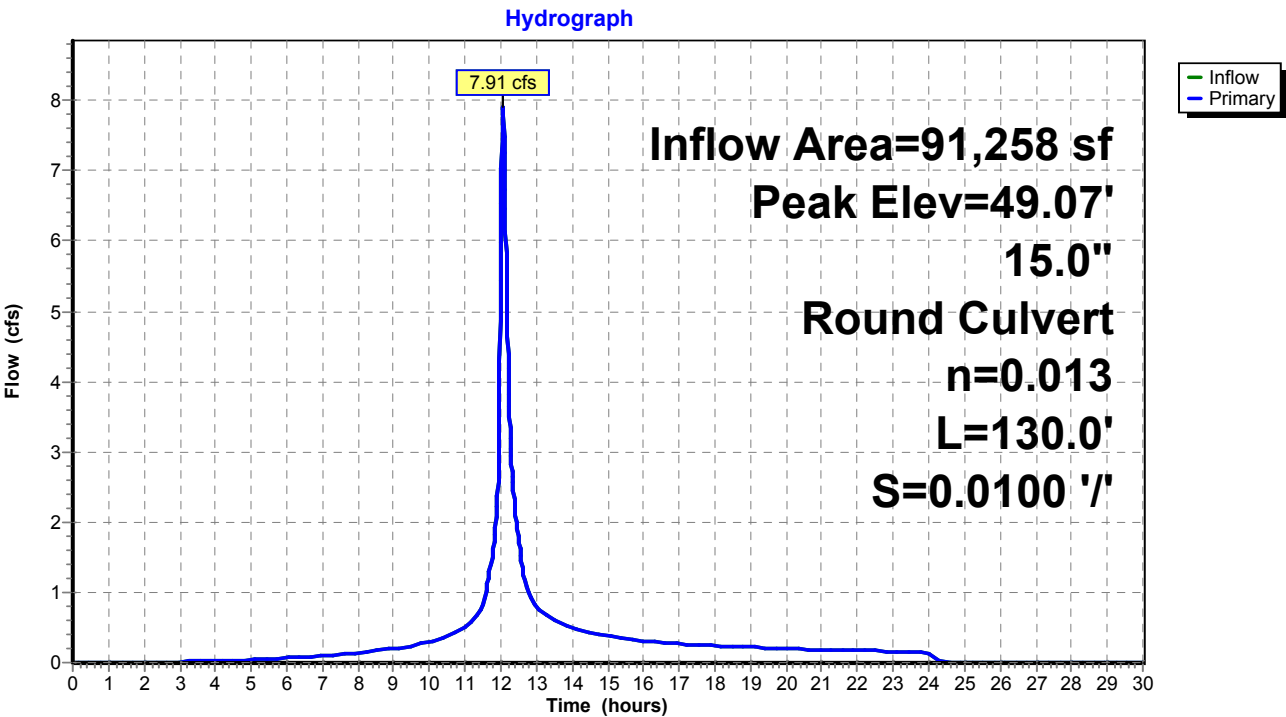
Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 3.81" for 10 year event
Inflow = 7.91 cfs @ 12.06 hrs, Volume= 28,943 cf
Outflow = 7.91 cfs @ 12.06 hrs, Volume= 28,943 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.91 cfs @ 12.06 hrs, Volume= 28,943 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.07' @ 12.06 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.90 cfs @ 12.06 hrs HW=49.06' (Free Discharge)
1=Culvert (Barrel Controls 7.90 cfs @ 6.44 fps)

Pond 63P: Manhole



Existing Conditions

Prepared by Tighe & Bond

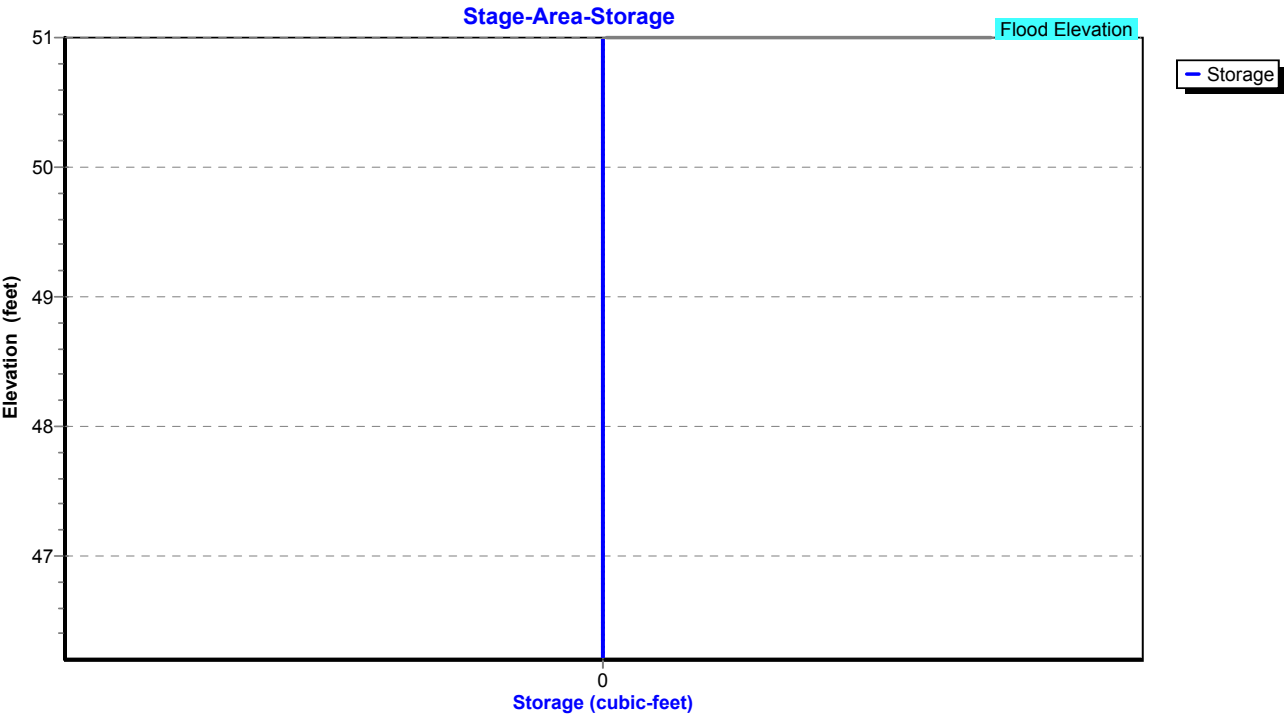
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Pond 63P: Manhole



Existing Conditions

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Summary for Pond 64P: YD

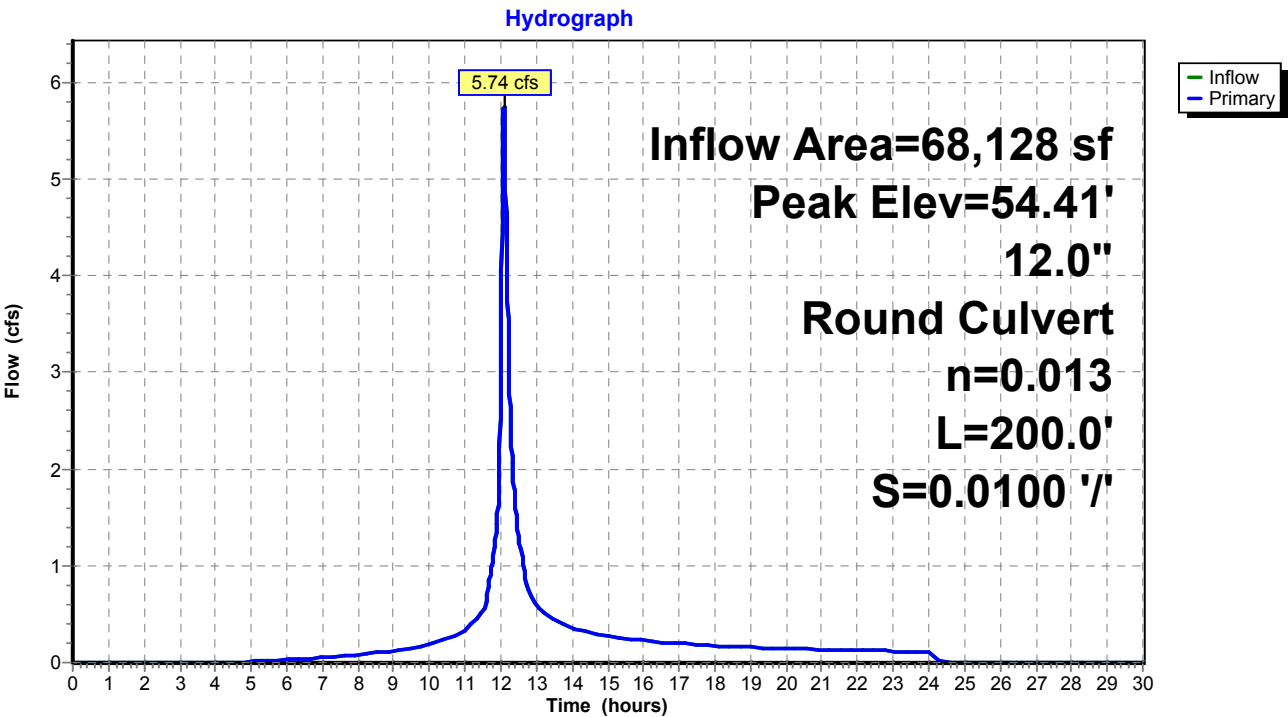
Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 3.57" for 10 year event
Inflow = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf
Outflow = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 54.41' @ 12.08 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=5.73 cfs @ 12.08 hrs HW=54.38' (Free Discharge)
1=Culvert (Barrel Controls 5.73 cfs @ 7.30 fps)

Pond 64P: YD



Existing Conditions

Prepared by Tighe & Bond

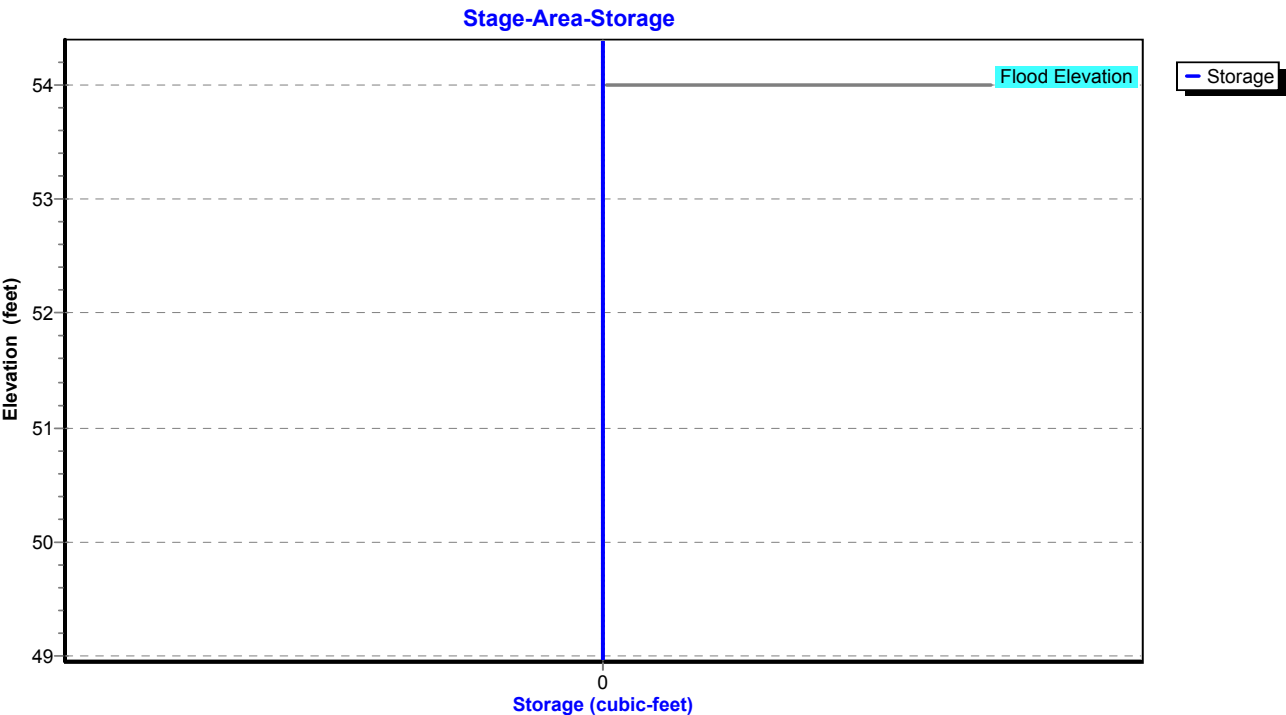
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Pond 64P: YD



Existing Conditions

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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 4.41" for 10 year event
Inflow = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf
Outflow = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.24' @ 12.03 hrs

Flood Elev= 53.00'

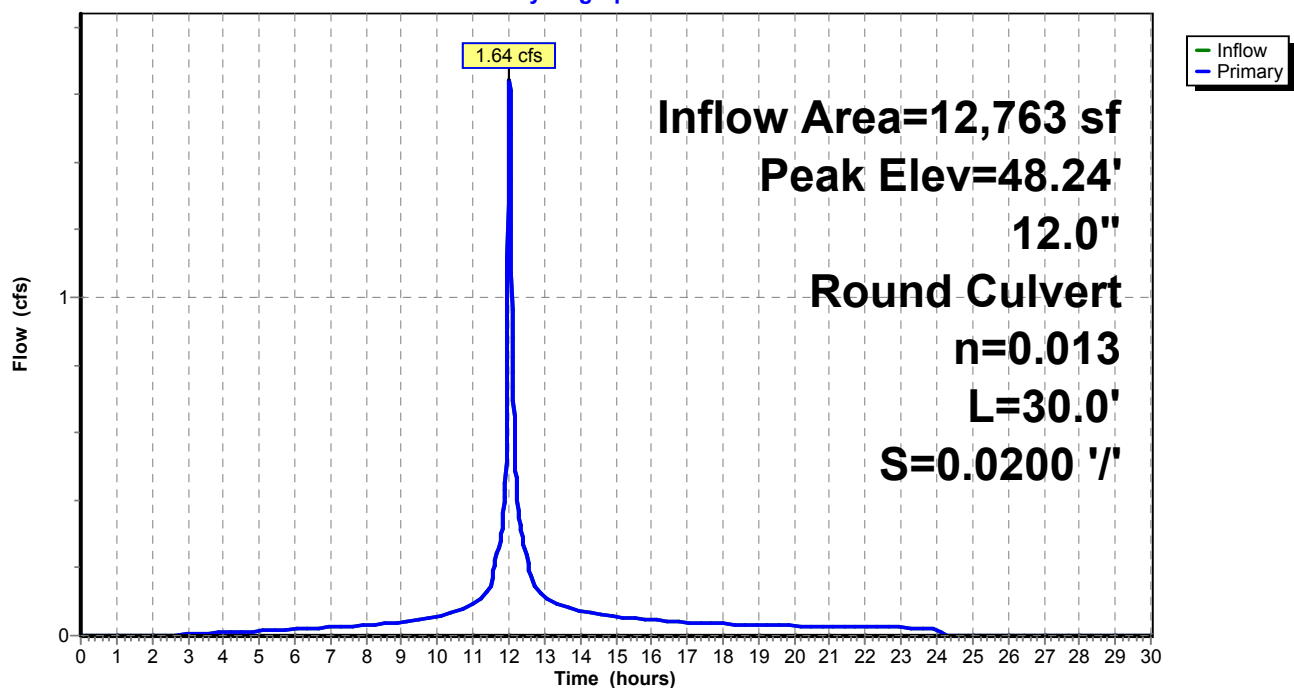
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.64 cfs @ 12.03 hrs HW=48.24' (Free Discharge)

↑1=Culvert (Inlet Controls 1.64 cfs @ 2.83 fps)

Pond 66P: CB-10

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

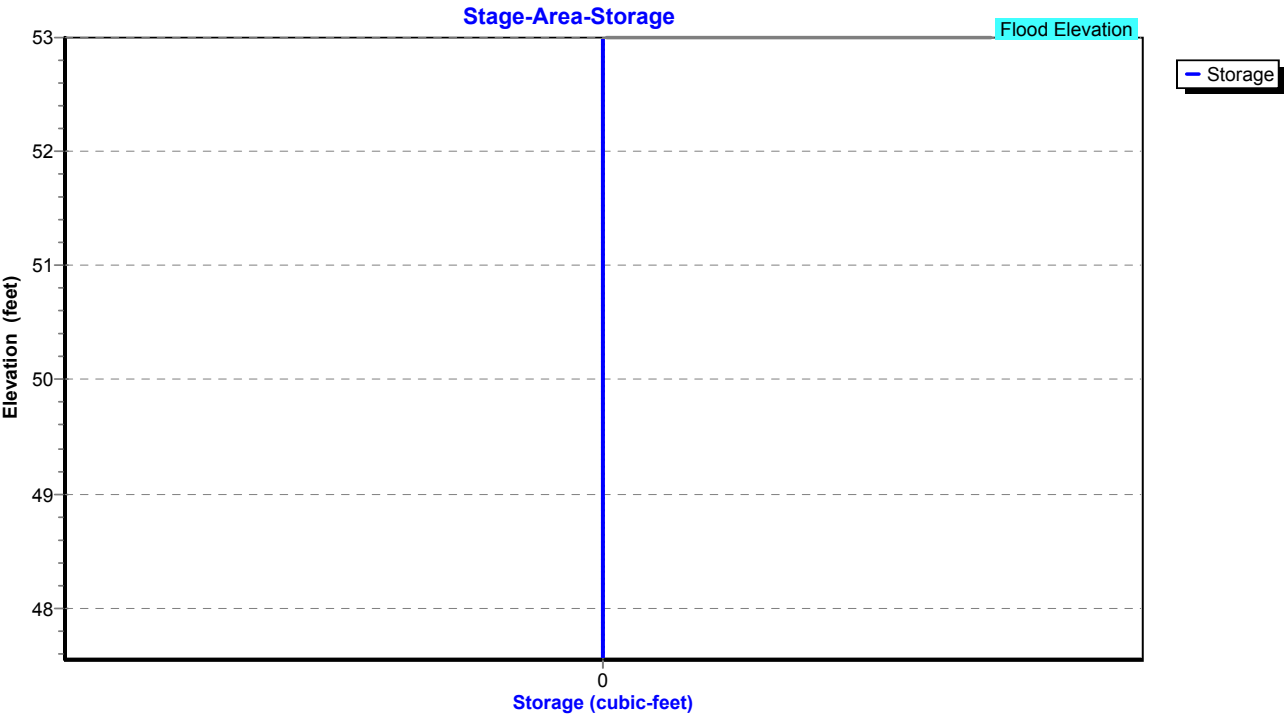
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Pond 66P: CB-10



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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 4.30" for 10 year event
Inflow = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf
Outflow = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.62' @ 12.03 hrs

Flood Elev= 52.00'

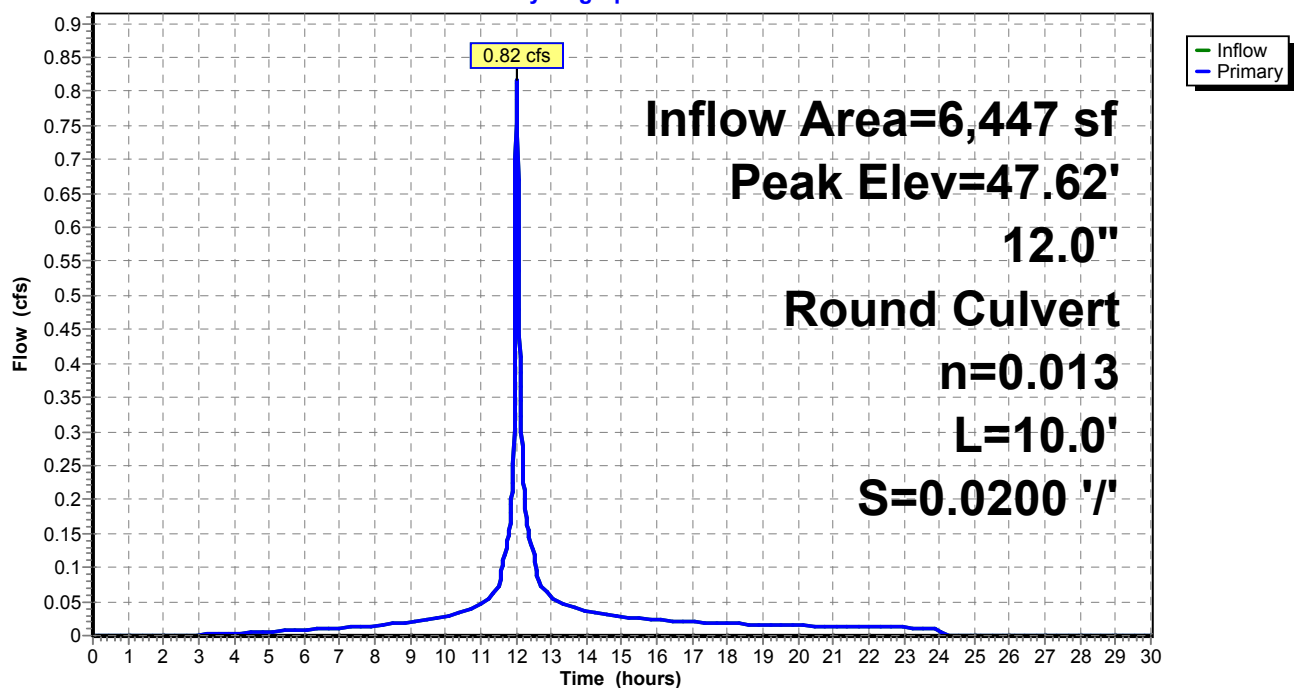
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.03 hrs HW=47.62' (Free Discharge)

↑1=Culvert (Barrel Controls 0.81 cfs @ 3.25 fps)

Pond 67P: CB-9

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

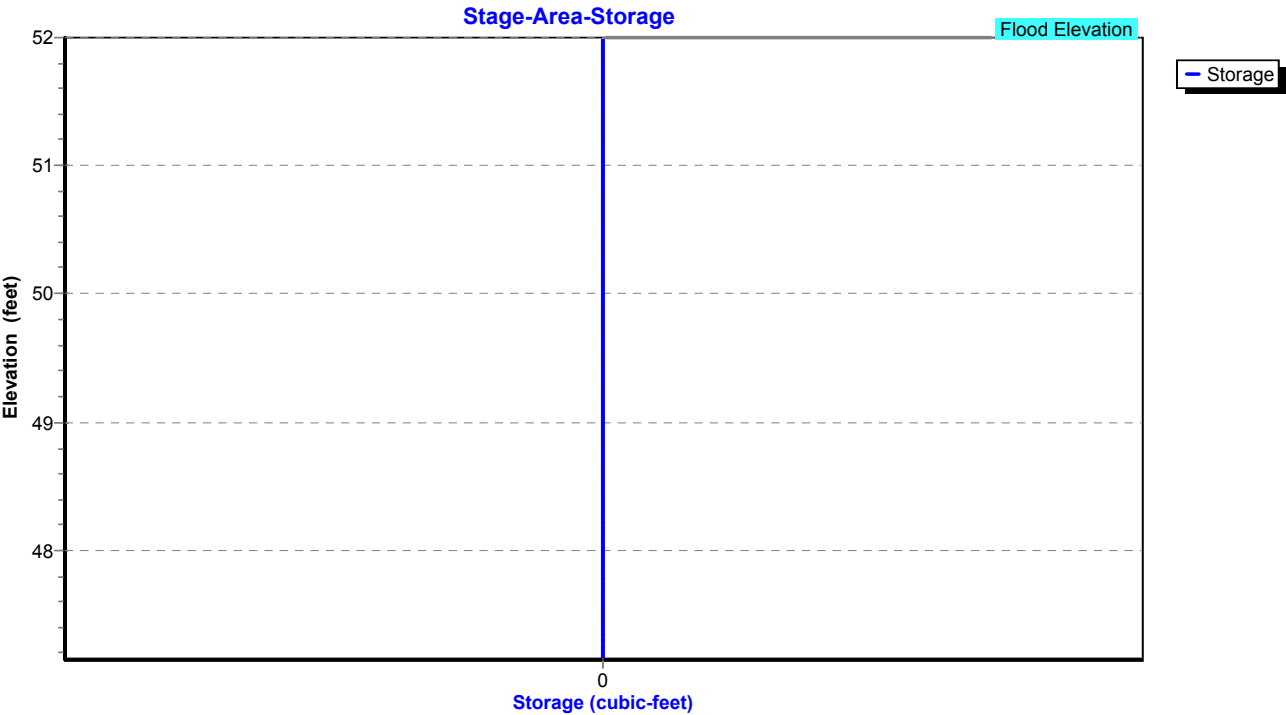
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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 3.85" for 10 year event
Inflow = 7.70 cfs @ 11.99 hrs, Volume= 28,216 cf
Outflow = 7.70 cfs @ 11.99 hrs, Volume= 28,216 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.70 cfs @ 11.99 hrs, Volume= 28,216 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.66' @ 11.99 hrs

Flood Elev= 53.30'

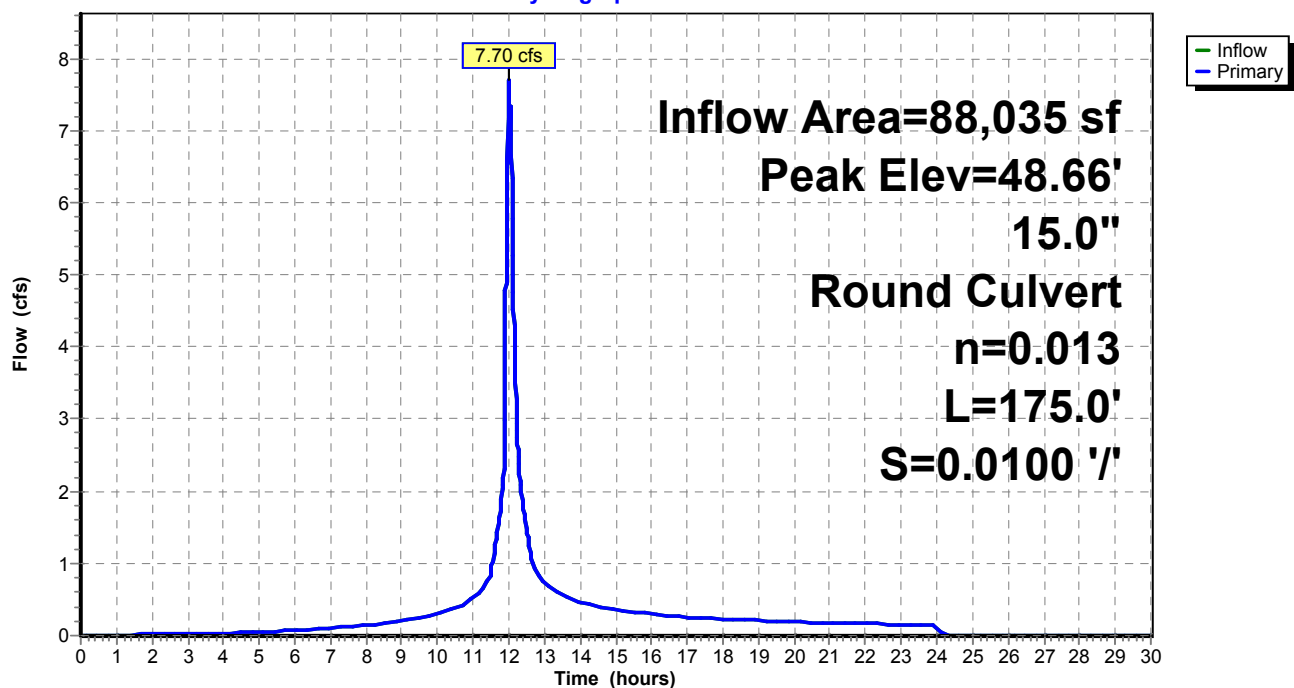
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.70 cfs @ 11.99 hrs HW=48.66' (Free Discharge)

↑1=Culvert (Barrel Controls 7.70 cfs @ 6.27 fps)

Pond 70P: CB-2

Hydrograph



Existing Conditions

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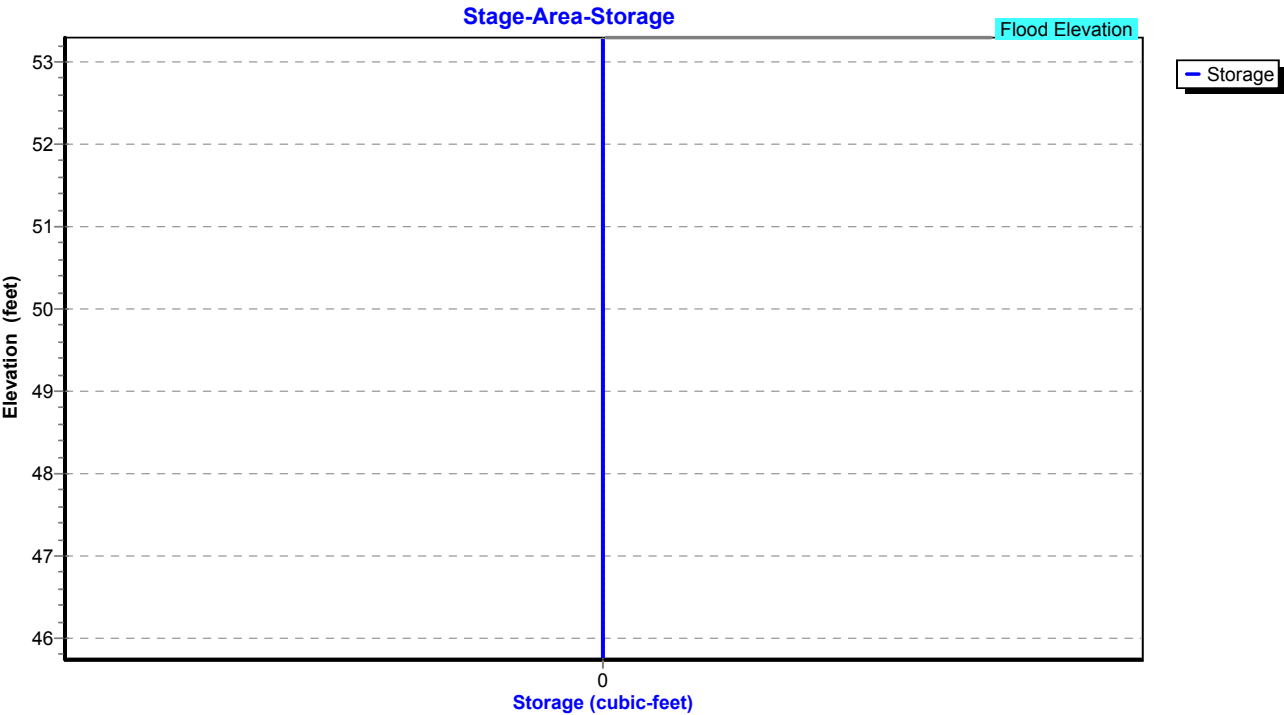
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Pond 70P: CB-2



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Summary for Pond 72P: Manhole

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 3.62" for 10 year event
Inflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Outflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.34' @ 11.99 hrs

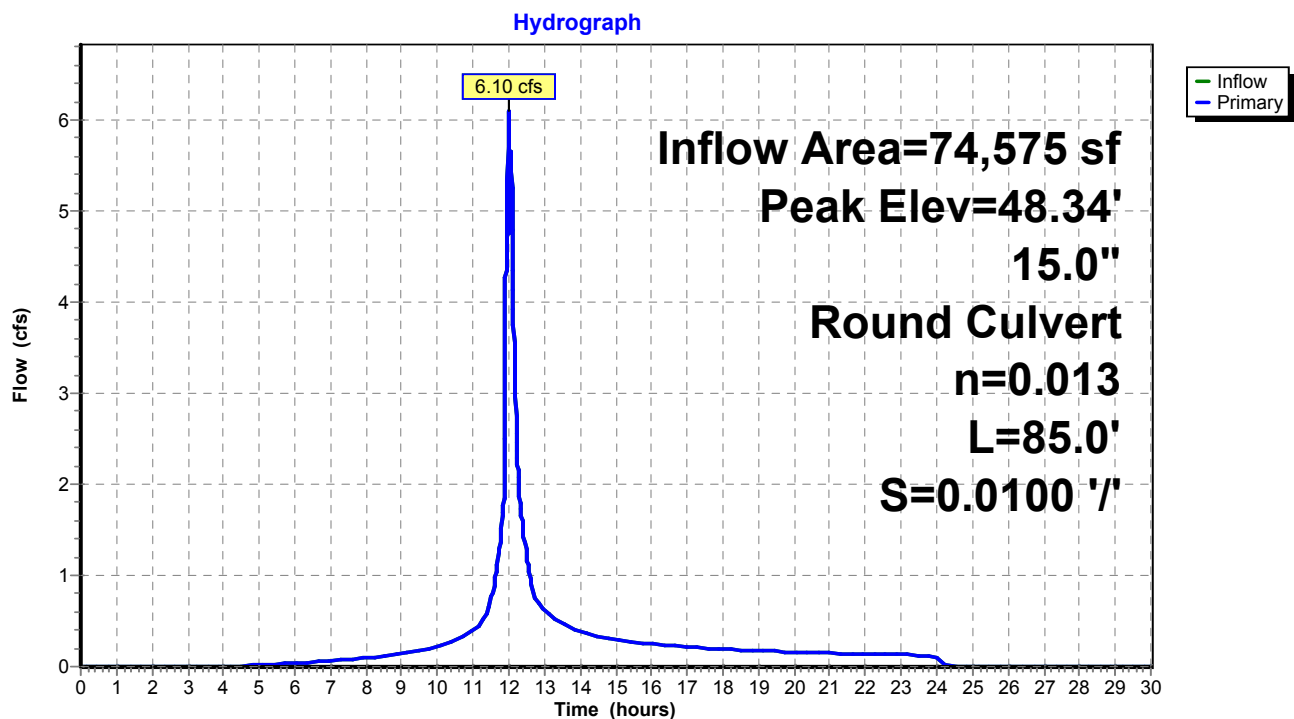
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.04 cfs @ 11.99 hrs HW=48.31' (Free Discharge)

↑1=Culvert (Barrel Controls 6.04 cfs @ 4.92 fps)

Pond 72P: Manhole



Existing Conditions

Prepared by Tighe & Bond

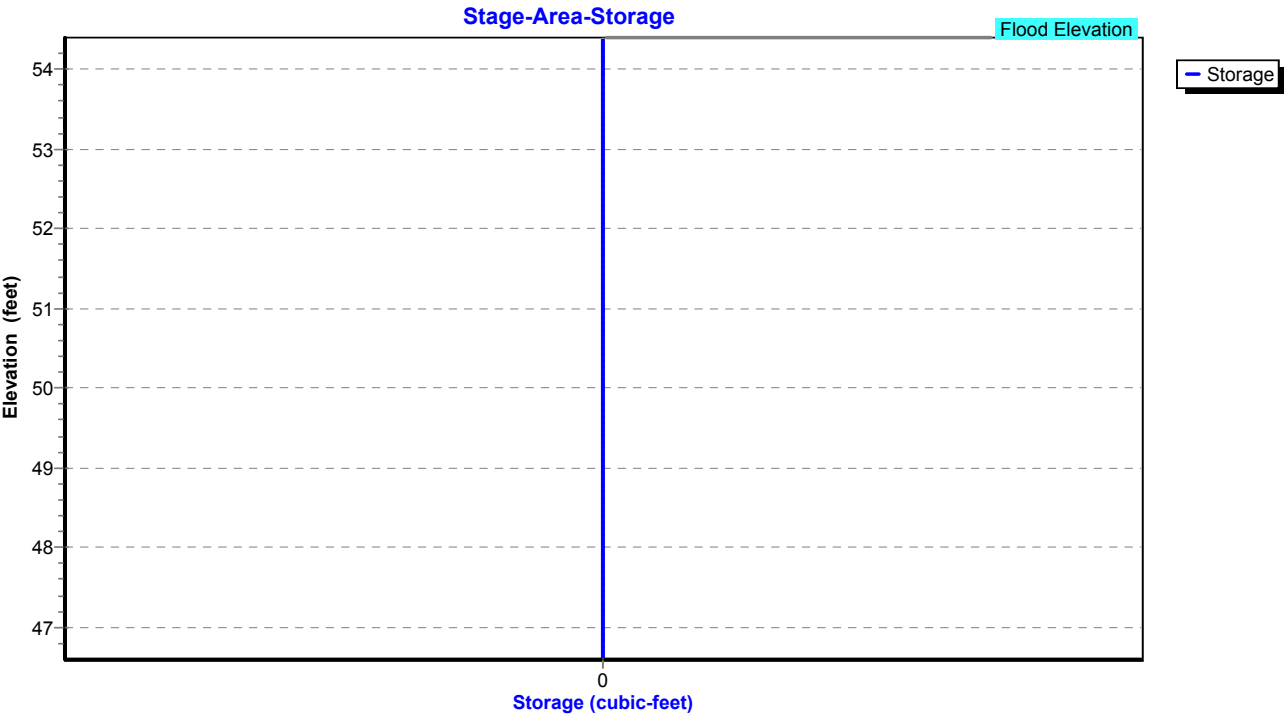
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Pond 72P: Manhole



Existing Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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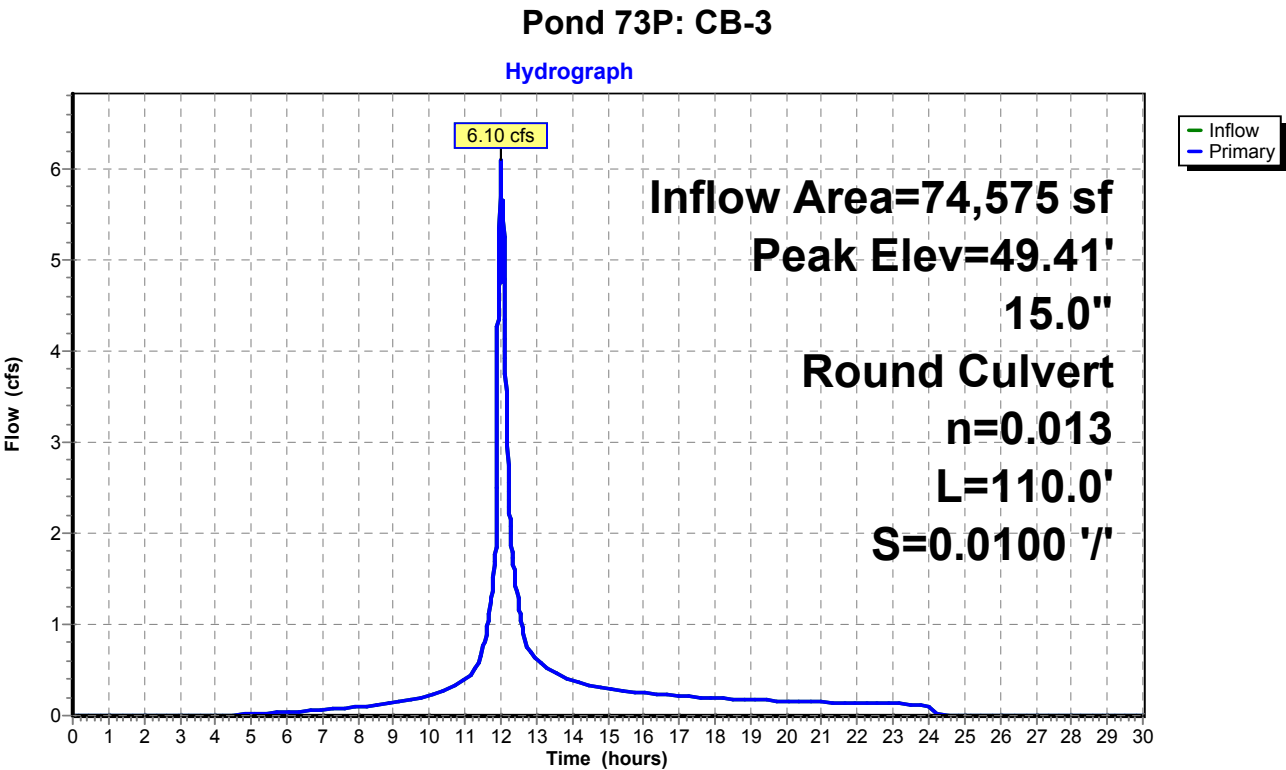
Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 3.62" for 10 year event
Inflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Outflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.41' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.06 cfs @ 11.99 hrs HW=49.39' (Free Discharge)
1=Culvert (Barrel Controls 6.06 cfs @ 4.94 fps)



Existing Conditions

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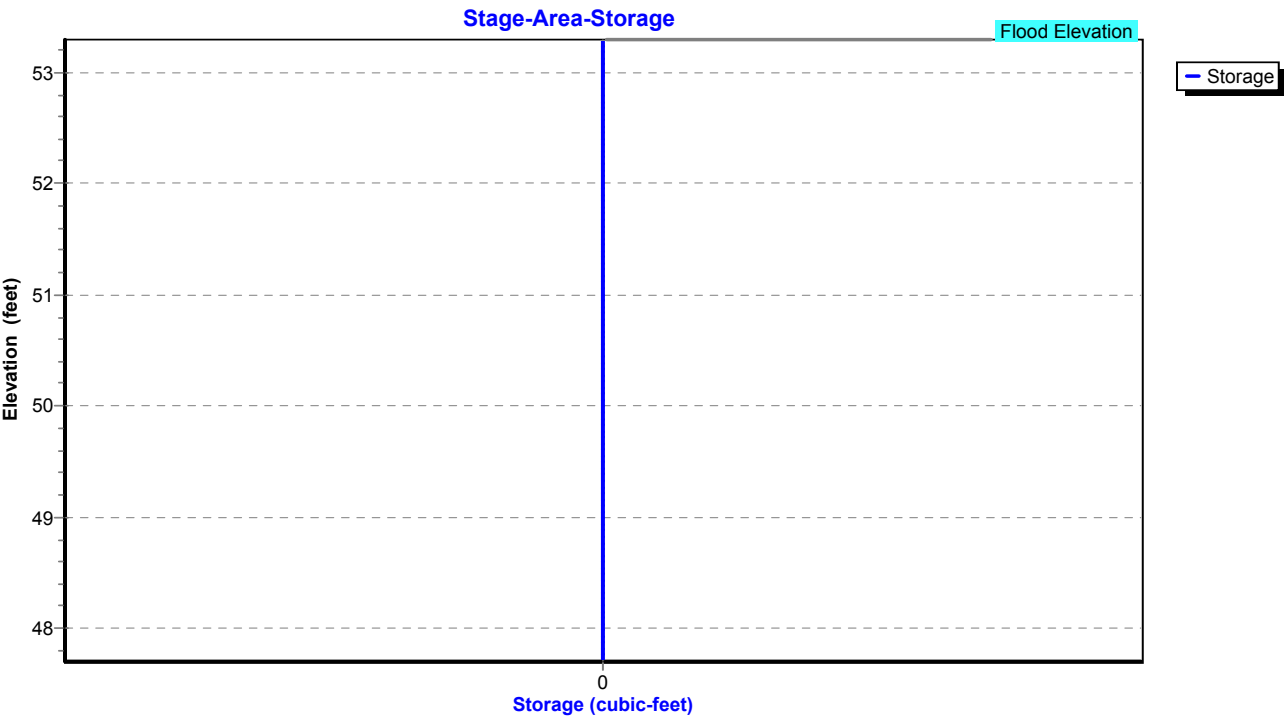
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Pond 73P: CB-3



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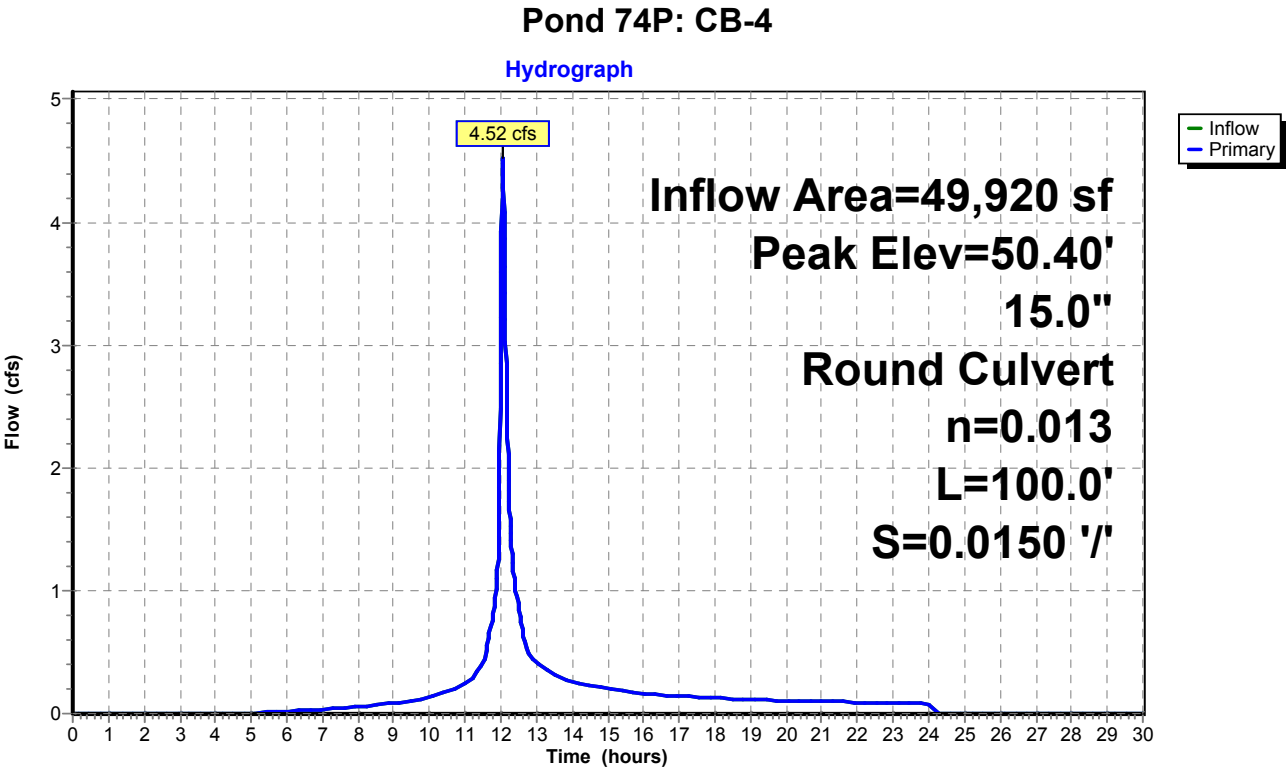
Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 3.50" for 10 year event
Inflow = 4.52 cfs @ 12.06 hrs, Volume= 14,540 cf
Outflow = 4.52 cfs @ 12.06 hrs, Volume= 14,540 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.52 cfs @ 12.06 hrs, Volume= 14,540 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.40' @ 12.06 hrs
Flood Elev= 53.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.51 cfs @ 12.06 hrs HW=50.40' (Free Discharge)
1=Culvert (Inlet Controls 4.51 cfs @ 3.73 fps)



Existing Conditions

Prepared by Tighe & Bond

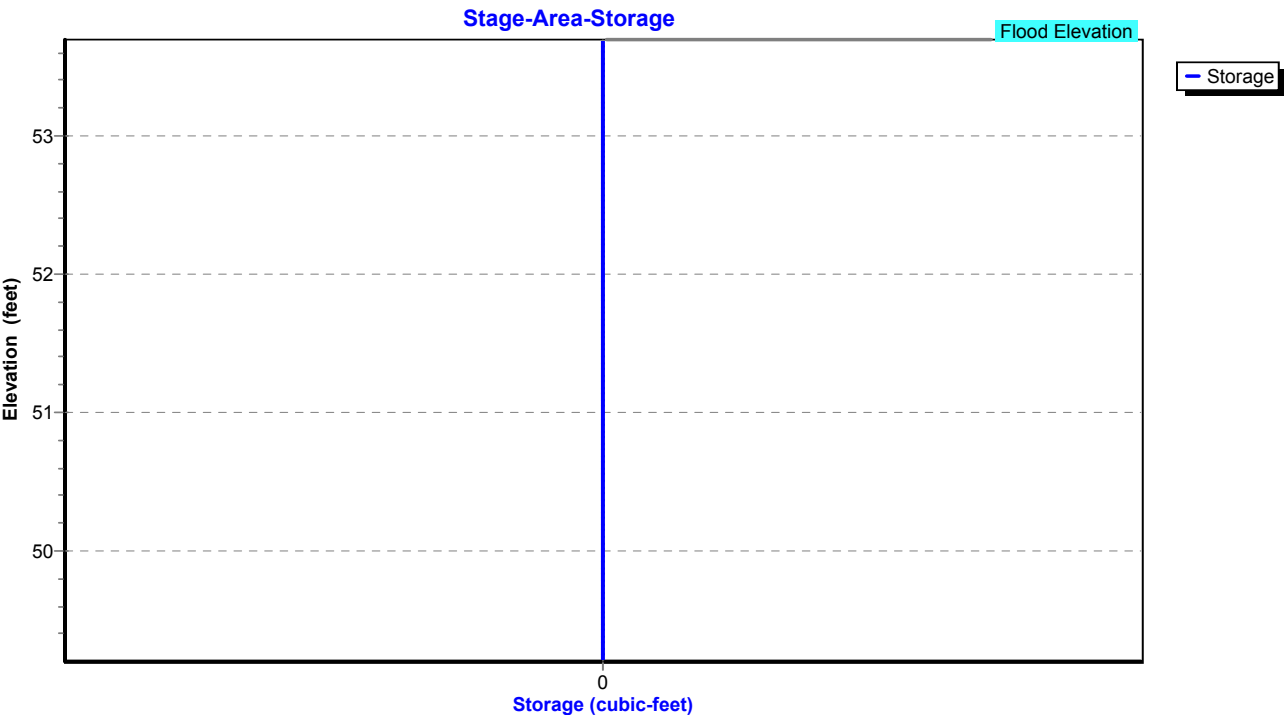
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Pond 74P: CB-4



Existing Conditions

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Summary for Pond 77P: Manhole

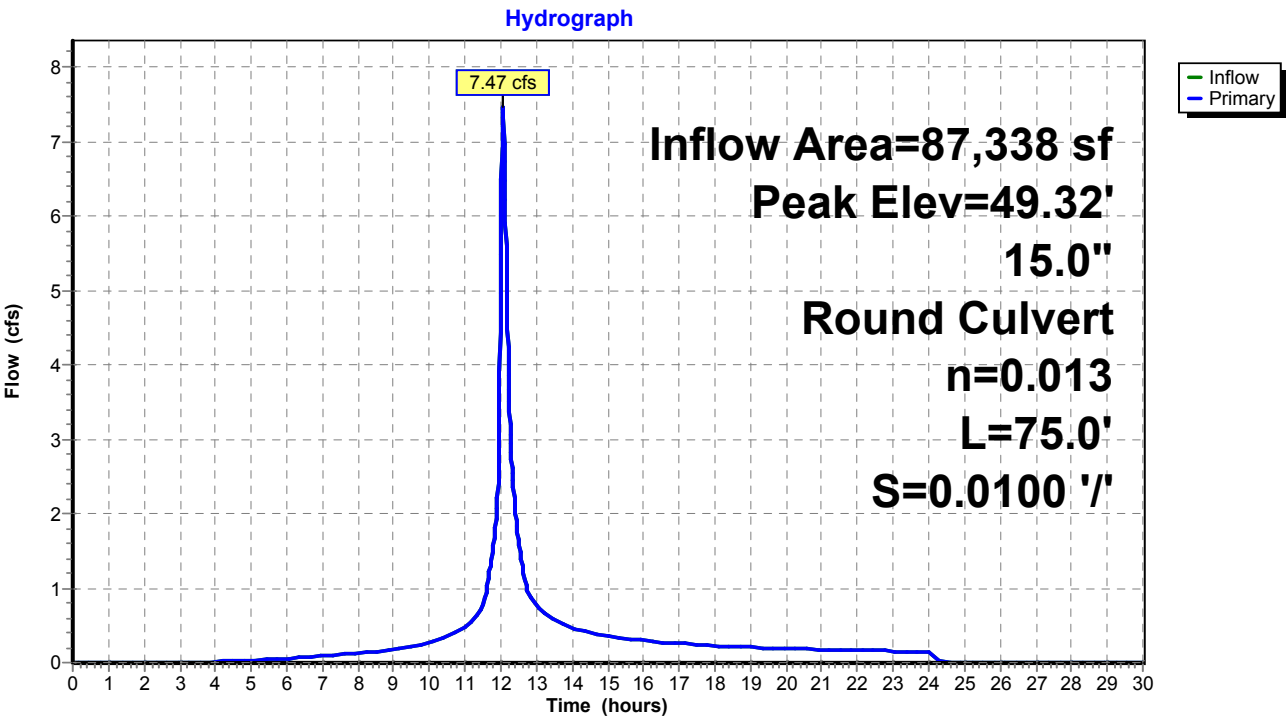
Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 3.75" for 10 year event
Inflow = 7.47 cfs @ 12.06 hrs, Volume= 27,279 cf
Outflow = 7.47 cfs @ 12.06 hrs, Volume= 27,279 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.47 cfs @ 12.06 hrs, Volume= 27,279 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.32' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.46 cfs @ 12.06 hrs HW=49.31' (Free Discharge)
1=Culvert (Barrel Controls 7.46 cfs @ 6.08 fps)

Pond 77P: Manhole



Existing Conditions

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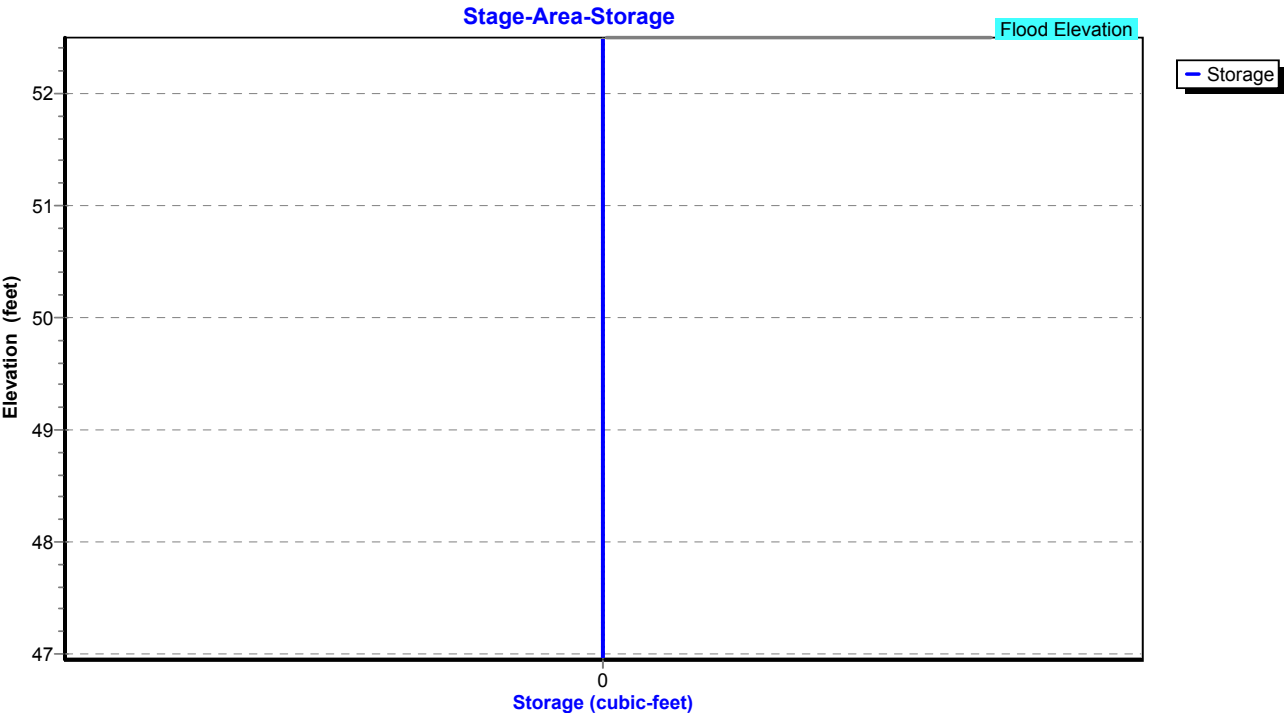
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Pond 77P: Manhole



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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 5.09" for 10 year event
Inflow = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf
Outflow = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.57' @ 12.03 hrs

Flood Elev= 52.50'

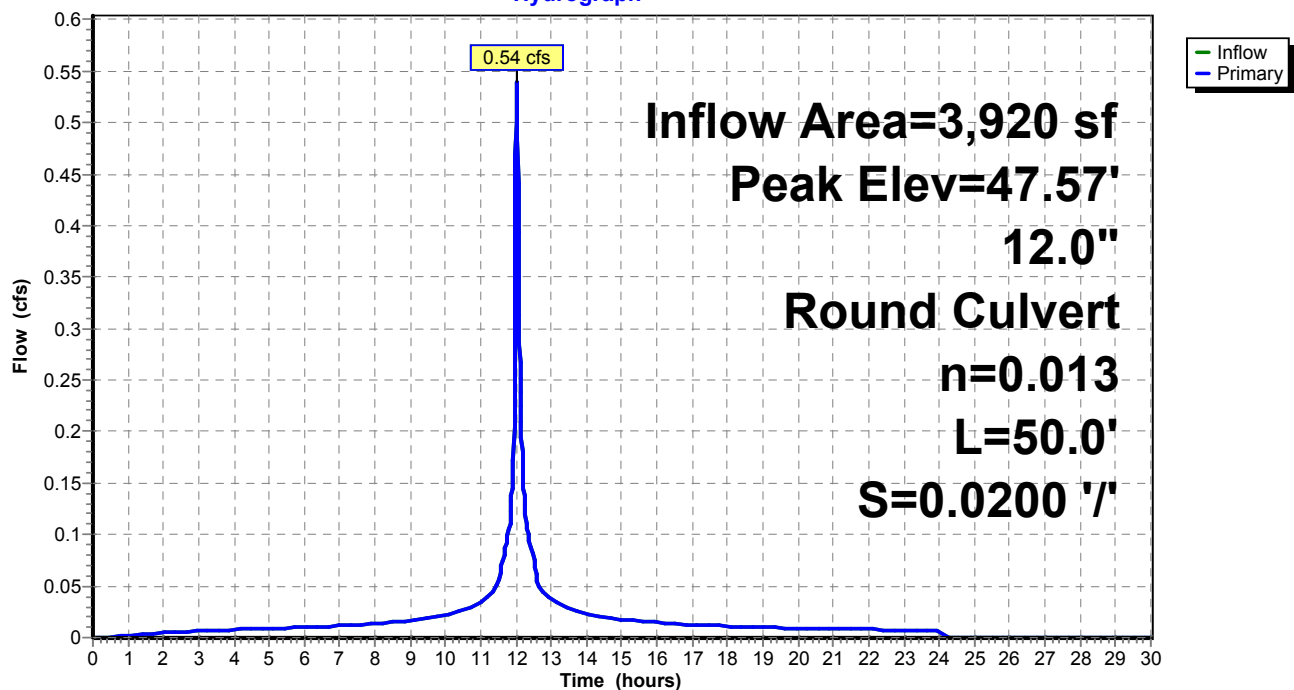
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.54 cfs @ 12.03 hrs HW=47.57' (Free Discharge)

↑1=Culvert (Inlet Controls 0.54 cfs @ 2.06 fps)

Pond 79P: CB-8

Hydrograph



Existing Conditions

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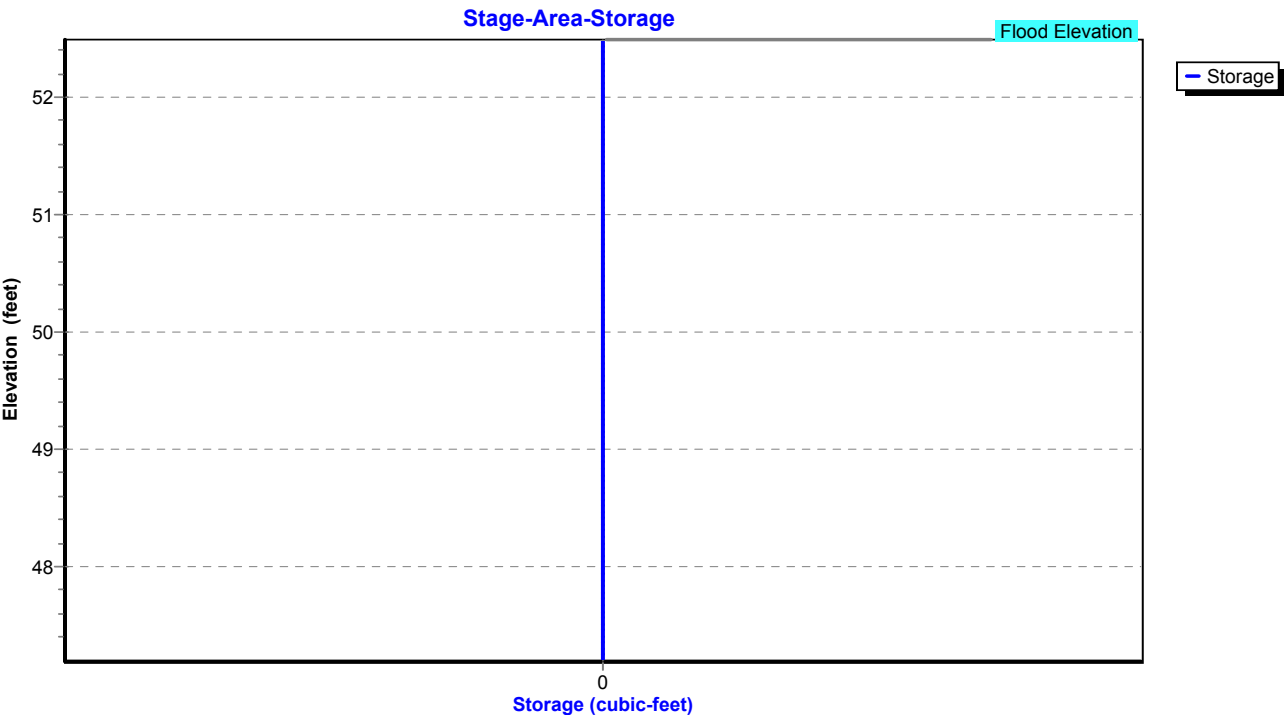
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Pond 79P: CB-8



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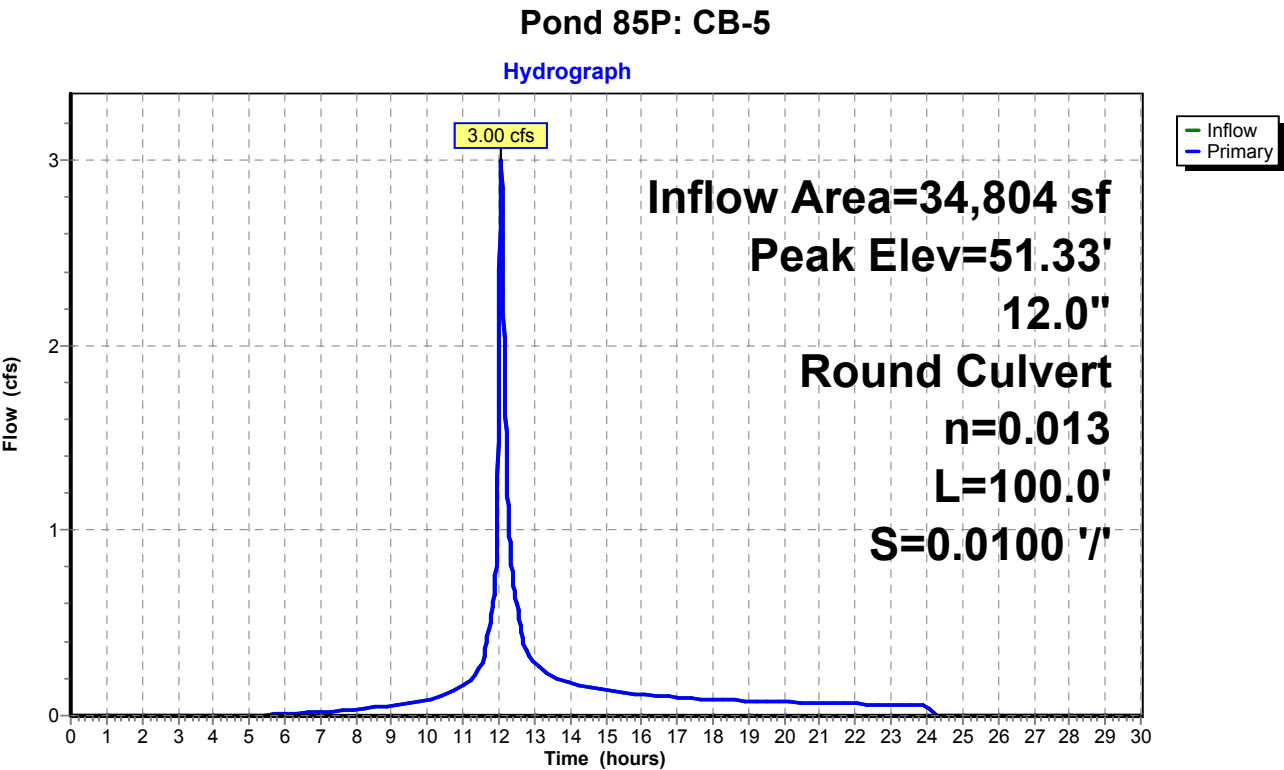
Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 3.37" for 10 year event
Inflow = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf
Outflow = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.33' @ 12.07 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.99 cfs @ 12.07 hrs HW=51.33' (Free Discharge)
1=Culvert (Inlet Controls 2.99 cfs @ 3.81 fps)



Existing Conditions

Prepared by Tighe & Bond

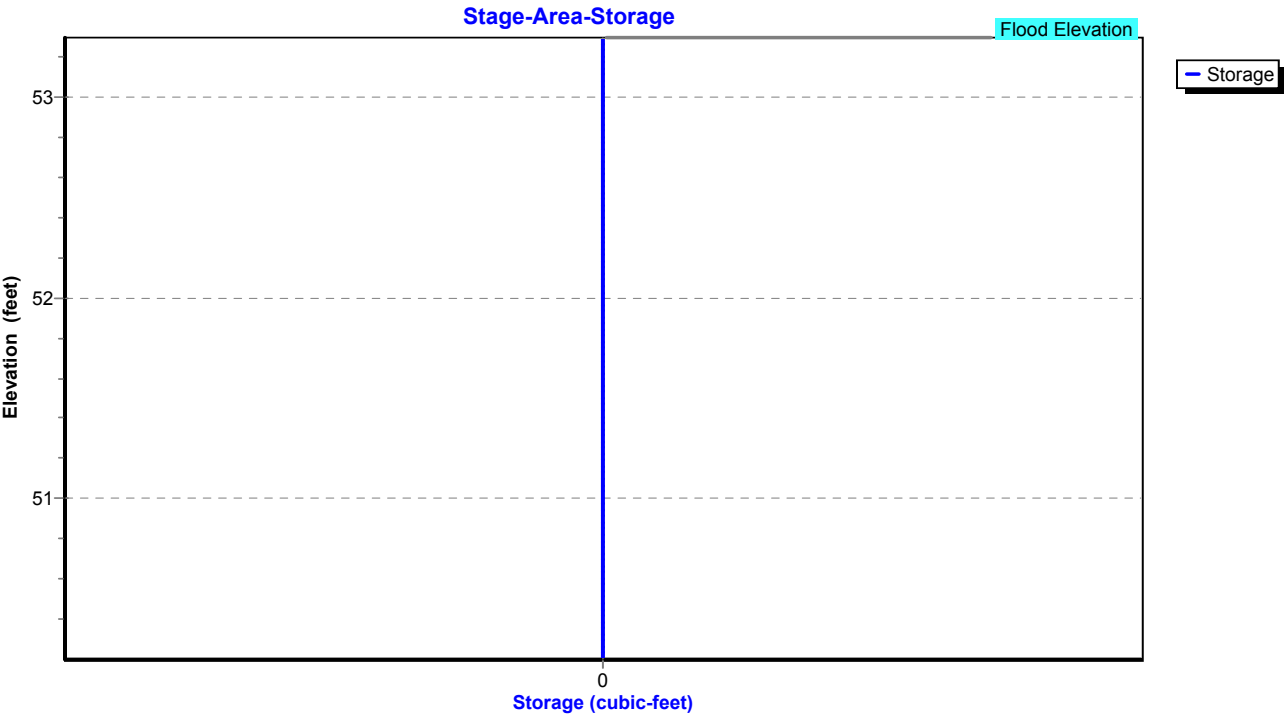
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Pond 85P: CB-5



Existing Conditions

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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 5.09" for 10 year event
Inflow = 2.33 cfs @ 12.03 hrs, Volume= 7,170 cf
Outflow = 0.64 cfs @ 12.20 hrs, Volume= 7,170 cf, Atten= 73%, Lag= 10.8 min
Primary = 0.64 cfs @ 12.20 hrs, Volume= 7,170 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 53.79' @ 12.20 hrs Surf.Area= 749 sf Storage= 1,222 cf

Plug-Flow detention time= 18.7 min calculated for 7,170 cf (100% of inflow)

Center-of-Mass det. time= 18.6 min (765.9 - 747.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.64 cfs @ 12.20 hrs HW=53.79' (Free Discharge)

- 1=Culvert (Passes 0.64 cfs of 5.28 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.64 cfs @ 7.28 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Existing Conditions

Prepared by Tighe & Bond

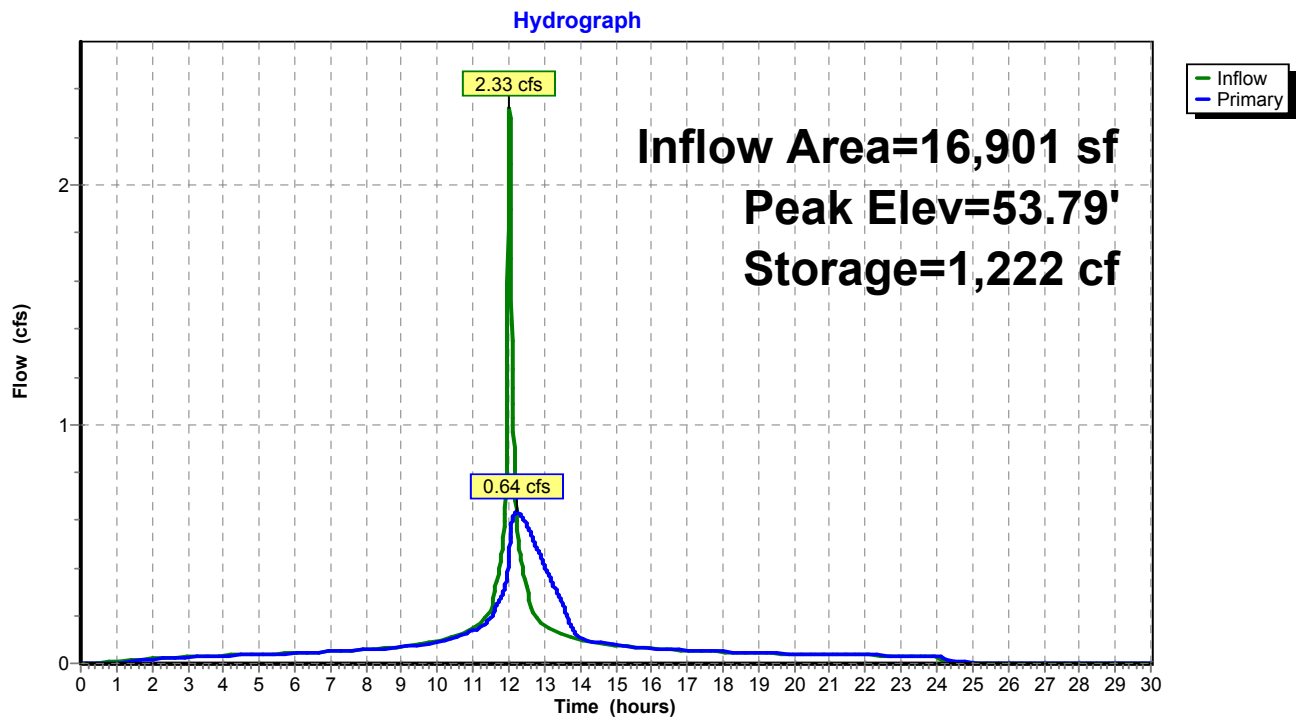
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NORWALK 24-hr S1 10 year Rainfall=5.33"

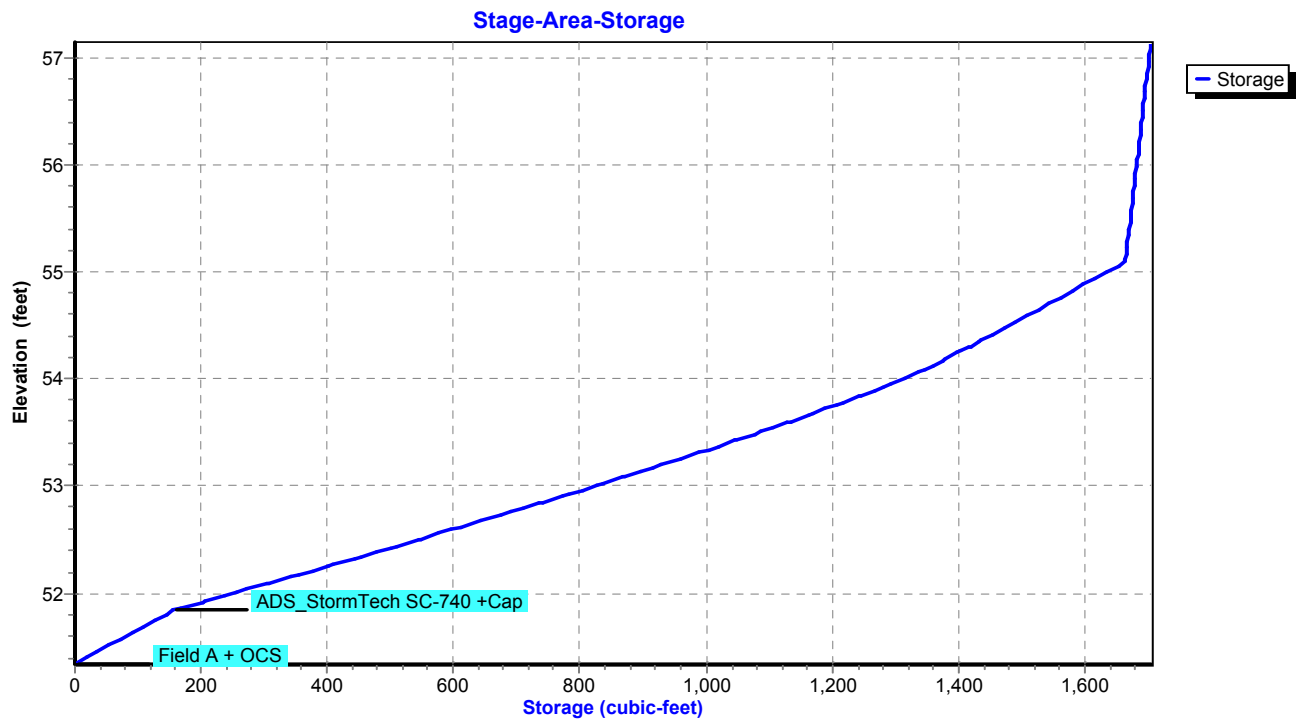
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"
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Summary for Subcatchment 4S: Area 4

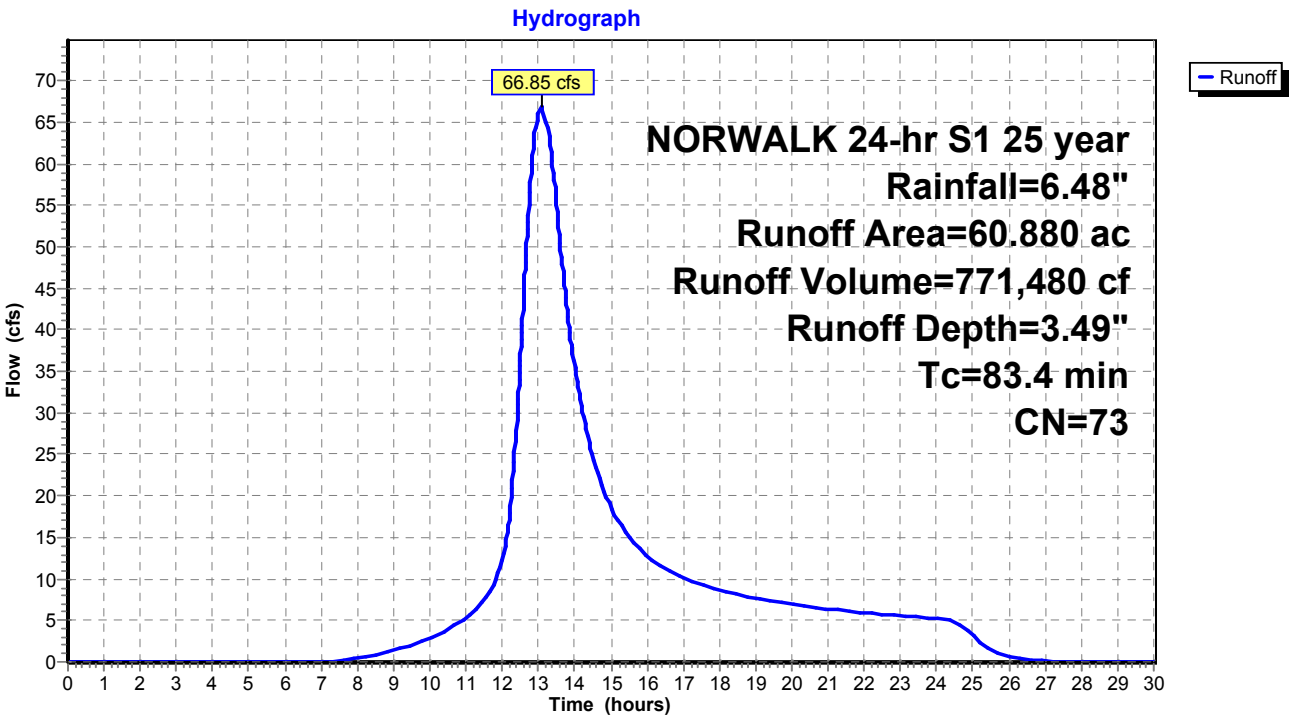
Runoff = 66.85 cfs @ 13.07 hrs, Volume= 771,480 cf, Depth= 3.49"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 5S: Area 5

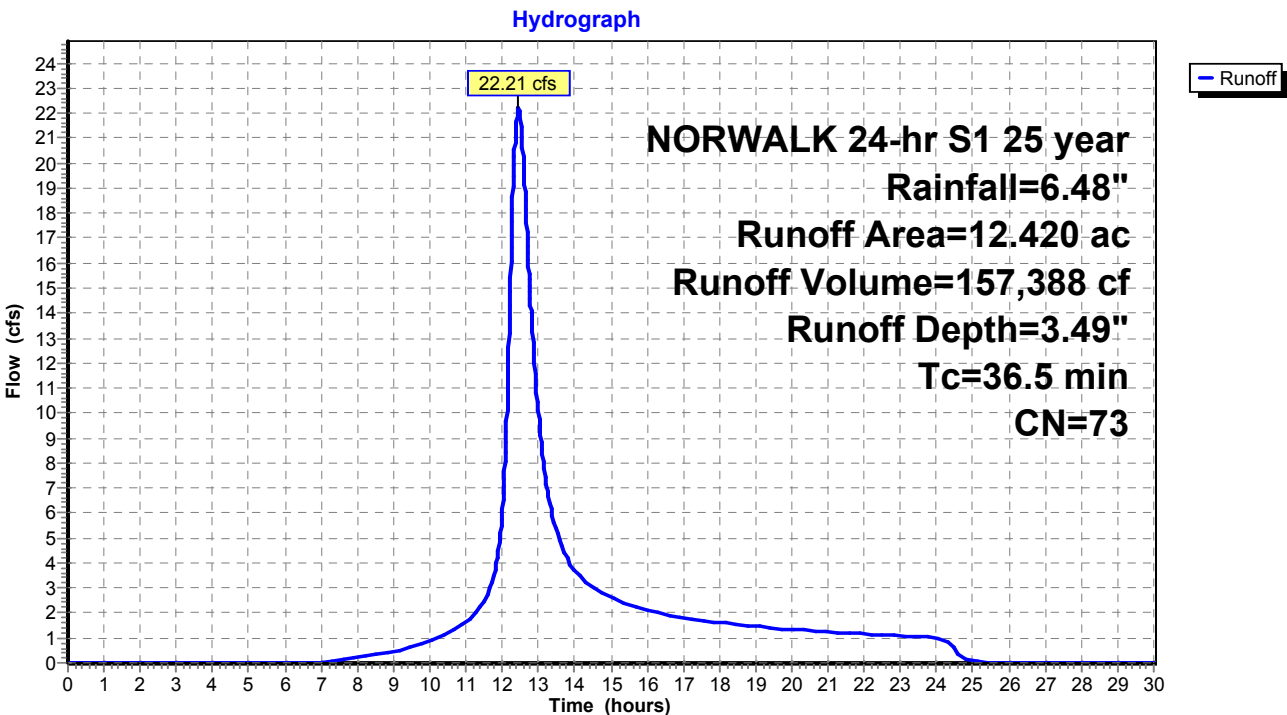
Runoff = 22.21 cfs @ 12.45 hrs, Volume= 157,388 cf, Depth= 3.49"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 6S: Area 6

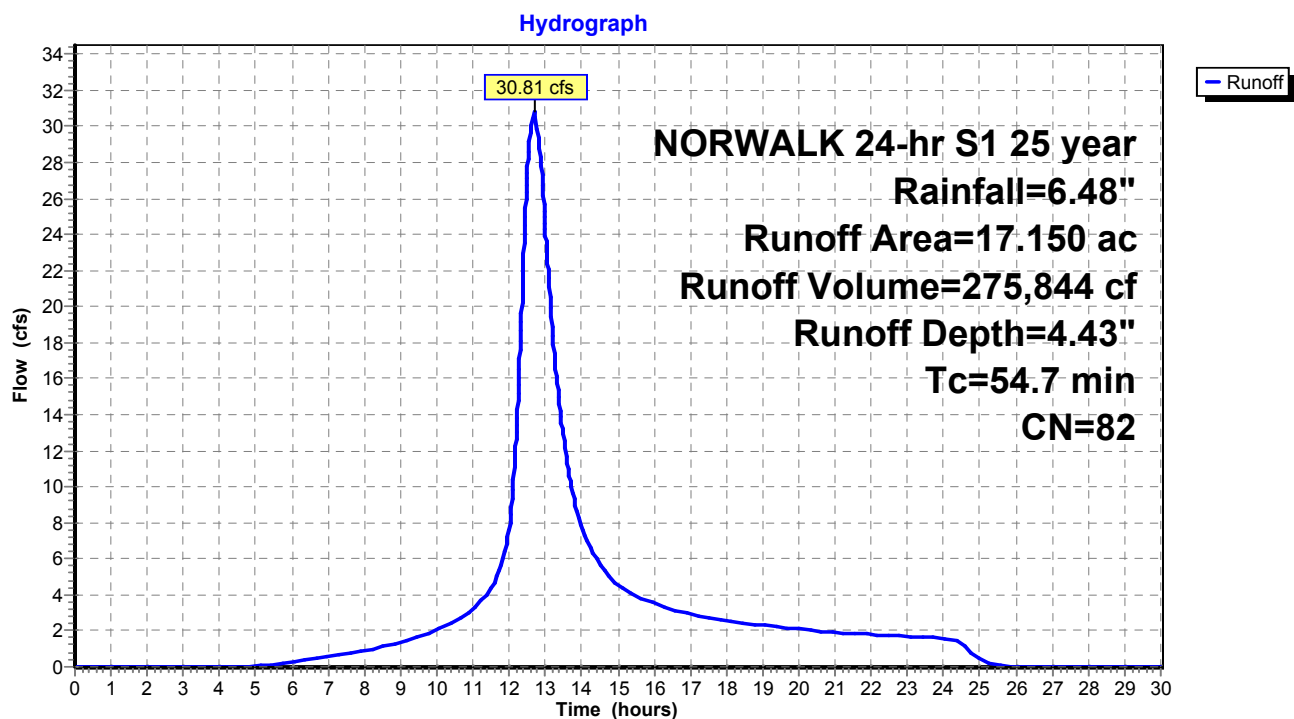
Runoff = 30.81 cfs @ 12.70 hrs, Volume= 275,844 cf, Depth= 4.43"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 7S: Area 7

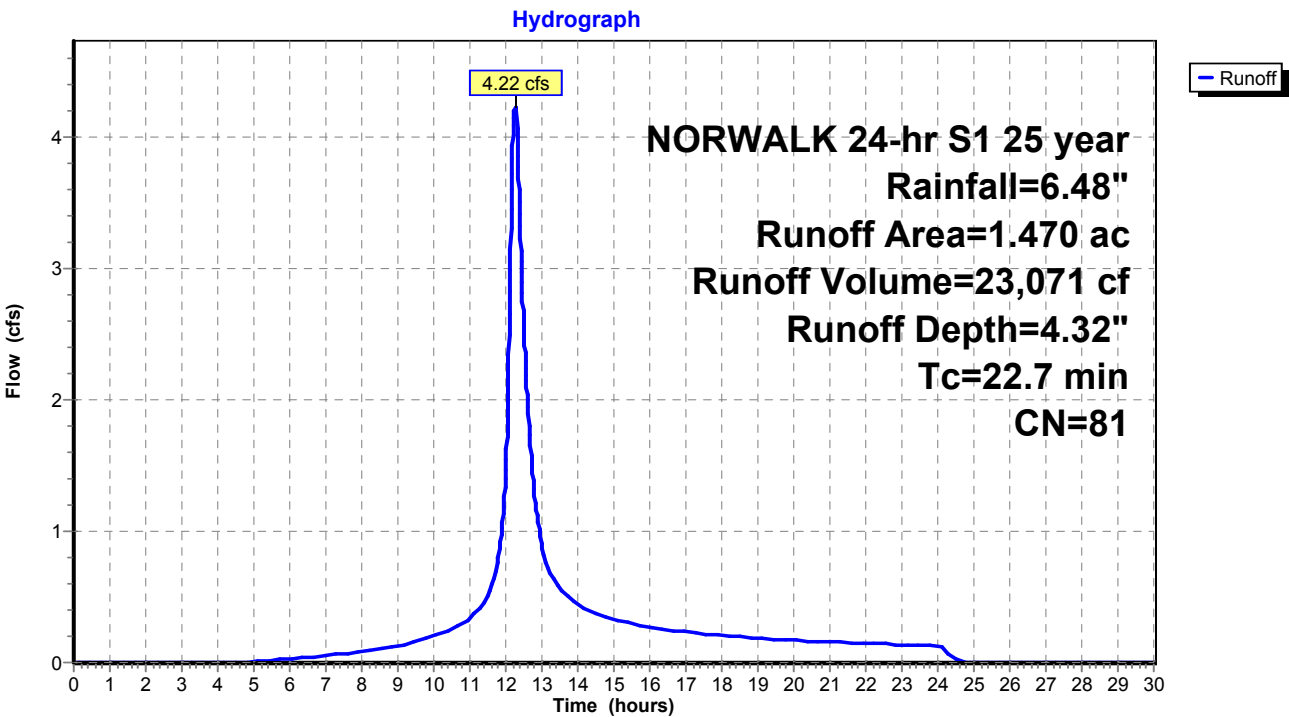
Runoff = 4.22 cfs @ 12.26 hrs, Volume= 23,071 cf, Depth= 4.32"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 8S: Area 8

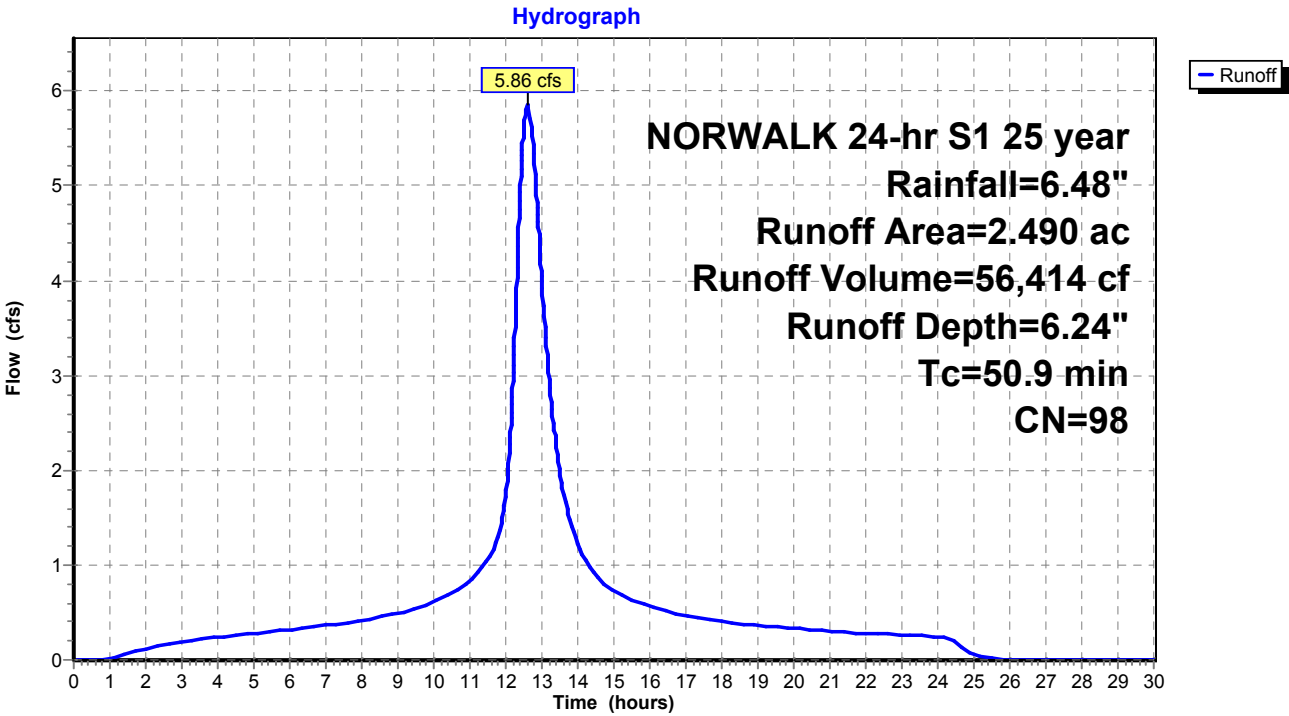
Runoff = 5.86 cfs @ 12.61 hrs, Volume= 56,414 cf, Depth= 6.24"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 9S: Area 9

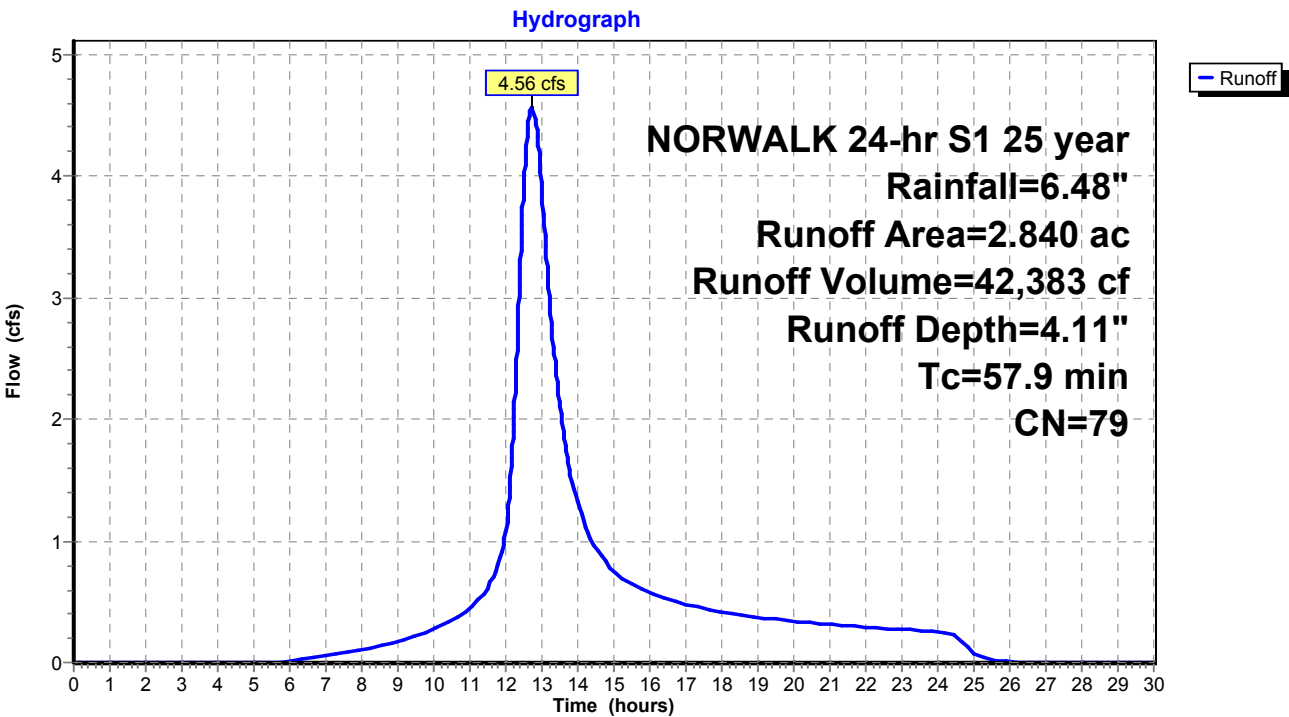
Runoff = 4.56 cfs @ 12.73 hrs, Volume= 42,383 cf, Depth= 4.11"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10AS: Area 10A

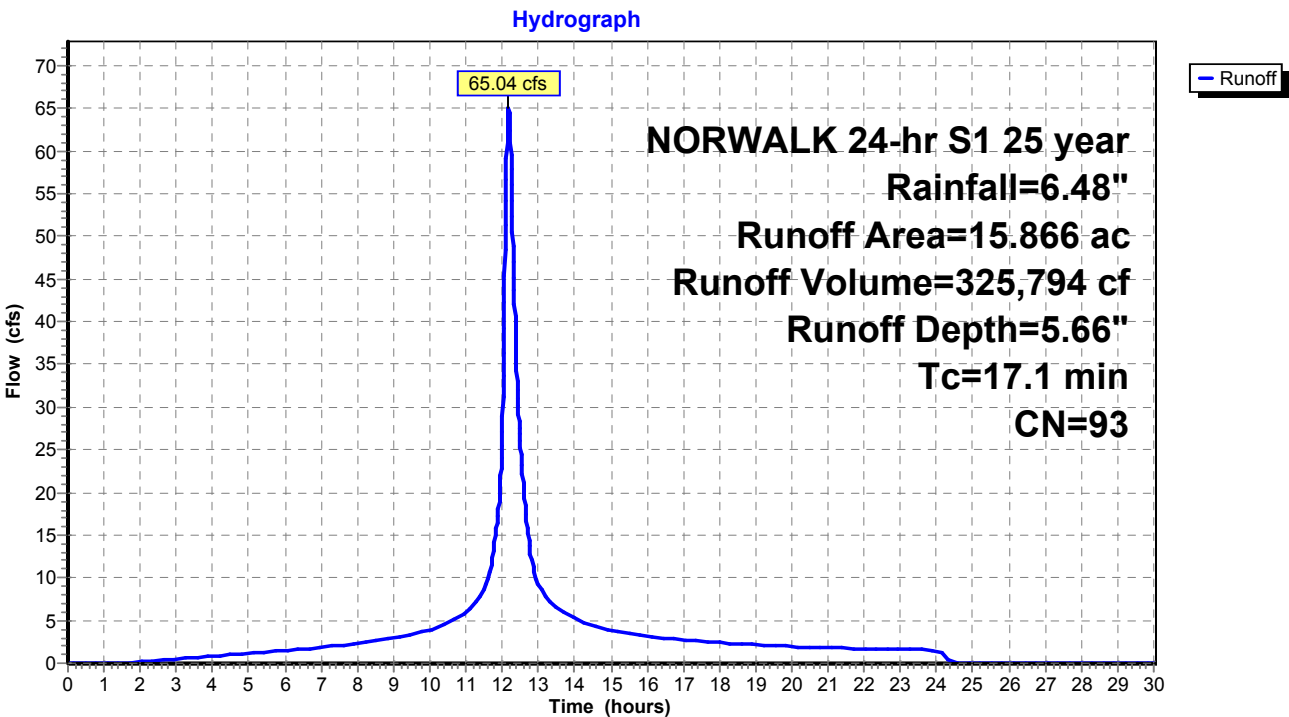
Runoff = 65.04 cfs @ 12.18 hrs, Volume= 325,794 cf, Depth= 5.66"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10BS: Area 10B

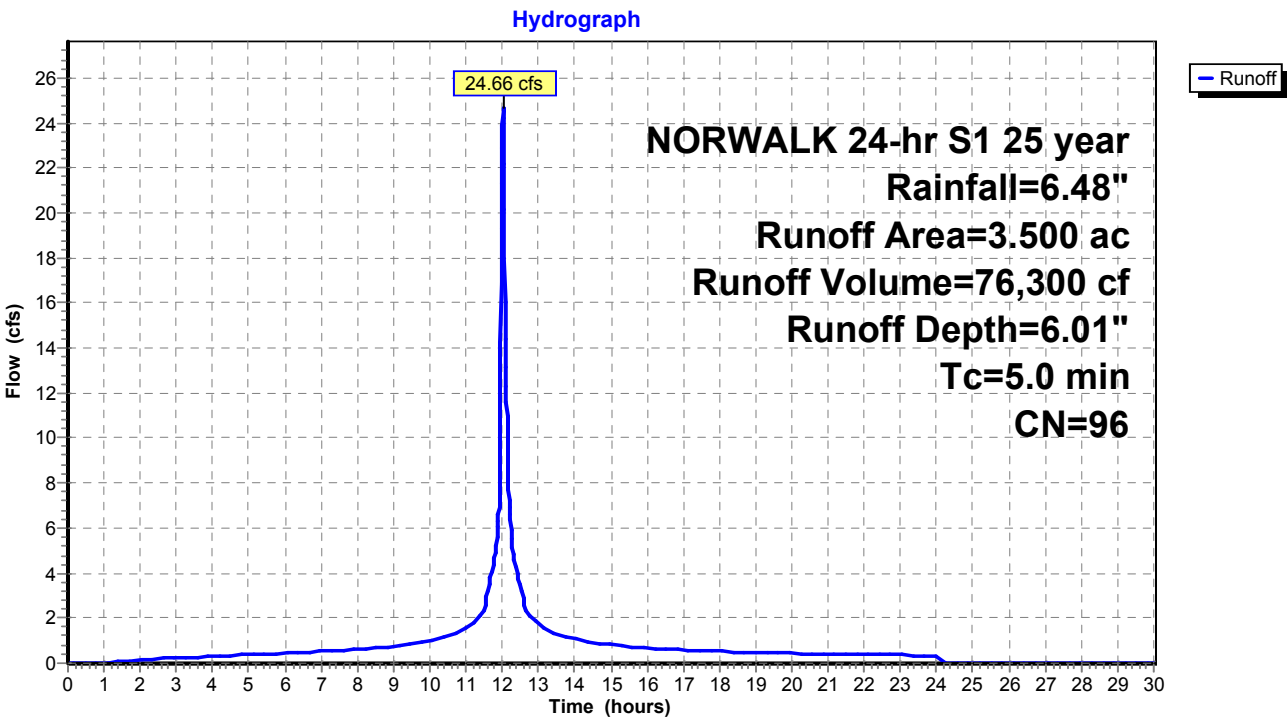
Runoff = 24.66 cfs @ 12.03 hrs, Volume= 76,300 cf, Depth= 6.01"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10CS: Area 10C

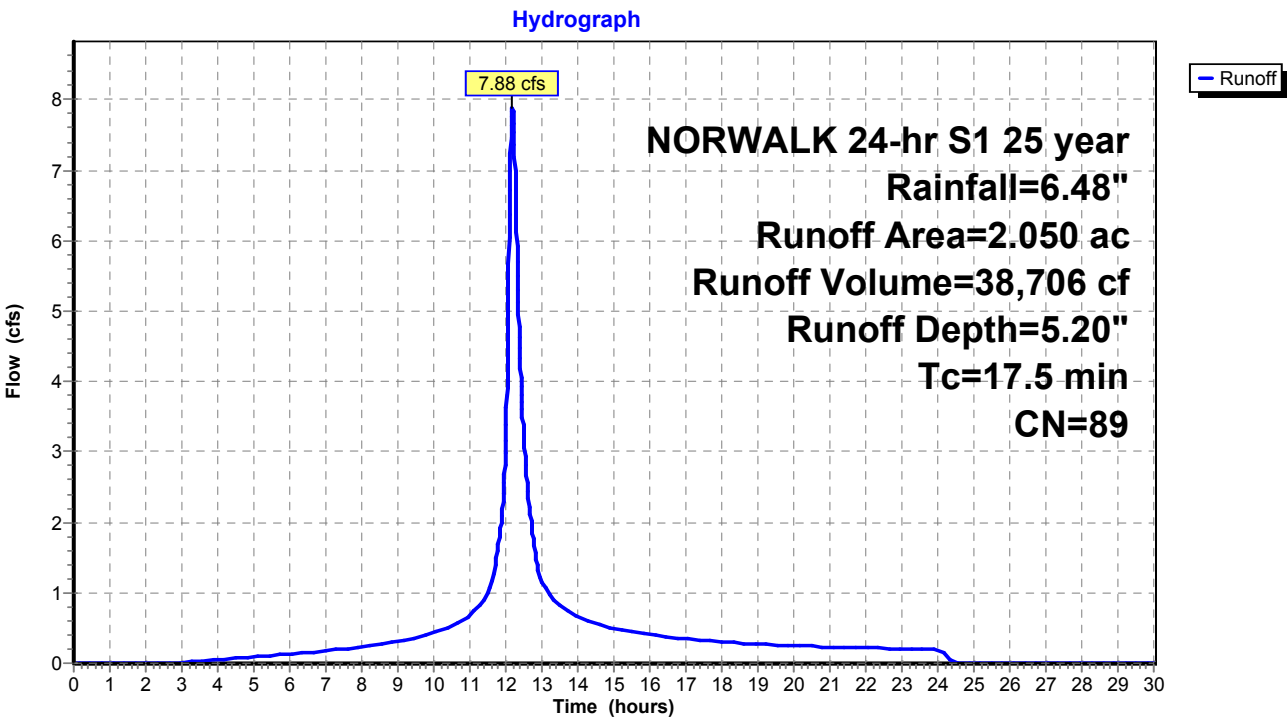
Runoff = 7.88 cfs @ 12.19 hrs, Volume= 38,706 cf, Depth= 5.20"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10DS: Area 10D

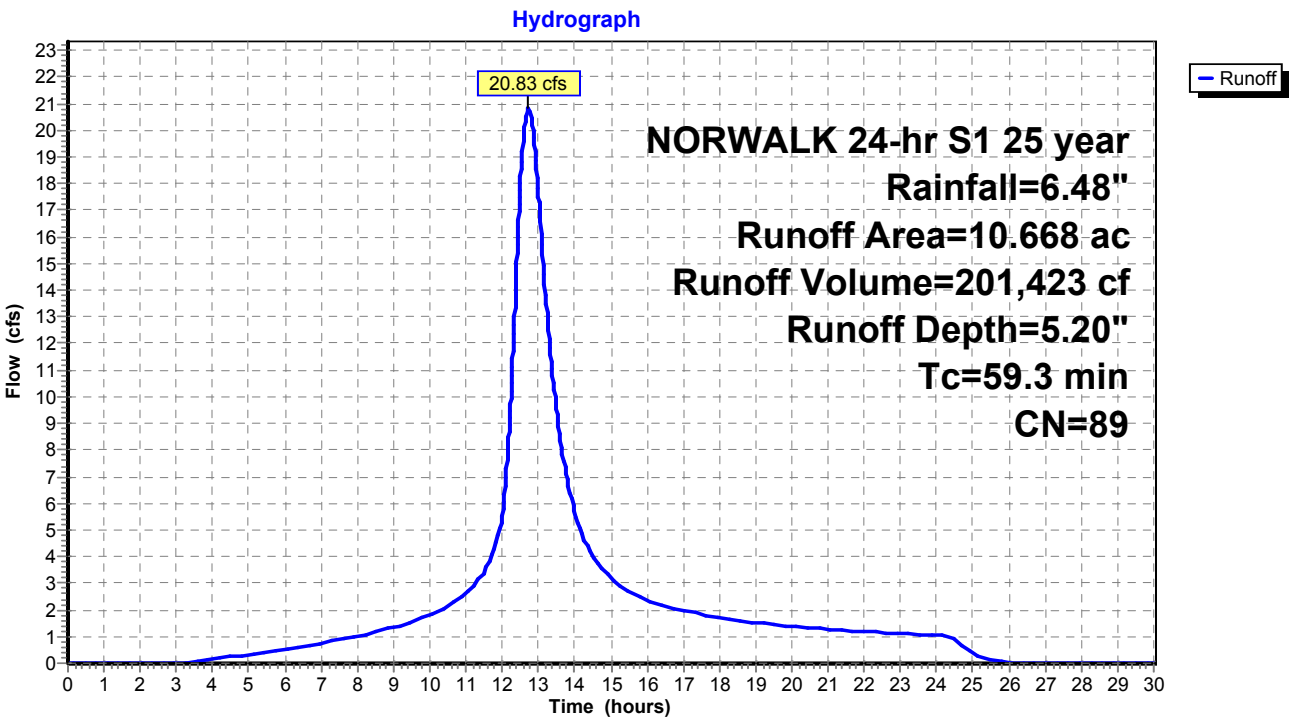
Runoff = 20.83 cfs @ 12.72 hrs, Volume= 201,423 cf, Depth= 5.20"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10ES: Area 10E

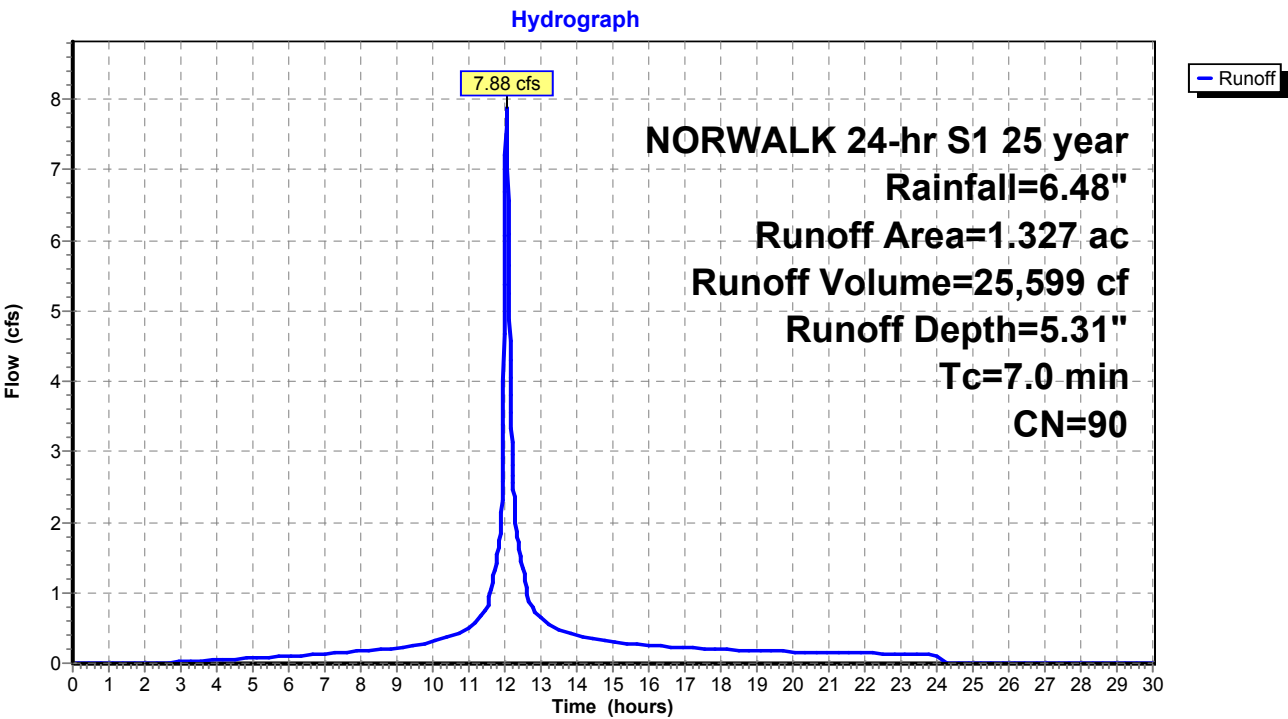
Runoff = 7.88 cfs @ 12.05 hrs, Volume= 25,599 cf, Depth= 5.31"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.798	98	Paved parking, HSG C
0.529	79	50-75% Grass cover, Fair, HSG C
1.327	90	Weighted Average
0.529		39.86% Pervious Area
0.798		60.14% Impervious Area

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

Subcatchment 10ES: Area 10E



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10FS: Area 10F

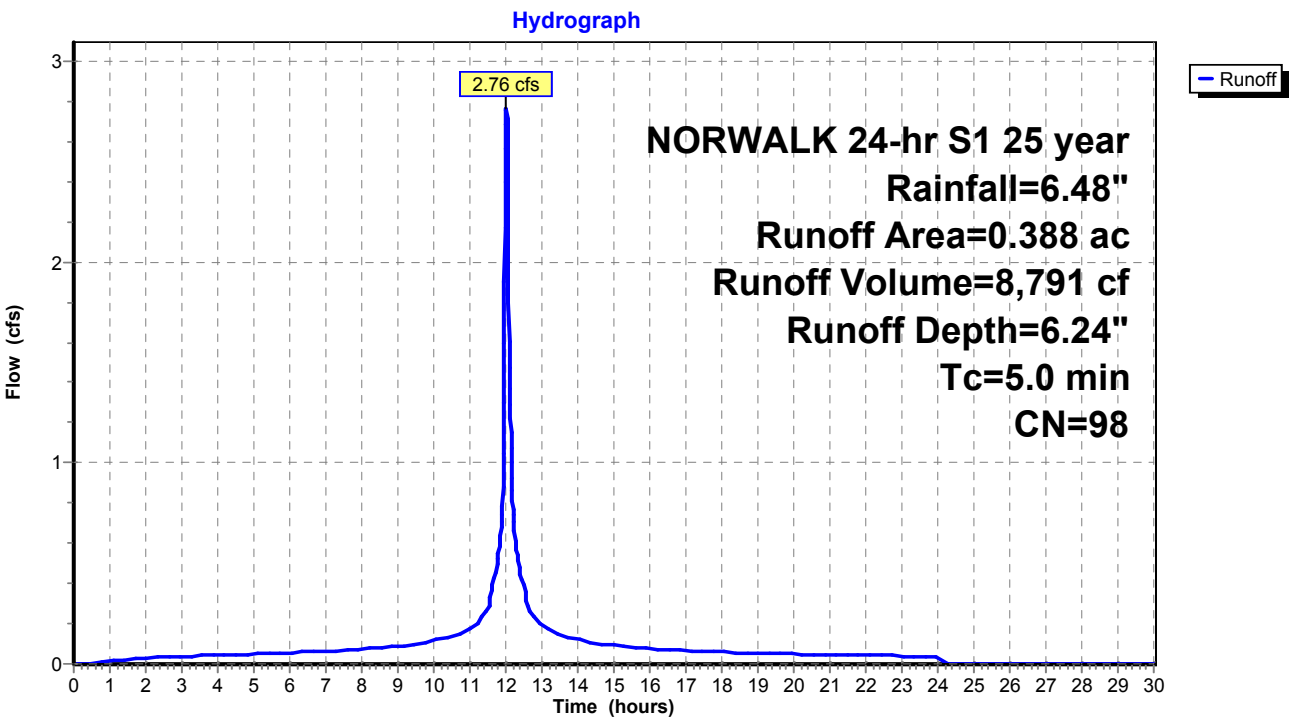
Runoff = 2.76 cfs @ 12.03 hrs, Volume= 8,791 cf, Depth= 6.24"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 11S: Area 11

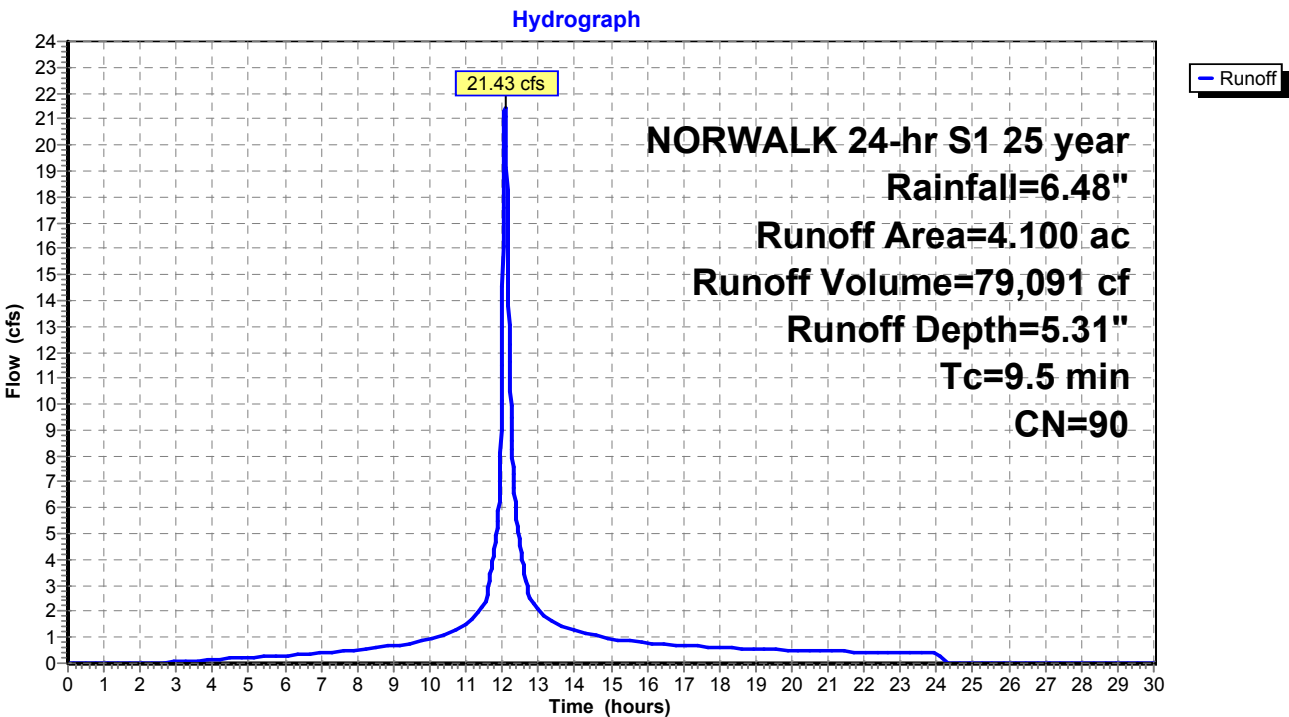
Runoff = 21.43 cfs @ 12.08 hrs, Volume= 79,091 cf, Depth= 5.31"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 12S: Area 12

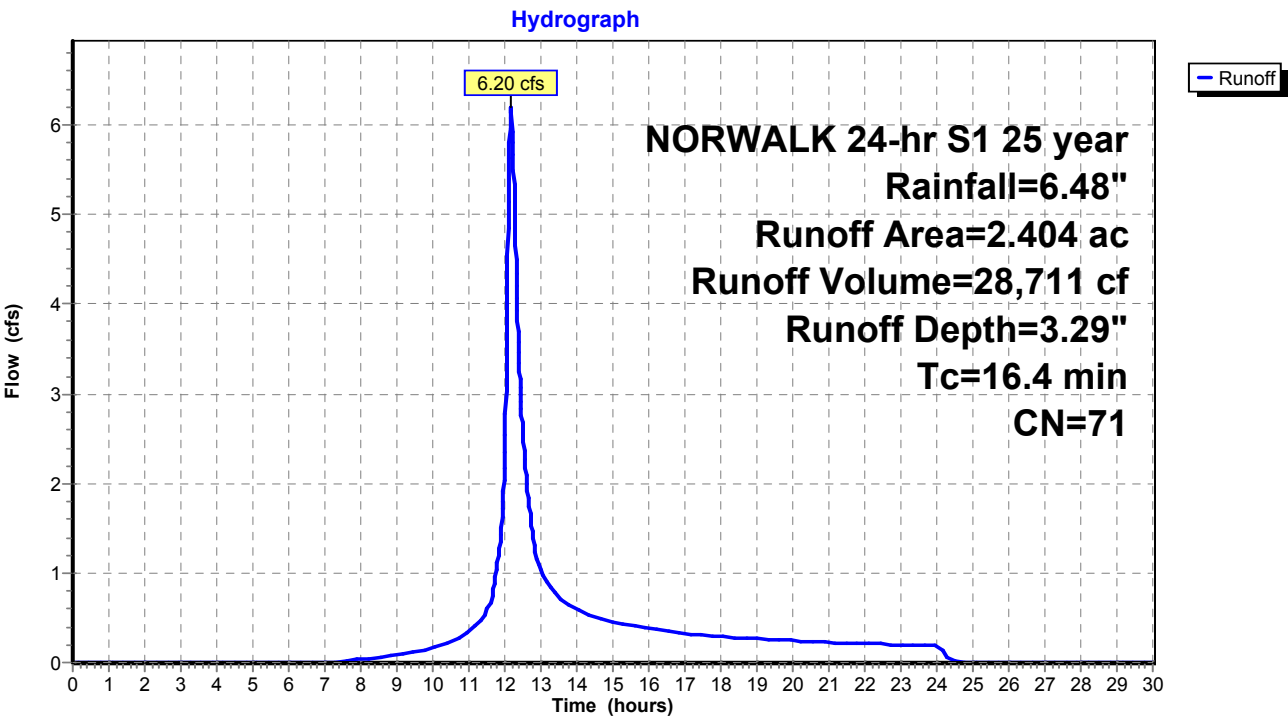
Runoff = 6.20 cfs @ 12.18 hrs, Volume= 28,711 cf, Depth= 3.29"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 13S: Area 13

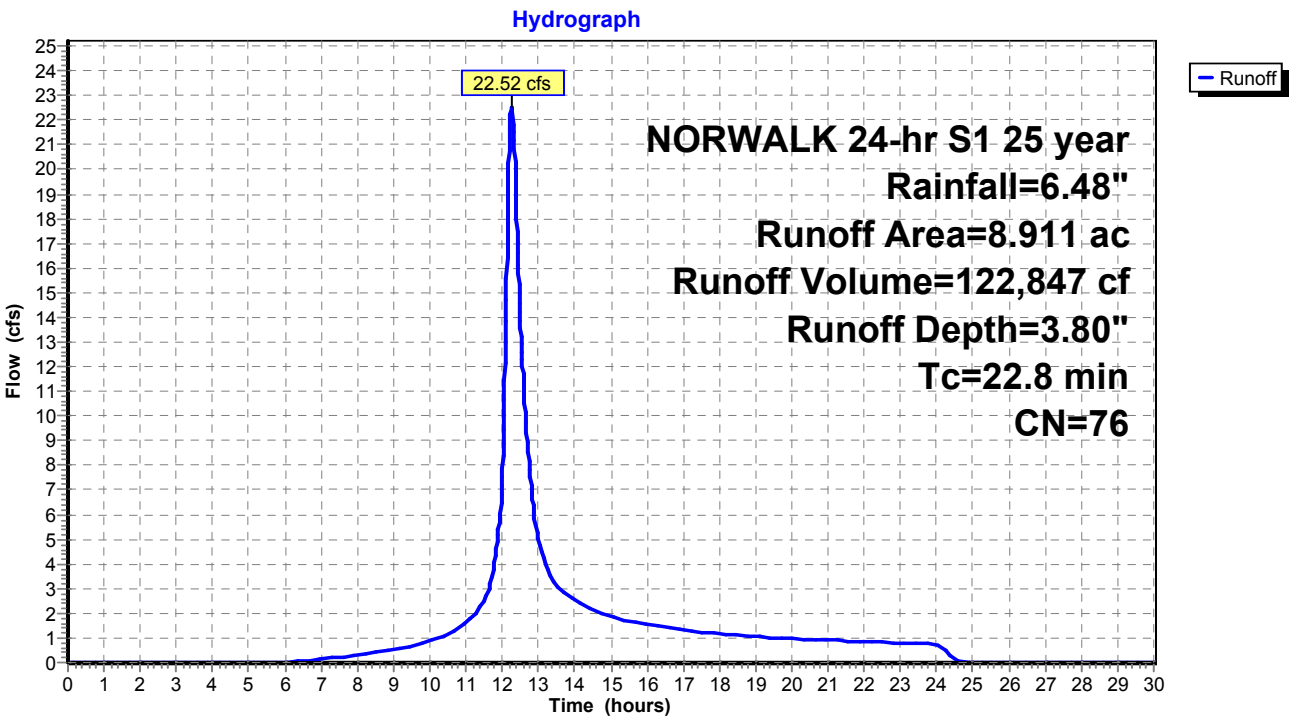
Runoff = 22.52 cfs @ 12.26 hrs, Volume= 122,847 cf, Depth= 3.80"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 14S: Area 14

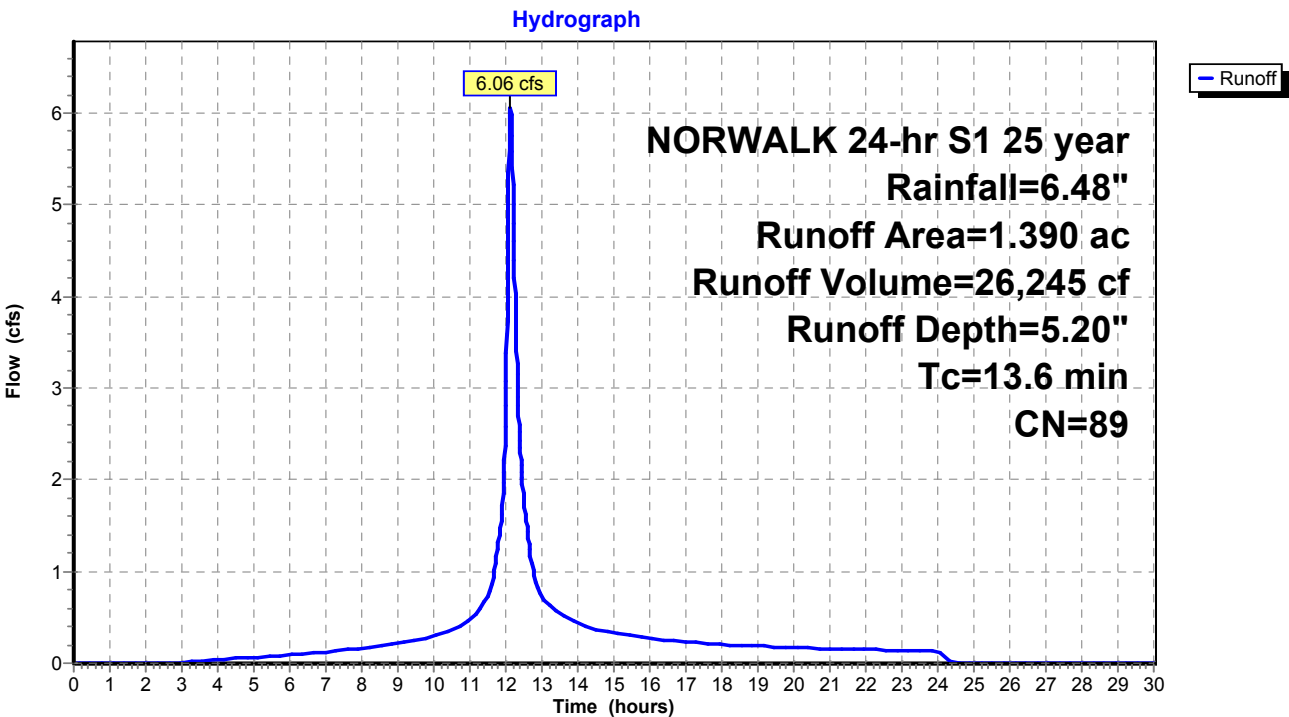
Runoff = 6.06 cfs @ 12.13 hrs, Volume= 26,245 cf, Depth= 5.20"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 15S: Area 15

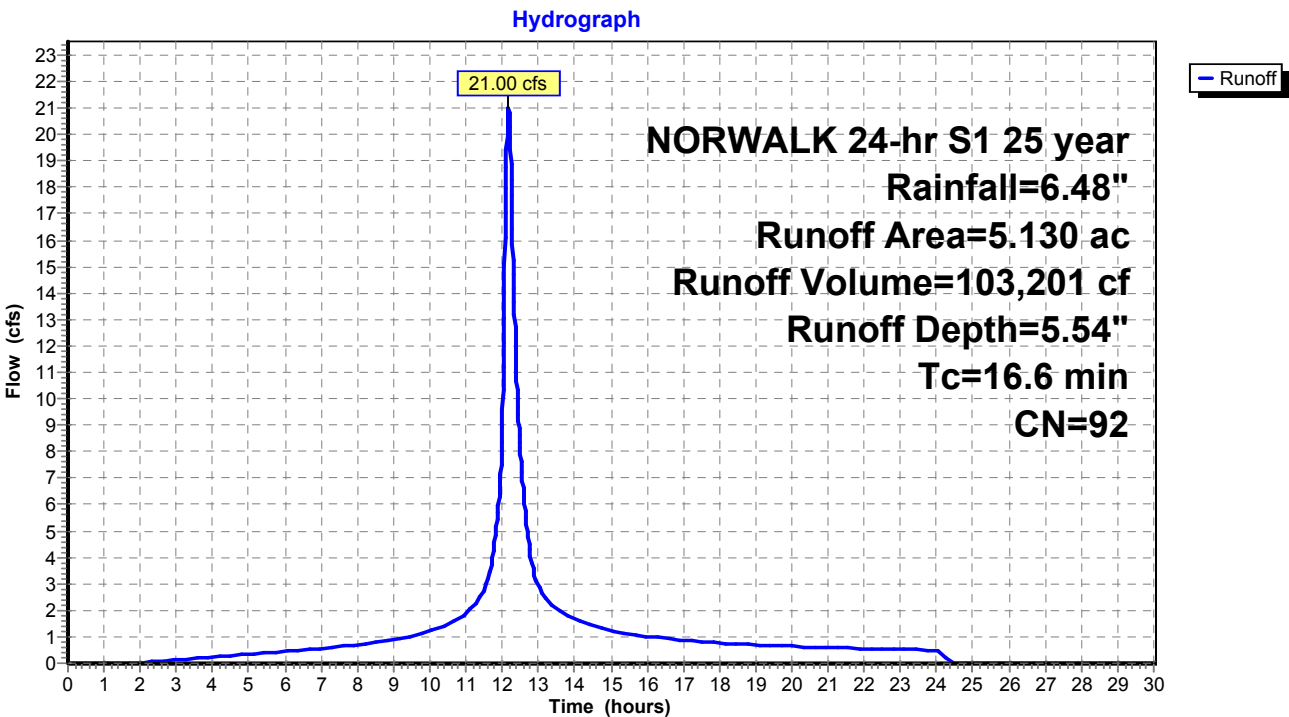
Runoff = 21.00 cfs @ 12.17 hrs, Volume= 103,201 cf, Depth= 5.54"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 16S: Area 16A

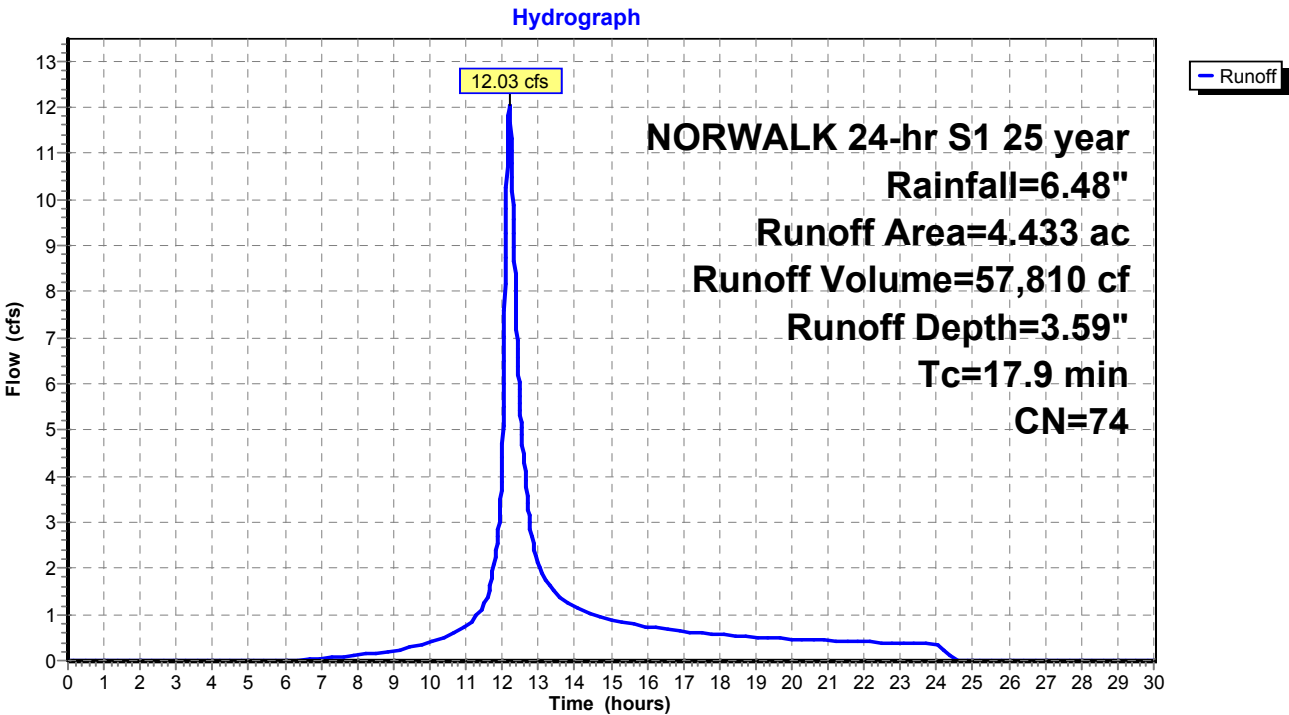
Runoff = 12.03 cfs @ 12.19 hrs, Volume= 57,810 cf, Depth= 3.59"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 17S: Area 17

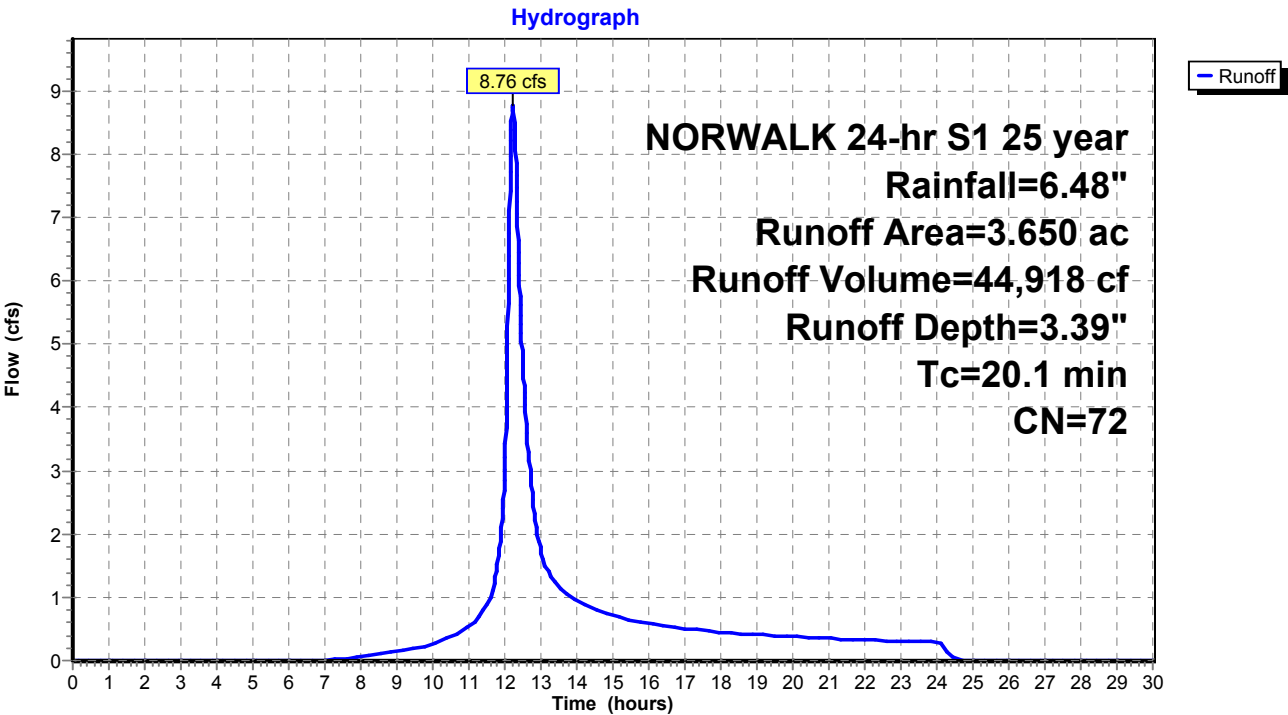
Runoff = 8.76 cfs @ 12.22 hrs, Volume= 44,918 cf, Depth= 3.39"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 20S: Area 20

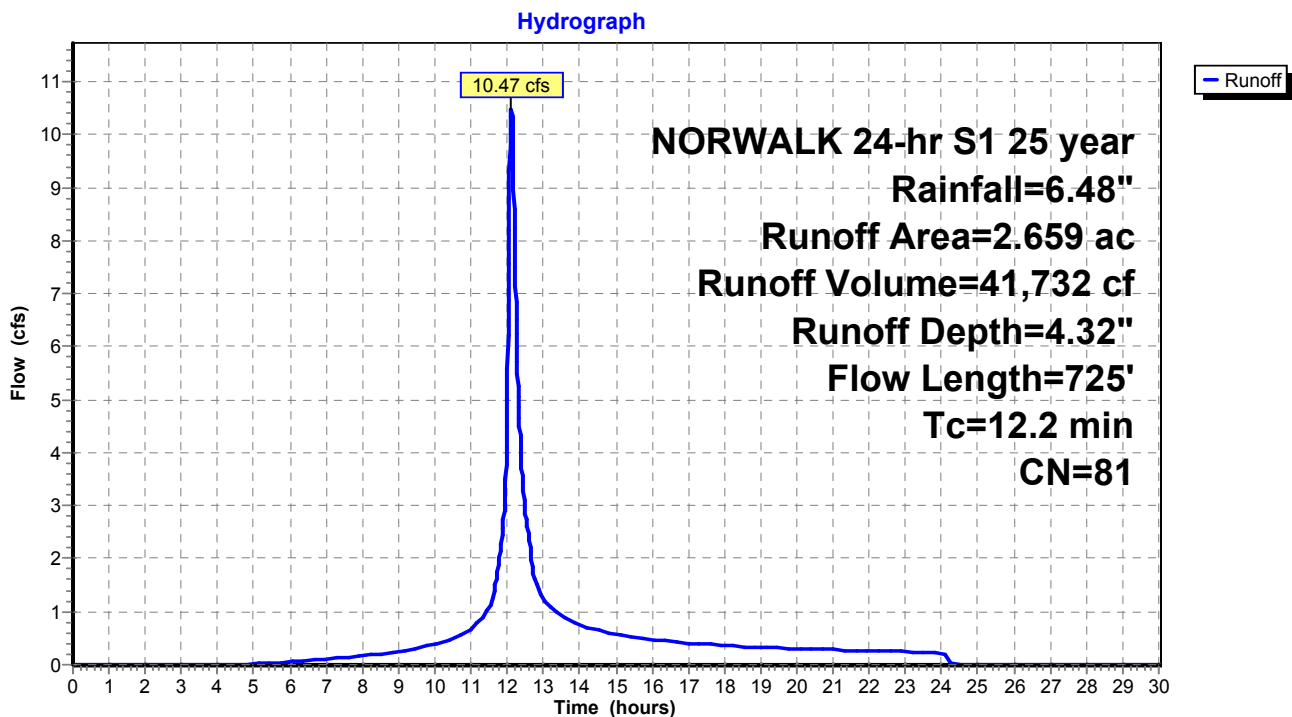
Runoff = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf, Depth= 4.32"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 21S: Area 21

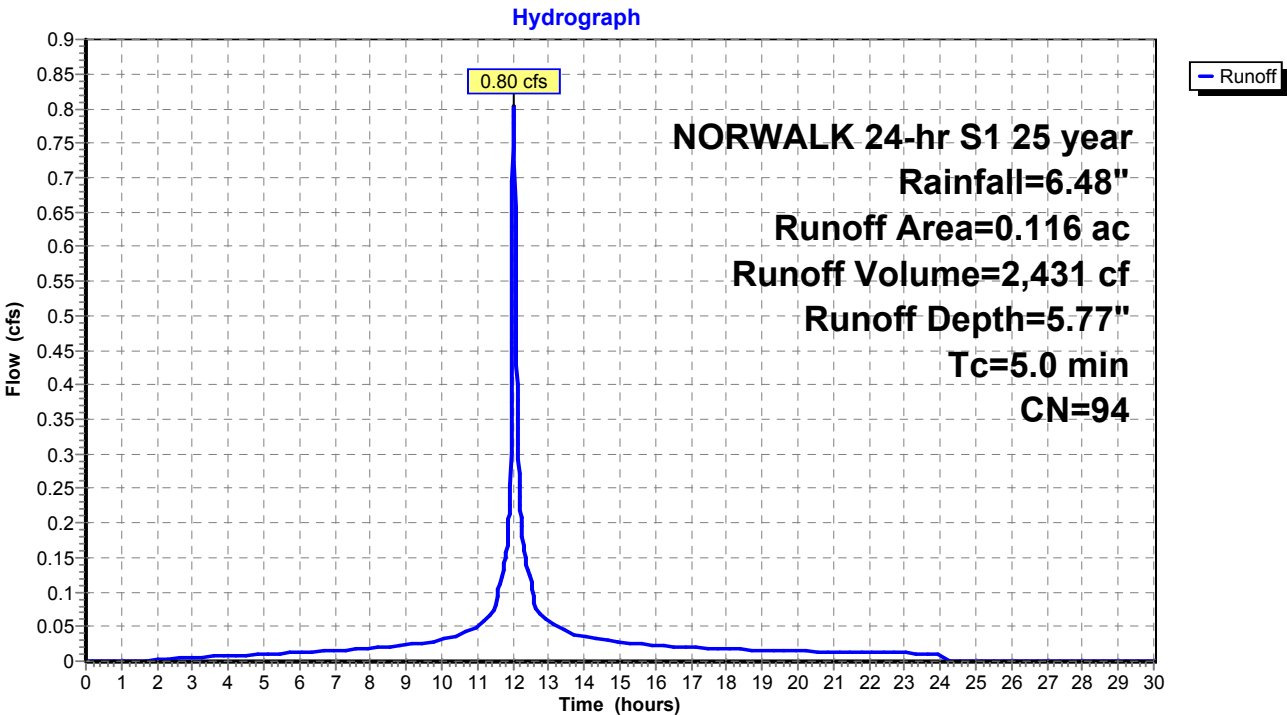
Runoff = 0.80 cfs @ 12.03 hrs, Volume= 2,431 cf, Depth= 5.77"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Existing Conditions

Prepared by Tighe & Bond

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 22S: Area 22

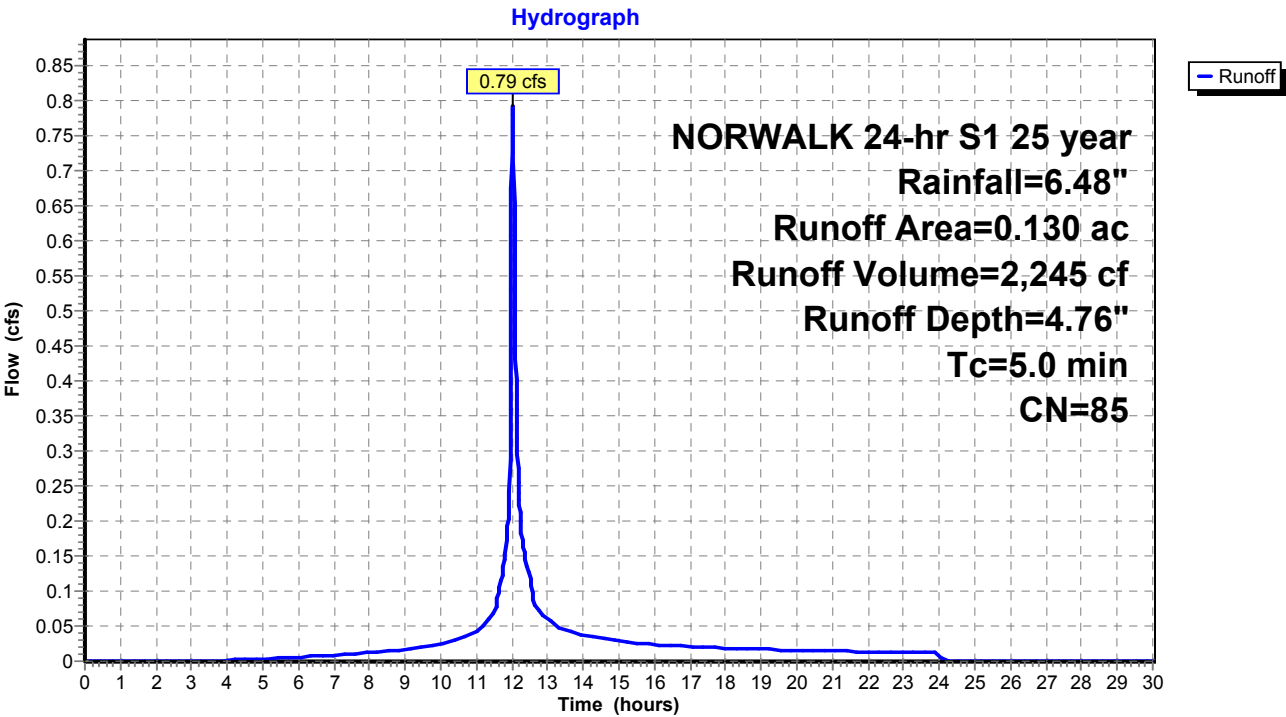
Runoff = 0.79 cfs @ 12.03 hrs, Volume= 2,245 cf, Depth= 4.76"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 23S: Area 23

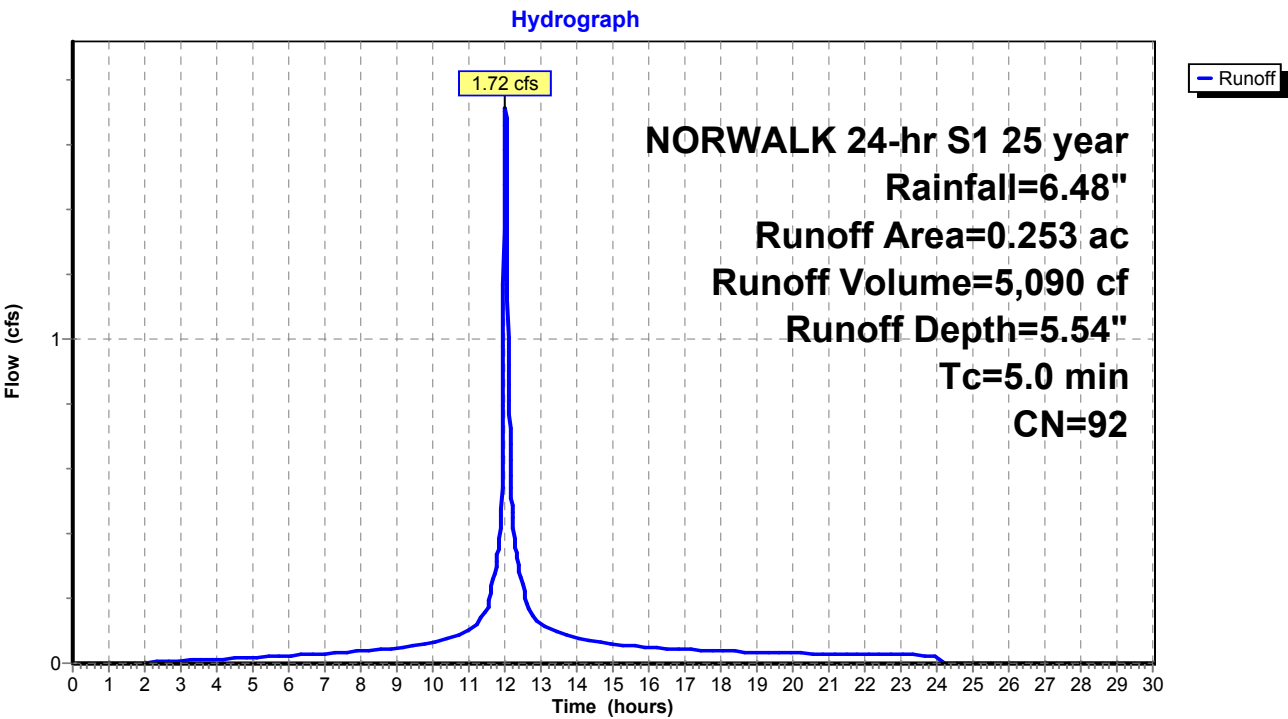
Runoff = 1.72 cfs @ 12.03 hrs, Volume= 5,090 cf, Depth= 5.54"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 24S: Area 24

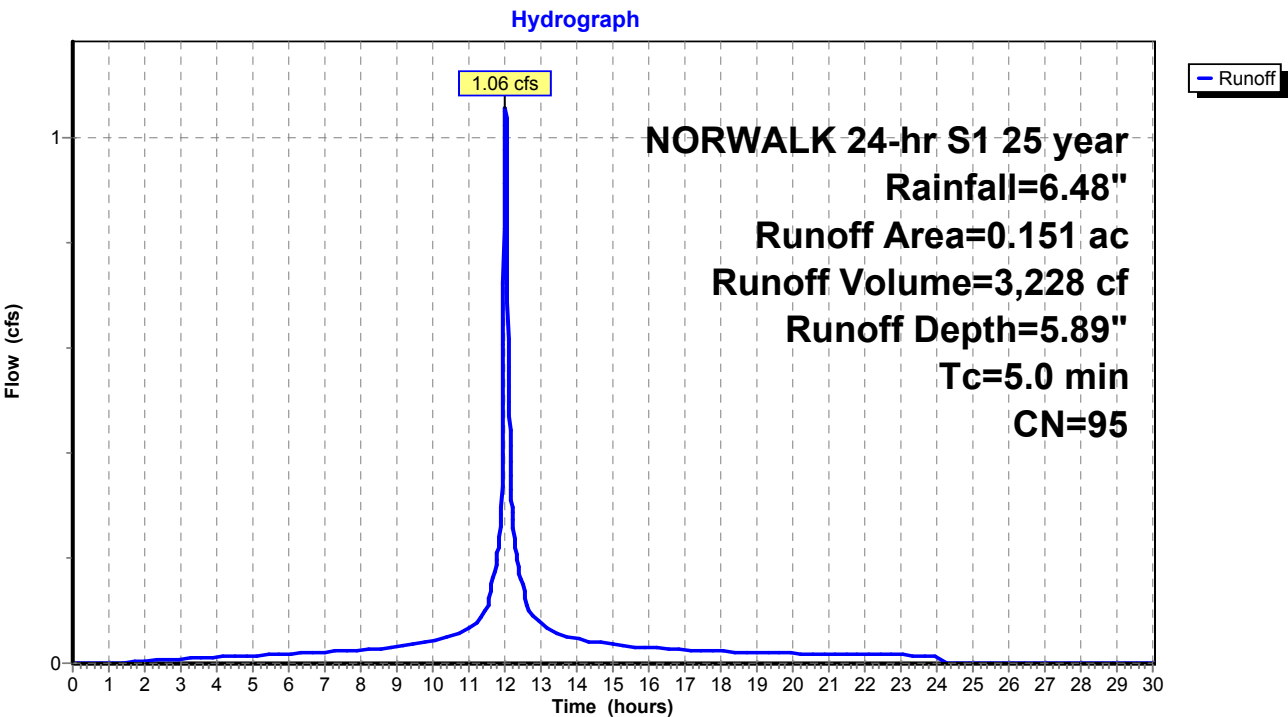
Runoff = 1.06 cfs @ 12.03 hrs, Volume= 3,228 cf, Depth= 5.89"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 25S: Area 25

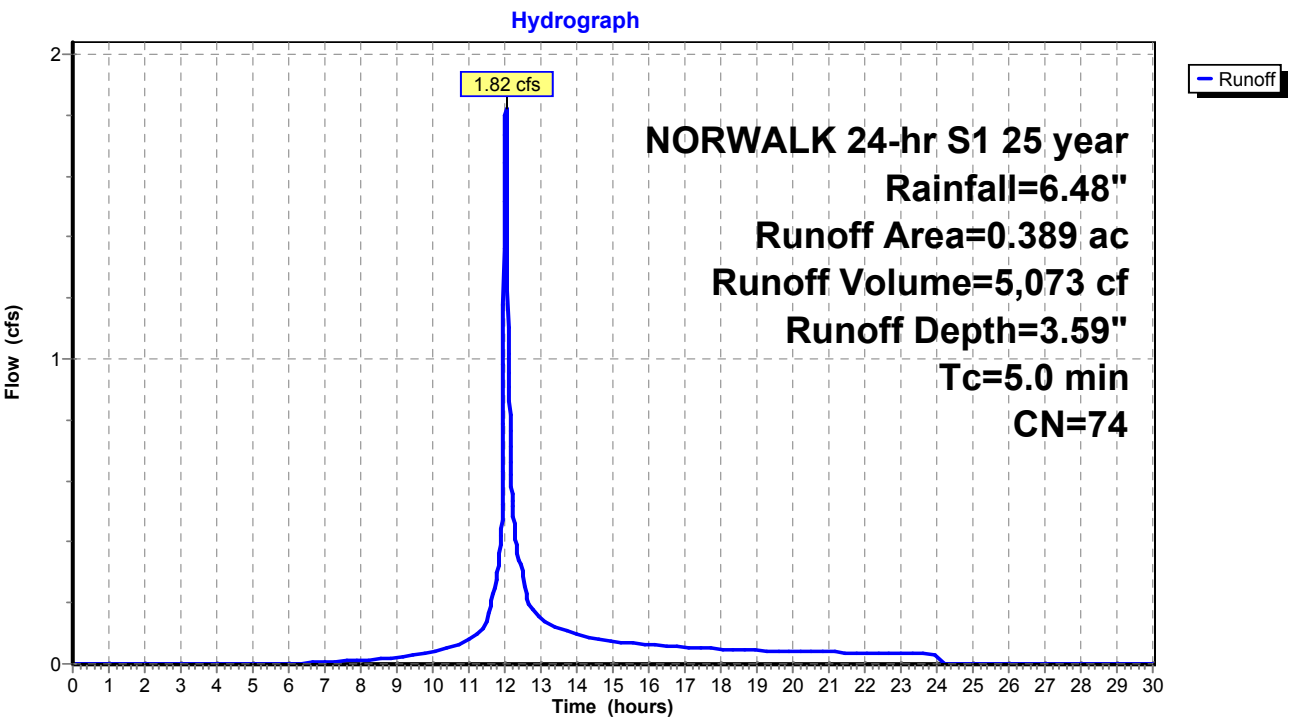
Runoff = 1.82 cfs @ 12.03 hrs, Volume= 5,073 cf, Depth= 3.59"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 26S: Area 26

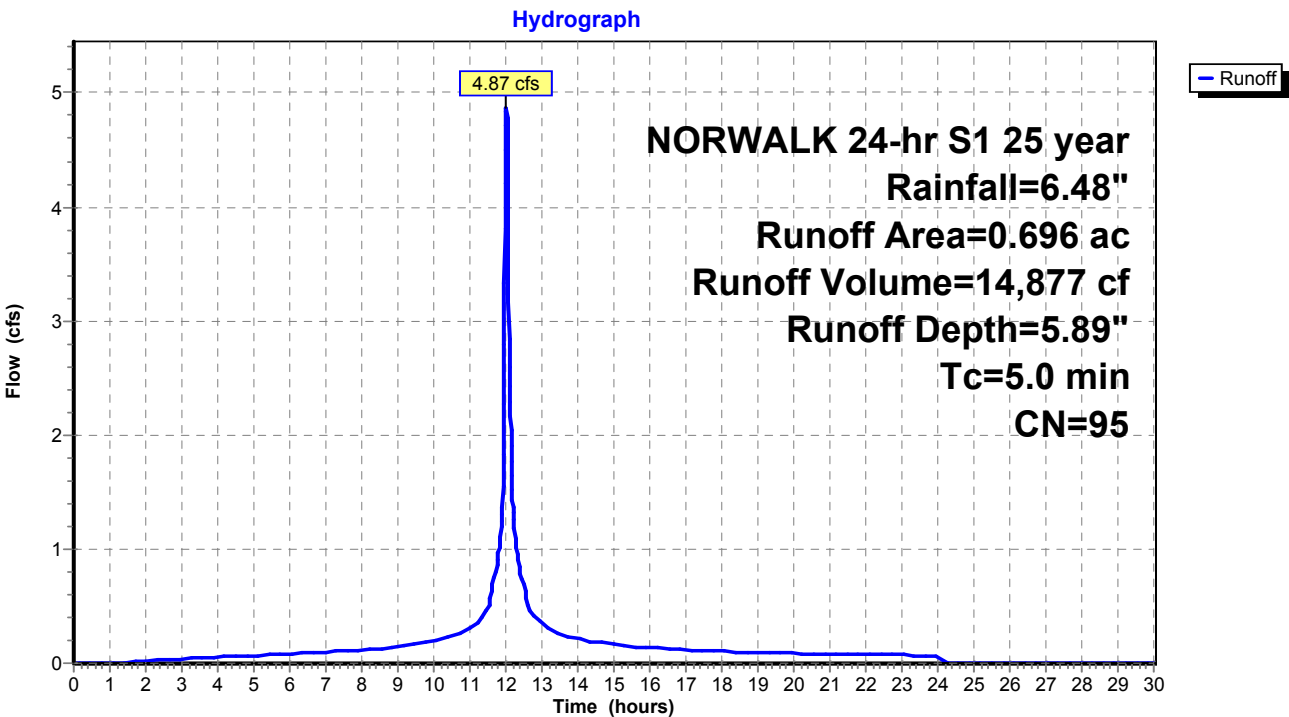
Runoff = 4.87 cfs @ 12.03 hrs, Volume= 14,877 cf, Depth= 5.89"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 27S: Area 27

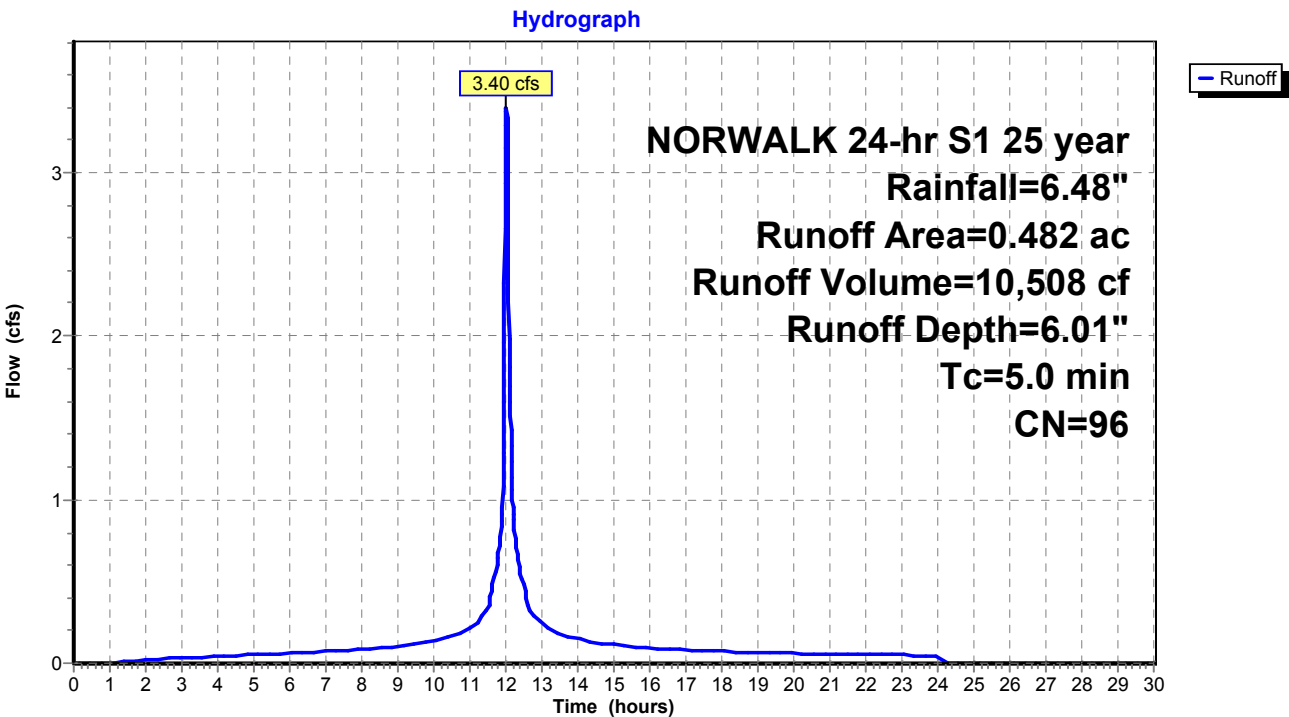
Runoff = 3.40 cfs @ 12.03 hrs, Volume= 10,508 cf, Depth= 6.01"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 28S: Area 28

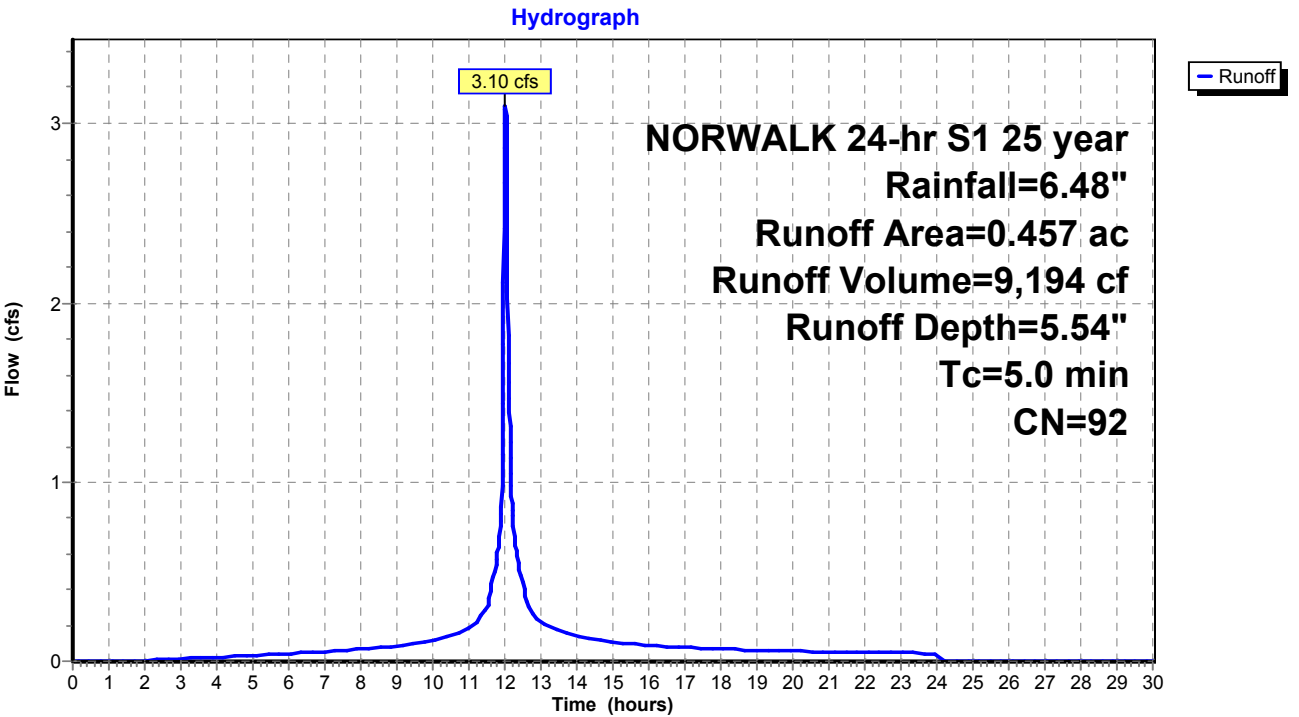
Runoff = 3.10 cfs @ 12.03 hrs, Volume= 9,194 cf, Depth= 5.54"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 29S: Area 29

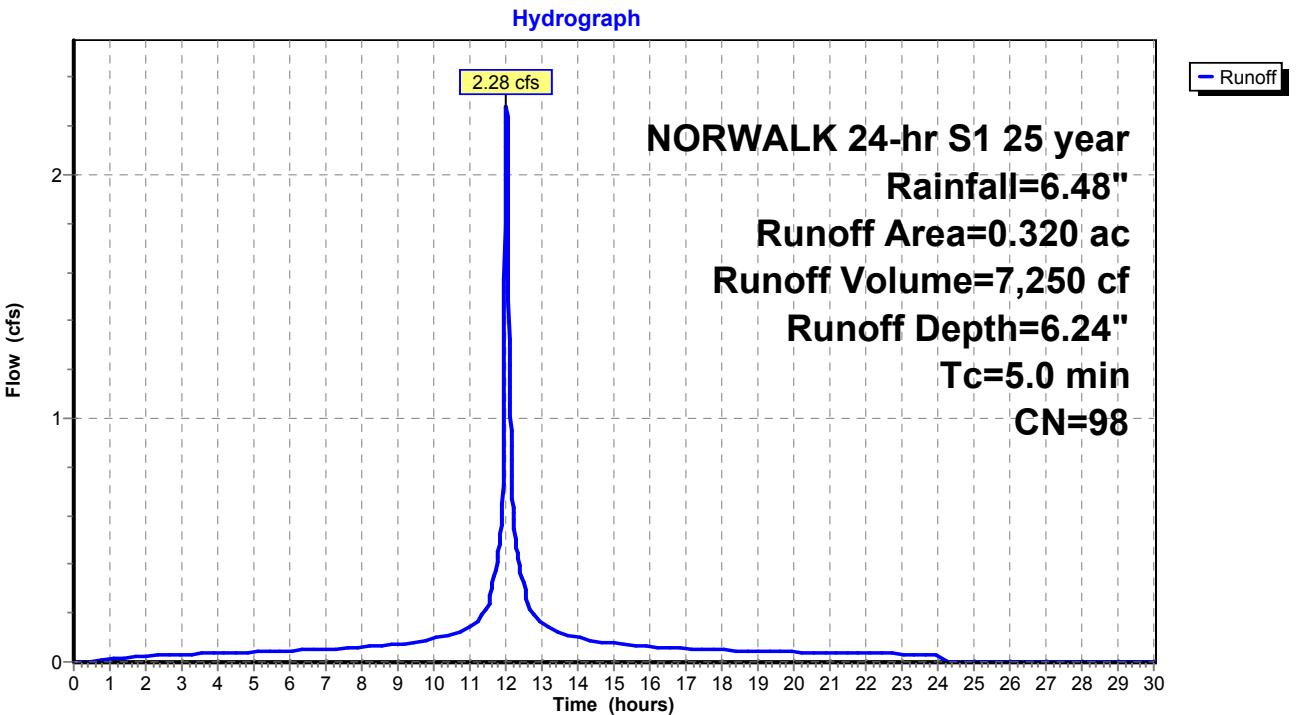
Runoff = 2.28 cfs @ 12.03 hrs, Volume= 7,250 cf, Depth= 6.24"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"
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Summary for Subcatchment 30S: Area 30

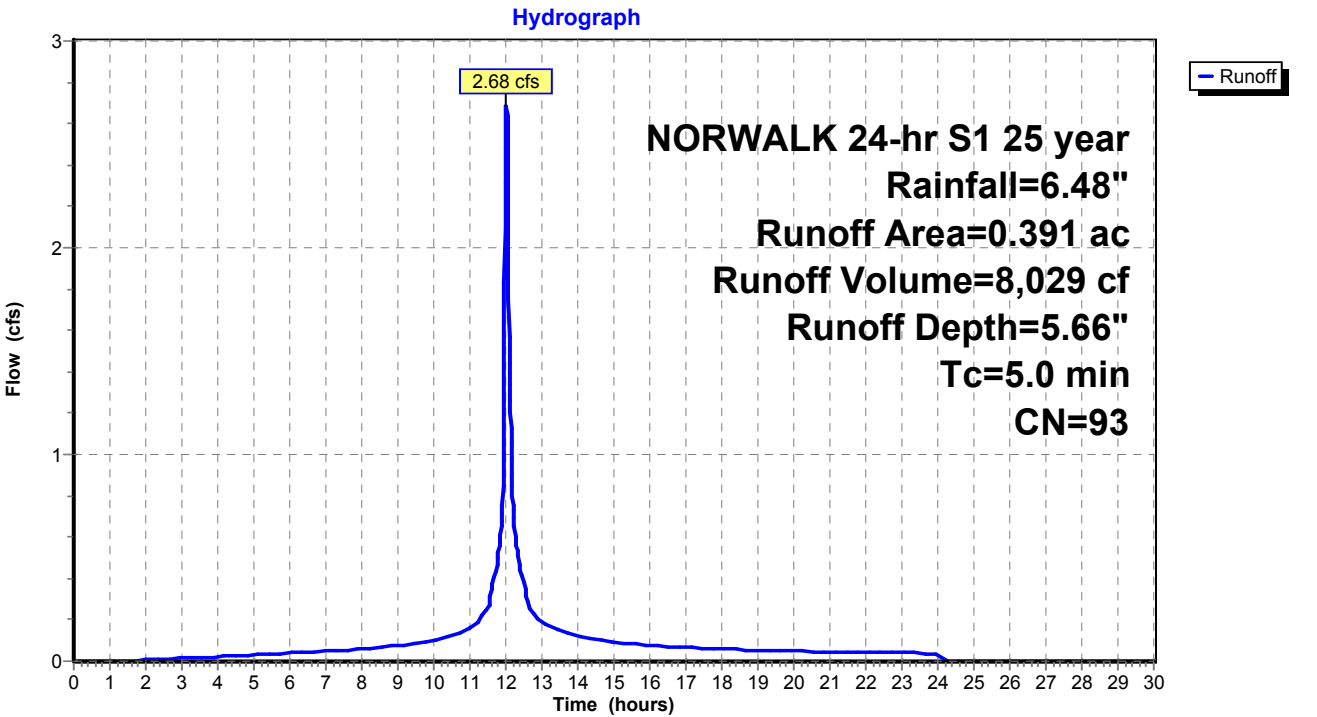
Runoff = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf, Depth= 5.66"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 52S: Area 1

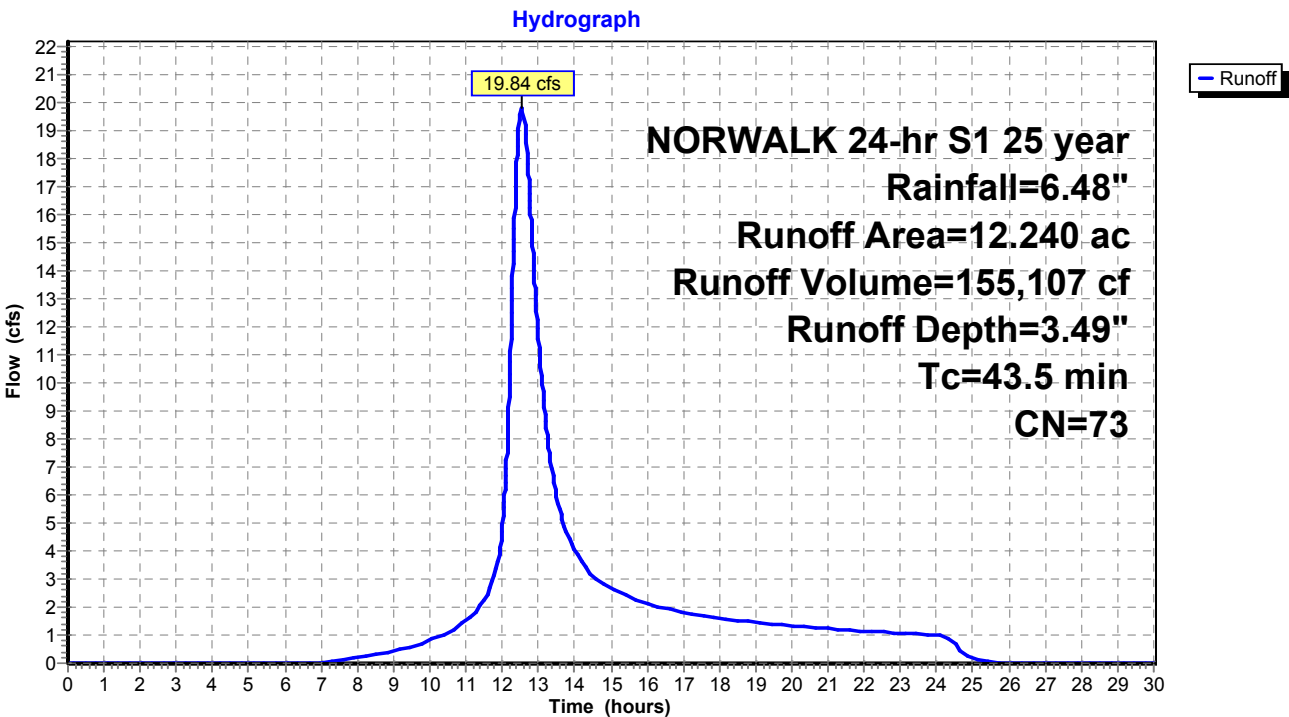
Runoff = 19.84 cfs @ 12.52 hrs, Volume= 155,107 cf, Depth= 3.49"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 53S: Area 2

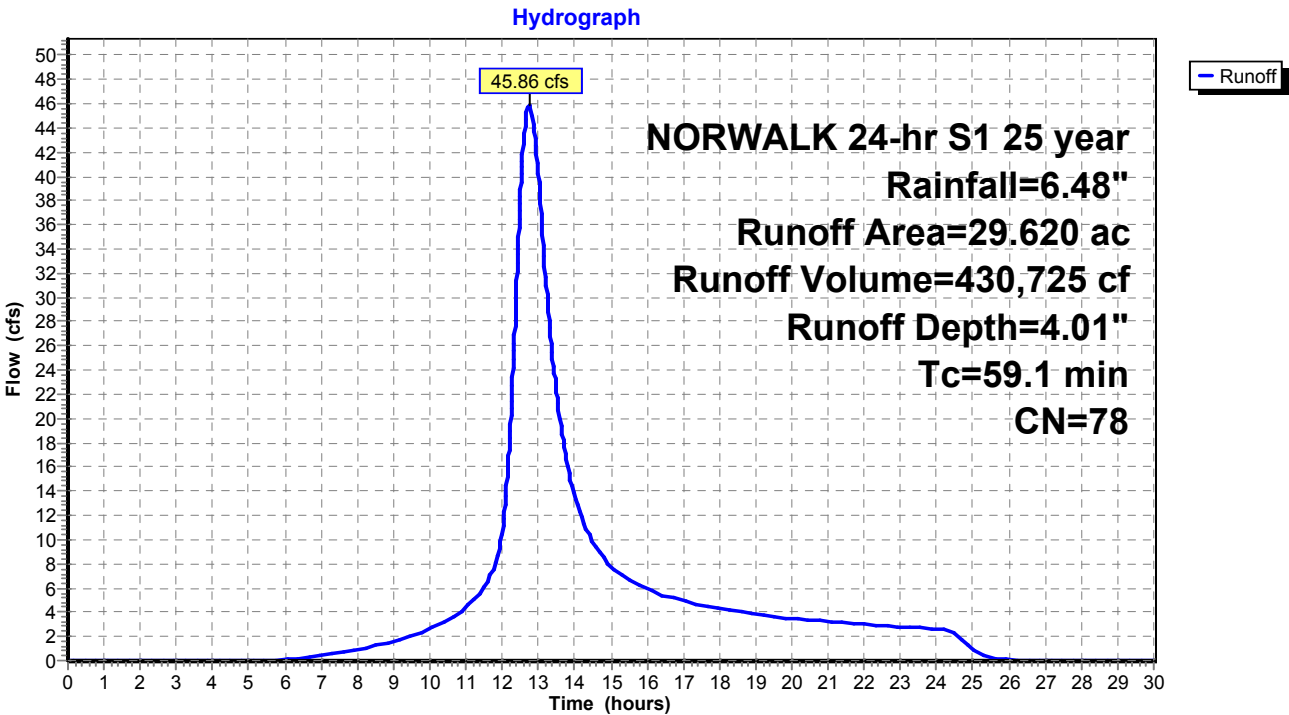
Runoff = 45.86 cfs @ 12.74 hrs, Volume= 430,725 cf, Depth= 4.01"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 54S: Area 3

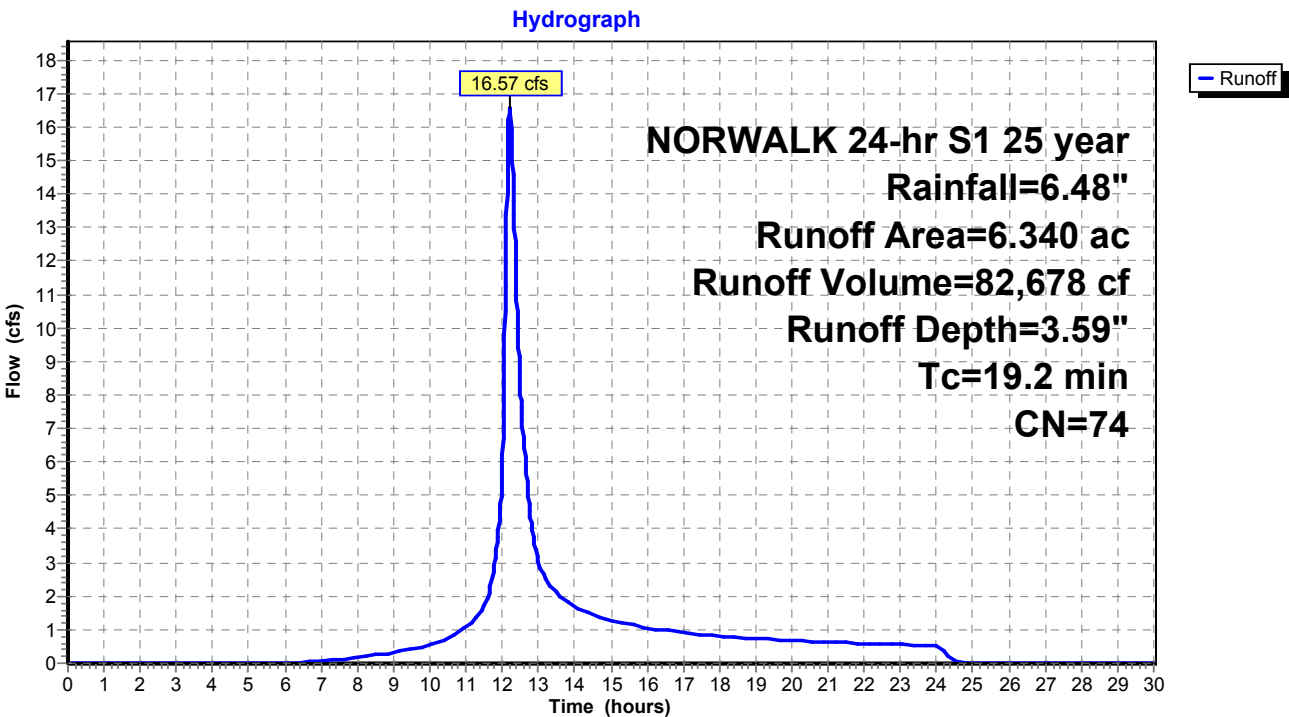
Runoff = 16.57 cfs @ 12.22 hrs, Volume= 82,678 cf, Depth= 3.59"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 56S: Area 35

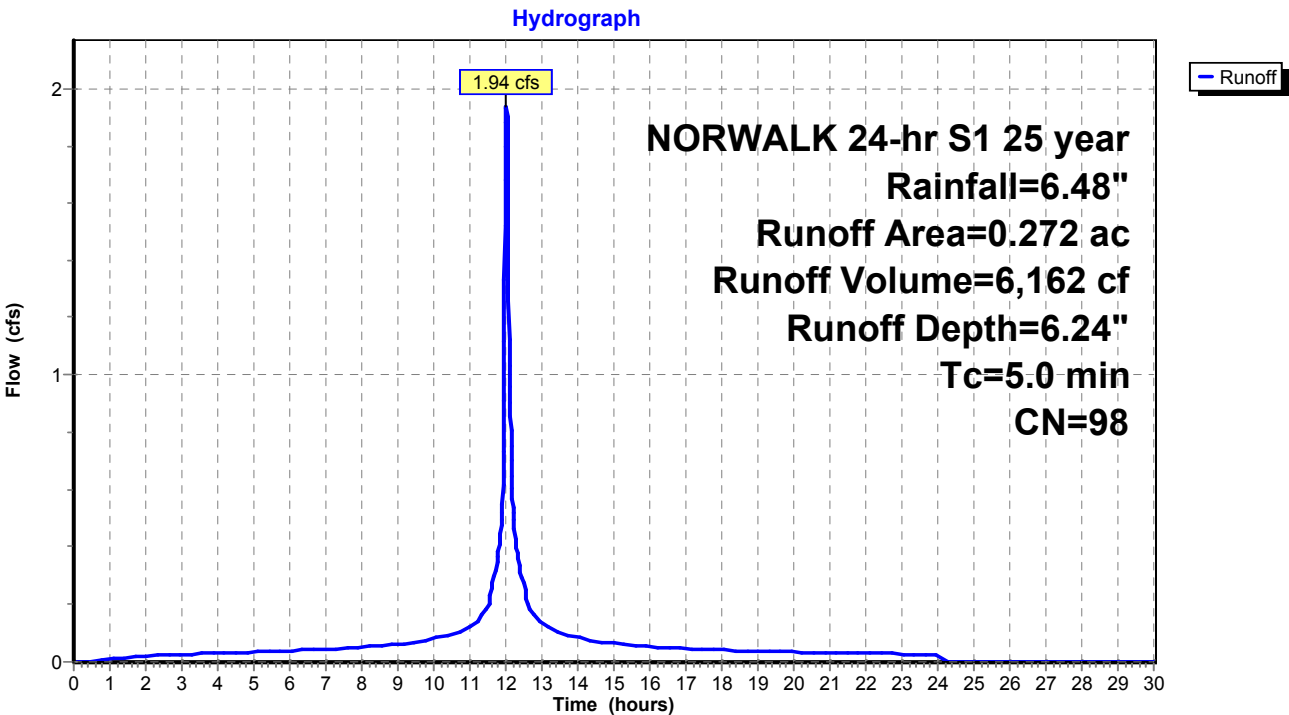
Runoff = 1.94 cfs @ 12.03 hrs, Volume= 6,162 cf, Depth= 6.24"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 60S: Area 37

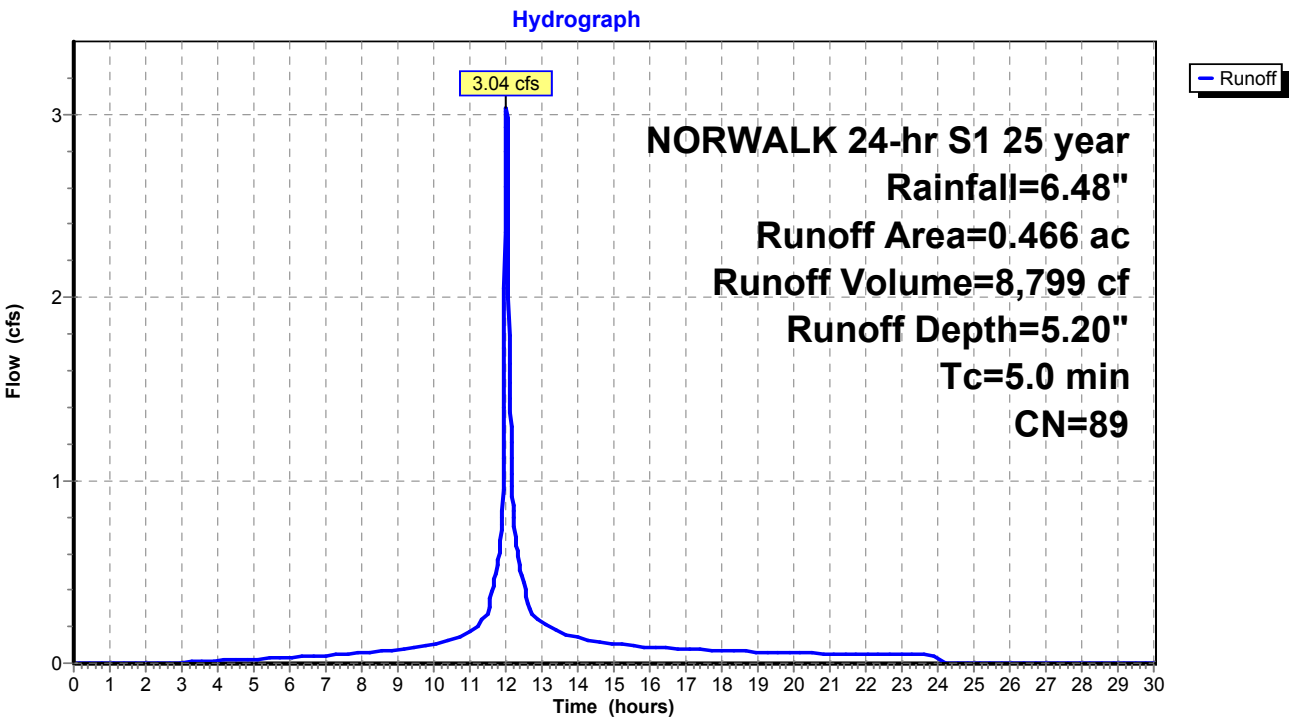
Runoff = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf, Depth= 5.20"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 62S: Area 38

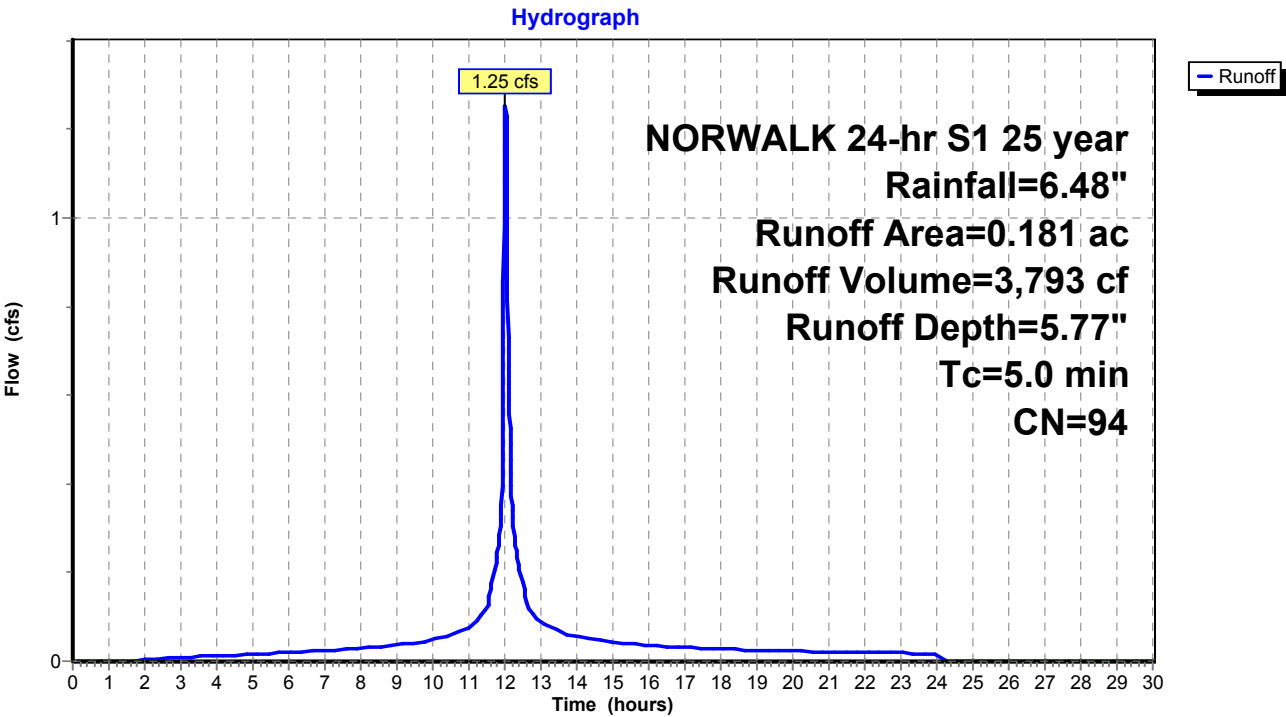
Runoff = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf, Depth= 5.77"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 65S: Area 41

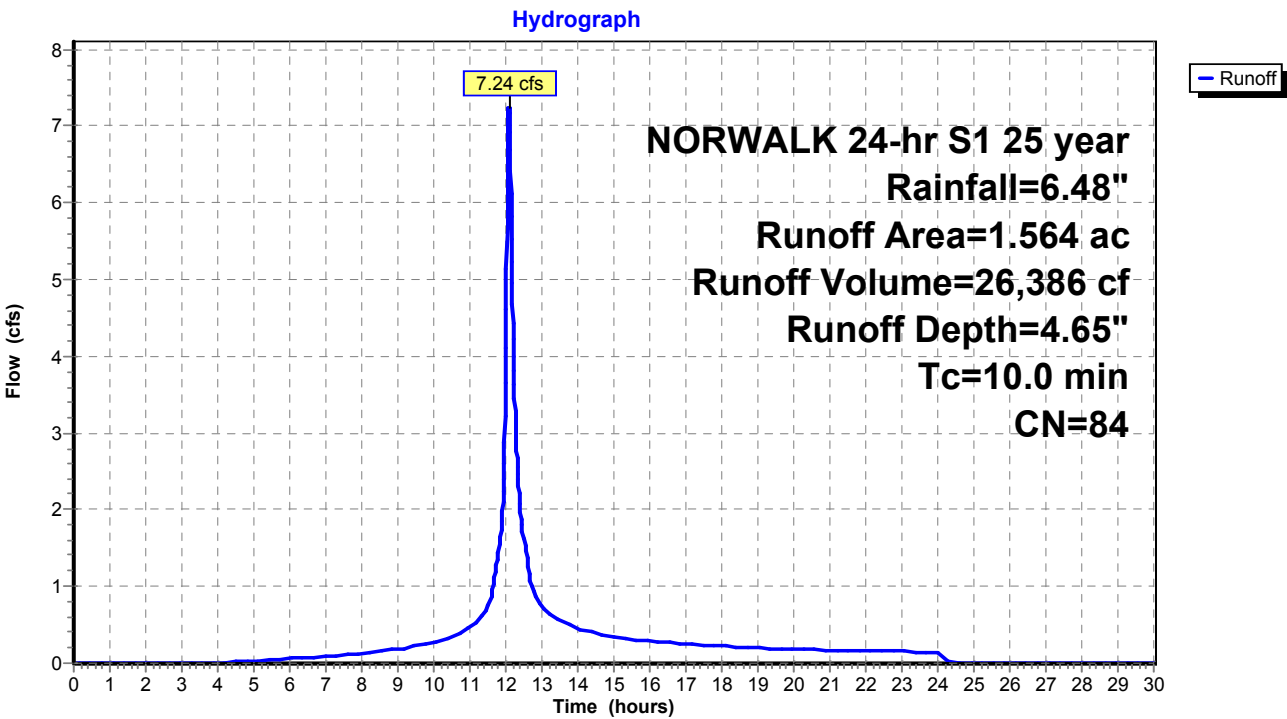
Runoff = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf, Depth= 4.65"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Existing Conditions

Prepared by Tighe & Bond

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 68S: Area 36

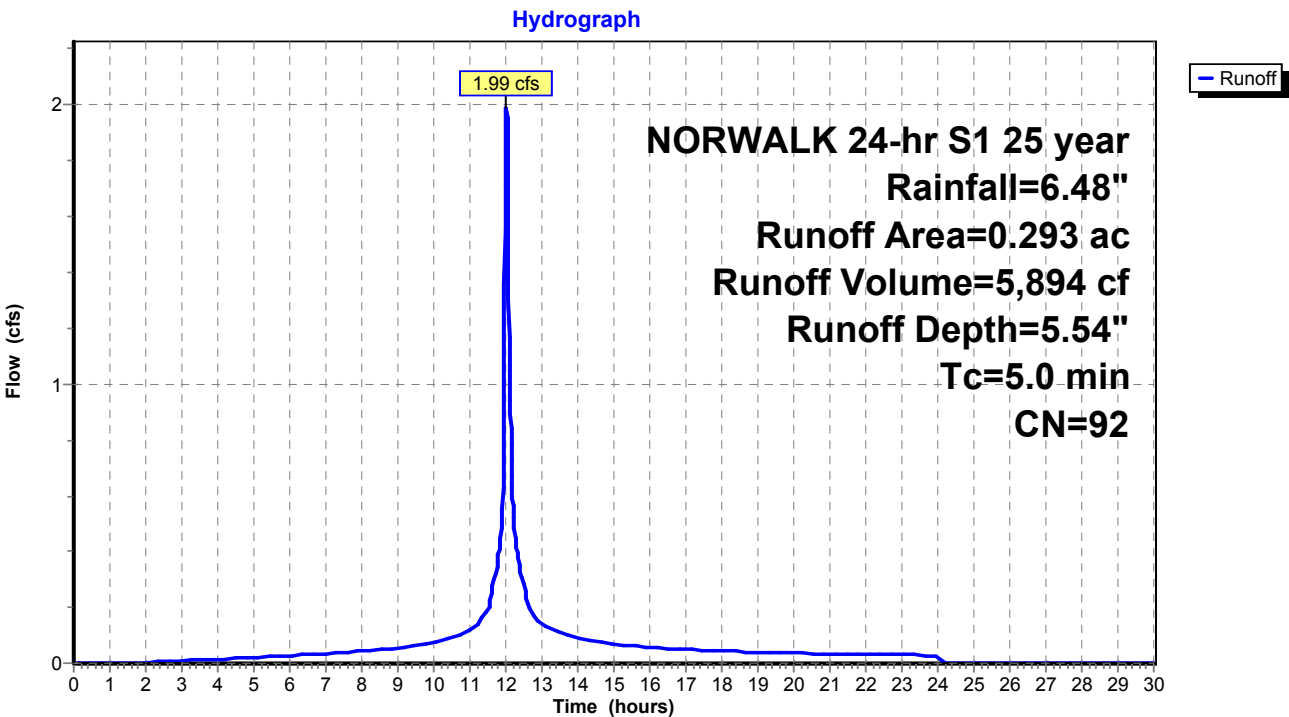
Runoff = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf, Depth= 5.54"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 69S: Area 40

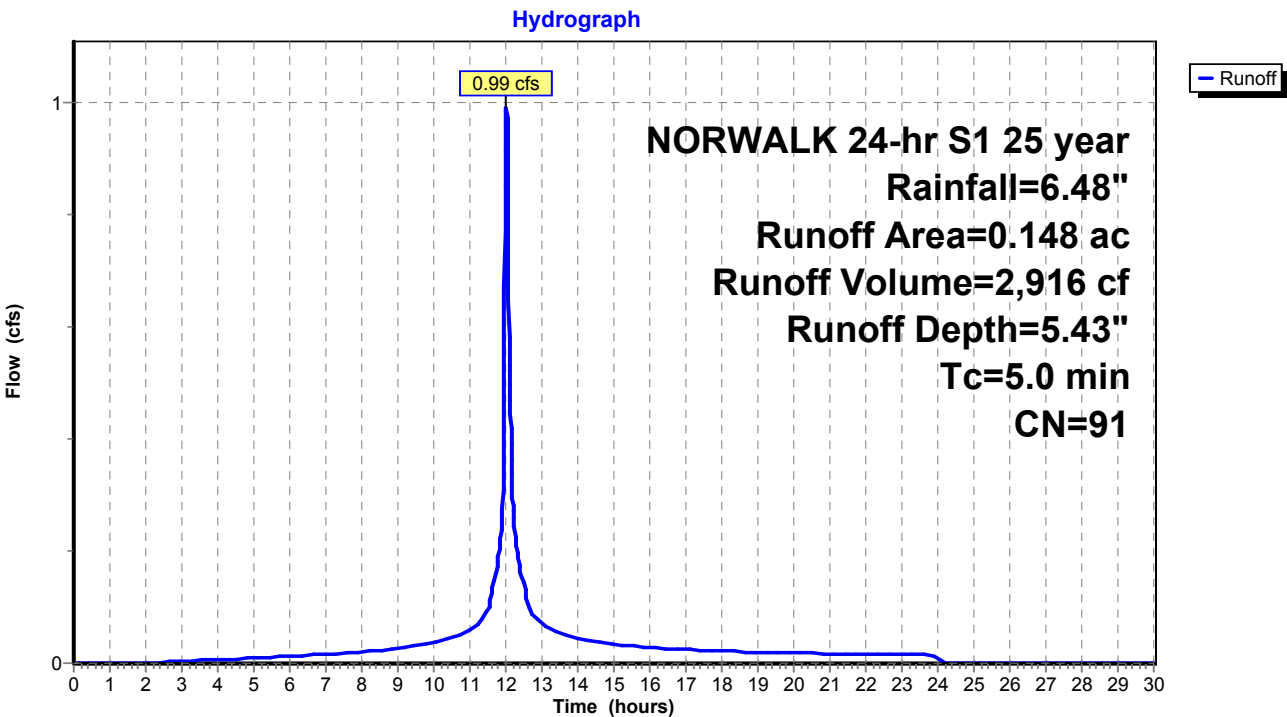
Runoff = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf, Depth= 5.43"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 71S: Area 34

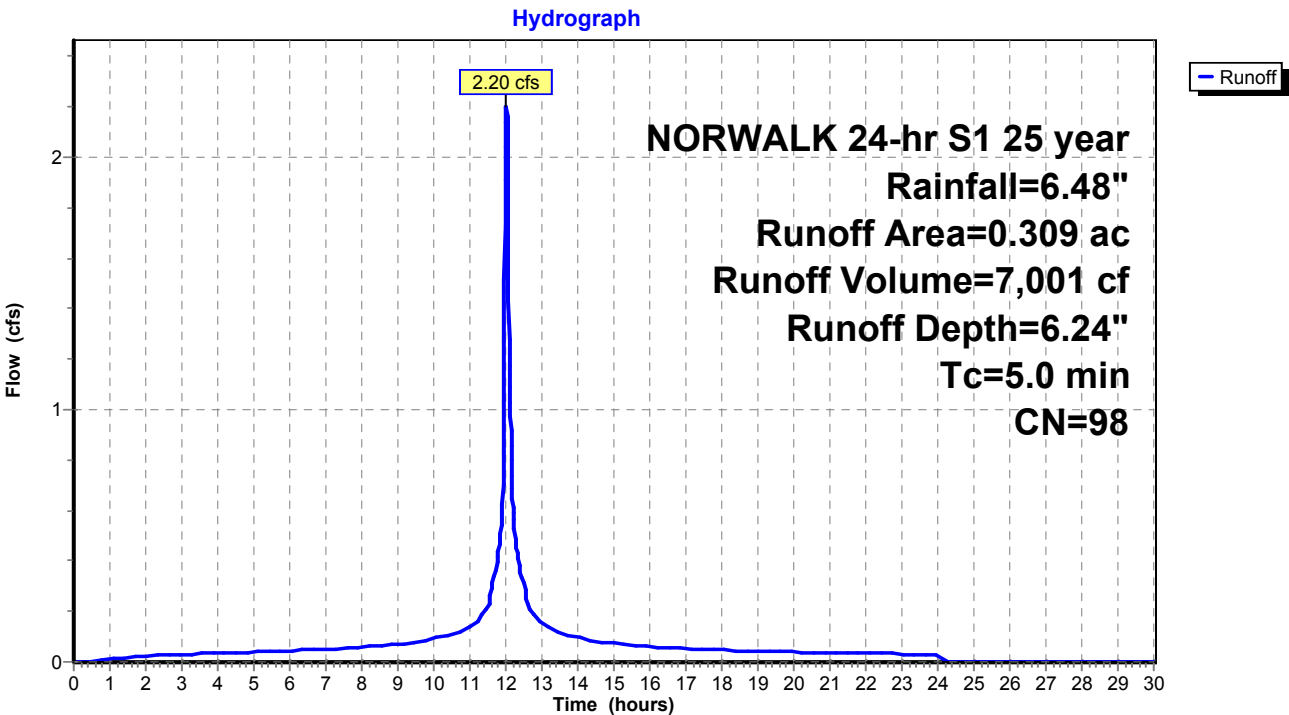
Runoff = 2.20 cfs @ 12.03 hrs, Volume= 7,001 cf, Depth= 6.24"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 75S: Area 32

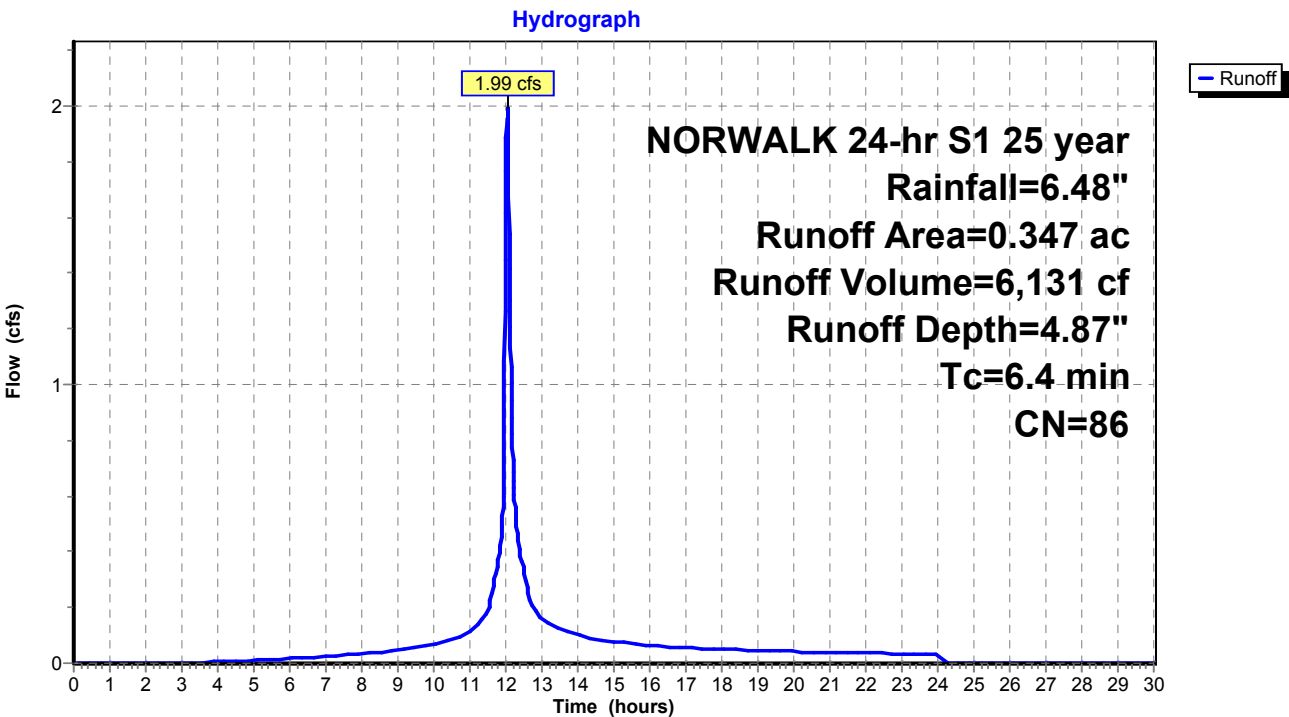
Runoff = 1.99 cfs @ 12.04 hrs, Volume= 6,131 cf, Depth= 4.87"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 76S: Area 33

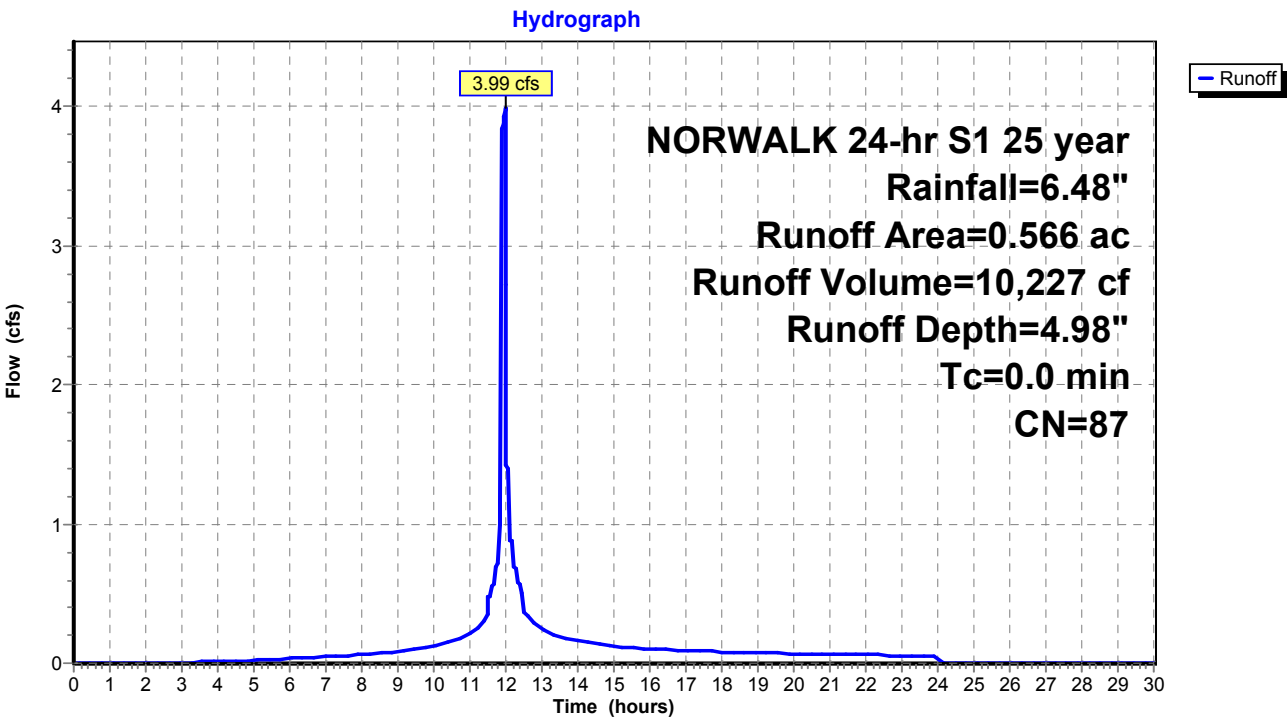
Runoff = 3.99 cfs @ 11.99 hrs, Volume= 10,227 cf, Depth= 4.98"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 78S: Area 39

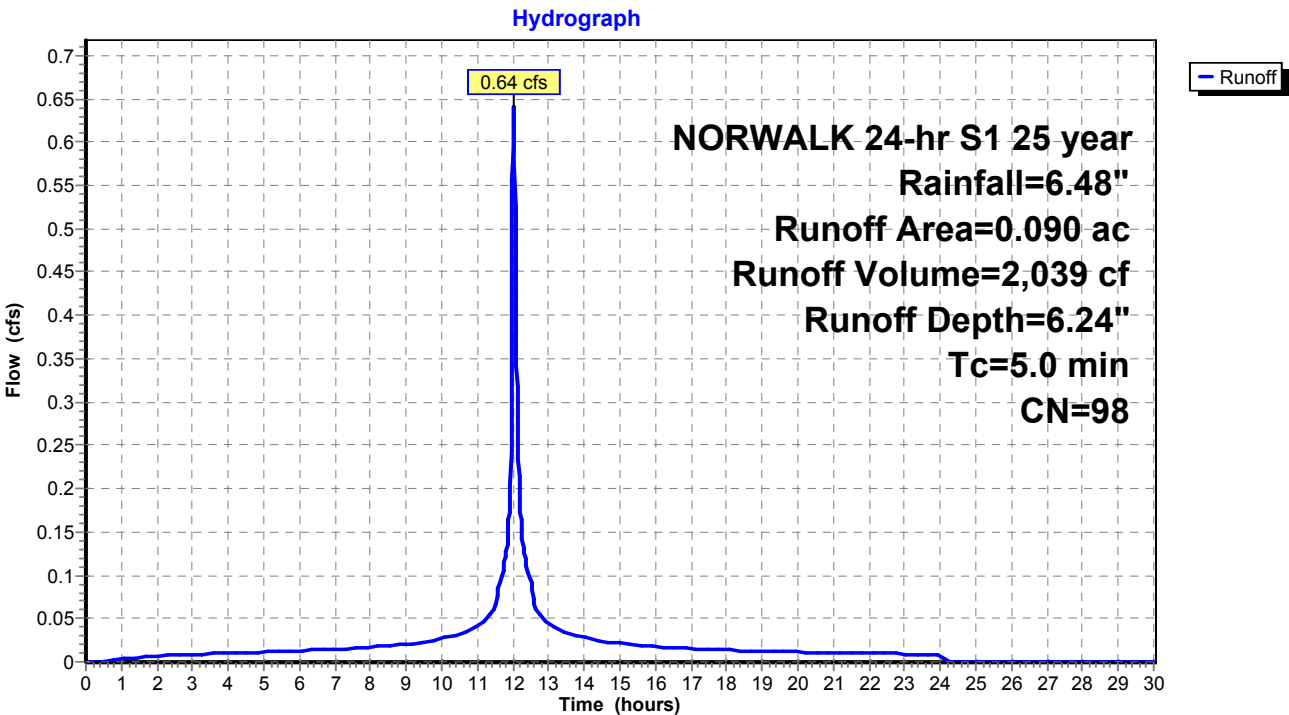
Runoff = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf, Depth= 6.24"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 84S: Area 31

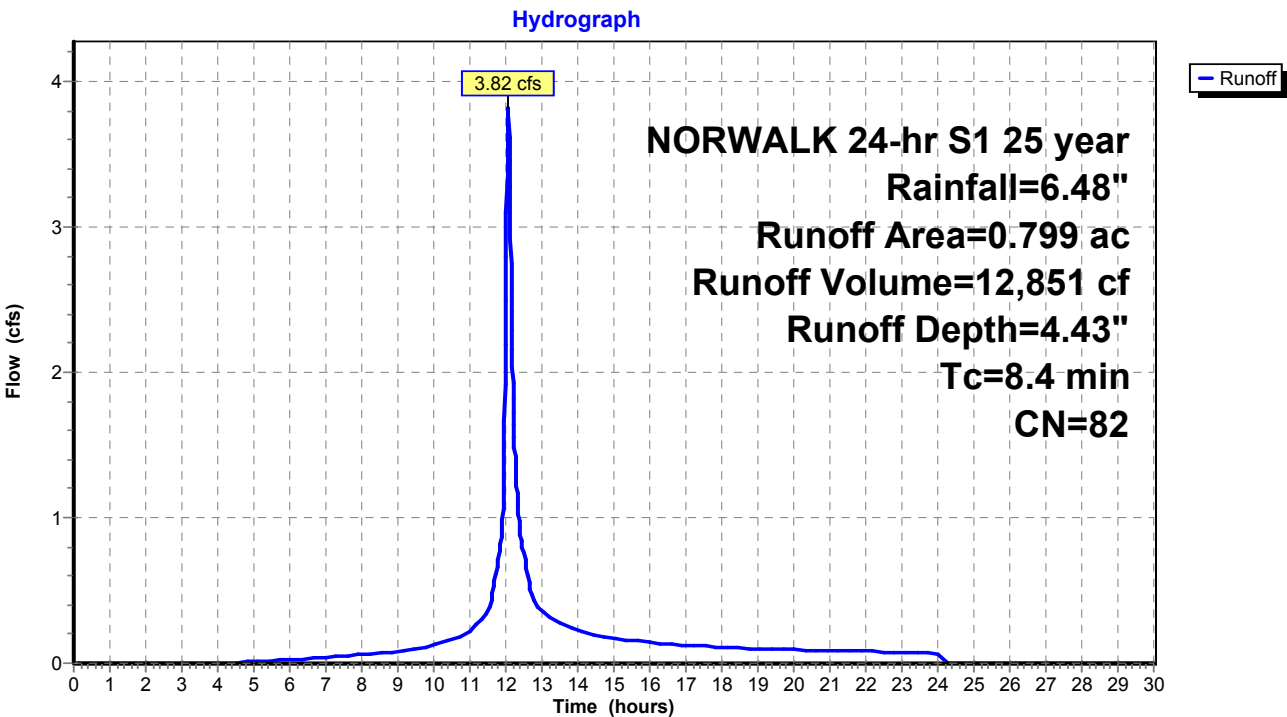
Runoff = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf, Depth= 4.43"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 100S: Area 16B

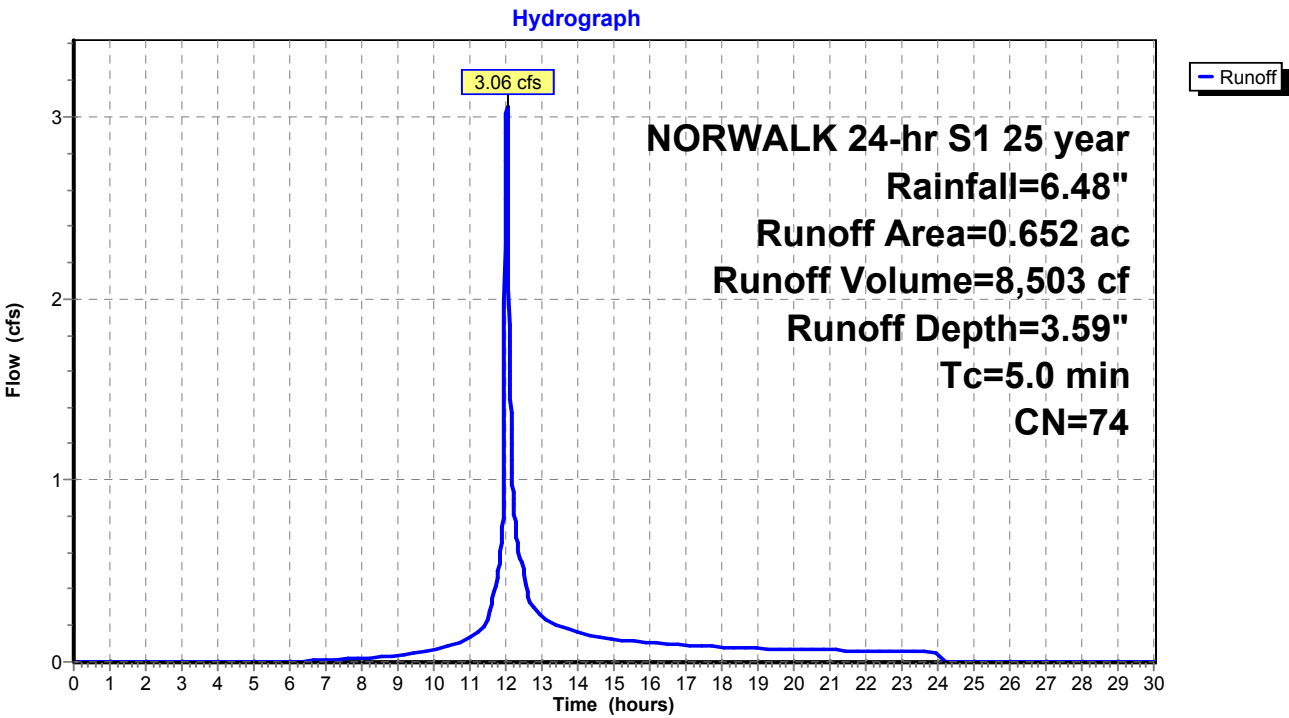
Runoff = 3.06 cfs @ 12.03 hrs, Volume= 8,503 cf, Depth= 3.59"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Existing Conditions

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Summary for Subcatchment 105S: Area 18

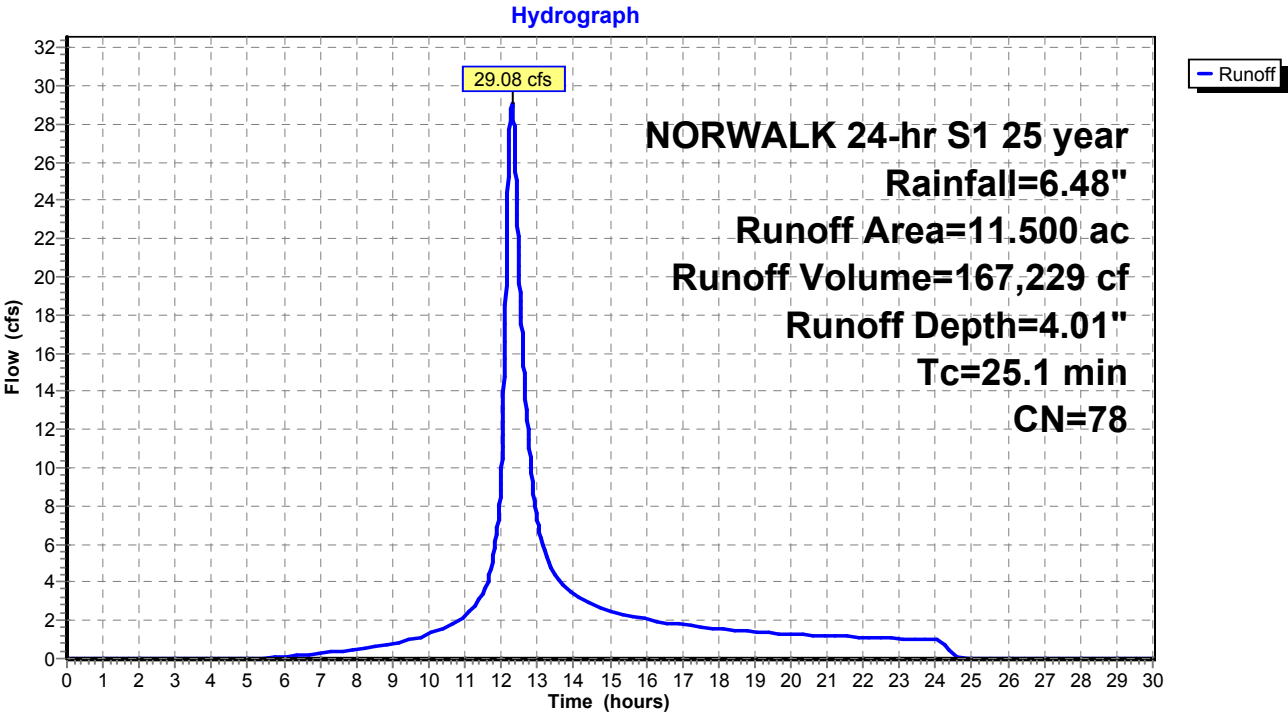
Runoff = 29.08 cfs @ 12.30 hrs, Volume= 167,229 cf, Depth= 4.01"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment BLDG: EX-BLDG

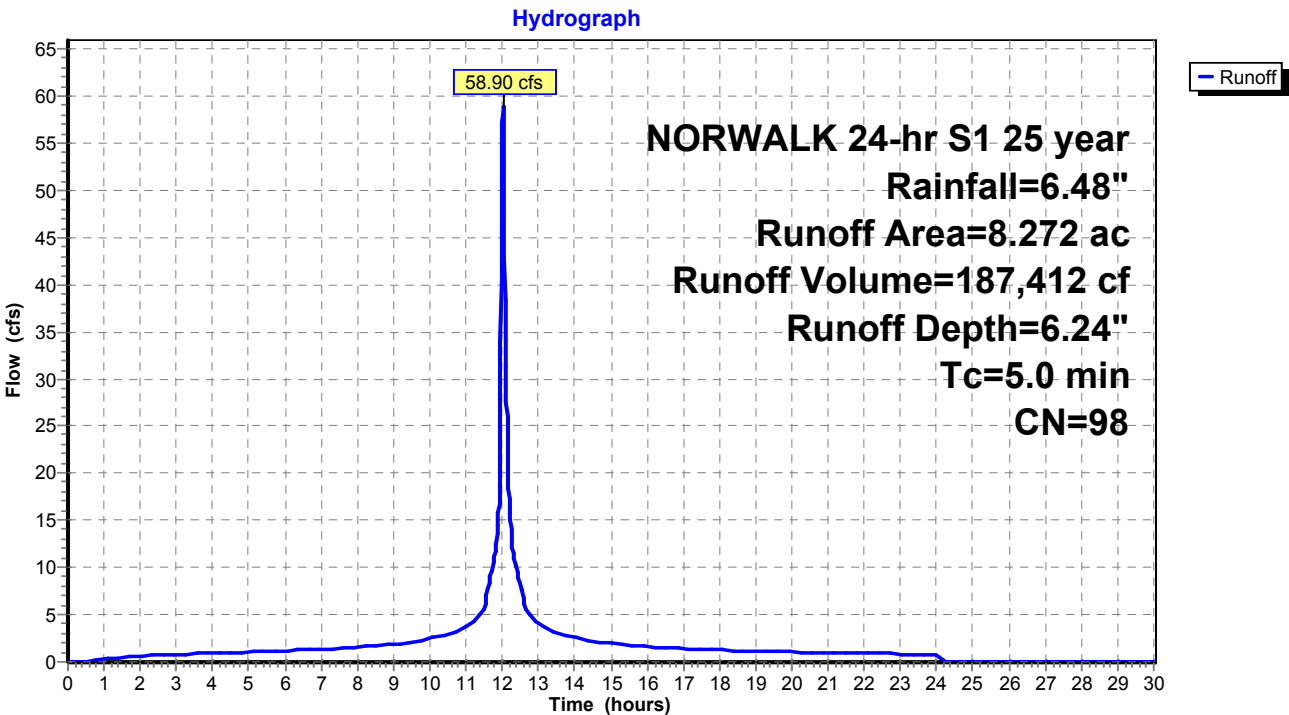
Runoff = 58.90 cfs @ 12.03 hrs, Volume= 187,412 cf, Depth= 6.24"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 4.42" for 25 year event
Inflow = 240.12 cfs @ 12.21 hrs, Volume= 2,419,547 cf
Outflow = 240.12 cfs @ 12.21 hrs, Volume= 2,419,547 cf, Atten= 0%, Lag= 0.0 min
Primary = 33.81 cfs @ 12.21 hrs, Volume= 1,193,787 cf
Secondary = 206.31 cfs @ 12.21 hrs, Volume= 1,225,760 cf
Routed to Pond 24P : RR Culvert 3

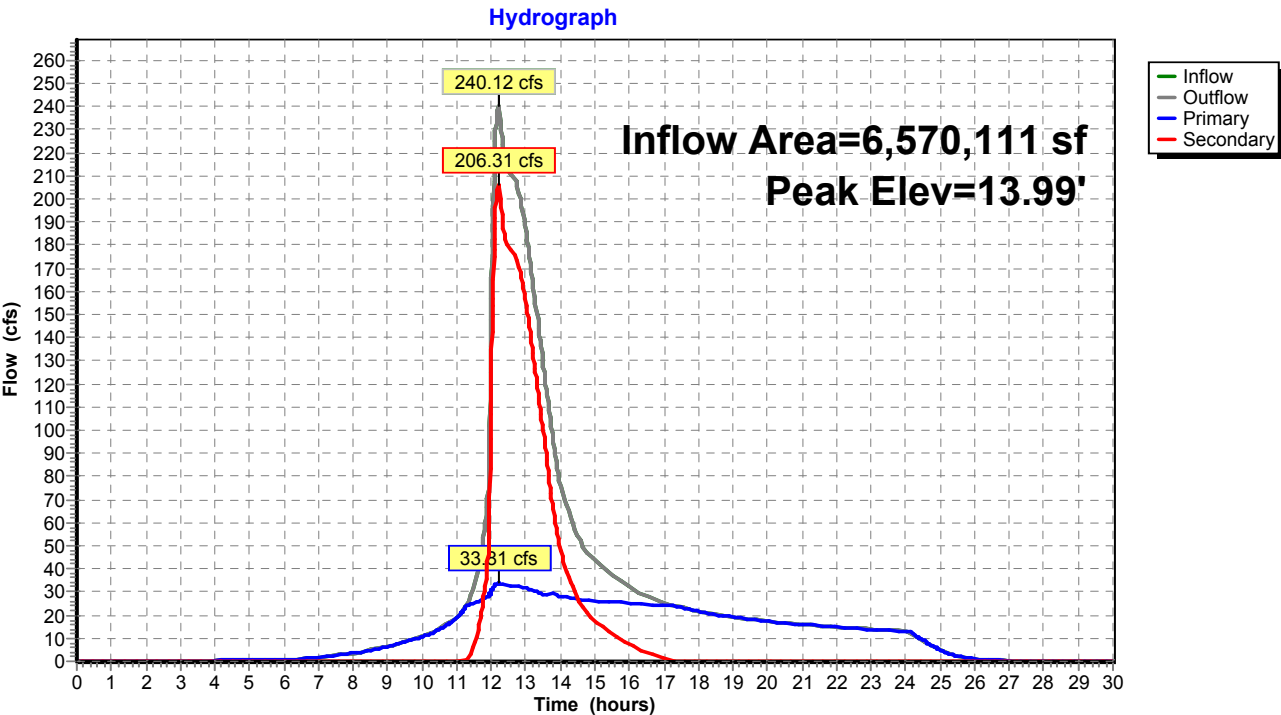
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 13.99' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 ' / Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

Primary OutFlow Max=33.81 cfs @ 12.21 hrs HW=13.99' (Free Discharge)
↑2=Culvert (Barrel Controls 33.81 cfs @ 5.63 fps)

Secondary OutFlow Max=206.25 cfs @ 12.21 hrs HW=13.99' (Free Discharge)
↑1=Custom Weir/Orifice (Weir Controls 206.25 cfs @ 4.15 fps)

Pond 1P: RR Culvert 2



Existing Conditions

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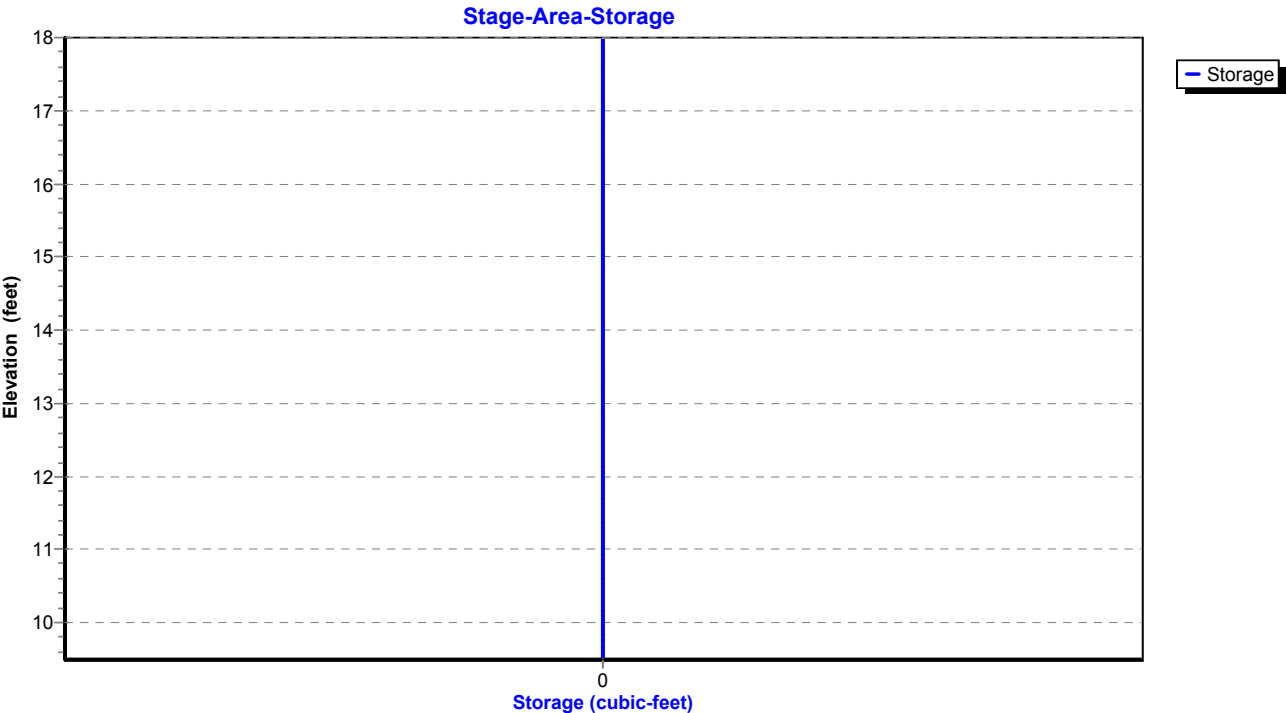
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 1P: RR Culvert 2



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.57% Impervious, Inflow Depth = 4.98" for 25 year event
Inflow = 153.54 cfs @ 12.04 hrs, Volume= 1,419,122 cf
Outflow = 153.54 cfs @ 12.04 hrs, Volume= 1,419,122 cf, Atten= 0%, Lag= 0.0 min
Primary = 52.79 cfs @ 12.04 hrs, Volume= 1,059,659 cf
Secondary = 100.76 cfs @ 12.04 hrs, Volume= 359,463 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 29.86' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

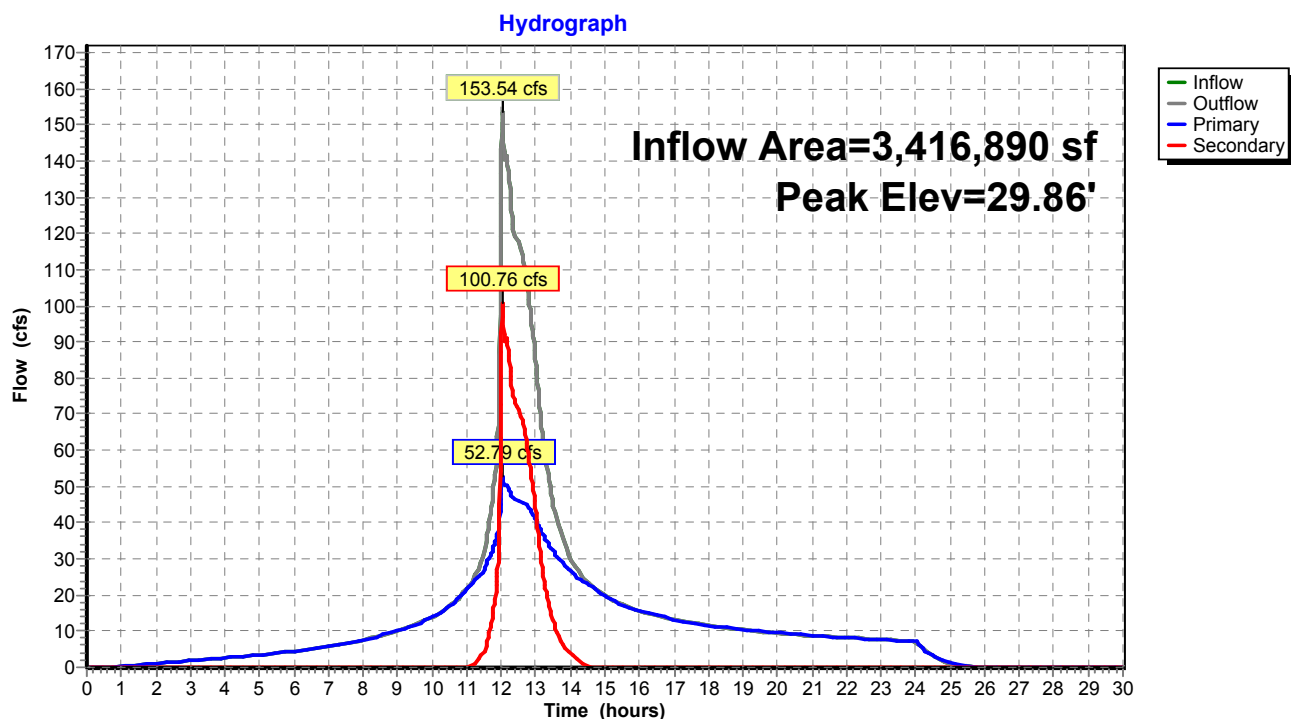
Primary OutFlow Max=52.77 cfs @ 12.04 hrs HW=29.85' (Free Discharge)

↑**1=Culvert** (Inlet Controls 52.77 cfs @ 9.16 fps)

Secondary OutFlow Max=100.68 cfs @ 12.04 hrs HW=29.85' (Free Discharge)

↑**2=Custom Weir/Orifice** (Orifice Controls 100.68 cfs @ 8.39 fps)

Pond 2P: RR Culvert 1



Existing Conditions

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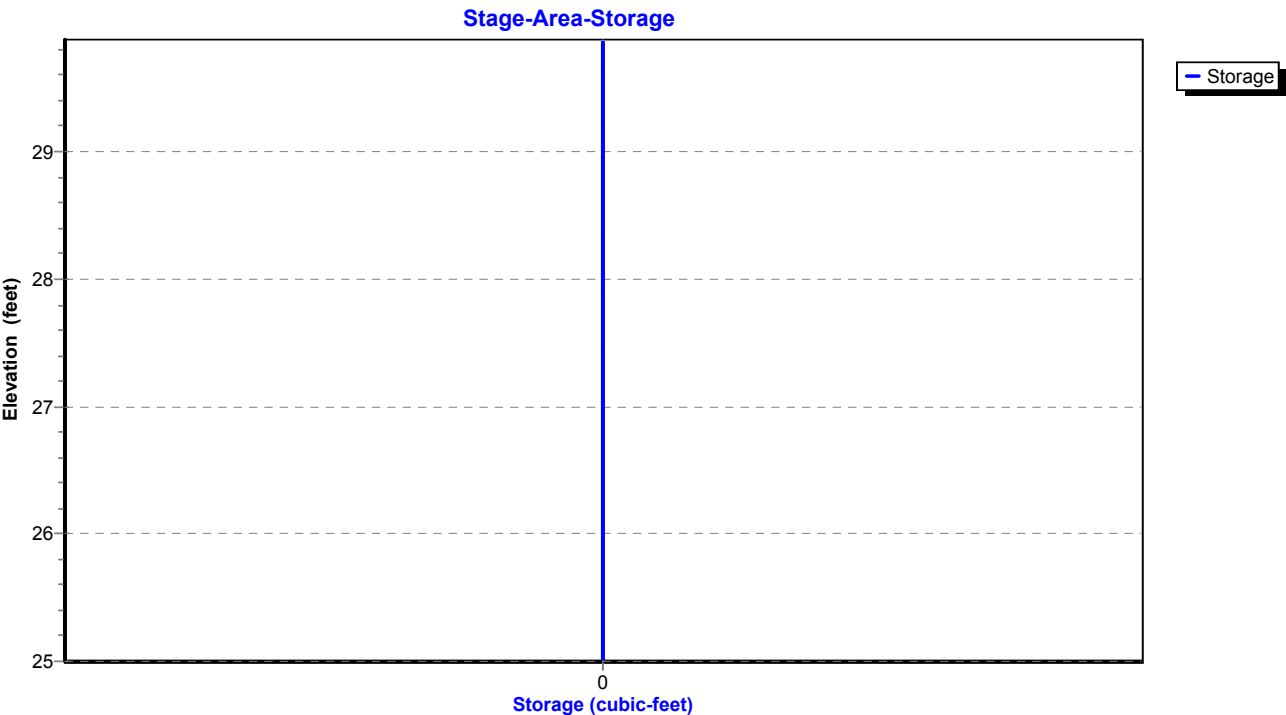
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Pond 2P: RR Culvert 1



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 4.45" for 25 year event
Inflow = 29.16 cfs @ 12.03 hrs, Volume= 97,738 cf
Outflow = 4.45 cfs @ 12.61 hrs, Volume= 81,966 cf, Atten= 85%, Lag= 34.4 min
Primary = 4.45 cfs @ 12.61 hrs, Volume= 81,966 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.29' @ 12.61 hrs Surf.Area= 12,581 sf Storage= 47,206 cf

Plug-Flow detention time= 218.9 min calculated for 81,939 cf (84% of inflow)
Center-of-Mass det. time= 140.4 min (937.2 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.45 cfs @ 12.61 hrs HW=50.29' (Free Discharge)

- 1=Culvert (Passes 4.45 cfs of 20.03 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 4.45 cfs @ 8.16 fps)
- 3=Orifice/Grate (Controls 0.00 cfs)

Existing Conditions

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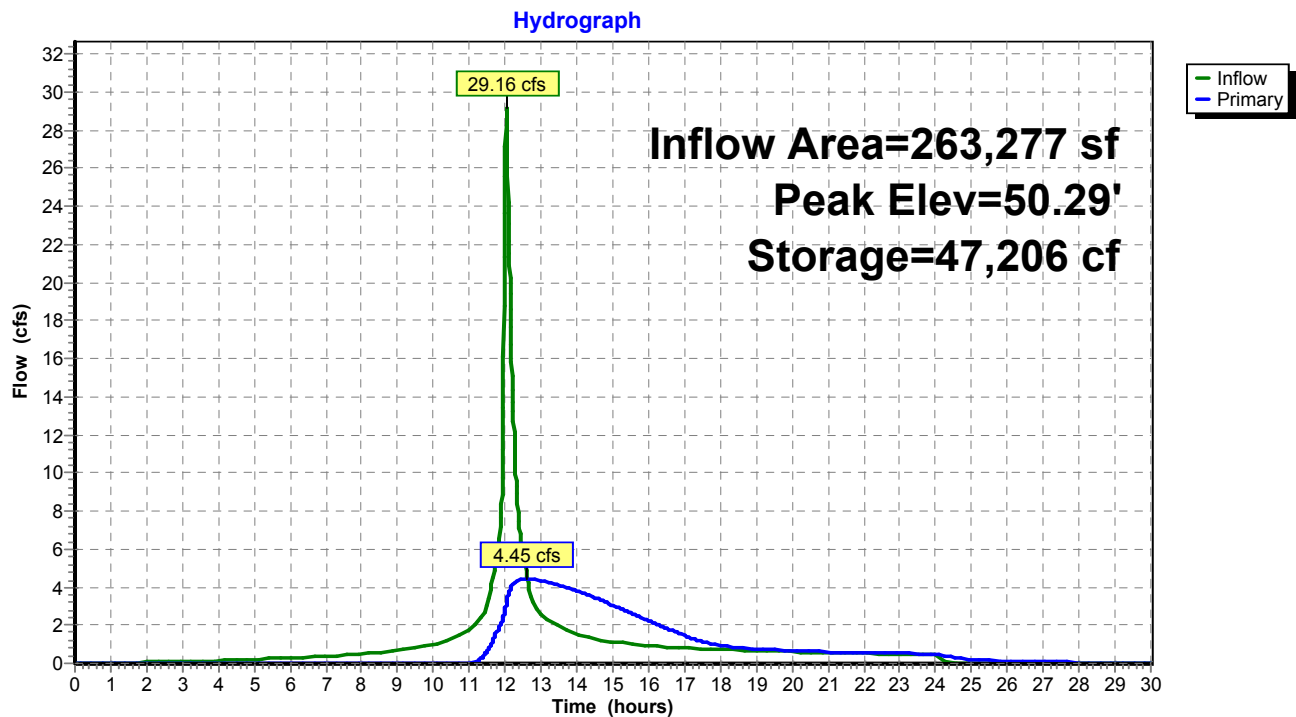
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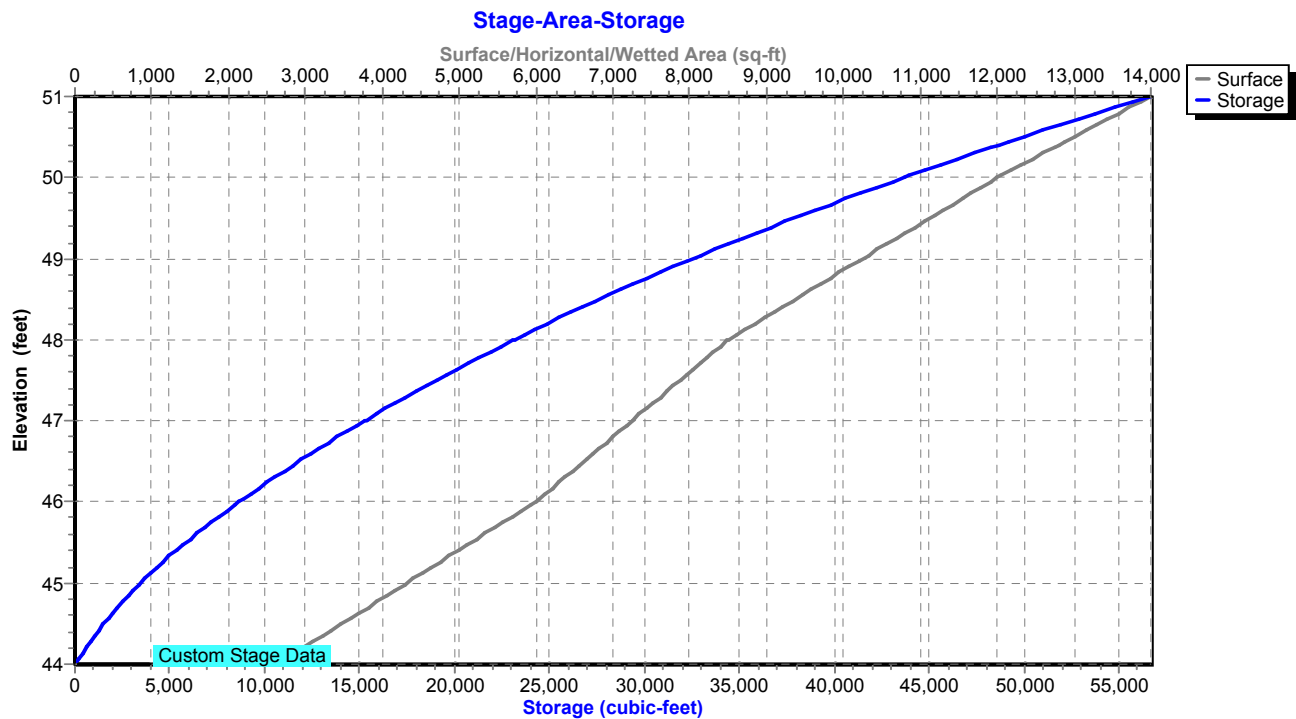
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 3.49" for 25 year event
 Inflow = 22.21 cfs @ 12.45 hrs, Volume= 157,388 cf
 Outflow = 18.94 cfs @ 12.63 hrs, Volume= 157,387 cf, Atten= 15%, Lag= 10.6 min
 Primary = 18.94 cfs @ 12.63 hrs, Volume= 157,387 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 80.78' @ 12.63 hrs Storage= 8,732 cf

Plug-Flow detention time= 6.3 min calculated for 157,387 cf (100% of inflow)

Center-of-Mass det. time= 6.3 min (887.5 - 881.2)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=18.94 cfs @ 12.63 hrs HW=80.78' (Free Discharge)↑**1=Culvert** (Inlet Controls 18.94 cfs @ 6.03 fps)

Existing Conditions

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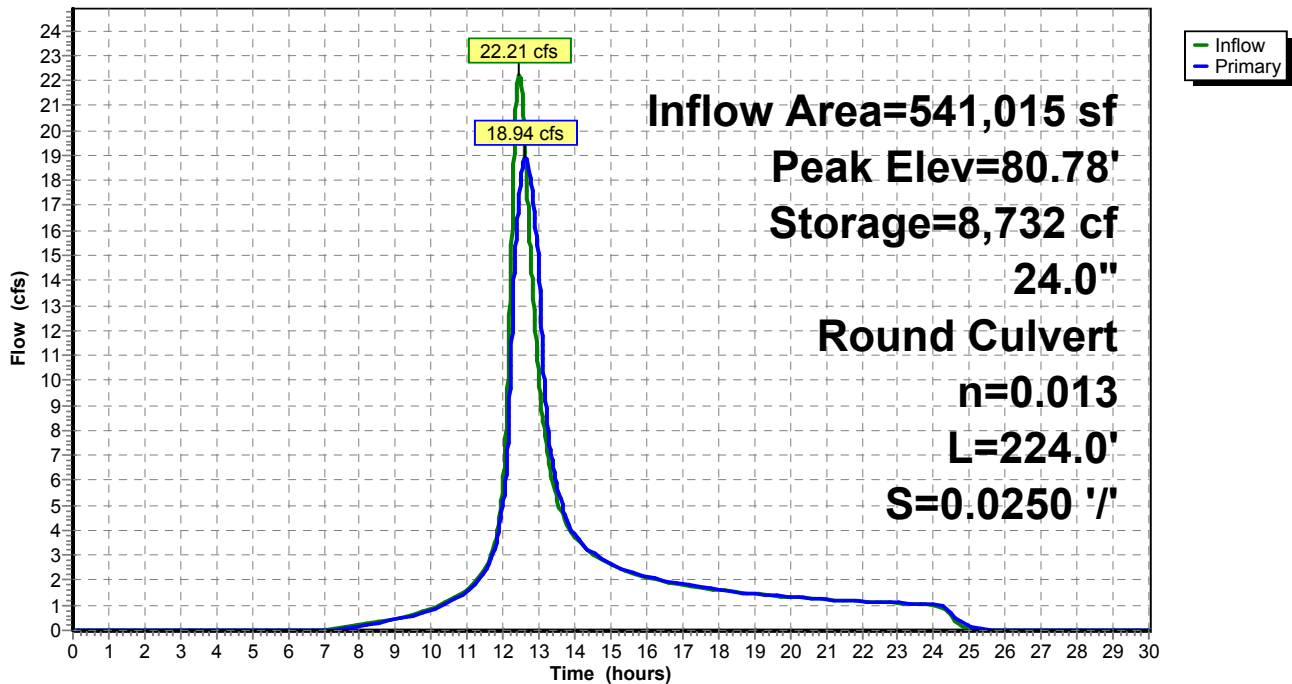
NORWALK 24-hr S1 25 year Rainfall=6.48"

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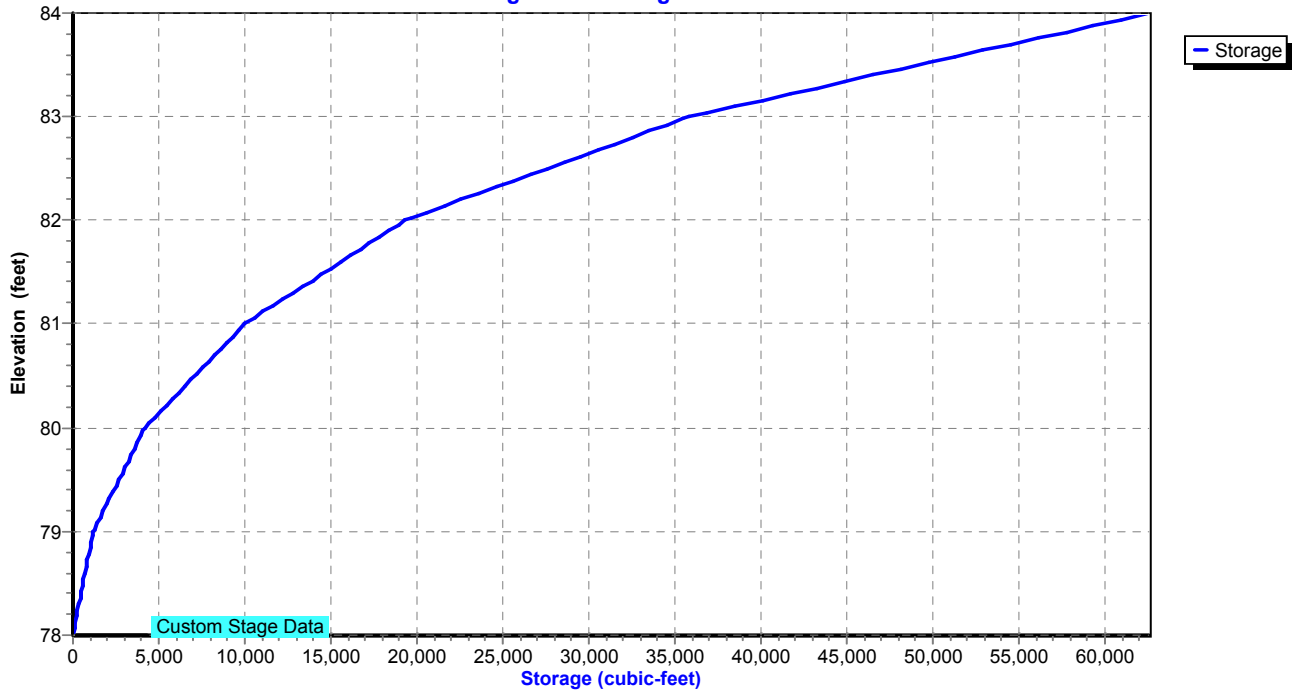
Pond 5P: DET 5 Culvert

Hydrograph



Pond 5P: DET 5 Culvert

Stage-Area-Storage



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 4.43" for 25 year event
 Inflow = 30.81 cfs @ 12.70 hrs, Volume= 275,844 cf
 Outflow = 30.74 cfs @ 12.71 hrs, Volume= 275,844 cf, Atten= 0%, Lag= 0.7 min
 Primary = 30.74 cfs @ 12.71 hrs, Volume= 275,844 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 91.67' @ 12.71 hrs Storage= 1,138 cf

Plug-Flow detention time= 0.5 min calculated for 275,844 cf (100% of inflow)

Center-of-Mass det. time= 0.4 min (869.5 - 869.0)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=30.74 cfs @ 12.71 hrs HW=91.67' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 30.74 cfs @ 6.26 fps)

Existing Conditions

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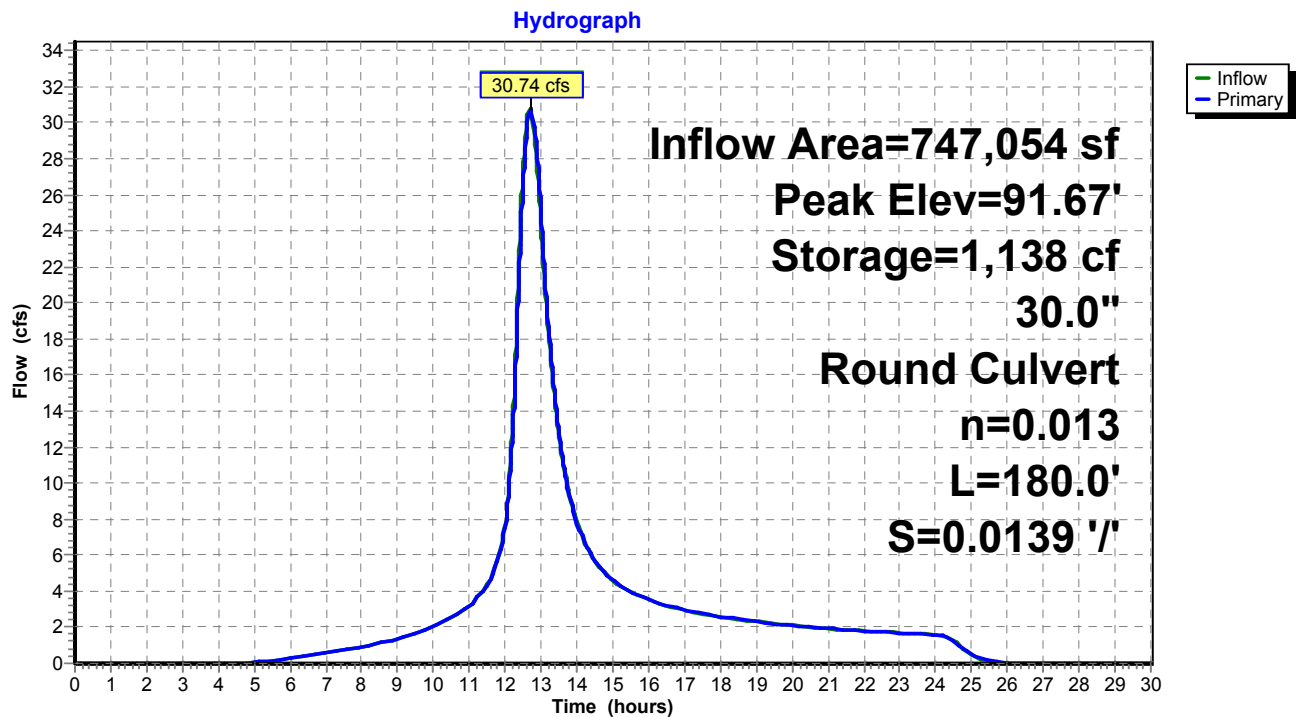
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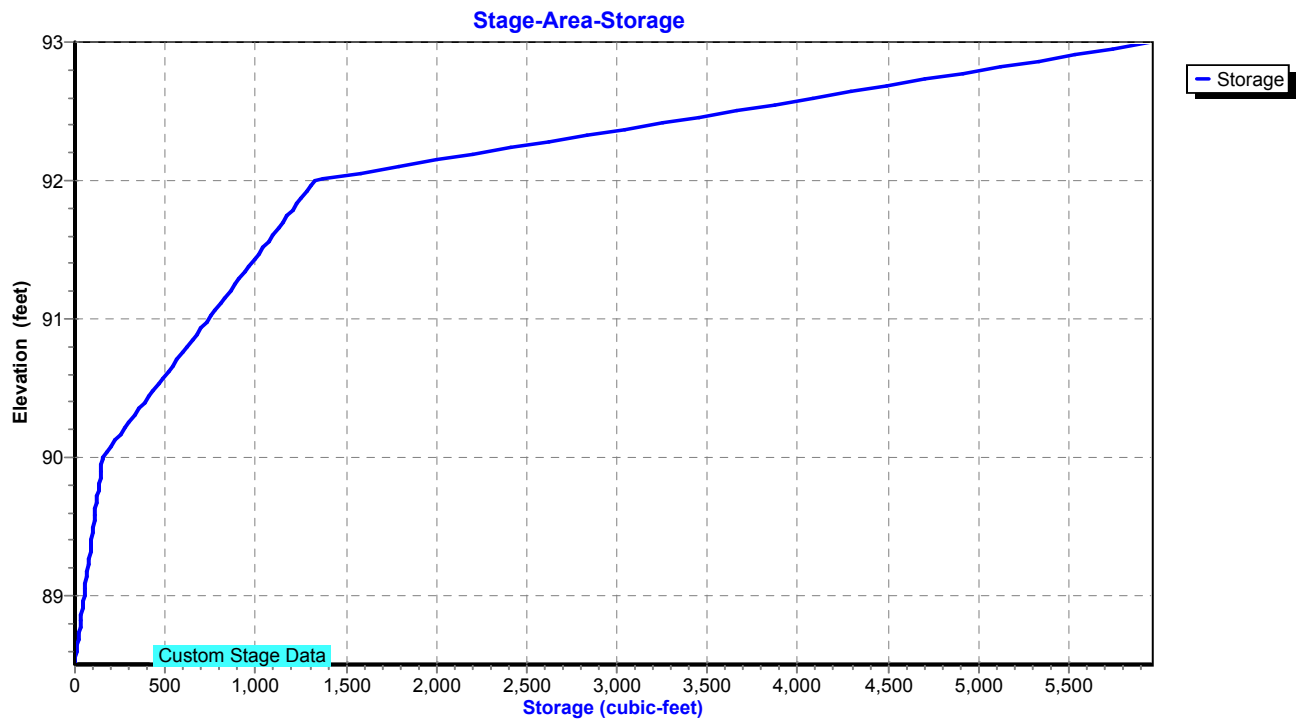
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 4.32" for 25 year event
 Inflow = 4.22 cfs @ 12.26 hrs, Volume= 23,071 cf
 Outflow = 2.81 cfs @ 12.46 hrs, Volume= 23,071 cf, Atten= 33%, Lag= 12.2 min
 Primary = 2.81 cfs @ 12.46 hrs, Volume= 23,071 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.39' @ 12.46 hrs Storage= 2,350 cf

Plug-Flow detention time= 6.6 min calculated for 23,071 cf (100% of inflow)

Center-of-Mass det. time= 6.6 min (849.3 - 842.7)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.81 cfs @ 12.46 hrs HW=93.39' (Free Discharge)↑**1=Culvert** (Inlet Controls 2.81 cfs @ 3.01 fps)

Existing Conditions

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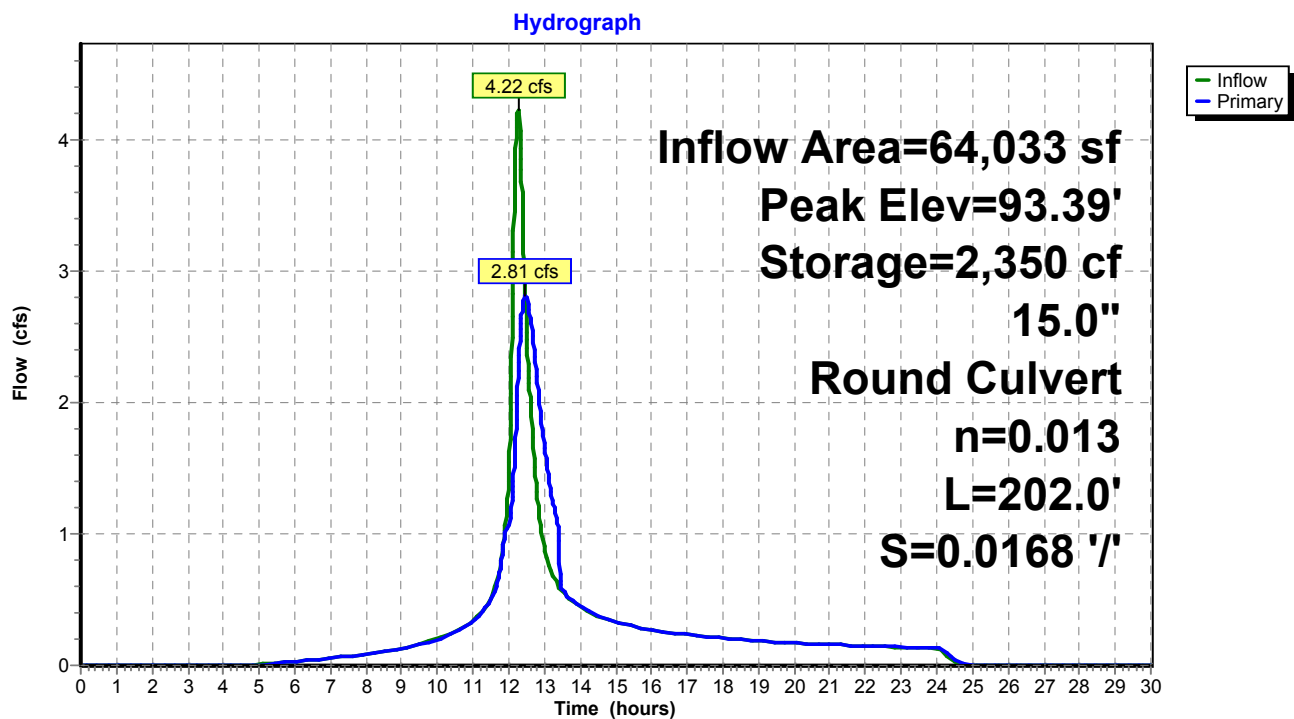
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NORWALK 24-hr S1 25 year Rainfall=6.48"

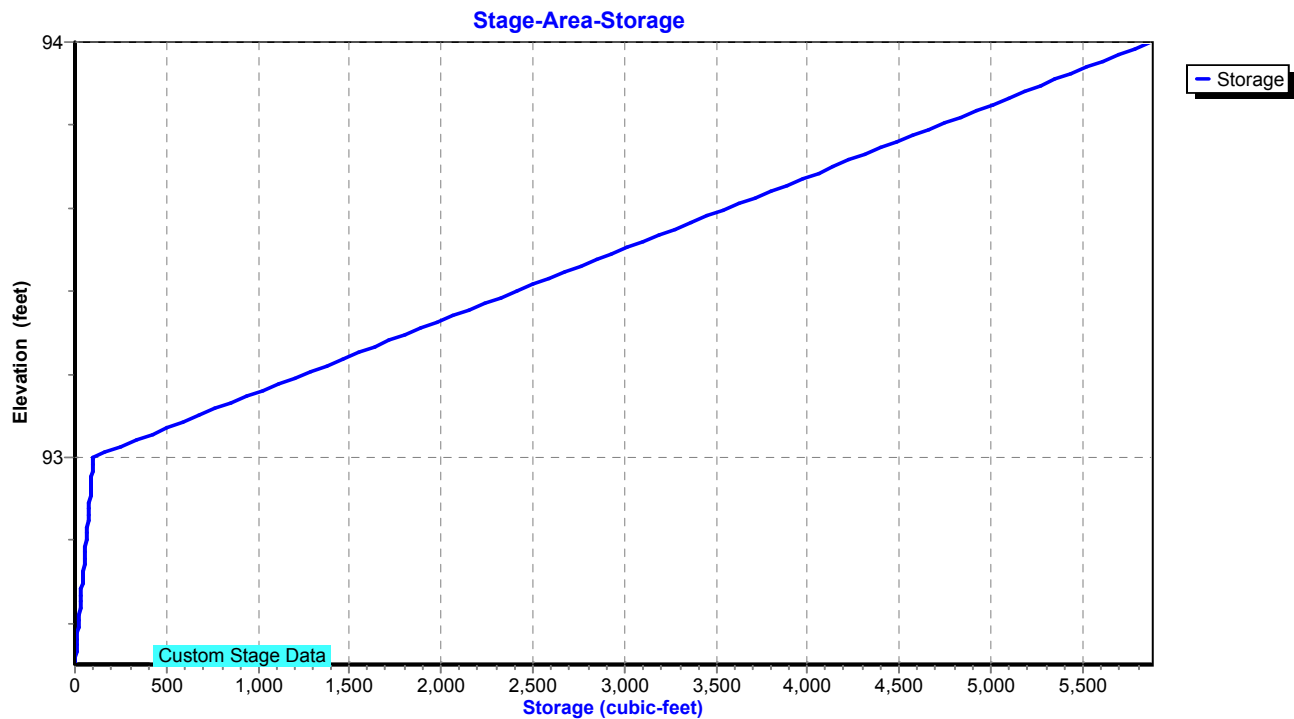
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 4.20" for 25 year event
 Inflow = 62.19 cfs @ 12.67 hrs, Volume= 555,099 cf
 Outflow = 62.19 cfs @ 12.67 hrs, Volume= 555,099 cf, Atten= 0%, Lag= 0.1 min
 Primary = 62.19 cfs @ 12.67 hrs, Volume= 555,099 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 71.95' @ 12.67 hrs Storage= 164 cf

Plug-Flow detention time= 0.0 min calculated for 555,099 cf (100% of inflow)

Center-of-Mass det. time= 0.0 min (866.3 - 866.3)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=62.19 cfs @ 12.67 hrs HW=71.95' (Free Discharge)↑ **1=Culvert** (Inlet Controls 62.19 cfs @ 6.46 fps)

Existing Conditions

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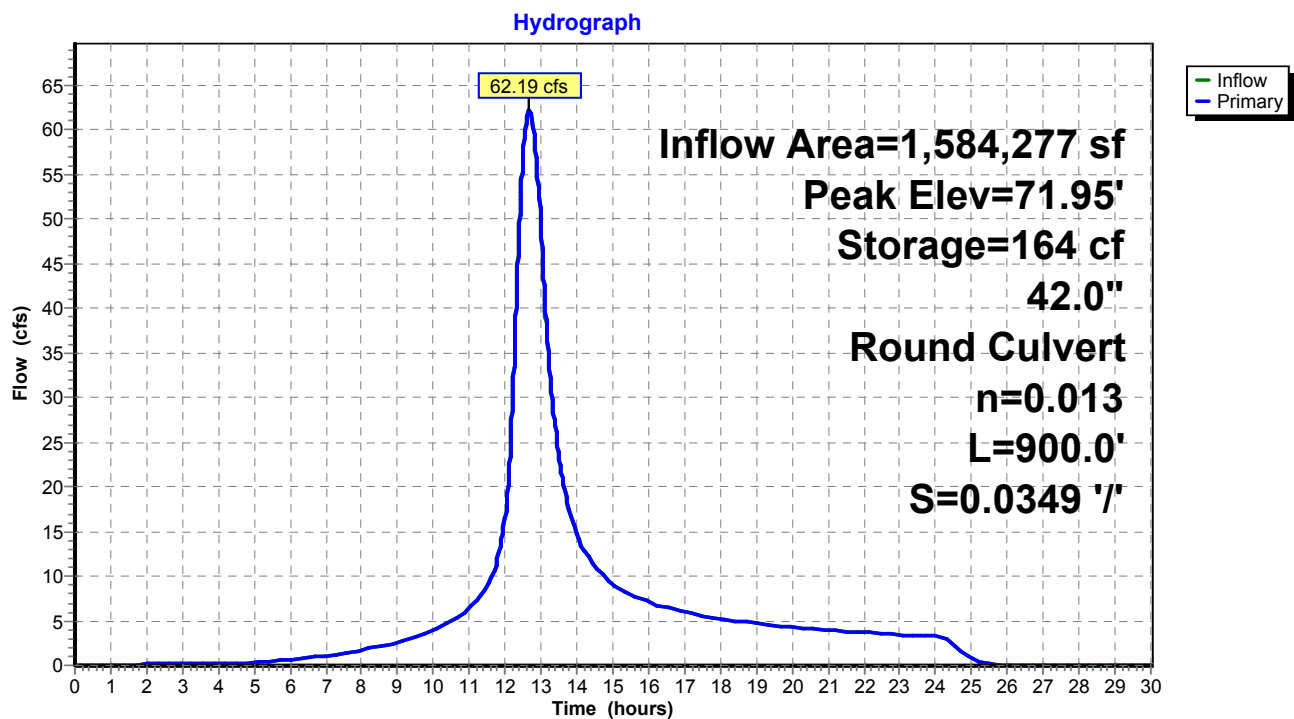
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NORWALK 24-hr S1 25 year Rainfall=6.48"

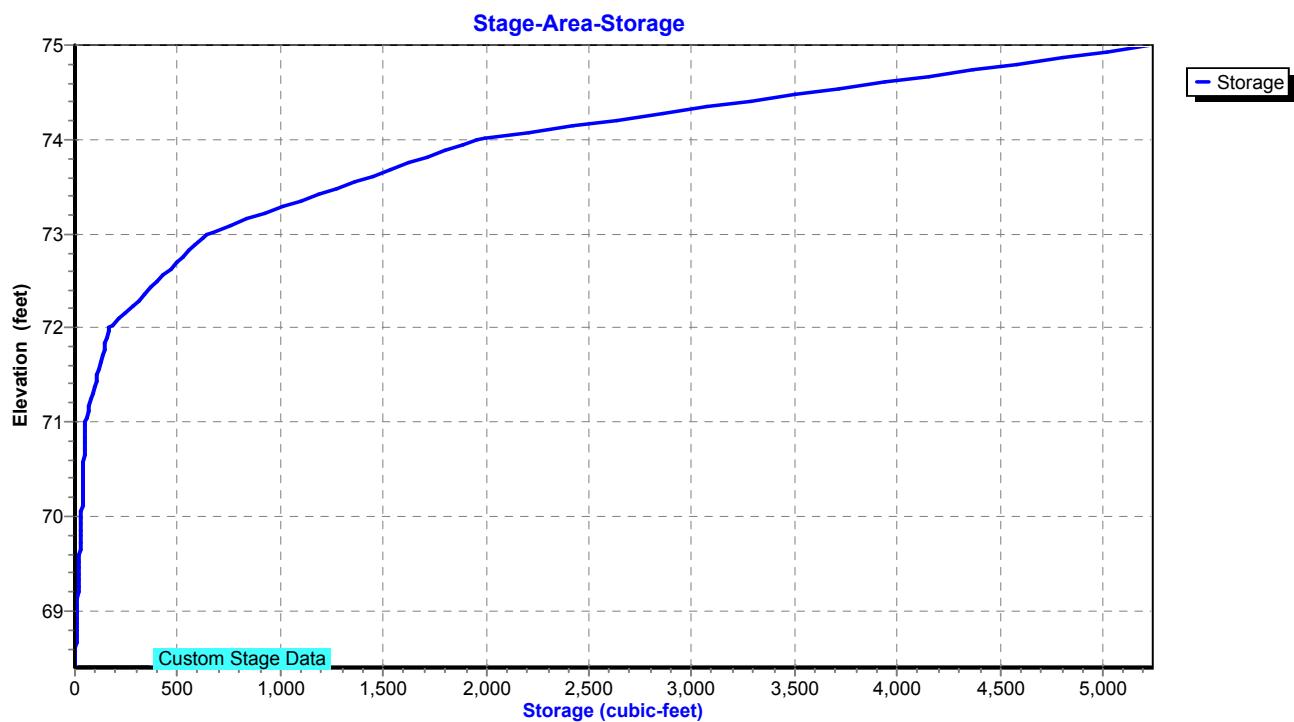
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 9P: MH-K

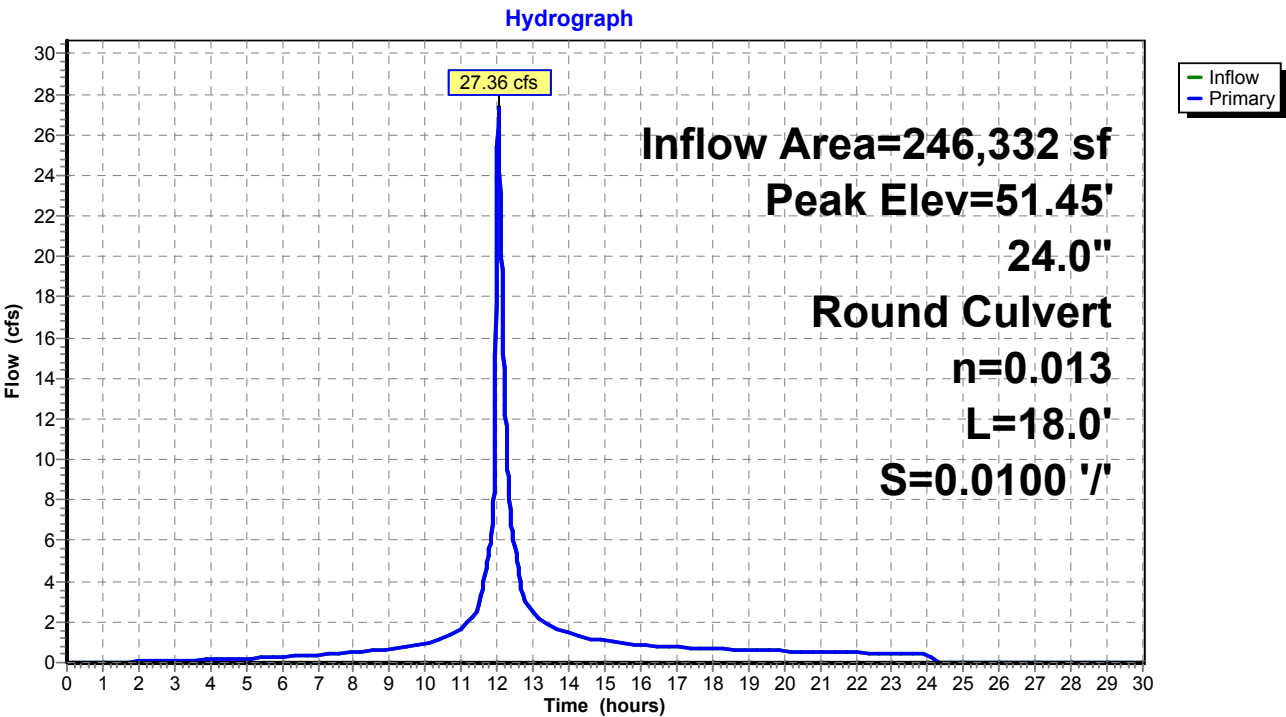
Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 4.51" for 25 year event
Inflow = 27.36 cfs @ 12.04 hrs, Volume= 92,665 cf
Outflow = 27.36 cfs @ 12.04 hrs, Volume= 92,665 cf, Atten= 0%, Lag= 0.0 min
Primary = 27.36 cfs @ 12.04 hrs, Volume= 92,665 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.45' @ 12.04 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=27.27 cfs @ 12.04 hrs HW=51.43' (Free Discharge)
1=Culvert (Inlet Controls 27.27 cfs @ 8.68 fps)

Pond 9P: MH-K



Existing Conditions

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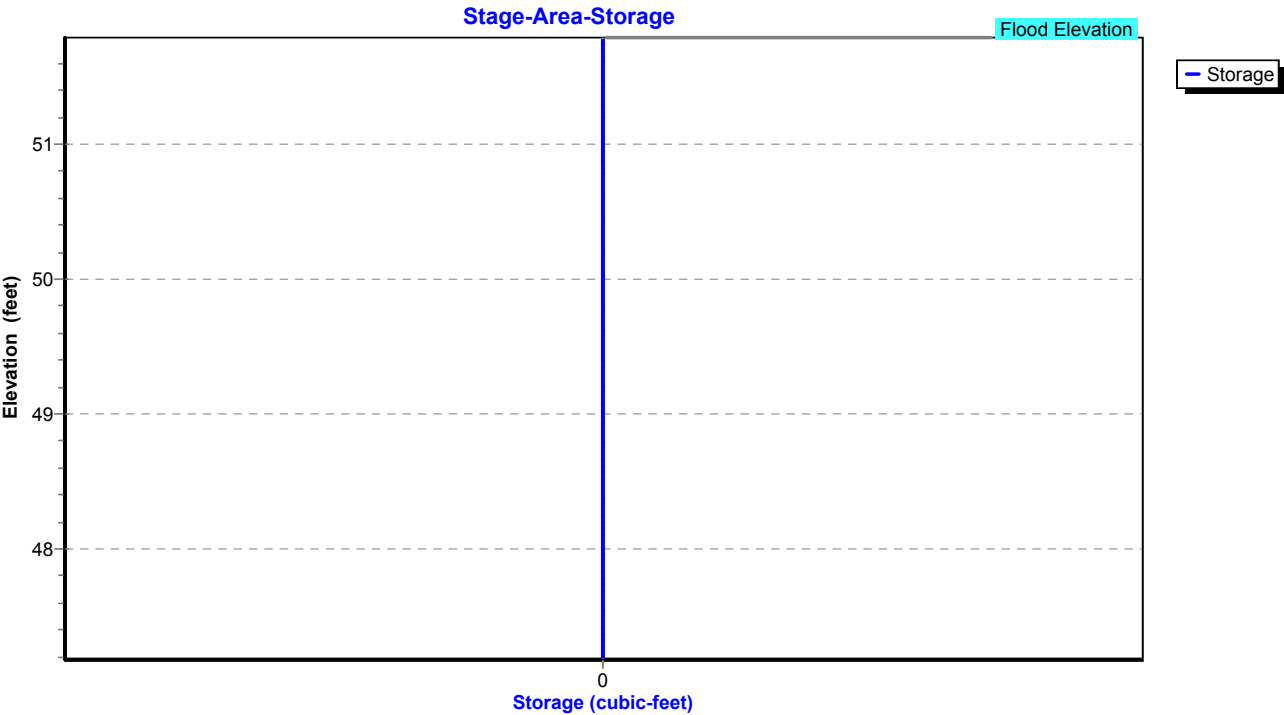
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 9P: MH-K



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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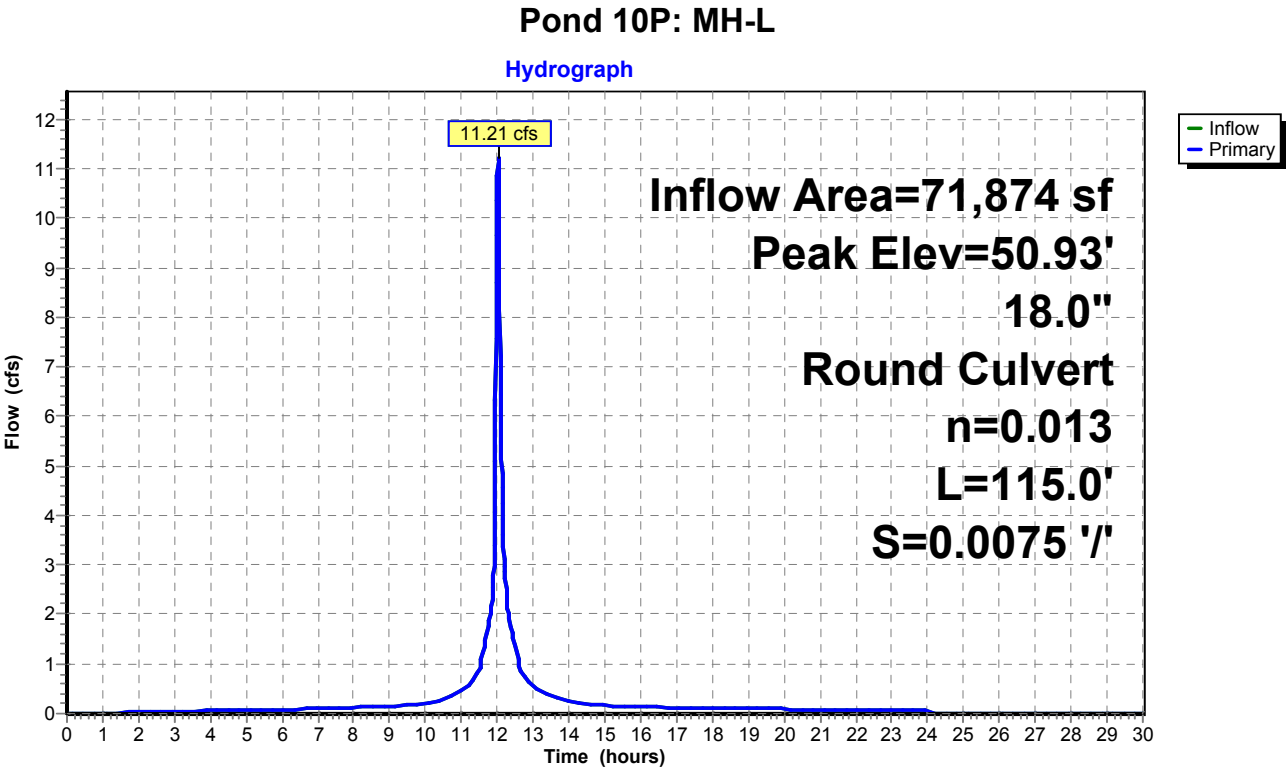
Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 3.85" for 25 year event
Inflow = 11.21 cfs @ 12.03 hrs, Volume= 23,062 cf
Outflow = 11.21 cfs @ 12.03 hrs, Volume= 23,062 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.21 cfs @ 12.03 hrs, Volume= 23,062 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.93' @ 12.03 hrs
Flood Elev= 53.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=11.16 cfs @ 12.03 hrs HW=50.91' (Free Discharge)
1=Culvert (Barrel Controls 11.16 cfs @ 6.32 fps)



Existing Conditions

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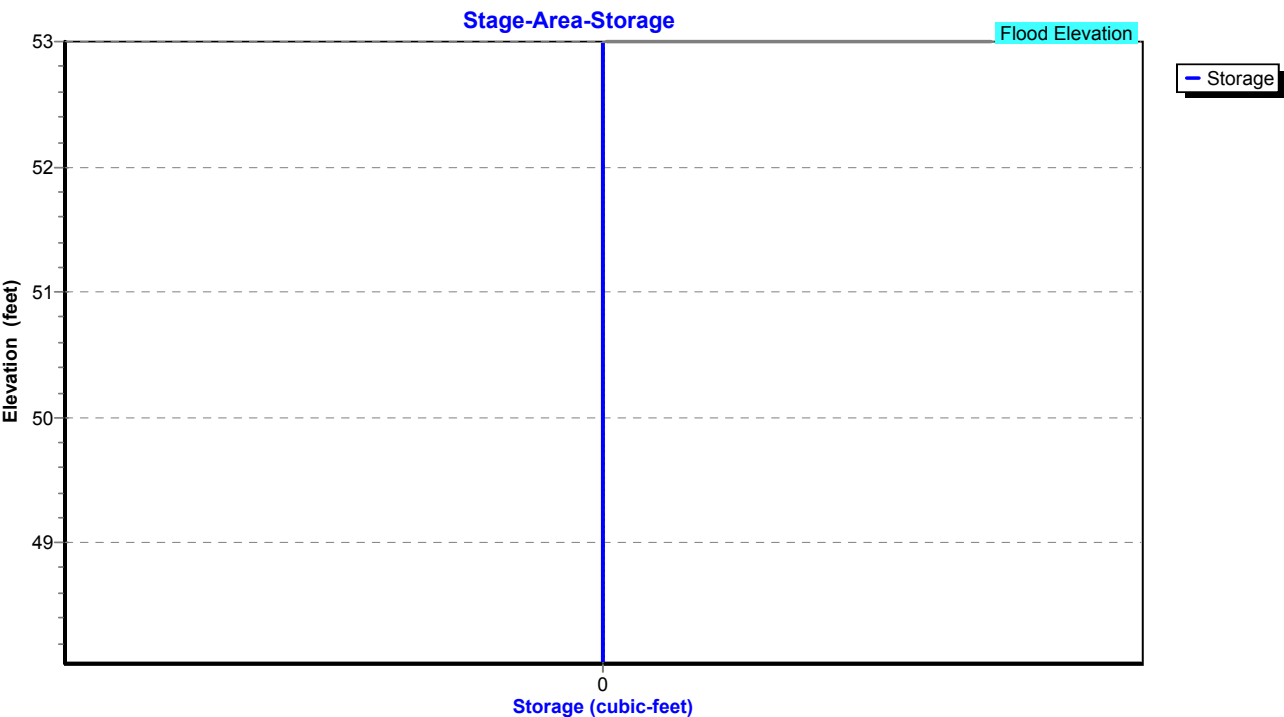
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Pond 10P: MH-L



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 5.78" for 25 year event
Inflow = 6.50 cfs @ 12.03 hrs, Volume= 19,701 cf
Outflow = 6.25 cfs @ 12.03 hrs, Volume= 7,784 cf, Atten= 4%, Lag= 0.0 min
Primary = 6.25 cfs @ 12.03 hrs, Volume= 7,784 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 52.02' @ 12.03 hrs Storage= 0.081 af

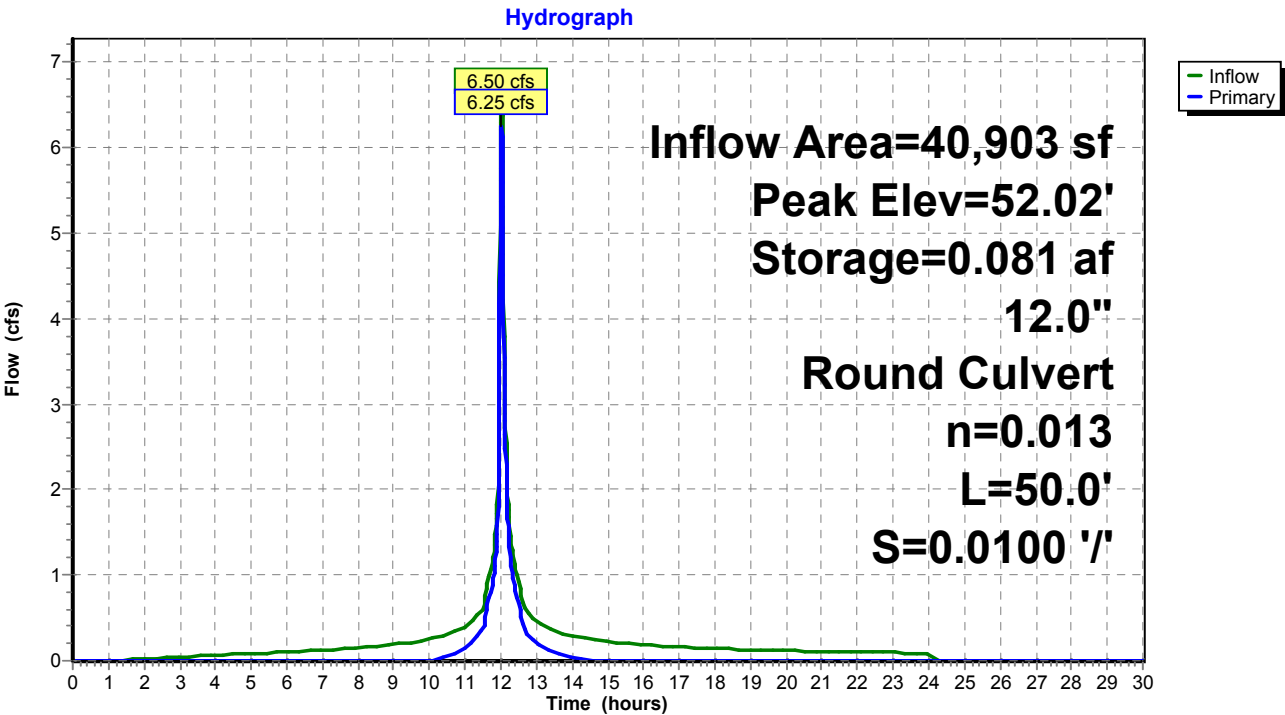
Plug-Flow detention time= 146.8 min calculated for 7,781 cf (39% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=6.22 cfs @ 12.03 hrs HW=51.99' (Free Discharge)
1=Culvert (Barrel Controls 6.22 cfs @ 7.92 fps)

Pond 11P: Pipe Storage



Existing Conditions

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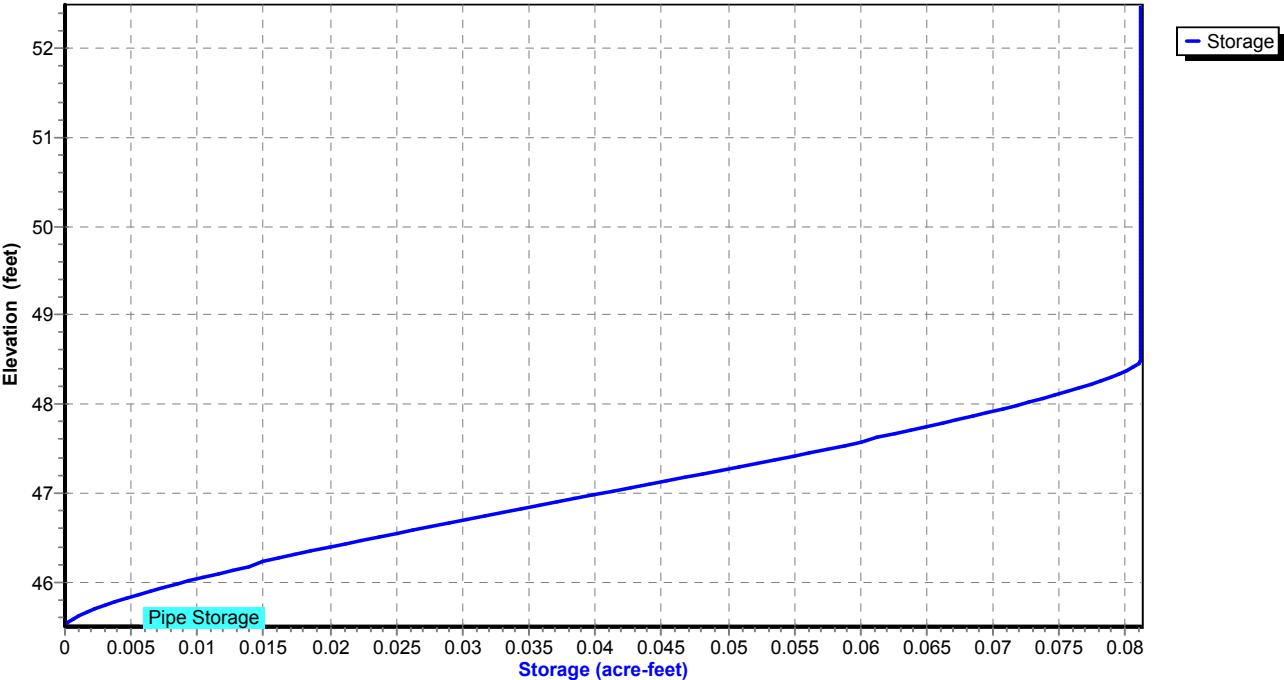
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Pond 11P: Pipe Storage

Stage-Area-Storage



Existing Conditions

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Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 5.92" for 25 year event
Inflow = 4.96 cfs @ 12.03 hrs, Volume= 15,279 cf
Outflow = 4.96 cfs @ 12.03 hrs, Volume= 15,279 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.96 cfs @ 12.03 hrs, Volume= 15,279 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.64' @ 12.03 hrs

Flood Elev= 54.00'

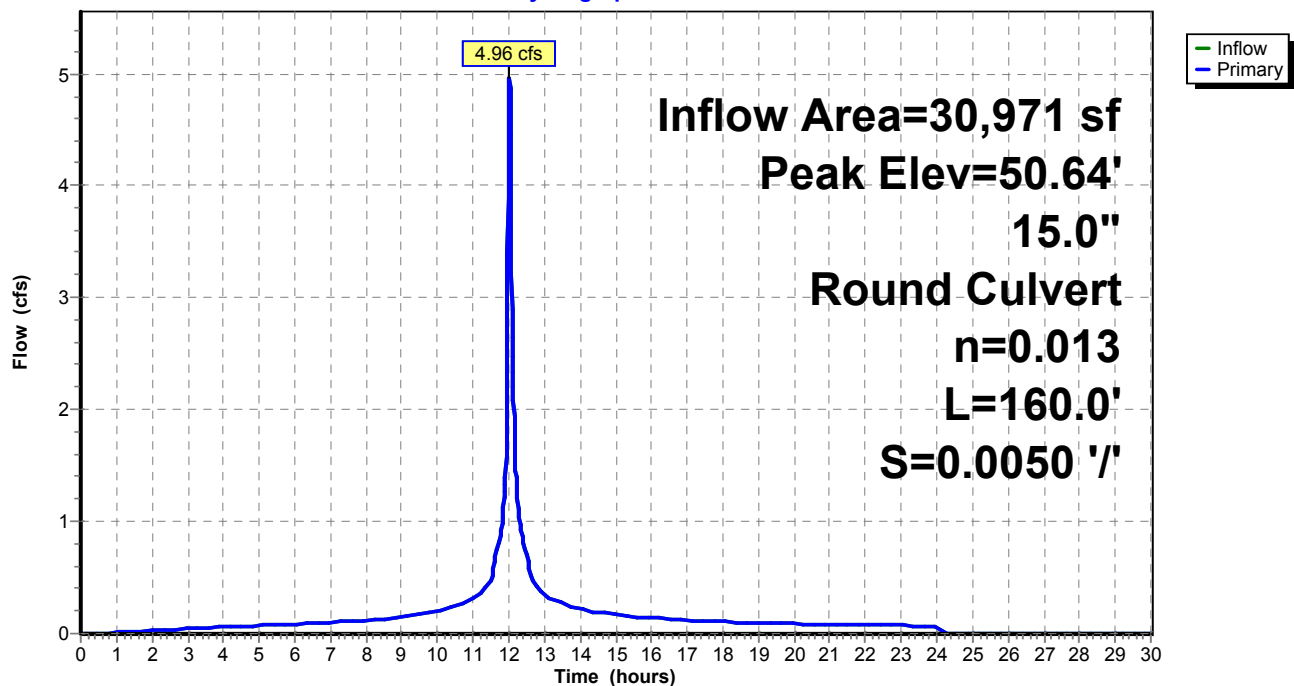
Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.94 cfs @ 12.03 hrs HW=50.61' (Free Discharge)

↑1=Culvert (Barrel Controls 4.94 cfs @ 4.03 fps)

Pond 12P: MH-M

Hydrograph



Existing Conditions

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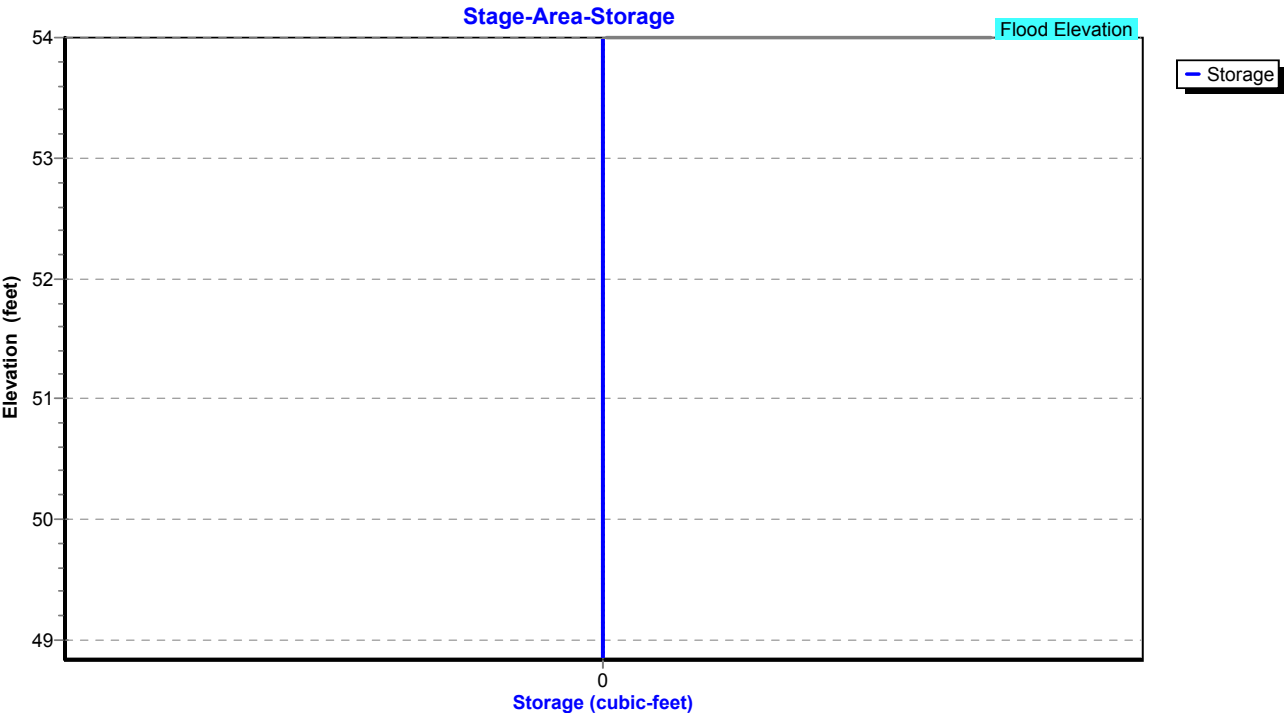
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 5.66" for 25 year event
Inflow = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf
Outflow = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

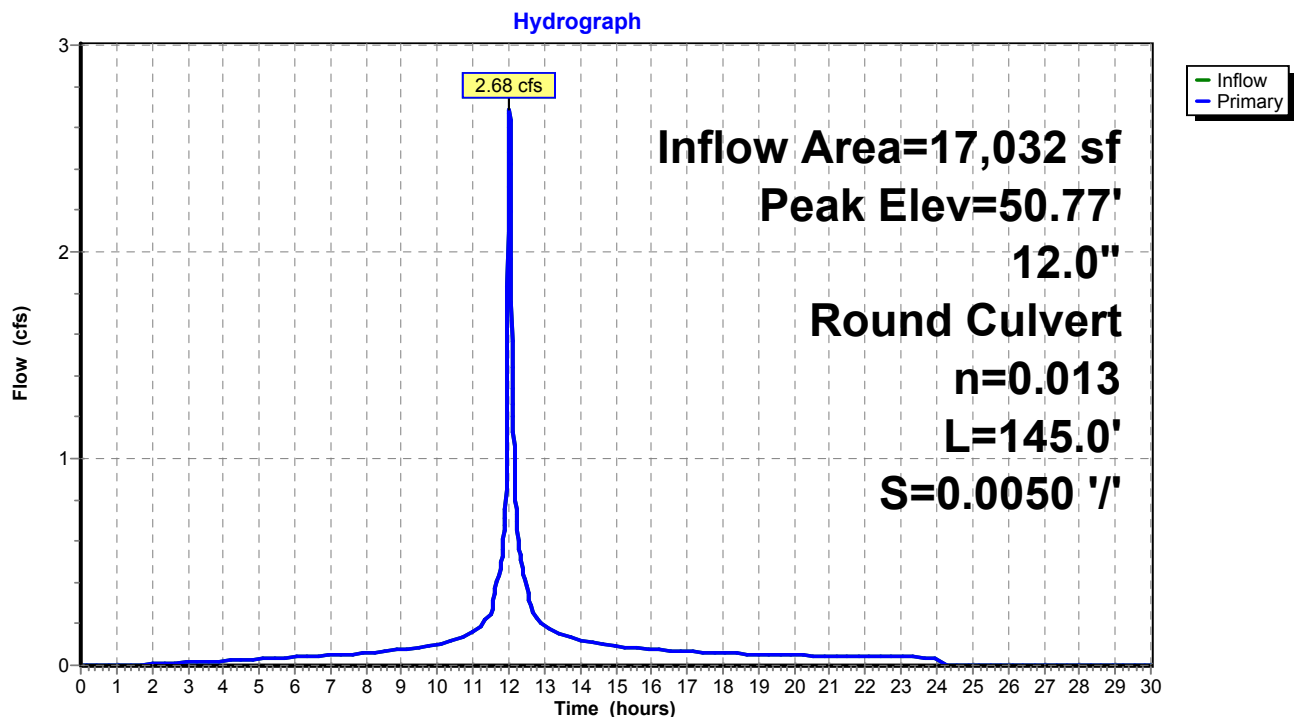
Peak Elev= 50.77' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.67 cfs @ 12.03 hrs HW=50.76' (Free Discharge)

↑1=Culvert (Barrel Controls 2.67 cfs @ 3.61 fps)

Pond 13P: MH-J



Existing Conditions

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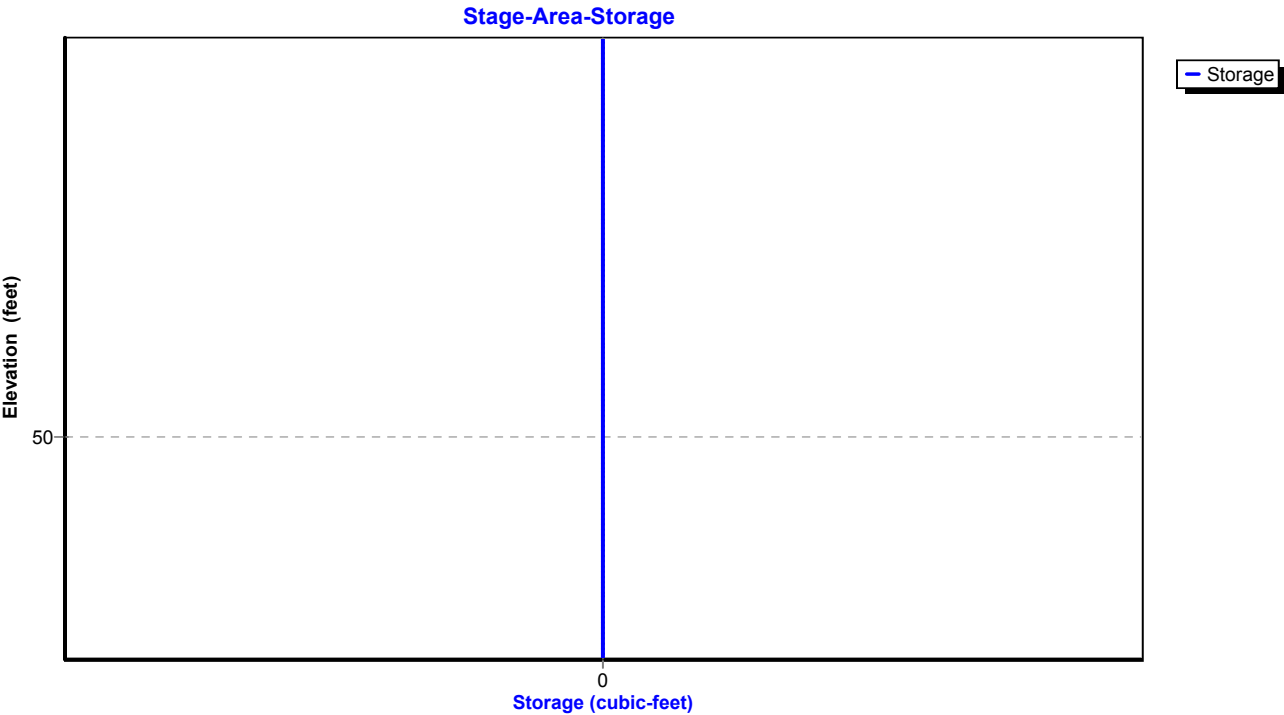
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Pond 13P: MH-J



Existing Conditions

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Summary for Pond 14P: MH-O

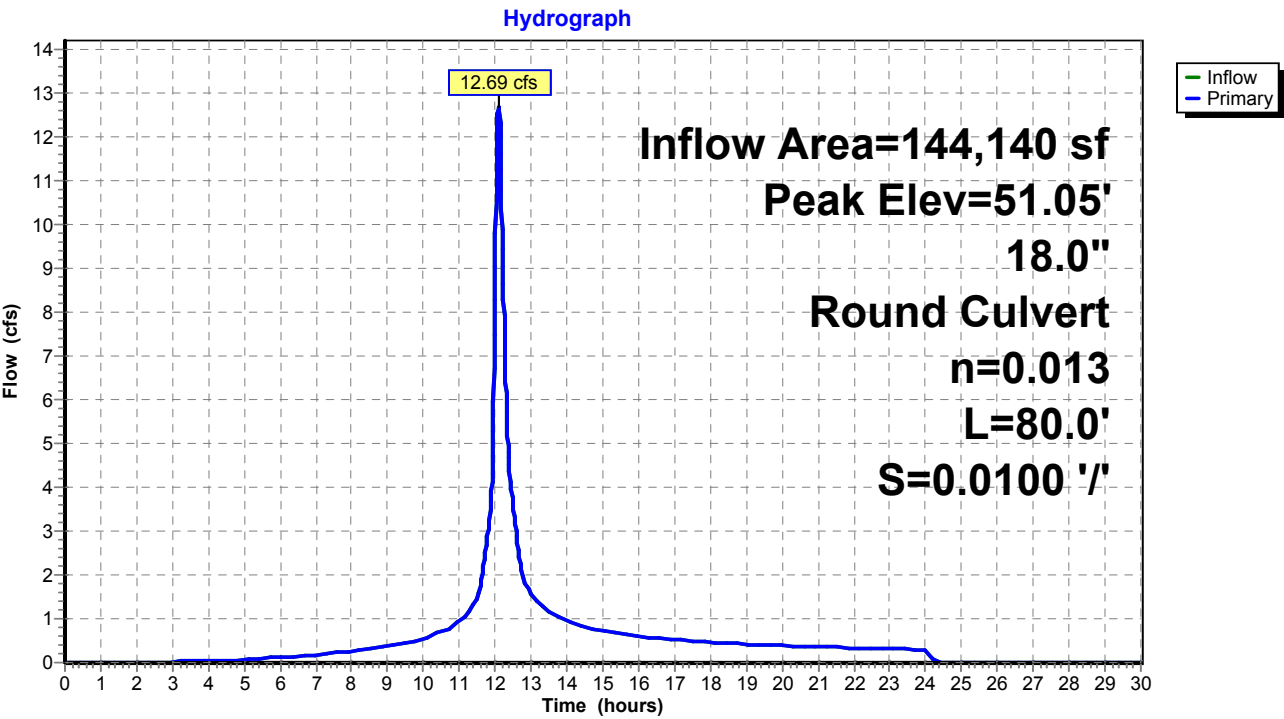
Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 4.56" for 25 year event
Inflow = 12.69 cfs @ 12.10 hrs, Volume= 54,725 cf
Outflow = 12.69 cfs @ 12.10 hrs, Volume= 54,725 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.69 cfs @ 12.10 hrs, Volume= 54,725 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.05' @ 12.10 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=12.68 cfs @ 12.10 hrs HW=51.05' (Free Discharge)
1=Culvert (Barrel Controls 12.68 cfs @ 7.18 fps)

Pond 14P: MH-O



Existing Conditions

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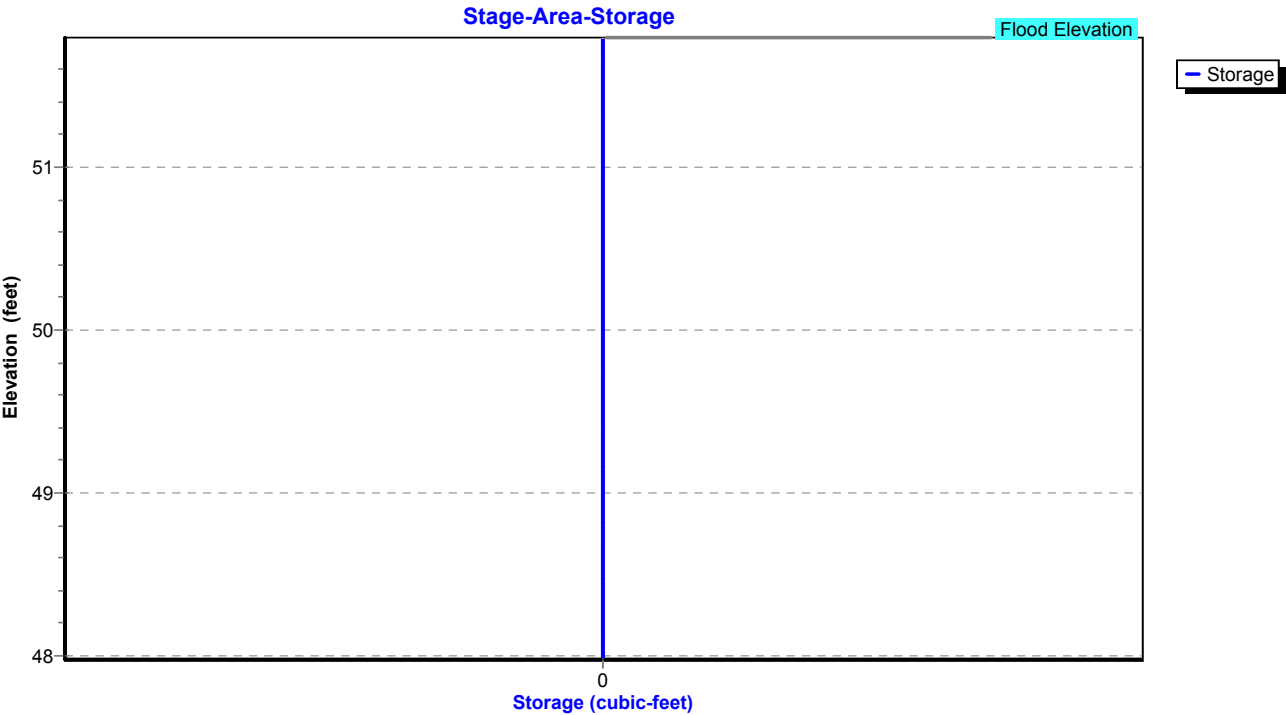
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Pond 14P: MH-O



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Summary for Pond 15P: MH-P

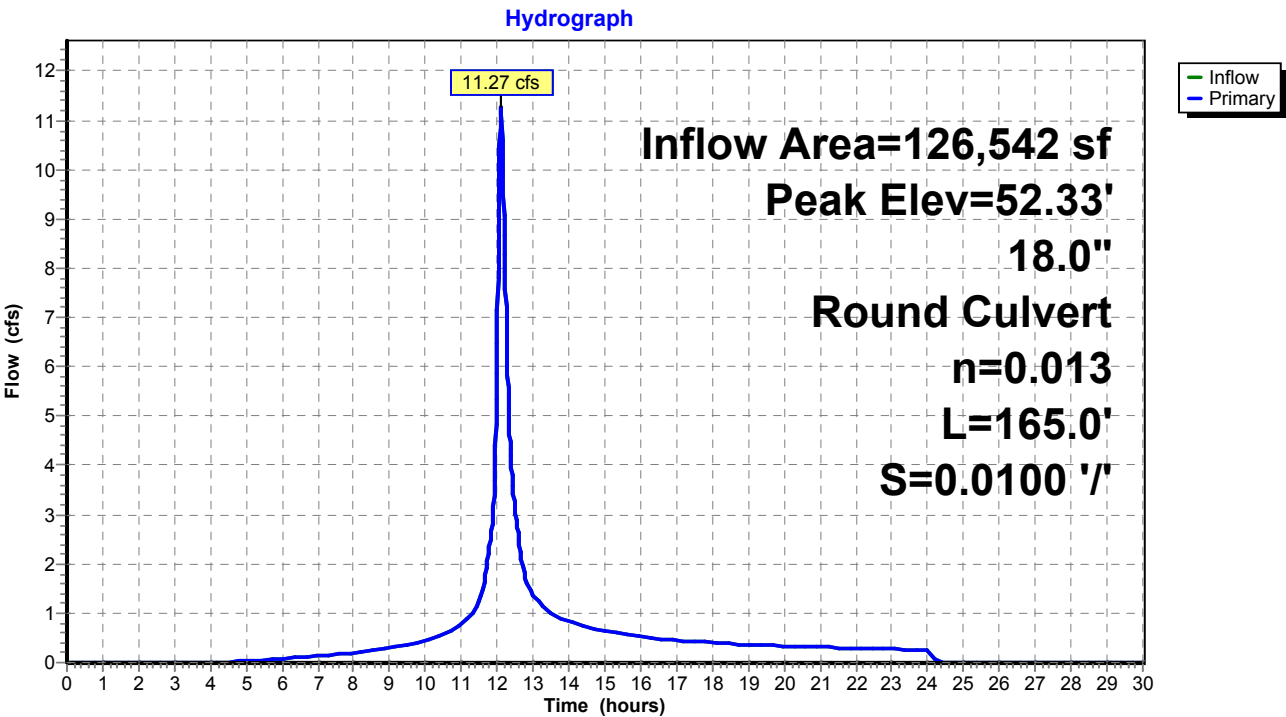
Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 4.40" for 25 year event
Inflow = 11.27 cfs @ 12.11 hrs, Volume= 46,408 cf
Outflow = 11.27 cfs @ 12.11 hrs, Volume= 46,408 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.27 cfs @ 12.11 hrs, Volume= 46,408 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.33' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=11.26 cfs @ 12.11 hrs HW=52.33' (Free Discharge)
1=Culvert (Barrel Controls 11.26 cfs @ 6.37 fps)

Pond 15P: MH-P



Existing Conditions

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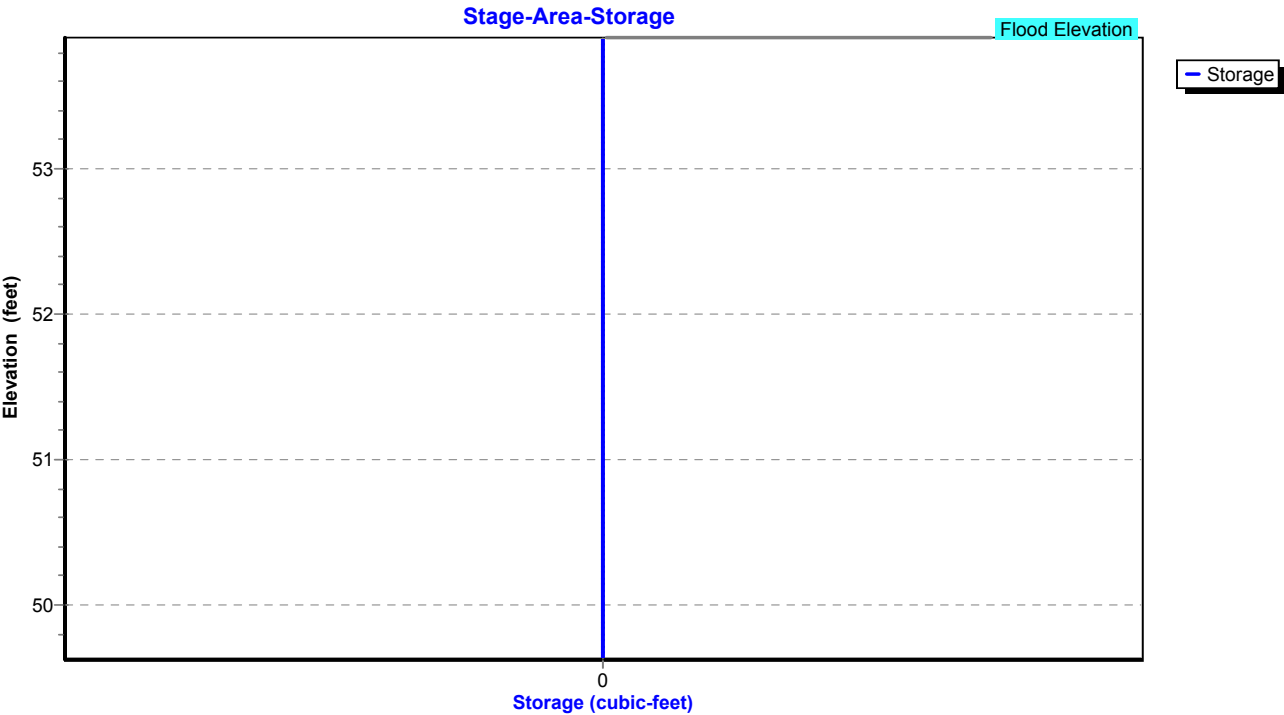
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Pond 15P: MH-P



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Summary for Pond 16P: MH-Q

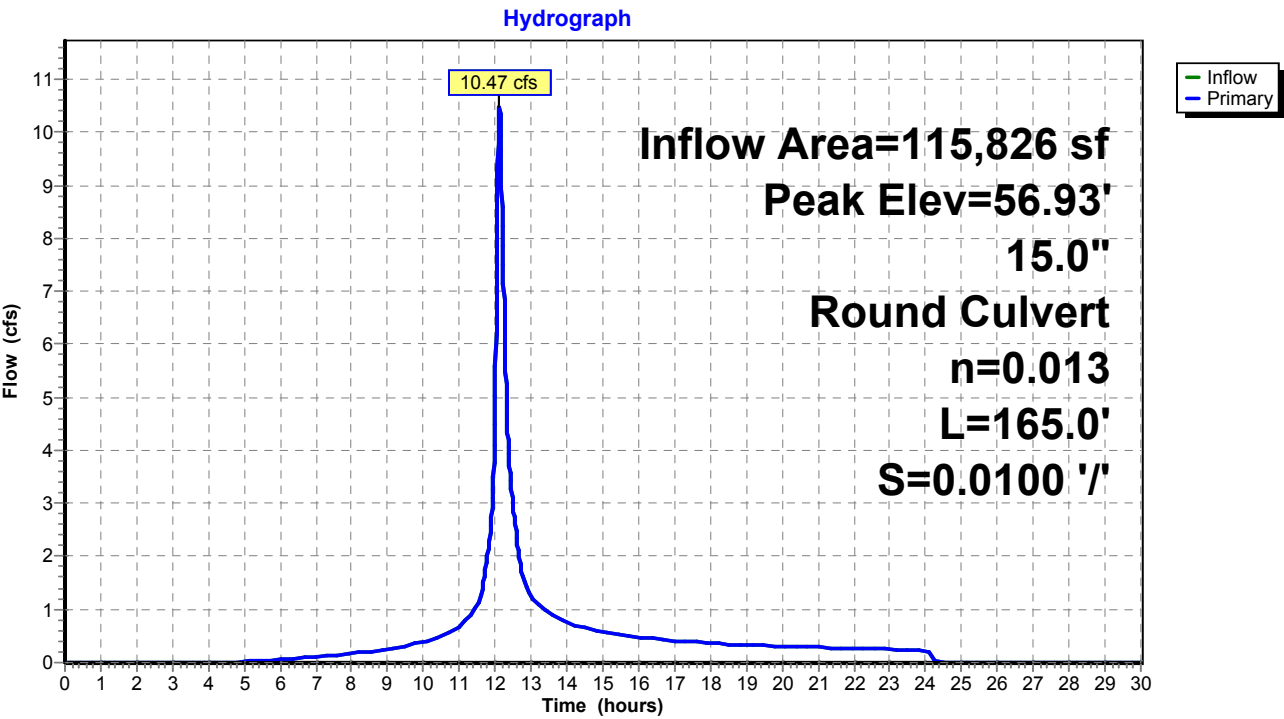
Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 4.32" for 25 year event
Inflow = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf
Outflow = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 56.93' @ 12.12 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=10.46 cfs @ 12.12 hrs HW=56.92' (Free Discharge)
1=Culvert (Barrel Controls 10.46 cfs @ 8.53 fps)

Pond 16P: MH-Q



Existing Conditions

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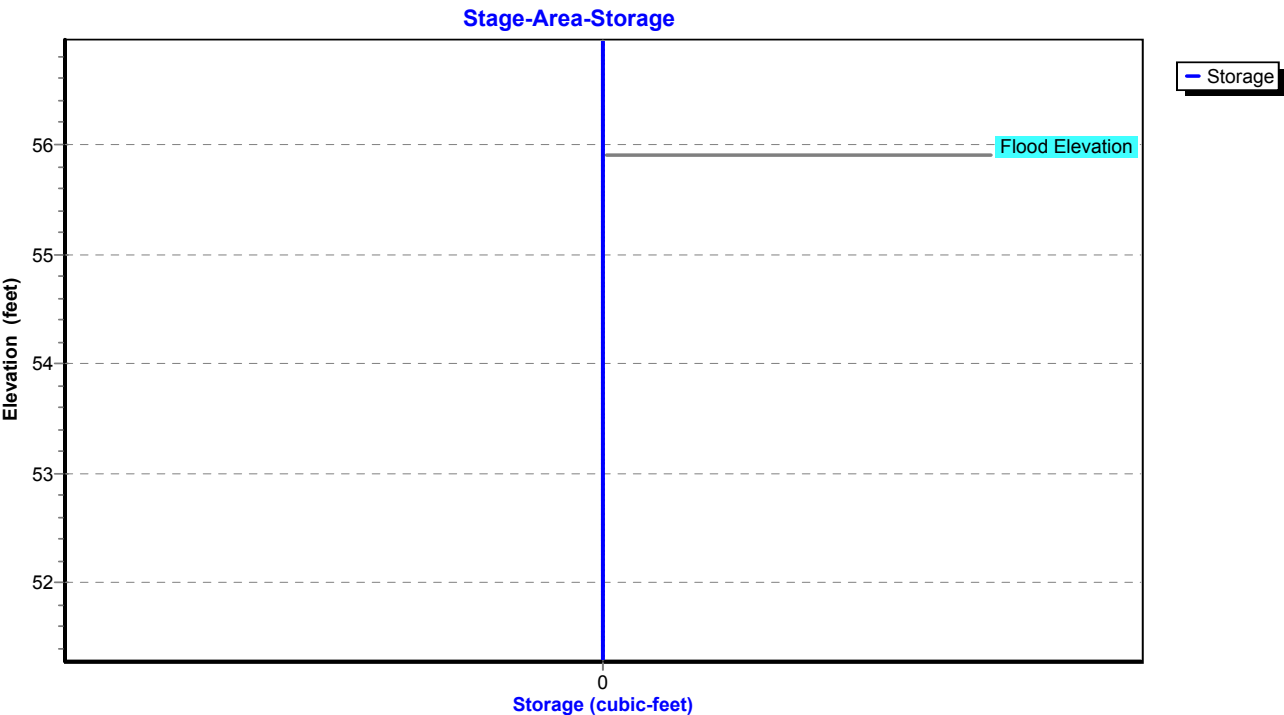
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 16P: MH-Q



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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 3.59" for 25 year event
 Inflow = 69.41 cfs @ 13.10 hrs, Volume= 879,283 cf
 Outflow = 69.27 cfs @ 13.13 hrs, Volume= 879,283 cf, Atten= 0%, Lag= 2.1 min
 Primary = 69.27 cfs @ 13.13 hrs, Volume= 879,283 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 46.88' @ 13.13 hrs Surf.Area= 4,316 sf Storage= 6,219 cf

Plug-Flow detention time= 1.6 min calculated for 879,283 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (913.1 - 911.5)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=69.27 cfs @ 13.13 hrs HW=46.88' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 69.27 cfs @ 5.97 fps)

Existing Conditions

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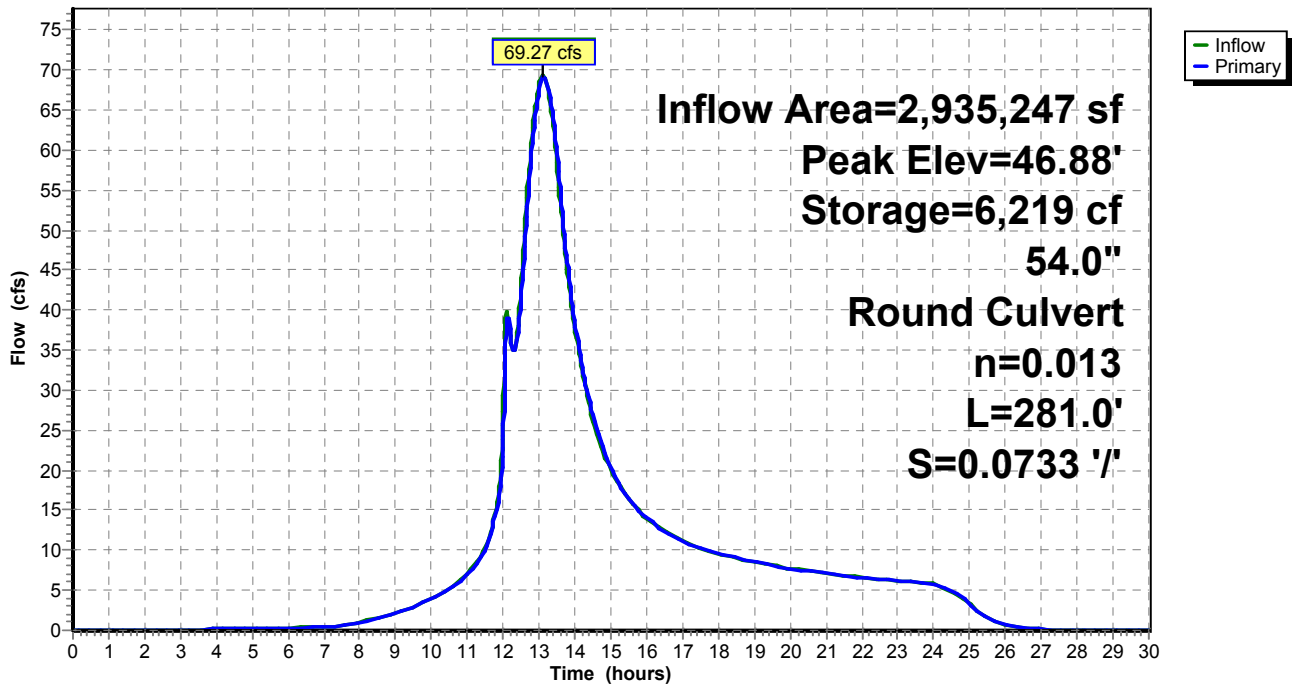
NORWALK 24-hr S1 25 year Rainfall=6.48"

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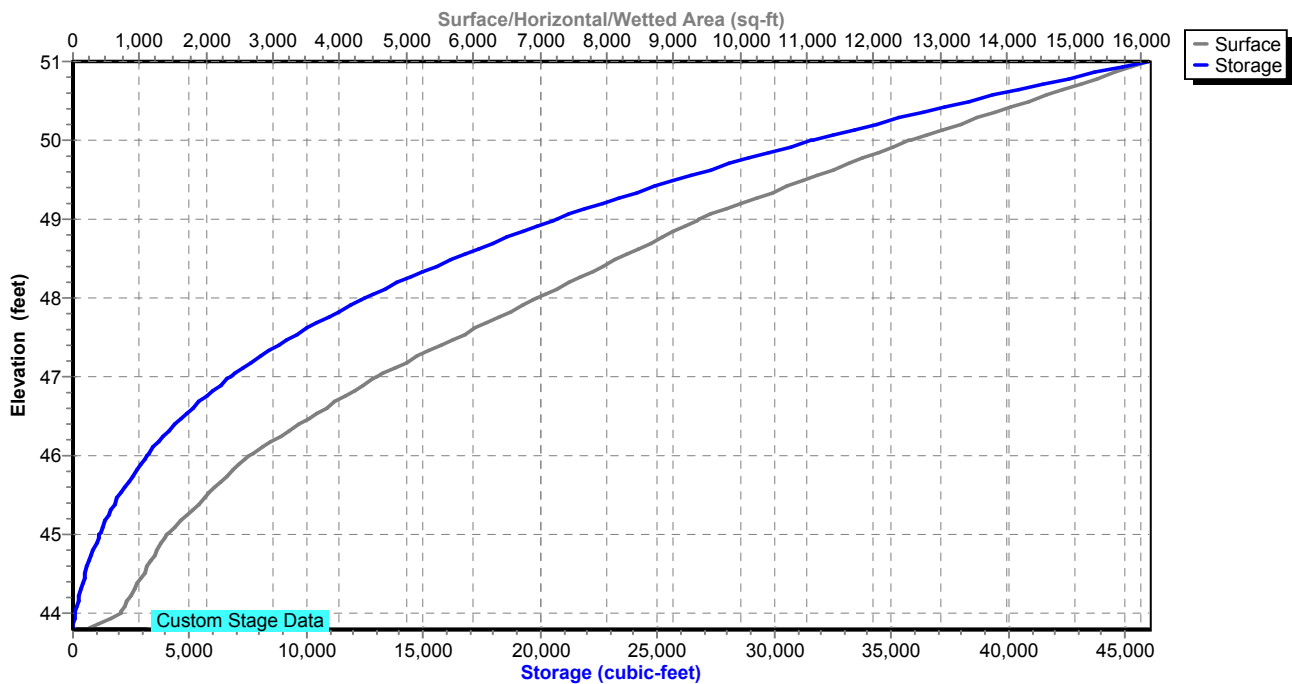
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 3.49" for 25 year event
 Inflow = 66.85 cfs @ 13.07 hrs, Volume= 771,480 cf
 Outflow = 66.55 cfs @ 13.10 hrs, Volume= 771,480 cf, Atten= 0%, Lag= 2.1 min
 Primary = 66.55 cfs @ 13.10 hrs, Volume= 771,480 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 67.32' @ 13.10 hrs Surf.Area= 1,191 sf Storage= 2,181 cf

Plug-Flow detention time= 0.2 min calculated for 771,480 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (925.0 - 924.8)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=66.55 cfs @ 13.10 hrs HW=67.32' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 66.55 cfs @ 9.42 fps)

Existing Conditions

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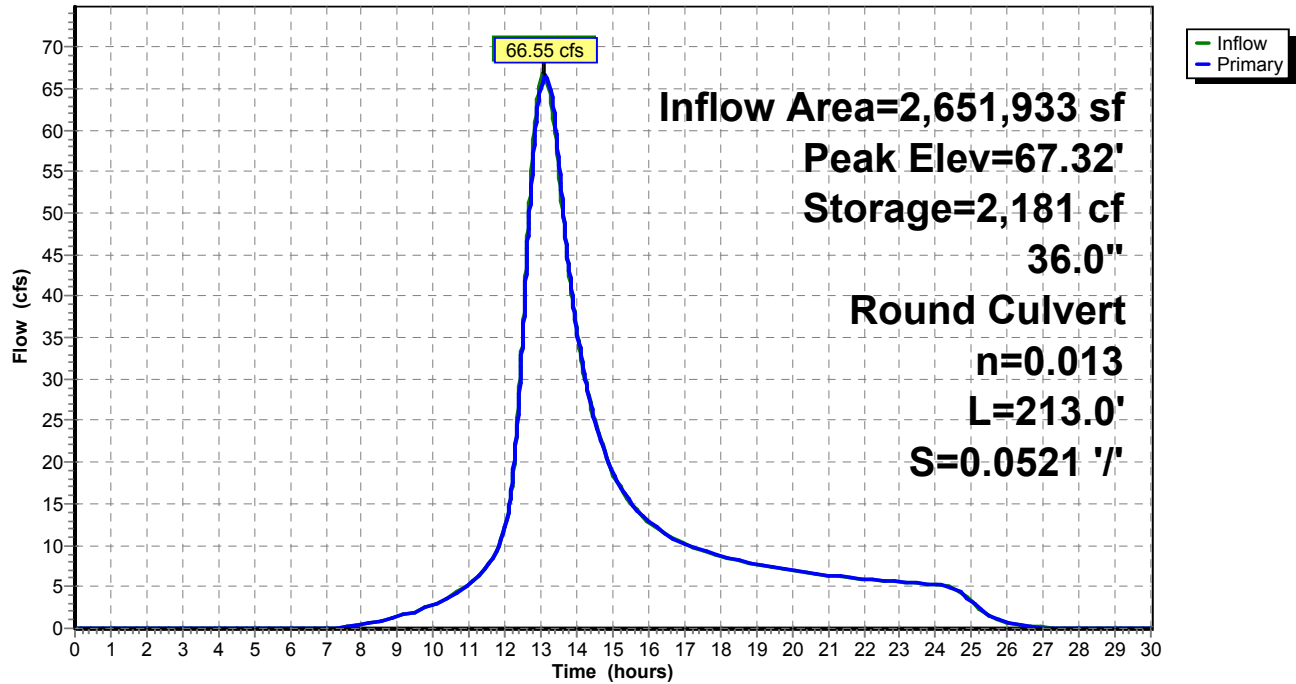
NORWALK 24-hr S1 25 year Rainfall=6.48"

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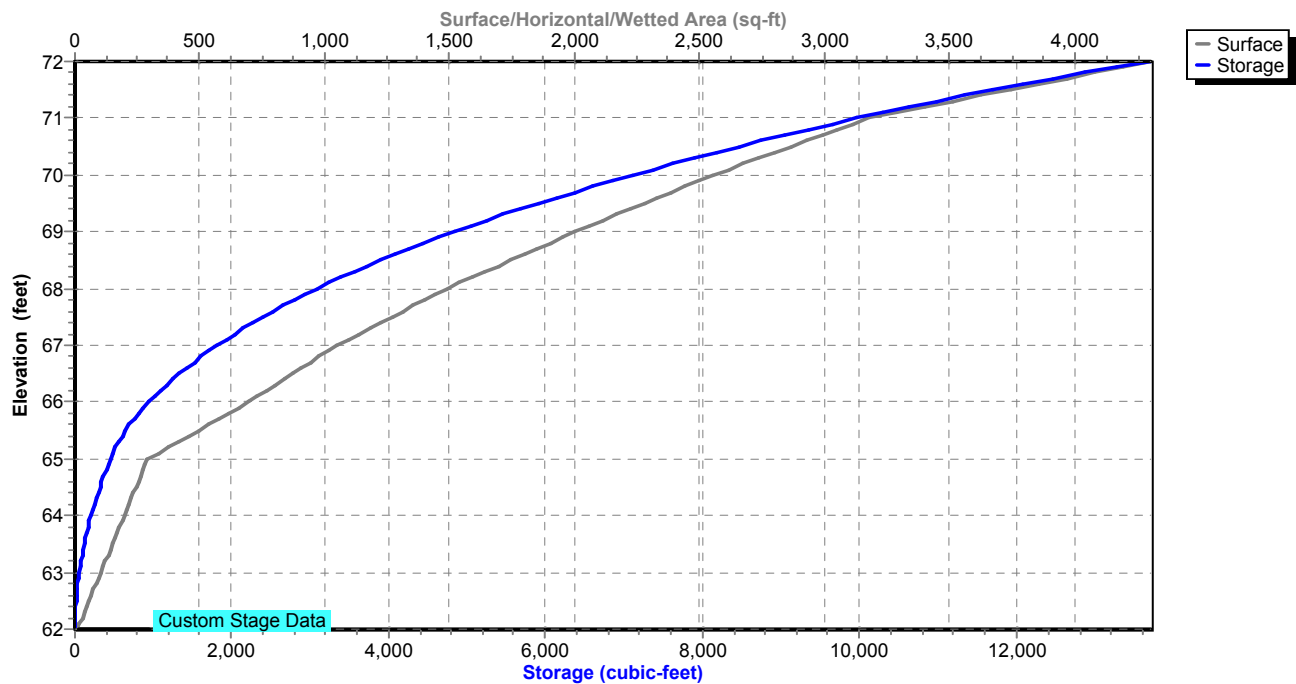
Pond 18P: DET 4 Culvert

Hydrograph



Pond 18P: DET 4 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 3.49" for 25 year event
 Inflow = 19.84 cfs @ 12.52 hrs, Volume= 155,107 cf
 Outflow = 19.57 cfs @ 12.60 hrs, Volume= 155,107 cf, Atten= 1%, Lag= 4.5 min
 Primary = 19.57 cfs @ 12.60 hrs, Volume= 155,107 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 39.67' @ 12.60 hrs Surf.Area= 1,331 sf Storage= 1,087 cf

Plug-Flow detention time= 0.6 min calculated for 155,055 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (888.3 - 887.8)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=19.56 cfs @ 12.60 hrs HW=39.67' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 19.56 cfs @ 6.23 fps)

Existing Conditions

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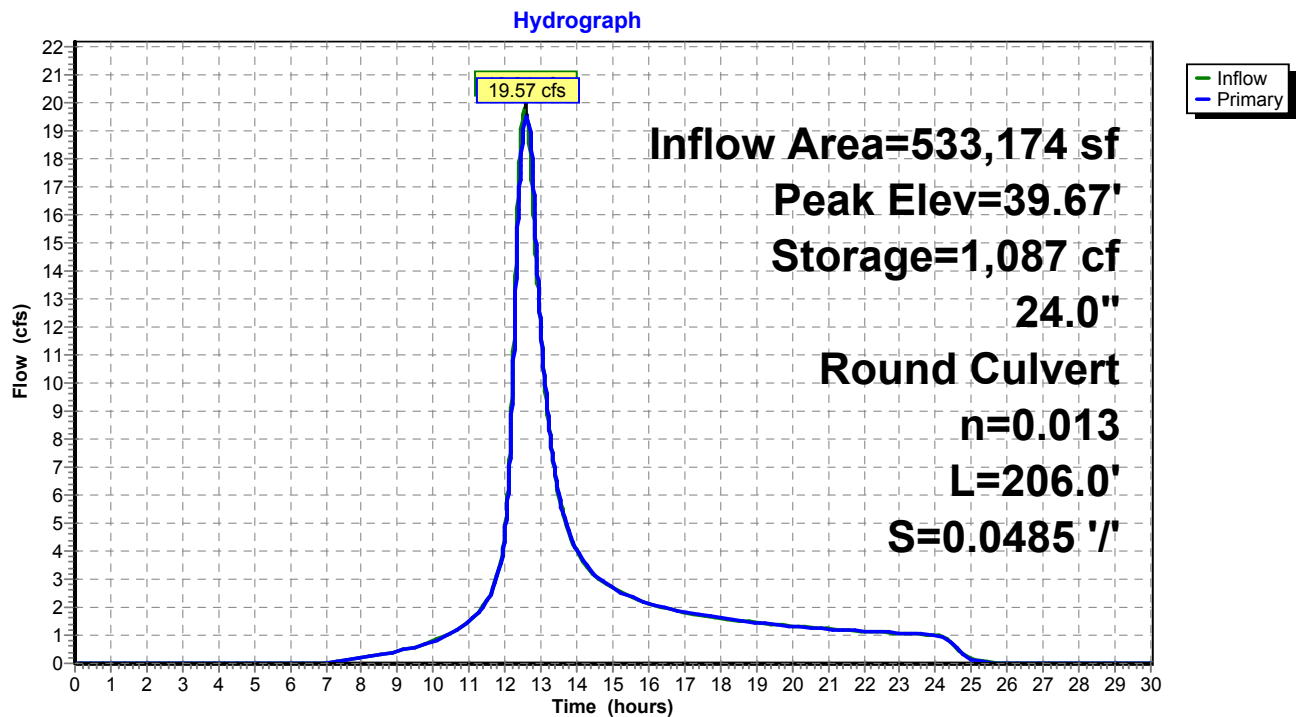
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NORWALK 24-hr S1 25 year Rainfall=6.48"

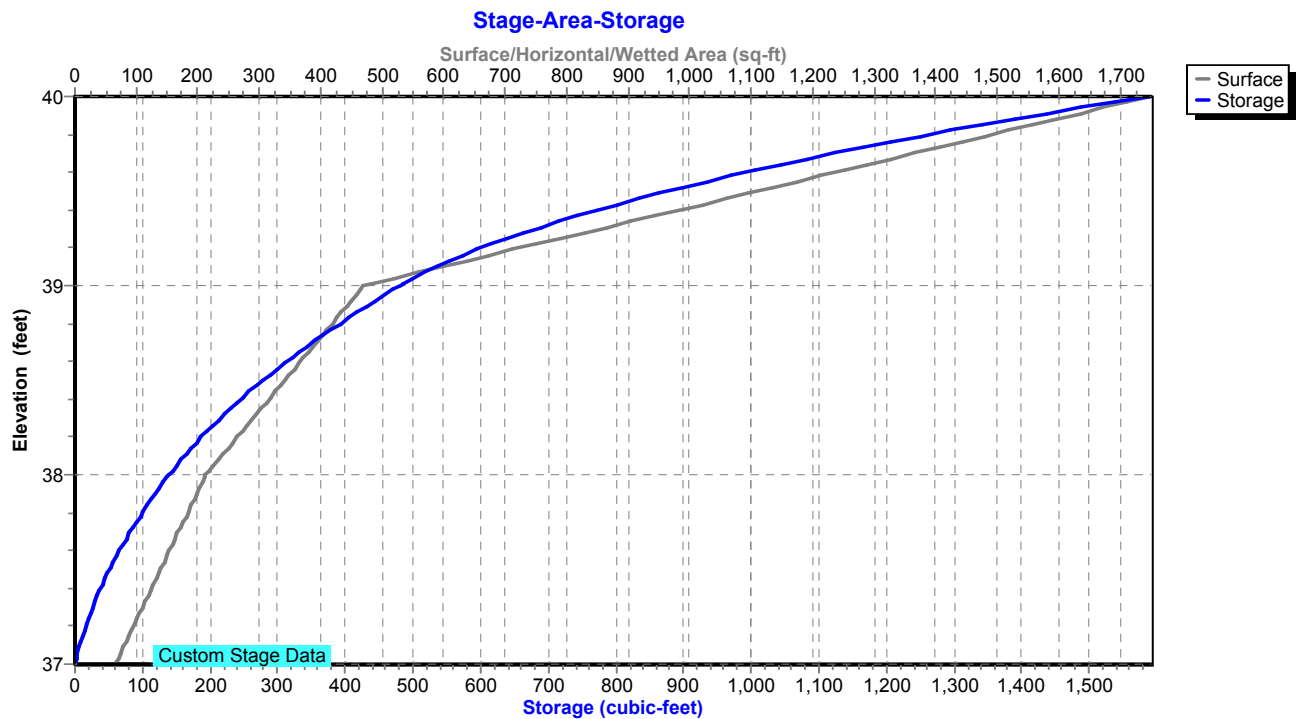
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



Existing Conditions

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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 4.01" for 25 year event
 Inflow = 45.86 cfs @ 12.74 hrs, Volume= 430,725 cf
 Outflow = 39.05 cfs @ 13.02 hrs, Volume= 430,725 cf, Atten= 15%, Lag= 17.0 min
 Primary = 39.05 cfs @ 13.02 hrs, Volume= 430,725 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 38.78' @ 13.02 hrs Surf.Area= 14,427 sf Storage= 24,760 cf

Plug-Flow detention time= 5.4 min calculated for 430,725 cf (100% of inflow)
 Center-of-Mass det. time= 5.4 min (891.8 - 886.5)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=39.05 cfs @ 13.02 hrs HW=38.78' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 39.05 cfs @ 7.95 fps)

Existing Conditions

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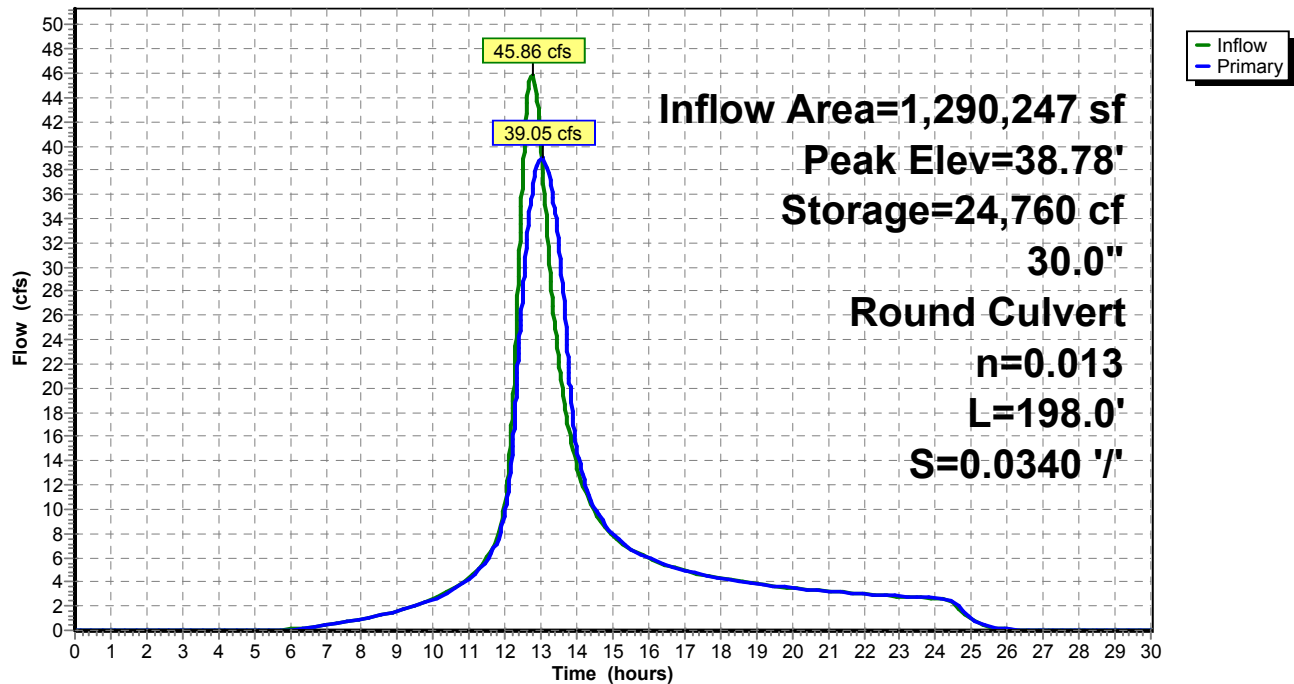
NORWALK 24-hr S1 25 year Rainfall=6.48"

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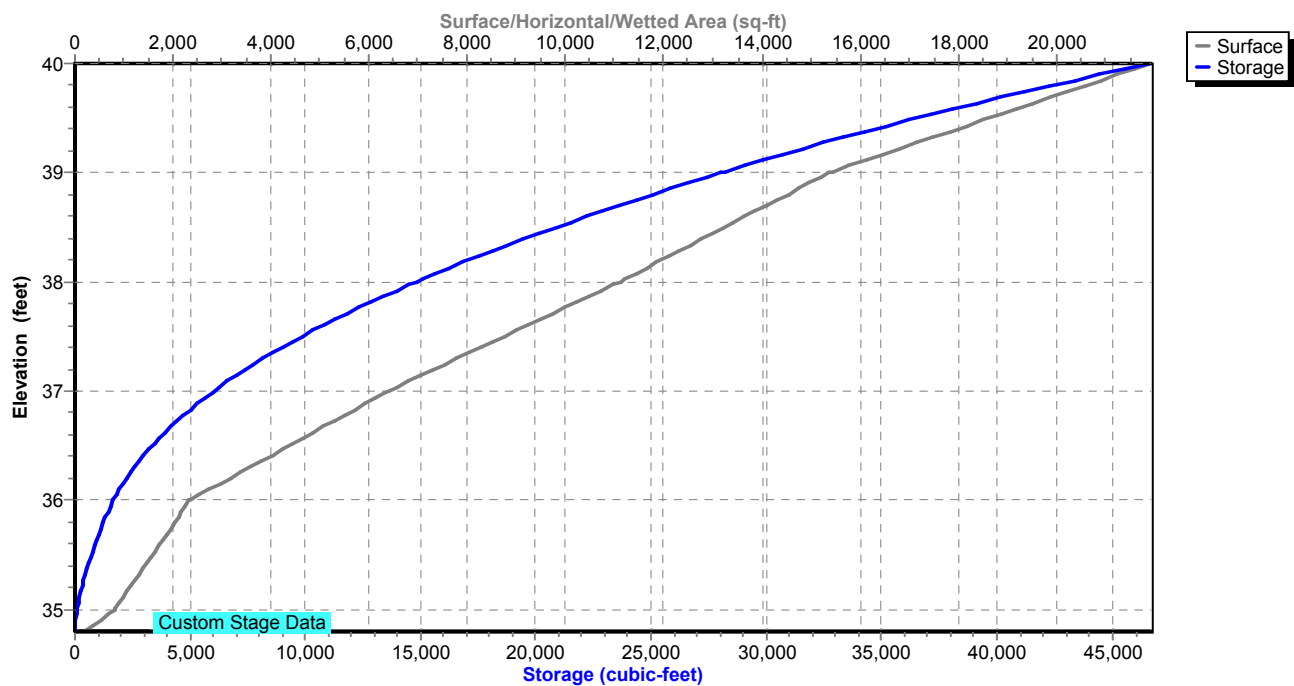
Pond 22P: DET 2 Culvert

Hydrograph



Pond 22P: DET 2 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 3.59" for 25 year event
 Inflow = 16.57 cfs @ 12.22 hrs, Volume= 82,678 cf
 Outflow = 16.10 cfs @ 12.25 hrs, Volume= 82,678 cf, Atten= 3%, Lag= 2.1 min
 Primary = 16.10 cfs @ 12.25 hrs, Volume= 82,678 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 44.63' @ 12.25 hrs Surf.Area= 1,227 sf Storage= 1,006 cf

Plug-Flow detention time= 0.7 min calculated for 82,651 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (862.8 - 862.1)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=16.09 cfs @ 12.25 hrs HW=44.63' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 16.09 cfs @ 5.12 fps)

Existing Conditions

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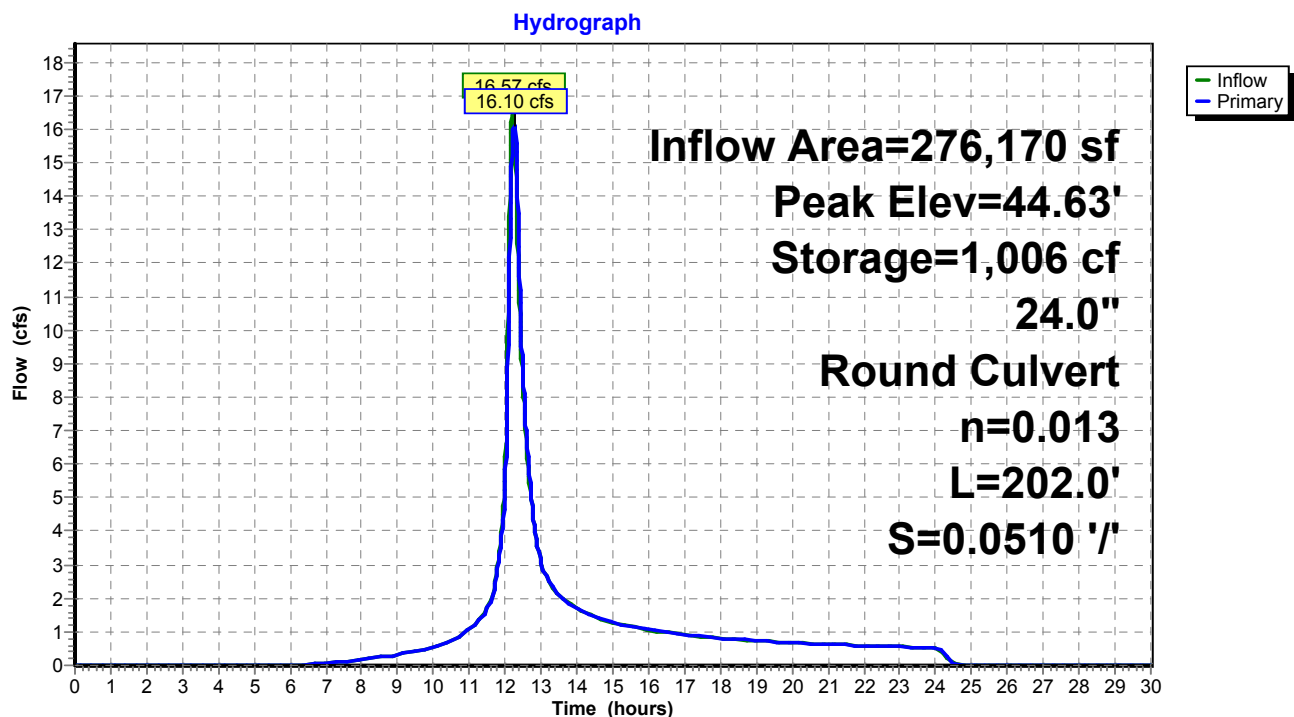
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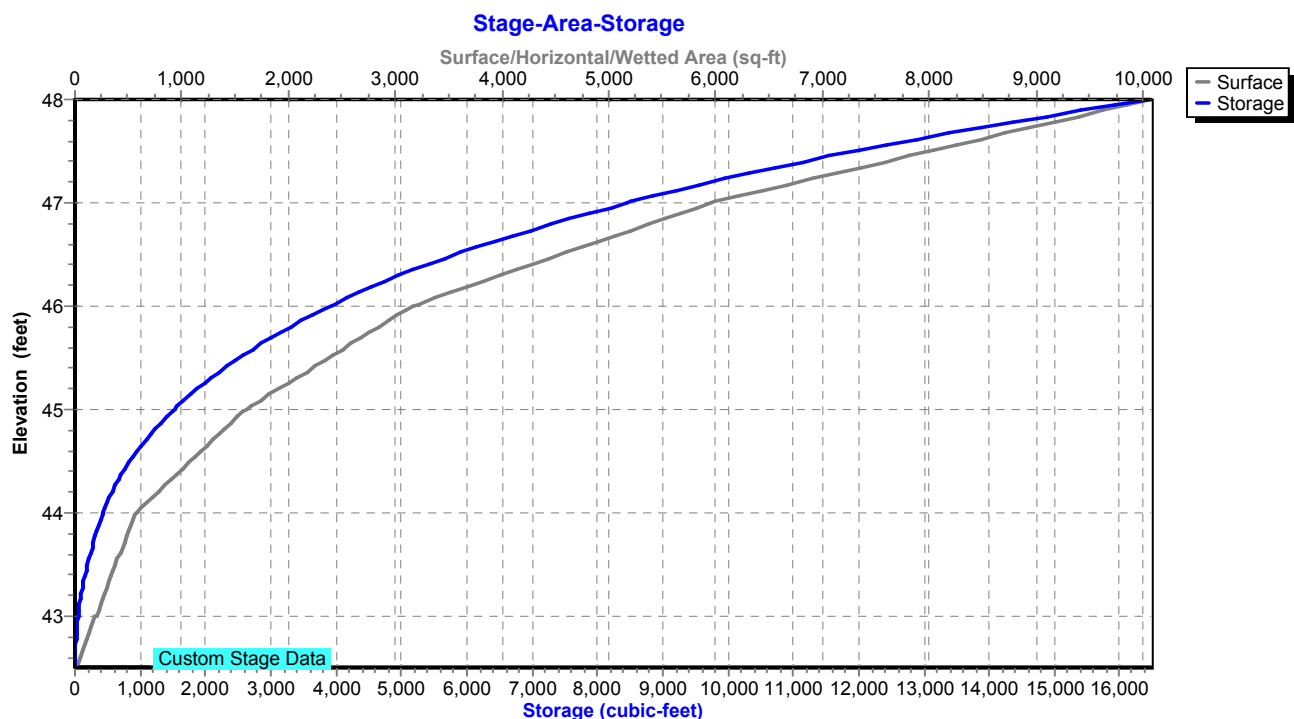
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 33.37" for 25 year event
 Inflow = 233.47 cfs @ 12.22 hrs, Volume= 1,392,990 cf
 Outflow = 51.44 cfs @ 14.01 hrs, Volume= 1,393,043 cf, Atten= 78%, Lag= 107.3 min
 Primary = 51.44 cfs @ 14.01 hrs, Volume= 1,393,043 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 13.27' @ 14.01 hrs Storage= 811,456 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 175.3 min (966.5 - 791.2)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=51.45 cfs @ 14.01 hrs HW=13.27' (Free Discharge)↑ **1=Culvert** (Barrel Controls 51.45 cfs @ 5.88 fps)

Existing Conditions

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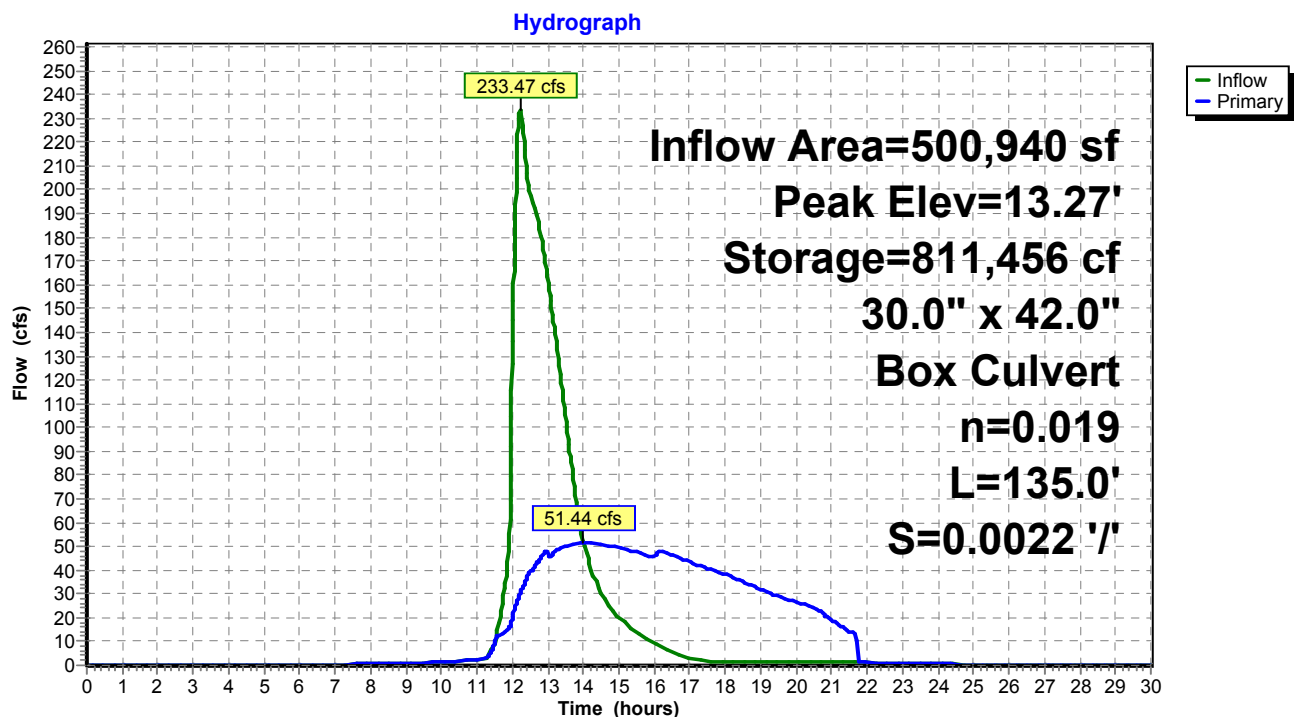
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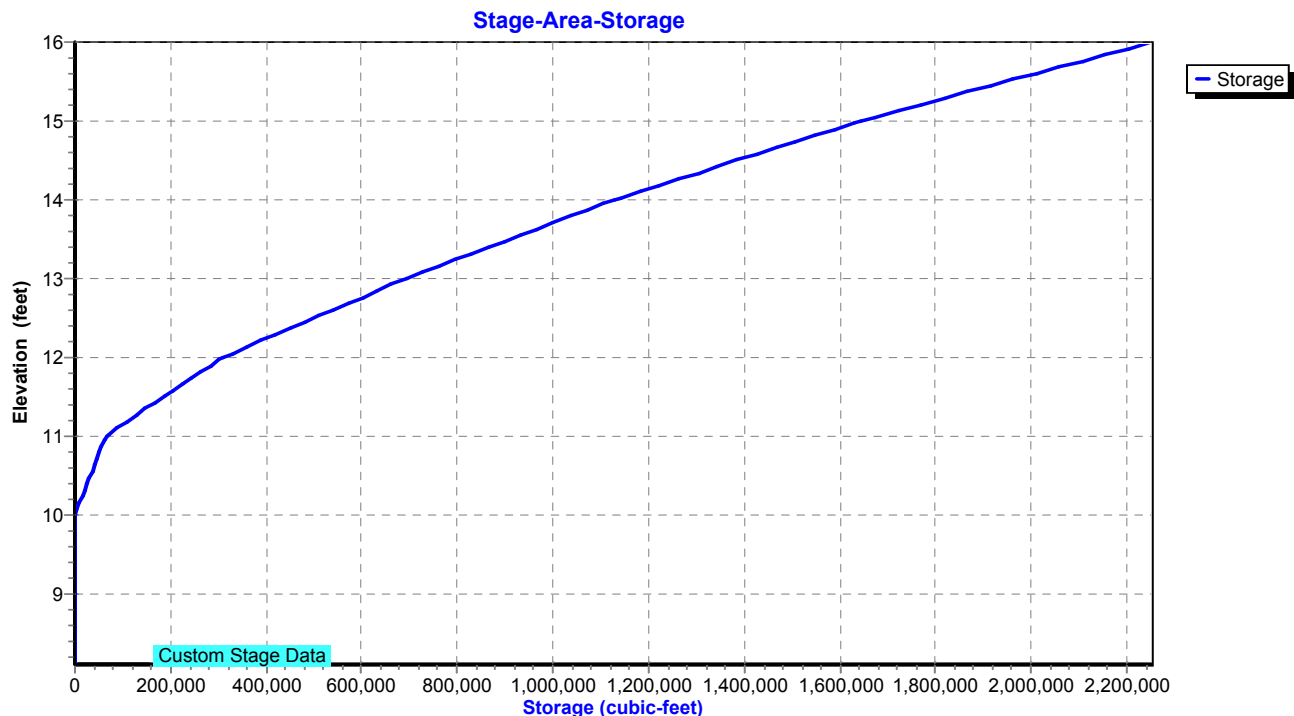
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Pond 24P: RR Culvert 3



Pond 24P: RR Culvert 3



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 3.73" for 25 year event
Inflow = 36.64 cfs @ 12.21 hrs, Volume= 241,993 cf
Outflow = 36.63 cfs @ 12.21 hrs, Volume= 242,038 cf, Atten= 0%, Lag= 0.1 min
Primary = 36.63 cfs @ 12.21 hrs, Volume= 242,038 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 20.09' @ 12.21 hrs Surf.Area= 2,246 sf Storage= 2,602 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.7 min (889.4 - 888.8)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=36.33 cfs @ 12.21 hrs HW=20.09' (Free Discharge)

1=Culvert (Inlet Controls 12.35 cfs @ 10.06 fps)
2=Custom Weir/Orifice (Weir Controls 23.98 cfs @ 1.28 fps)

Existing Conditions

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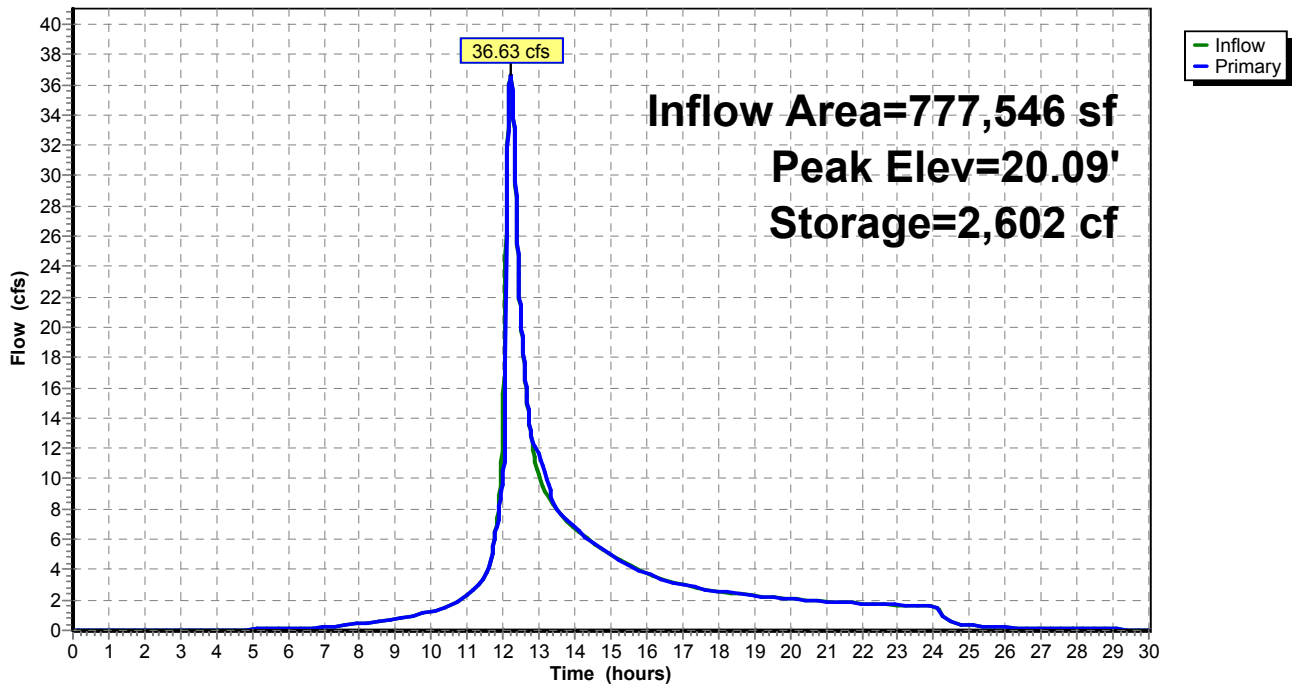
NORWALK 24-hr S1 25 year Rainfall=6.48"

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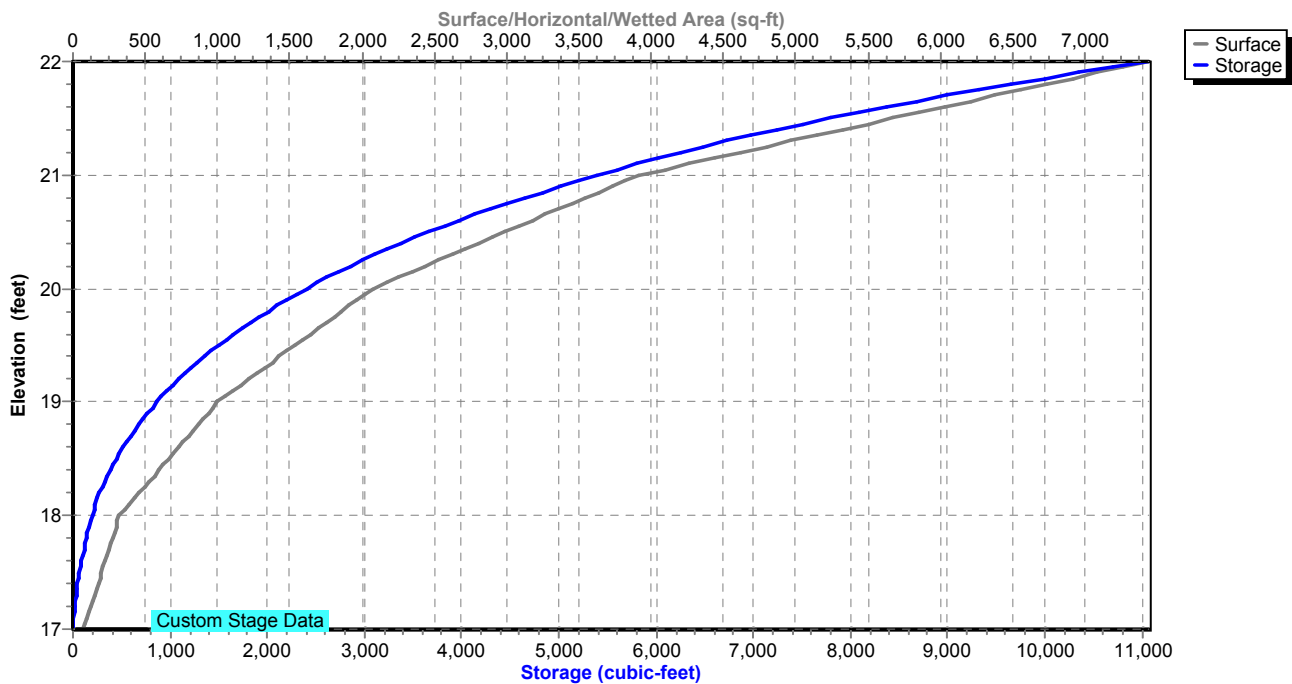
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 3.99" for 25 year event
Inflow = 61.95 cfs @ 12.67 hrs, Volume= 733,950 cf
Outflow = 61.94 cfs @ 12.67 hrs, Volume= 733,950 cf, Atten= 0%, Lag= 0.5 min
Primary = 61.94 cfs @ 12.67 hrs, Volume= 733,950 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 18.79' @ 12.67 hrs Surf.Area= 11,074 sf Storage= 10,782 cf

Plug-Flow detention time= 3.8 min calculated for 733,950 cf (100% of inflow)
Center-of-Mass det. time= 3.8 min (879.5 - 875.8)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=61.78 cfs @ 12.67 hrs HW=18.79' (Free Discharge)

1=Culvert (Inlet Controls 14.07 cfs @ 7.96 fps)

2=Custom Weir/Orifice (Weir Controls 47.71 cfs @ 2.02 fps)

Existing Conditions

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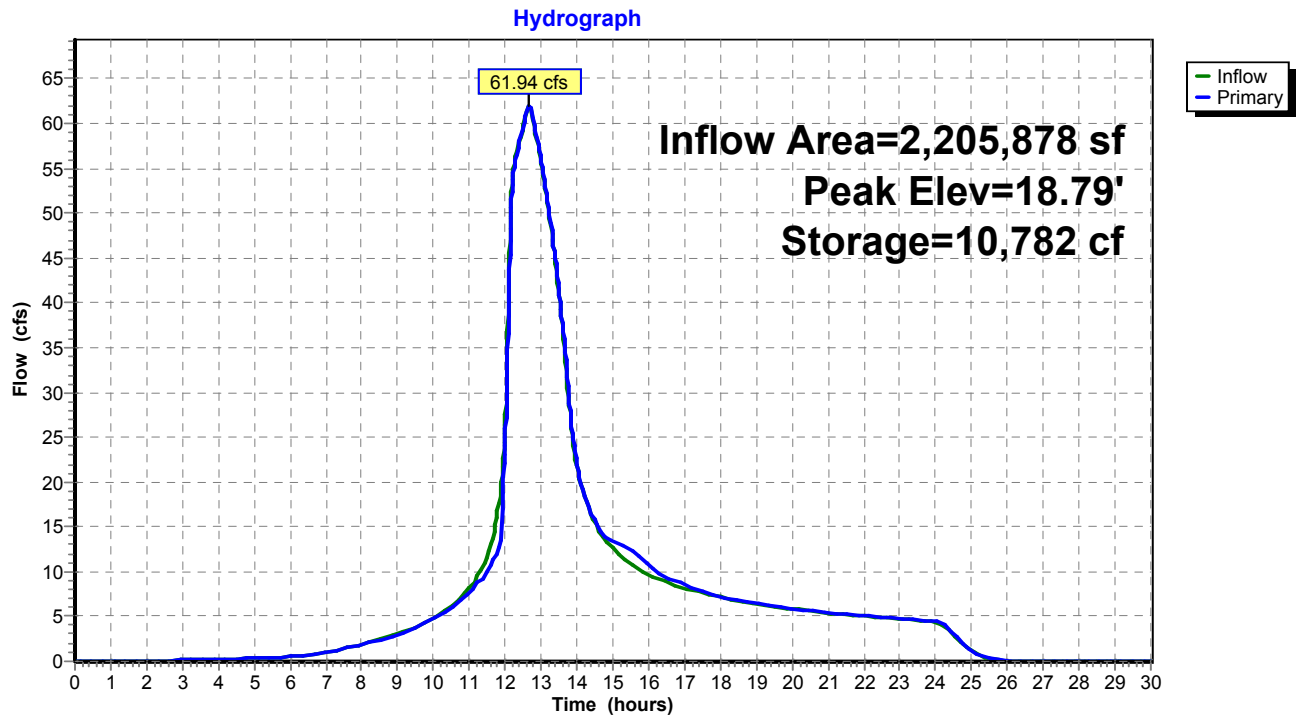
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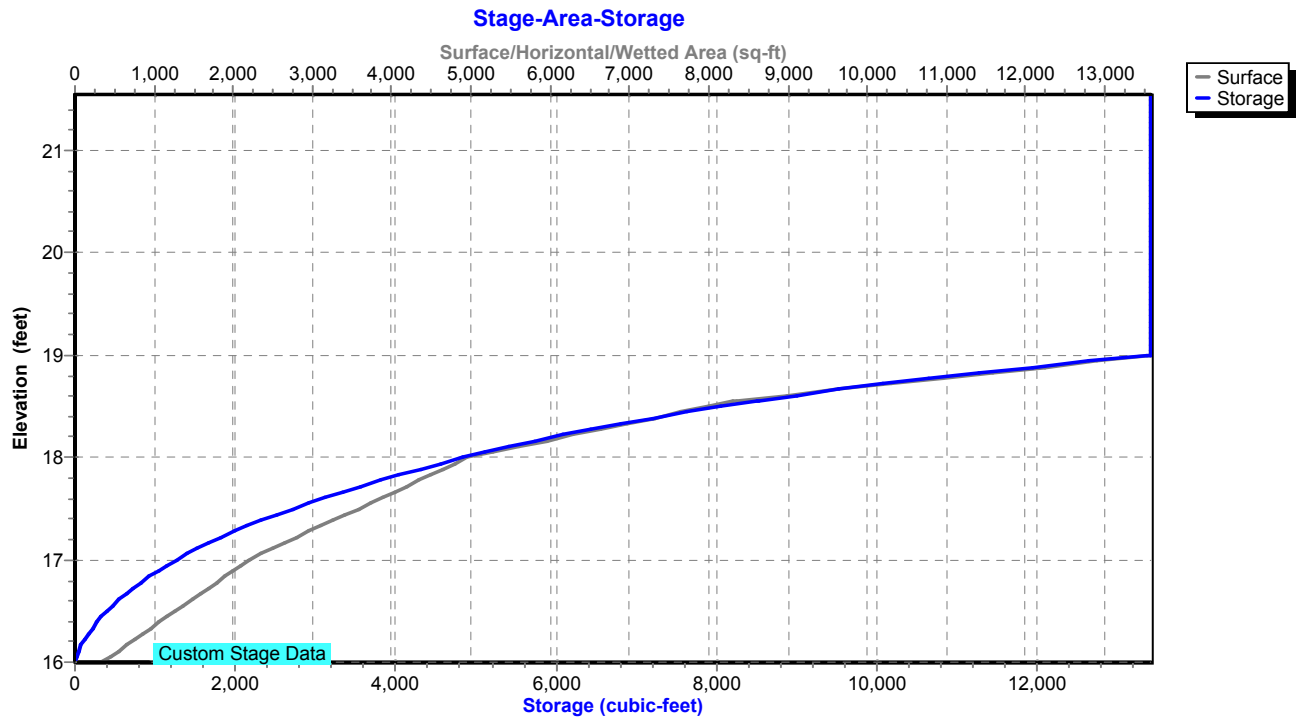
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 4.88" for 25 year event
Inflow = 27.74 cfs @ 12.04 hrs, Volume= 100,701 cf
Outflow = 4.39 cfs @ 12.59 hrs, Volume= 75,261 cf, Atten= 84%, Lag= 32.8 min
Primary = 4.39 cfs @ 12.59 hrs, Volume= 75,261 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 28.35' @ 12.59 hrs Surf.Area= 16,050 sf Storage= 50,377 cf

Plug-Flow detention time= 275.1 min calculated for 75,261 cf (75% of inflow)
Center-of-Mass det. time= 166.3 min (968.3 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.39 cfs @ 12.59 hrs HW=28.35' (Free Discharge)

1=Culvert (Passes 4.39 cfs of 16.14 cfs potential flow)
2=Orifice/Grate (Orifice Controls 4.39 cfs @ 5.59 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Existing Conditions

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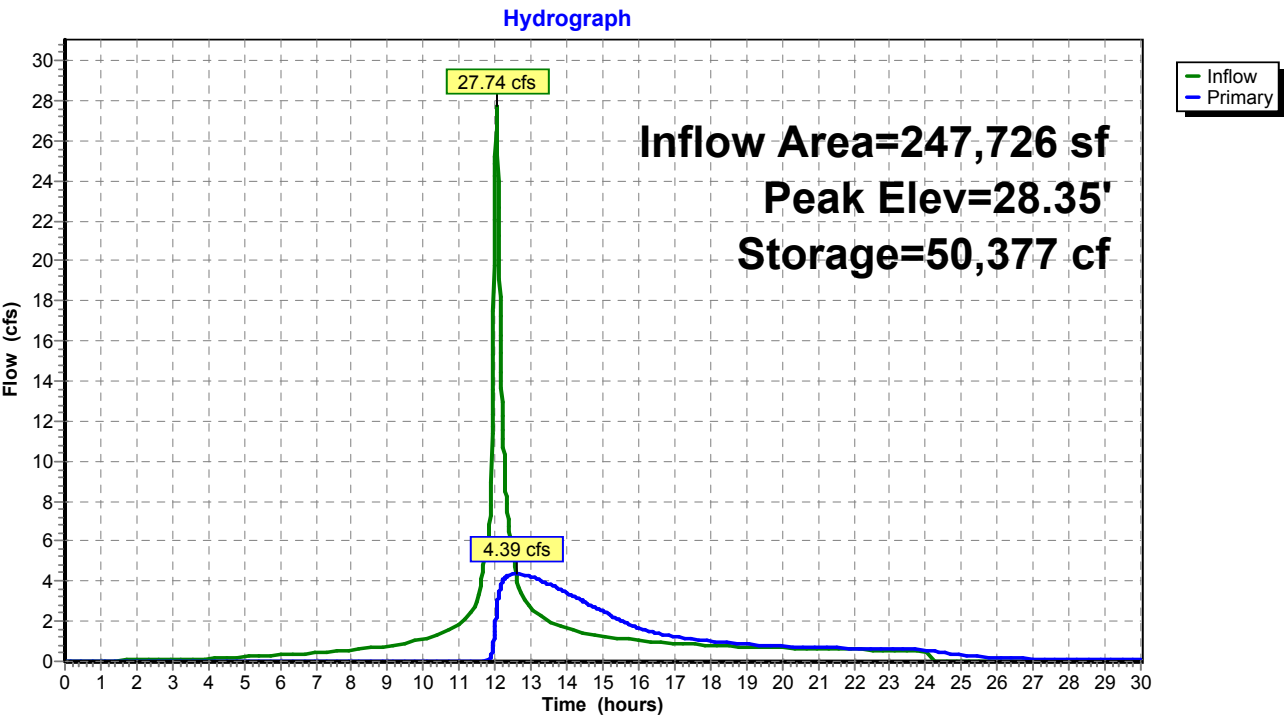
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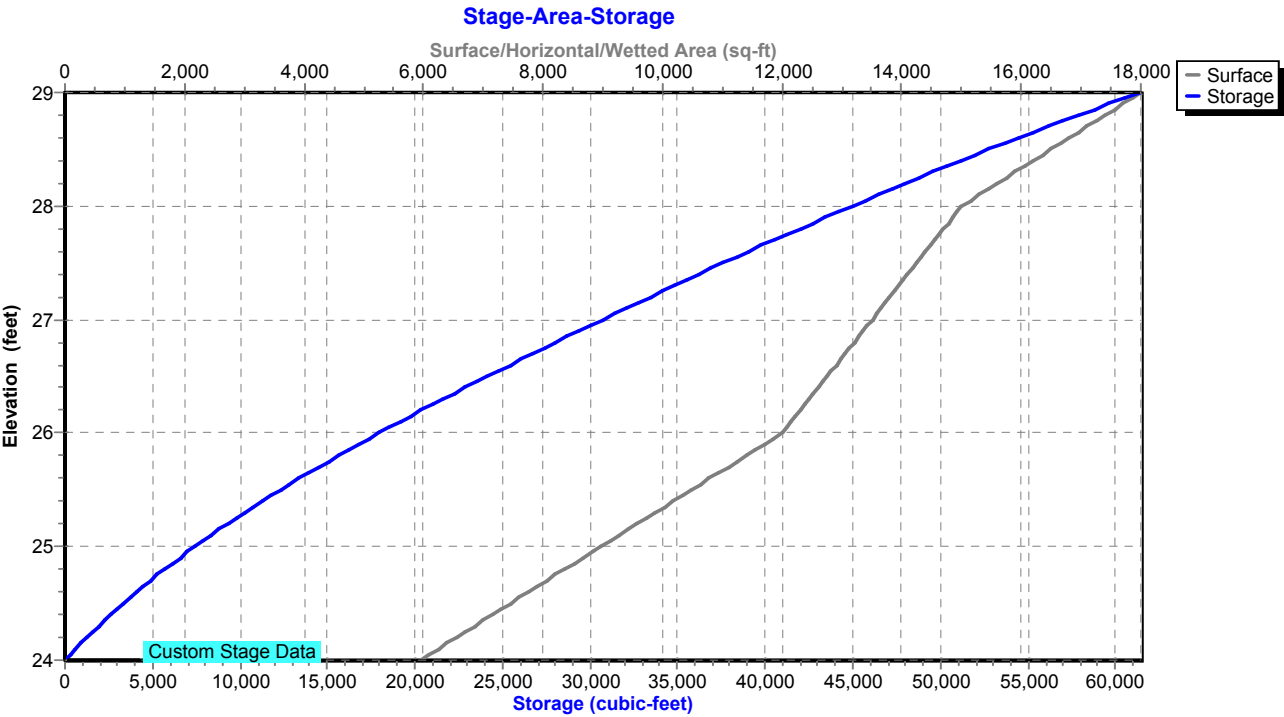
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 5.04" for 25 year event
Inflow = 24.76 cfs @ 12.04 hrs, Volume= 92,199 cf
Outflow = 24.76 cfs @ 12.04 hrs, Volume= 92,199 cf, Atten= 0%, Lag= 0.0 min
Primary = 24.76 cfs @ 12.04 hrs, Volume= 92,199 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.68' @ 12.04 hrs

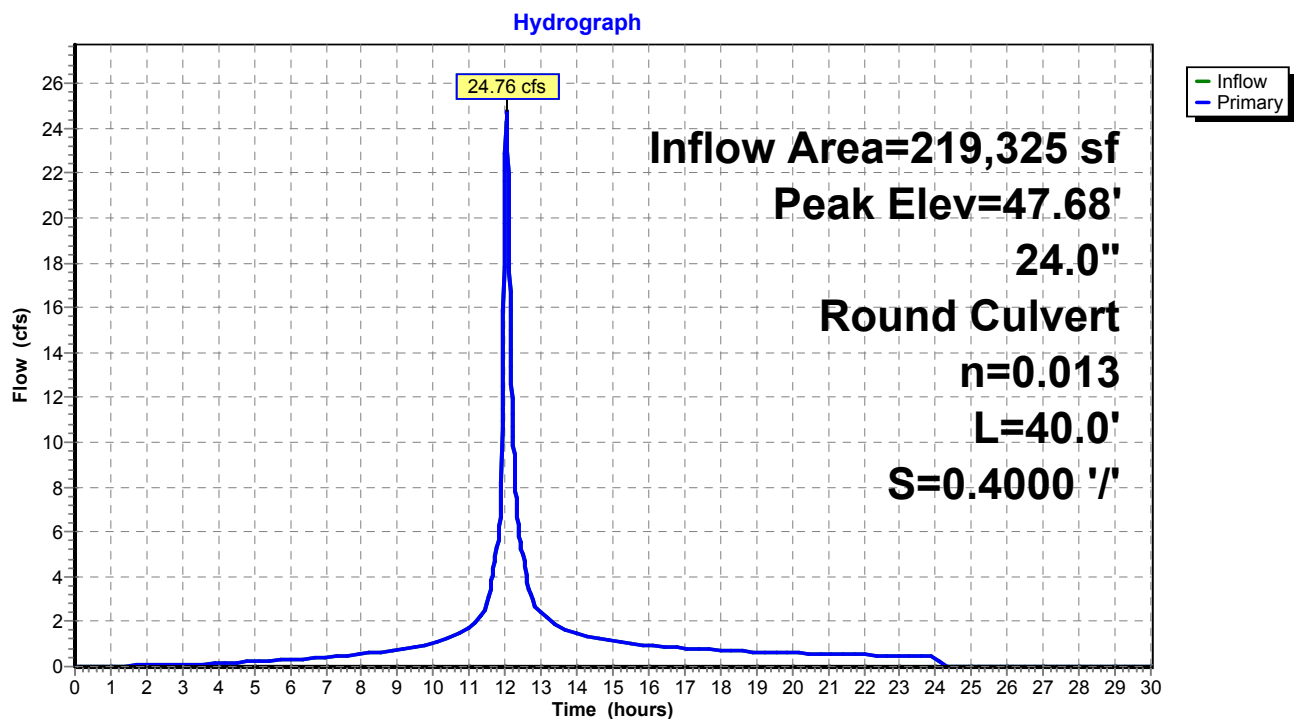
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=24.73 cfs @ 12.04 hrs HW=47.67' (Free Discharge)

↑1=Culvert (Inlet Controls 24.73 cfs @ 7.87 fps)

Pond 51P: Manhole



Existing Conditions

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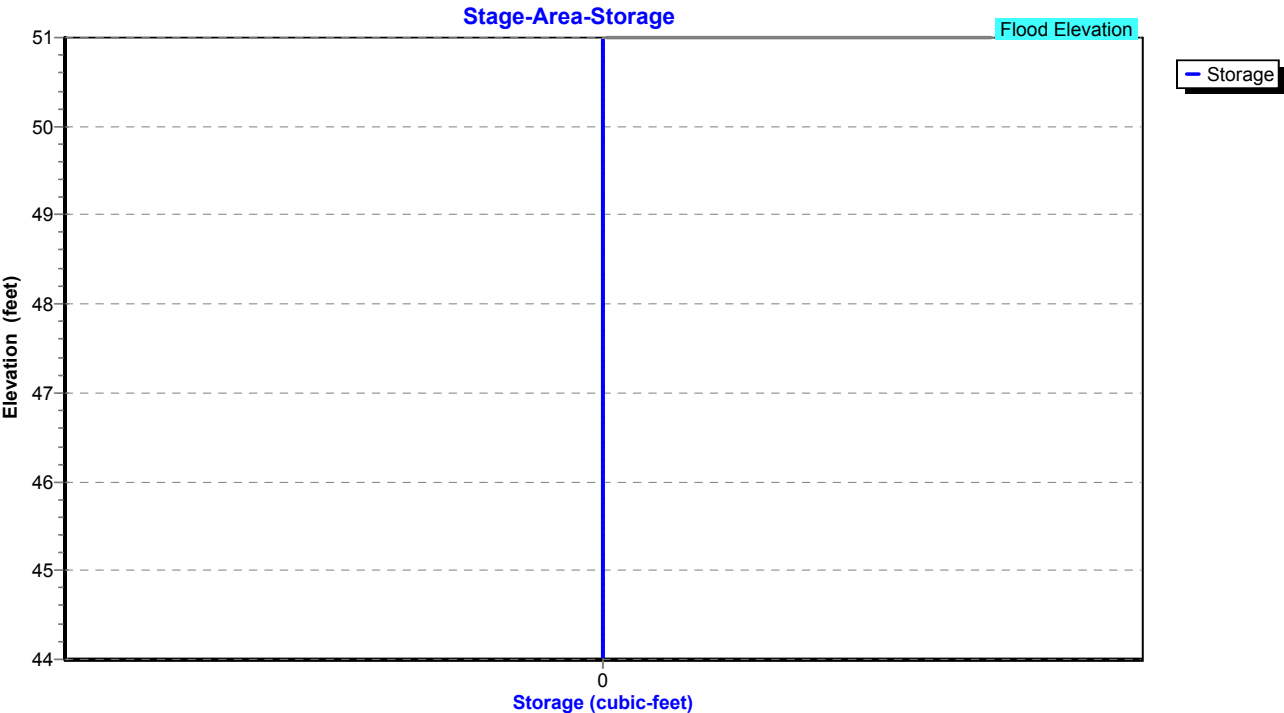
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 51P: Manhole



Existing Conditions

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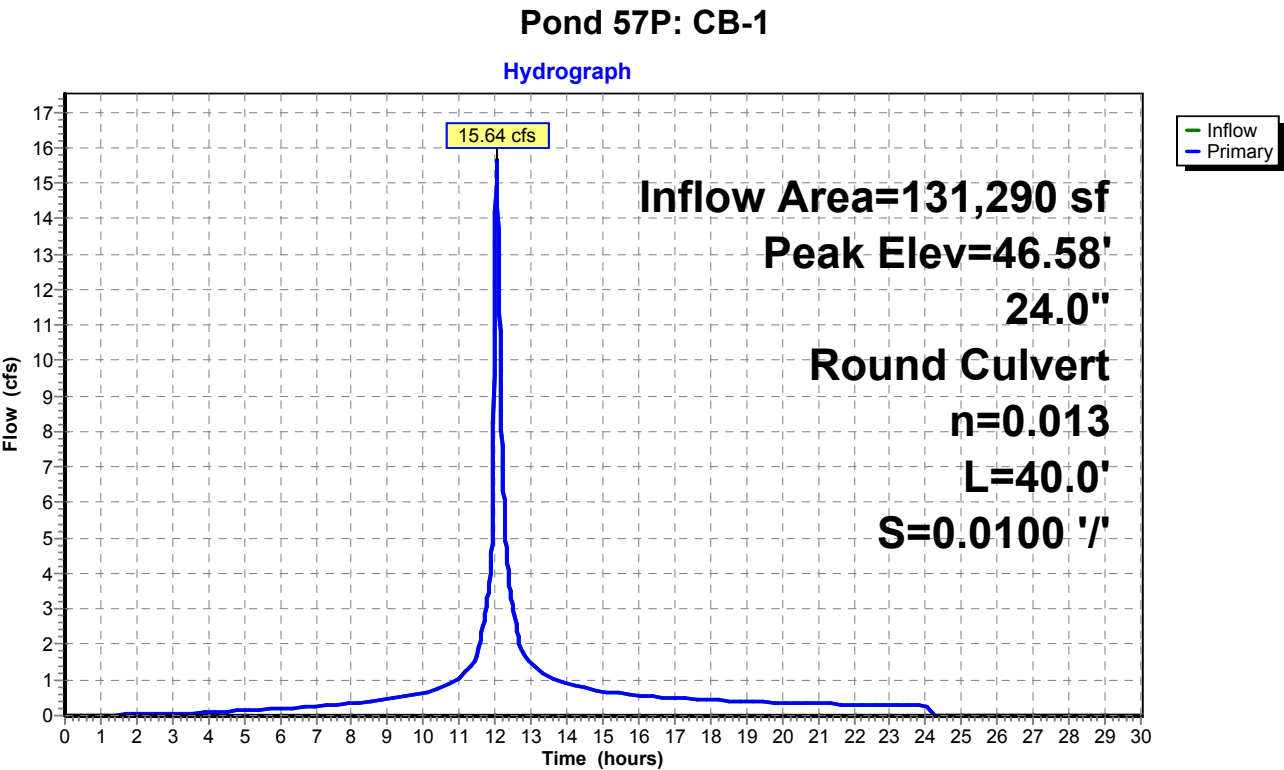
Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 5.12" for 25 year event
Inflow = 15.64 cfs @ 12.04 hrs, Volume= 55,989 cf
Outflow = 15.64 cfs @ 12.04 hrs, Volume= 55,989 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.64 cfs @ 12.04 hrs, Volume= 55,989 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.58' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=15.63 cfs @ 12.04 hrs HW=46.58' (Free Discharge)
1=Culvert (Barrel Controls 15.63 cfs @ 5.68 fps)



Existing Conditions

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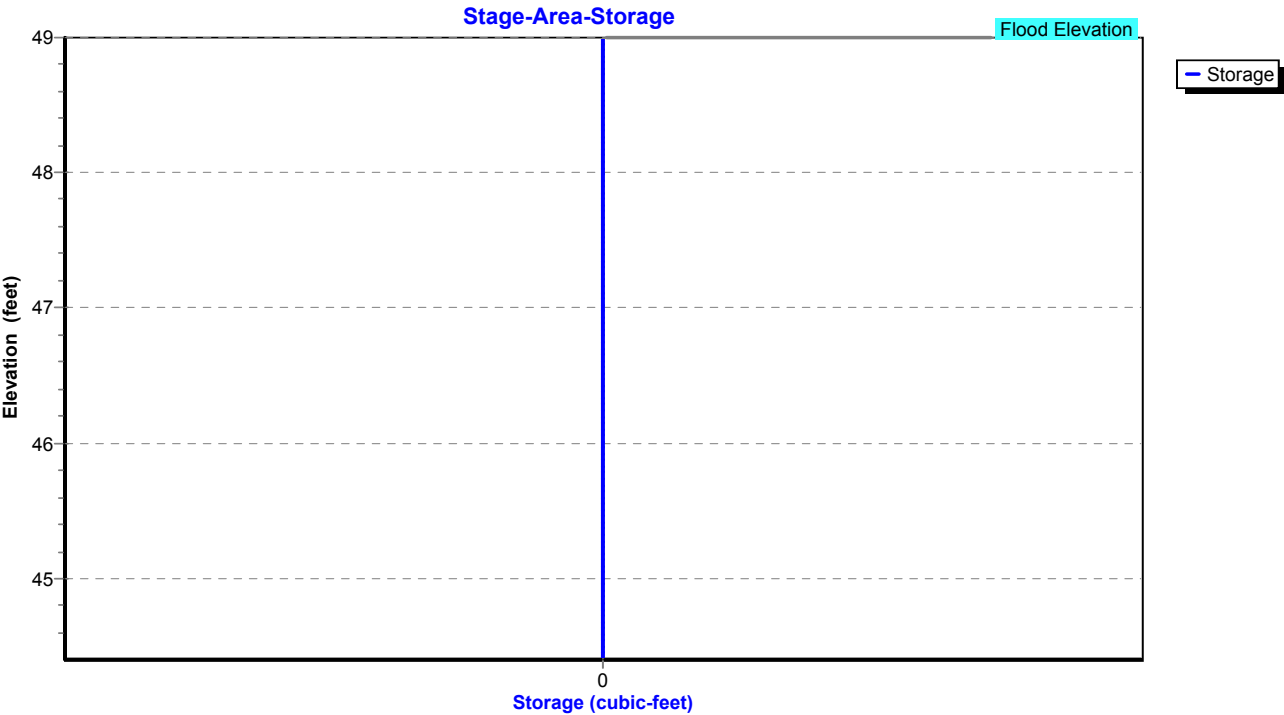
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Pond 57P: CB-1



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 5.01" for 25 year event
Inflow = 13.78 cfs @ 12.04 hrs, Volume= 49,826 cf
Outflow = 13.78 cfs @ 12.04 hrs, Volume= 49,826 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.78 cfs @ 12.04 hrs, Volume= 49,826 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.27' @ 12.04 hrs

Flood Elev= 49.00'

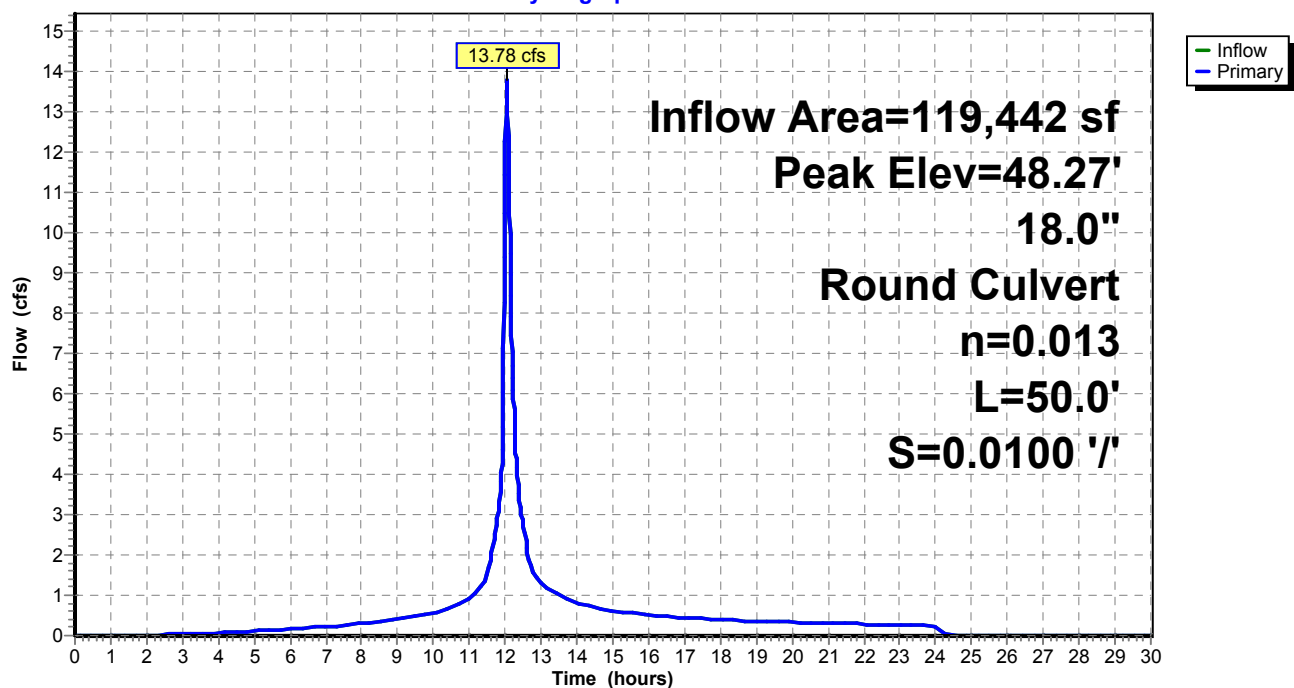
Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=13.75 cfs @ 12.04 hrs HW=48.26' (Free Discharge)

↑1=Culvert (Inlet Controls 13.75 cfs @ 7.78 fps)

Pond 58P: Manhole

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

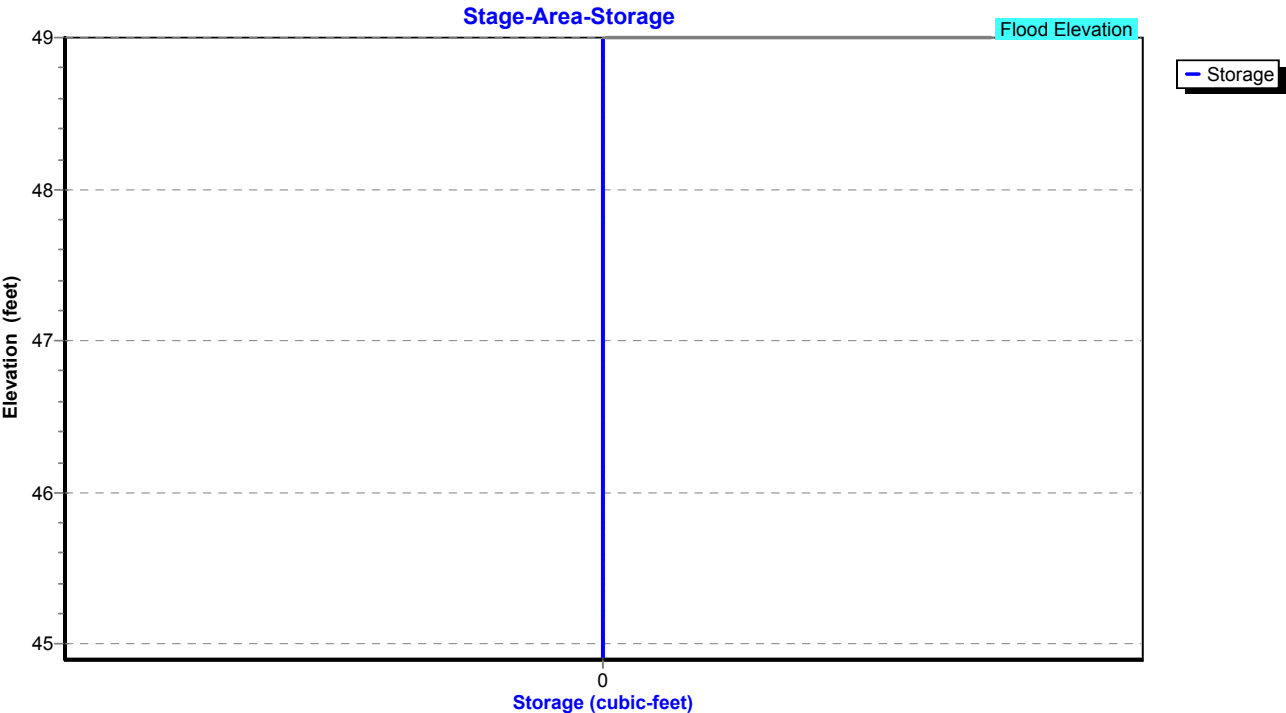
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Pond 58P: Manhole



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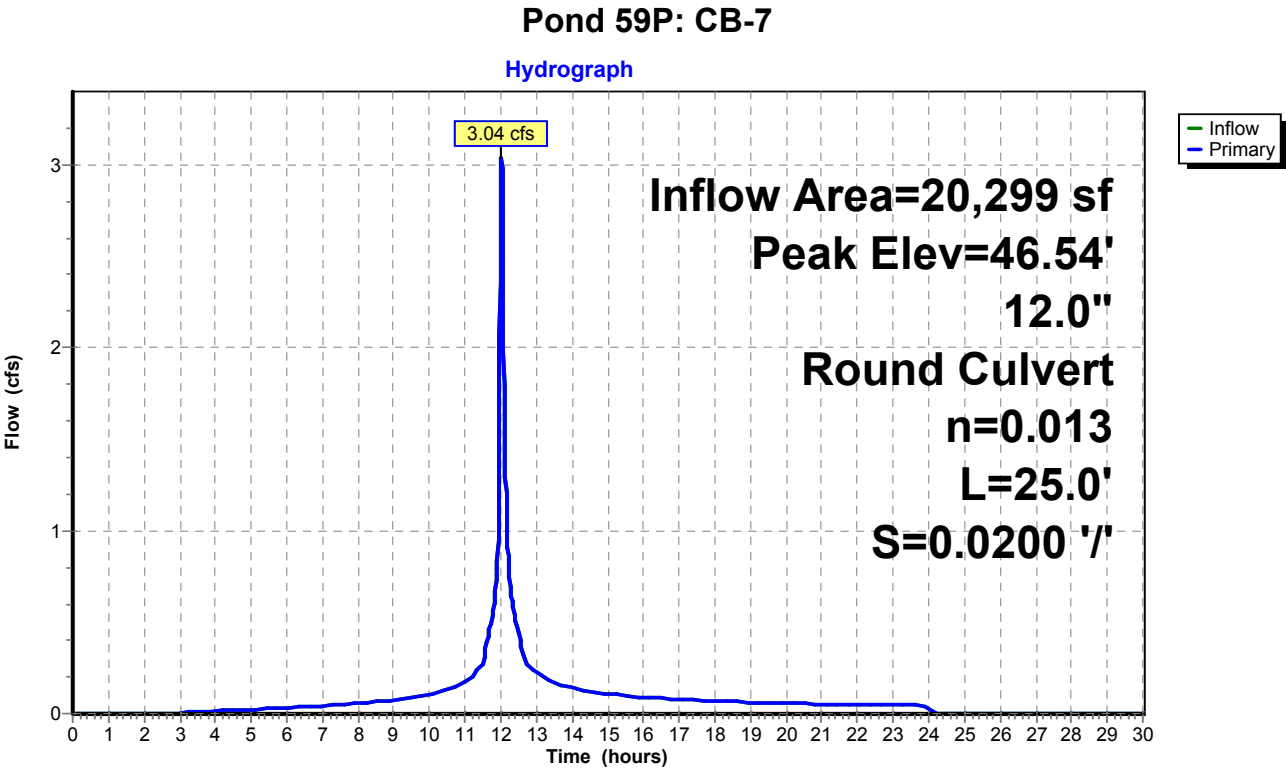
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 5.20" for 25 year event
Inflow = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf
Outflow = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.54' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.02 cfs @ 12.03 hrs HW=46.54' (Free Discharge)
1=Culvert (Inlet Controls 3.02 cfs @ 3.85 fps)



Existing Conditions

Prepared by Tighe & Bond

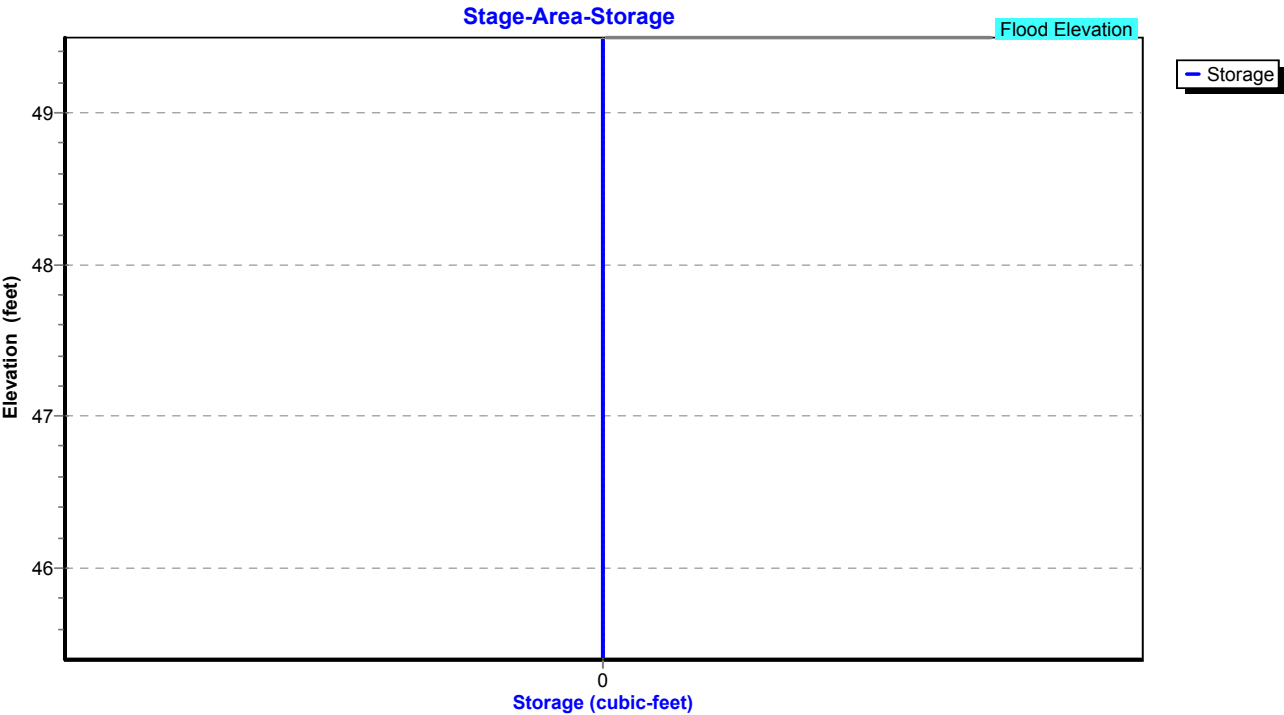
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Pond 59P: CB-7



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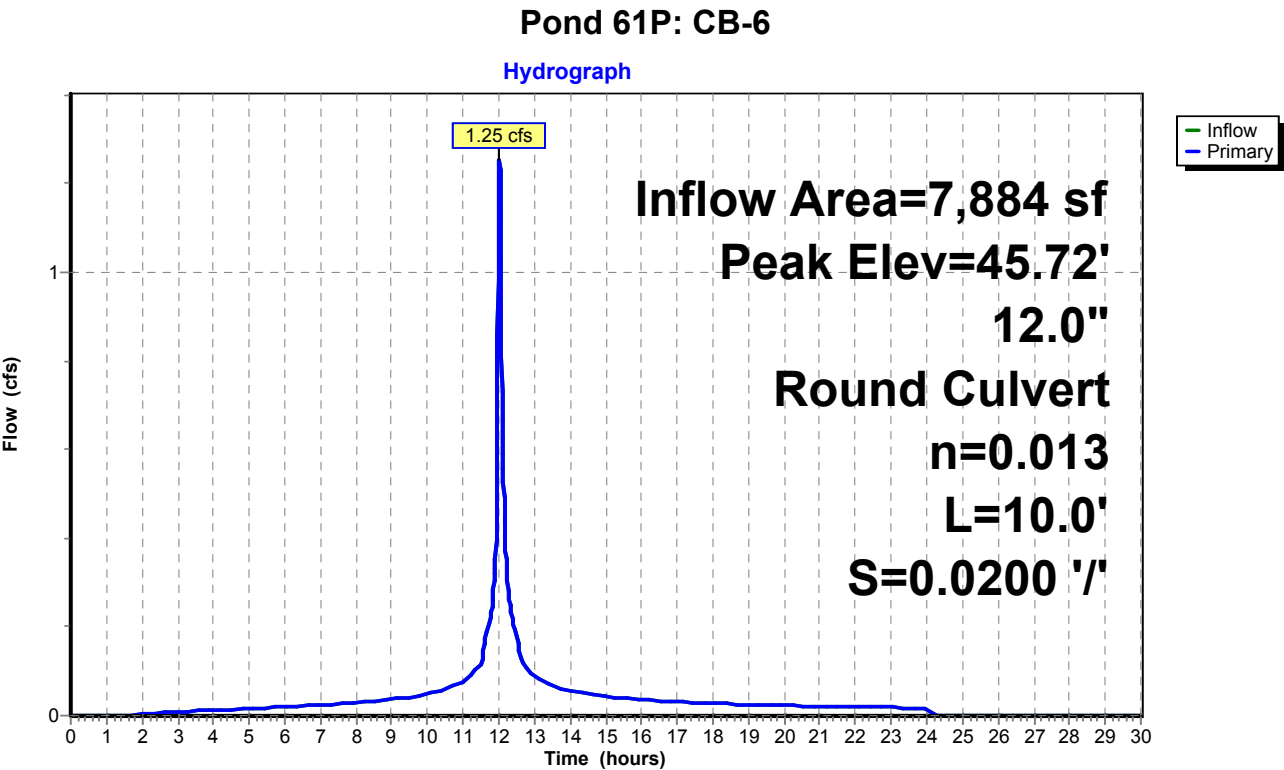
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 5.77" for 25 year event
Inflow = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf
Outflow = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.72' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.25 cfs @ 12.03 hrs HW=45.72' (Free Discharge)
1=Culvert (Barrel Controls 1.25 cfs @ 3.52 fps)



Existing Conditions

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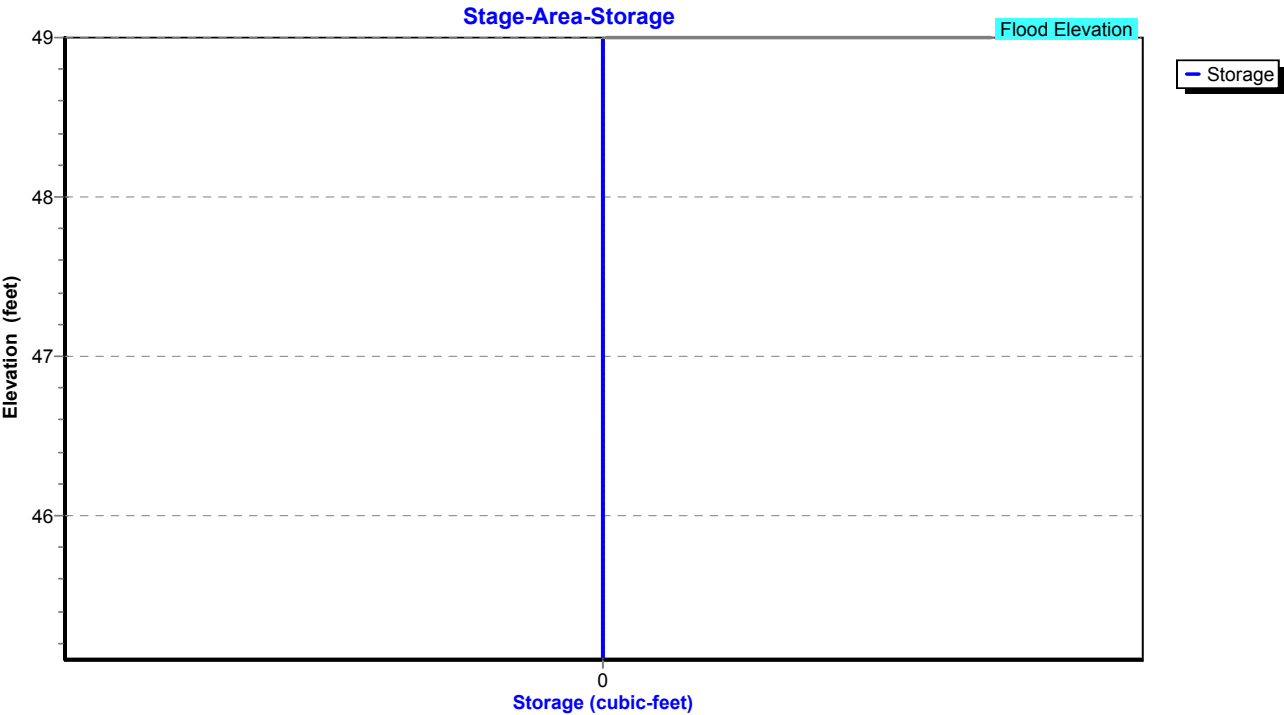
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Pond 61P: CB-6



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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 4.90" for 25 year event
Inflow = 9.85 cfs @ 12.06 hrs, Volume= 37,235 cf
Outflow = 9.85 cfs @ 12.06 hrs, Volume= 37,235 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.85 cfs @ 12.06 hrs, Volume= 37,235 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.68' @ 12.06 hrs

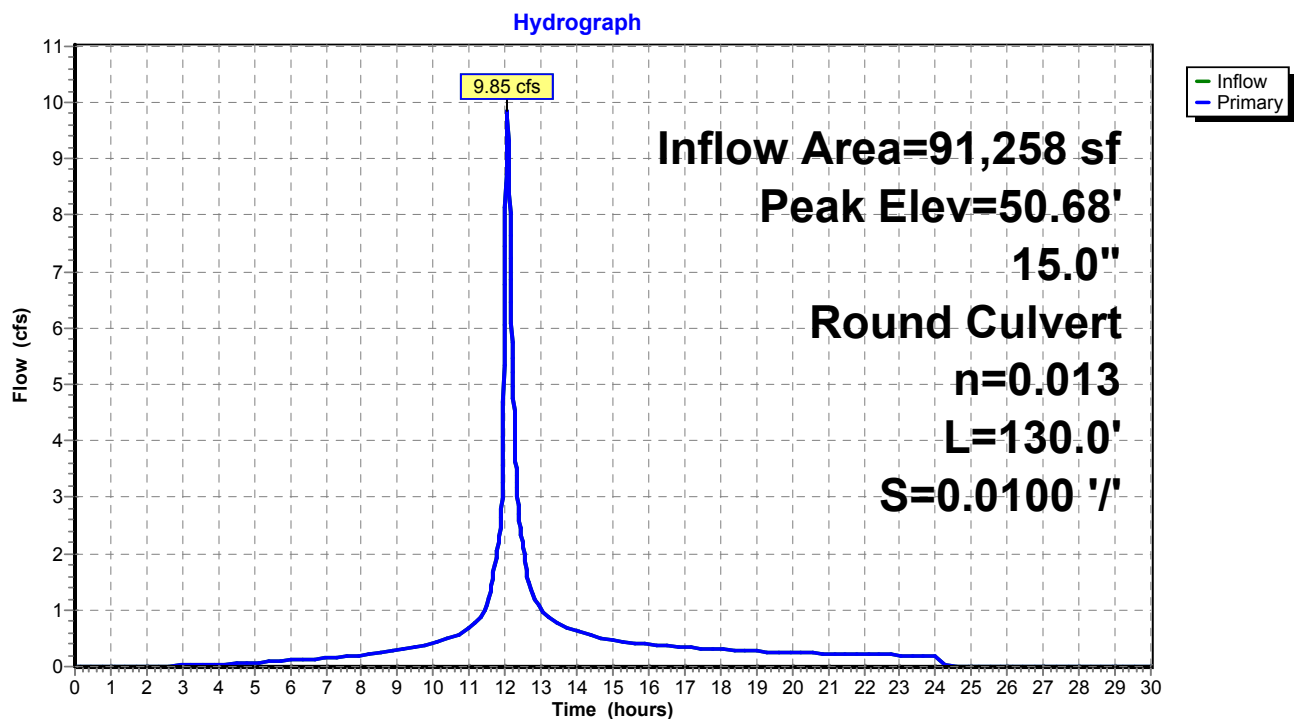
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.84 cfs @ 12.06 hrs HW=50.67' (Free Discharge)

↑1=Culvert (Barrel Controls 9.84 cfs @ 8.02 fps)

Pond 63P: Manhole



Existing Conditions

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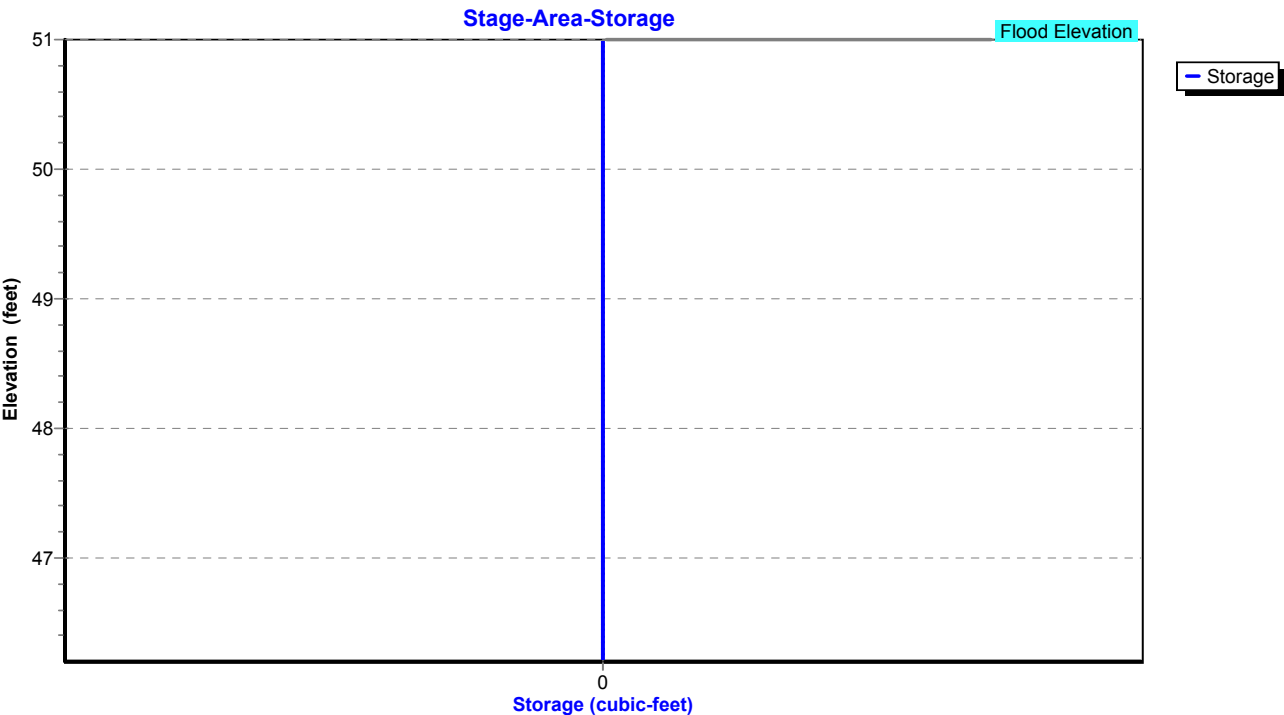
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Pond 63P: Manhole



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Summary for Pond 64P: YD

Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 4.65" for 25 year event
Inflow = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf
Outflow = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 58.21' @ 12.08 hrs

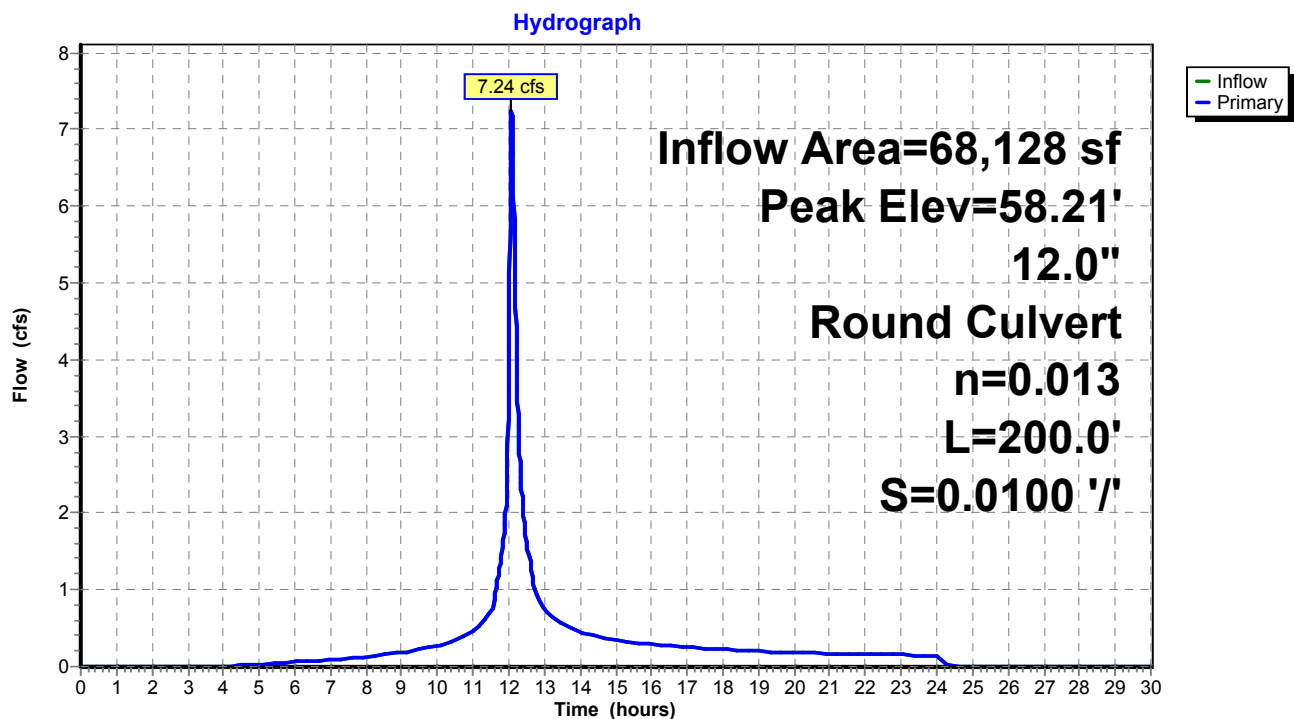
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=7.22 cfs @ 12.08 hrs HW=58.17' (Free Discharge)

↑1=Culvert (Barrel Controls 7.22 cfs @ 9.20 fps)

Pond 64P: YD



Existing Conditions

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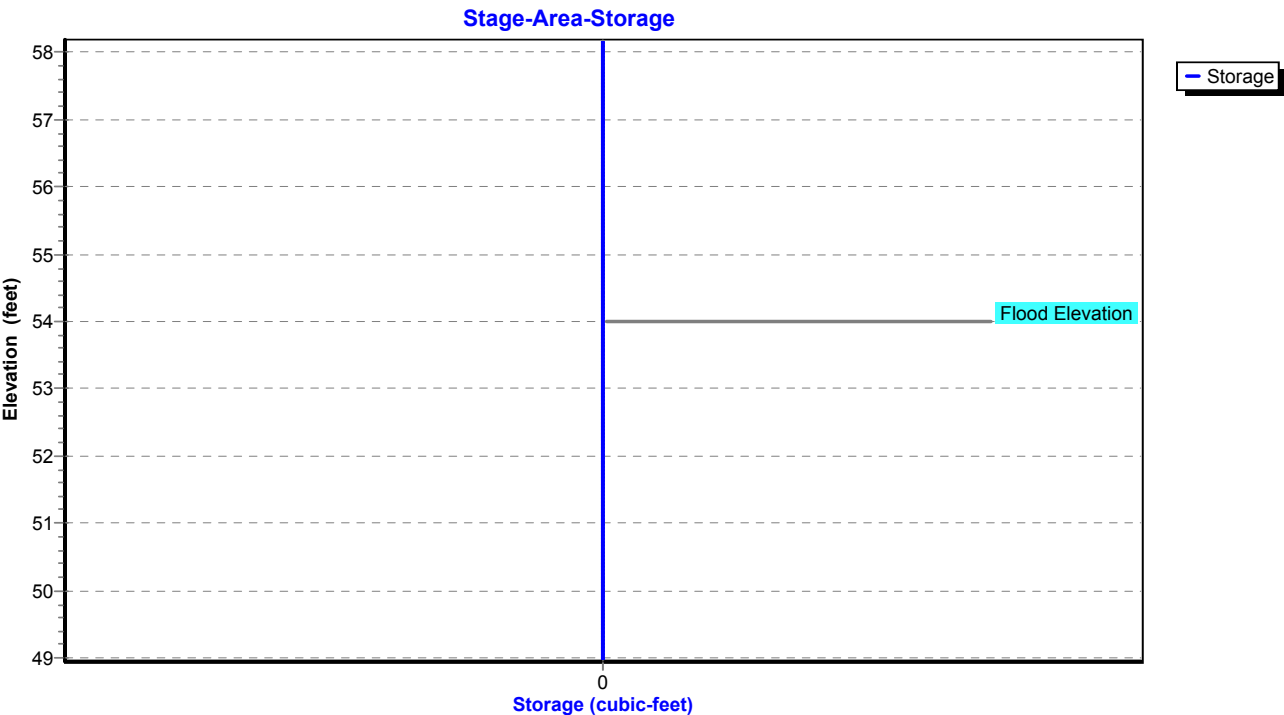
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 5.54" for 25 year event
Inflow = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf
Outflow = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.33' @ 12.03 hrs

Flood Elev= 53.00'

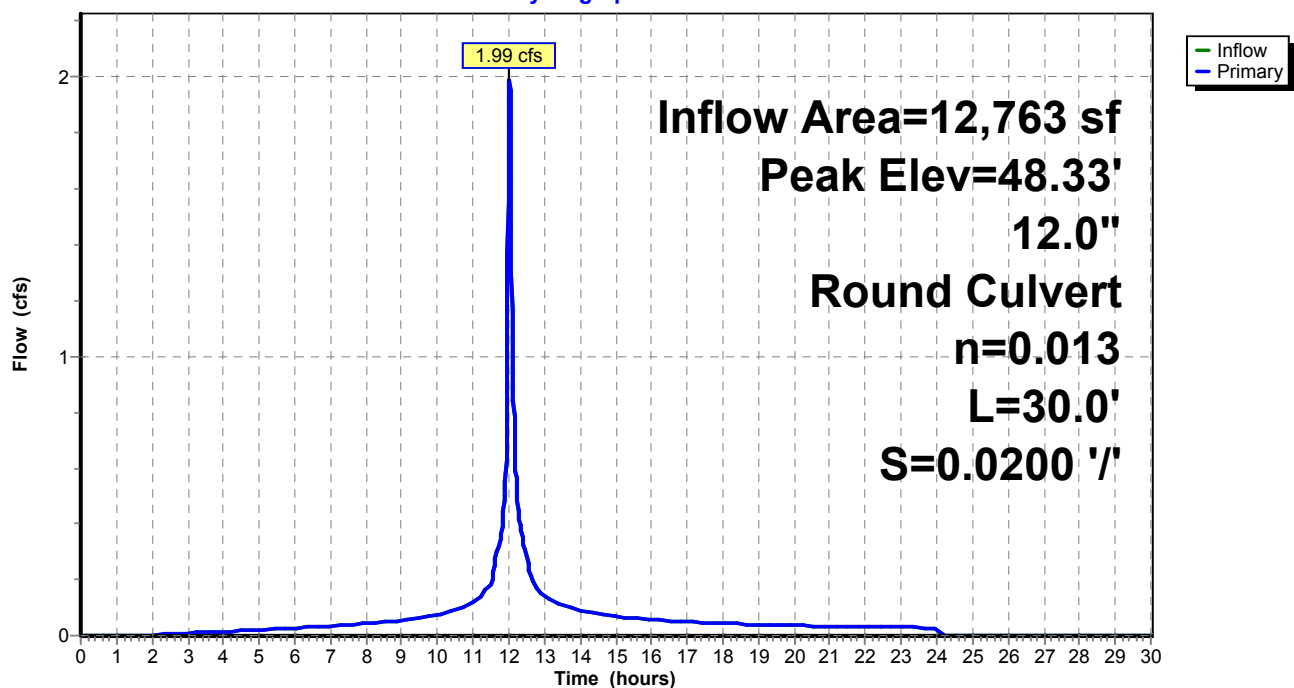
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.98 cfs @ 12.03 hrs HW=48.33' (Free Discharge)

↑1=Culvert (Inlet Controls 1.98 cfs @ 3.01 fps)

Pond 66P: CB-10

Hydrograph



Existing Conditions

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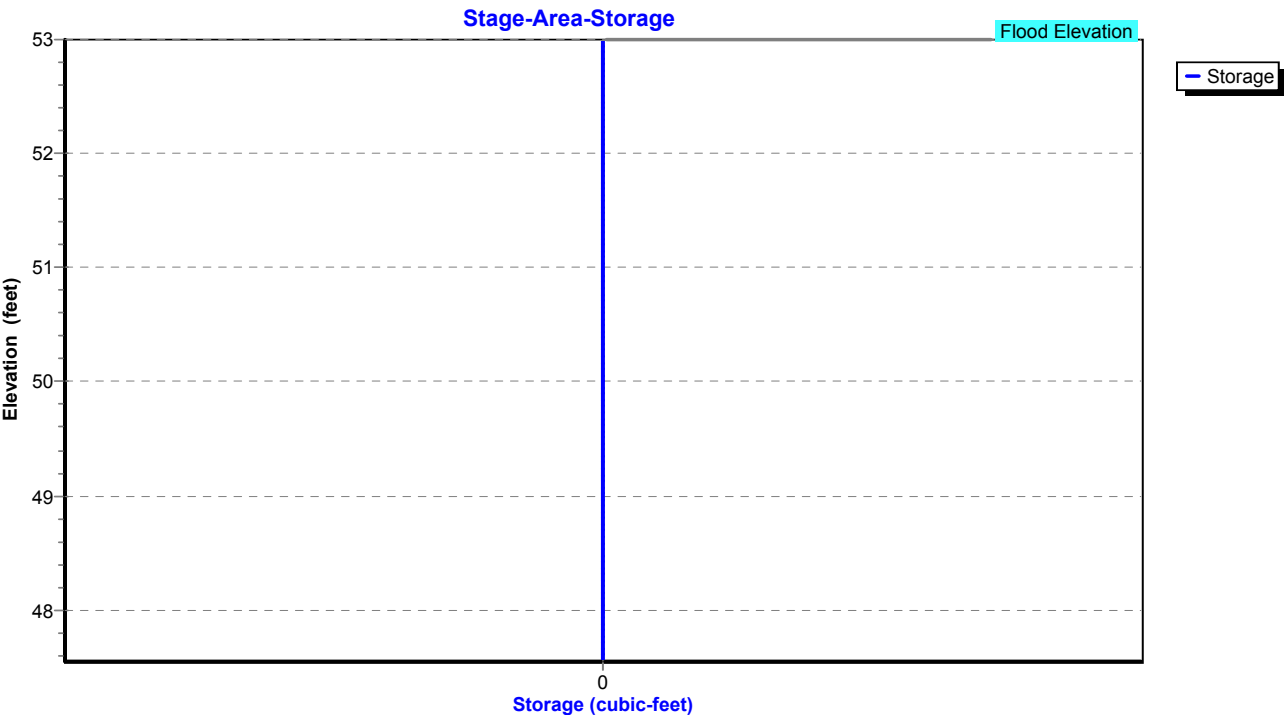
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Pond 66P: CB-10



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Summary for Pond 67P: CB-9

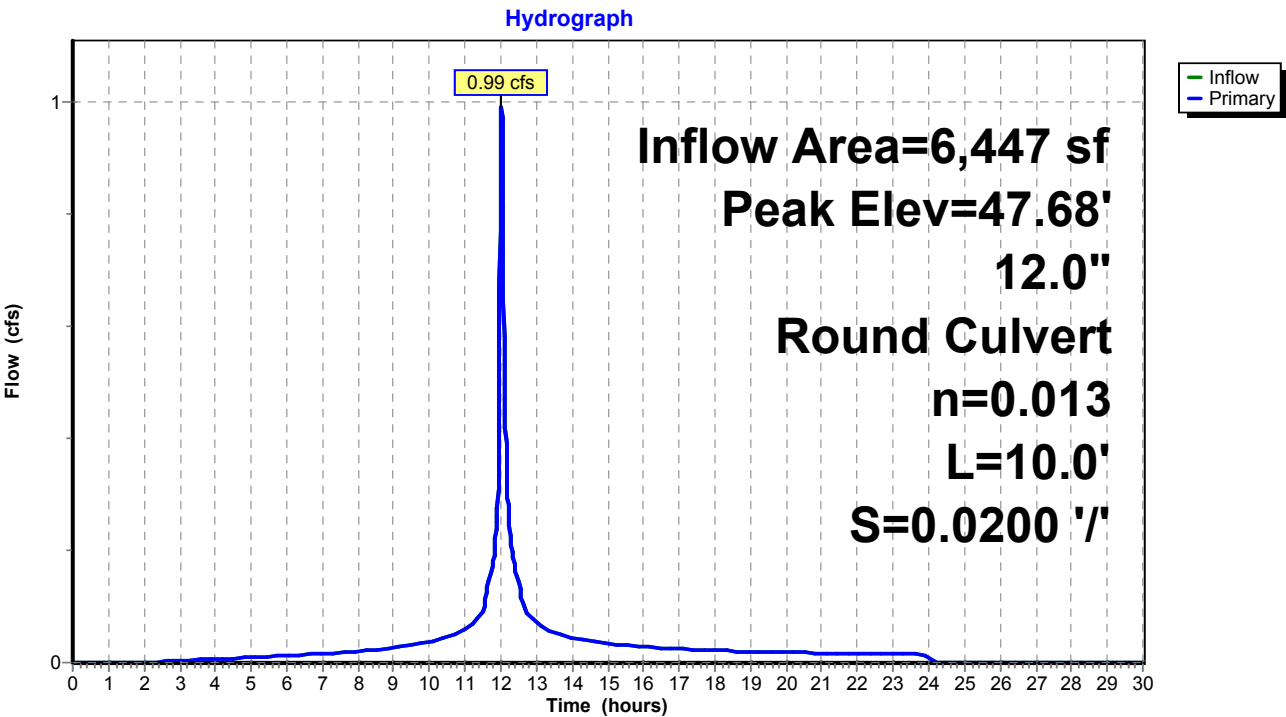
Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 5.43" for 25 year event
Inflow = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf
Outflow = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.68' @ 12.03 hrs
Flood Elev= 52.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.99 cfs @ 12.03 hrs HW=47.68' (Free Discharge)
1=Culvert (Barrel Controls 0.99 cfs @ 3.37 fps)

Pond 67P: CB-9



Existing Conditions

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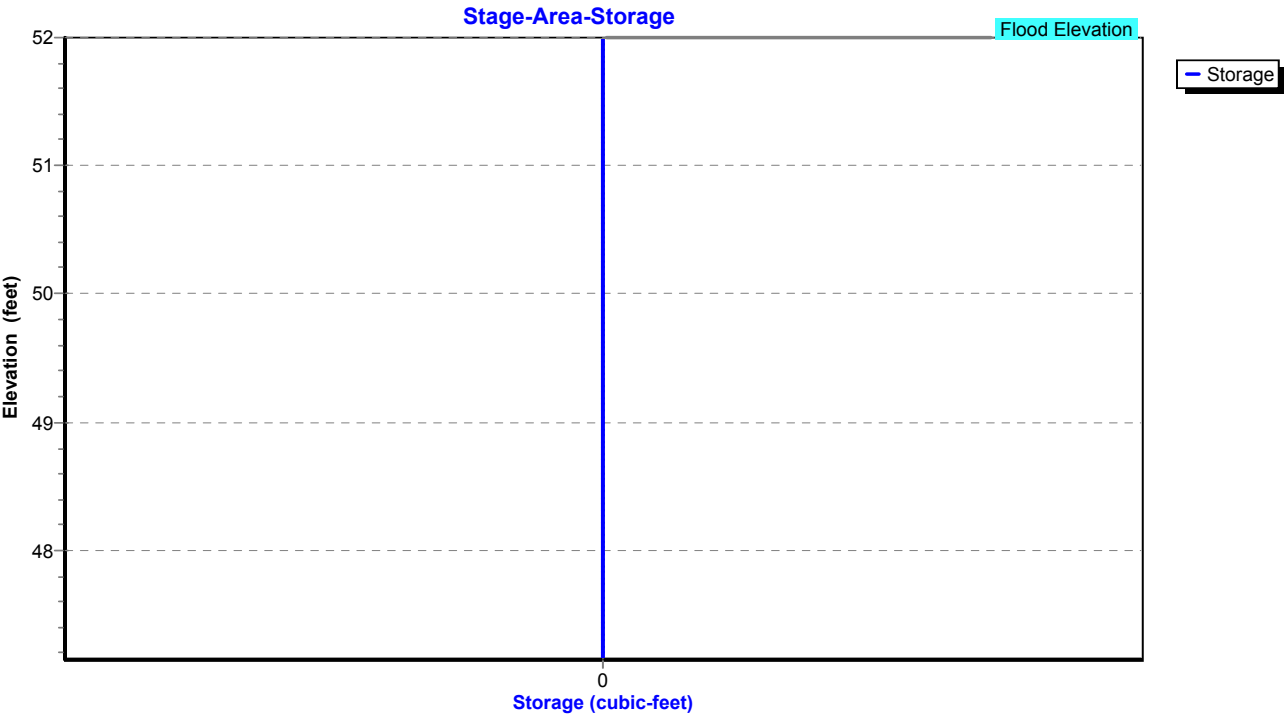
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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 4.94" for 25 year event
Inflow = 9.54 cfs @ 11.99 hrs, Volume= 36,210 cf
Outflow = 9.54 cfs @ 11.99 hrs, Volume= 36,210 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.54 cfs @ 11.99 hrs, Volume= 36,210 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.49' @ 11.99 hrs

Flood Elev= 53.30'

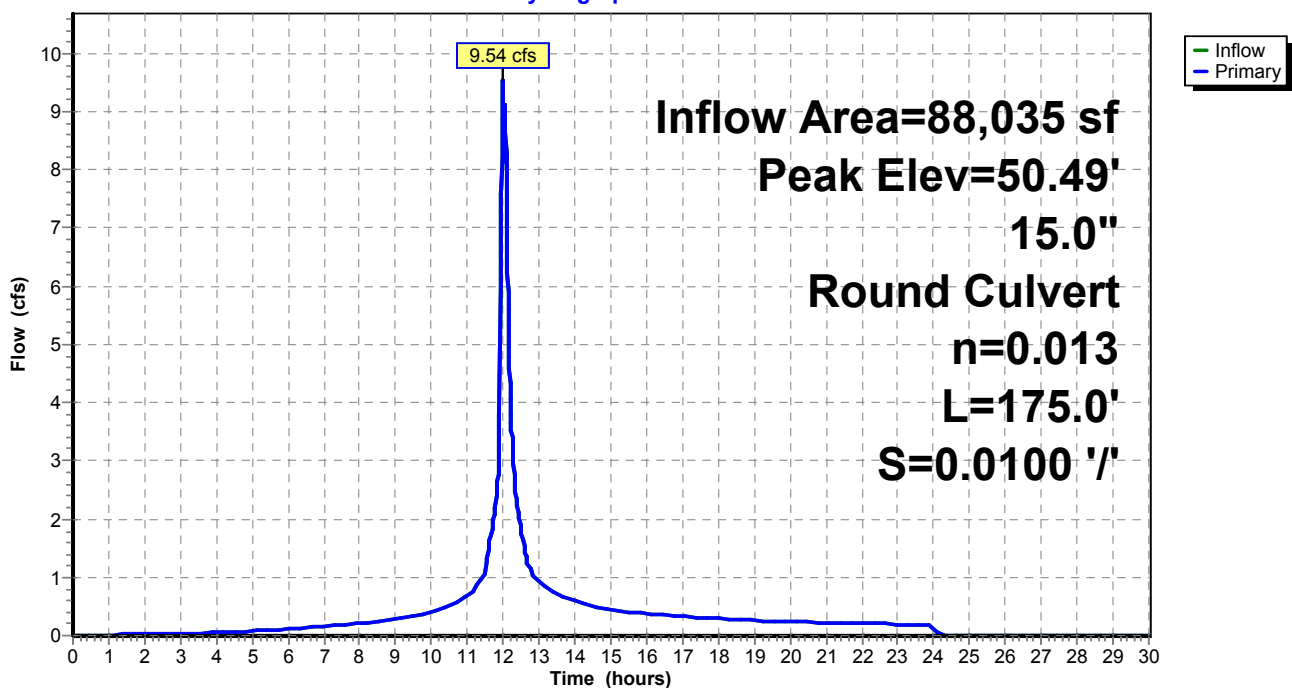
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.54 cfs @ 11.99 hrs HW=50.48' (Free Discharge)

↑1=Culvert (Barrel Controls 9.54 cfs @ 7.77 fps)

Pond 70P: CB-2

Hydrograph



Existing Conditions

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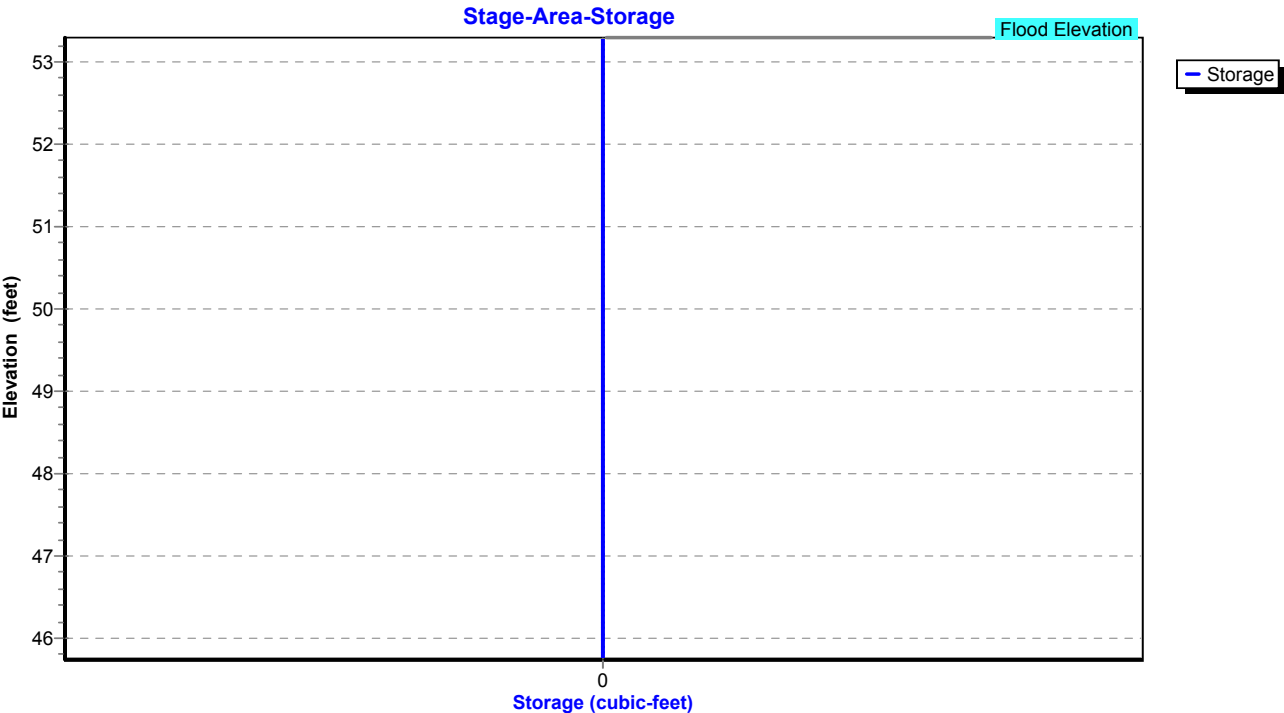
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Pond 70P: CB-2



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Summary for Pond 72P: Manhole

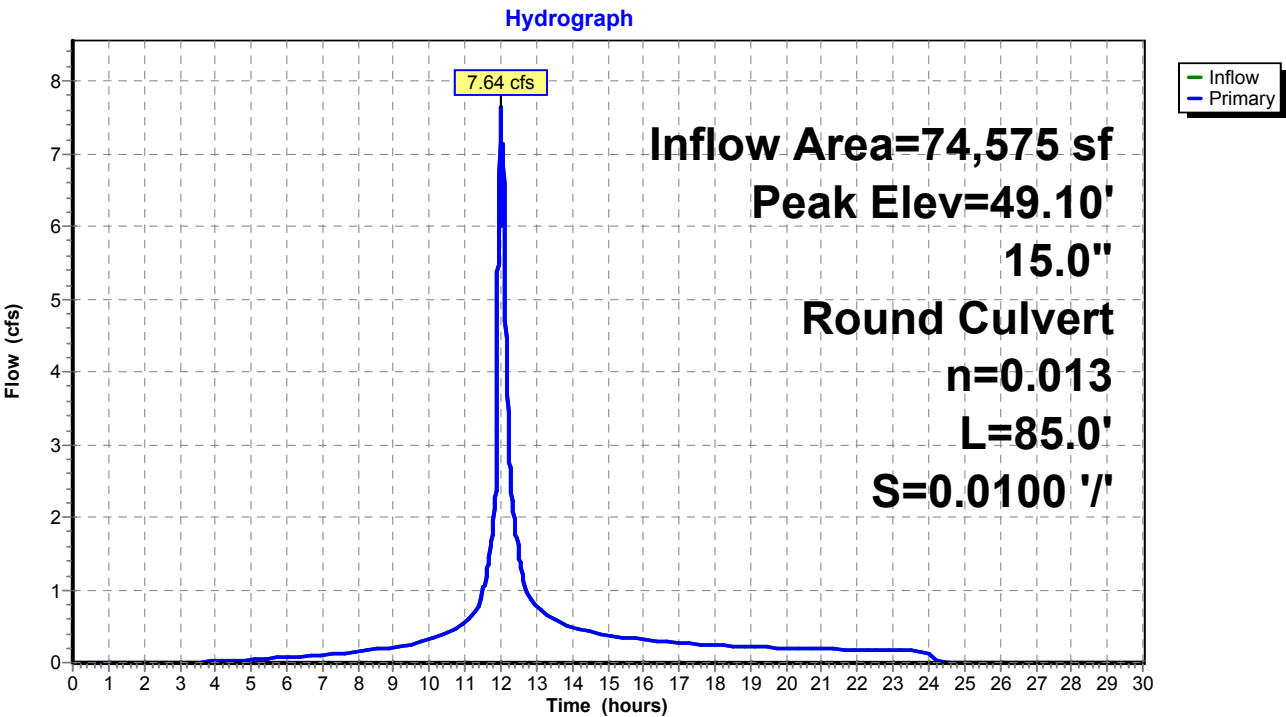
Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 4.70" for 25 year event
Inflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Outflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.10' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.57 cfs @ 11.99 hrs HW=49.06' (Free Discharge)
1=Culvert (Barrel Controls 7.57 cfs @ 6.17 fps)

Pond 72P: Manhole



Existing Conditions

Prepared by Tighe & Bond

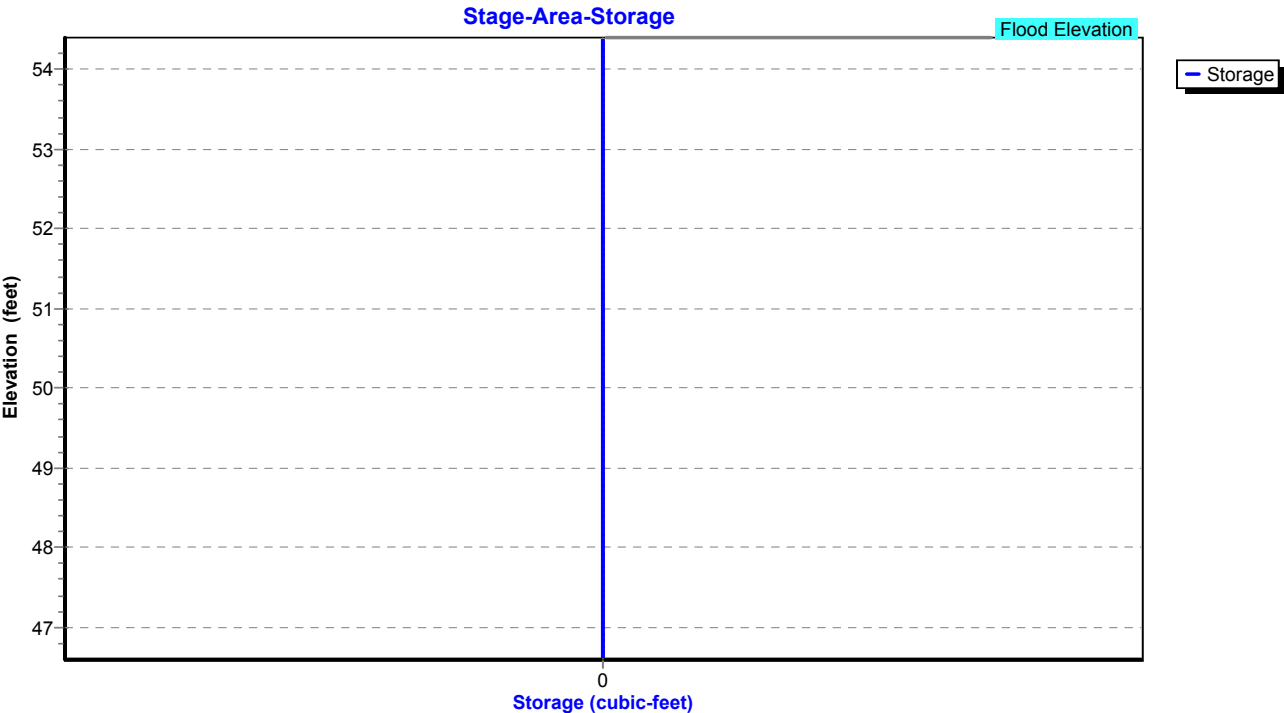
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Pond 72P: Manhole



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Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 4.70" for 25 year event
Inflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Outflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.30' @ 11.99 hrs

Flood Elev= 53.30'

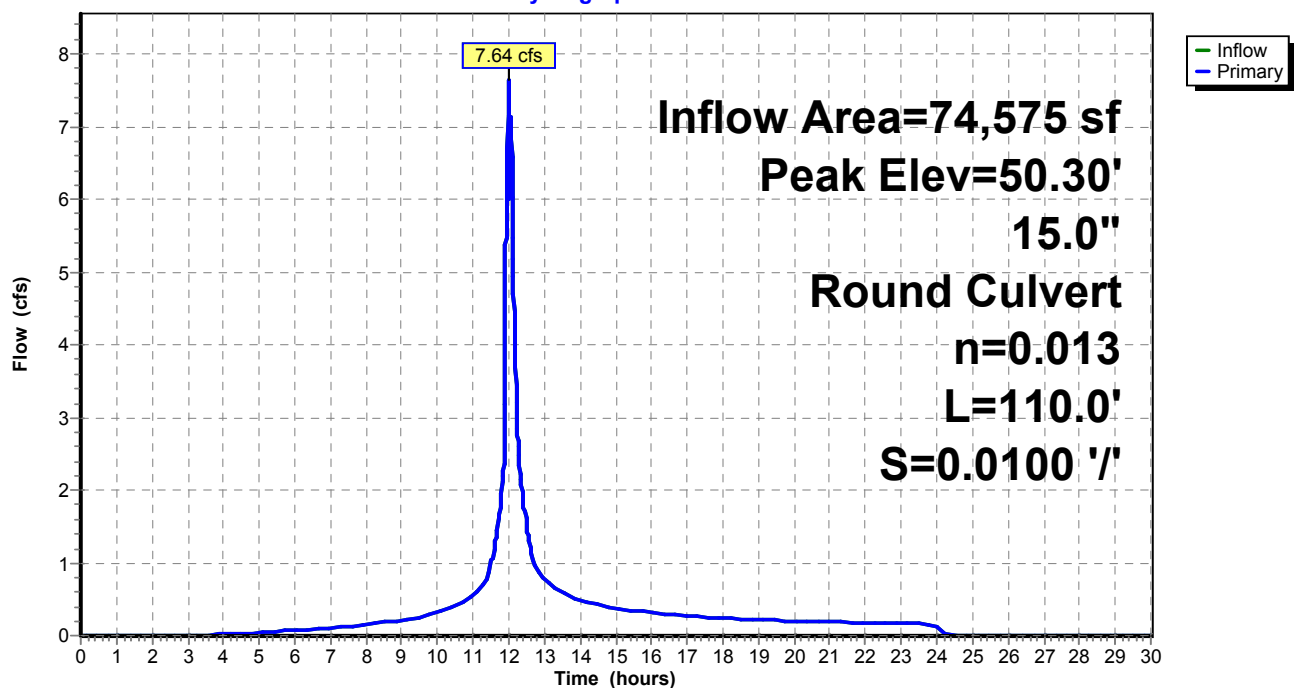
Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.57 cfs @ 11.99 hrs HW=50.25' (Free Discharge)

↑1=Culvert (Barrel Controls 7.57 cfs @ 6.17 fps)

Pond 73P: CB-3

Hydrograph



Existing Conditions

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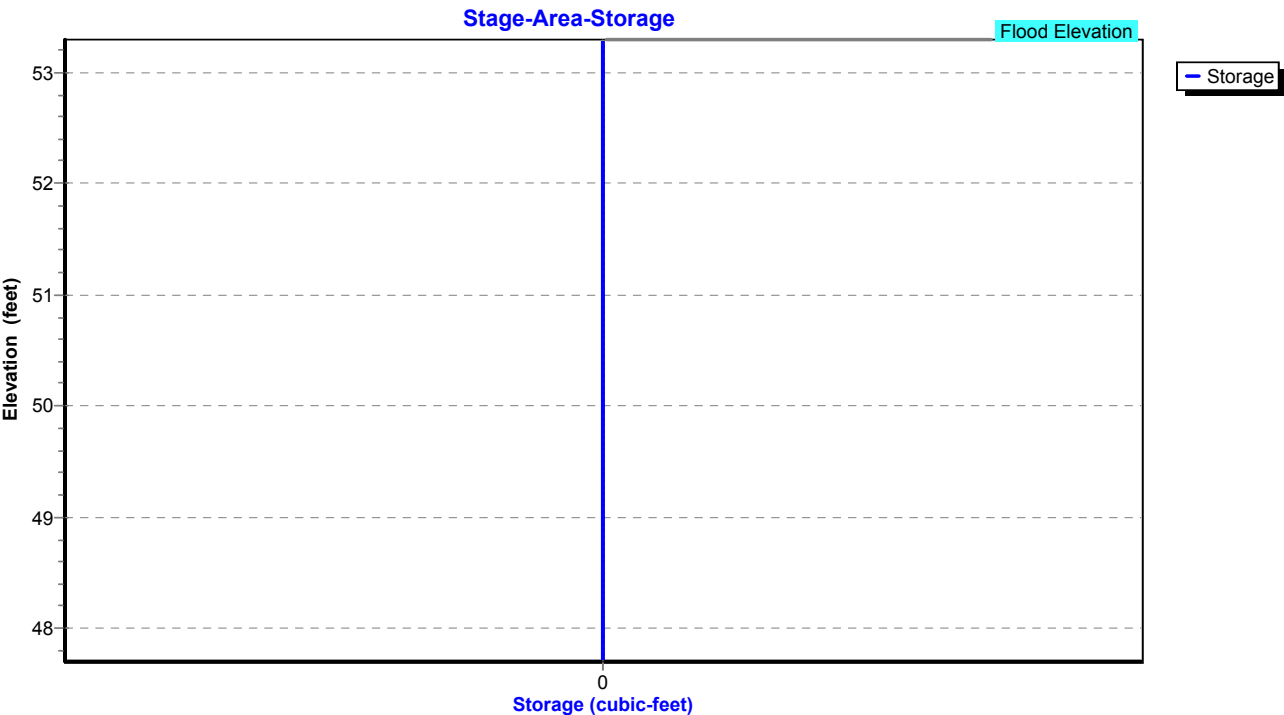
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Pond 73P: CB-3



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Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 4.56" for 25 year event
Inflow = 5.72 cfs @ 12.06 hrs, Volume= 18,982 cf
Outflow = 5.72 cfs @ 12.06 hrs, Volume= 18,982 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.72 cfs @ 12.06 hrs, Volume= 18,982 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.76' @ 12.06 hrs

Flood Elev= 53.70'

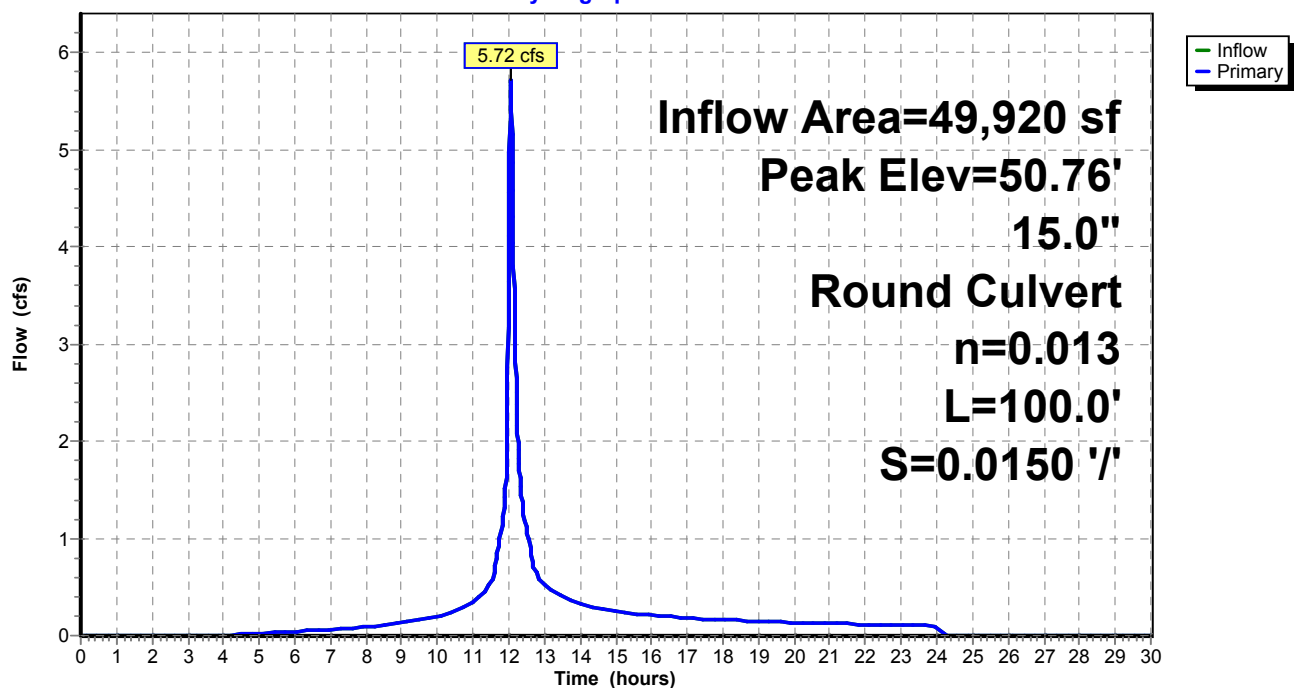
Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=5.71 cfs @ 12.06 hrs HW=50.76' (Free Discharge)

↑1=Culvert (Inlet Controls 5.71 cfs @ 4.65 fps)

Pond 74P: CB-4

Hydrograph



Existing Conditions

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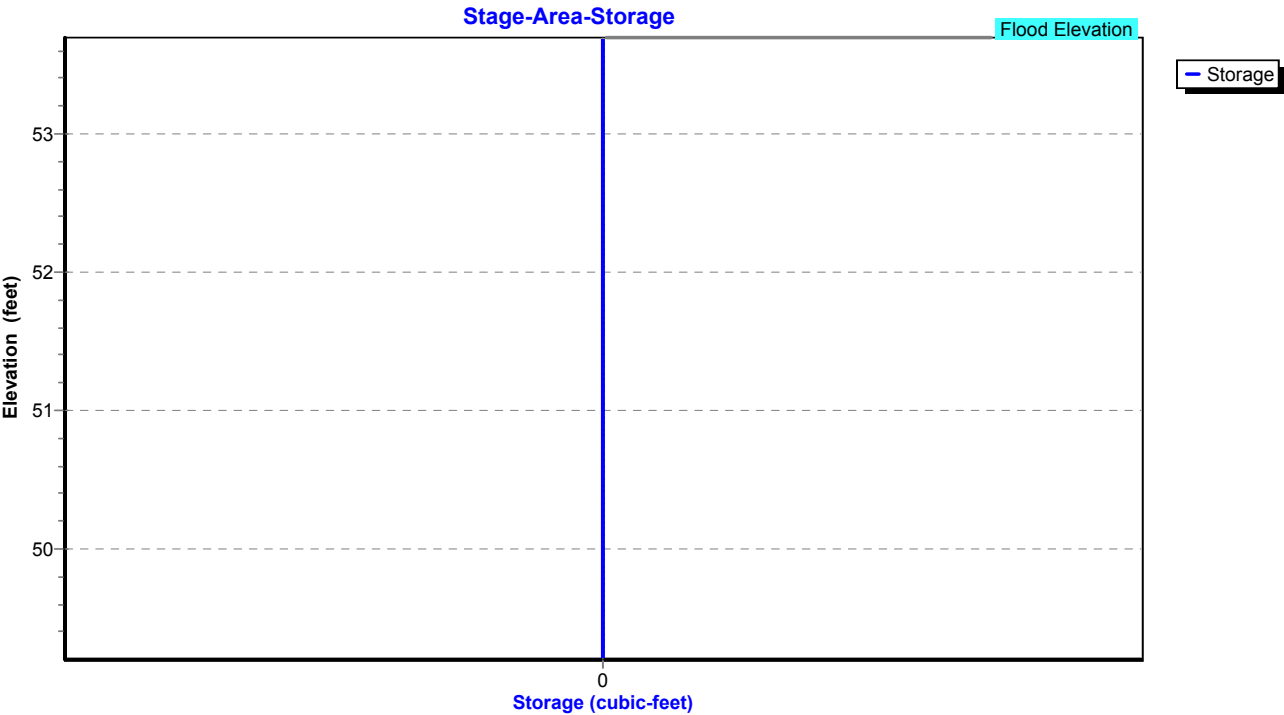
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Pond 74P: CB-4



Existing Conditions

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Summary for Pond 77P: Manhole

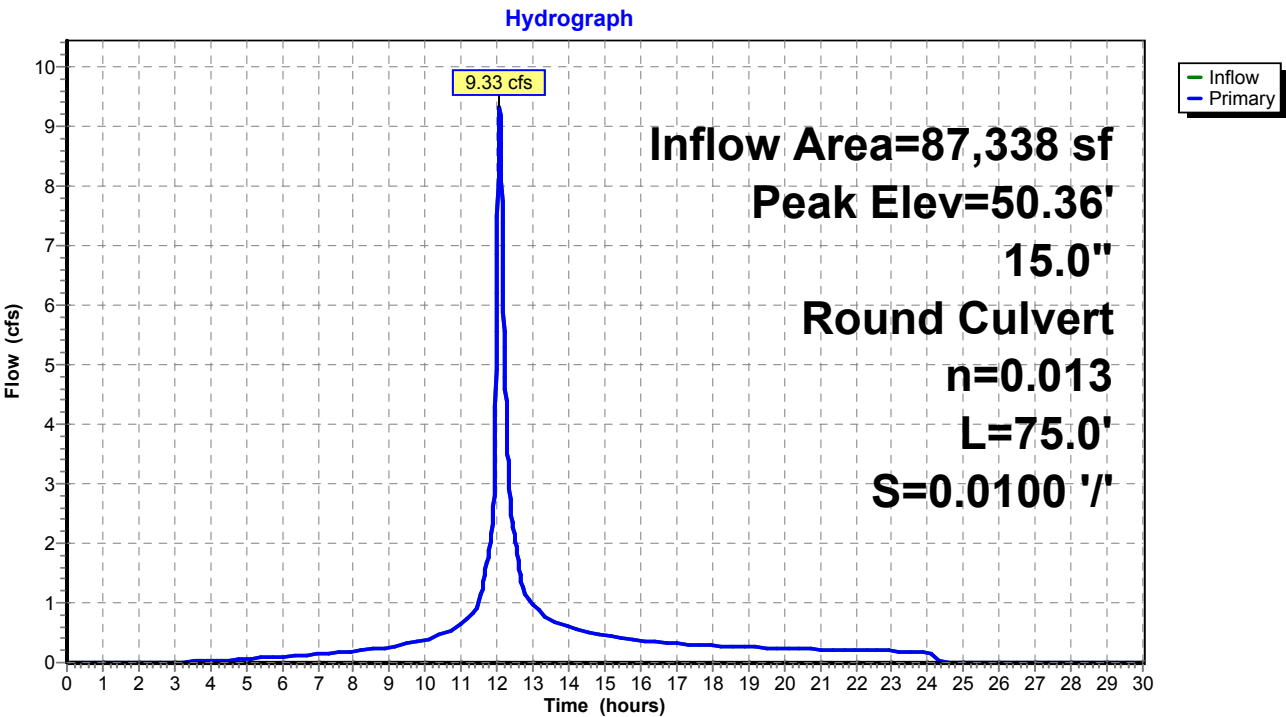
Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 4.84" for 25 year event
Inflow = 9.33 cfs @ 12.06 hrs, Volume= 35,196 cf
Outflow = 9.33 cfs @ 12.06 hrs, Volume= 35,196 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.33 cfs @ 12.06 hrs, Volume= 35,196 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.36' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.31 cfs @ 12.06 hrs HW=50.36' (Free Discharge)
1=Culvert (Barrel Controls 9.31 cfs @ 7.59 fps)

Pond 77P: Manhole



Existing Conditions

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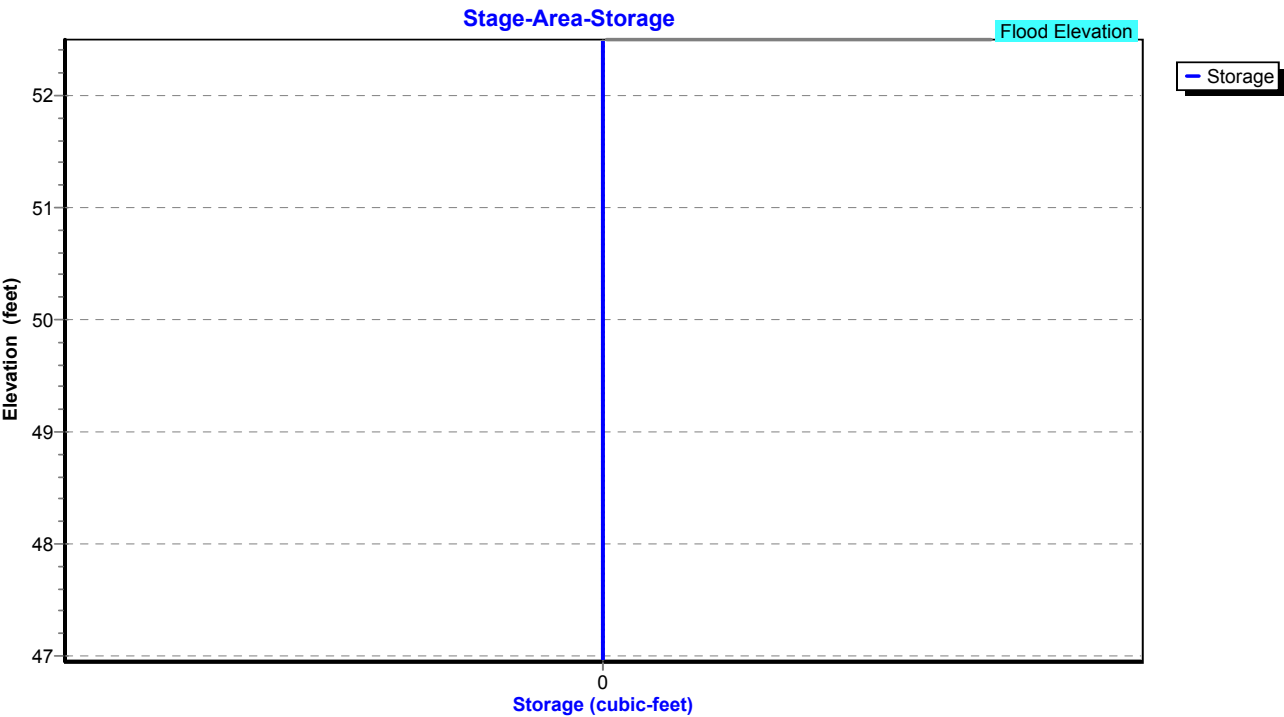
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Pond 77P: Manhole



Existing Conditions

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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 6.24" for 25 year event
Inflow = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf
Outflow = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.60' @ 12.03 hrs

Flood Elev= 52.50'

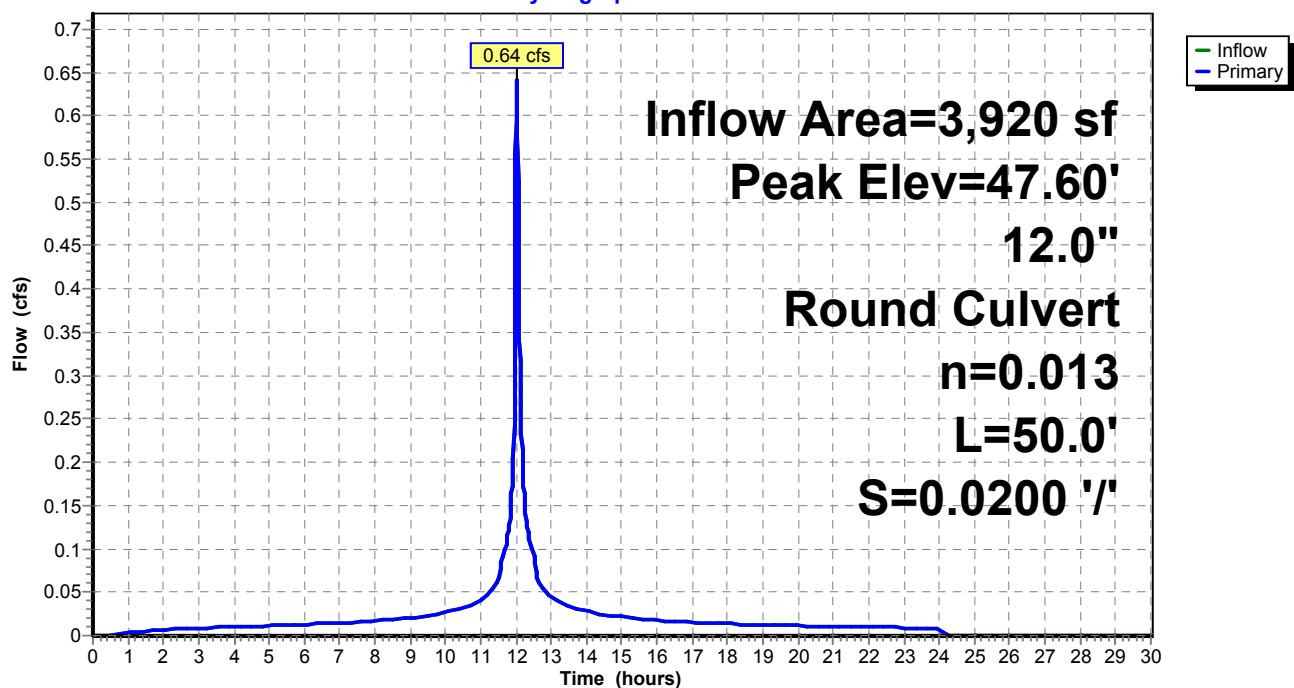
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.64 cfs @ 12.03 hrs HW=47.60' (Free Discharge)

↑1=Culvert (Inlet Controls 0.64 cfs @ 2.16 fps)

Pond 79P: CB-8

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

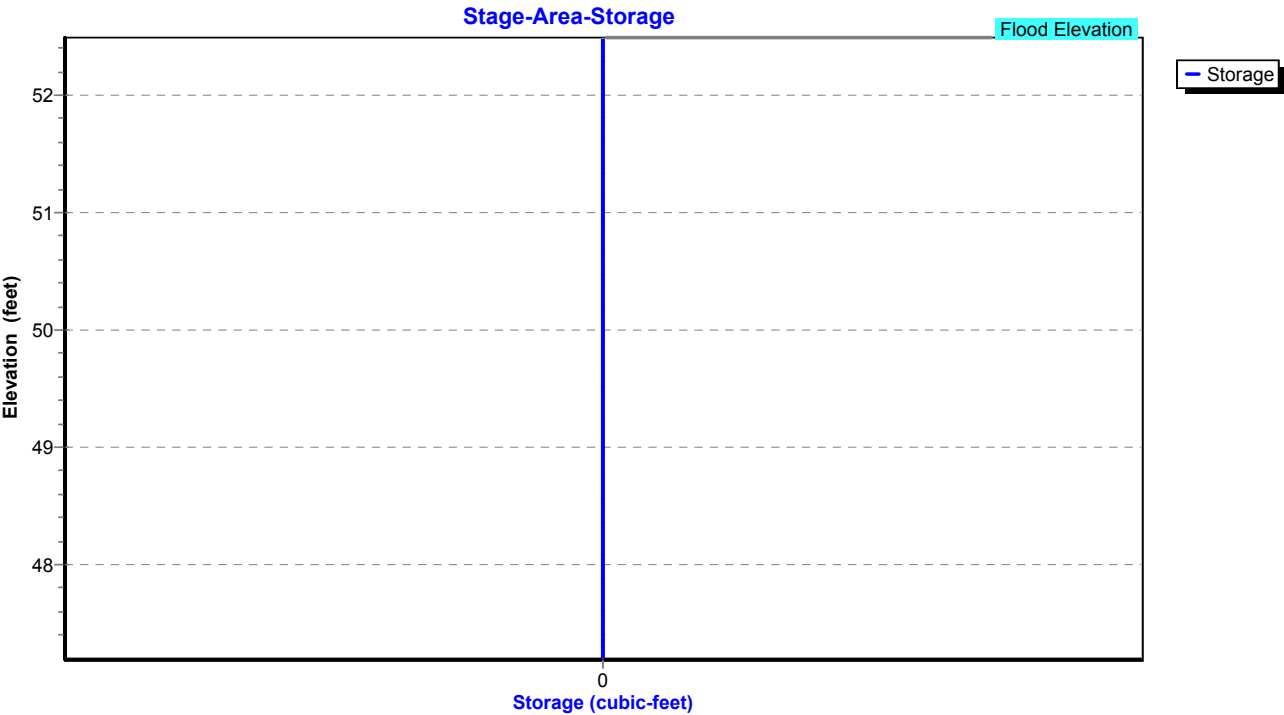
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 79P: CB-8



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 4.43" for 25 year event
Inflow = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf
Outflow = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.91' @ 12.07 hrs

Flood Elev= 53.30'

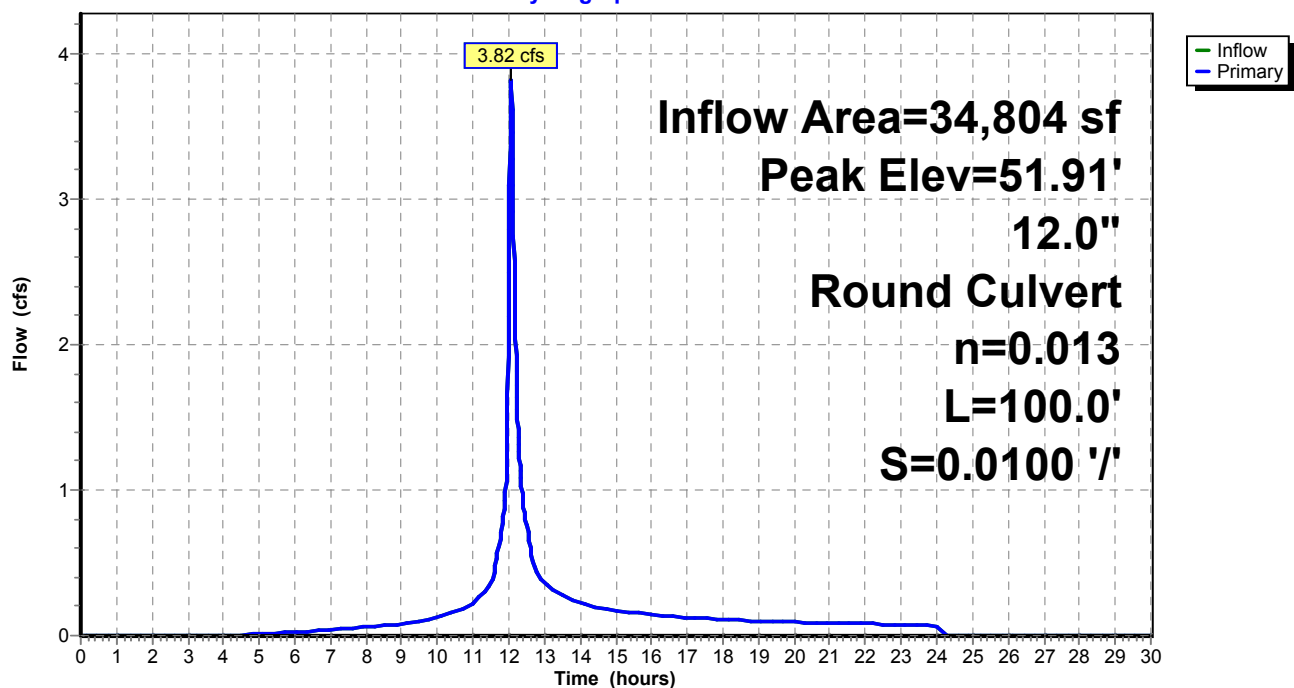
Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.81 cfs @ 12.07 hrs HW=51.90' (Free Discharge)

↑1=Culvert (Barrel Controls 3.81 cfs @ 4.85 fps)

Pond 85P: CB-5

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

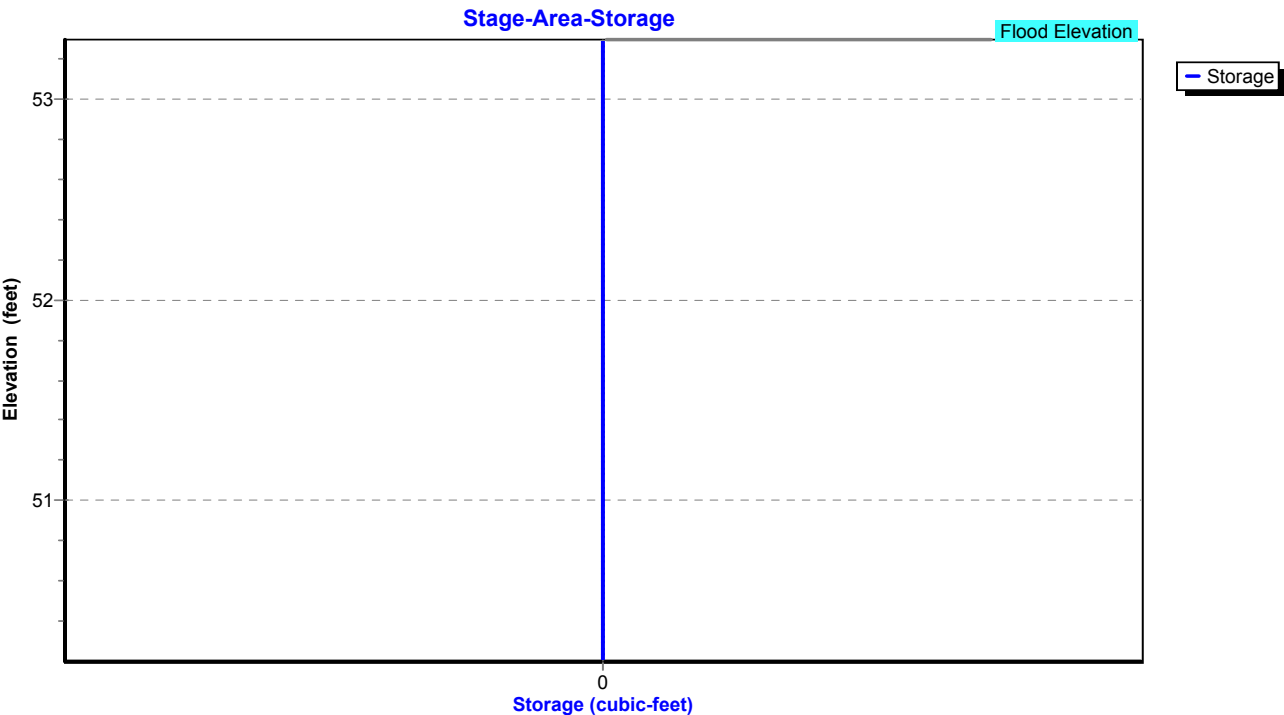
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 85P: CB-5



Existing Conditions

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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 6.24" for 25 year event
Inflow = 2.76 cfs @ 12.03 hrs, Volume= 8,791 cf
Outflow = 1.12 cfs @ 12.14 hrs, Volume= 8,791 cf, Atten= 59%, Lag= 7.2 min
Primary = 1.12 cfs @ 12.14 hrs, Volume= 8,791 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 54.39' @ 12.14 hrs Surf.Area= 749 sf Storage= 1,447 cf

Plug-Flow detention time= 18.6 min calculated for 8,788 cf (100% of inflow)
Center-of-Mass det. time= 18.6 min (762.5 - 743.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.10 cfs @ 12.14 hrs HW=54.39' (Free Discharge)

1=Culvert (Passes 1.10 cfs of 6.04 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.71 cfs @ 8.18 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 0.39 cfs @ 0.85 fps)

Existing Conditions

Prepared by Tighe & Bond

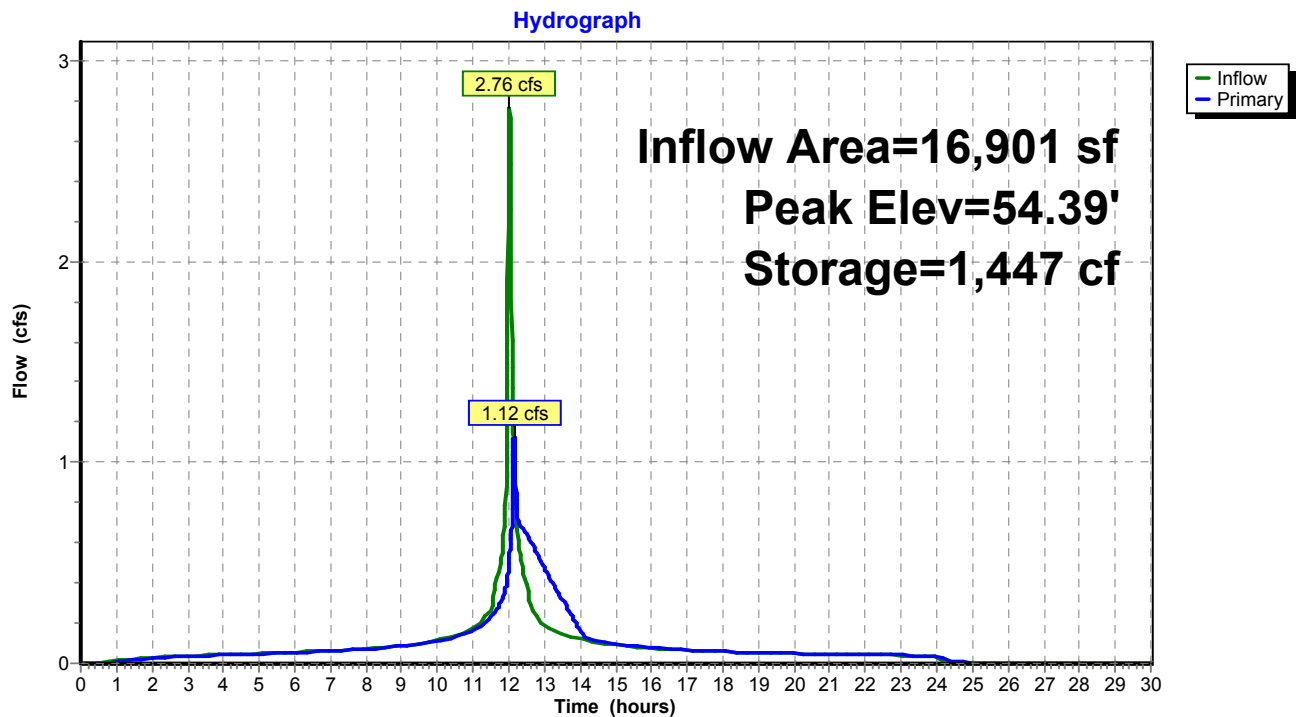
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NORWALK 24-hr S1 25 year Rainfall=6.48"

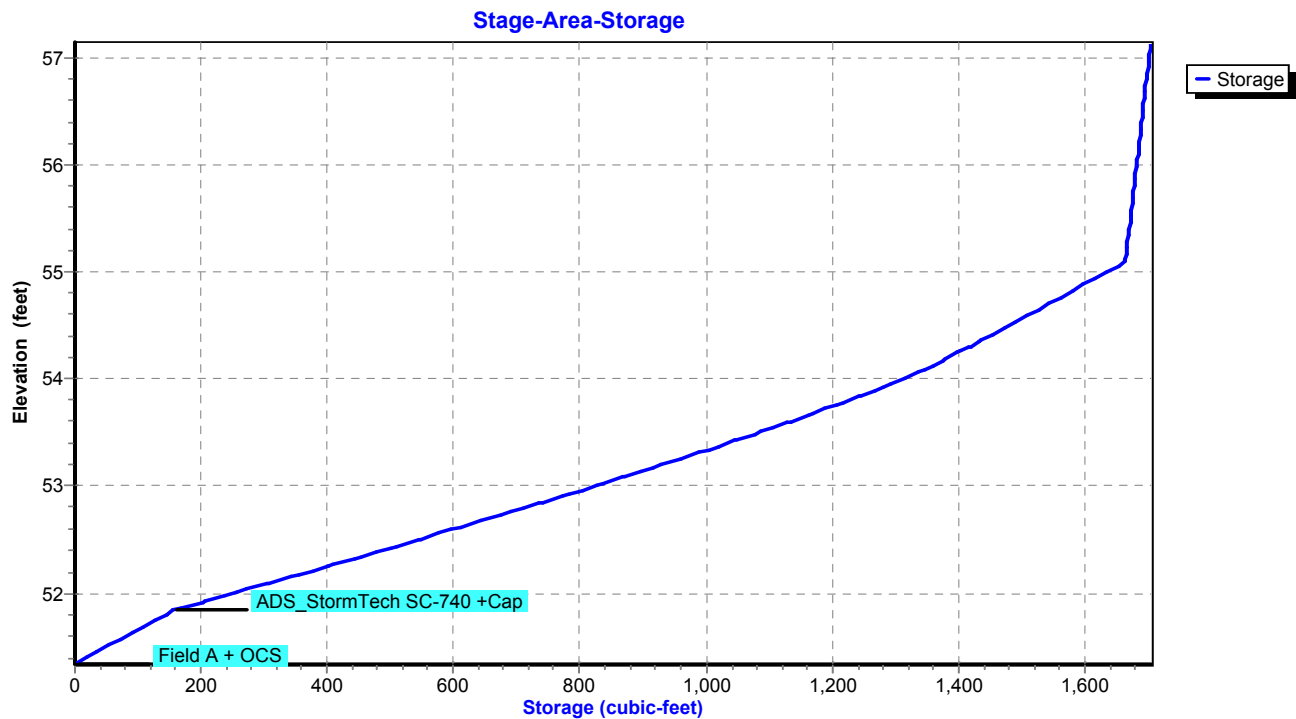
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 4S: Area 4

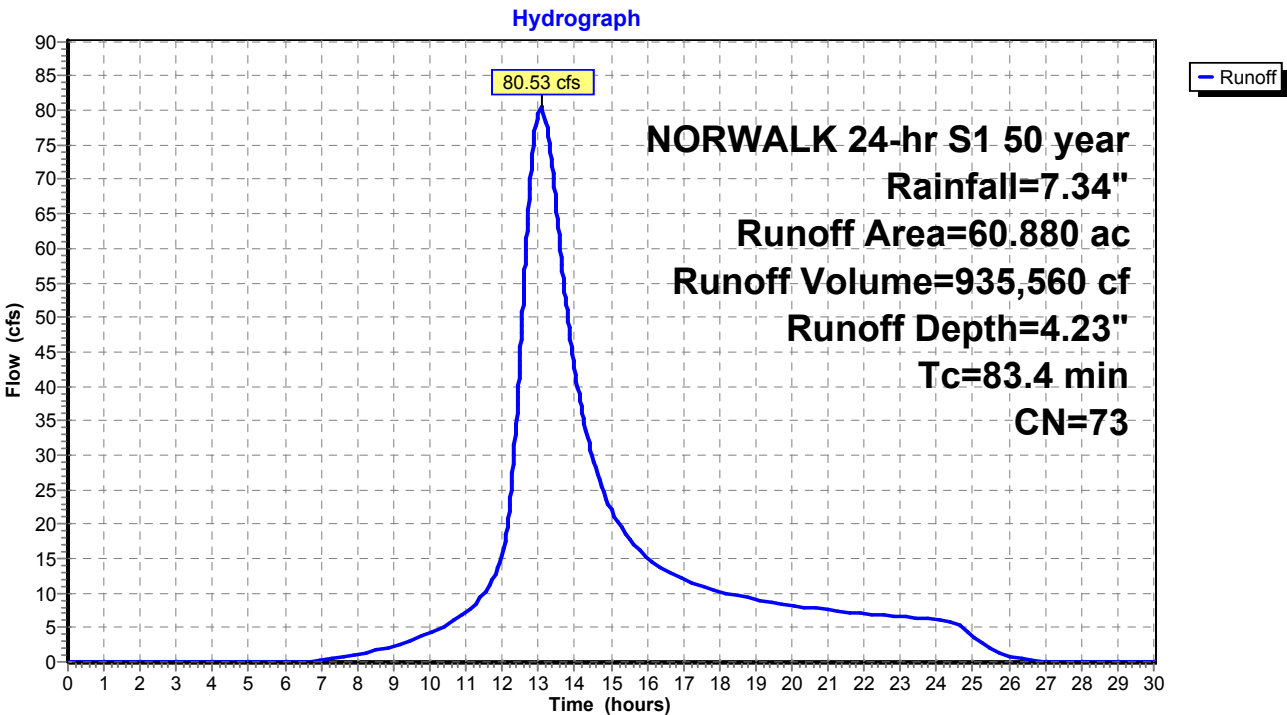
Runoff = 80.53 cfs @ 13.07 hrs, Volume= 935,560 cf, Depth= 4.23"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 5S: Area 5

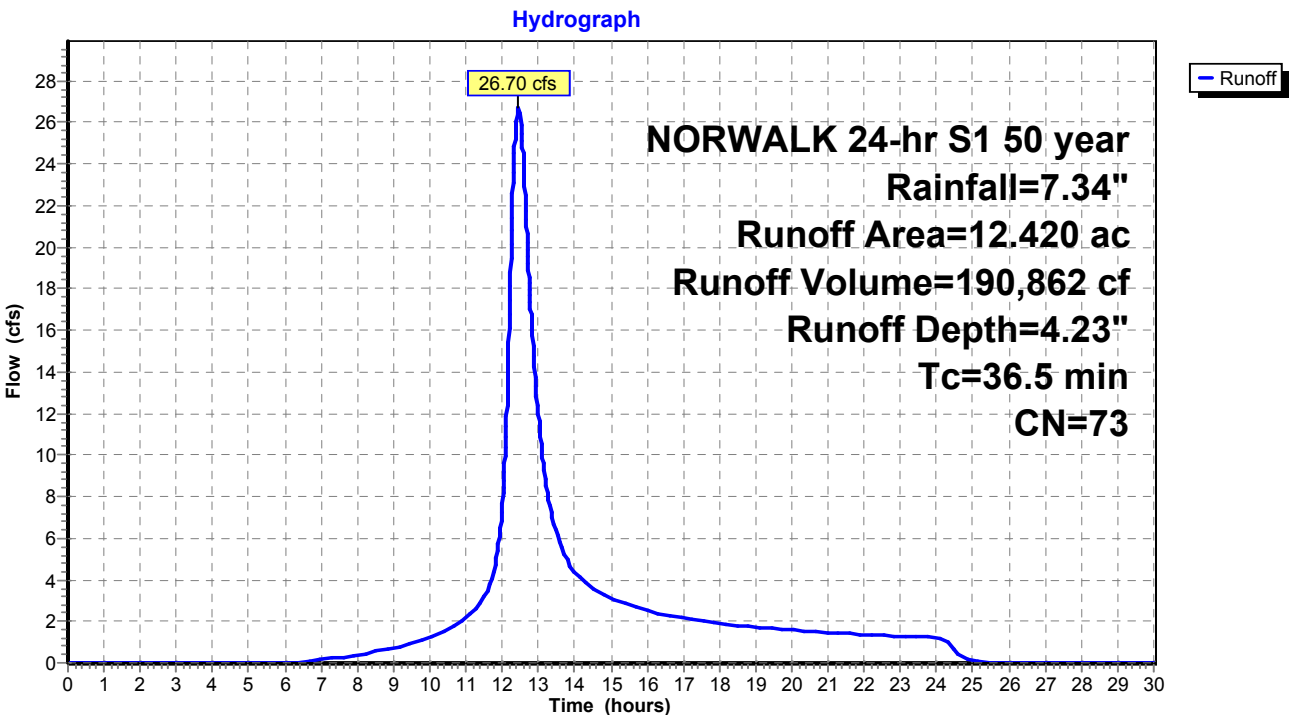
Runoff = 26.70 cfs @ 12.45 hrs, Volume= 190,862 cf, Depth= 4.23"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 6S: Area 6

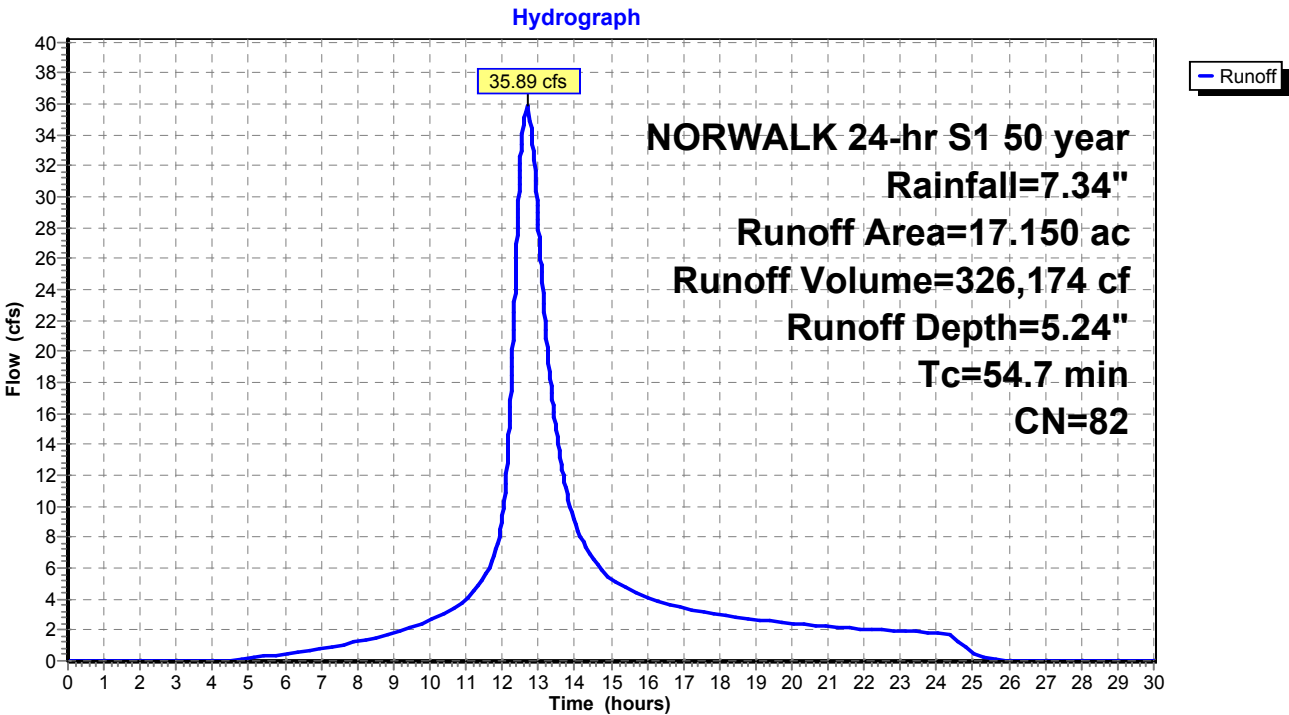
Runoff = 35.89 cfs @ 12.70 hrs, Volume= 326,174 cf, Depth= 5.24"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 7S: Area 7

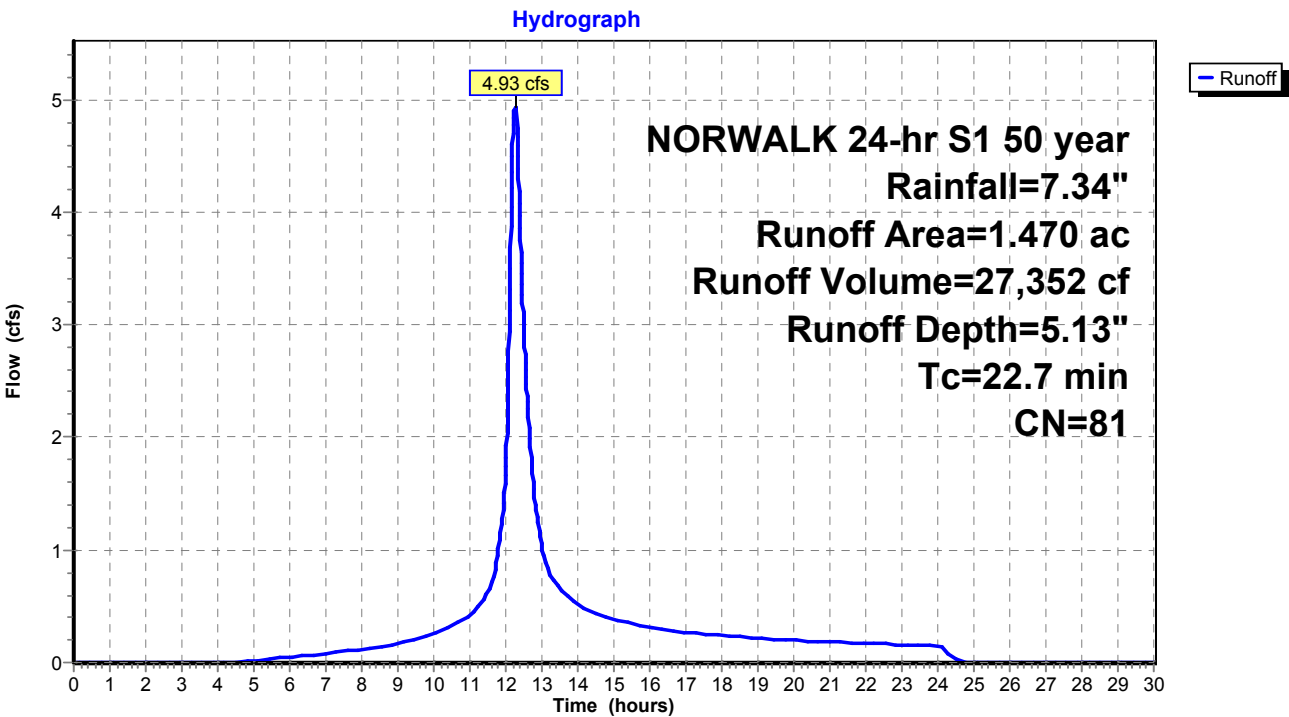
Runoff = 4.93 cfs @ 12.26 hrs, Volume= 27,352 cf, Depth= 5.13"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"
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Summary for Subcatchment 8S: Area 8

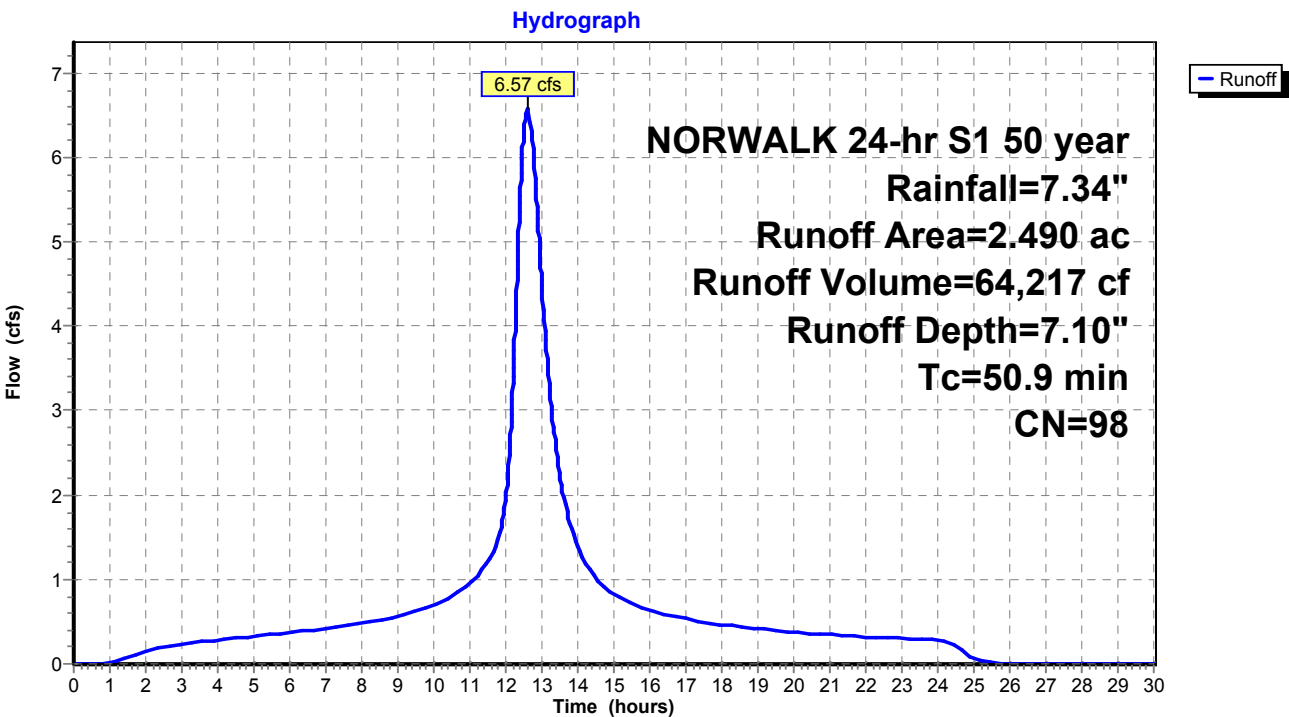
Runoff = 6.57 cfs @ 12.61 hrs, Volume= 64,217 cf, Depth= 7.10"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 9S: Area 9

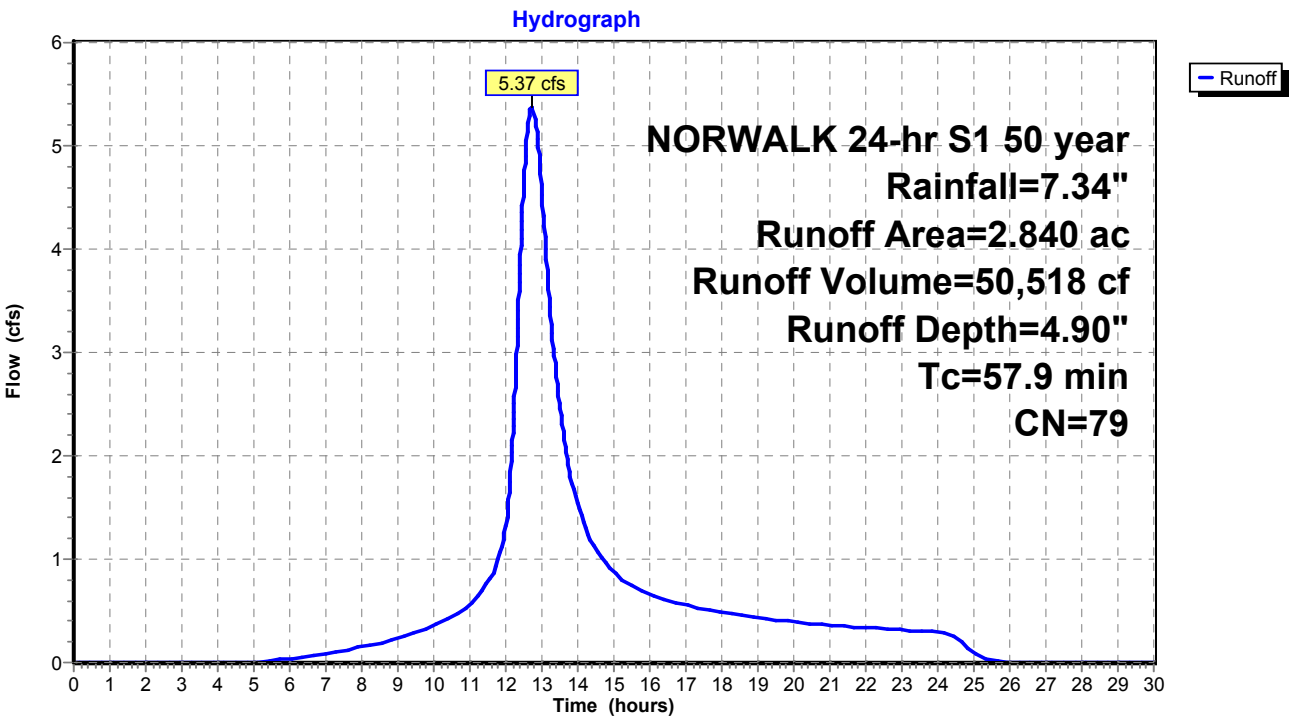
Runoff = 5.37 cfs @ 12.73 hrs, Volume= 50,518 cf, Depth= 4.90"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10AS: Area 10A

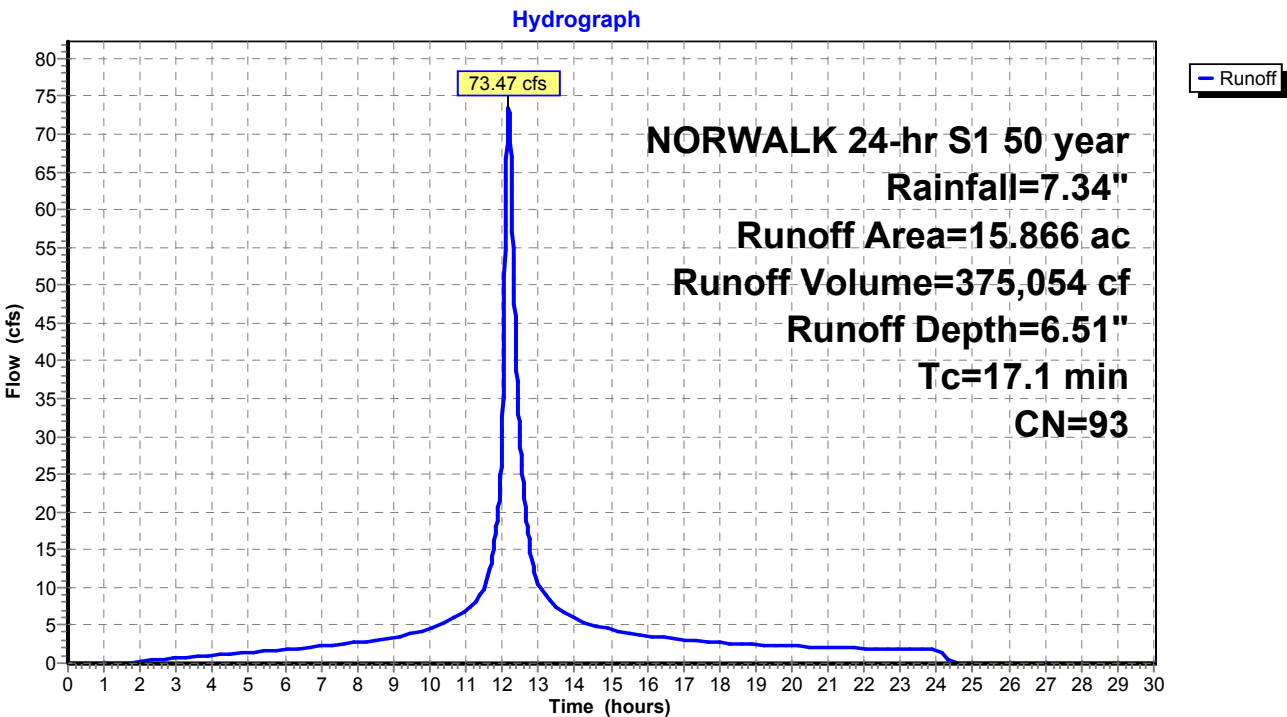
Runoff = 73.47 cfs @ 12.18 hrs, Volume= 375,054 cf, Depth= 6.51"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10BS: Area 10B

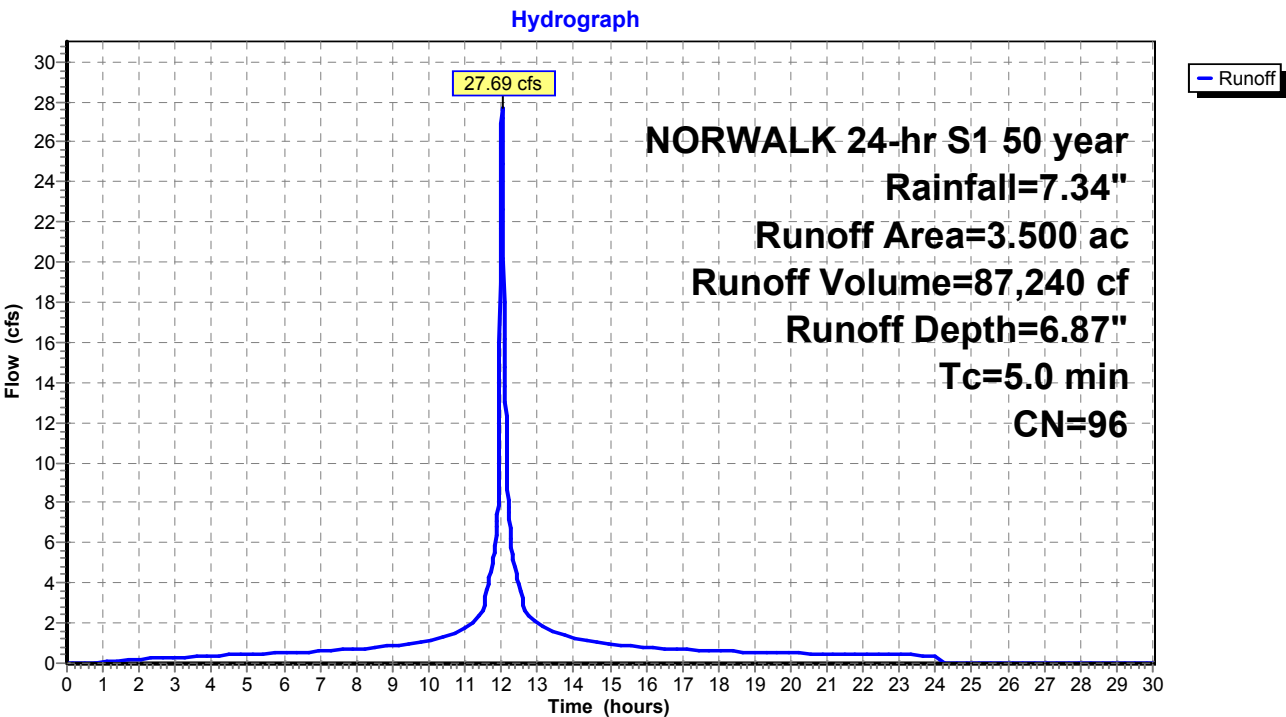
Runoff = 27.69 cfs @ 12.03 hrs, Volume= 87,240 cf, Depth= 6.87"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10CS: Area 10C

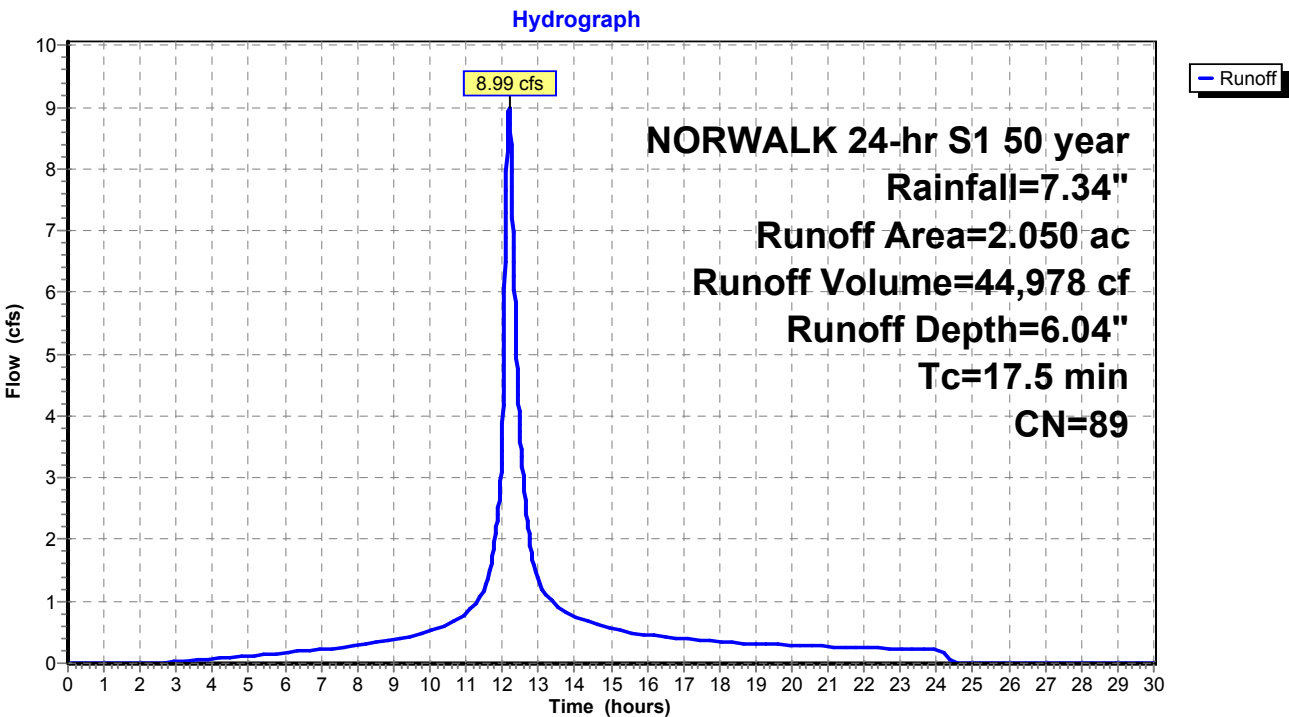
Runoff = 8.99 cfs @ 12.19 hrs, Volume= 44,978 cf, Depth= 6.04"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10DS: Area 10D

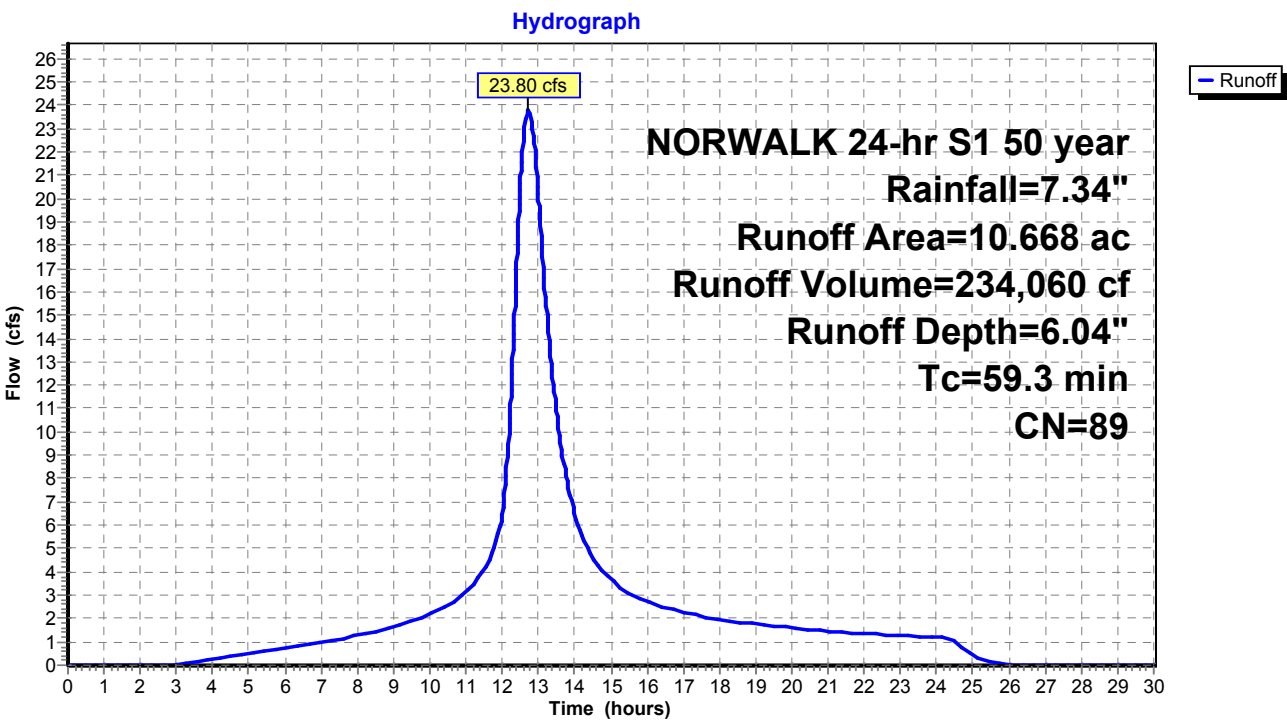
Runoff = 23.80 cfs @ 12.72 hrs, Volume= 234,060 cf, Depth= 6.04"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10ES: Area 10E

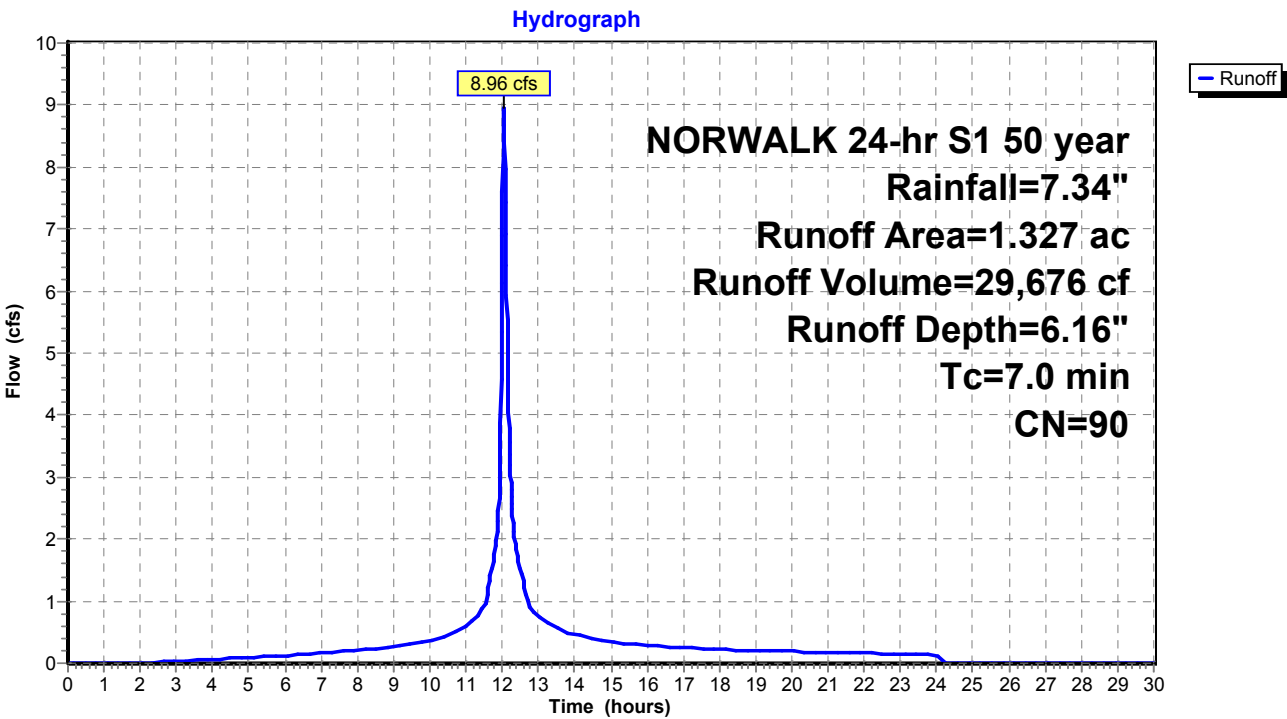
Runoff = 8.96 cfs @ 12.05 hrs, Volume= 29,676 cf, Depth= 6.16"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.798	98	Paved parking, HSG C
0.529	79	50-75% Grass cover, Fair, HSG C
1.327	90	Weighted Average
0.529		39.86% Pervious Area
0.798		60.14% Impervious Area

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

Subcatchment 10ES: Area 10E



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10FS: Area 10F

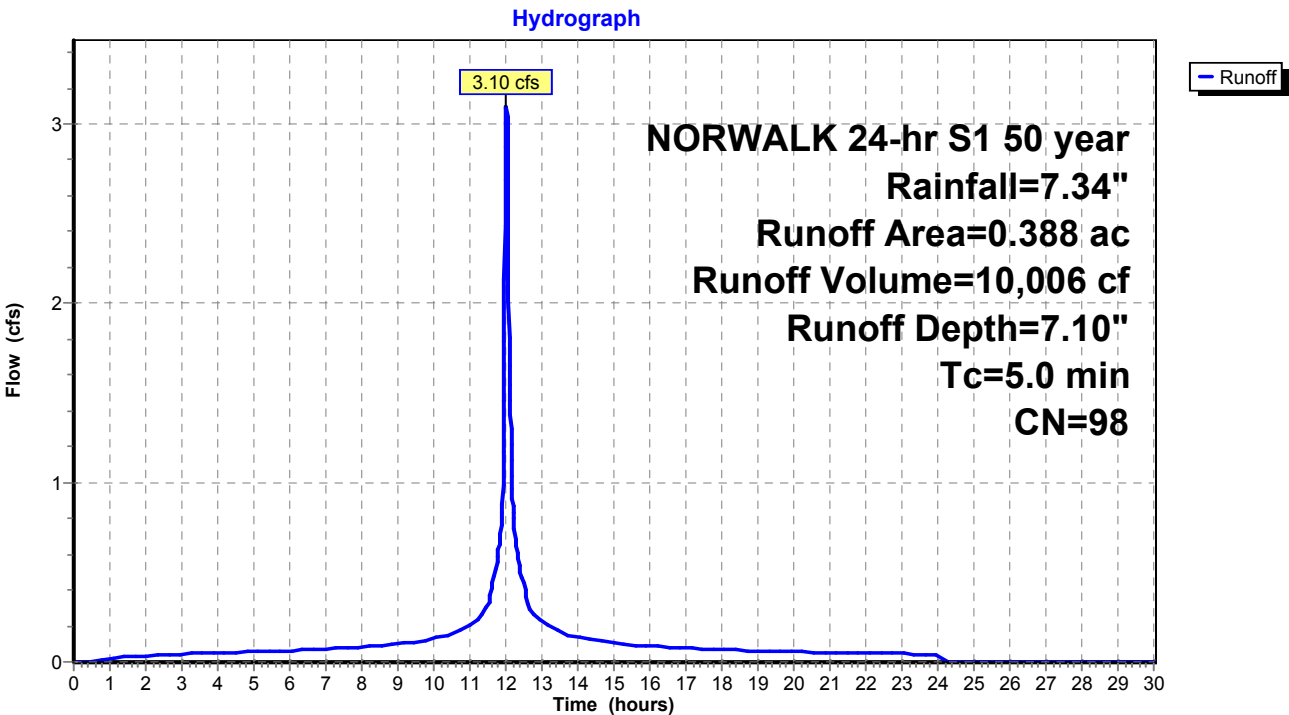
Runoff = 3.10 cfs @ 12.03 hrs, Volume= 10,006 cf, Depth= 7.10"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 11S: Area 11

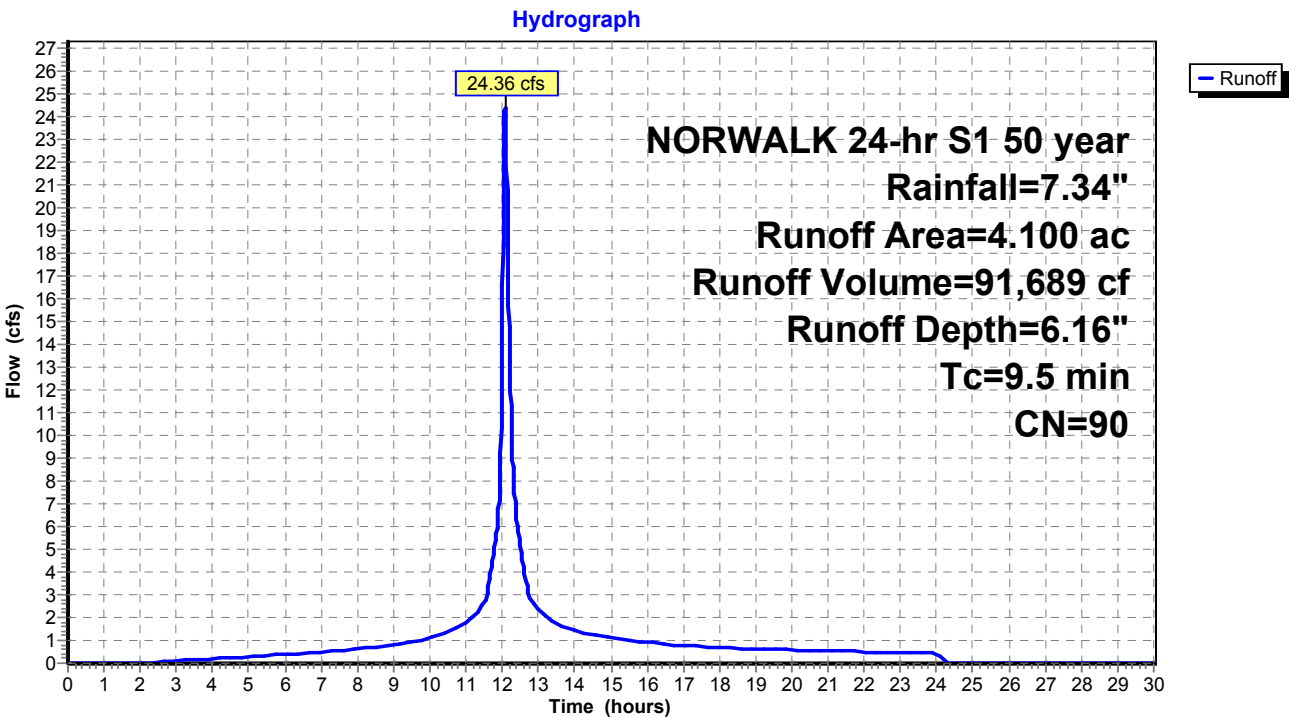
Runoff = 24.36 cfs @ 12.08 hrs, Volume= 91,689 cf, Depth= 6.16"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 12S: Area 12

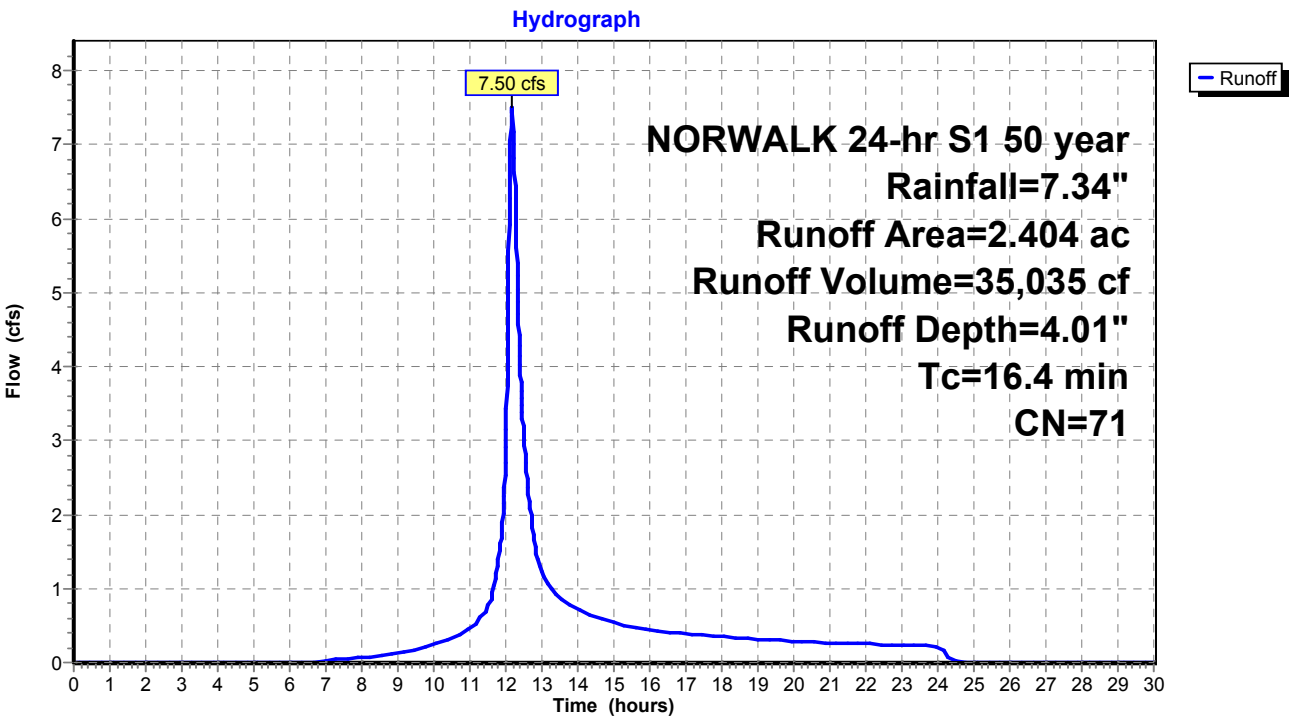
Runoff = 7.50 cfs @ 12.18 hrs, Volume= 35,035 cf, Depth= 4.01"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 13S: Area 13

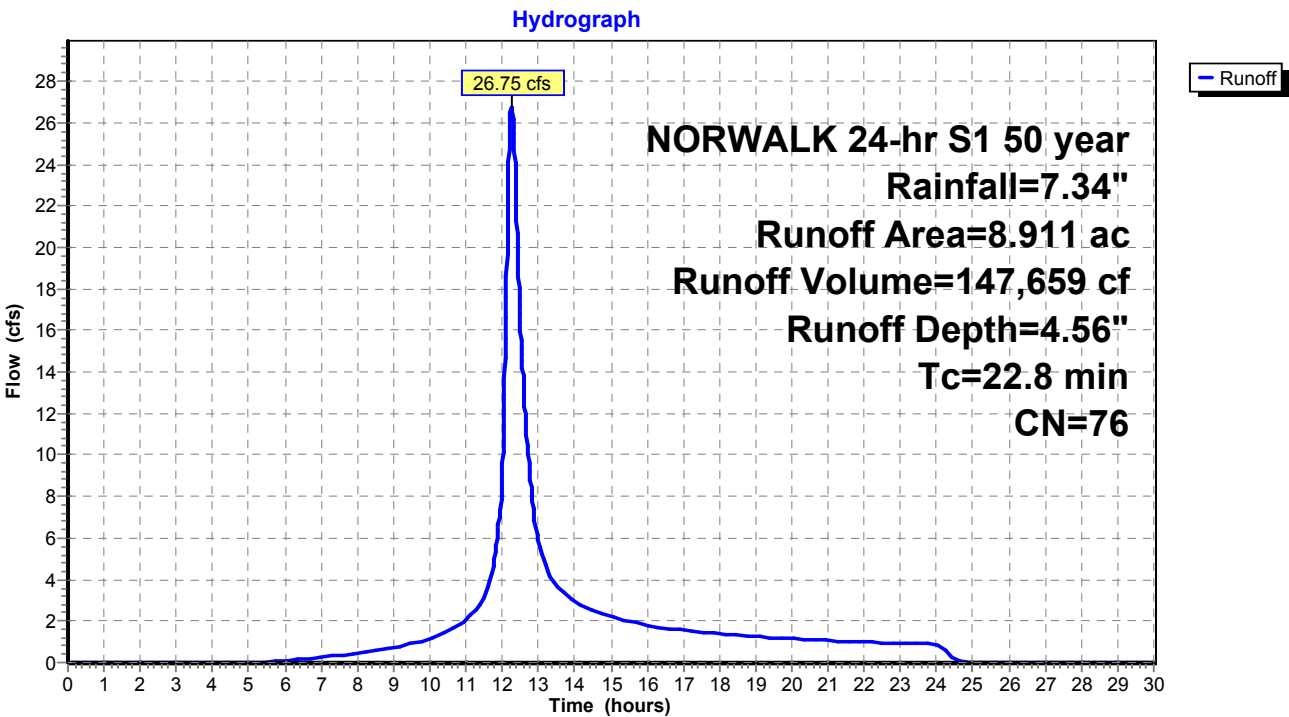
Runoff = 26.75 cfs @ 12.26 hrs, Volume= 147,659 cf, Depth= 4.56"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 14S: Area 14

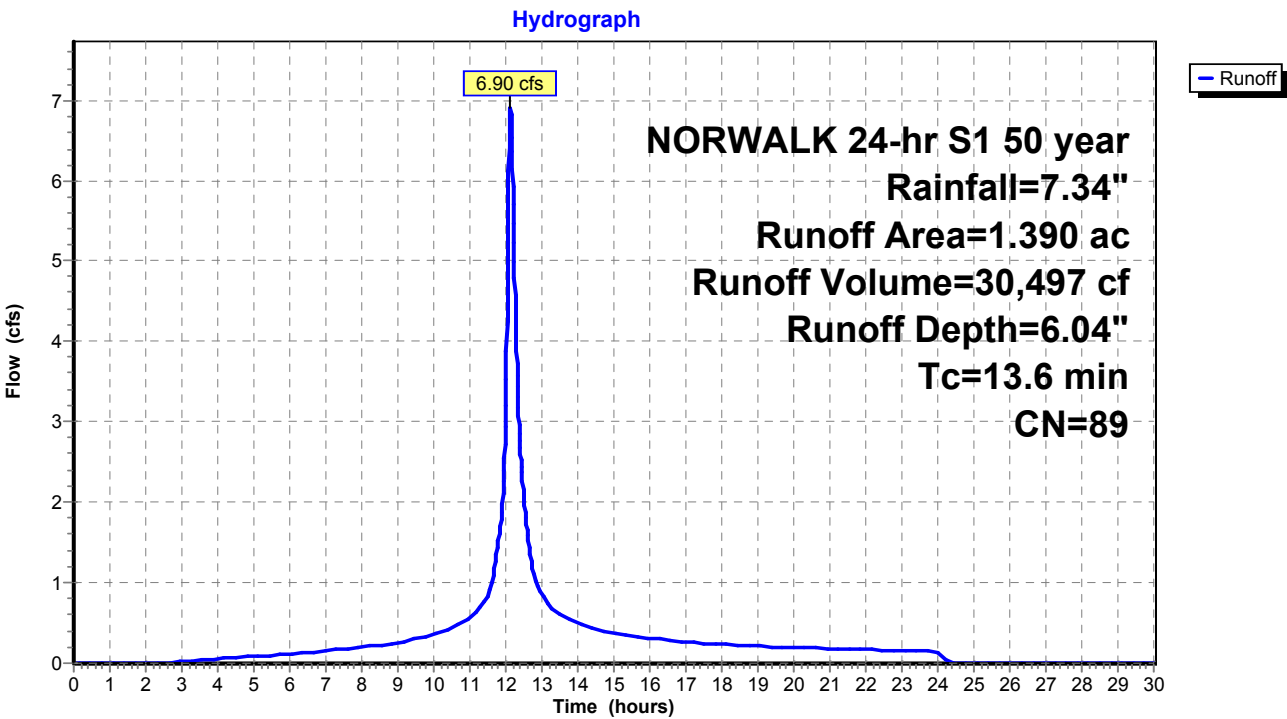
Runoff = 6.90 cfs @ 12.13 hrs, Volume= 30,497 cf, Depth= 6.04"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 15S: Area 15

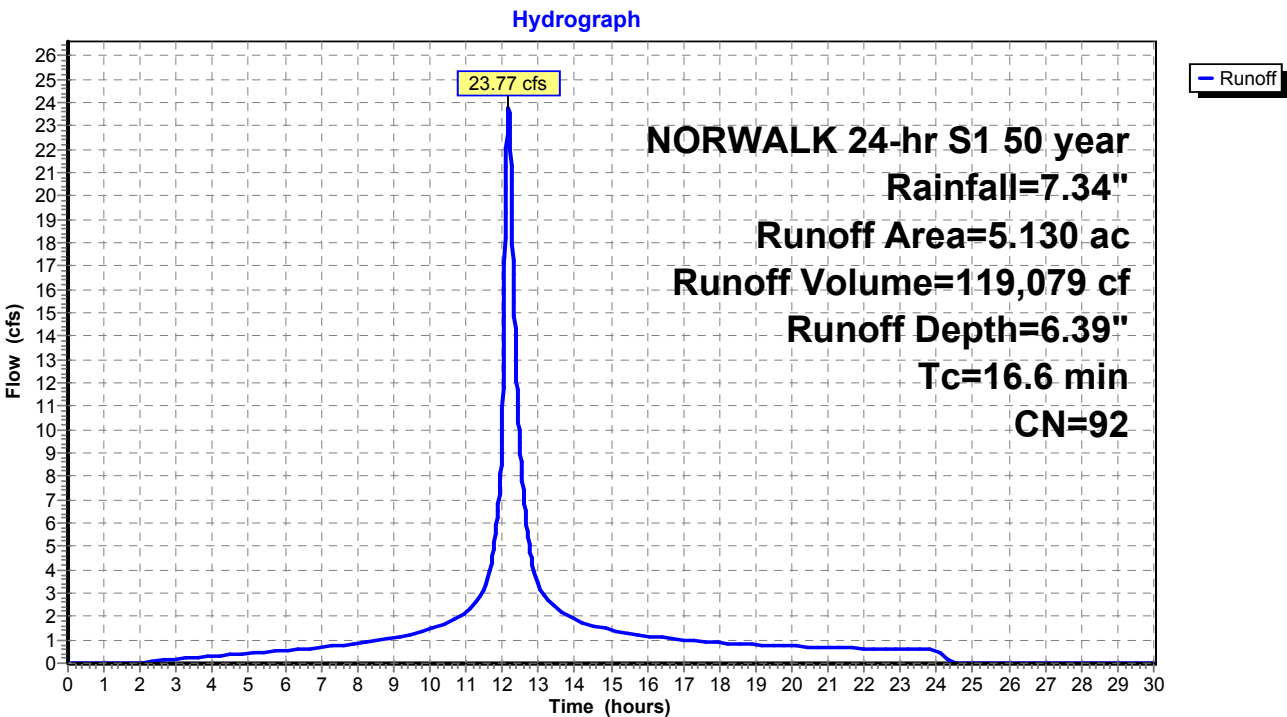
Runoff = 23.77 cfs @ 12.17 hrs, Volume= 119,079 cf, Depth= 6.39"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 16S: Area 16A

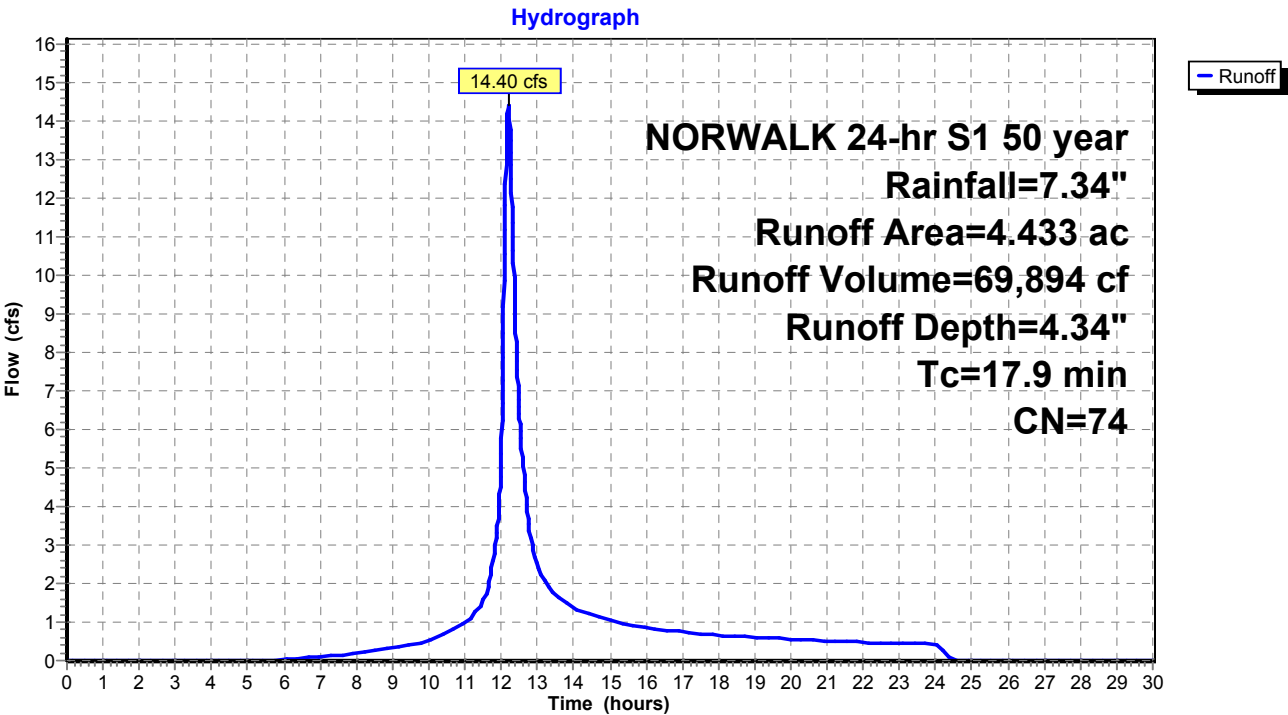
Runoff = 14.40 cfs @ 12.19 hrs, Volume= 69,894 cf, Depth= 4.34"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 17S: Area 17

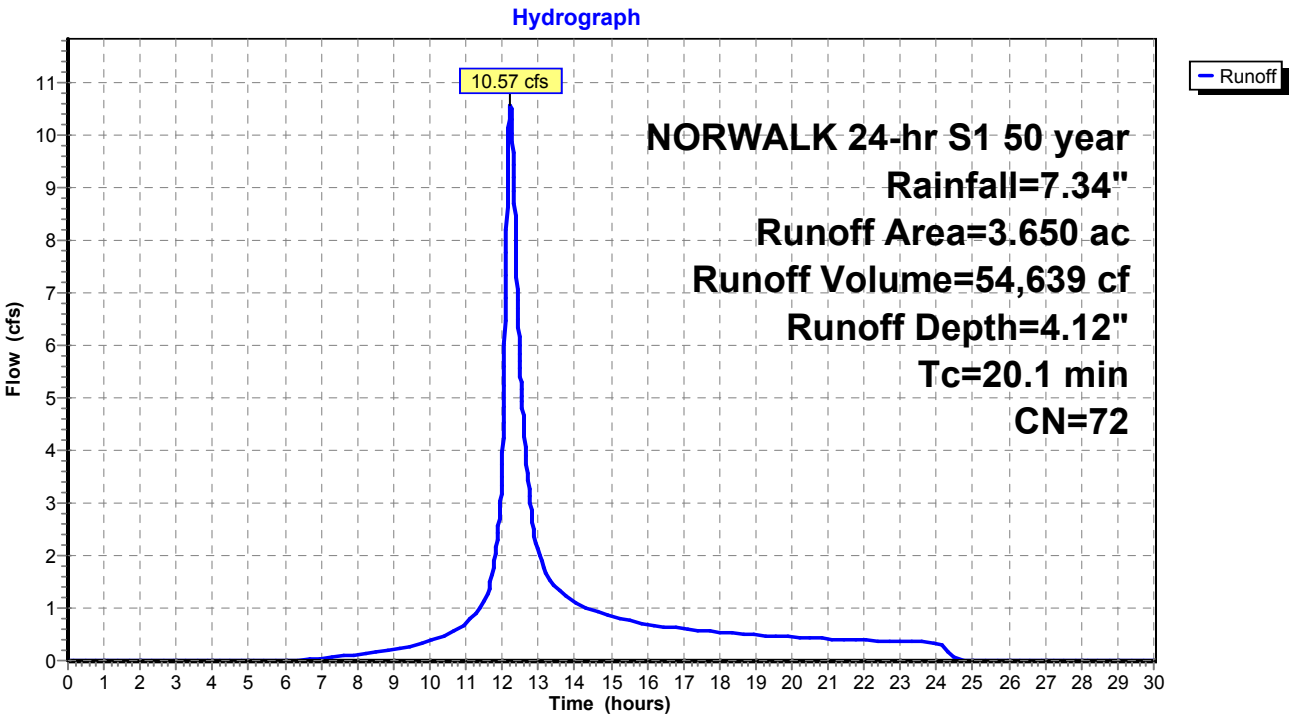
Runoff = 10.57 cfs @ 12.22 hrs, Volume= 54,639 cf, Depth= 4.12"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 20S: Area 20

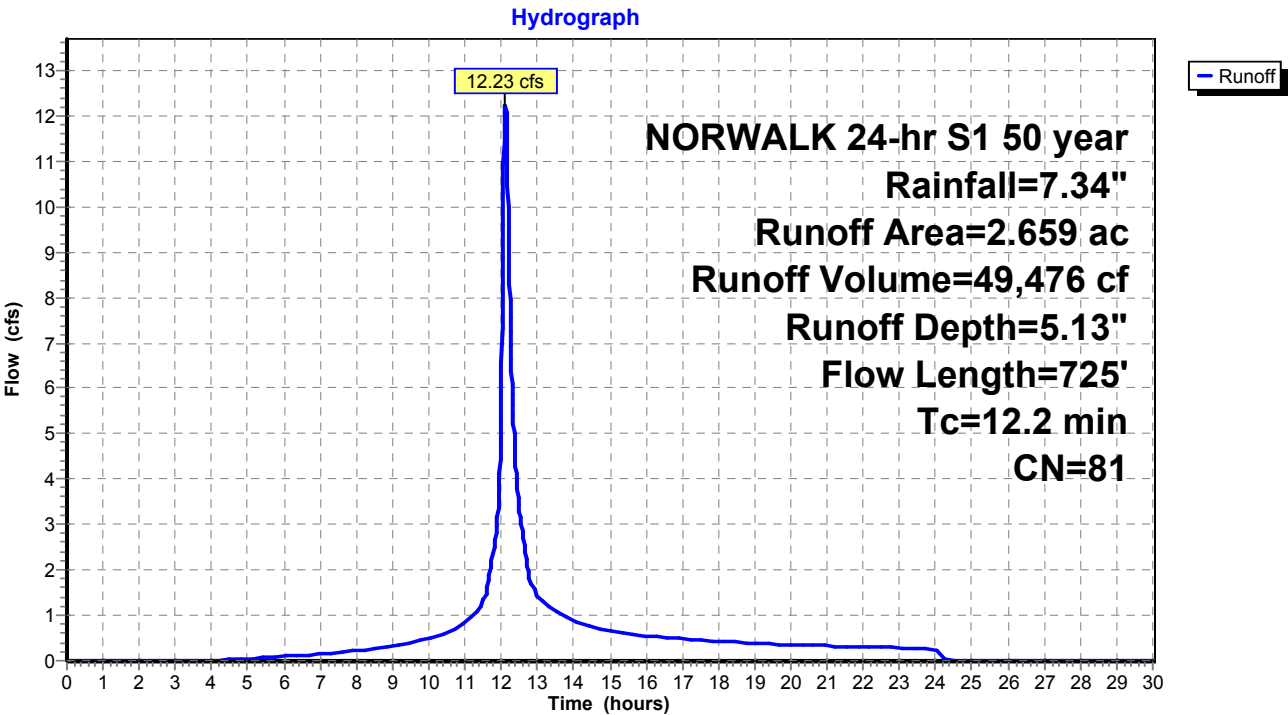
Runoff = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf, Depth= 5.13"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 21S: Area 21

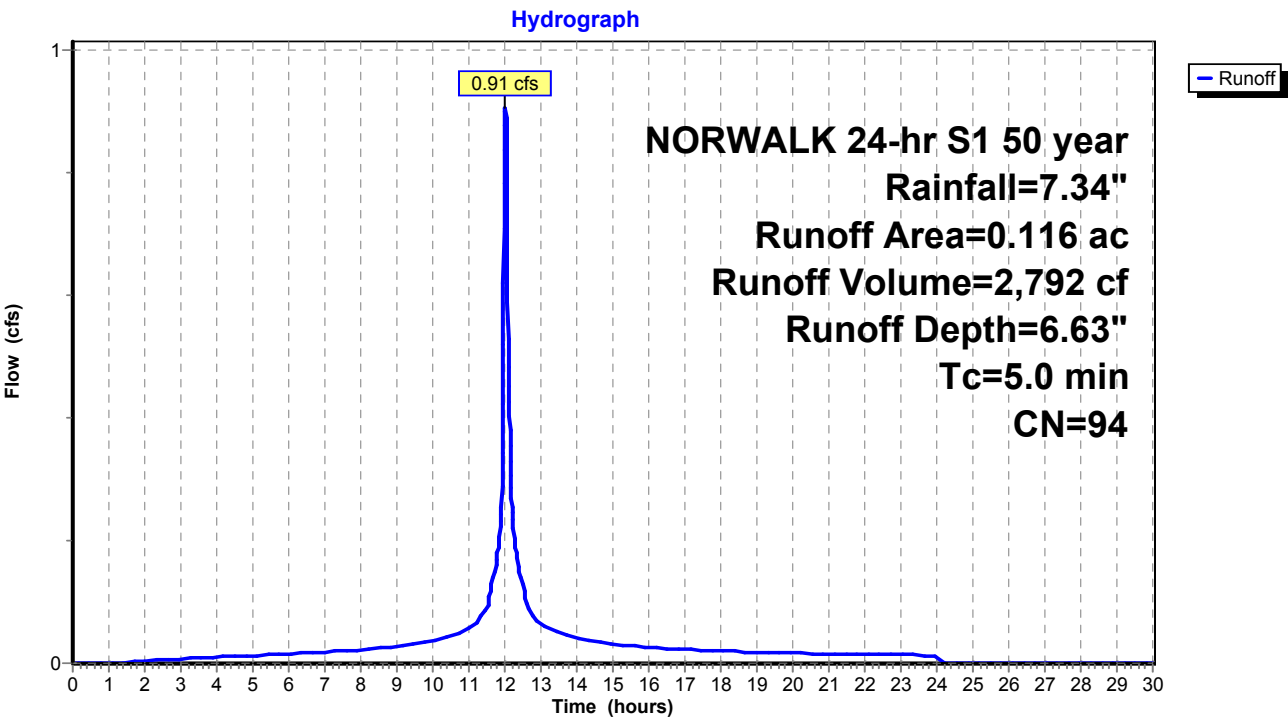
Runoff = 0.91 cfs @ 12.03 hrs, Volume= 2,792 cf, Depth= 6.63"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 22S: Area 22

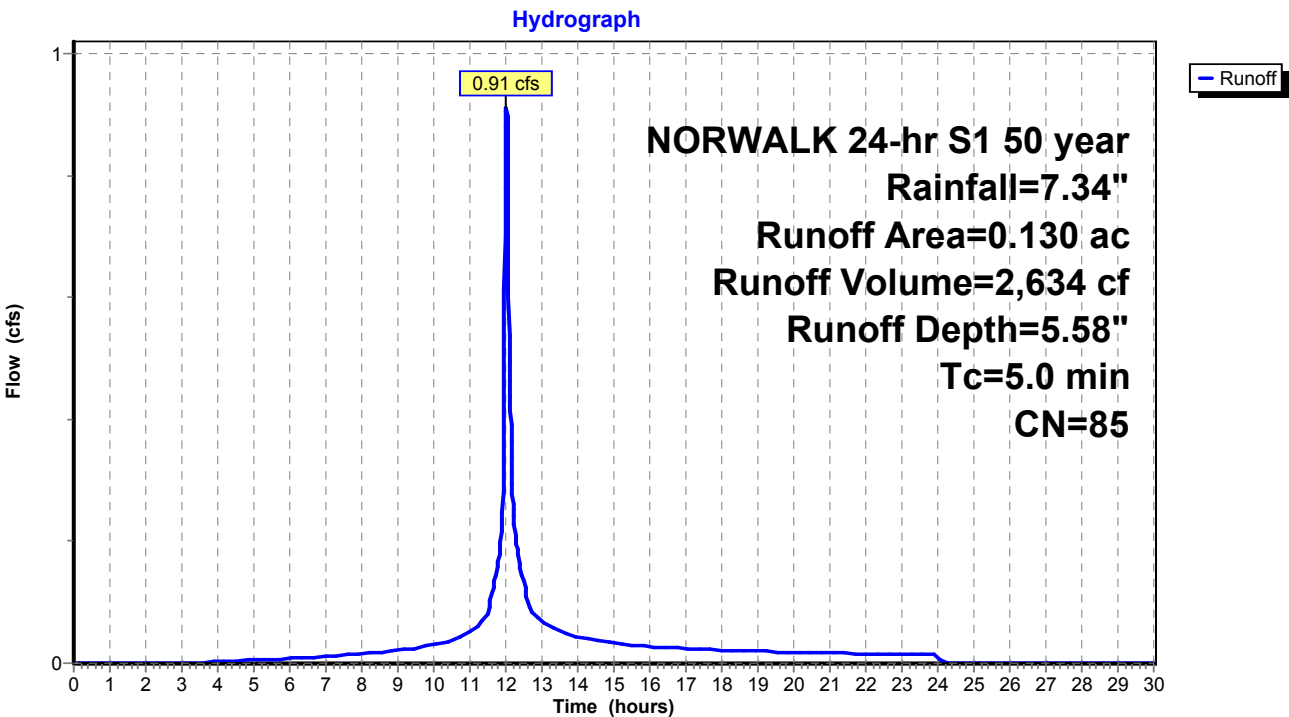
Runoff = 0.91 cfs @ 12.03 hrs, Volume= 2,634 cf, Depth= 5.58"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 23S: Area 23

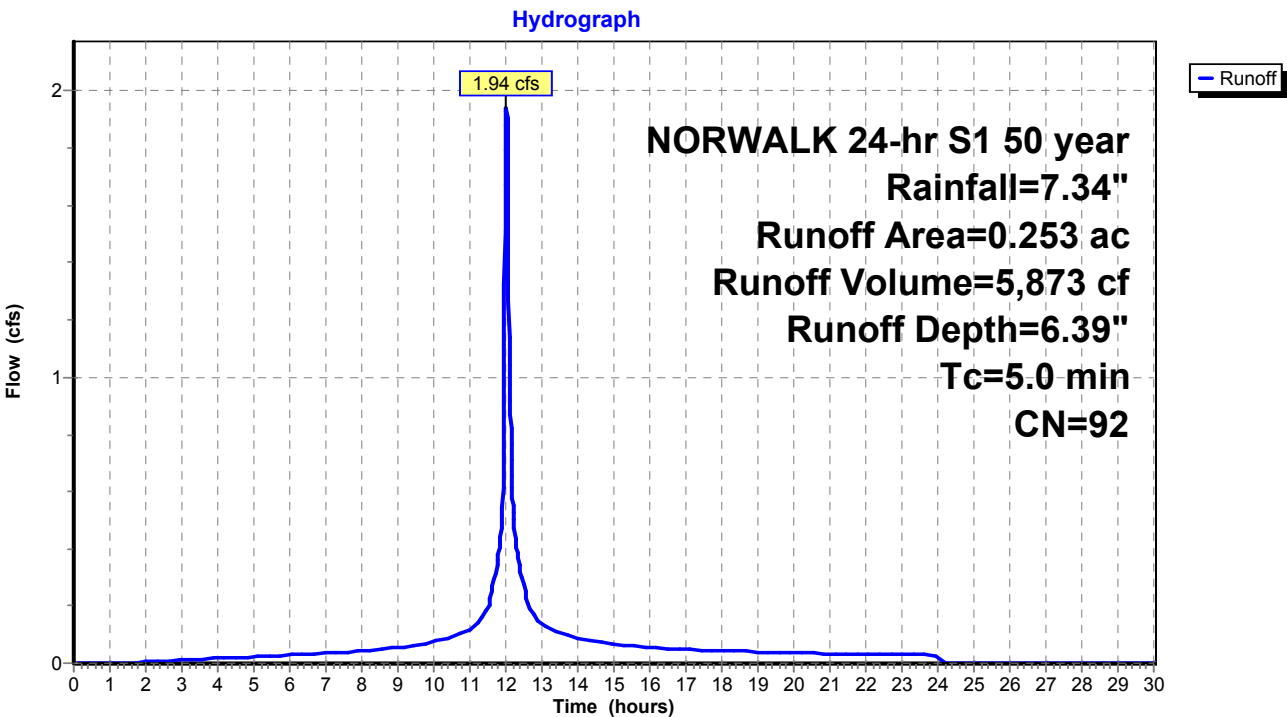
Runoff = 1.94 cfs @ 12.03 hrs, Volume= 5,873 cf, Depth= 6.39"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 24S: Area 24

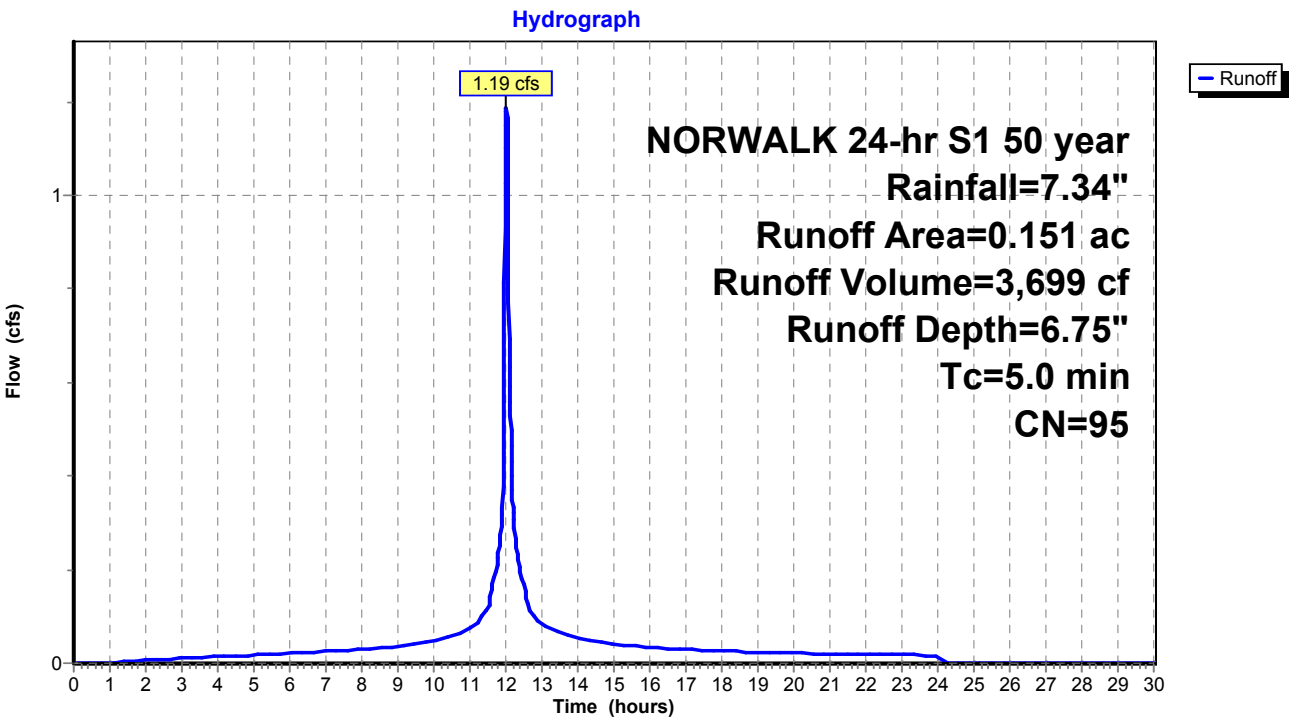
Runoff = 1.19 cfs @ 12.03 hrs, Volume= 3,699 cf, Depth= 6.75"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 25S: Area 25

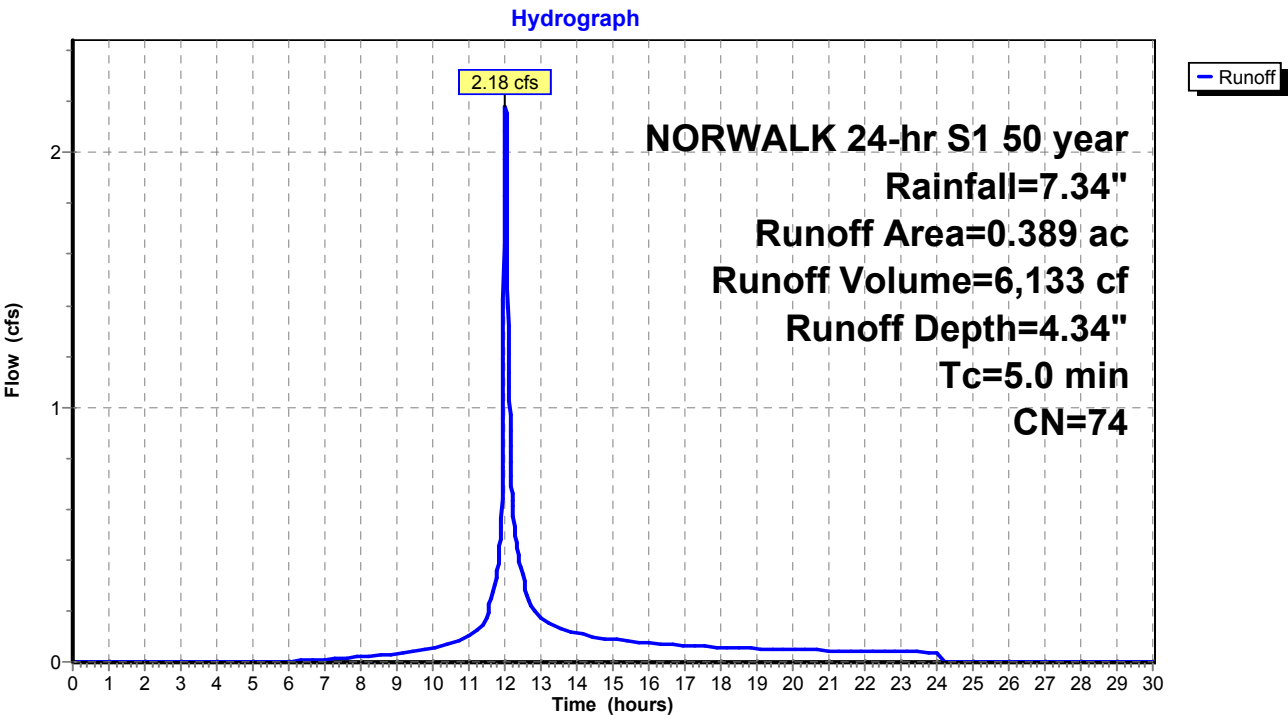
Runoff = 2.18 cfs @ 12.03 hrs, Volume= 6,133 cf, Depth= 4.34"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 26S: Area 26

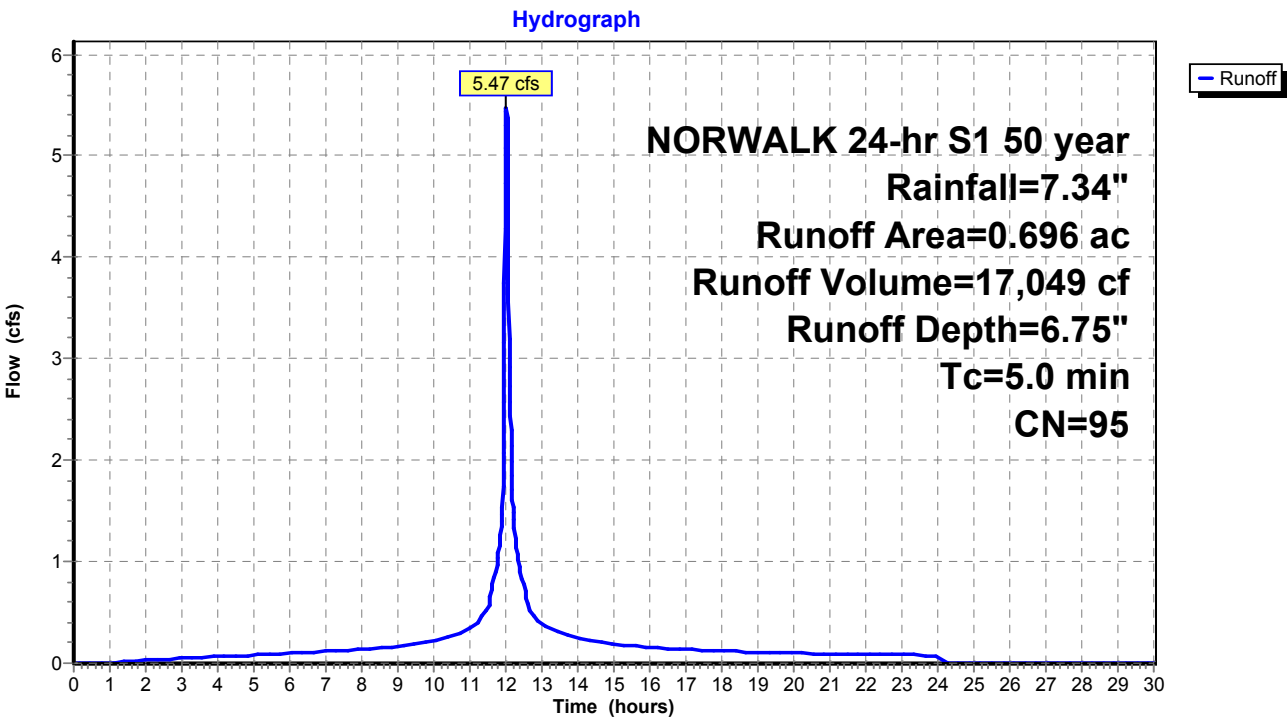
Runoff = 5.47 cfs @ 12.03 hrs, Volume= 17,049 cf, Depth= 6.75"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 27S: Area 27

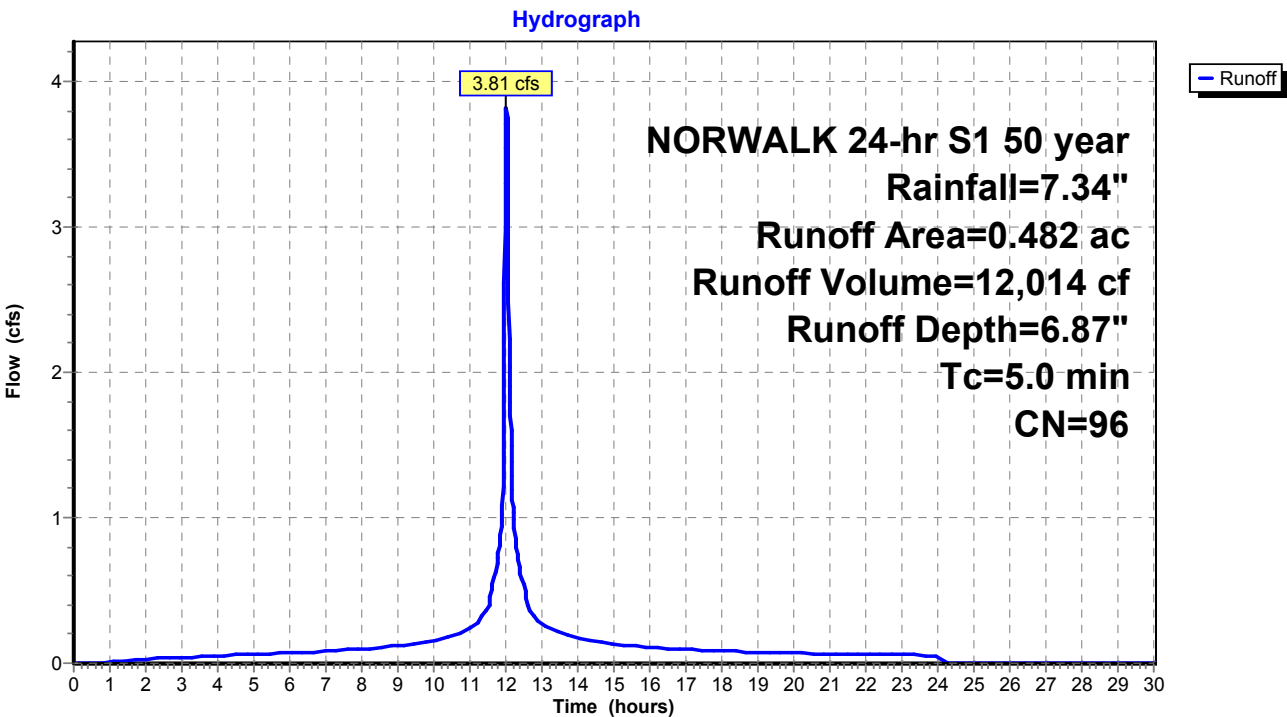
Runoff = 3.81 cfs @ 12.03 hrs, Volume= 12,014 cf, Depth= 6.87"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 28S: Area 28

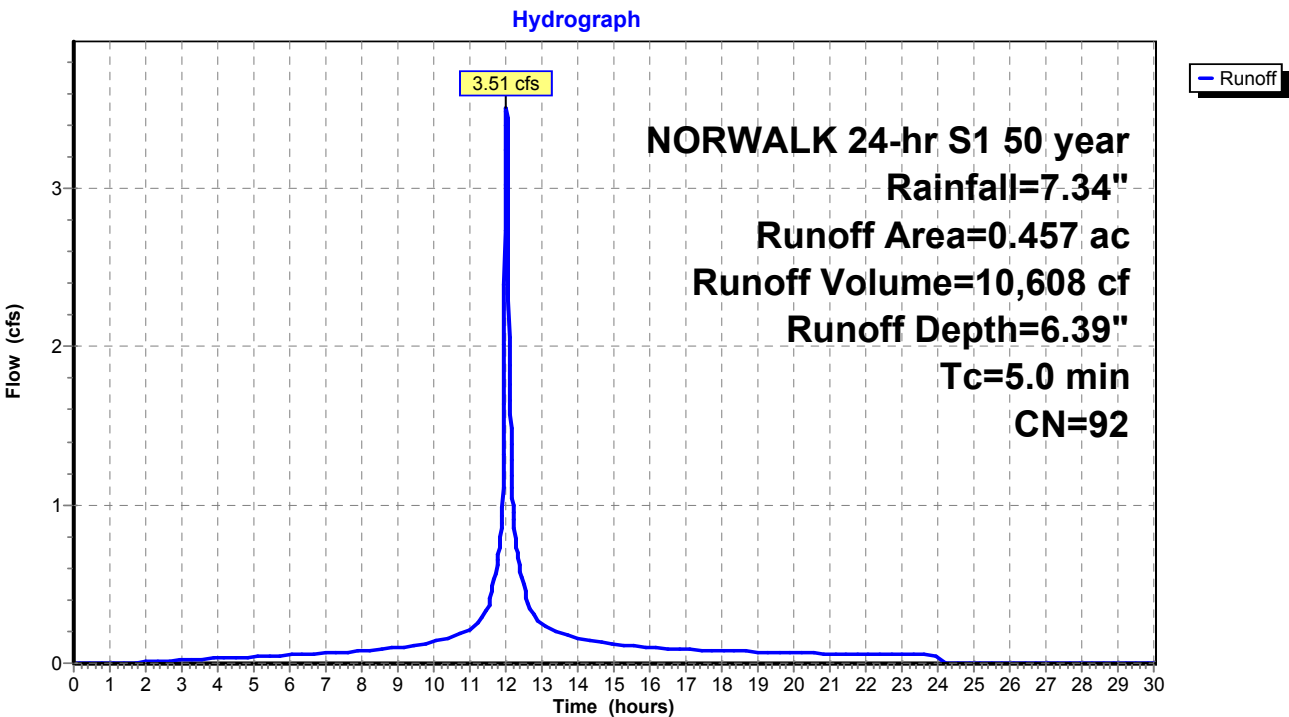
Runoff = 3.51 cfs @ 12.03 hrs, Volume= 10,608 cf, Depth= 6.39"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"
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Summary for Subcatchment 29S: Area 29

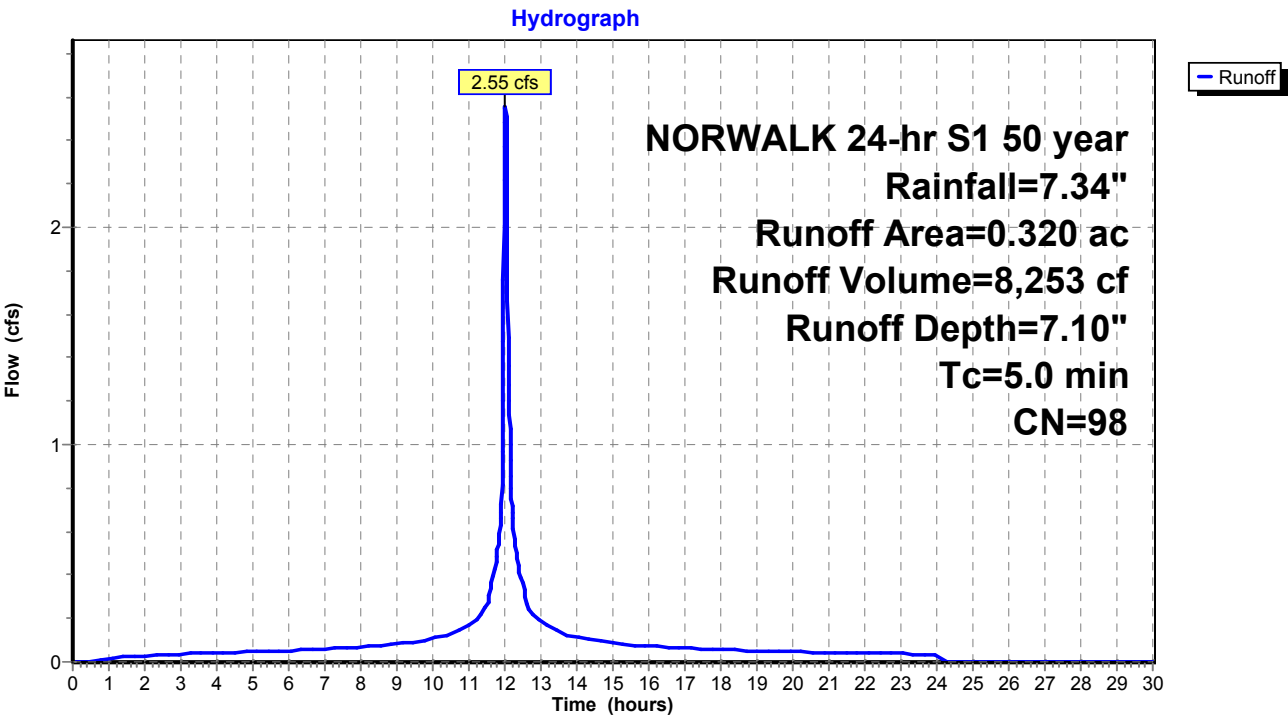
Runoff = 2.55 cfs @ 12.03 hrs, Volume= 8,253 cf, Depth= 7.10"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 30S: Area 30

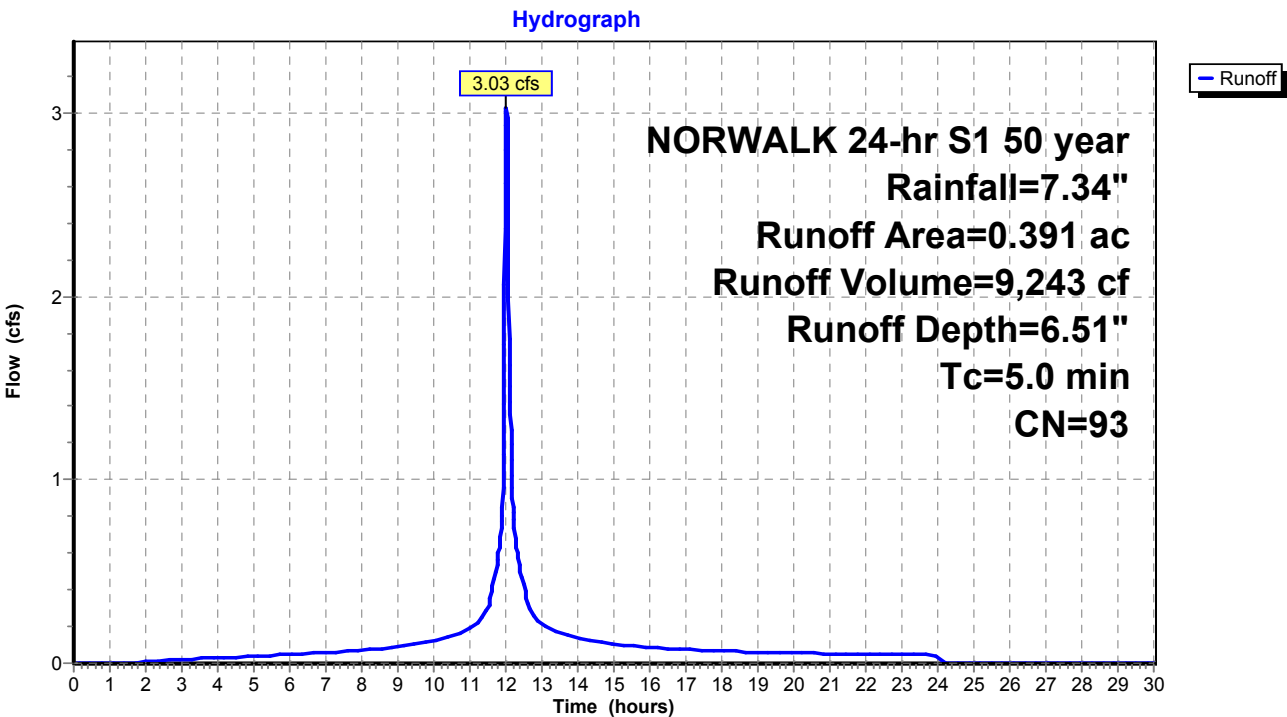
Runoff = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf, Depth= 6.51"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 52S: Area 1

Runoff = 23.87 cfs @ 12.52 hrs, Volume= 188,096 cf, Depth= 4.23"
Routed to Pond 21P : DET 1 Culvert

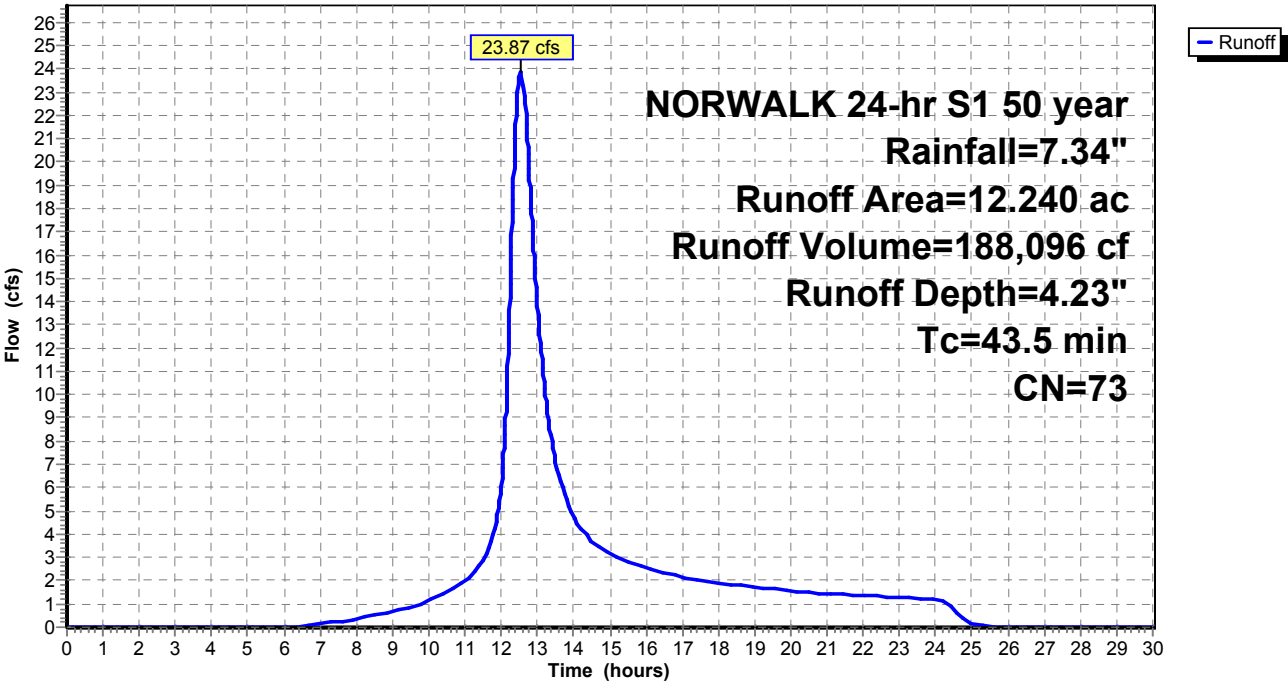
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 53S: Area 2

Runoff = 54.17 cfs @ 12.74 hrs, Volume= 514,811 cf, Depth= 4.79"
Routed to Pond 22P : DET 2 Culvert

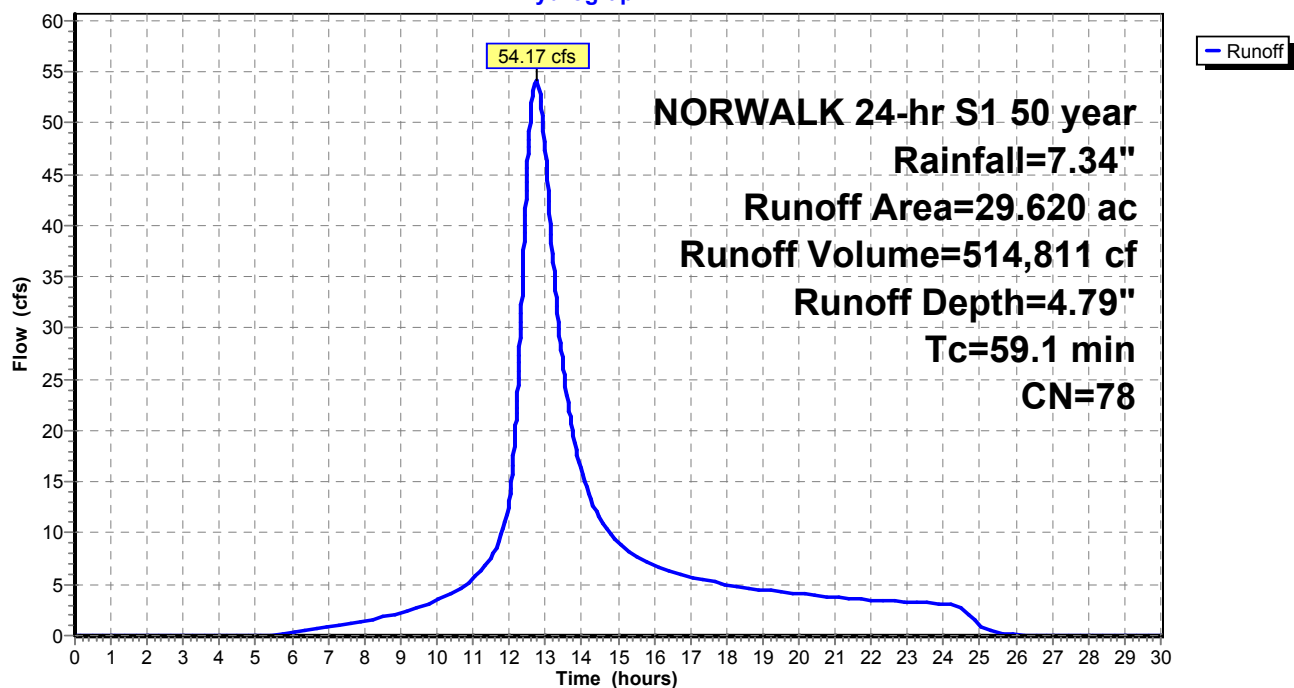
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 54S: Area 3

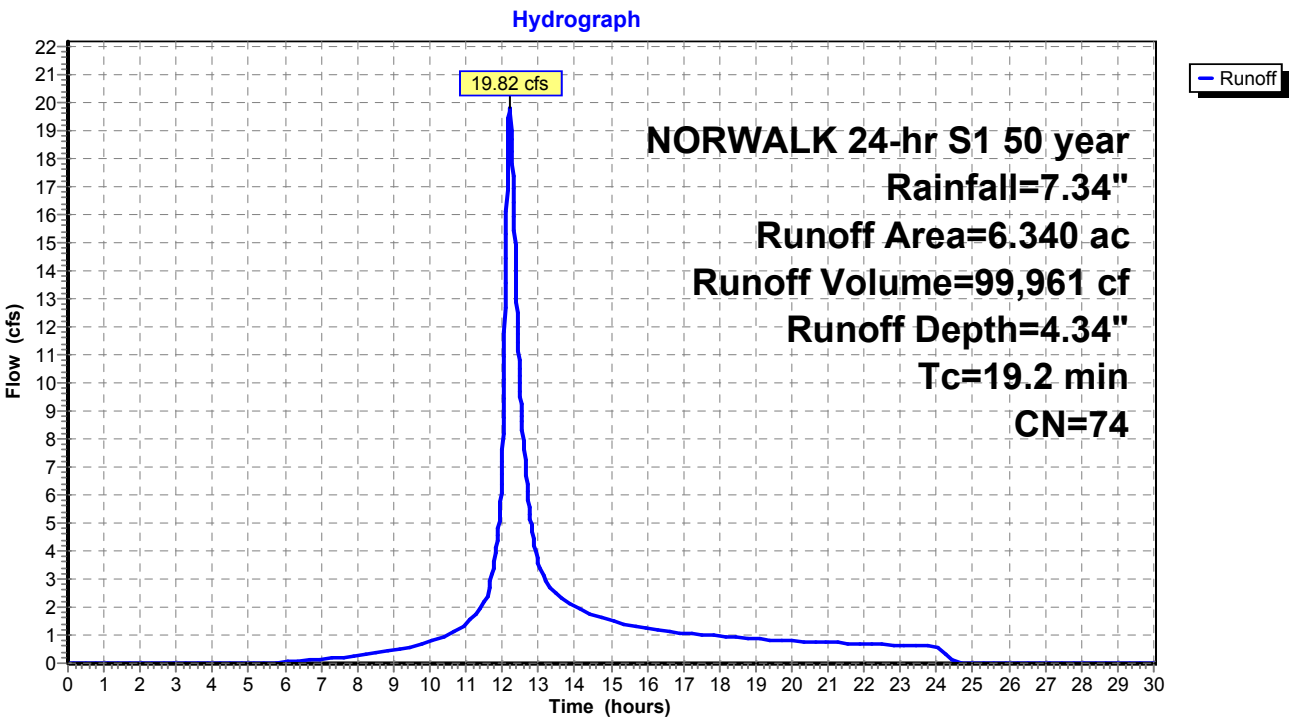
Runoff = 19.82 cfs @ 12.22 hrs, Volume= 99,961 cf, Depth= 4.34"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Existing Conditions

Prepared by Tighe & Bond

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 56S: Area 35

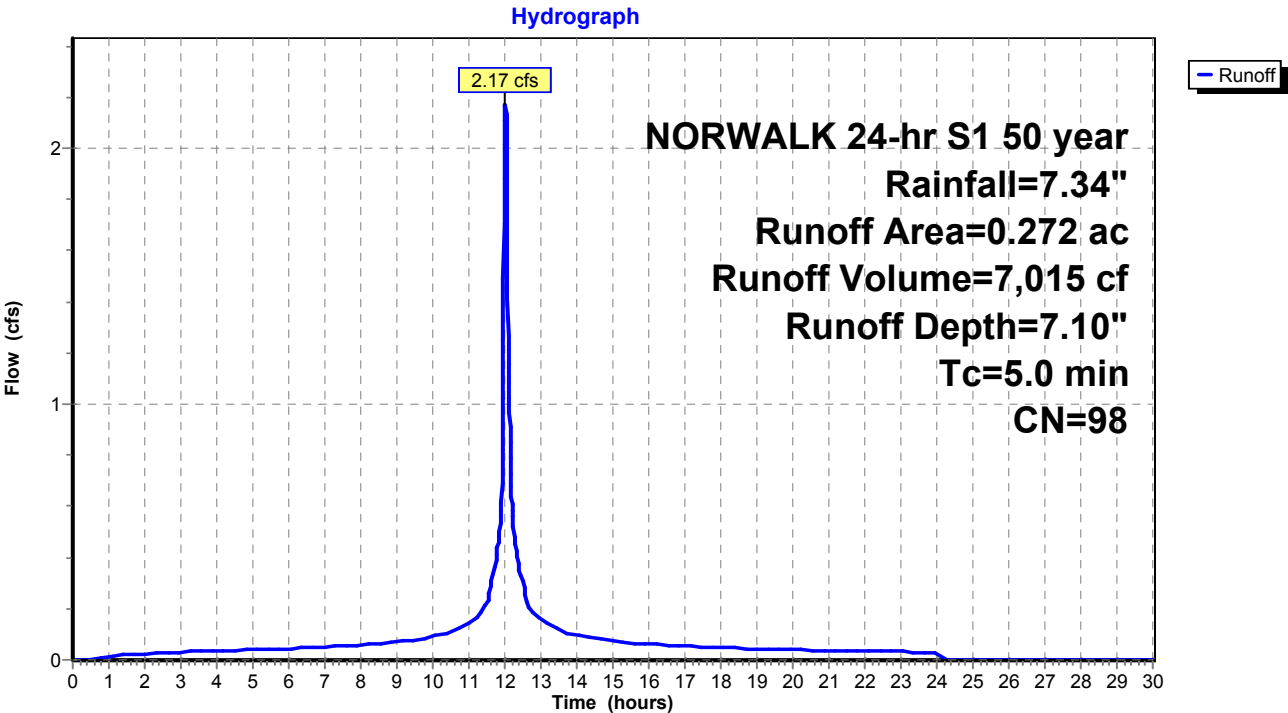
Runoff = 2.17 cfs @ 12.03 hrs, Volume= 7,015 cf, Depth= 7.10"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Existing Conditions

Prepared by Tighe & Bond

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 60S: Area 37

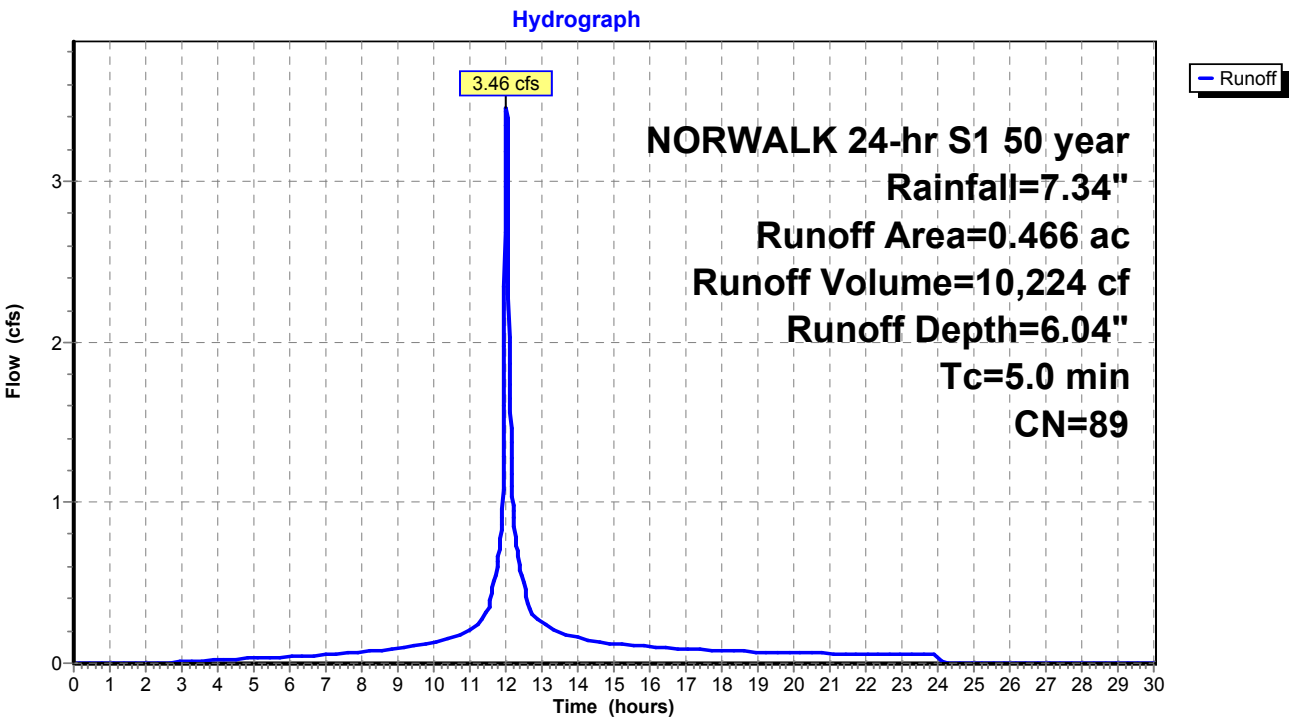
Runoff = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf, Depth= 6.04"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 62S: Area 38

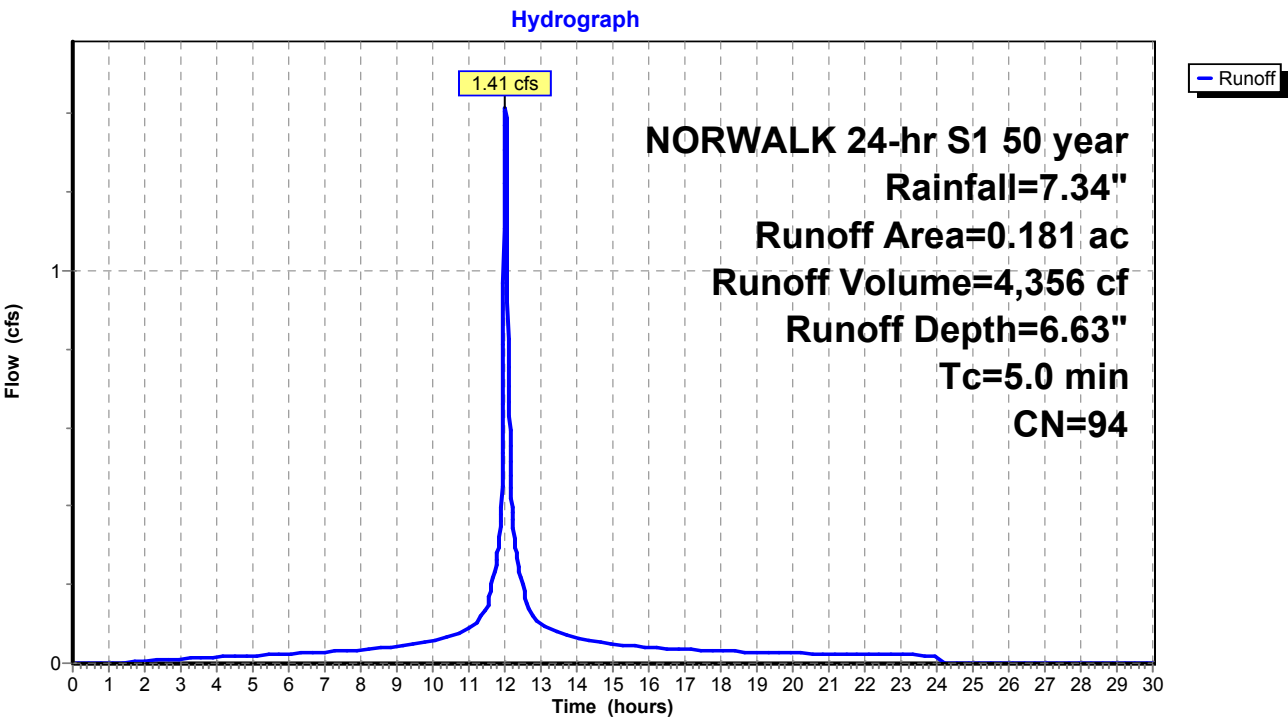
Runoff = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf, Depth= 6.63"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 65S: Area 41

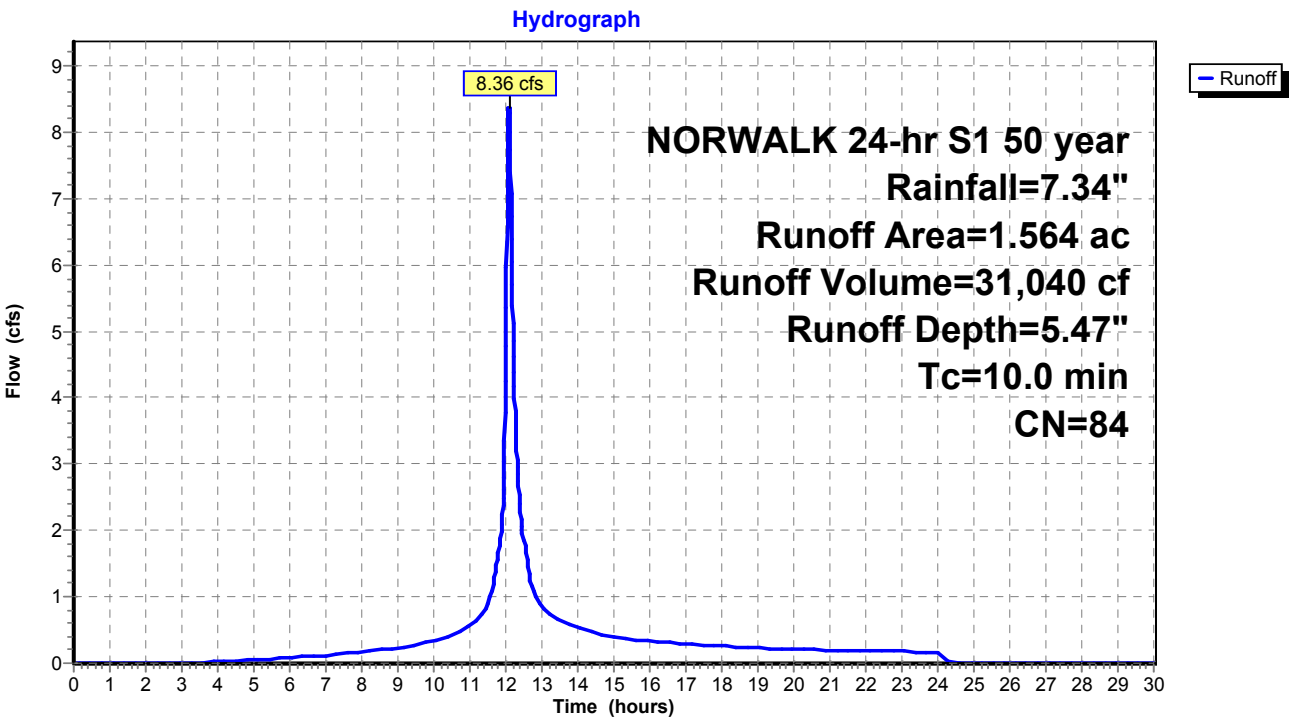
Runoff = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf, Depth= 5.47"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"
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Summary for Subcatchment 68S: Area 36

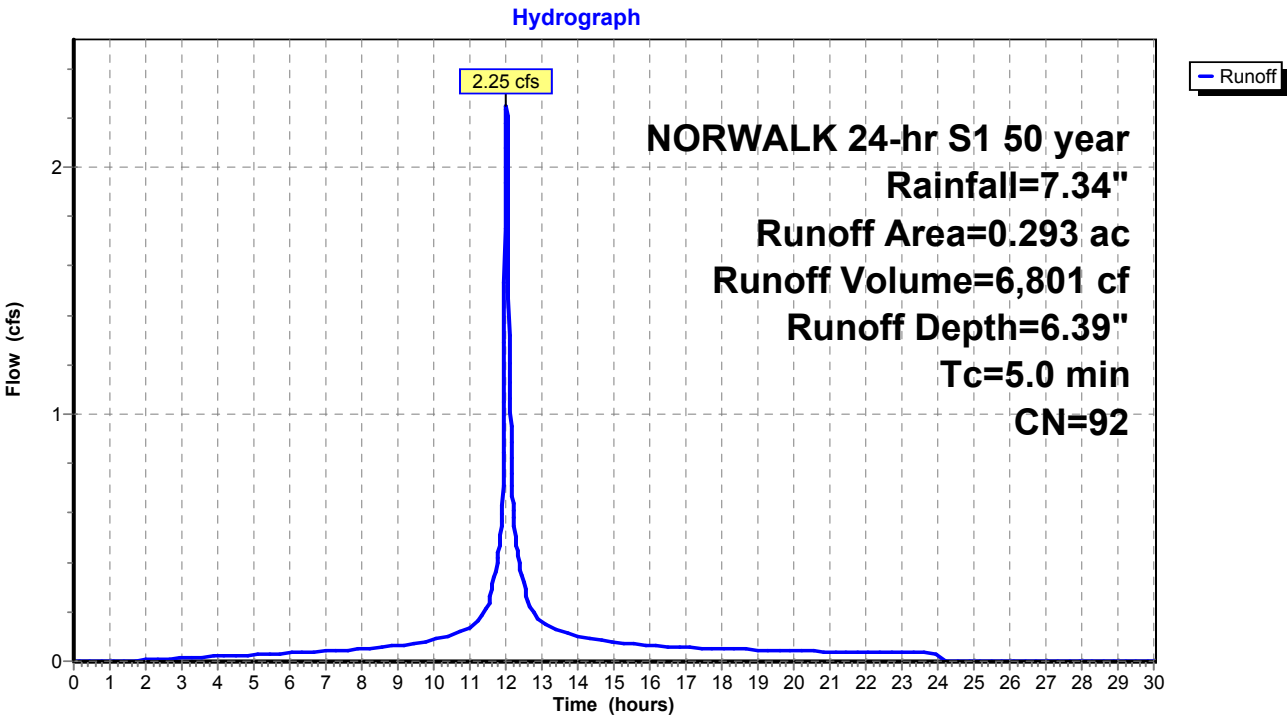
Runoff = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf, Depth= 6.39"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 69S: Area 40

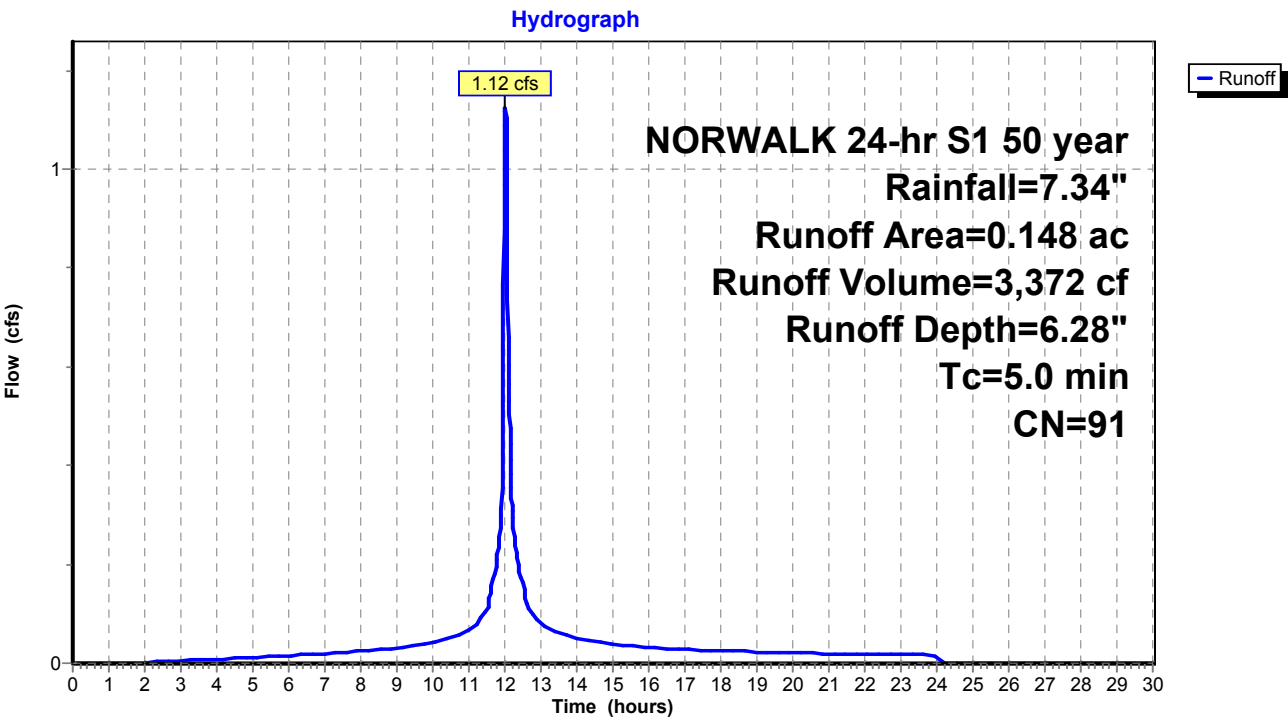
Runoff = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf, Depth= 6.28"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 71S: Area 34

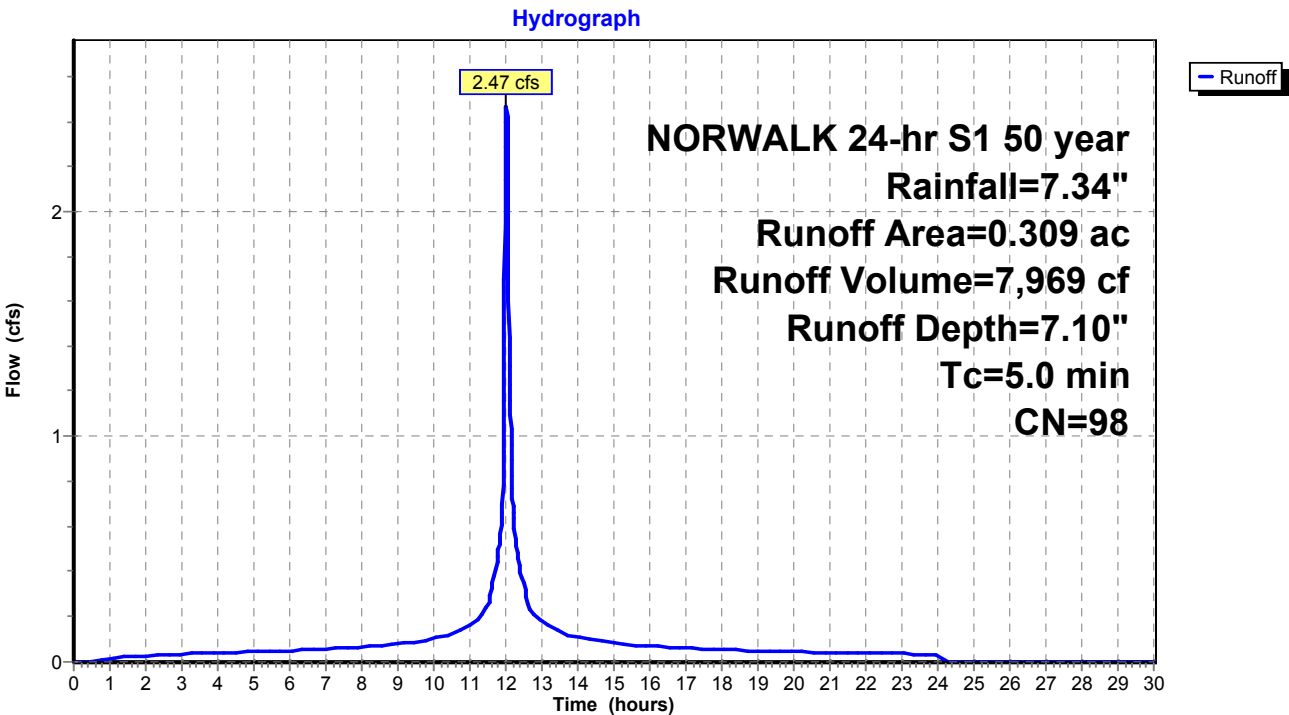
Runoff = 2.47 cfs @ 12.03 hrs, Volume= 7,969 cf, Depth= 7.10"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 75S: Area 32

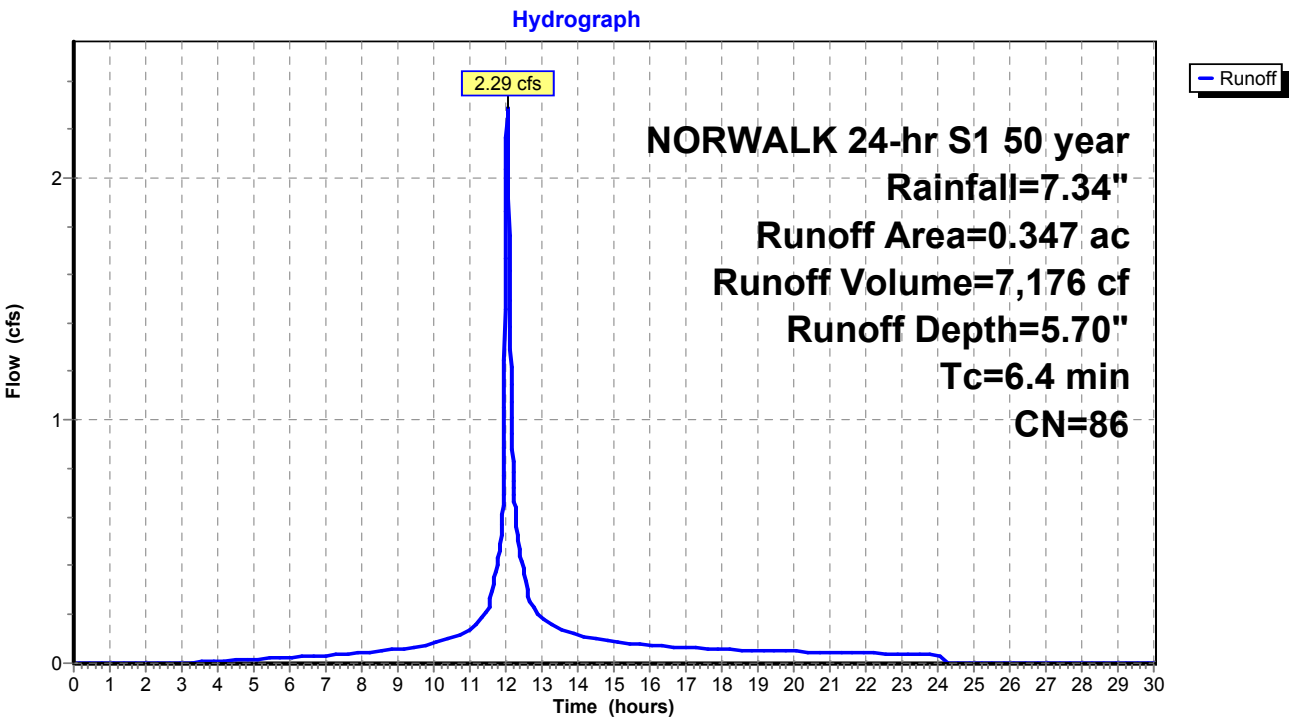
Runoff = 2.29 cfs @ 12.04 hrs, Volume= 7,176 cf, Depth= 5.70"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 76S: Area 33

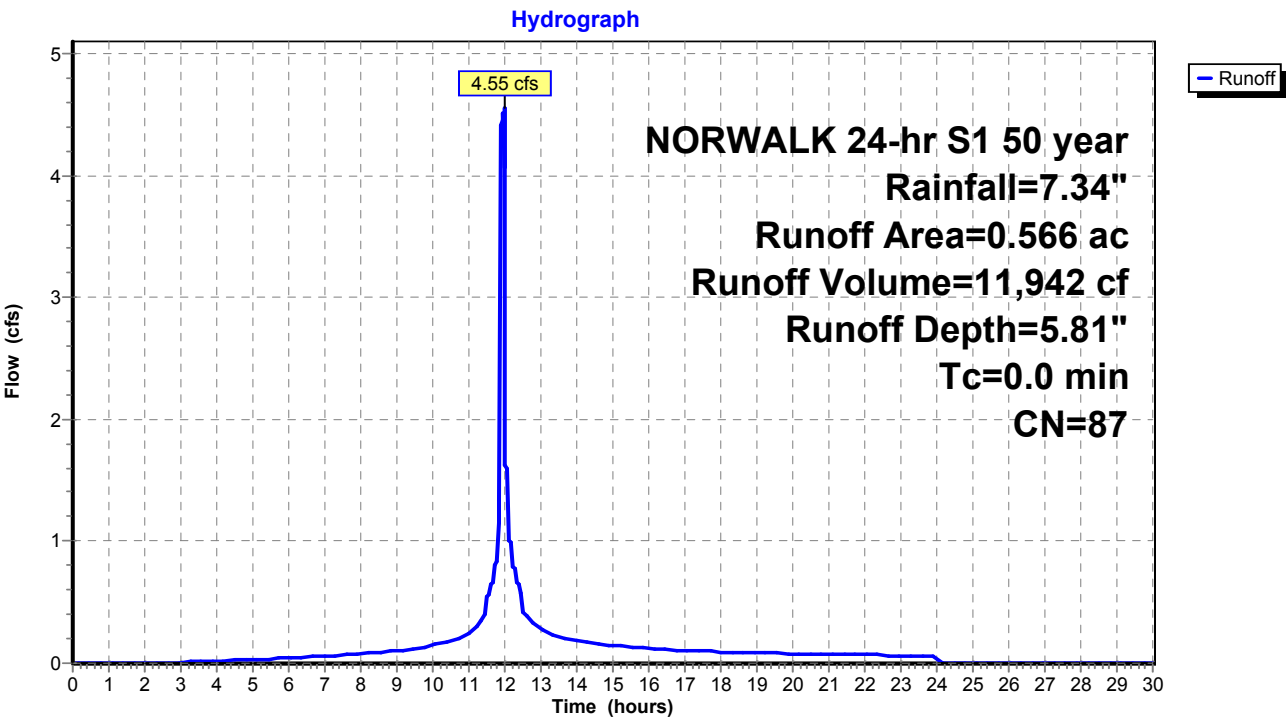
Runoff = 4.55 cfs @ 11.99 hrs, Volume= 11,942 cf, Depth= 5.81"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 78S: Area 39

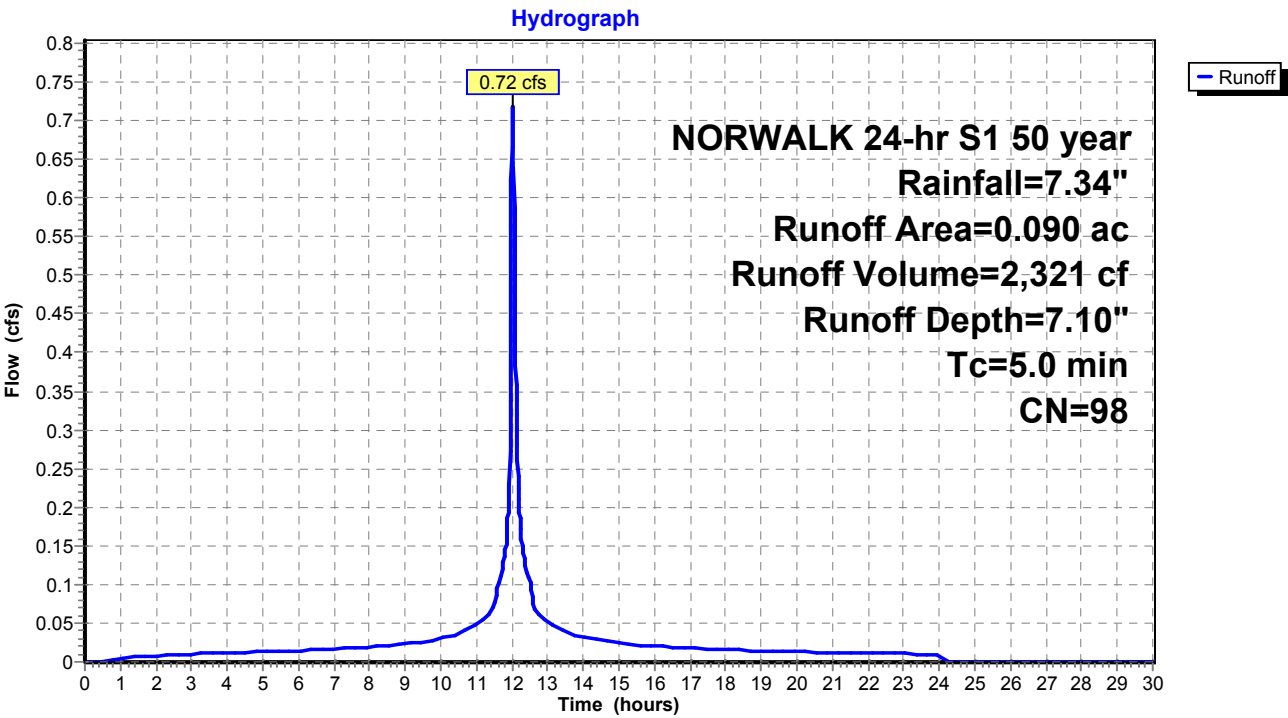
Runoff = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf, Depth= 7.10"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 84S: Area 31

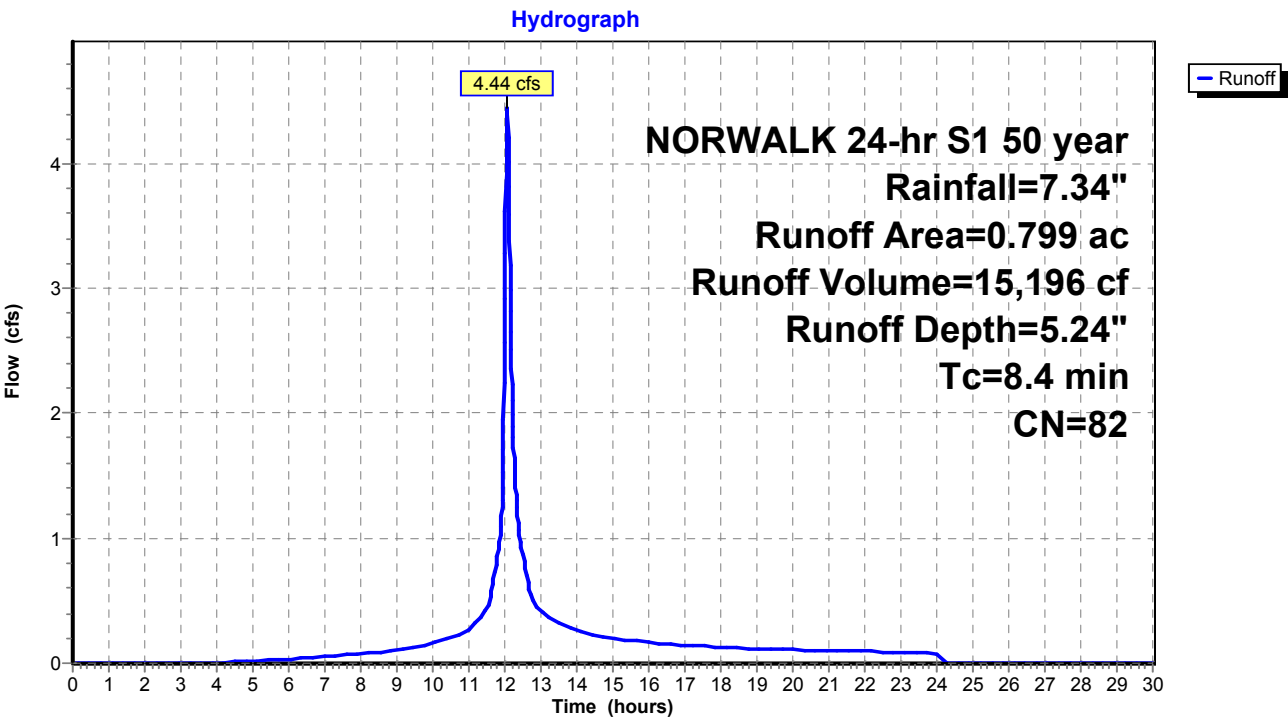
Runoff = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf, Depth= 5.24"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 100S: Area 16B

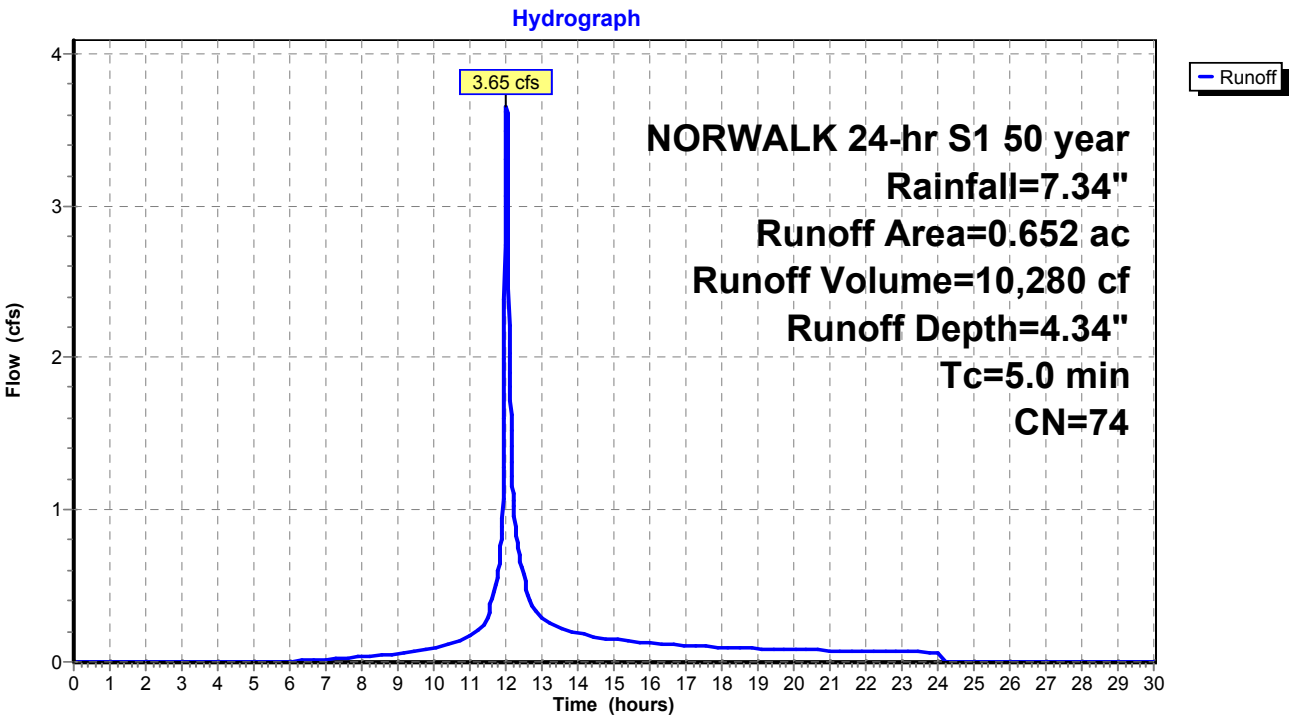
Runoff = 3.65 cfs @ 12.03 hrs, Volume= 10,280 cf, Depth= 4.34"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 105S: Area 18

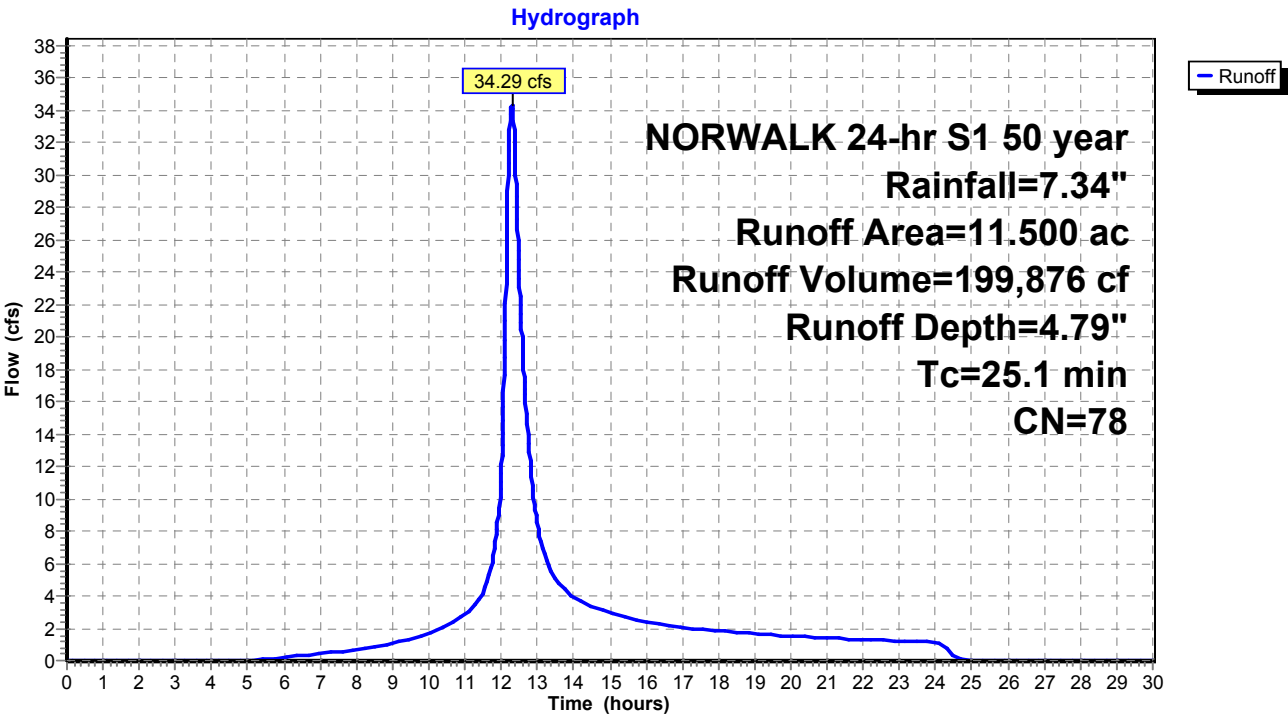
Runoff = 34.29 cfs @ 12.30 hrs, Volume= 199,876 cf, Depth= 4.79"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment BLDG: EX-BLDG

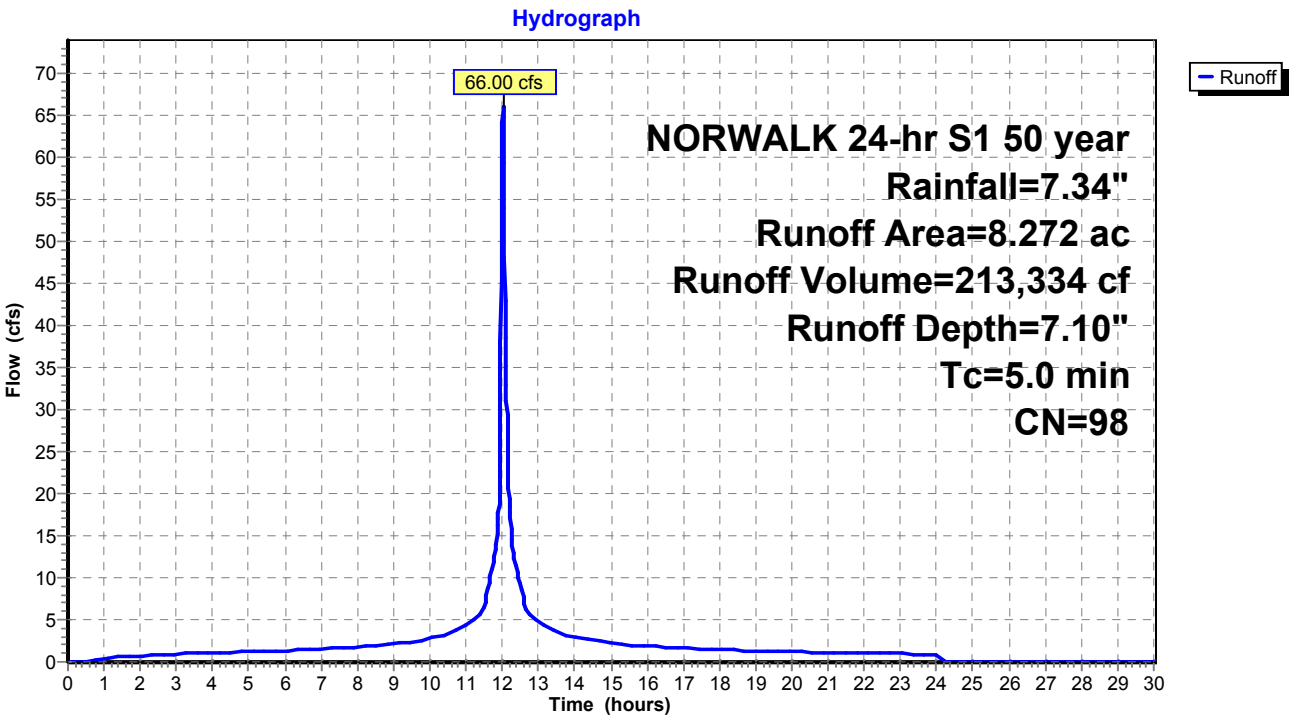
Runoff = 66.00 cfs @ 12.03 hrs, Volume= 213,334 cf, Depth= 7.10"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 5.37" for 50 year event
Inflow = 285.78 cfs @ 12.23 hrs, Volume= 2,939,592 cf
Outflow = 285.78 cfs @ 12.23 hrs, Volume= 2,939,592 cf, Atten= 0%, Lag= 0.0 min
Primary = 35.32 cfs @ 12.23 hrs, Volume= 1,339,140 cf
Secondary = 250.45 cfs @ 12.23 hrs, Volume= 1,600,453 cf
Routed to Pond 24P : RR Culvert 3

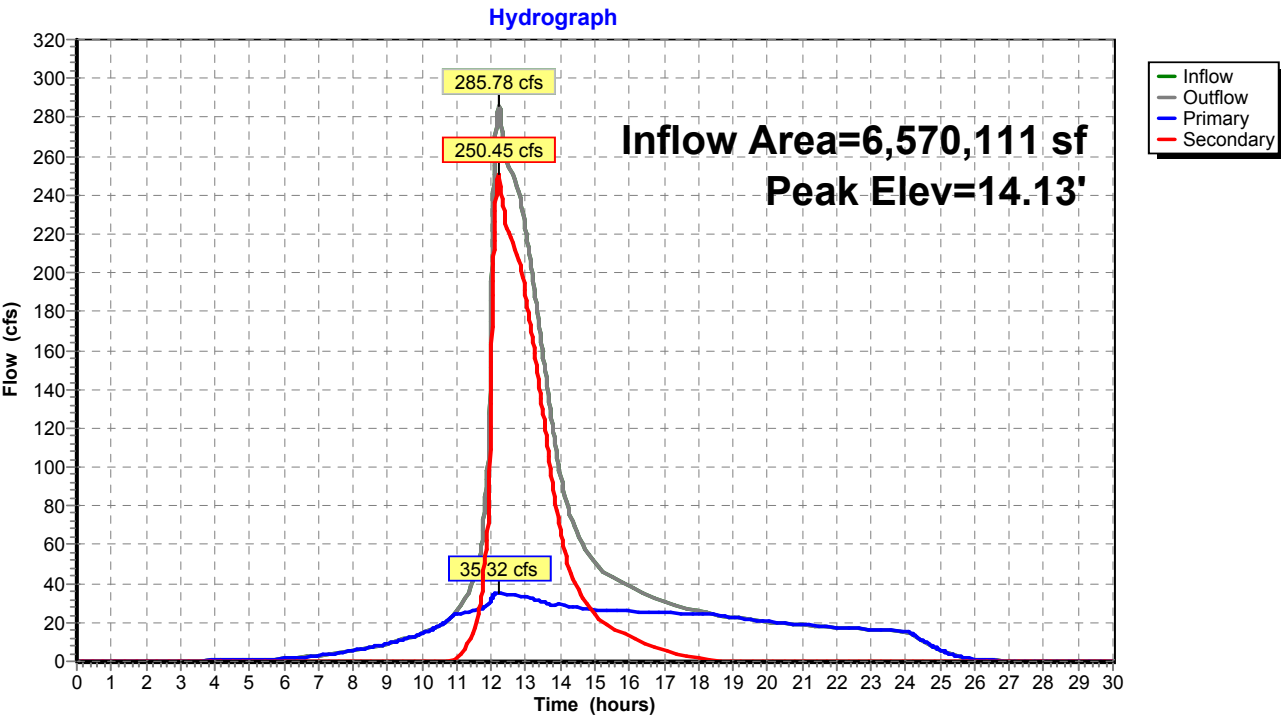
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 14.13' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 '/' Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

Primary OutFlow Max=35.32 cfs @ 12.23 hrs HW=14.13' (Free Discharge)
↑2=Culvert (Barrel Controls 35.32 cfs @ 5.89 fps)

Secondary OutFlow Max=250.27 cfs @ 12.23 hrs HW=14.13' (Free Discharge)
↑1=Custom Weir/Orifice (Weir Controls 250.27 cfs @ 4.43 fps)

Pond 1P: RR Culvert 2



Existing Conditions

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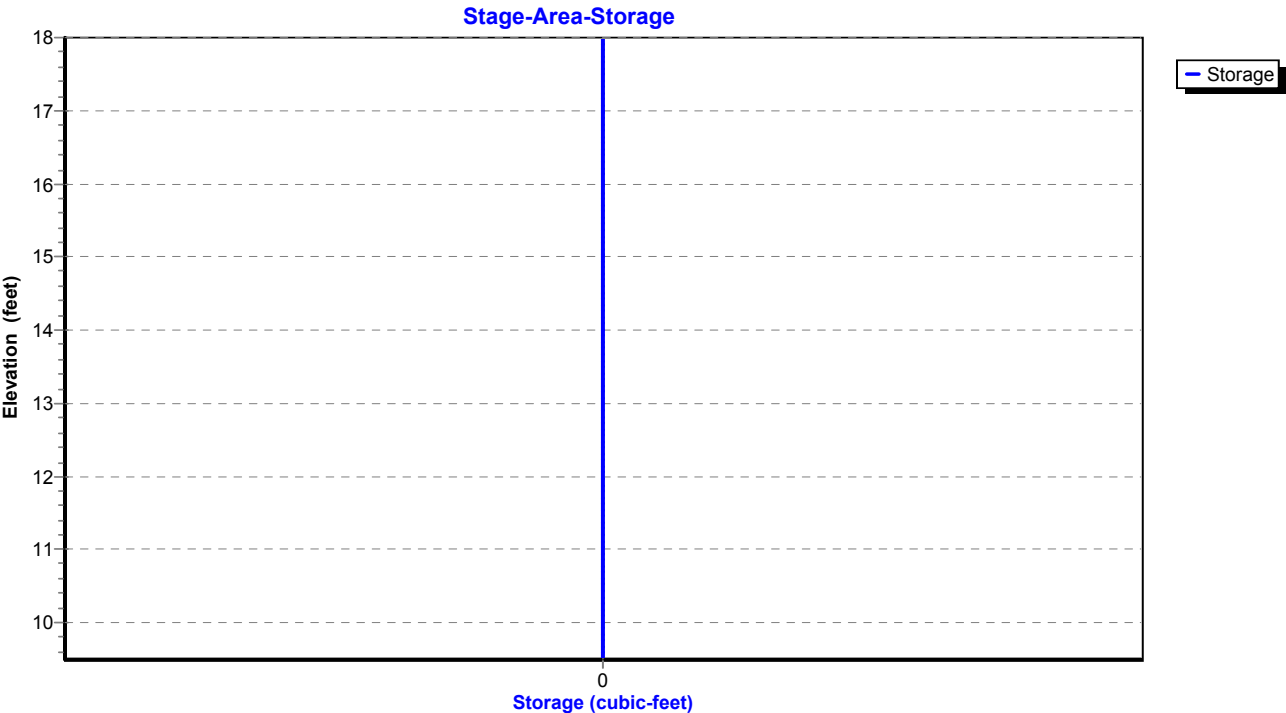
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 1P: RR Culvert 2



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.57% Impervious, Inflow Depth = 5.81" for 50 year event
Inflow = 174.33 cfs @ 12.04 hrs, Volume= 1,653,470 cf
Outflow = 174.33 cfs @ 12.04 hrs, Volume= 1,653,470 cf, Atten= 0%, Lag= 0.0 min
Primary = 57.18 cfs @ 12.04 hrs, Volume= 1,199,665 cf
Secondary = 117.15 cfs @ 12.04 hrs, Volume= 453,805 cf
Routed to Pond 1P : RR Culvert 2

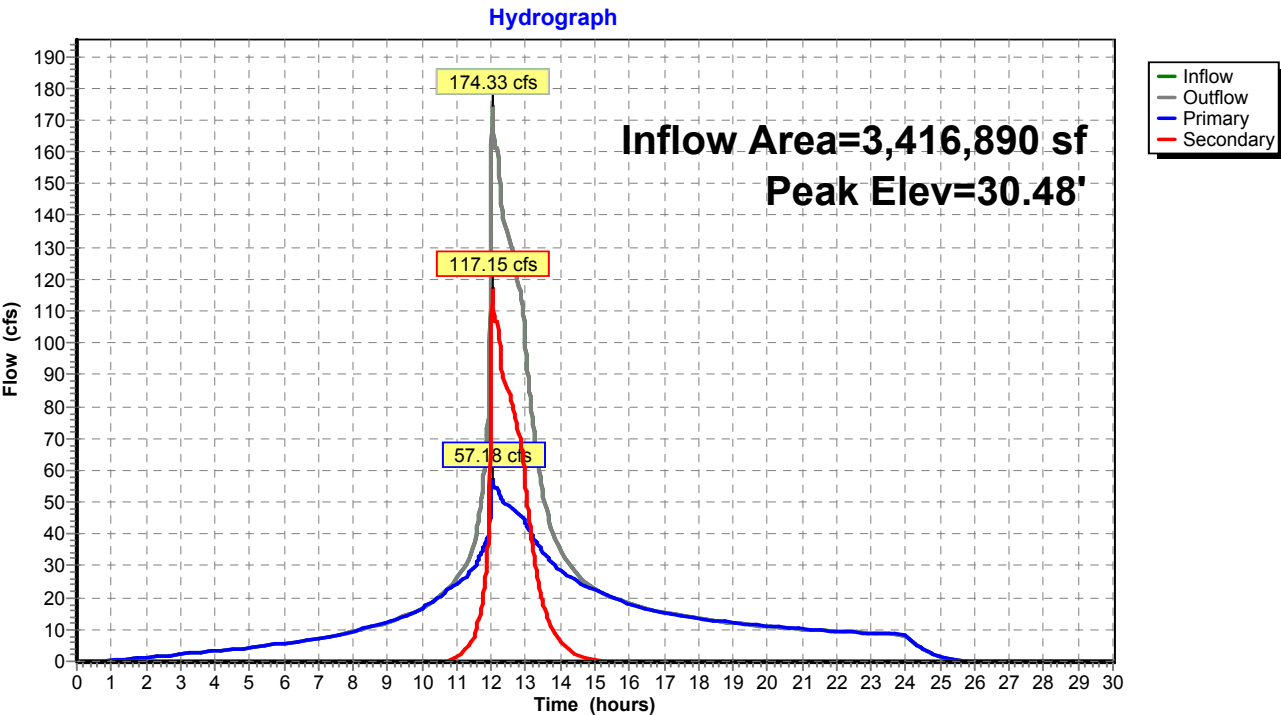
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 30.48' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

Primary OutFlow Max=57.17 cfs @ 12.04 hrs HW=30.48' (Free Discharge)
↑1=Culvert (Inlet Controls 57.17 cfs @ 9.92 fps)

Secondary OutFlow Max=117.09 cfs @ 12.04 hrs HW=30.48' (Free Discharge)
↑2=Custom Weir/Orifice (Orifice Controls 117.09 cfs @ 9.76 fps)

Pond 2P: RR Culvert 1



Existing Conditions

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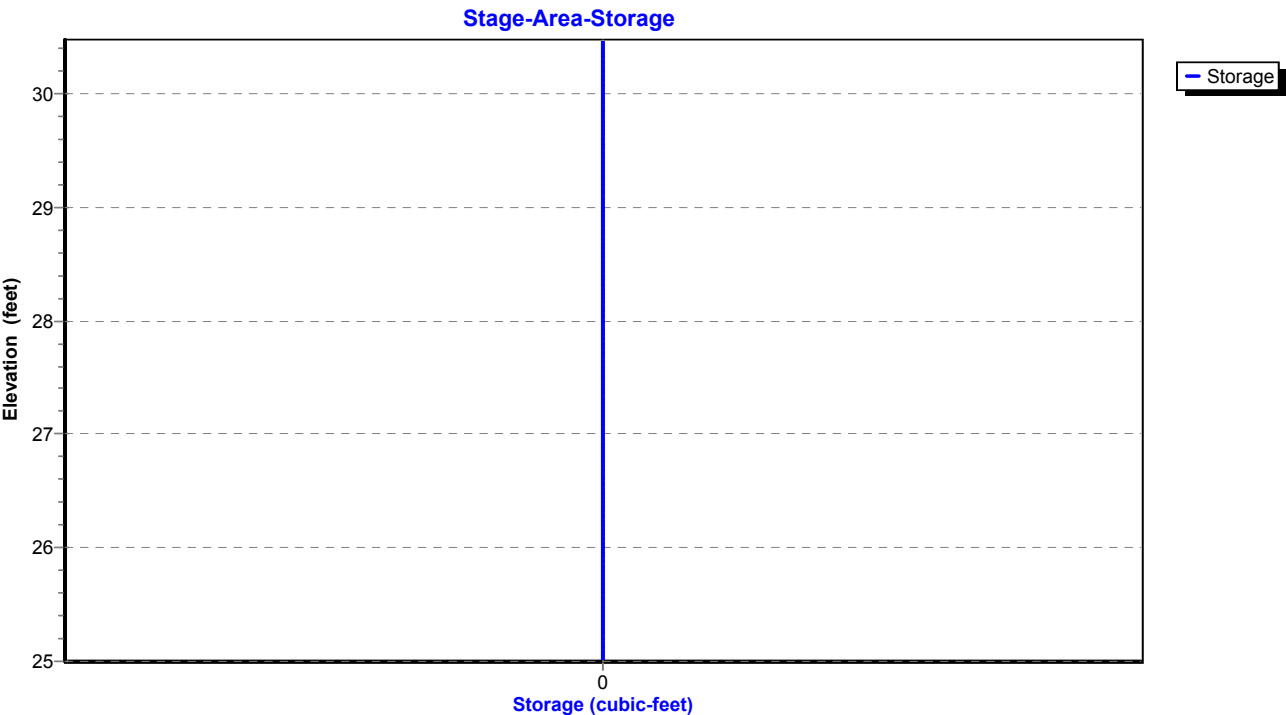
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 2P: RR Culvert 1



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 5.58" for 50 year event
Inflow = 33.56 cfs @ 12.03 hrs, Volume= 122,454 cf
Outflow = 9.05 cfs @ 12.37 hrs, Volume= 106,665 cf, Atten= 73%, Lag= 20.3 min
Primary = 9.05 cfs @ 12.37 hrs, Volume= 106,665 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.63' @ 12.37 hrs Surf.Area= 13,260 sf Storage= 51,596 cf

Plug-Flow detention time= 198.4 min calculated for 106,665 cf (87% of inflow)
Center-of-Mass det. time= 131.2 min (932.1 - 800.8)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.02 cfs @ 12.37 hrs HW=50.63' (Free Discharge)

1=Culvert (Passes 9.02 cfs of 20.63 cfs potential flow)
2=Orifice/Grate (Orifice Controls 4.71 cfs @ 8.63 fps)
3=Orifice/Grate (Weir Controls 4.31 cfs @ 1.57 fps)

Existing Conditions

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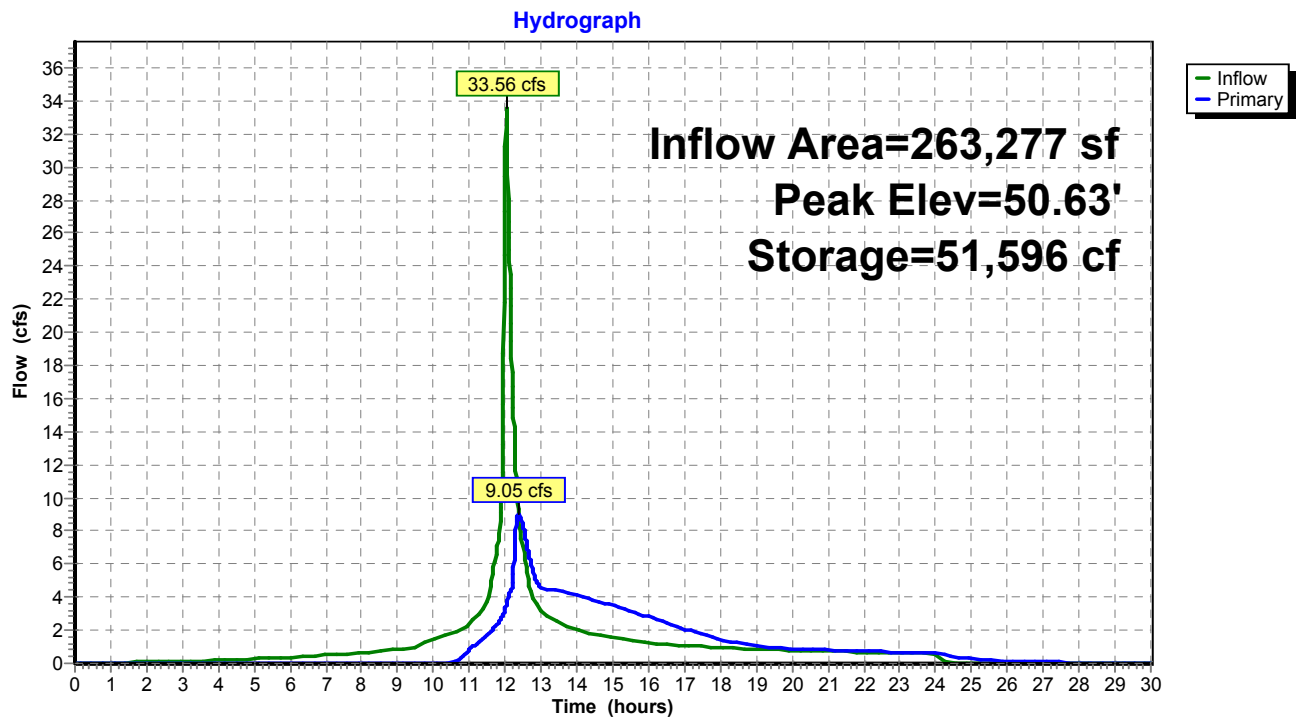
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NORWALK 24-hr S1 50 year Rainfall=7.34"

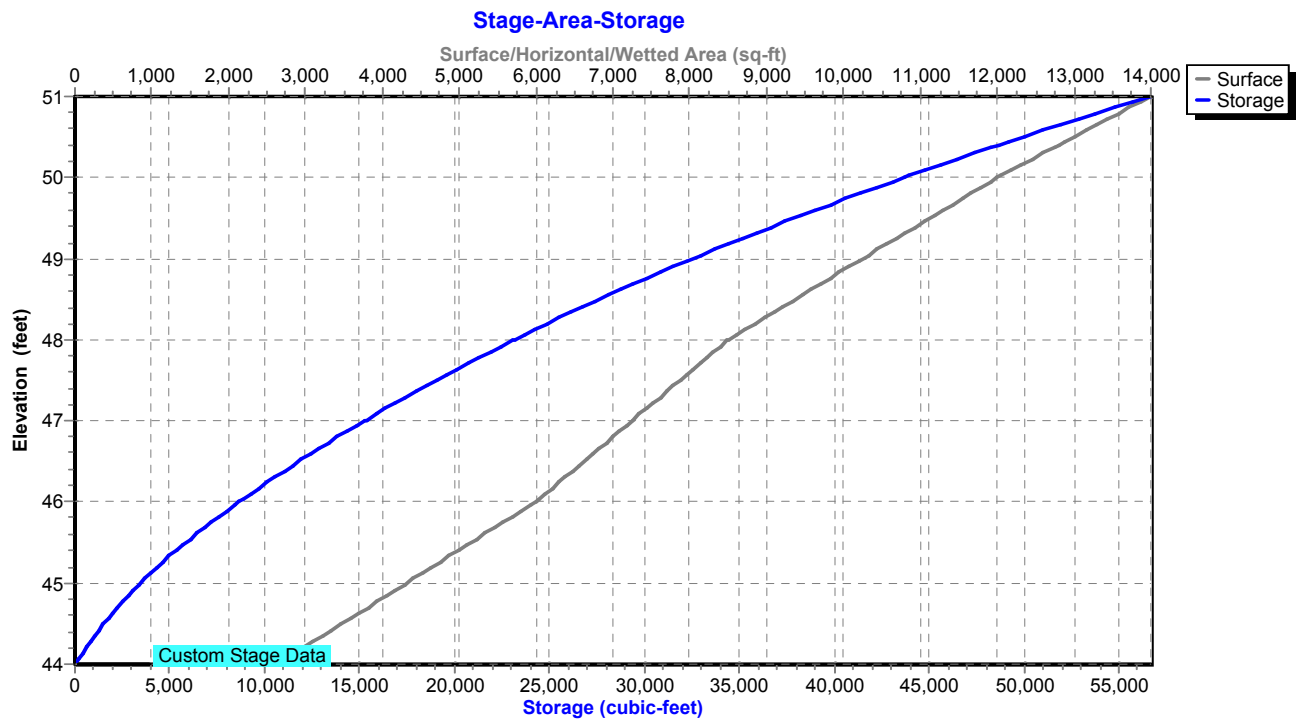
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 4.23" for 50 year event
 Inflow = 26.70 cfs @ 12.45 hrs, Volume= 190,862 cf
 Outflow = 21.38 cfs @ 12.66 hrs, Volume= 190,861 cf, Atten= 20%, Lag= 12.6 min
 Primary = 21.38 cfs @ 12.66 hrs, Volume= 190,861 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 81.27' @ 12.66 hrs Storage= 12,522 cf

Plug-Flow detention time= 6.6 min calculated for 190,861 cf (100% of inflow)

Center-of-Mass det. time= 6.6 min (881.0 - 874.5)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=21.38 cfs @ 12.66 hrs HW=81.27' (Free Discharge)↑**1=Culvert** (Inlet Controls 21.38 cfs @ 6.80 fps)

Existing Conditions

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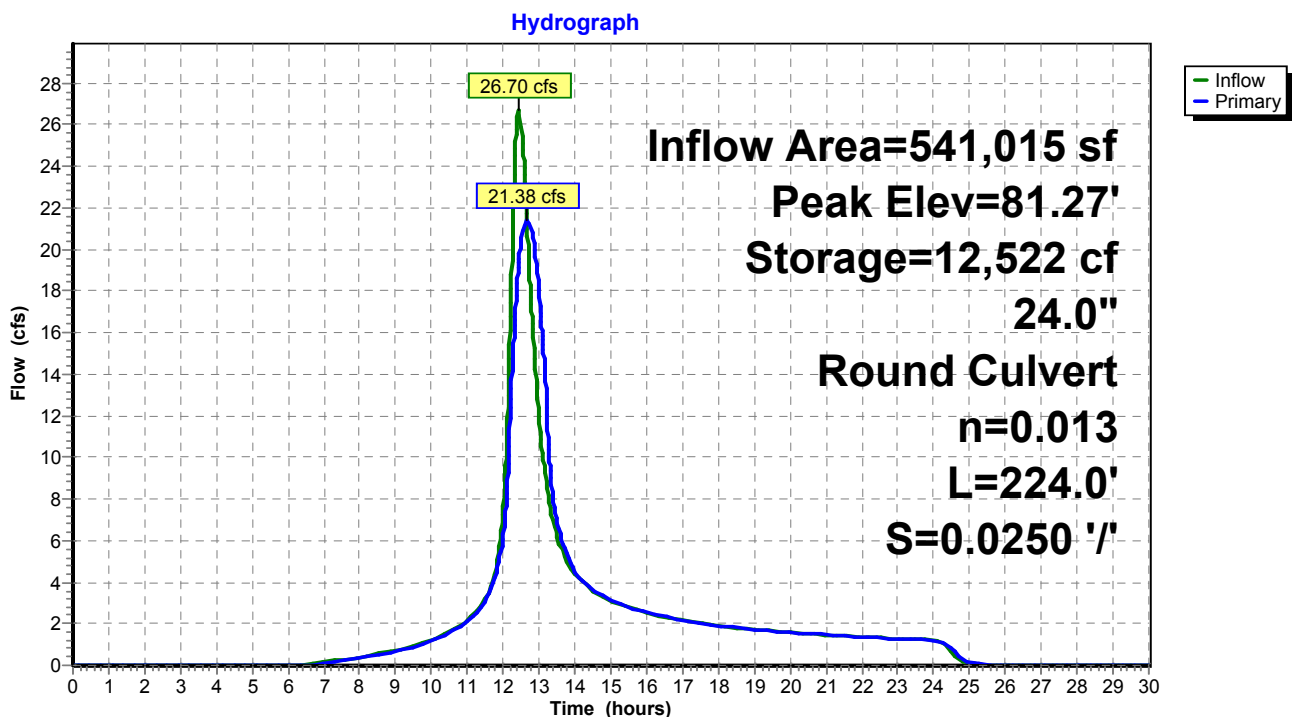
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NORWALK 24-hr S1 50 year Rainfall=7.34"

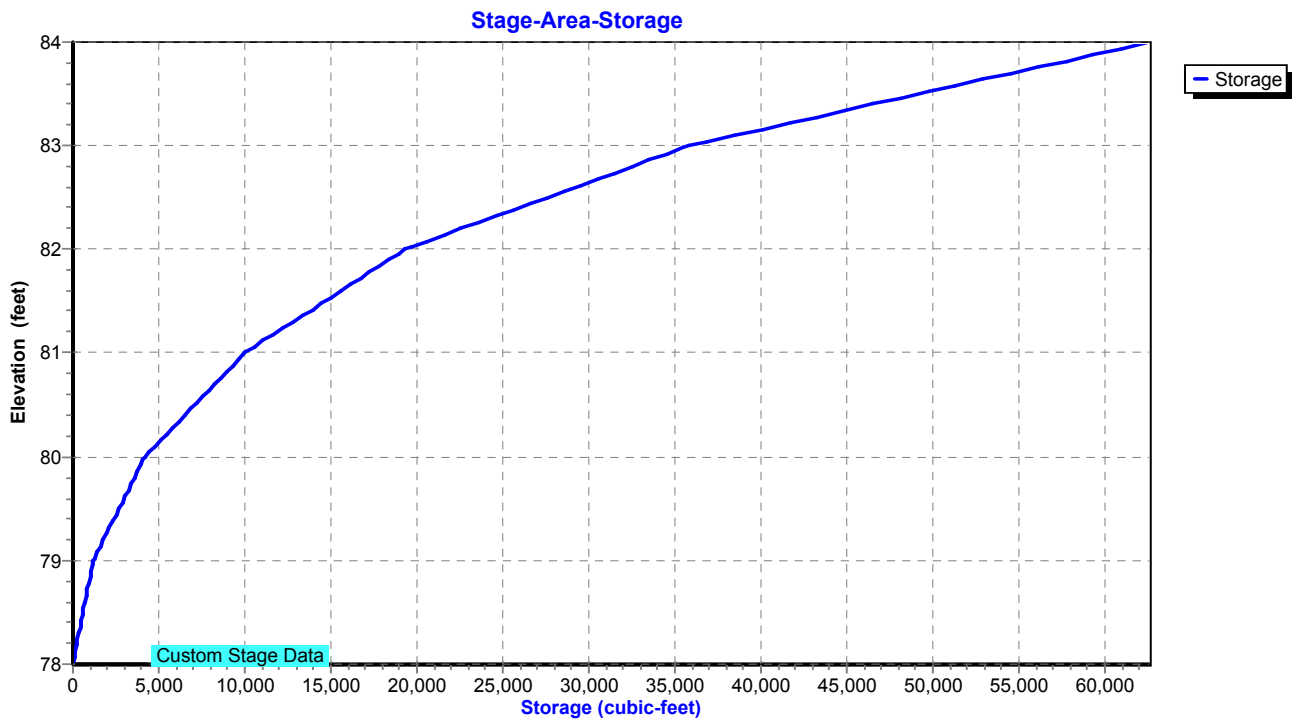
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Pond 5P: DET 5 Culvert



Pond 5P: DET 5 Culvert



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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 5.24" for 50 year event
 Inflow = 35.89 cfs @ 12.70 hrs, Volume= 326,174 cf
 Outflow = 34.79 cfs @ 12.78 hrs, Volume= 326,174 cf, Atten= 3%, Lag= 5.1 min
 Primary = 34.79 cfs @ 12.78 hrs, Volume= 326,174 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 92.22' @ 12.78 hrs Storage= 2,324 cf

Plug-Flow detention time= 0.5 min calculated for 326,065 cf (100% of inflow)

Center-of-Mass det. time= 0.5 min (863.6 - 863.1)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=34.79 cfs @ 12.78 hrs HW=92.22' (Free Discharge)↑ **1=Culvert** (Inlet Controls 34.79 cfs @ 7.09 fps)

Existing Conditions

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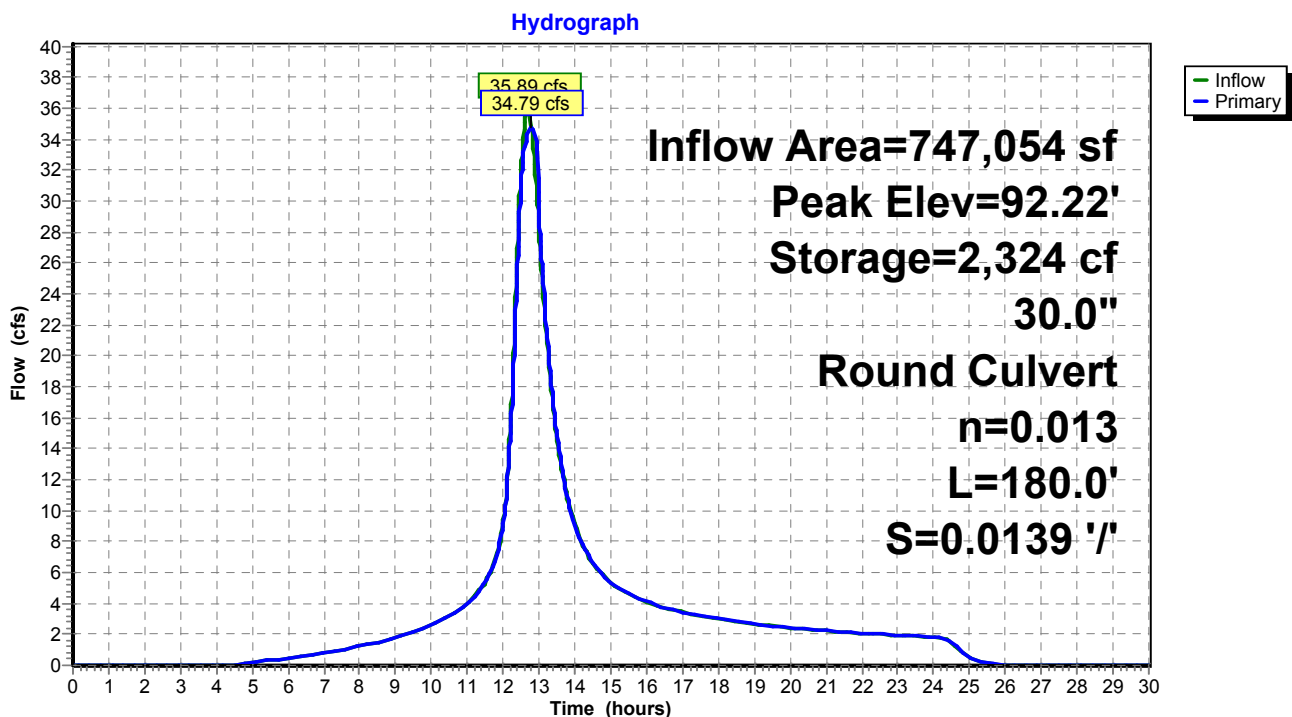
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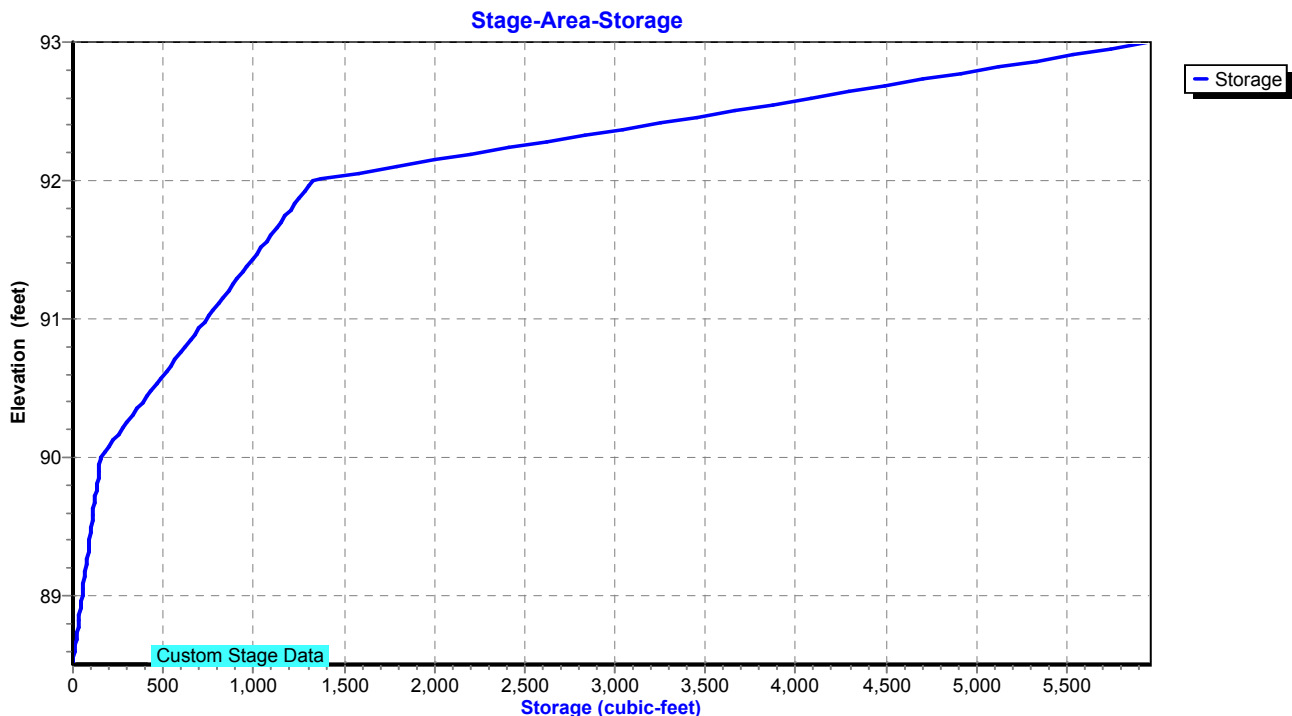
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 5.13" for 50 year event
 Inflow = 4.93 cfs @ 12.26 hrs, Volume= 27,352 cf
 Outflow = 3.27 cfs @ 12.46 hrs, Volume= 27,352 cf, Atten= 34%, Lag= 12.2 min
 Primary = 3.27 cfs @ 12.46 hrs, Volume= 27,352 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.48' @ 12.46 hrs Storage= 2,887 cf

Plug-Flow detention time= 6.9 min calculated for 27,352 cf (100% of inflow)

Center-of-Mass det. time= 6.9 min (843.6 - 836.7)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.27 cfs @ 12.46 hrs HW=93.48' (Free Discharge)↑ **1=Culvert** (Inlet Controls 3.27 cfs @ 3.16 fps)

Existing Conditions

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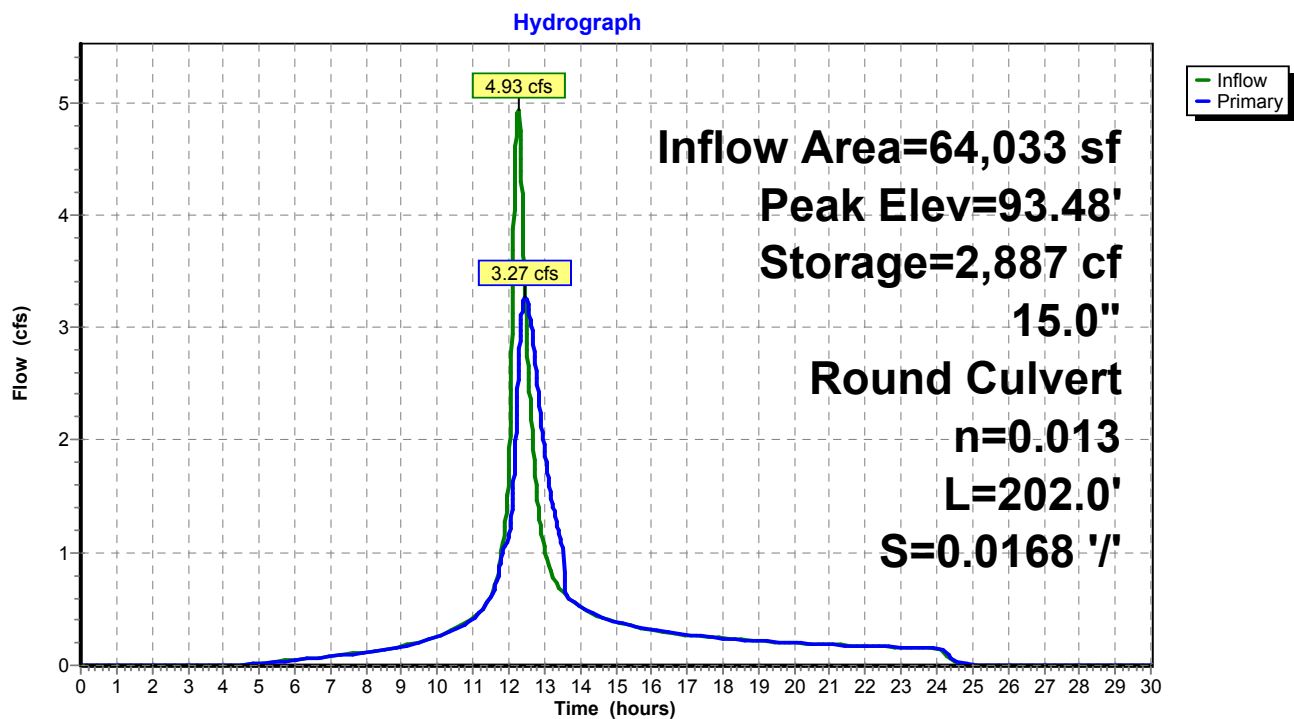
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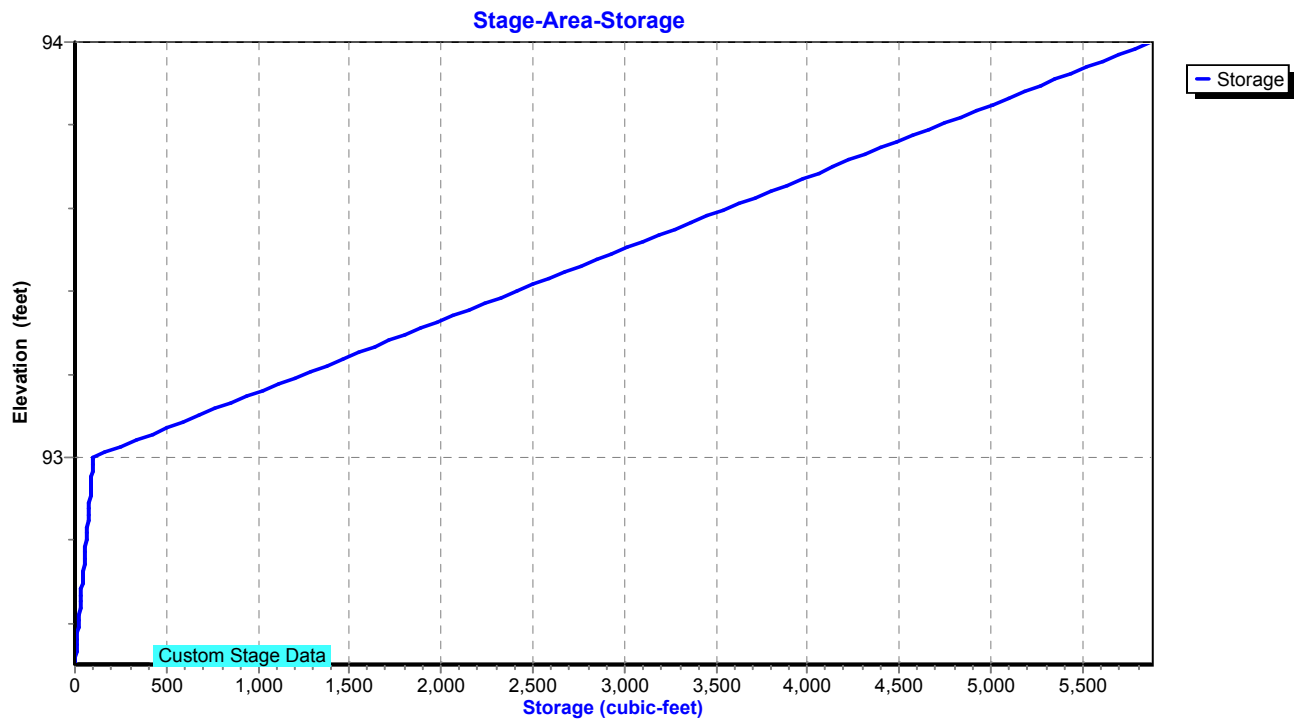
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 4.99" for 50 year event
 Inflow = 70.33 cfs @ 12.69 hrs, Volume= 659,122 cf
 Outflow = 70.32 cfs @ 12.70 hrs, Volume= 659,122 cf, Atten= 0%, Lag= 0.6 min
 Primary = 70.32 cfs @ 12.70 hrs, Volume= 659,122 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 72.45' @ 12.70 hrs Storage= 384 cf

Plug-Flow detention time= 0.0 min calculated for 658,902 cf (100% of inflow)
 Center-of-Mass det. time= 0.0 min (861.1 - 861.1)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=70.33 cfs @ 12.70 hrs HW=72.45' (Free Discharge)
 ↑1=Culvert (Inlet Controls 70.33 cfs @ 7.31 fps)

Existing Conditions

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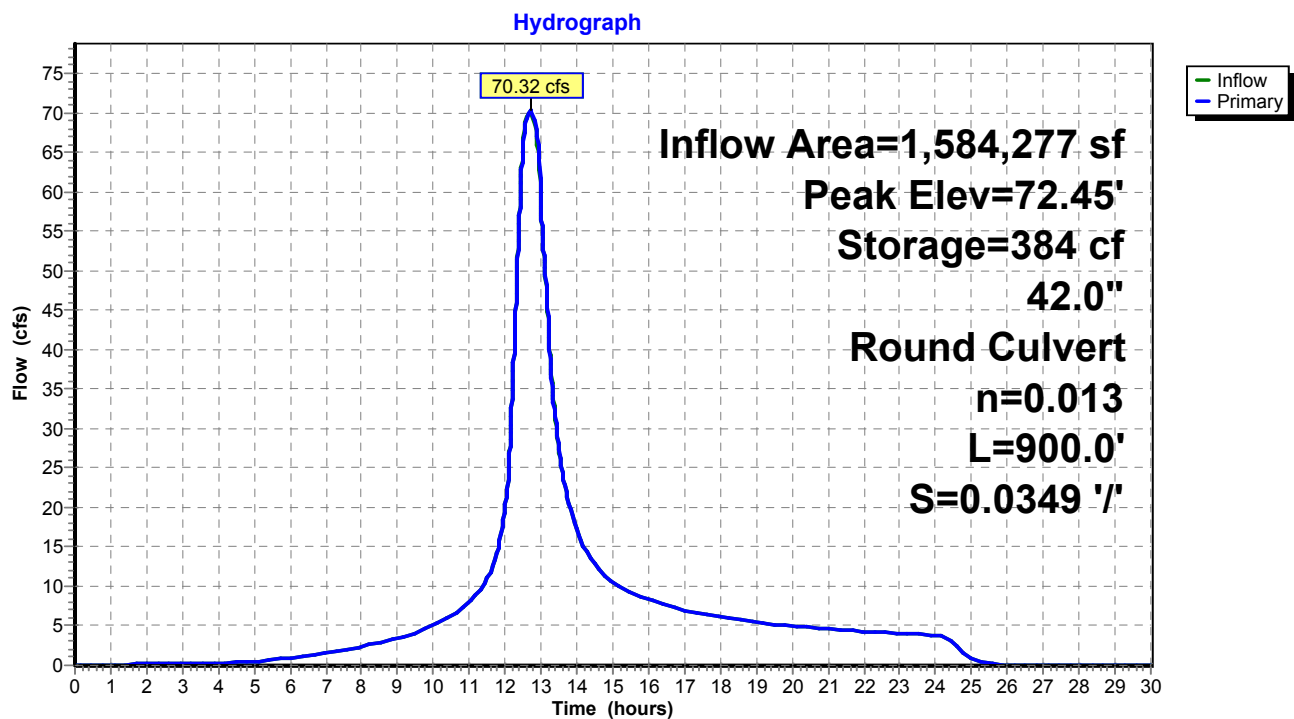
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NORWALK 24-hr S1 50 year Rainfall=7.34"

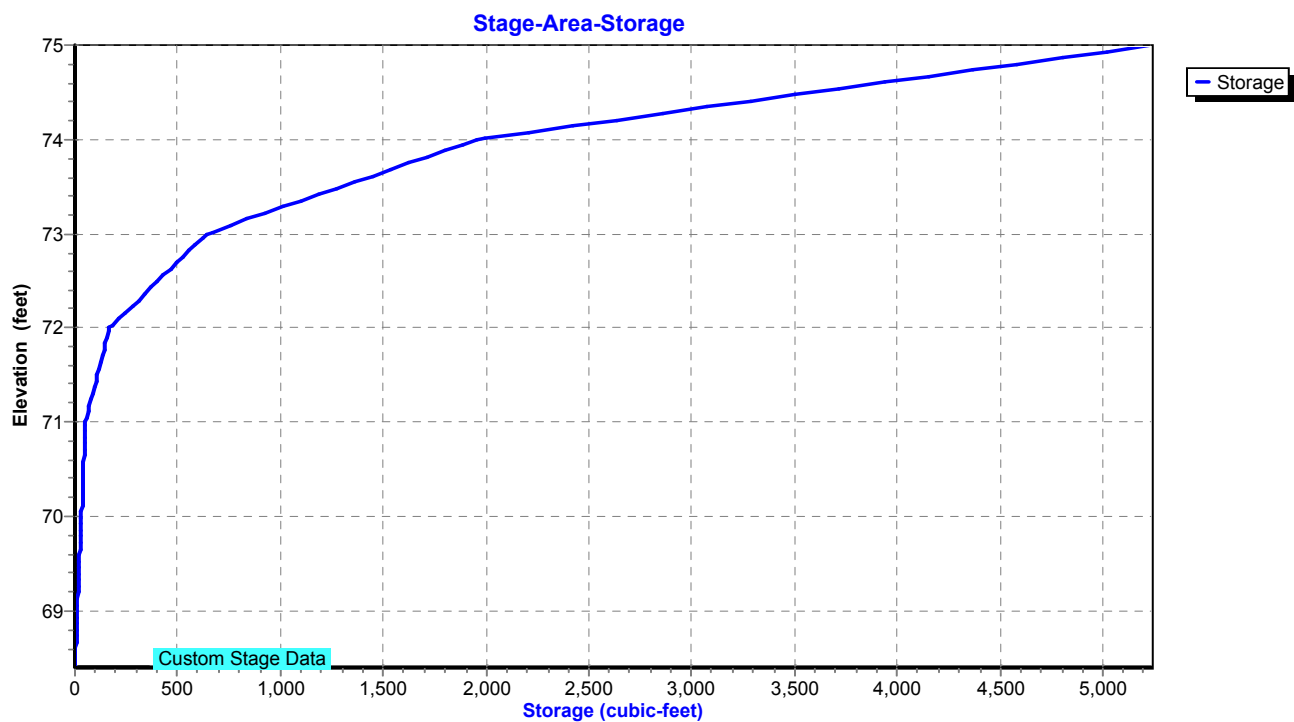
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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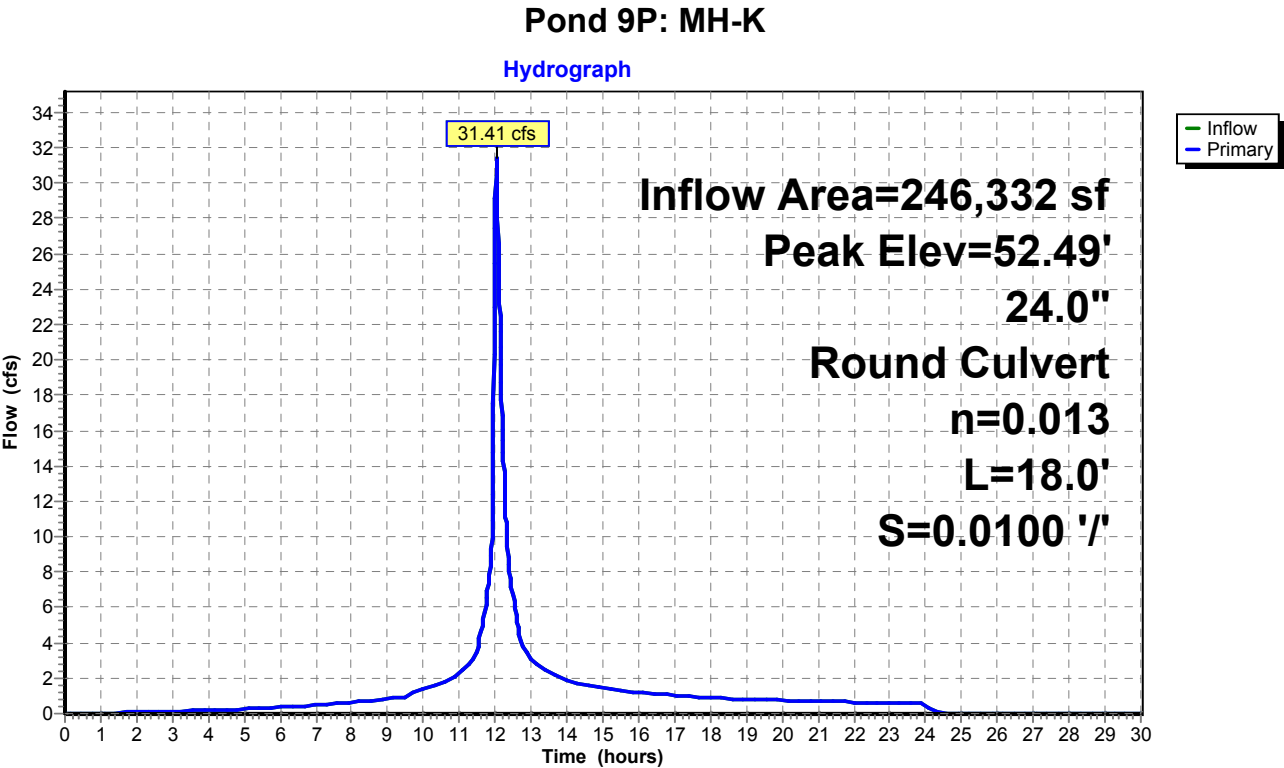
Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 5.67" for 50 year event
Inflow = 31.41 cfs @ 12.04 hrs, Volume= 116,321 cf
Outflow = 31.41 cfs @ 12.04 hrs, Volume= 116,321 cf, Atten= 0%, Lag= 0.0 min
Primary = 31.41 cfs @ 12.04 hrs, Volume= 116,321 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.49' @ 12.04 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=31.31 cfs @ 12.04 hrs HW=52.46' (Free Discharge)
1=Culvert (Inlet Controls 31.31 cfs @ 9.97 fps)



Existing Conditions

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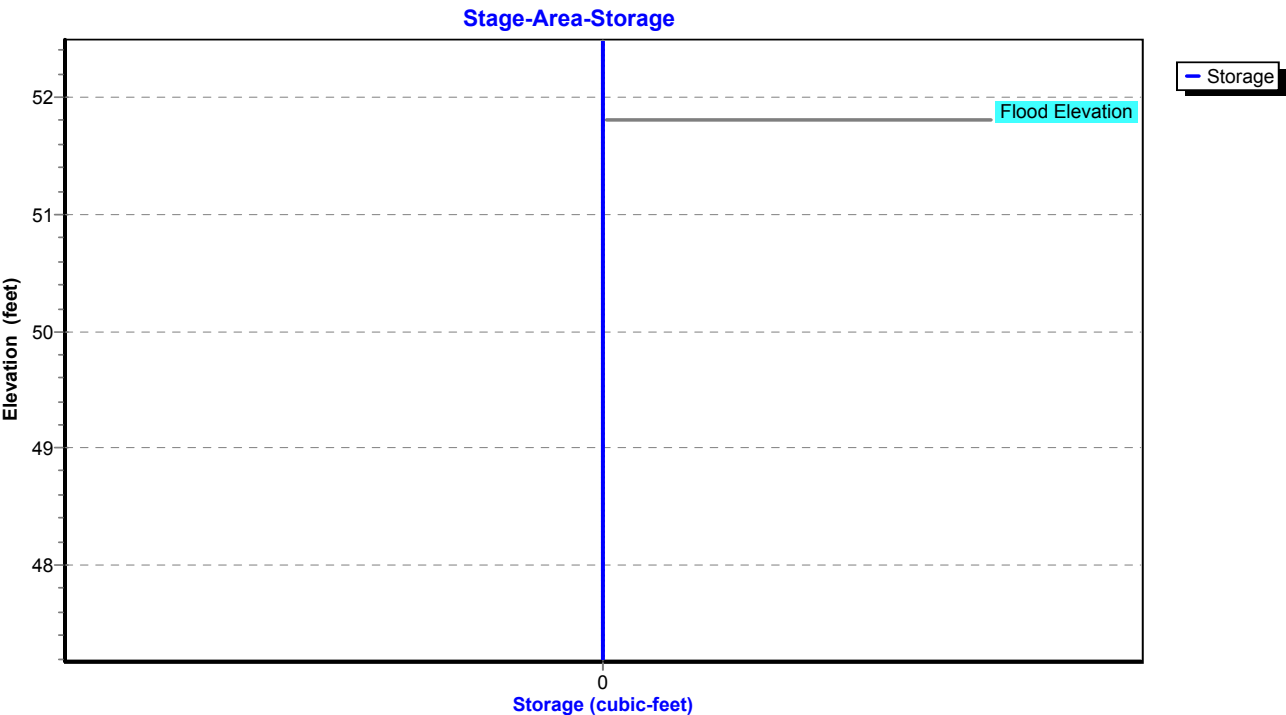
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Pond 9P: MH-K



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 5.81" for 50 year event
Inflow = 12.87 cfs @ 12.03 hrs, Volume= 34,798 cf
Outflow = 12.87 cfs @ 12.03 hrs, Volume= 34,798 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.87 cfs @ 12.03 hrs, Volume= 34,798 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.65' @ 12.03 hrs

Flood Elev= 53.00'

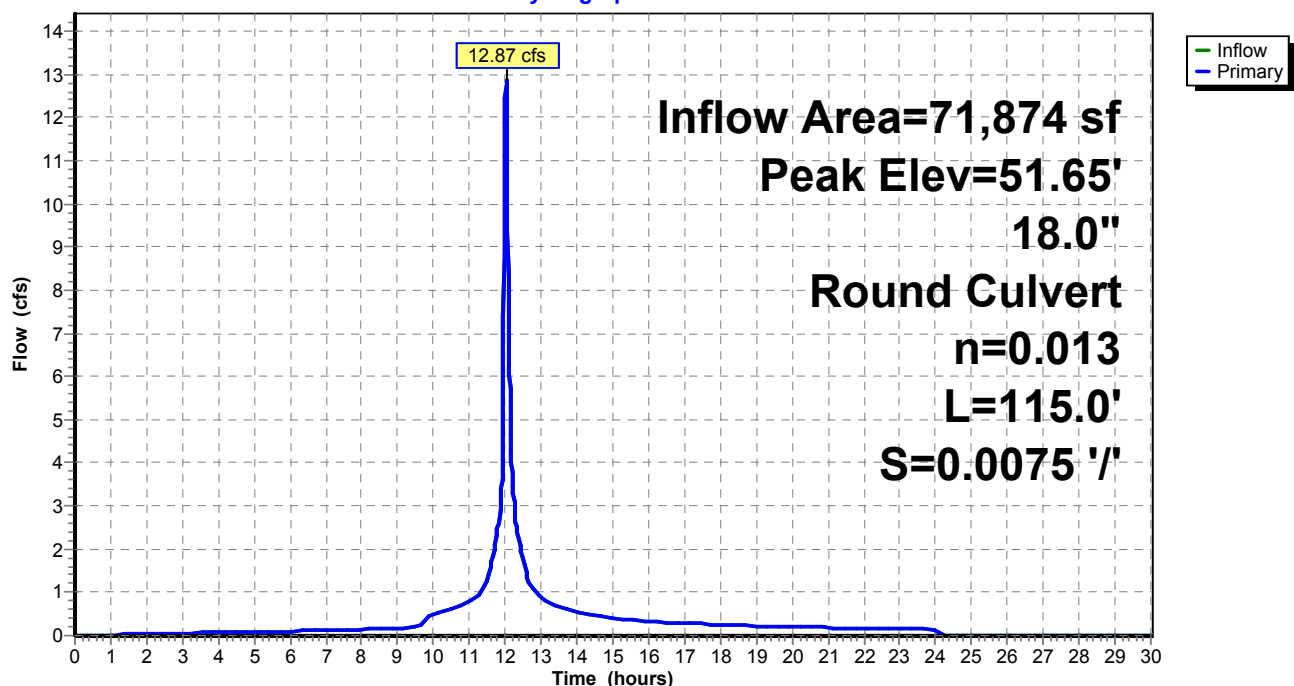
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=12.81 cfs @ 12.03 hrs HW=51.62' (Free Discharge)

↑1=Culvert (Barrel Controls 12.81 cfs @ 7.25 fps)

Pond 10P: MH-L

Hydrograph



Existing Conditions

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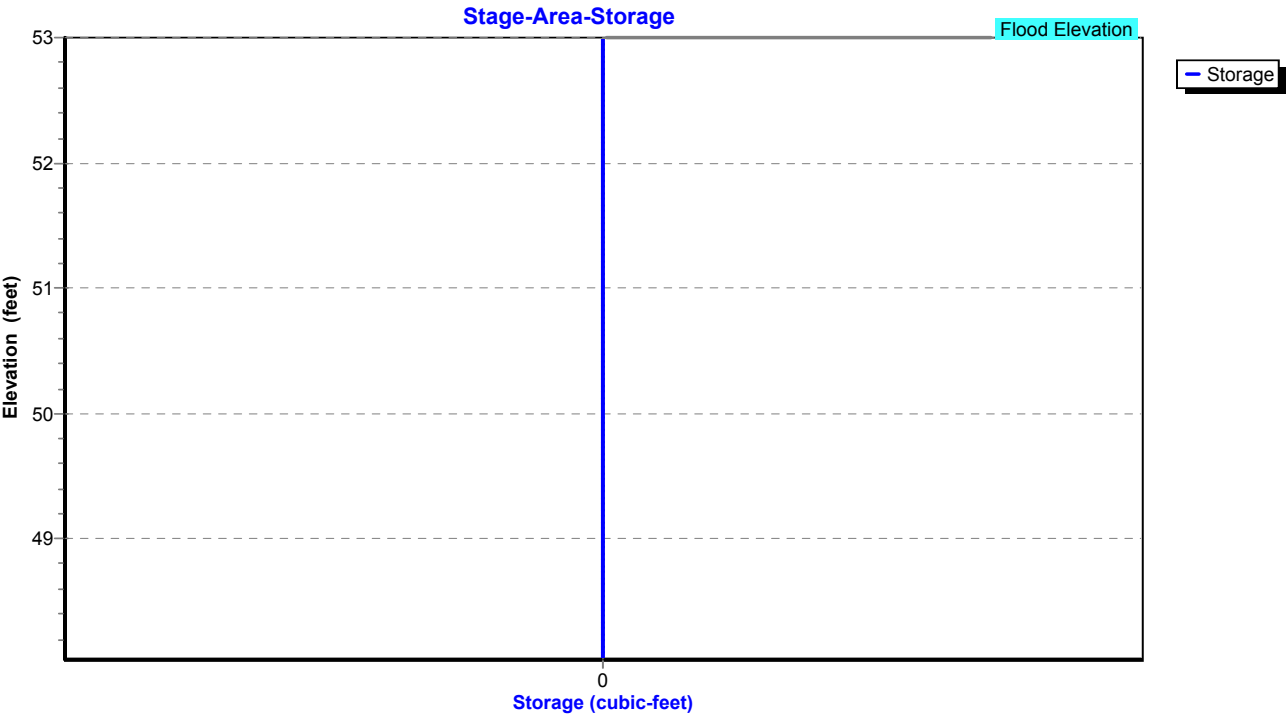
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 10P: MH-L



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 6.64" for 50 year event
Inflow = 7.32 cfs @ 12.03 hrs, Volume= 22,622 cf
Outflow = 7.29 cfs @ 12.03 hrs, Volume= 17,303 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.29 cfs @ 12.03 hrs, Volume= 17,303 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 53.10' @ 12.03 hrs Storage= 0.081 af

Plug-Flow detention time= 153.6 min calculated for 17,303 cf (76% of inflow)

Center-of-Mass det. time= 47.8 min (813.8 - 766.0)

Volume	Invert	Avail.Storage	Storage Description
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#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'
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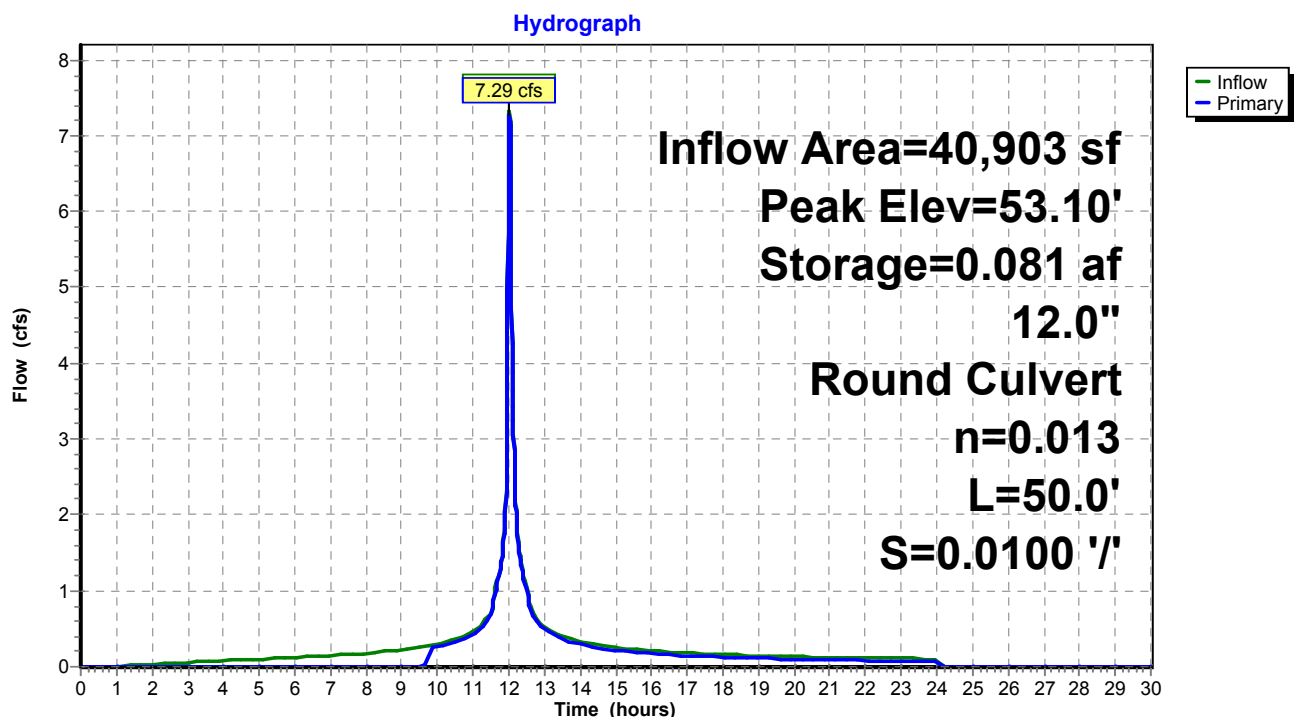
Device	Routing	Invert	Outlet Devices
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#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
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Primary OutFlow Max=7.26 cfs @ 12.03 hrs HW=53.07' (Free Discharge)

←1=Culvert (Barrel Controls 7.26 cfs @ 9.24 fps)

Pond 11P: Pipe Storage



Existing Conditions

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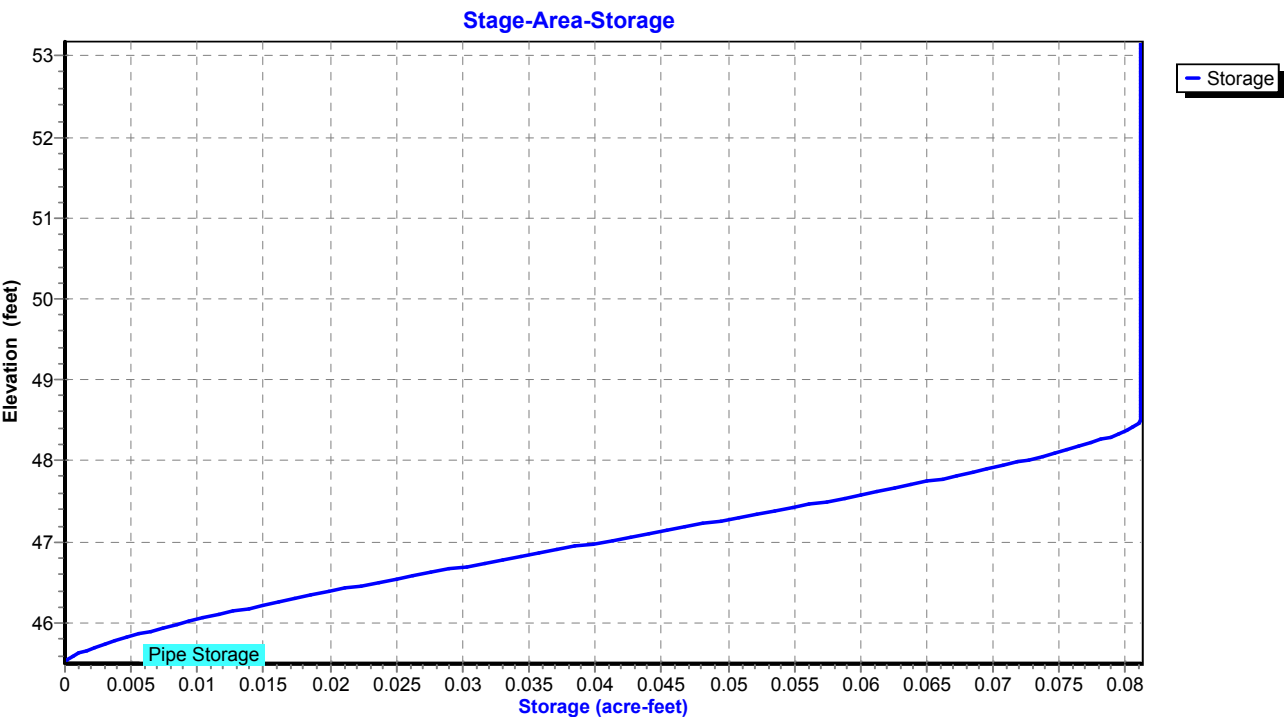
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Pond 11P: Pipe Storage



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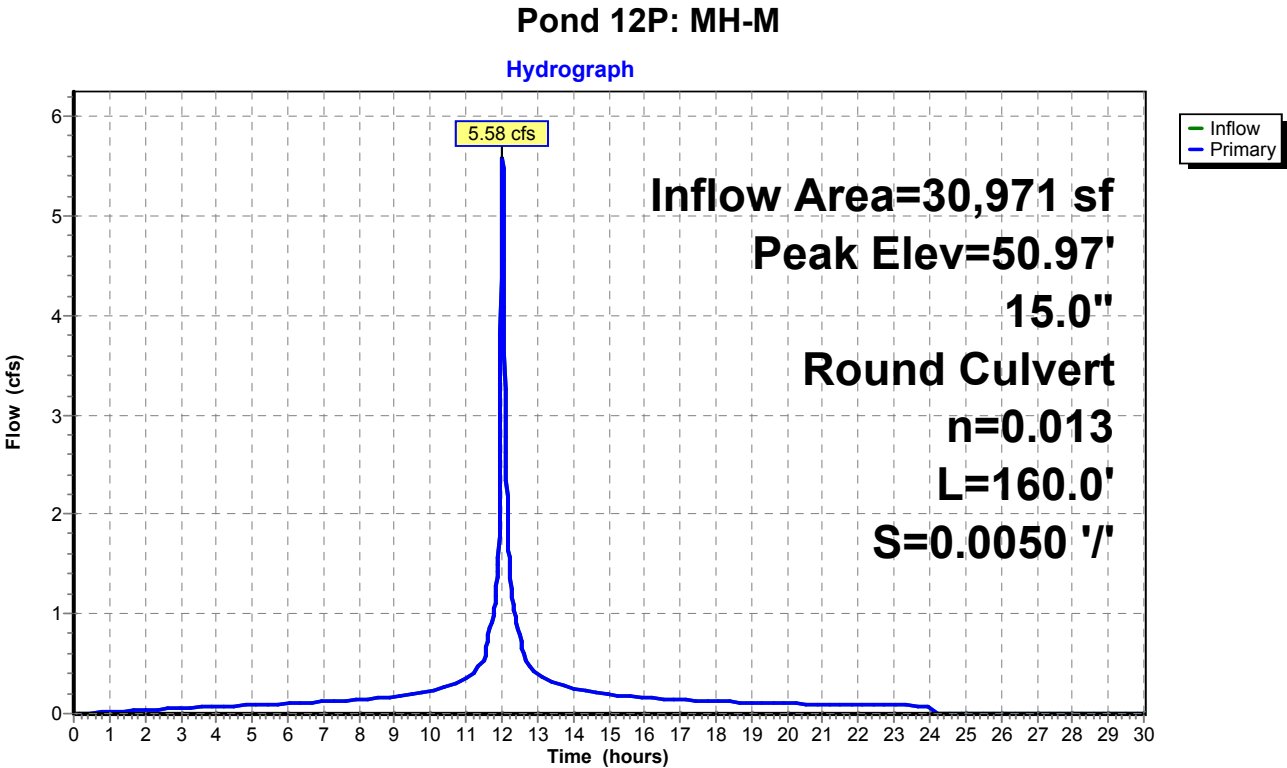
Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 6.78" for 50 year event
Inflow = 5.58 cfs @ 12.03 hrs, Volume= 17,496 cf
Outflow = 5.58 cfs @ 12.03 hrs, Volume= 17,496 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.58 cfs @ 12.03 hrs, Volume= 17,496 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.97' @ 12.03 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=5.56 cfs @ 12.03 hrs HW=50.96' (Free Discharge)
1=Culvert (Barrel Controls 5.56 cfs @ 4.53 fps)



Existing Conditions

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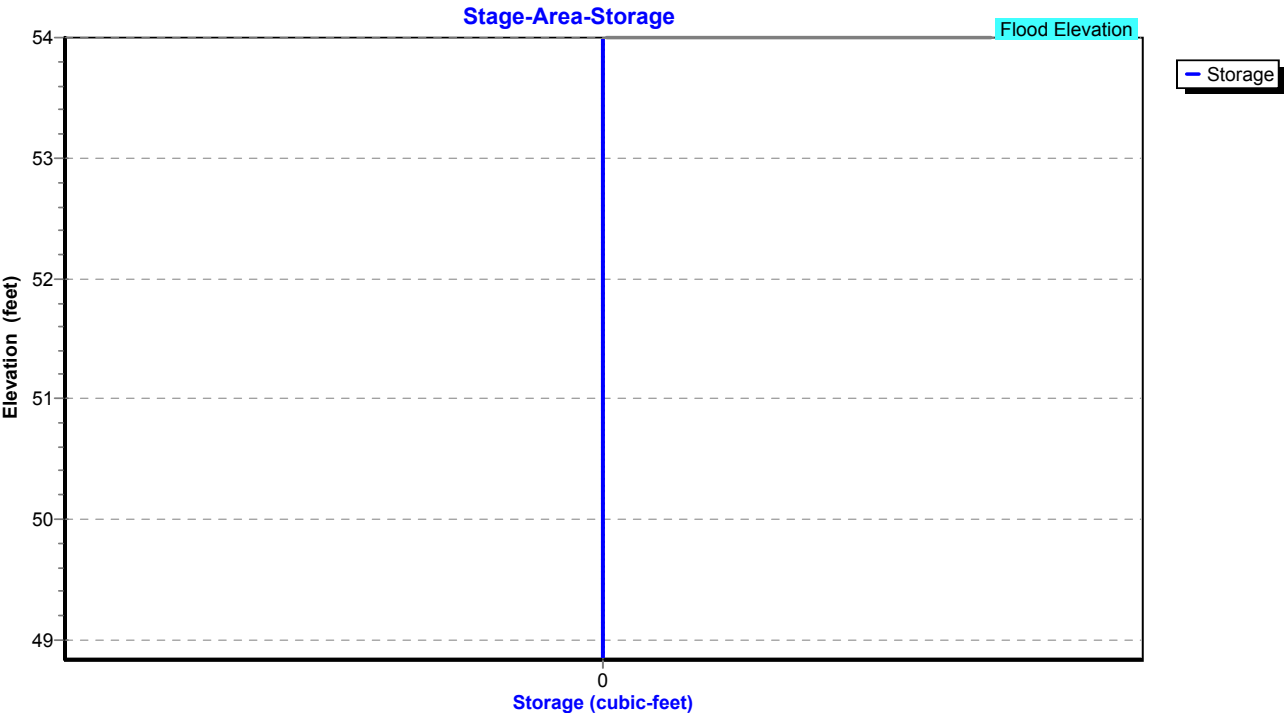
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 6.51" for 50 year event
Inflow = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf
Outflow = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.24' @ 12.03 hrs

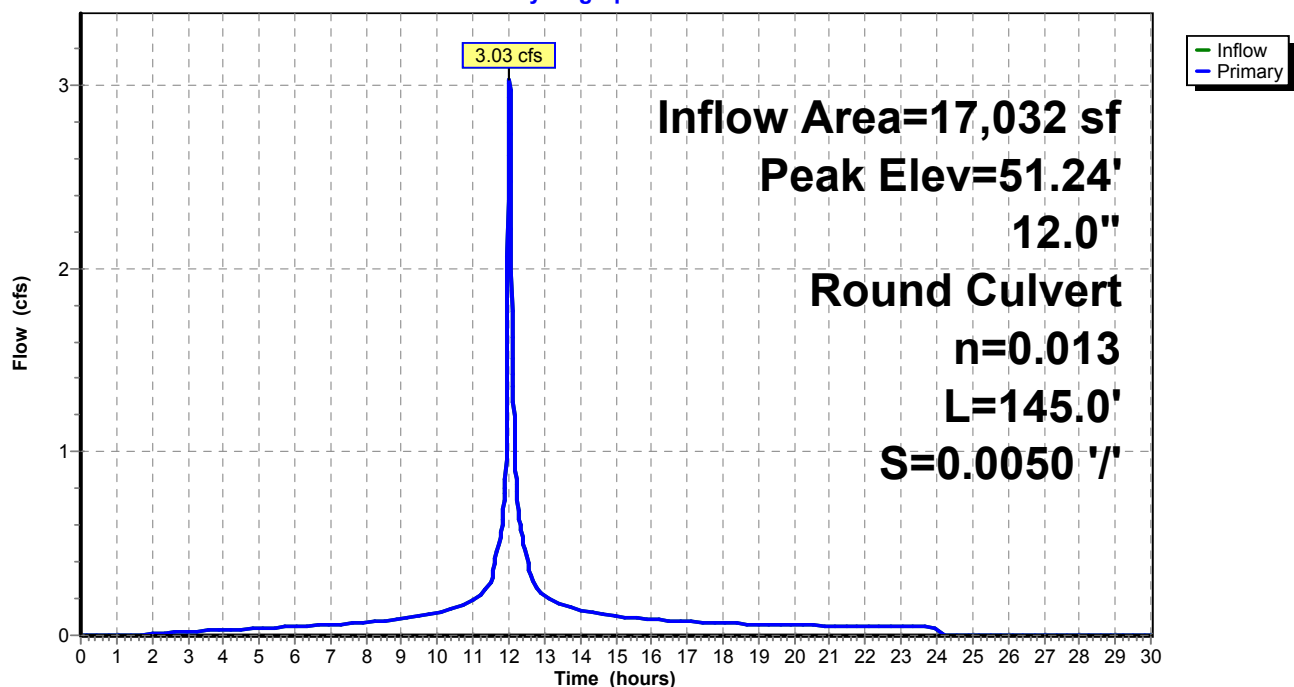
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.02 cfs @ 12.03 hrs HW=51.23' (Free Discharge)

↑1=Culvert (Barrel Controls 3.02 cfs @ 3.84 fps)

Pond 13P: MH-J

Hydrograph



Existing Conditions

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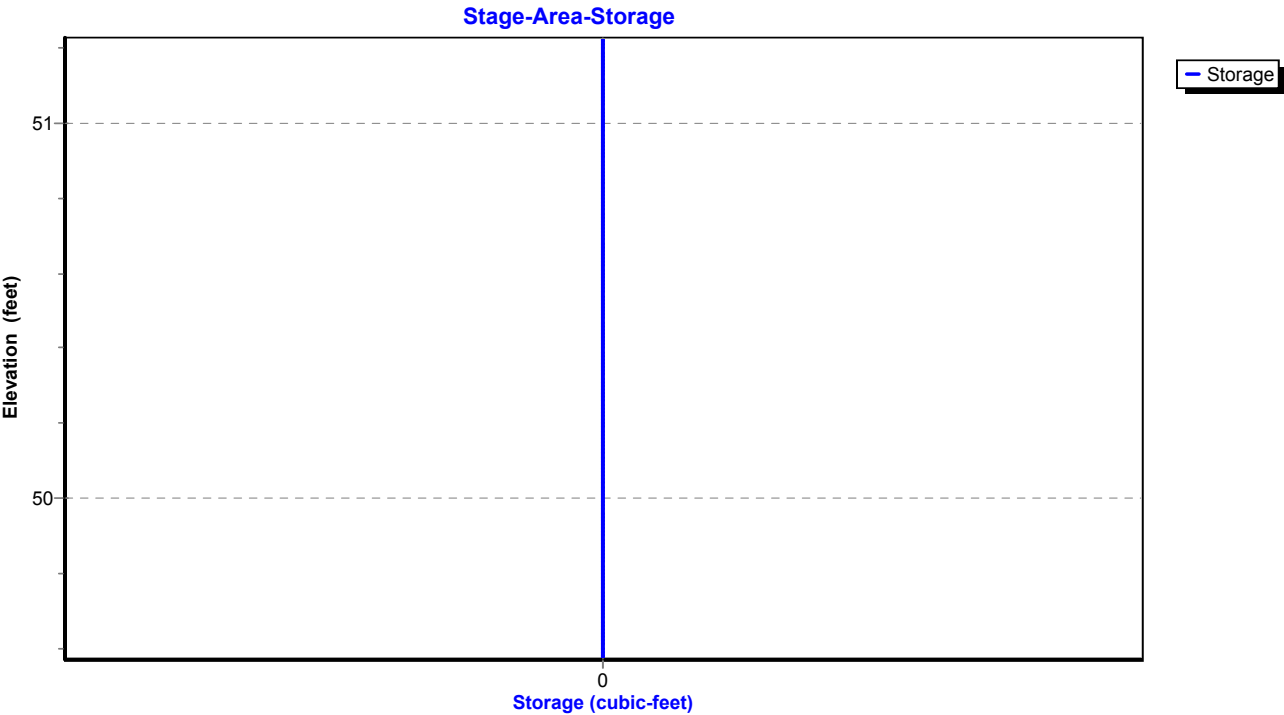
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Pond 13P: MH-J



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Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 5.37" for 50 year event
Inflow = 14.73 cfs @ 12.10 hrs, Volume= 64,474 cf
Outflow = 14.73 cfs @ 12.10 hrs, Volume= 64,474 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.73 cfs @ 12.10 hrs, Volume= 64,474 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.88' @ 12.10 hrs

Flood Elev= 51.80'

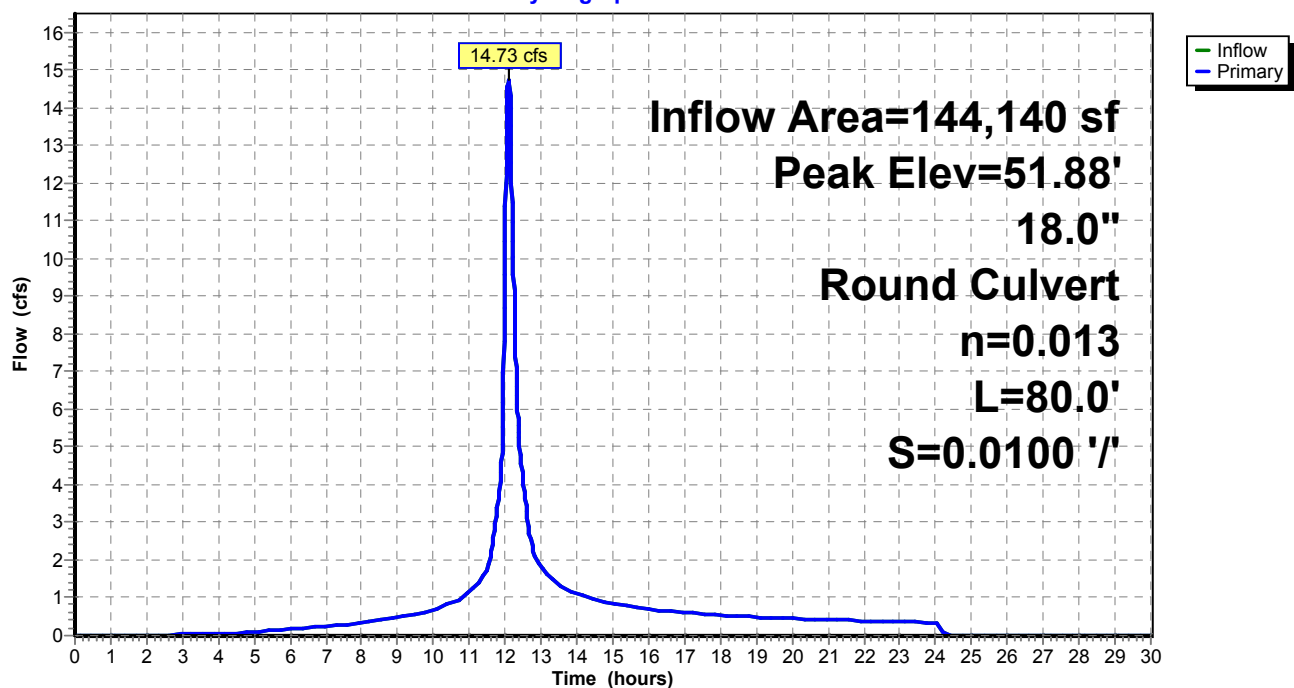
Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=14.73 cfs @ 12.10 hrs HW=51.88' (Free Discharge)

↑1=Culvert (Barrel Controls 14.73 cfs @ 8.33 fps)

Pond 14P: MH-O

Hydrograph



Existing Conditions

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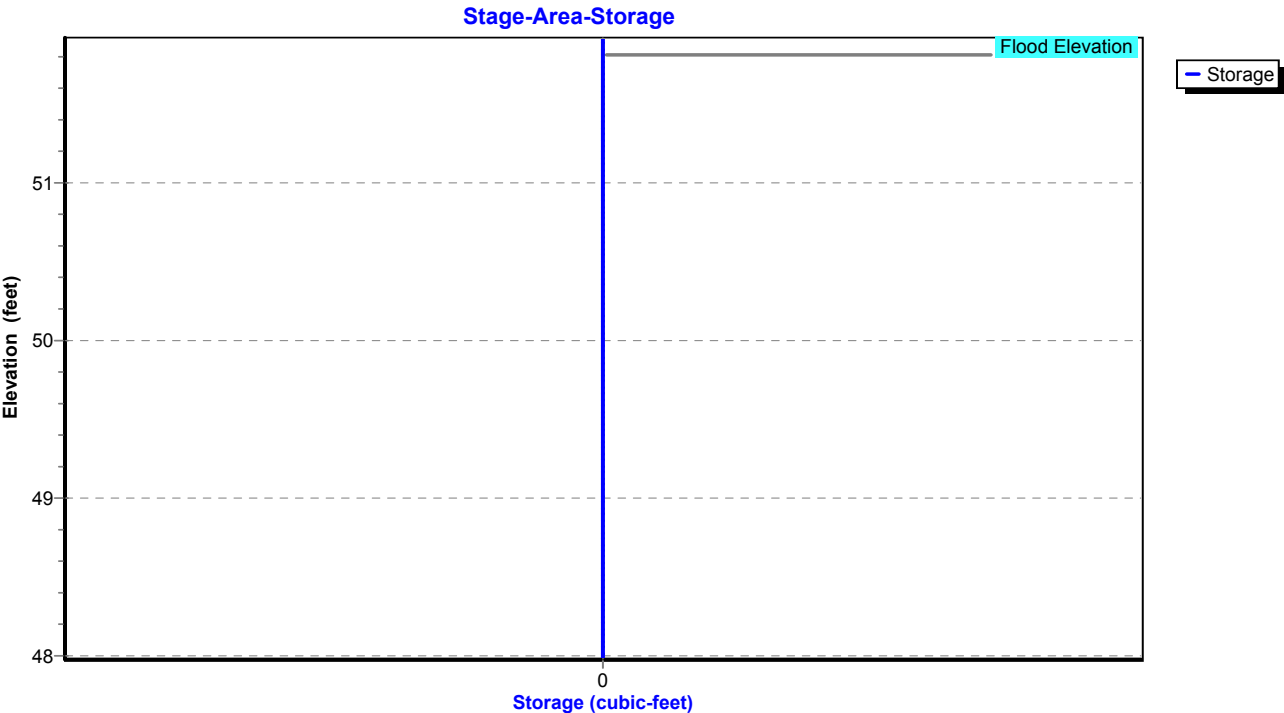
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Pond 14P: MH-O



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Summary for Pond 15P: MH-P

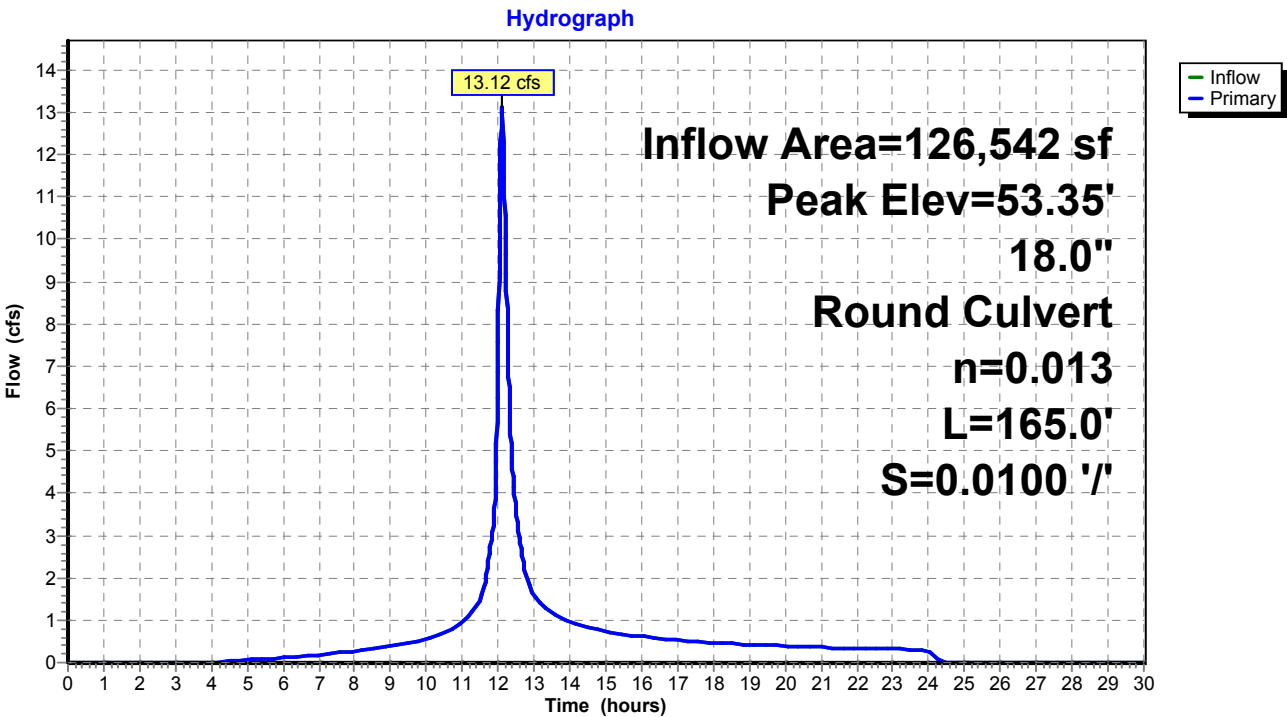
Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 5.21" for 50 year event
Inflow = 13.12 cfs @ 12.11 hrs, Volume= 54,902 cf
Outflow = 13.12 cfs @ 12.11 hrs, Volume= 54,902 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.12 cfs @ 12.11 hrs, Volume= 54,902 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 53.35' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=13.12 cfs @ 12.11 hrs HW=53.35' (Free Discharge)
↑1=Culvert (Barrel Controls 13.12 cfs @ 7.42 fps)

Pond 15P: MH-P



Existing Conditions

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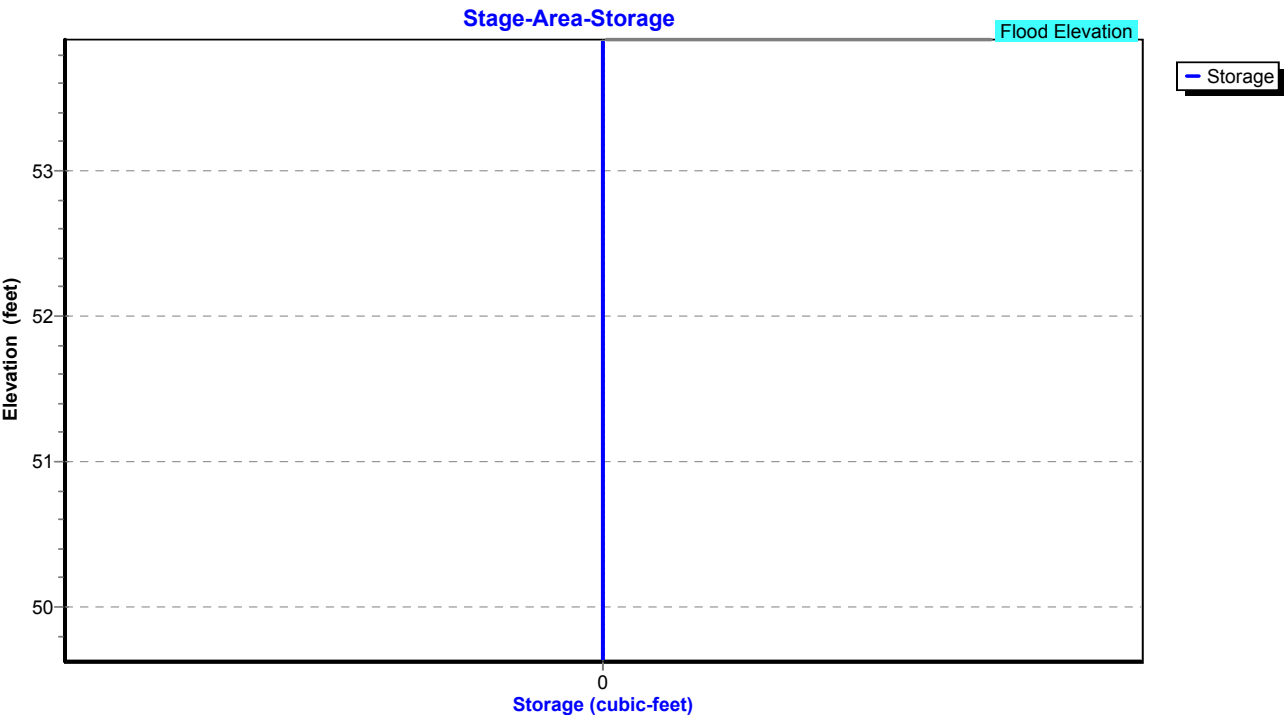
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Pond 15P: MH-P



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 16P: MH-Q

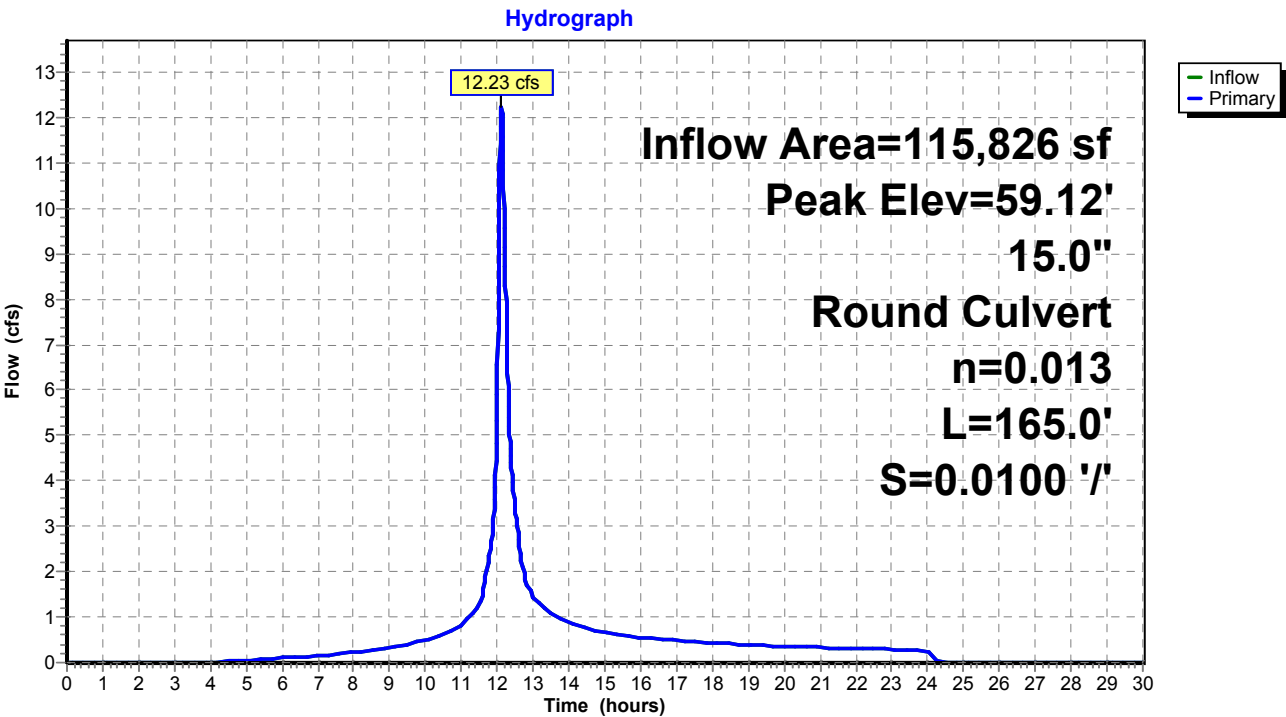
Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 5.13" for 50 year event
Inflow = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf
Outflow = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 59.12' @ 12.11 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.21 cfs @ 12.11 hrs HW=59.10' (Free Discharge)
1=Culvert (Barrel Controls 12.21 cfs @ 9.95 fps)

Pond 16P: MH-Q



Existing Conditions

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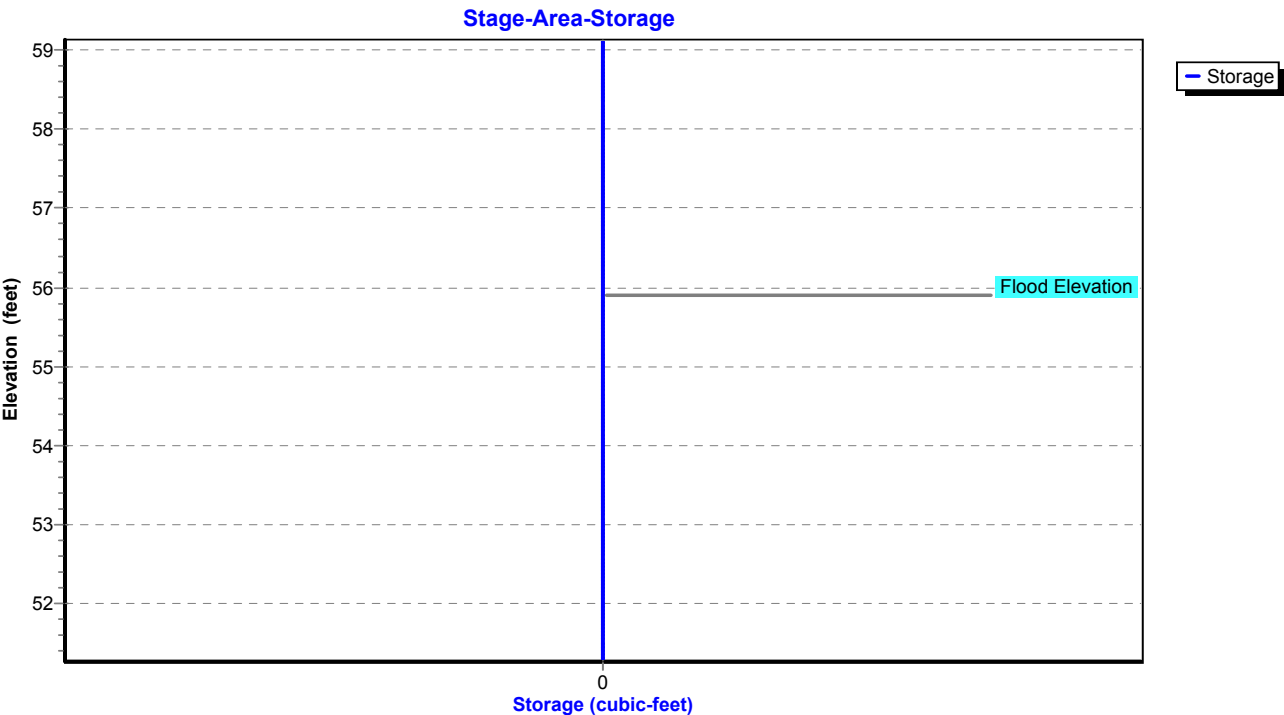
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Pond 16P: MH-Q



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 4.34" for 50 year event
 Inflow = 82.96 cfs @ 13.12 hrs, Volume= 1,062,284 cf
 Outflow = 82.81 cfs @ 13.17 hrs, Volume= 1,062,284 cf, Atten= 0%, Lag= 2.6 min
 Primary = 82.81 cfs @ 13.17 hrs, Volume= 1,062,284 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 47.25' @ 13.17 hrs Surf.Area= 5,155 sf Storage= 7,978 cf

Plug-Flow detention time= 1.5 min calculated for 1,061,930 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (907.0 - 905.5)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=82.80 cfs @ 13.17 hrs HW=47.25' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 82.80 cfs @ 6.33 fps)

Existing Conditions

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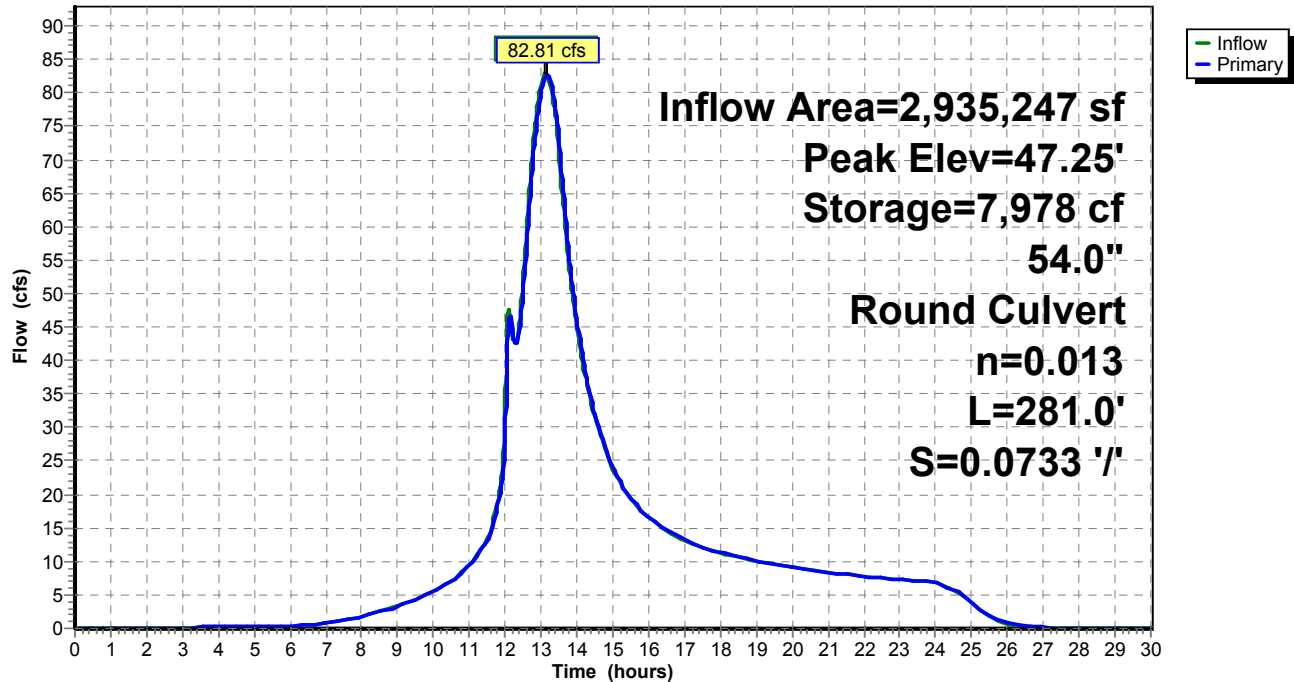
NORWALK 24-hr S1 50 year Rainfall=7.34"

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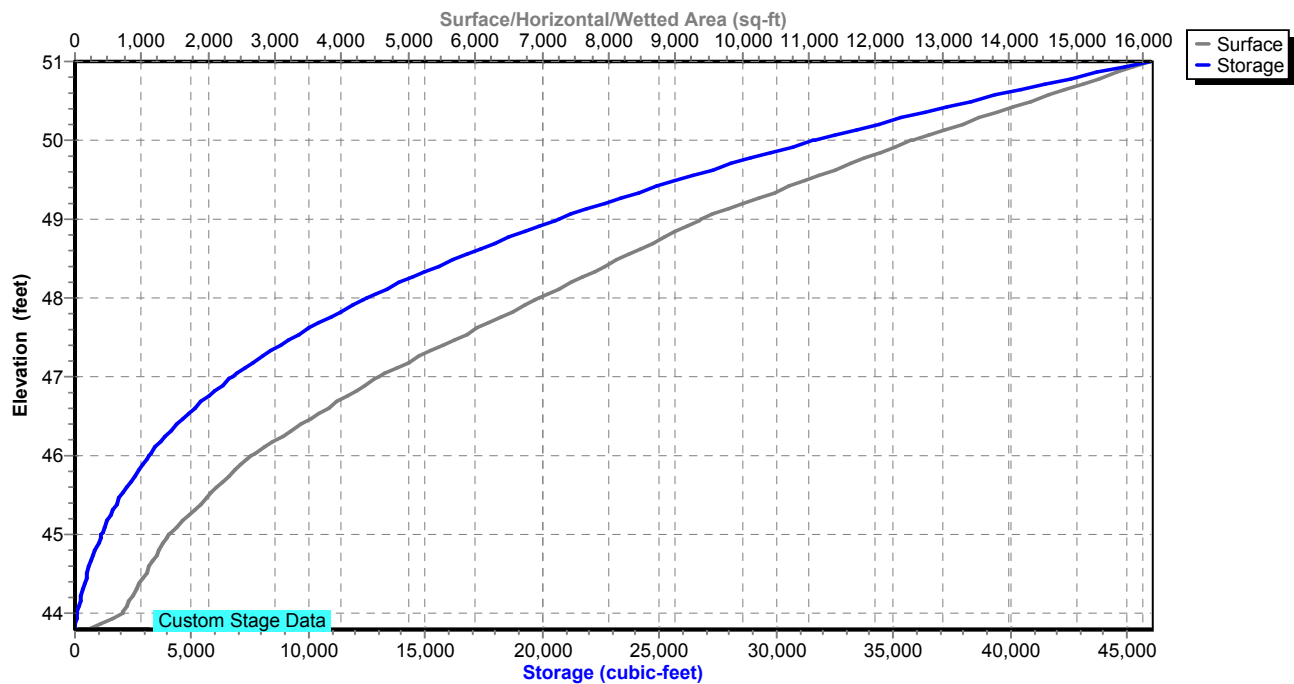
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 4.23" for 50 year event
 Inflow = 80.53 cfs @ 13.07 hrs, Volume= 935,560 cf
 Outflow = 79.72 cfs @ 13.13 hrs, Volume= 935,560 cf, Atten= 1%, Lag= 4.0 min
 Primary = 79.72 cfs @ 13.13 hrs, Volume= 935,560 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 68.99' @ 13.13 hrs Surf.Area= 1,997 sf Storage= 4,806 cf

Plug-Flow detention time= 0.3 min calculated for 935,249 cf (100% of inflow)
 Center-of-Mass det. time= 0.3 min (918.3 - 918.0)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=79.72 cfs @ 13.13 hrs HW=68.99' (Free Discharge)

↑**1=Culvert** (Inlet Controls 79.72 cfs @ 11.28 hrs)

Existing Conditions

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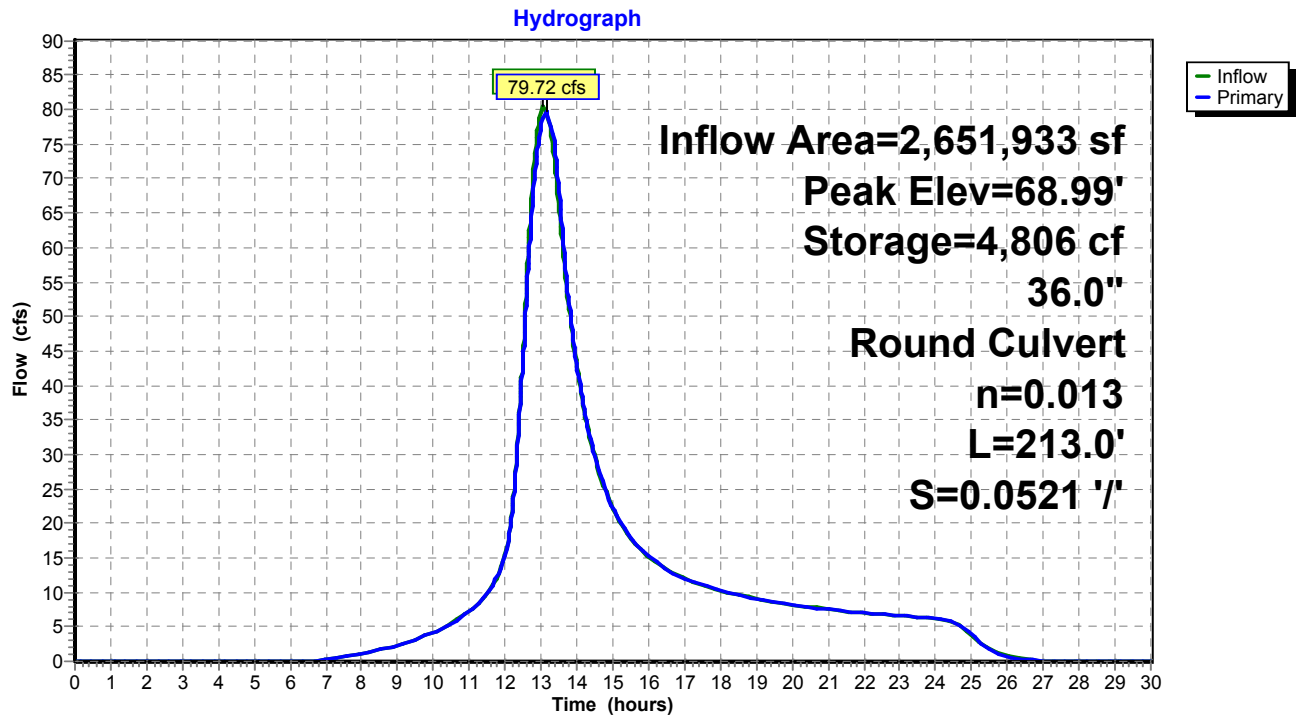
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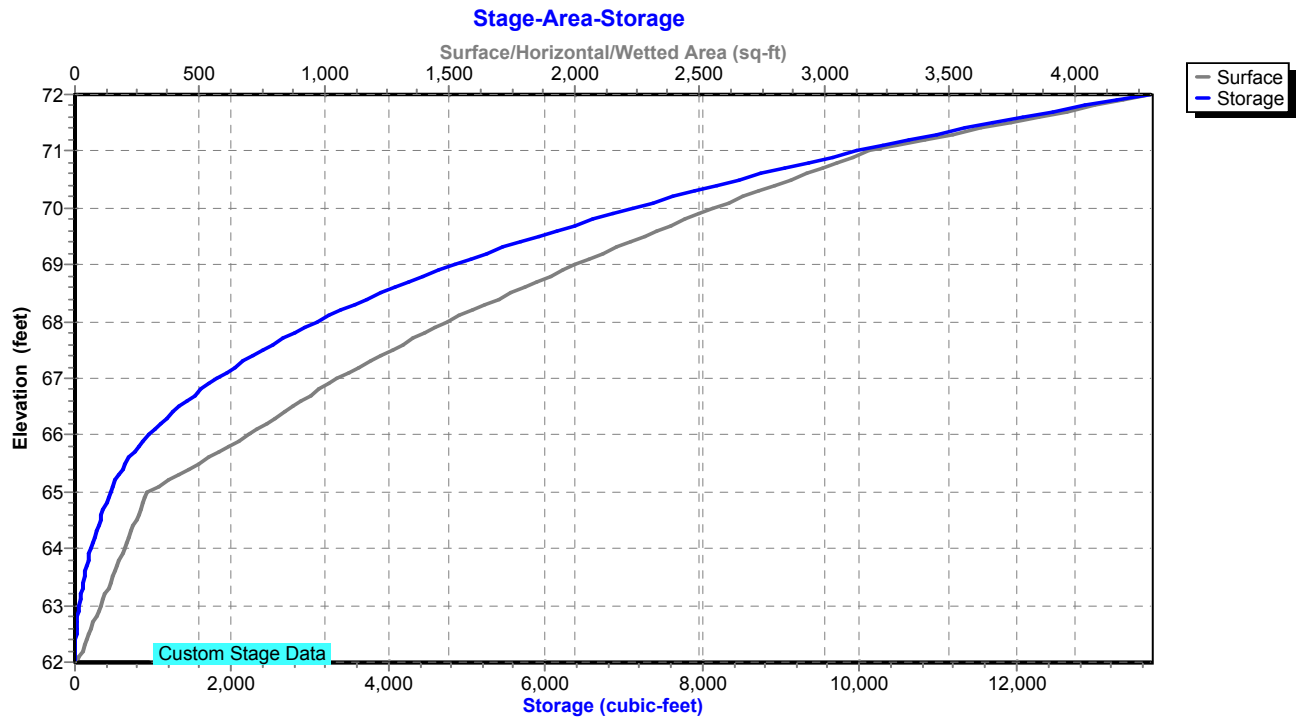
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Pond 18P: DET 4 Culvert



Pond 18P: DET 4 Culvert



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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 4.23" for 50 year event
 Inflow = 23.87 cfs @ 12.52 hrs, Volume= 188,096 cf
 Outflow = 24.57 cfs @ 12.52 hrs, Volume= 188,096 cf, Atten= 0%, Lag= 0.0 min
 Primary = 24.57 cfs @ 12.52 hrs, Volume= 188,096 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 40.64' @ 12.52 hrs Surf.Area= 1,750 sf Storage= 1,591 cf

Plug-Flow detention time= 0.6 min calculated for 188,033 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (881.6 - 881.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=24.55 cfs @ 12.52 hrs HW=40.63' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 24.55 cfs @ 7.81 fps)

Existing Conditions

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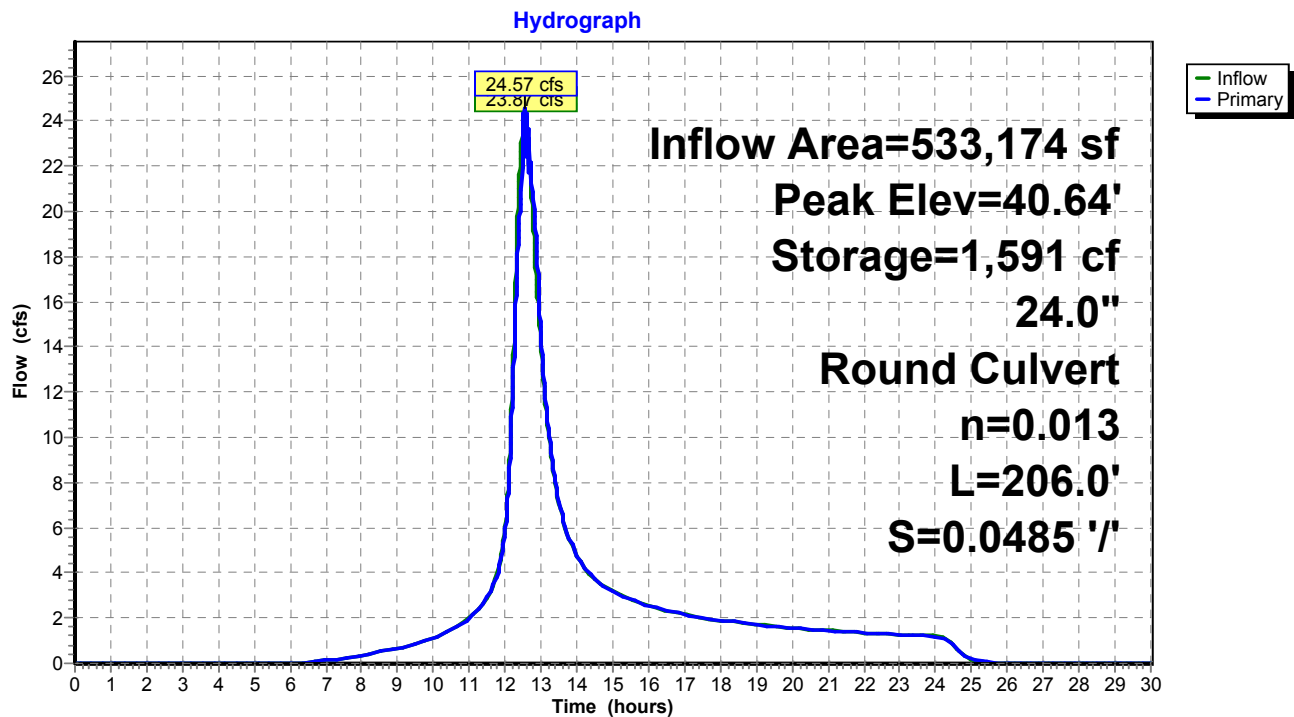
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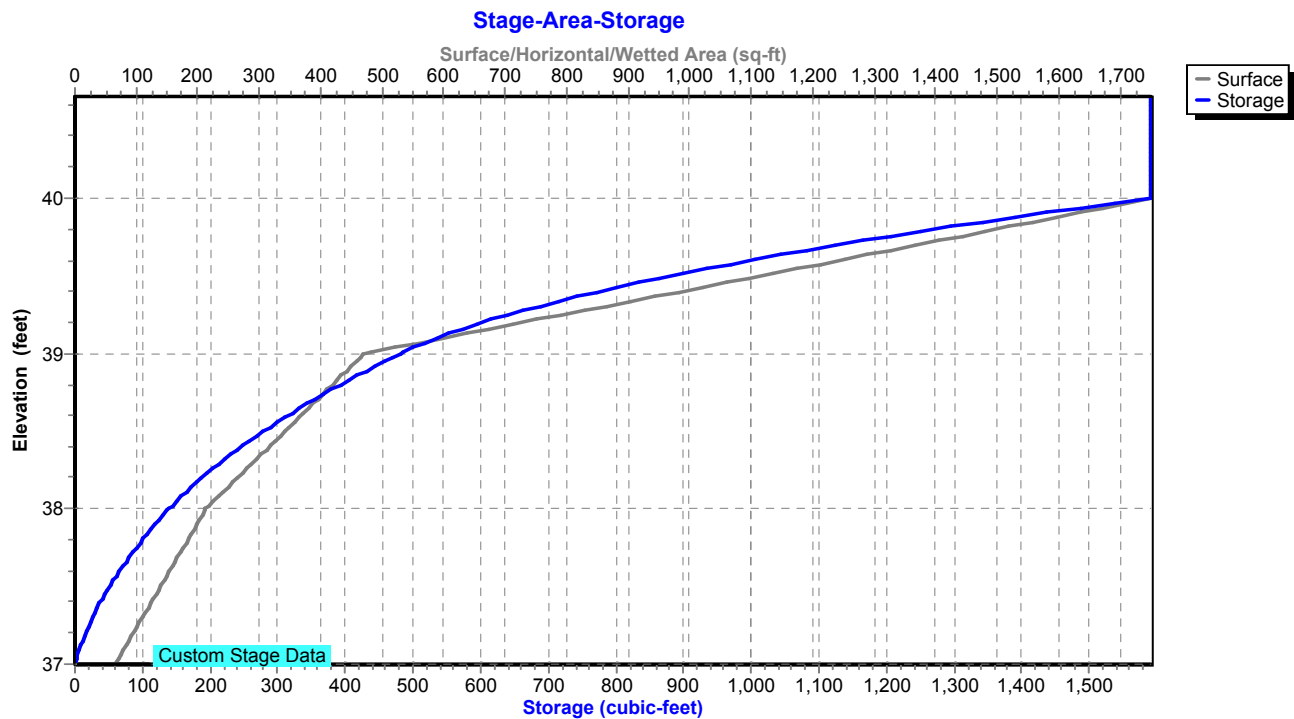
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 4.79" for 50 year event
 Inflow = 54.17 cfs @ 12.74 hrs, Volume= 514,811 cf
 Outflow = 43.66 cfs @ 13.07 hrs, Volume= 514,811 cf, Atten= 19%, Lag= 19.8 min
 Primary = 43.66 cfs @ 13.07 hrs, Volume= 514,811 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 39.46' @ 13.07 hrs Surf.Area= 18,393 sf Storage= 35,833 cf

Plug-Flow detention time= 6.4 min calculated for 514,811 cf (100% of inflow)
 Center-of-Mass det. time= 6.3 min (886.5 - 880.2)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=43.66 cfs @ 13.07 hrs HW=39.46' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 43.66 cfs @ 8.89 fps)

Existing Conditions

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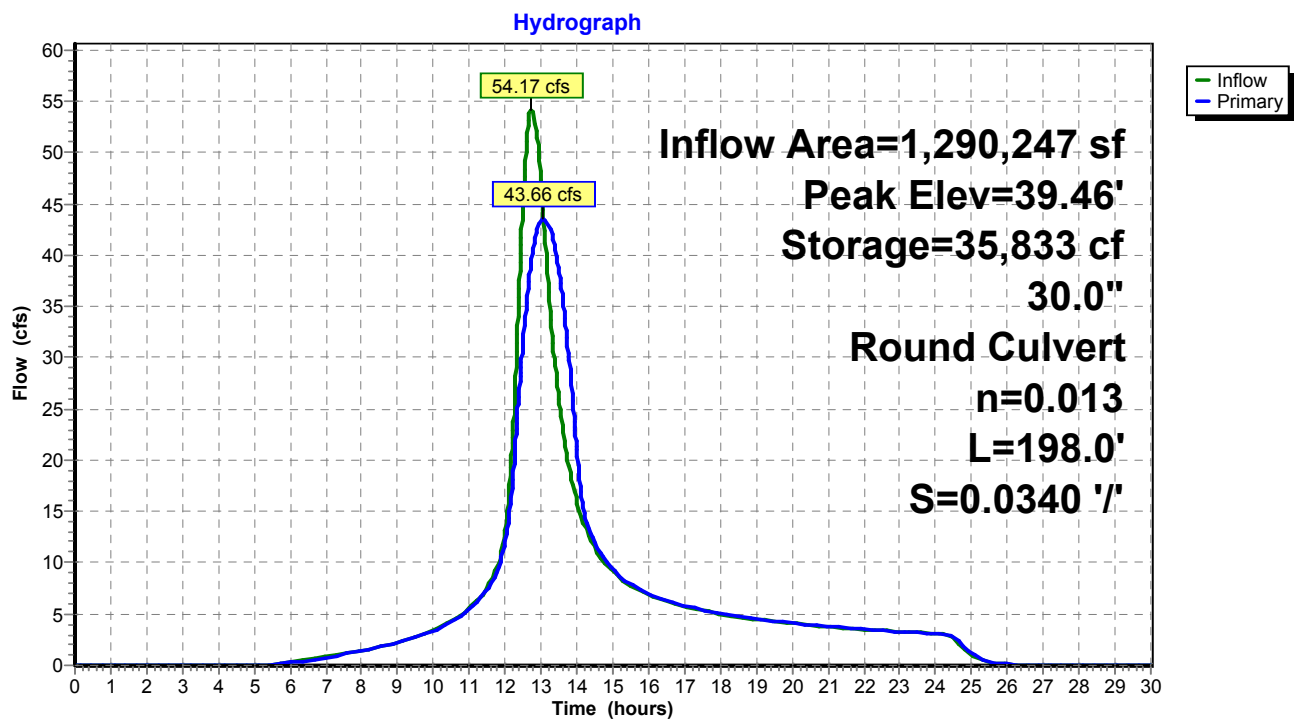
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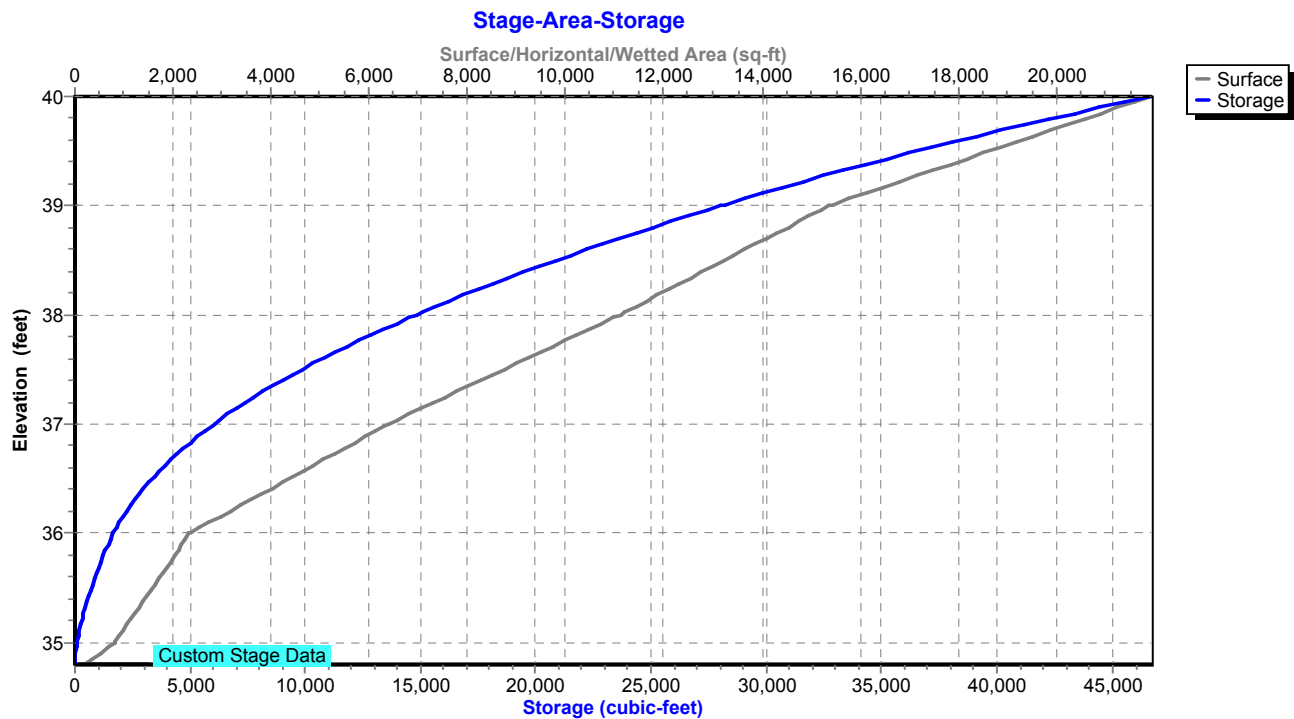
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Pond 22P: DET 2 Culvert



Pond 22P: DET 2 Culvert



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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 4.34" for 50 year event
 Inflow = 19.82 cfs @ 12.22 hrs, Volume= 99,961 cf
 Outflow = 18.82 cfs @ 12.27 hrs, Volume= 99,961 cf, Atten= 5%, Lag= 3.0 min
 Primary = 18.82 cfs @ 12.27 hrs, Volume= 99,961 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 45.05' @ 12.27 hrs Surf.Area= 1,681 sf Storage= 1,605 cf

Plug-Flow detention time= 0.7 min calculated for 99,928 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (856.2 - 855.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=18.82 cfs @ 12.27 hrs HW=45.05' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 18.82 cfs @ 5.99 fps)

Existing Conditions

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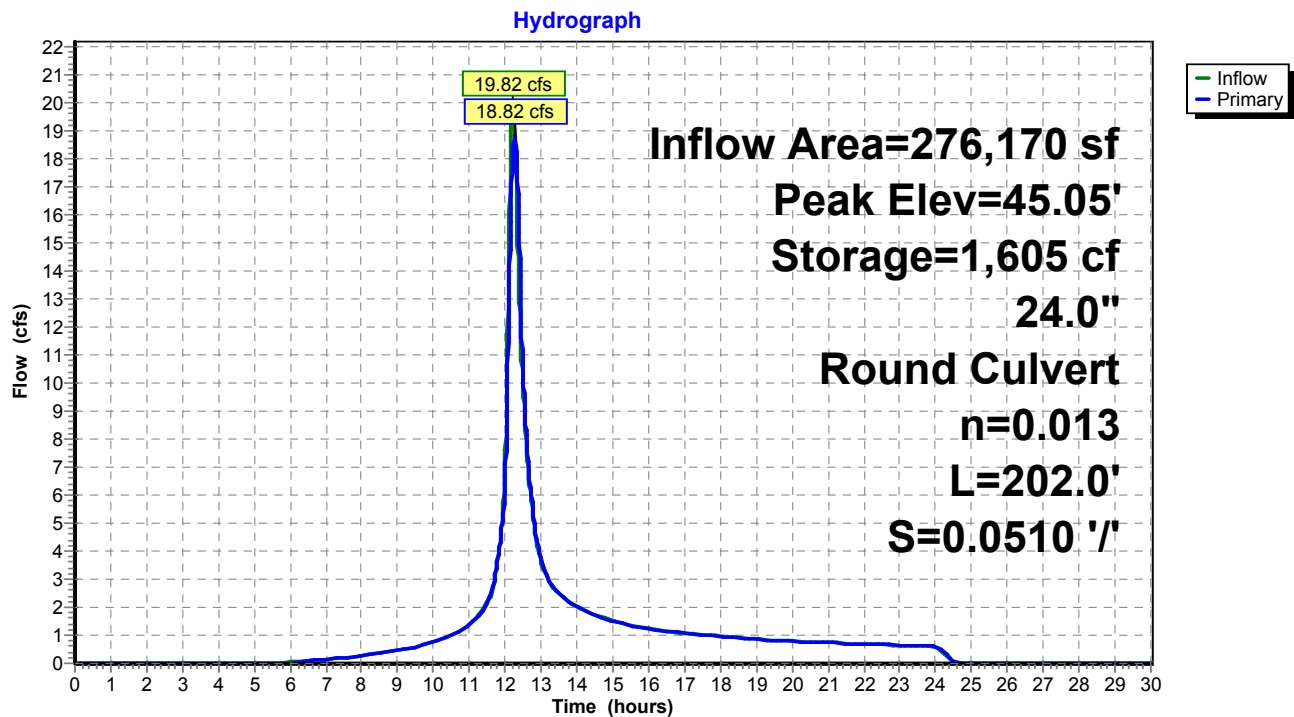
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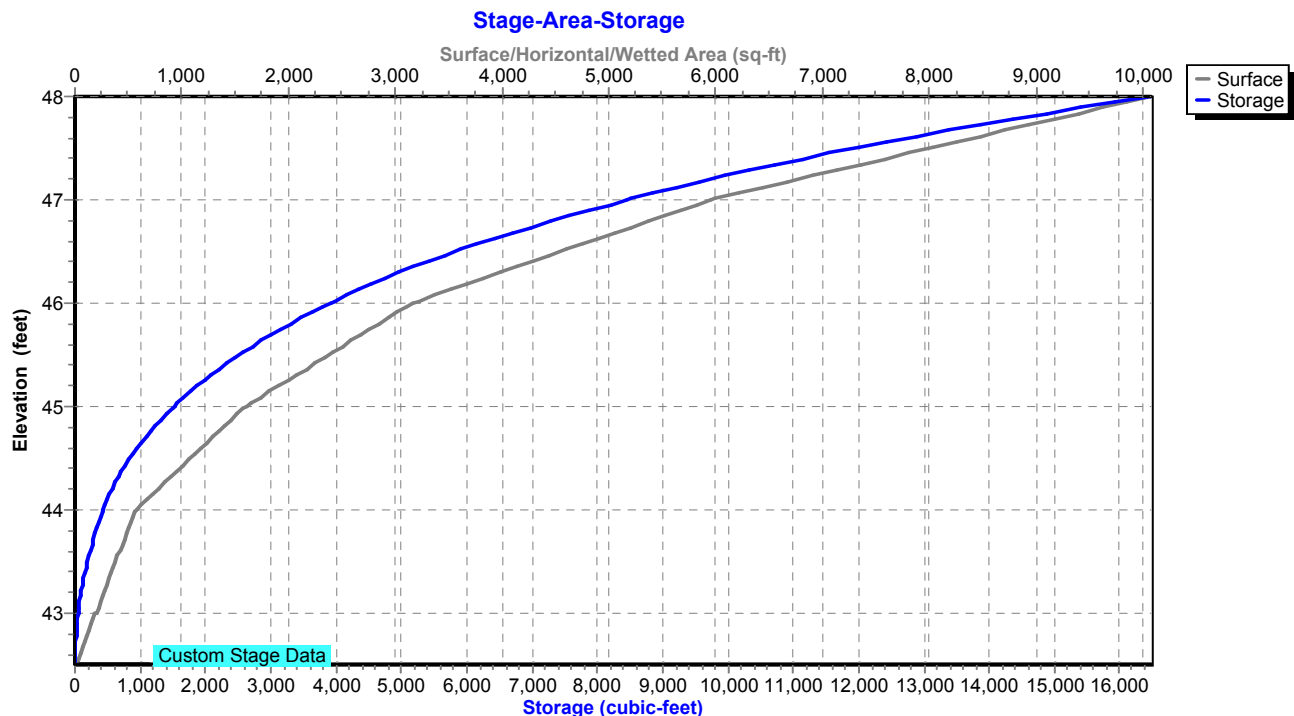
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 43.13" for 50 year event
 Inflow = 283.34 cfs @ 12.24 hrs, Volume= 1,800,329 cf
 Outflow = 58.61 cfs @ 14.15 hrs, Volume= 1,800,384 cf, Atten= 79%, Lag= 114.6 min
 Primary = 58.61 cfs @ 14.15 hrs, Volume= 1,800,384 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 13.86' @ 14.15 hrs Storage= 1,066,992 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 207.1 min (1,001.0 - 793.9)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=58.61 cfs @ 14.15 hrs HW=13.86' (Free Discharge)↑**1=Culvert** (Barrel Controls 58.61 cfs @ 6.70 fps)

Existing Conditions

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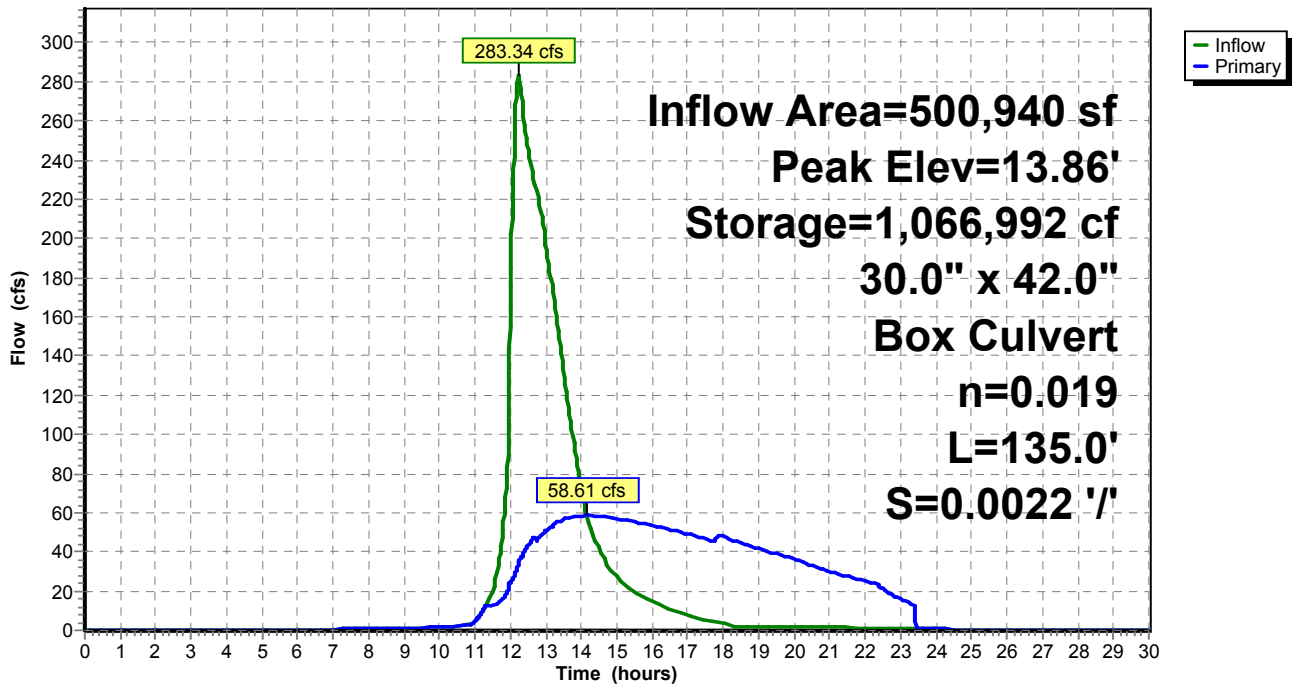
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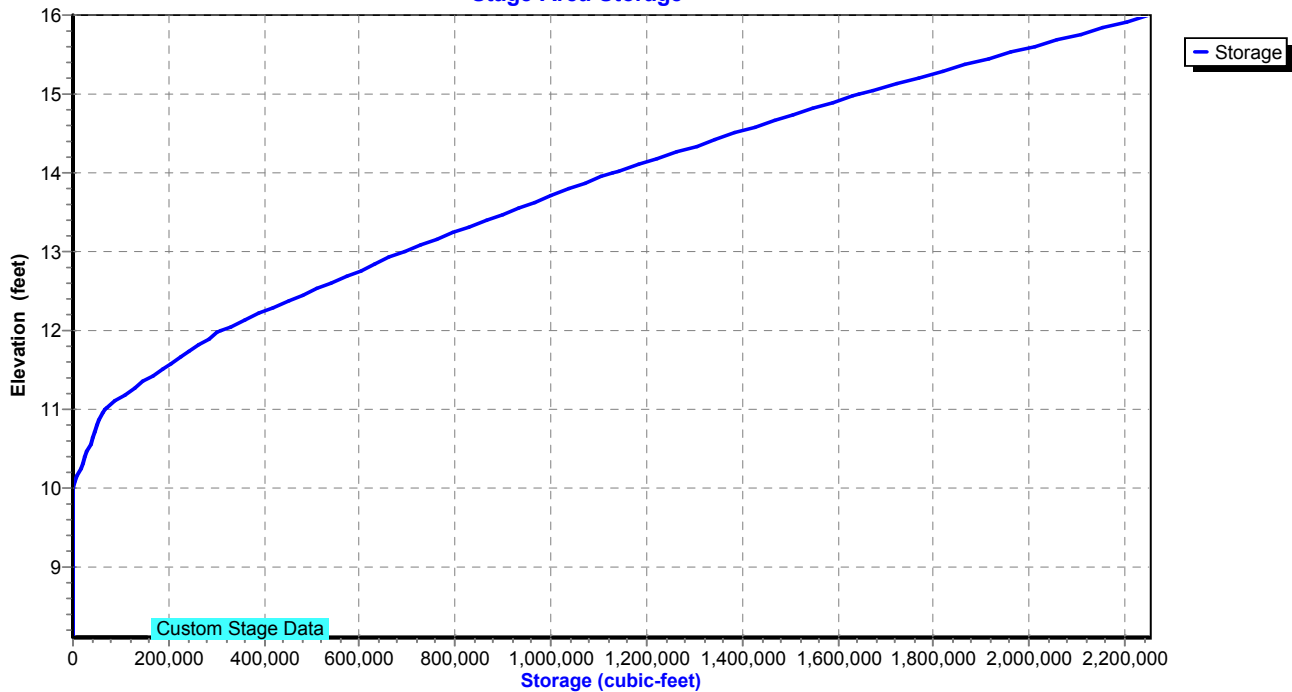
Pond 24P: RR Culvert 3

Hydrograph



Pond 24P: RR Culvert 3

Stage-Area-Storage



Existing Conditions

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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 4.52" for 50 year event
Inflow = 43.85 cfs @ 12.23 hrs, Volume= 292,573 cf
Outflow = 43.84 cfs @ 12.23 hrs, Volume= 292,555 cf, Atten= 0%, Lag= 0.1 min
Primary = 43.84 cfs @ 12.23 hrs, Volume= 292,555 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 20.11' @ 12.23 hrs Surf.Area= 2,278 sf Storage= 2,642 cf

Plug-Flow detention time= 0.8 min calculated for 292,555 cf (100% of inflow)
Center-of-Mass det. time= 0.7 min (881.6 - 880.9)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=43.44 cfs @ 12.23 hrs HW=20.11' (Free Discharge)

1=Culvert (Inlet Controls 12.38 cfs @ 10.08 fps)

2=Custom Weir/Orifice (Weir Controls 31.06 cfs @ 1.39 fps)

Existing Conditions

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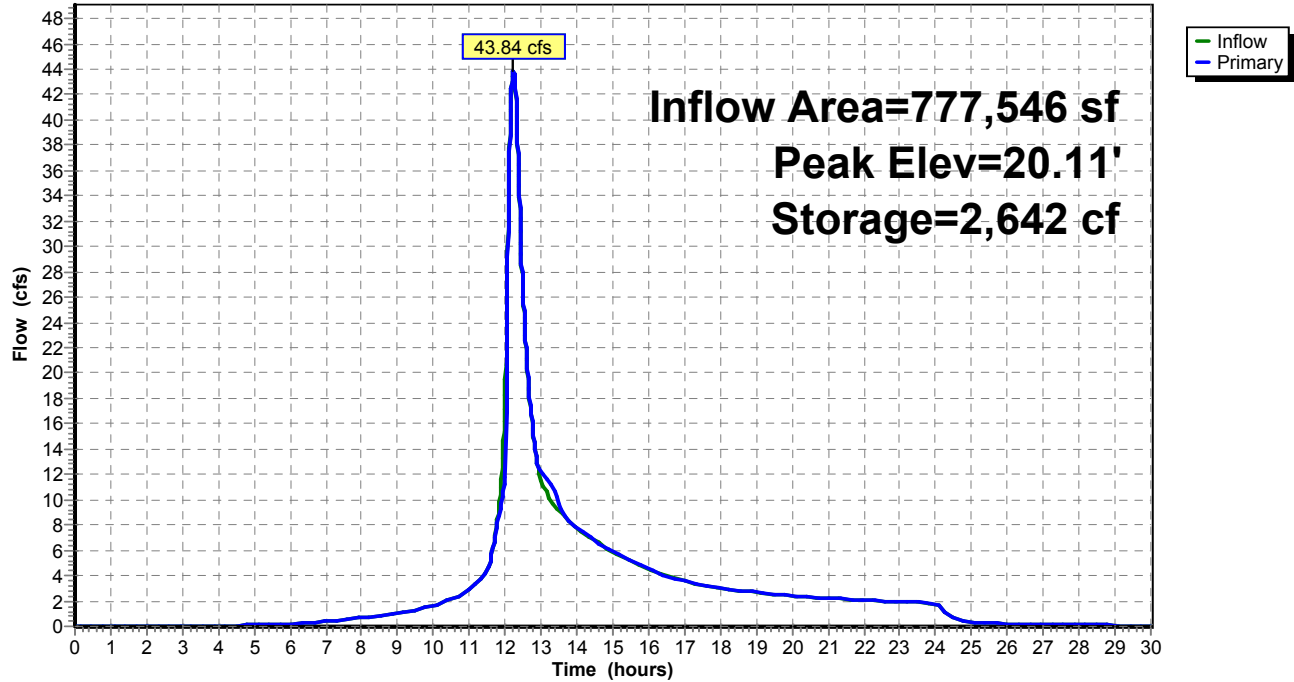
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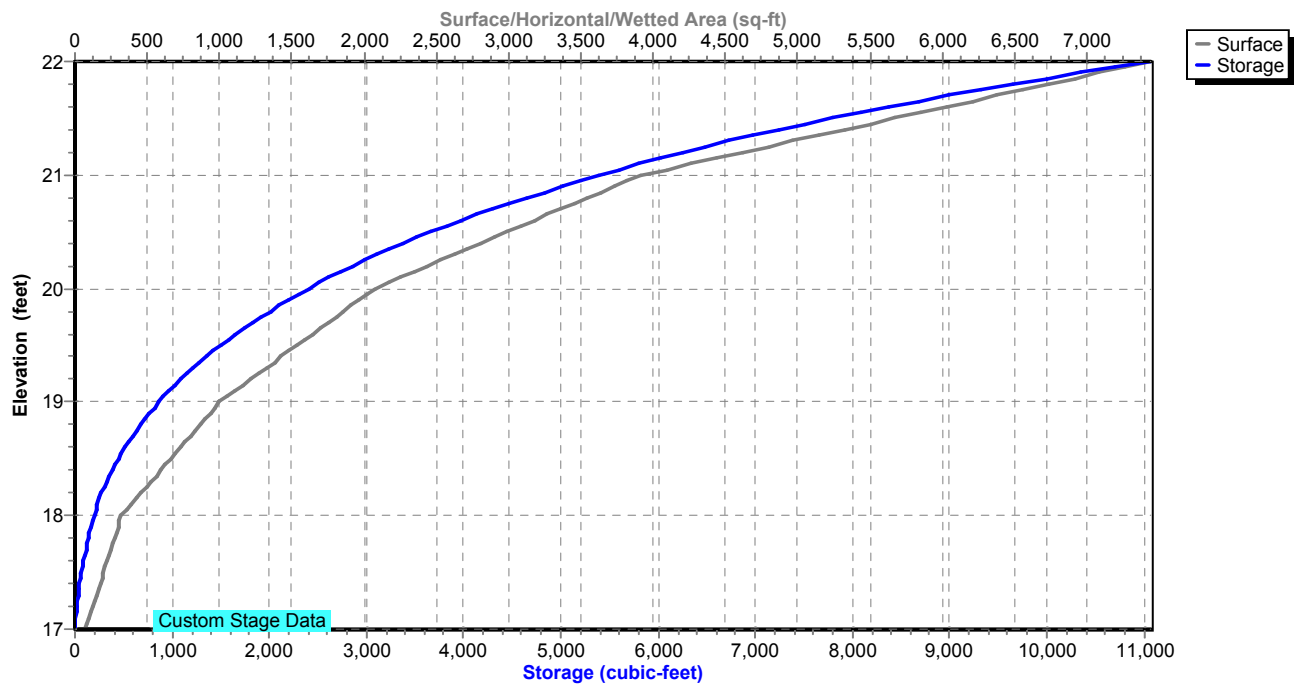
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 4.77" for 50 year event
Inflow = 71.25 cfs @ 12.60 hrs, Volume= 876,625 cf
Outflow = 70.56 cfs @ 12.62 hrs, Volume= 876,625 cf, Atten= 1%, Lag= 1.0 min
Primary = 70.56 cfs @ 12.62 hrs, Volume= 876,625 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 18.81' @ 12.62 hrs Surf.Area= 11,393 sf Storage= 11,088 cf

Plug-Flow detention time= 3.9 min calculated for 876,625 cf (100% of inflow)
Center-of-Mass det. time= 3.9 min (874.5 - 870.6)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=70.35 cfs @ 12.62 hrs HW=18.81' (Free Discharge)

1=Culvert (Inlet Controls 14.14 cfs @ 8.00 fps)

2=Custom Weir/Orifice (Weir Controls 56.20 cfs @ 2.14 fps)

Existing Conditions

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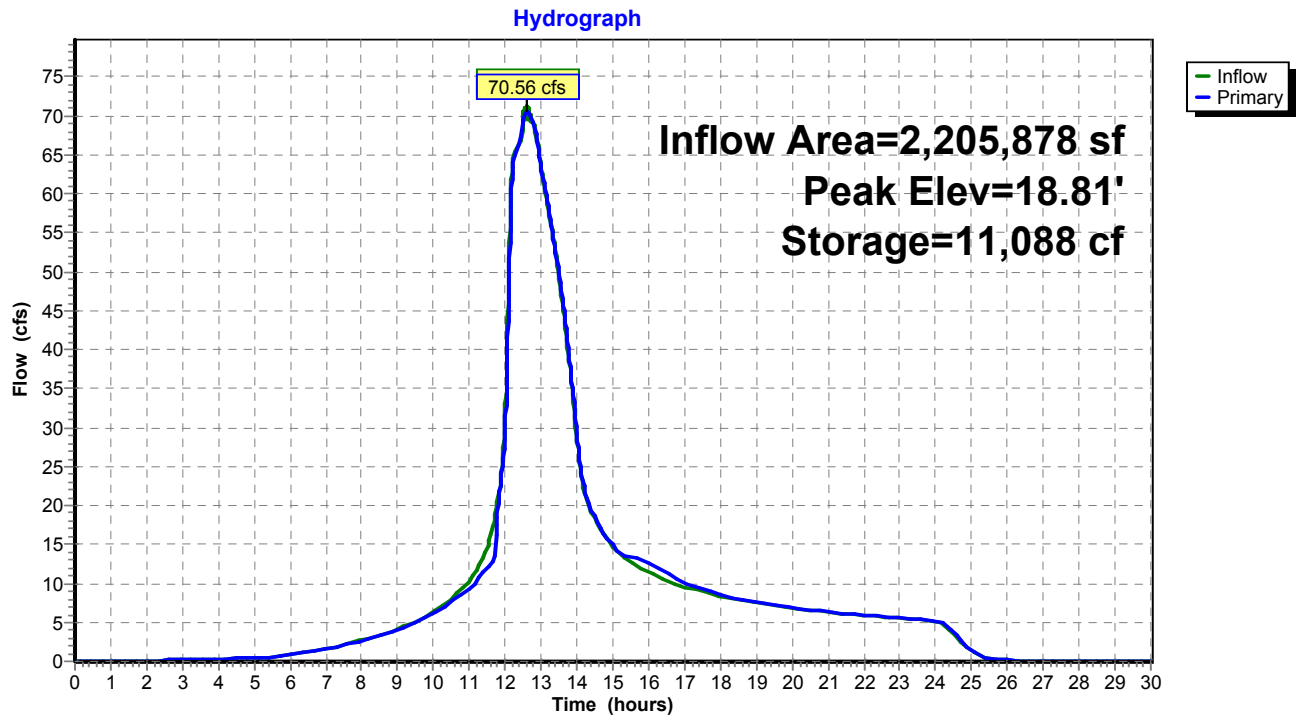
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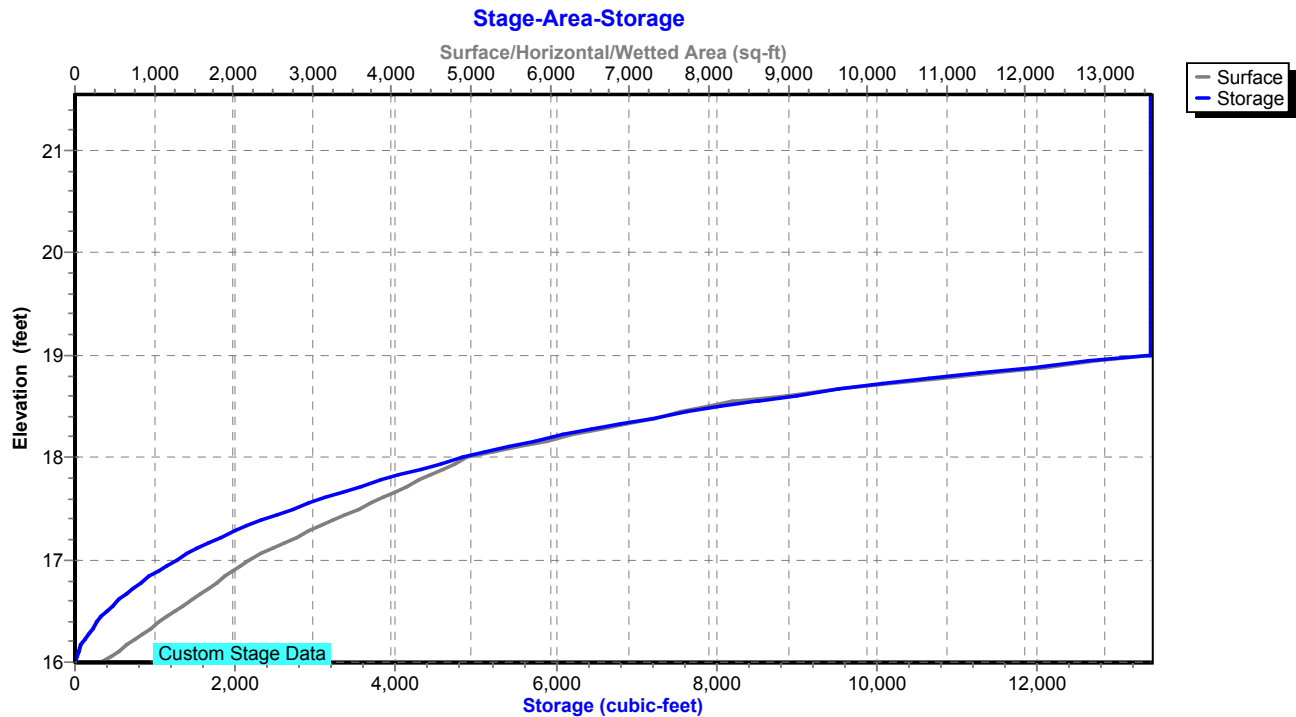
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 5.70" for 50 year event
Inflow = 31.87 cfs @ 12.04 hrs, Volume= 117,693 cf
Outflow = 7.75 cfs @ 12.38 hrs, Volume= 92,221 cf, Atten= 76%, Lag= 20.2 min
Primary = 7.75 cfs @ 12.38 hrs, Volume= 92,221 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 28.67' @ 12.38 hrs Surf.Area= 17,023 sf Storage= 55,735 cf

Plug-Flow detention time= 256.6 min calculated for 92,221 cf (78% of inflow)
Center-of-Mass det. time= 157.4 min (954.9 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.73 cfs @ 12.38 hrs HW=28.67' (Free Discharge)

1=Culvert (Passes 7.73 cfs of 16.86 cfs potential flow)
2=Orifice/Grate (Orifice Controls 4.89 cfs @ 6.23 fps)
3=Orifice/Grate (Weir Controls 2.84 cfs @ 1.36 fps)

Existing Conditions

Prepared by Tighe & Bond

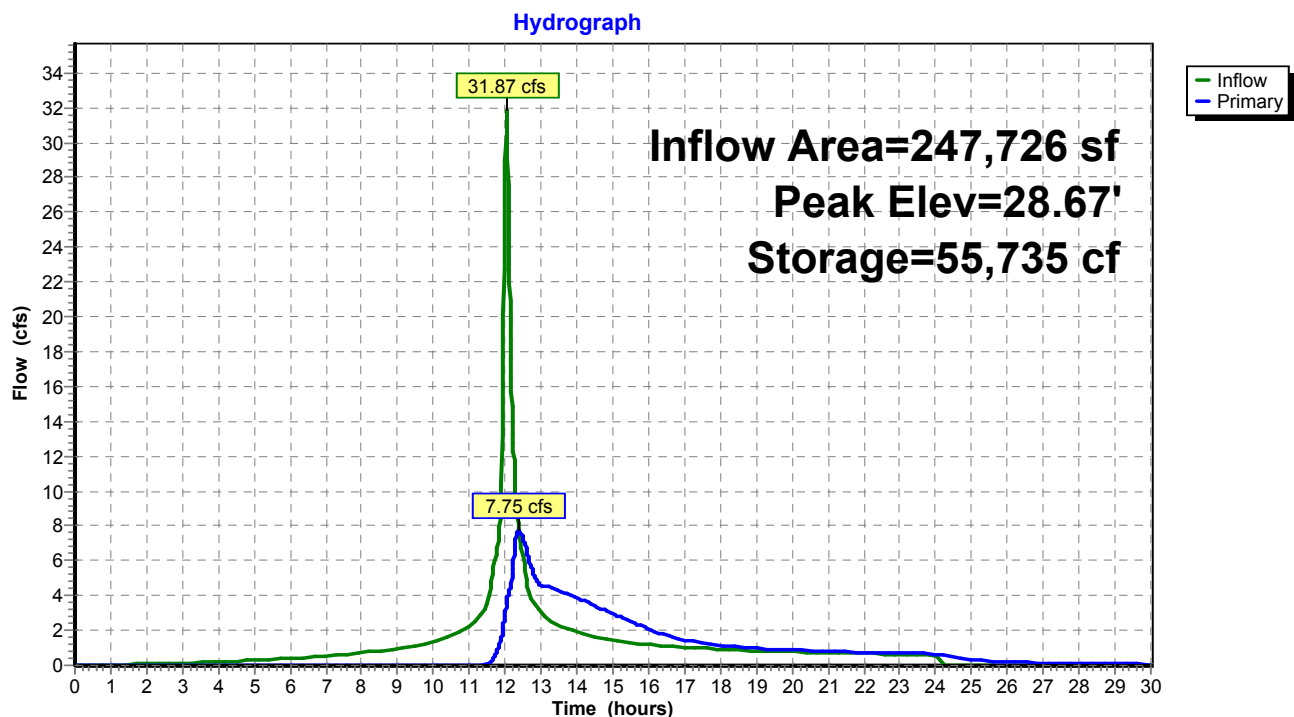
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NORWALK 24-hr S1 50 year Rainfall=7.34"

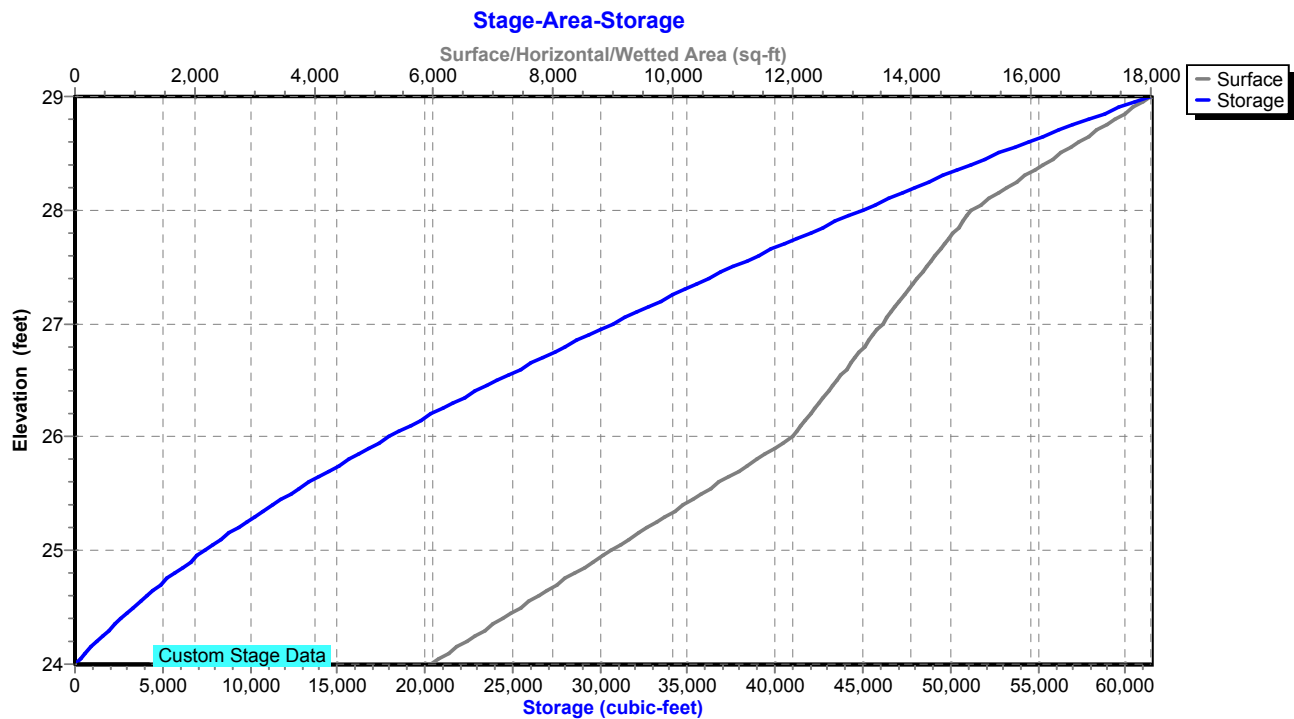
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



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Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 5.88" for 50 year event
Inflow = 28.31 cfs @ 12.04 hrs, Volume= 107,413 cf
Outflow = 28.31 cfs @ 12.04 hrs, Volume= 107,413 cf, Atten= 0%, Lag= 0.0 min
Primary = 28.31 cfs @ 12.04 hrs, Volume= 107,413 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.50' @ 12.04 hrs

Flood Elev= 51.00'

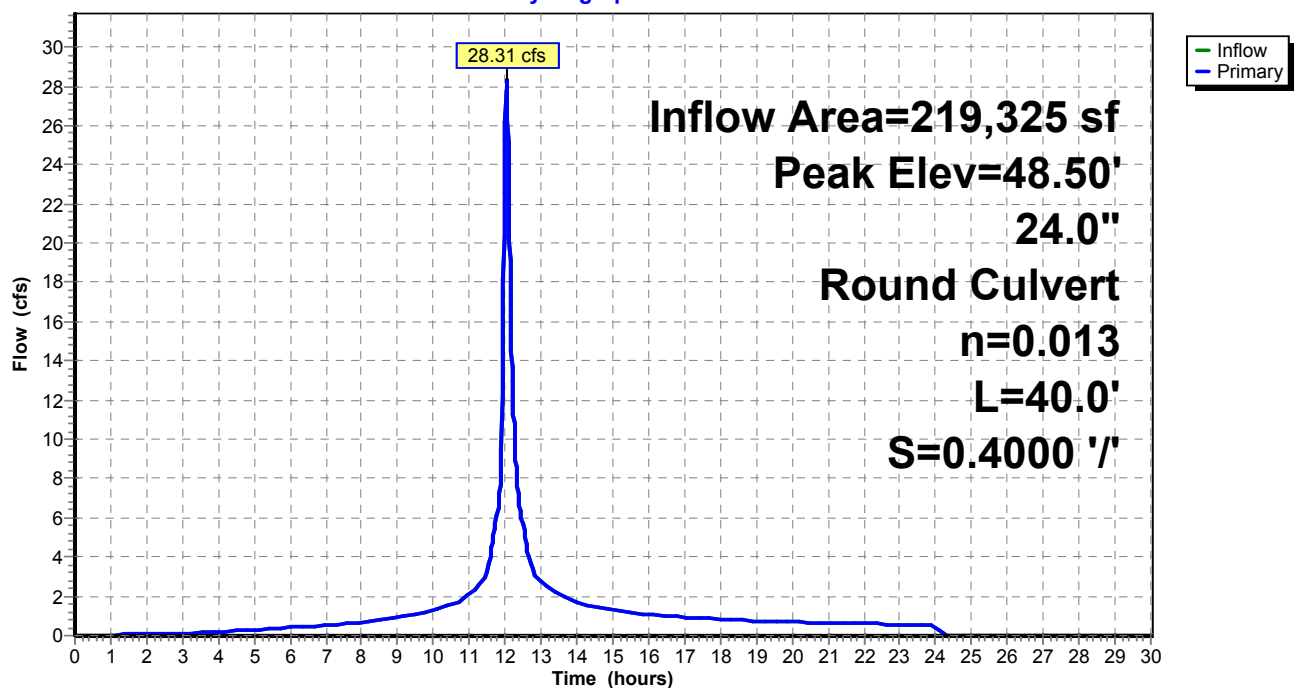
Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=28.28 cfs @ 12.04 hrs HW=48.49' (Free Discharge)

↑1=Culvert (Inlet Controls 28.28 cfs @ 9.00 fps)

Pond 51P: Manhole

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

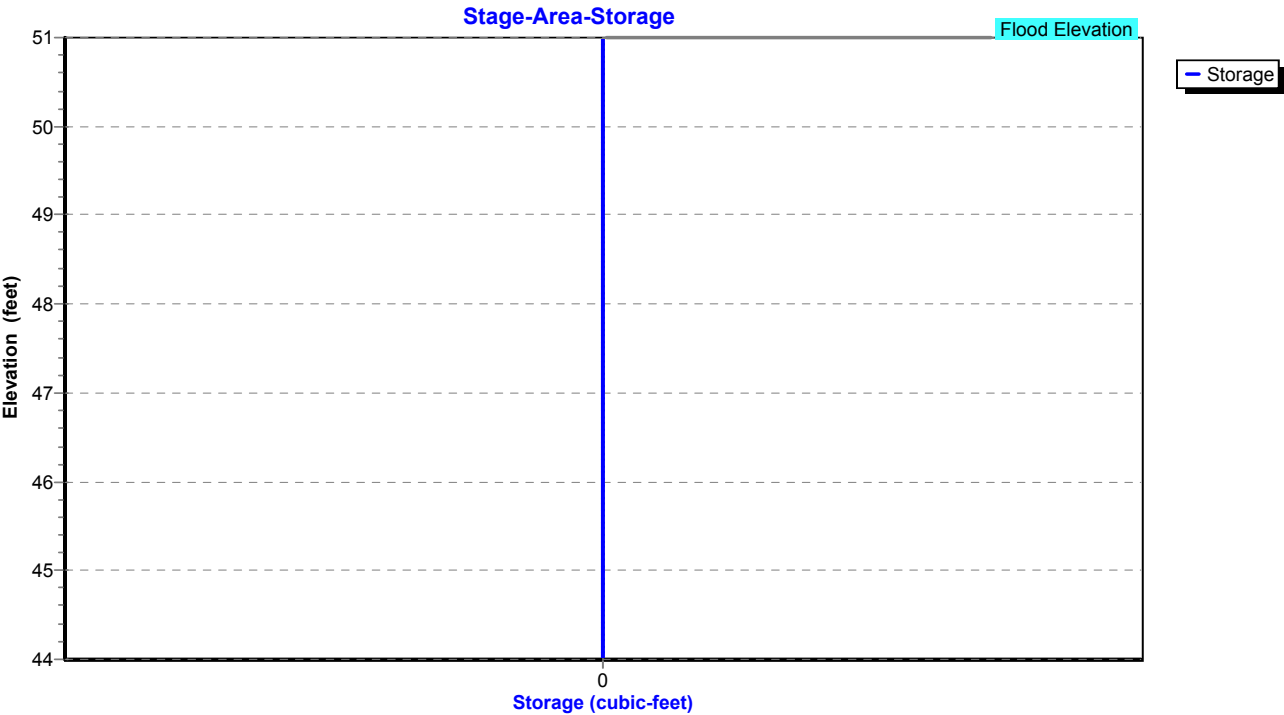
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Pond 51P: Manhole



Existing Conditions

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Summary for Pond 57P: CB-1

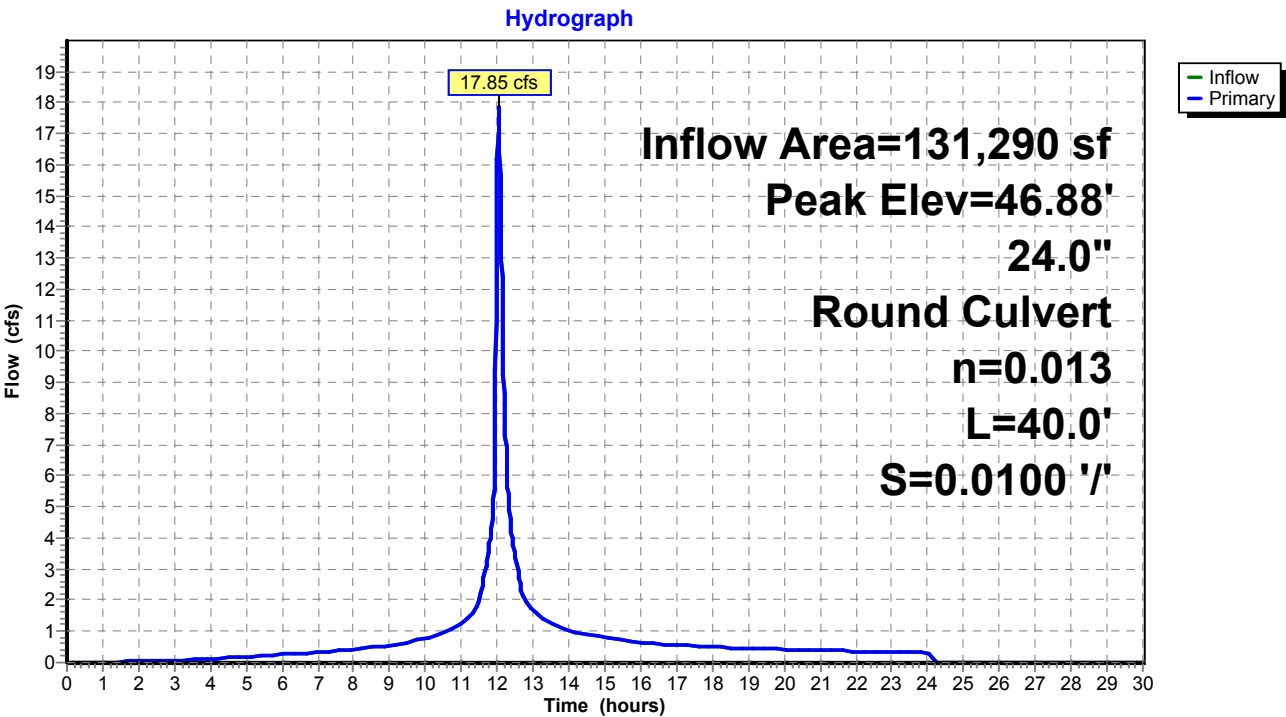
Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 5.95" for 50 year event
Inflow = 17.85 cfs @ 12.04 hrs, Volume= 65,130 cf
Outflow = 17.85 cfs @ 12.04 hrs, Volume= 65,130 cf, Atten= 0%, Lag= 0.0 min
Primary = 17.85 cfs @ 12.04 hrs, Volume= 65,130 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.88' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=17.84 cfs @ 12.04 hrs HW=46.87' (Free Discharge)
1=Culvert (Barrel Controls 17.84 cfs @ 5.87 fps)

Pond 57P: CB-1



Existing Conditions

Prepared by Tighe & Bond

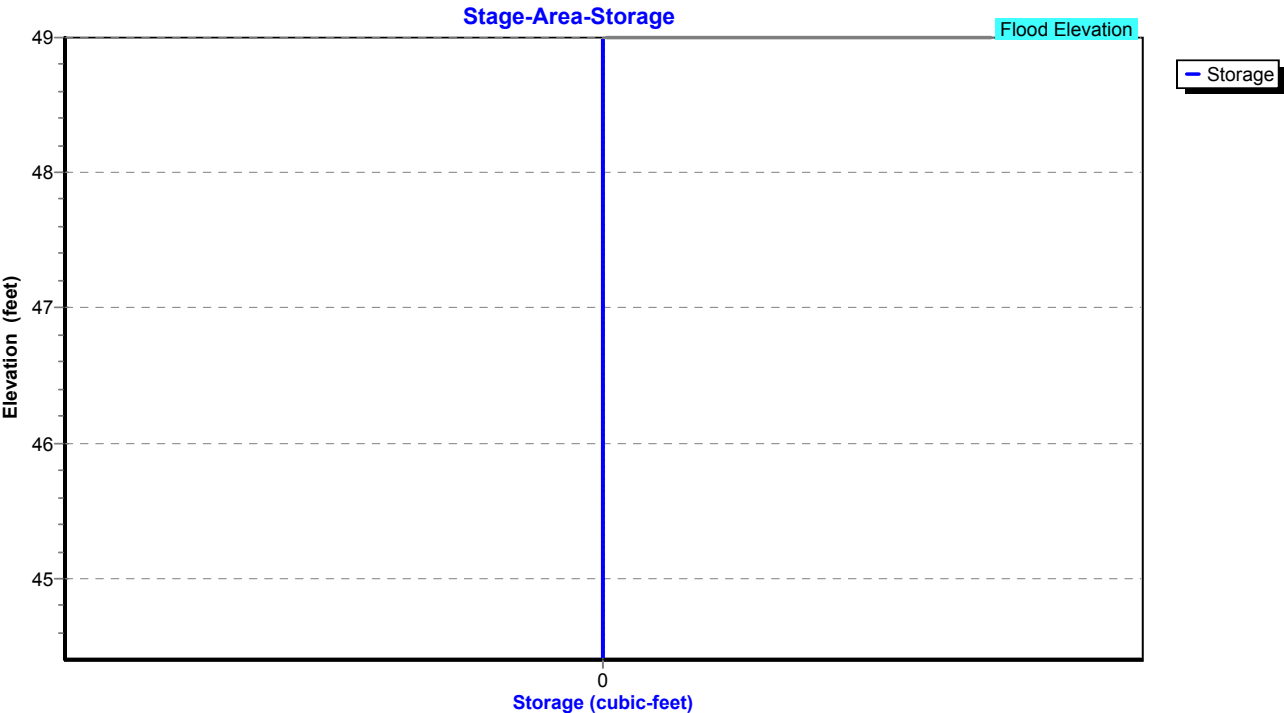
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Pond 57P: CB-1



Existing Conditions

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Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 5.84" for 50 year event
Inflow = 15.76 cfs @ 12.04 hrs, Volume= 58,115 cf
Outflow = 15.76 cfs @ 12.04 hrs, Volume= 58,115 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.76 cfs @ 12.04 hrs, Volume= 58,115 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 49.08' @ 12.04 hrs

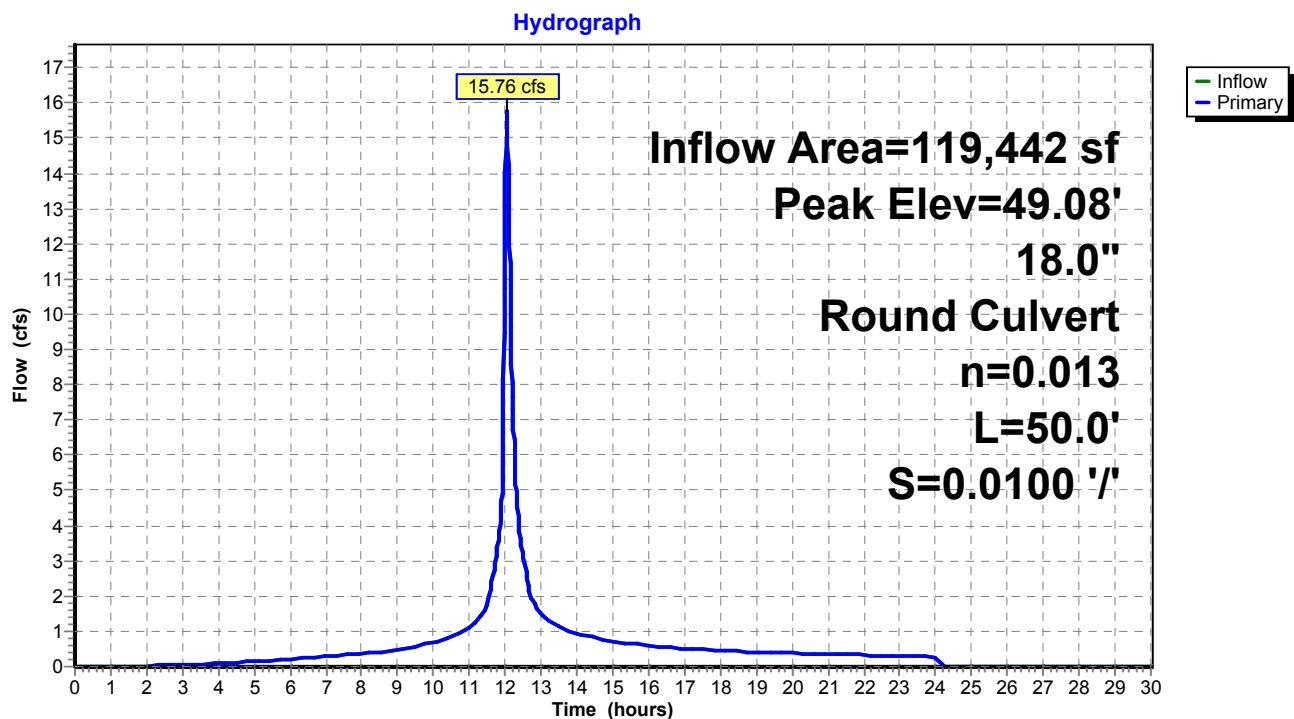
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=15.73 cfs @ 12.04 hrs HW=49.07' (Free Discharge)

↑1=Culvert (Inlet Controls 15.73 cfs @ 8.90 fps)

Pond 58P: Manhole



Existing Conditions

Prepared by Tighe & Bond

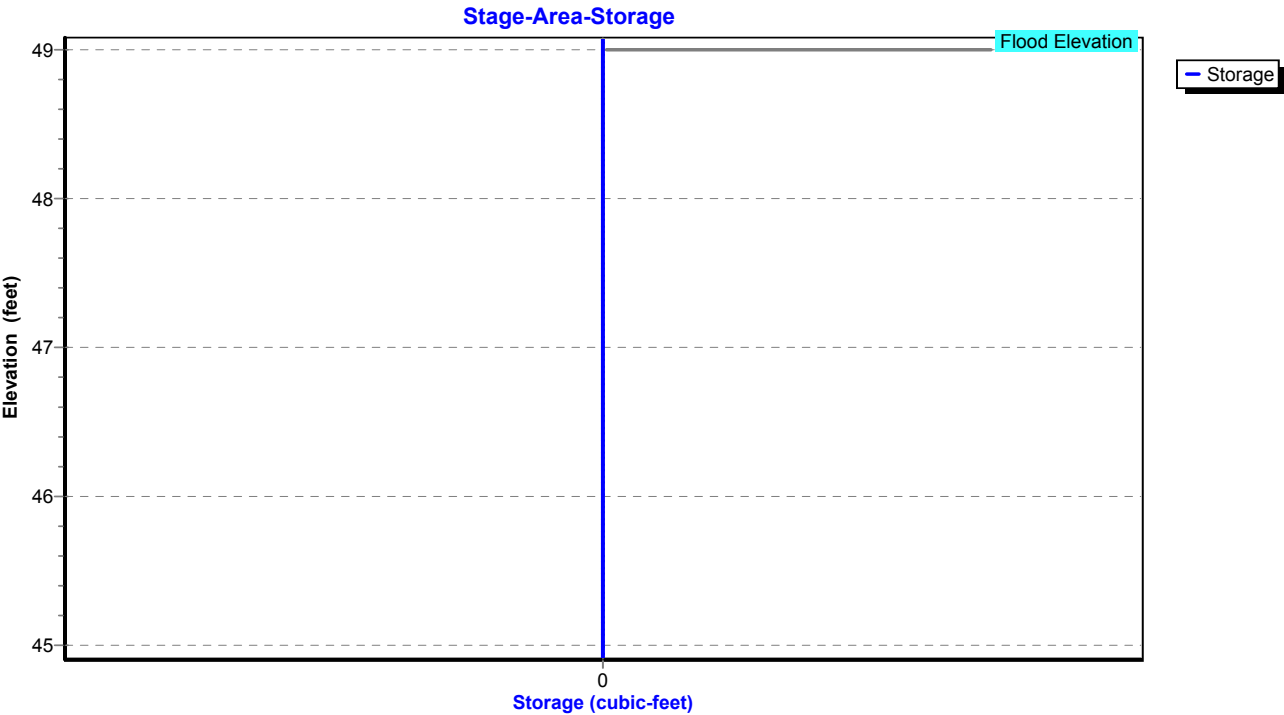
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Pond 58P: Manhole



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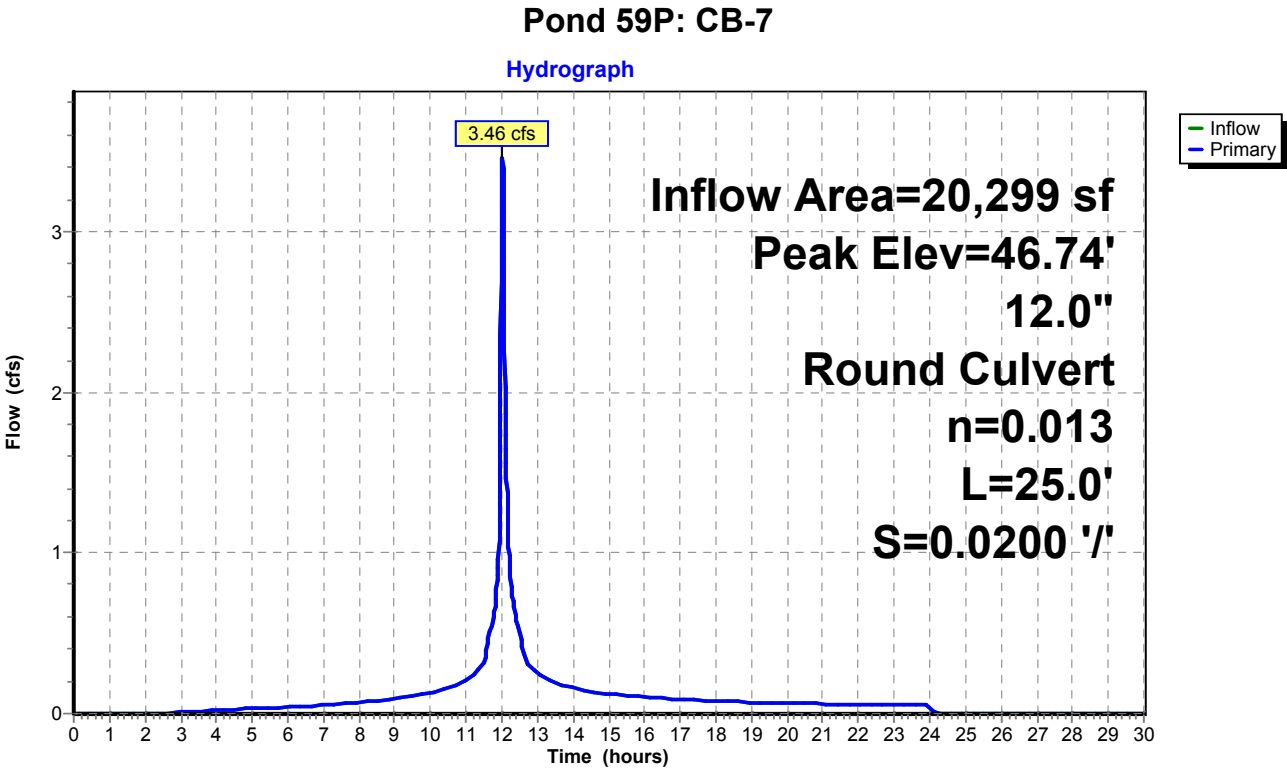
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 6.04" for 50 year event
Inflow = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf
Outflow = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.74' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.44 cfs @ 12.03 hrs HW=46.73' (Free Discharge)
1=Culvert (Inlet Controls 3.44 cfs @ 4.39 fps)



Existing Conditions

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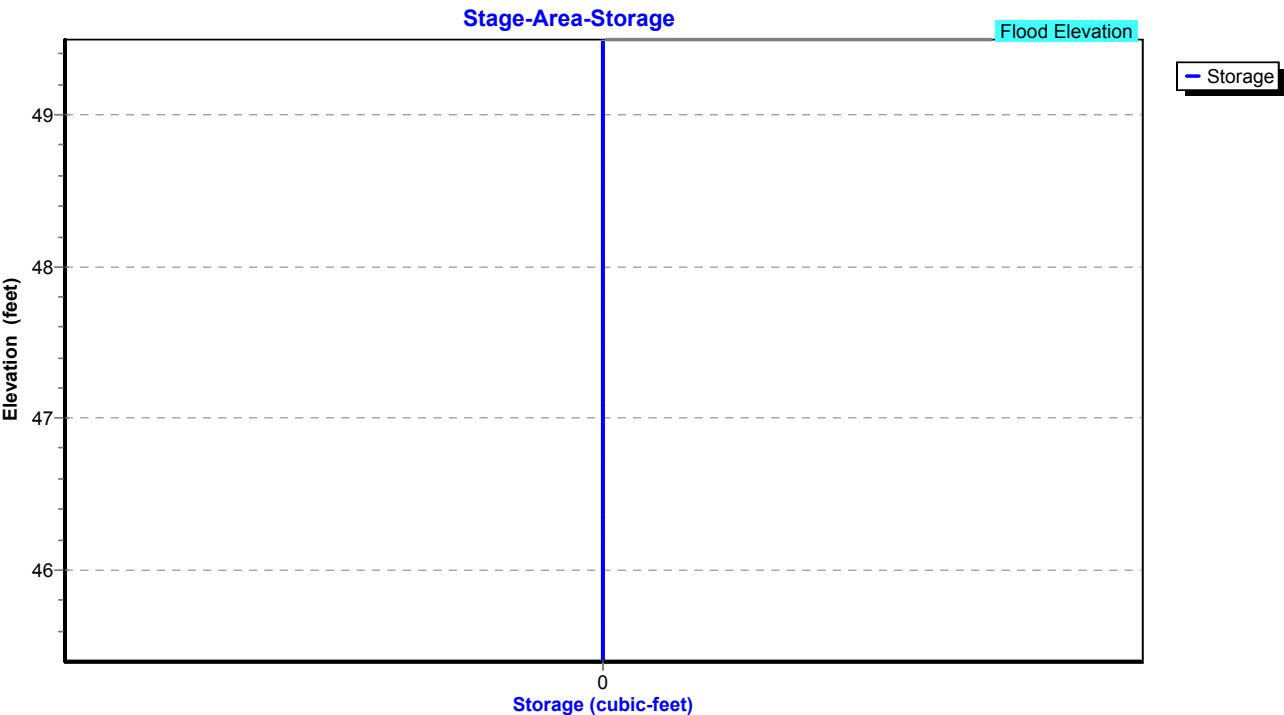
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Pond 59P: CB-7



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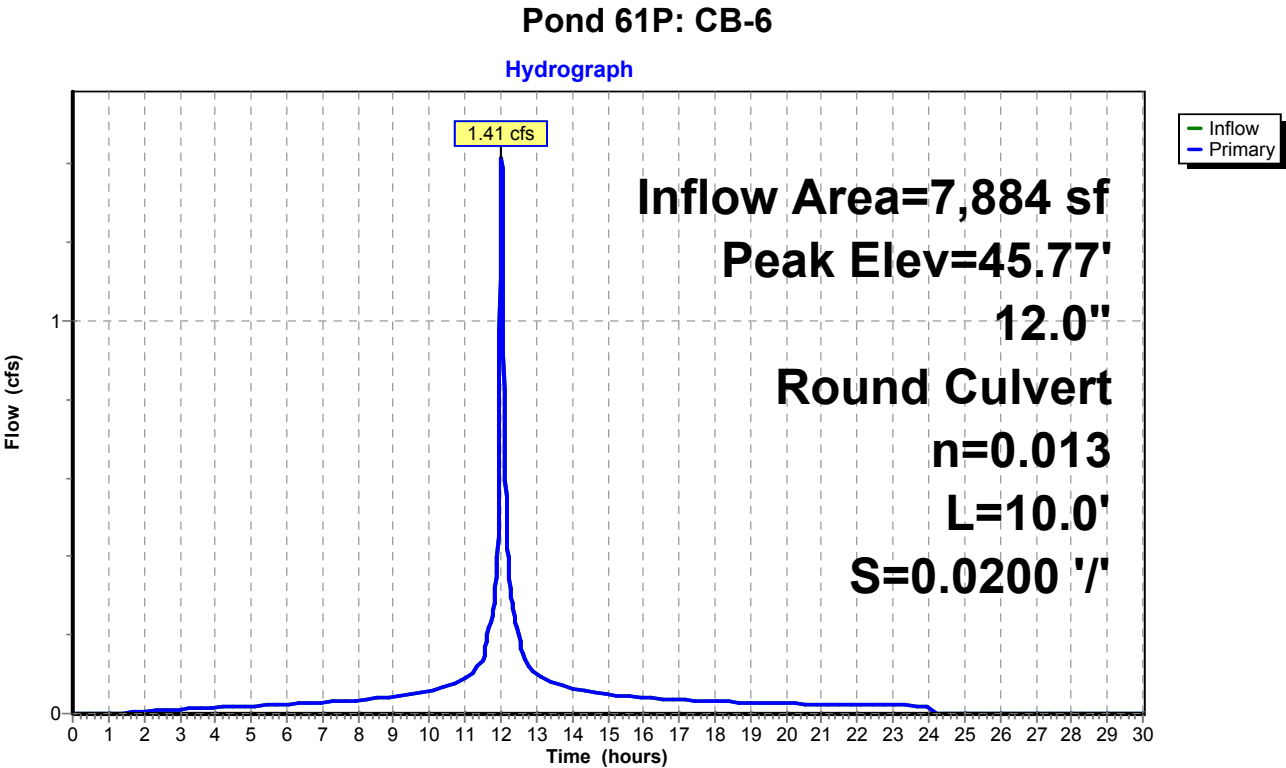
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 6.63" for 50 year event
Inflow = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf
Outflow = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.77' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.41 cfs @ 12.03 hrs HW=45.76' (Free Discharge)
1=Culvert (Barrel Controls 1.41 cfs @ 3.60 fps)



Existing Conditions

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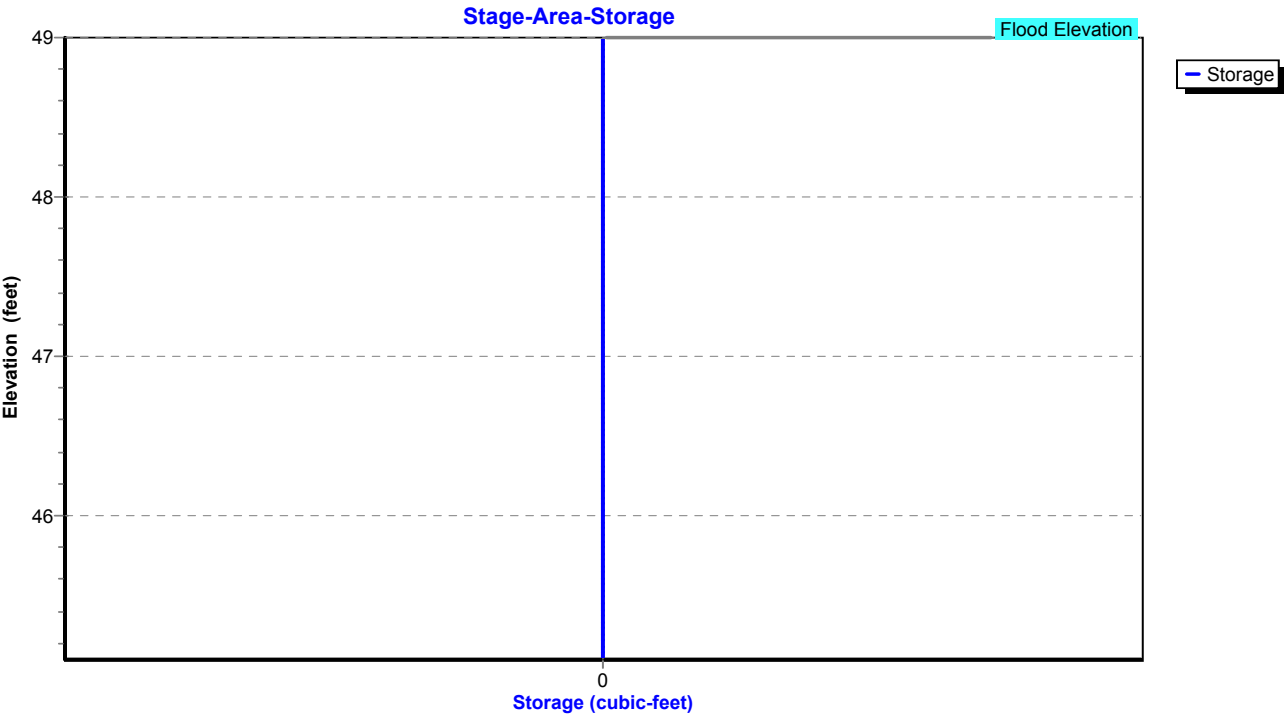
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Pond 61P: CB-6



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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 5.72" for 50 year event
Inflow = 11.31 cfs @ 12.06 hrs, Volume= 43,535 cf
Outflow = 11.31 cfs @ 12.06 hrs, Volume= 43,535 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.31 cfs @ 12.06 hrs, Volume= 43,535 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.13' @ 12.06 hrs

Flood Elev= 51.00'

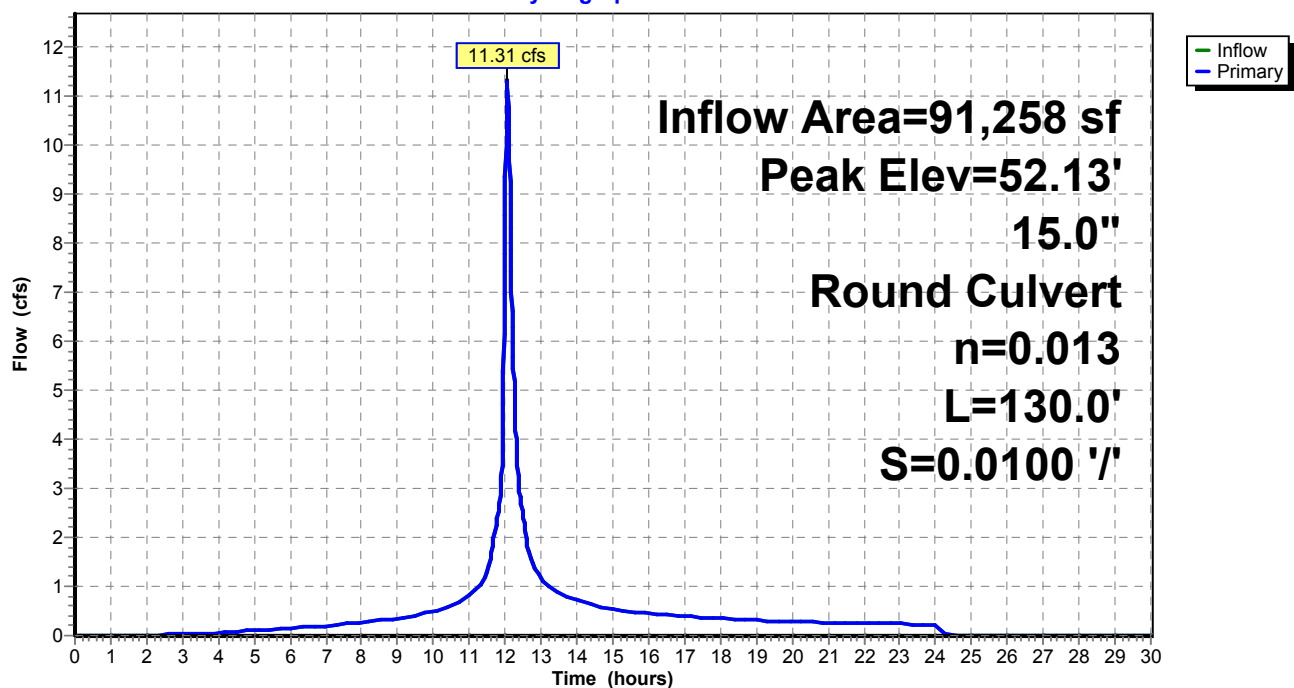
Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=11.30 cfs @ 12.06 hrs HW=52.12' (Free Discharge)

↑1=Culvert (Barrel Controls 11.30 cfs @ 9.21 fps)

Pond 63P: Manhole

Hydrograph



Existing Conditions

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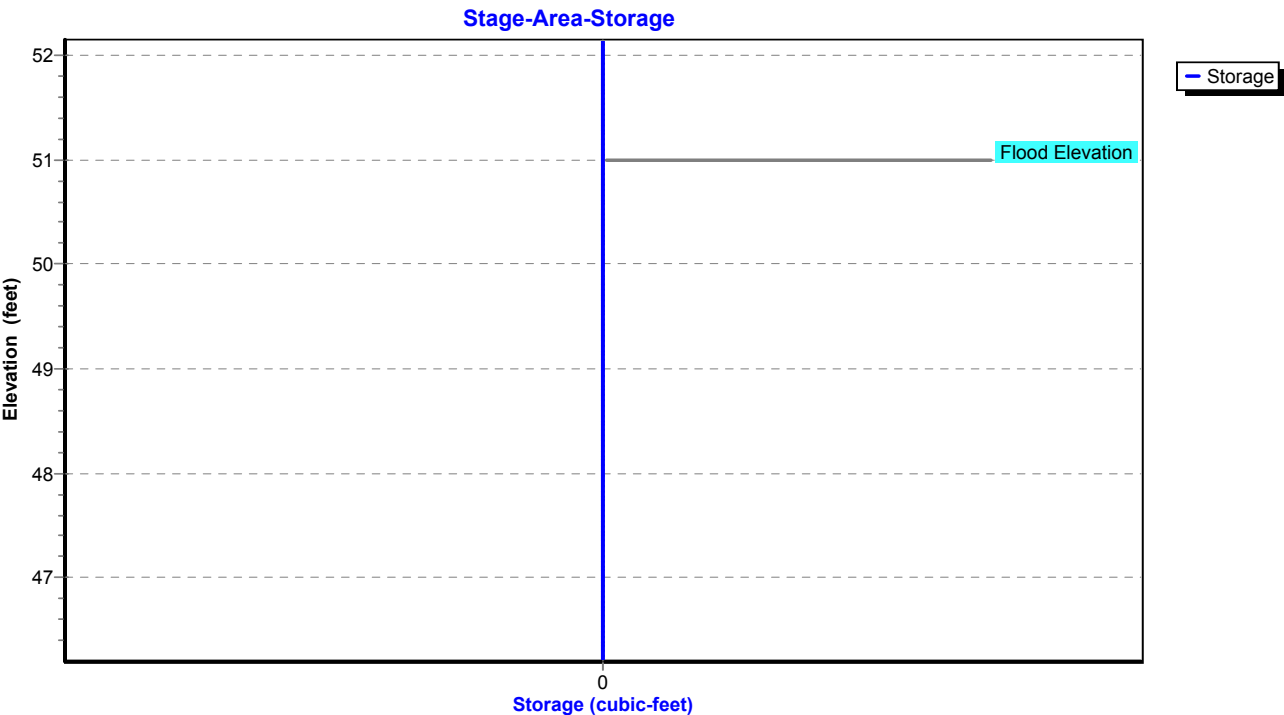
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Pond 63P: Manhole



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Summary for Pond 64P: YD

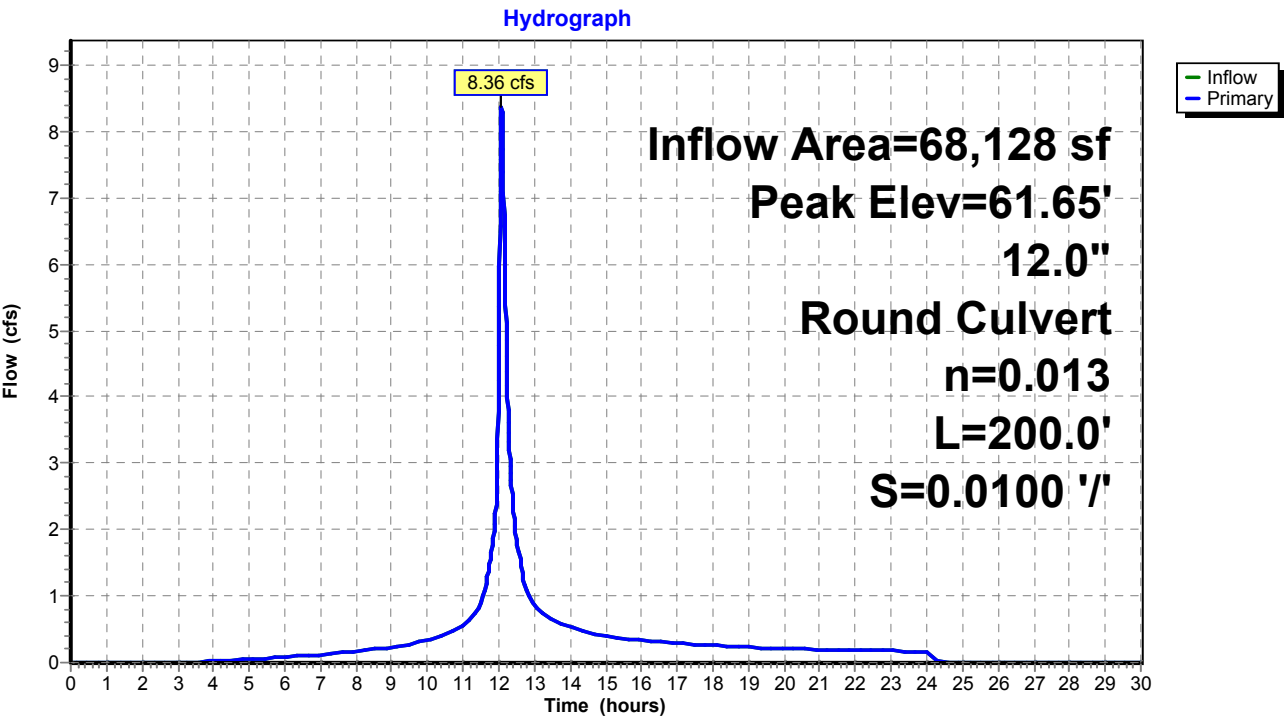
Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 5.47" for 50 year event
Inflow = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf
Outflow = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 61.65' @ 12.08 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=8.35 cfs @ 12.08 hrs HW=61.59' (Free Discharge)
1=Culvert (Barrel Controls 8.35 cfs @ 10.63 fps)

Pond 64P: YD



Existing Conditions

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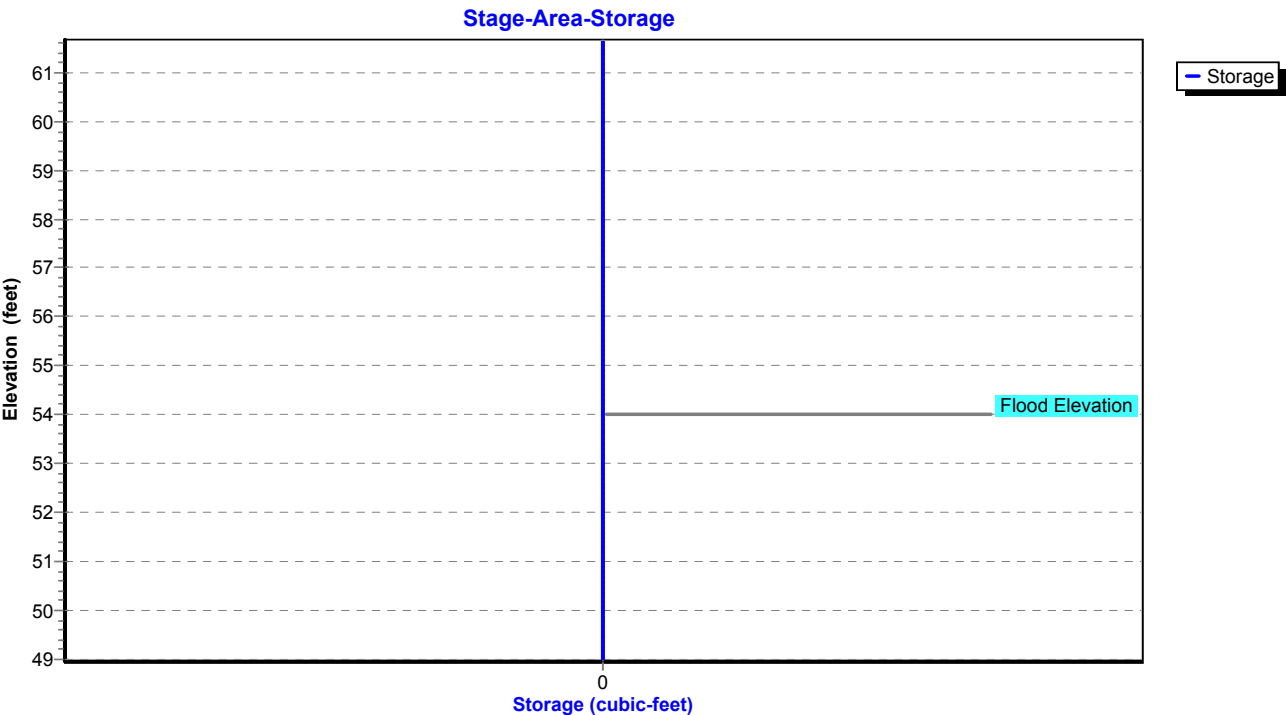
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 6.39" for 50 year event
Inflow = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf
Outflow = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.40' @ 12.03 hrs

Flood Elev= 53.00'

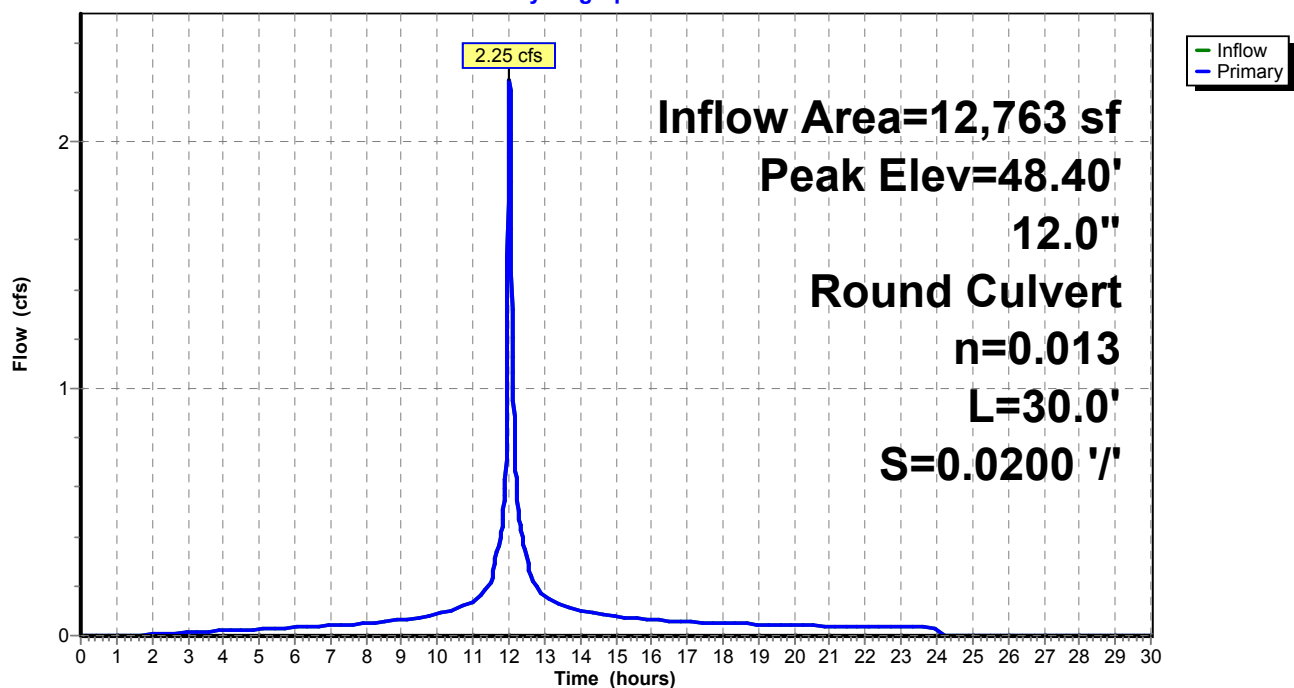
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.24 cfs @ 12.03 hrs HW=48.40' (Free Discharge)

↑1=Culvert (Inlet Controls 2.24 cfs @ 3.14 fps)

Pond 66P: CB-10

Hydrograph



Existing Conditions

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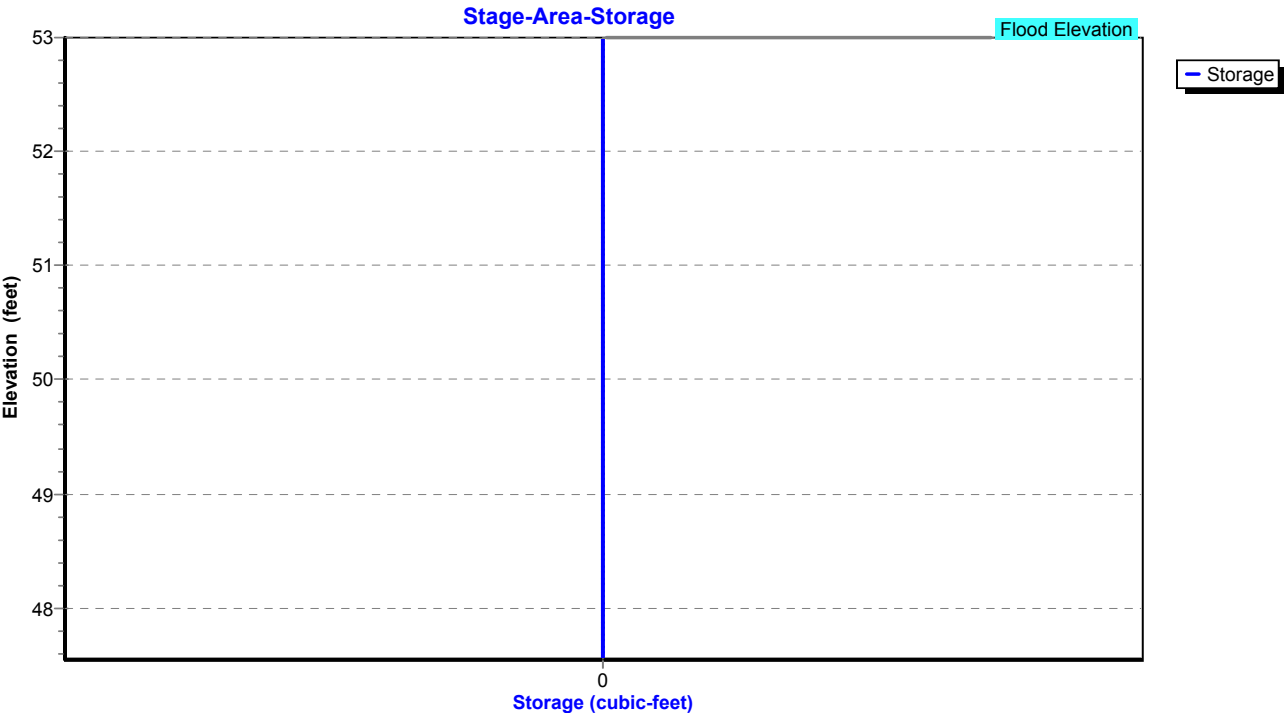
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Pond 66P: CB-10



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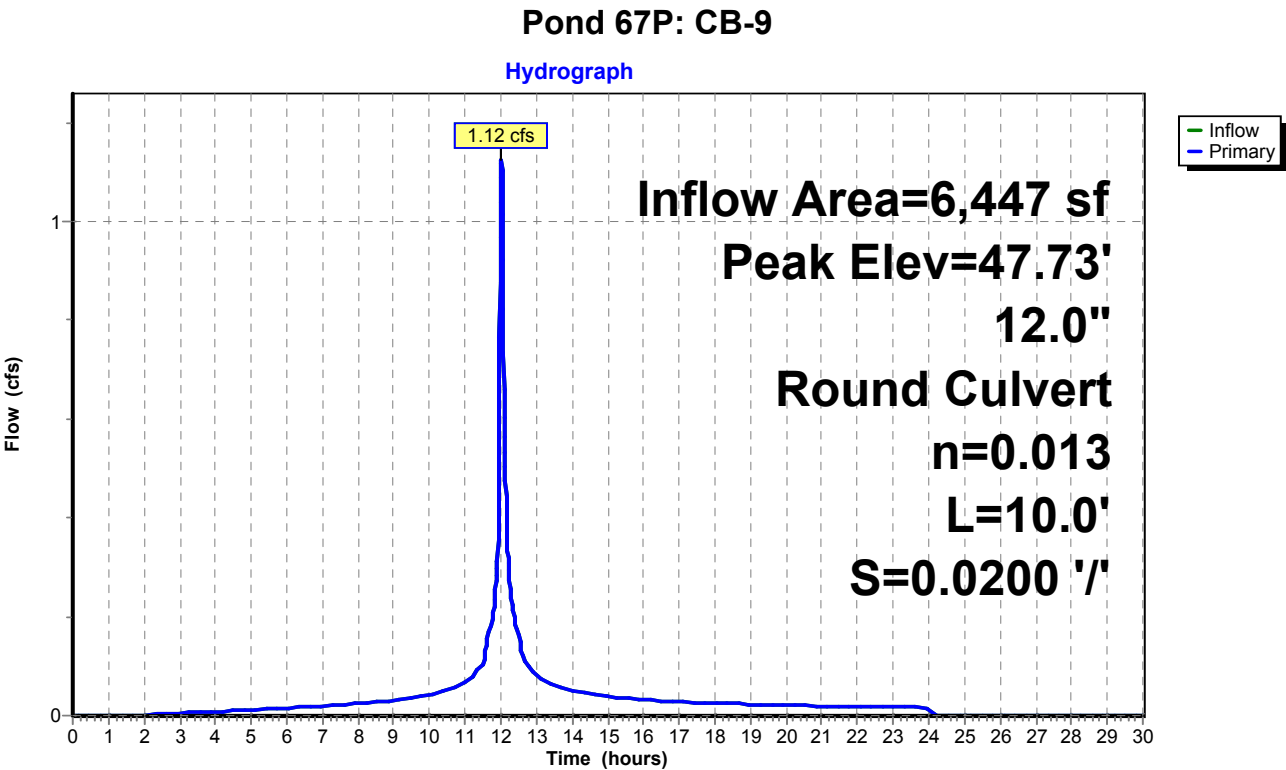
Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 6.28" for 50 year event
Inflow = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf
Outflow = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.73' @ 12.03 hrs
Flood Elev= 52.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.03 hrs HW=47.73' (Free Discharge)
1=Culvert (Barrel Controls 1.12 cfs @ 3.45 fps)



Existing Conditions

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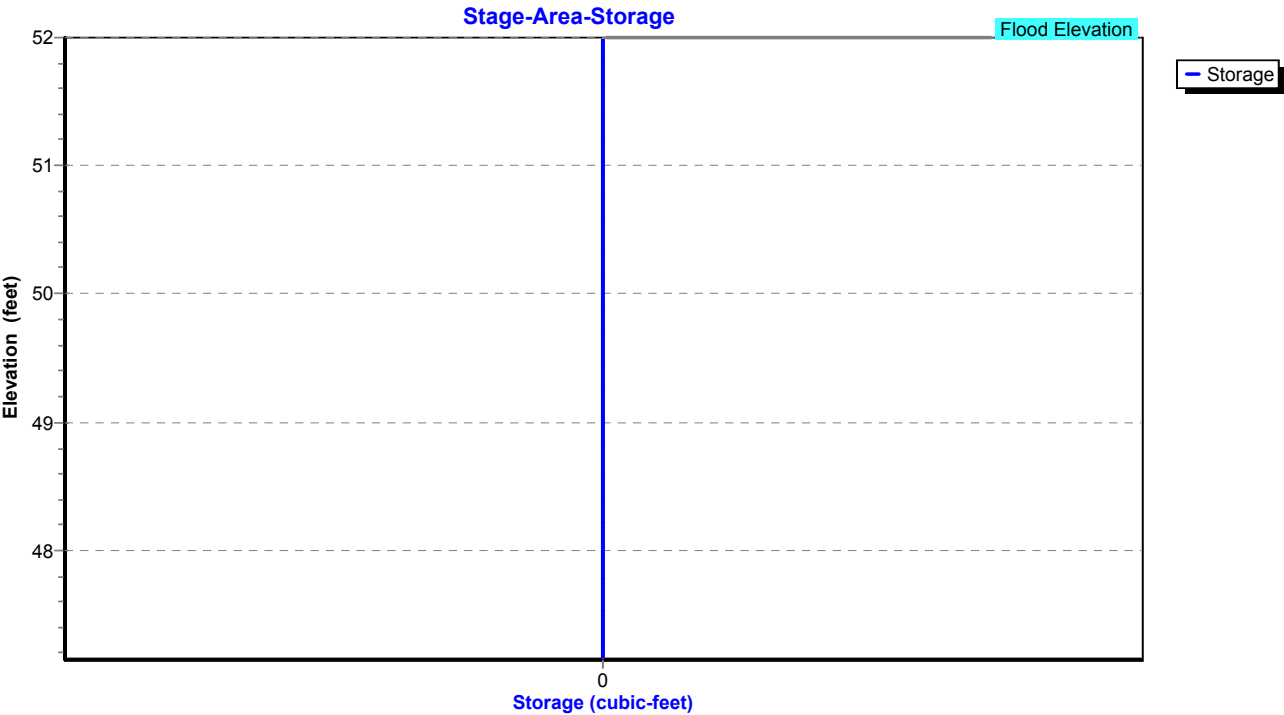
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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 5.76" for 50 year event
Inflow = 10.93 cfs @ 11.99 hrs, Volume= 42,283 cf
Outflow = 10.93 cfs @ 11.99 hrs, Volume= 42,283 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.93 cfs @ 11.99 hrs, Volume= 42,283 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.12' @ 11.99 hrs

Flood Elev= 53.30'

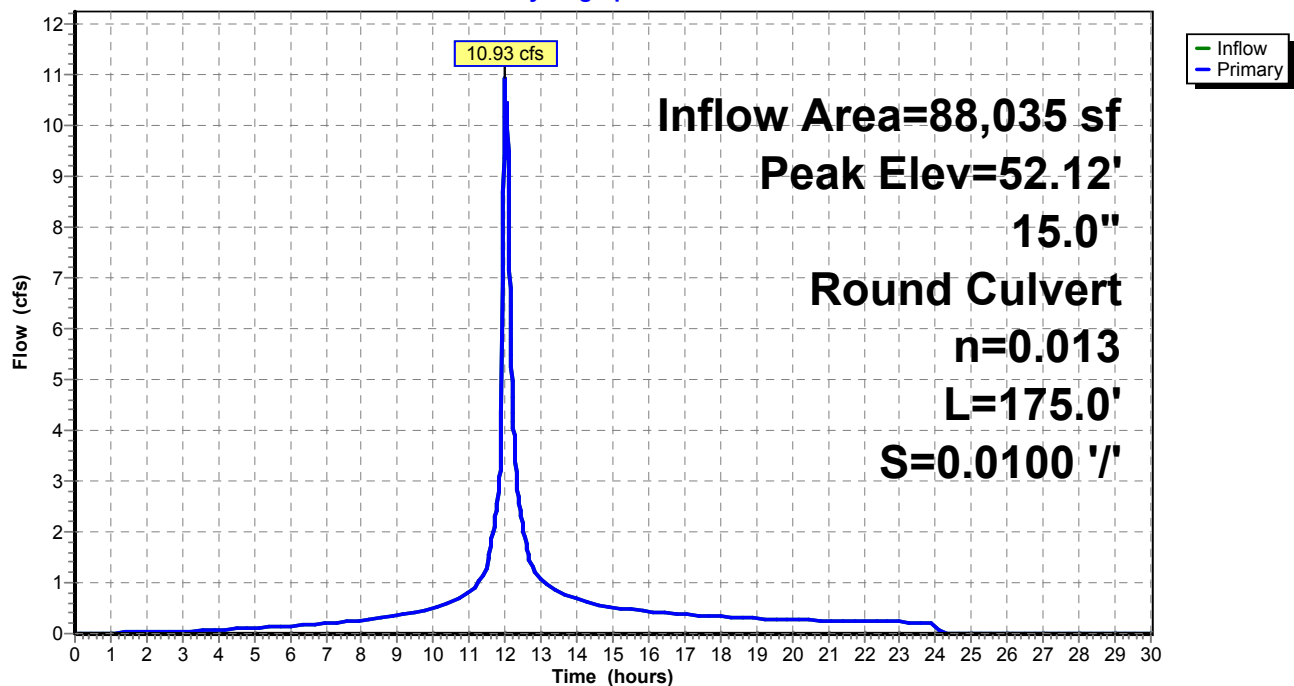
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=10.92 cfs @ 11.99 hrs HW=52.12' (Free Discharge)

↑1=Culvert (Barrel Controls 10.92 cfs @ 8.90 fps)

Pond 70P: CB-2

Hydrograph



Existing Conditions

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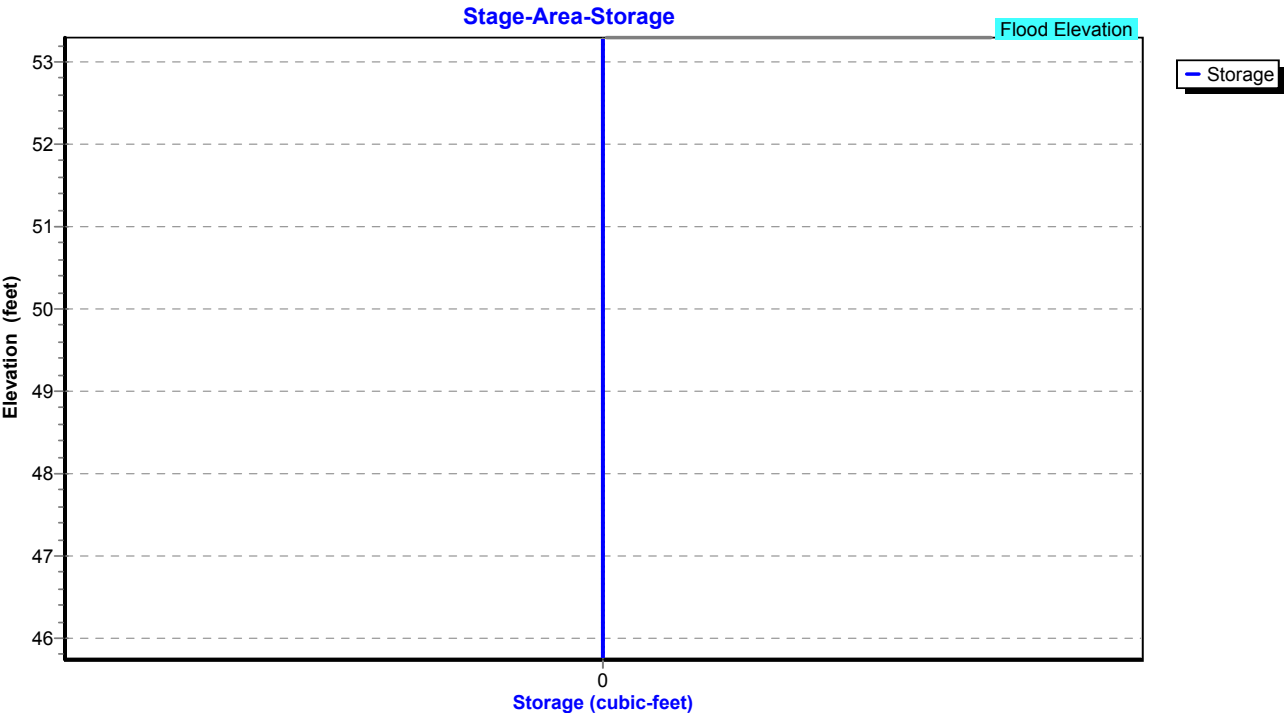
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Pond 70P: CB-2



Existing Conditions

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Summary for Pond 72P: Manhole

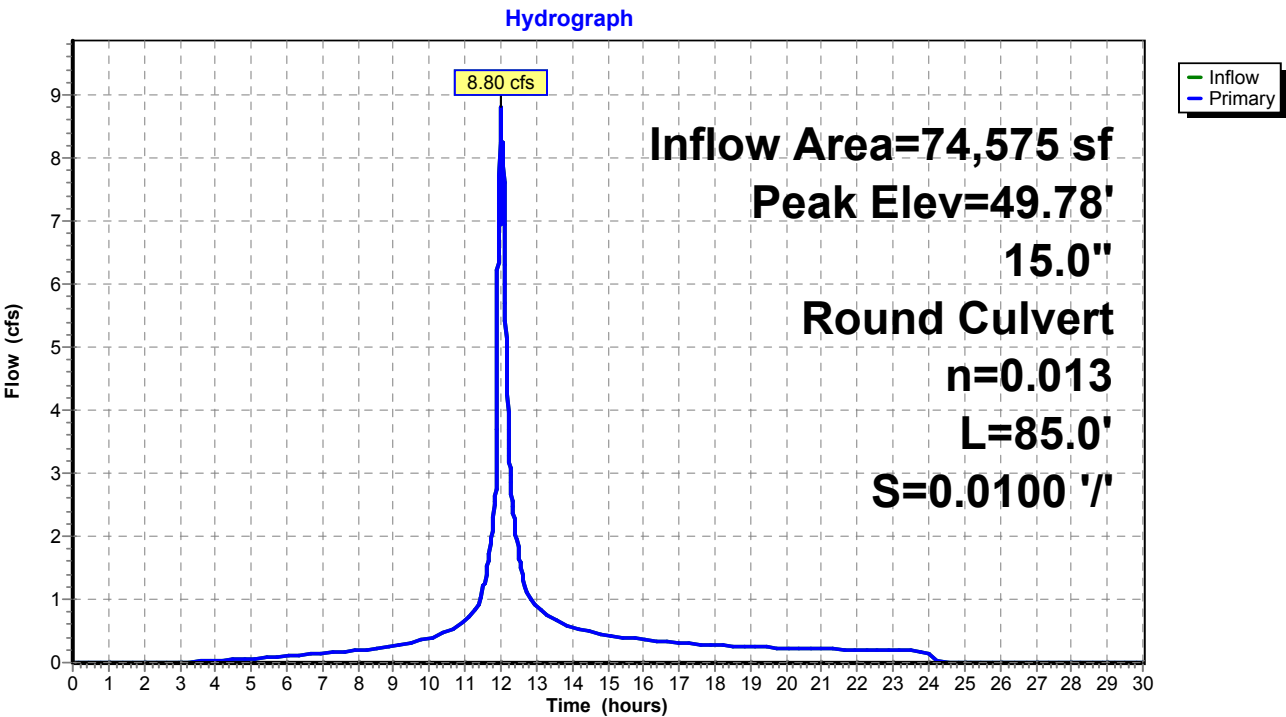
Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 5.52" for 50 year event
Inflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Outflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.78' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=8.72 cfs @ 11.99 hrs HW=49.73' (Free Discharge)
1=Culvert (Barrel Controls 8.72 cfs @ 7.11 fps)

Pond 72P: Manhole



Existing Conditions

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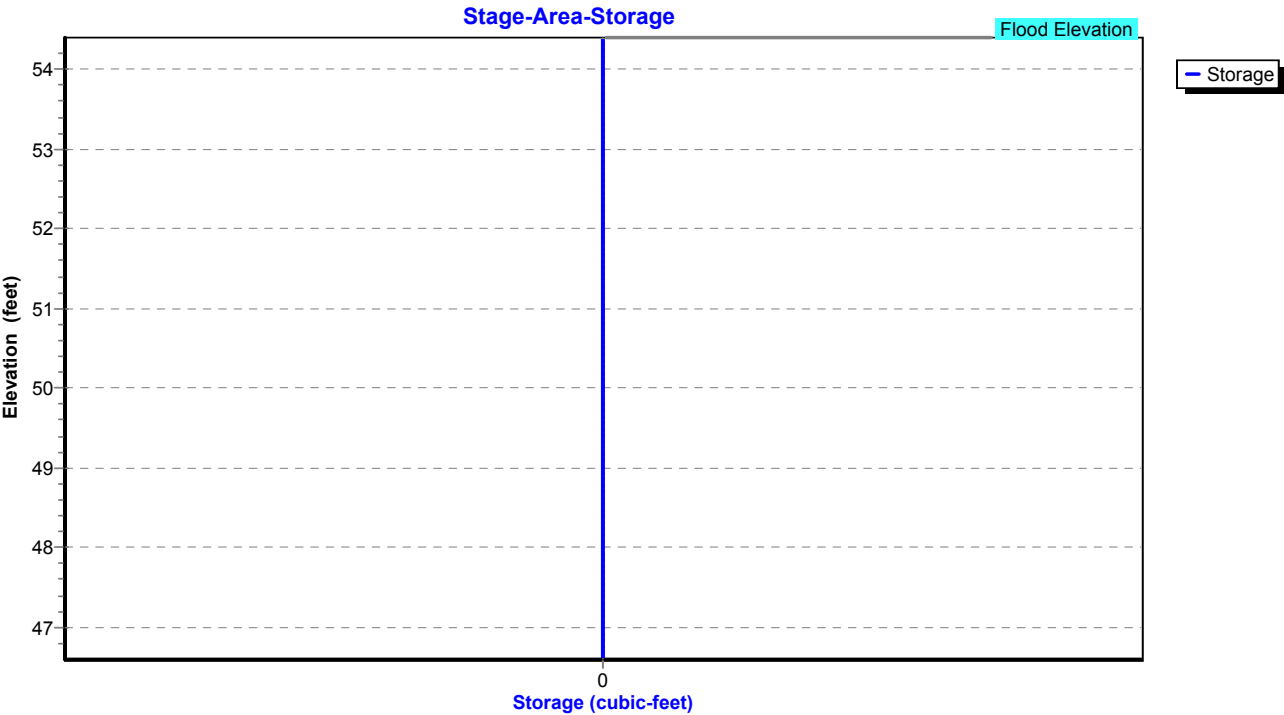
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Pond 72P: Manhole



Existing Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 5.52" for 50 year event
Inflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Outflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.10' @ 11.99 hrs

Flood Elev= 53.30'

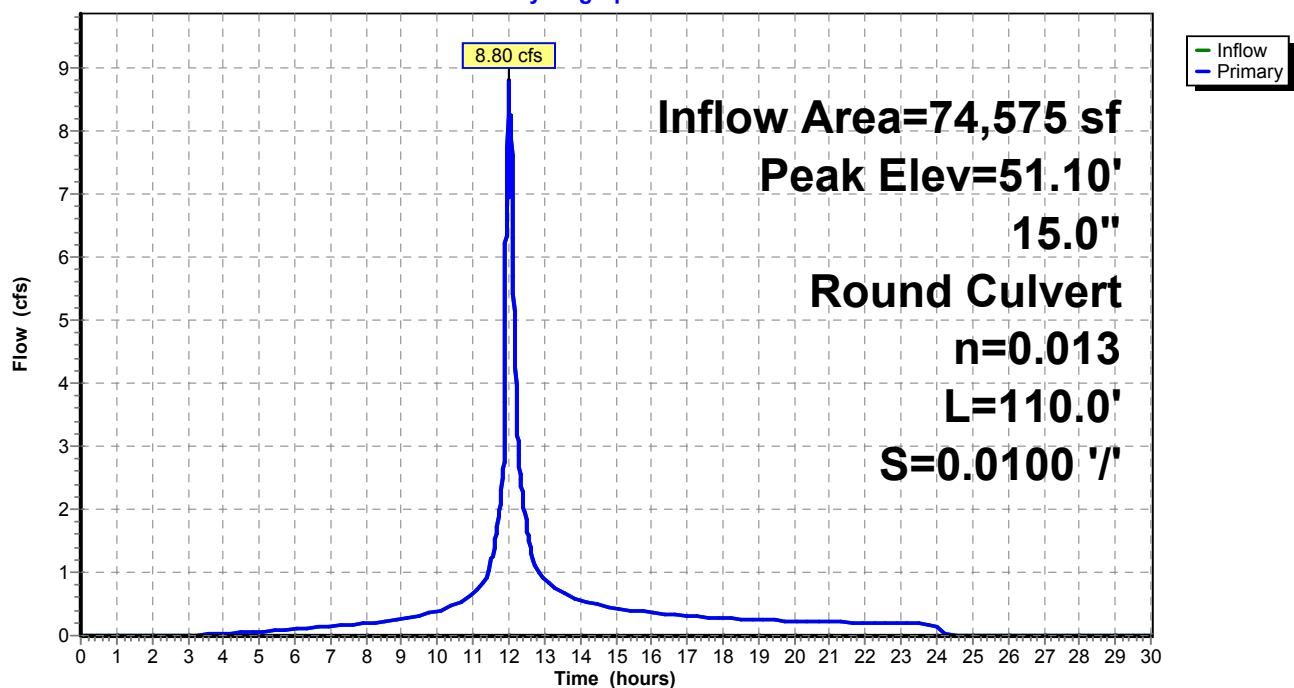
Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=8.72 cfs @ 11.99 hrs HW=51.04' (Free Discharge)

↑1=Culvert (Barrel Controls 8.72 cfs @ 7.11 fps)

Pond 73P: CB-3

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

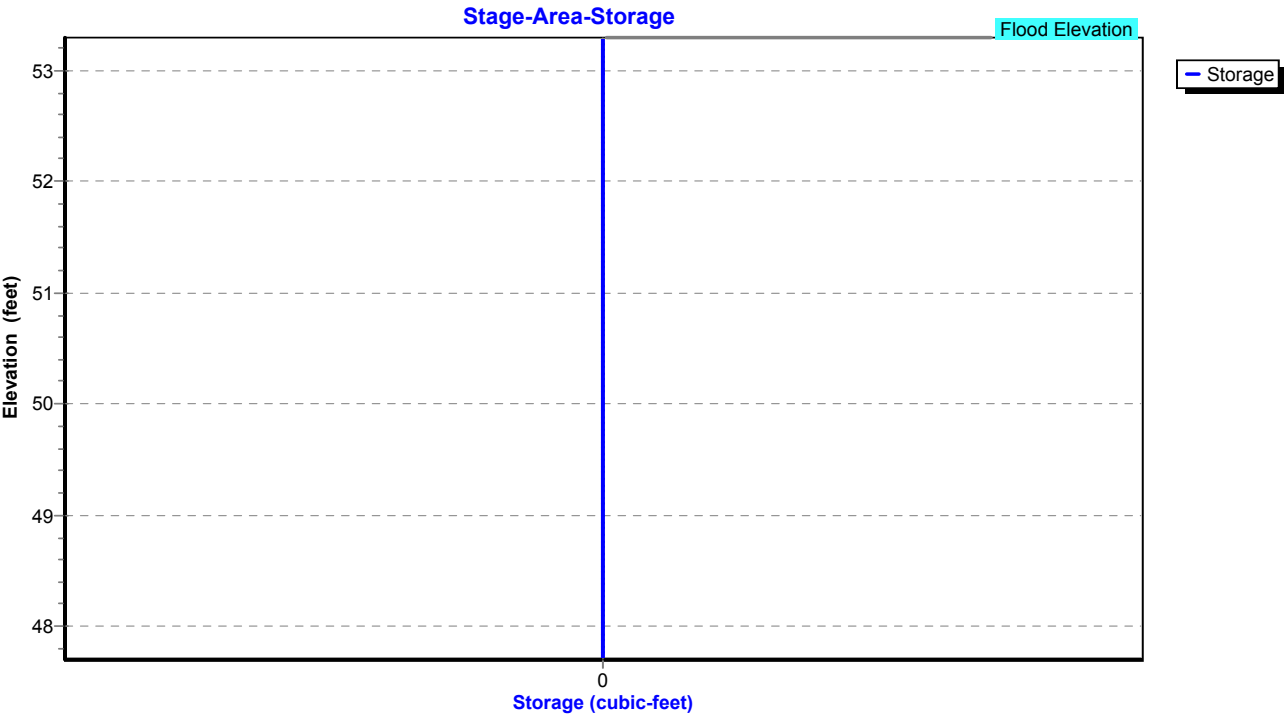
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 73P: CB-3



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 5.38" for 50 year event
Inflow = 6.62 cfs @ 12.06 hrs, Volume= 22,372 cf
Outflow = 6.62 cfs @ 12.06 hrs, Volume= 22,372 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.62 cfs @ 12.06 hrs, Volume= 22,372 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.08' @ 12.06 hrs

Flood Elev= 53.70'

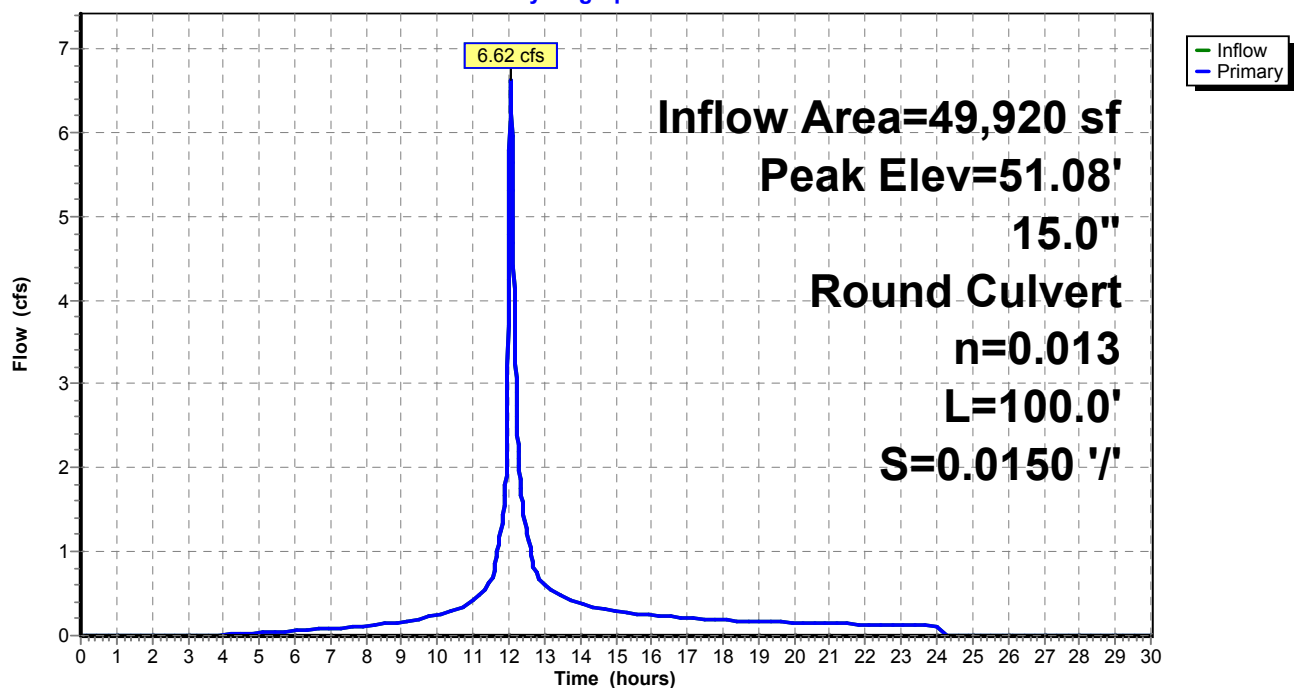
Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.61 cfs @ 12.06 hrs HW=51.08' (Free Discharge)

↑1=Culvert (Inlet Controls 6.61 cfs @ 5.38 fps)

Pond 74P: CB-4

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

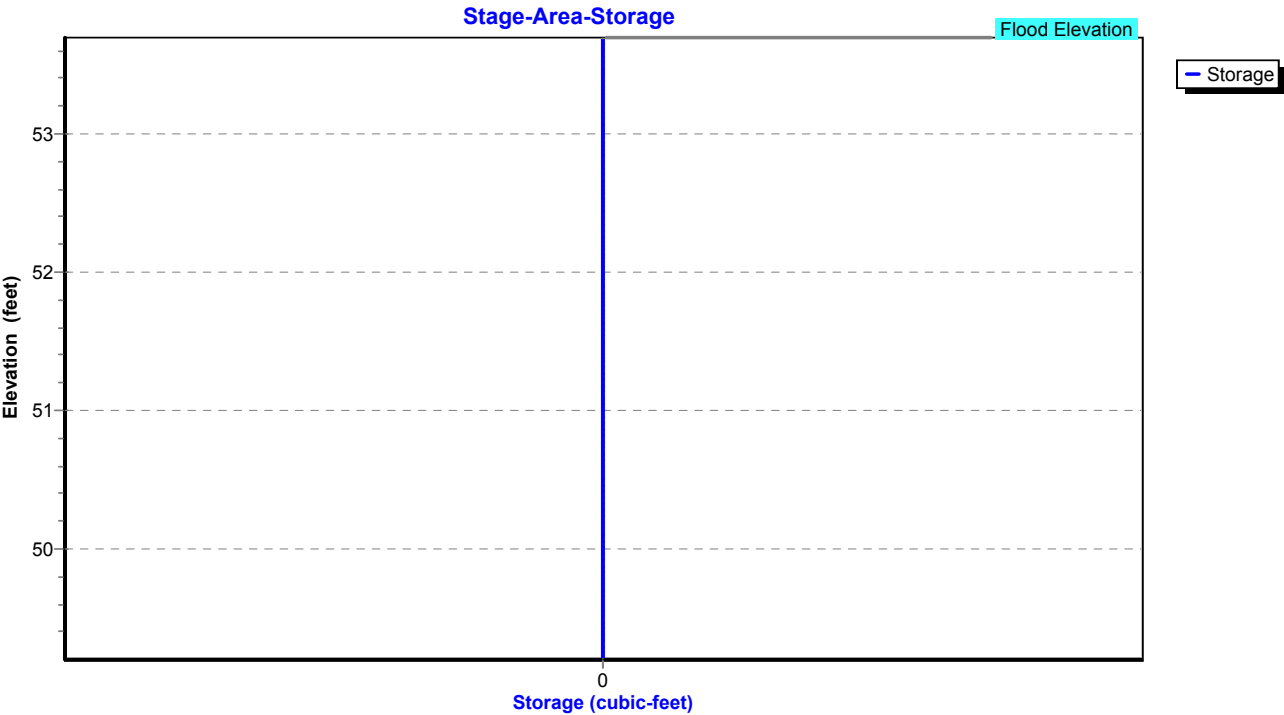
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Pond 74P: CB-4



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 77P: Manhole

Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 5.66" for 50 year event
Inflow = 10.73 cfs @ 12.06 hrs, Volume= 41,214 cf
Outflow = 10.73 cfs @ 12.06 hrs, Volume= 41,214 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.73 cfs @ 12.06 hrs, Volume= 41,214 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.31' @ 12.06 hrs

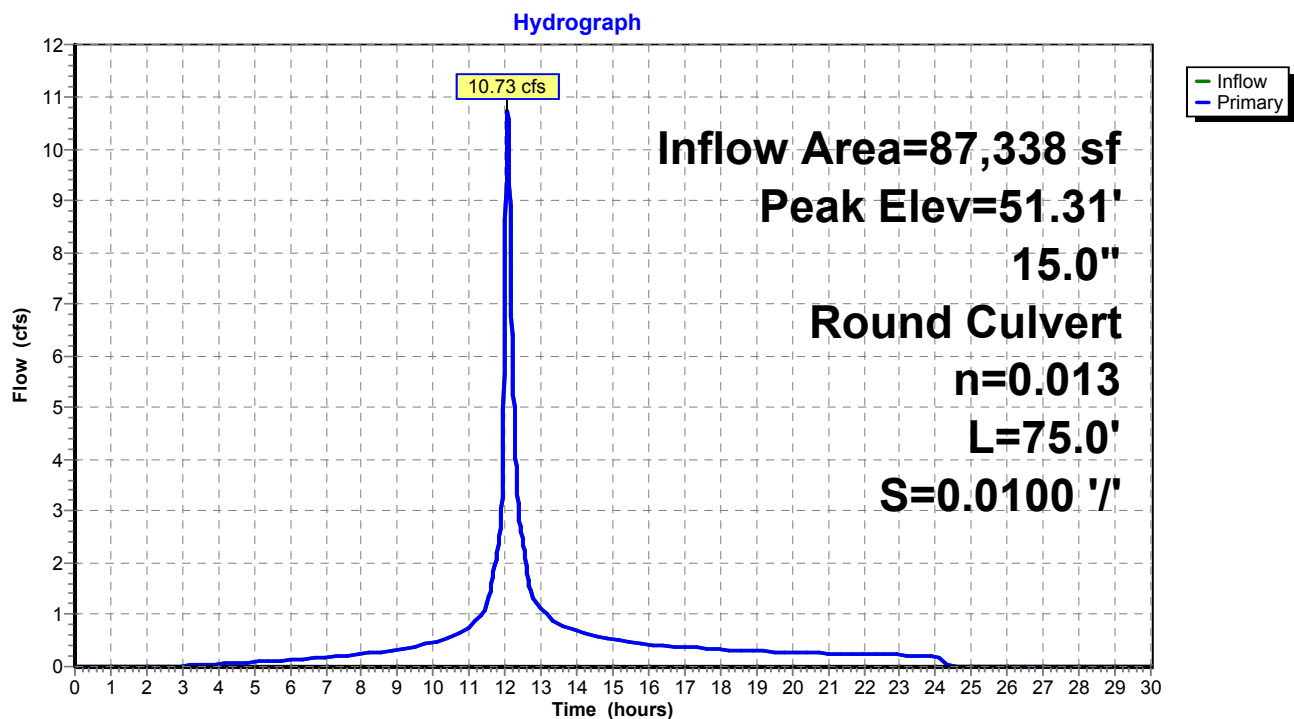
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=10.71 cfs @ 12.06 hrs HW=51.30' (Free Discharge)

↑1=Culvert (Barrel Controls 10.71 cfs @ 8.73 fps)

Pond 77P: Manhole



Existing Conditions

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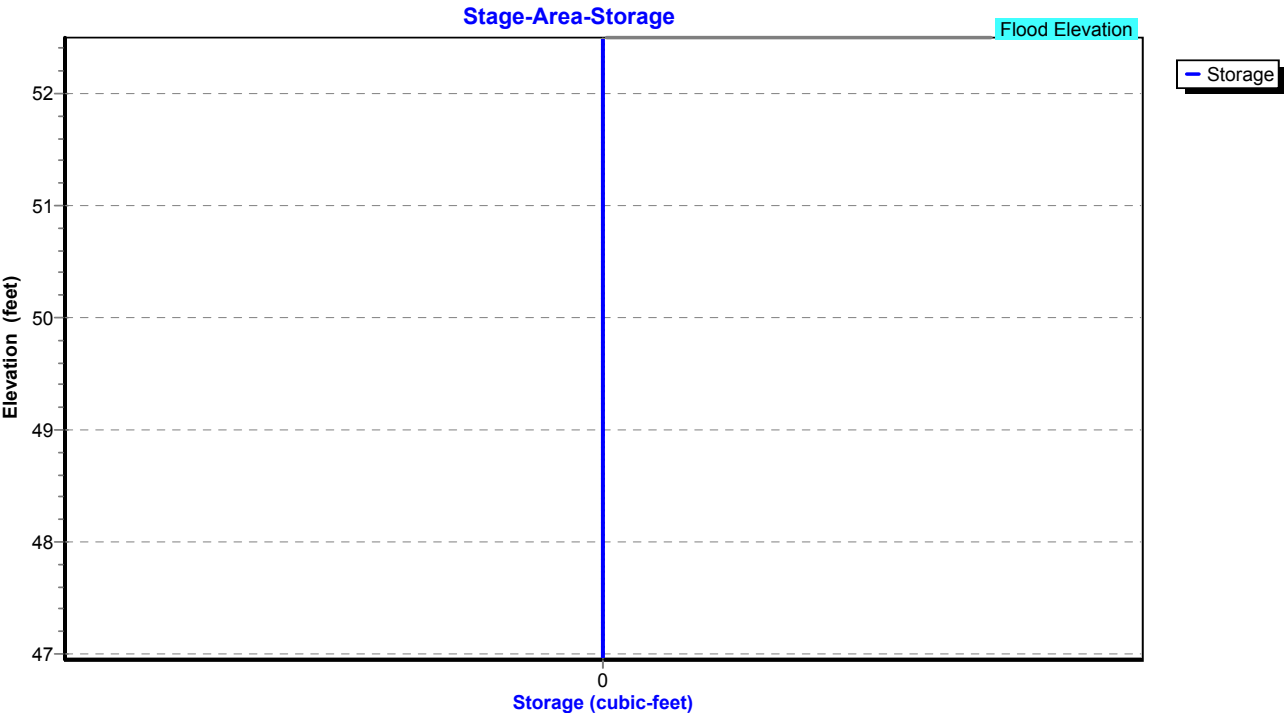
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 77P: Manhole



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 7.10" for 50 year event
Inflow = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf
Outflow = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.63' @ 12.03 hrs

Flood Elev= 52.50'

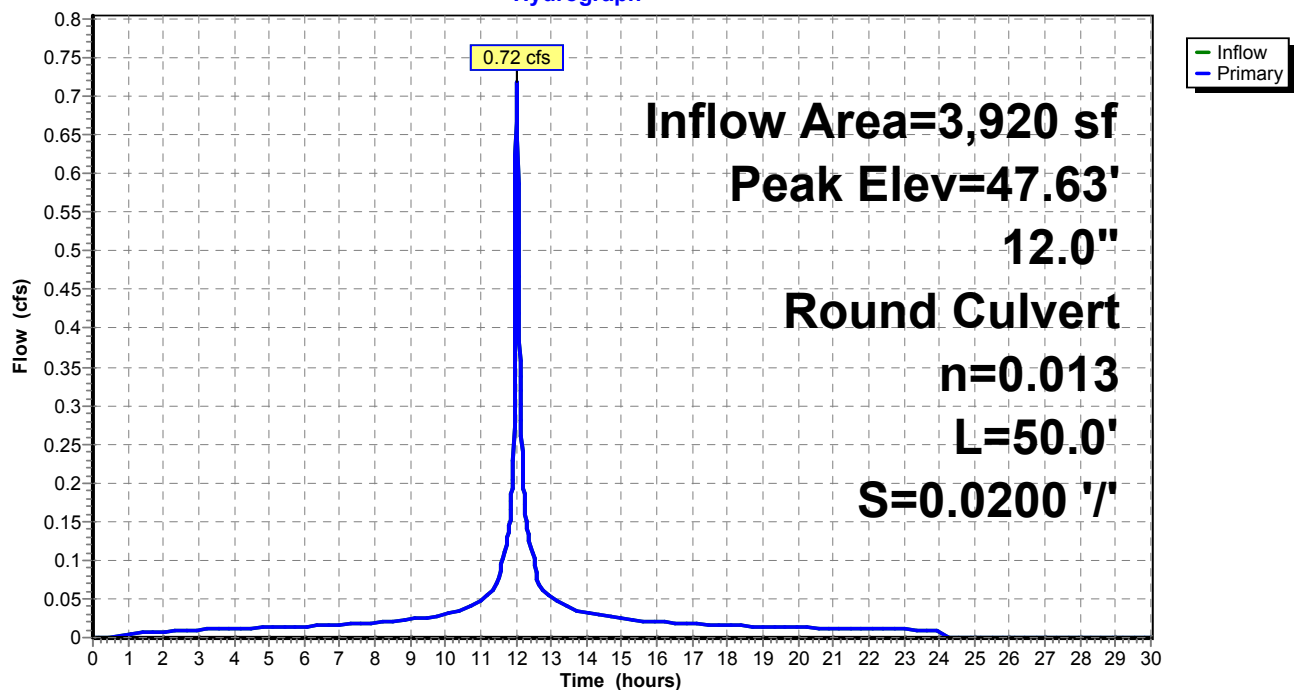
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.03 hrs HW=47.63' (Free Discharge)

↑1=Culvert (Inlet Controls 0.71 cfs @ 2.23 fps)

Pond 79P: CB-8

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

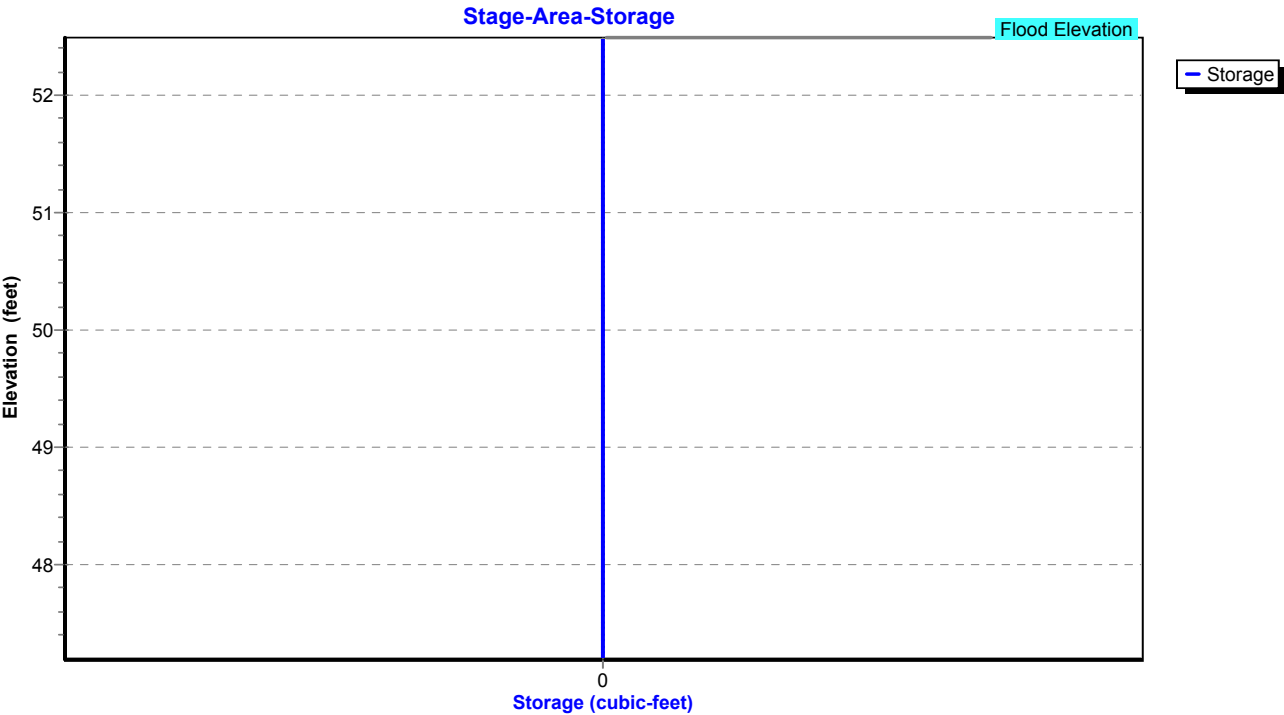
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 79P: CB-8



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Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 5.24" for 50 year event
Inflow = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf
Outflow = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.50' @ 12.07 hrs

Flood Elev= 53.30'

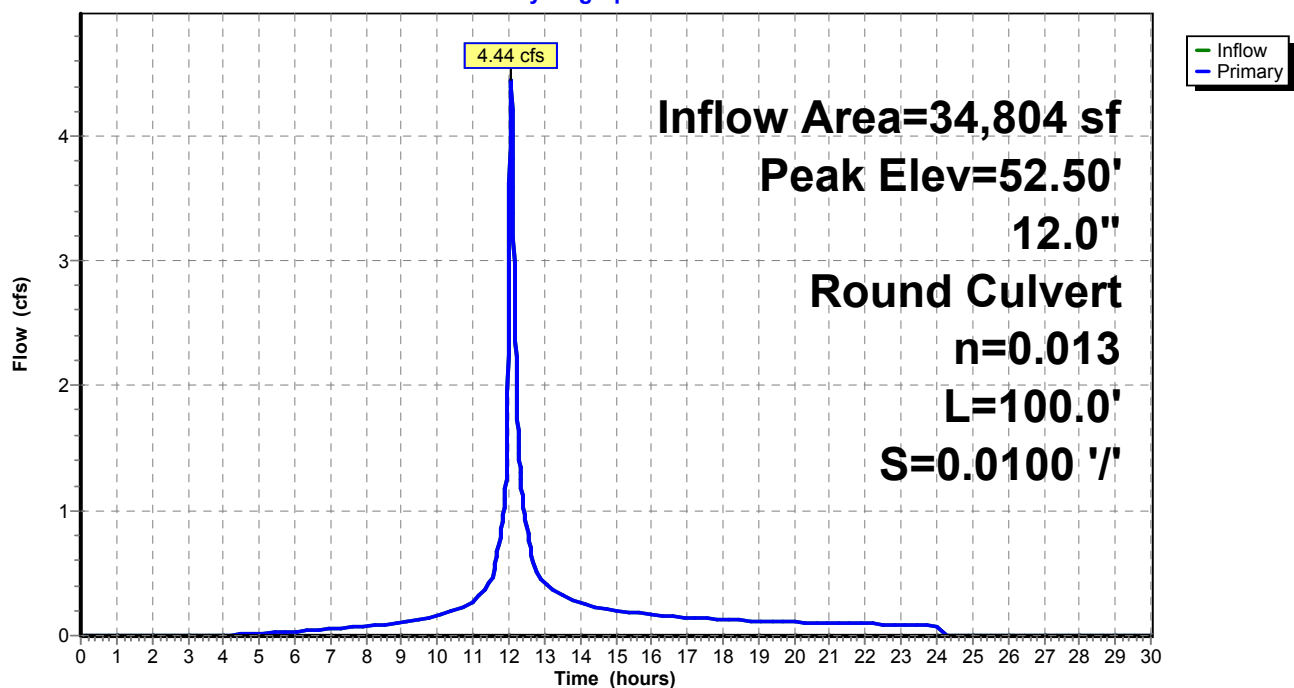
Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=4.43 cfs @ 12.07 hrs HW=52.49' (Free Discharge)

↑1=Culvert (Barrel Controls 4.43 cfs @ 5.64 fps)

Pond 85P: CB-5

Hydrograph



Existing Conditions

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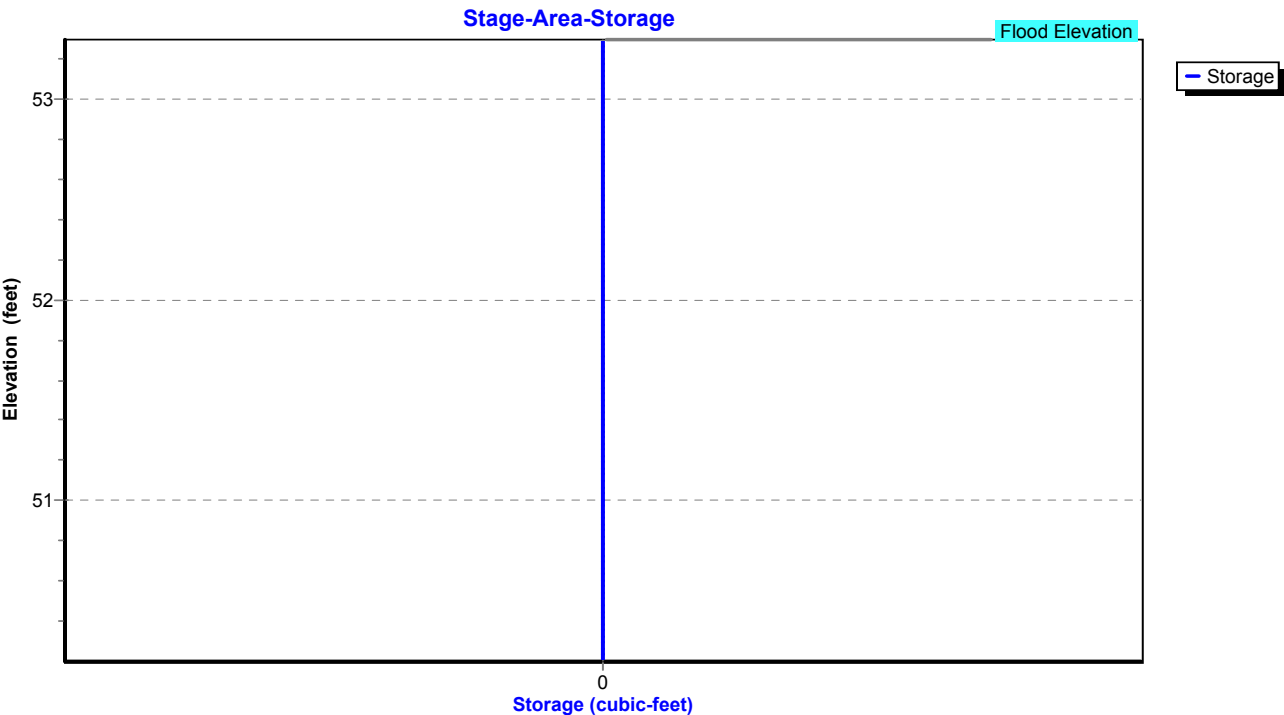
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Pond 85P: CB-5



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 7.10" for 50 year event
Inflow = 3.10 cfs @ 12.03 hrs, Volume= 10,006 cf
Outflow = 1.87 cfs @ 12.09 hrs, Volume= 10,007 cf, Atten= 40%, Lag= 3.8 min
Primary = 1.87 cfs @ 12.09 hrs, Volume= 10,007 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 54.49' @ 12.09 hrs Surf.Area= 749 sf Storage= 1,477 cf

Plug-Flow detention time= 17.7 min calculated for 10,004 cf (100% of inflow)
Center-of-Mass det. time= 17.8 min (759.8 - 742.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.85 cfs @ 12.09 hrs HW=54.49' (Free Discharge)

1=Culvert (Passes 1.85 cfs of 6.15 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.73 cfs @ 8.31 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.12 cfs @ 1.21 fps)

Existing Conditions

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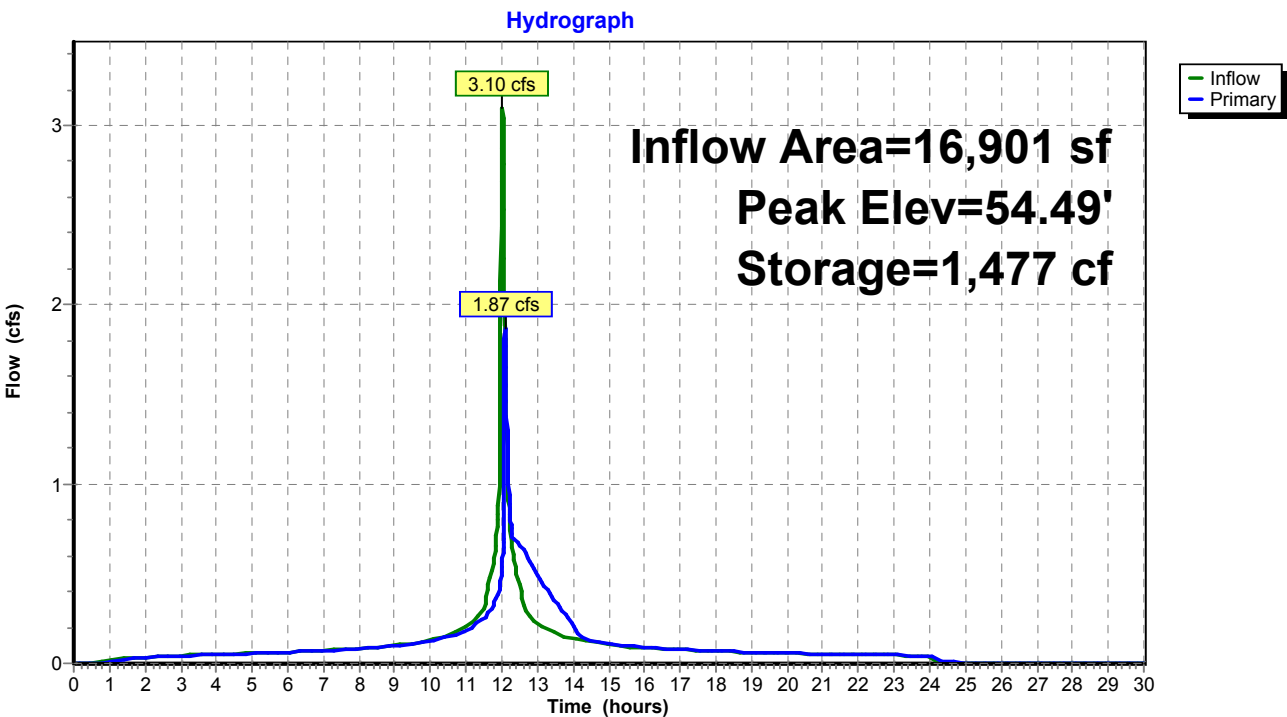
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NORWALK 24-hr S1 50 year Rainfall=7.34"

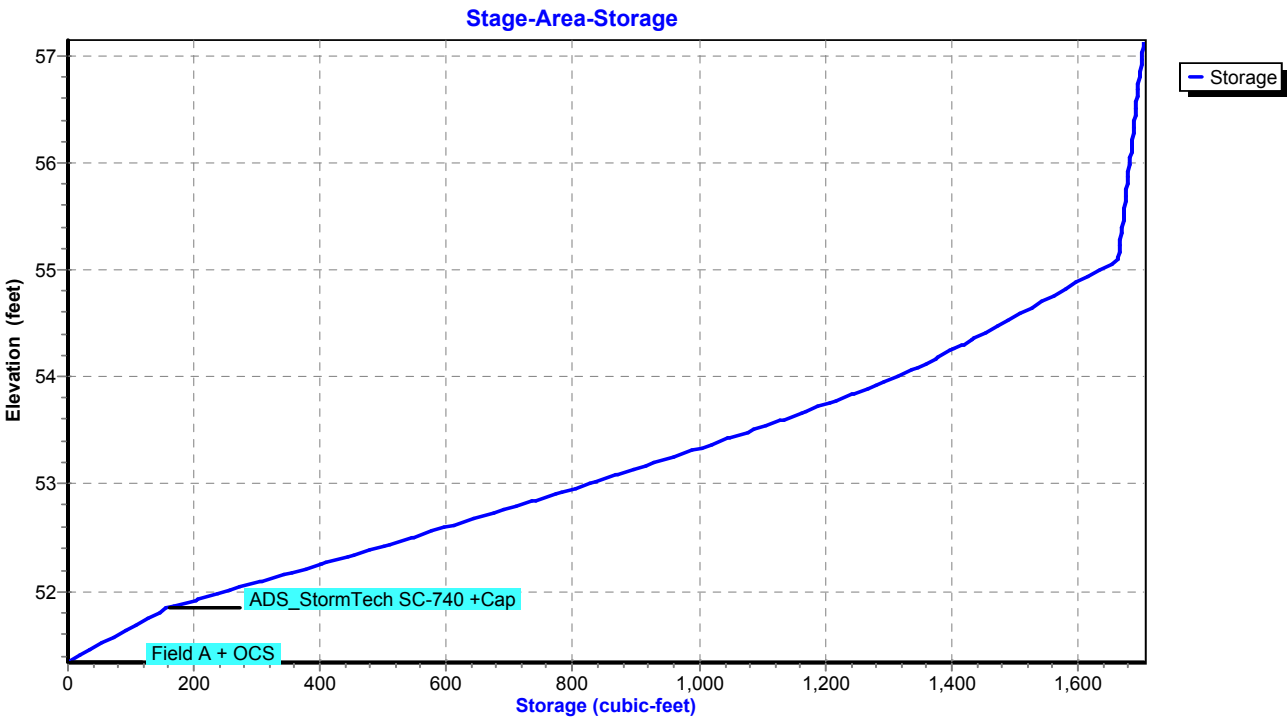
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



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NORWALK 24-hr S1 100 year Rainfall=8.26"
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Summary for Subcatchment 4S: Area 4

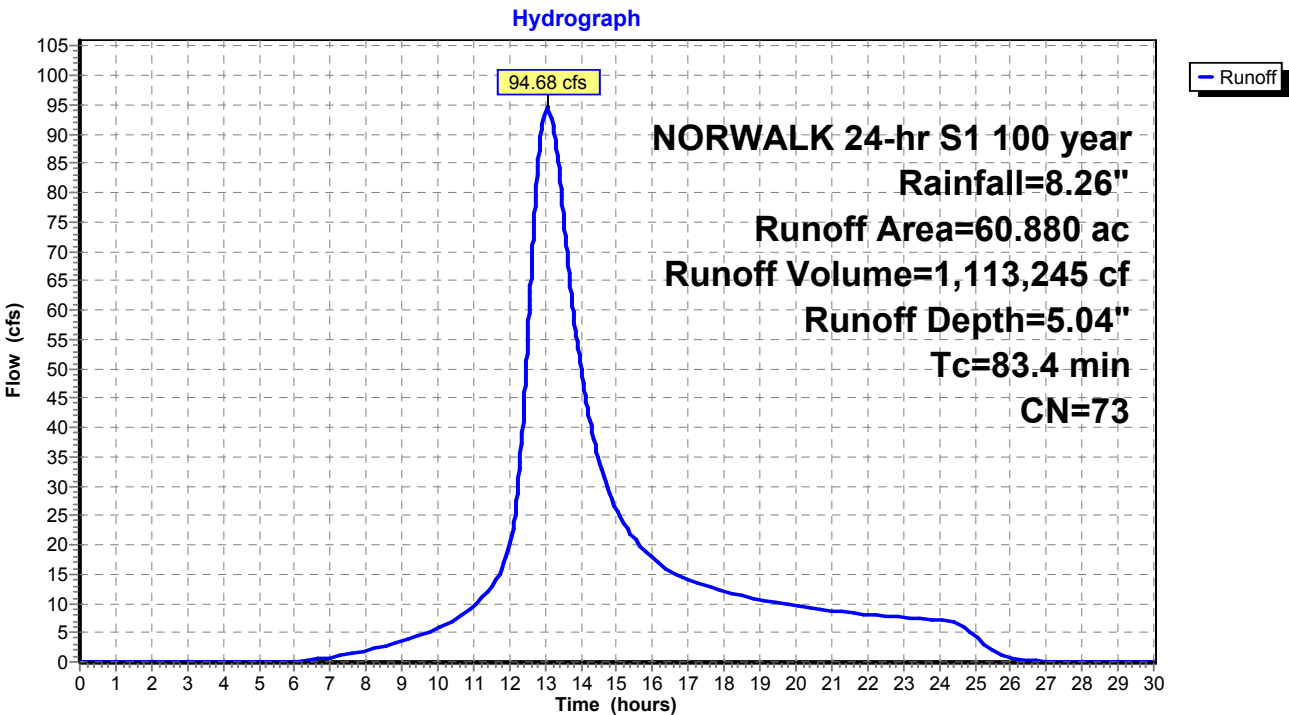
Runoff = 94.68 cfs @ 13.07 hrs, Volume= 1,113,245 cf, Depth= 5.04"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 5S: Area 5

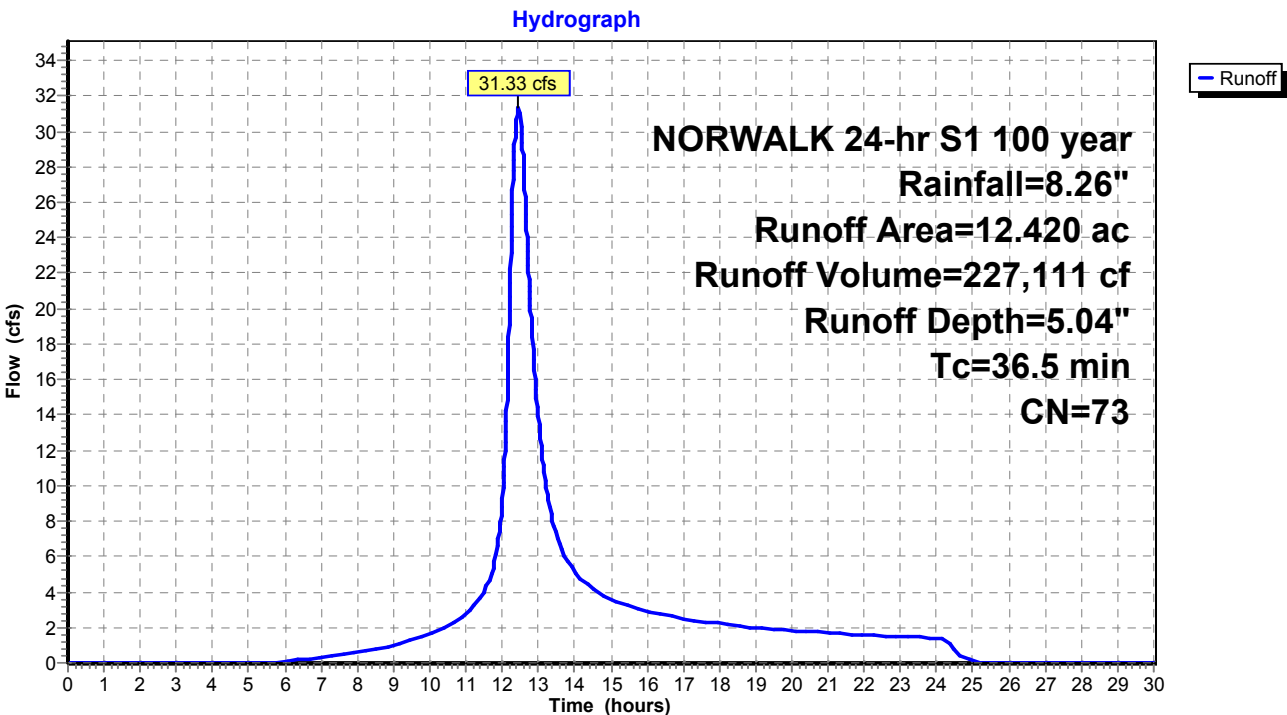
Runoff = 31.33 cfs @ 12.45 hrs, Volume= 227,111 cf, Depth= 5.04"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 6S: Area 6

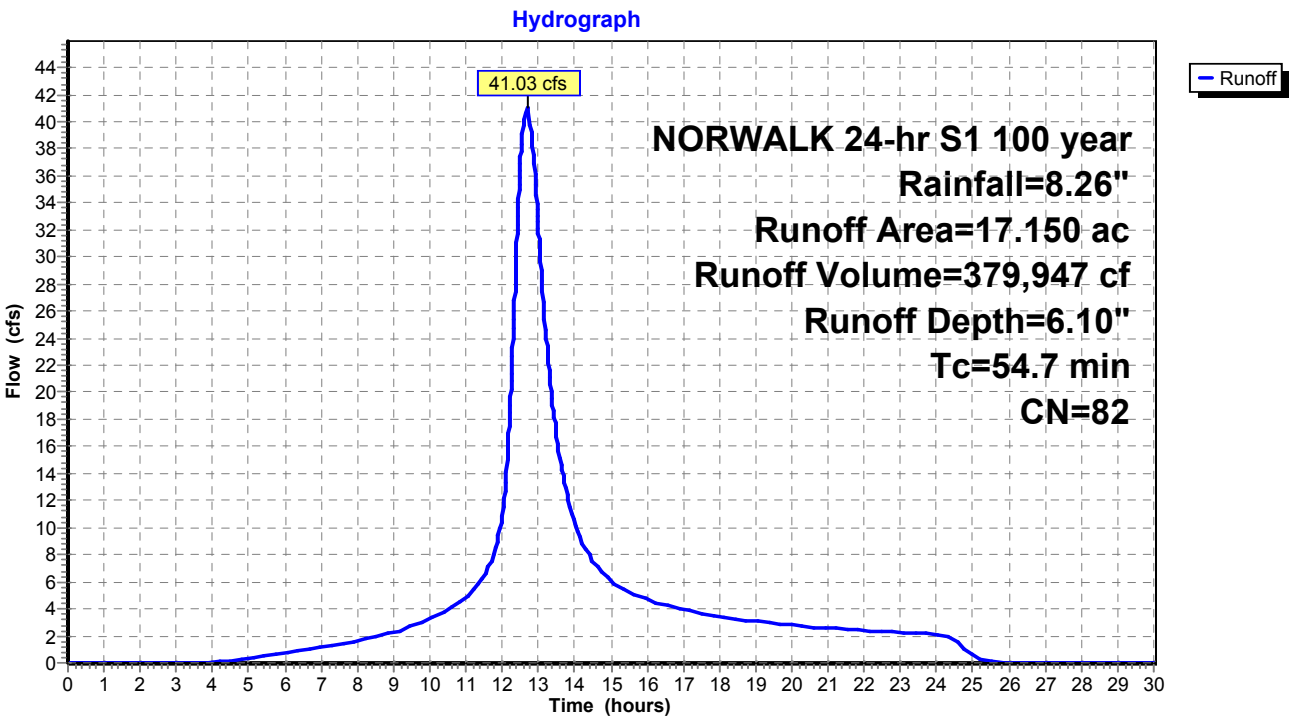
Runoff = 41.03 cfs @ 12.70 hrs, Volume= 379,947 cf, Depth= 6.10"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 7S: Area 7

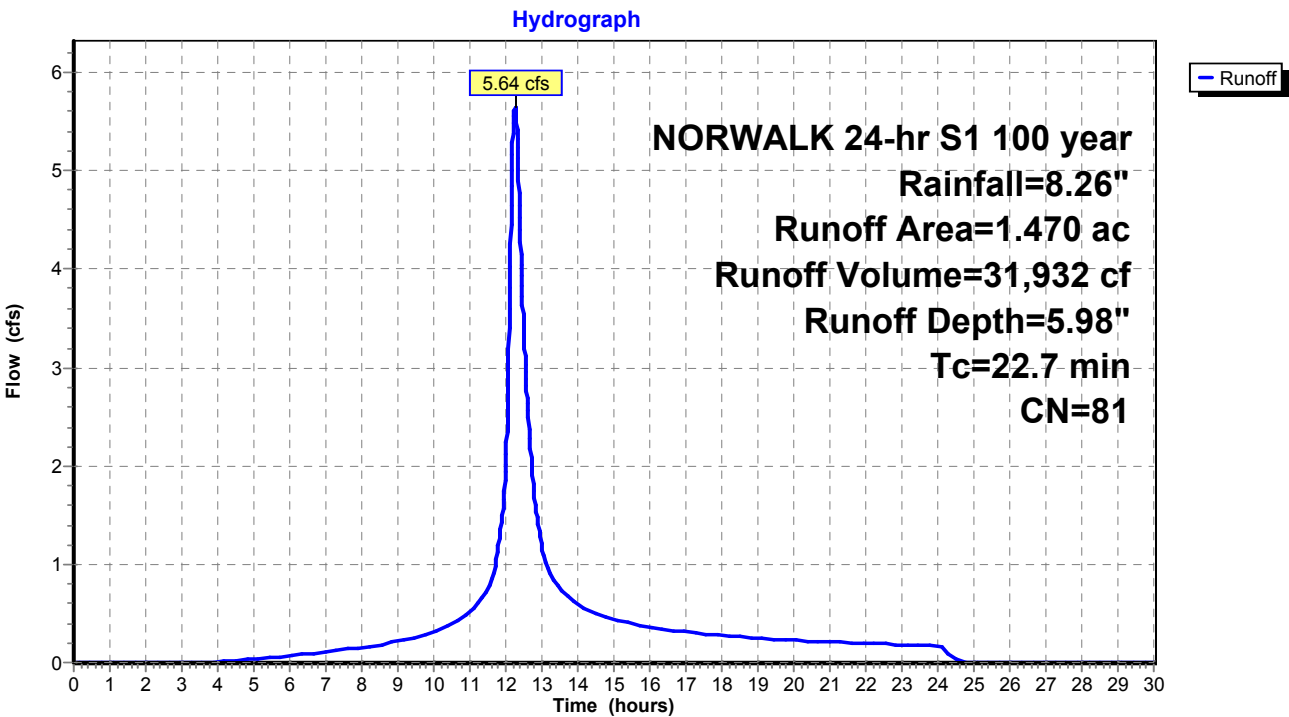
Runoff = 5.64 cfs @ 12.25 hrs, Volume= 31,932 cf, Depth= 5.98"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 8S: Area 8

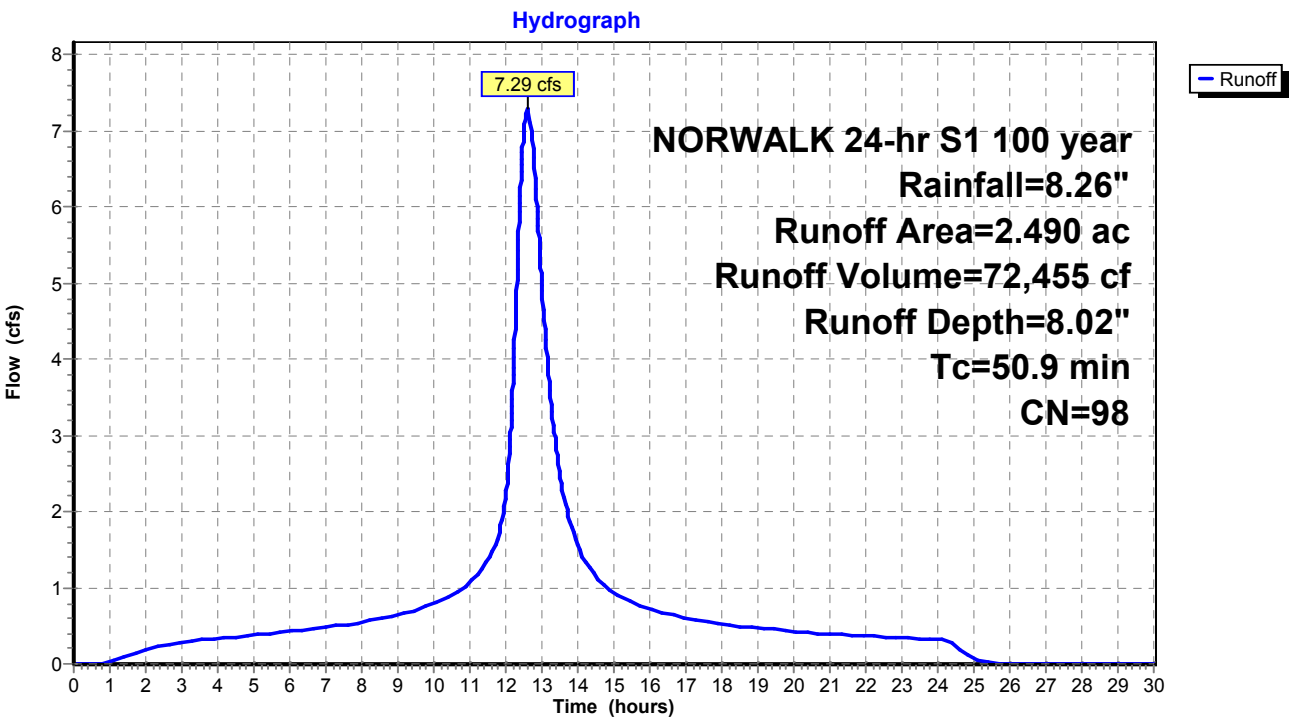
Runoff = 7.29 cfs @ 12.61 hrs, Volume= 72,455 cf, Depth= 8.02"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 9S: Area 9

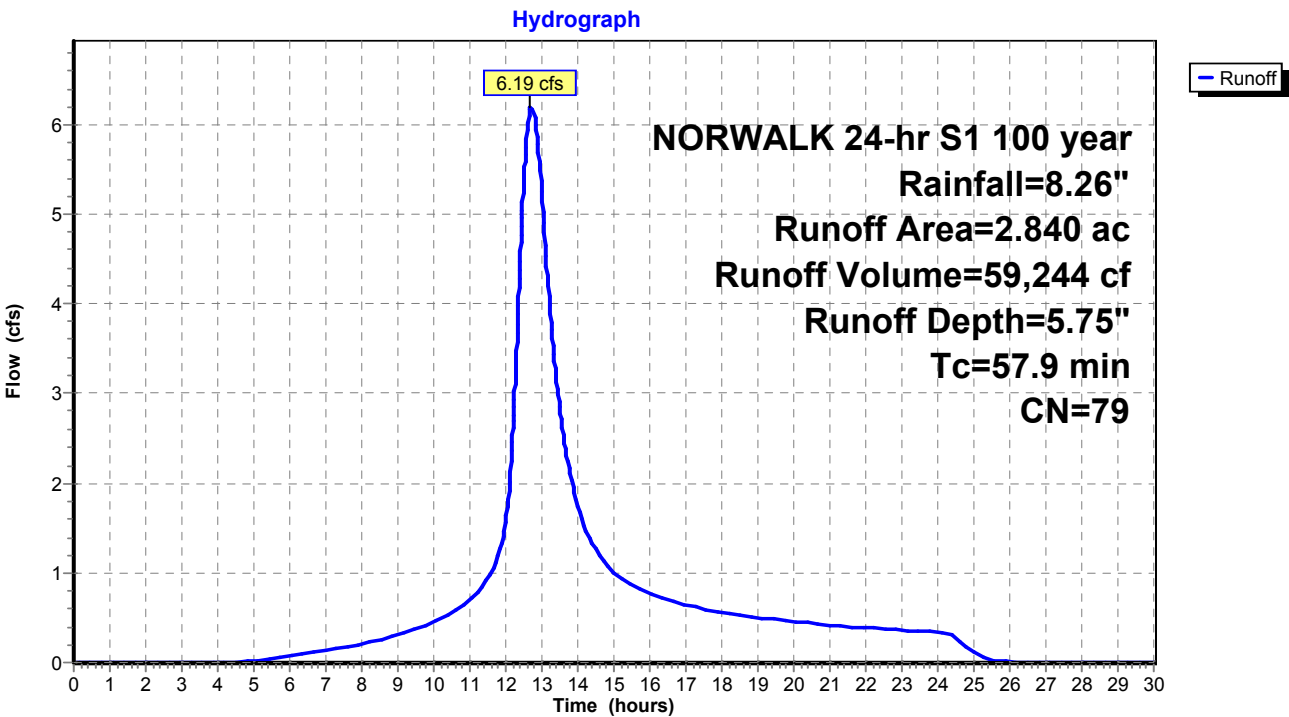
Runoff = 6.19 cfs @ 12.68 hrs, Volume= 59,244 cf, Depth= 5.75"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10AS: Area 10A

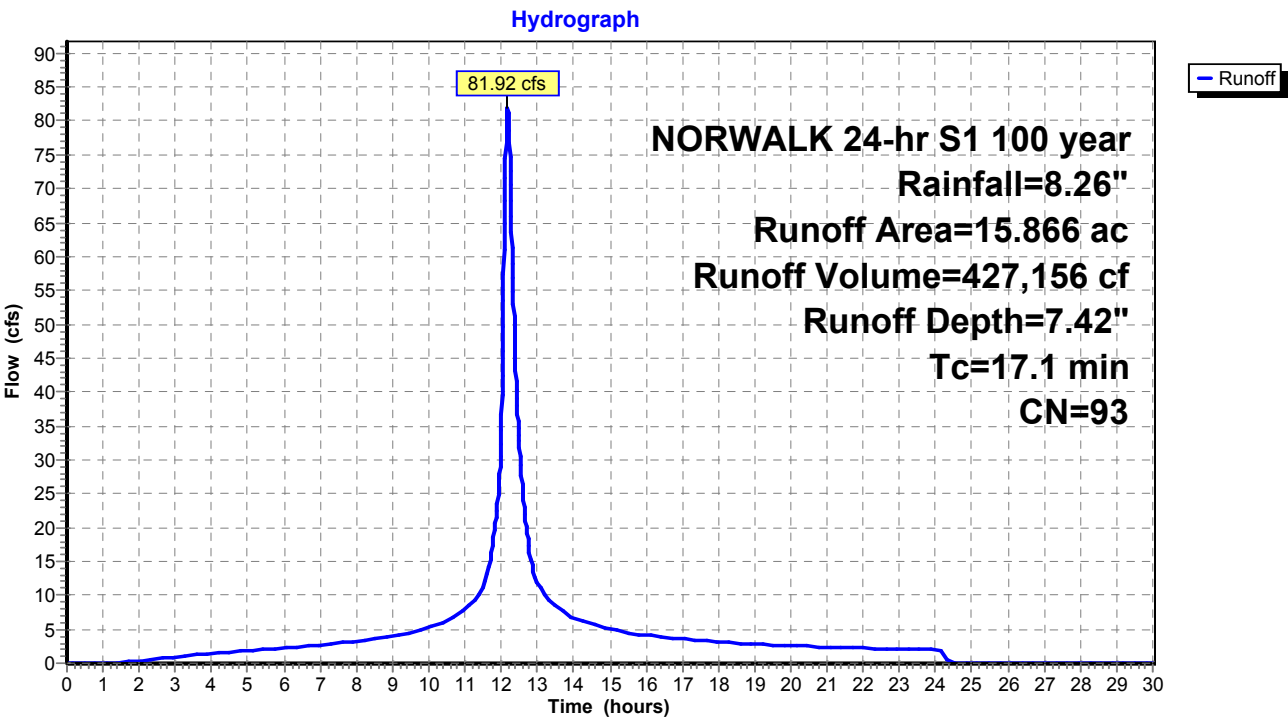
Runoff = 81.92 cfs @ 12.18 hrs, Volume= 427,156 cf, Depth= 7.42"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10BS: Area 10B

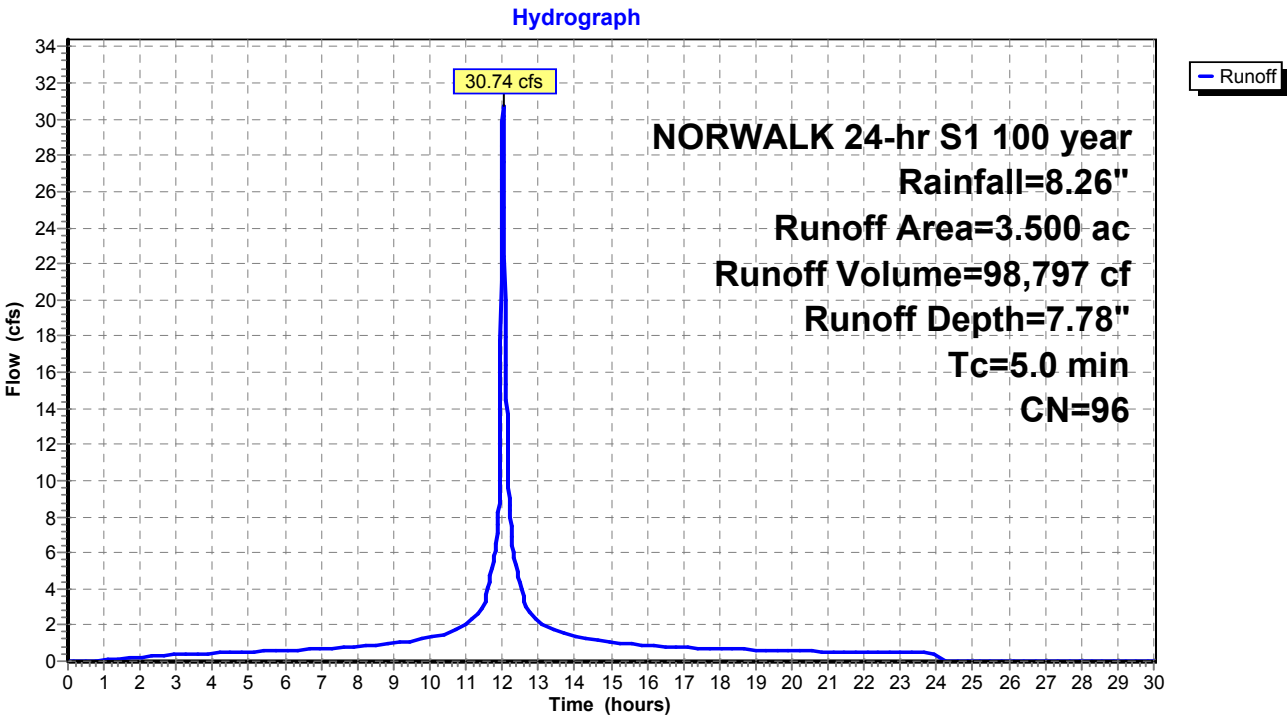
Runoff = 30.74 cfs @ 12.03 hrs, Volume= 98,797 cf, Depth= 7.78"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10CS: Area 10C

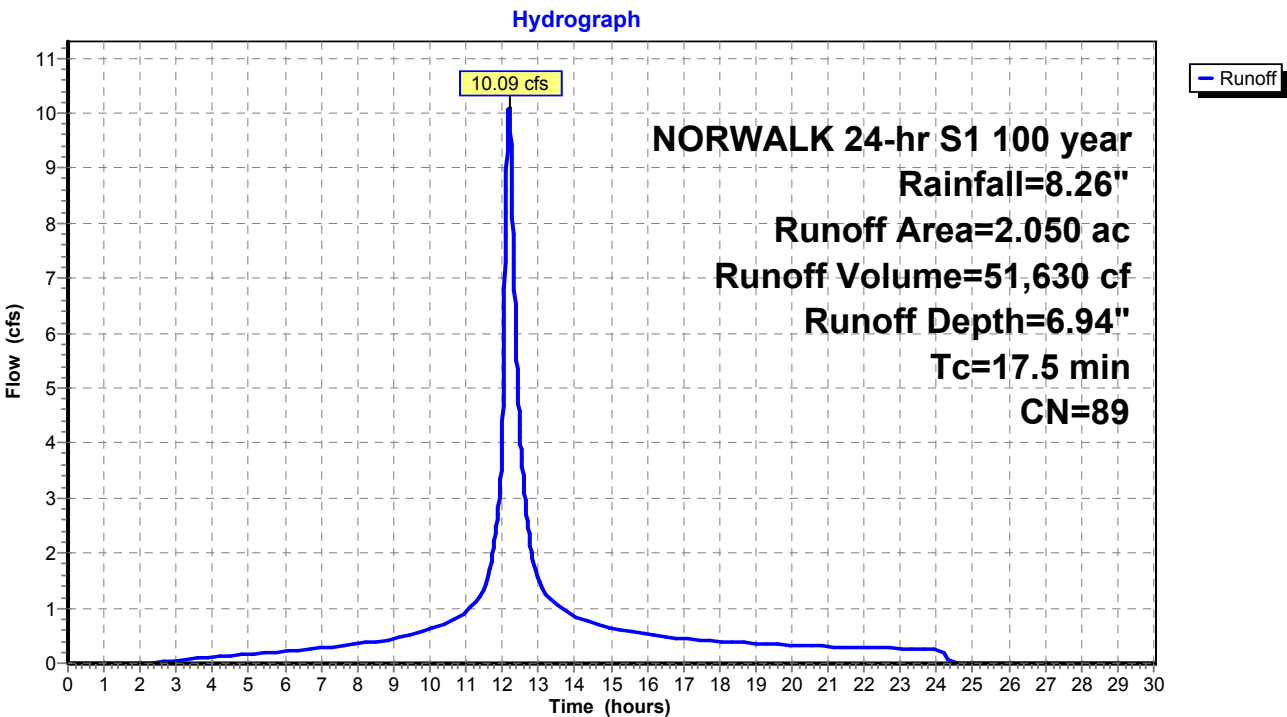
Runoff = 10.09 cfs @ 12.19 hrs, Volume= 51,630 cf, Depth= 6.94"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10DS: Area 10D

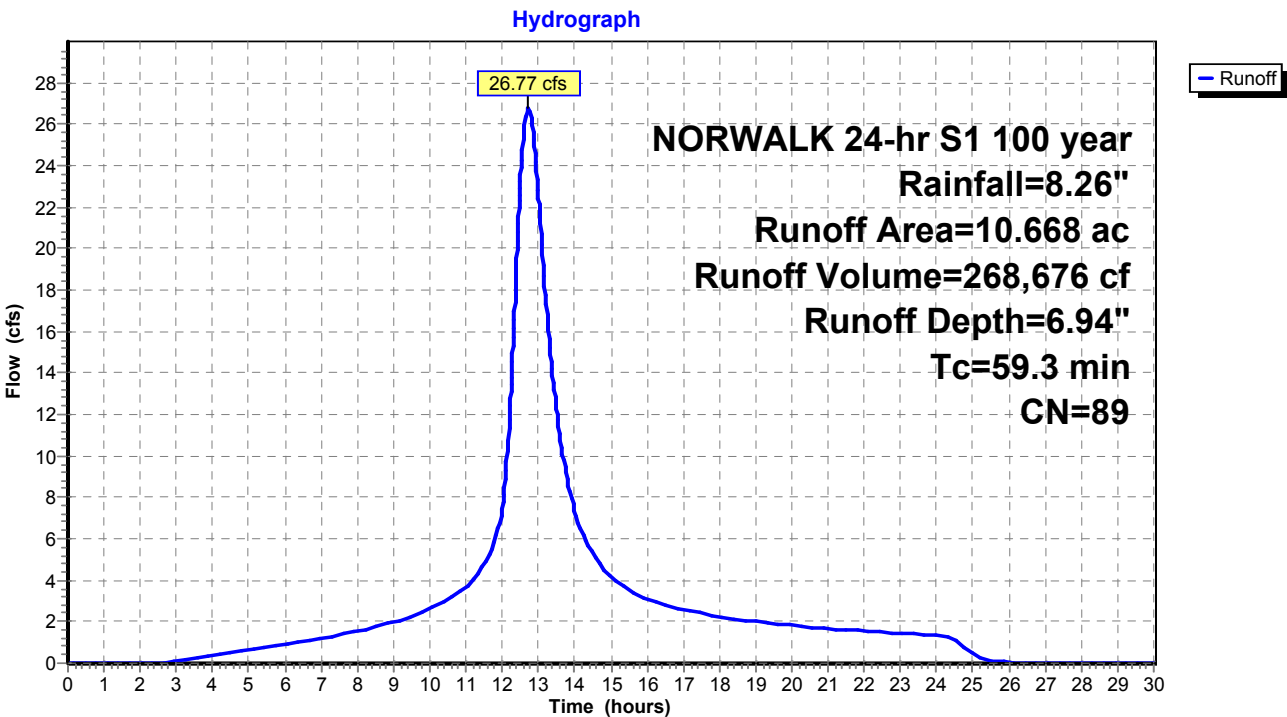
Runoff = 26.77 cfs @ 12.72 hrs, Volume= 268,676 cf, Depth= 6.94"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10ES: Area 10E

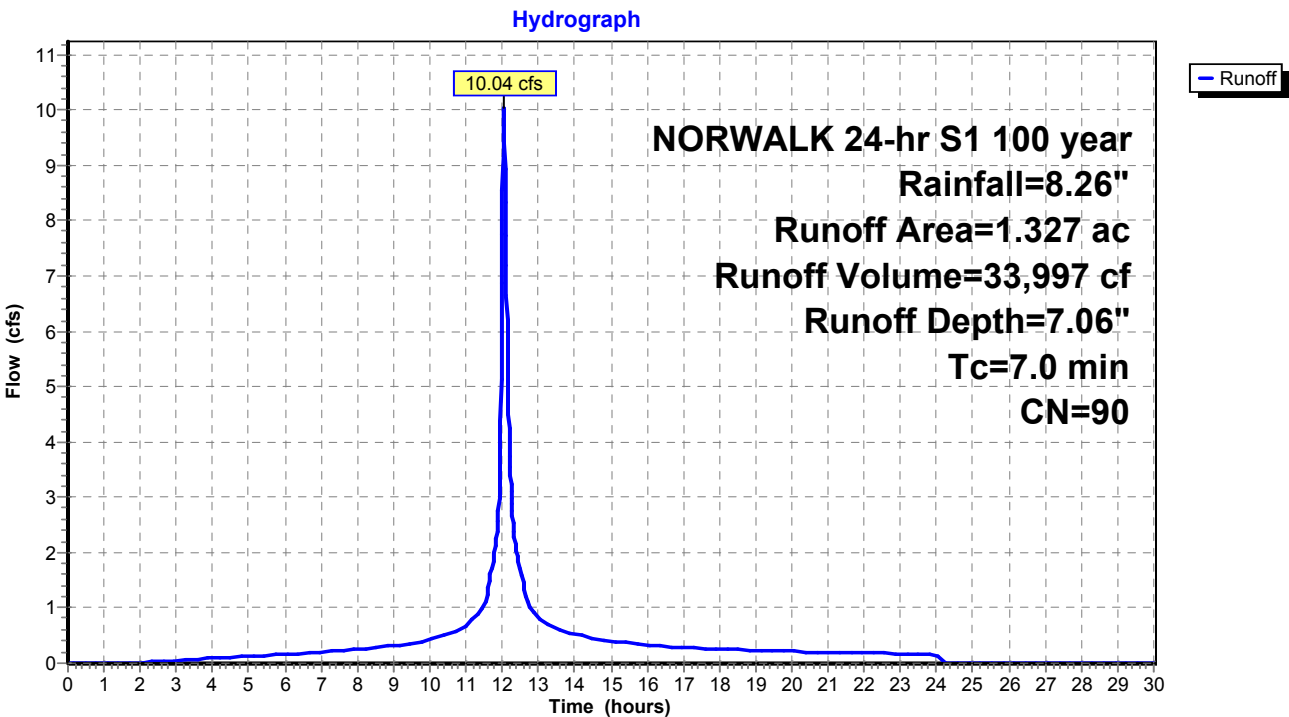
Runoff = 10.04 cfs @ 12.05 hrs, Volume= 33,997 cf, Depth= 7.06"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.798	98	Paved parking, HSG C
0.529	79	50-75% Grass cover, Fair, HSG C
1.327	90	Weighted Average
0.529		39.86% Pervious Area
0.798		60.14% Impervious Area

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

Subcatchment 10ES: Area 10E



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10FS: Area 10F

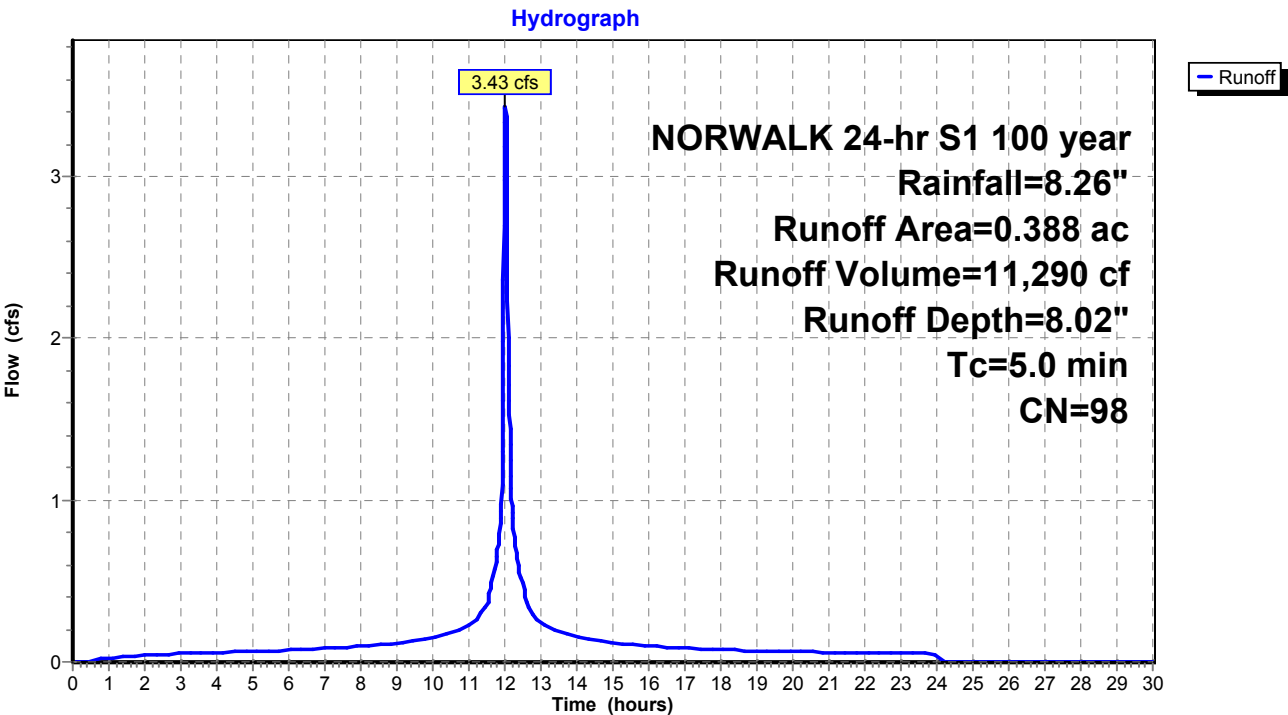
Runoff = 3.43 cfs @ 12.03 hrs, Volume= 11,290 cf, Depth= 8.02"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 11S: Area 11

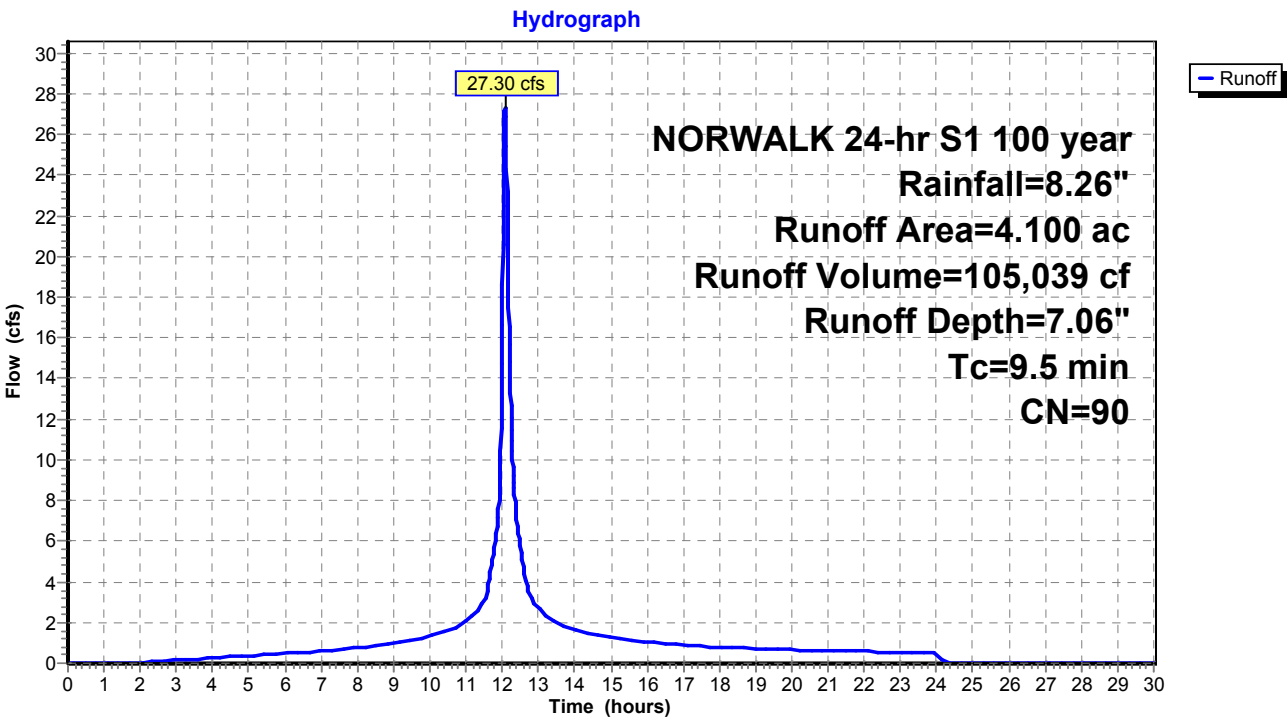
Runoff = 27.30 cfs @ 12.08 hrs, Volume= 105,039 cf, Depth= 7.06"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 12S: Area 12

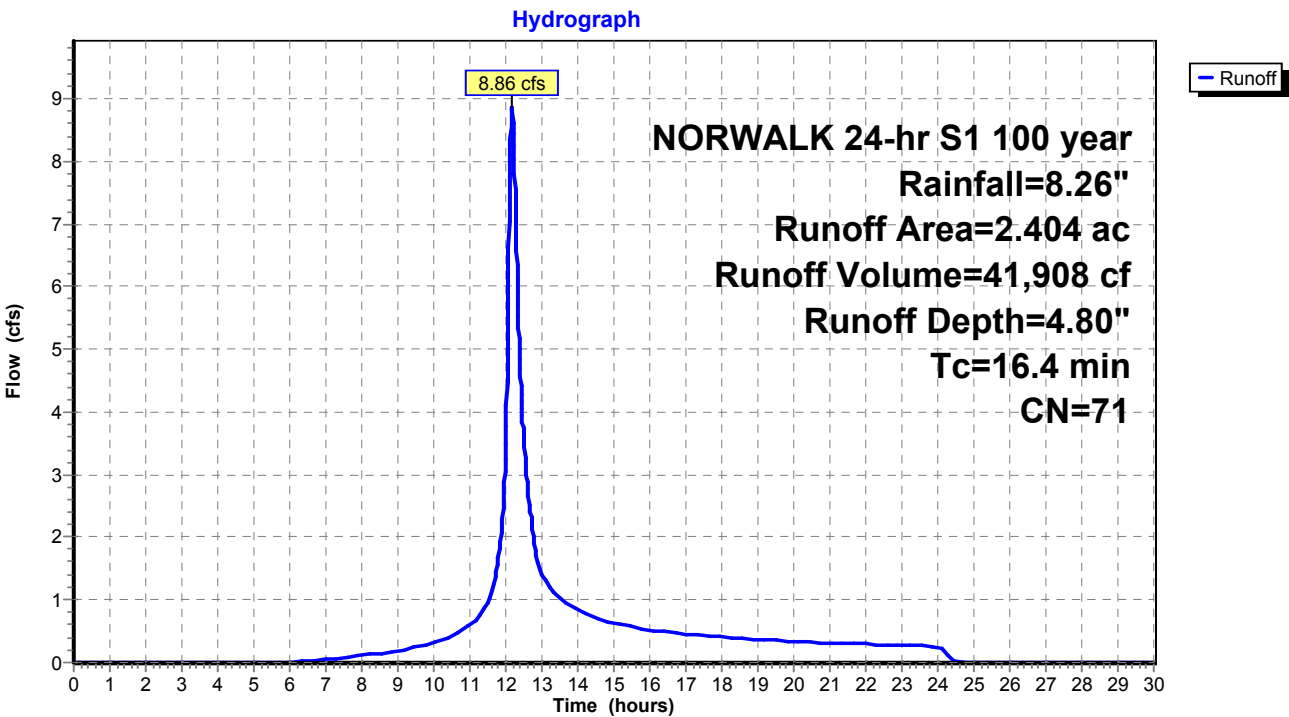
Runoff = 8.86 cfs @ 12.17 hrs, Volume= 41,908 cf, Depth= 4.80"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 13S: Area 13

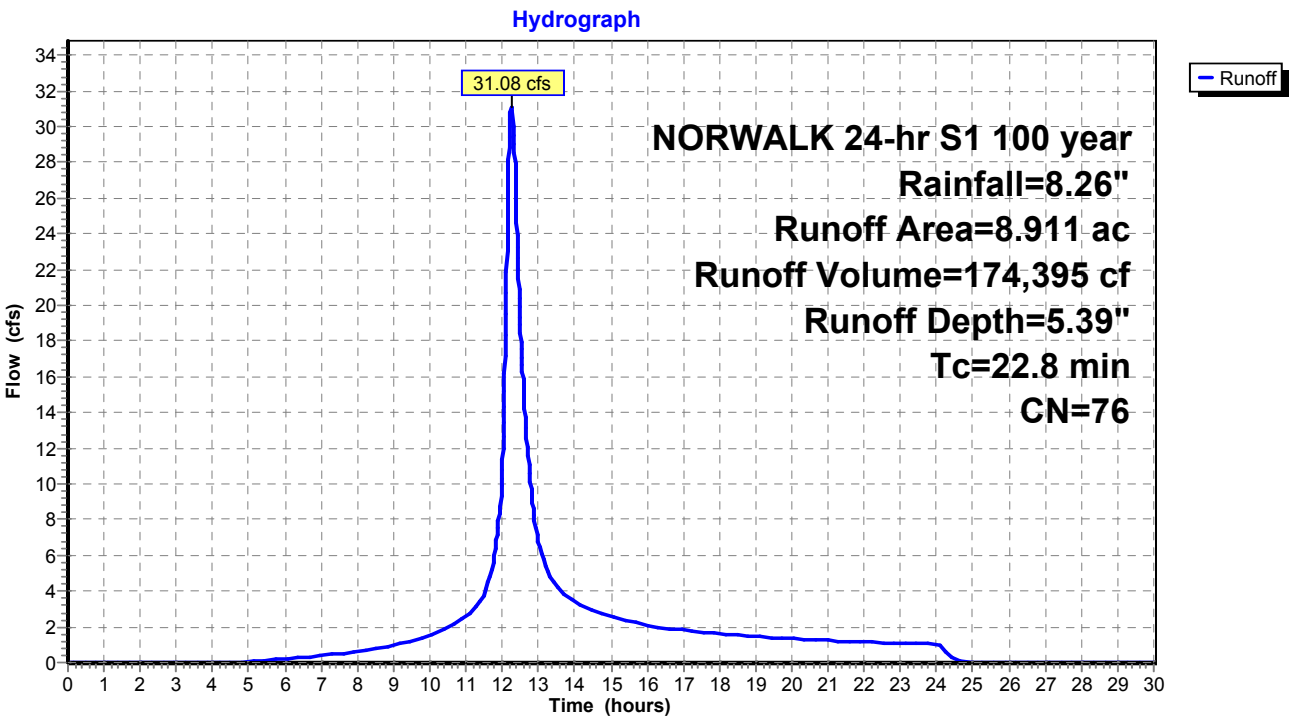
Runoff = 31.08 cfs @ 12.26 hrs, Volume= 174,395 cf, Depth= 5.39"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 14S: Area 14

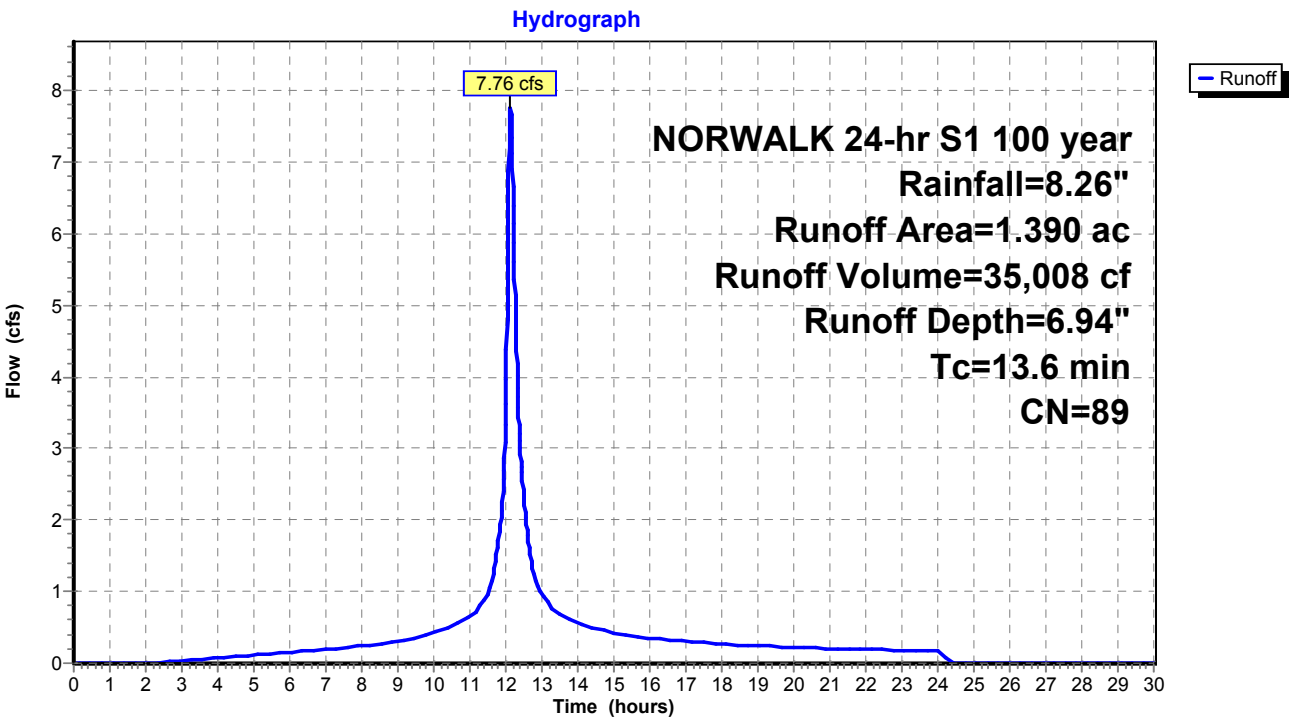
Runoff = 7.76 cfs @ 12.13 hrs, Volume= 35,008 cf, Depth= 6.94"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 15S: Area 15

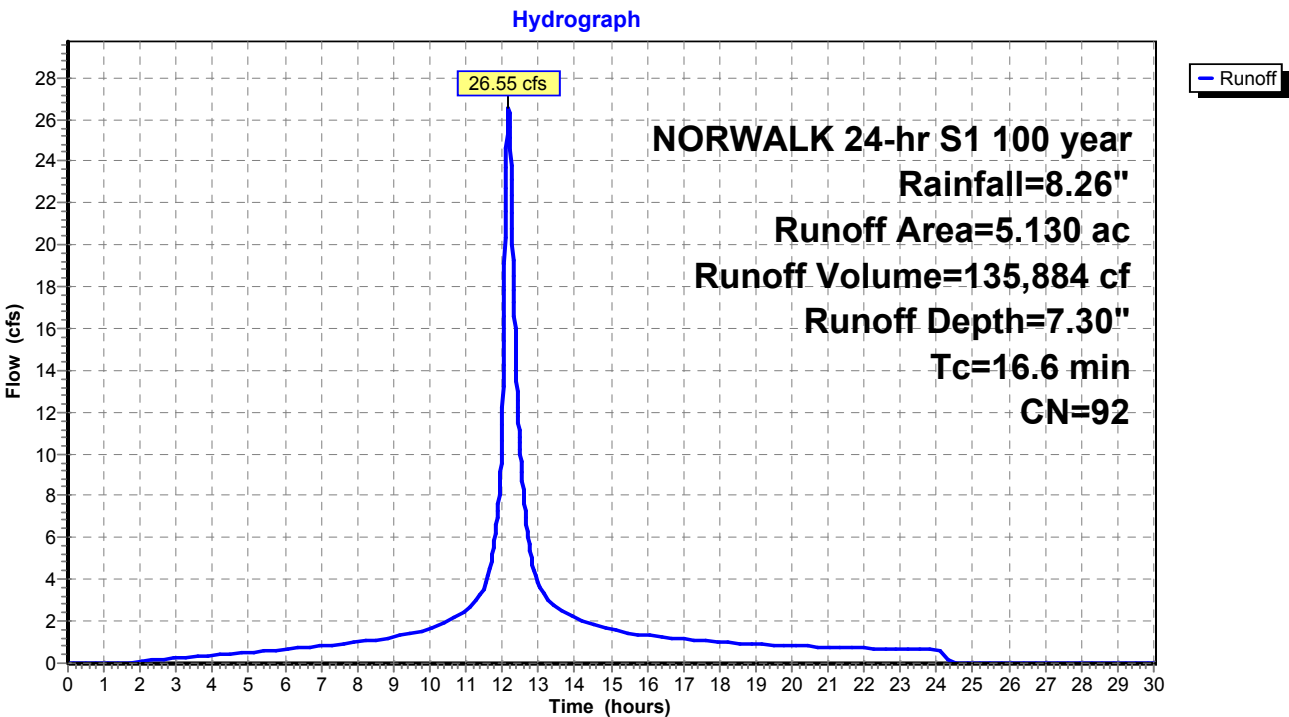
Runoff = 26.55 cfs @ 12.17 hrs, Volume= 135,884 cf, Depth= 7.30"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 16S: Area 16A

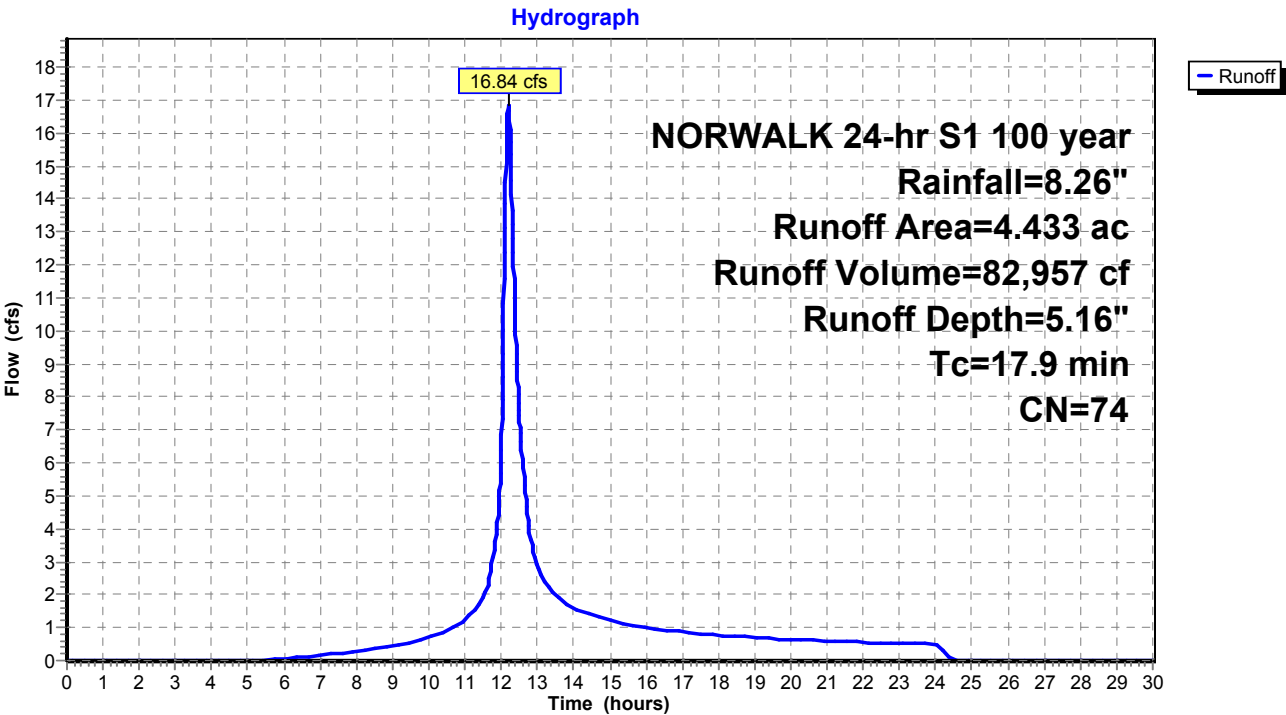
Runoff = 16.84 cfs @ 12.19 hrs, Volume= 82,957 cf, Depth= 5.16"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 17S: Area 17

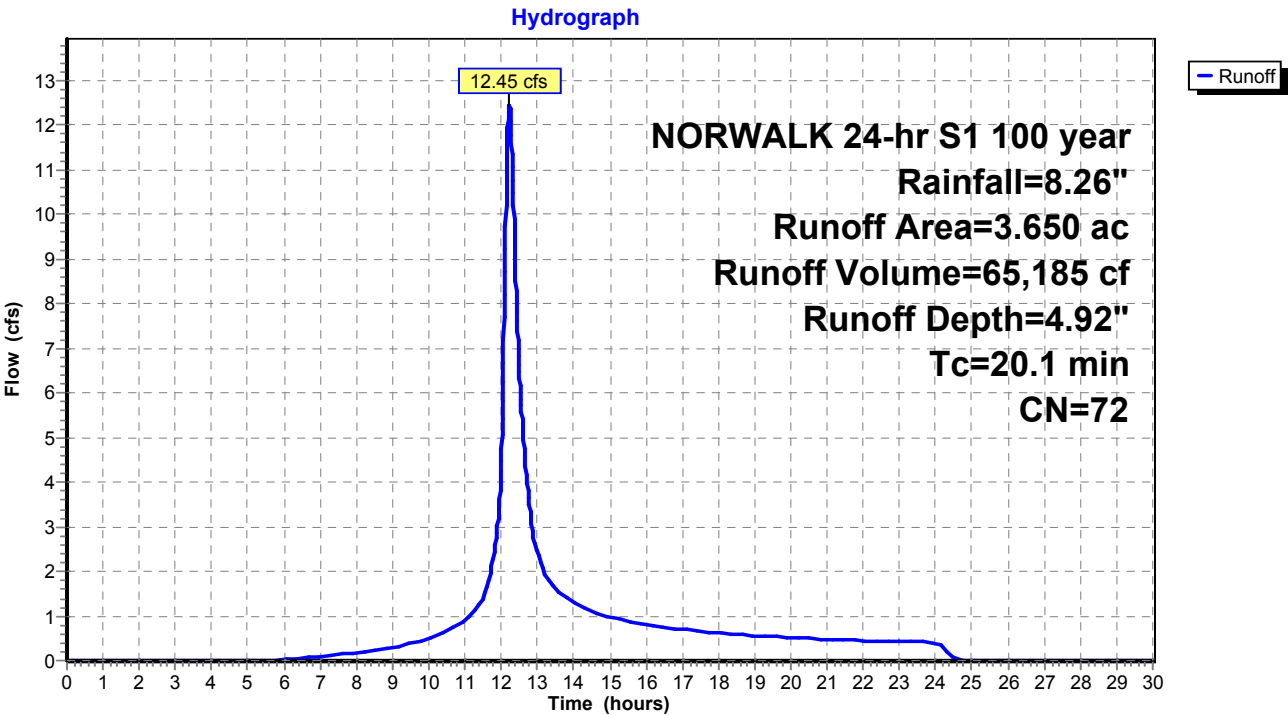
Runoff = 12.45 cfs @ 12.22 hrs, Volume= 65,185 cf, Depth= 4.92"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 20S: Area 20

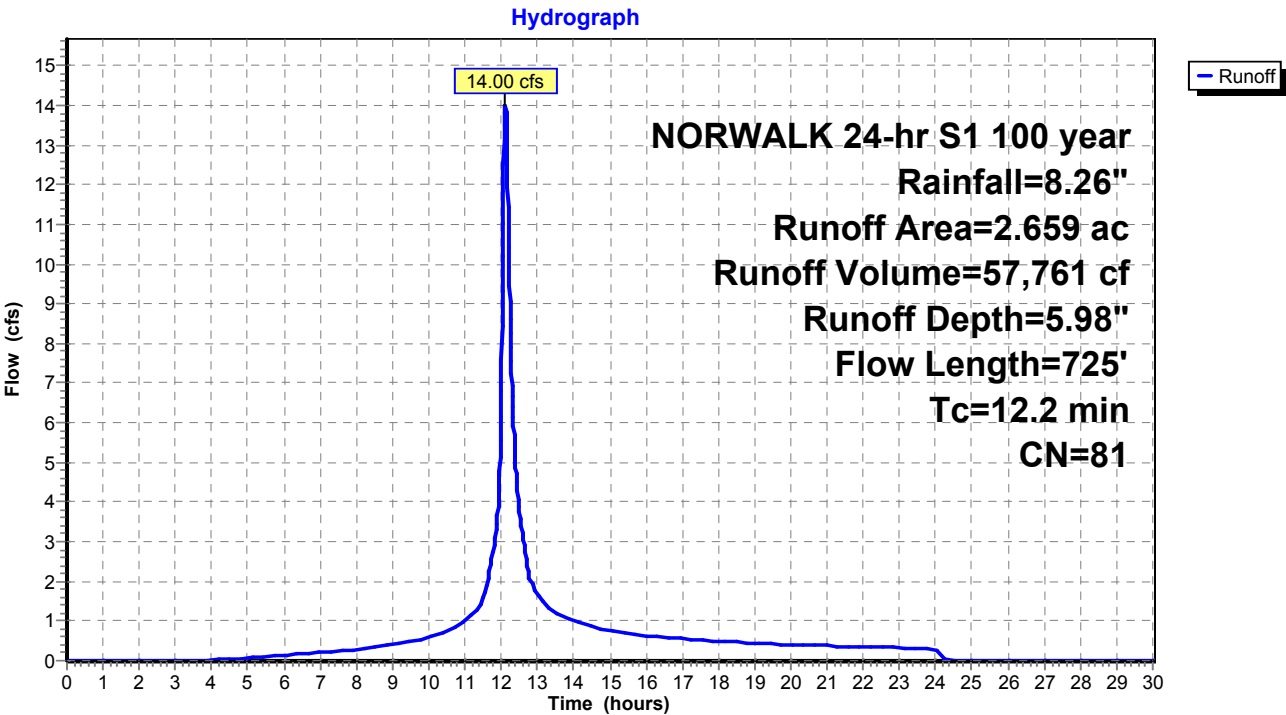
Runoff = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf, Depth= 5.98"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 21S: Area 21

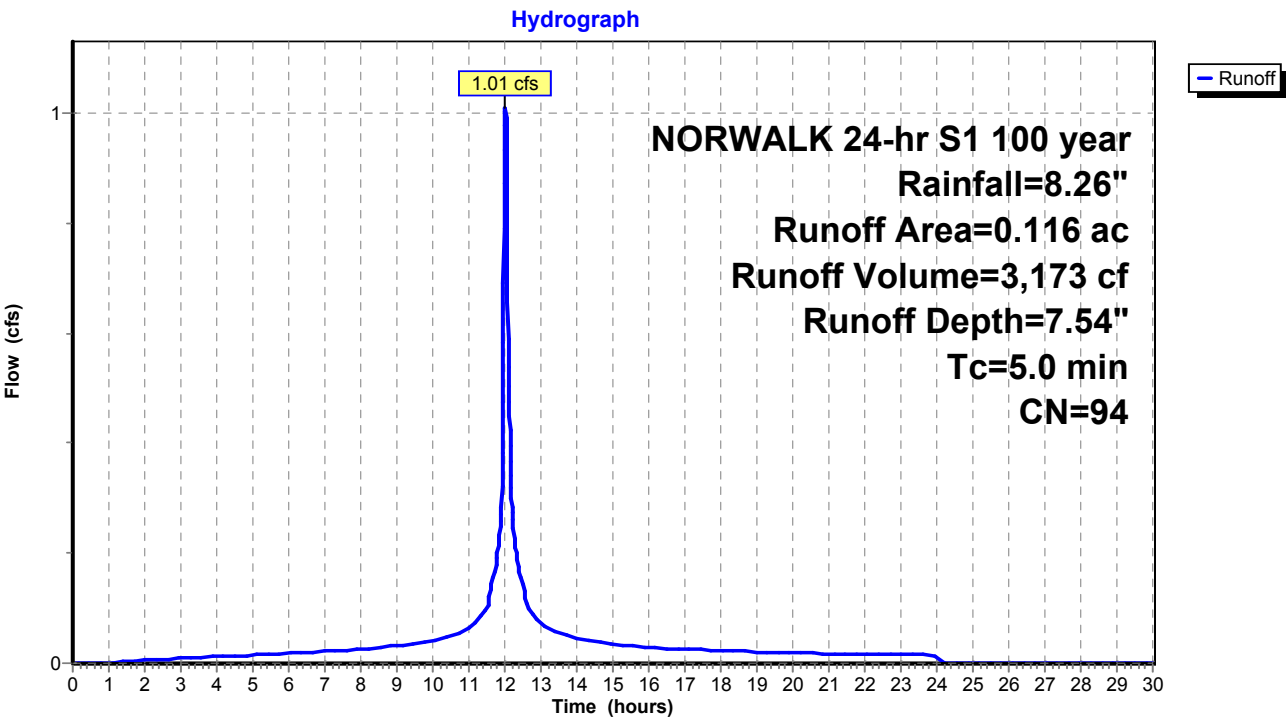
Runoff = 1.01 cfs @ 12.03 hrs, Volume= 3,173 cf, Depth= 7.54"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 22S: Area 22

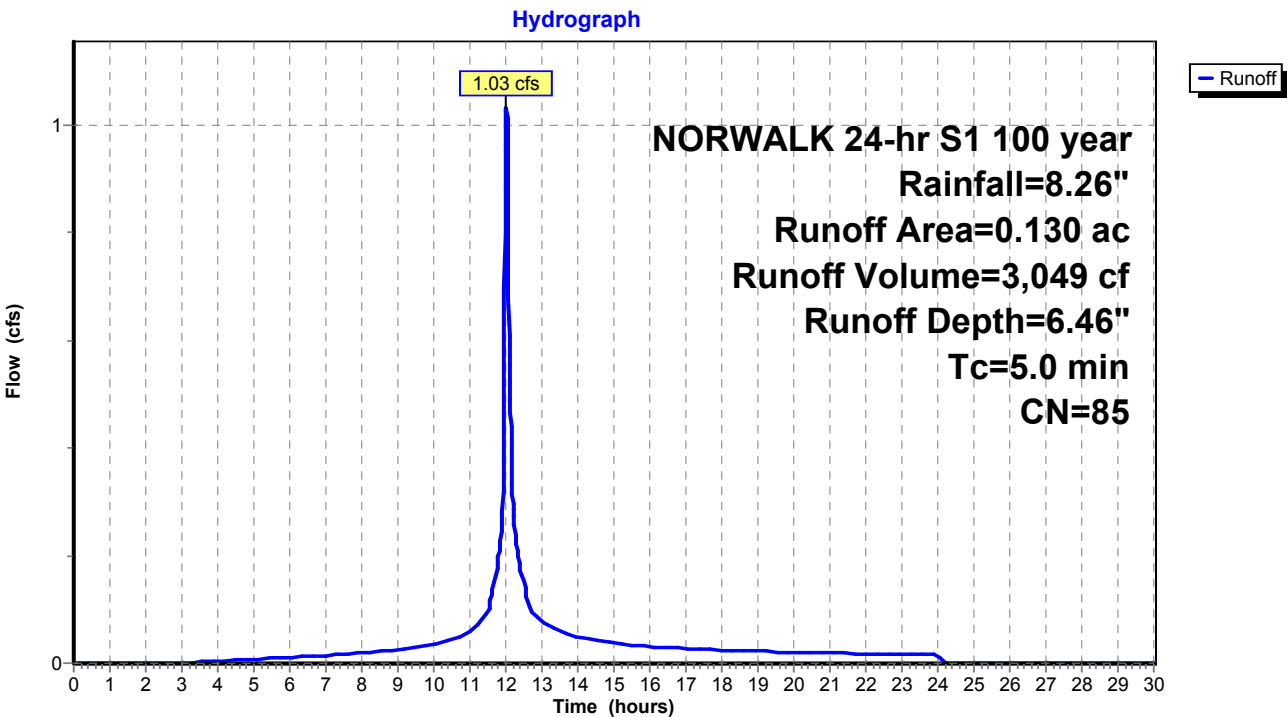
Runoff = 1.03 cfs @ 12.03 hrs, Volume= 3,049 cf, Depth= 6.46"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 23S: Area 23

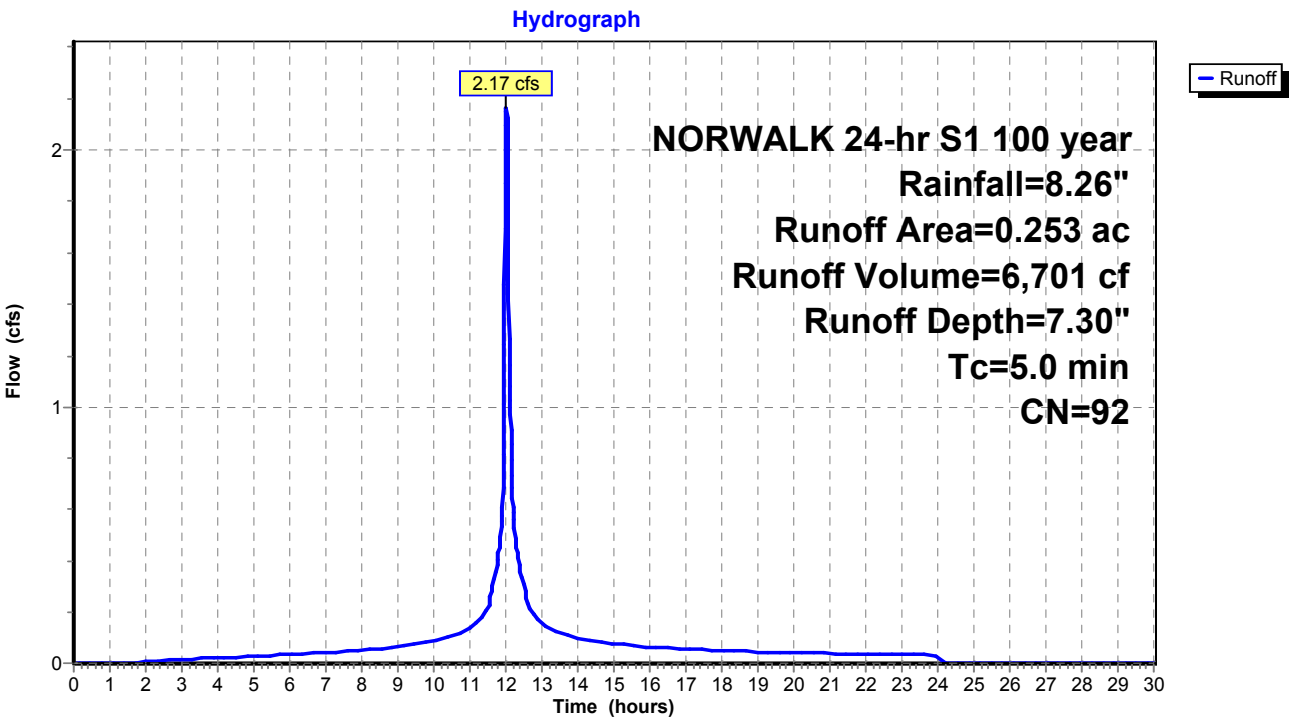
Runoff = 2.17 cfs @ 12.03 hrs, Volume= 6,701 cf, Depth= 7.30"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 24S: Area 24

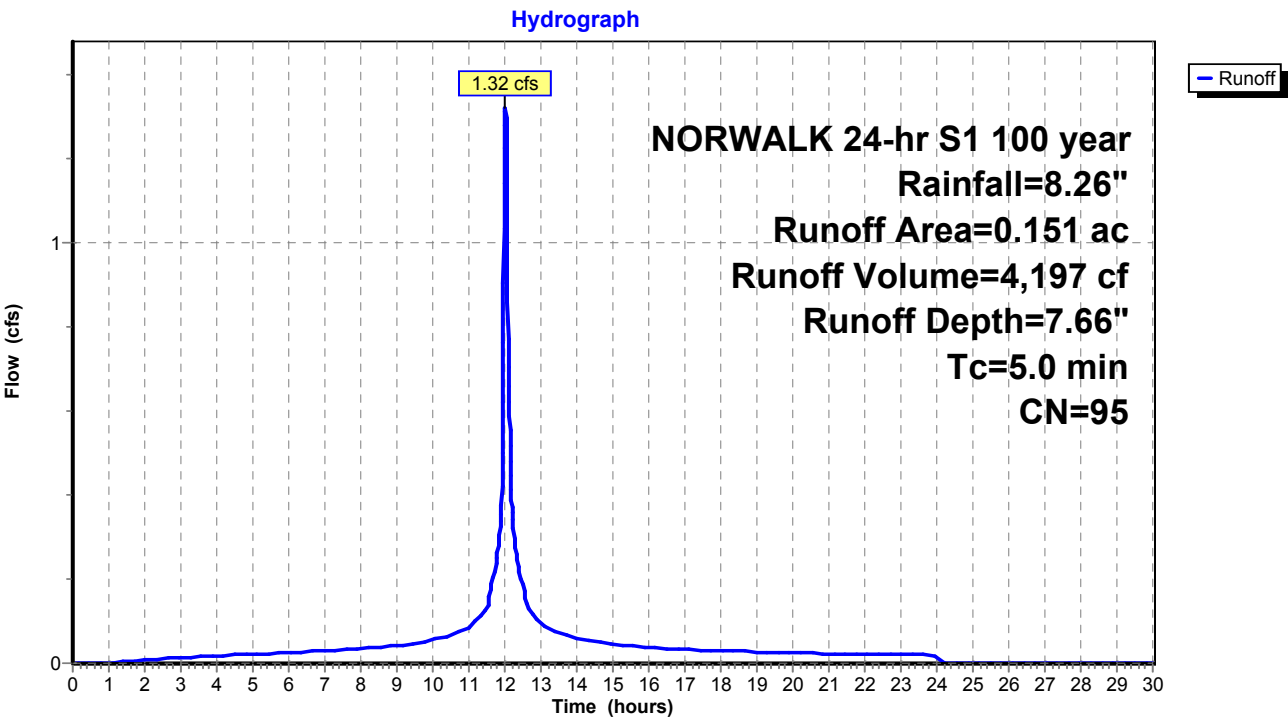
Runoff = 1.32 cfs @ 12.03 hrs, Volume= 4,197 cf, Depth= 7.66"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 25S: Area 25

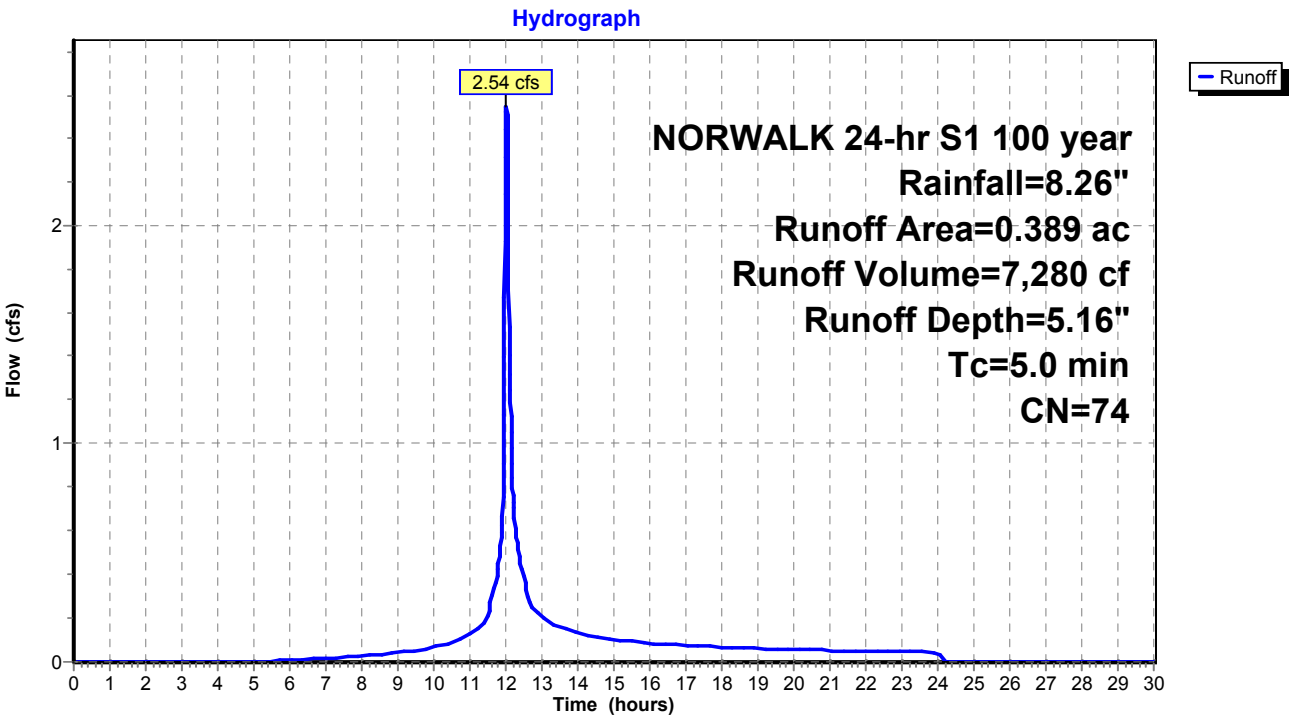
Runoff = 2.54 cfs @ 12.03 hrs, Volume= 7,280 cf, Depth= 5.16"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 26S: Area 26

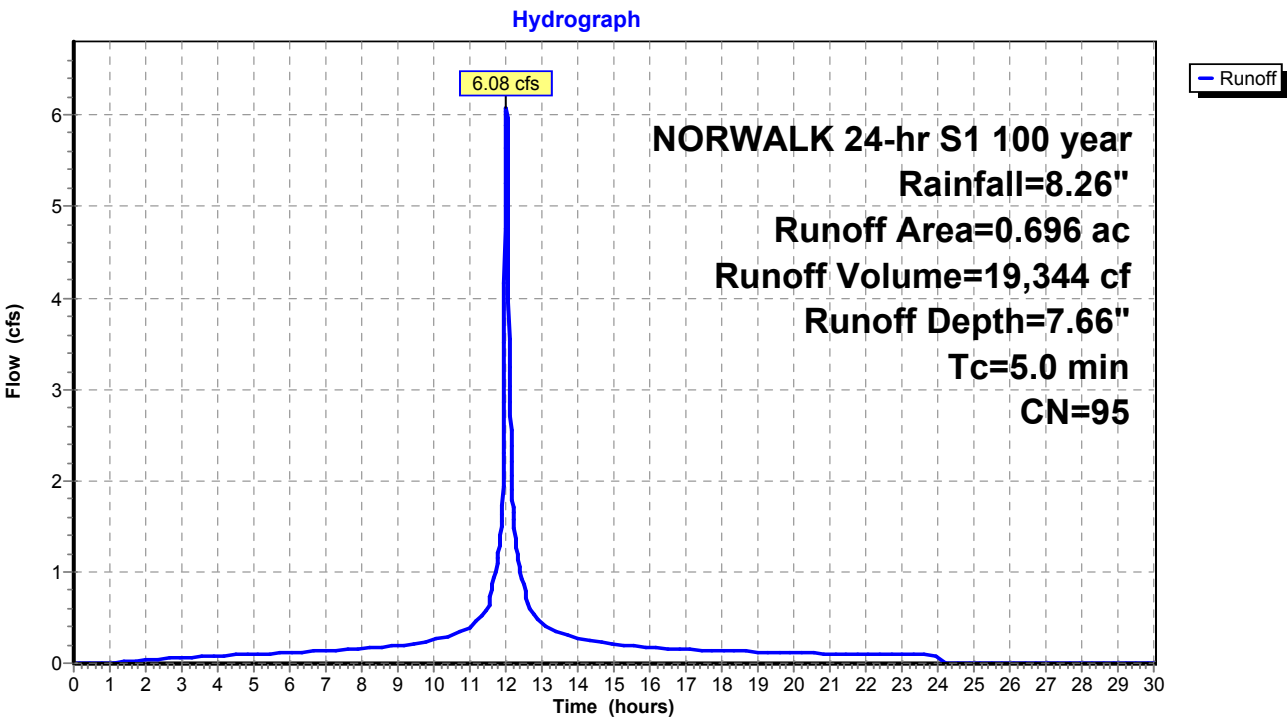
Runoff = 6.08 cfs @ 12.03 hrs, Volume= 19,344 cf, Depth= 7.66"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 27S: Area 27

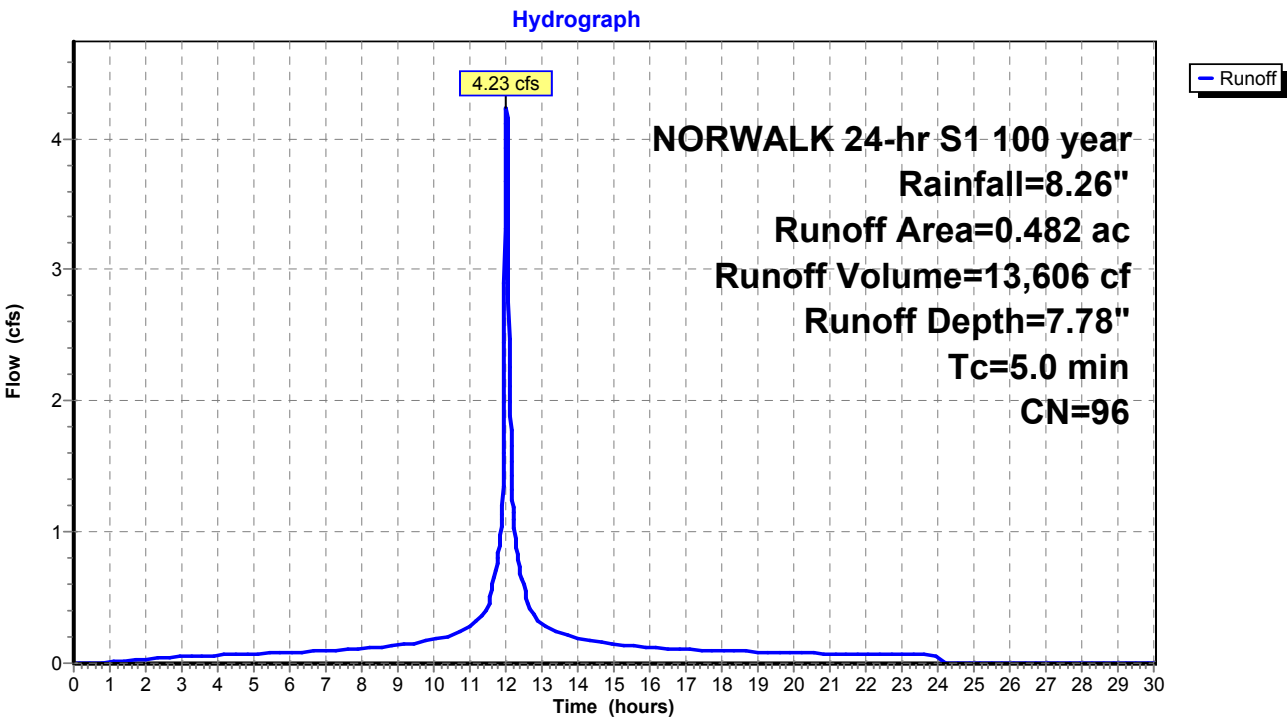
Runoff = 4.23 cfs @ 12.03 hrs, Volume= 13,606 cf, Depth= 7.78"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 28S: Area 28

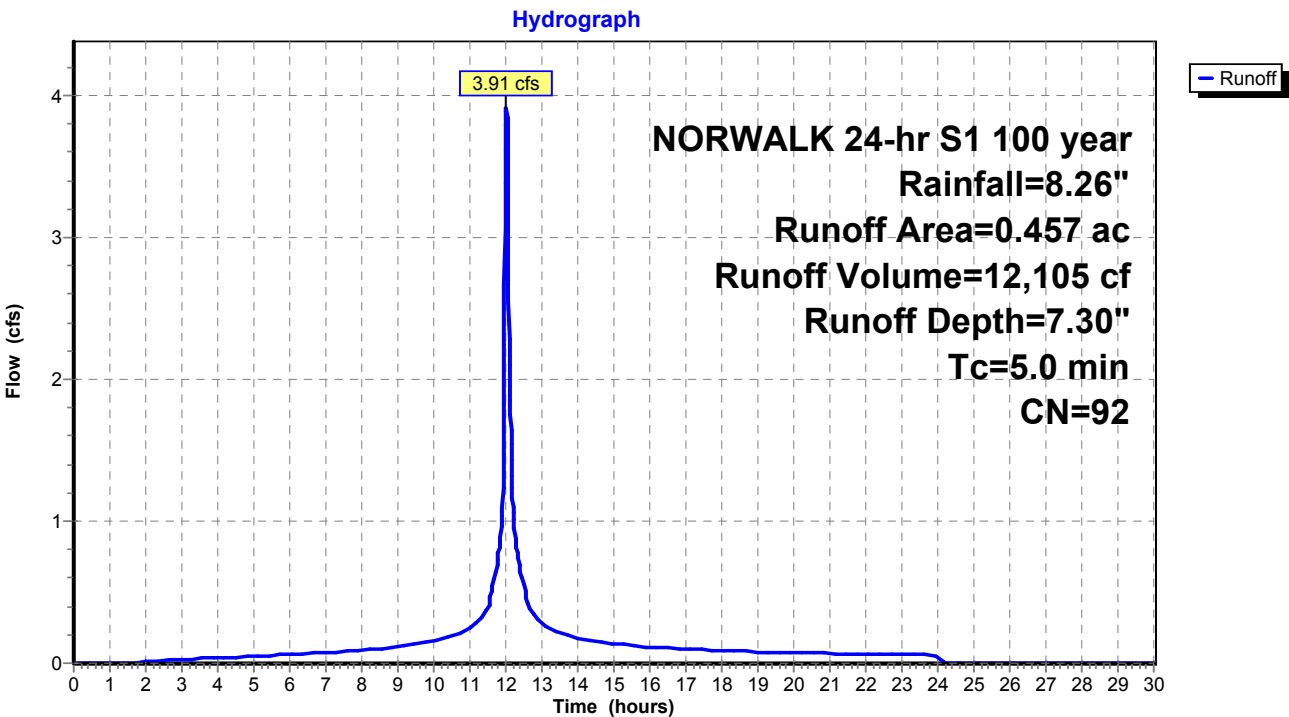
Runoff = 3.91 cfs @ 12.03 hrs, Volume= 12,105 cf, Depth= 7.30"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 29S: Area 29

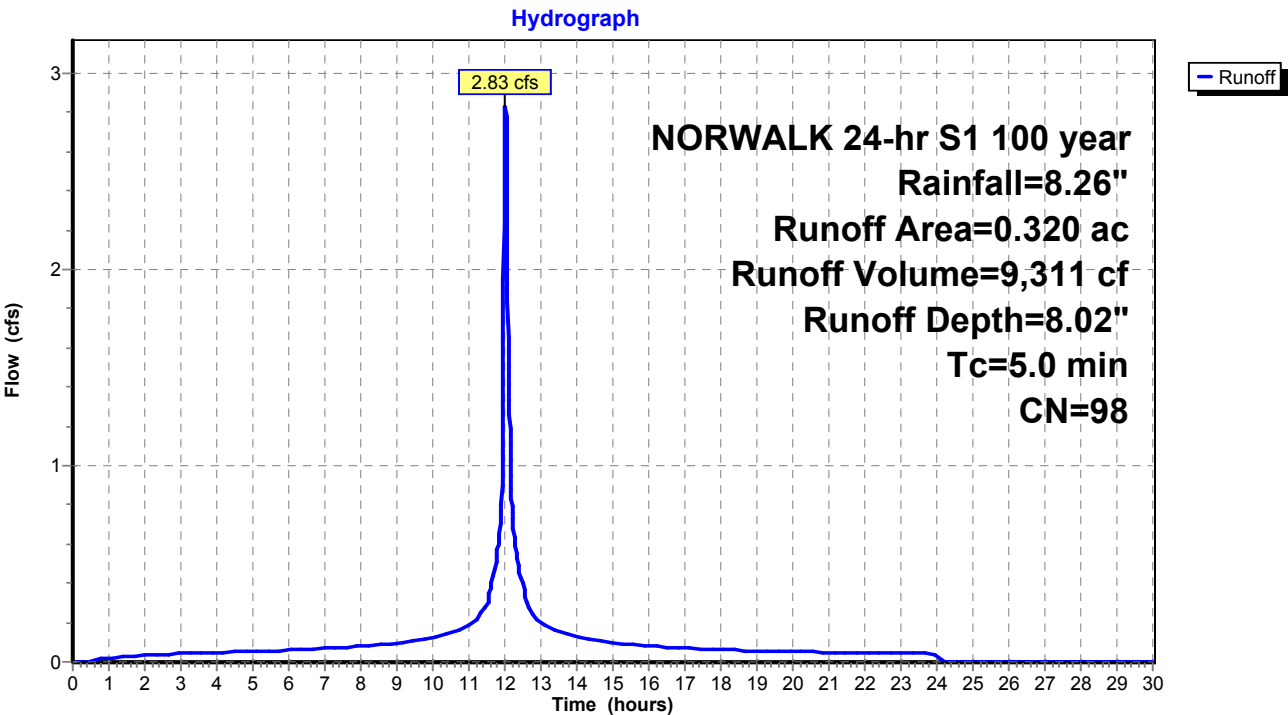
Runoff = 2.83 cfs @ 12.03 hrs, Volume= 9,311 cf, Depth= 8.02"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 30S: Area 30

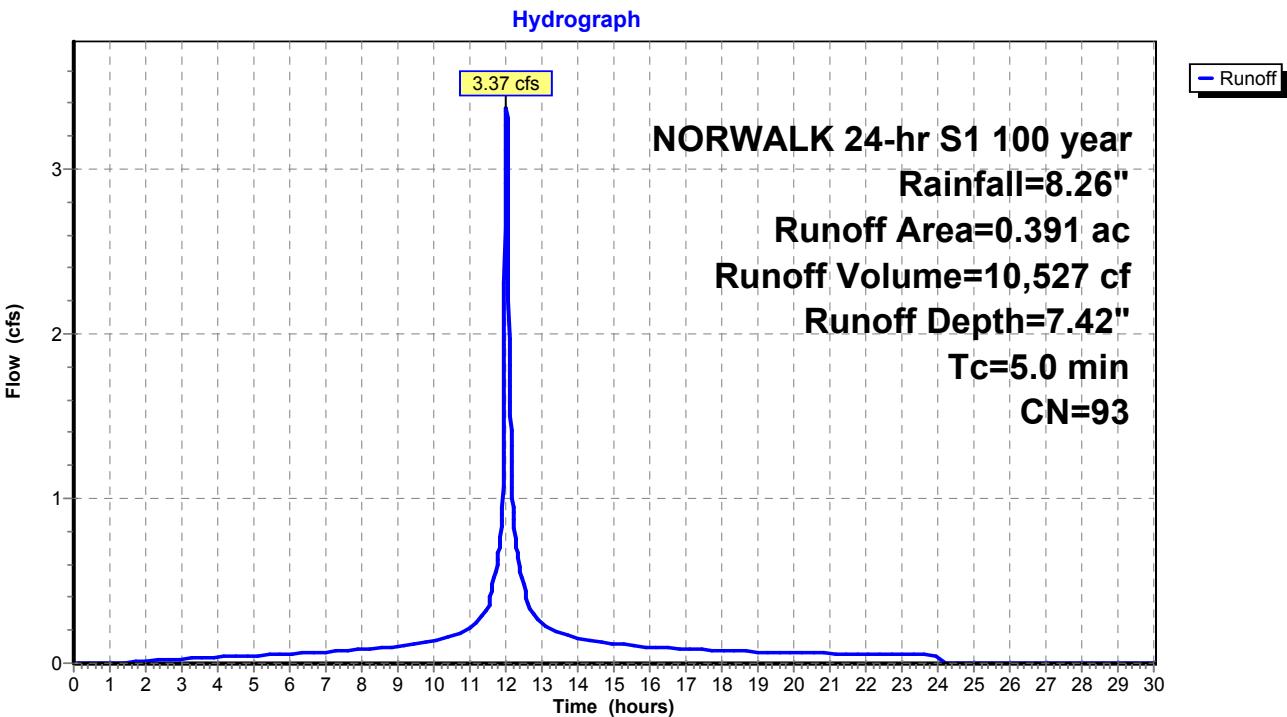
Runoff = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf, Depth= 7.42"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 52S: Area 1

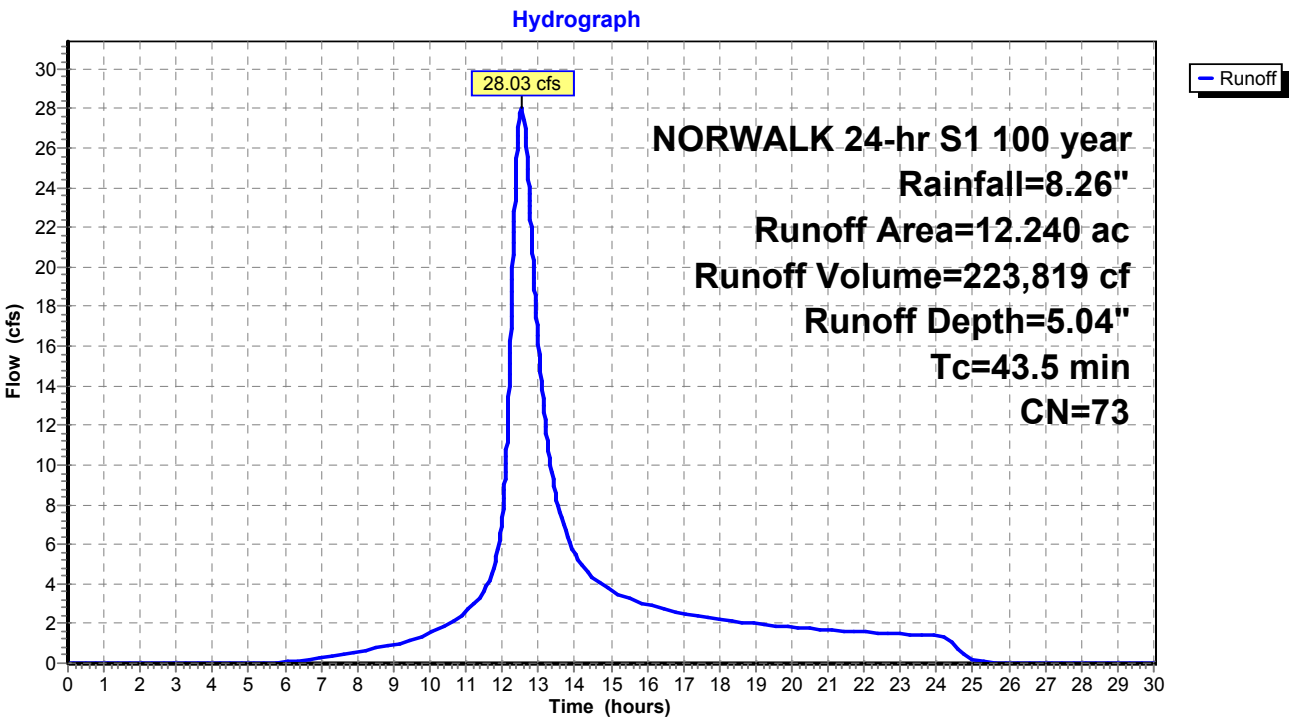
Runoff = 28.03 cfs @ 12.52 hrs, Volume= 223,819 cf, Depth= 5.04"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 53S: Area 2

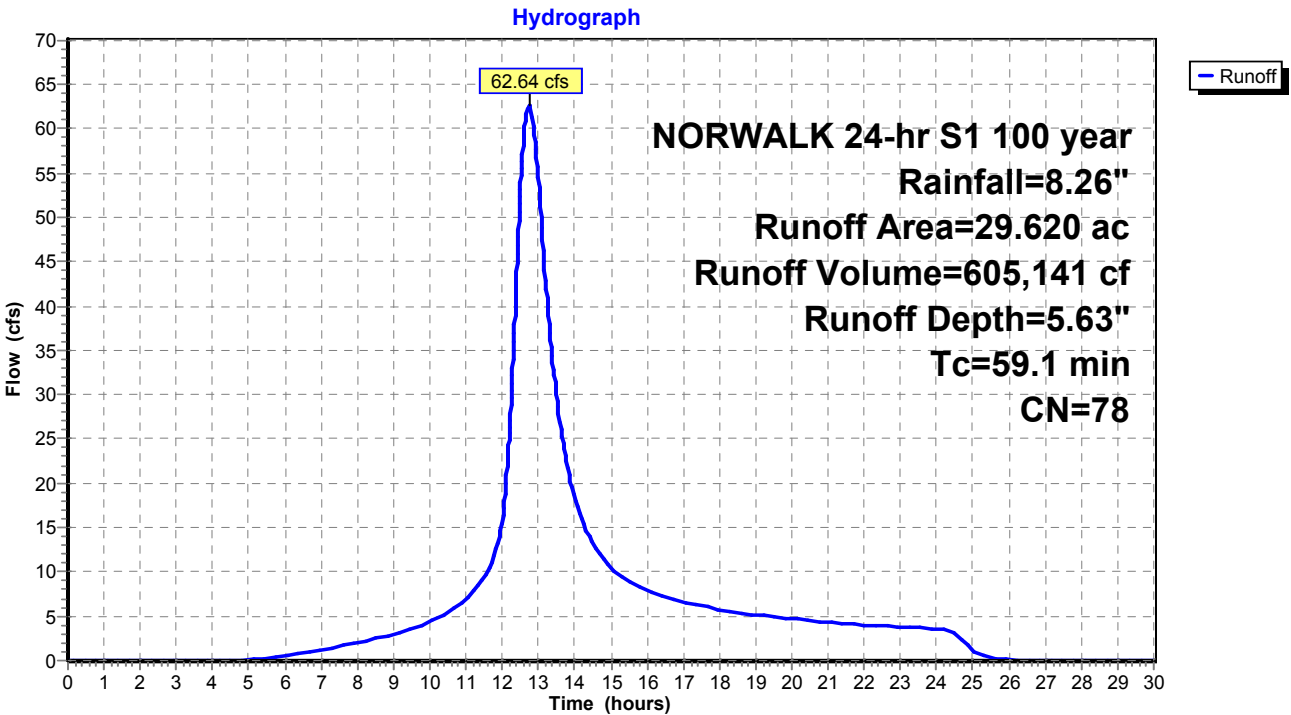
Runoff = 62.64 cfs @ 12.74 hrs, Volume= 605,141 cf, Depth= 5.63"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 54S: Area 3

Runoff = 23.17 cfs @ 12.22 hrs, Volume= 118,644 cf, Depth= 5.16"
Routed to Pond 23P : DET 3 Culvert

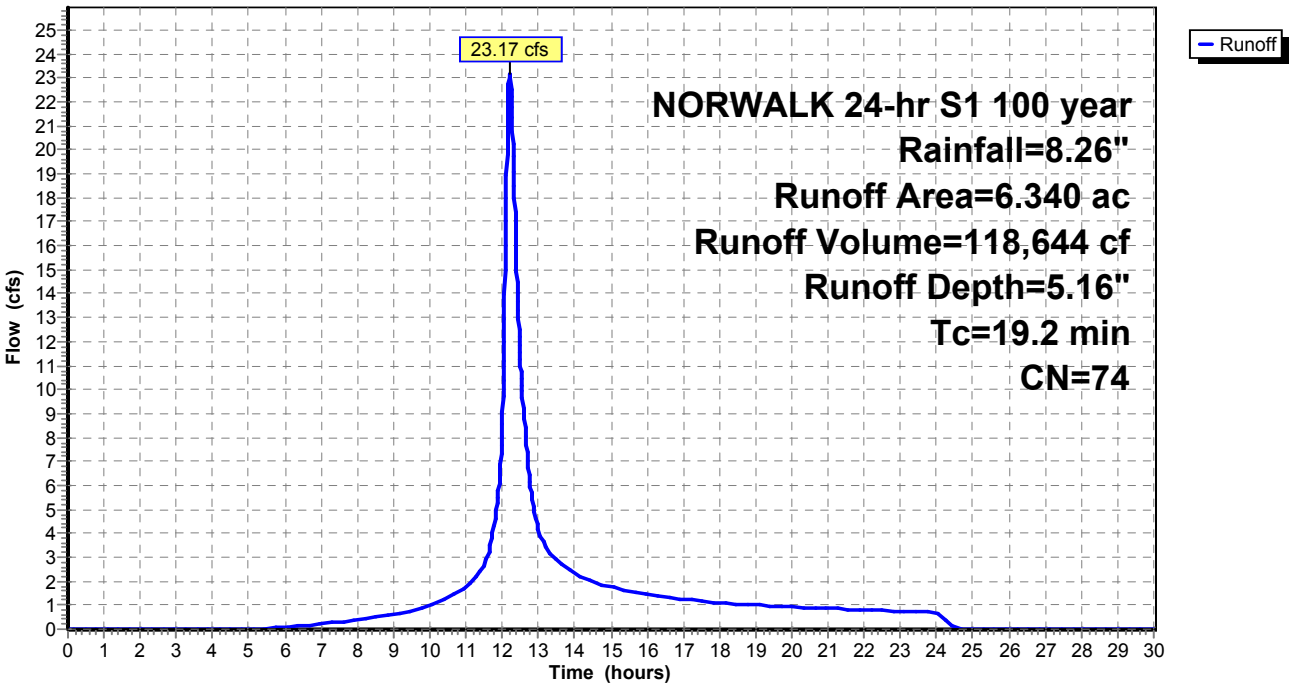
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3

Hydrograph



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 56S: Area 35

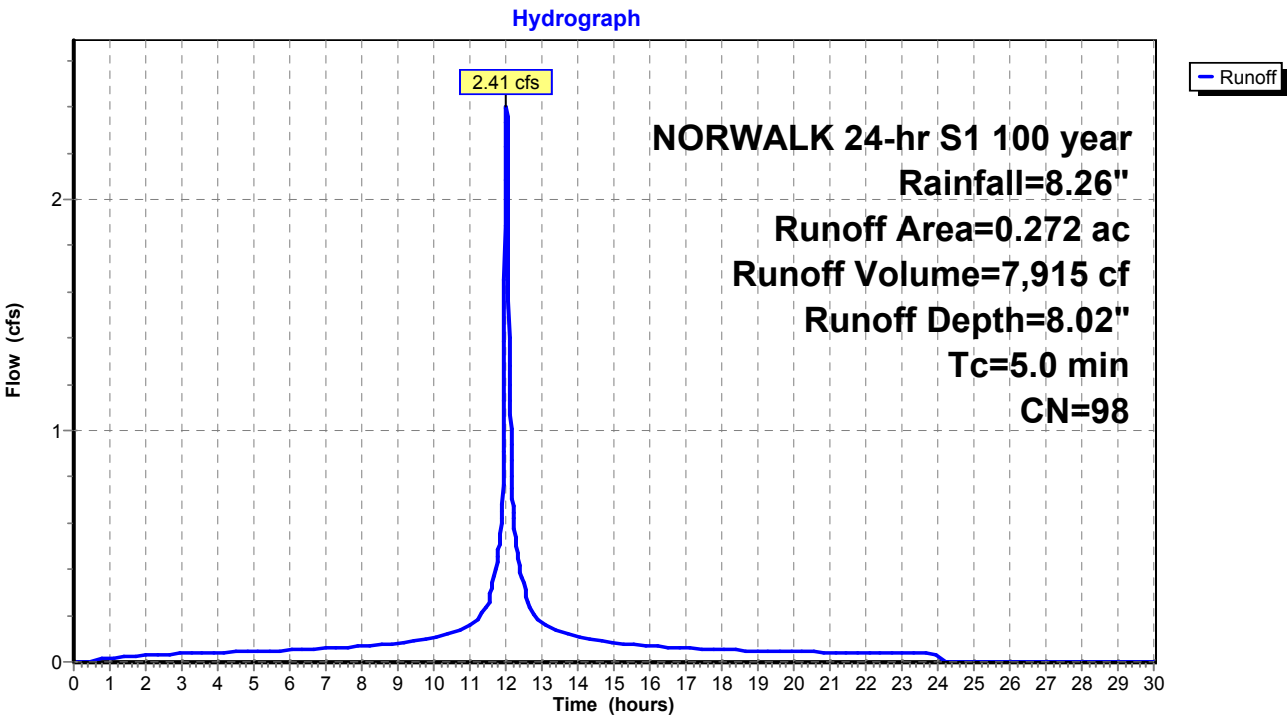
Runoff = 2.41 cfs @ 12.03 hrs, Volume= 7,915 cf, Depth= 8.02"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 60S: Area 37

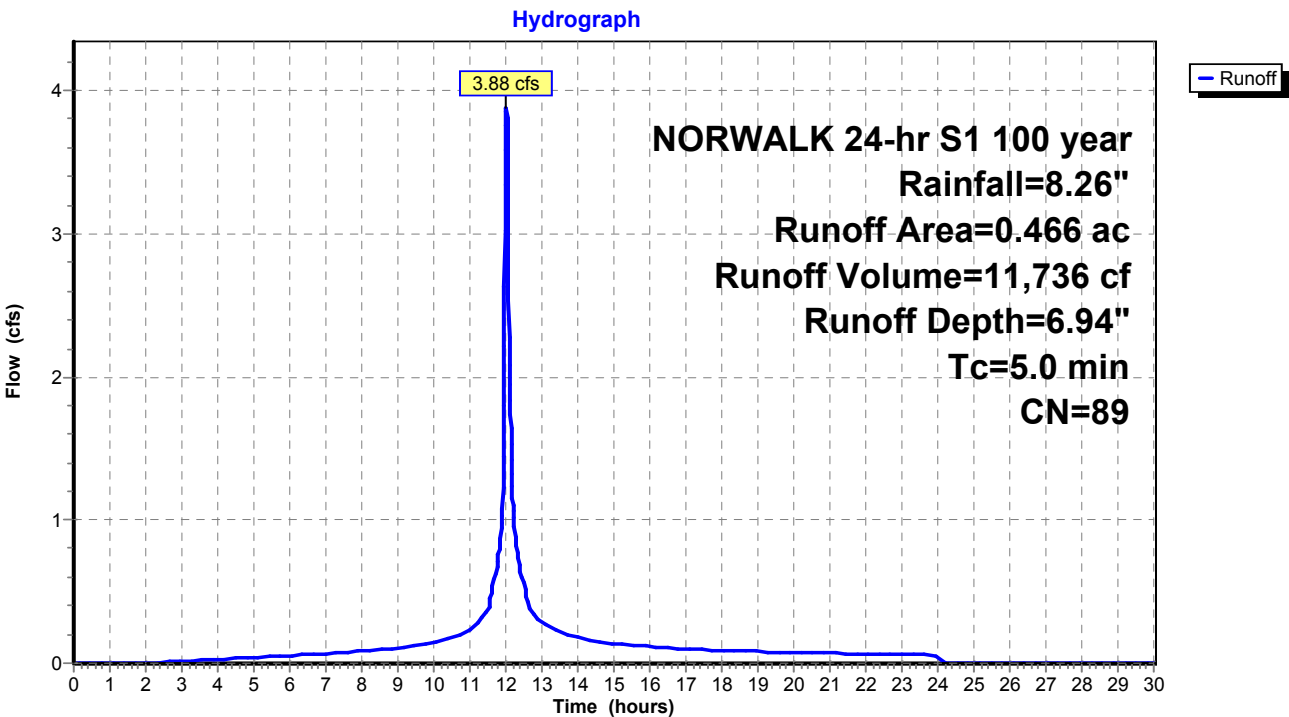
Runoff = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf, Depth= 6.94"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 62S: Area 38

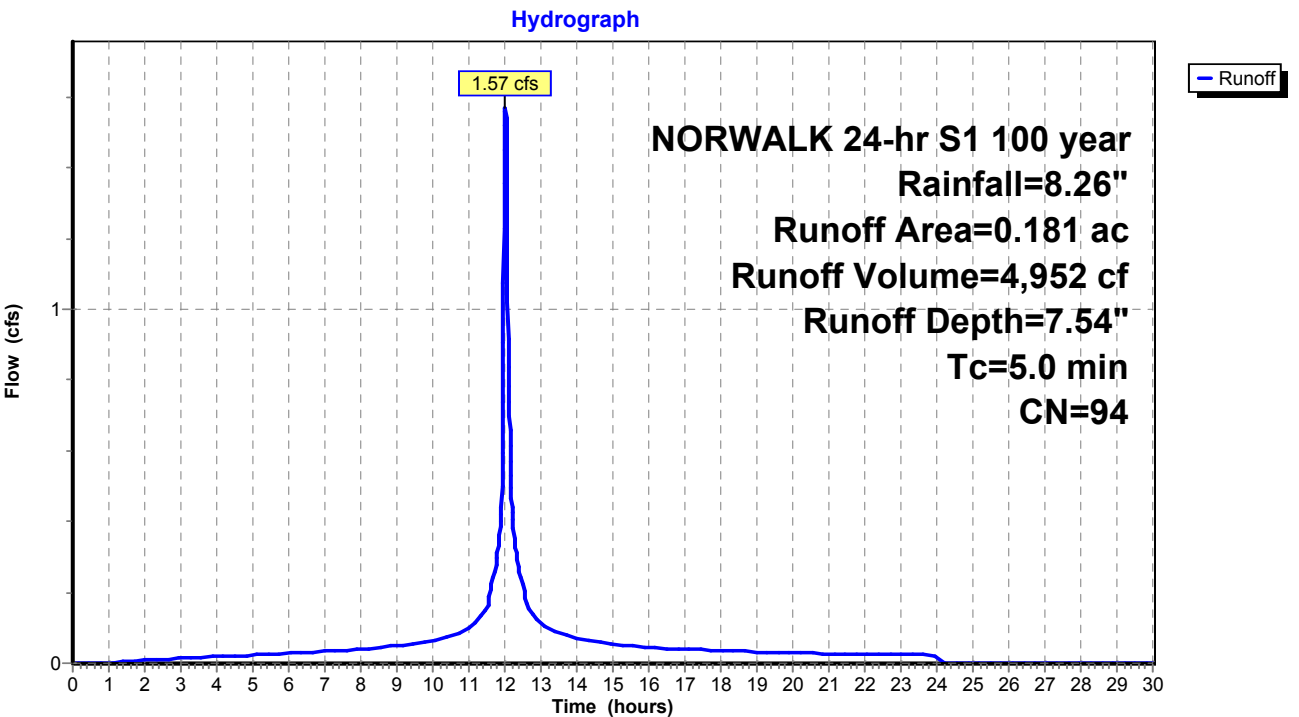
Runoff = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf, Depth= 7.54"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 65S: Area 41

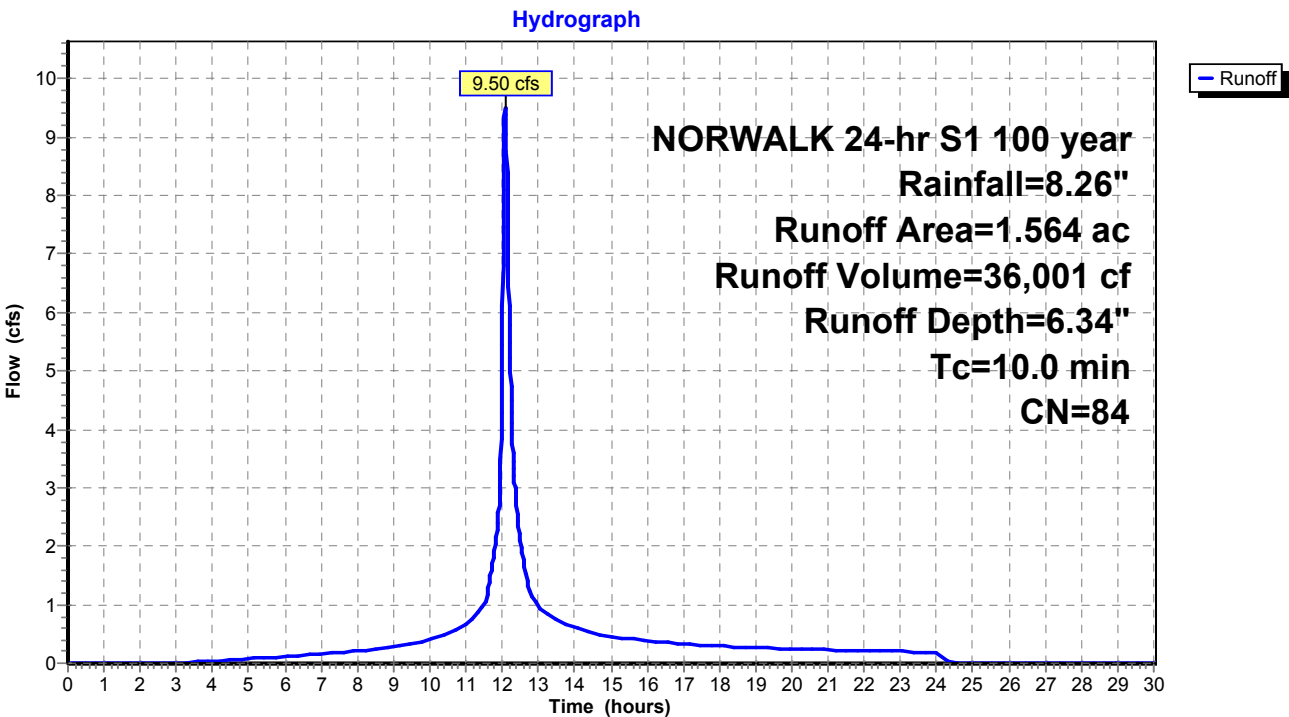
Runoff = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf, Depth= 6.34"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 68S: Area 36

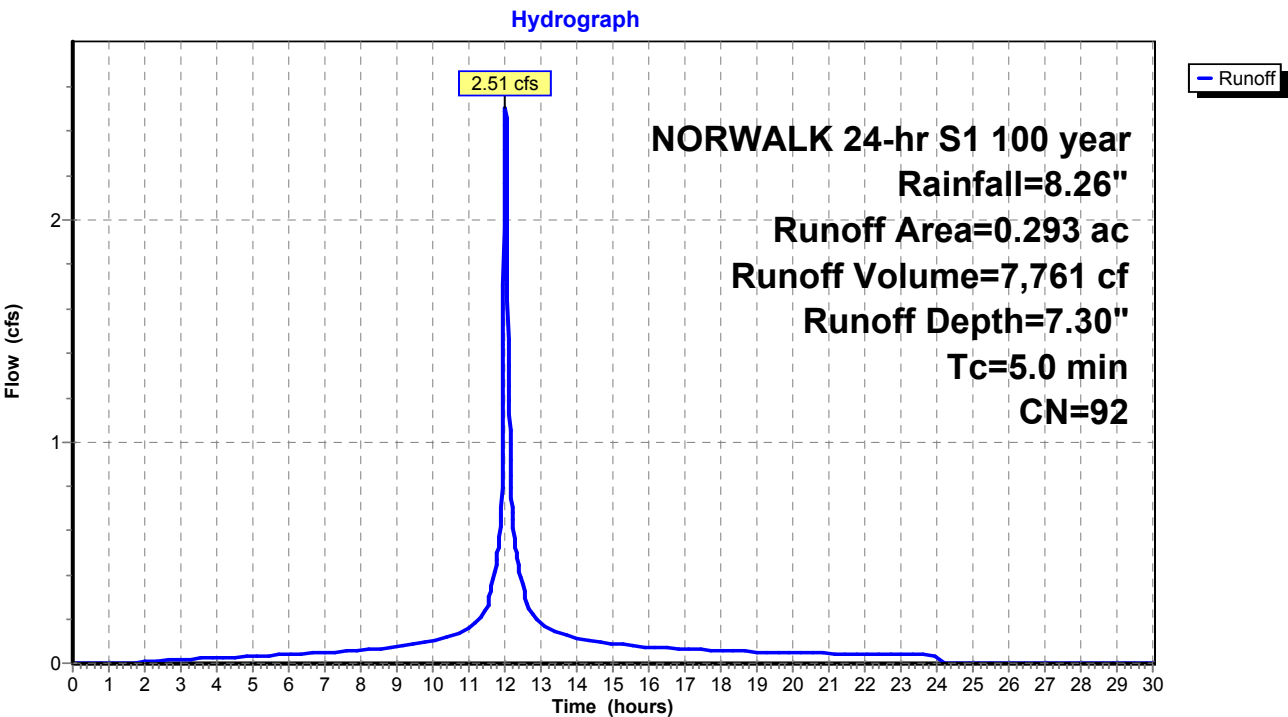
Runoff = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf, Depth= 7.30"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 69S: Area 40

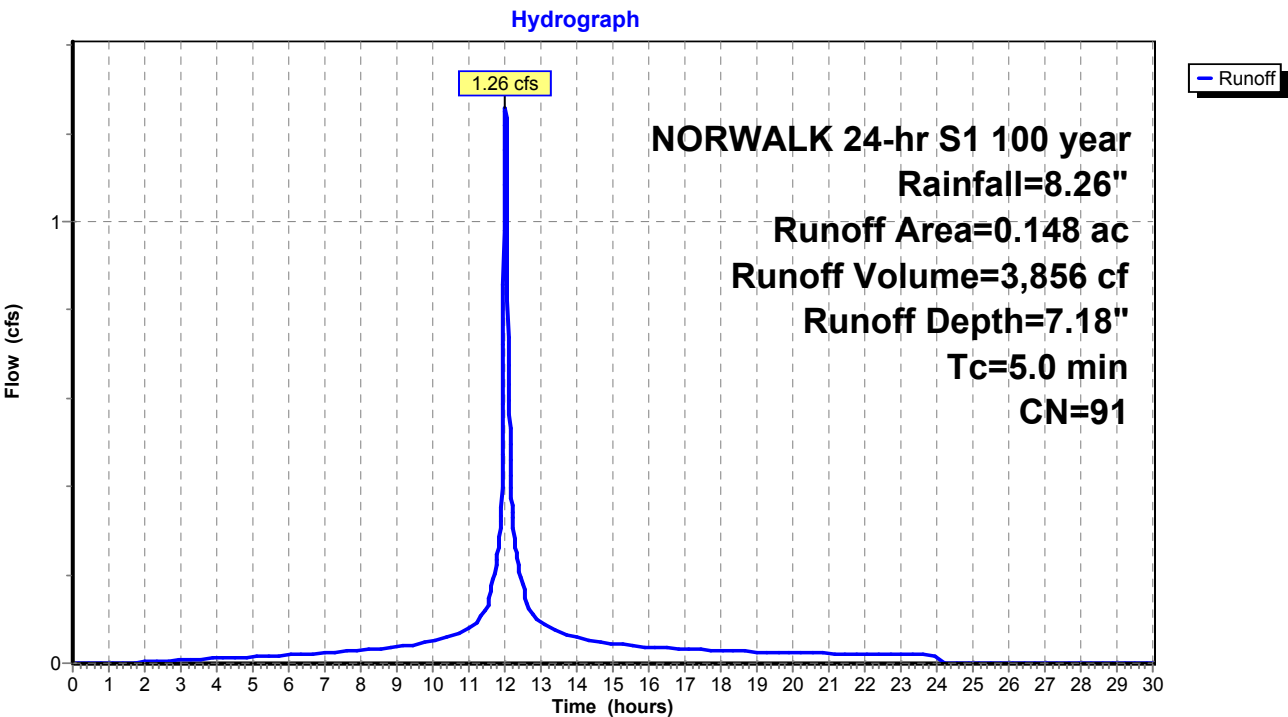
Runoff = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf, Depth= 7.18"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 71S: Area 34

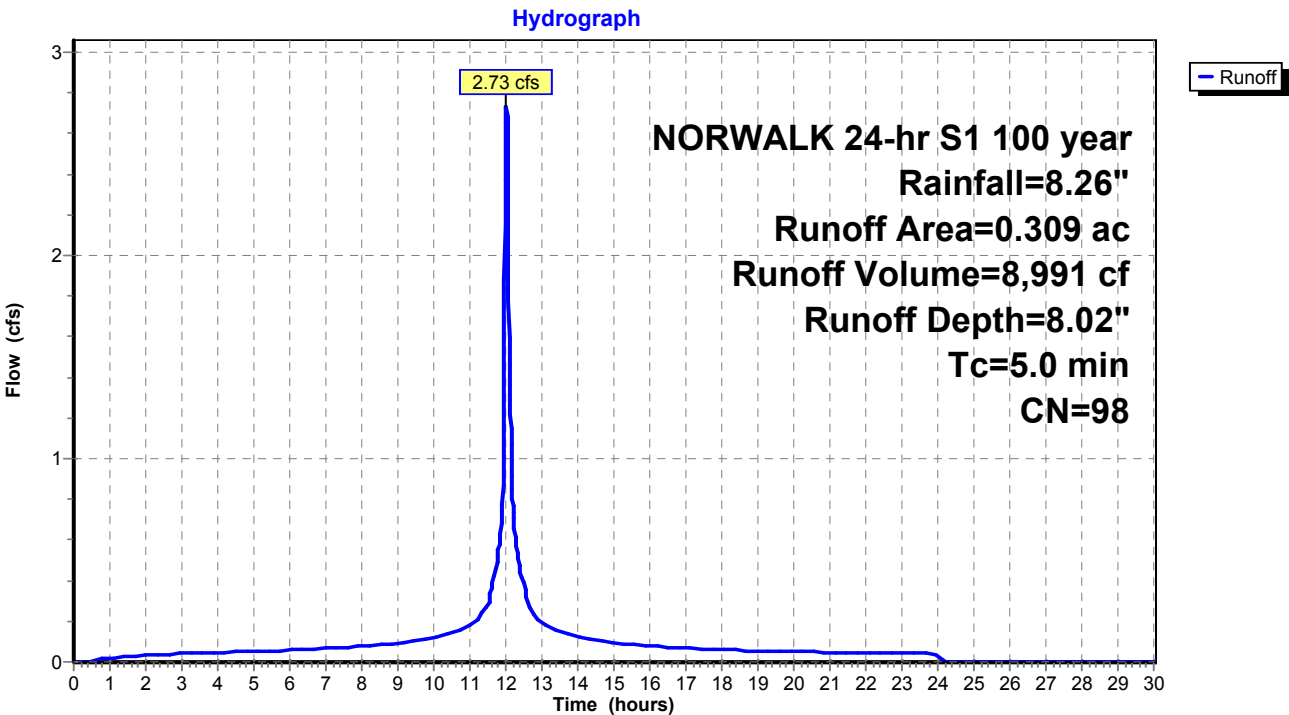
Runoff = 2.73 cfs @ 12.03 hrs, Volume= 8,991 cf, Depth= 8.02"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 75S: Area 32

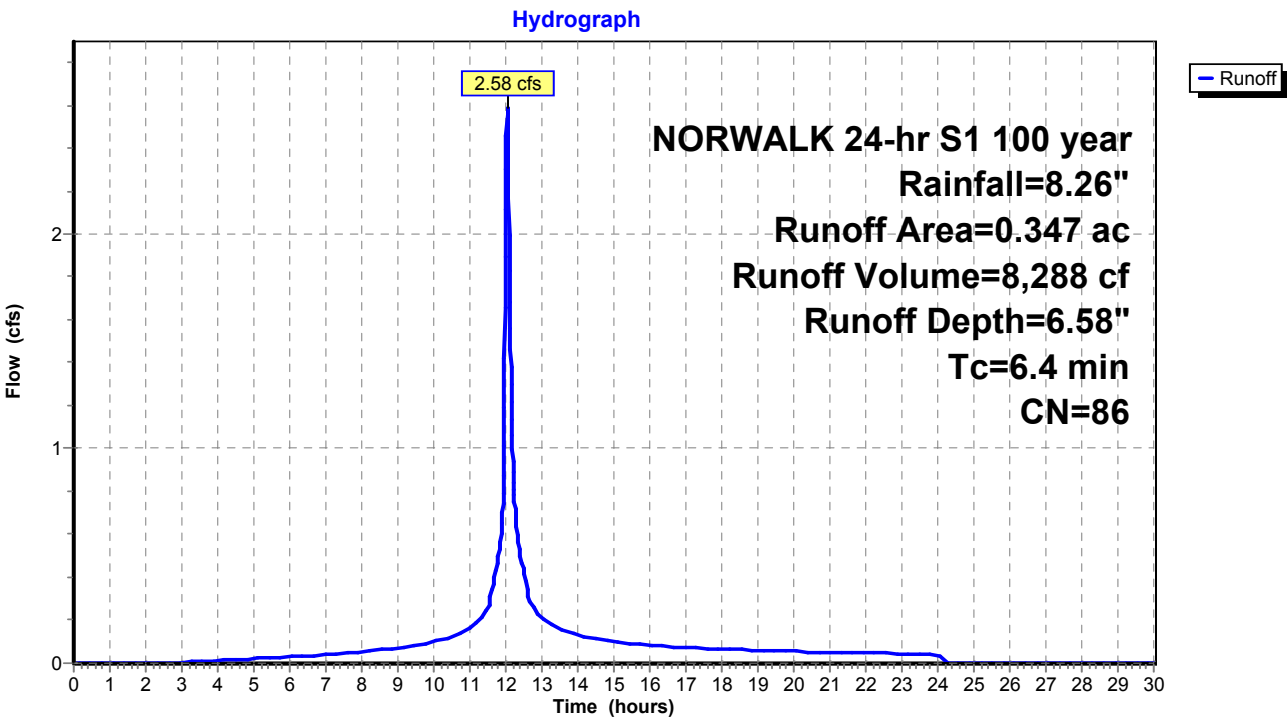
Runoff = 2.58 cfs @ 12.04 hrs, Volume= 8,288 cf, Depth= 6.58"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 76S: Area 33

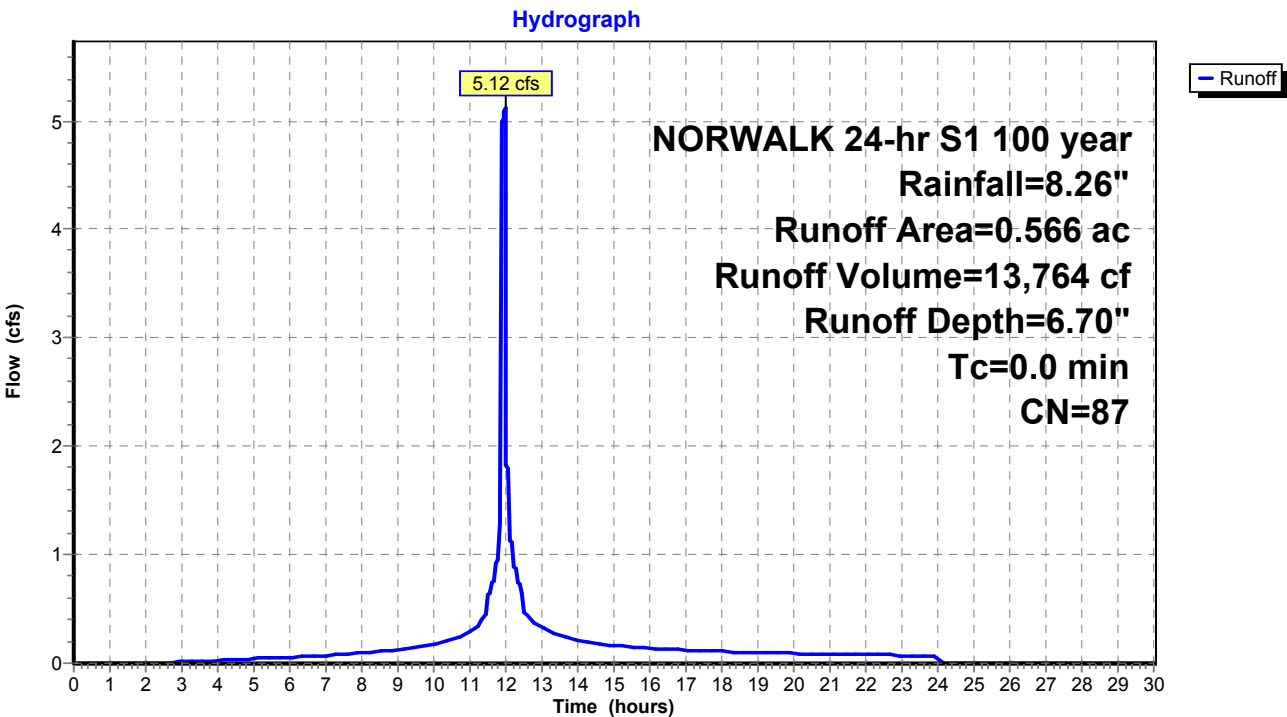
Runoff = 5.12 cfs @ 11.99 hrs, Volume= 13,764 cf, Depth= 6.70"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 78S: Area 39

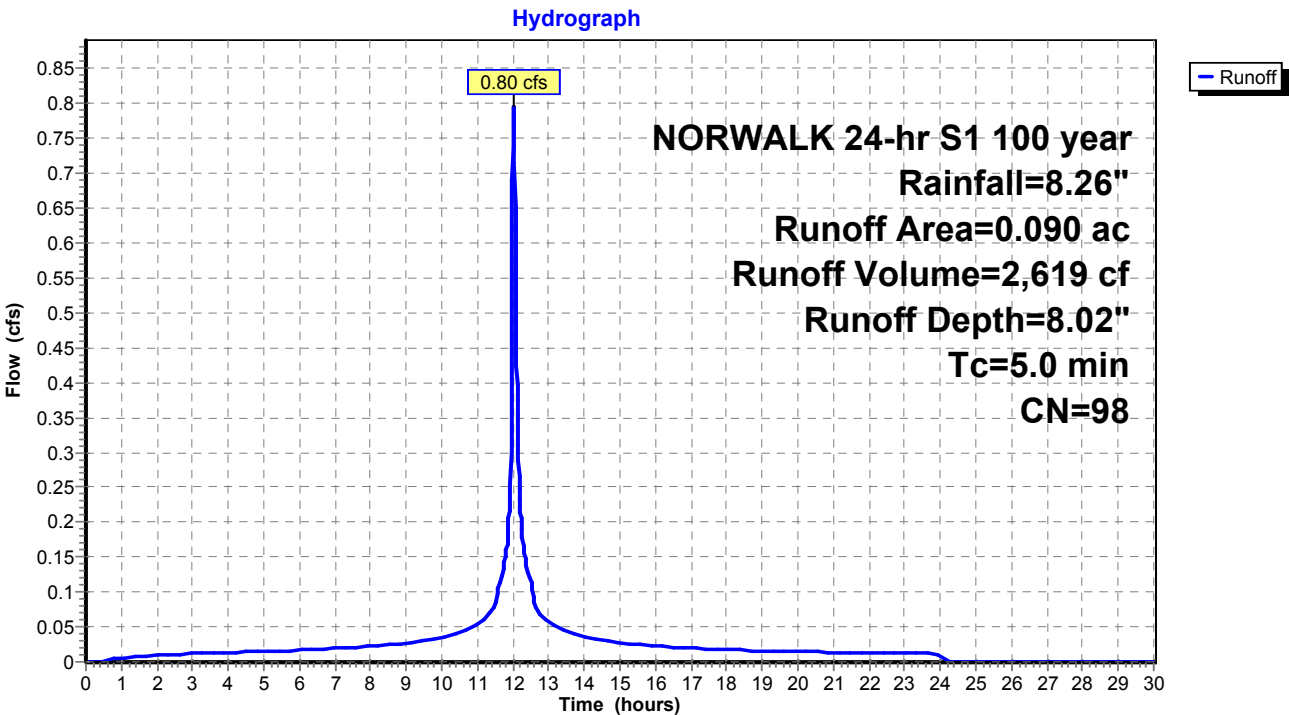
Runoff = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf, Depth= 8.02"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 84S: Area 31

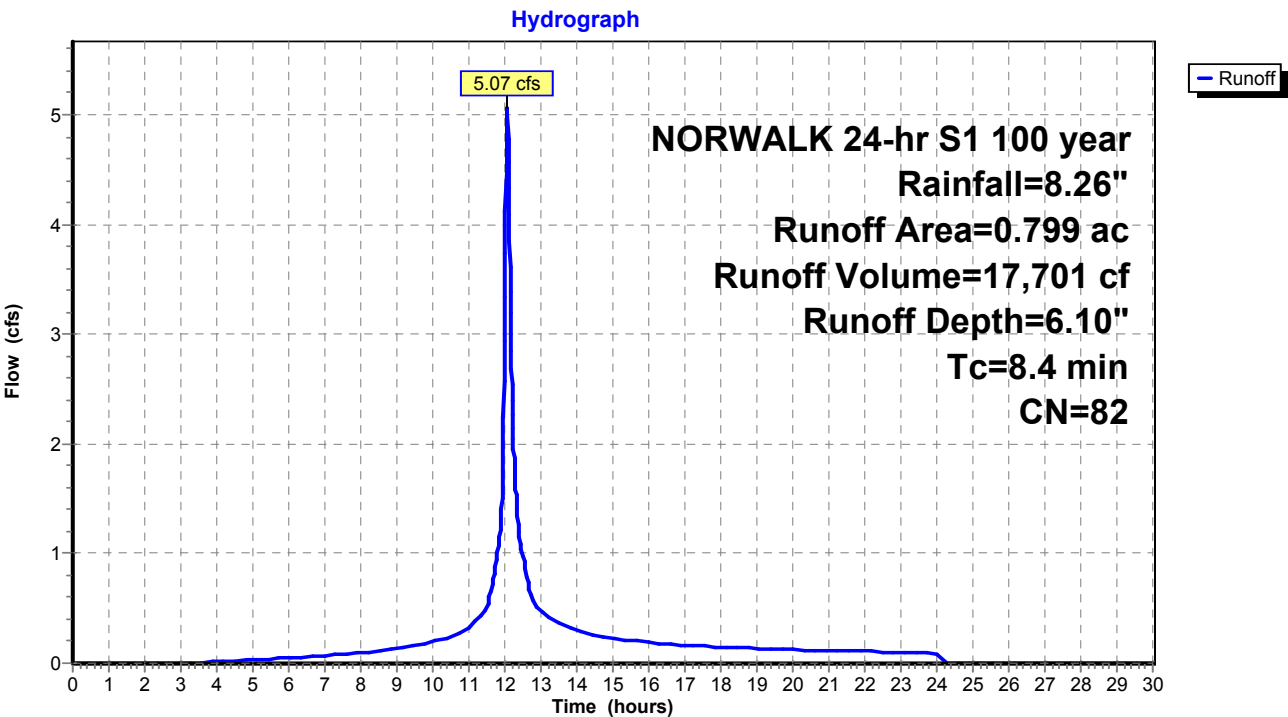
Runoff = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf, Depth= 6.10"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 100S: Area 16B

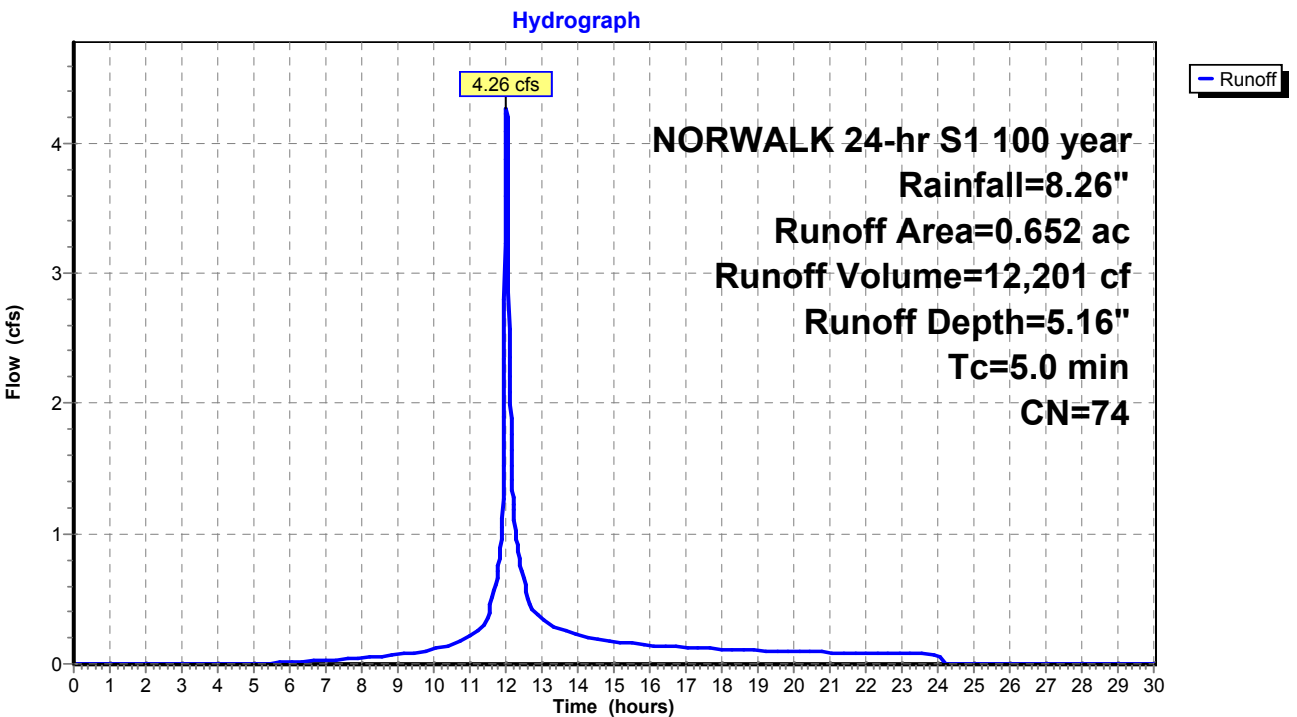
Runoff = 4.26 cfs @ 12.03 hrs, Volume= 12,201 cf, Depth= 5.16"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 105S: Area 18

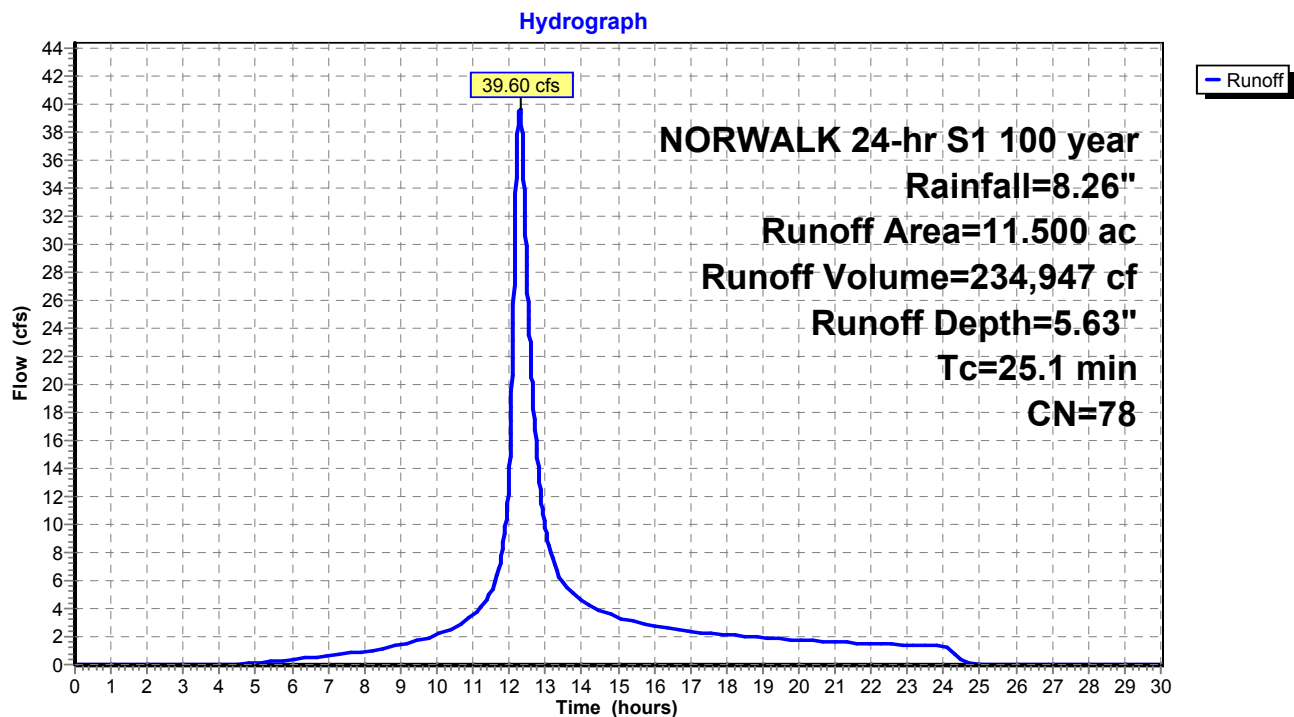
Runoff = 39.60 cfs @ 12.30 hrs, Volume= 234,947 cf, Depth= 5.63"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment BLDG: EX-BLDG

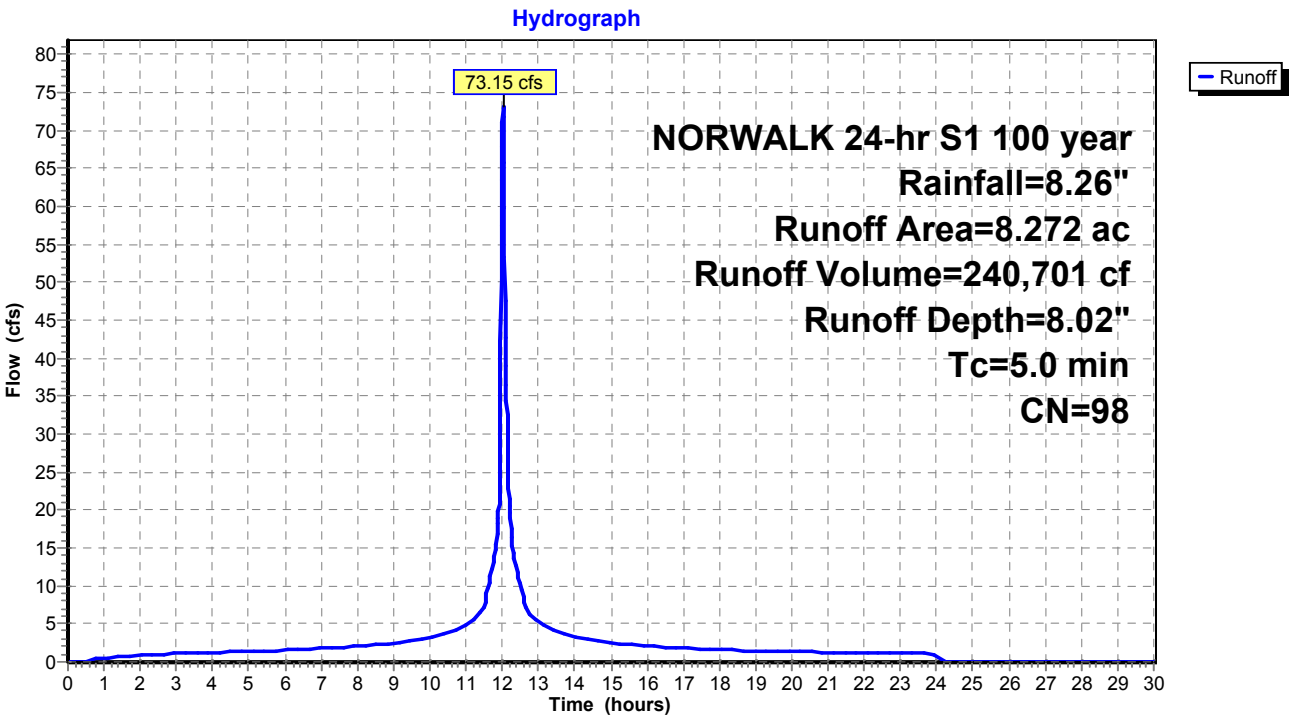
Runoff = 73.15 cfs @ 12.03 hrs, Volume= 240,701 cf, Depth= 8.02"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 6.39" for 100 year event
Inflow = 343.99 cfs @ 12.22 hrs, Volume= 3,495,923 cf
Outflow = 343.99 cfs @ 12.22 hrs, Volume= 3,495,923 cf, Atten= 0%, Lag= 0.0 min
Primary = 37.06 cfs @ 12.22 hrs, Volume= 1,475,464 cf
Secondary = 306.93 cfs @ 12.22 hrs, Volume= 2,020,459 cf
Routed to Pond 24P : RR Culvert 3

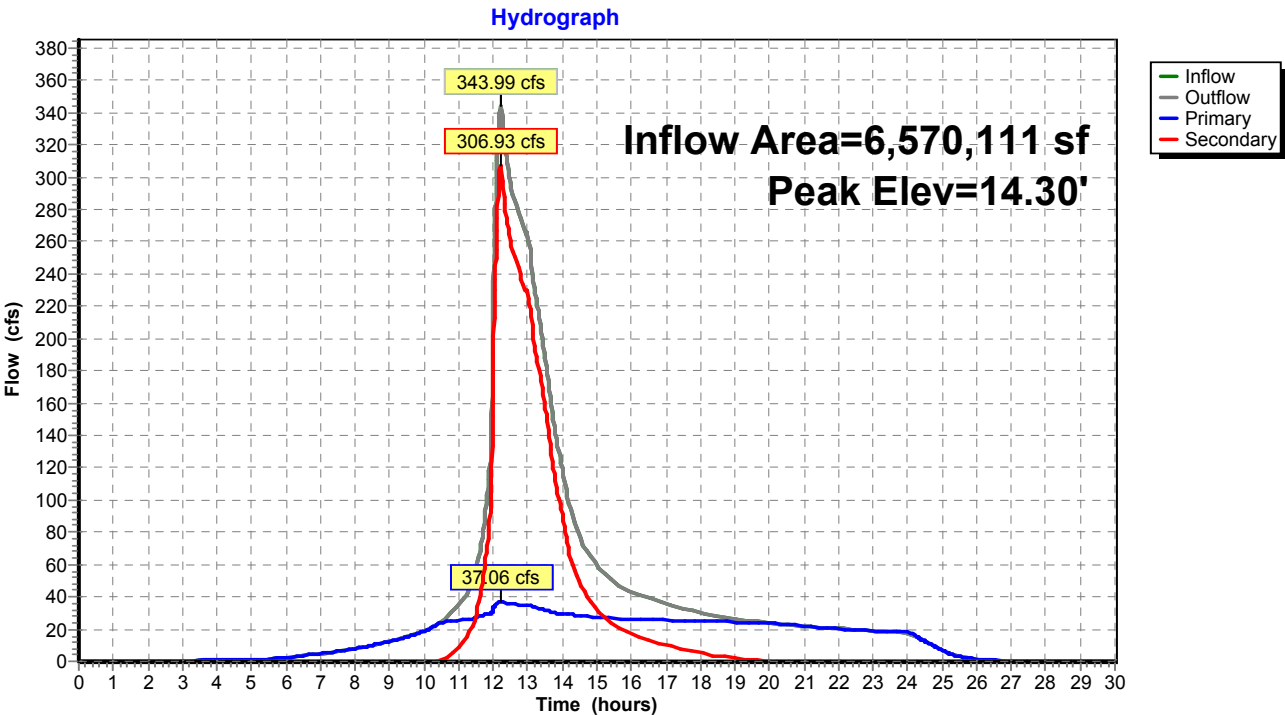
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 14.30' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 '/' Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

Primary OutFlow Max=37.06 cfs @ 12.22 hrs HW=14.30' (Free Discharge)
↑**2=Culvert** (Barrel Controls 37.06 cfs @ 6.18 fps)

Secondary OutFlow Max=306.73 cfs @ 12.22 hrs HW=14.30' (Free Discharge)
↑**1=Custom Weir/Orifice** (Weir Controls 306.73 cfs @ 4.74 fps)

Pond 1P: RR Culvert 2



Existing Conditions

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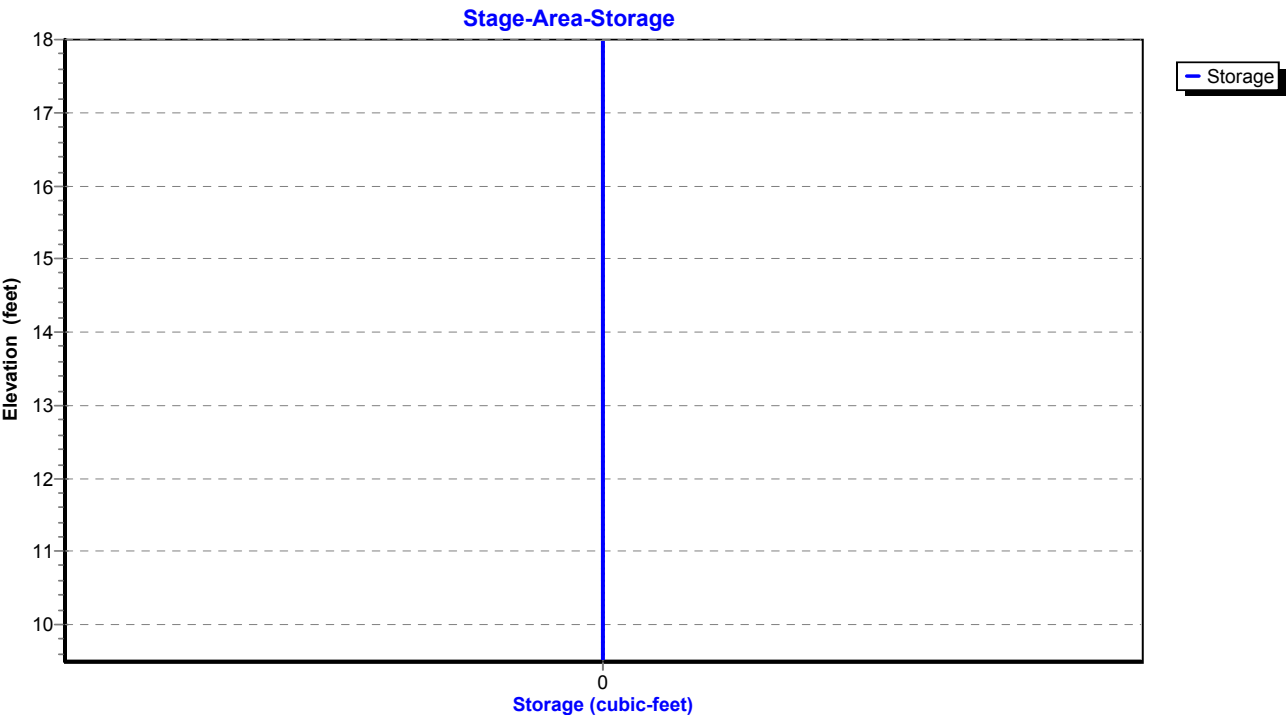
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 1P: RR Culvert 2



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.57% Impervious, Inflow Depth = 6.68" for 100 year event
Inflow = 195.77 cfs @ 12.04 hrs, Volume= 1,902,933 cf
Outflow = 195.77 cfs @ 12.04 hrs, Volume= 1,902,933 cf, Atten= 0%, Lag= 0.0 min
Primary = 61.96 cfs @ 12.04 hrs, Volume= 1,345,885 cf
Secondary = 133.81 cfs @ 12.04 hrs, Volume= 557,047 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 31.22' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

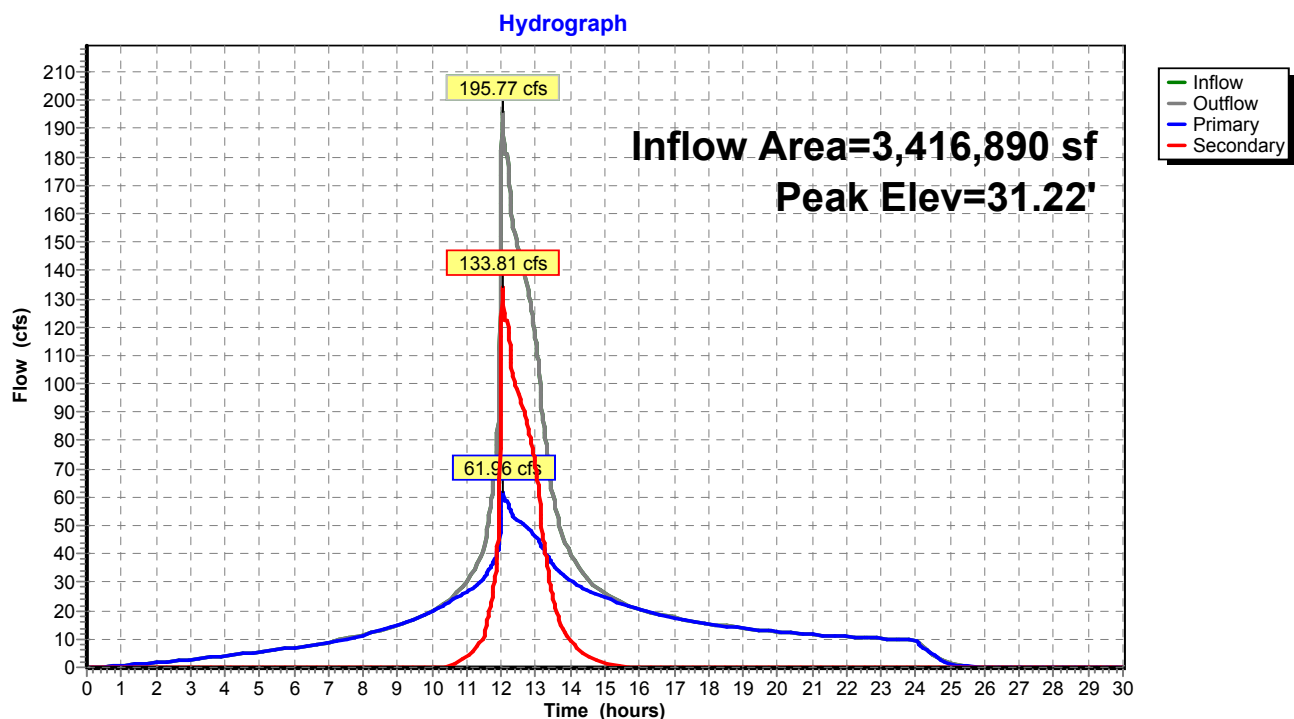
Primary OutFlow Max=61.92 cfs @ 12.04 hrs HW=31.21' (Free Discharge)

↑**1=Culvert** (Inlet Controls 61.92 cfs @ 10.75 fps)

Secondary OutFlow Max=133.65 cfs @ 12.04 hrs HW=31.21' (Free Discharge)

↑**2=Custom Weir/Orifice** (Orifice Controls 133.65 cfs @ 11.14 fps)

Pond 2P: RR Culvert 1



Existing Conditions

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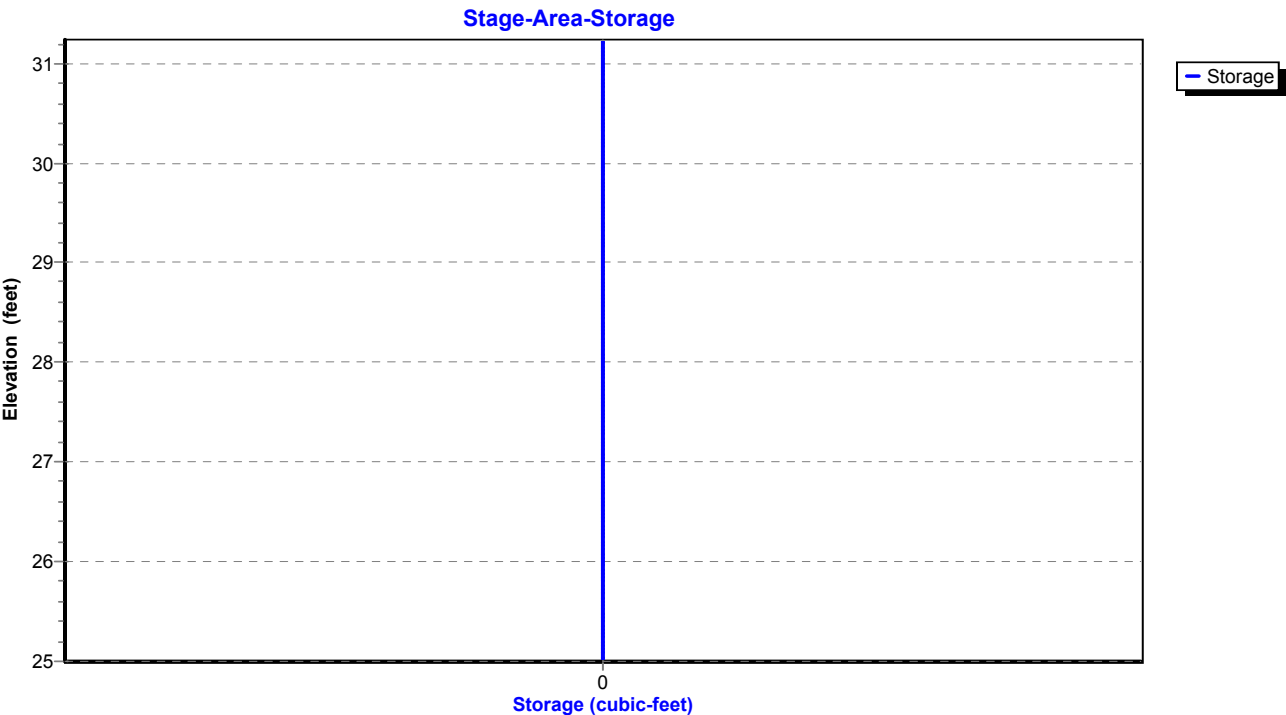
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Pond 2P: RR Culvert 1



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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 6.53" for 100 year event
Inflow = 37.82 cfs @ 12.03 hrs, Volume= 143,174 cf
Outflow = 14.55 cfs @ 12.26 hrs, Volume= 127,372 cf, Atten= 62%, Lag= 13.8 min
Primary = 14.55 cfs @ 12.26 hrs, Volume= 127,372 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.80' @ 12.26 hrs Surf.Area= 13,591 sf Storage= 53,817 cf

Plug-Flow detention time= 182.9 min calculated for 127,329 cf (89% of inflow)
Center-of-Mass det. time= 123.1 min (922.3 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=14.53 cfs @ 12.26 hrs HW=50.80' (Free Discharge)

- 1=Culvert (Passes 14.53 cfs of 20.92 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 4.83 cfs @ 8.85 fps)
- 3=Orifice/Grate (Weir Controls 9.71 cfs @ 2.06 fps)

Existing Conditions

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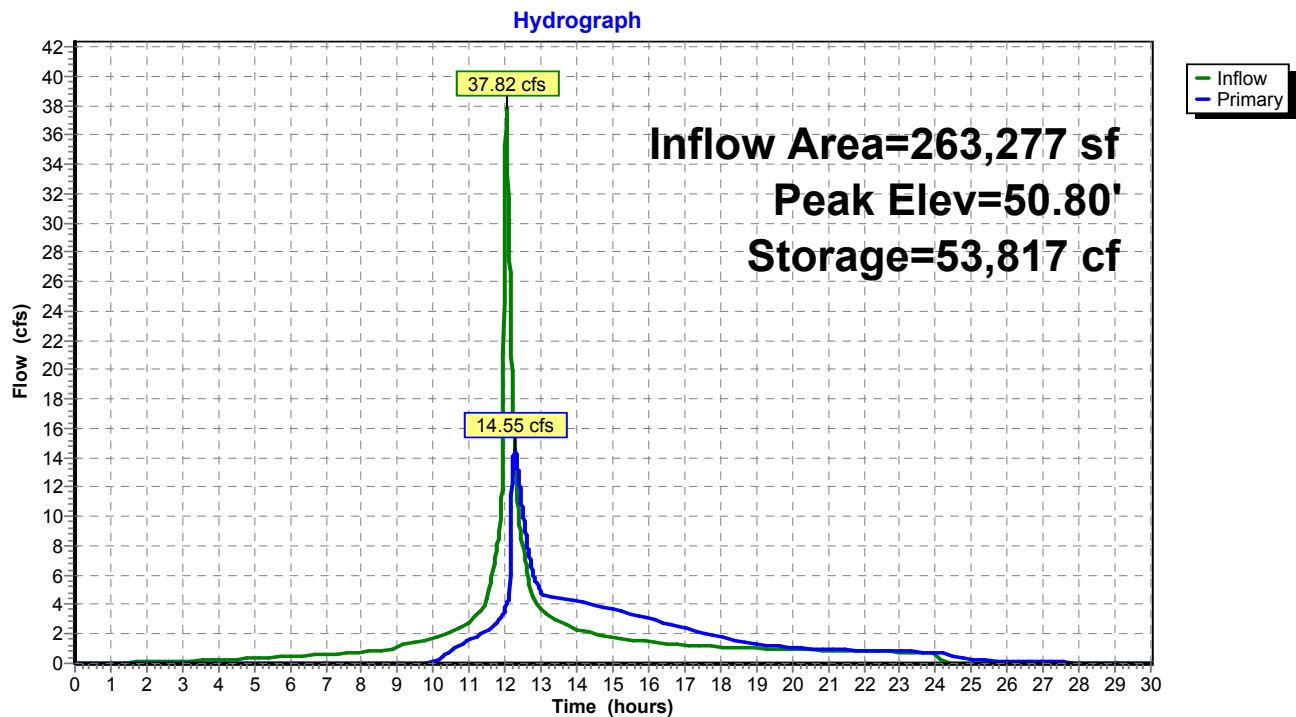
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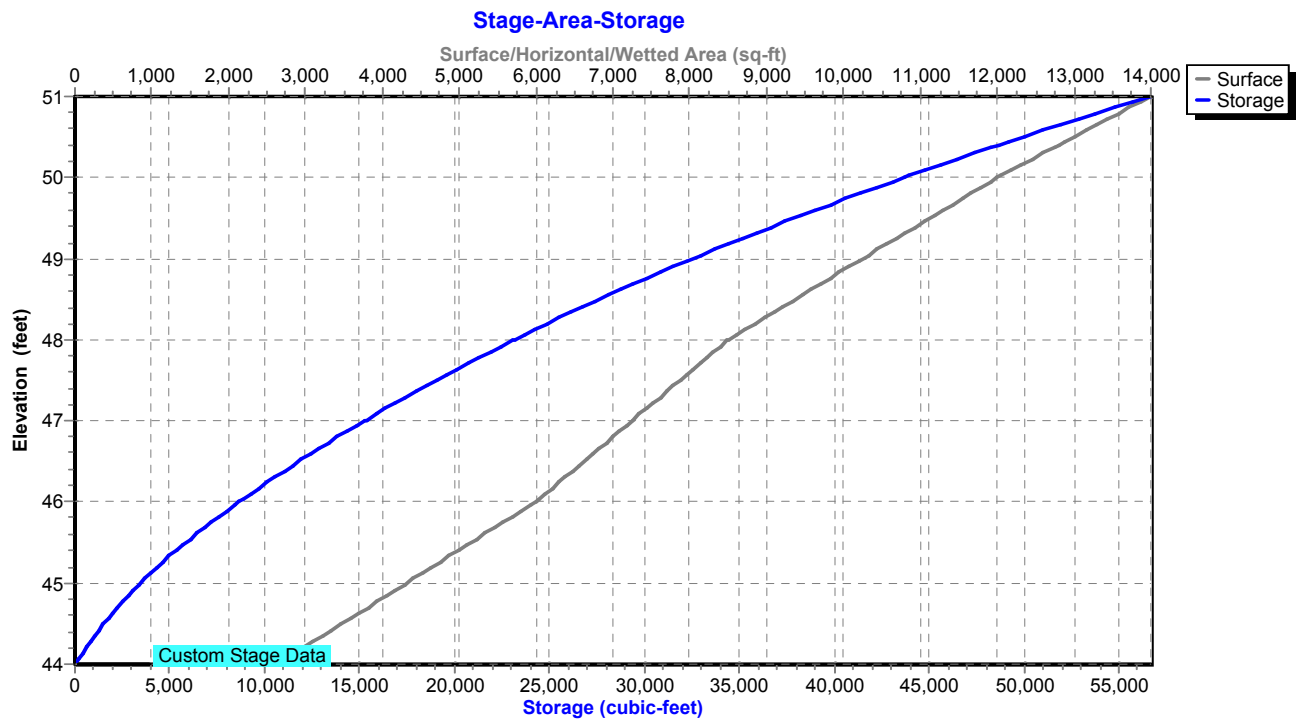
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 5.04" for 100 year event
 Inflow = 31.33 cfs @ 12.45 hrs, Volume= 227,111 cf
 Outflow = 23.65 cfs @ 12.69 hrs, Volume= 227,110 cf, Atten= 25%, Lag= 14.5 min
 Primary = 23.65 cfs @ 12.69 hrs, Volume= 227,110 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 81.78' @ 12.69 hrs Storage= 17,276 cf

Plug-Flow detention time= 7.1 min calculated for 227,110 cf (100% of inflow)

Center-of-Mass det. time= 7.0 min (875.5 - 868.5)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=23.65 cfs @ 12.69 hrs HW=81.78' (Free Discharge)↑**1=Culvert** (Inlet Controls 23.65 cfs @ 7.53 fps)

Existing Conditions

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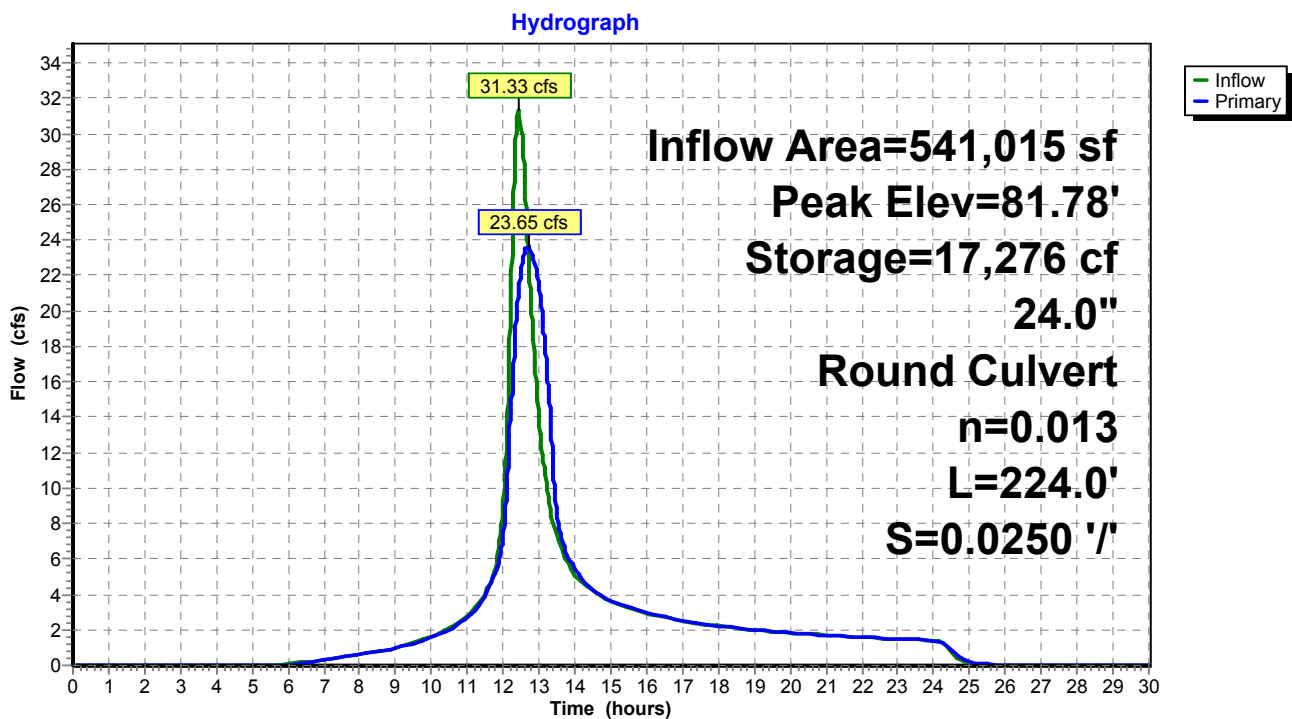
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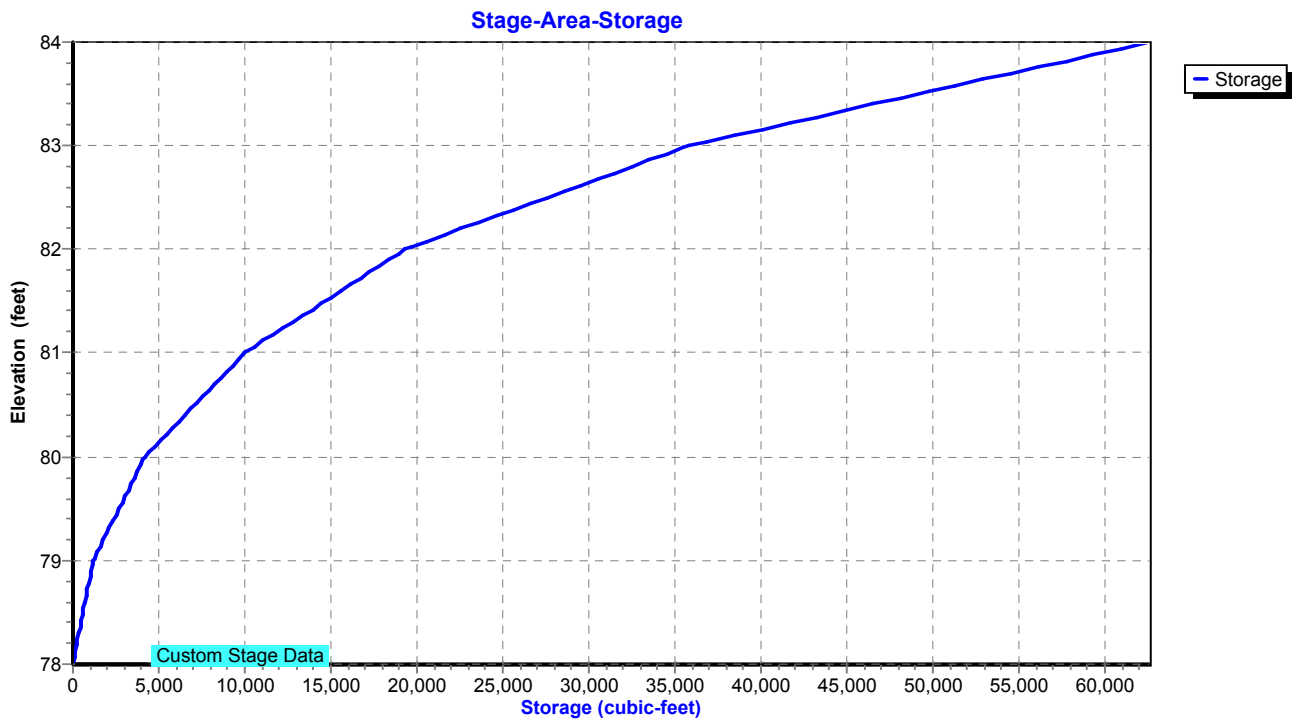
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Pond 5P: DET 5 Culvert



Pond 5P: DET 5 Culvert



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 6.10" for 100 year event
 Inflow = 41.03 cfs @ 12.70 hrs, Volume= 379,947 cf
 Outflow = 38.84 cfs @ 12.82 hrs, Volume= 379,947 cf, Atten= 5%, Lag= 7.5 min
 Primary = 38.84 cfs @ 12.82 hrs, Volume= 379,947 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 92.82' @ 12.82 hrs Storage= 5,136 cf

Plug-Flow detention time= 0.7 min calculated for 379,821 cf (100% of inflow)

Center-of-Mass det. time= 0.7 min (858.6 - 857.9)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=38.84 cfs @ 12.82 hrs HW=92.82' (Free Discharge)↑ **1=Culvert** (Inlet Controls 38.84 cfs @ 7.91 fps)

Existing Conditions

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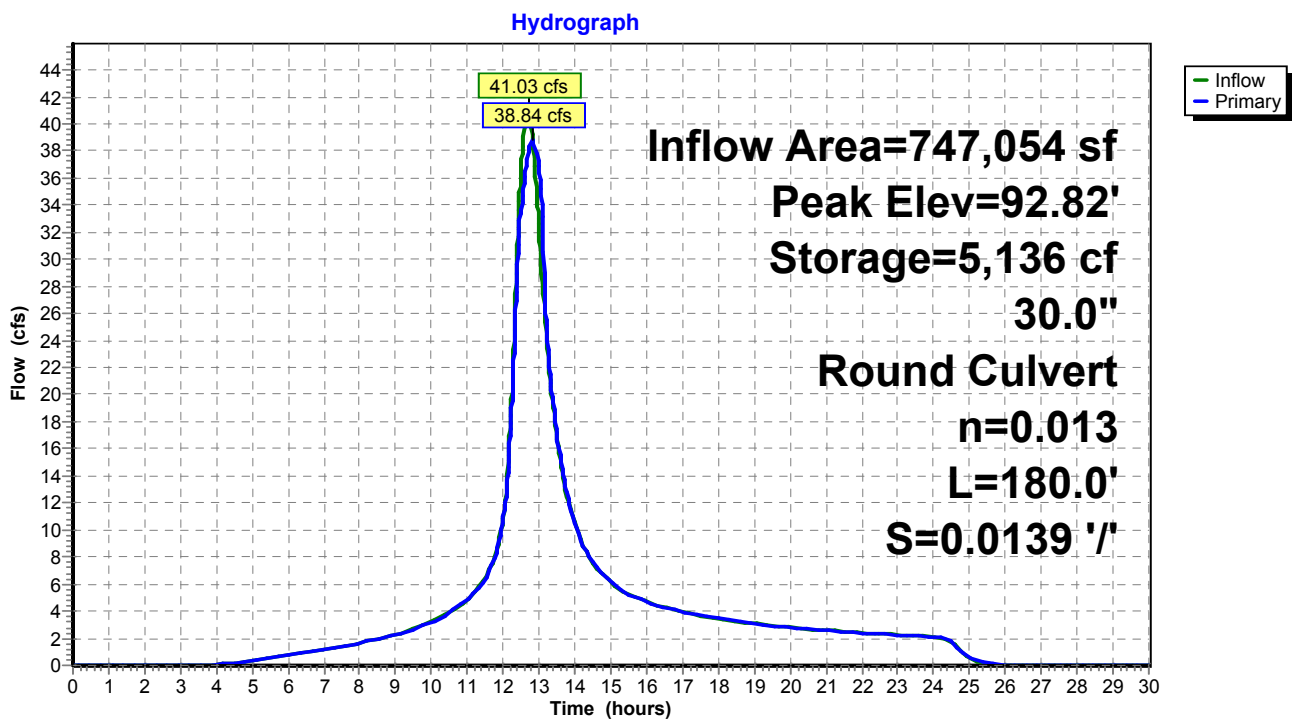
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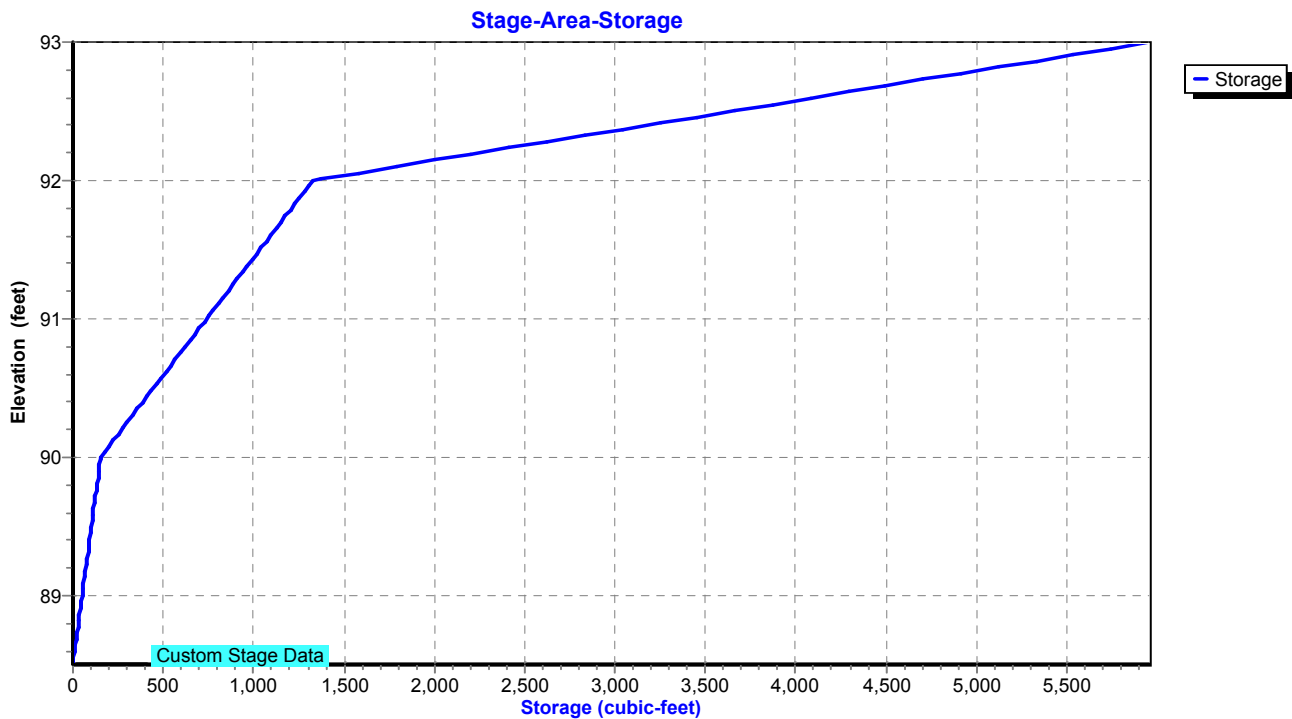
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 5.98" for 100 year event
Inflow = 5.64 cfs @ 12.25 hrs, Volume= 31,932 cf
Outflow = 3.73 cfs @ 12.46 hrs, Volume= 31,932 cf, Atten= 34%, Lag= 12.3 min
Primary = 3.73 cfs @ 12.46 hrs, Volume= 31,932 cf
Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.58' @ 12.46 hrs Storage= 3,442 cf

Plug-Flow detention time= 7.2 min calculated for 31,932 cf (100% of inflow)

Center-of-Mass det. time= 7.1 min (838.6 - 831.5)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.73 cfs @ 12.46 hrs HW=93.58' (Free Discharge)↑**1=Culvert** (Inlet Controls 3.73 cfs @ 3.31 fps)

Existing Conditions

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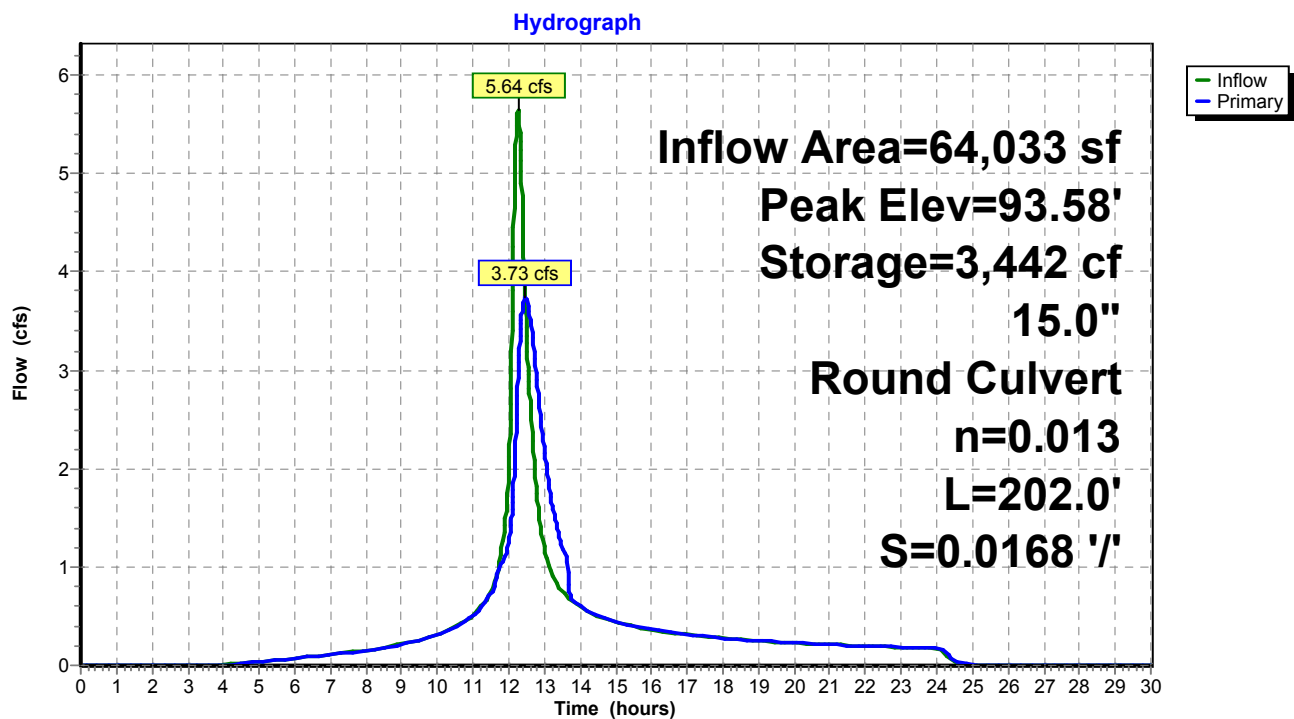
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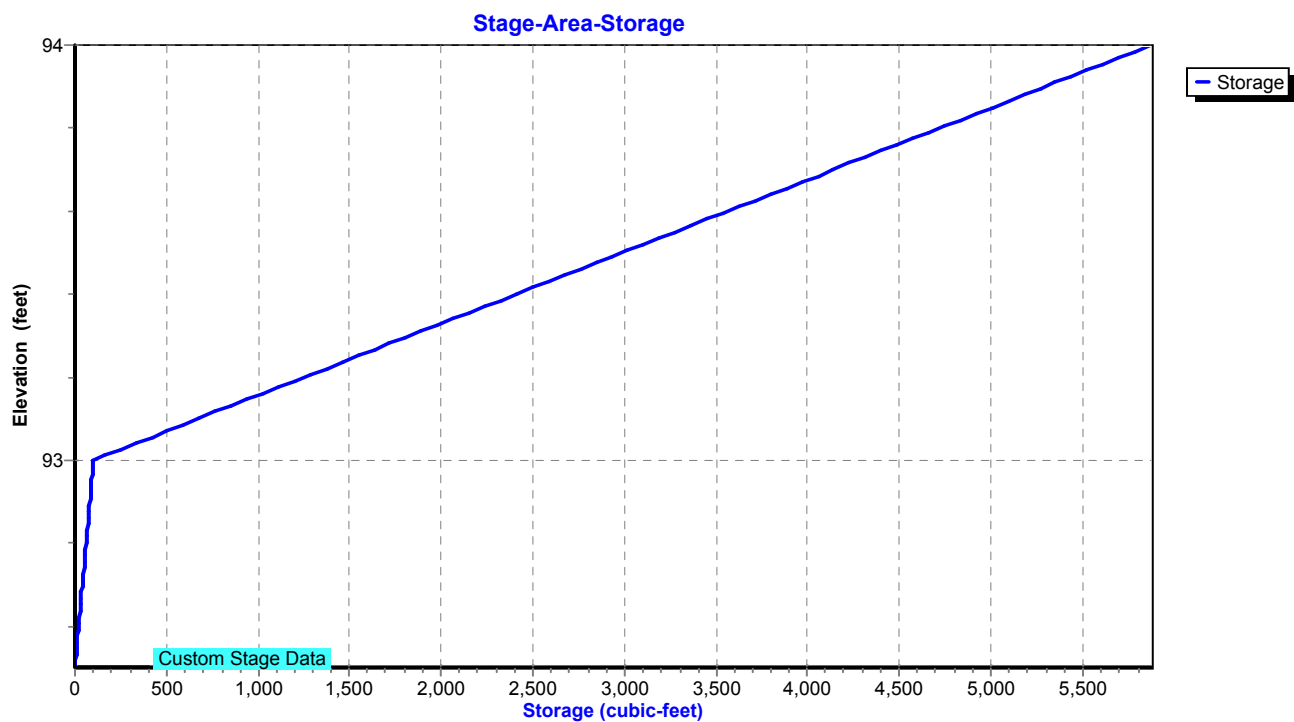
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 5.84" for 100 year event
 Inflow = 78.16 cfs @ 12.73 hrs, Volume= 770,688 cf
 Outflow = 78.15 cfs @ 12.74 hrs, Volume= 770,688 cf, Atten= 0%, Lag= 0.6 min
 Primary = 78.15 cfs @ 12.74 hrs, Volume= 770,688 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 73.00' @ 12.74 hrs Storage= 639 cf

Plug-Flow detention time= 0.1 min calculated for 770,688 cf (100% of inflow)
 Center-of-Mass det. time= 0.1 min (856.6 - 856.5)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=78.15 cfs @ 12.74 hrs HW=73.00' (Free Discharge)

↑**1=Culvert** (Inlet Controls 78.15 cfs @ 8.12 fps)

Existing Conditions

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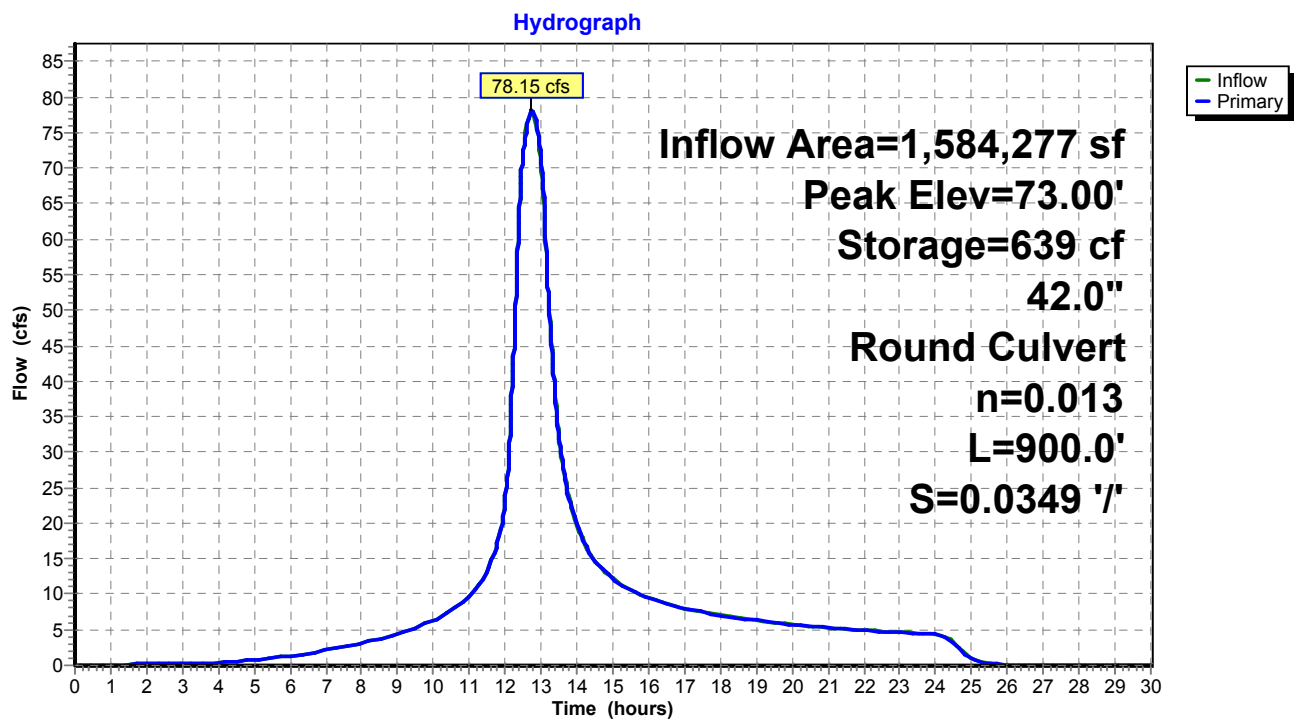
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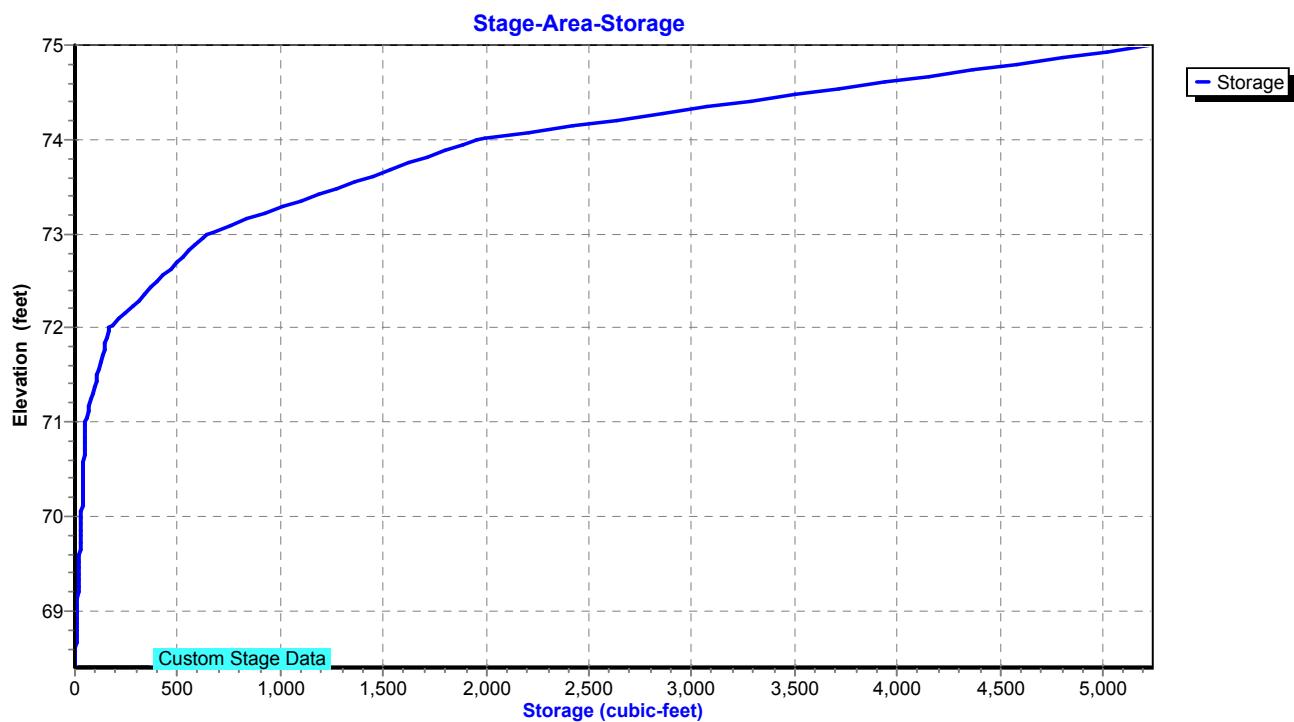
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



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Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 6.62" for 100 year event
Inflow = 35.31 cfs @ 12.04 hrs, Volume= 135,894 cf
Outflow = 35.31 cfs @ 12.04 hrs, Volume= 135,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 35.31 cfs @ 12.04 hrs, Volume= 135,894 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 53.63' @ 12.04 hrs

Flood Elev= 51.80'

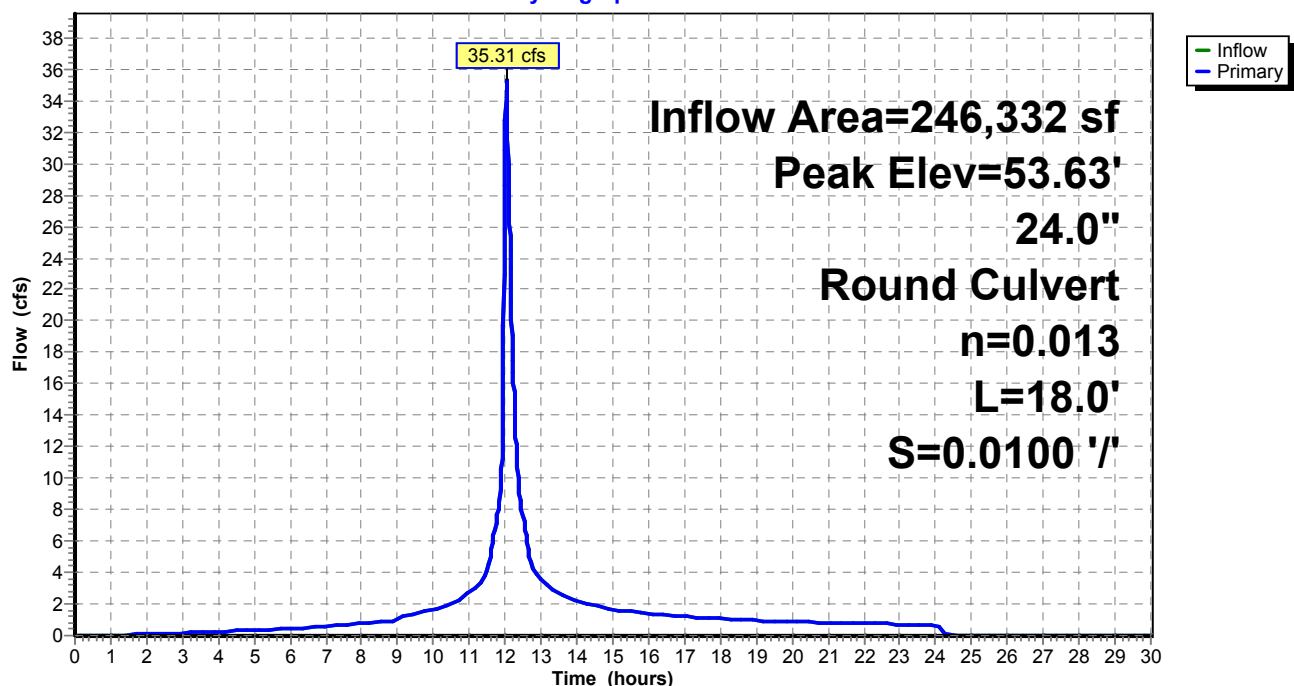
Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=35.20 cfs @ 12.04 hrs HW=53.59' (Free Discharge)

↑1=Culvert (Inlet Controls 35.20 cfs @ 11.20 hrs)

Pond 9P: MH-K

Hydrograph



Existing Conditions

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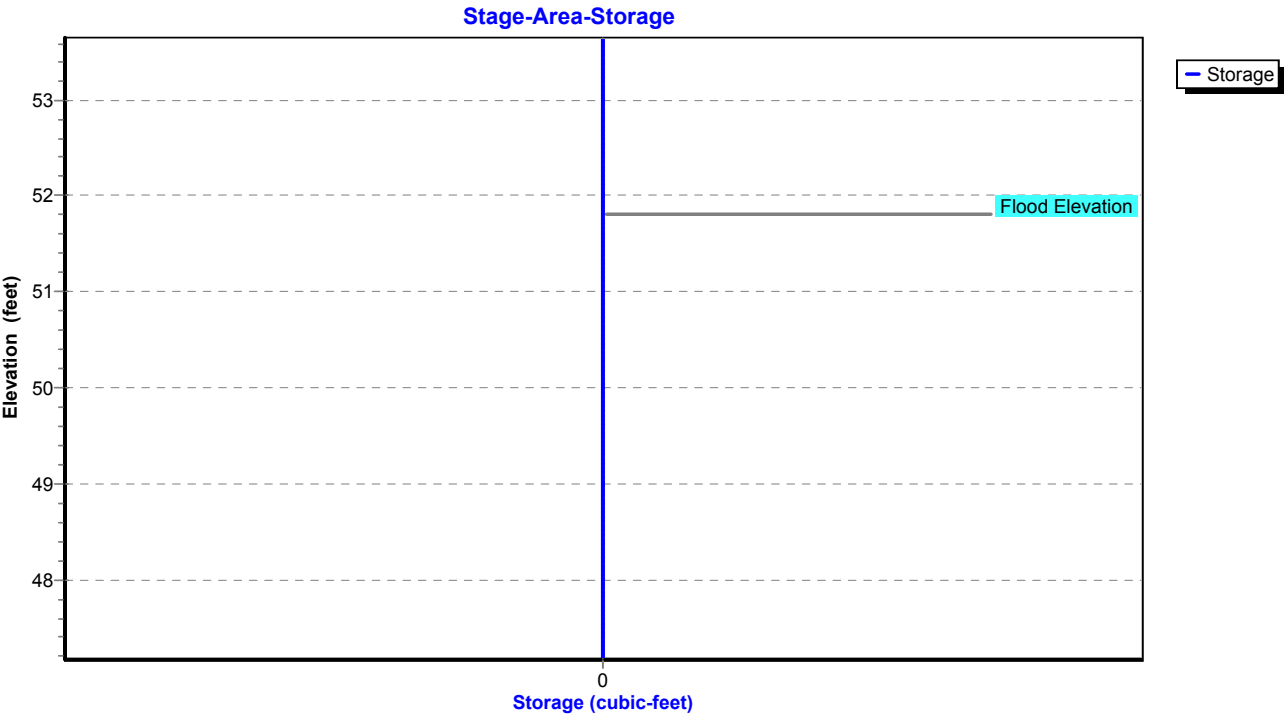
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Pond 9P: MH-K



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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 6.96" for 100 year event
Inflow = 14.35 cfs @ 12.03 hrs, Volume= 41,670 cf
Outflow = 14.35 cfs @ 12.03 hrs, Volume= 41,670 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.35 cfs @ 12.03 hrs, Volume= 41,670 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.37' @ 12.03 hrs

Flood Elev= 53.00'

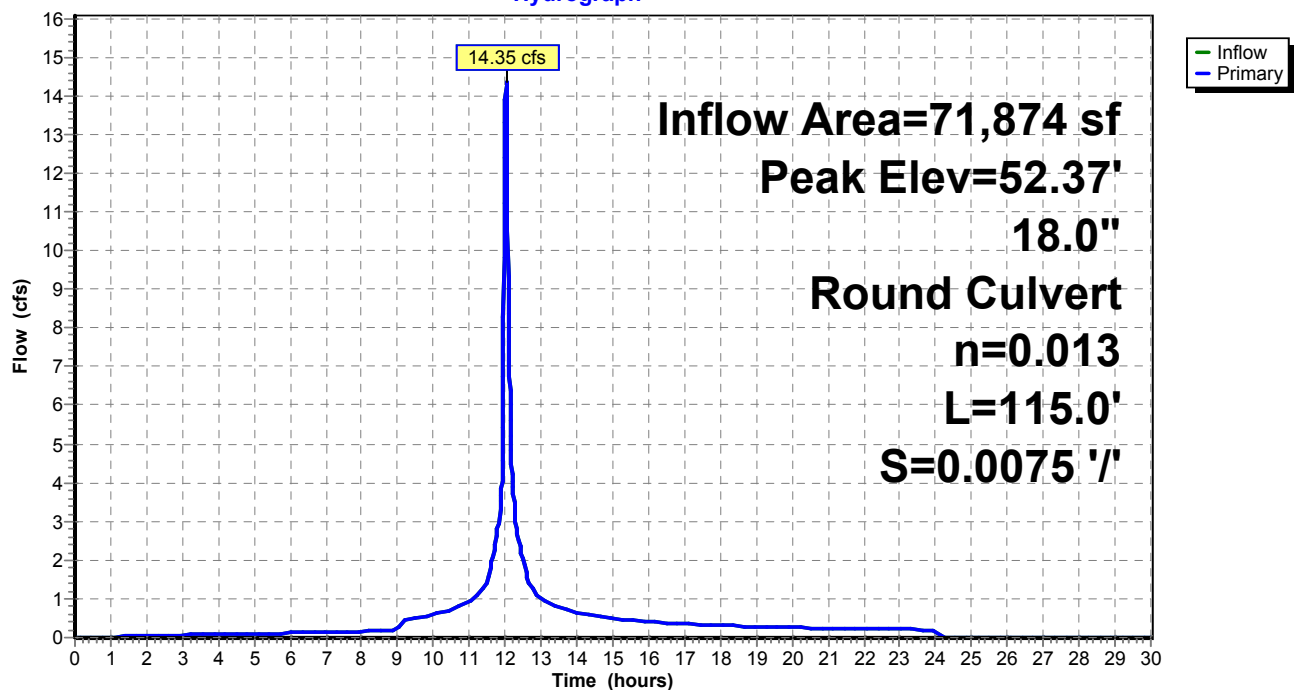
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=14.29 cfs @ 12.03 hrs HW=52.34' (Free Discharge)

↑1=Culvert (Barrel Controls 14.29 cfs @ 8.09 fps)

Pond 10P: MH-L

Hydrograph



Existing Conditions

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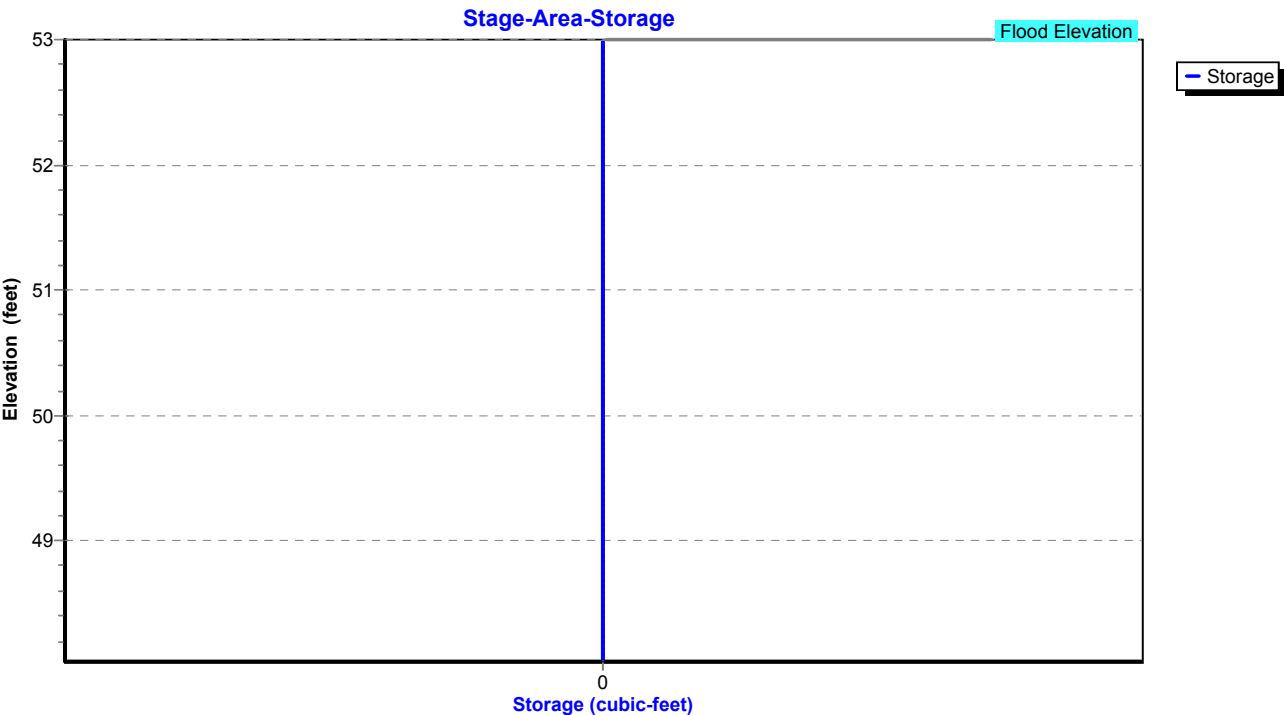
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Pond 10P: MH-L



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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 7.54" for 100 year event
Inflow = 8.15 cfs @ 12.03 hrs, Volume= 25,711 cf
Outflow = 8.14 cfs @ 12.03 hrs, Volume= 21,832 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.14 cfs @ 12.03 hrs, Volume= 21,832 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 54.12' @ 12.03 hrs Storage= 0.081 af

Plug-Flow detention time= 138.7 min calculated for 21,832 cf (85% of inflow)

Center-of-Mass det. time= 59.6 min (822.5 - 762.9)

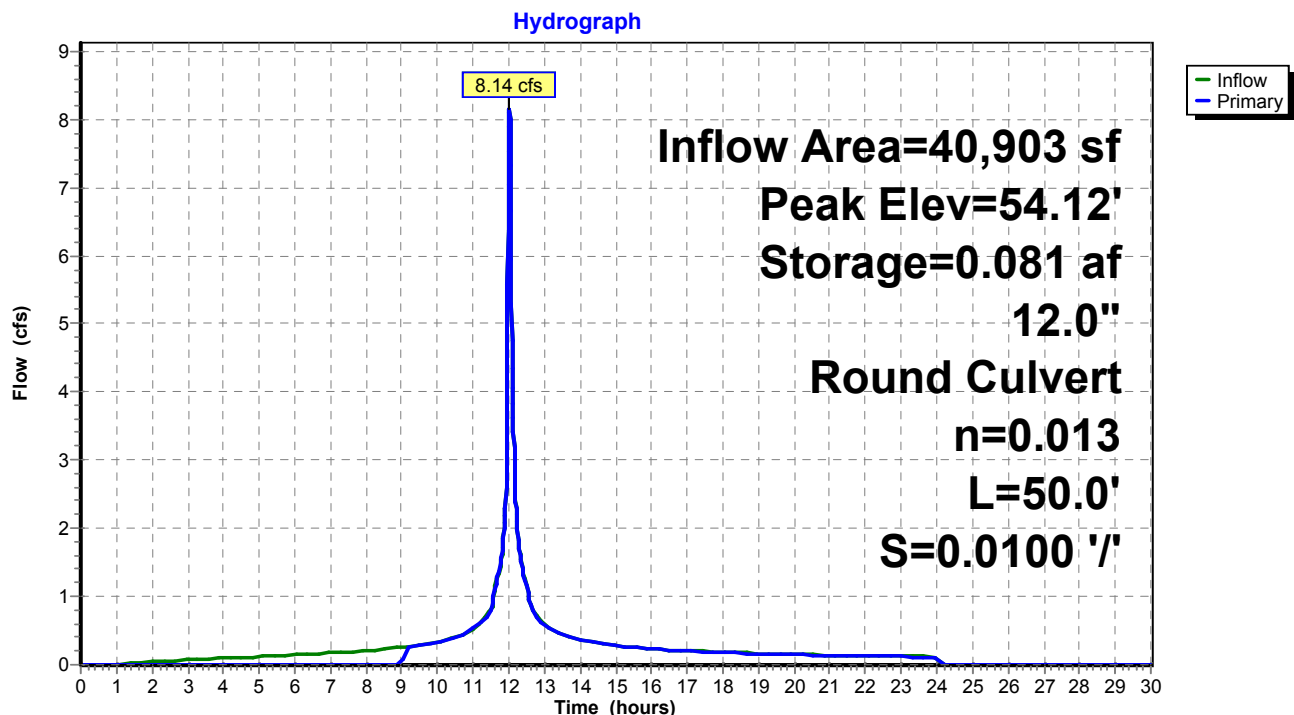
Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=8.11 cfs @ 12.03 hrs HW=54.08' (Free Discharge)

←1=Culvert (Barrel Controls 8.11 cfs @ 10.32 fps)

Pond 11P: Pipe Storage



Existing Conditions

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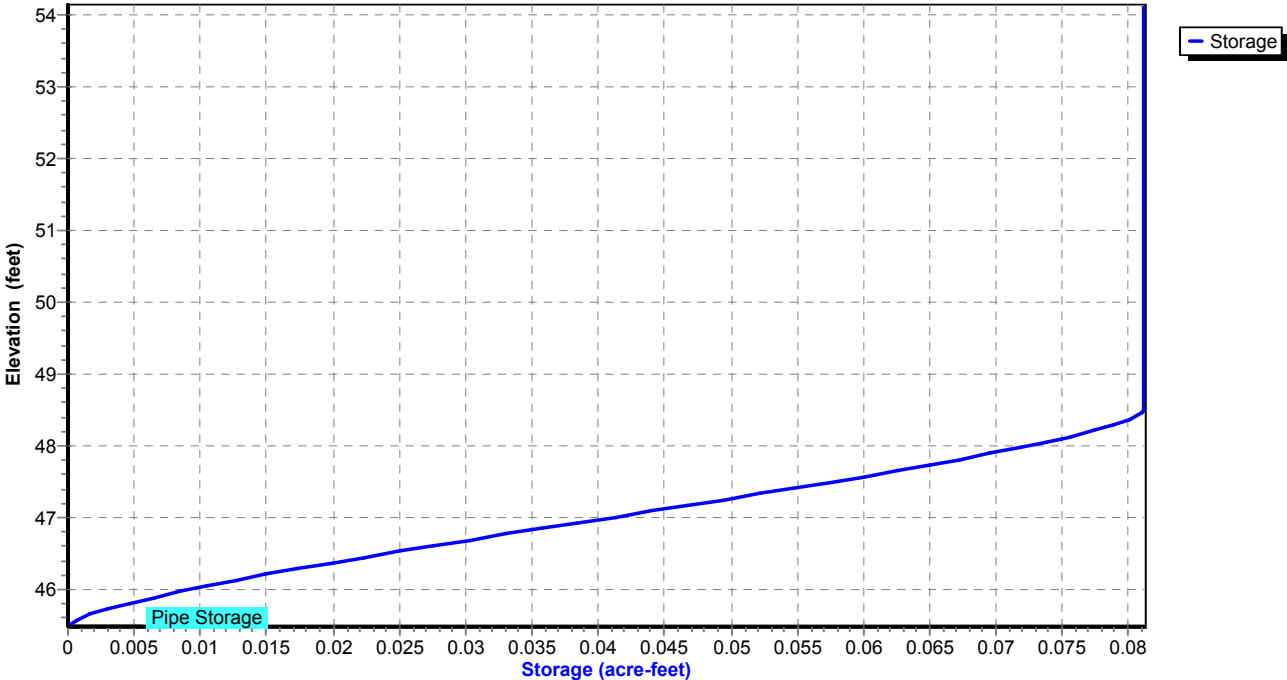
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Pond 11P: Pipe Storage

Stage-Area-Storage



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Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 7.69" for 100 year event
Inflow = 6.20 cfs @ 12.03 hrs, Volume= 19,838 cf
Outflow = 6.20 cfs @ 12.03 hrs, Volume= 19,838 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.20 cfs @ 12.03 hrs, Volume= 19,838 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.37' @ 12.03 hrs

Flood Elev= 54.00'

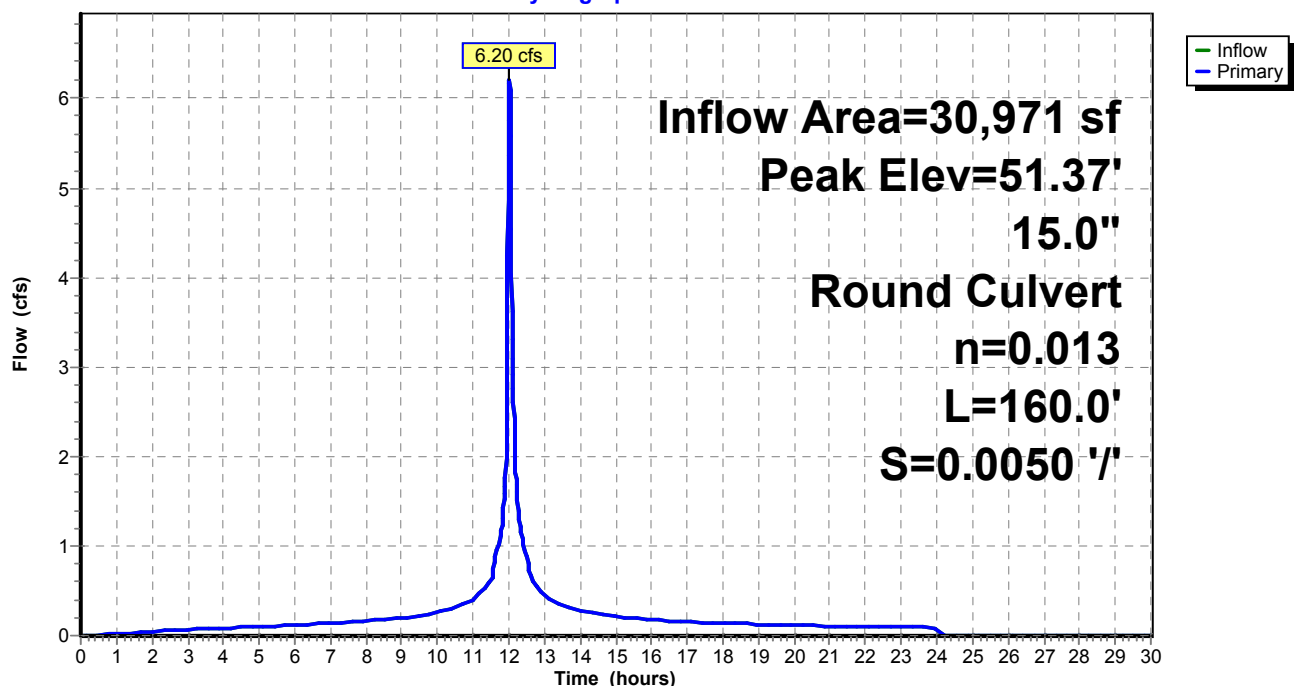
Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.18 cfs @ 12.03 hrs HW=51.35' (Free Discharge)

↑1=Culvert (Barrel Controls 6.18 cfs @ 5.04 fps)

Pond 12P: MH-M

Hydrograph



Existing Conditions

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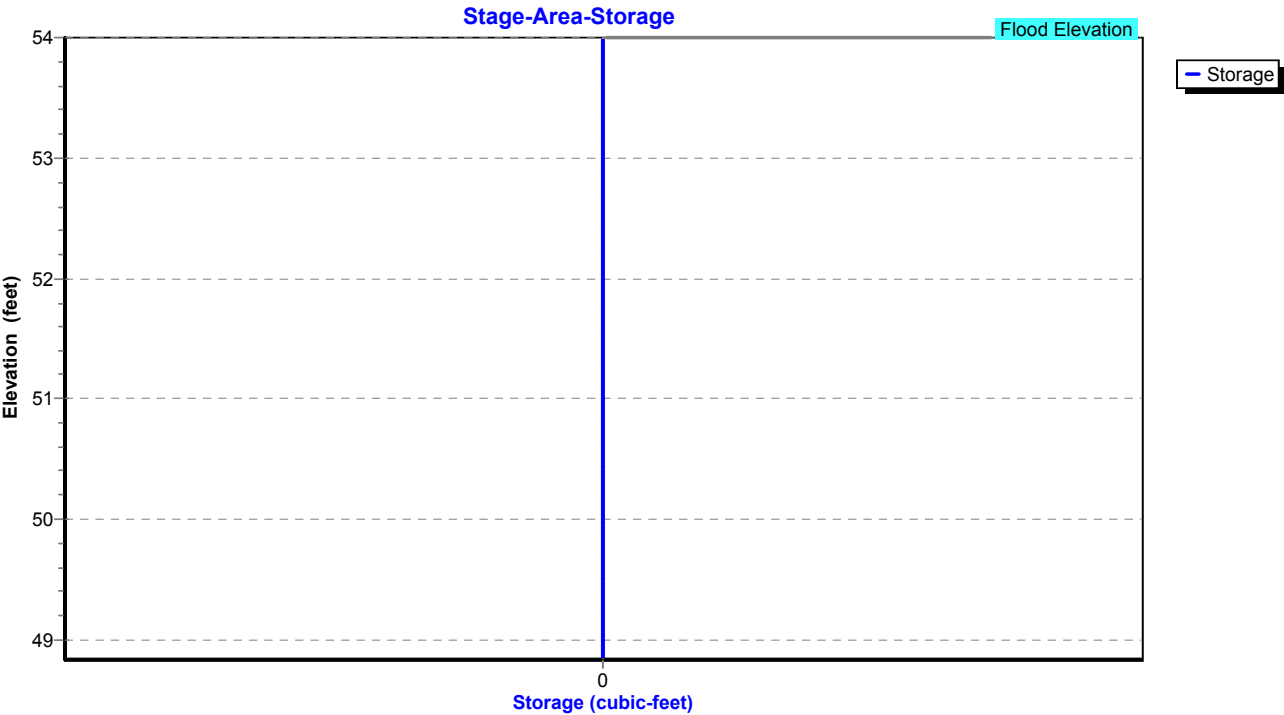
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 7.42" for 100 year event
Inflow = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf
Outflow = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.58' @ 12.03 hrs

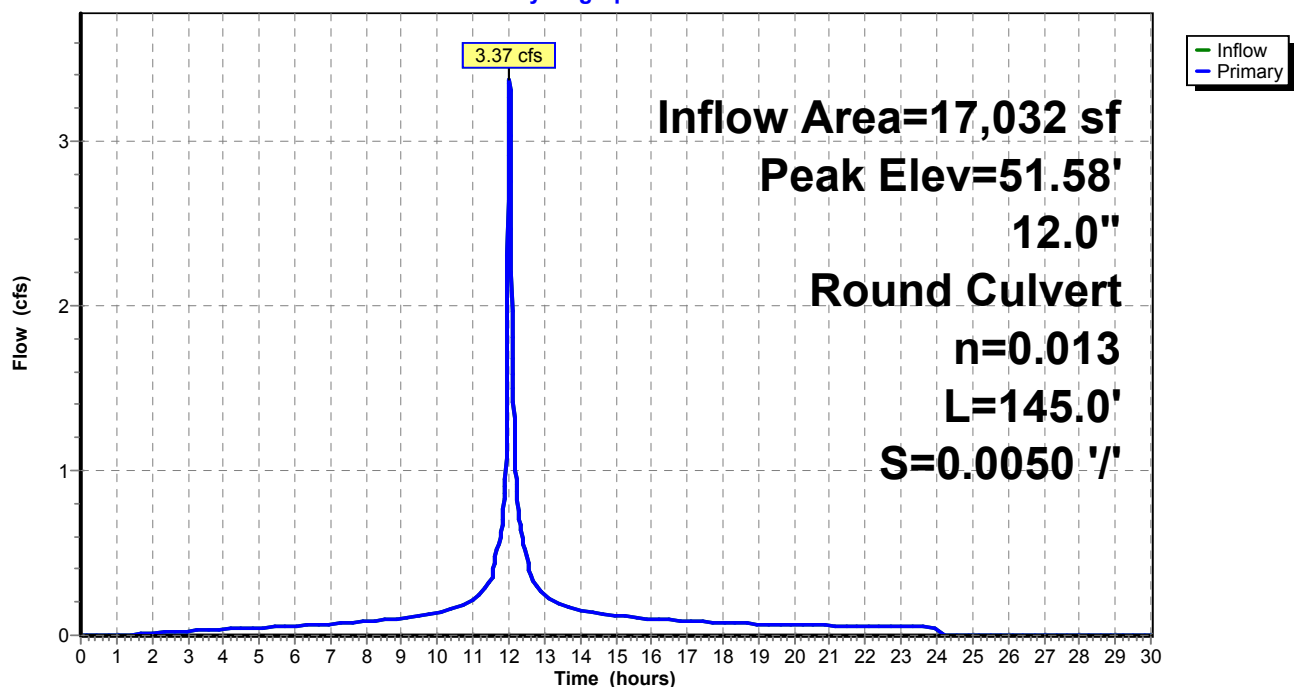
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.36 cfs @ 12.03 hrs HW=51.56' (Free Discharge)

↑1=Culvert (Barrel Controls 3.36 cfs @ 4.28 fps)

Pond 13P: MH-J

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

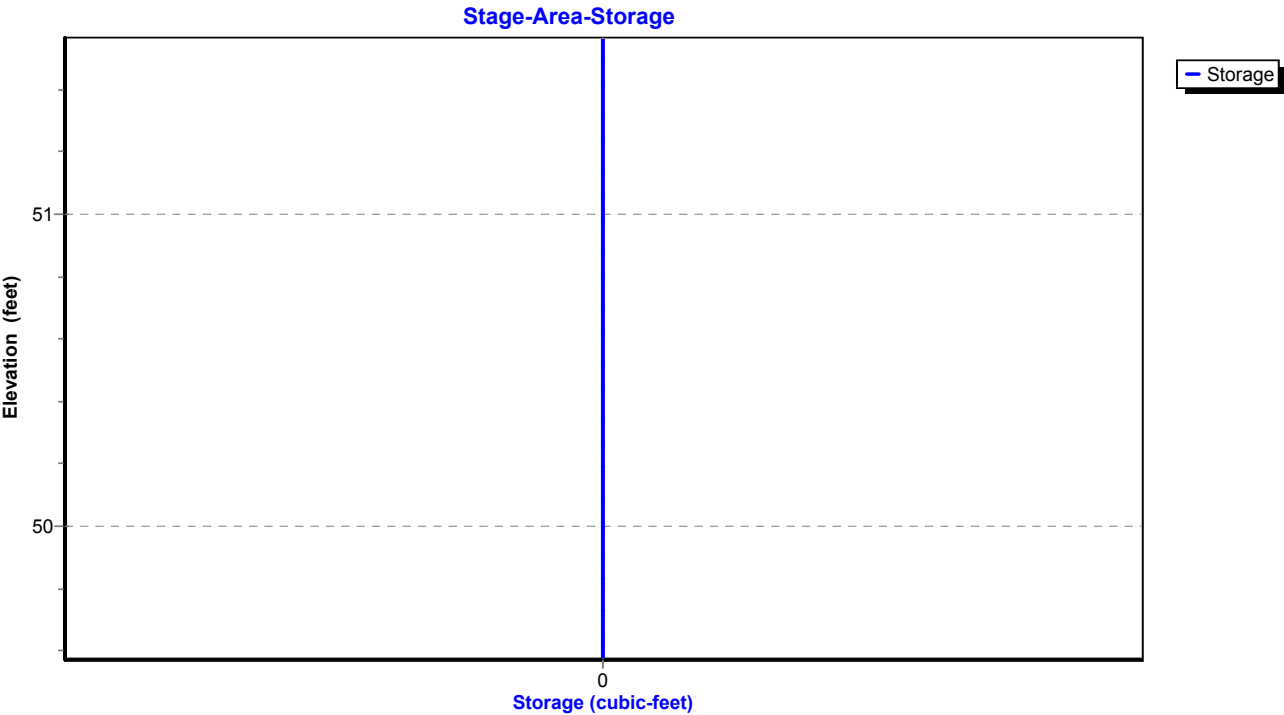
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 13P: MH-J



Existing Conditions

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Summary for Pond 14P: MH-O

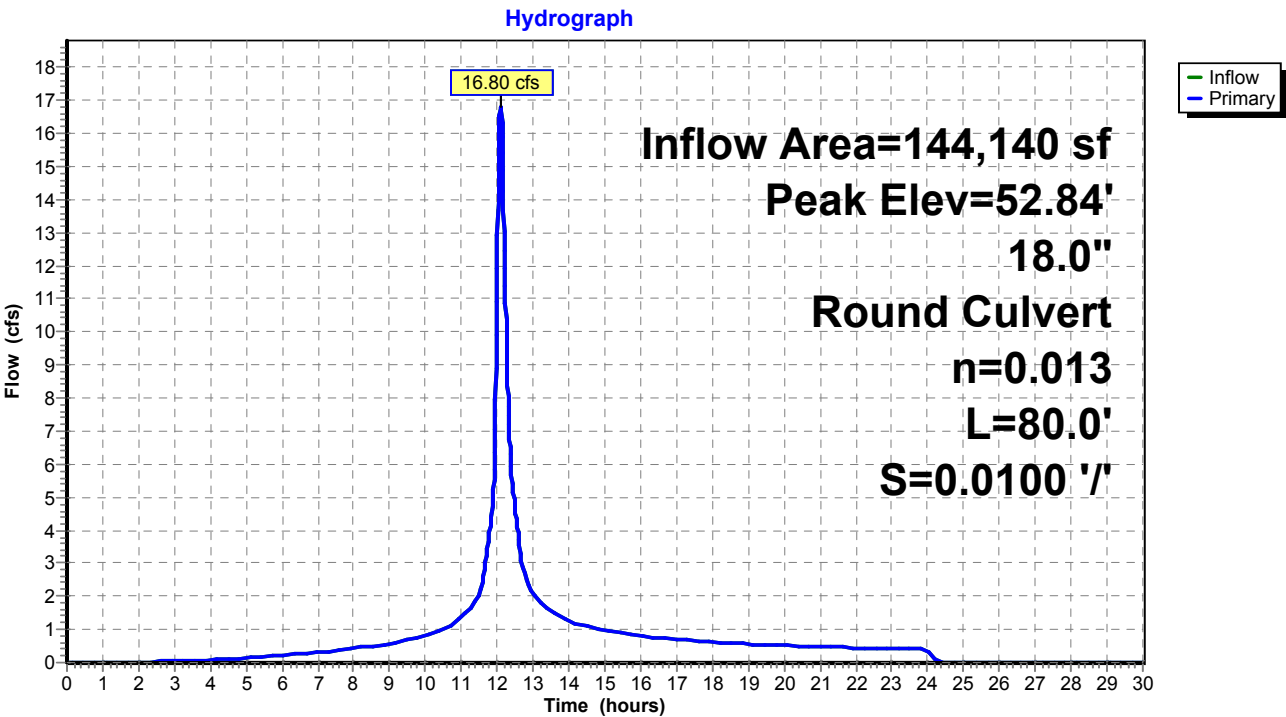
Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 6.23" for 100 year event
Inflow = 16.80 cfs @ 12.10 hrs, Volume= 74,881 cf
Outflow = 16.80 cfs @ 12.10 hrs, Volume= 74,881 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.80 cfs @ 12.10 hrs, Volume= 74,881 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.84' @ 12.10 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=16.79 cfs @ 12.10 hrs HW=52.84' (Free Discharge)
1=Culvert (Barrel Controls 16.79 cfs @ 9.50 fps)

Pond 14P: MH-O



Existing Conditions

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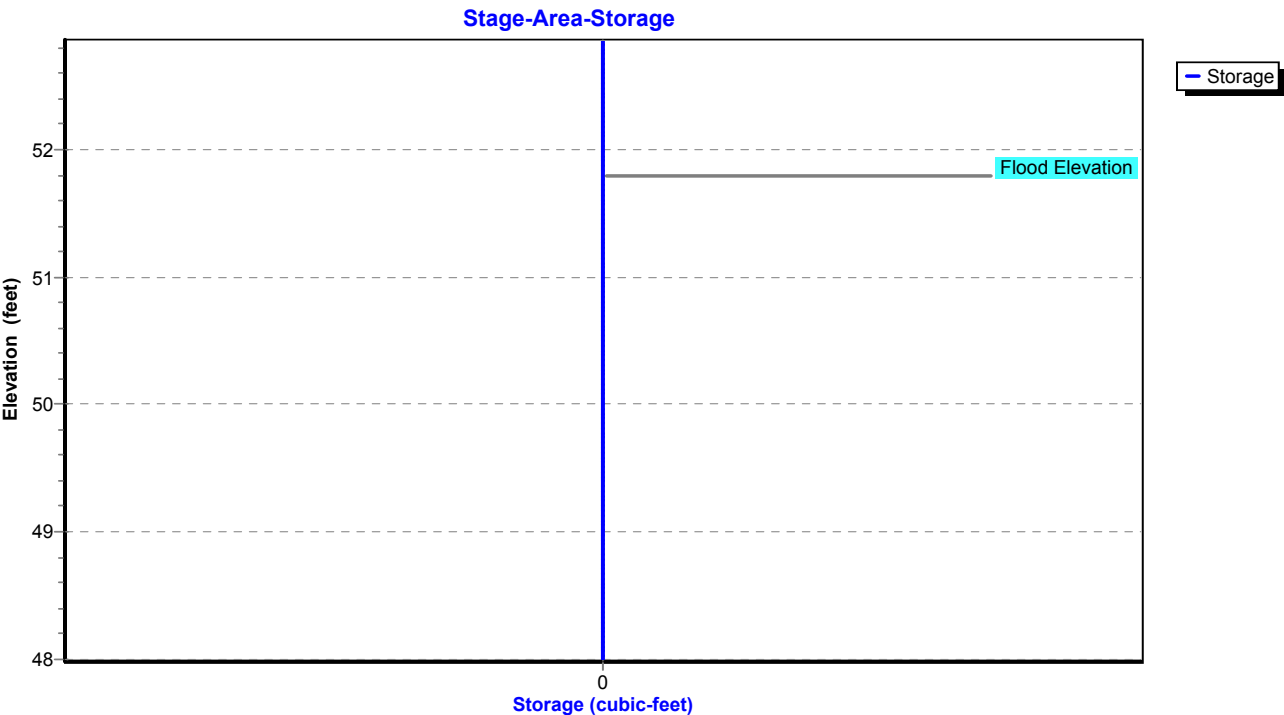
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Pond 14P: MH-O



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Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 6.07" for 100 year event
Inflow = 15.01 cfs @ 12.11 hrs, Volume= 63,983 cf
Outflow = 15.01 cfs @ 12.11 hrs, Volume= 63,983 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.01 cfs @ 12.11 hrs, Volume= 63,983 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 54.54' @ 12.11 hrs

Flood Elev= 53.90'

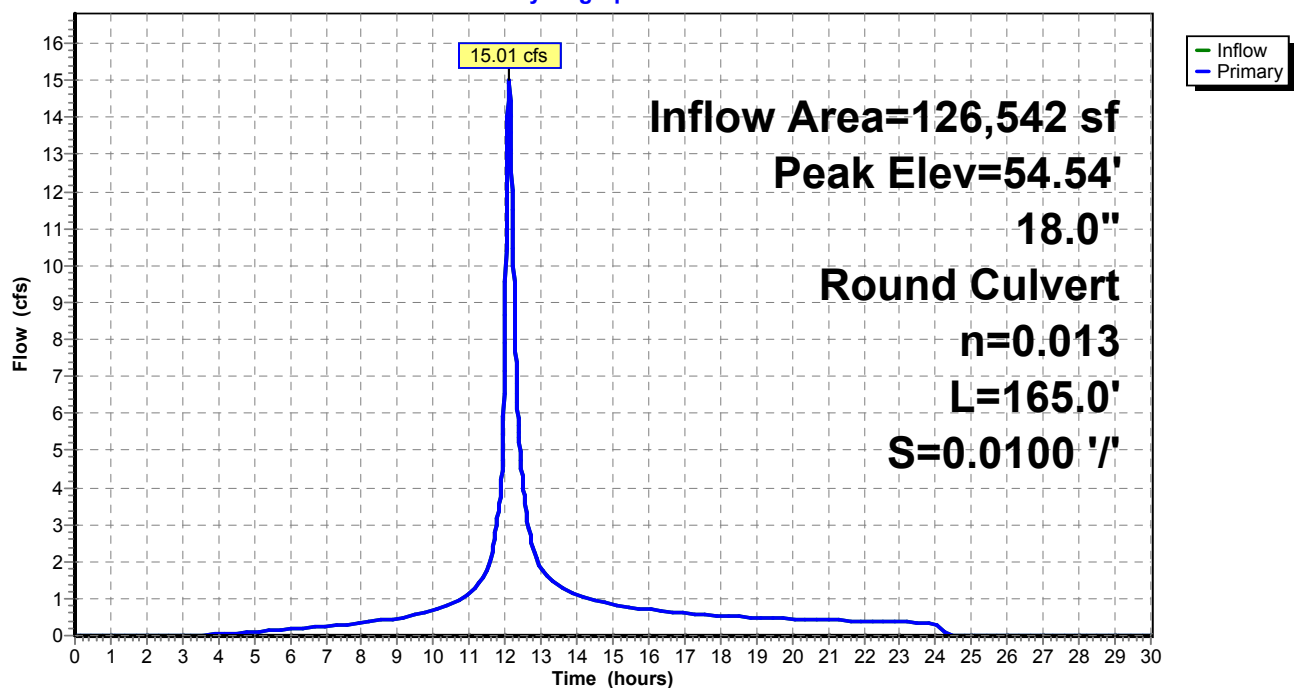
Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=15.00 cfs @ 12.11 hrs HW=54.54' (Free Discharge)

↑1=Culvert (Barrel Controls 15.00 cfs @ 8.49 fps)

Pond 15P: MH-P

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

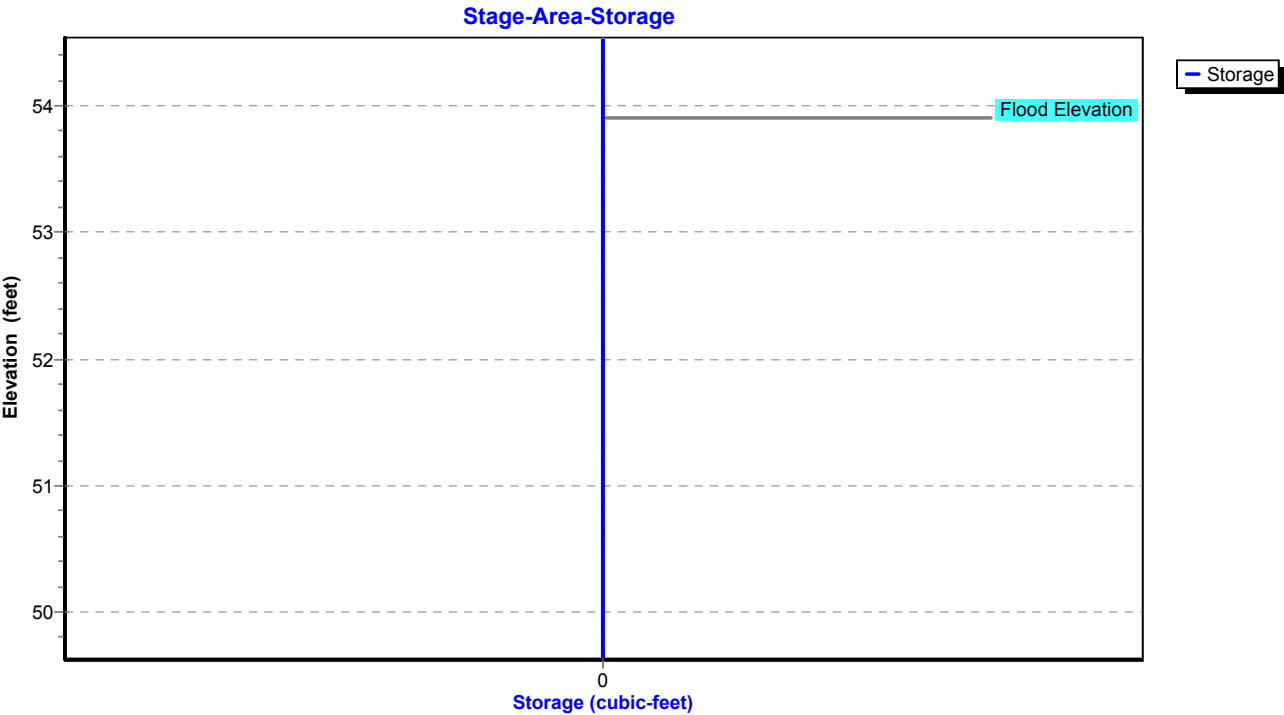
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Pond 15P: MH-P



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 16P: MH-Q

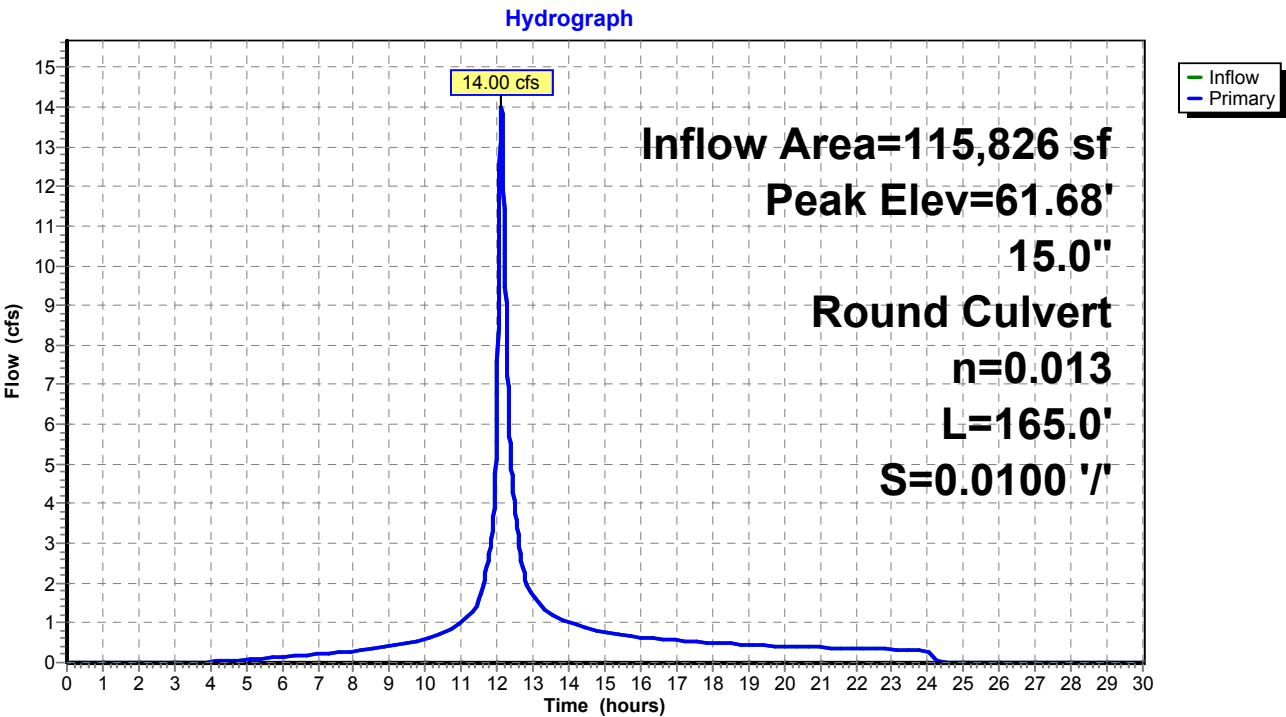
Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 5.98" for 100 year event
Inflow = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf
Outflow = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 61.68' @ 12.11 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=13.98 cfs @ 12.11 hrs HW=61.66' (Free Discharge)
1=Culvert (Barrel Controls 13.98 cfs @ 11.39 fps)

Pond 16P: MH-Q



Existing Conditions

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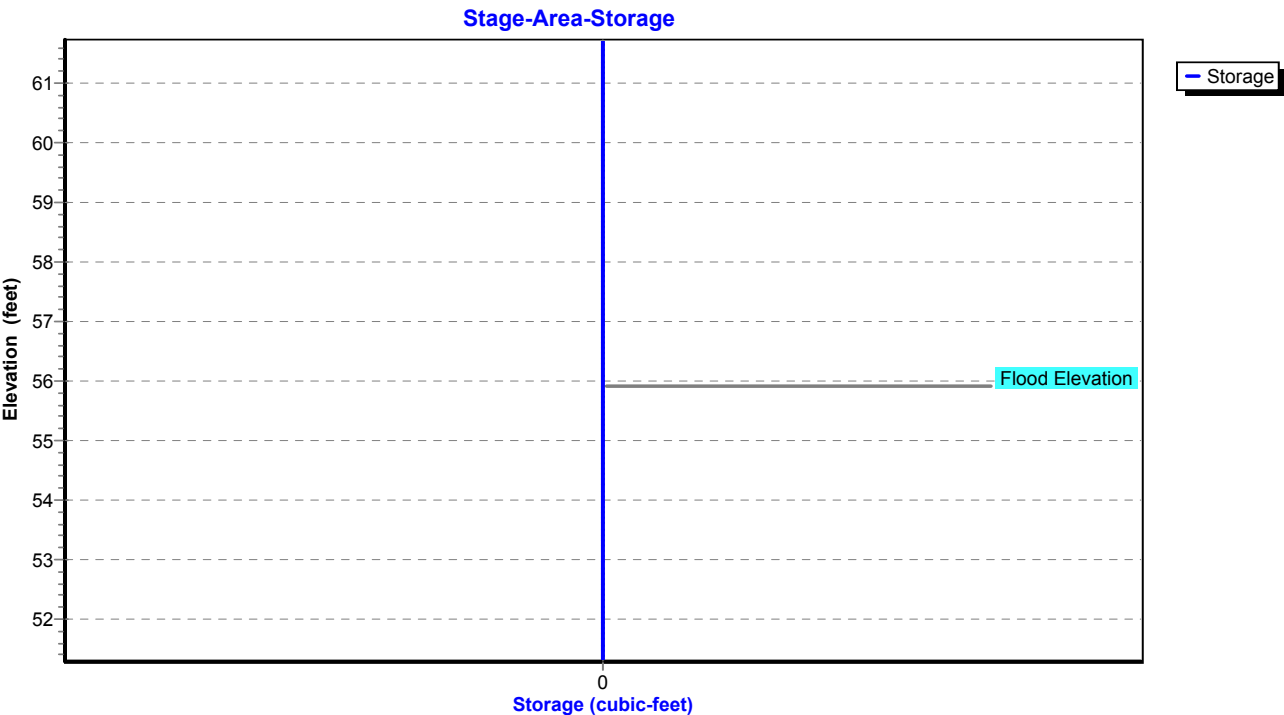
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Pond 16P: MH-Q



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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 5.15" for 100 year event
 Inflow = 96.35 cfs @ 13.16 hrs, Volume= 1,260,192 cf
 Outflow = 96.13 cfs @ 13.21 hrs, Volume= 1,260,192 cf, Atten= 0%, Lag= 2.9 min
 Primary = 96.13 cfs @ 13.21 hrs, Volume= 1,260,192 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 47.63' @ 13.21 hrs Surf.Area= 6,069 sf Storage= 10,104 cf

Plug-Flow detention time= 1.6 min calculated for 1,260,192 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (901.7 - 900.2)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=96.13 cfs @ 13.21 hrs HW=47.63' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 96.13 cfs @ 6.66 fps)

Existing Conditions

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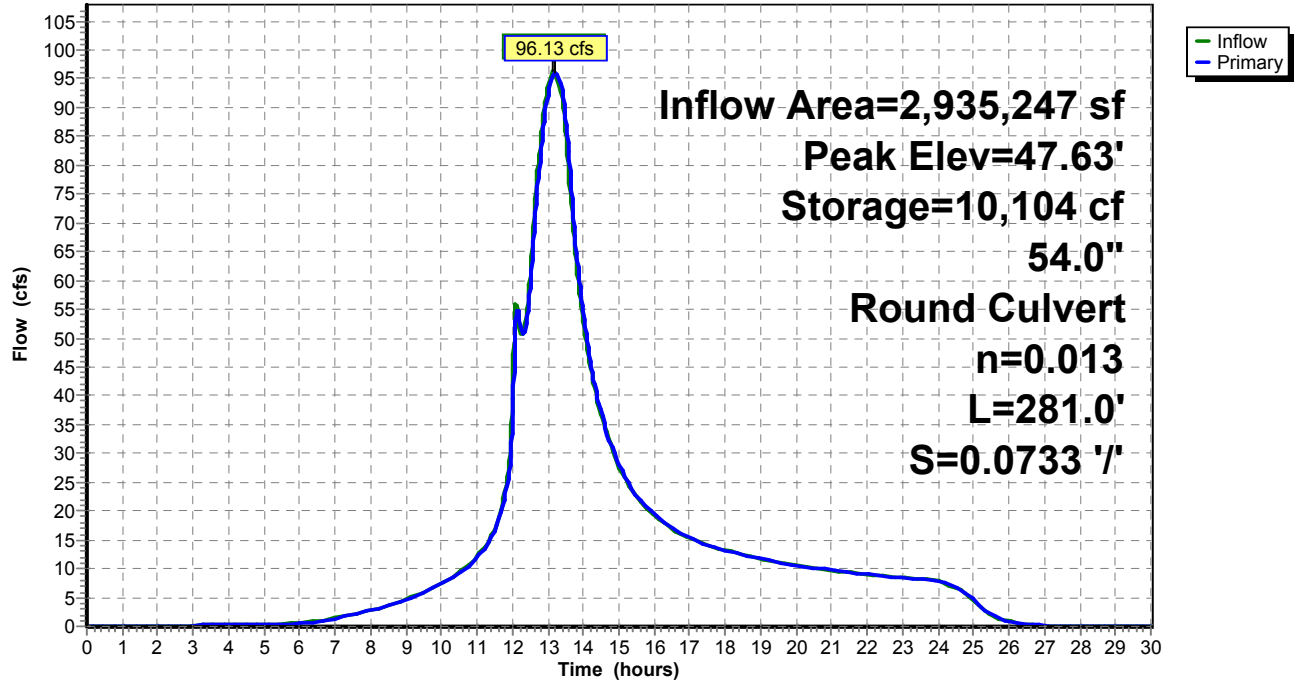
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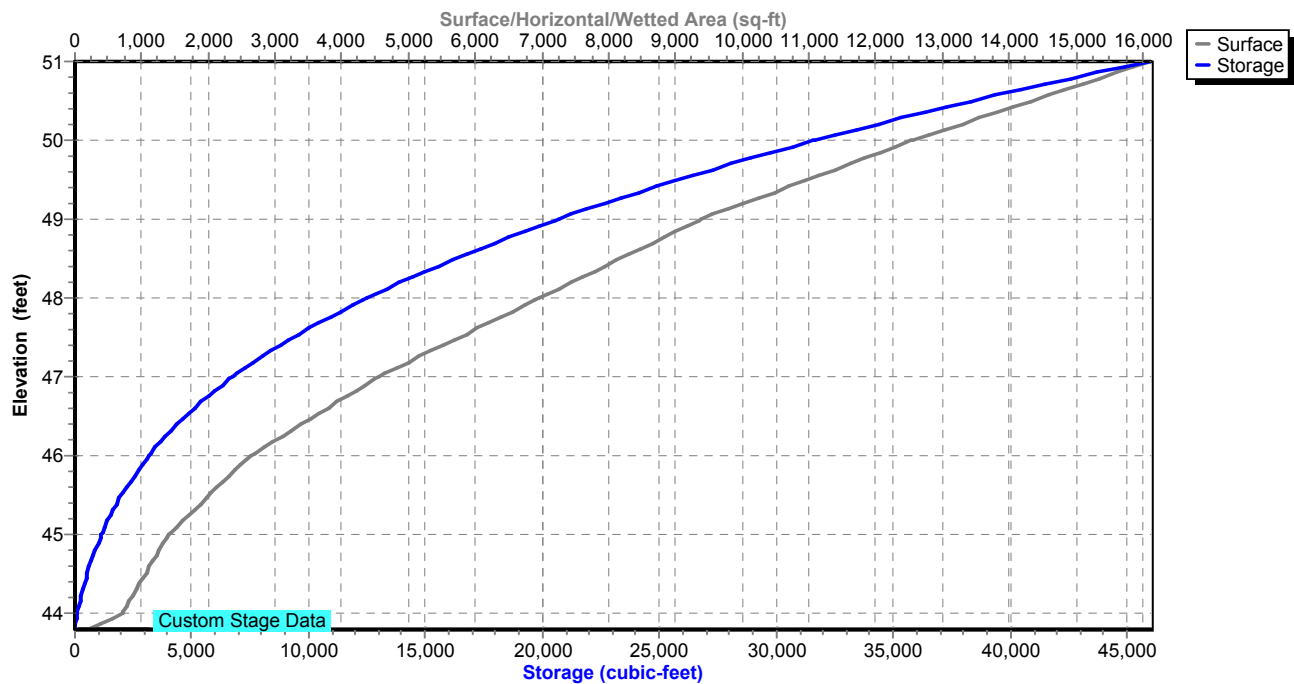
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 5.04" for 100 year event
 Inflow = 94.68 cfs @ 13.07 hrs, Volume= 1,113,245 cf
 Outflow = 92.74 cfs @ 13.18 hrs, Volume= 1,113,245 cf, Atten= 2%, Lag= 6.6 min
 Primary = 92.74 cfs @ 13.18 hrs, Volume= 1,113,245 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 70.93' @ 13.18 hrs Surf.Area= 3,131 sf Storage= 9,738 cf

Plug-Flow detention time= 0.5 min calculated for 1,112,874 cf (100% of inflow)
 Center-of-Mass det. time= 0.5 min (912.6 - 912.1)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=92.74 cfs @ 13.18 hrs HW=70.92' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 92.74 cfs @ 13.12 hrs)

Existing Conditions

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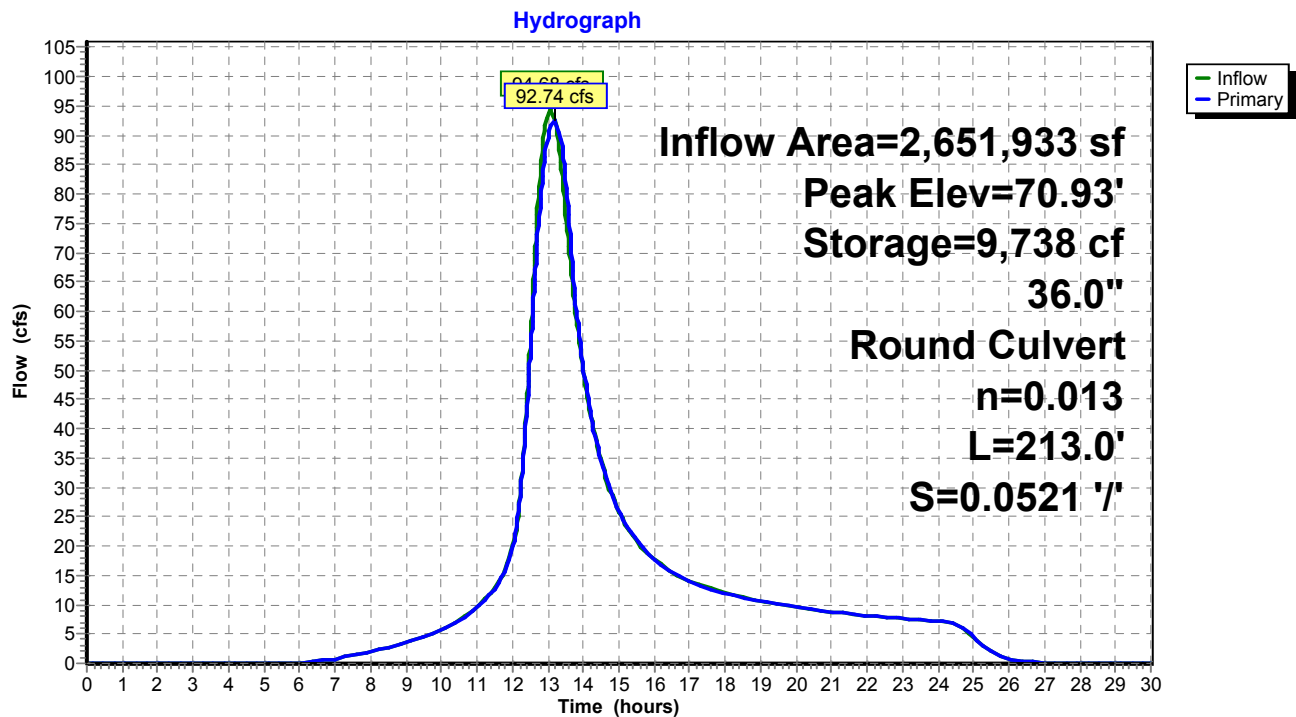
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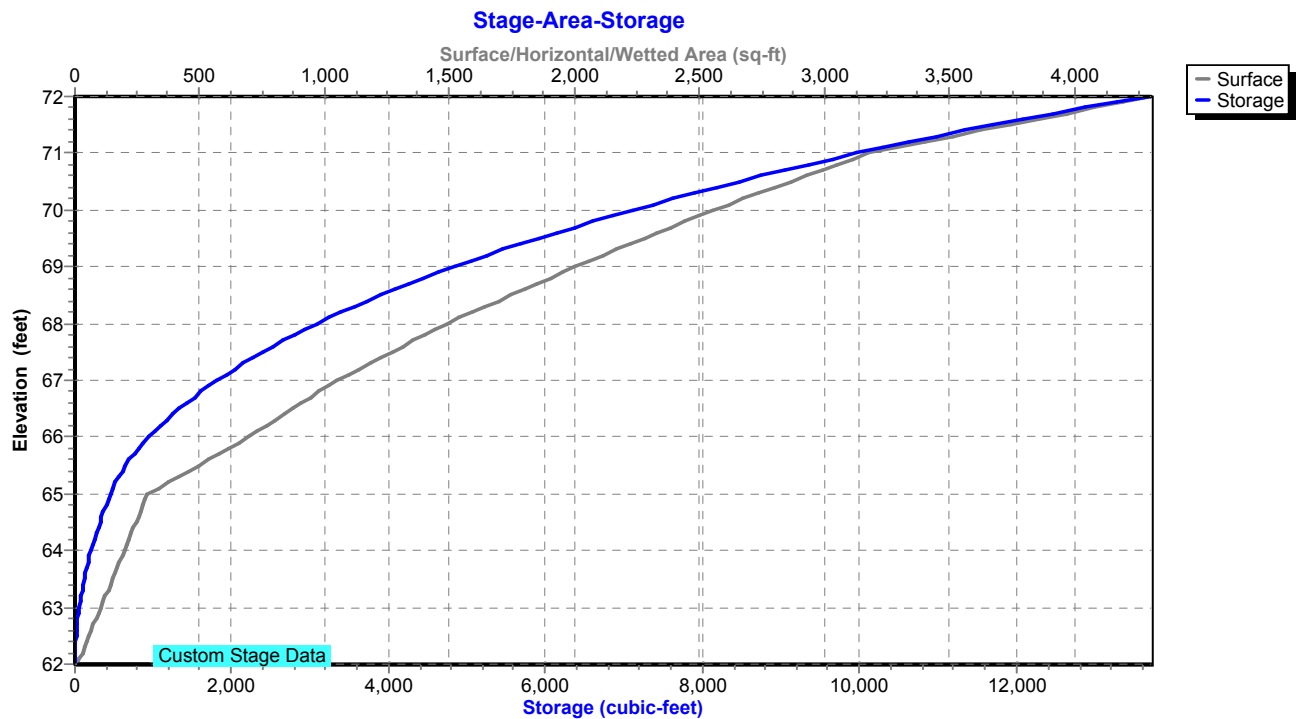
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Pond 18P: DET 4 Culvert



Pond 18P: DET 4 Culvert



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 5.04" for 100 year event
 Inflow = 28.03 cfs @ 12.52 hrs, Volume= 223,819 cf
 Outflow = 28.03 cfs @ 12.53 hrs, Volume= 223,819 cf, Atten= 0%, Lag= 0.3 min
 Primary = 28.03 cfs @ 12.53 hrs, Volume= 223,819 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 41.43' @ 12.53 hrs Surf.Area= 1,750 sf Storage= 1,591 cf

Plug-Flow detention time= 0.6 min calculated for 223,745 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (875.7 - 875.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=28.02 cfs @ 12.53 hrs HW=41.43' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 28.02 cfs @ 8.92 fps)

Existing Conditions

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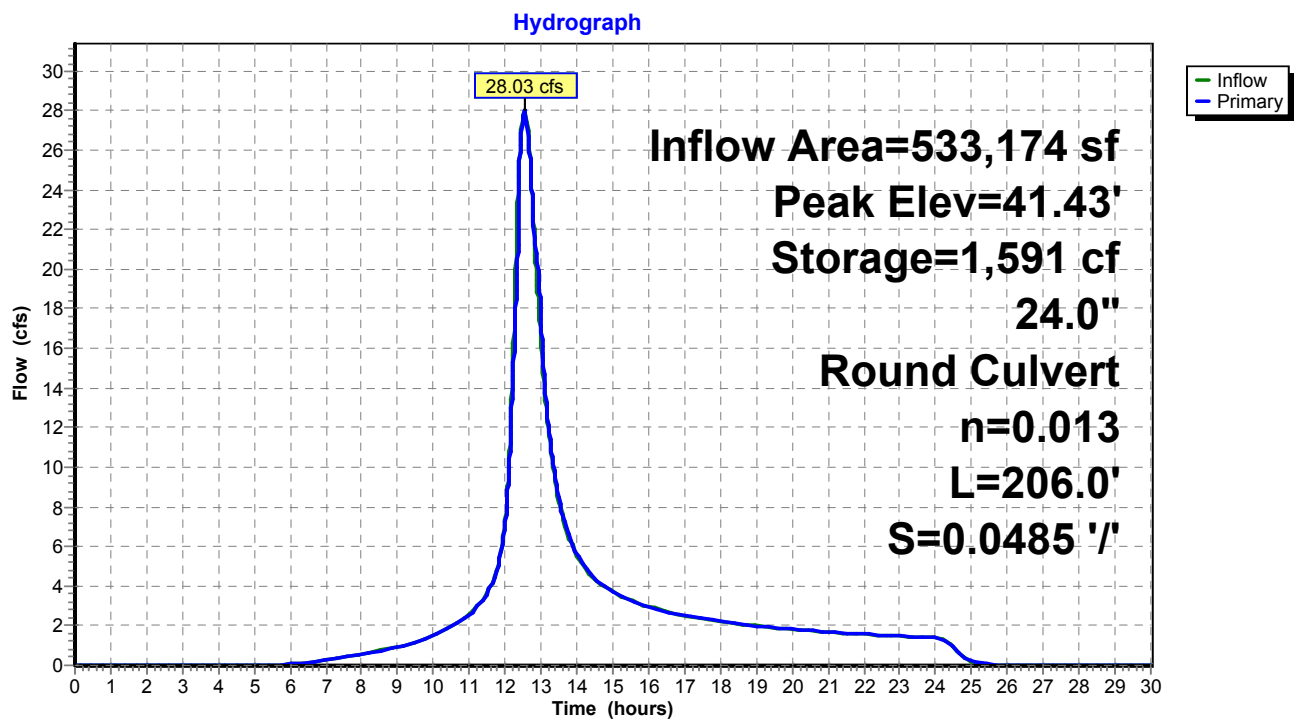
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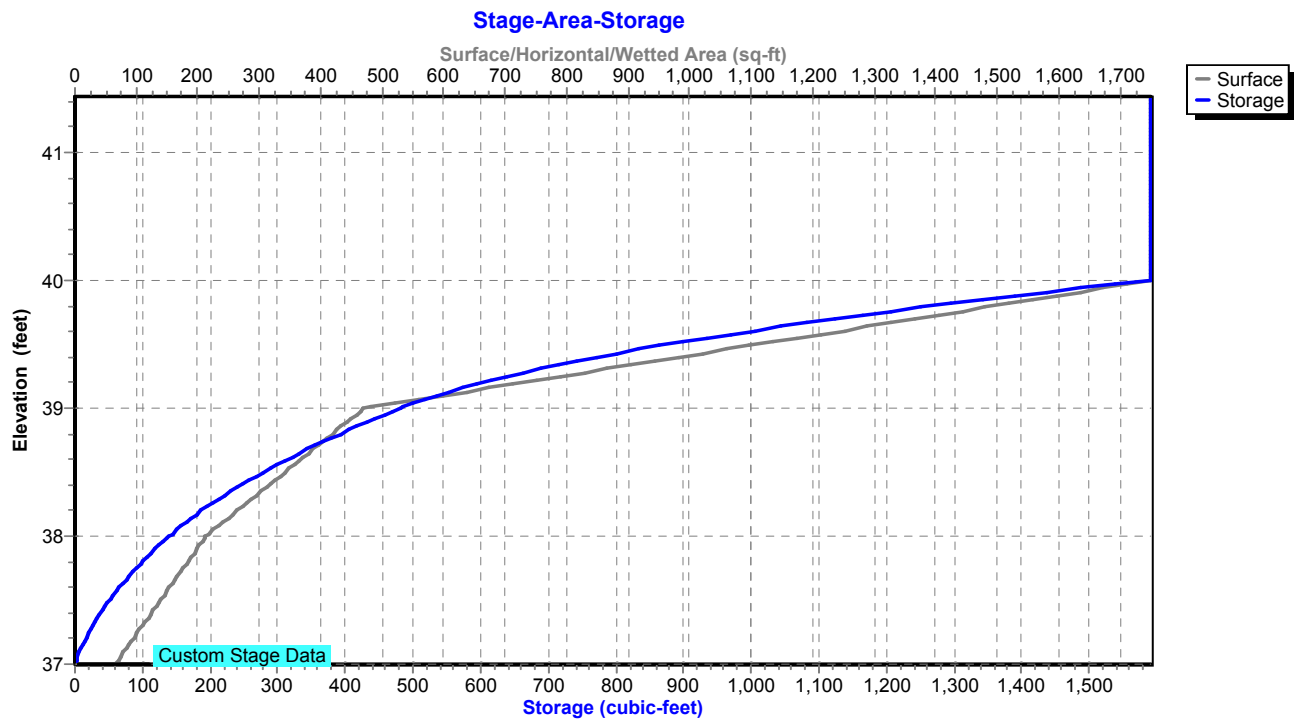
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 5.63" for 100 year event
 Inflow = 62.64 cfs @ 12.74 hrs, Volume= 605,141 cf
 Outflow = 63.23 cfs @ 12.97 hrs, Volume= 605,141 cf, Atten= 0%, Lag= 13.9 min
 Primary = 63.23 cfs @ 12.97 hrs, Volume= 605,141 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 43.21' @ 12.97 hrs Surf.Area= 21,926 sf Storage= 46,687 cf

Plug-Flow detention time= 7.3 min calculated for 605,141 cf (100% of inflow)
 Center-of-Mass det. time= 7.3 min (881.9 - 874.6)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=63.00 cfs @ 12.97 hrs HW=43.15' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 63.00 cfs @ 12.83 fps)

Existing Conditions

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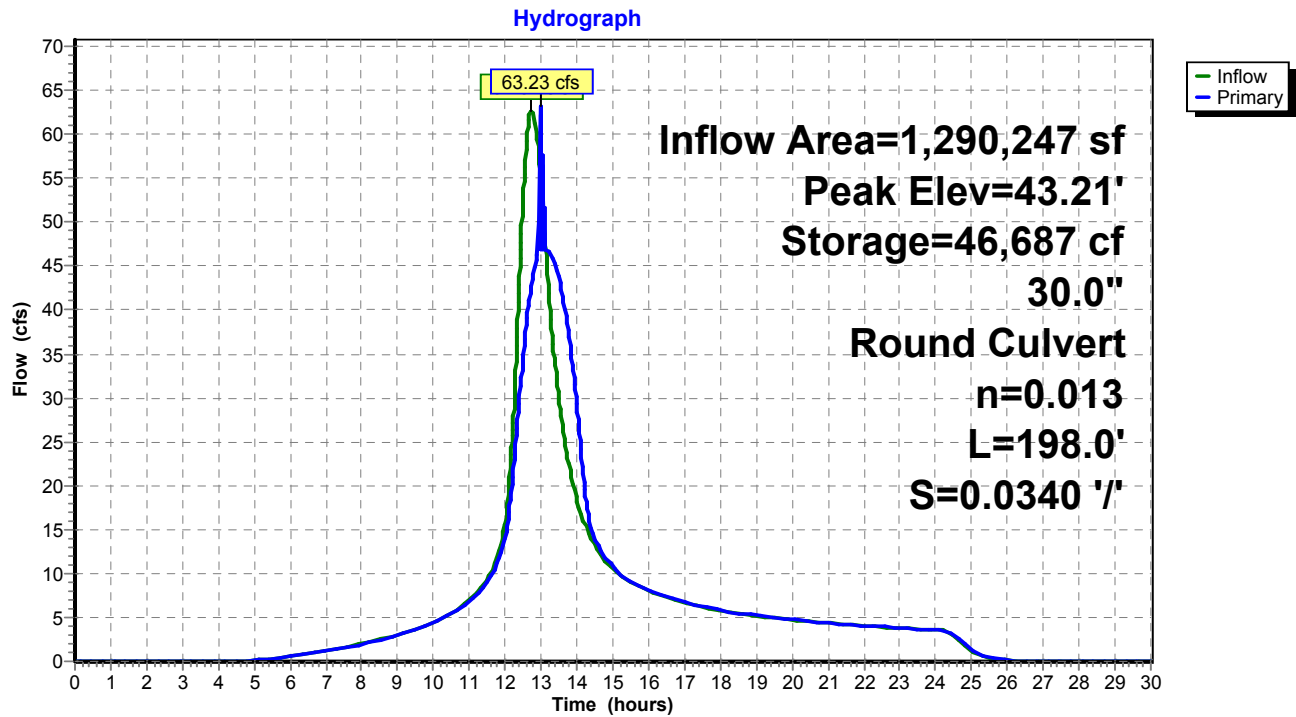
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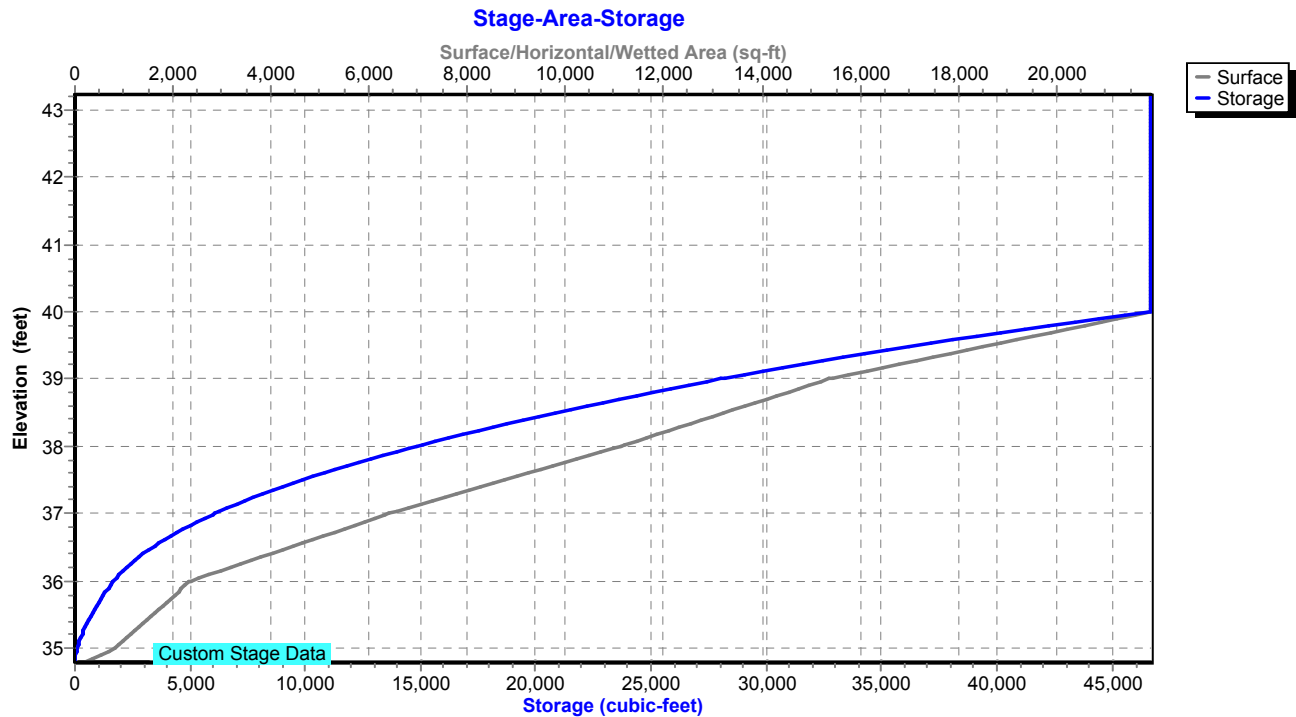
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Pond 22P: DET 2 Culvert



Pond 22P: DET 2 Culvert



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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 5.16" for 100 year event
 Inflow = 23.17 cfs @ 12.22 hrs, Volume= 118,644 cf
 Outflow = 21.27 cfs @ 12.28 hrs, Volume= 118,644 cf, Atten= 8%, Lag= 3.9 min
 Primary = 21.27 cfs @ 12.28 hrs, Volume= 118,644 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 45.48' @ 12.28 hrs Surf.Area= 2,348 sf Storage= 2,472 cf

Plug-Flow detention time= 0.8 min calculated for 118,605 cf (100% of inflow)
 Center-of-Mass det. time= 0.8 min (850.4 - 849.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=21.27 cfs @ 12.28 hrs HW=45.48' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 21.27 cfs @ 6.77 fps)

Existing Conditions

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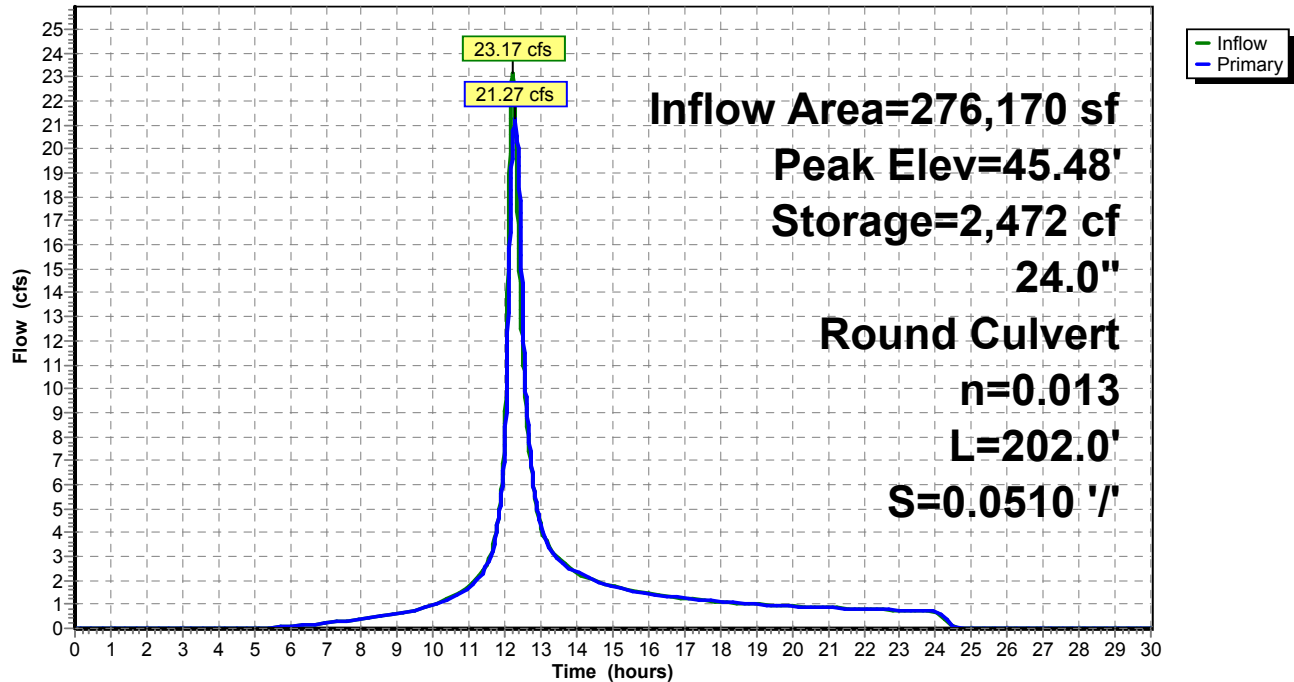
NORWALK 24-hr S1 100 year Rainfall=8.26"

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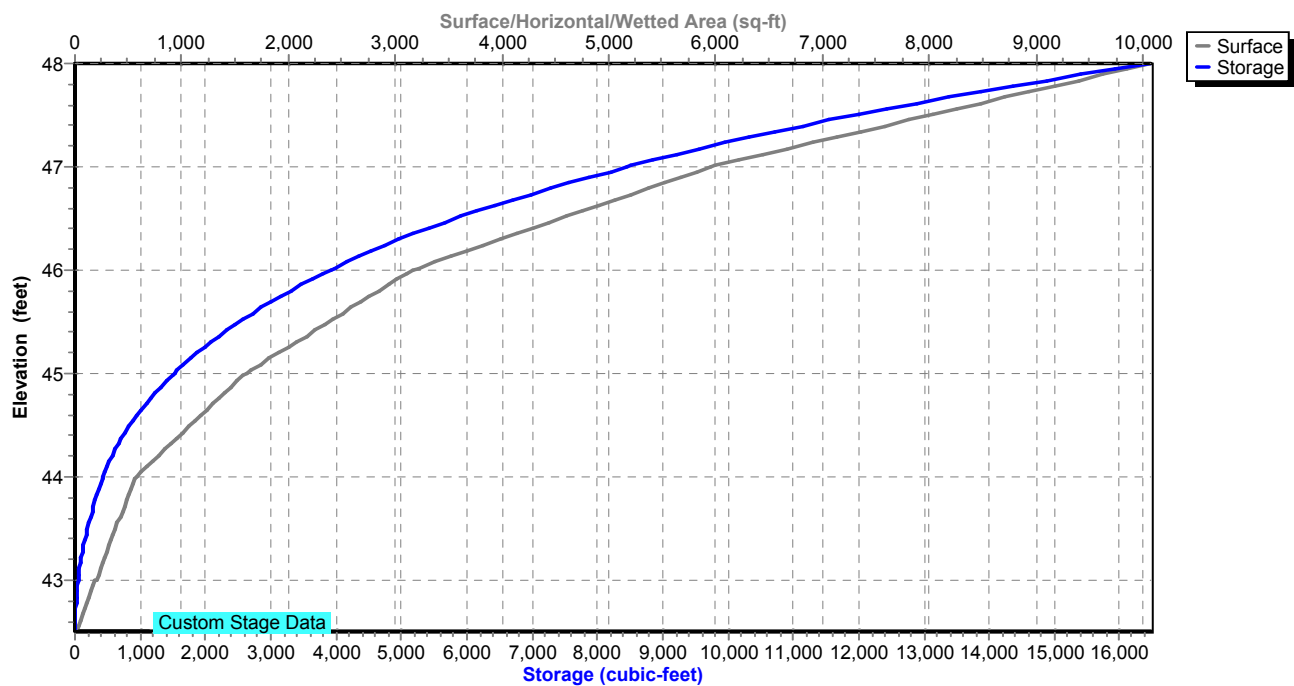
Pond 23P: DET 3 Culvert

Hydrograph



Pond 23P: DET 3 Culvert

Stage-Area-Storage



Existing Conditions

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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 54.03" for 100 year event
 Inflow = 344.20 cfs @ 12.23 hrs, Volume= 2,255,405 cf
 Outflow = 64.79 cfs @ 14.29 hrs, Volume= 2,255,457 cf, Atten= 81%, Lag= 123.7 min
 Primary = 64.79 cfs @ 14.29 hrs, Volume= 2,255,457 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 14.43' @ 14.29 hrs Storage= 1,348,201 cf

Plug-Flow detention time= 237.7 min calculated for 2,254,705 cf (100% of inflow)

Center-of-Mass det. time= 237.6 min (1,034.8 - 797.1)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=64.79 cfs @ 14.29 hrs HW=14.43' (Free Discharge)↑**1=Culvert** (Barrel Controls 64.79 cfs @ 7.40 fps)

Existing Conditions

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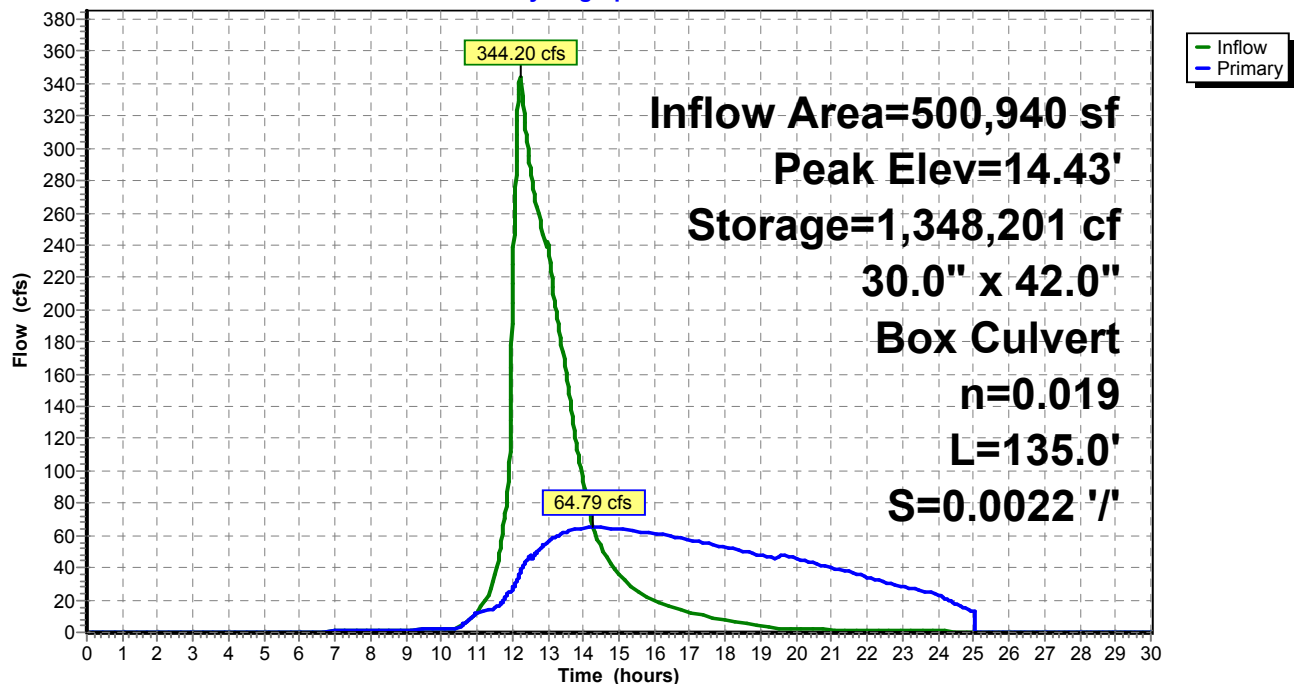
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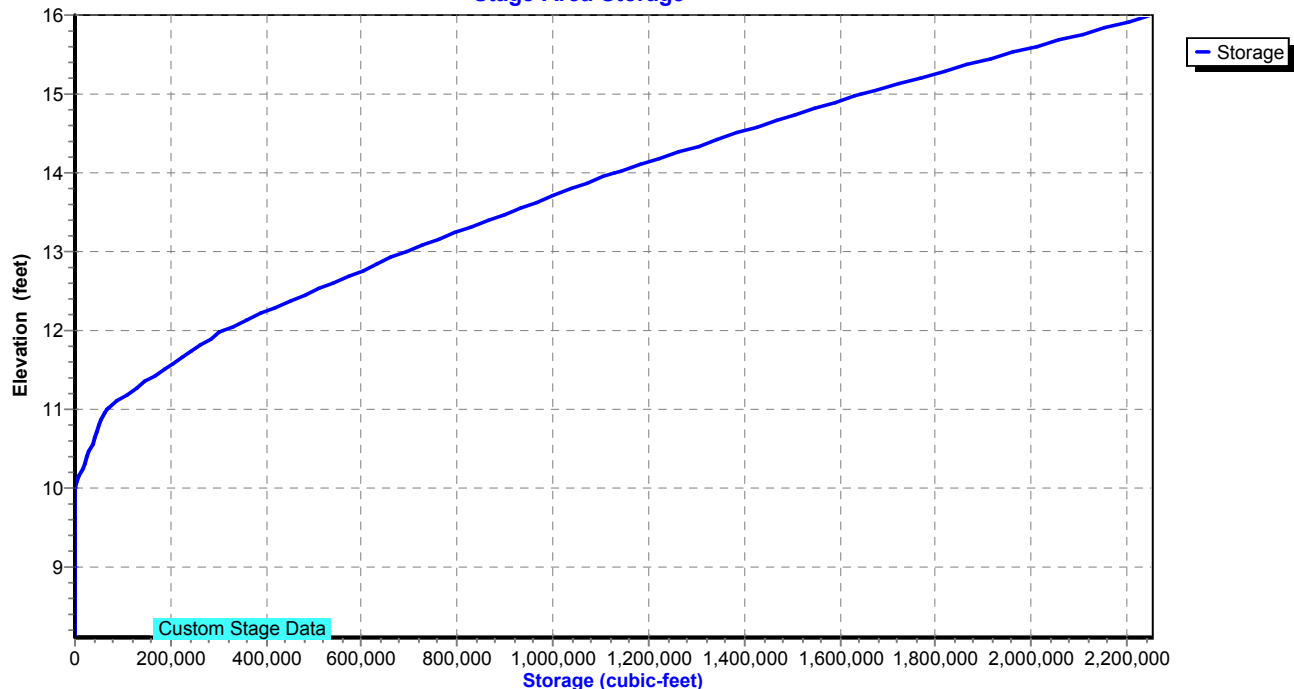
Pond 24P: RR Culvert 3

Hydrograph



Pond 24P: RR Culvert 3

Stage-Area-Storage



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 5.35" for 100 year event
 Inflow = 56.55 cfs @ 12.21 hrs, Volume= 346,893 cf
 Outflow = 56.54 cfs @ 12.21 hrs, Volume= 346,887 cf, Atten= 0%, Lag= 0.1 min
 Primary = 56.54 cfs @ 12.21 hrs, Volume= 346,887 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 20.14' @ 12.21 hrs Surf.Area= 2,331 sf Storage= 2,709 cf

Plug-Flow detention time= 0.7 min calculated for 346,887 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (873.6 - 872.9)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' S= 0.0691 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=56.18 cfs @ 12.21 hrs HW=20.14' (Free Discharge)

1=Culvert (Inlet Controls 12.42 cfs @ 10.12 fps)
 2=Custom Weir/Orifice (Weir Controls 43.76 cfs @ 1.56 fps)

Existing Conditions

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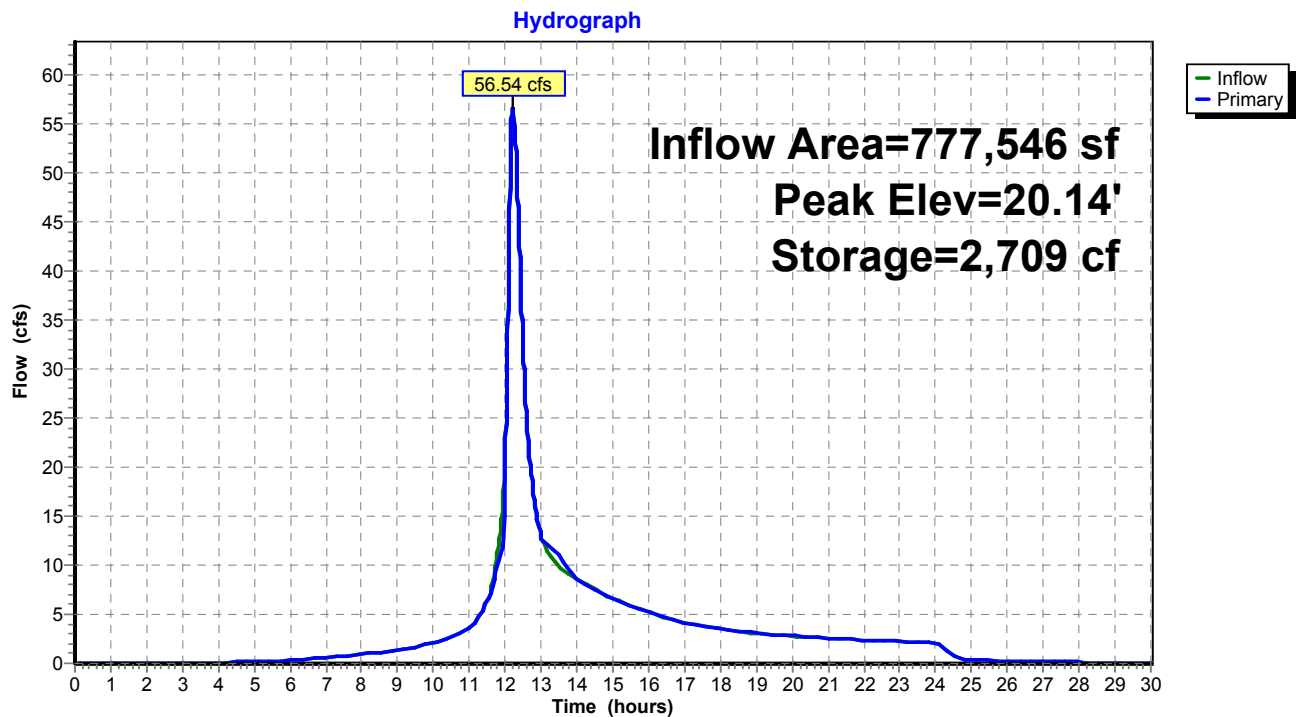
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NORWALK 24-hr S1 100 year Rainfall=8.26"

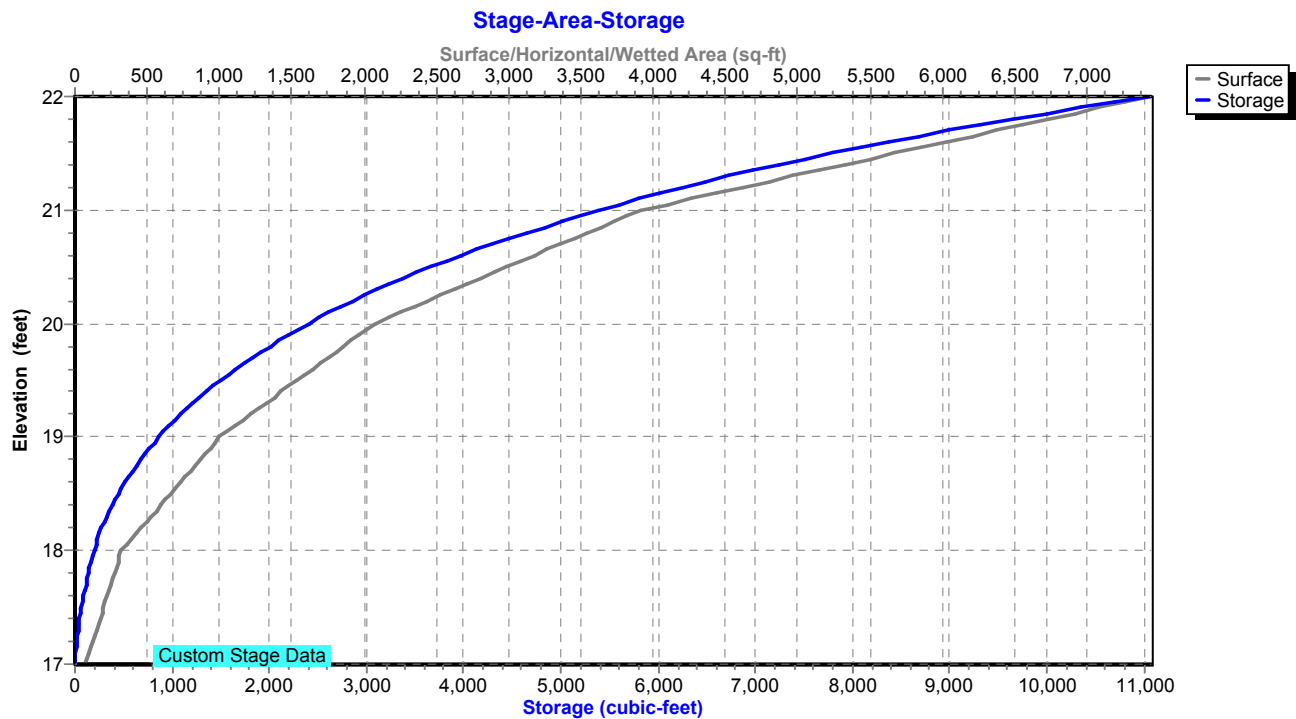
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Pond 26P: DET 16 Culvert



Pond 26P: DET 16 Culvert



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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 5.60" for 100 year event
 Inflow = 88.18 cfs @ 12.97 hrs, Volume= 1,030,029 cf
 Outflow = 79.77 cfs @ 12.98 hrs, Volume= 1,030,029 cf, Atten= 10%, Lag= 0.9 min
 Primary = 79.77 cfs @ 12.98 hrs, Volume= 1,030,029 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 18.84' @ 12.98 hrs Surf.Area= 11,721 sf Storage= 11,412 cf

Plug-Flow detention time= 4.0 min calculated for 1,029,685 cf (100% of inflow)
 Center-of-Mass det. time= 4.0 min (870.1 - 866.1)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=79.40 cfs @ 12.98 hrs HW=18.84' (Free Discharge)

1=Culvert (Inlet Controls 14.21 cfs @ 8.04 fps)

2=Custom Weir/Orifice (Weir Controls 65.19 cfs @ 2.24 fps)

Existing Conditions

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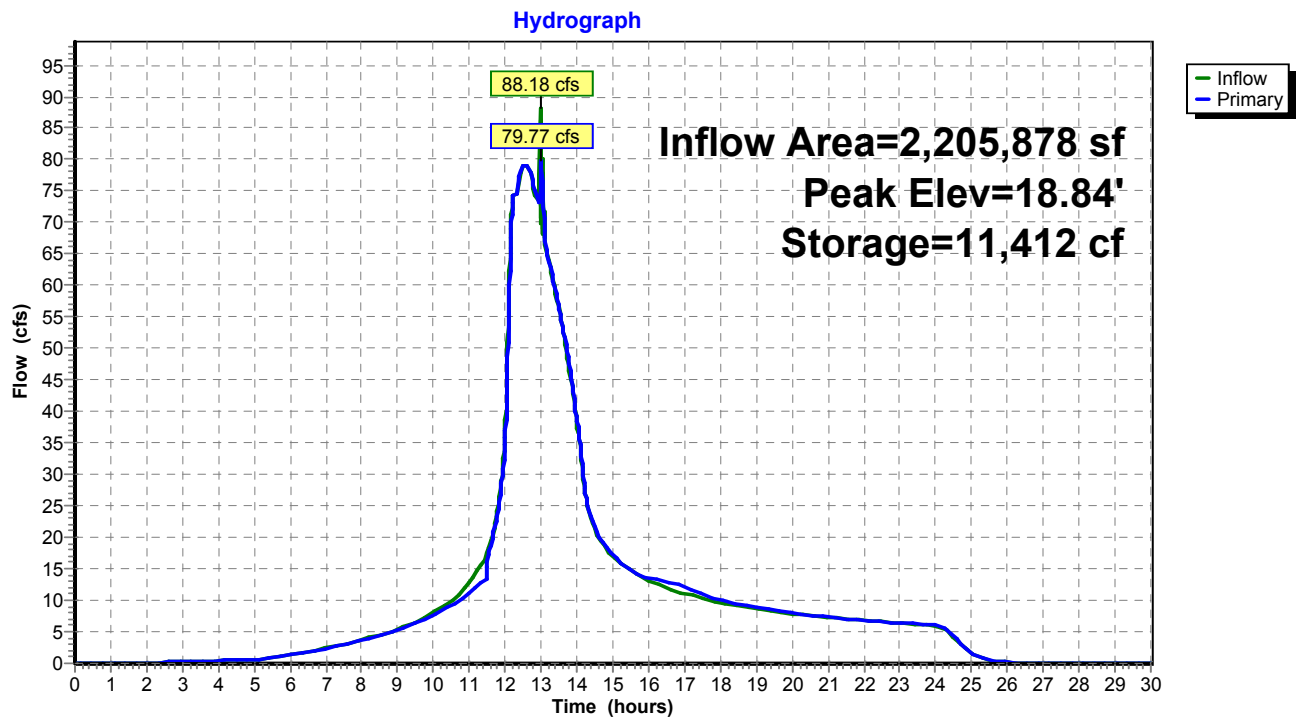
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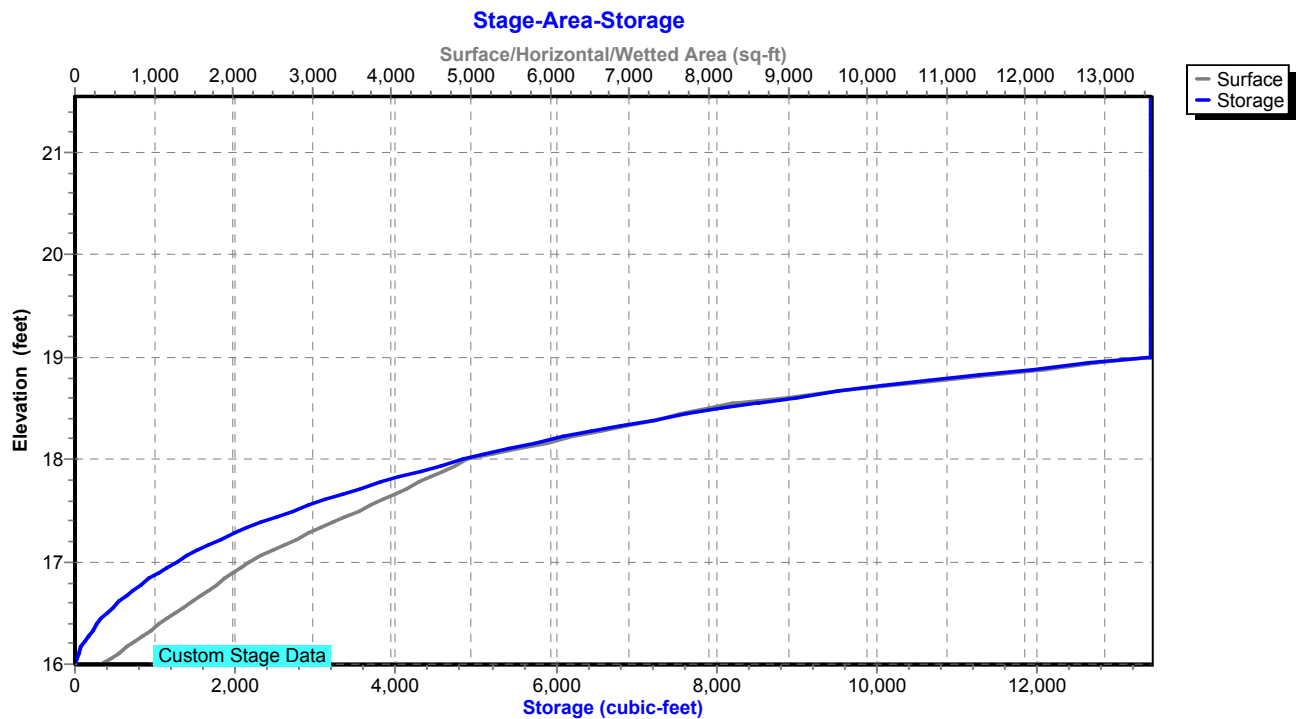
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 6.58" for 100 year event
Inflow = 36.04 cfs @ 12.04 hrs, Volume= 135,786 cf
Outflow = 13.36 cfs @ 12.24 hrs, Volume= 110,284 cf, Atten= 63%, Lag= 12.0 min
Primary = 13.36 cfs @ 12.24 hrs, Volume= 110,284 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 28.85' @ 12.24 hrs Surf.Area= 17,561 sf Storage= 58,839 cf

Plug-Flow detention time= 237.3 min calculated for 110,247 cf (81% of inflow)
Center-of-Mass det. time= 146.7 min (940.3 - 793.5)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' S= 0.0333 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.36 cfs @ 12.24 hrs HW=28.85' (Free Discharge)

1=Culvert (Passes 13.36 cfs of 17.24 cfs potential flow)
2=Orifice/Grate (Orifice Controls 5.15 cfs @ 6.56 fps)
3=Orifice/Grate (Weir Controls 8.21 cfs @ 1.94 fps)

Existing Conditions

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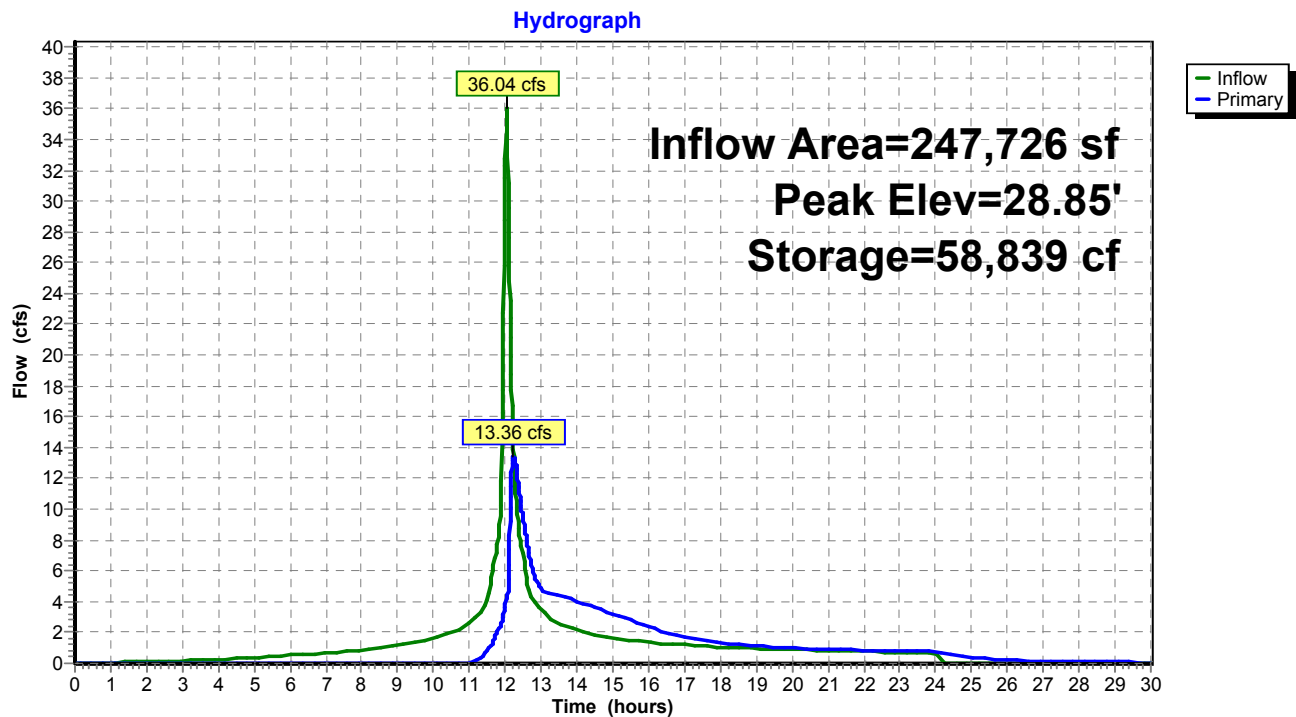
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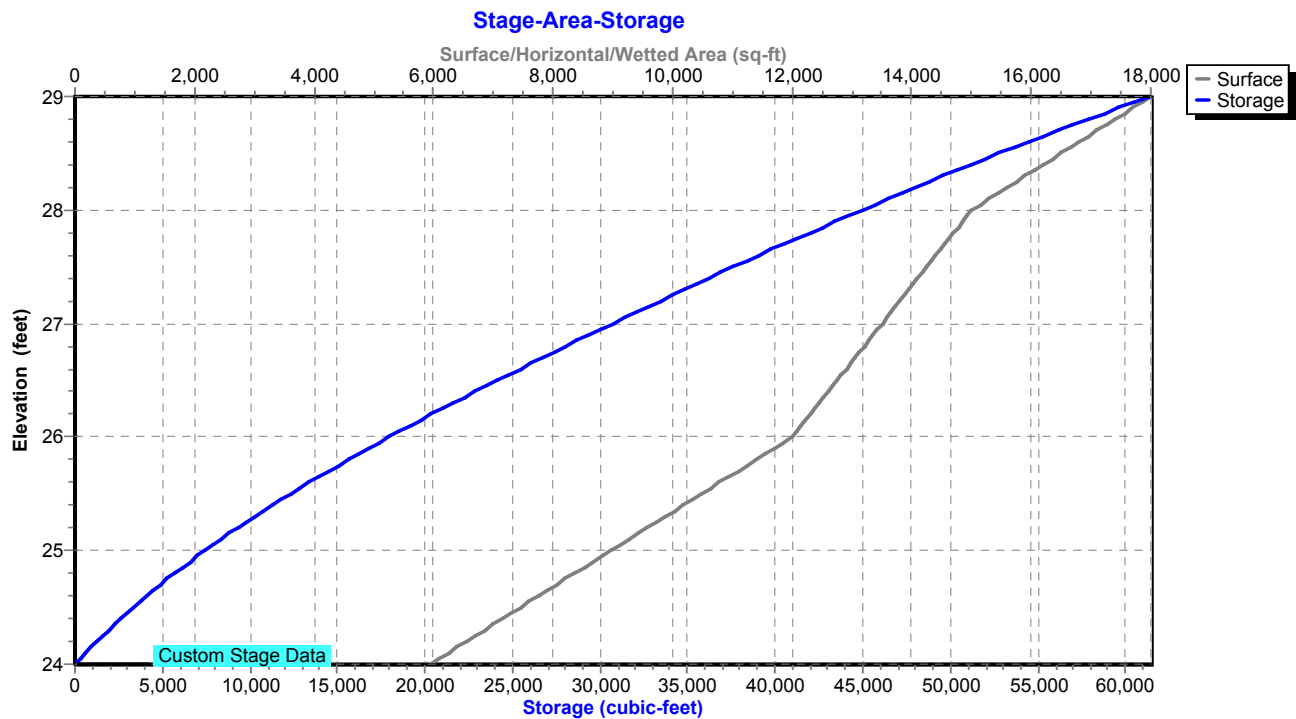
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



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Summary for Pond 51P: Manhole

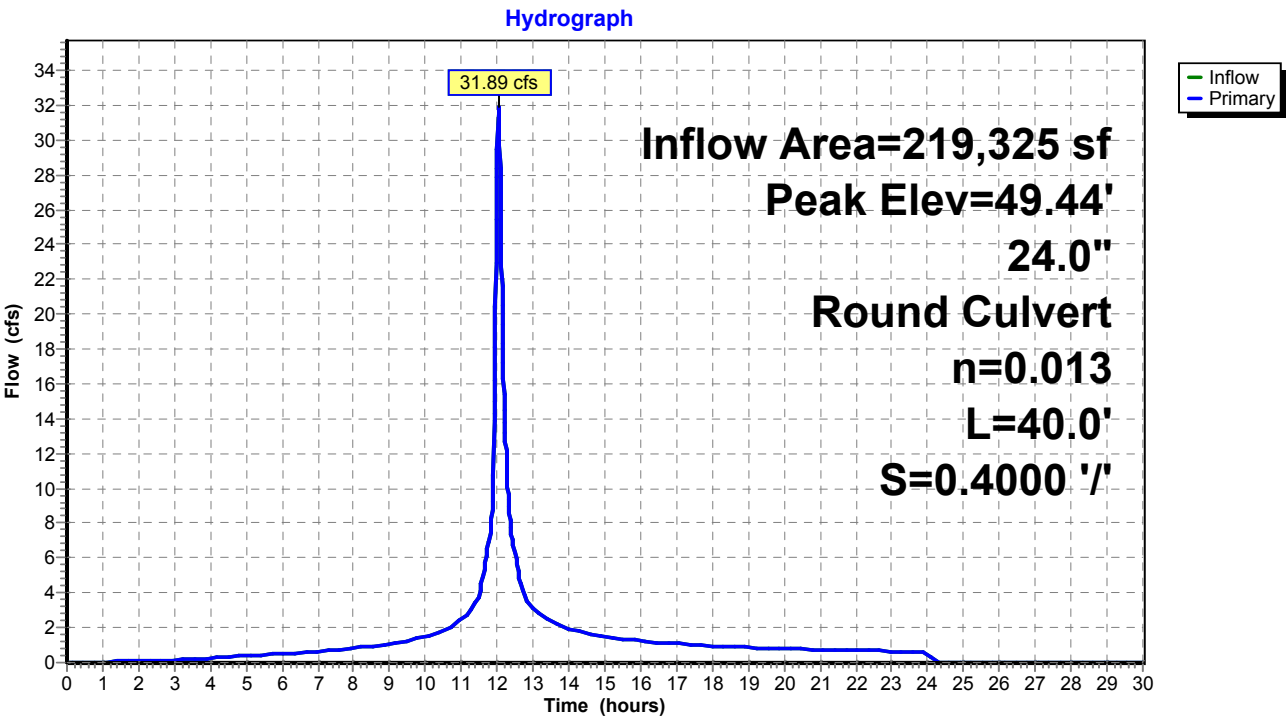
Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 6.76" for 100 year event
Inflow = 31.89 cfs @ 12.04 hrs, Volume= 123,585 cf
Outflow = 31.89 cfs @ 12.04 hrs, Volume= 123,585 cf, Atten= 0%, Lag= 0.0 min
Primary = 31.89 cfs @ 12.04 hrs, Volume= 123,585 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.44' @ 12.04 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=31.85 cfs @ 12.04 hrs HW=49.43' (Free Discharge)
1=Culvert (Inlet Controls 31.85 cfs @ 10.14 hrs)

Pond 51P: Manhole



Existing Conditions

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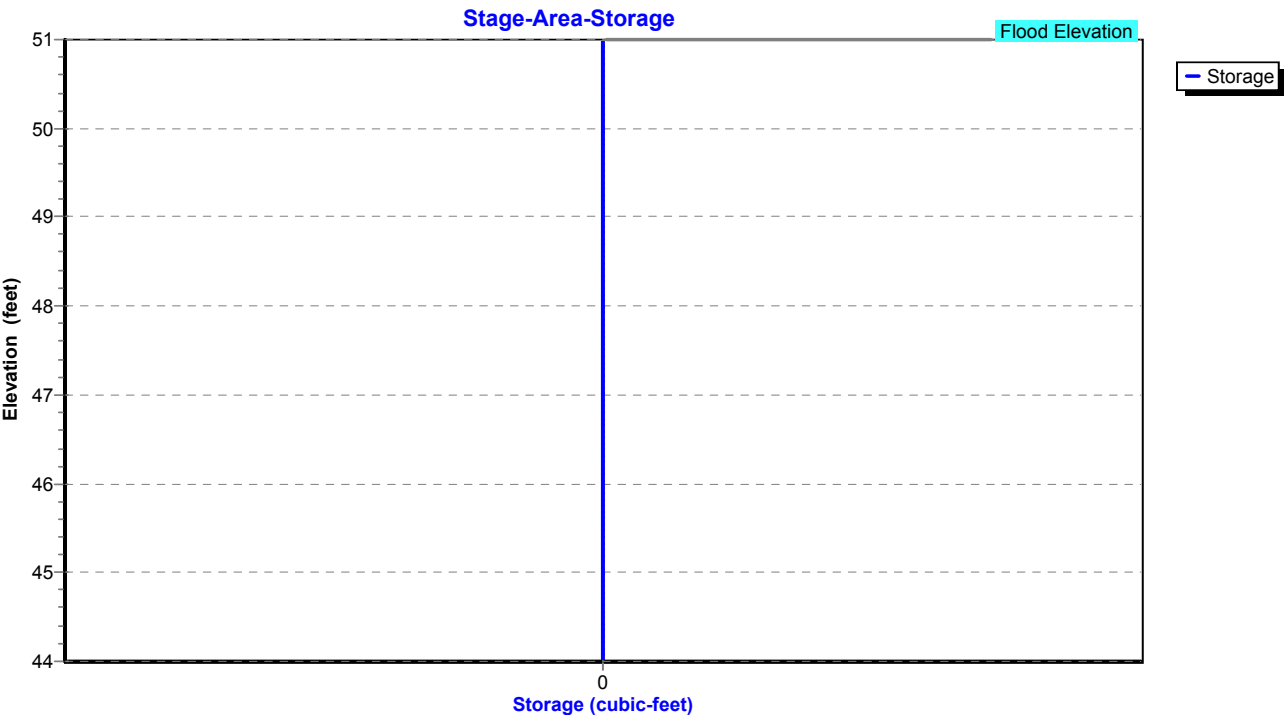
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Pond 51P: Manhole



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Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 6.84" for 100 year event
Inflow = 20.07 cfs @ 12.04 hrs, Volume= 74,840 cf
Outflow = 20.07 cfs @ 12.04 hrs, Volume= 74,840 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.07 cfs @ 12.04 hrs, Volume= 74,840 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.27' @ 12.04 hrs

Flood Elev= 49.00'

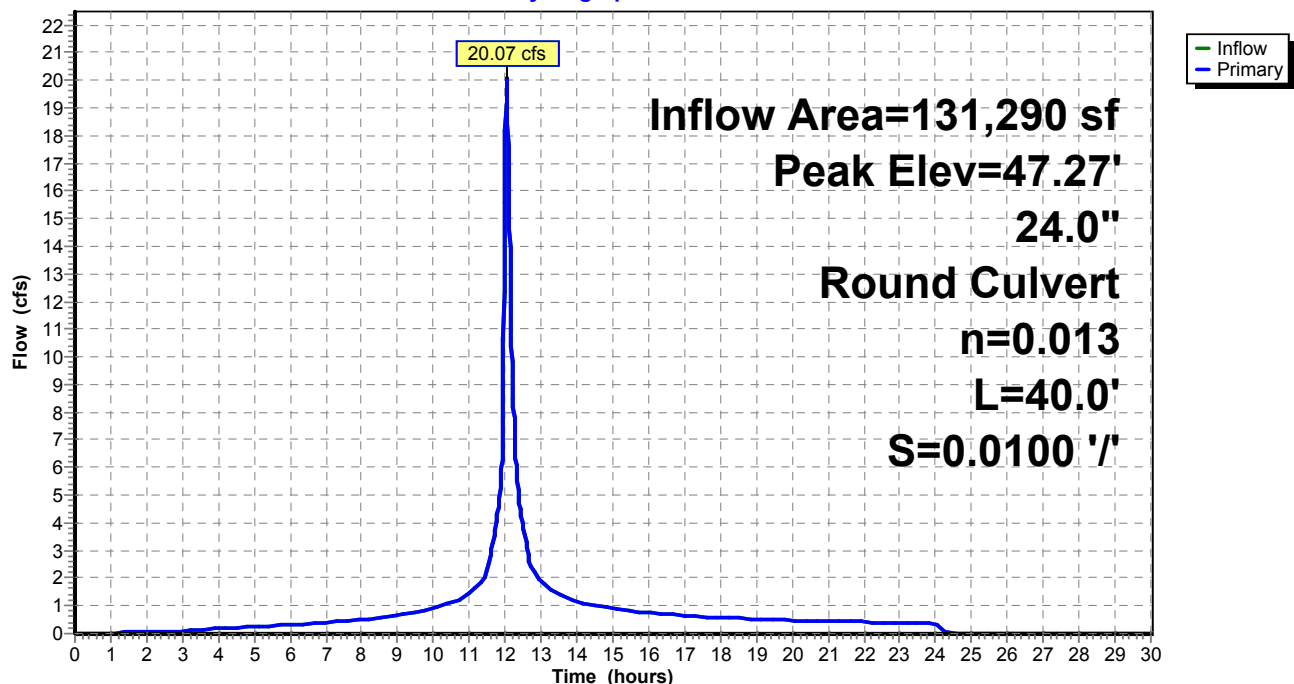
Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=20.06 cfs @ 12.04 hrs HW=47.27' (Free Discharge)

↑1=Culvert (Barrel Controls 20.06 cfs @ 6.39 fps)

Pond 57P: CB-1

Hydrograph



Existing Conditions

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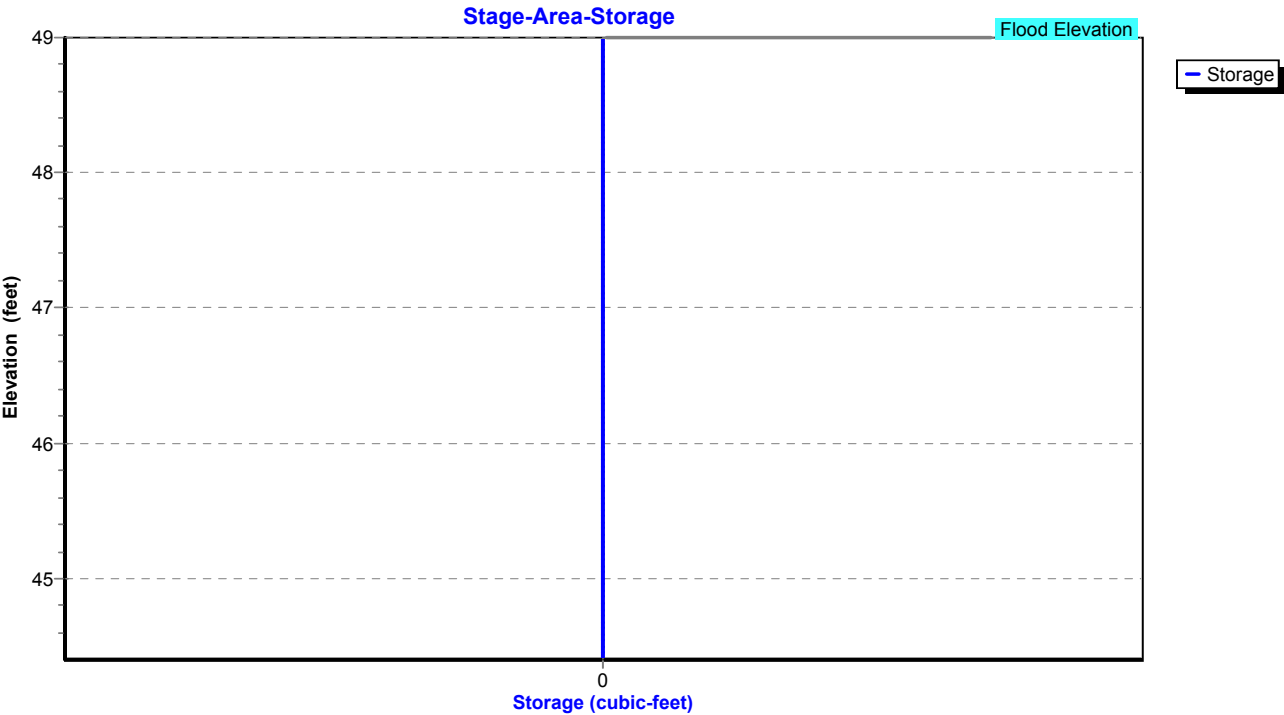
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Pond 57P: CB-1



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Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 6.72" for 100 year event
Inflow = 17.76 cfs @ 12.04 hrs, Volume= 66,925 cf
Outflow = 17.76 cfs @ 12.04 hrs, Volume= 66,925 cf, Atten= 0%, Lag= 0.0 min
Primary = 17.76 cfs @ 12.04 hrs, Volume= 66,925 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.01' @ 12.04 hrs

Flood Elev= 49.00'

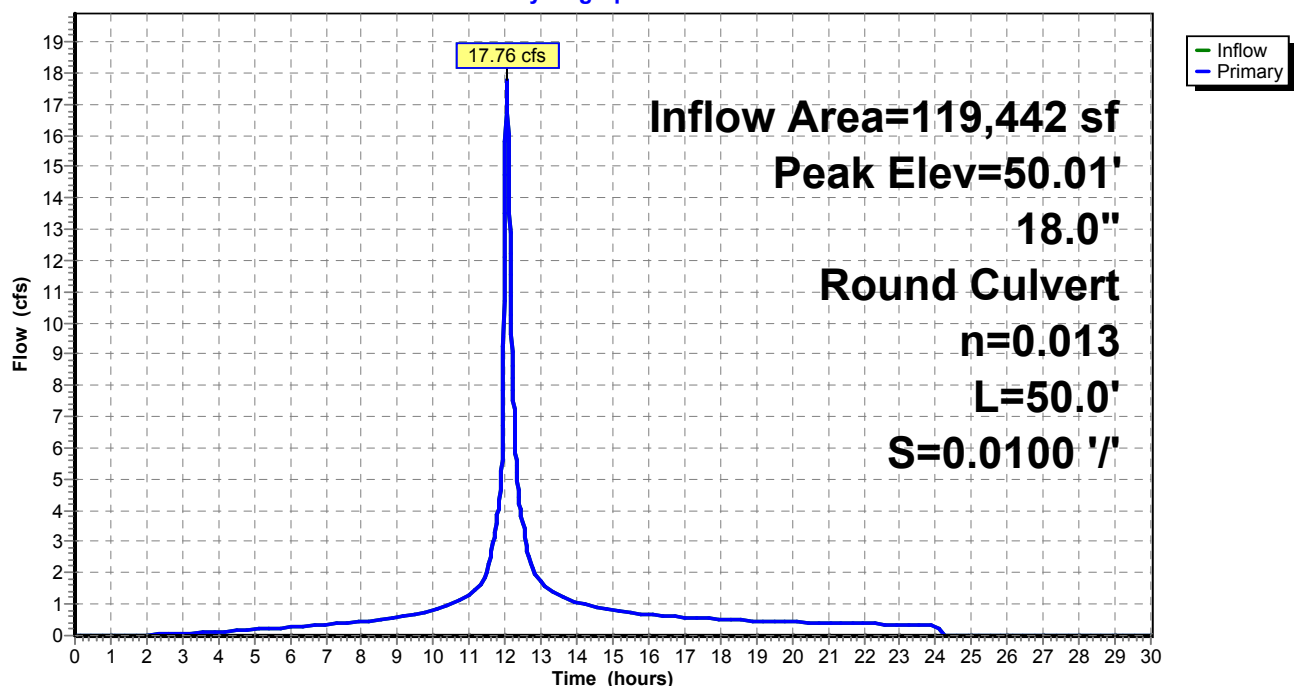
Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=17.73 cfs @ 12.04 hrs HW=49.99' (Free Discharge)

↑1=Culvert (Inlet Controls 17.73 cfs @ 10.03 hrs)

Pond 58P: Manhole

Hydrograph



Existing Conditions

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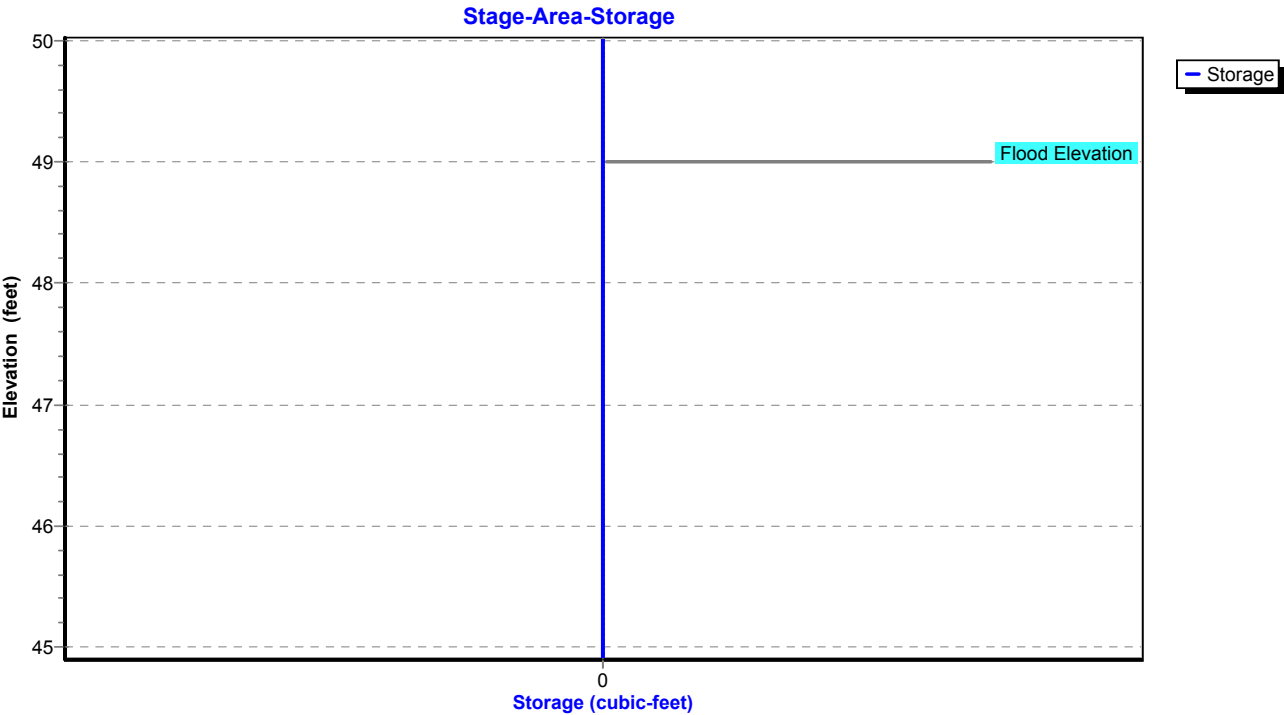
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Pond 58P: Manhole



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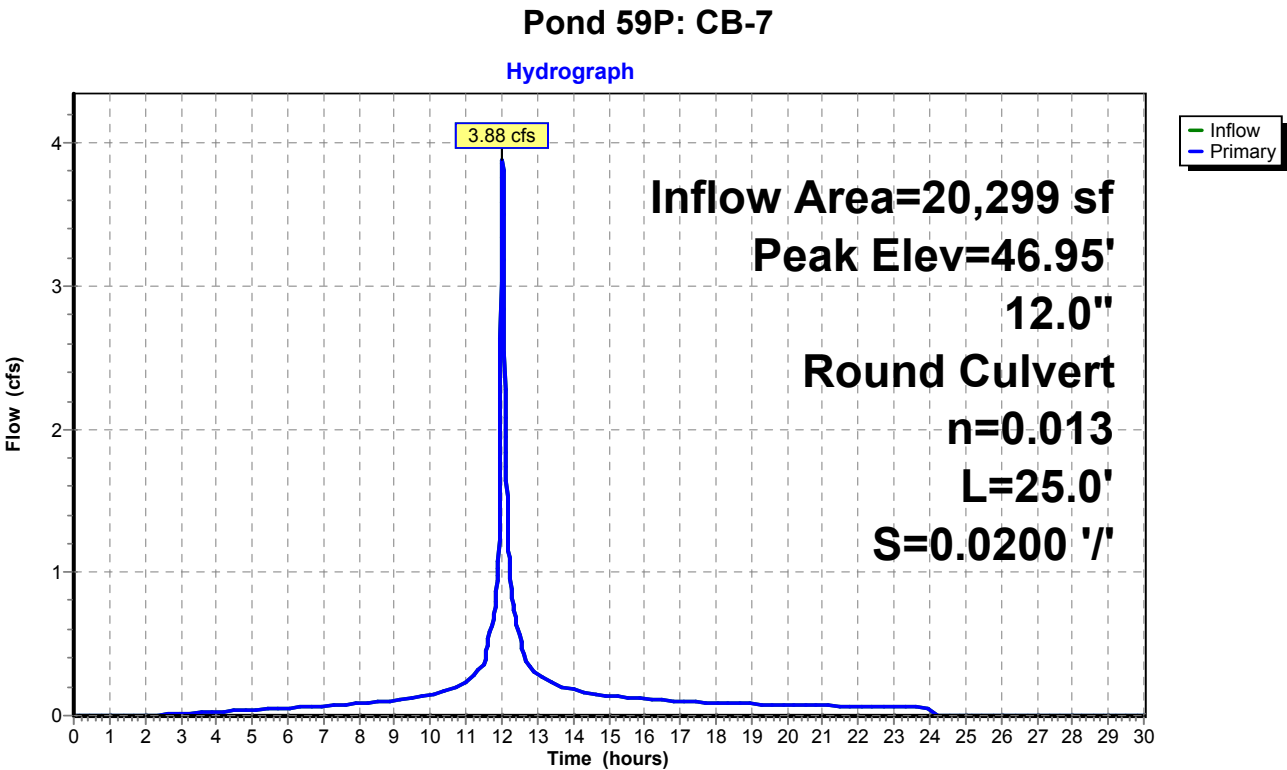
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 6.94" for 100 year event
Inflow = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf
Outflow = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.95' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.87 cfs @ 12.03 hrs HW=46.94' (Free Discharge)
↑1=Culvert (Inlet Controls 3.87 cfs @ 4.92 fps)



Existing Conditions

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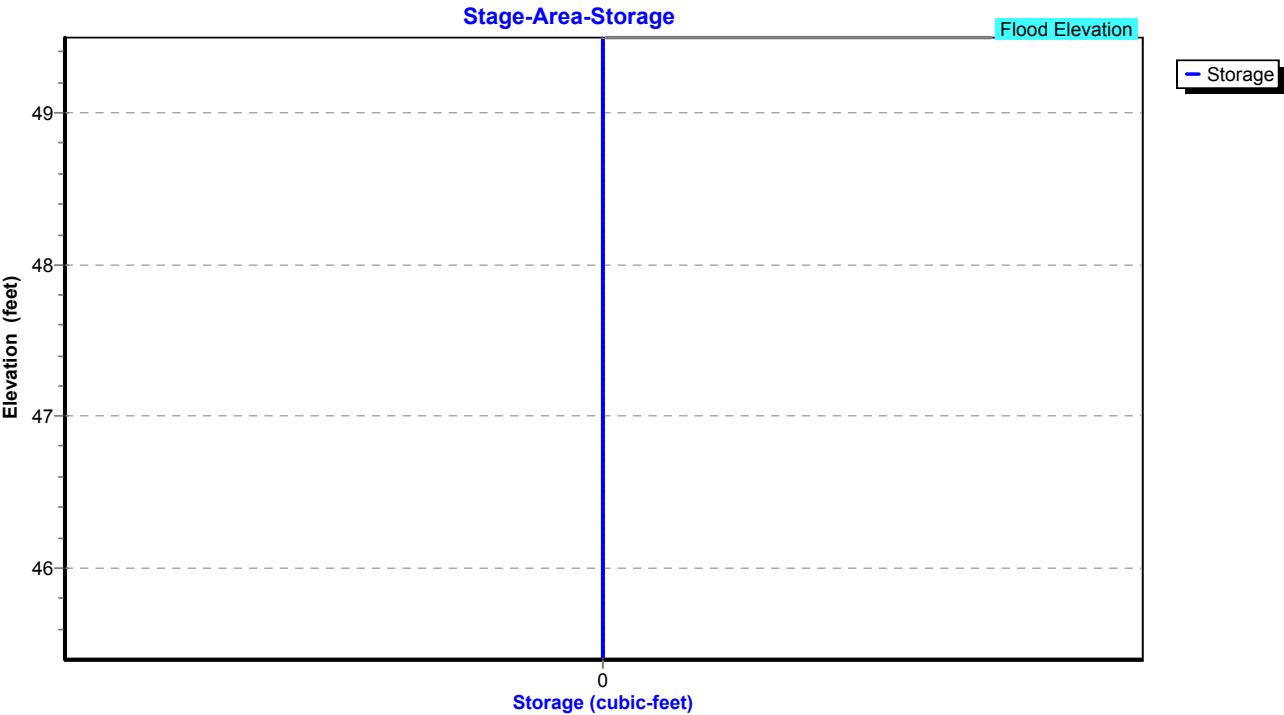
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Pond 59P: CB-7



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Summary for Pond 61P: CB-6

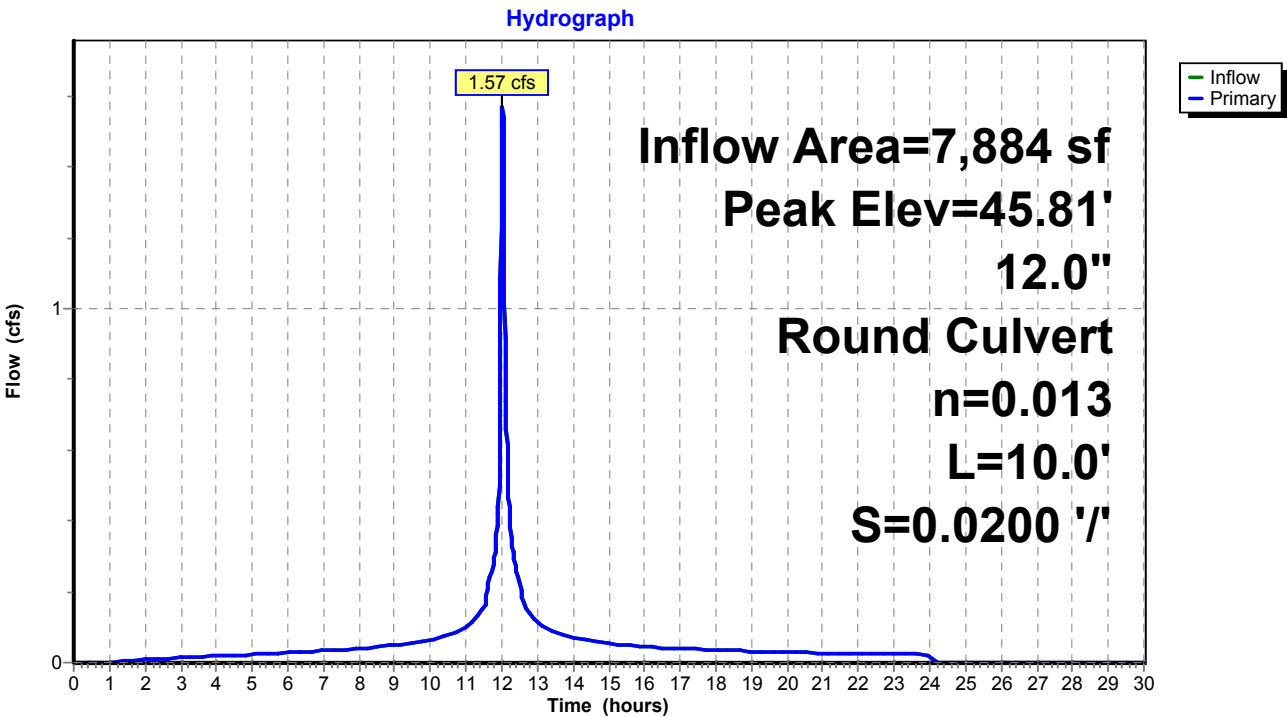
Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 7.54" for 100 year event
Inflow = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf
Outflow = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.81' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.57 cfs @ 12.03 hrs HW=45.81' (Free Discharge)
1=Culvert (Barrel Controls 1.57 cfs @ 3.68 fps)

Pond 61P: CB-6



Existing Conditions

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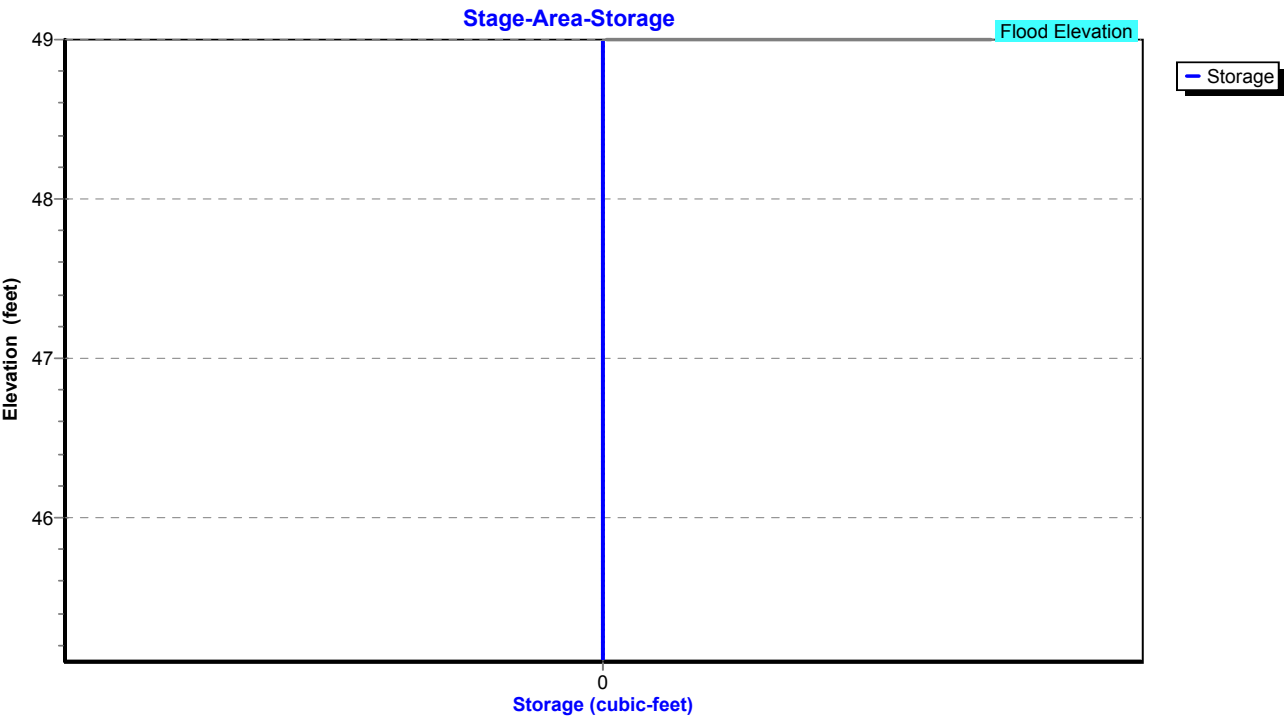
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Pond 61P: CB-6



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Summary for Pond 63P: Manhole

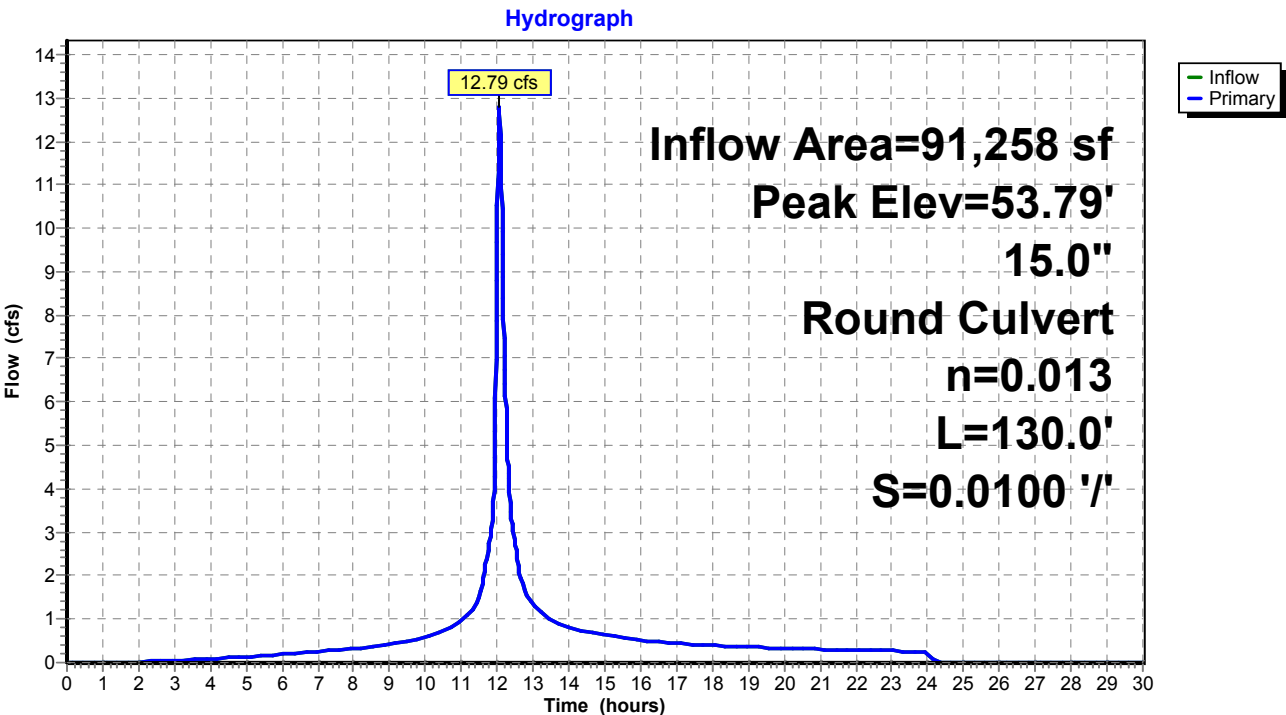
Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 6.61" for 100 year event
Inflow = 12.79 cfs @ 12.06 hrs, Volume= 50,237 cf
Outflow = 12.79 cfs @ 12.06 hrs, Volume= 50,237 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.79 cfs @ 12.06 hrs, Volume= 50,237 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 53.79' @ 12.06 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.78 cfs @ 12.06 hrs HW=53.78' (Free Discharge)
1=Culvert (Barrel Controls 12.78 cfs @ 10.41 fps)

Pond 63P: Manhole



Existing Conditions

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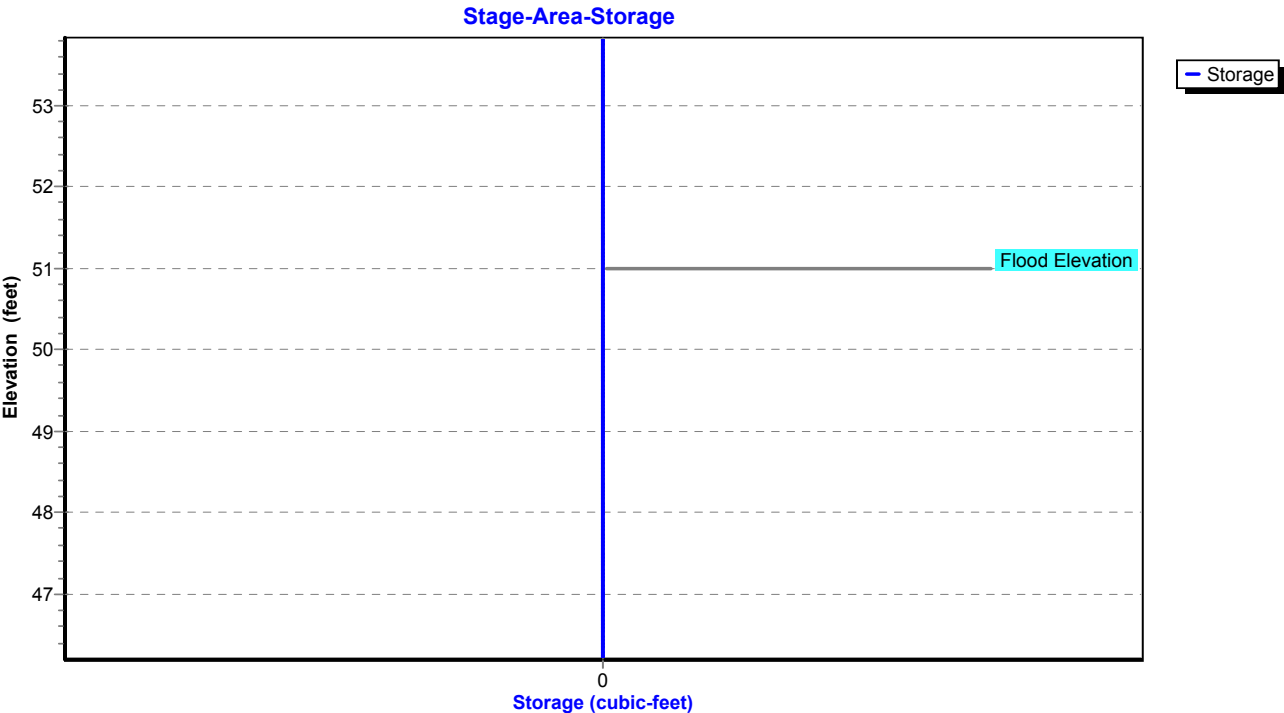
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Pond 63P: Manhole



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Summary for Pond 64P: YD

Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 6.34" for 100 year event
Inflow = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf
Outflow = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 65.63' @ 12.08 hrs

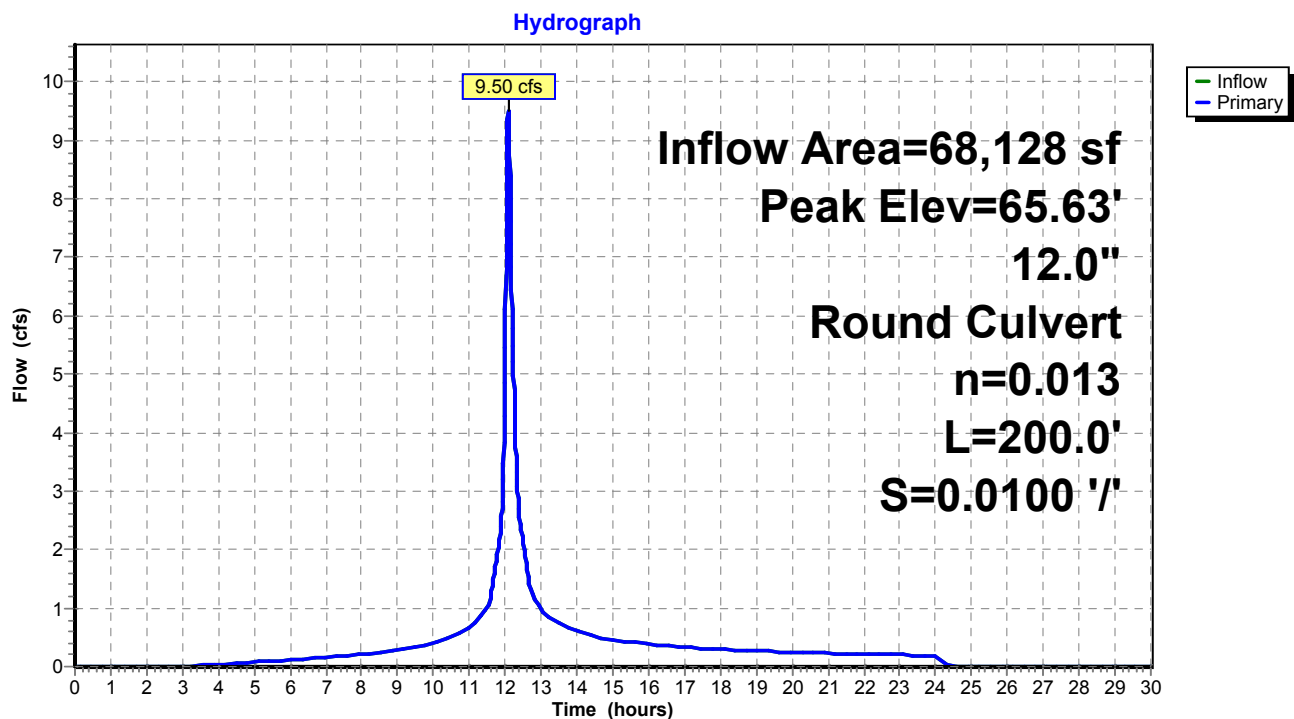
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=9.48 cfs @ 12.08 hrs HW=65.56' (Free Discharge)

↑1=Culvert (Barrel Controls 9.48 cfs @ 12.07 fps)

Pond 64P: YD



Existing Conditions

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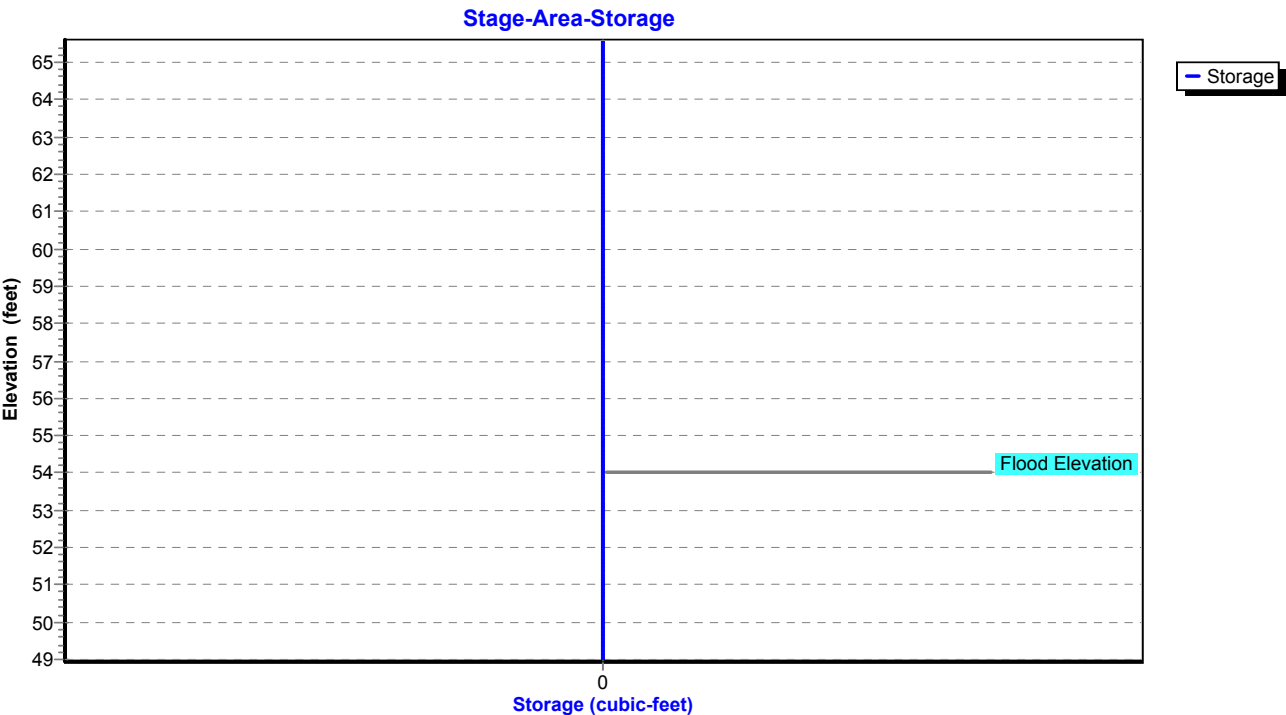
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 7.30" for 100 year event
Inflow = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf
Outflow = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.48' @ 12.03 hrs

Flood Elev= 53.00'

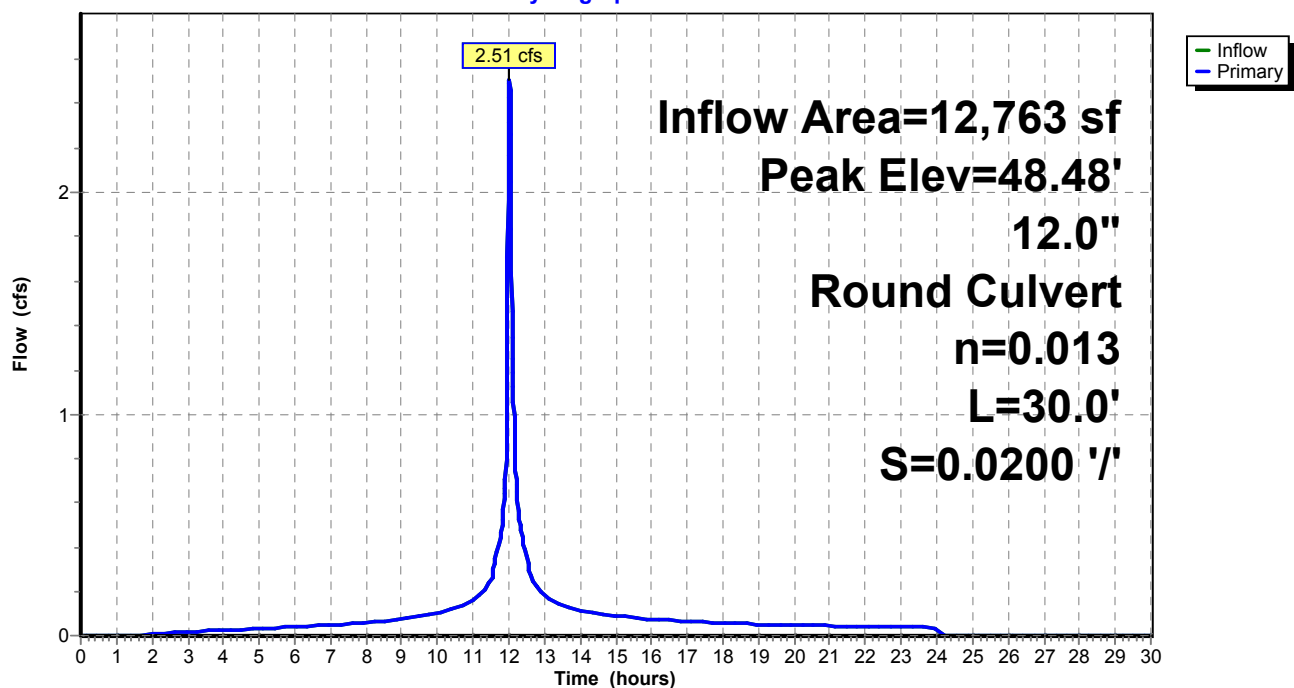
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.50 cfs @ 12.03 hrs HW=48.48' (Free Discharge)

↑1=Culvert (Inlet Controls 2.50 cfs @ 3.28 fps)

Pond 66P: CB-10

Hydrograph



Existing Conditions

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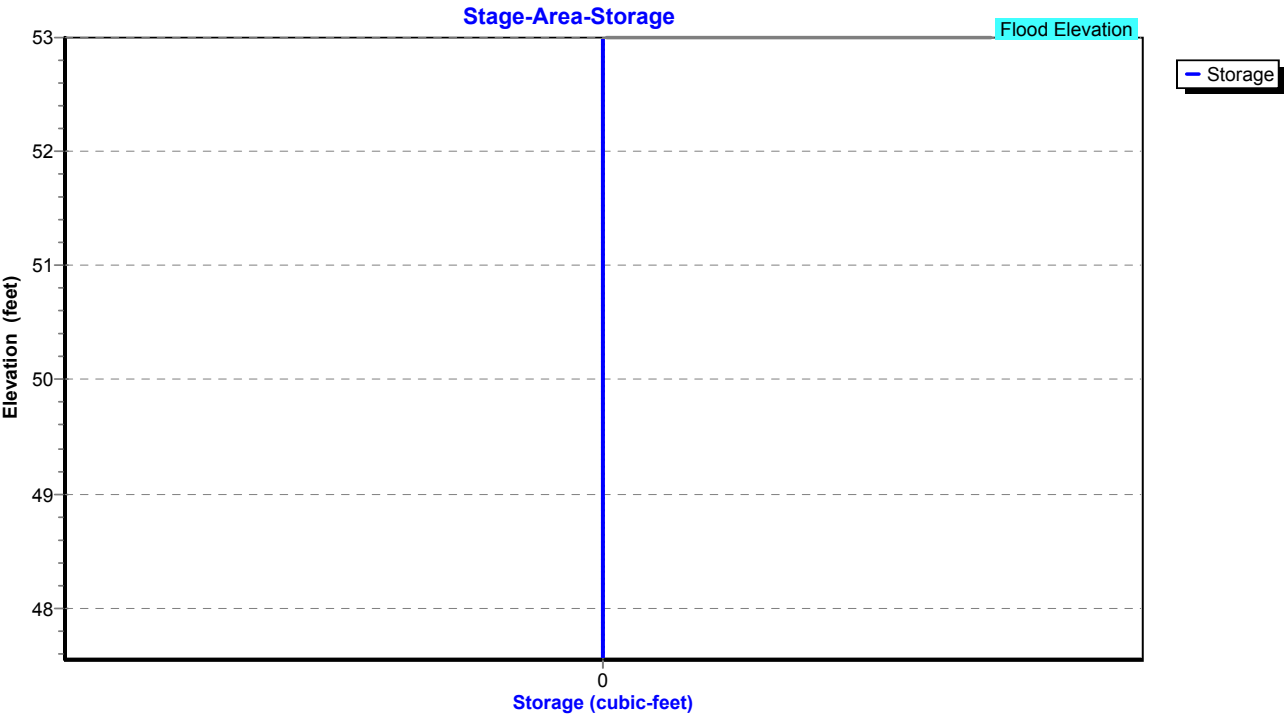
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Pond 66P: CB-10



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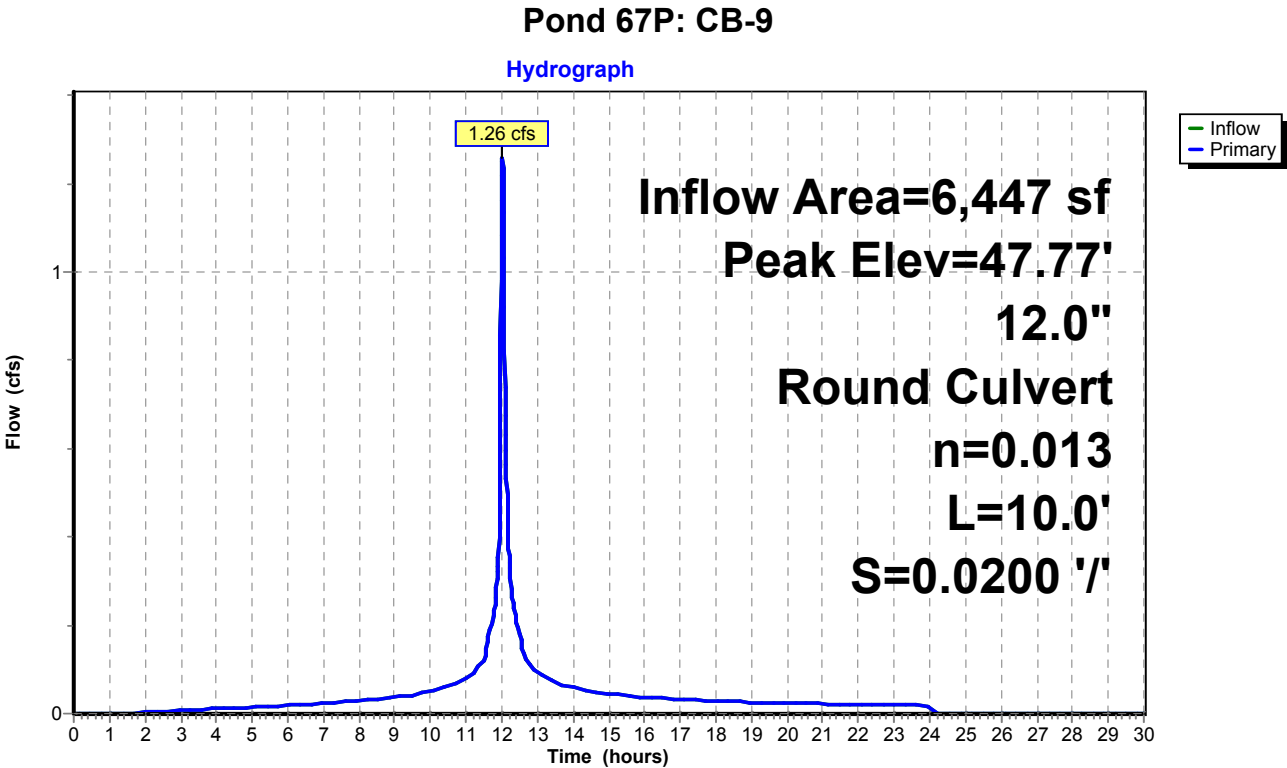
Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 7.18" for 100 year event
Inflow = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf
Outflow = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.77' @ 12.03 hrs
Flood Elev= 52.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.25 cfs @ 12.03 hrs HW=47.77' (Free Discharge)
1=Culvert (Barrel Controls 1.25 cfs @ 3.52 fps)



Existing Conditions

Prepared by Tighe & Bond

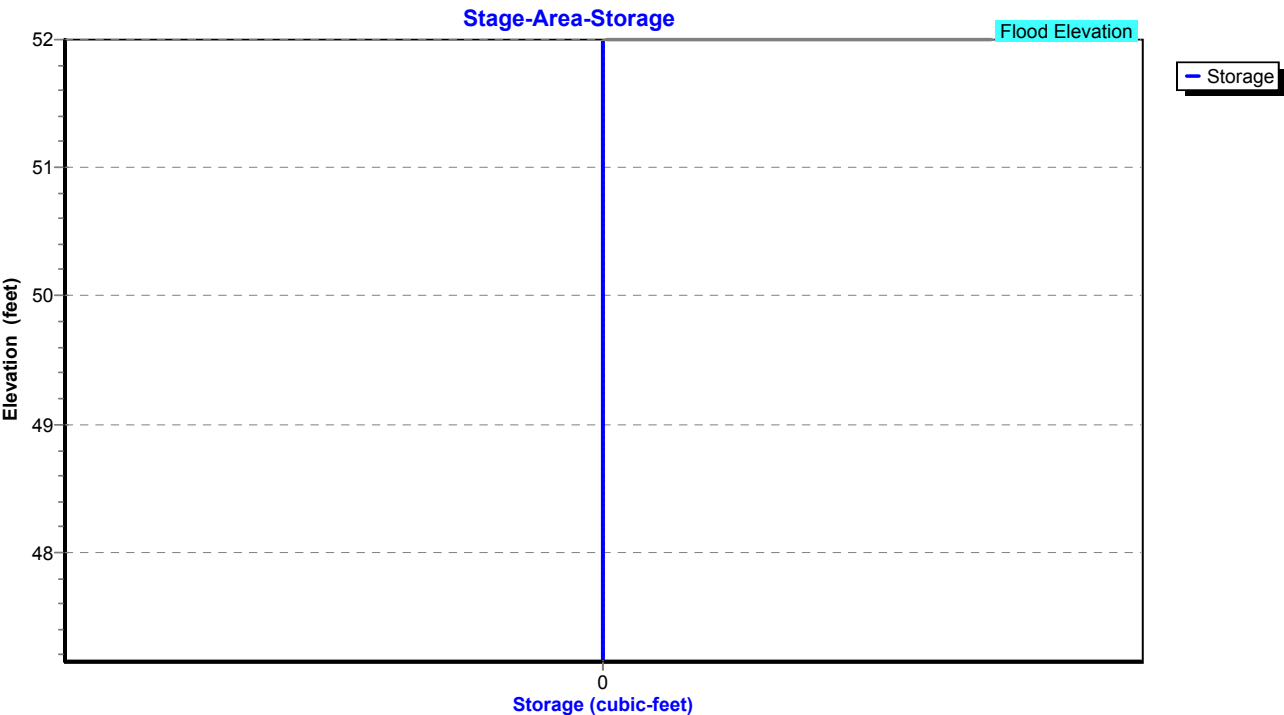
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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 6.64" for 100 year event
Inflow = 12.33 cfs @ 11.99 hrs, Volume= 48,745 cf
Outflow = 12.33 cfs @ 11.99 hrs, Volume= 48,745 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.33 cfs @ 11.99 hrs, Volume= 48,745 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 54.00' @ 11.99 hrs

Flood Elev= 53.30'

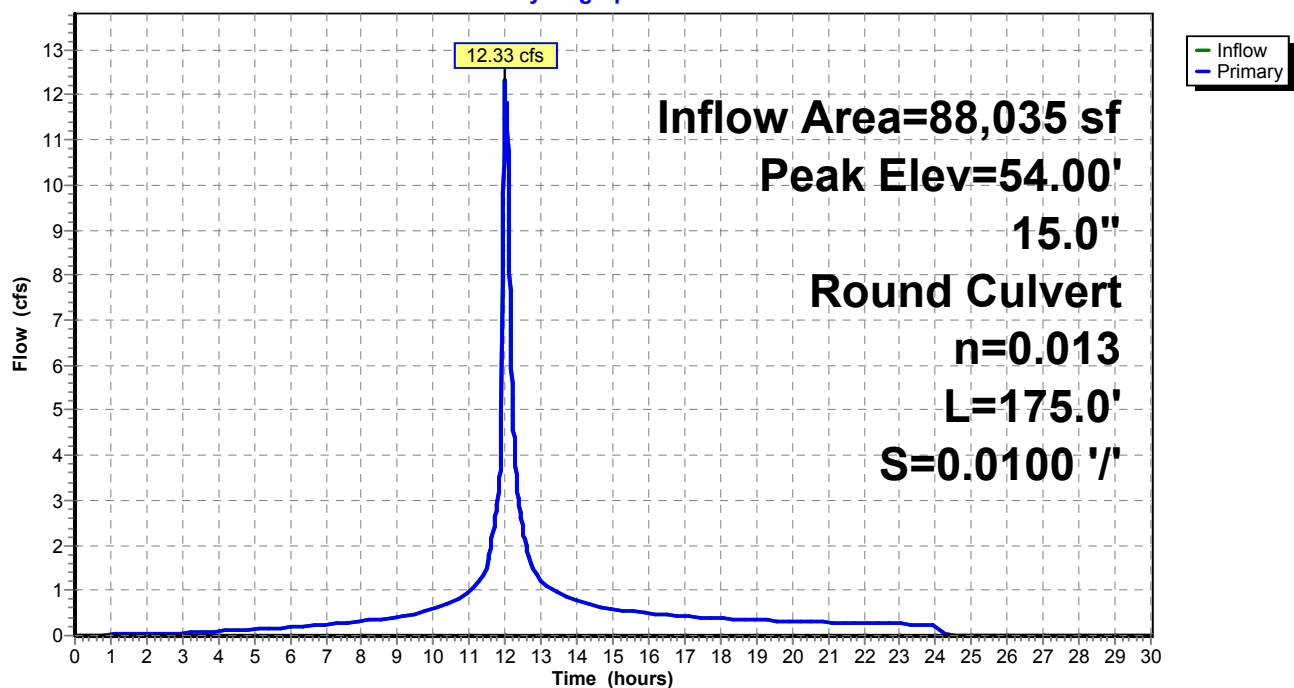
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.33 cfs @ 11.99 hrs HW=53.99' (Free Discharge)

↑1=Culvert (Barrel Controls 12.33 cfs @ 10.04 fps)

Pond 70P: CB-2

Hydrograph



Existing Conditions

Prepared by Tighe & Bond

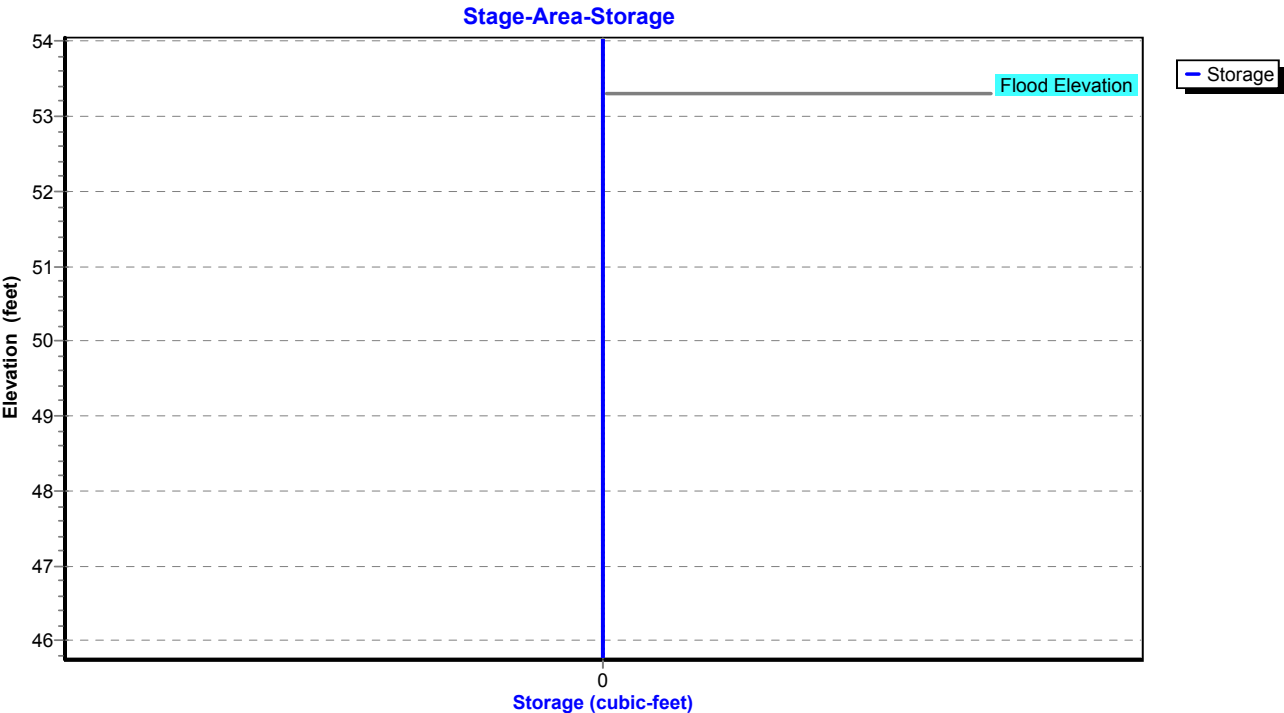
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Pond 70P: CB-2



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Summary for Pond 72P: Manhole

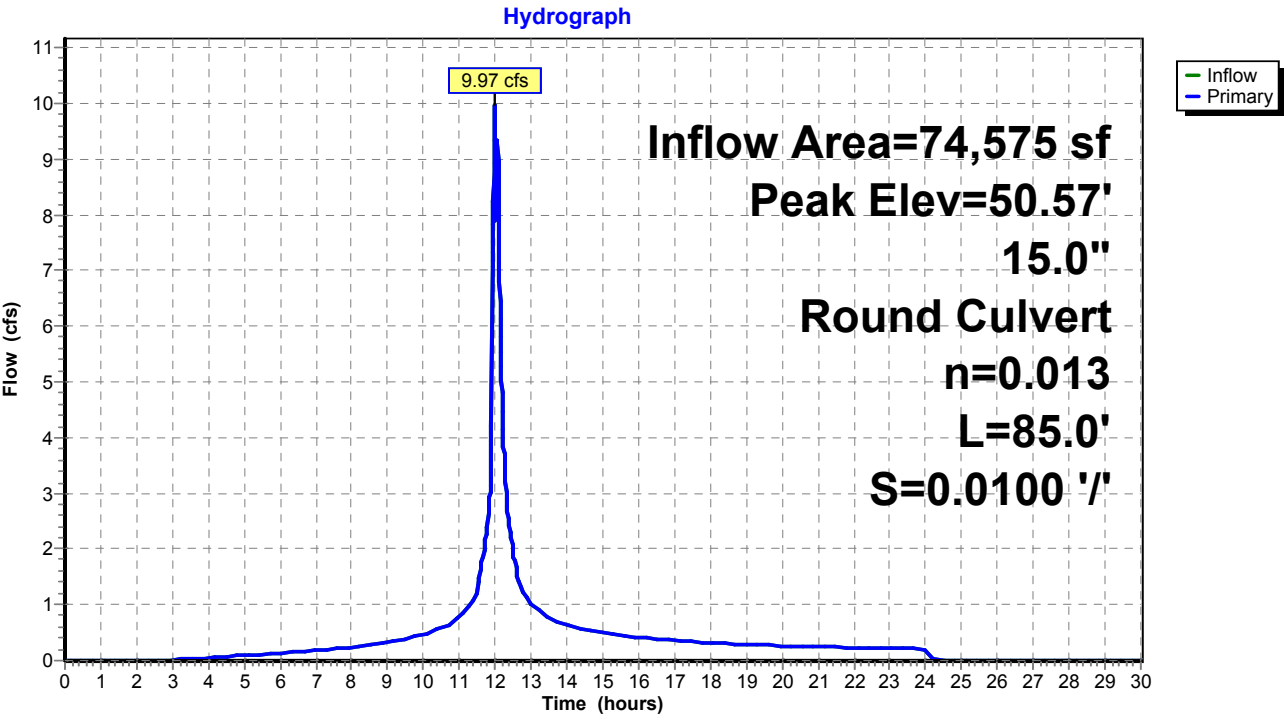
Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 6.40" for 100 year event
Inflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Outflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.57' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.89 cfs @ 11.99 hrs HW=50.51' (Free Discharge)
1=Culvert (Barrel Controls 9.89 cfs @ 8.06 fps)

Pond 72P: Manhole



Existing Conditions

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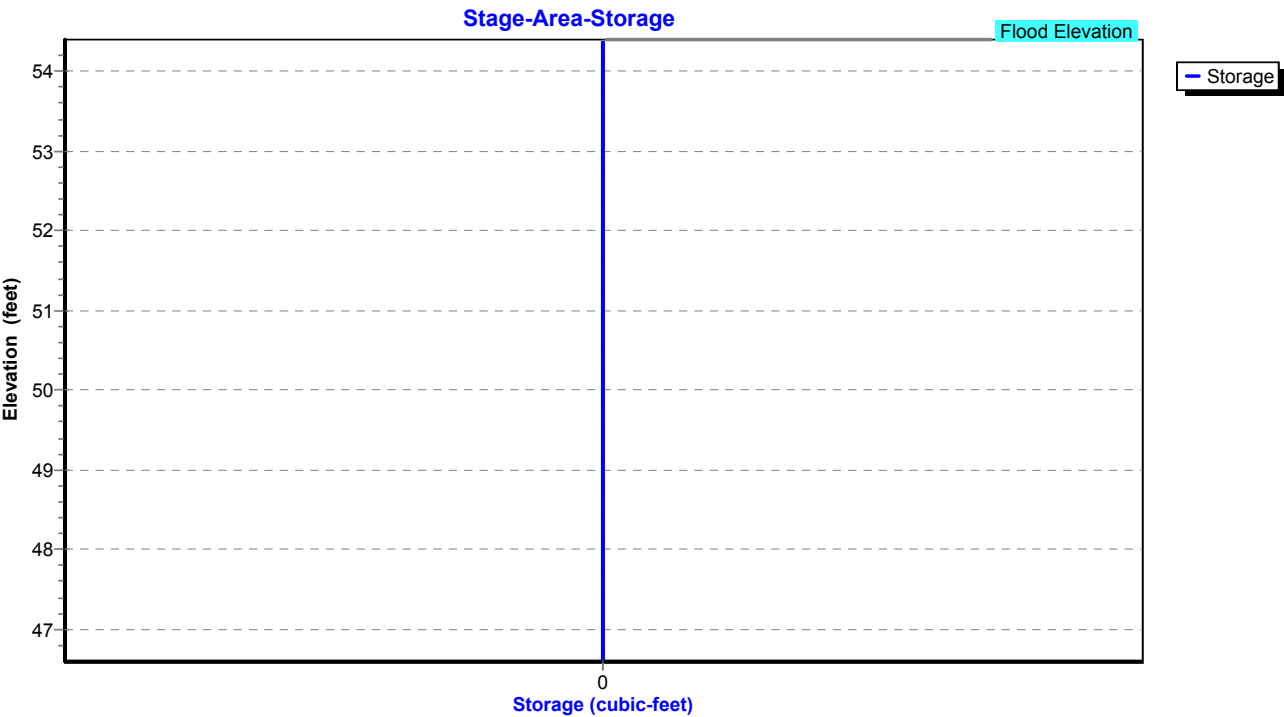
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Pond 72P: Manhole



Existing Conditions

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Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 6.40" for 100 year event
Inflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Outflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.02' @ 11.99 hrs

Flood Elev= 53.30'

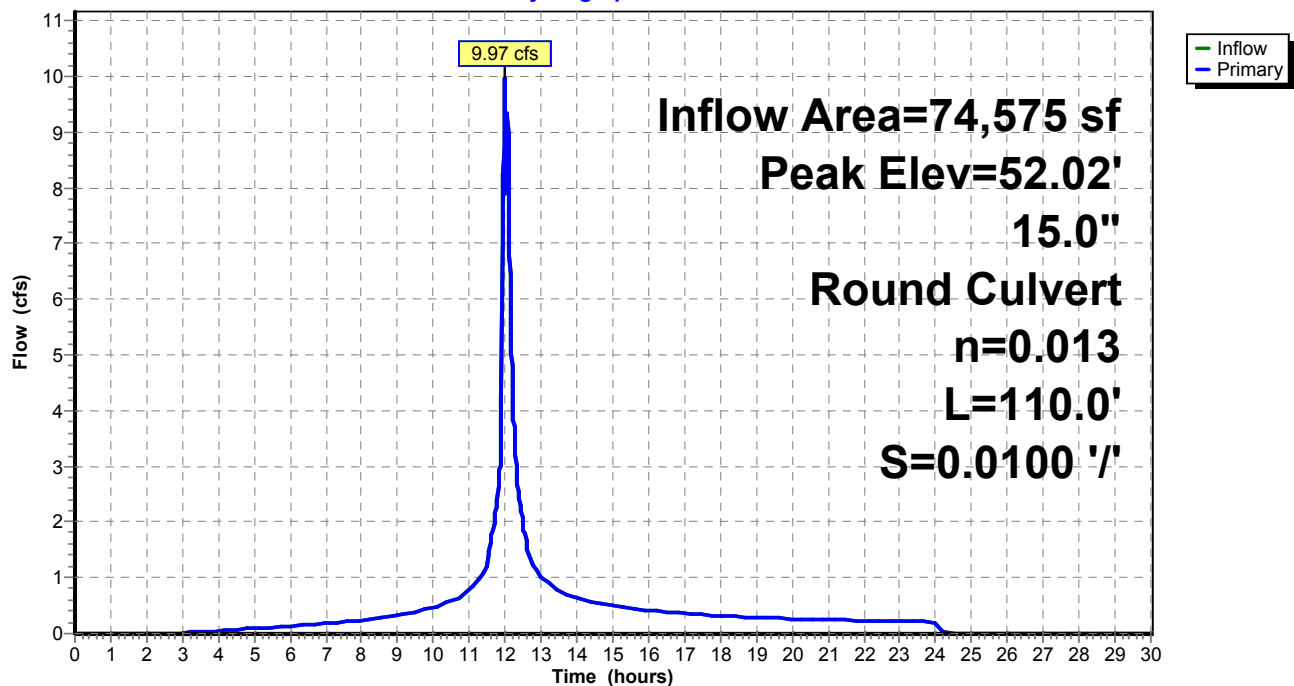
Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.89 cfs @ 11.99 hrs HW=51.95' (Free Discharge)

↑1=Culvert (Barrel Controls 9.89 cfs @ 8.06 fps)

Pond 73P: CB-3

Hydrograph



Existing Conditions

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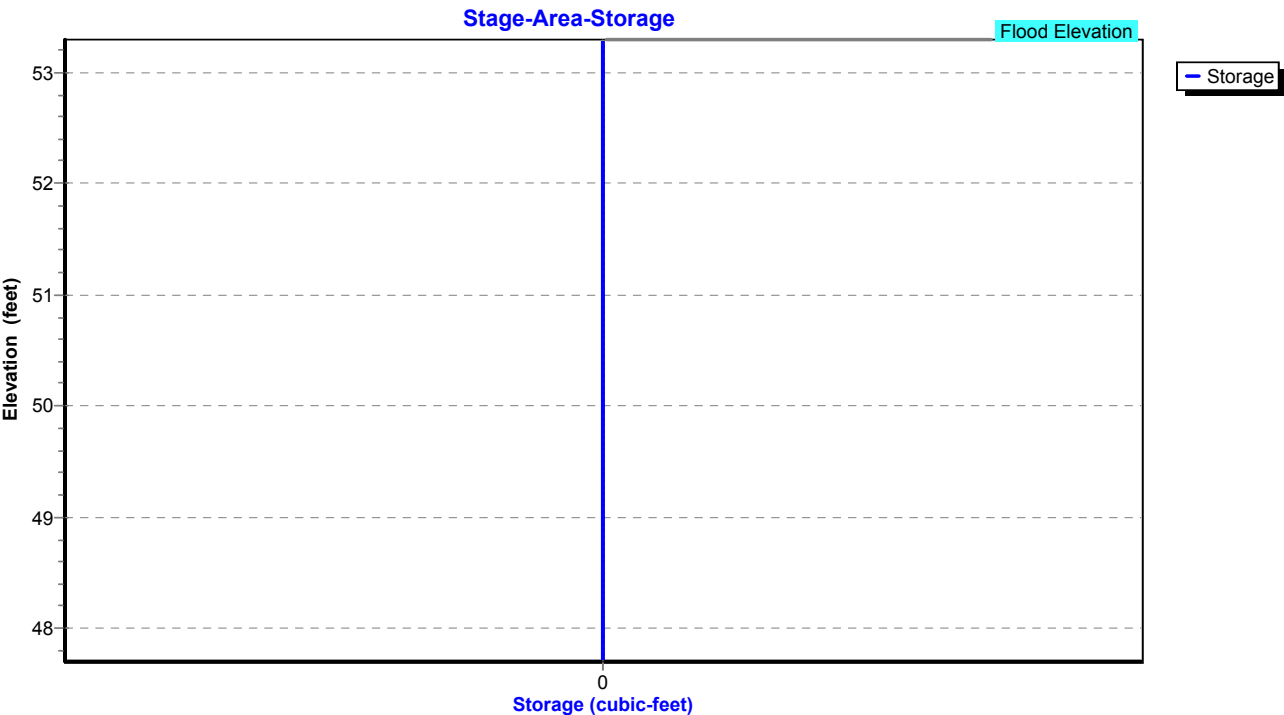
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Pond 73P: CB-3



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Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 6.25" for 100 year event
Inflow = 7.53 cfs @ 12.06 hrs, Volume= 25,989 cf
Outflow = 7.53 cfs @ 12.06 hrs, Volume= 25,989 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.53 cfs @ 12.06 hrs, Volume= 25,989 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.45' @ 12.06 hrs

Flood Elev= 53.70'

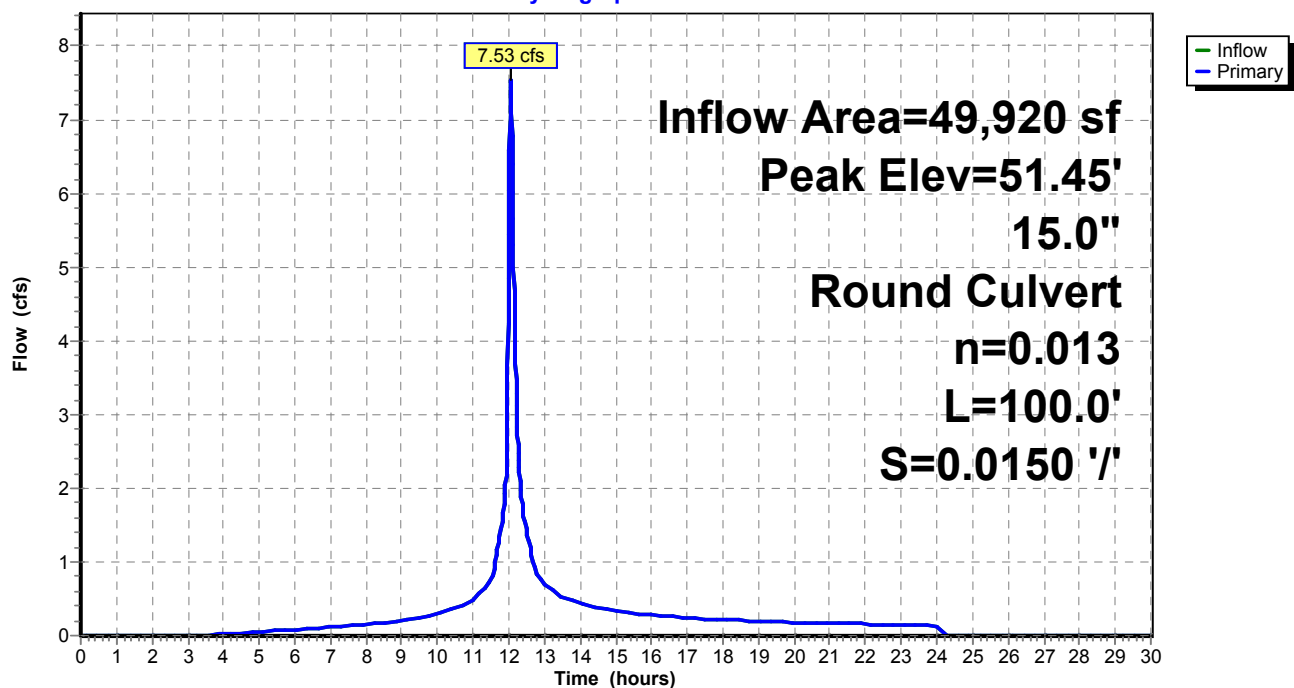
Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.52 cfs @ 12.06 hrs HW=51.44' (Free Discharge)

↑1=Culvert (Inlet Controls 7.52 cfs @ 6.13 fps)

Pond 74P: CB-4

Hydrograph



Existing Conditions

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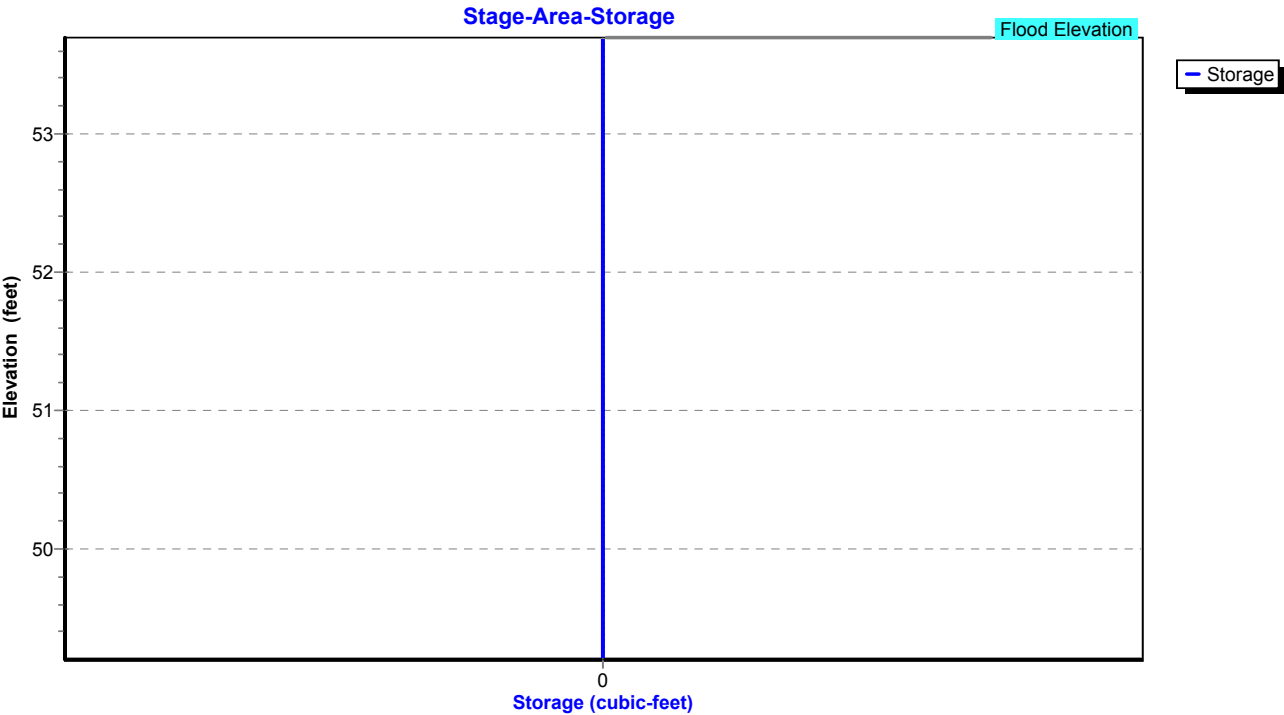
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Pond 74P: CB-4



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 77P: Manhole

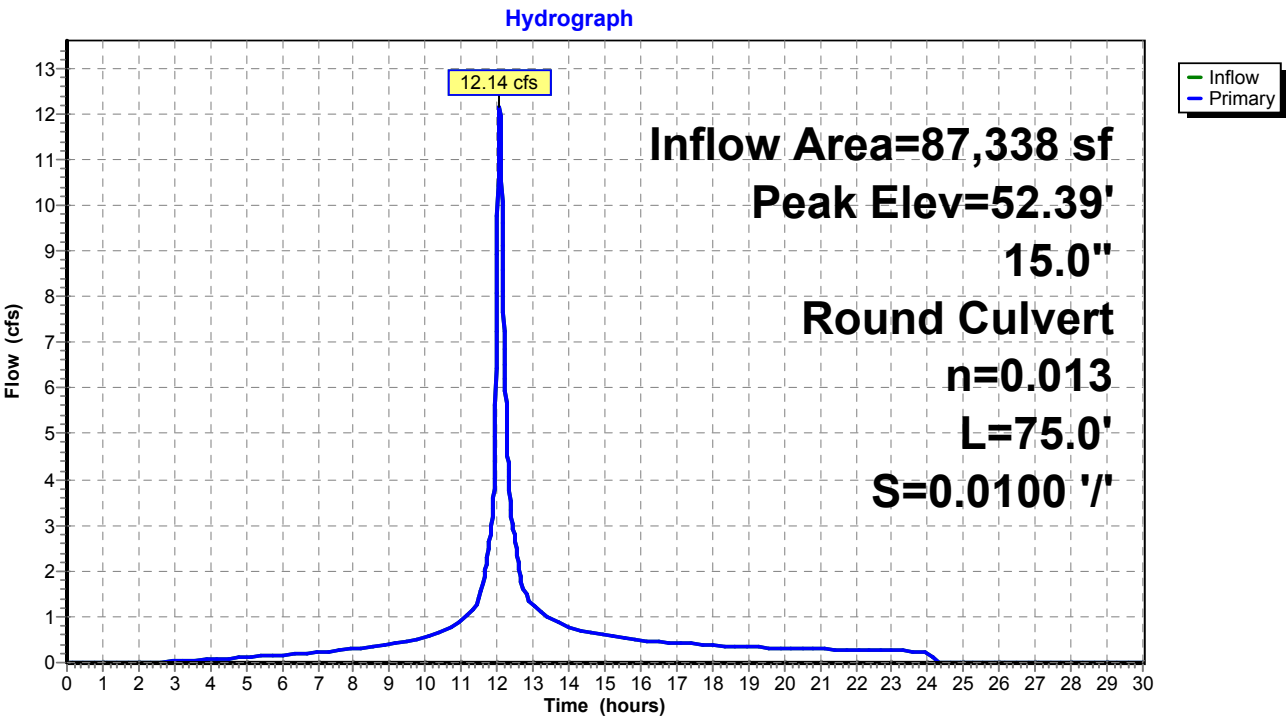
Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 6.54" for 100 year event
Inflow = 12.14 cfs @ 12.06 hrs, Volume= 47,618 cf
Outflow = 12.14 cfs @ 12.06 hrs, Volume= 47,618 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.14 cfs @ 12.06 hrs, Volume= 47,618 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.39' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.13 cfs @ 12.06 hrs HW=52.38' (Free Discharge)
1=Culvert (Barrel Controls 12.13 cfs @ 9.88 fps)

Pond 77P: Manhole



Existing Conditions

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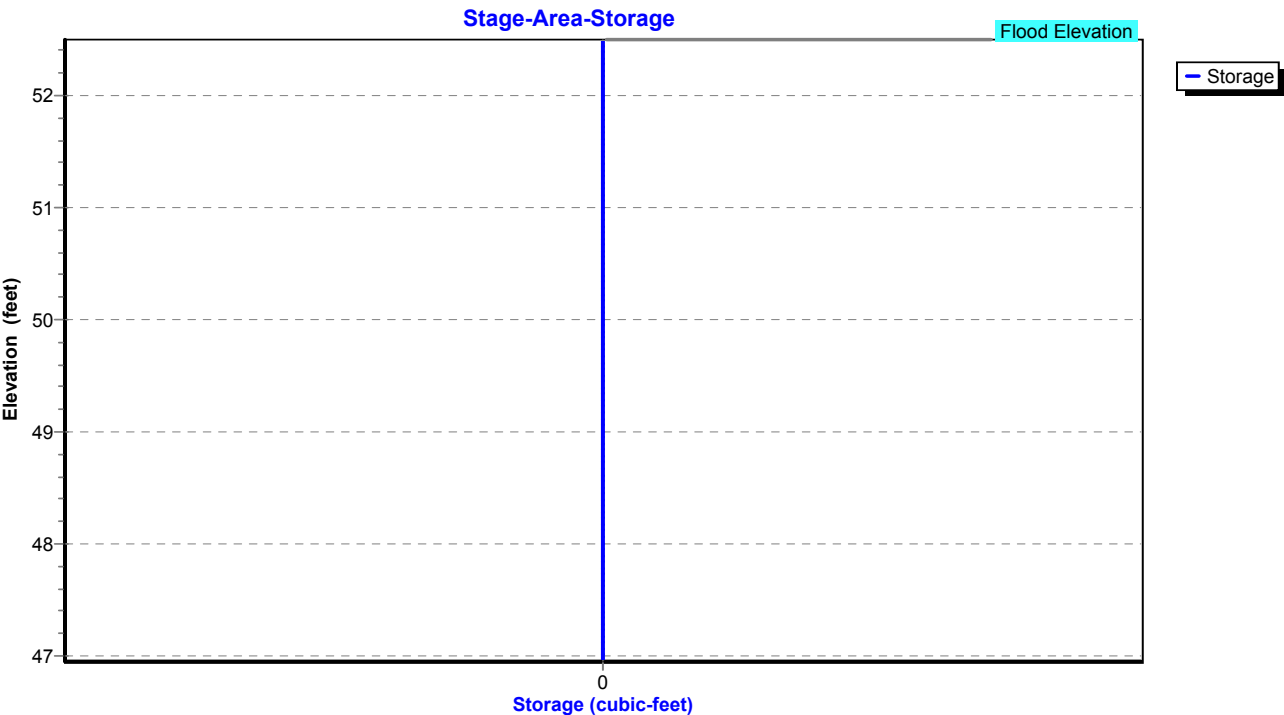
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 77P: Manhole



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 8.02" for 100 year event
Inflow = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf
Outflow = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.65' @ 12.03 hrs

Flood Elev= 52.50'

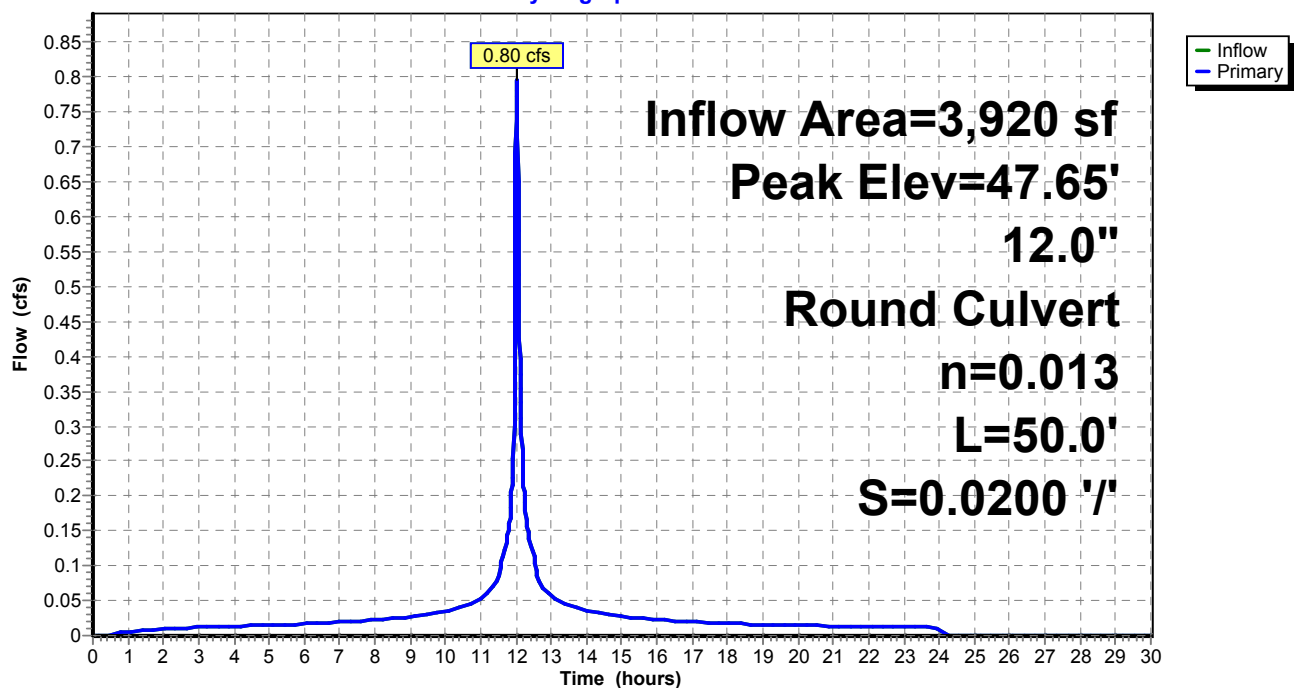
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.79 cfs @ 12.03 hrs HW=47.65' (Free Discharge)

↑1=Culvert (Inlet Controls 0.79 cfs @ 2.29 fps)

Pond 79P: CB-8

Hydrograph



Existing Conditions

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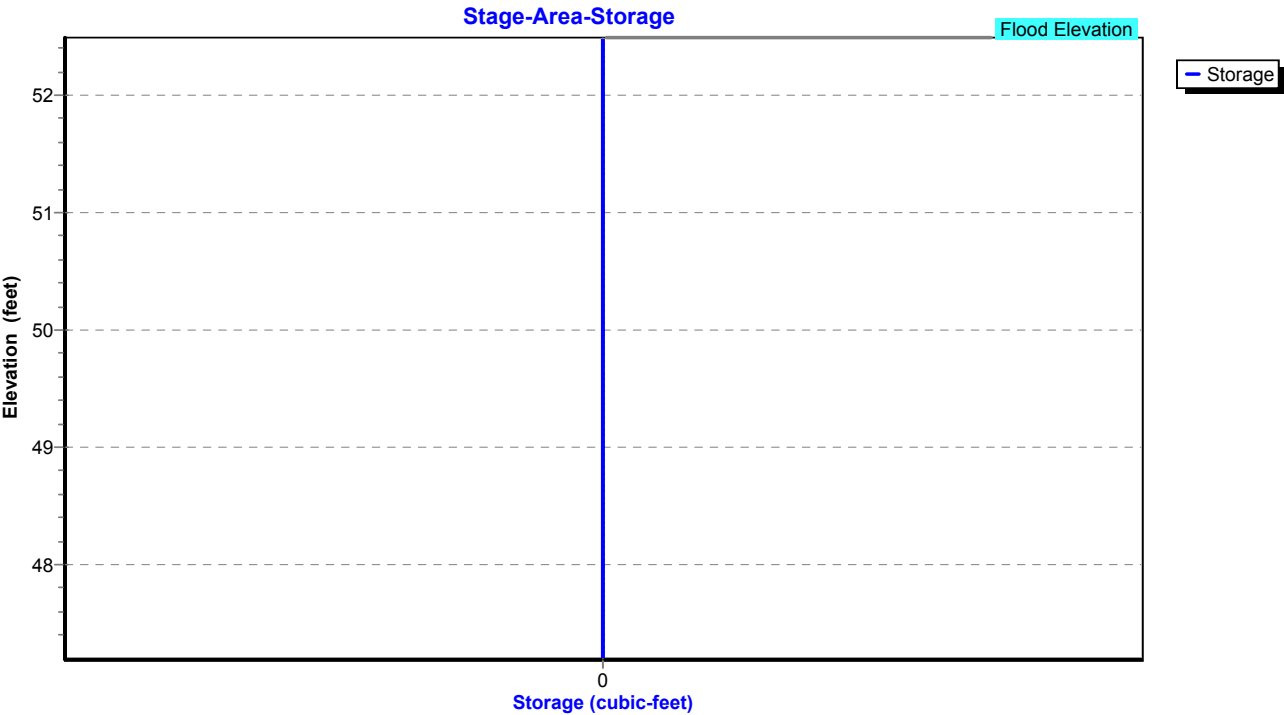
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 79P: CB-8



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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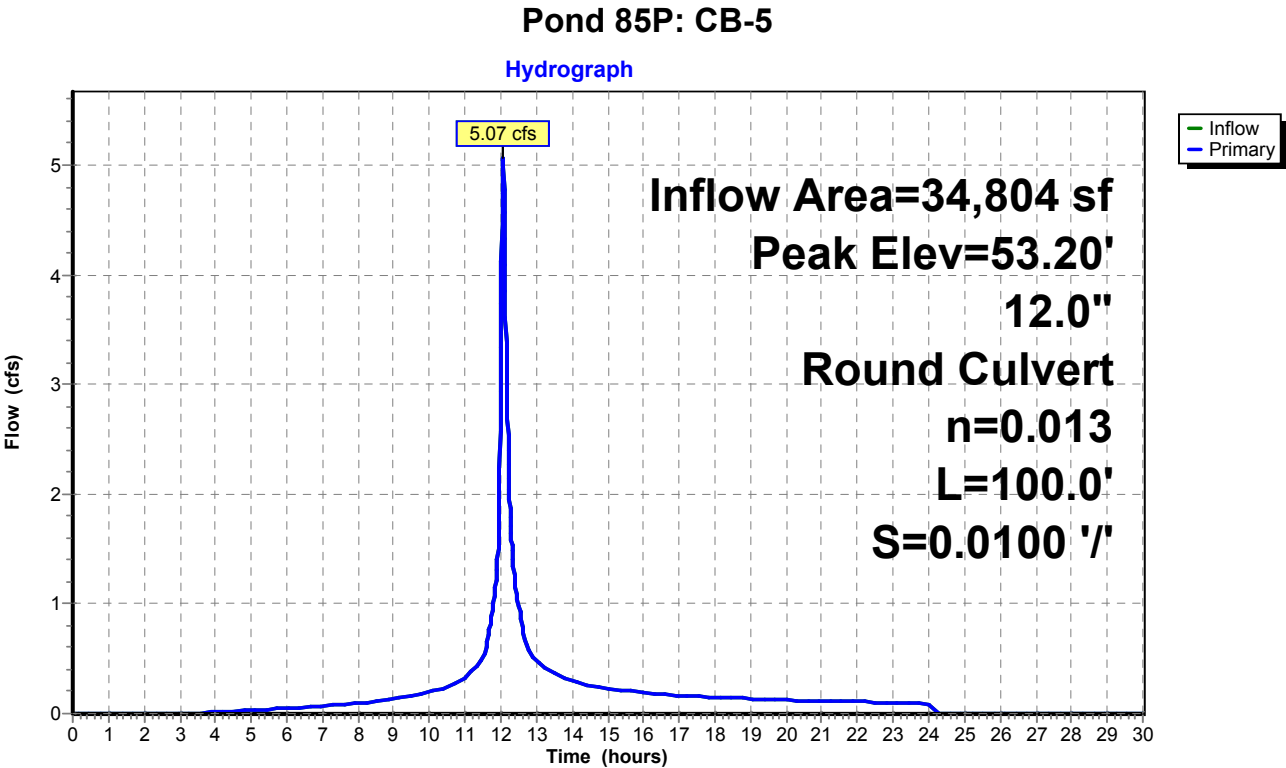
Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 6.10" for 100 year event
Inflow = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf
Outflow = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 53.20' @ 12.07 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=5.06 cfs @ 12.07 hrs HW=53.19' (Free Discharge)
1=Culvert (Barrel Controls 5.06 cfs @ 6.44 fps)



Existing Conditions

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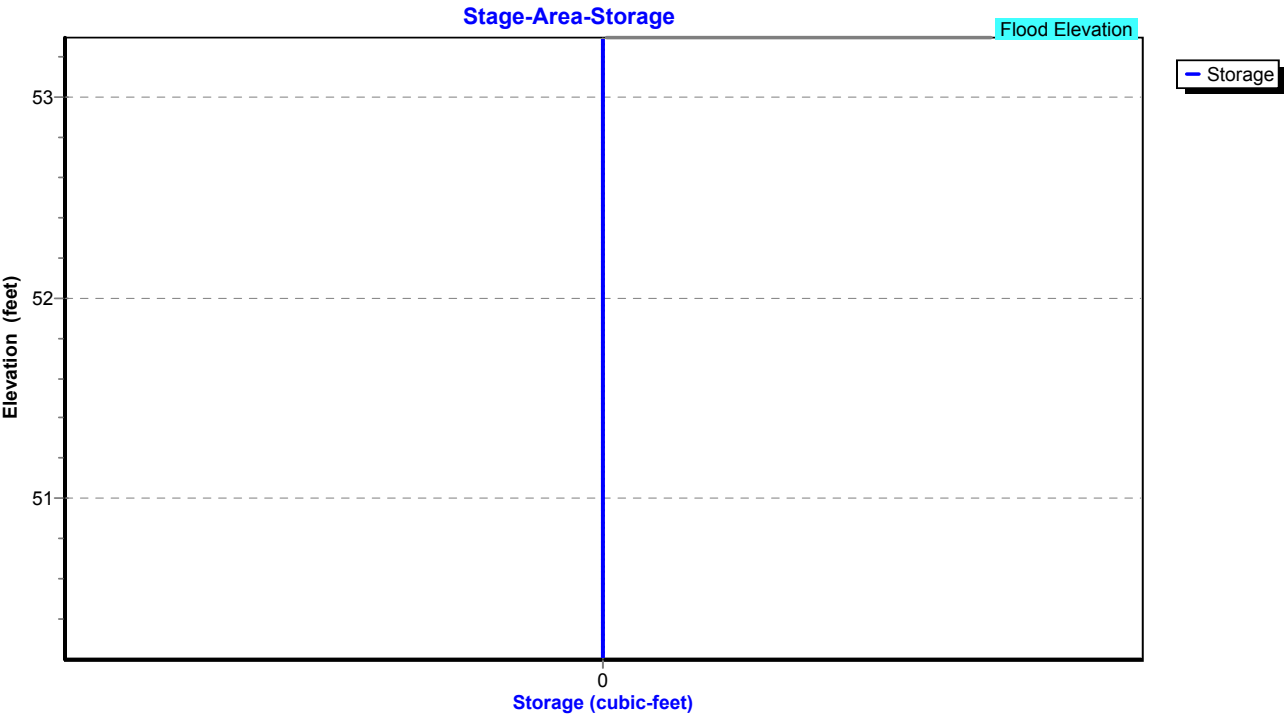
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 85P: CB-5



Existing Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 8.02" for 100 year event
Inflow = 3.43 cfs @ 12.03 hrs, Volume= 11,290 cf
Outflow = 2.77 cfs @ 12.06 hrs, Volume= 11,288 cf, Atten= 19%, Lag= 2.3 min
Primary = 2.77 cfs @ 12.06 hrs, Volume= 11,288 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 54.57' @ 12.06 hrs Surf.Area= 749 sf Storage= 1,503 cf

Plug-Flow detention time= 17.3 min calculated for 11,284 cf (100% of inflow)

Center-of-Mass det. time= 17.2 min (757.5 - 740.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.68 cfs @ 12.06 hrs HW=54.57' (Free Discharge)

1=Culvert (Passes 2.68 cfs of 6.24 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.73 cfs @ 8.42 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.95 cfs @ 1.46 fps)

Existing Conditions

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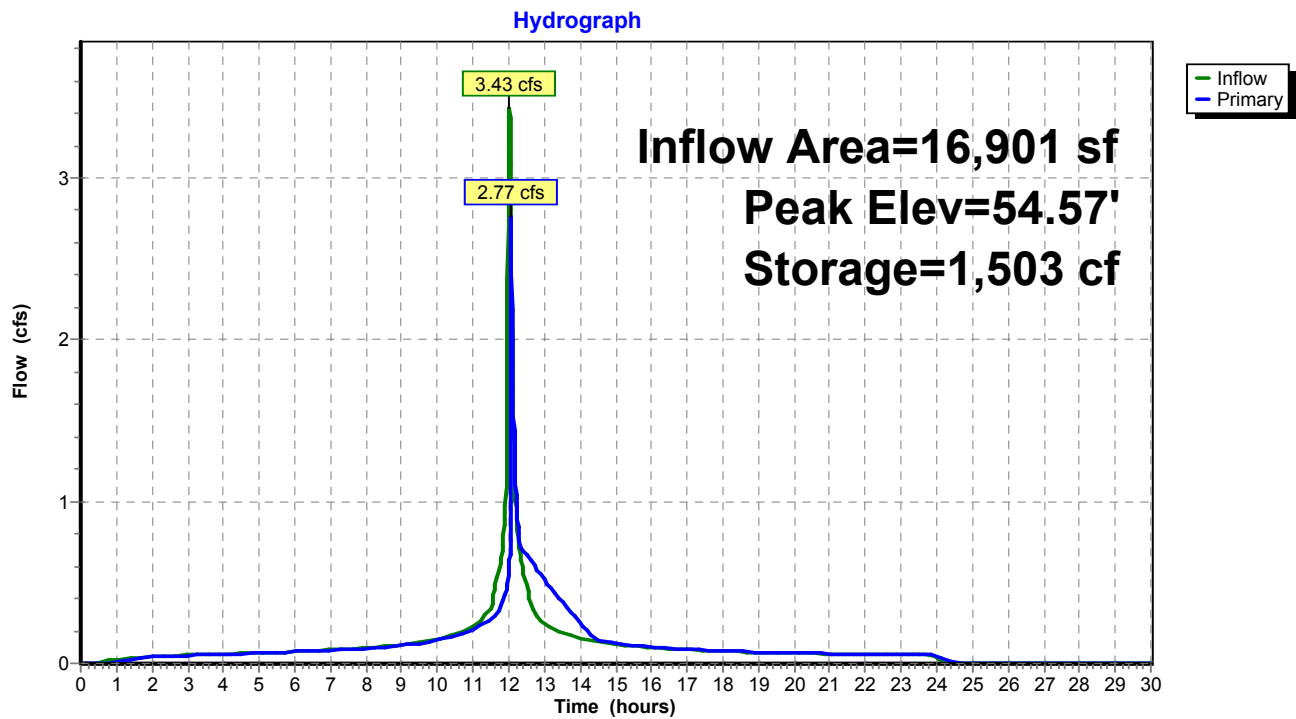
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NORWALK 24-hr S1 100 year Rainfall=8.26"

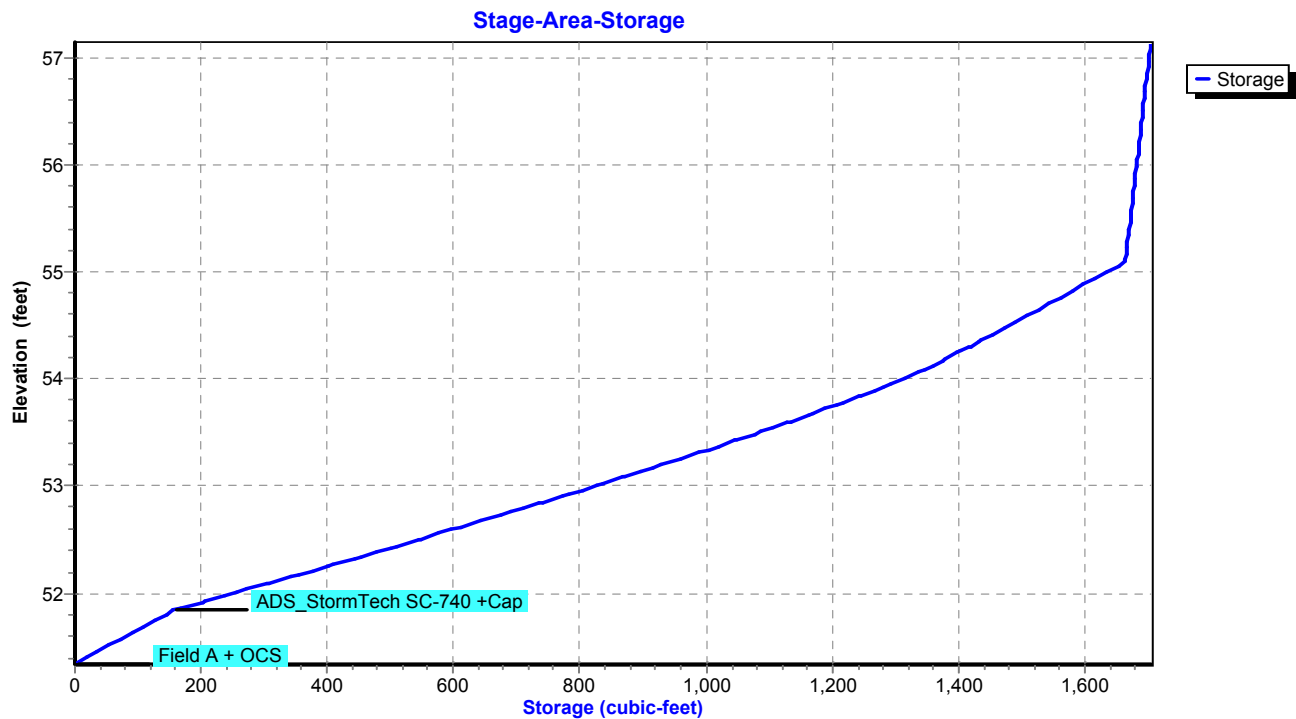
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



APPENDIX D

LEGEND

WATERSHED BOUNDARY



EXISTING PIPE SYSTEM



WATERSHED CATCHMENT AREA
IMPACTED BY PROJECT



Tighe&Bond

1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

THE AUTO
COLLECTIVE

Norwalk, CT

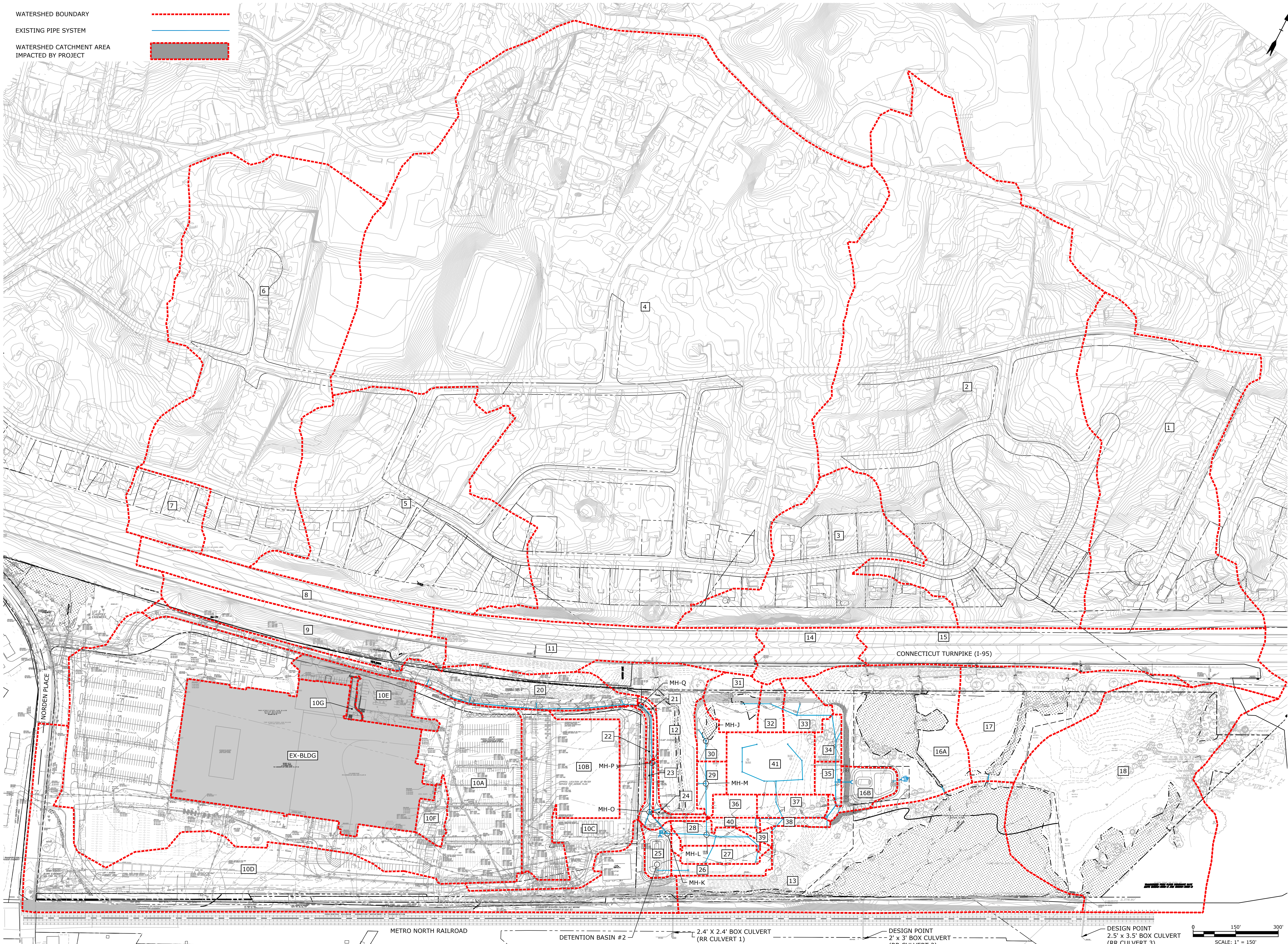
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DATE:	01/13/2025	
FILE:	AS128-01-PR-WM.dwg	
DRAWN BY:	ZNH	
CHECKED:	EWL	
APPROVED:	JWB	

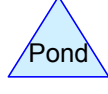
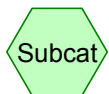
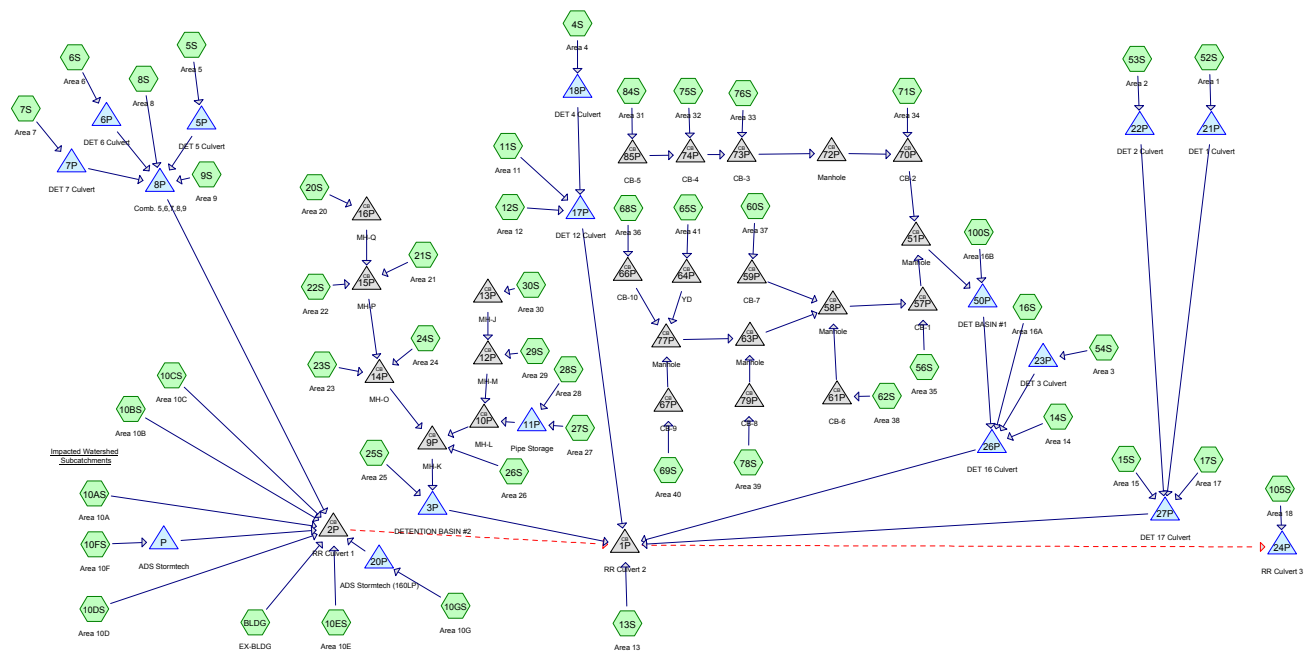
PROPOSED
WATERSHED MAP

SCALE: AS SHOWN

WM-02

Last Saved: 1/15/2025
Plotted On: Jan 15, 2025 3:28pm By: Zhanan
Tighe & Bond: 1:VA5128 The Auto Collective 0001 Design\Stormwater\AS128-01-PR-WM.dwg





Routing Diagram for Proposed Conditions
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Proposed Conditions

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,994,177	70	1/2 acre lots, 25% imp, HSG B (4S, 52S, 53S, 54S)
2,083,910	80	1/2 acre lots, 25% imp, HSG C (4S, 52S, 53S, 54S)
293,159	85	1/2 acre lots, 25% imp, HSG D (4S, 53S)
447,884	79	50-75% Grass cover, Fair, HSG C (7S, 10AS, 10DS, 10ES, 10GS)
25,265	84	50-75% Grass cover, Fair, HSG D (7S)
596,598	61	>75% Grass cover, Good, HSG B (4S, 5S, 10BS, 10CS)
524,593	74	>75% Grass cover, Good, HSG C (4S, 5S, 9S, 11S, 14S, 15S, 16S, 21S, 22S, 23S, 25S, 26S, 27S, 28S, 30S, 60S, 62S, 65S, 68S, 69S, 100S)
135,297	80	>75% Grass cover, Good, HSG D (4S, 5S, 9S, 24S)
6,534	89	Gravel roads, HSG C (16S)
404,672	71	Meadow, non-grazed, HSG C (6S)
1,293,688	98	Paved parking & roofs (5S, 6S, 8S, 10BS, 10CS, 11S, 14S, 15S, 17S, 20S, 21S, 22S, 23S, 24S, 26S, 27S, 28S, 29S, 30S, 56S, 60S, 62S, 65S, 68S, 69S, 71S, 75S, 76S, 78S, 84S)
307,446	98	Paved parking, HSG C (10DS, 10ES, 10GS, 105S)
537,922	98	Paved roads w/curbs & sewers, HSG C (10AS, 10FS)
360,328	98	Roofs, HSG B (BLDG)
485,171	70	Woods, Good, HSG C (12S, 13S, 16S, 17S, 20S, 75S, 76S, 84S, 105S)
991,295	77	Woods, Good, HSG D (6S, 12S, 13S, 16S, 17S, 105S)
10,487,941	80	TOTAL AREA

Summary for Subcatchment 4S: Area 4

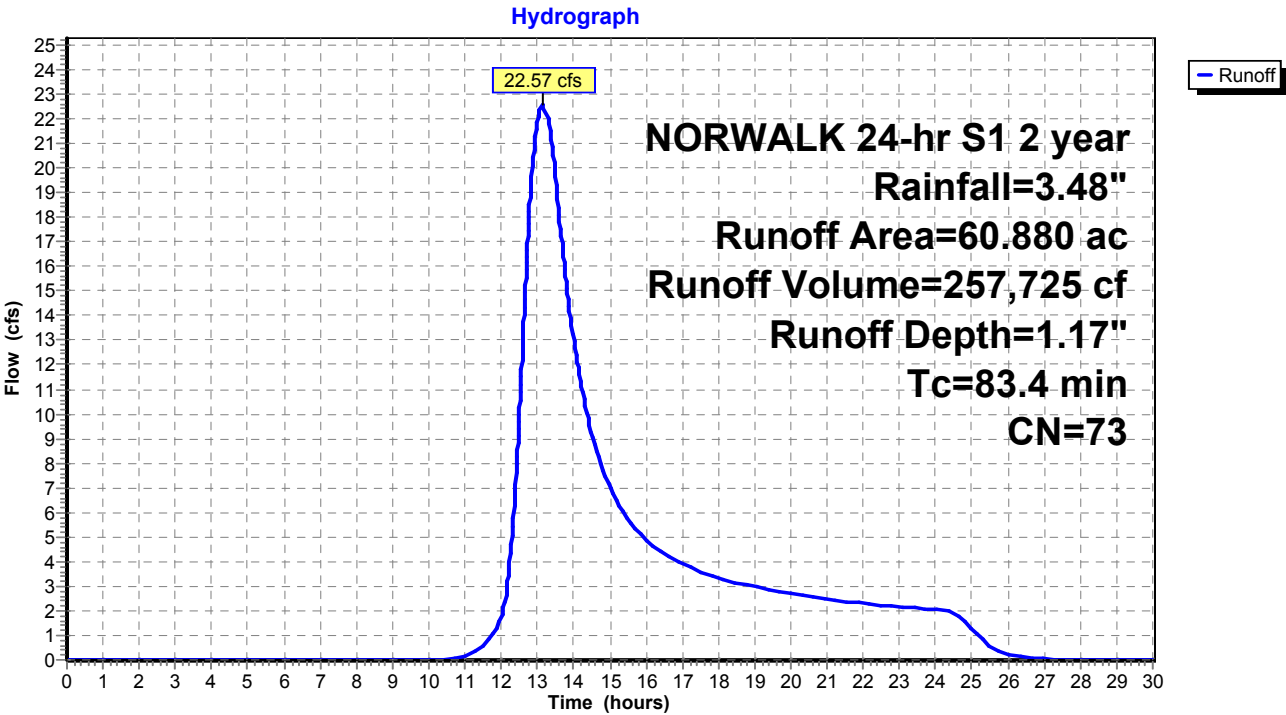
Runoff = 22.57 cfs @ 13.15 hrs, Volume= 257,725 cf, Depth= 1.17"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Proposed Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 5S: Area 5

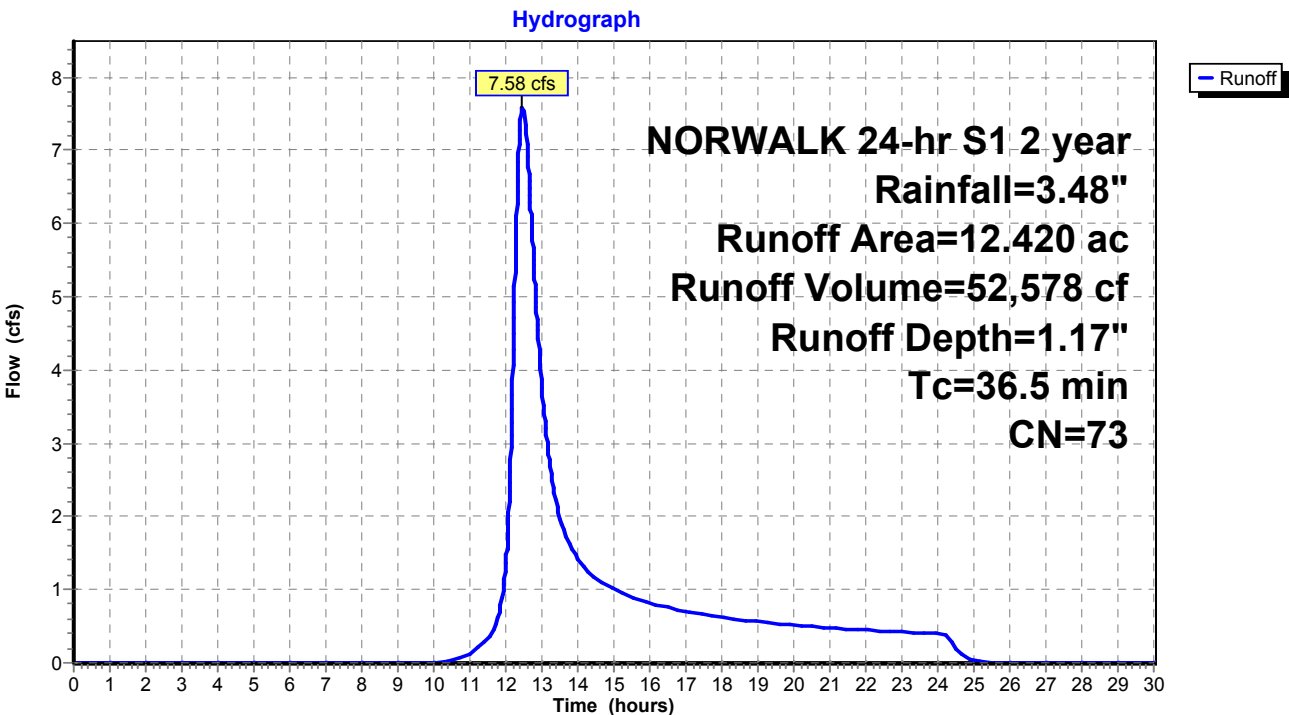
Runoff = 7.58 cfs @ 12.46 hrs, Volume= 52,578 cf, Depth= 1.17"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



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Summary for Subcatchment 6S: Area 6

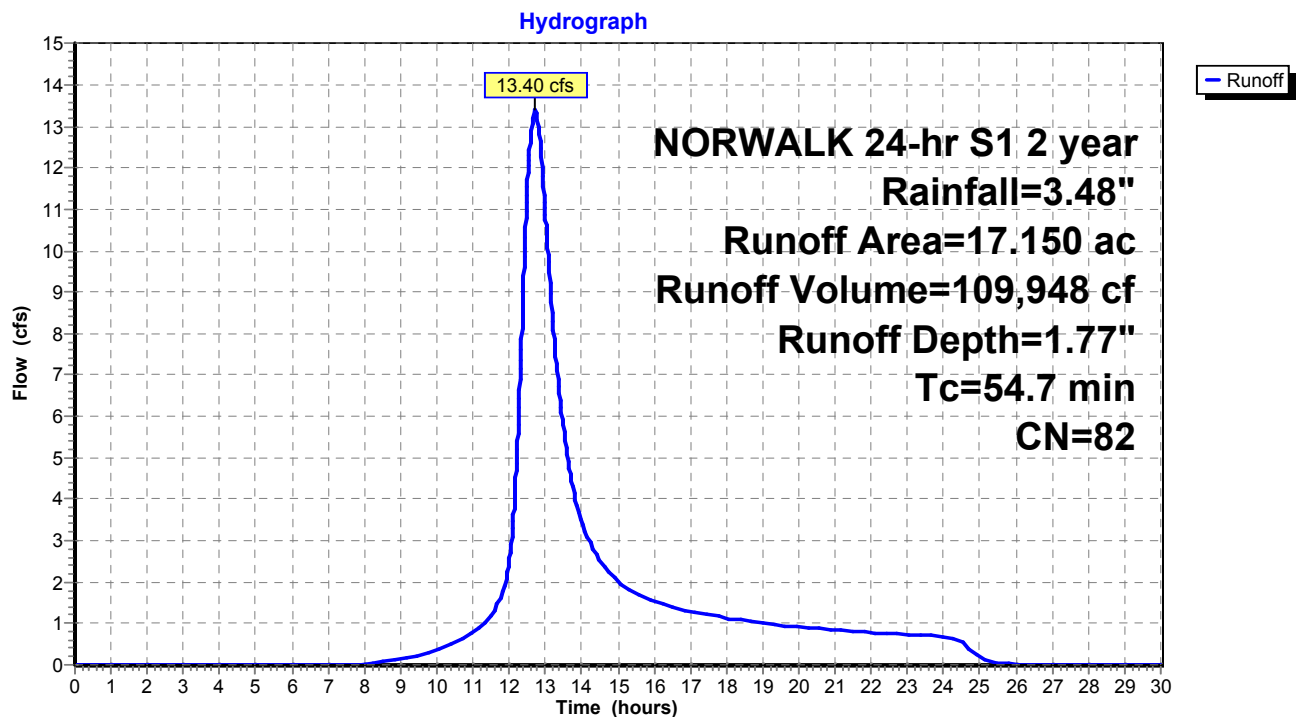
Runoff = 13.40 cfs @ 12.70 hrs, Volume= 109,948 cf, Depth= 1.77"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 7S: Area 7

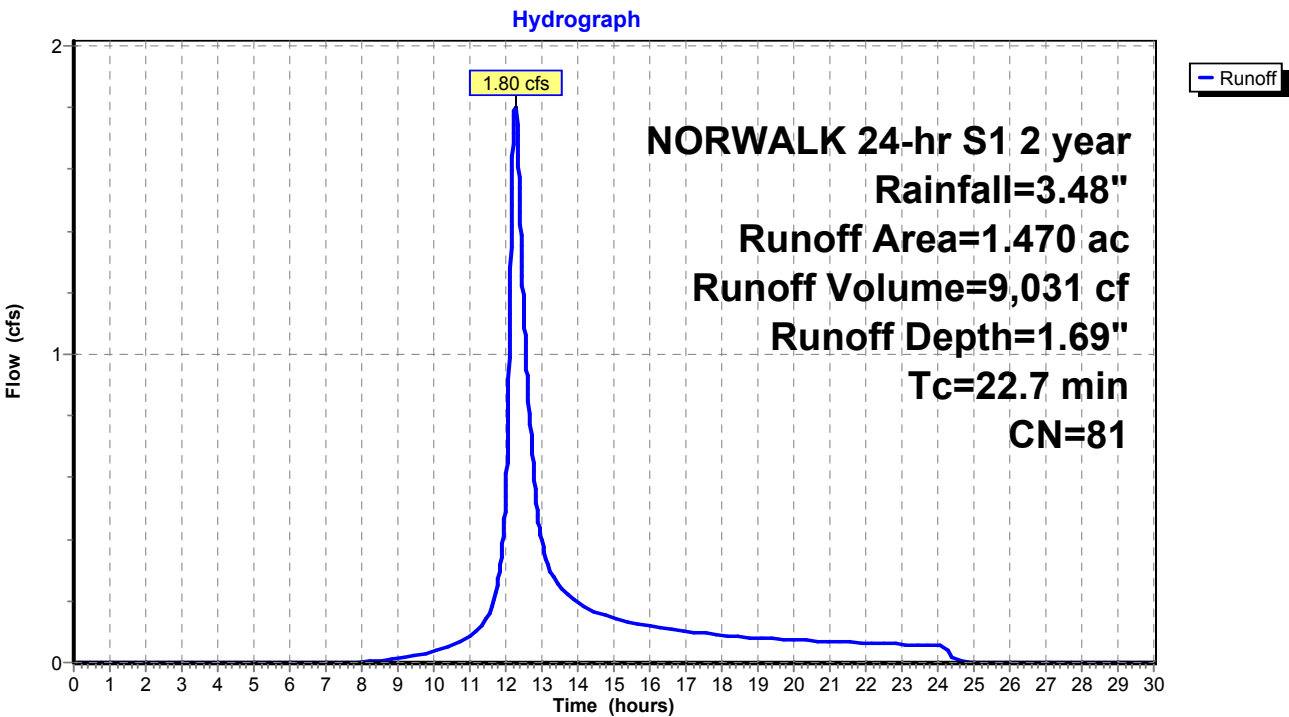
Runoff = 1.80 cfs @ 12.27 hrs, Volume= 9,031 cf, Depth= 1.69"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Summary for Subcatchment 8S: Area 8

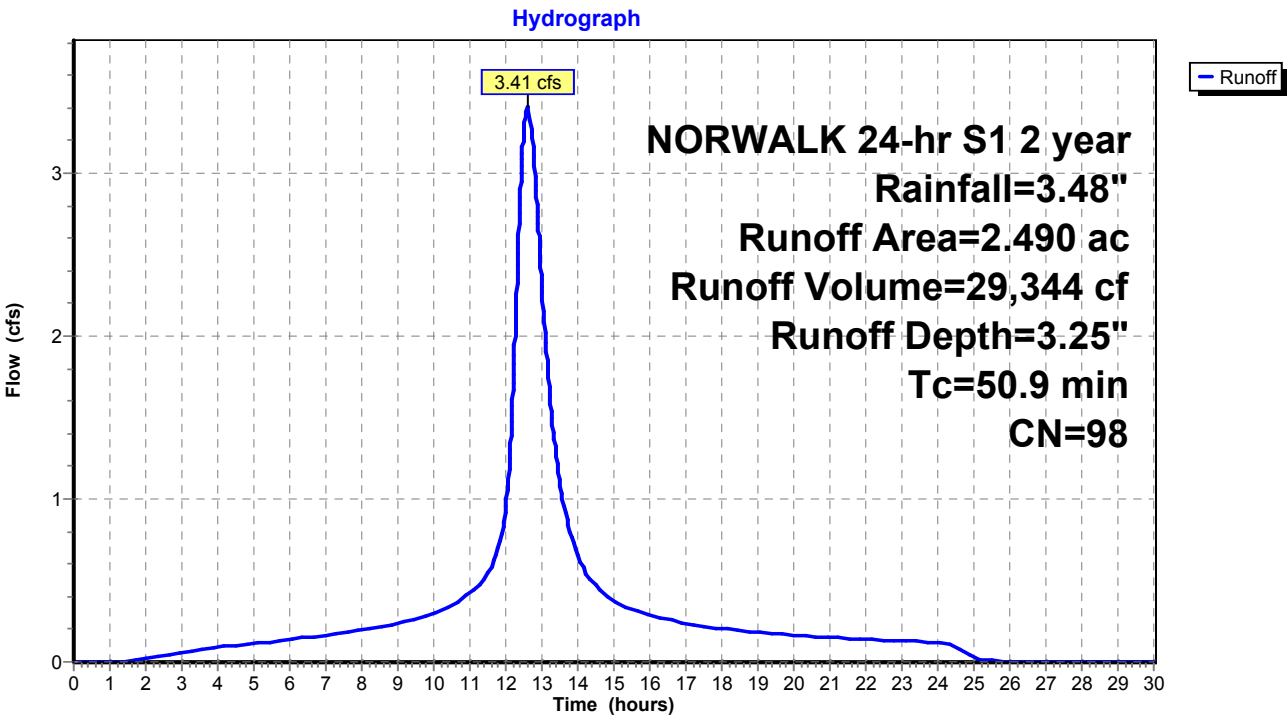
Runoff = 3.41 cfs @ 12.61 hrs, Volume= 29,344 cf, Depth= 3.25"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 9S: Area 9

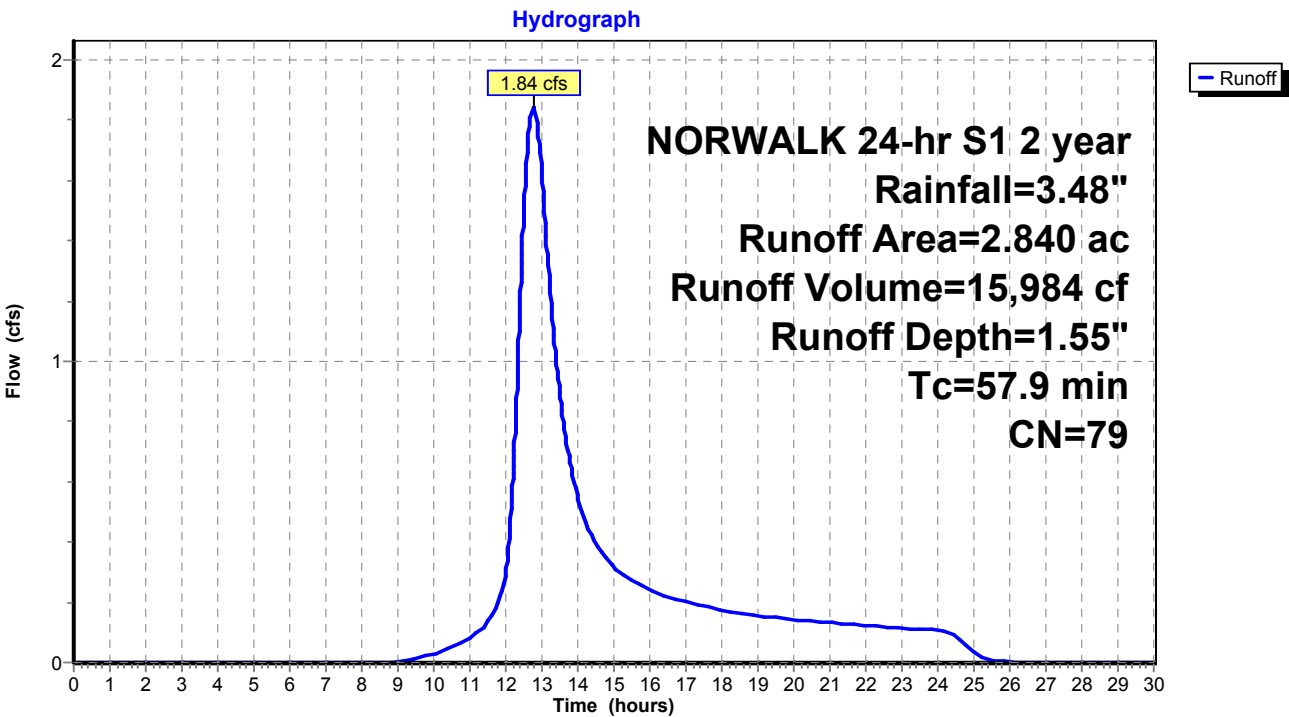
Runoff = 1.84 cfs @ 12.75 hrs, Volume= 15,984 cf, Depth= 1.55"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10AS: Area 10A

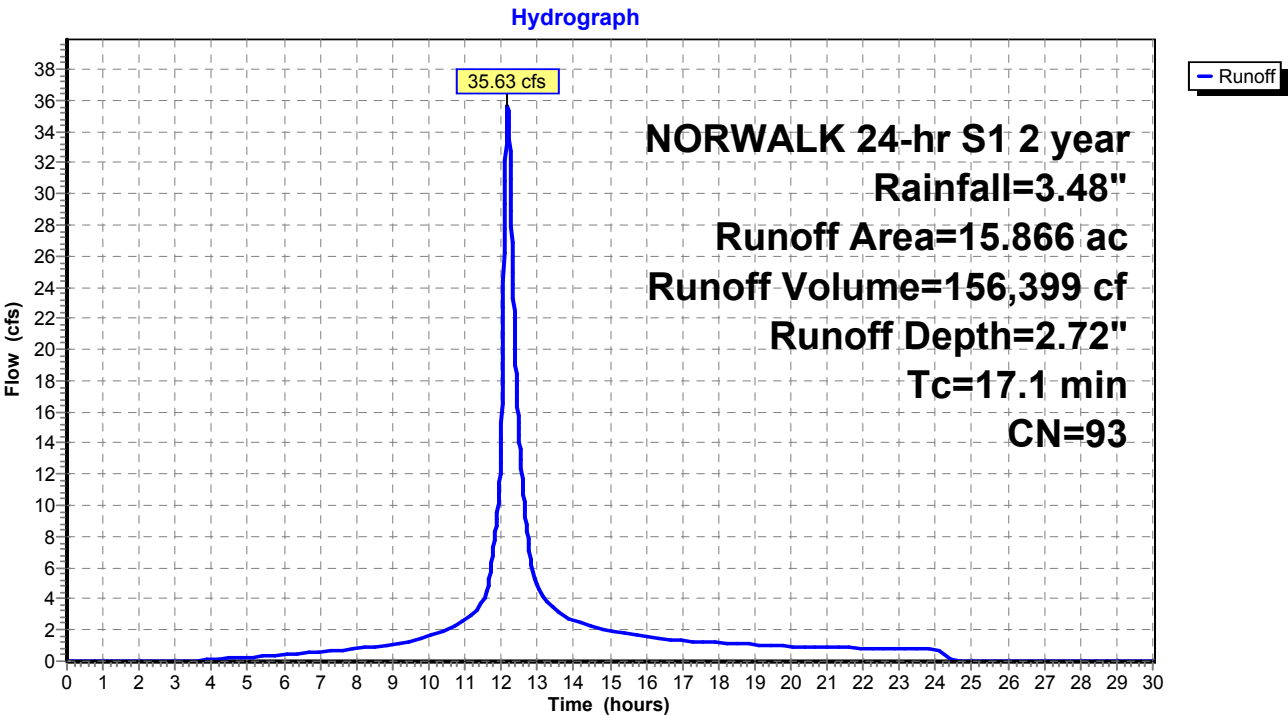
Runoff = 35.63 cfs @ 12.18 hrs, Volume= 156,399 cf, Depth= 2.72"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10BS: Area 10B

Runoff = 14.18 cfs @ 12.03 hrs, Volume= 38,439 cf, Depth= 3.03"
Routed to Pond 2P : RR Culvert 1

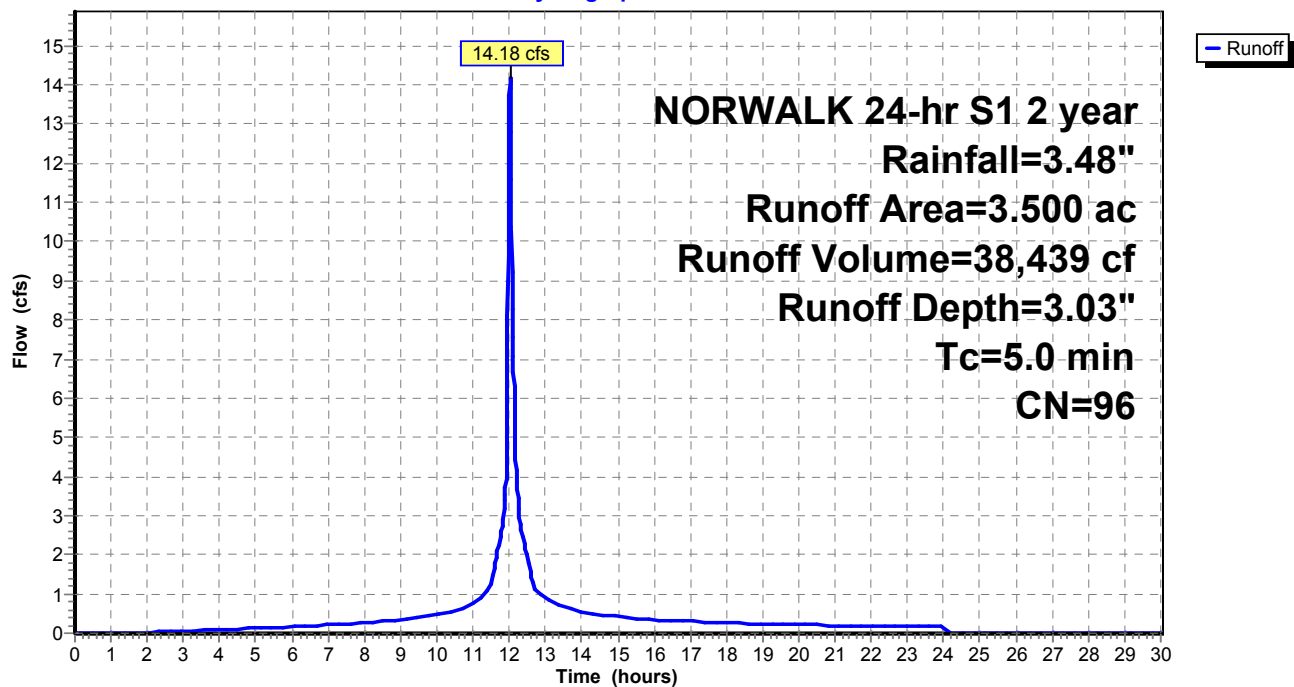
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B

Hydrograph



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10CS: Area 10C

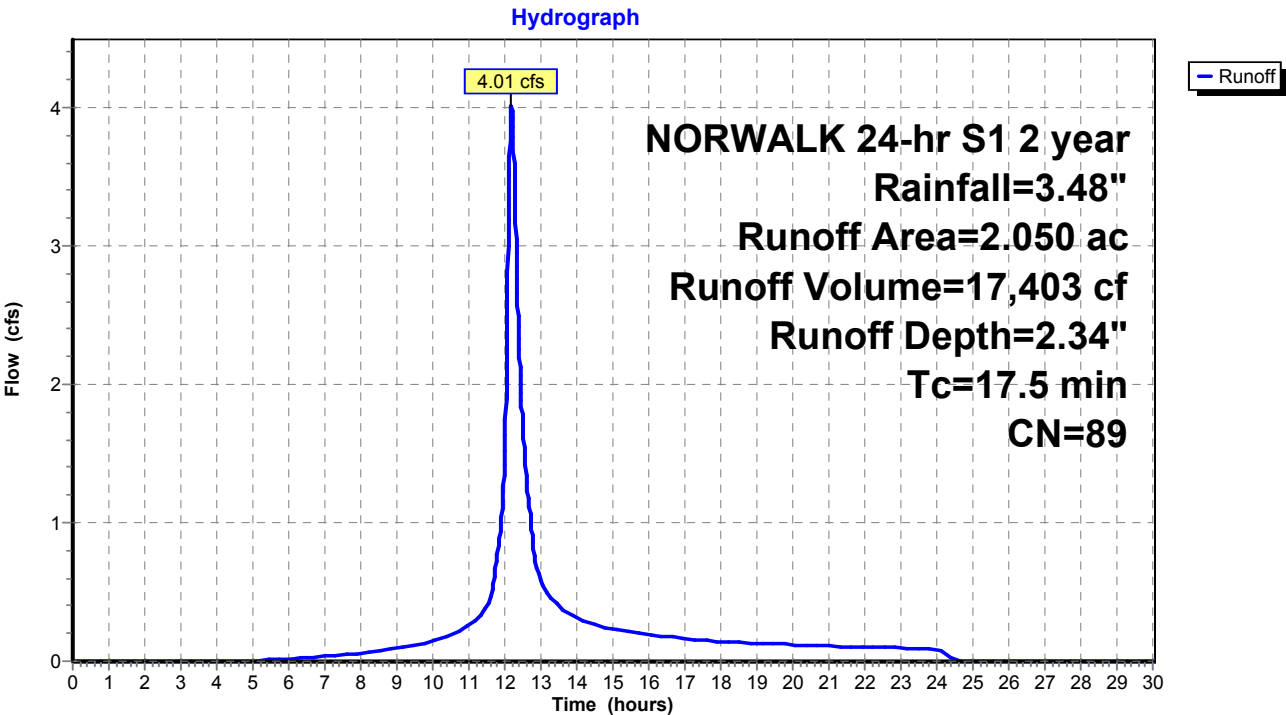
Runoff = 4.01 cfs @ 12.19 hrs, Volume= 17,403 cf, Depth= 2.34"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 10DS: Area 10D

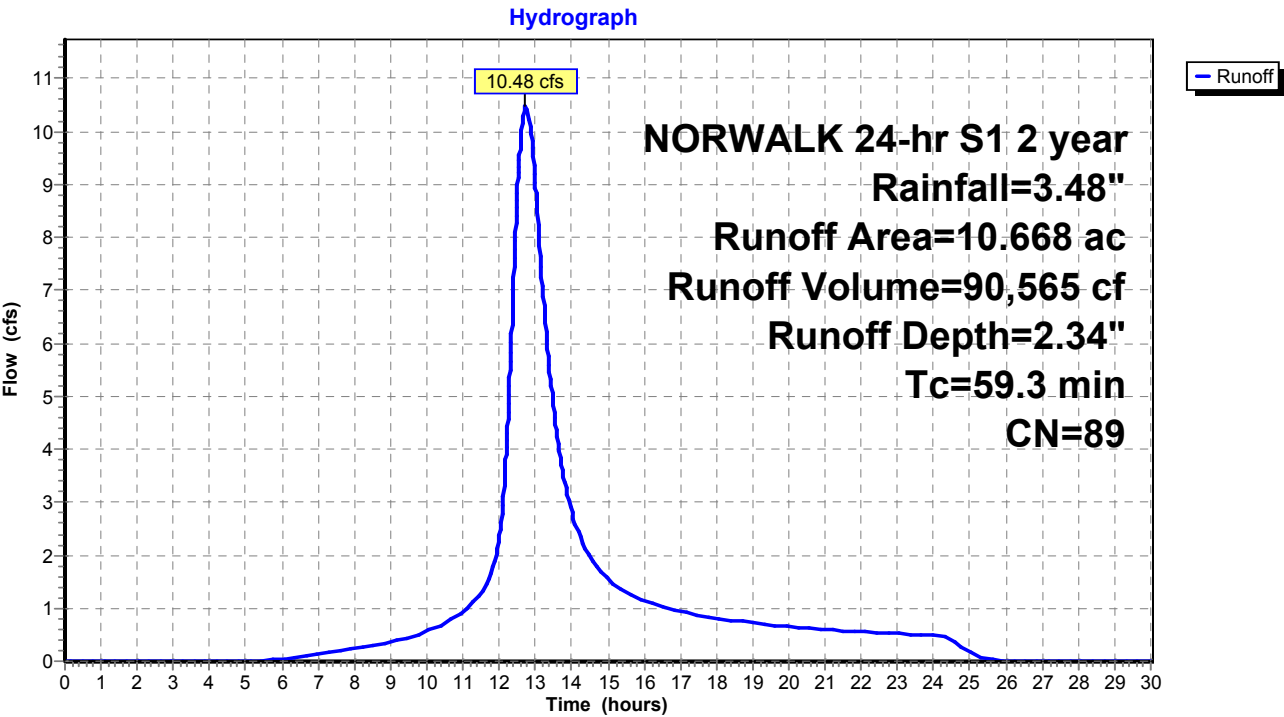
Runoff = 10.48 cfs @ 12.72 hrs, Volume= 90,565 cf, Depth= 2.34"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Summary for Subcatchment 10ES: Area 10E

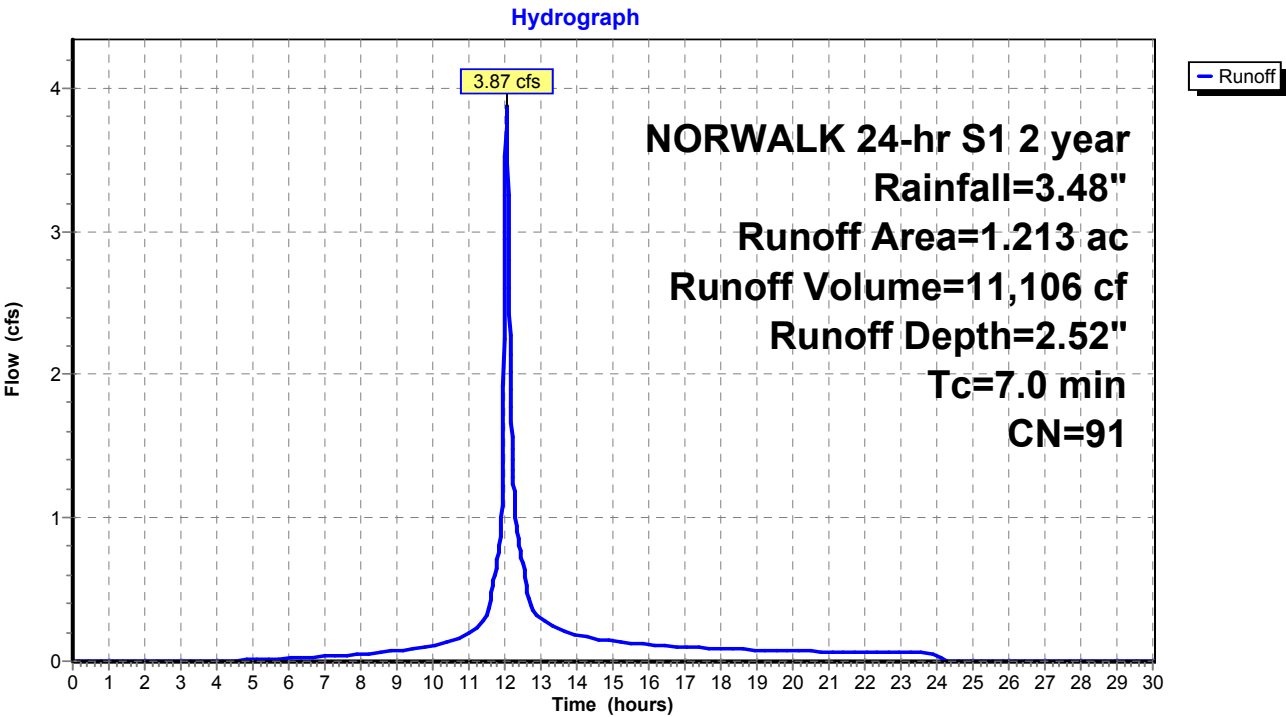
Runoff = 3.87 cfs @ 12.05 hrs, Volume= 11,106 cf, Depth= 2.52"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.781	98	Paved parking, HSG C
0.432	79	50-75% Grass cover, Fair, HSG C
1.213	91	Weighted Average
0.432		35.61% Pervious Area
0.781		64.39% Impervious Area

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

Subcatchment 10ES: Area 10E



Summary for Subcatchment 10FS: Area 10F

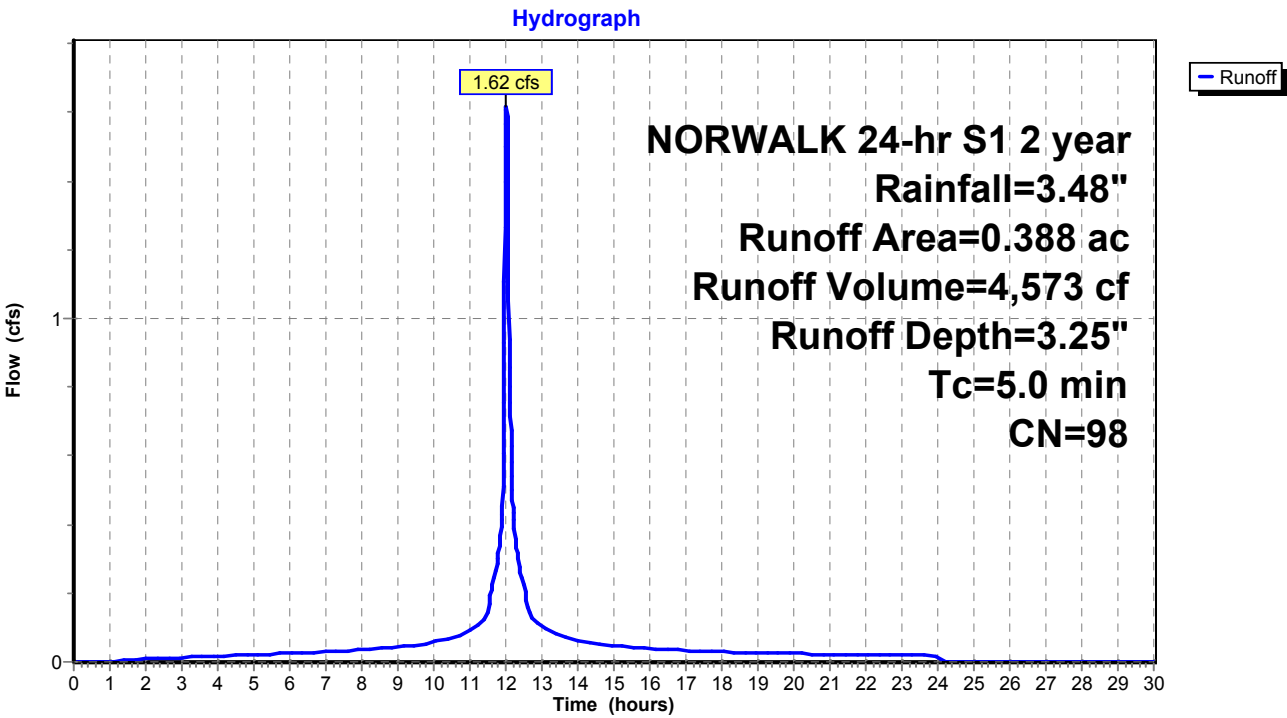
Runoff = 1.62 cfs @ 12.03 hrs, Volume= 4,573 cf, Depth= 3.25"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



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Summary for Subcatchment 10GS: Area 10G

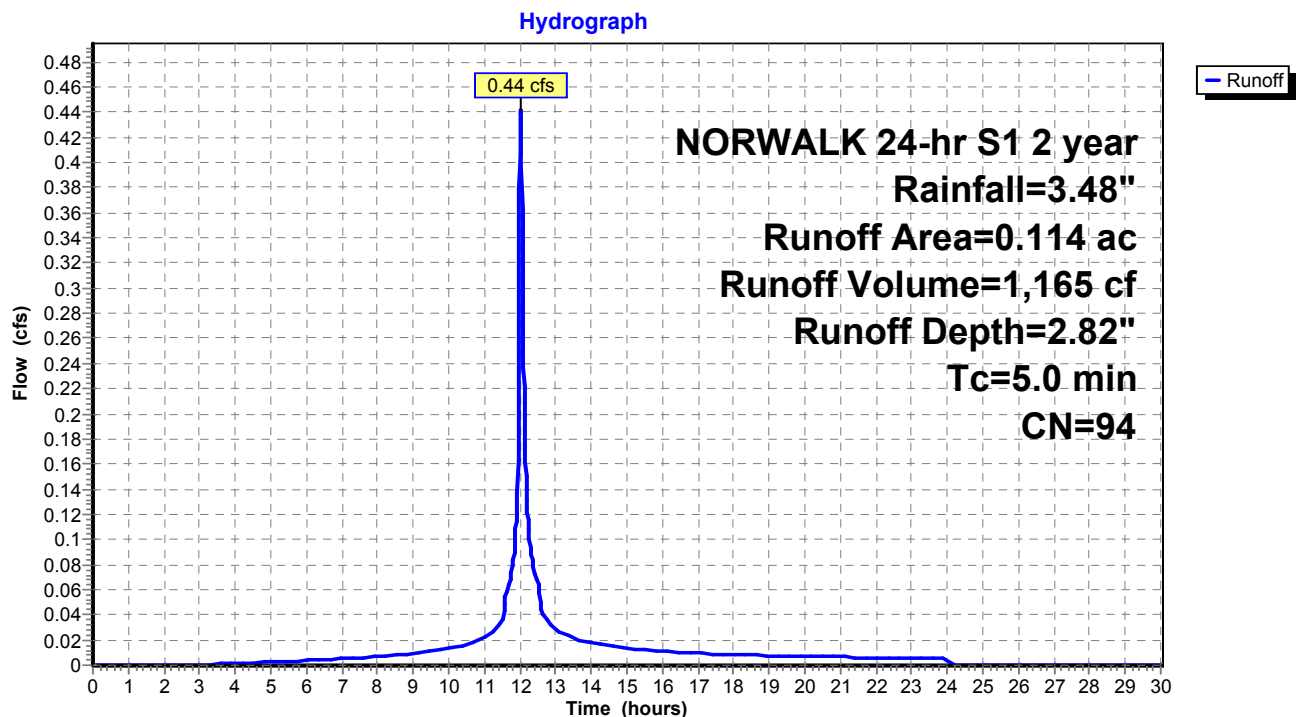
Runoff = 0.44 cfs @ 12.03 hrs, Volume= 1,165 cf, Depth= 2.82"
Routed to Pond 20P : ADS Stormtech (160LP)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
* 0.092	98	Paved parking, HSG C
* 0.022	79	50-75% Grass cover, Fair, HSG C
0.114	94	Weighted Average
0.022		19.30% Pervious Area
0.092		80.70% Impervious Area

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

Subcatchment 10GS: Area 10G



Summary for Subcatchment 11S: Area 11

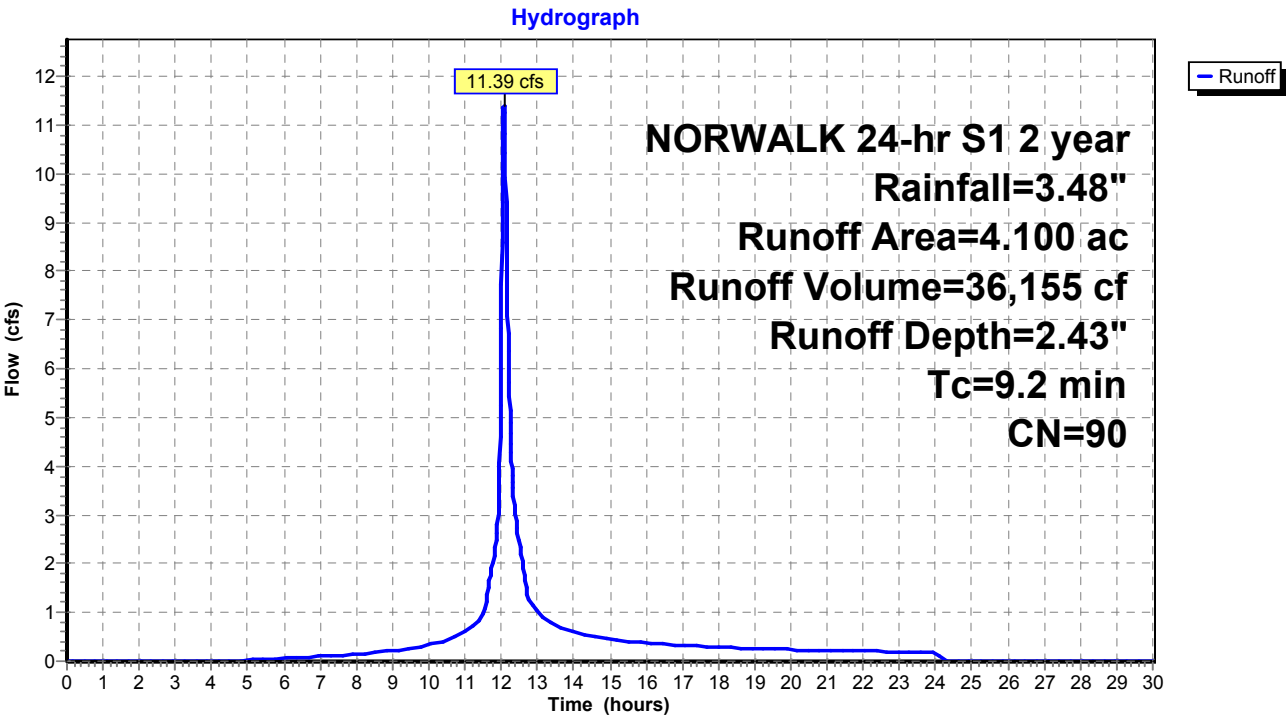
Runoff = 11.39 cfs @ 12.07 hrs, Volume= 36,155 cf, Depth= 2.43"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Summary for Subcatchment 12S: Area 12

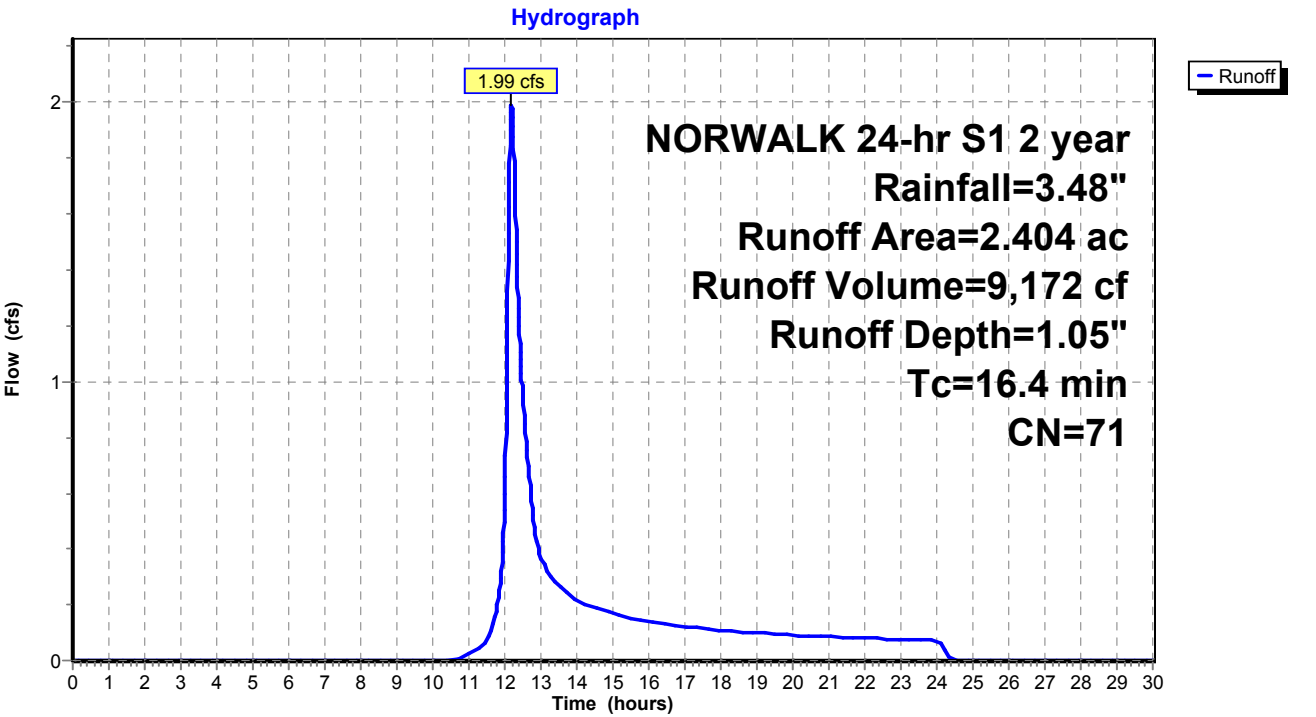
Runoff = 1.99 cfs @ 12.19 hrs, Volume= 9,172 cf, Depth= 1.05"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Summary for Subcatchment 13S: Area 13

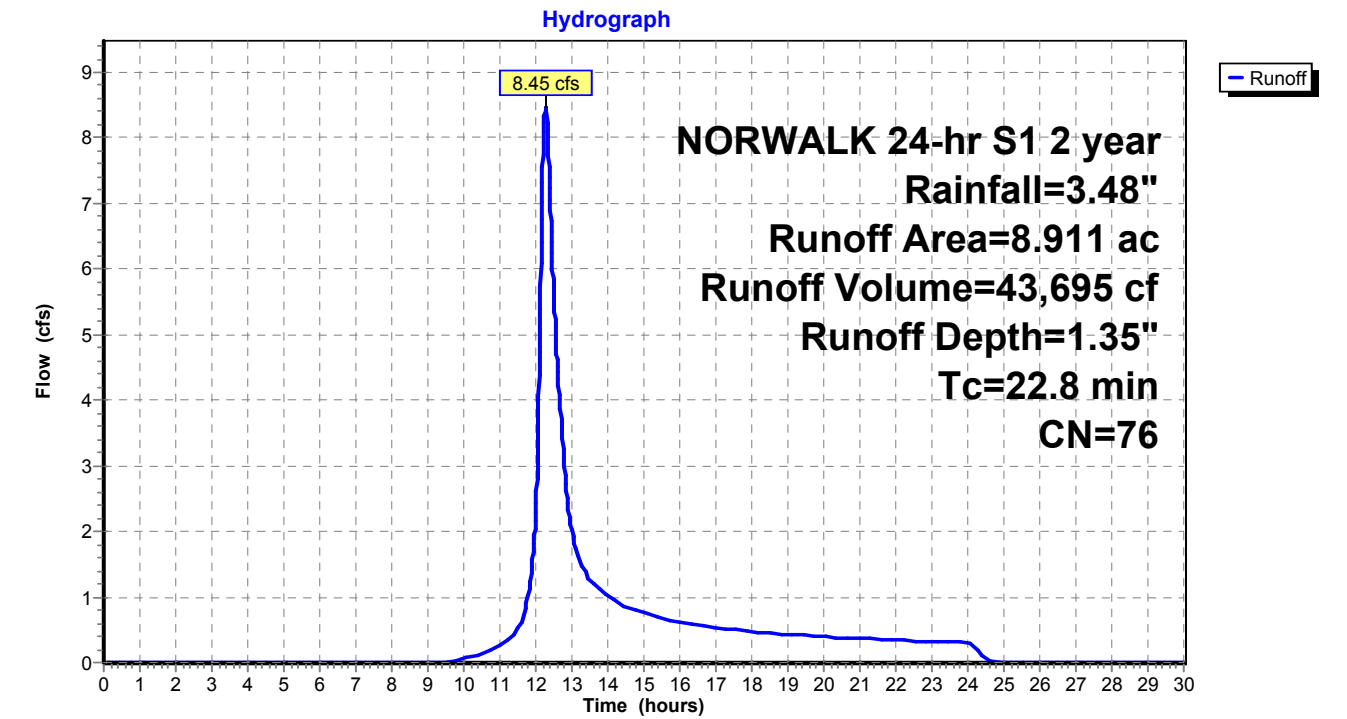
Runoff = 8.45 cfs @ 12.28 hrs, Volume= 43,695 cf, Depth= 1.35"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



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Summary for Subcatchment 14S: Area 14

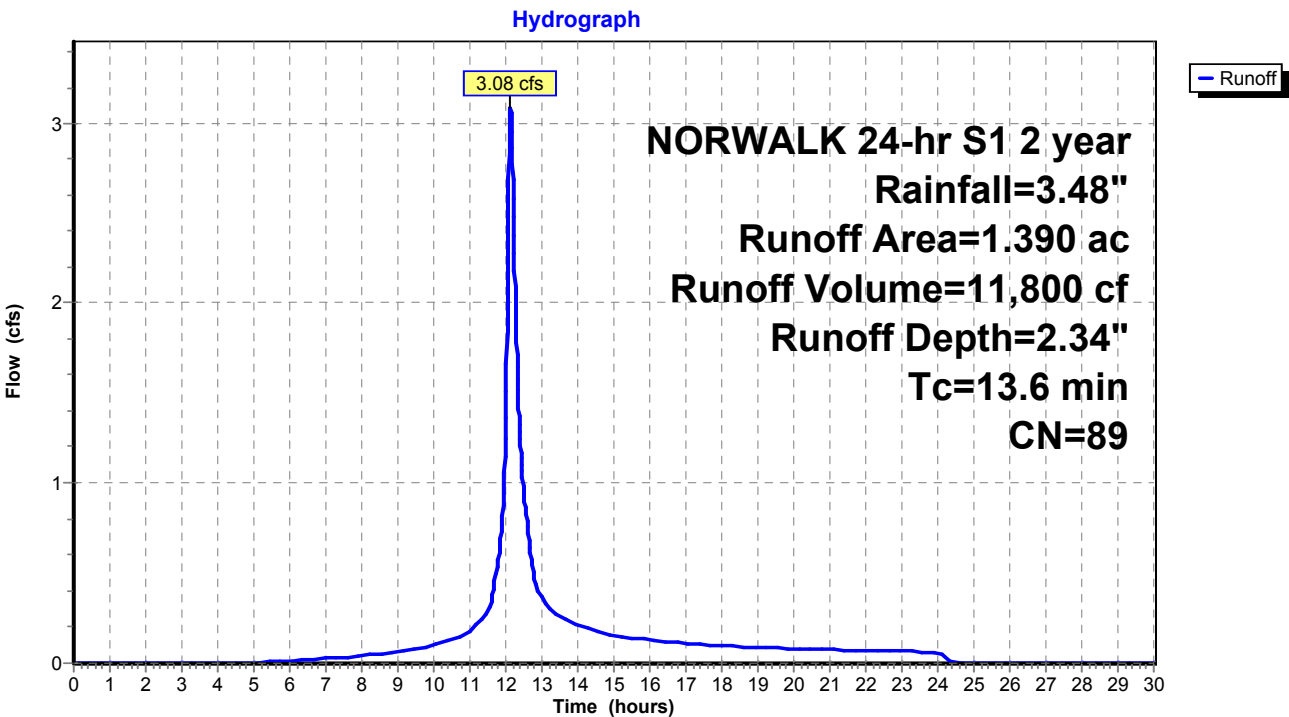
Runoff = 3.08 cfs @ 12.13 hrs, Volume= 11,800 cf, Depth= 2.34"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Summary for Subcatchment 15S: Area 15

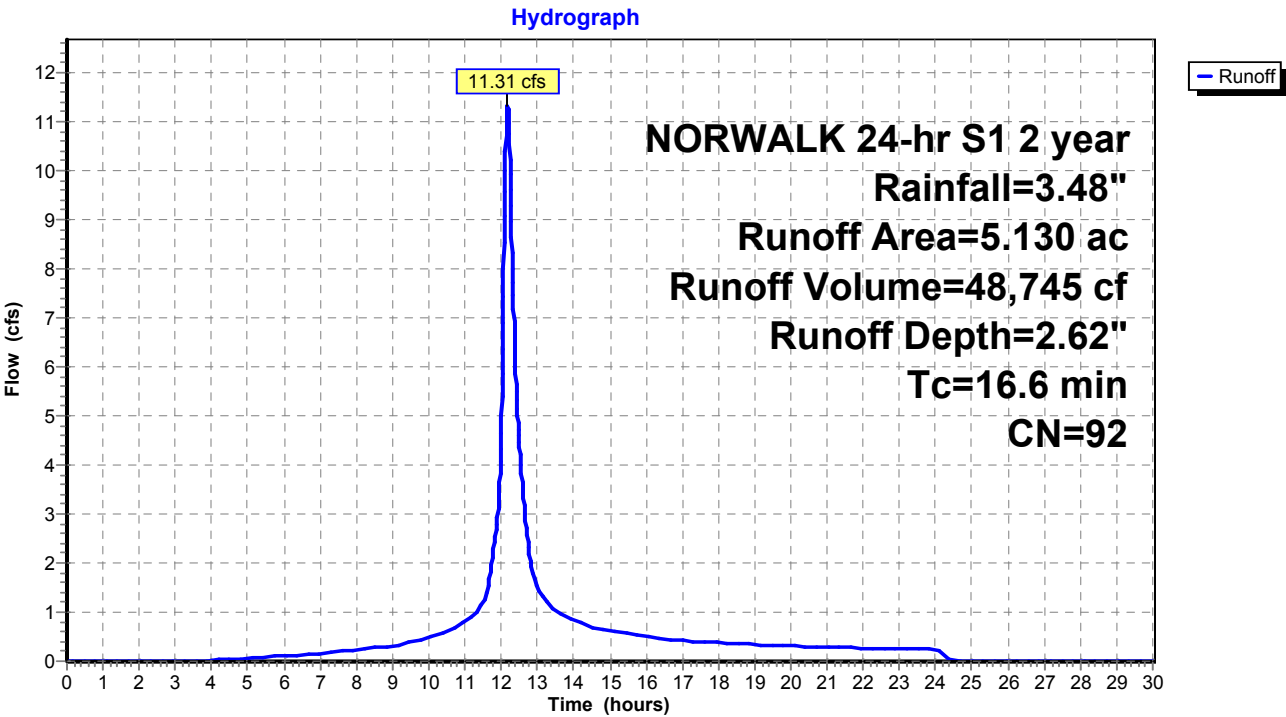
Runoff = 11.31 cfs @ 12.17 hrs, Volume= 48,745 cf, Depth= 2.62"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 16S: Area 16A

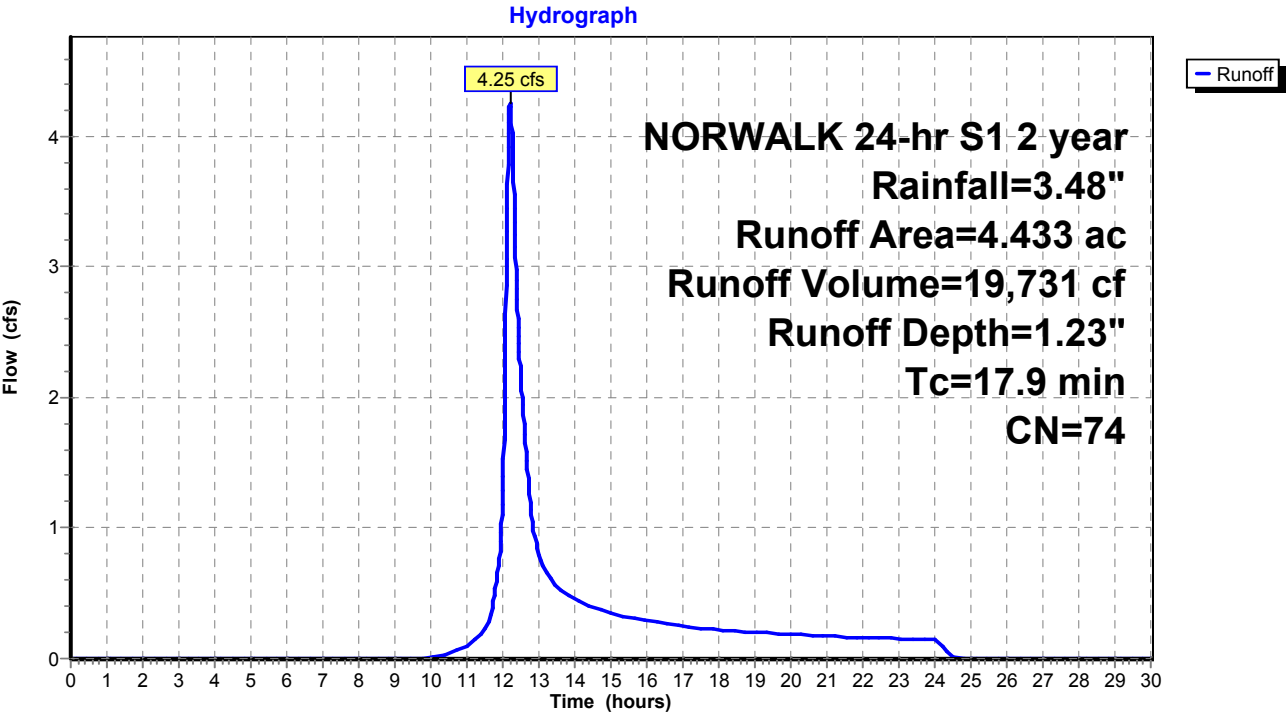
Runoff = 4.25 cfs @ 12.21 hrs, Volume= 19,731 cf, Depth= 1.23"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 17S: Area 17

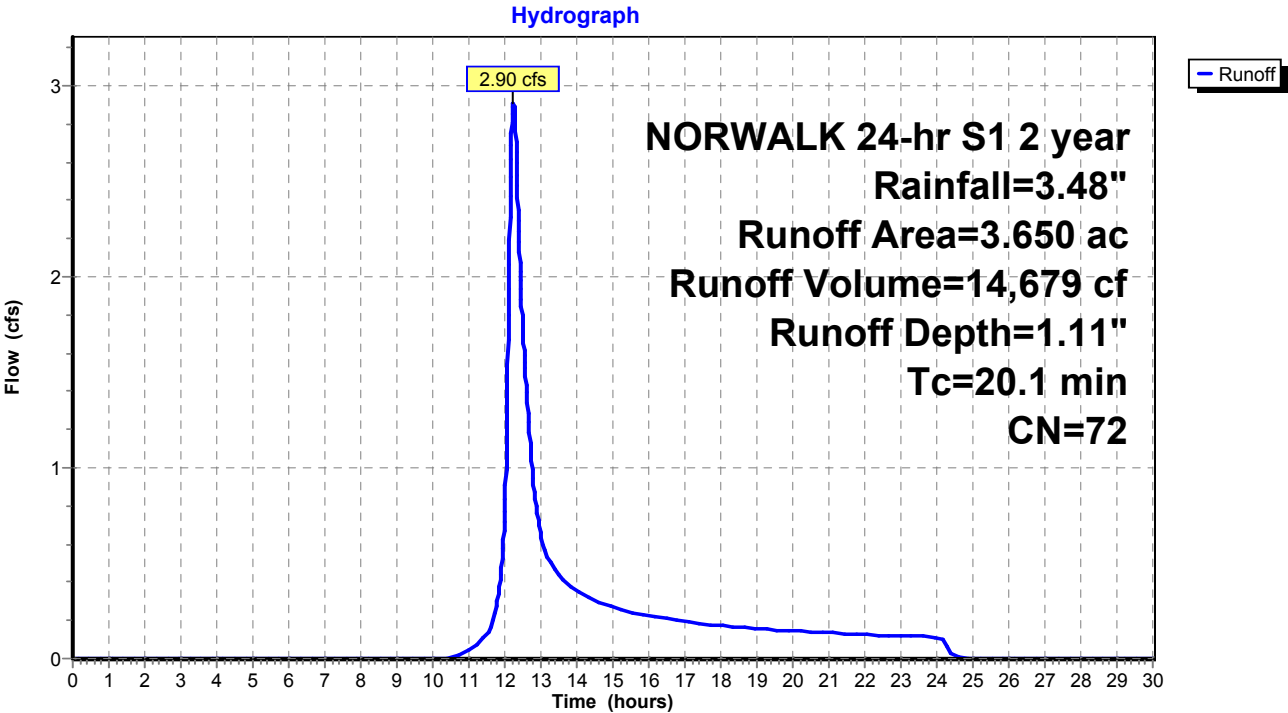
Runoff = 2.90 cfs @ 12.24 hrs, Volume= 14,679 cf, Depth= 1.11"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 20S: Area 20

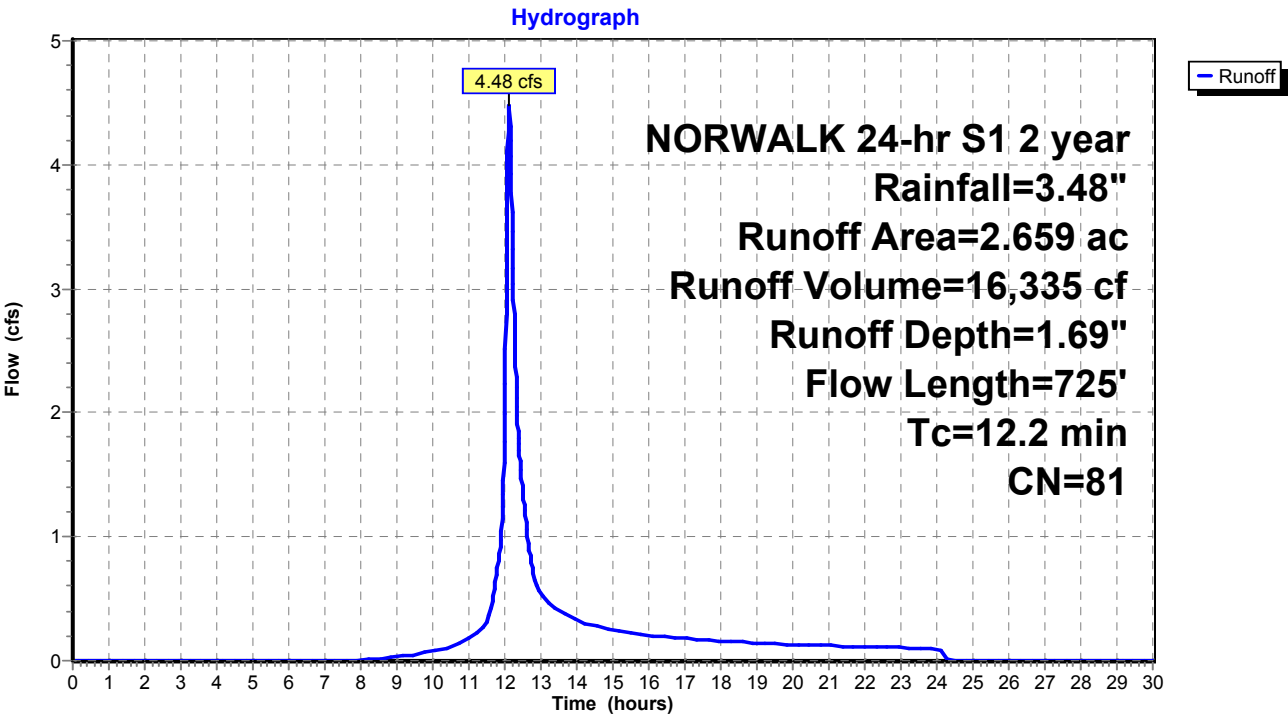
Runoff = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf, Depth= 1.69"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 21S: Area 21

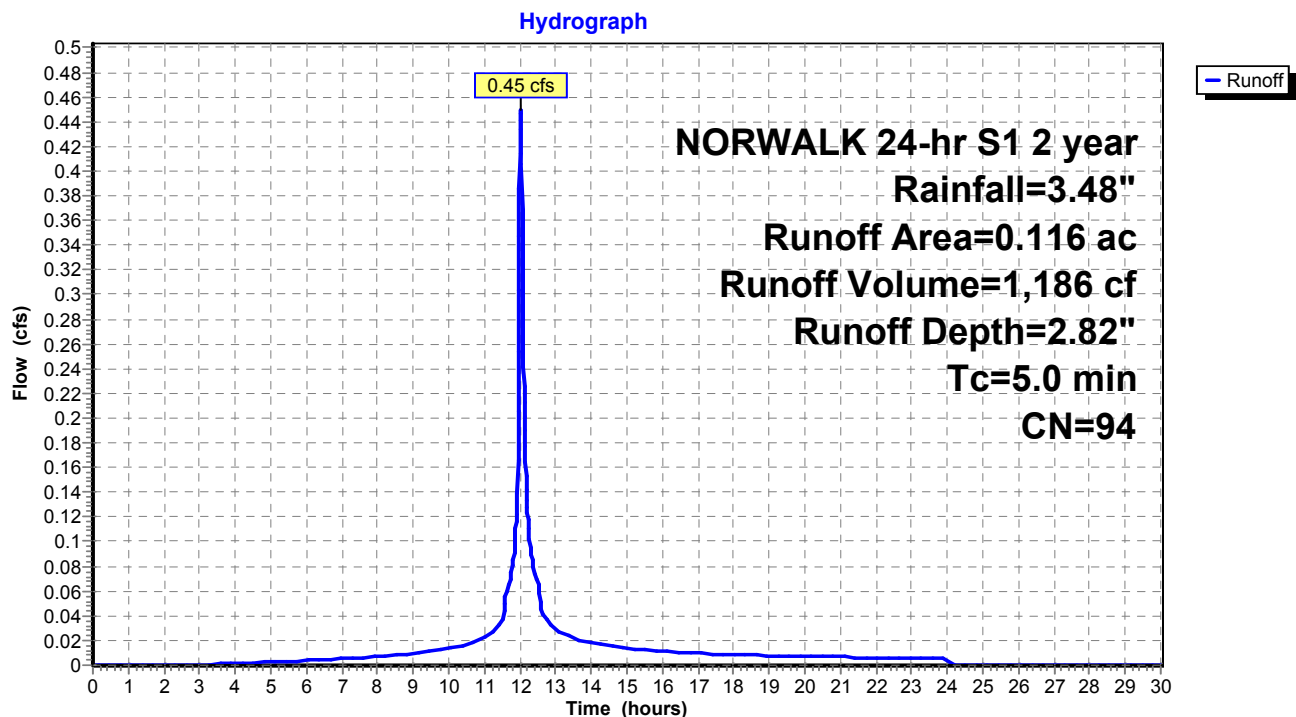
Runoff = 0.45 cfs @ 12.03 hrs, Volume= 1,186 cf, Depth= 2.82"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Proposed Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 22S: Area 22

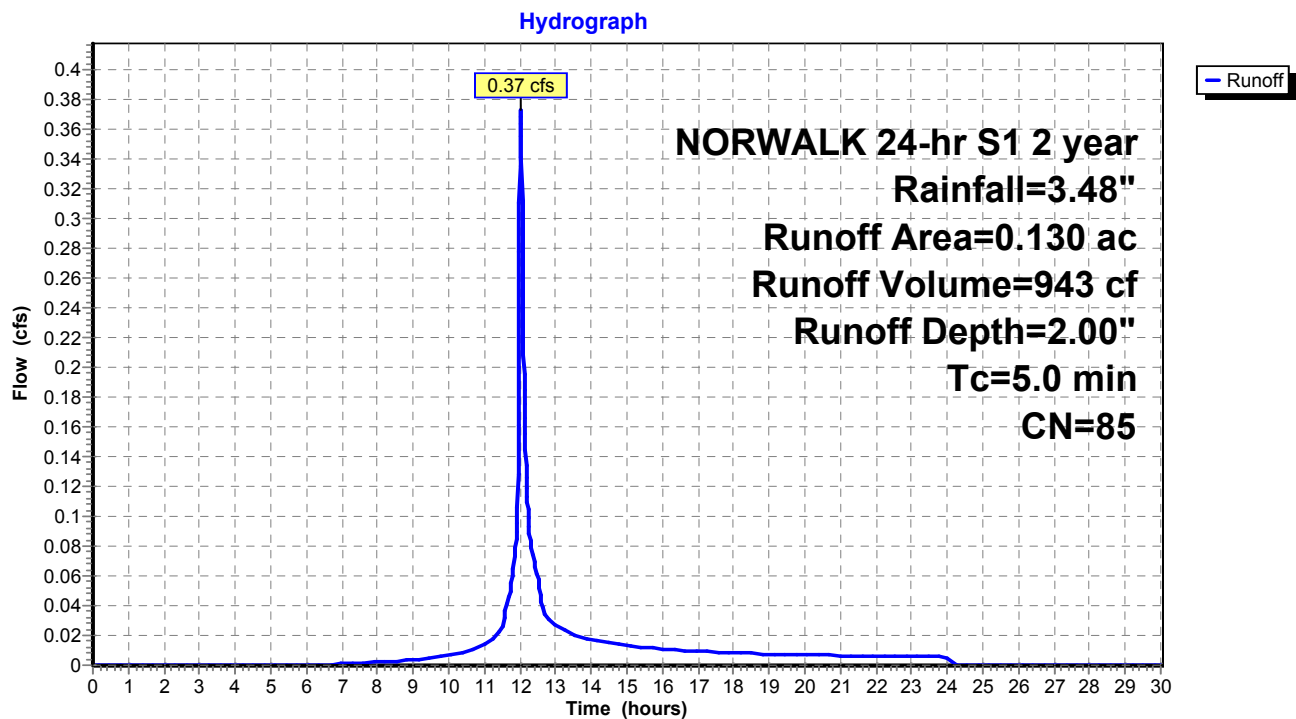
Runoff = 0.37 cfs @ 12.03 hrs, Volume= 943 cf, Depth= 2.00"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Summary for Subcatchment 23S: Area 23

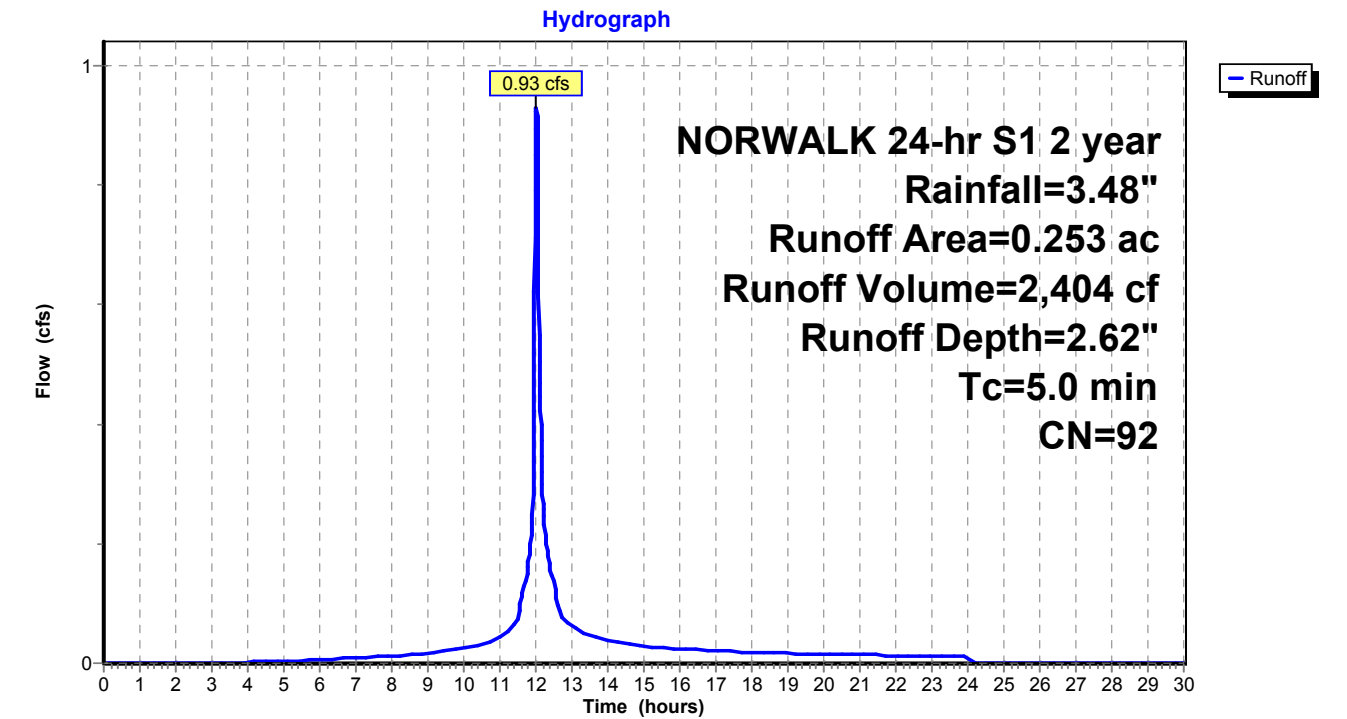
Runoff = 0.93 cfs @ 12.03 hrs, Volume= 2,404 cf, Depth= 2.62"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Summary for Subcatchment 24S: Area 24

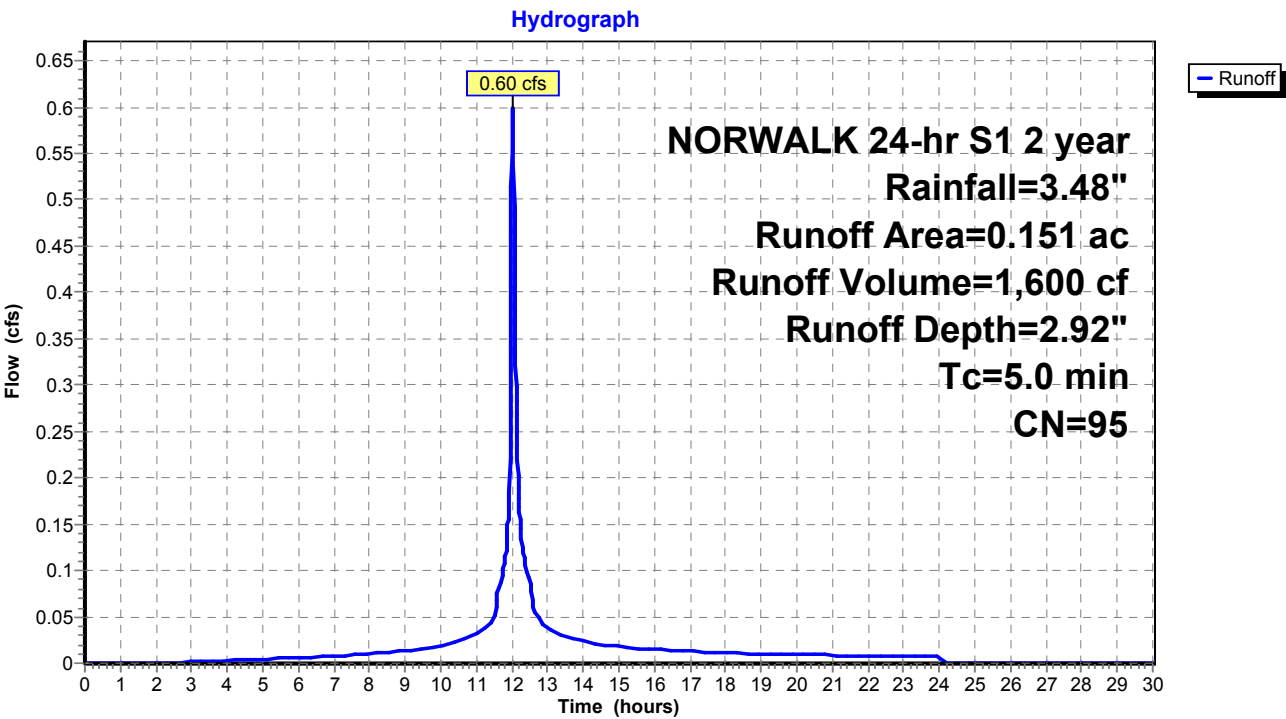
Runoff = 0.60 cfs @ 12.03 hrs, Volume= 1,600 cf, Depth= 2.92"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 25S: Area 25

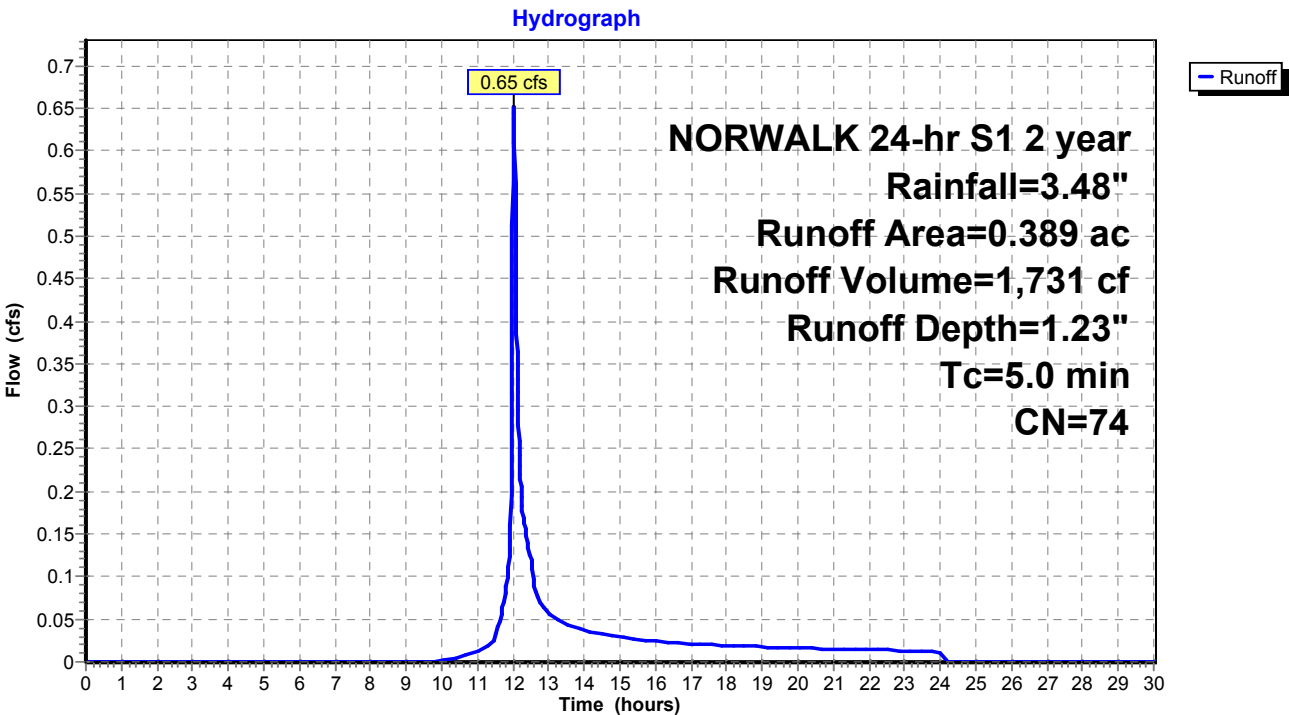
Runoff = 0.65 cfs @ 12.03 hrs, Volume= 1,731 cf, Depth= 1.23"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Summary for Subcatchment 26S: Area 26

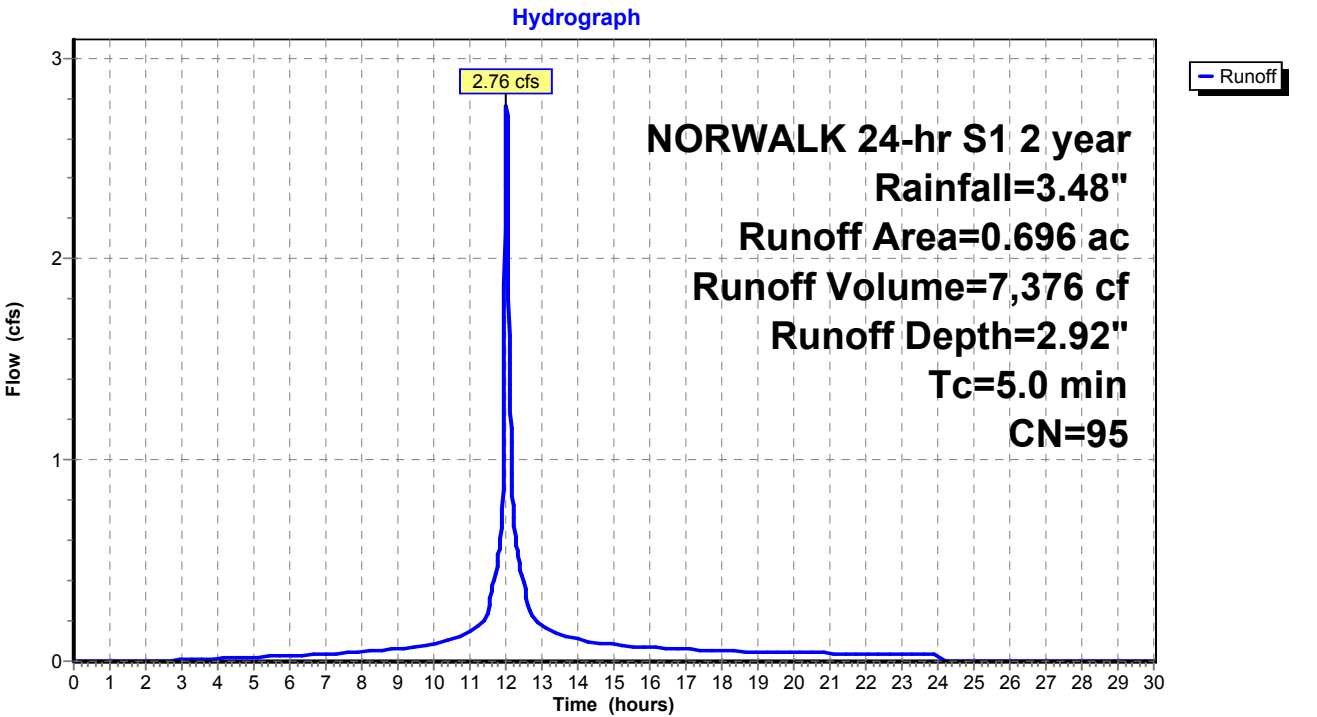
Runoff = 2.76 cfs @ 12.03 hrs, Volume= 7,376 cf, Depth= 2.92"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 27S: Area 27

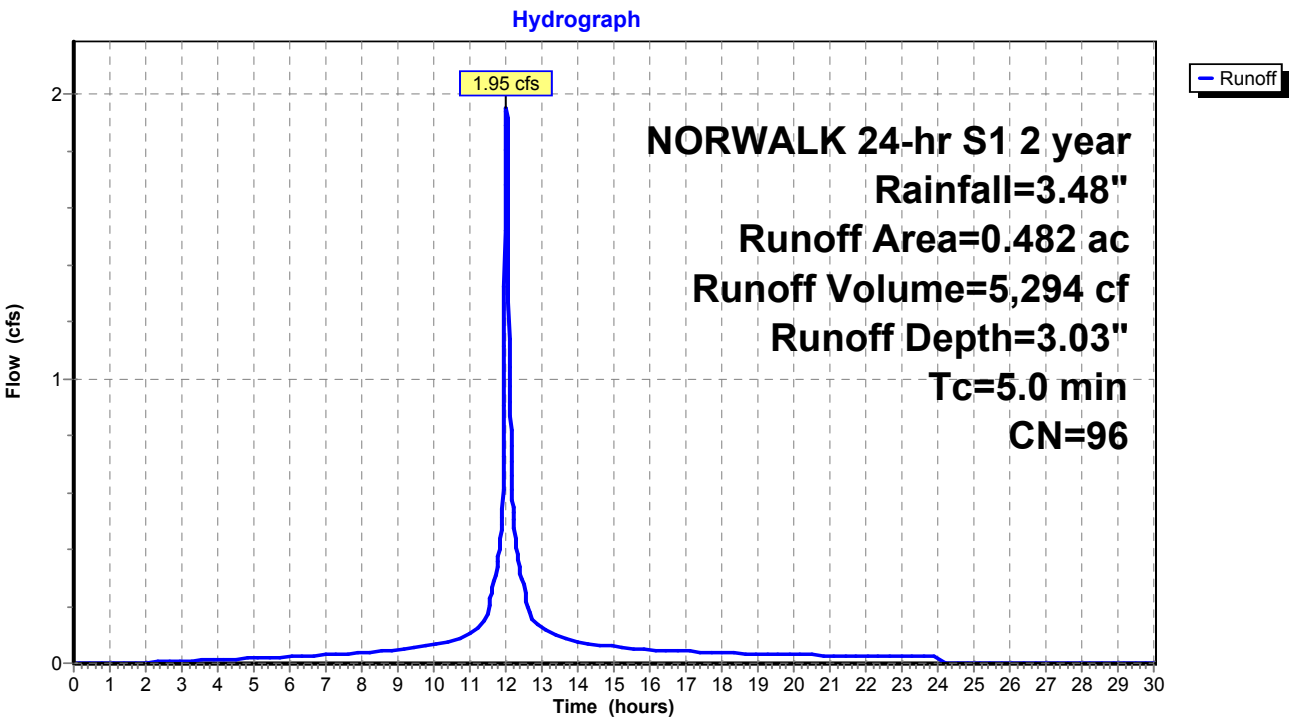
Runoff = 1.95 cfs @ 12.03 hrs, Volume= 5,294 cf, Depth= 3.03"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 28S: Area 28

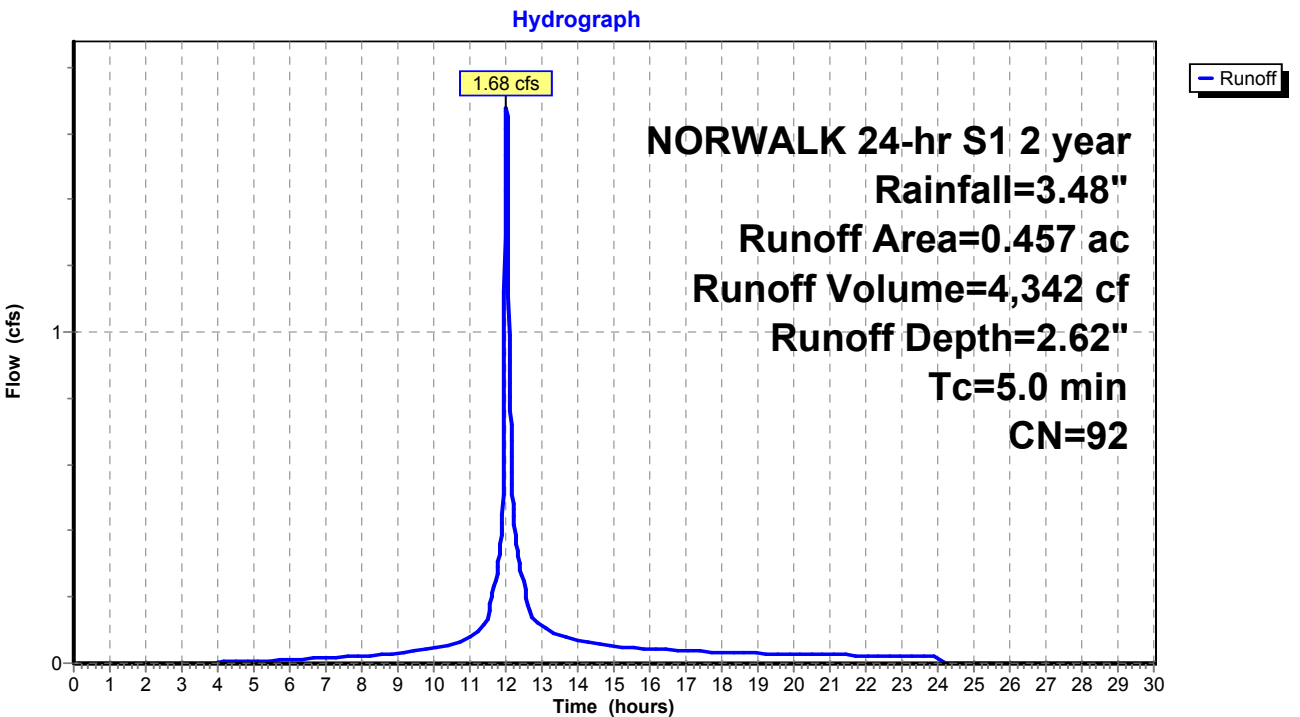
Runoff = 1.68 cfs @ 12.03 hrs, Volume= 4,342 cf, Depth= 2.62"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 29S: Area 29

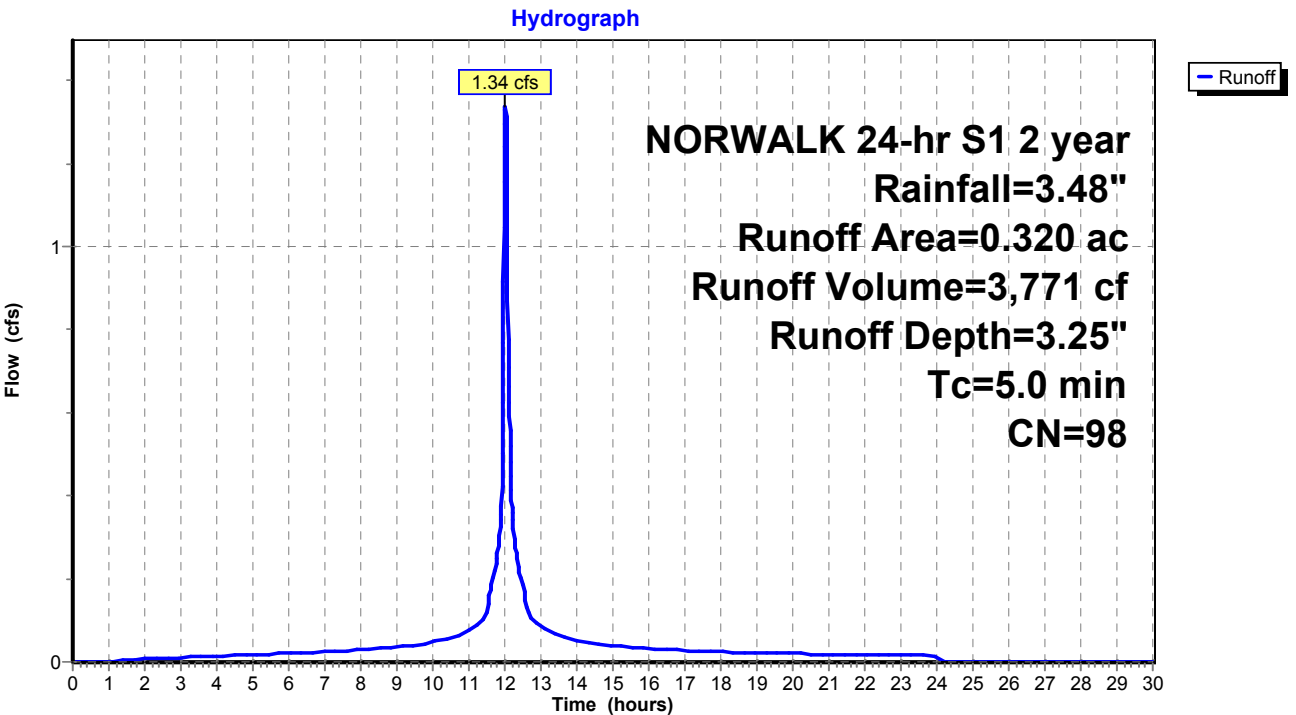
Runoff = 1.34 cfs @ 12.03 hrs, Volume= 3,771 cf, Depth= 3.25"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 30S: Area 30

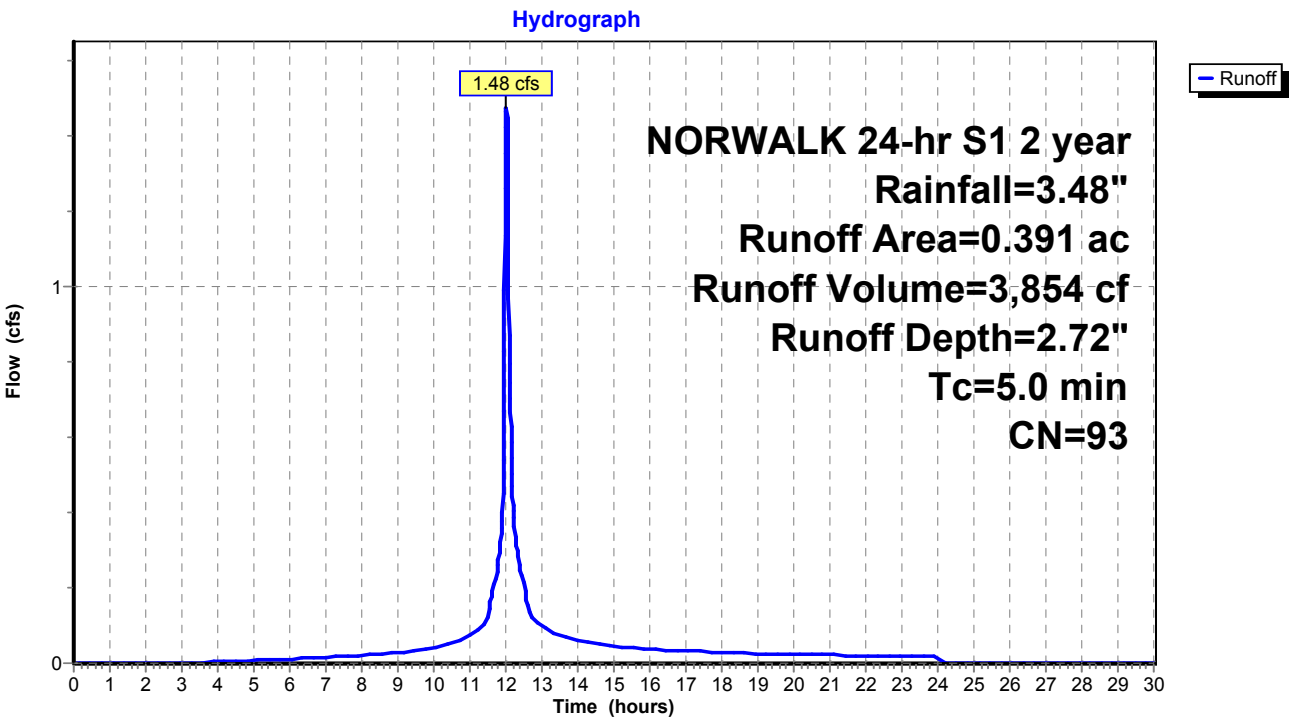
Runoff = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf, Depth= 2.72"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 52S: Area 1

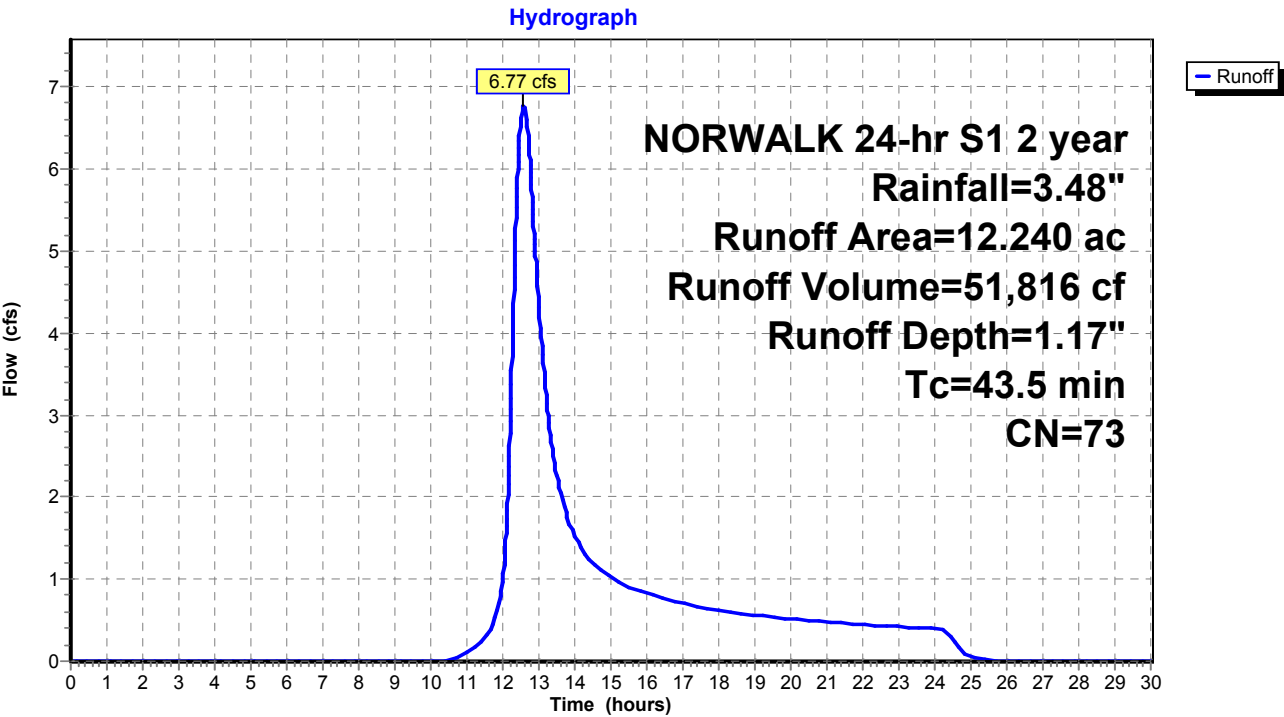
Runoff = 6.77 cfs @ 12.57 hrs, Volume= 51,816 cf, Depth= 1.17"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



Summary for Subcatchment 53S: Area 2

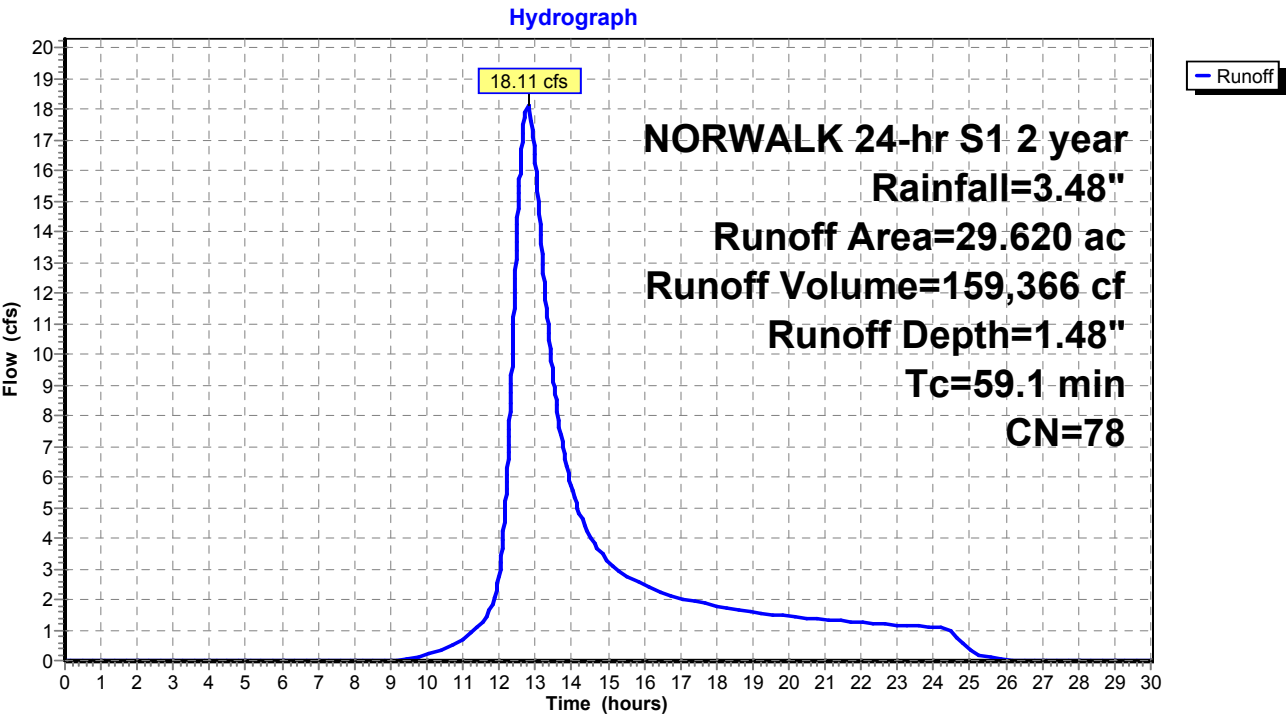
Runoff = 18.11 cfs @ 12.80 hrs, Volume= 159,366 cf, Depth= 1.48"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



Summary for Subcatchment 54S: Area 3

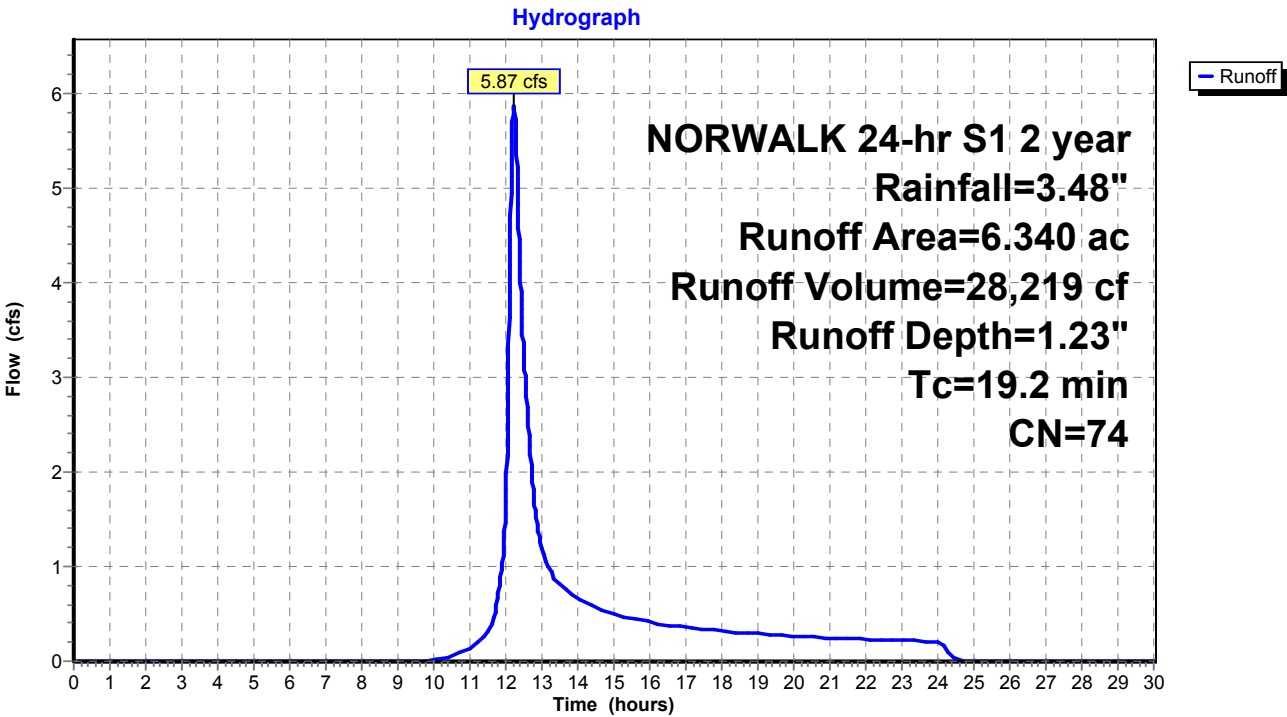
Runoff = 5.87 cfs @ 12.23 hrs, Volume= 28,219 cf, Depth= 1.23"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Summary for Subcatchment 56S: Area 35

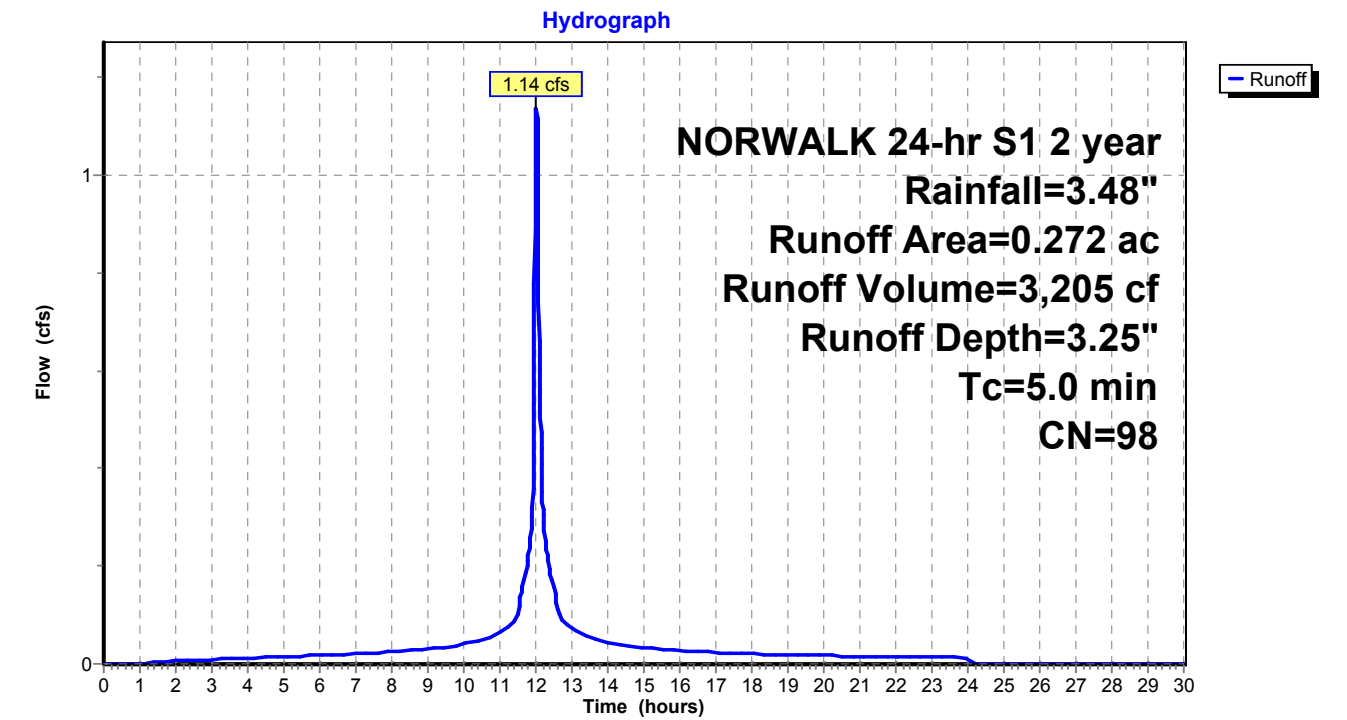
Runoff = 1.14 cfs @ 12.03 hrs, Volume= 3,205 cf, Depth= 3.25"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 60S: Area 37

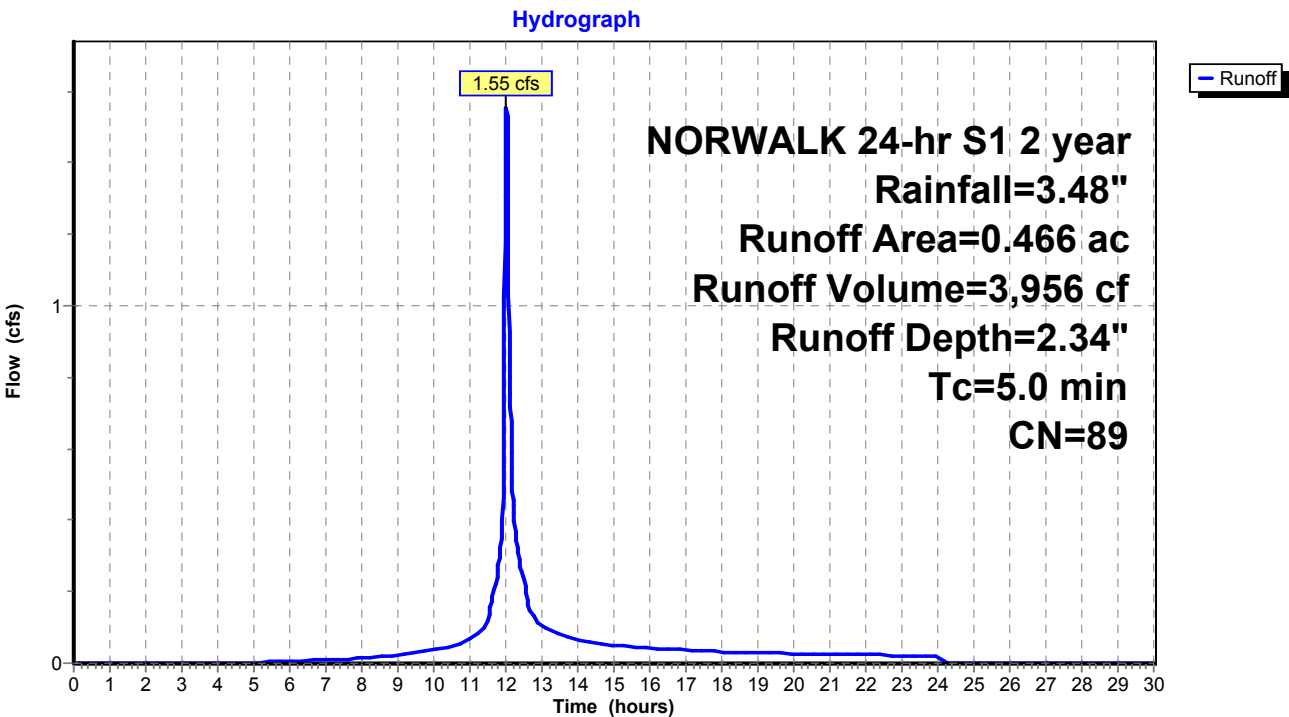
Runoff = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf, Depth= 2.34"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 62S: Area 38

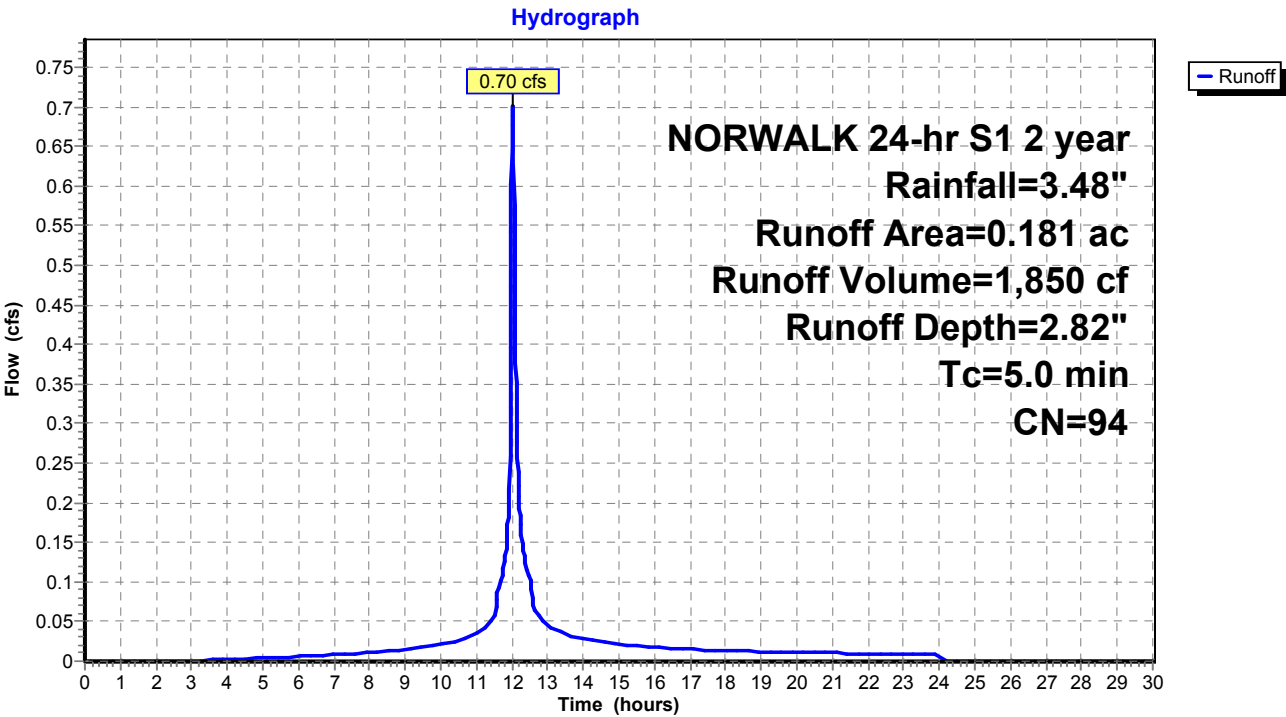
Runoff = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf, Depth= 2.82"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment 65S: Area 41

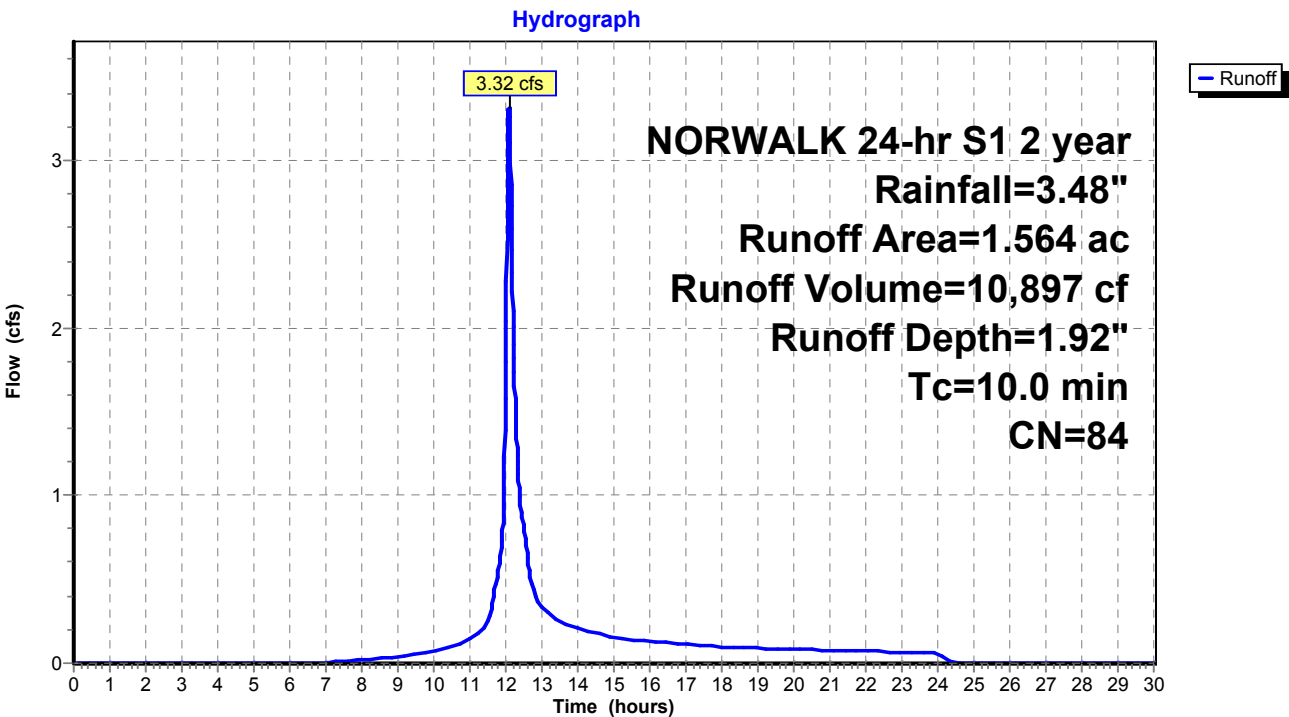
Runoff = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf, Depth= 1.92"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



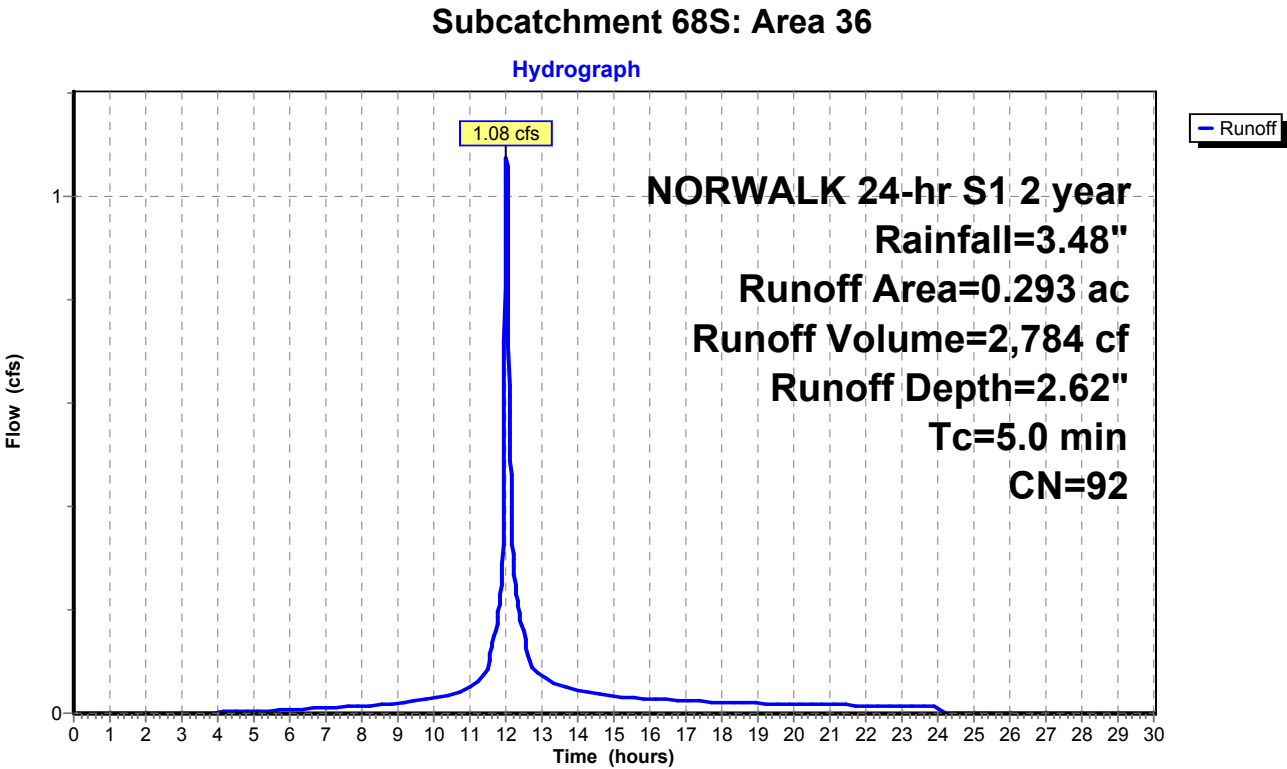
Summary for Subcatchment 68S: Area 36

Runoff = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf, Depth= 2.62"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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



Summary for Subcatchment 69S: Area 40

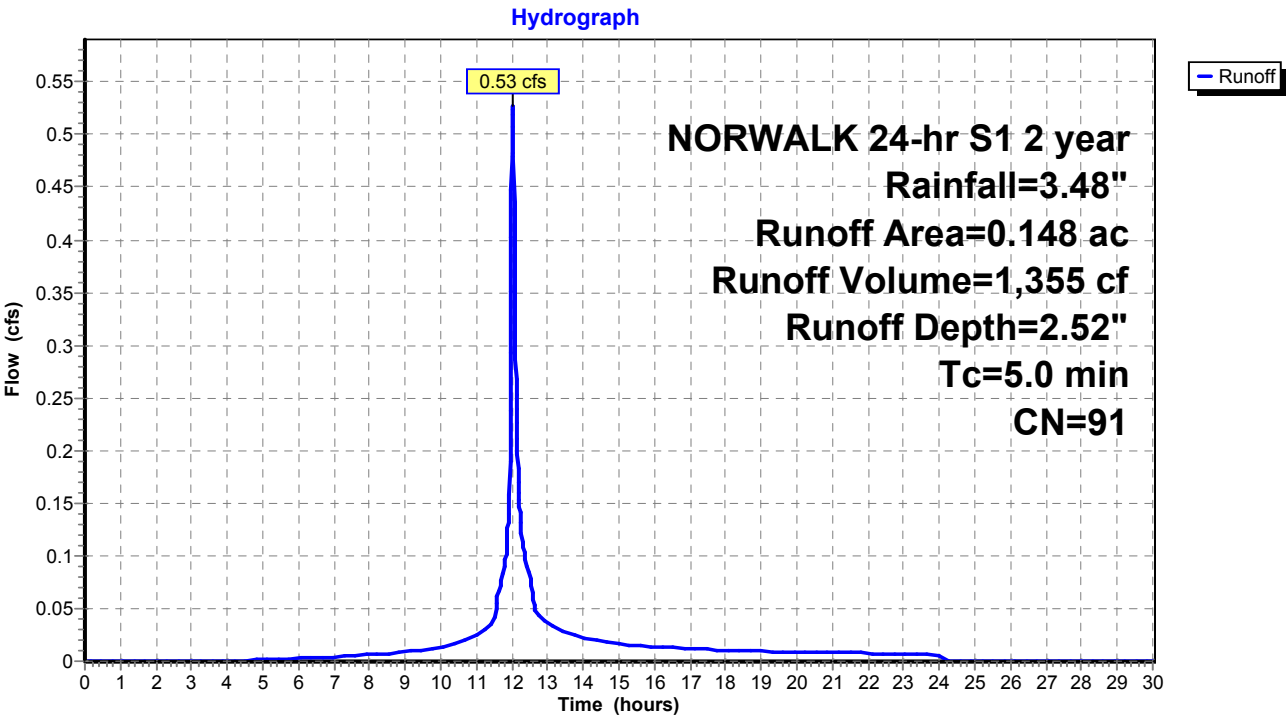
Runoff = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf, Depth= 2.52"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Summary for Subcatchment 71S: Area 34

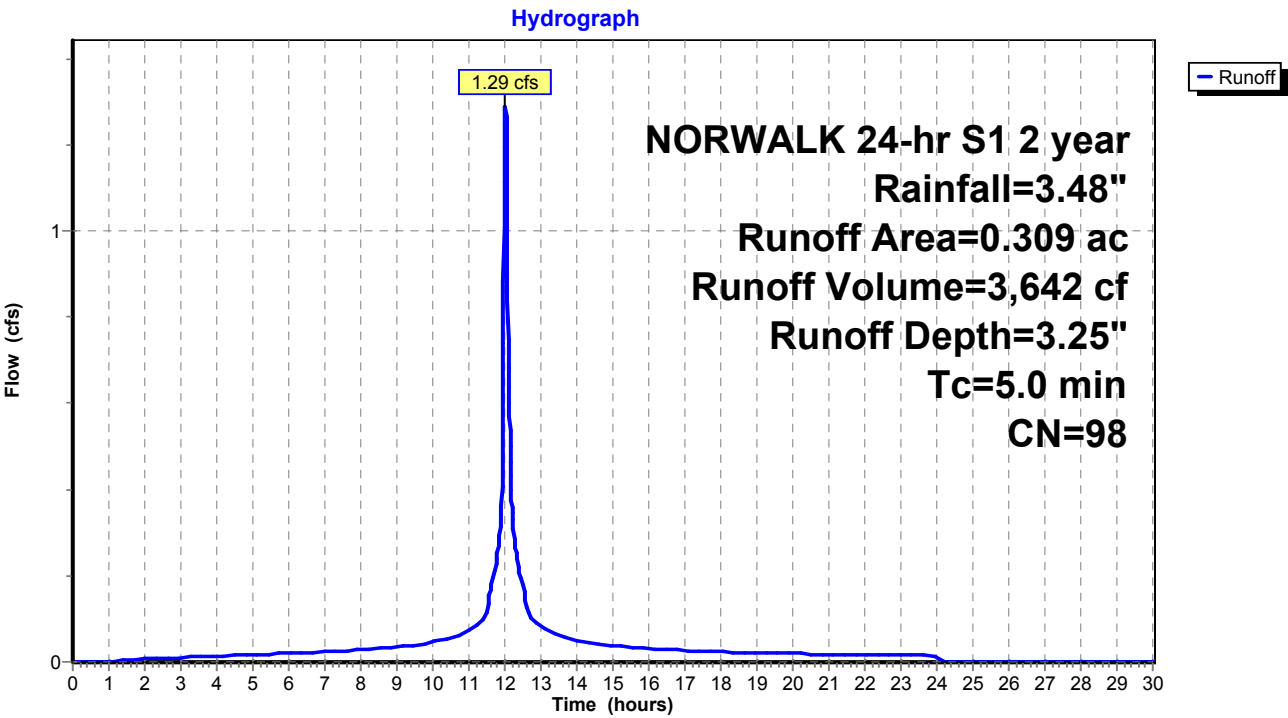
Runoff = 1.29 cfs @ 12.03 hrs, Volume= 3,642 cf, Depth= 3.25"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Summary for Subcatchment 75S: Area 32

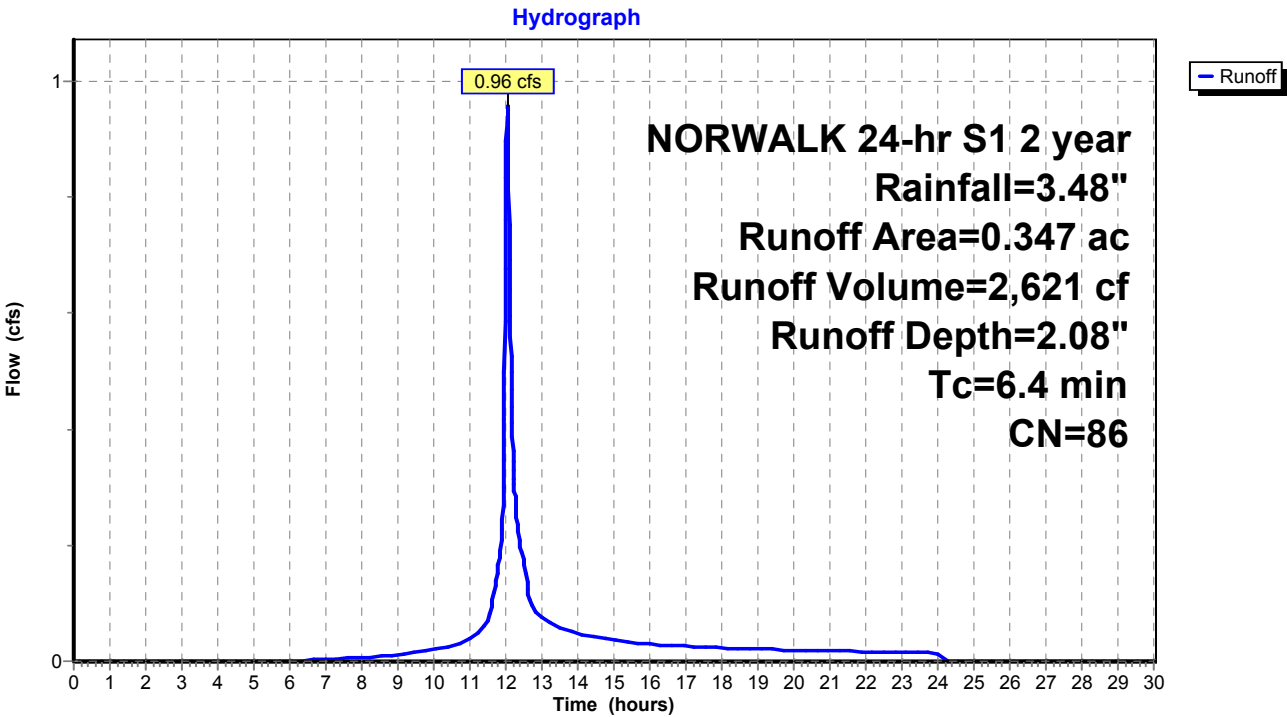
Runoff = 0.96 cfs @ 12.04 hrs, Volume= 2,621 cf, Depth= 2.08"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



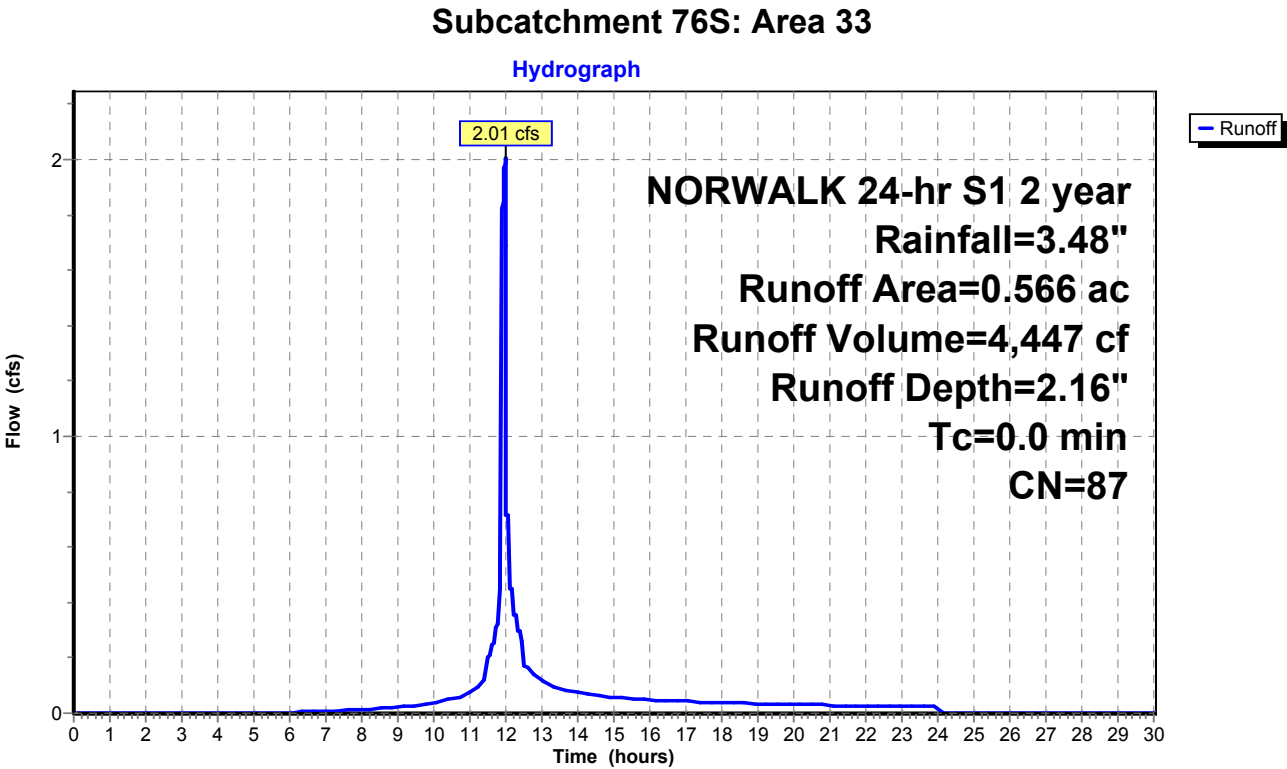
Summary for Subcatchment 76S: Area 33

Runoff = 2.01 cfs @ 11.99 hrs, Volume= 4,447 cf, Depth= 2.16"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7



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Summary for Subcatchment 78S: Area 39

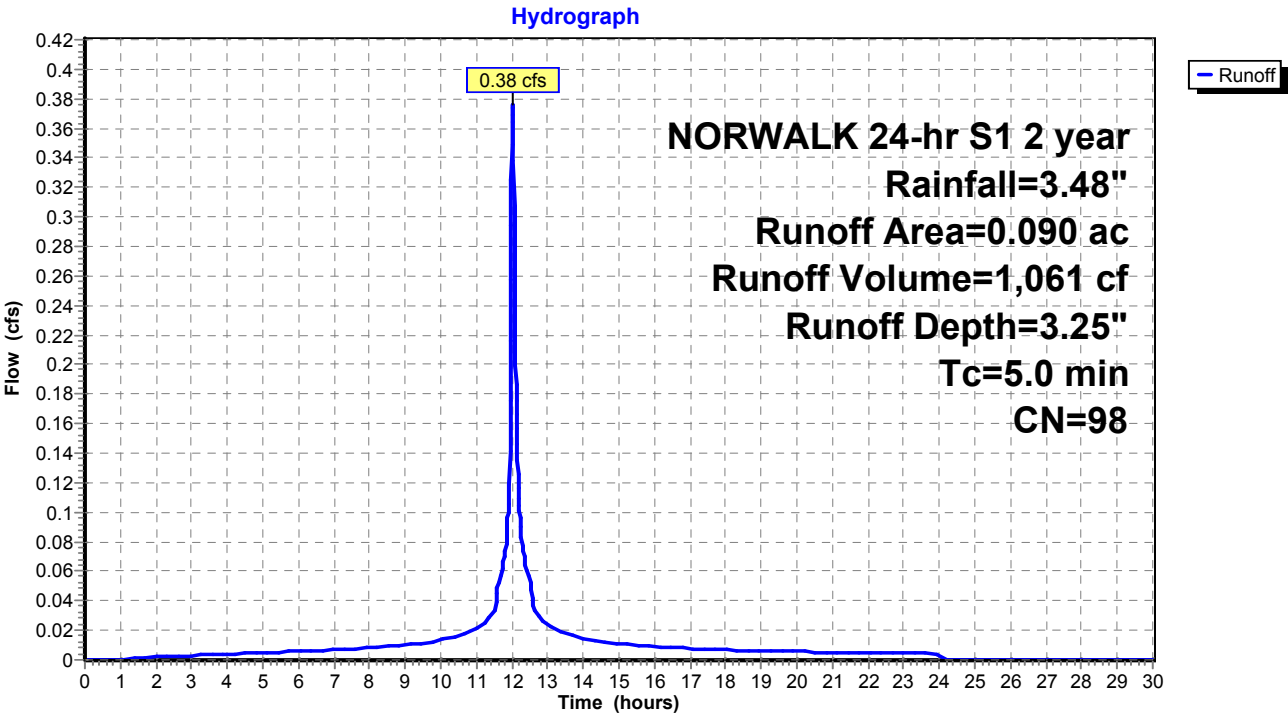
Runoff = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf, Depth= 3.25"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Summary for Subcatchment 84S: Area 31

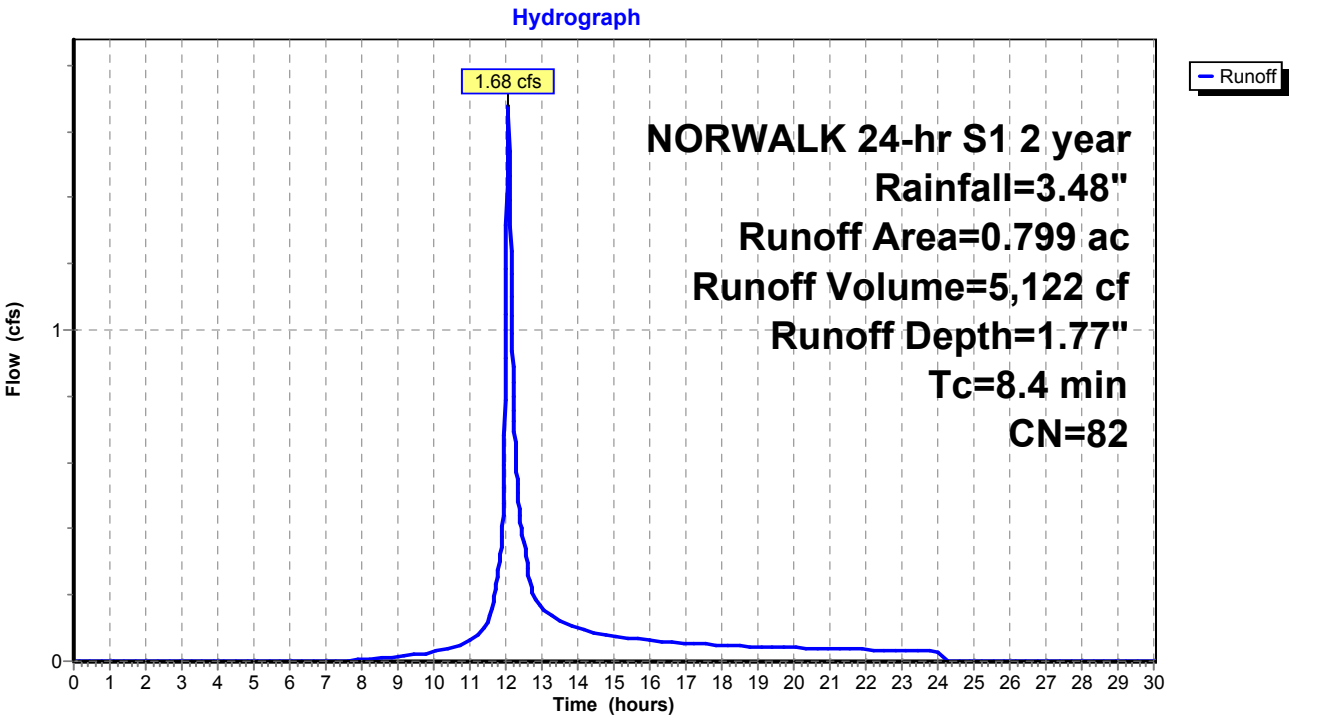
Runoff = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf, Depth= 1.77"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Summary for Subcatchment 100S: Area 16B

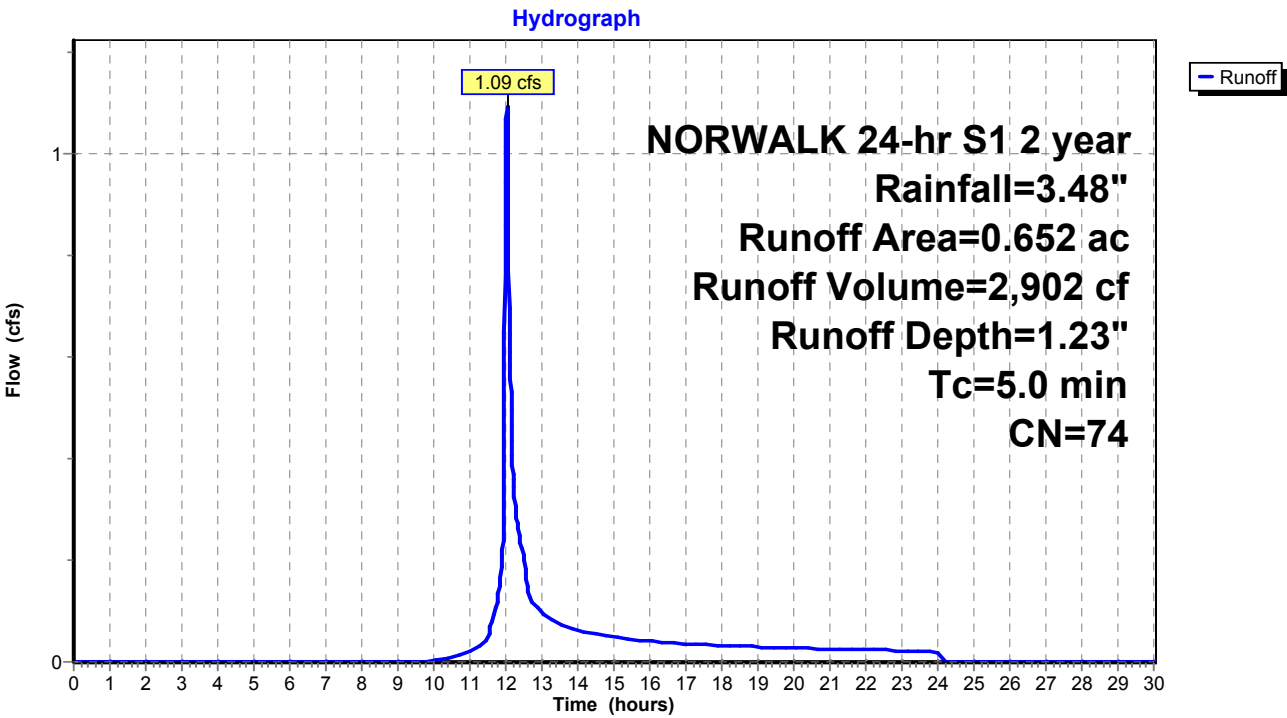
Runoff = 1.09 cfs @ 12.03 hrs, Volume= 2,902 cf, Depth= 1.23"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Summary for Subcatchment 105S: Area 18

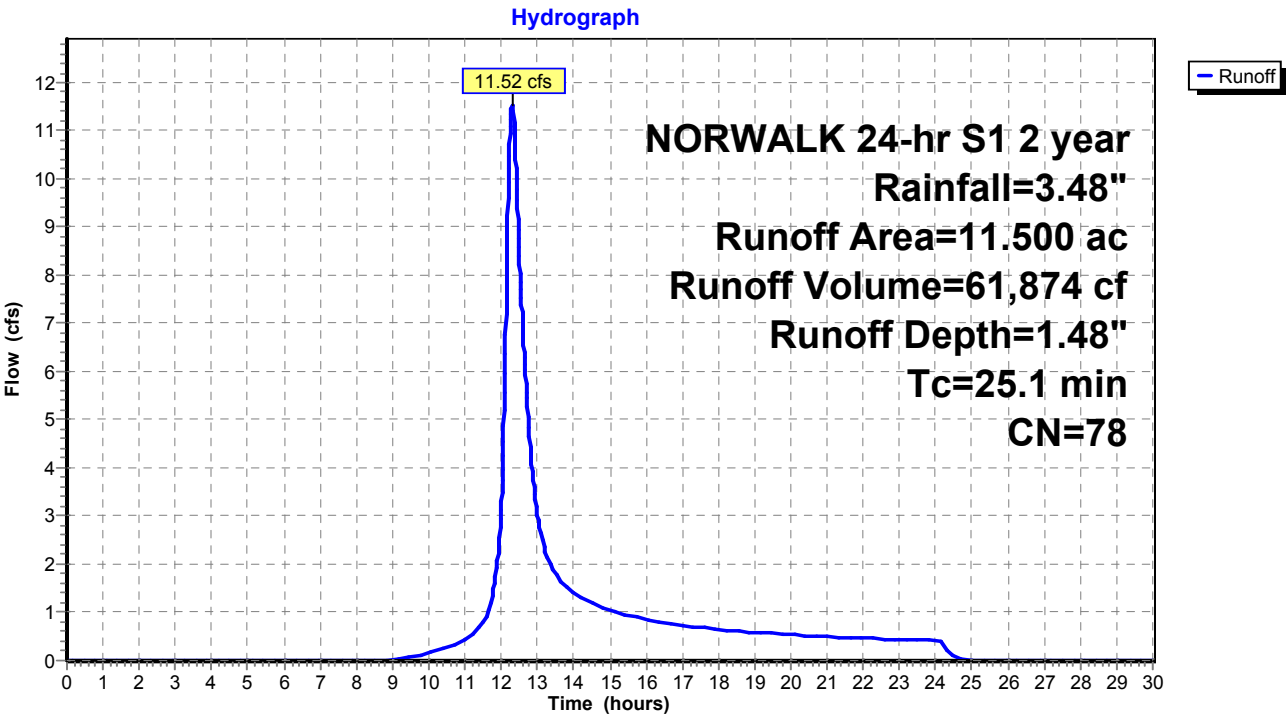
Runoff = 11.52 cfs @ 12.30 hrs, Volume= 61,874 cf, Depth= 1.48"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Subcatchment BLDG: EX-BLDG

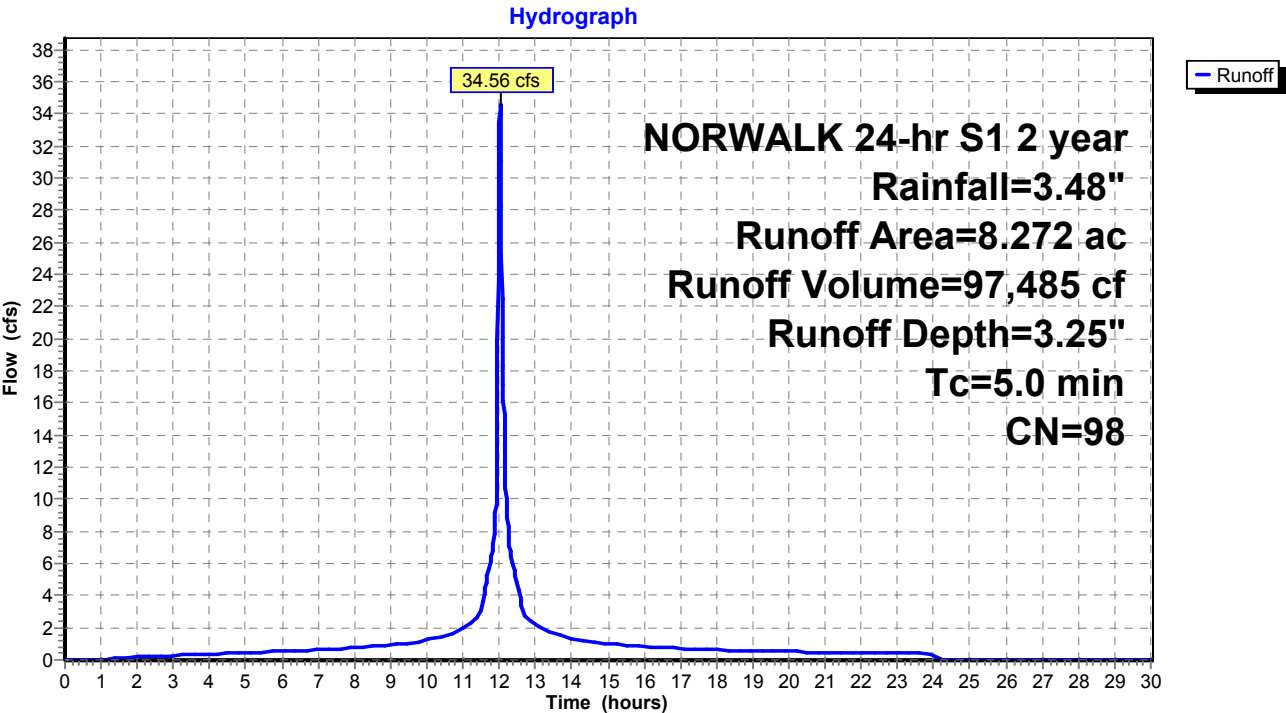
Runoff = 34.56 cfs @ 12.03 hrs, Volume= 97,485 cf, Depth= 3.25"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 2 year Rainfall=3.48"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 1.49" for 2 year event
Inflow = 77.18 cfs @ 12.35 hrs, Volume= 816,760 cf
Outflow = 77.18 cfs @ 12.35 hrs, Volume= 816,760 cf, Atten= 0%, Lag= 0.0 min
Primary = 28.26 cfs @ 12.35 hrs, Volume= 597,482 cf
Secondary = 48.92 cfs @ 12.35 hrs, Volume= 219,278 cf
Routed to Pond 24P : RR Culvert 3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 13.38' @ 12.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 ' / Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

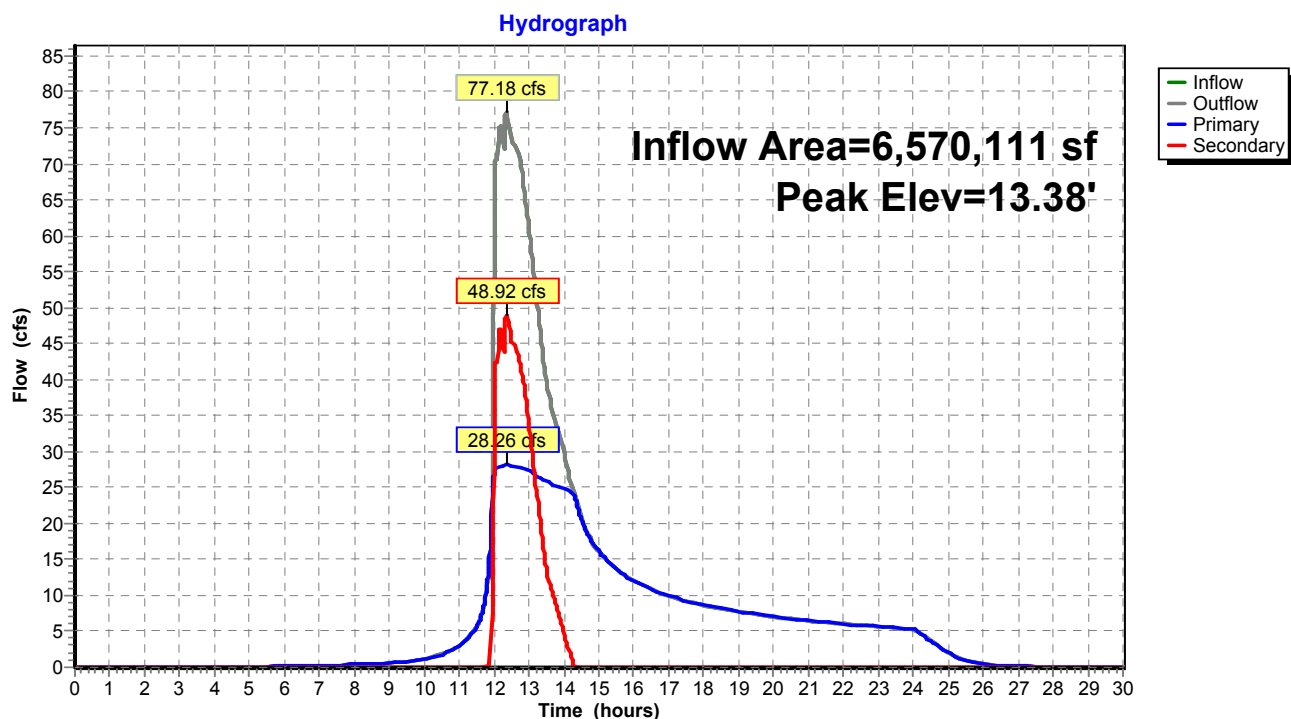
Primary OutFlow Max=28.26 cfs @ 12.35 hrs HW=13.38' (Free Discharge)

↑**2=Culvert** (Barrel Controls 28.26 cfs @ 4.86 fps)

Secondary OutFlow Max=48.68 cfs @ 12.35 hrs HW=13.38' (Free Discharge)

↑**1=Custom Weir/Orifice** (Weir Controls 48.68 cfs @ 2.56 fps)

Pond 1P: RR Culvert 2



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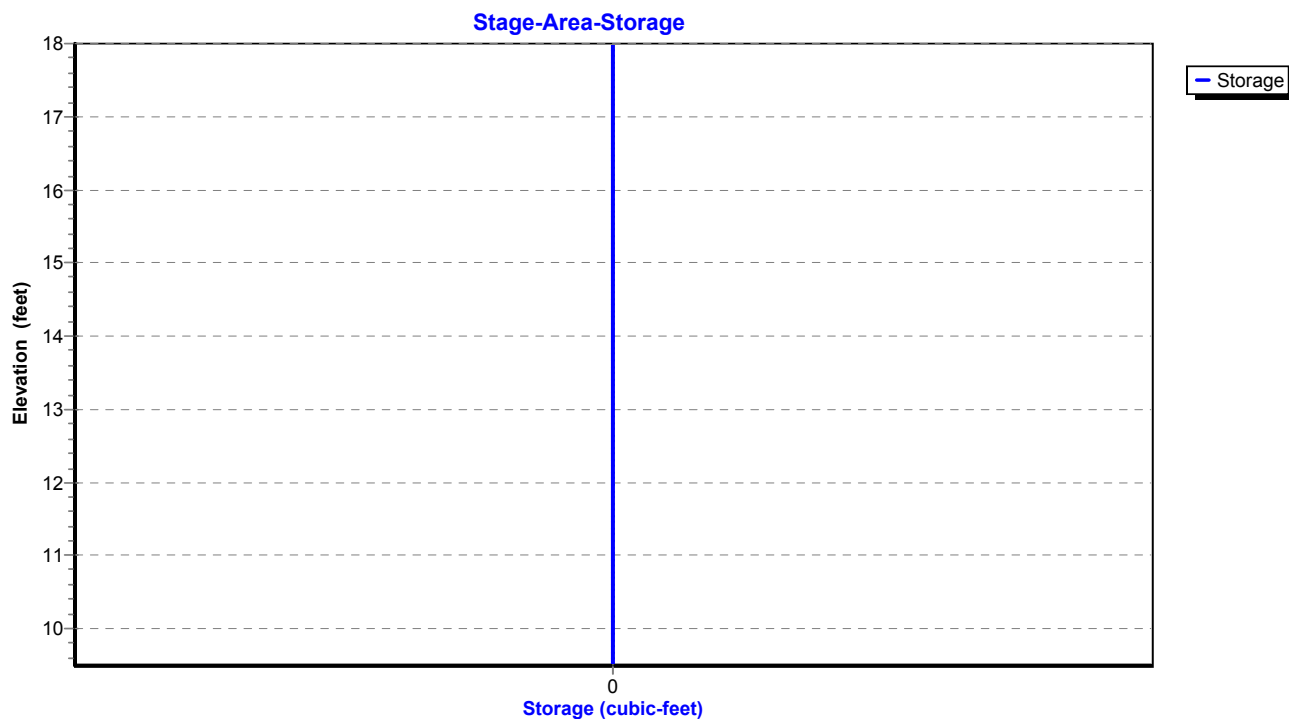
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 1P: RR Culvert 2



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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.67% Impervious, Inflow Depth = 2.23" for 2 year event
Inflow = 81.46 cfs @ 12.04 hrs, Volume= 633,951 cf
Outflow = 81.46 cfs @ 12.04 hrs, Volume= 633,951 cf, Atten= 0%, Lag= 0.0 min
Primary = 40.50 cfs @ 12.04 hrs, Volume= 541,688 cf
Secondary = 40.95 cfs @ 12.04 hrs, Volume= 92,263 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 28.39' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

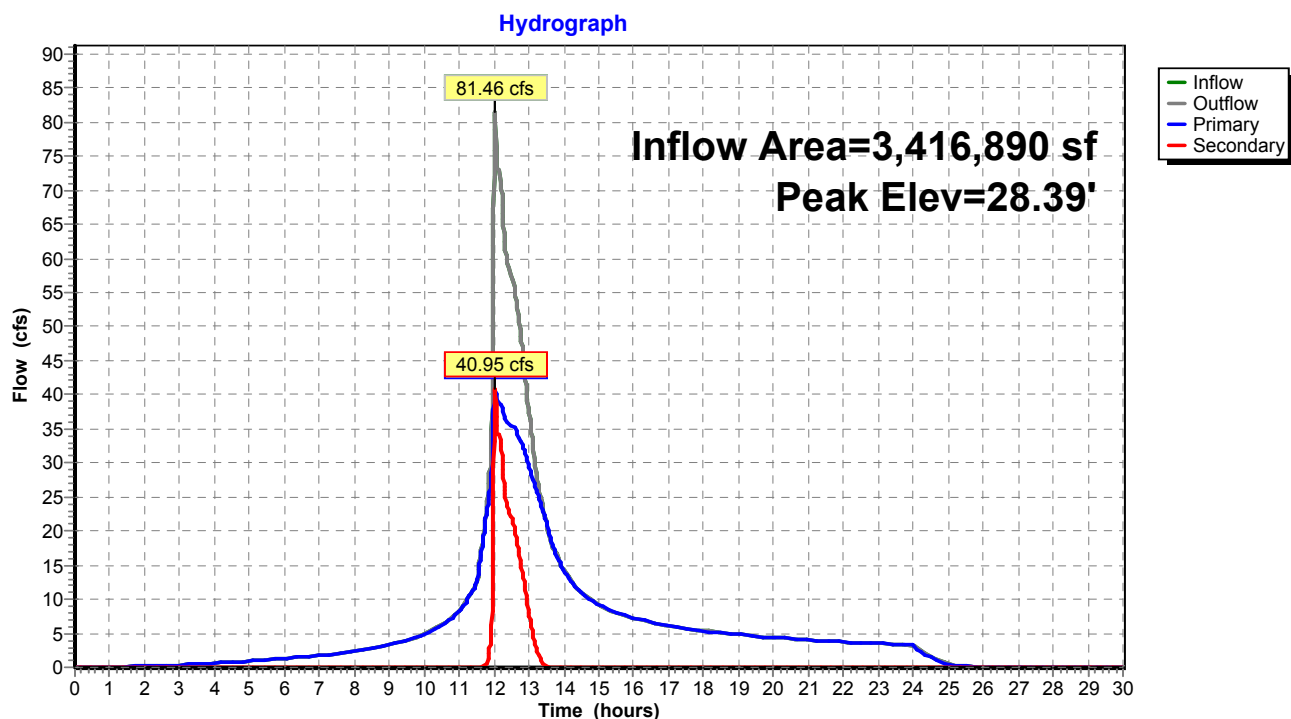
Primary OutFlow Max=40.48 cfs @ 12.04 hrs HW=28.39' (Free Discharge)

↑1=Culvert (Inlet Controls 40.48 cfs @ 7.03 fps)

Secondary OutFlow Max=40.86 cfs @ 12.04 hrs HW=28.39' (Free Discharge)

↑2=Custom Weir/Orifice (Weir Controls 40.86 cfs @ 4.90 fps)

Pond 2P: RR Culvert 1



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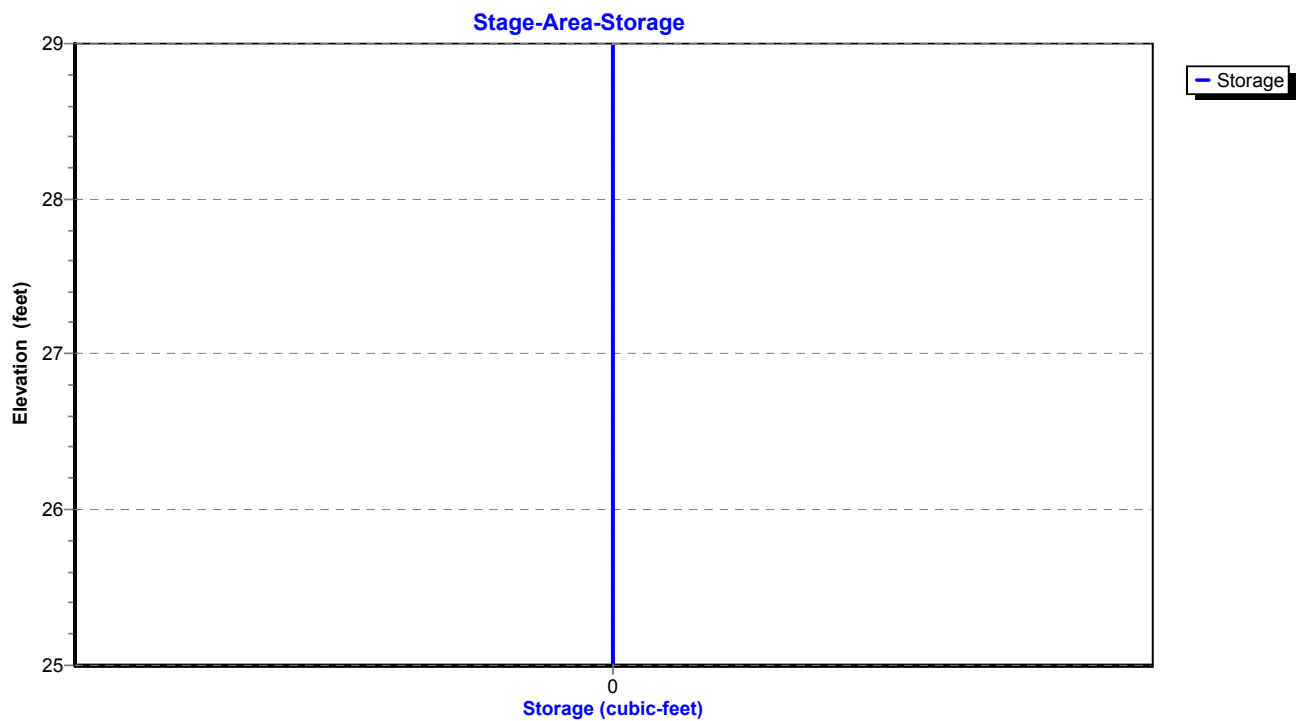
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Pond 2P: RR Culvert 1



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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 1.85" for 2 year event
Inflow = 14.48 cfs @ 12.03 hrs, Volume= 40,587 cf
Outflow = 1.64 cfs @ 12.68 hrs, Volume= 24,876 cf, Atten= 89%, Lag= 38.8 min
Primary = 1.64 cfs @ 12.68 hrs, Volume= 24,876 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 47.80' @ 12.68 hrs Surf.Area= 8,253 sf Storage= 21,479 cf

Plug-Flow detention time= 303.4 min calculated for 24,868 cf (61% of inflow)
Center-of-Mass det. time= 175.6 min (994.5 - 819.0)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.64 cfs @ 12.68 hrs HW=47.80' (Free Discharge)

1=Culvert (Passes 1.64 cfs of 14.87 cfs potential flow)
2=Orifice/Grate (Orifice Controls 1.64 cfs @ 3.05 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Proposed Conditions

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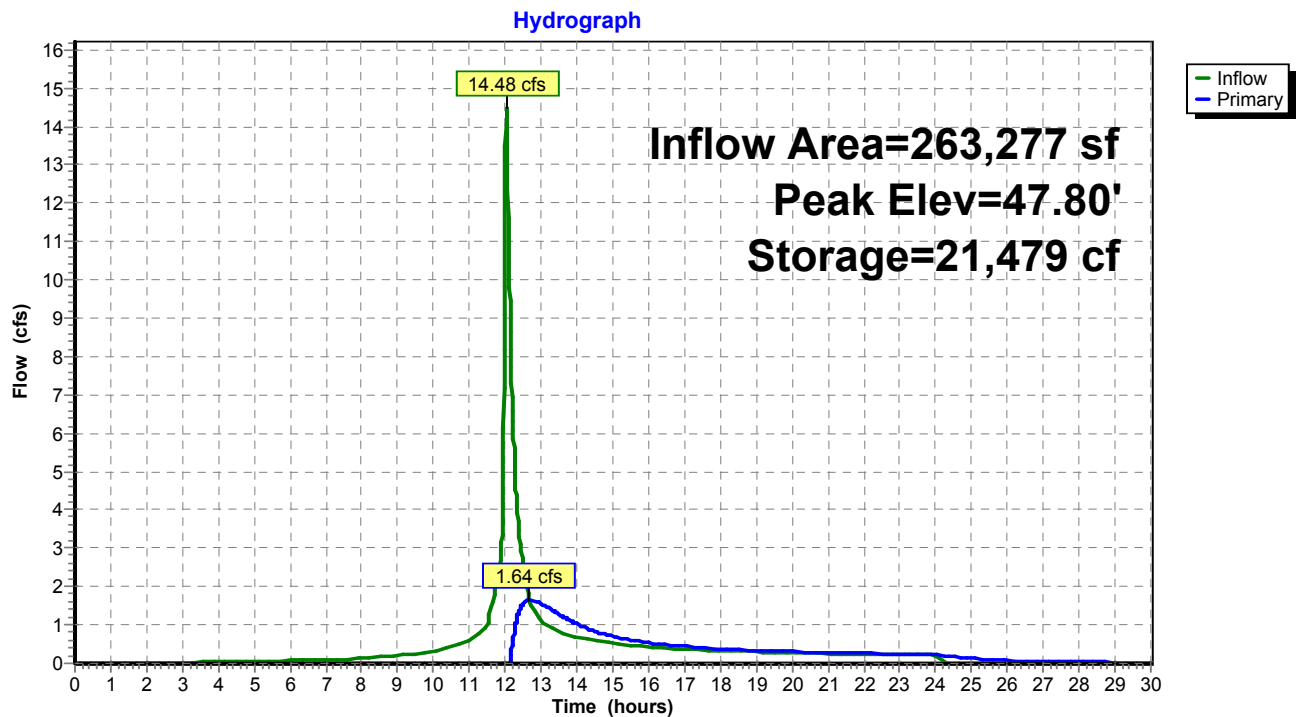
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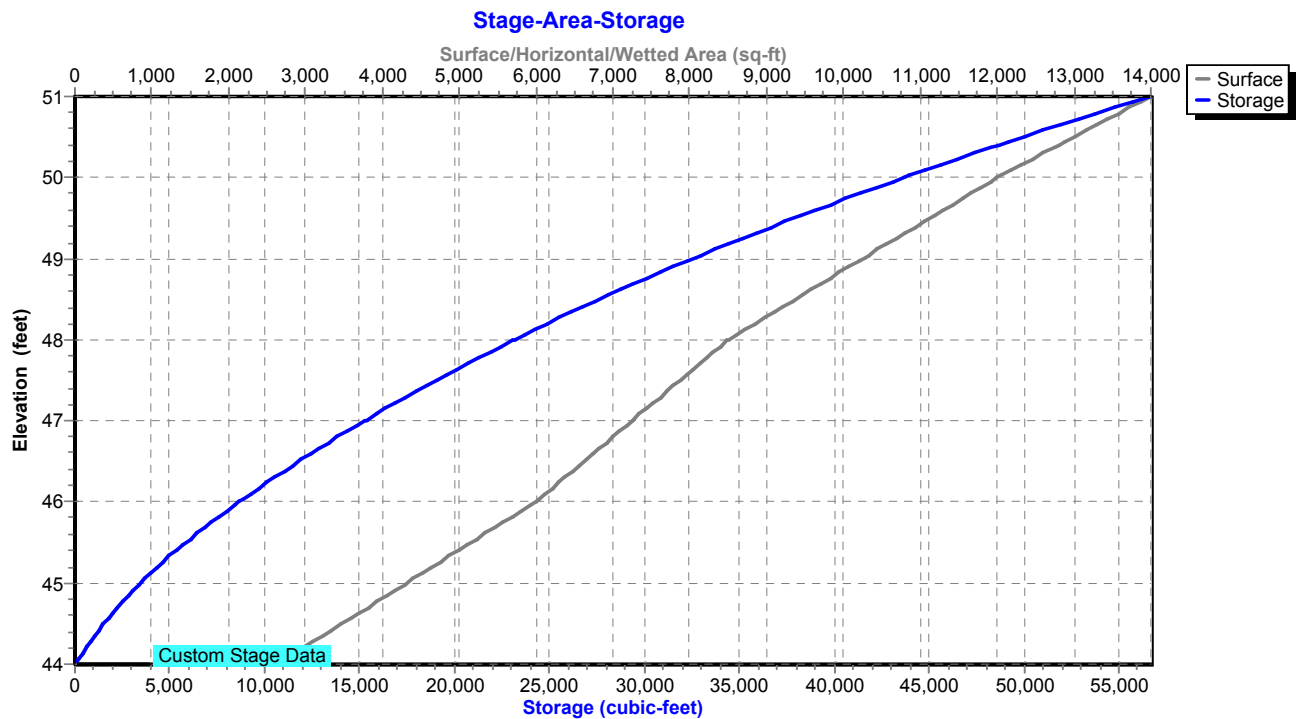
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 1.17" for 2 year event
 Inflow = 7.58 cfs @ 12.46 hrs, Volume= 52,578 cf
 Outflow = 7.30 cfs @ 12.56 hrs, Volume= 52,577 cf, Atten= 4%, Lag= 6.1 min
 Primary = 7.30 cfs @ 12.56 hrs, Volume= 52,577 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 79.24' @ 12.56 hrs Storage= 1,910 cf

Plug-Flow detention time= 7.6 min calculated for 52,577 cf (100% of inflow)

Center-of-Mass det. time= 7.6 min (922.0 - 914.4)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=7.30 cfs @ 12.56 hrs HW=79.24' (Free Discharge)↑**1=Culvert** (Inlet Controls 7.30 cfs @ 3.56 fps)

Proposed Conditions

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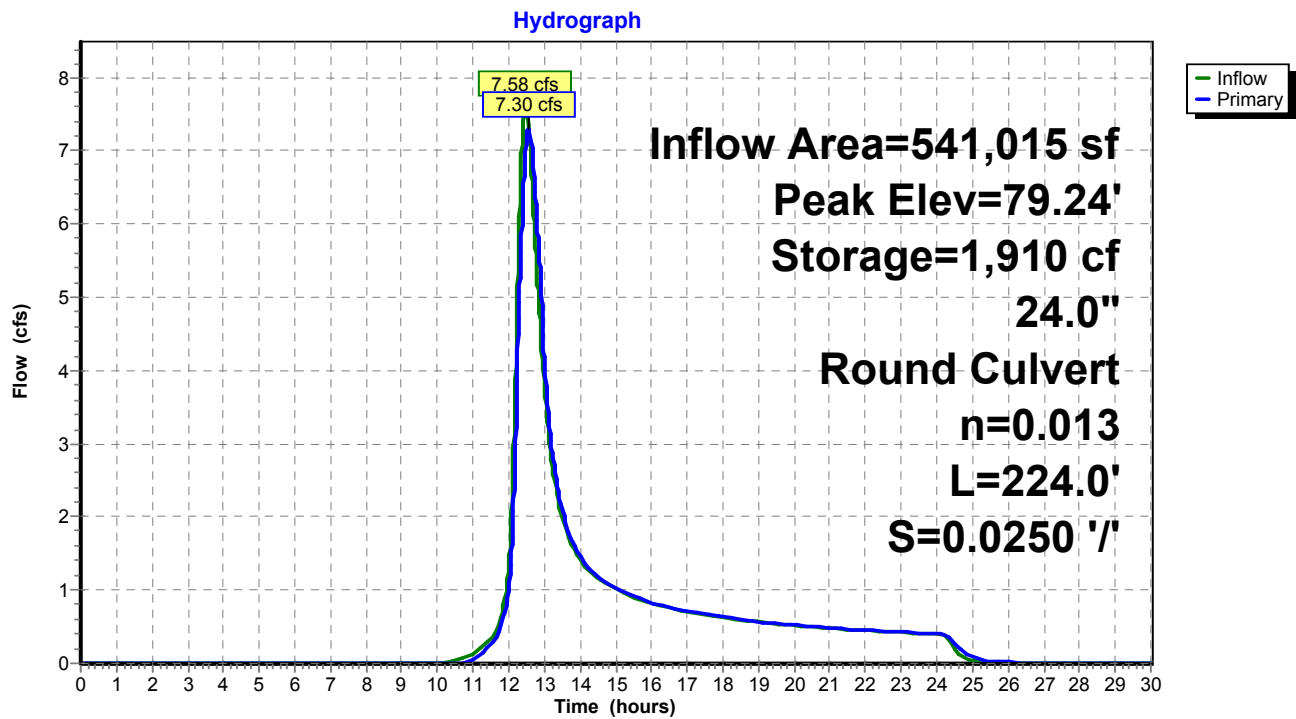
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NORWALK 24-hr S1 2 year Rainfall=3.48"

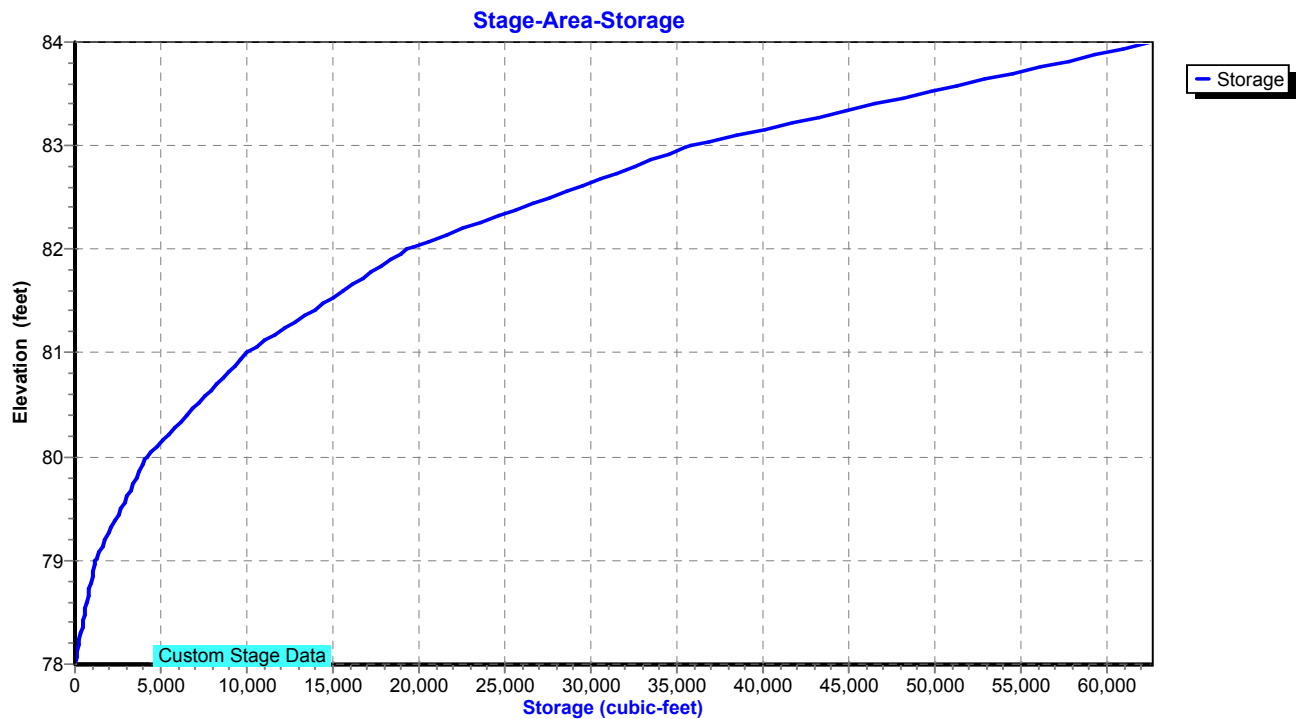
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Pond 5P: DET 5 Culvert



Pond 5P: DET 5 Culvert



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 1.77" for 2 year event
 Inflow = 13.40 cfs @ 12.70 hrs, Volume= 109,948 cf
 Outflow = 13.38 cfs @ 12.71 hrs, Volume= 109,948 cf, Atten= 0%, Lag= 0.7 min
 Primary = 13.38 cfs @ 12.71 hrs, Volume= 109,948 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 90.10' @ 12.71 hrs Storage= 212 cf

Plug-Flow detention time= 0.5 min calculated for 109,912 cf (100% of inflow)

Center-of-Mass det. time= 0.5 min (897.8 - 897.4)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=13.38 cfs @ 12.71 hrs HW=90.10' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 13.38 cfs @ 4.04 fps)

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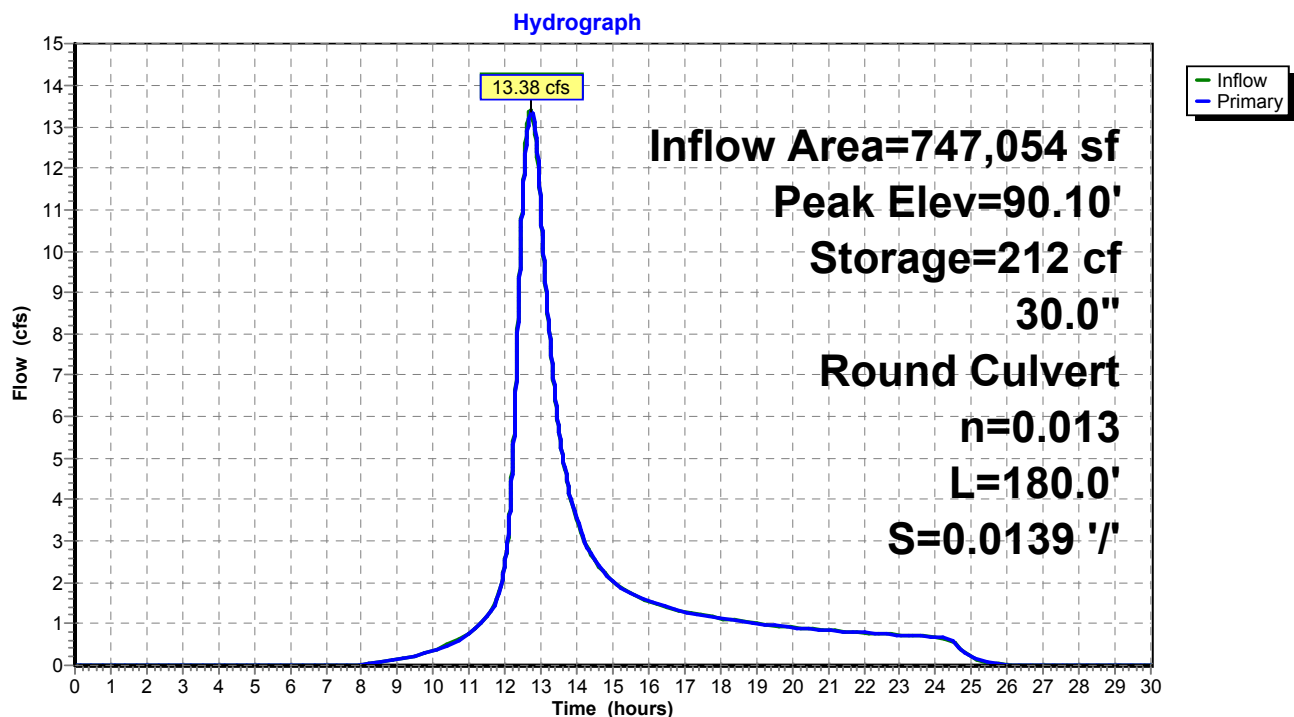
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NORWALK 24-hr S1 2 year Rainfall=3.48"

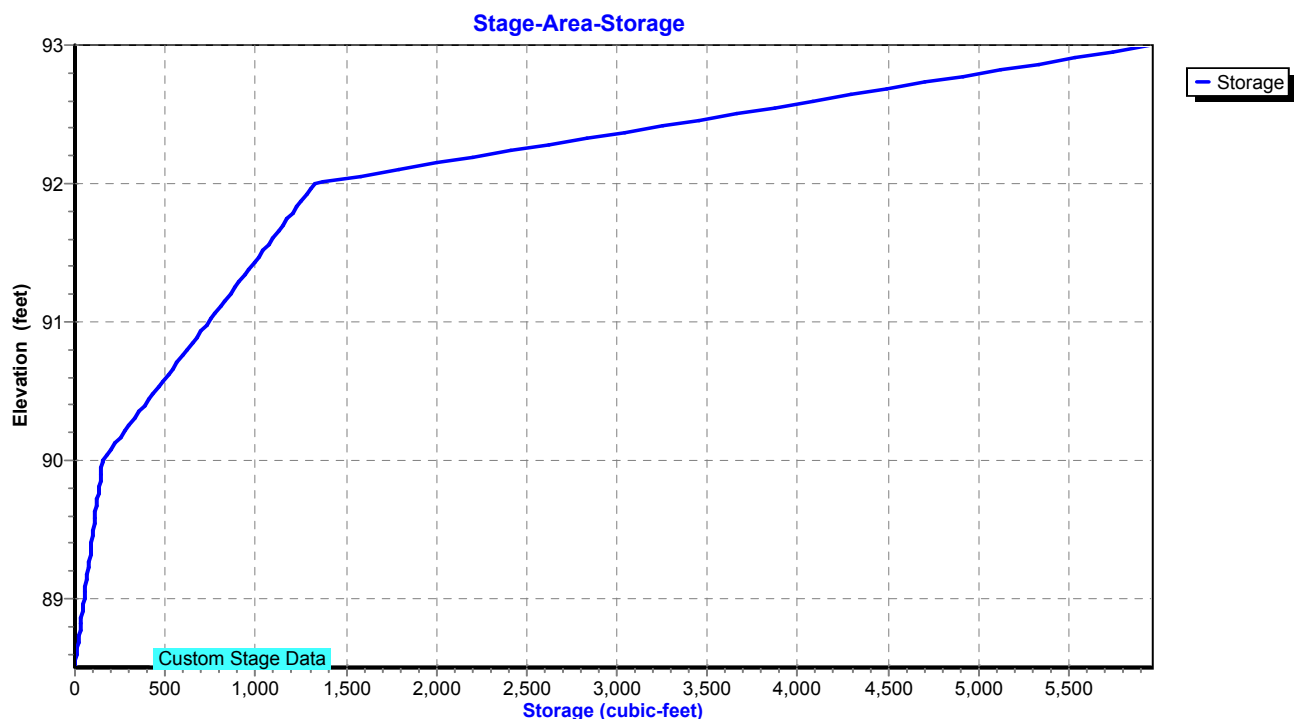
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 1.69" for 2 year event
 Inflow = 1.80 cfs @ 12.27 hrs, Volume= 9,031 cf
 Outflow = 1.35 cfs @ 12.43 hrs, Volume= 9,031 cf, Atten= 25%, Lag= 9.9 min
 Primary = 1.35 cfs @ 12.43 hrs, Volume= 9,031 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.08' @ 12.43 hrs Storage= 557 cf

Plug-Flow detention time= 4.8 min calculated for 9,031 cf (100% of inflow)

Center-of-Mass det. time= 4.8 min (876.3 - 871.5)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.35 cfs @ 12.43 hrs HW=93.08' (Free Discharge)↑ **1=Culvert** (Inlet Controls 1.35 cfs @ 2.43 fps)

Proposed Conditions

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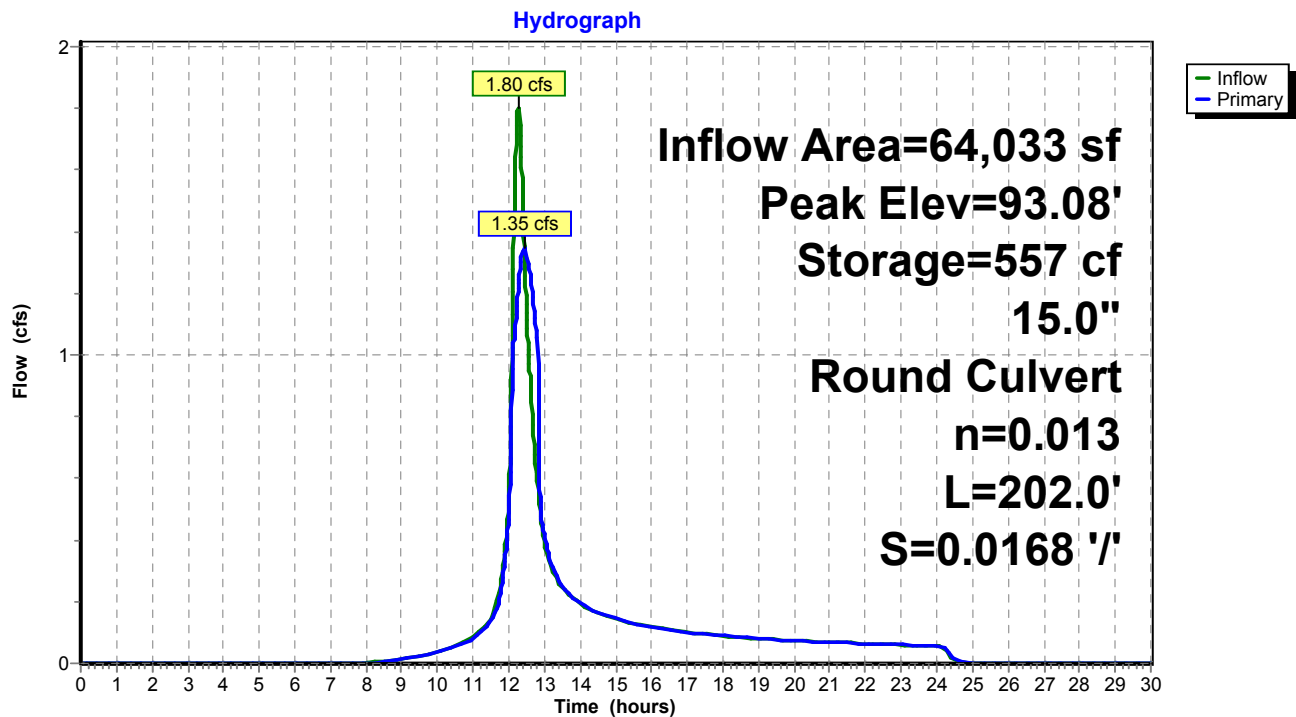
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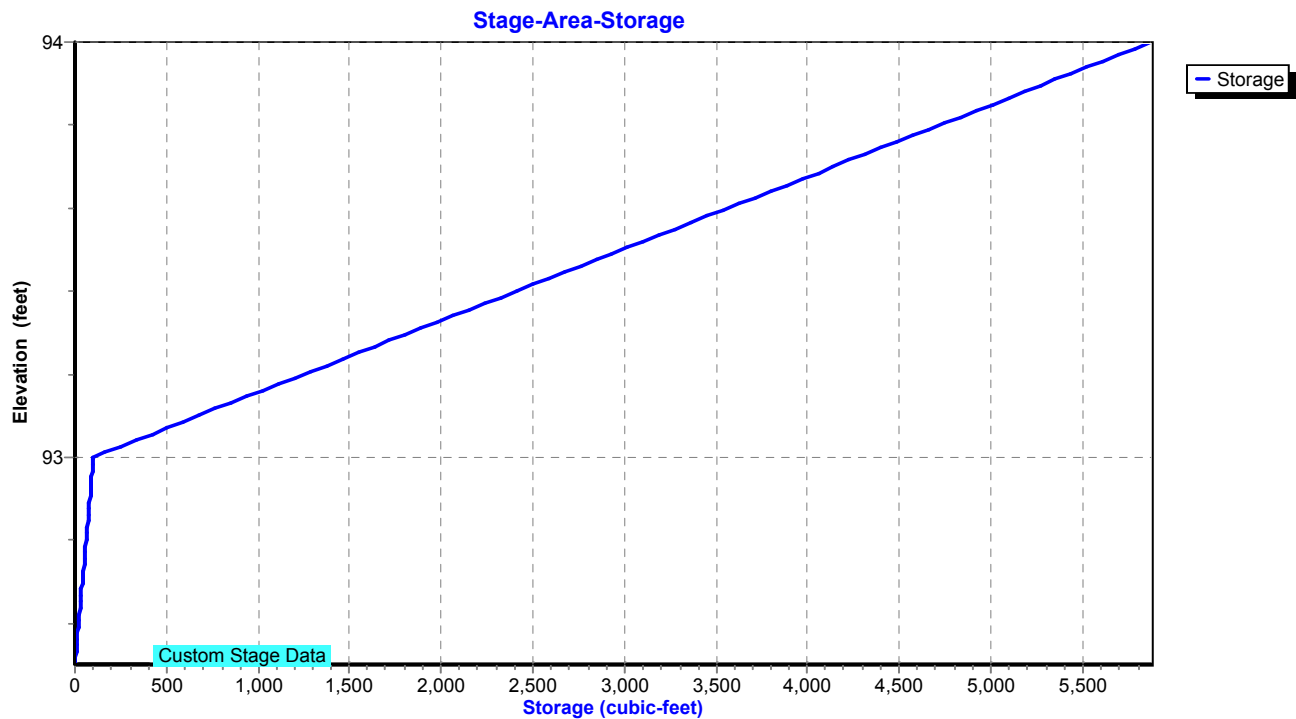
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 1.64" for 2 year event
 Inflow = 26.57 cfs @ 12.65 hrs, Volume= 216,885 cf
 Outflow = 26.57 cfs @ 12.65 hrs, Volume= 216,885 cf, Atten= 0%, Lag= 0.0 min
 Primary = 26.57 cfs @ 12.65 hrs, Volume= 216,885 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 70.37' @ 12.65 hrs Storage= 39 cf

Plug-Flow detention time= 0.1 min calculated for 216,885 cf (100% of inflow)
 Center-of-Mass det. time= 0.1 min (890.4 - 890.3)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=26.56 cfs @ 12.65 hrs HW=70.37' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 26.56 cfs @ 4.77 fps)

Proposed Conditions

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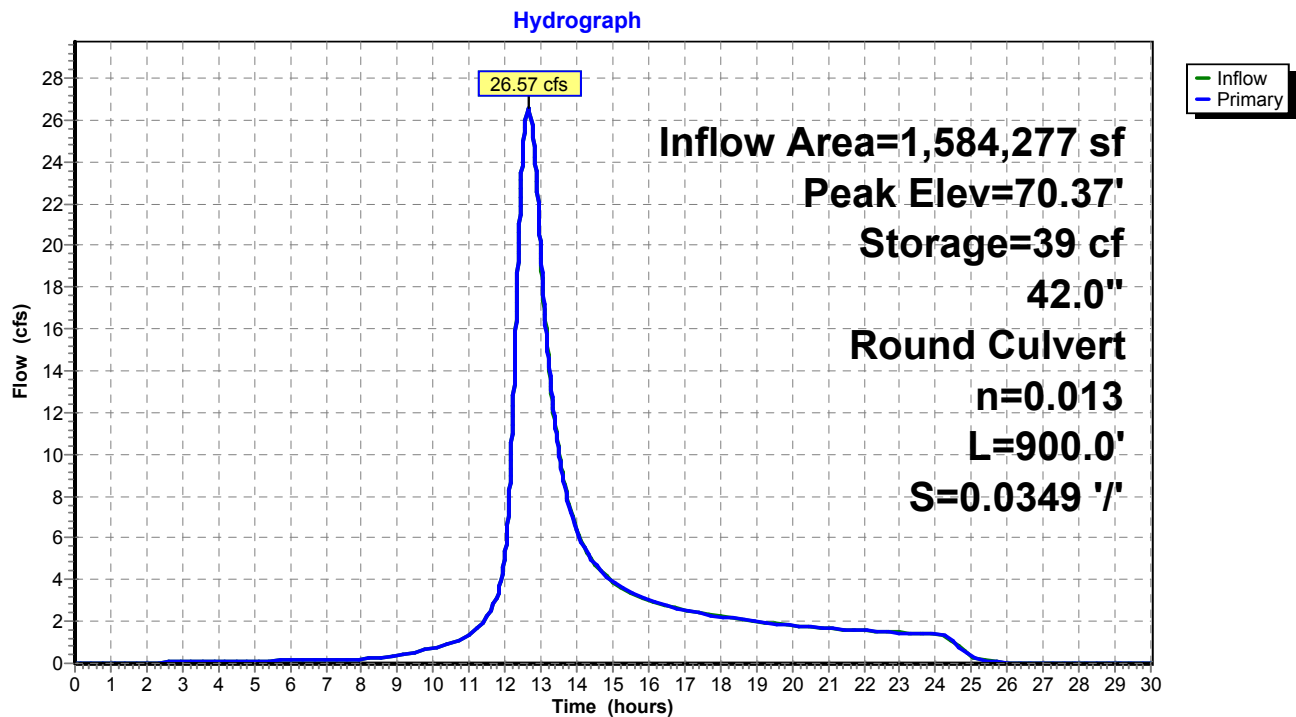
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NORWALK 24-hr S1 2 year Rainfall=3.48"

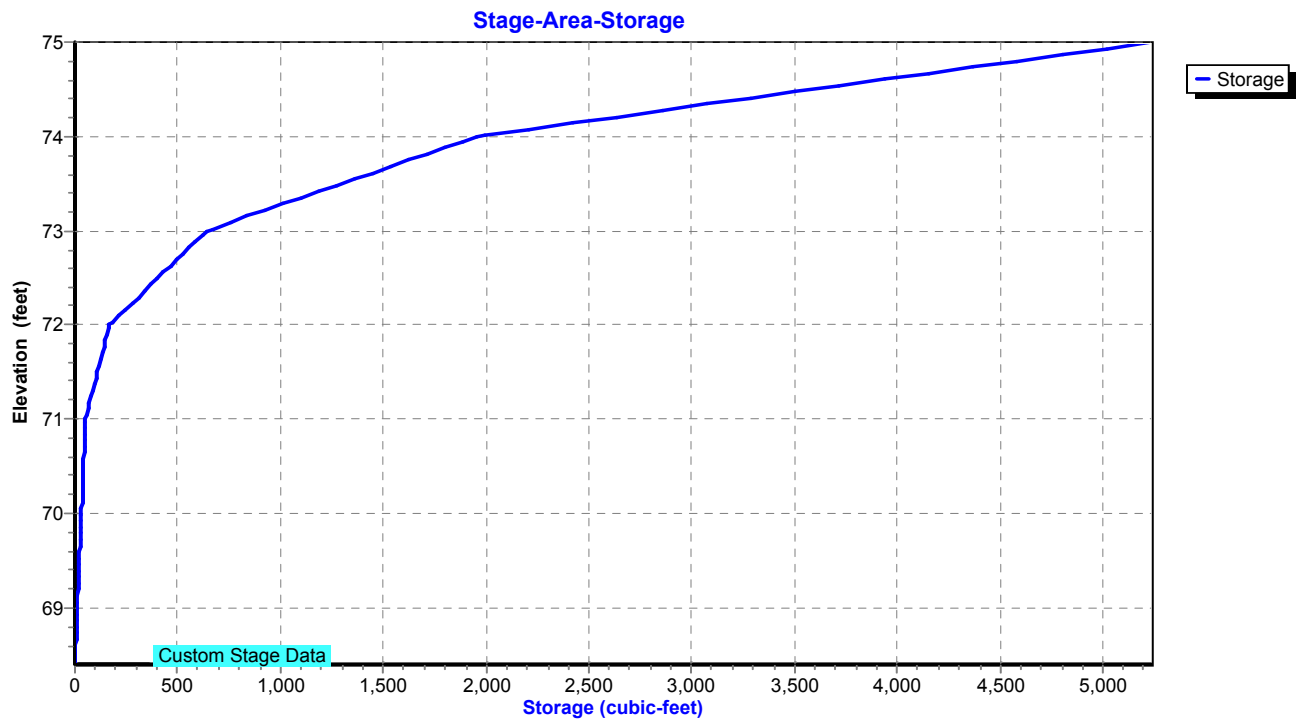
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 1.89" for 2 year event
Inflow = 13.83 cfs @ 12.03 hrs, Volume= 38,855 cf
Outflow = 13.83 cfs @ 12.03 hrs, Volume= 38,855 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.83 cfs @ 12.03 hrs, Volume= 38,855 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 49.28' @ 12.03 hrs

Flood Elev= 51.80'

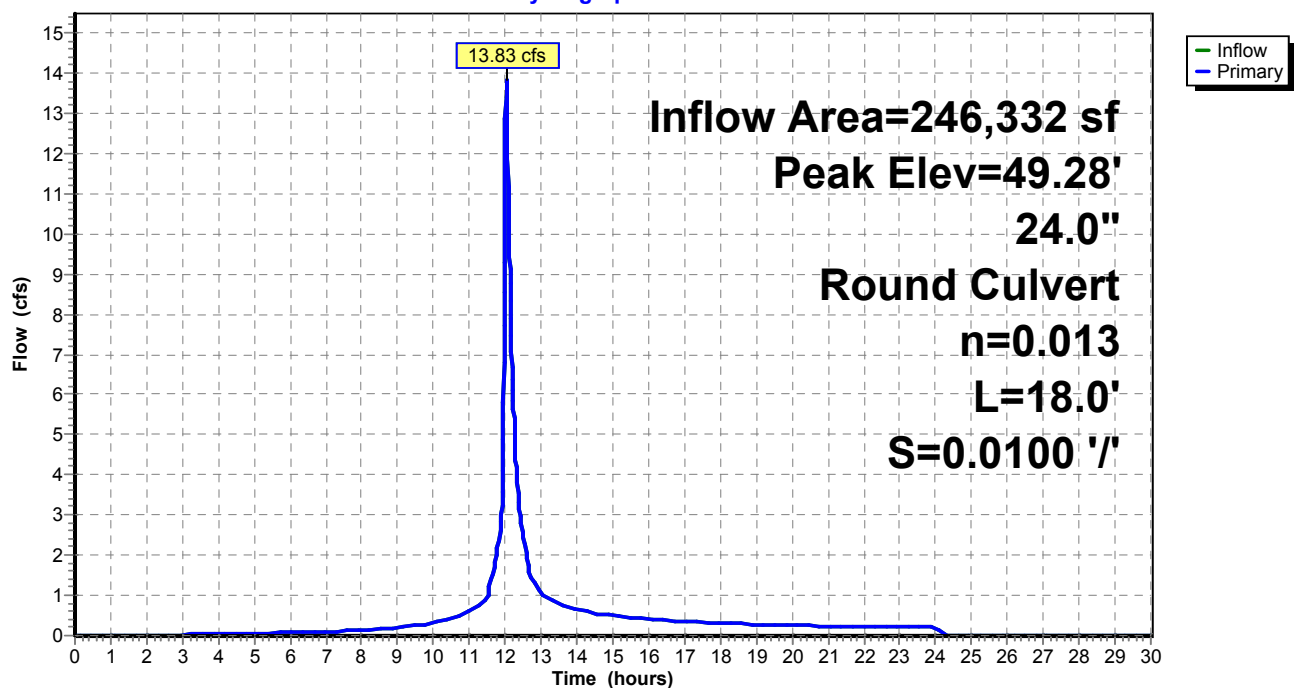
Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=13.79 cfs @ 12.03 hrs HW=49.28' (Free Discharge)

↑1=Culvert (Barrel Controls 13.79 cfs @ 5.21 fps)

Pond 9P: MH-K

Hydrograph



Proposed Conditions

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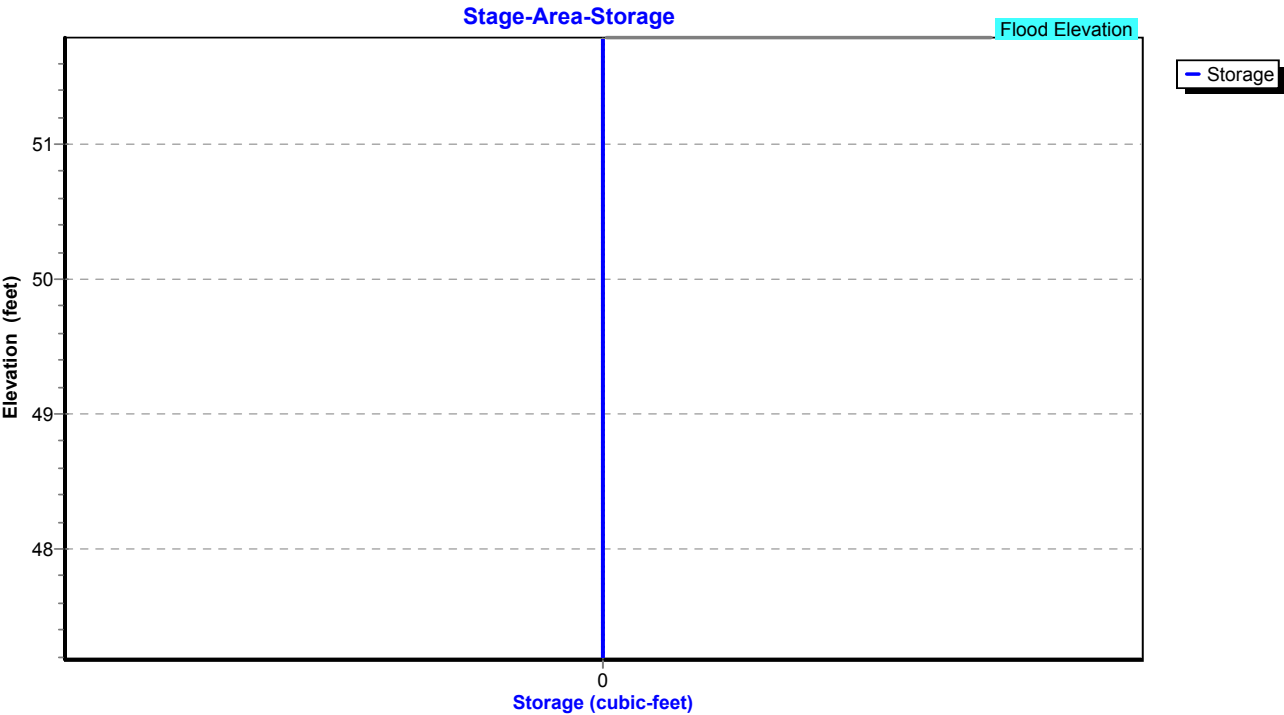
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Pond 9P: MH-K



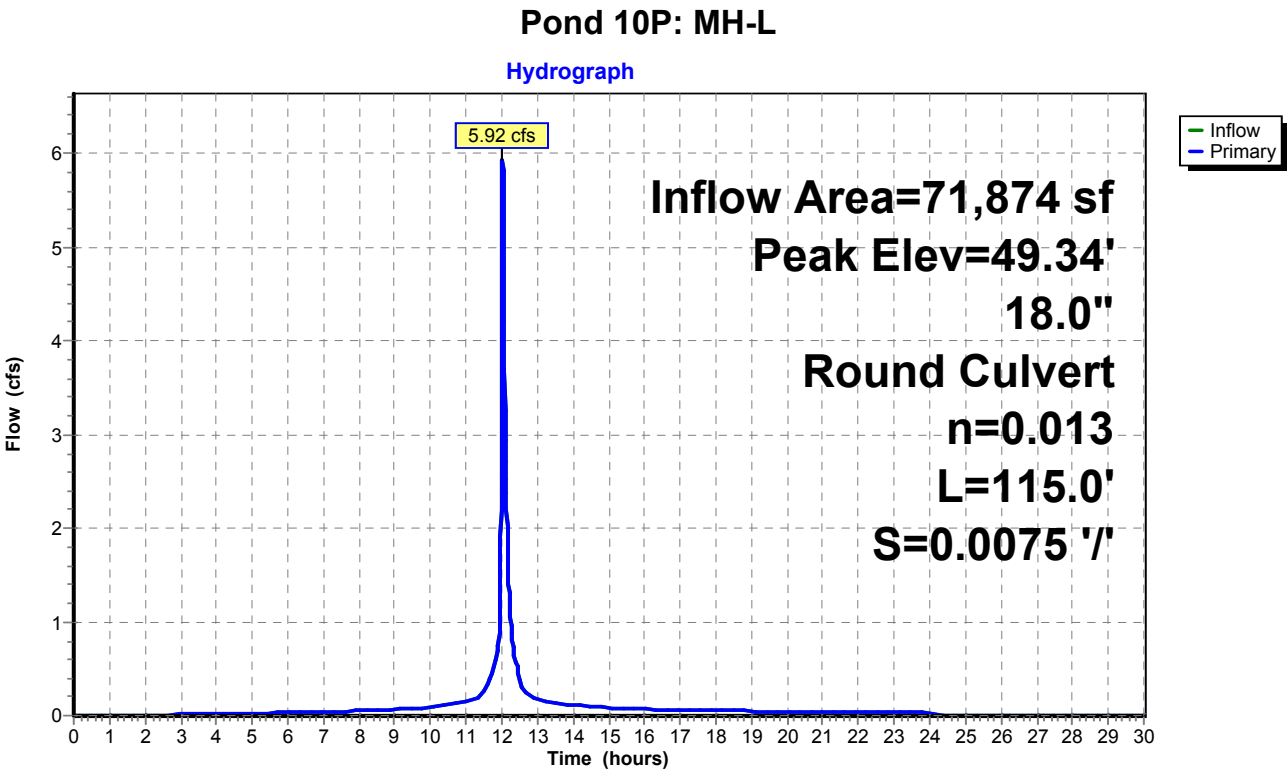
Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 1.50" for 2 year event
Inflow = 5.92 cfs @ 12.03 hrs, Volume= 9,011 cf
Outflow = 5.92 cfs @ 12.03 hrs, Volume= 9,011 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.92 cfs @ 12.03 hrs, Volume= 9,011 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.34' @ 12.03 hrs
Flood Elev= 53.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.90 cfs @ 12.03 hrs HW=49.34' (Free Discharge)
1=Culvert (Barrel Controls 5.90 cfs @ 4.85 fps)



Proposed Conditions

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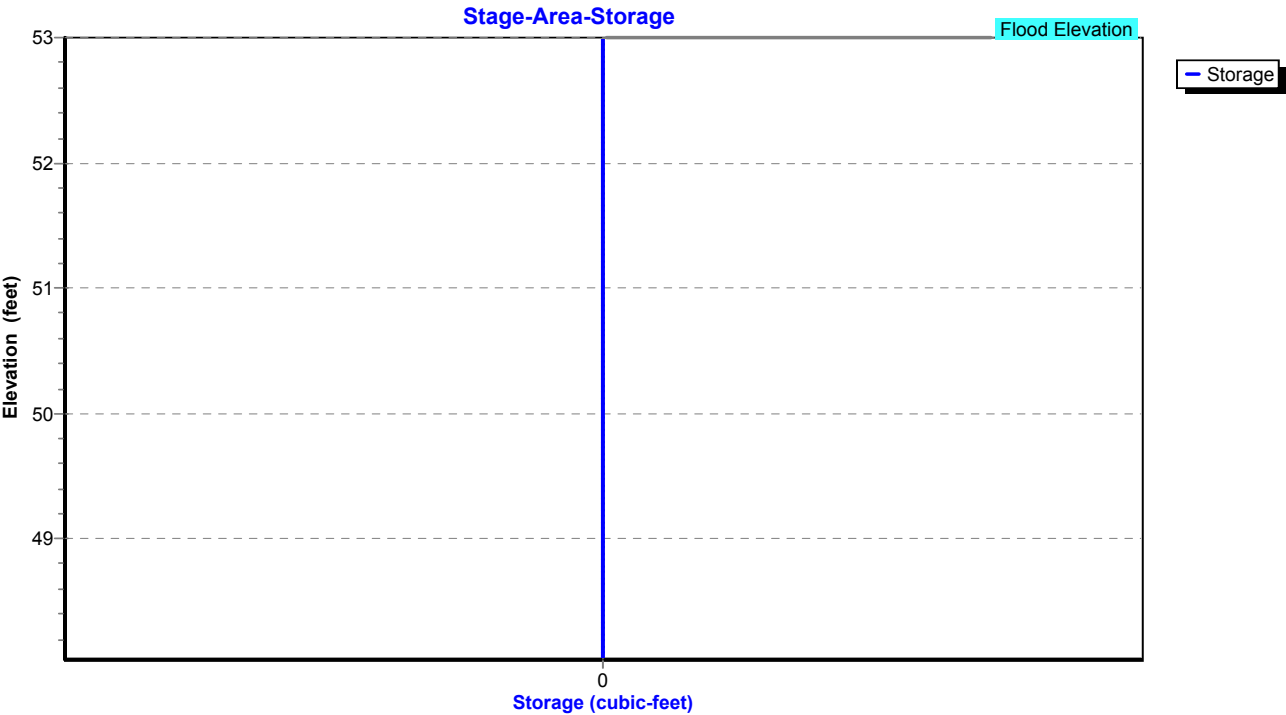
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 10P: MH-L



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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 2.83" for 2 year event
Inflow = 3.63 cfs @ 12.03 hrs, Volume= 9,636 cf
Outflow = 3.11 cfs @ 12.03 hrs, Volume= 1,386 cf, Atten= 14%, Lag= 0.0 min
Primary = 3.11 cfs @ 12.03 hrs, Volume= 1,386 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 49.68' @ 12.03 hrs Storage= 0.081 af

Plug-Flow detention time= 233.3 min calculated for 1,385 cf (14% of inflow)

Center-of-Mass det. time= (not calculated: outflow precedes inflow)

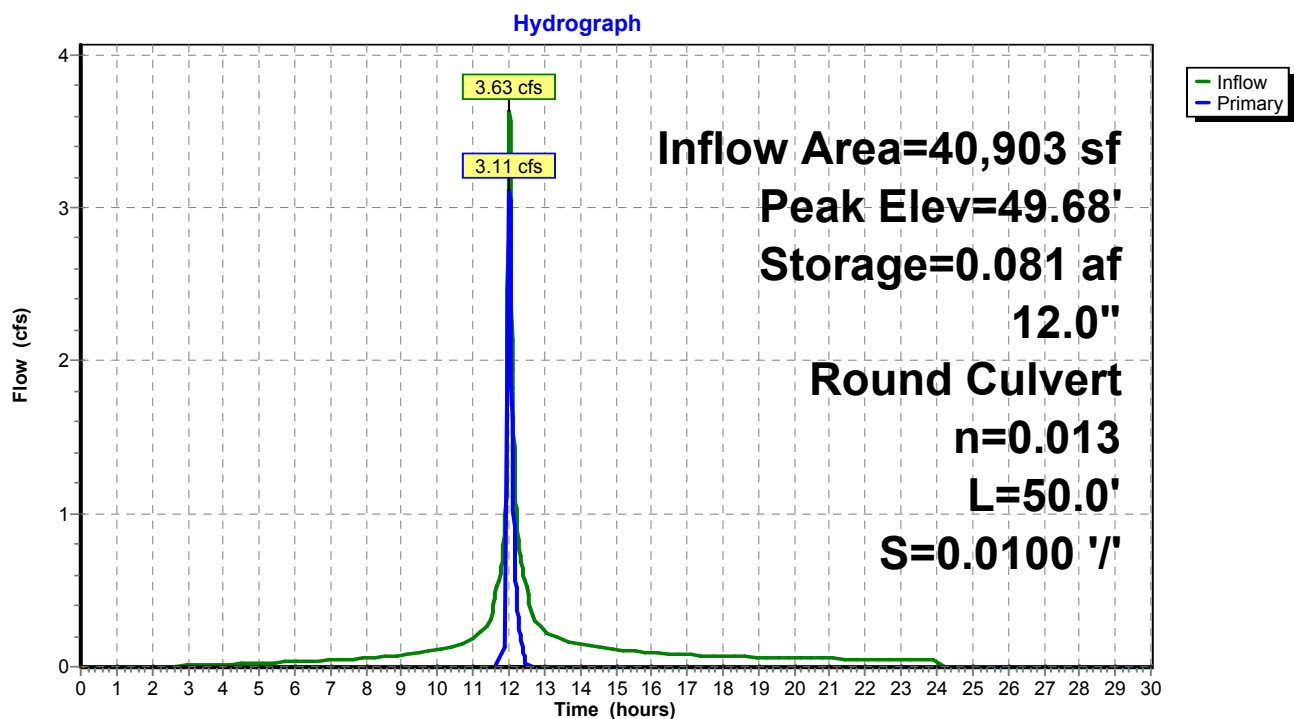
Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

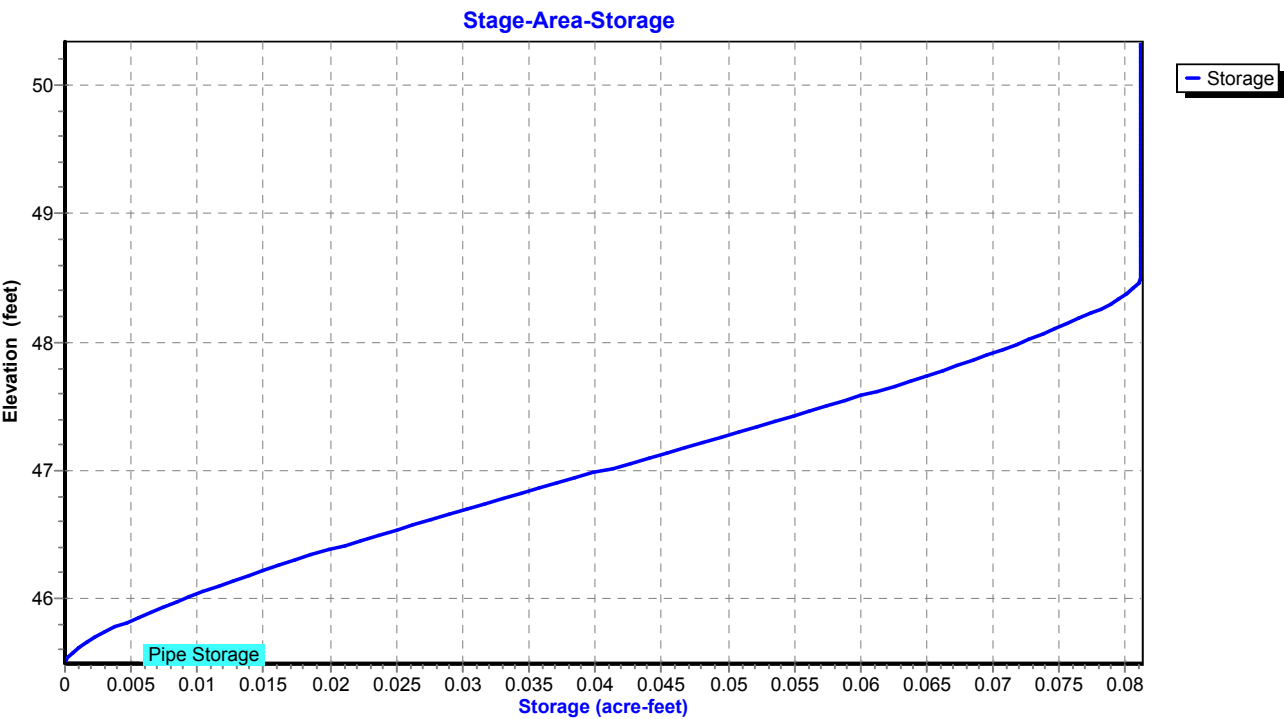
Primary OutFlow Max=3.10 cfs @ 12.03 hrs HW=49.67' (Free Discharge)

←1=Culvert (Inlet Controls 3.10 cfs @ 3.94 fps)

Pond 11P: Pipe Storage



Pond 11P: Pipe Storage



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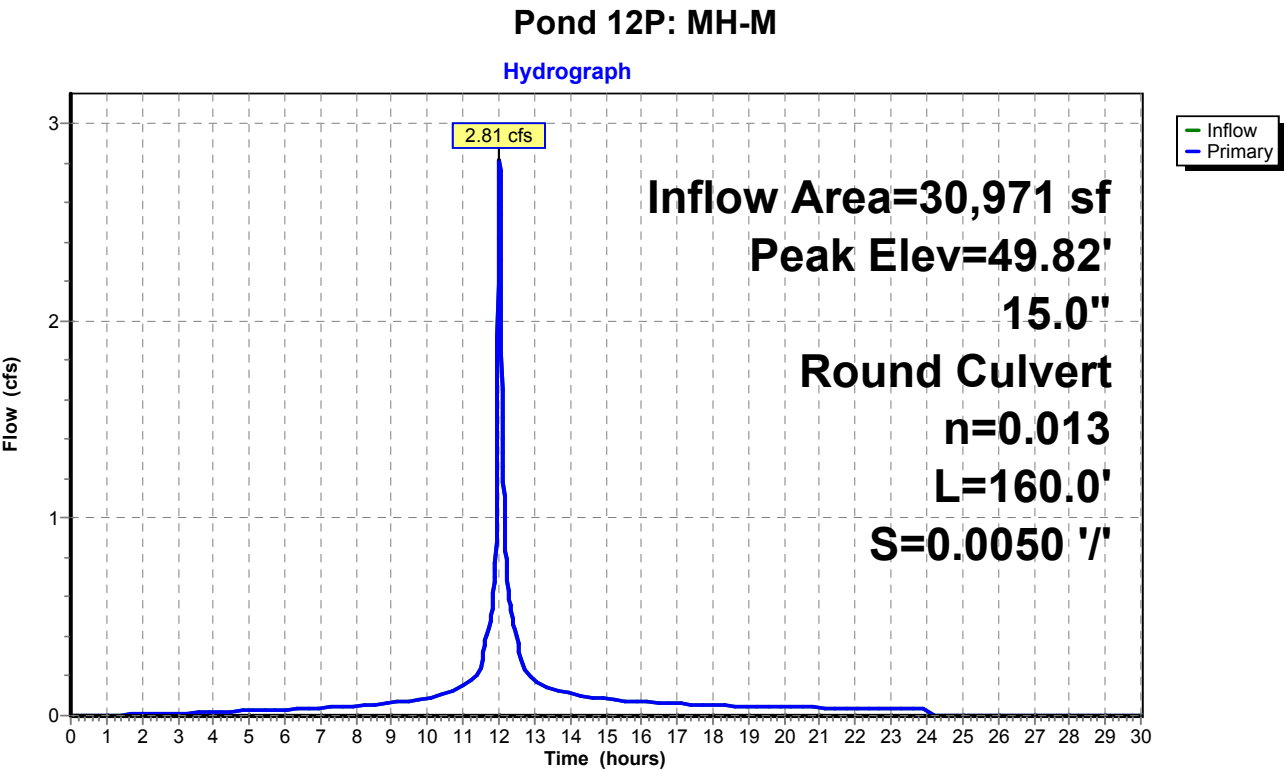
Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 2.95" for 2 year event
Inflow = 2.81 cfs @ 12.03 hrs, Volume= 7,625 cf
Outflow = 2.81 cfs @ 12.03 hrs, Volume= 7,625 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.81 cfs @ 12.03 hrs, Volume= 7,625 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.82' @ 12.03 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.80 cfs @ 12.03 hrs HW=49.82' (Free Discharge)
↑1=Culvert (Barrel Controls 2.80 cfs @ 3.75 fps)



Proposed Conditions

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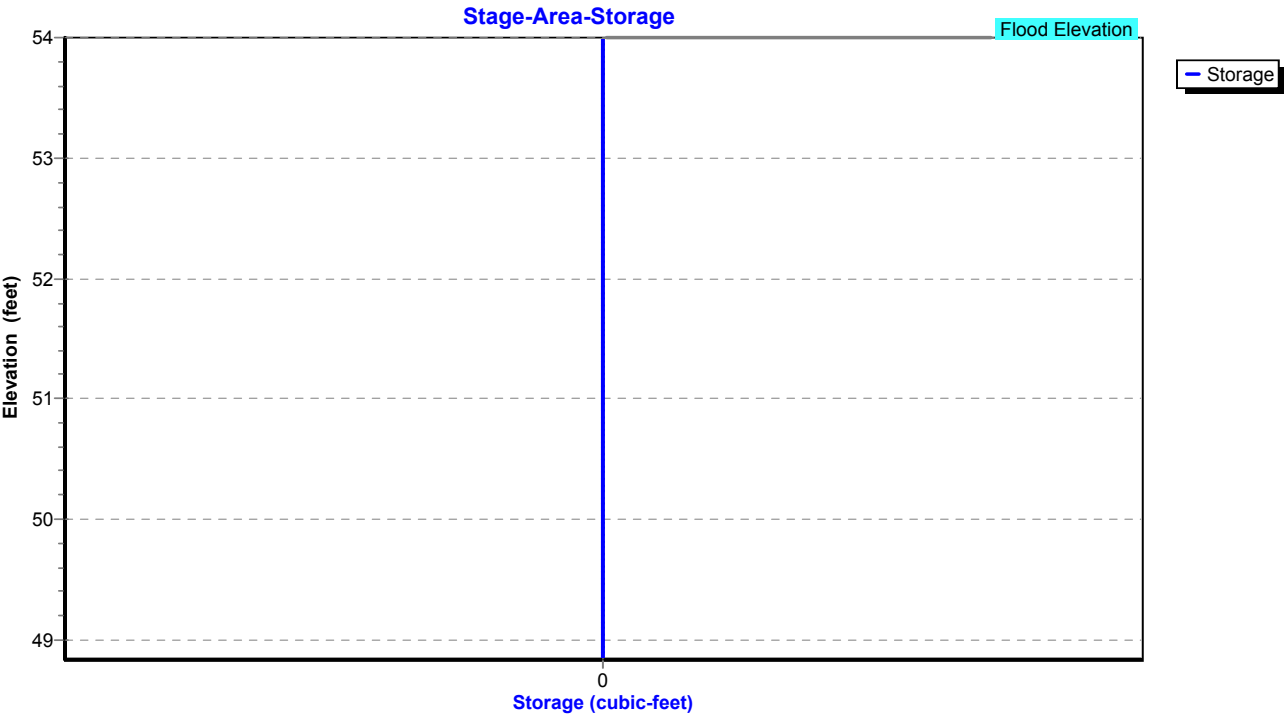
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 2.72" for 2 year event
Inflow = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf
Outflow = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.48 cfs @ 12.03 hrs, Volume= 3,854 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.32' @ 12.03 hrs

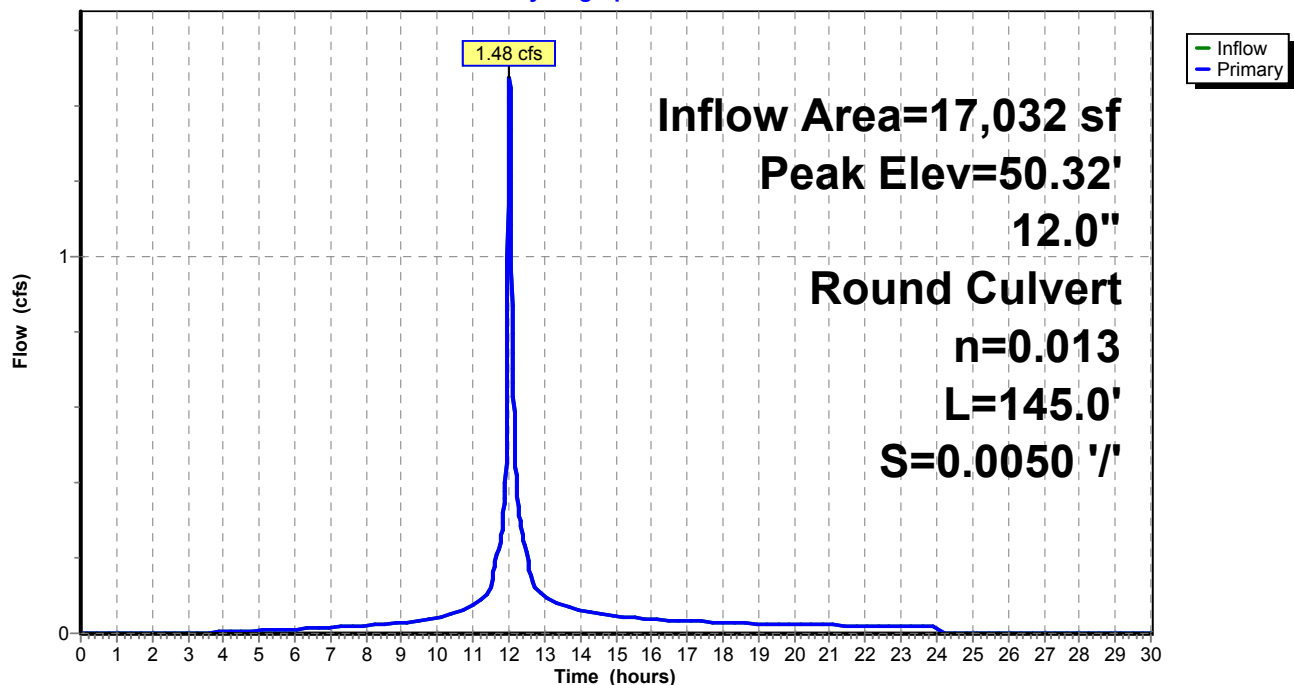
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.47 cfs @ 12.03 hrs HW=50.32' (Free Discharge)

↑1=Culvert (Barrel Controls 1.47 cfs @ 3.23 fps)

Pond 13P: MH-J

Hydrograph



Proposed Conditions

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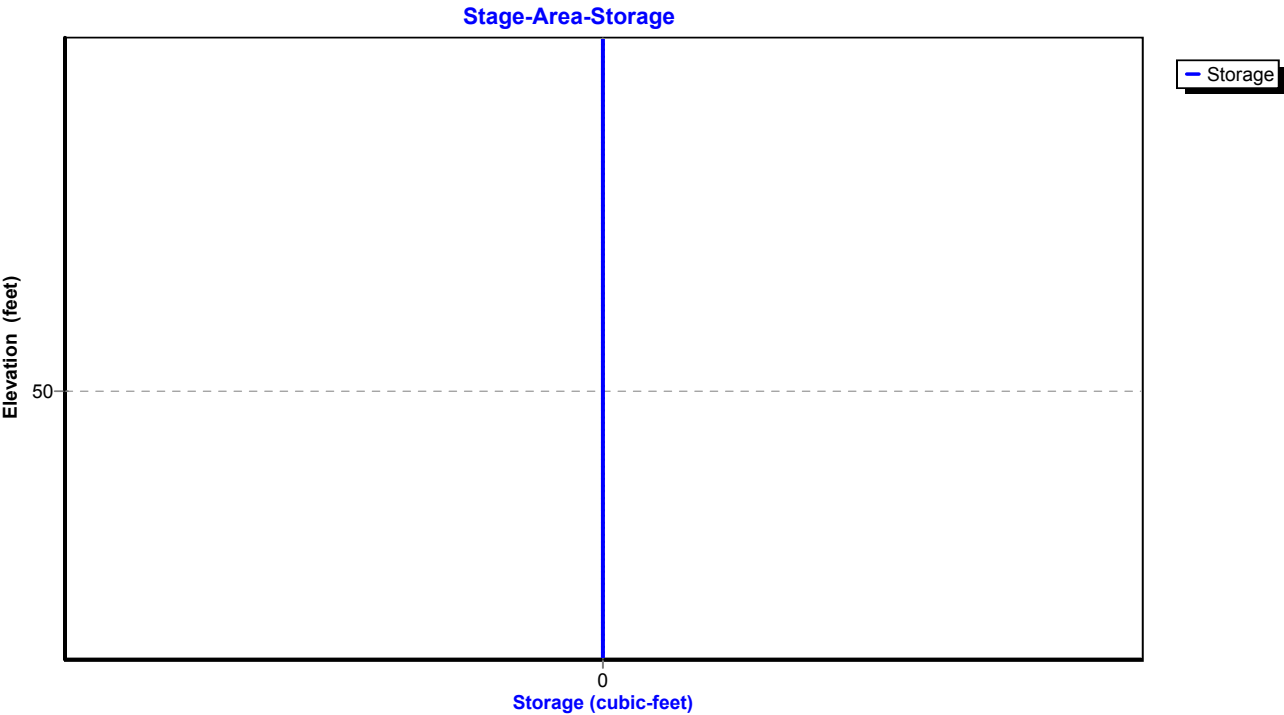
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Pond 13P: MH-J



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Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 1.87" for 2 year event
Inflow = 5.66 cfs @ 12.10 hrs, Volume= 22,468 cf
Outflow = 5.66 cfs @ 12.10 hrs, Volume= 22,468 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.66 cfs @ 12.10 hrs, Volume= 22,468 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 49.19' @ 12.10 hrs

Flood Elev= 51.80'

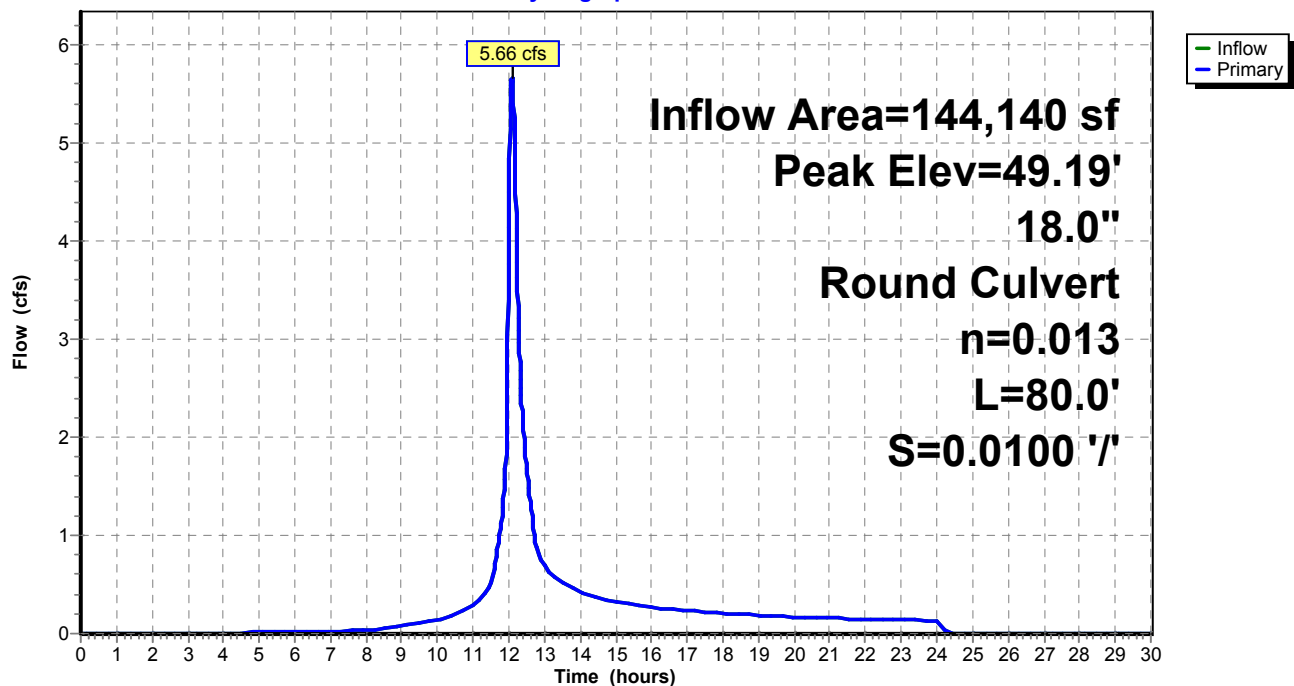
Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=5.66 cfs @ 12.10 hrs HW=49.19' (Free Discharge)

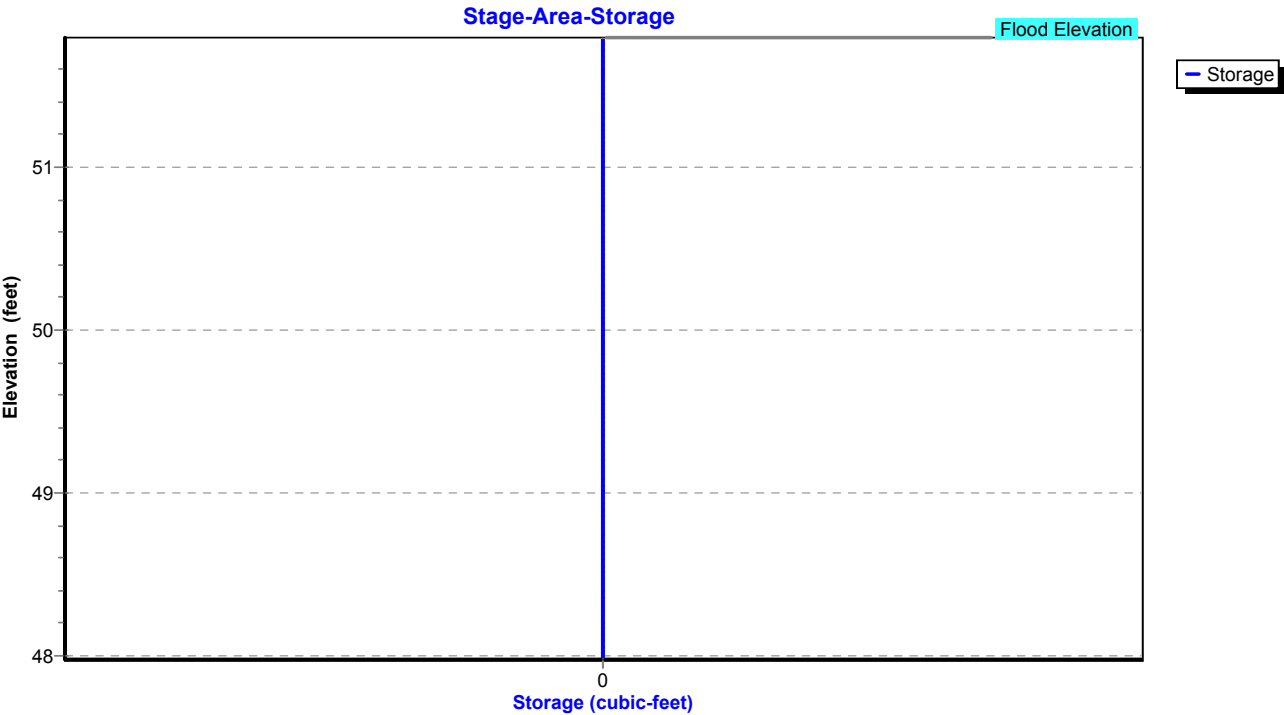
↑1=Culvert (Barrel Controls 5.66 cfs @ 5.07 fps)

Pond 14P: MH-O

Hydrograph



Pond 14P: MH-O



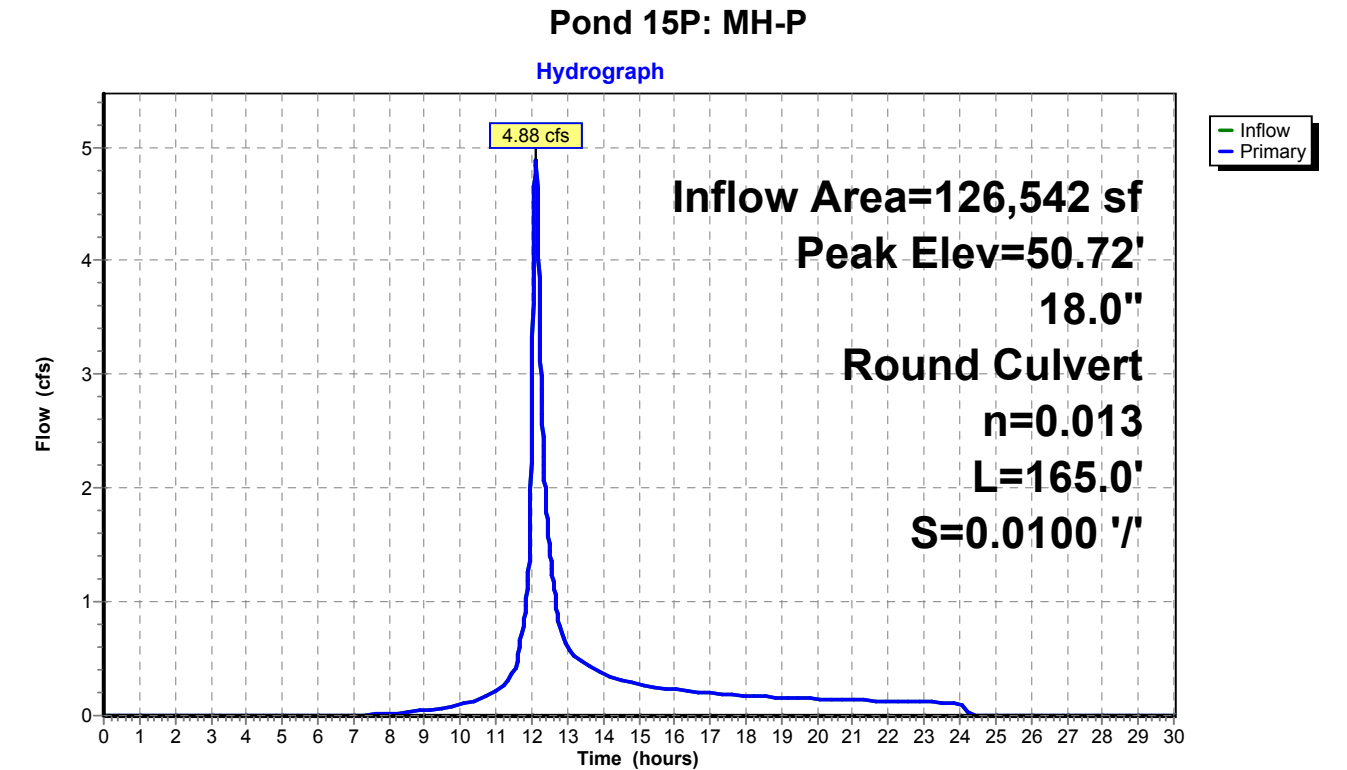
Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 1.75" for 2 year event
Inflow = 4.88 cfs @ 12.11 hrs, Volume= 18,464 cf
Outflow = 4.88 cfs @ 12.11 hrs, Volume= 18,464 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.88 cfs @ 12.11 hrs, Volume= 18,464 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.72' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=4.88 cfs @ 12.11 hrs HW=50.72' (Free Discharge)
1=Culvert (Inlet Controls 4.88 cfs @ 3.55 fps)



Proposed Conditions

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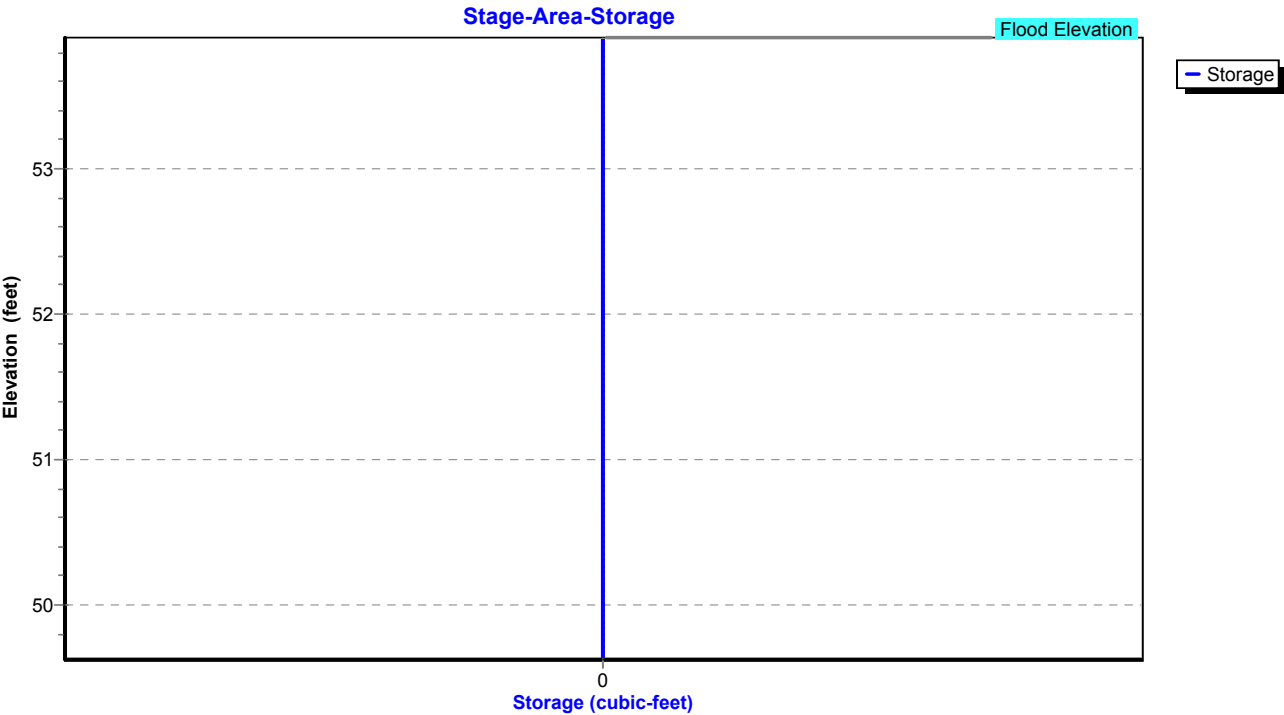
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Pond 15P: MH-P



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Summary for Pond 16P: MH-Q

Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 1.69" for 2 year event
Inflow = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf
Outflow = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.48 cfs @ 12.12 hrs, Volume= 16,335 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.47' @ 12.12 hrs

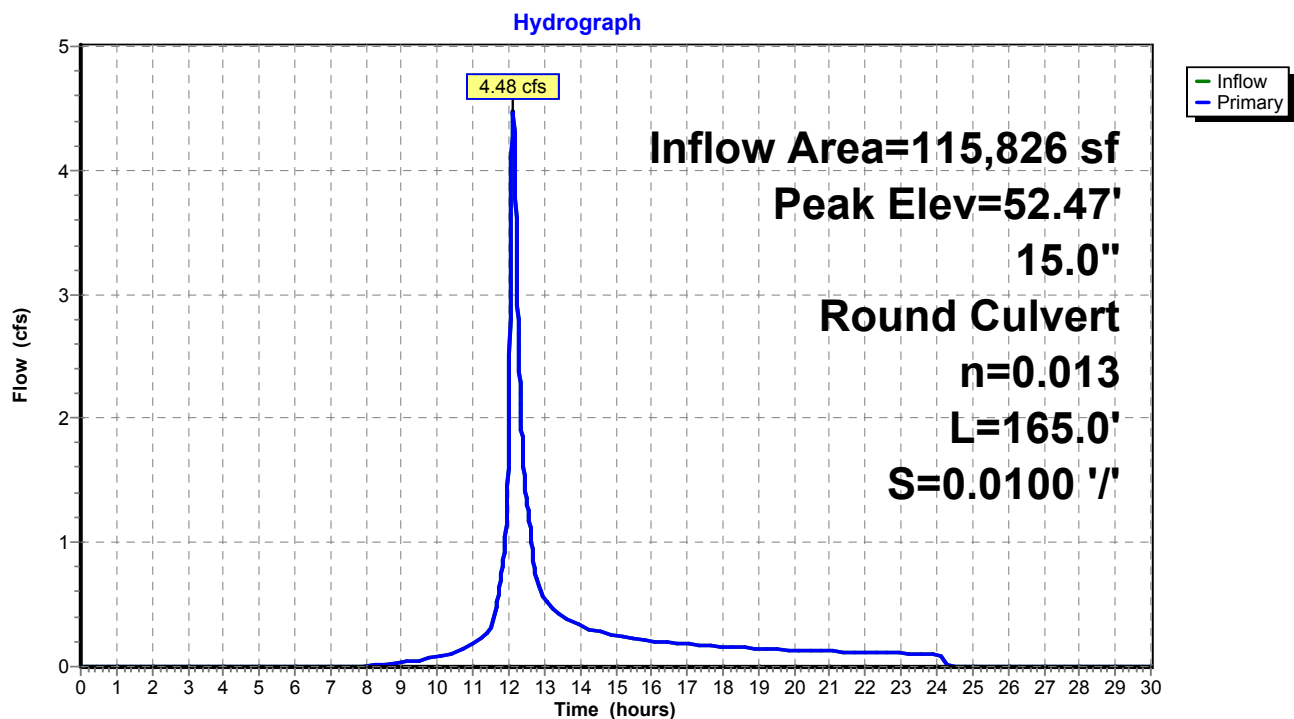
Flood Elev= 55.90'

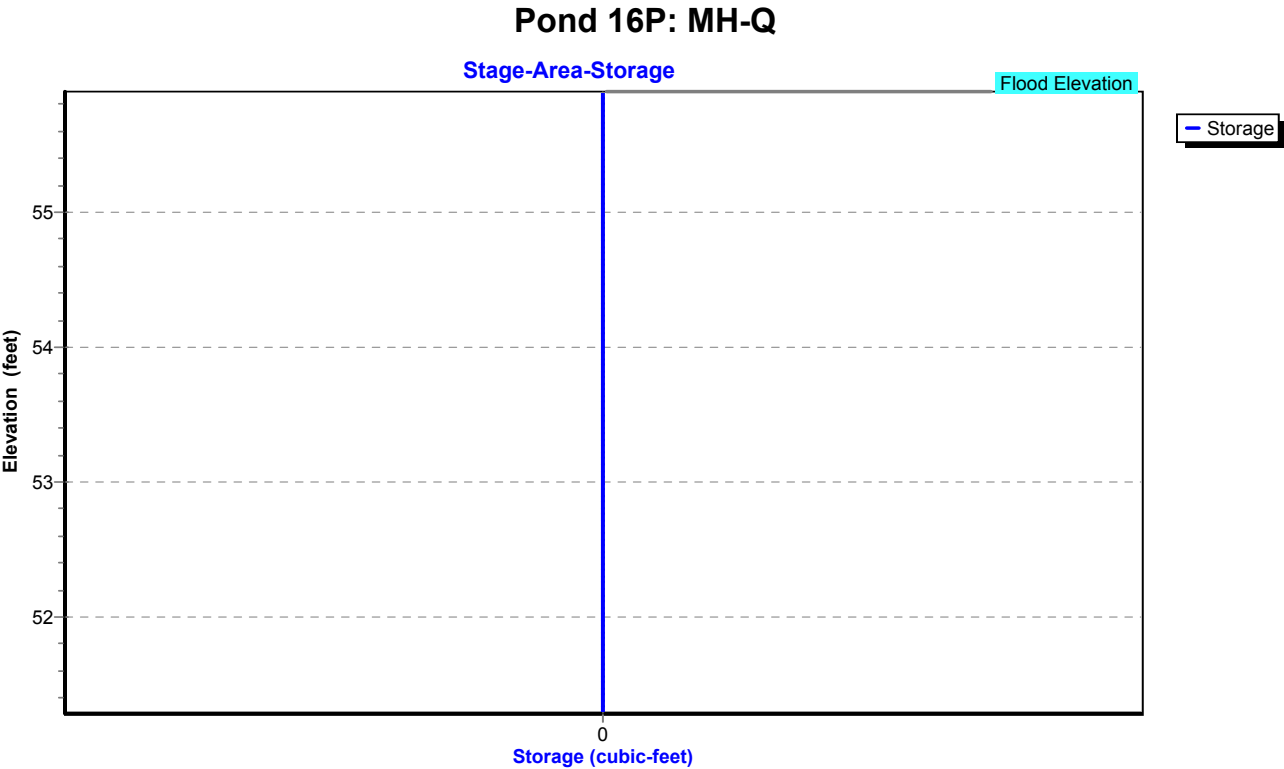
Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.48 cfs @ 12.12 hrs HW=52.47' (Free Discharge)

↑1=Culvert (Inlet Controls 4.48 cfs @ 3.72 fps)

Pond 16P: MH-Q





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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 1.24" for 2 year event
 Inflow = 23.83 cfs @ 13.08 hrs, Volume= 303,052 cf
 Outflow = 23.81 cfs @ 13.14 hrs, Volume= 303,052 cf, Atten= 0%, Lag= 3.5 min
 Primary = 23.81 cfs @ 13.14 hrs, Volume= 303,052 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 45.48' @ 13.14 hrs Surf.Area= 1,988 sf Storage= 1,956 cf

Plug-Flow detention time= 1.8 min calculated for 303,052 cf (100% of inflow)
 Center-of-Mass det. time= 1.8 min (941.7 - 939.9)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=23.80 cfs @ 13.14 hrs HW=45.48' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 23.80 cfs @ 4.41 fps)

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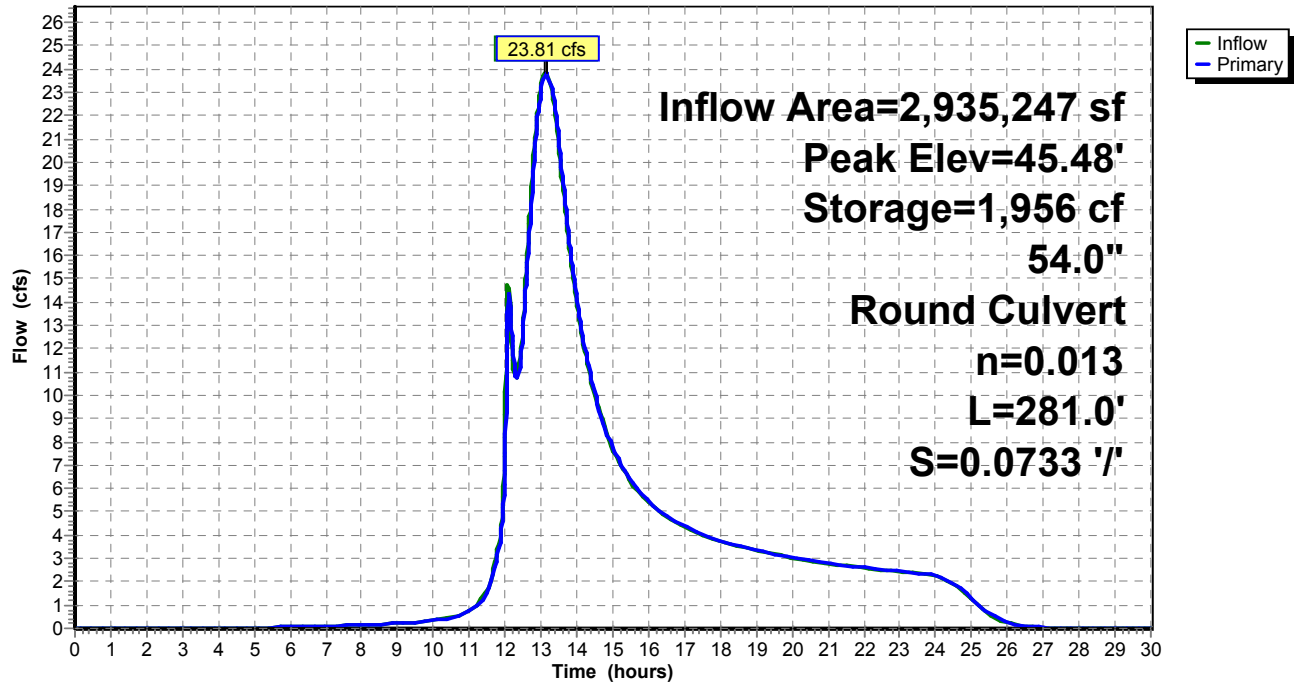
NORWALK 24-hr S1 2 year Rainfall=3.48"

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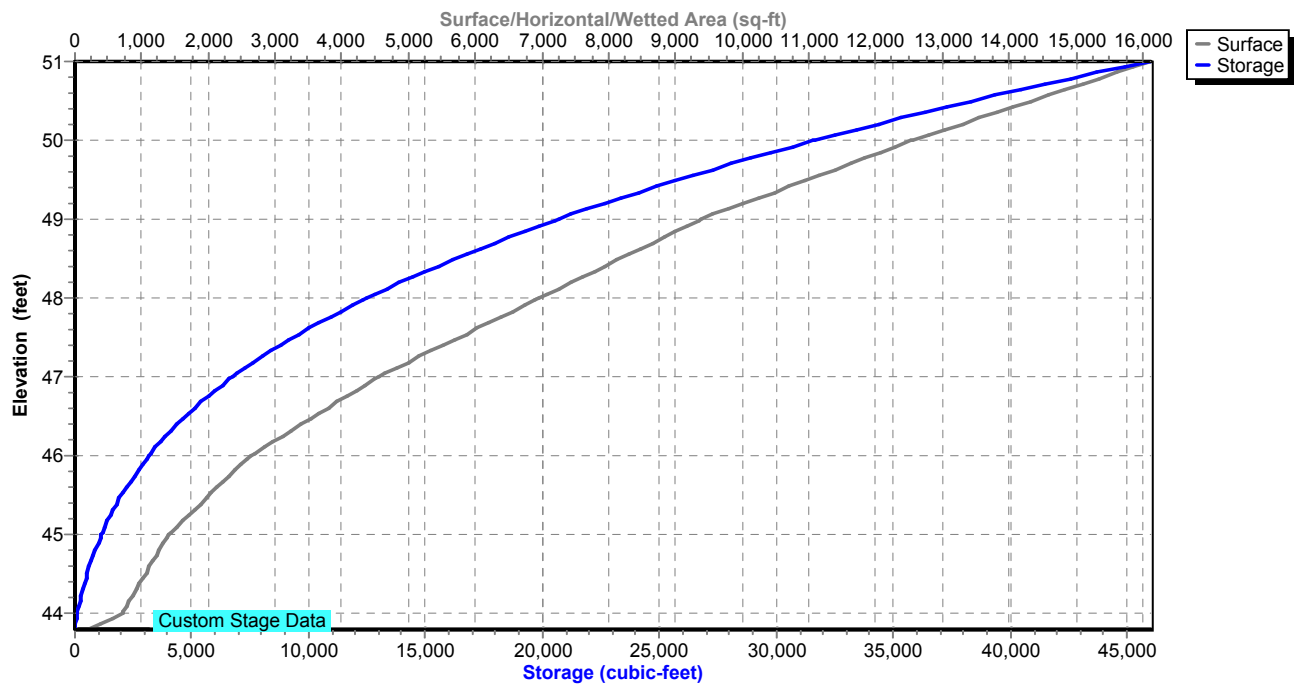
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 1.17" for 2 year event
 Inflow = 22.57 cfs @ 13.15 hrs, Volume= 257,725 cf
 Outflow = 22.57 cfs @ 13.16 hrs, Volume= 257,725 cf, Atten= 0%, Lag= 0.1 min
 Primary = 22.57 cfs @ 13.16 hrs, Volume= 257,725 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 63.92' @ 13.16 hrs Surf.Area= 191 sf Storage= 193 cf

Plug-Flow detention time= 0.1 min calculated for 257,640 cf (100% of inflow)
 Center-of-Mass det. time= 0.1 min (958.1 - 957.9)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=22.57 cfs @ 13.16 hrs HW=63.92' (Free Discharge)

↑**1=Culvert** (Inlet Controls 22.57 cfs @ 4.72 fps)

Proposed Conditions

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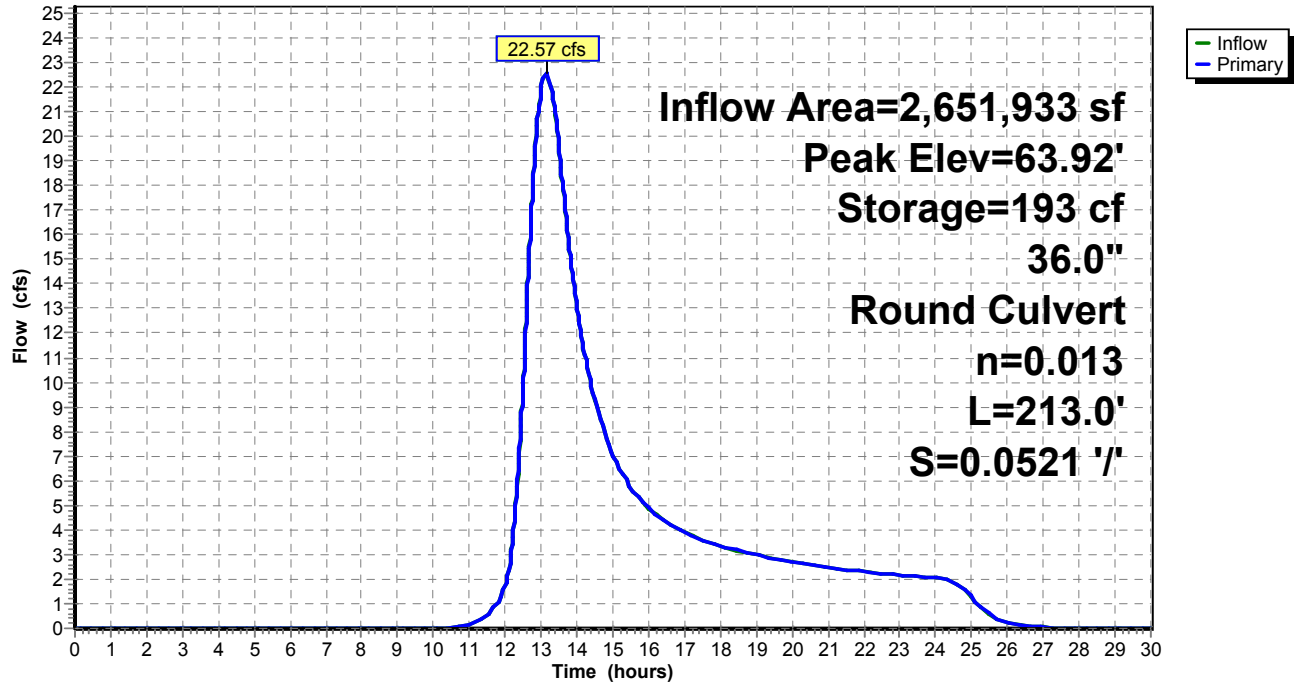
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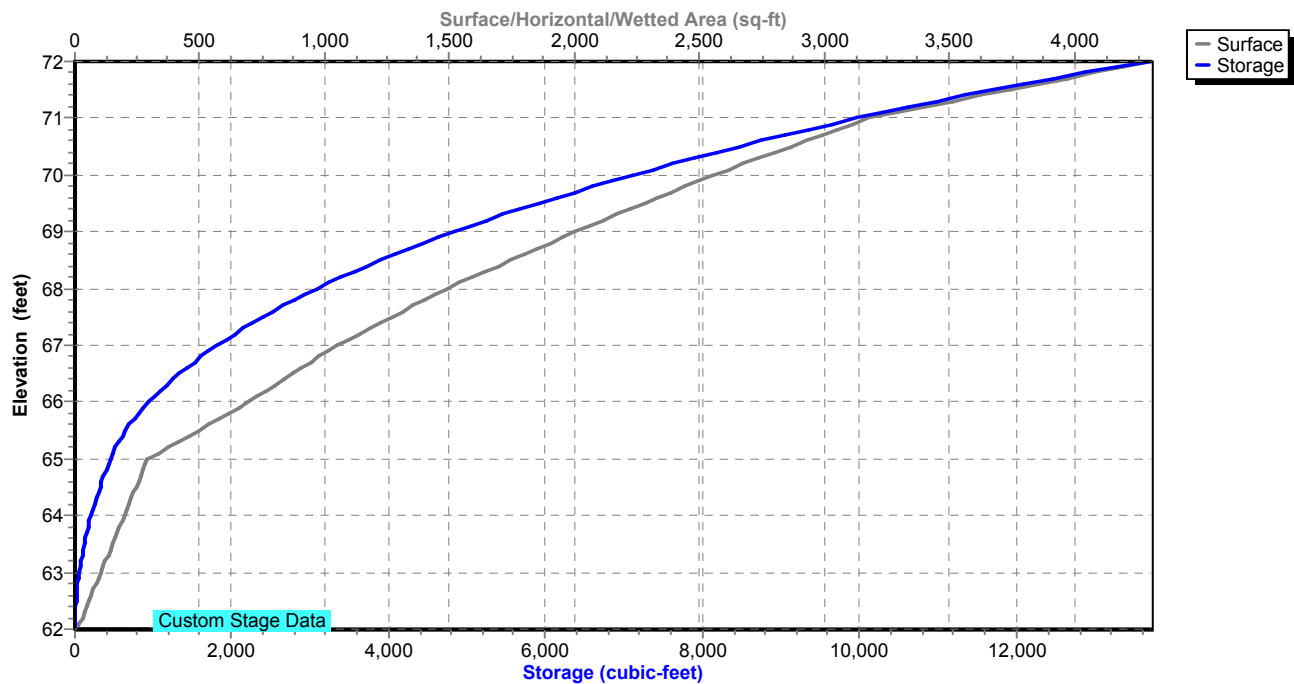
Pond 18P: DET 4 Culvert

Hydrograph



Pond 18P: DET 4 Culvert

Stage-Area-Storage



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Summary for Pond 20P: ADS Stormtech (160LP)

Inflow Area = 4,966 sf, 80.70% Impervious, Inflow Depth = 2.82" for 2 year event
Inflow = 0.44 cfs @ 12.03 hrs, Volume= 1,165 cf
Outflow = 0.19 cfs @ 12.14 hrs, Volume= 1,096 cf, Atten= 57%, Lag= 6.8 min
Primary = 0.19 cfs @ 12.14 hrs, Volume= 1,096 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 74.13' @ 12.14 hrs Surf.Area= 365 sf Storage= 231 cf

Plug-Flow detention time= 74.9 min calculated for 1,096 cf (94% of inflow)
Center-of-Mass det. time= 40.4 min (831.9 - 791.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	227 cf	14.50'W x 23.83'L x 2.00'H Field A 691 cf Overall - 123 cf Embedded = 568 cf x 40.0% Voids
#2A	73.50'	123 cf	ADS_StormTech SC-160LP +Cap x 18 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 6 Rows
#3	73.50'	22 cf	5.00'D x 1.10'H OCS
		372 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	12.0" Round Culvert L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 73.00' S= 0.0313 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	74.40'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 2.75 2.75 Width (feet) 0.33 0.33 5.00
#3	Device 1	73.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 12.14 hrs HW=74.13' (Free Discharge)

- 1=Culvert (Passes 0.19 cfs of 1.42 cfs potential flow)
- 2=Custom Weir/Orifice (Controls 0.00 cfs)
- 3=Orifice/Grate (Orifice Controls 0.19 cfs @ 3.83 fps)

Proposed Conditions

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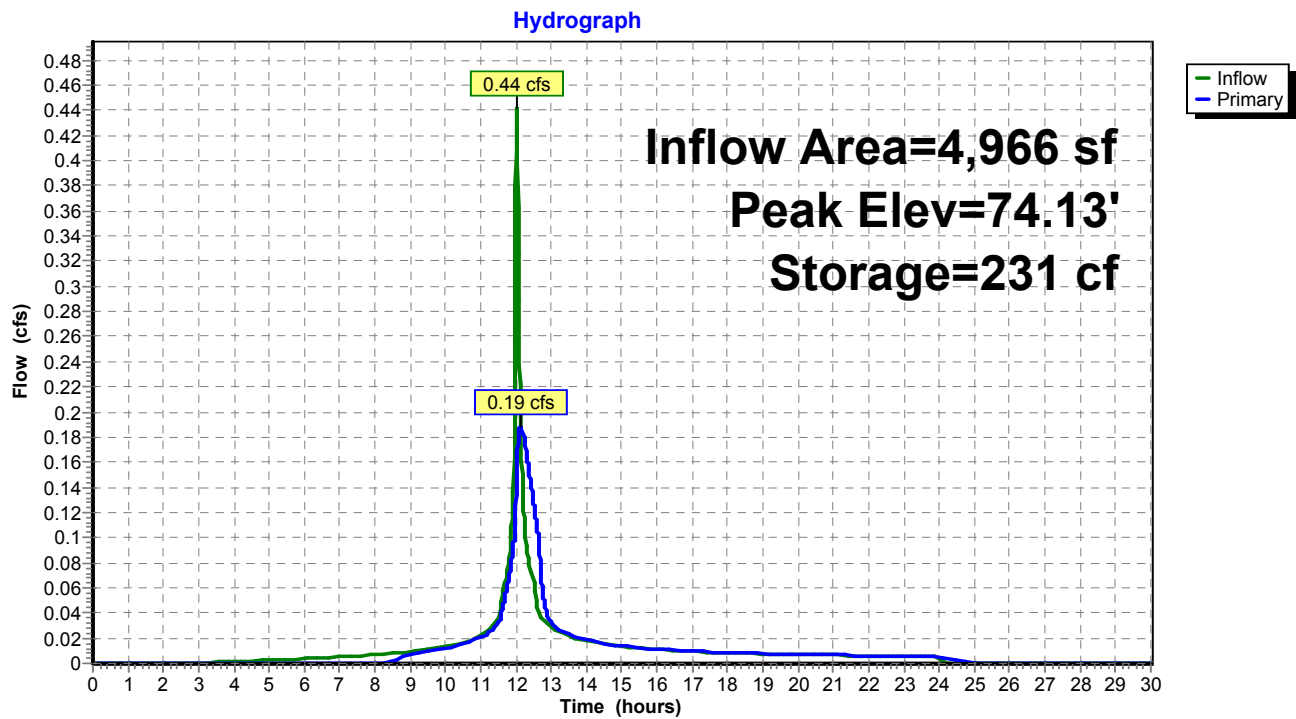
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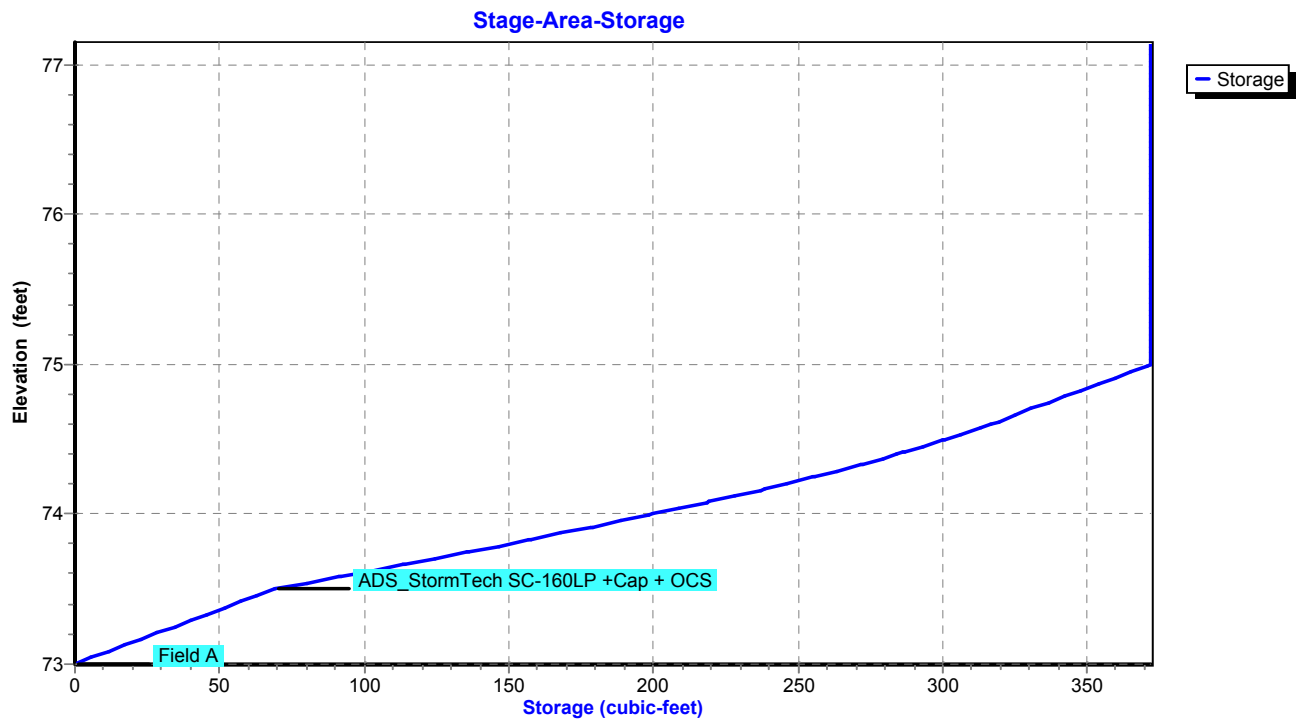
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Pond 20P: ADS Stormtech (160LP)



Pond 20P: ADS Stormtech (160LP)



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Stage-Area-Storage for Pond 20P: ADS Stormtech (160LP)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
73.00	0	75.60	372
73.05	7	75.65	372
73.10	14	75.70	372
73.15	21	75.75	372
73.20	28	75.80	372
73.25	35	75.85	372
73.30	41	75.90	372
73.35	48	75.95	372
73.40	55	76.00	372
73.45	62	76.05	372
73.50	69	76.10	372
73.55	83	76.15	372
73.60	96	76.20	372
73.65	110	76.25	372
73.70	123	76.30	372
73.75	136	76.35	372
73.80	149	76.40	372
73.85	162	76.45	372
73.90	175	76.50	372
73.95	187	76.55	372
74.00	200	76.60	372
74.05	211	76.65	372
74.10	223	76.70	372
74.15	235	76.75	372
74.20	246	76.80	372
74.25	256	76.85	372
74.30	266	76.90	372
74.35	275	76.95	372
74.40	284	77.00	372
74.45	293	77.05	372
74.50	301	77.10	372
74.55	309	77.15	372
74.60	317		
74.65	323		
74.70	330		
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75.20	372		
75.25	372		
75.30	372		
75.35	372		
75.40	372		
75.45	372		
75.50	372		
75.55	372		

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Required Water Quality Volume: 184 cuft

Provided Water Quality Volume: 284 cuft

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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 1.17" for 2 year event
 Inflow = 6.77 cfs @ 12.57 hrs, Volume= 51,816 cf
 Outflow = 6.77 cfs @ 12.58 hrs, Volume= 51,816 cf, Atten= 0%, Lag= 0.6 min
 Primary = 6.77 cfs @ 12.58 hrs, Volume= 51,816 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 38.14' @ 12.58 hrs Surf.Area= 250 sf Storage= 173 cf

Plug-Flow detention time= 0.6 min calculated for 51,799 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (921.5 - 920.9)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=6.77 cfs @ 12.58 hrs HW=38.14' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 6.77 cfs @ 3.64 fps)

Proposed Conditions

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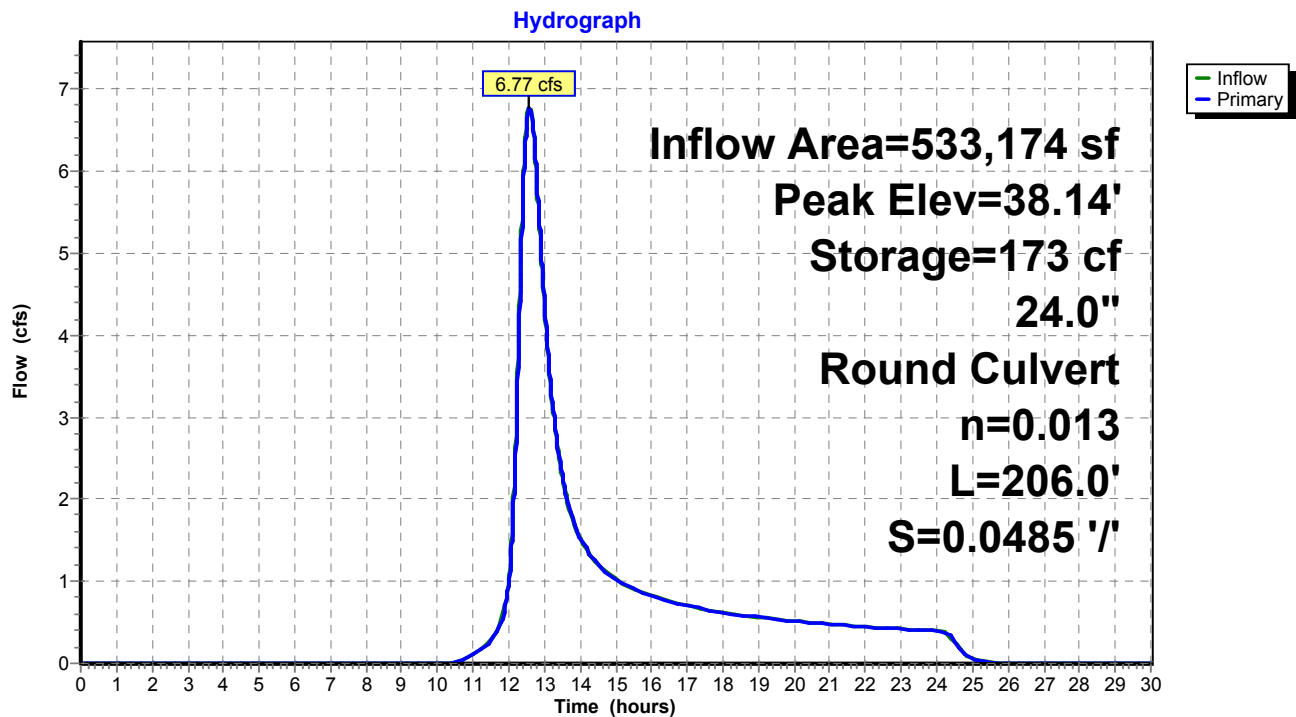
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NORWALK 24-hr S1 2 year Rainfall=3.48"

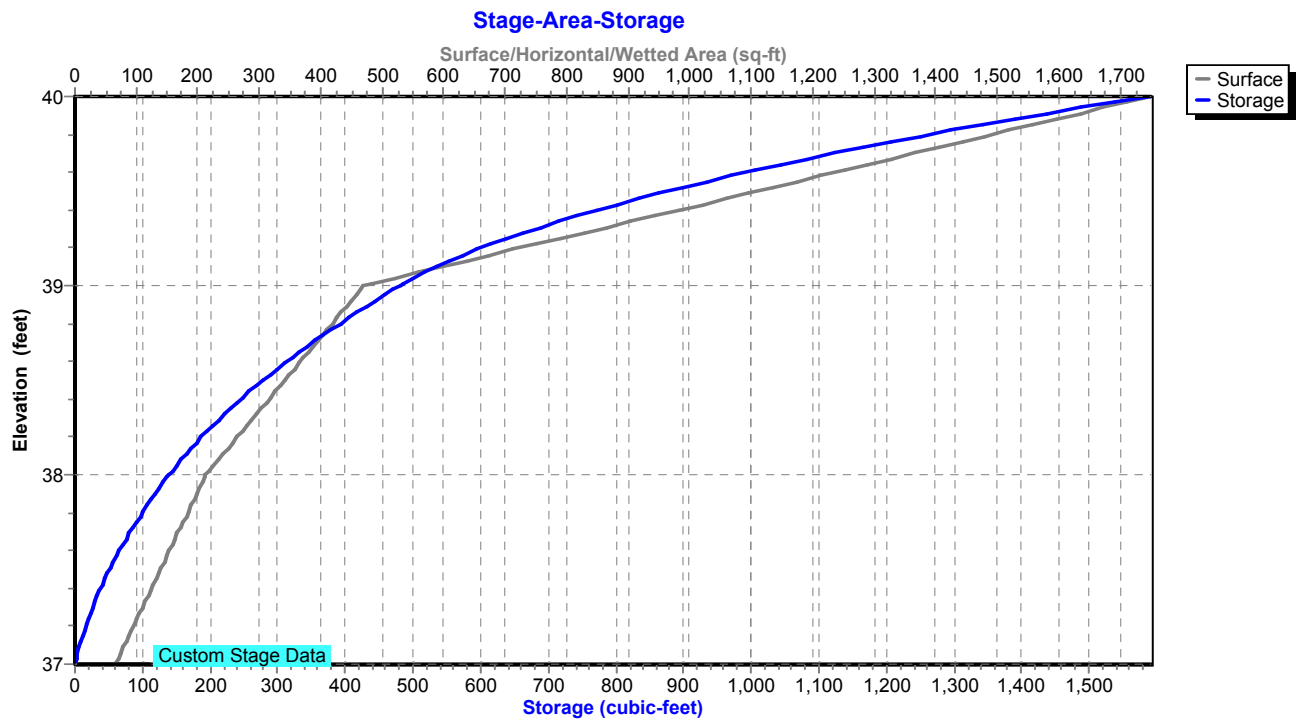
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 1.48" for 2 year event
 Inflow = 18.11 cfs @ 12.80 hrs, Volume= 159,366 cf
 Outflow = 17.77 cfs @ 12.87 hrs, Volume= 159,366 cf, Atten= 2%, Lag= 4.1 min
 Primary = 17.77 cfs @ 12.87 hrs, Volume= 159,366 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 36.63' @ 12.87 hrs Surf.Area= 4,908 sf Storage= 3,972 cf

Plug-Flow detention time= 3.8 min calculated for 159,366 cf (100% of inflow)
 Center-of-Mass det. time= 3.7 min (920.4 - 916.7)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=17.77 cfs @ 12.87 hrs HW=36.63' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 17.77 cfs @ 4.61 fps)

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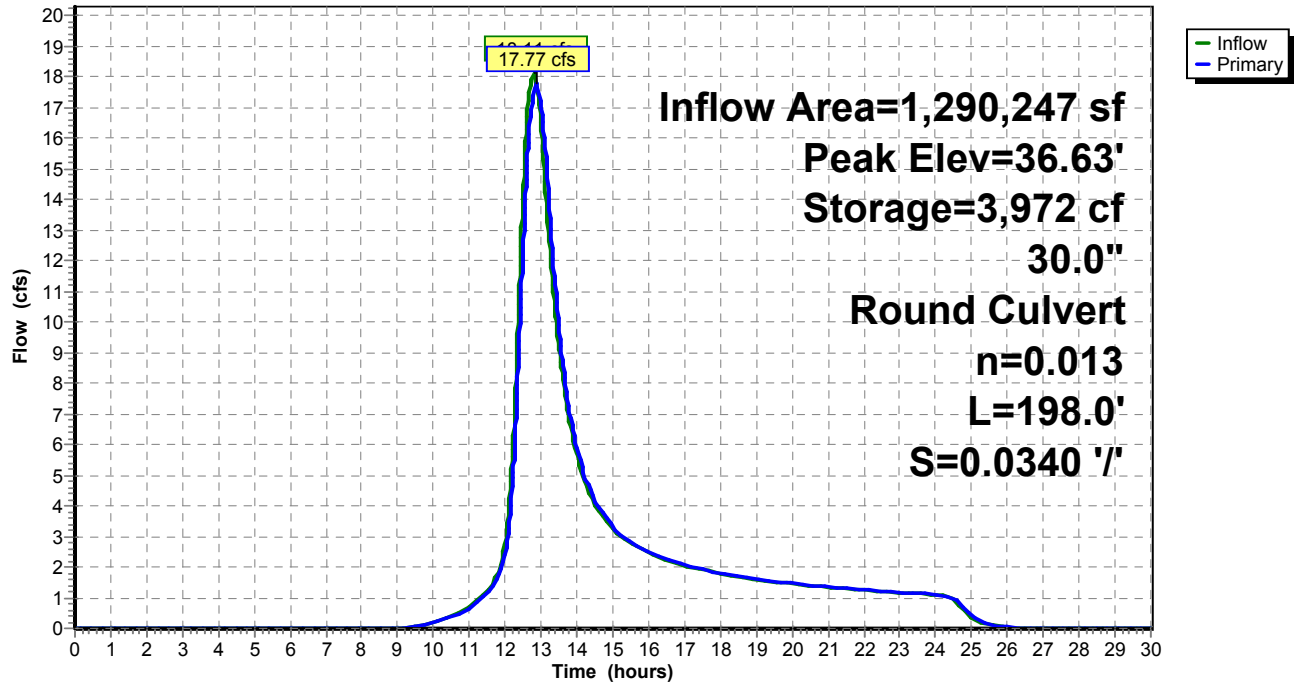
NORWALK 24-hr S1 2 year Rainfall=3.48"

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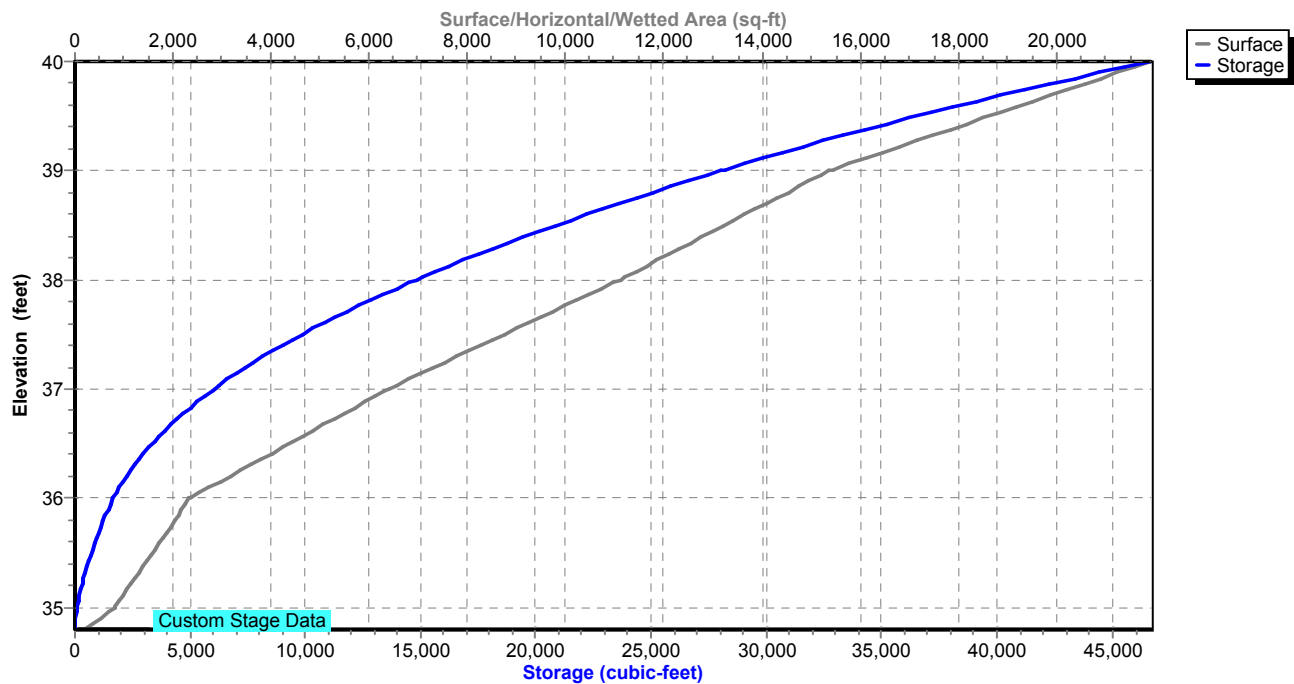
Pond 22P: DET 2 Culvert

Hydrograph



Pond 22P: DET 2 Culvert

Stage-Area-Storage



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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 1.23" for 2 year event
 Inflow = 5.87 cfs @ 12.23 hrs, Volume= 28,219 cf
 Outflow = 5.85 cfs @ 12.24 hrs, Volume= 28,219 cf, Atten= 0%, Lag= 0.7 min
 Primary = 5.85 cfs @ 12.24 hrs, Volume= 28,219 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 43.55' @ 12.24 hrs Surf.Area= 404 sf Storage= 218 cf

Plug-Flow detention time= 0.6 min calculated for 28,209 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (895.2 - 894.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=5.84 cfs @ 12.24 hrs HW=43.55' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 5.84 cfs @ 3.49 fps)

Proposed Conditions

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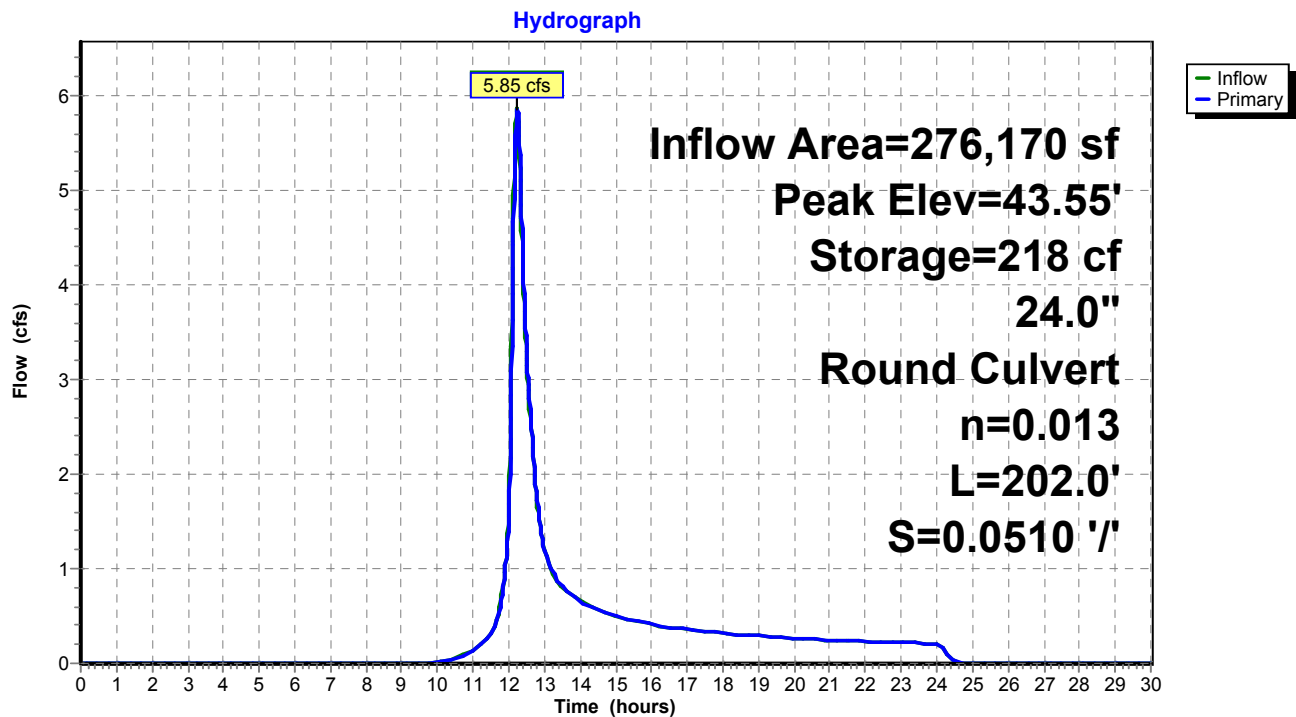
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NORWALK 24-hr S1 2 year Rainfall=3.48"

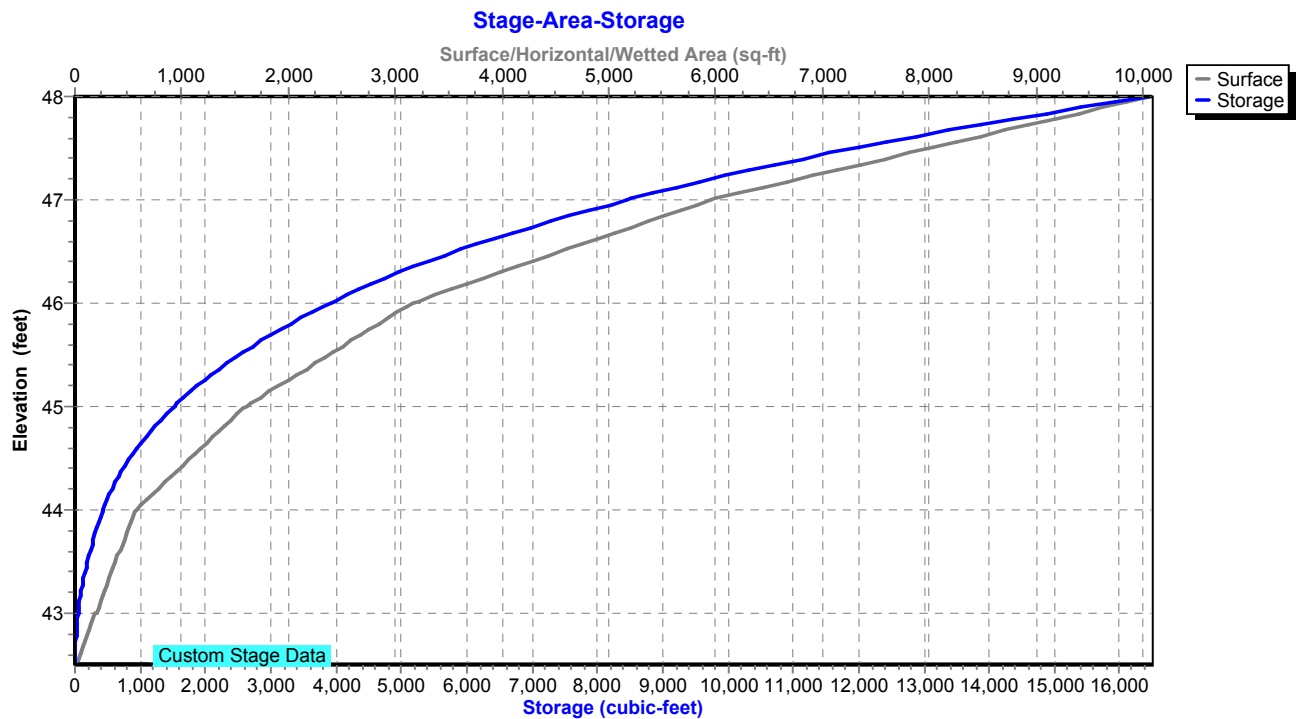
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 6.73" for 2 year event
 Inflow = 60.22 cfs @ 12.34 hrs, Volume= 281,152 cf
 Outflow = 26.06 cfs @ 13.23 hrs, Volume= 281,128 cf, Atten= 57%, Lag= 53.4 min
 Primary = 26.06 cfs @ 13.23 hrs, Volume= 281,128 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 11.18' @ 13.23 hrs Storage= 109,145 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 43.9 min (834.3 - 790.4)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=26.06 cfs @ 13.23 hrs HW=11.18' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 26.06 cfs @ 4.51 fps)

Proposed Conditions

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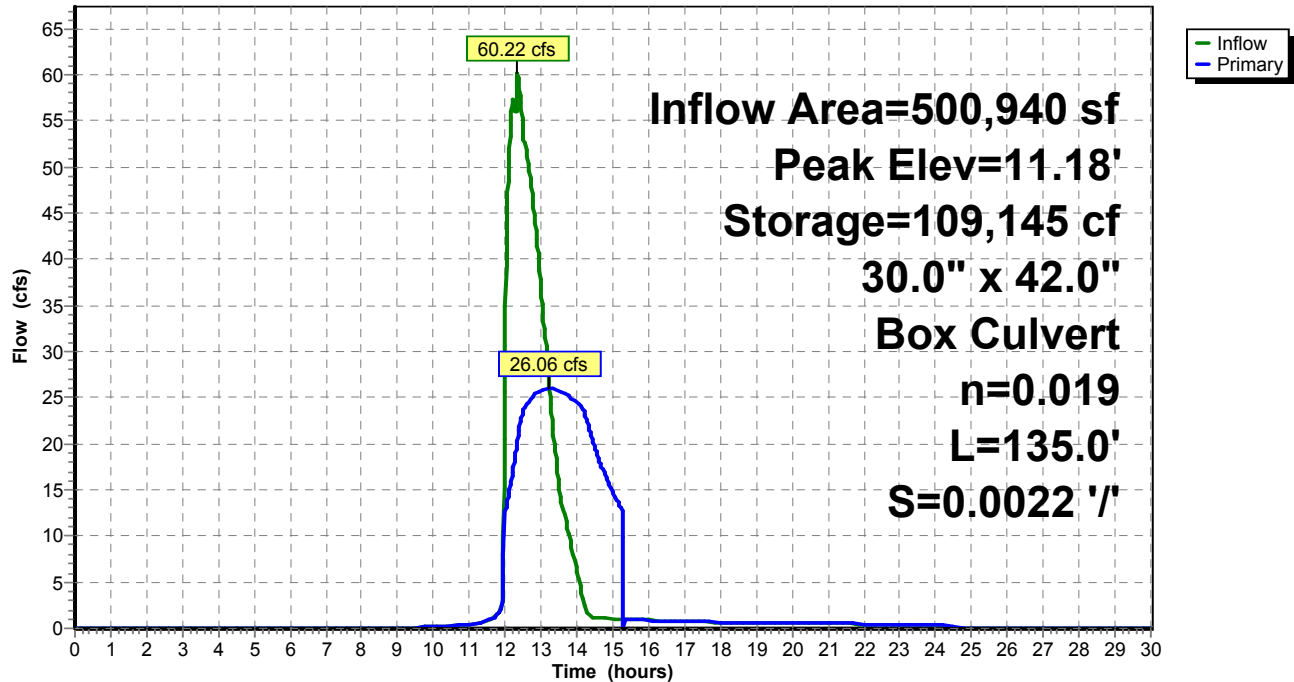
NORWALK 24-hr S1 2 year Rainfall=3.48"

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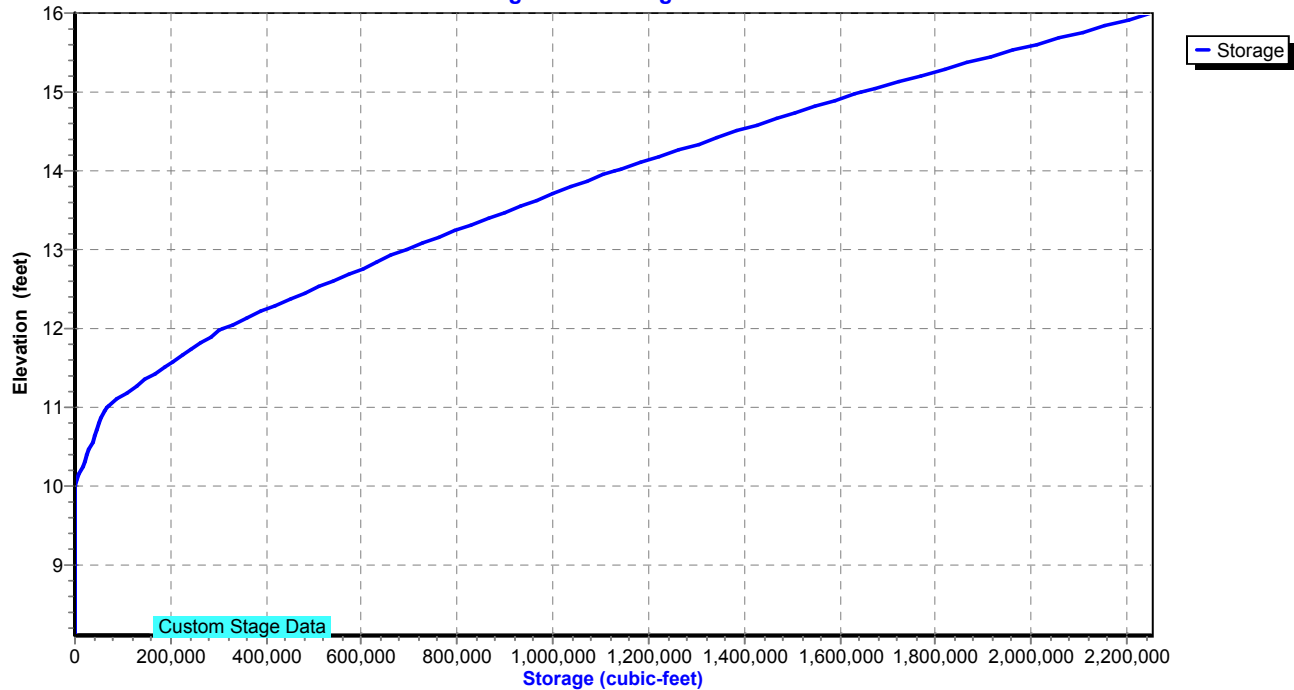
Pond 24P: RR Culvert 3

Hydrograph



Pond 24P: RR Culvert 3

Stage-Area-Storage



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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 1.21" for 2 year event
Inflow = 12.60 cfs @ 12.20 hrs, Volume= 78,326 cf
Outflow = 11.13 cfs @ 12.29 hrs, Volume= 78,268 cf, Atten= 12%, Lag= 5.5 min
Primary = 11.13 cfs @ 12.29 hrs, Volume= 78,268 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 19.27' @ 12.29 hrs Surf.Area= 1,296 sf Storage= 1,177 cf

Plug-Flow detention time= 1.0 min calculated for 78,242 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (940.0 - 939.7)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' S= 0.0691 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=11.13 cfs @ 12.29 hrs HW=19.27' (Free Discharge)

1=Culvert (Inlet Controls 11.13 cfs @ 9.07 fps)

2=Custom Weir/Orifice (Controls 0.00 cfs)

Proposed Conditions

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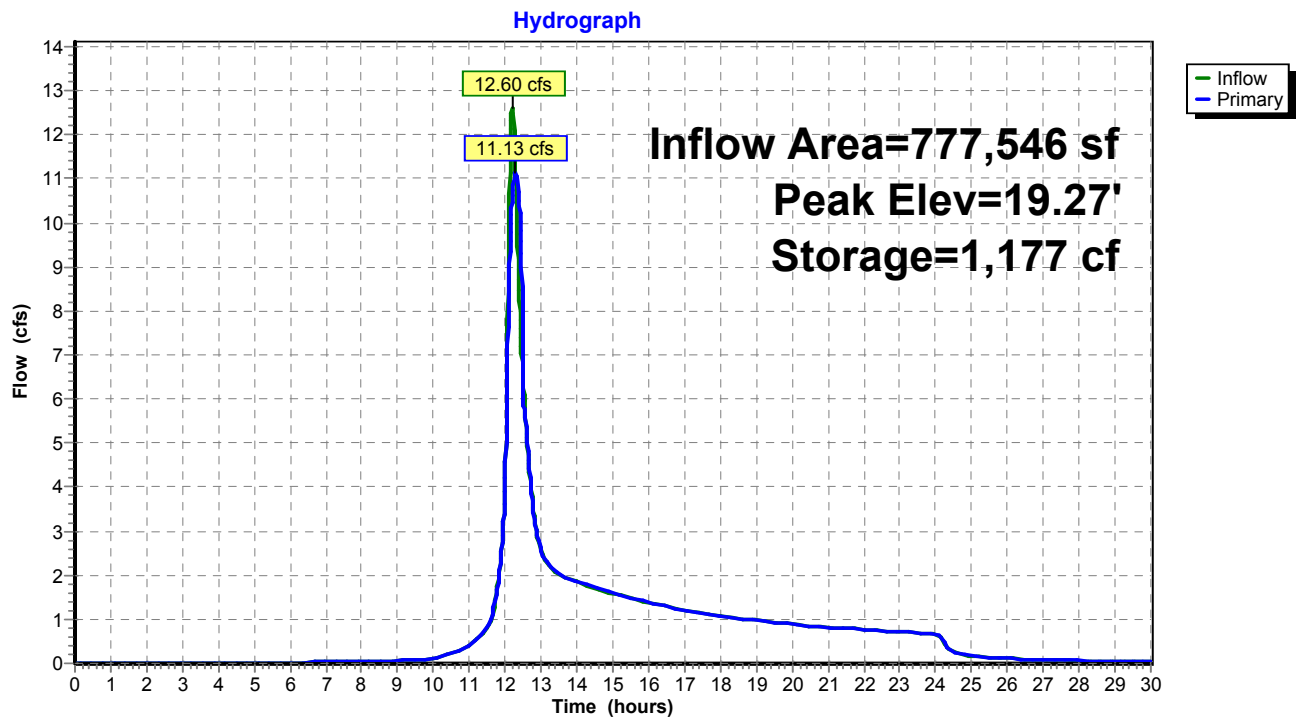
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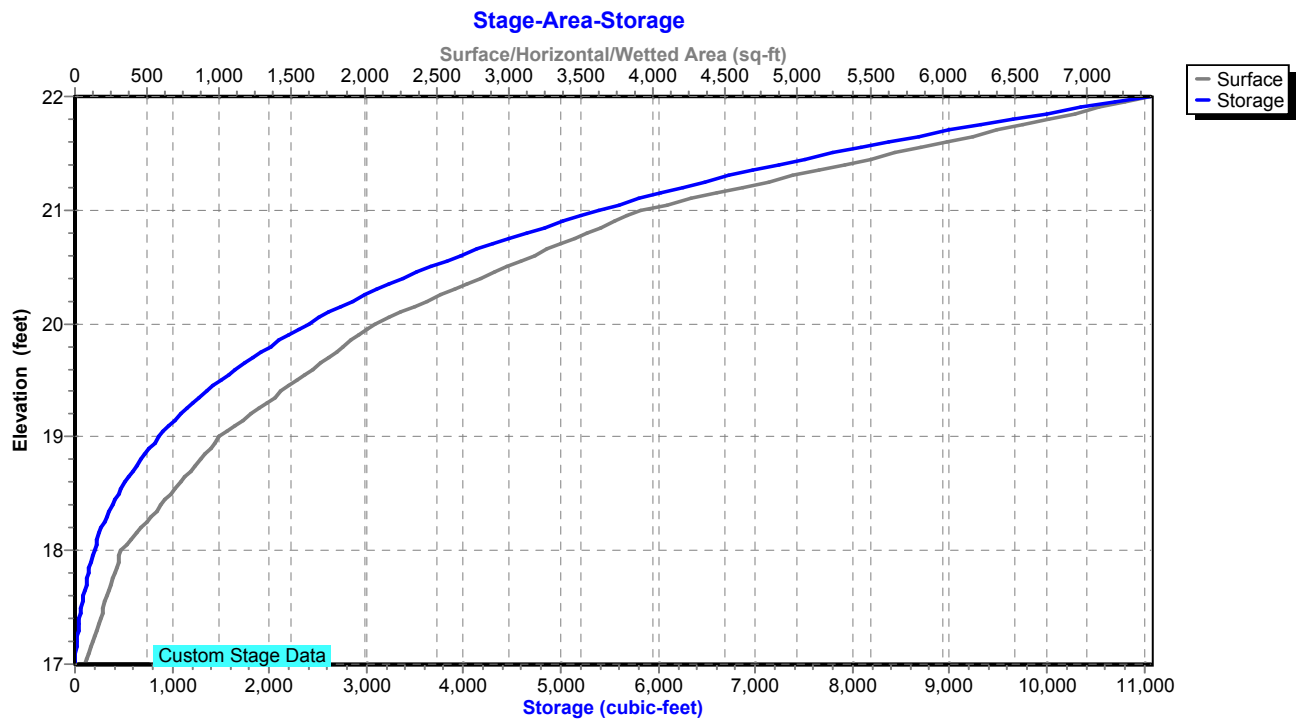
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Pond 26P: DET 16 Culvert



Pond 26P: DET 16 Culvert



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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 1.49" for 2 year event
 Inflow = 26.93 cfs @ 12.69 hrs, Volume= 274,605 cf
 Outflow = 26.92 cfs @ 12.71 hrs, Volume= 274,605 cf, Atten= 0%, Lag= 1.0 min
 Primary = 26.92 cfs @ 12.71 hrs, Volume= 274,605 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 18.65' @ 12.71 hrs Surf.Area= 9,465 sf Storage= 9,371 cf

Plug-Flow detention time= 4.0 min calculated for 274,514 cf (100% of inflow)
 Center-of-Mass det. time= 4.0 min (905.0 - 901.0)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=26.60 cfs @ 12.71 hrs HW=18.65' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 13.72 cfs @ 7.76 fps)

— **2=Custom Weir/Orifice** (Weir Controls 12.88 cfs @ 1.31 fps)

Proposed Conditions

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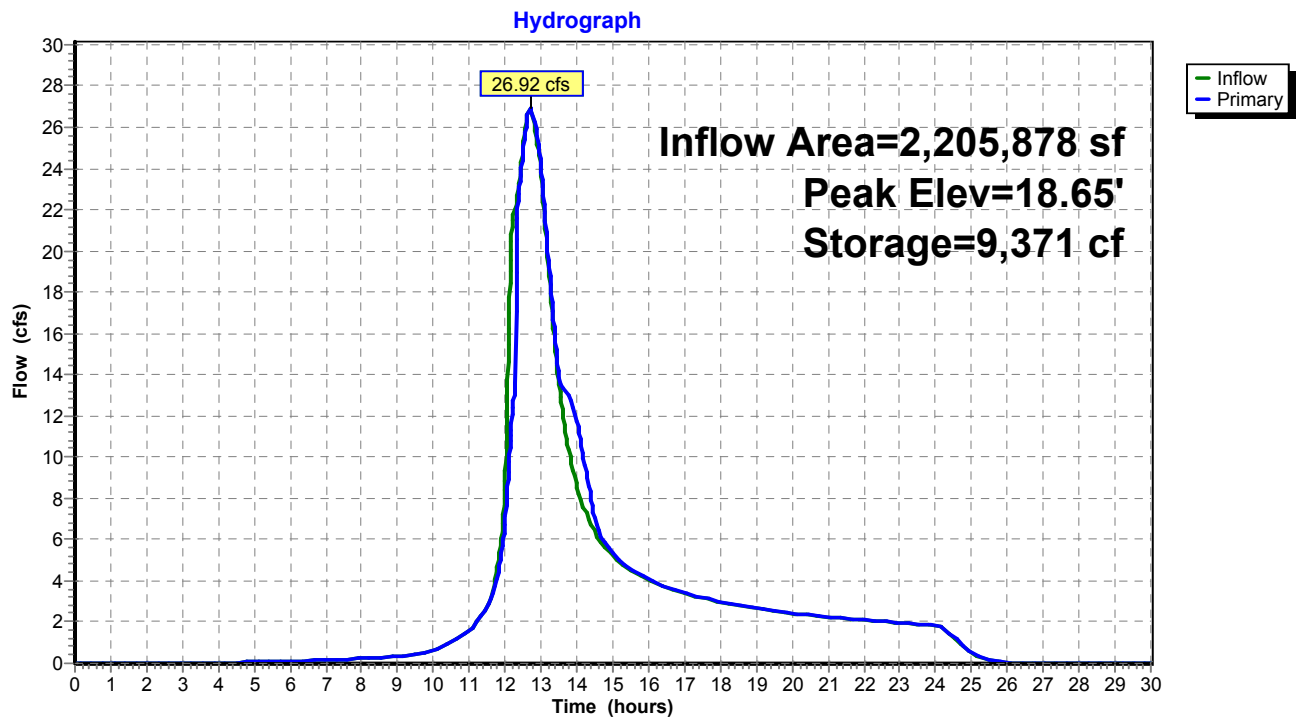
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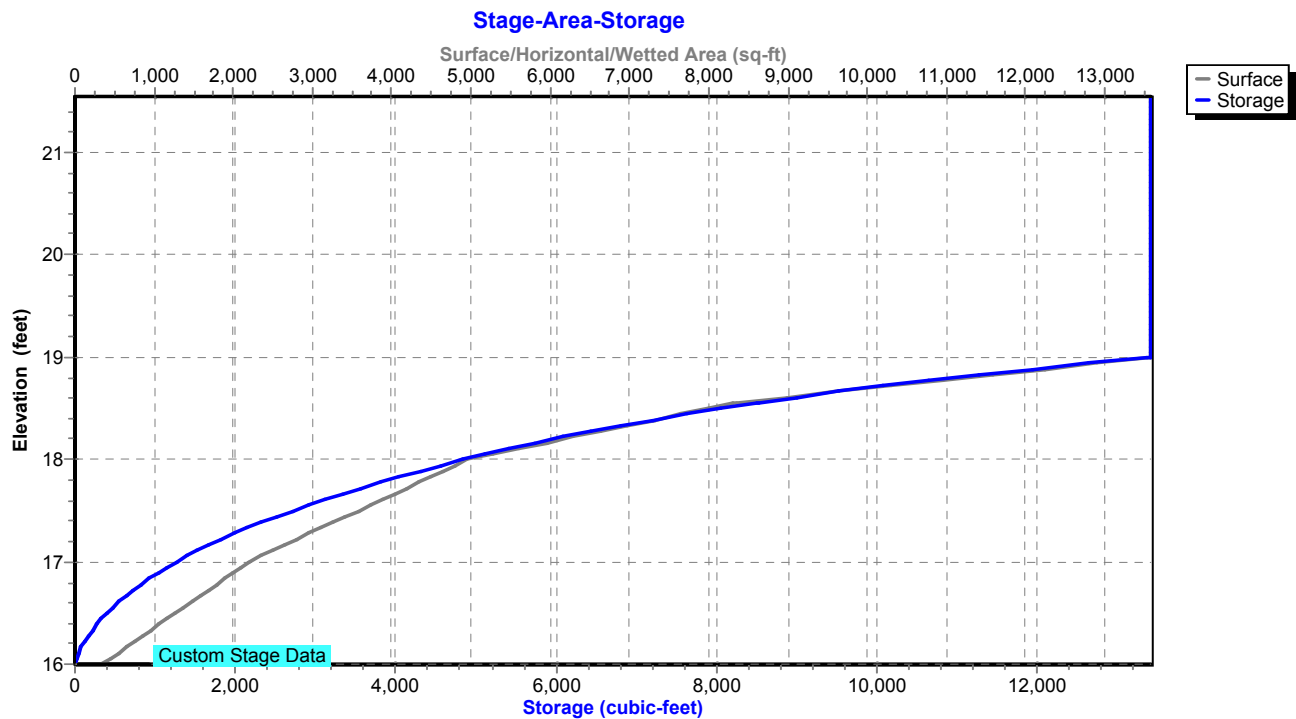
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 2.12" for 2 year event
Inflow = 13.50 cfs @ 12.04 hrs, Volume= 43,842 cf
Outflow = 0.59 cfs @ 14.92 hrs, Volume= 18,576 cf, Atten= 96%, Lag= 173.1 min
Primary = 0.59 cfs @ 14.92 hrs, Volume= 18,576 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 26.88' @ 14.92 hrs Surf.Area= 13,327 sf Storage= 29,140 cf

Plug-Flow detention time= 460.0 min calculated for 18,576 cf (42% of inflow)
Center-of-Mass det. time= 304.5 min (1,126.9 - 822.5)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' S= 0.0333 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.59 cfs @ 14.92 hrs HW=26.88' (Free Discharge)

1=Culvert (Passes 0.59 cfs of 12.43 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.59 cfs @ 2.11 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Proposed Conditions

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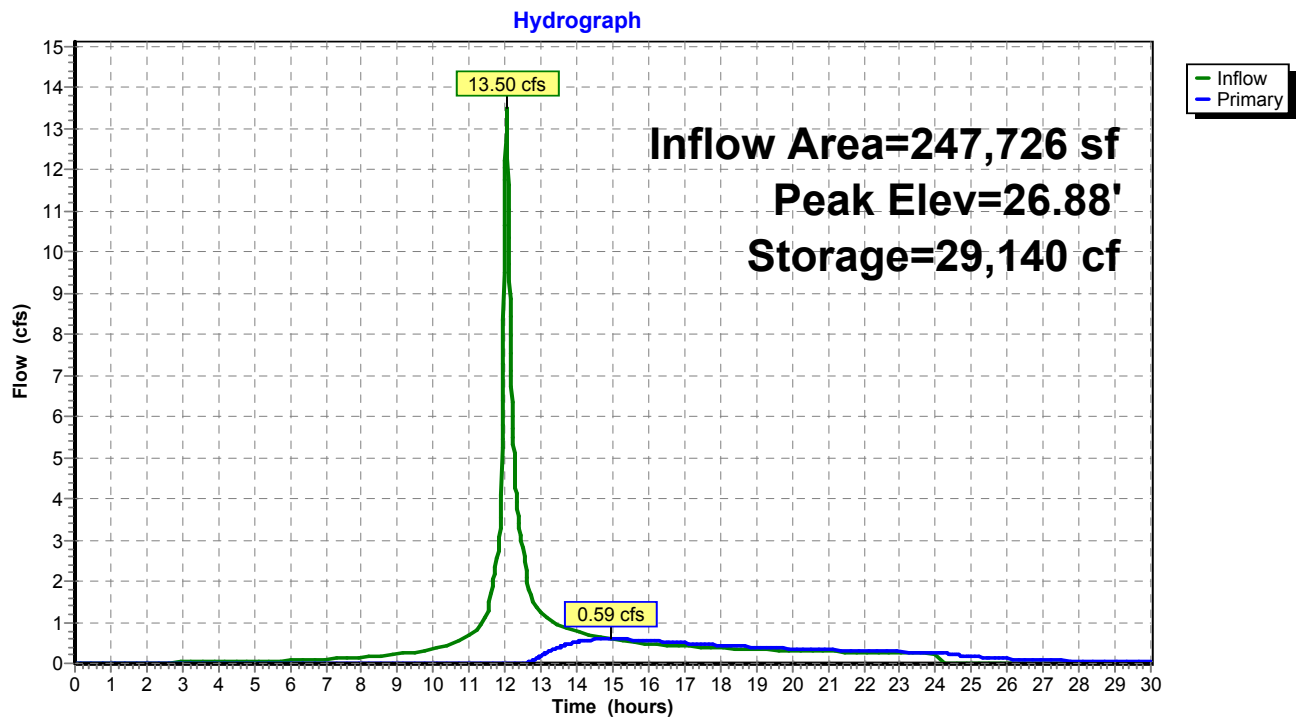
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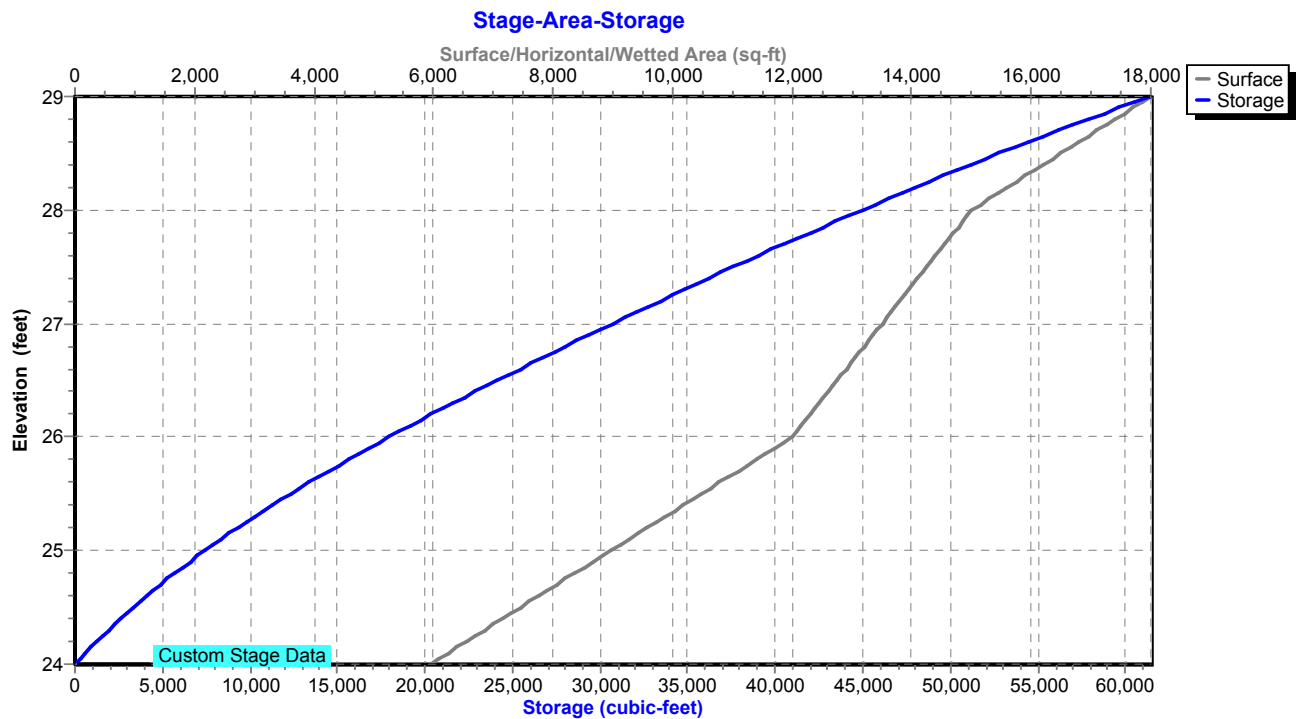
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



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Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 2.24" for 2 year event
Inflow = 12.42 cfs @ 12.04 hrs, Volume= 40,940 cf
Outflow = 12.42 cfs @ 12.04 hrs, Volume= 40,940 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.42 cfs @ 12.04 hrs, Volume= 40,940 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 45.68' @ 12.04 hrs

Flood Elev= 51.00'

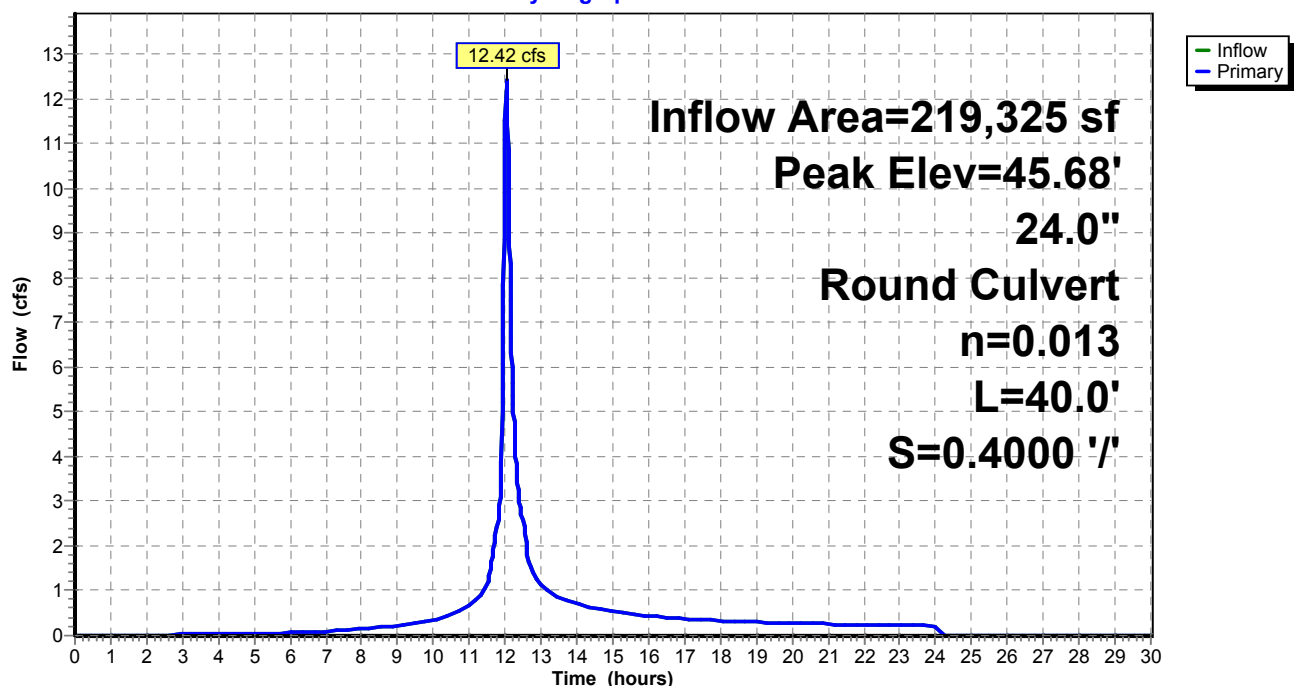
Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.42 cfs @ 12.04 hrs HW=45.68' (Free Discharge)

↑1=Culvert (Inlet Controls 12.42 cfs @ 4.41 fps)

Pond 51P: Manhole

Hydrograph



Proposed Conditions

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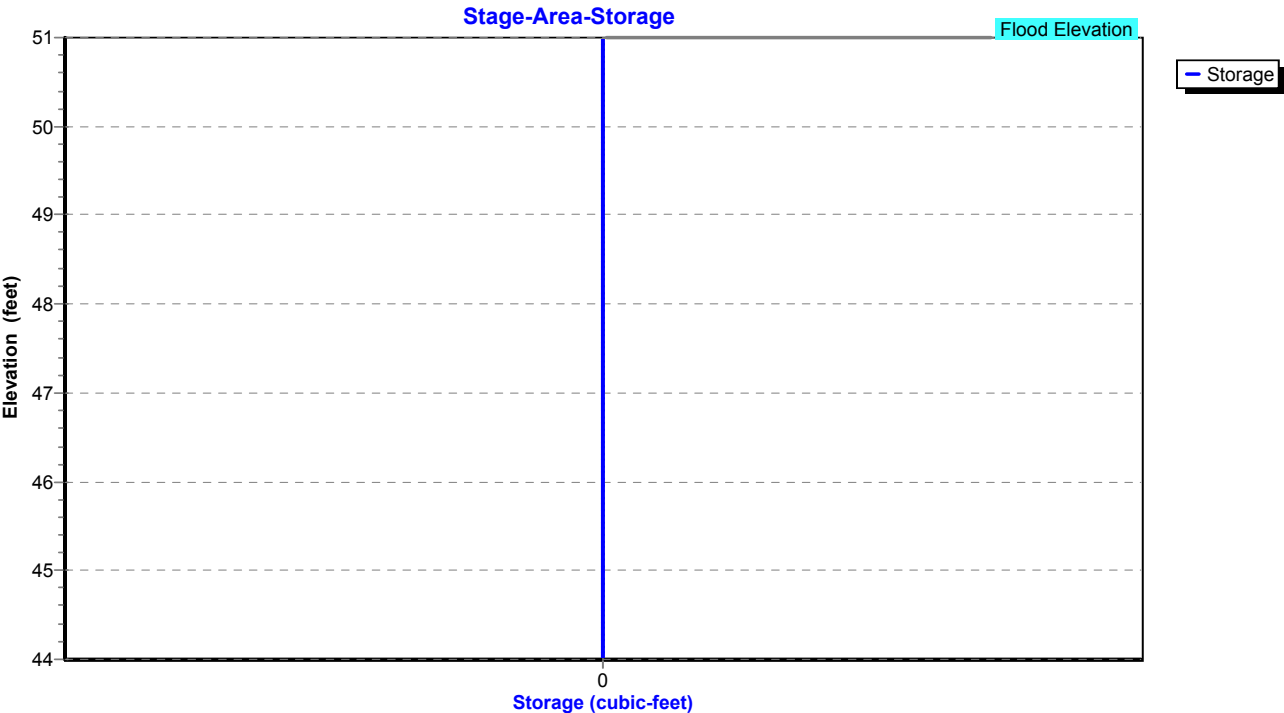
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Pond 51P: Manhole



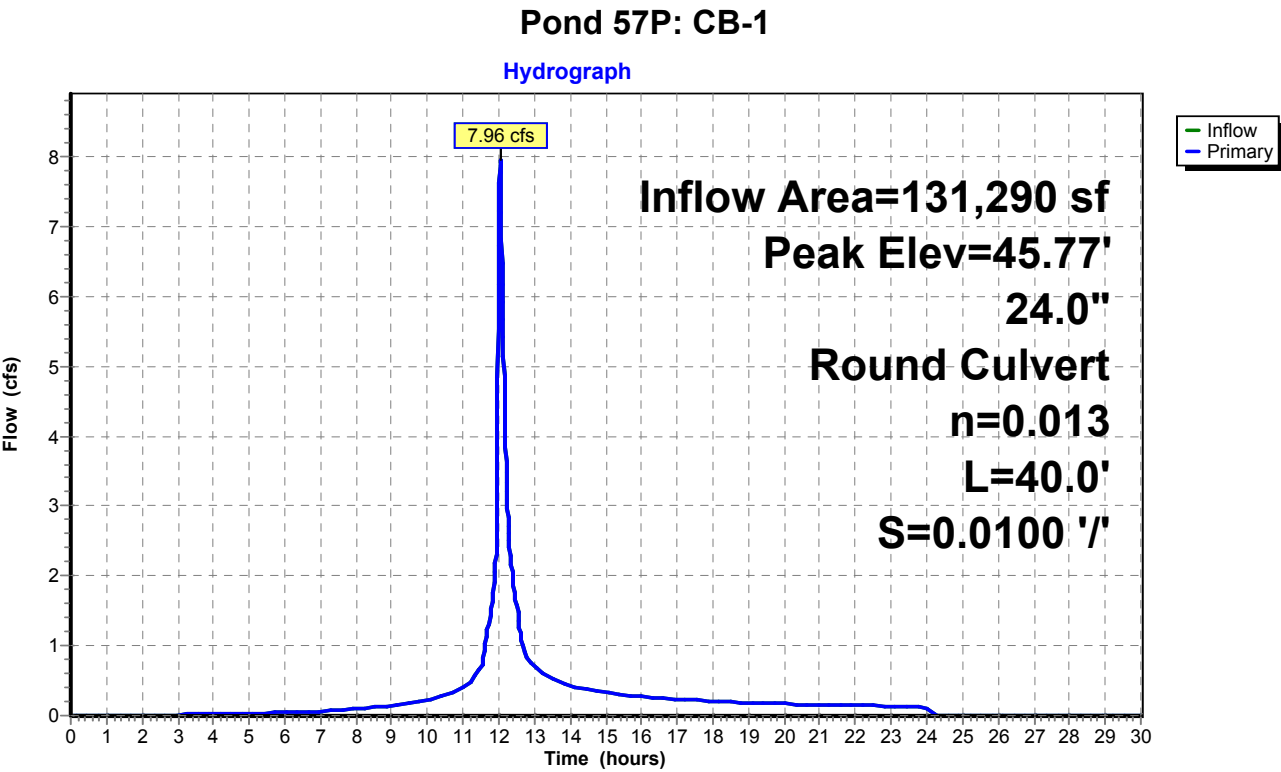
Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 2.29" for 2 year event
Inflow = 7.96 cfs @ 12.04 hrs, Volume= 25,108 cf
Outflow = 7.96 cfs @ 12.04 hrs, Volume= 25,108 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.96 cfs @ 12.04 hrs, Volume= 25,108 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.77' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=7.94 cfs @ 12.04 hrs HW=45.77' (Free Discharge)
1=Culvert (Barrel Controls 7.94 cfs @ 4.90 fps)



Proposed Conditions

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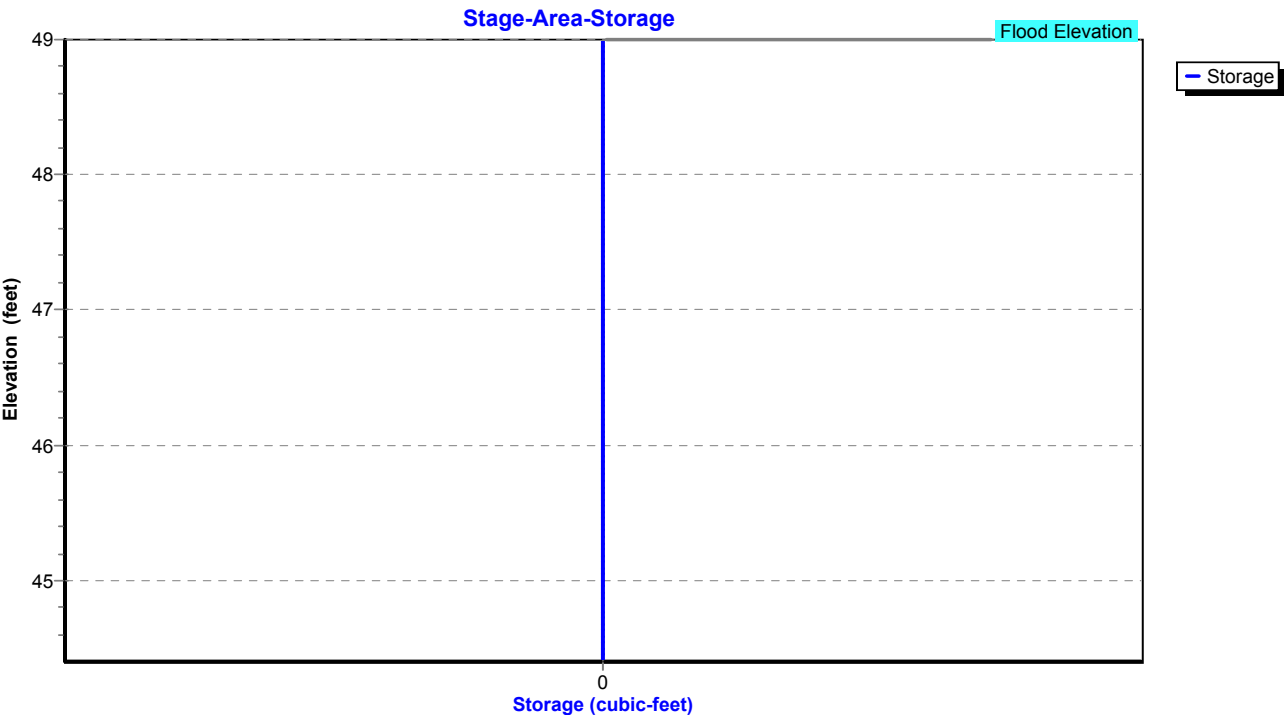
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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Pond 57P: CB-1



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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 2.20" for 2 year event
Inflow = 6.86 cfs @ 12.04 hrs, Volume= 21,903 cf
Outflow = 6.86 cfs @ 12.04 hrs, Volume= 21,903 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.86 cfs @ 12.04 hrs, Volume= 21,903 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 46.35' @ 12.04 hrs

Flood Elev= 49.00'

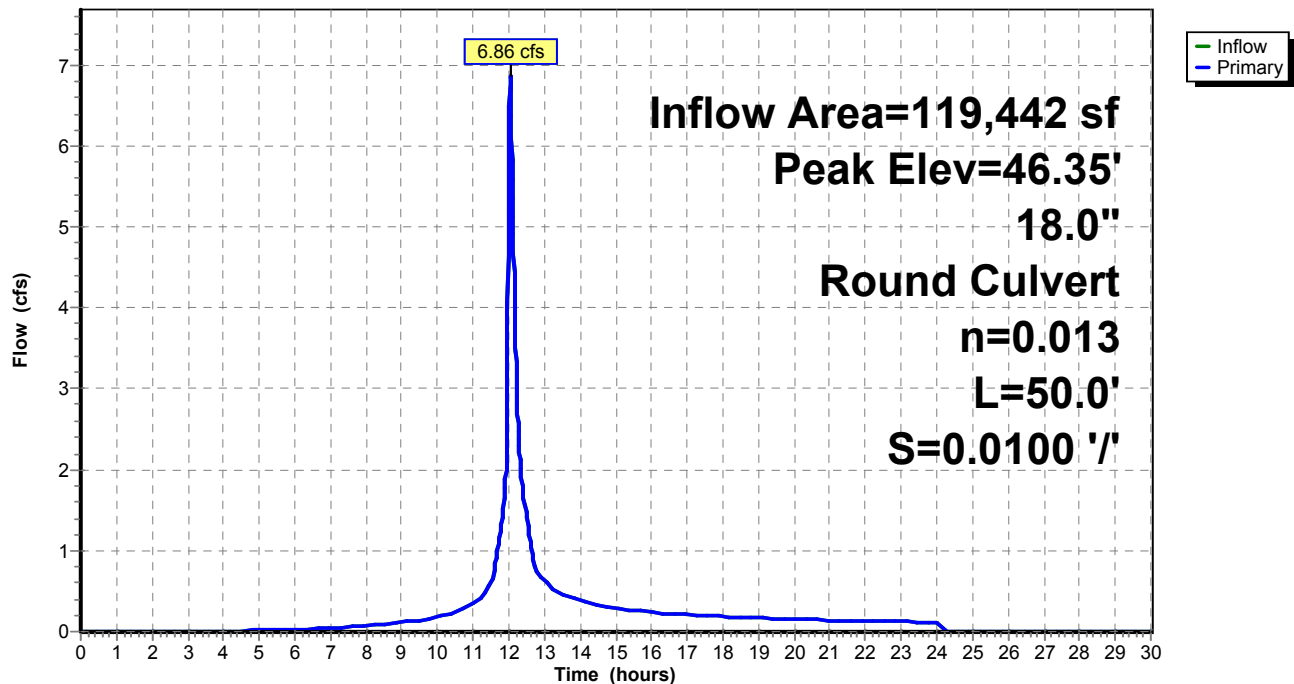
Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=6.85 cfs @ 12.04 hrs HW=46.35' (Free Discharge)

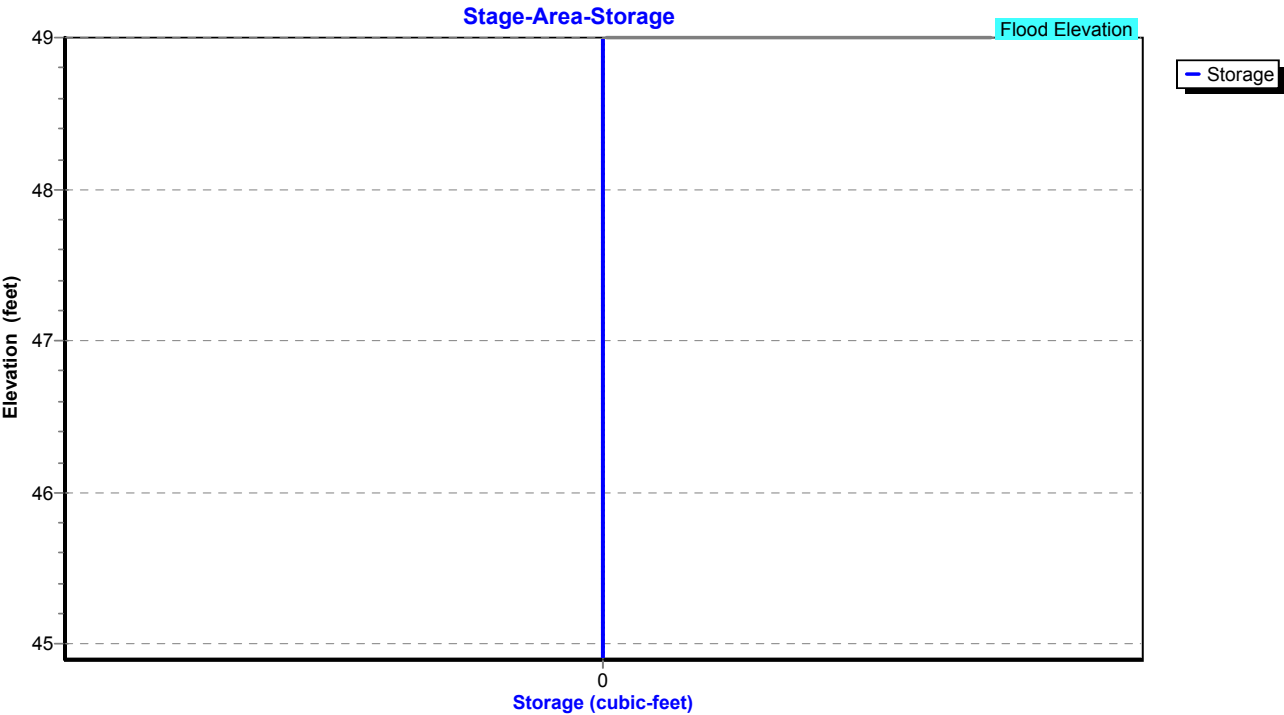
↑1=Culvert (Barrel Controls 6.85 cfs @ 5.00 fps)

Pond 58P: Manhole

Hydrograph



Pond 58P: Manhole



Proposed Conditions

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NORWALK 24-hr S1 2 year Rainfall=3.48"

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Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 2.34" for 2 year event
Inflow = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf
Outflow = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.55 cfs @ 12.03 hrs, Volume= 3,956 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 46.07' @ 12.03 hrs

Flood Elev= 49.50'

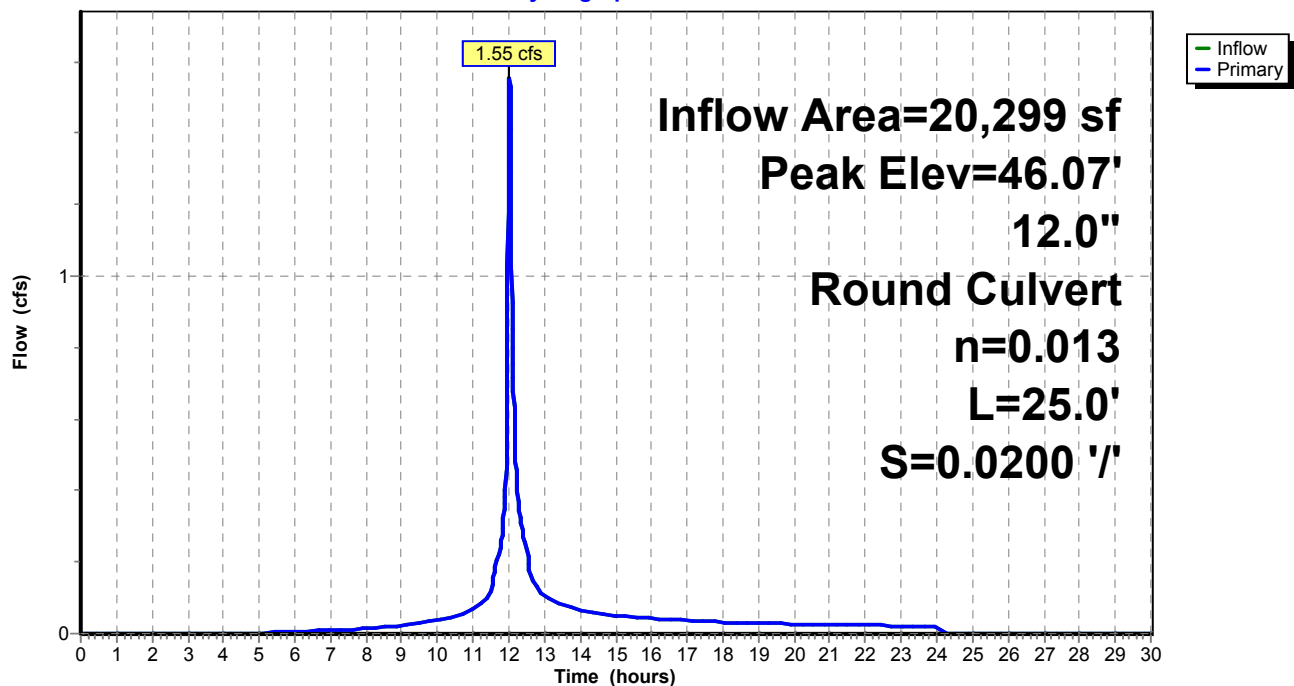
Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.55 cfs @ 12.03 hrs HW=46.07' (Free Discharge)

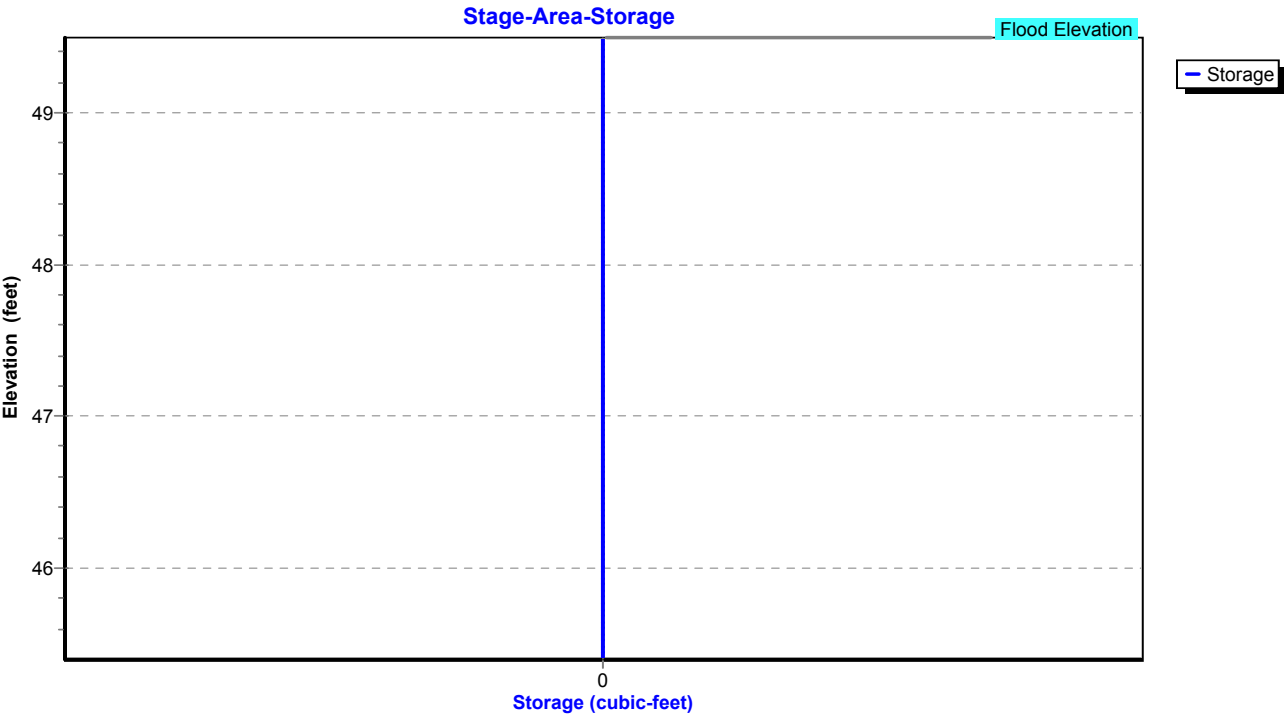
↑1=Culvert (Inlet Controls 1.55 cfs @ 2.78 fps)

Pond 59P: CB-7

Hydrograph



Pond 59P: CB-7



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Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 2.82" for 2 year event
Inflow = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf
Outflow = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.70 cfs @ 12.03 hrs, Volume= 1,850 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 45.53' @ 12.03 hrs

Flood Elev= 49.00'

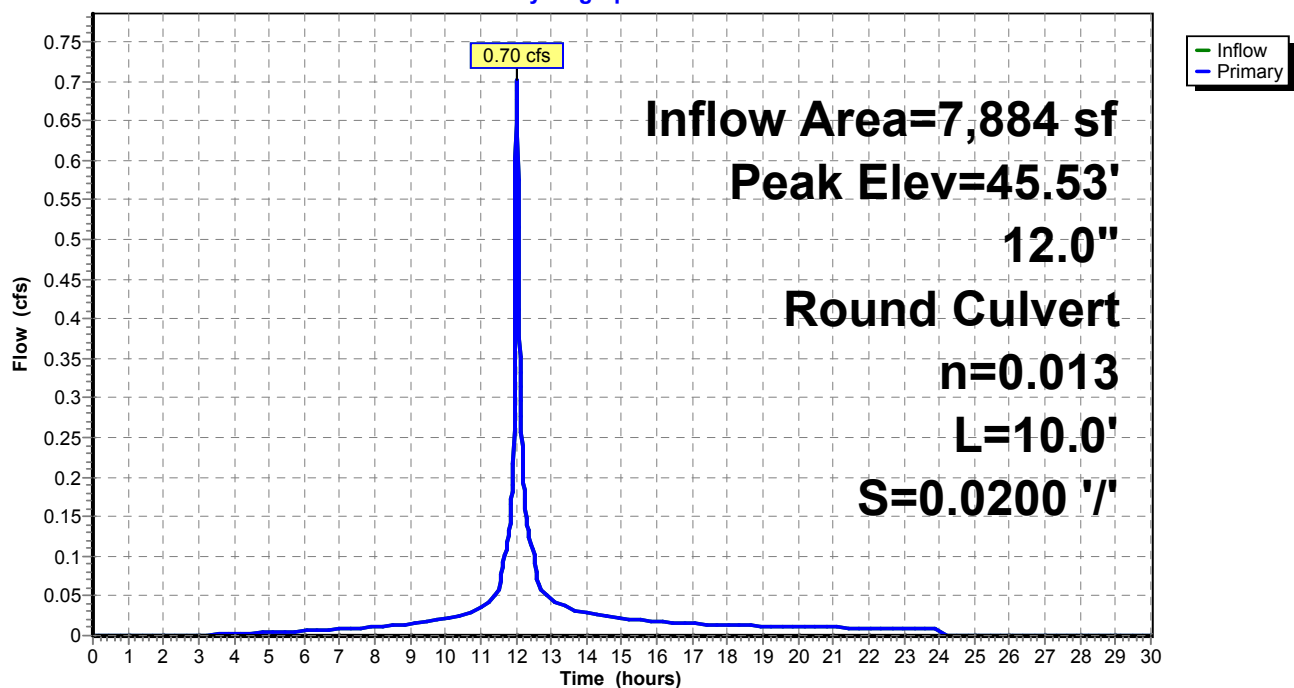
Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.70 cfs @ 12.03 hrs HW=45.53' (Free Discharge)

↑1=Culvert (Barrel Controls 0.70 cfs @ 3.17 fps)

Pond 61P: CB-6

Hydrograph



Proposed Conditions

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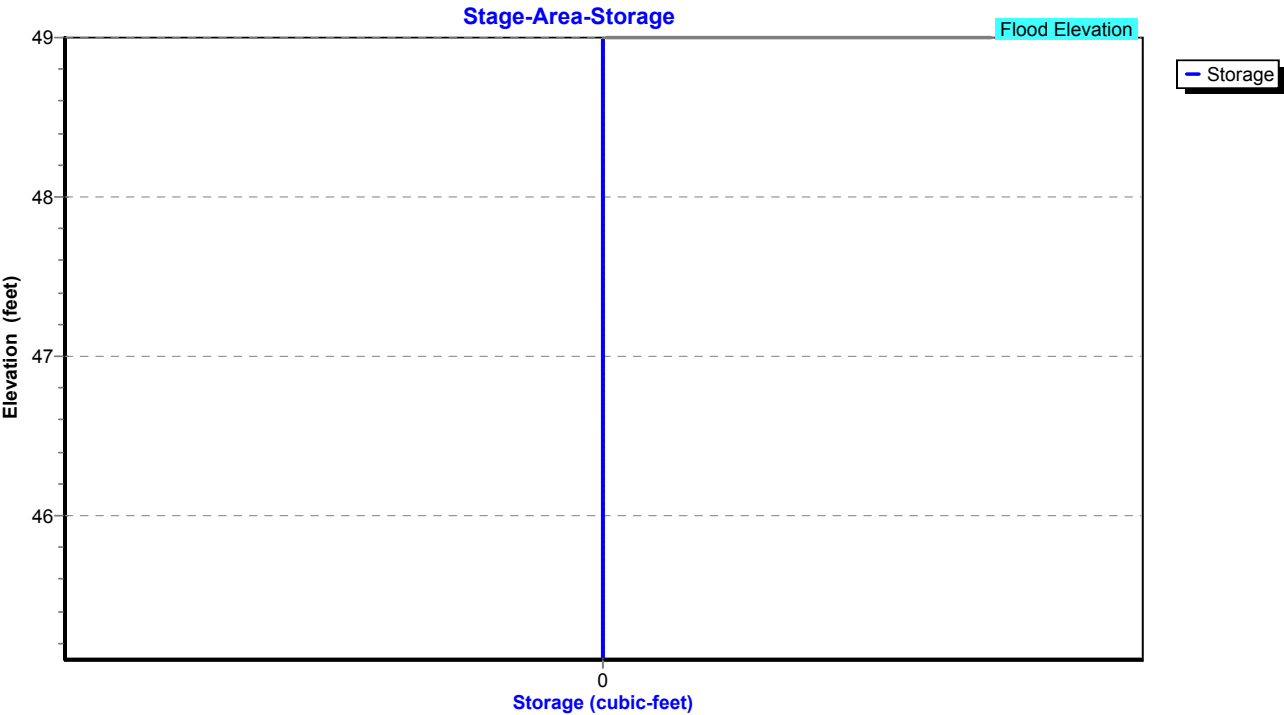
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Pond 61P: CB-6



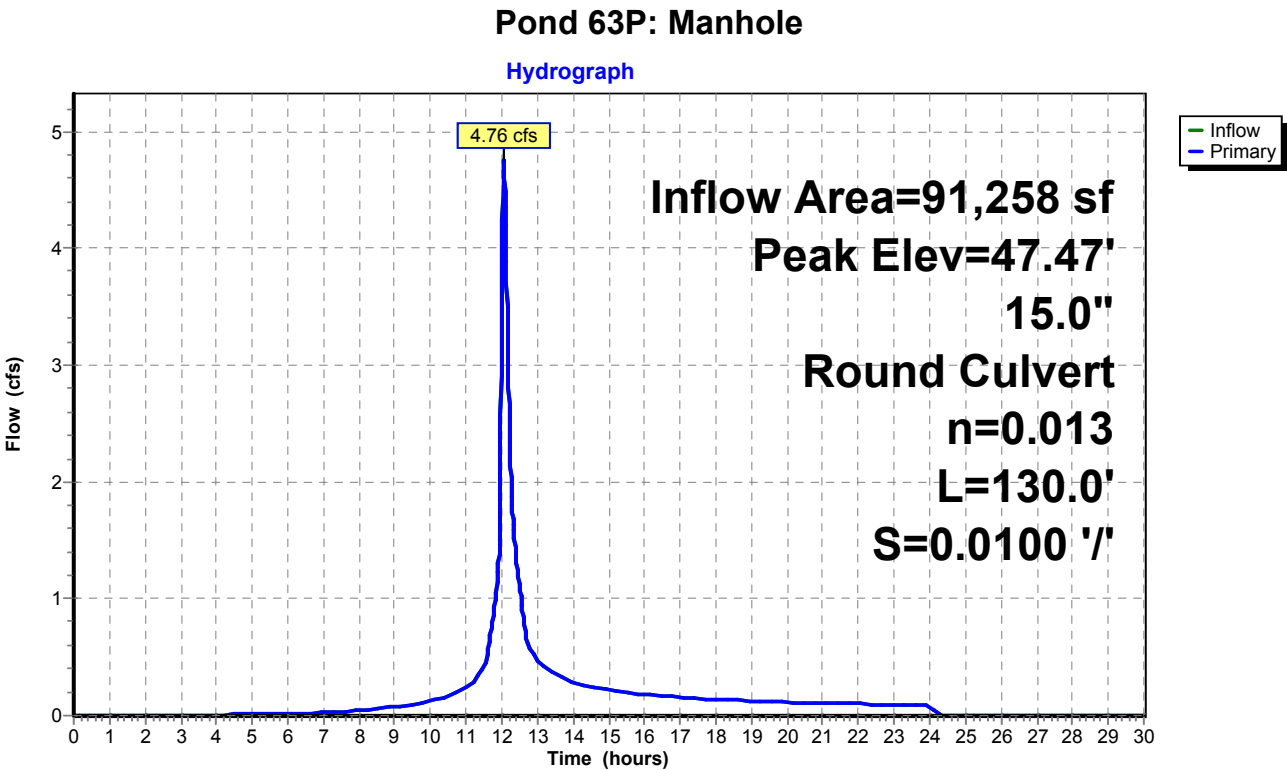
Summary for Pond 63P: Manhole

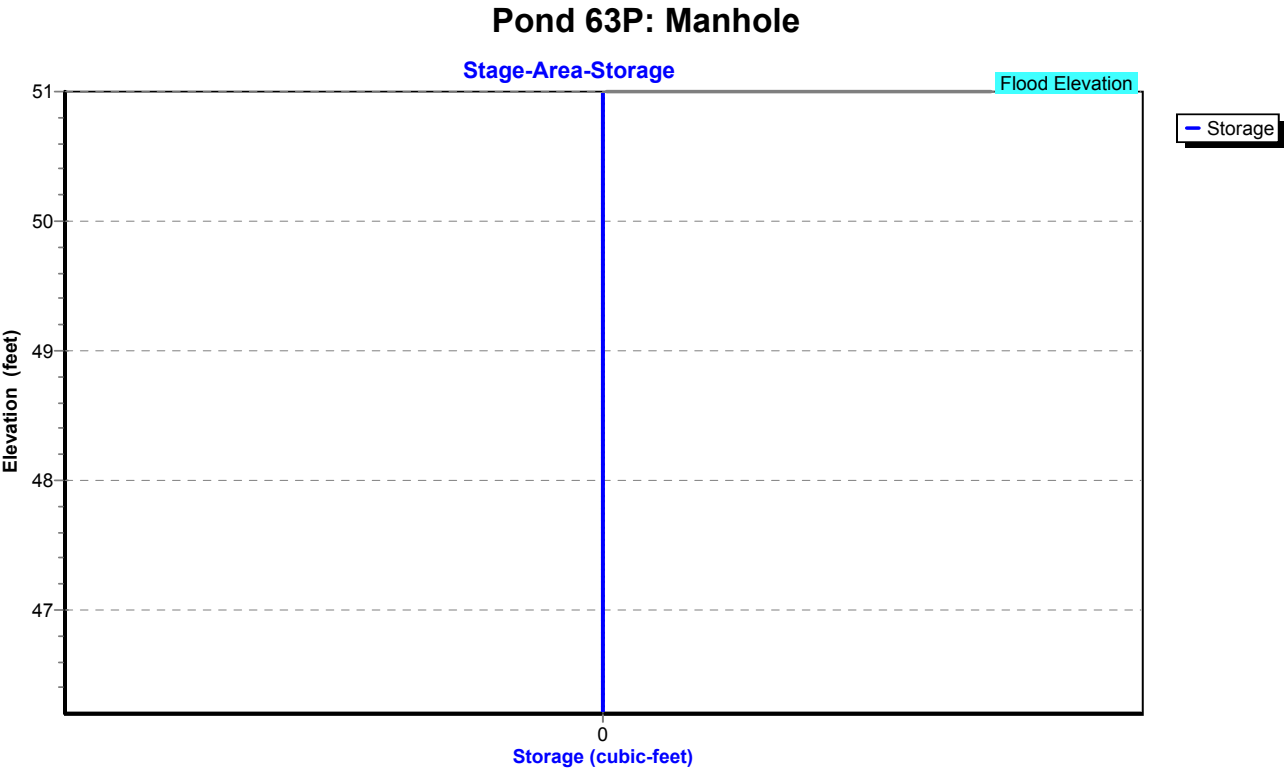
Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 2.12" for 2 year event
Inflow = 4.76 cfs @ 12.06 hrs, Volume= 16,097 cf
Outflow = 4.76 cfs @ 12.06 hrs, Volume= 16,097 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.76 cfs @ 12.06 hrs, Volume= 16,097 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.47' @ 12.06 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.75 cfs @ 12.06 hrs HW=47.47' (Free Discharge)
1=Culvert (Inlet Controls 4.75 cfs @ 3.87 fps)





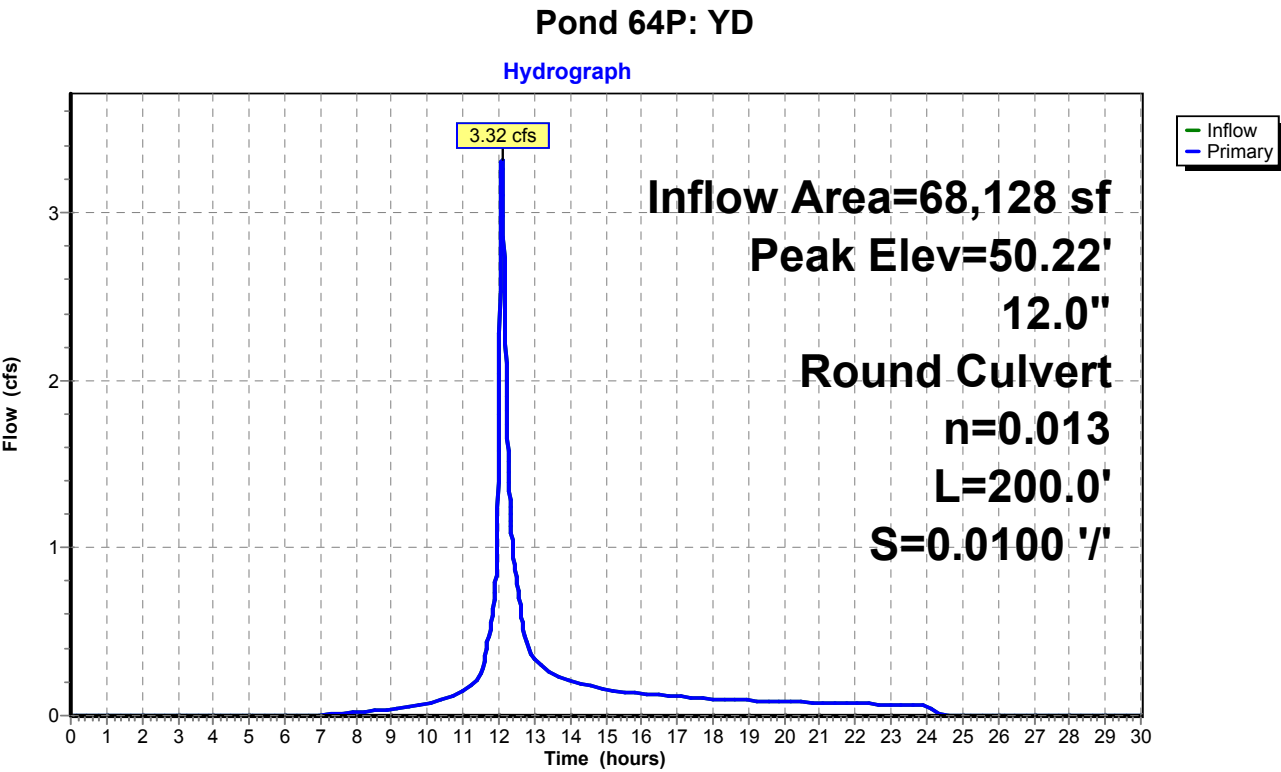
Summary for Pond 64P: YD

Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 1.92" for 2 year event
Inflow = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf
Outflow = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.32 cfs @ 12.09 hrs, Volume= 10,897 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.22' @ 12.09 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.31 cfs @ 12.09 hrs HW=50.22' (Free Discharge)
1=Culvert (Inlet Controls 3.31 cfs @ 4.22 fps)



Proposed Conditions

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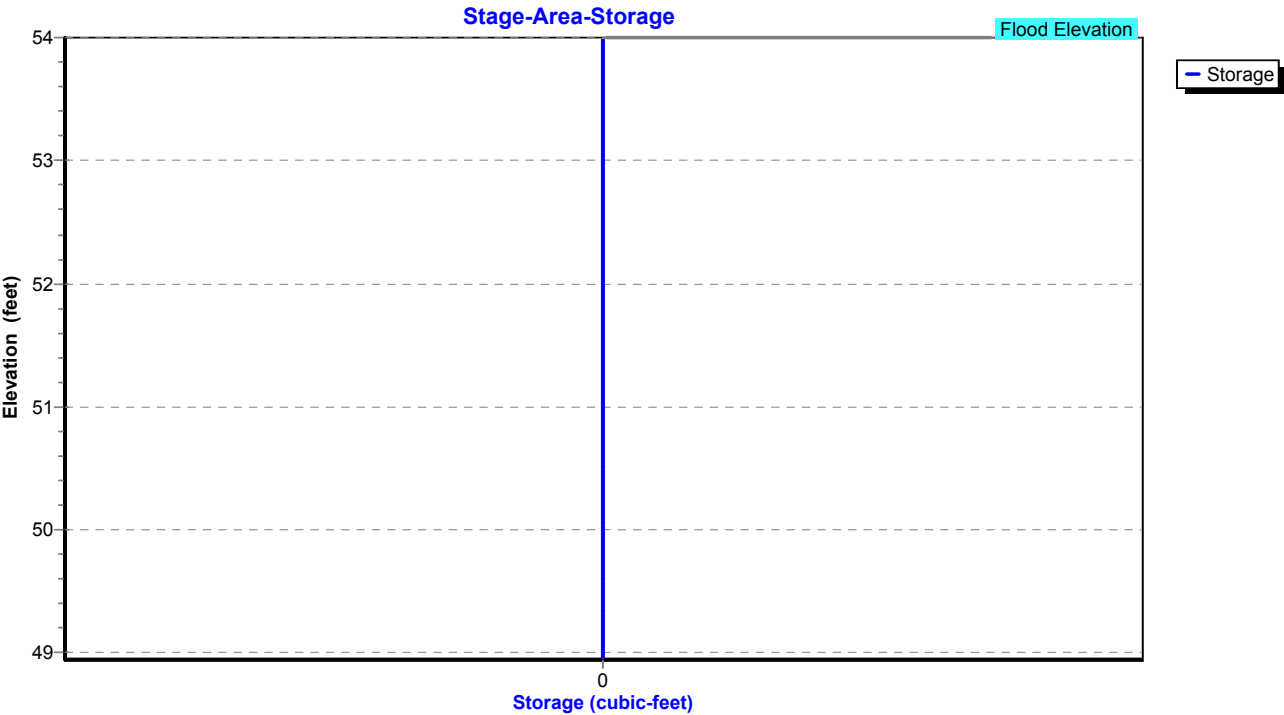
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 2.62" for 2 year event
Inflow = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf
Outflow = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.08 cfs @ 12.03 hrs, Volume= 2,784 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.09' @ 12.03 hrs

Flood Elev= 53.00'

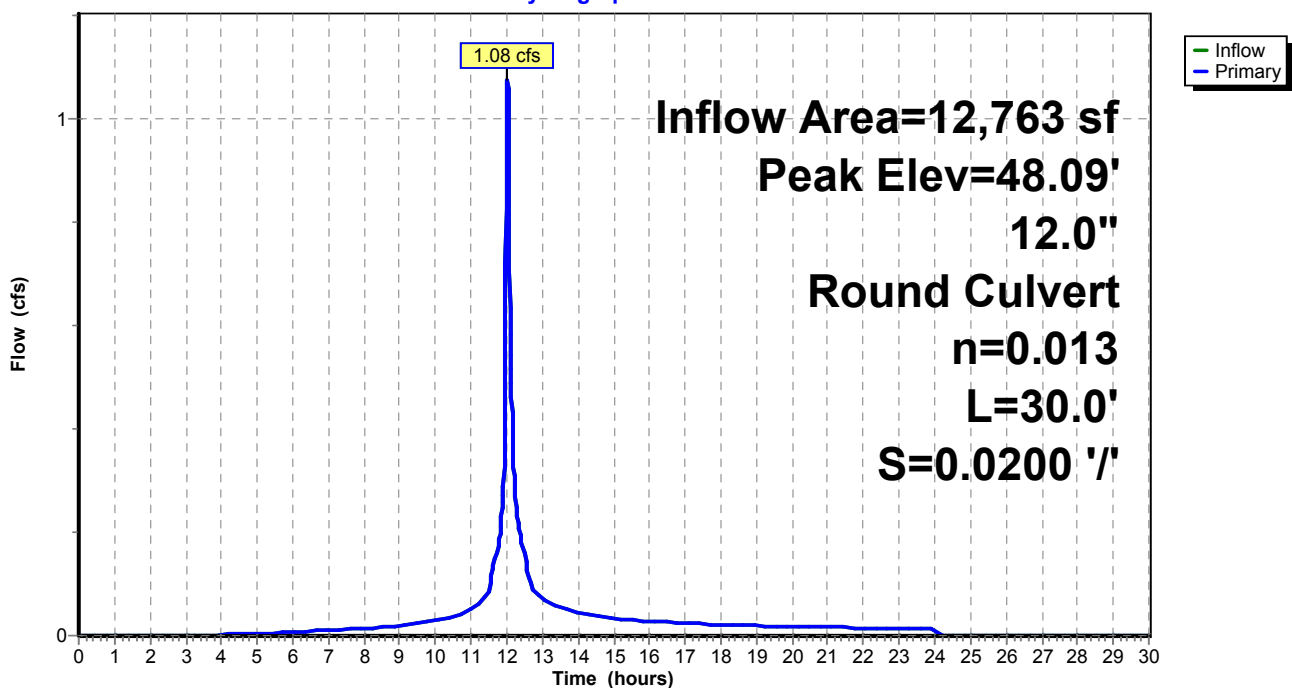
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.07 cfs @ 12.03 hrs HW=48.09' (Free Discharge)

↑1=Culvert (Inlet Controls 1.07 cfs @ 2.49 fps)

Pond 66P: CB-10

Hydrograph



Proposed Conditions

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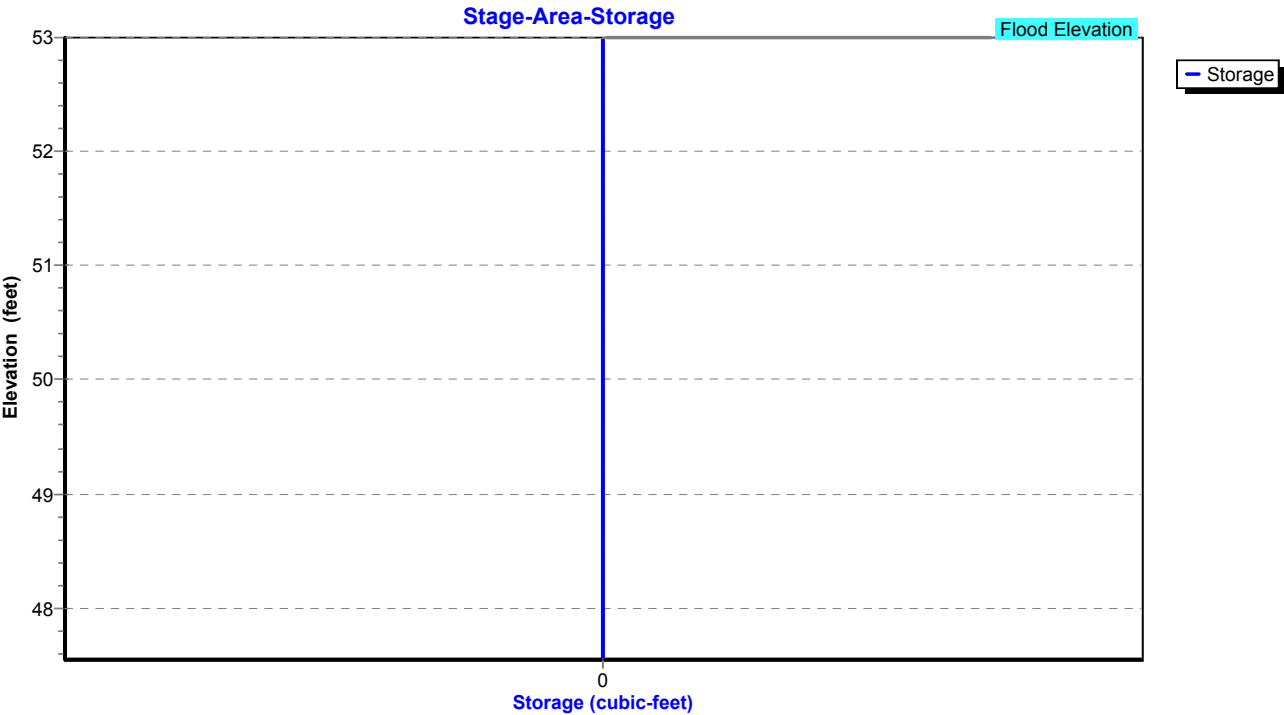
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Pond 66P: CB-10



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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 2.52" for 2 year event
Inflow = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf
Outflow = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.53 cfs @ 12.03 hrs, Volume= 1,355 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.52' @ 12.03 hrs

Flood Elev= 52.00'

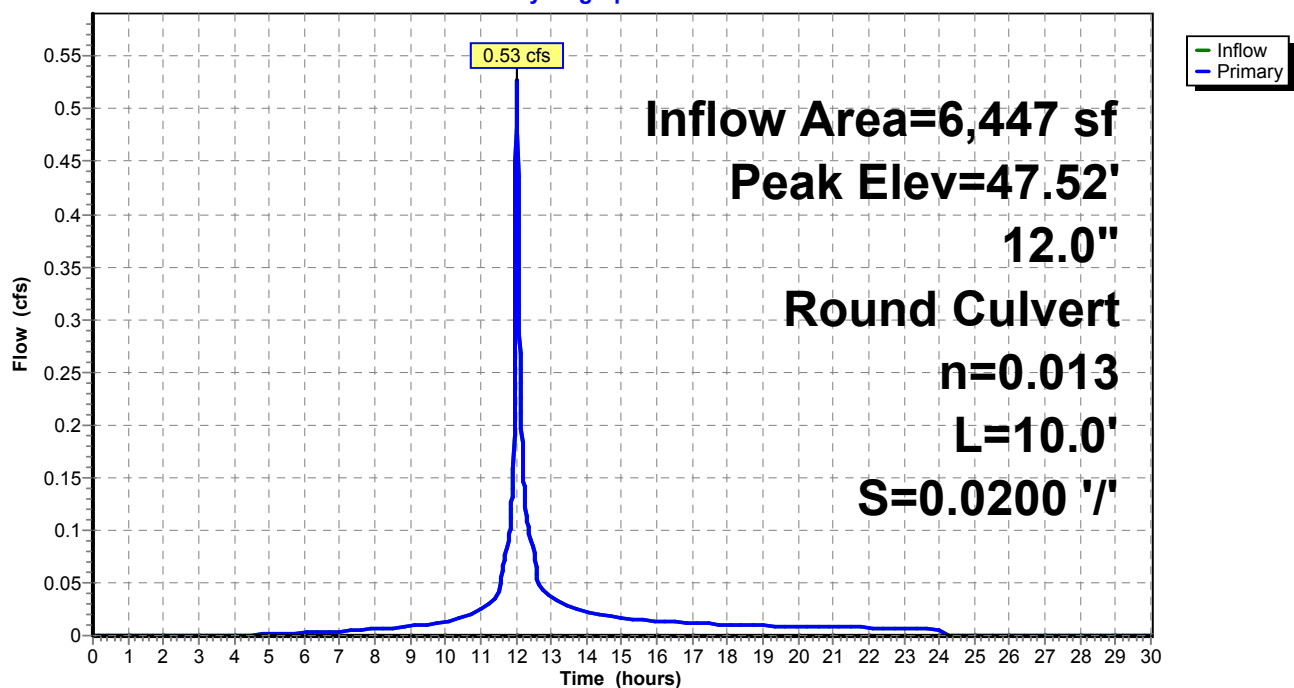
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.52 cfs @ 12.03 hrs HW=47.51' (Free Discharge)

↑1=Culvert (Barrel Controls 0.52 cfs @ 3.01 fps)

Pond 67P: CB-9

Hydrograph



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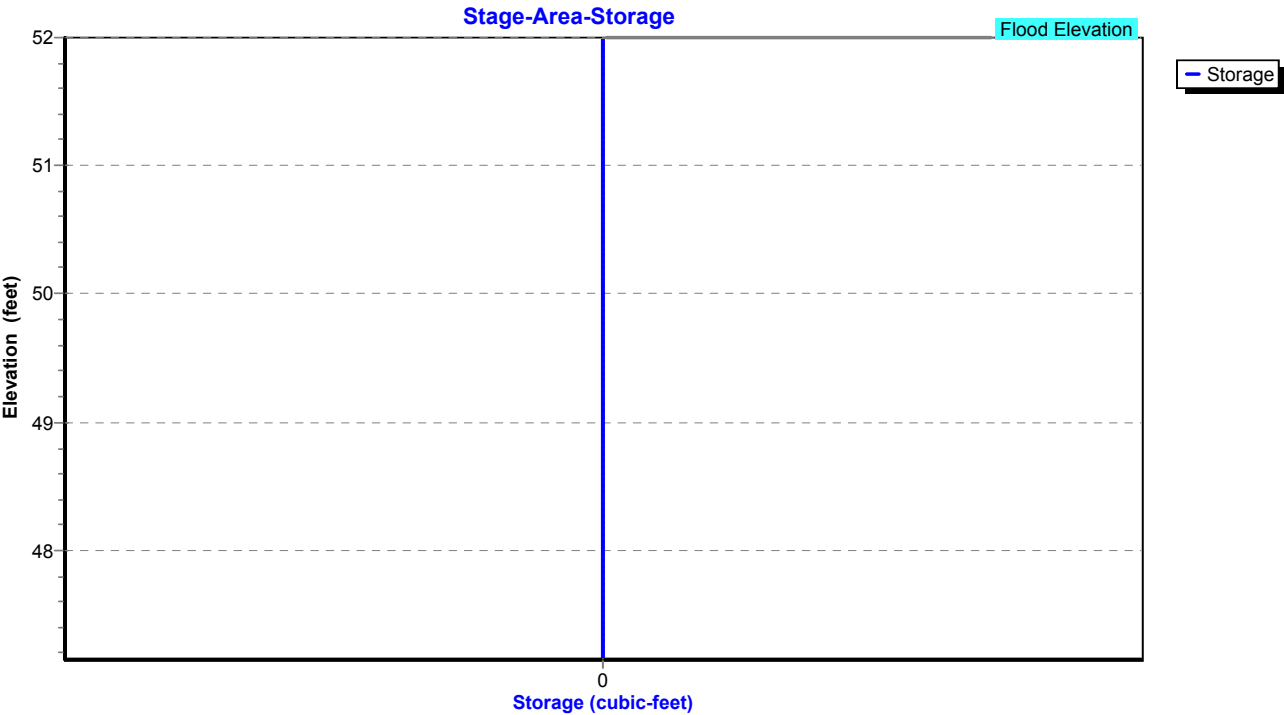
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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 2.16" for 2 year event
Inflow = 4.71 cfs @ 11.99 hrs, Volume= 15,832 cf
Outflow = 4.71 cfs @ 11.99 hrs, Volume= 15,832 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.71 cfs @ 11.99 hrs, Volume= 15,832 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.01' @ 11.99 hrs

Flood Elev= 53.30'

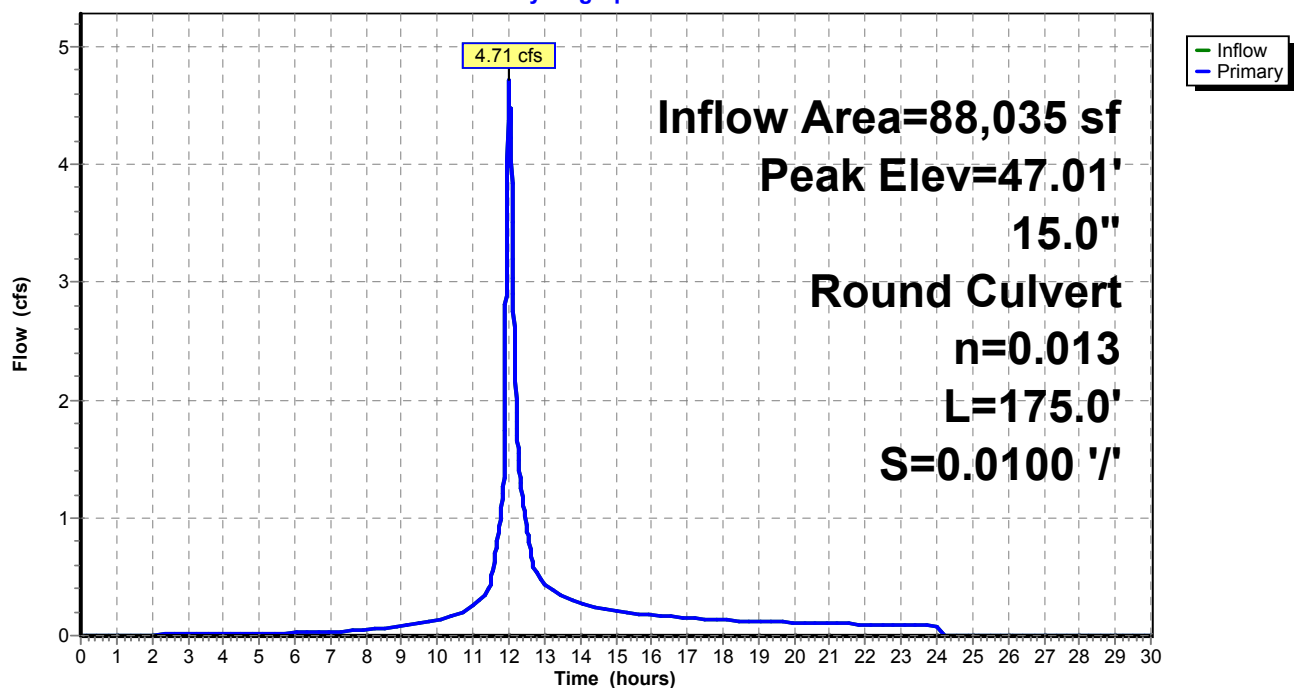
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.70 cfs @ 11.99 hrs HW=47.01' (Free Discharge)

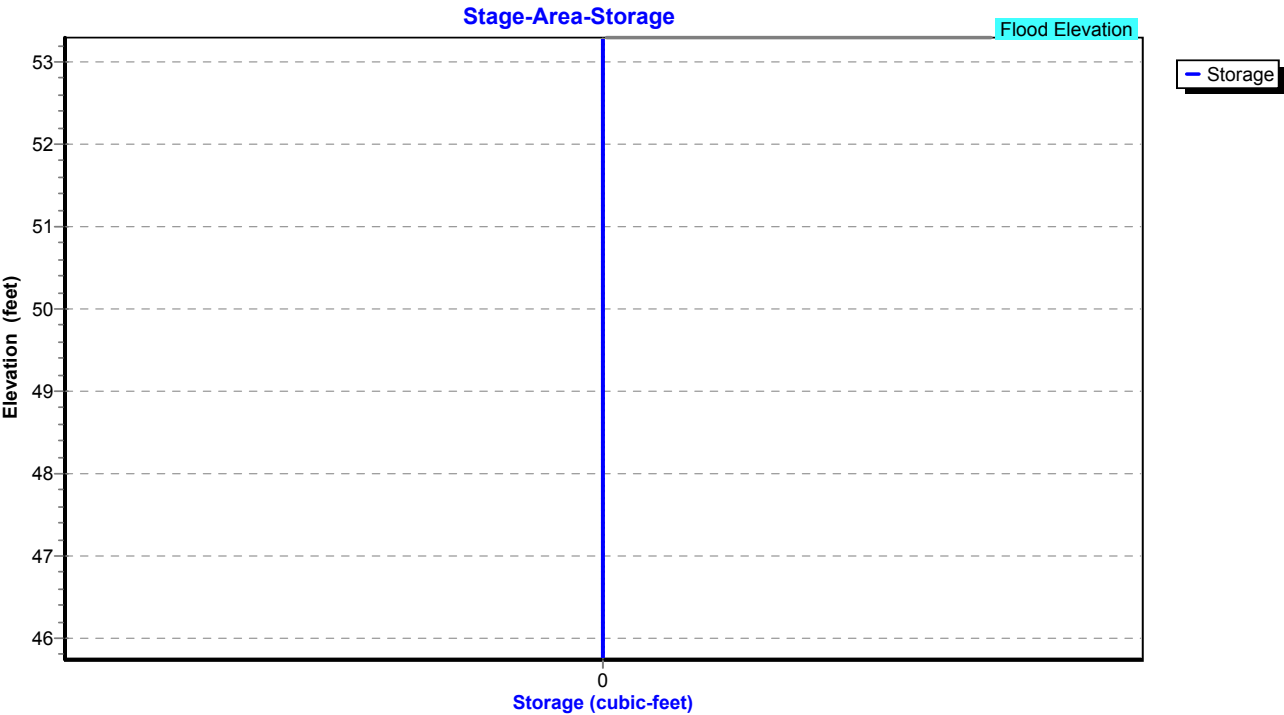
↑1=Culvert (Inlet Controls 4.70 cfs @ 3.83 fps)

Pond 70P: CB-2

Hydrograph



Pond 70P: CB-2



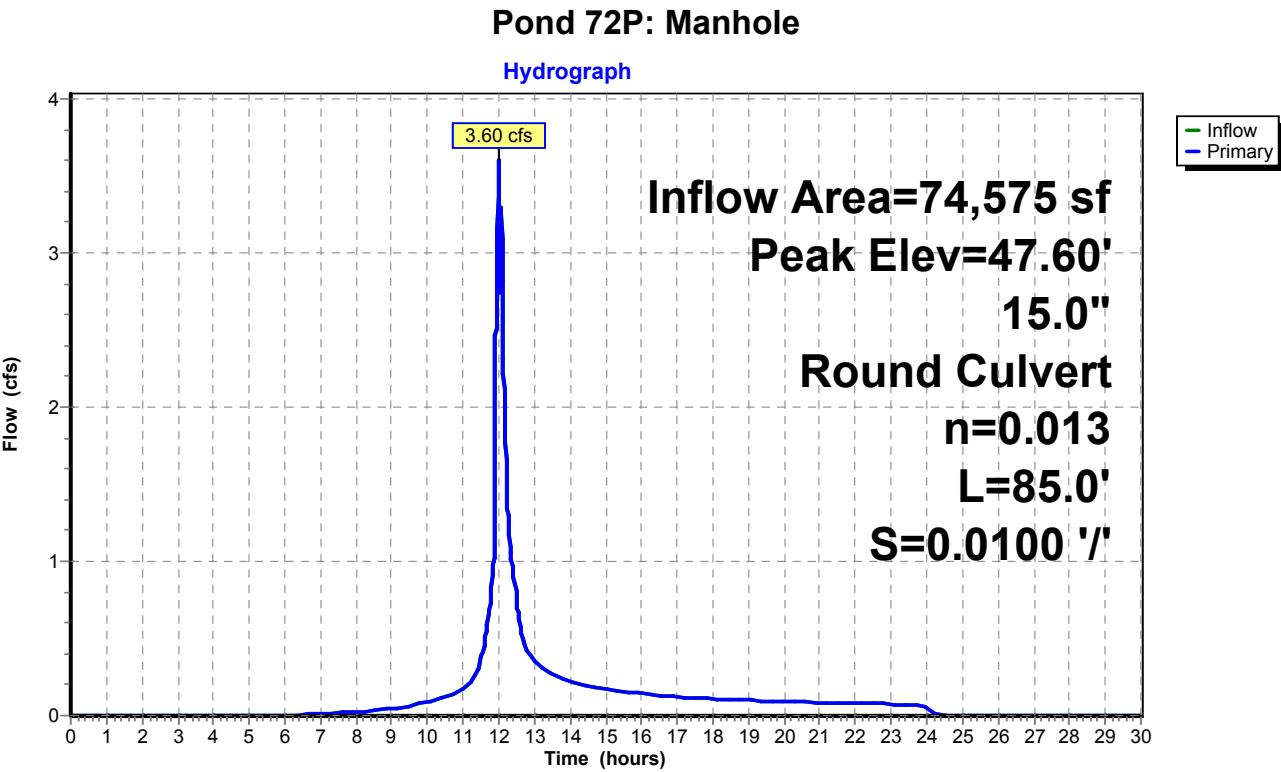
Summary for Pond 72P: Manhole

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 1.96" for 2 year event
Inflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Outflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 47.60' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.56 cfs @ 11.99 hrs HW=47.60' (Free Discharge)
1=Culvert (Inlet Controls 3.56 cfs @ 3.40 fps)



Proposed Conditions

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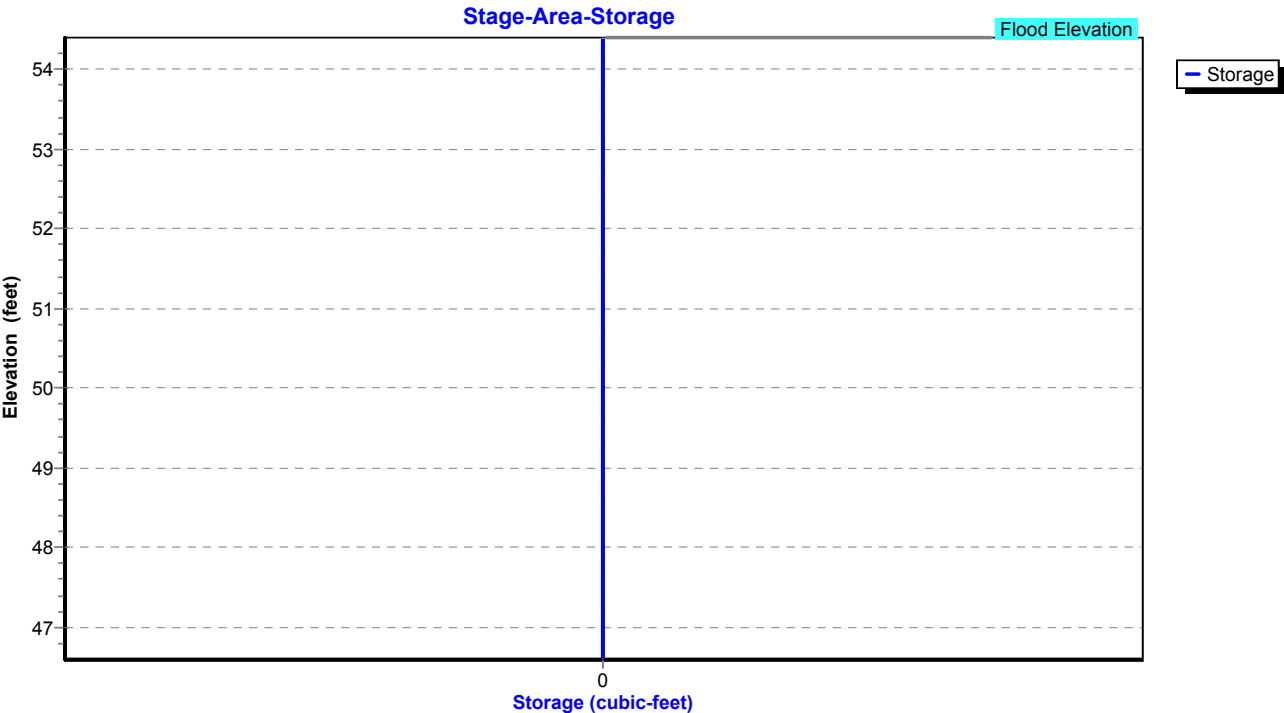
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Pond 72P: Manhole



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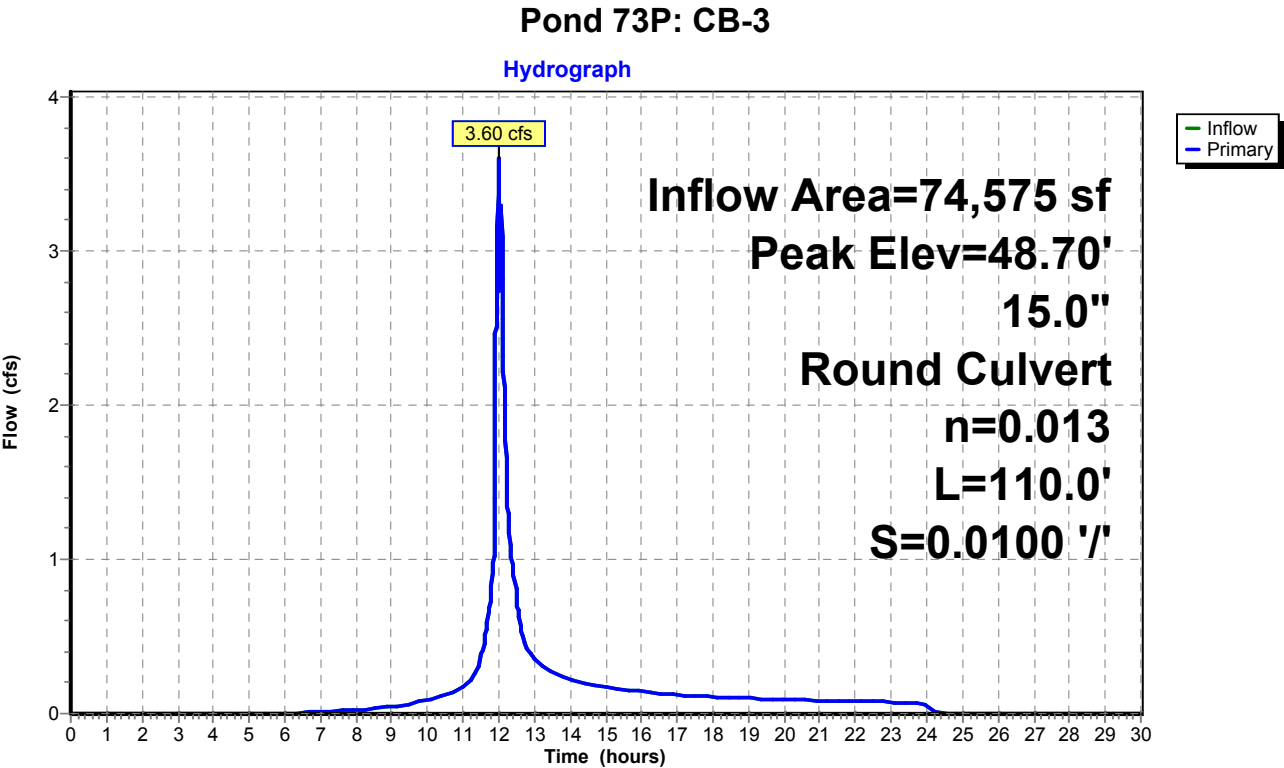
Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 1.96" for 2 year event
Inflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Outflow = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.60 cfs @ 11.99 hrs, Volume= 12,190 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.70' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.56 cfs @ 11.99 hrs HW=48.70' (Free Discharge)
↑1=Culvert (Inlet Controls 3.56 cfs @ 3.40 fps)



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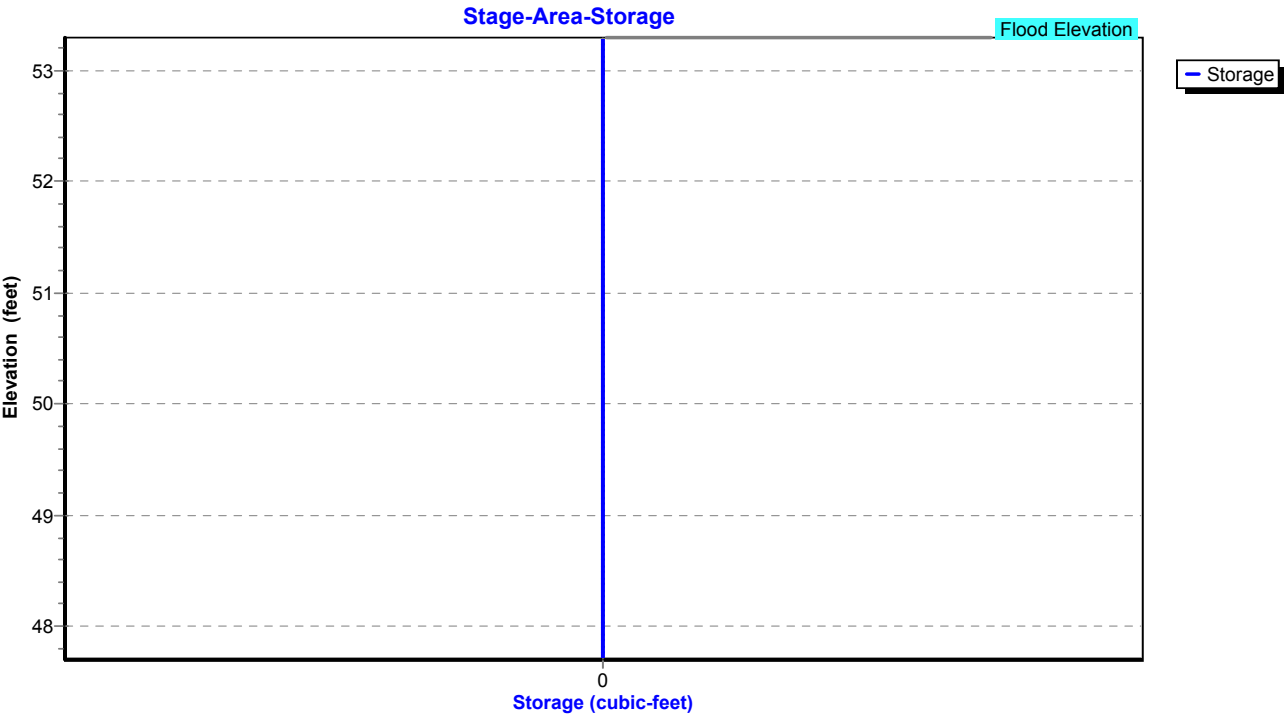
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Pond 73P: CB-3



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Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 1.86" for 2 year event
Inflow = 2.59 cfs @ 12.06 hrs, Volume= 7,743 cf
Outflow = 2.59 cfs @ 12.06 hrs, Volume= 7,743 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.59 cfs @ 12.06 hrs, Volume= 7,743 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.01' @ 12.06 hrs

Flood Elev= 53.70'

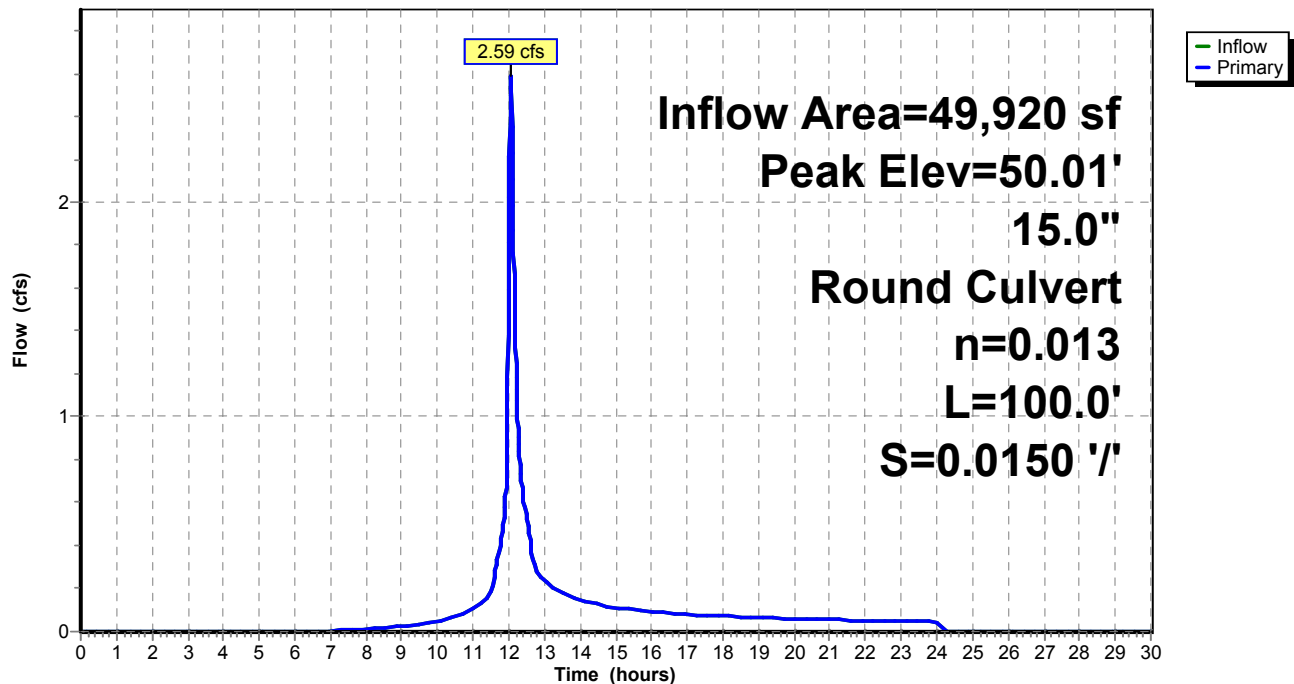
Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.58 cfs @ 12.06 hrs HW=50.01' (Free Discharge)

↑1=Culvert (Inlet Controls 2.58 cfs @ 3.07 fps)

Pond 74P: CB-4

Hydrograph



Proposed Conditions

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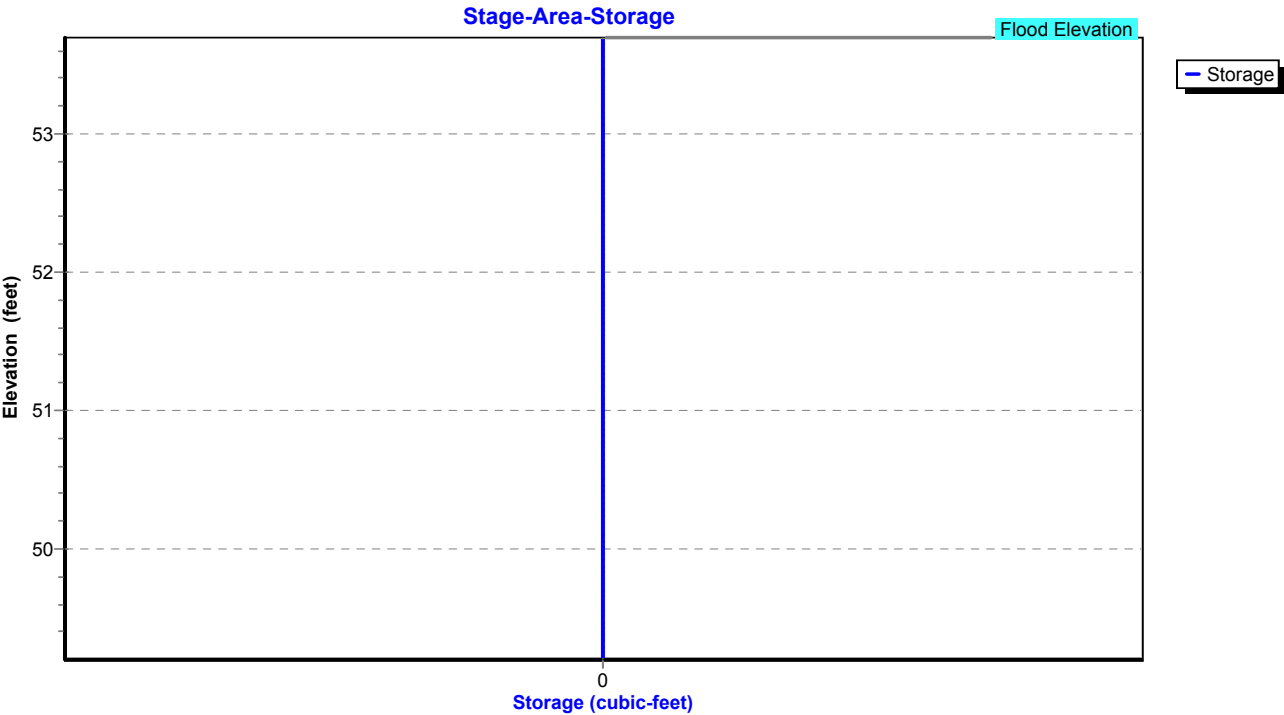
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Pond 74P: CB-4



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Summary for Pond 77P: Manhole

Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 2.07" for 2 year event
Inflow = 4.44 cfs @ 12.06 hrs, Volume= 15,036 cf
Outflow = 4.44 cfs @ 12.06 hrs, Volume= 15,036 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.44 cfs @ 12.06 hrs, Volume= 15,036 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.13' @ 12.06 hrs

Flood Elev= 52.50'

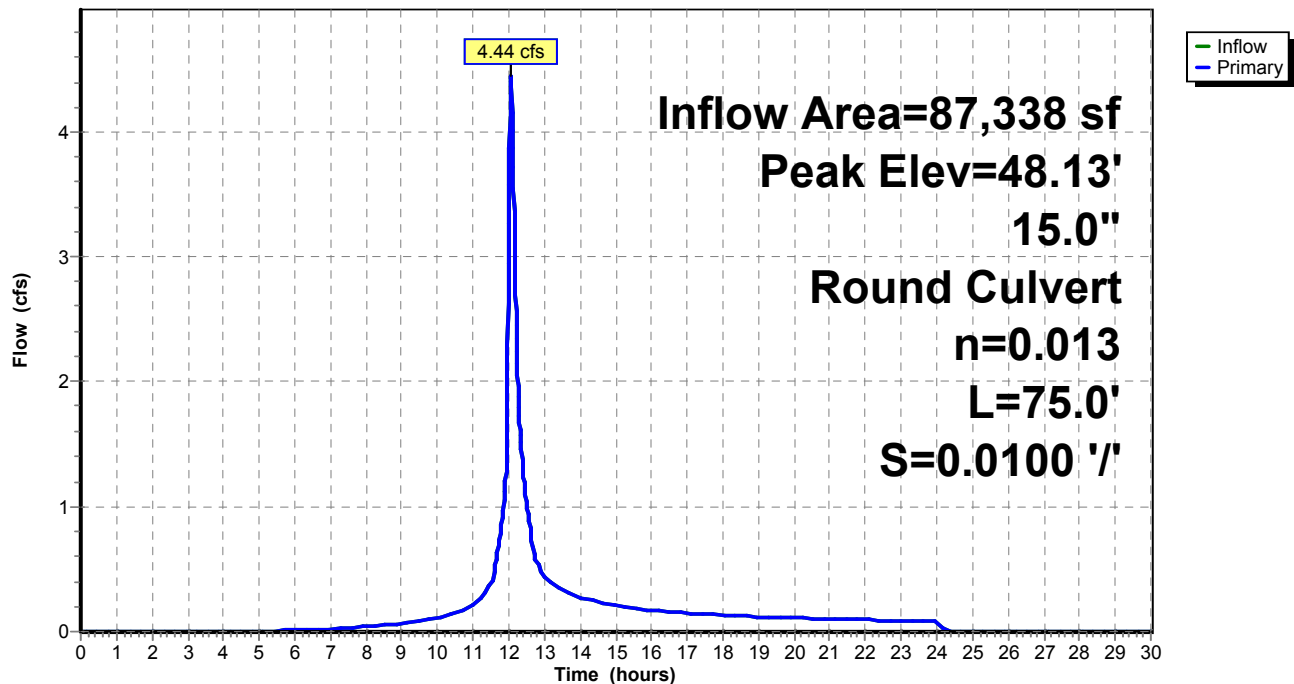
Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.45 cfs @ 12.06 hrs HW=48.13' (Free Discharge)

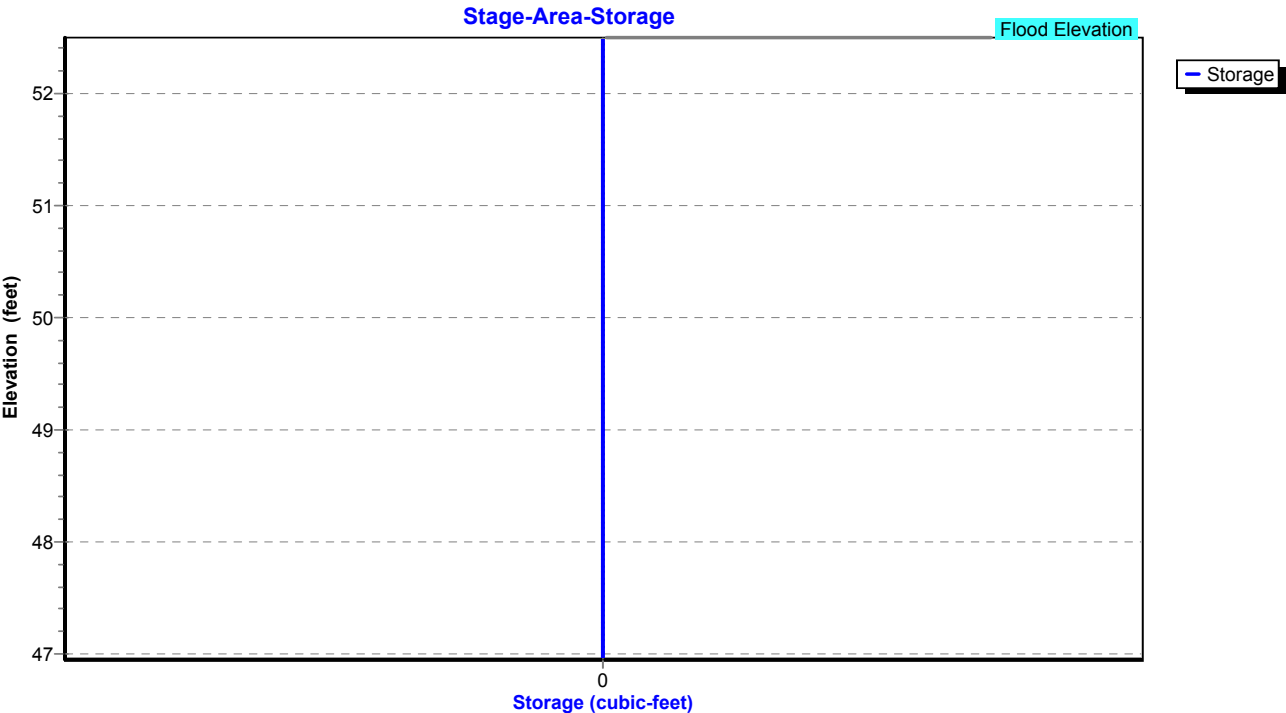
↑1=Culvert (Inlet Controls 4.45 cfs @ 3.70 fps)

Pond 77P: Manhole

Hydrograph



Pond 77P: Manhole



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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 3.25" for 2 year event
Inflow = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf
Outflow = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.38 cfs @ 12.03 hrs, Volume= 1,061 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.50' @ 12.03 hrs

Flood Elev= 52.50'

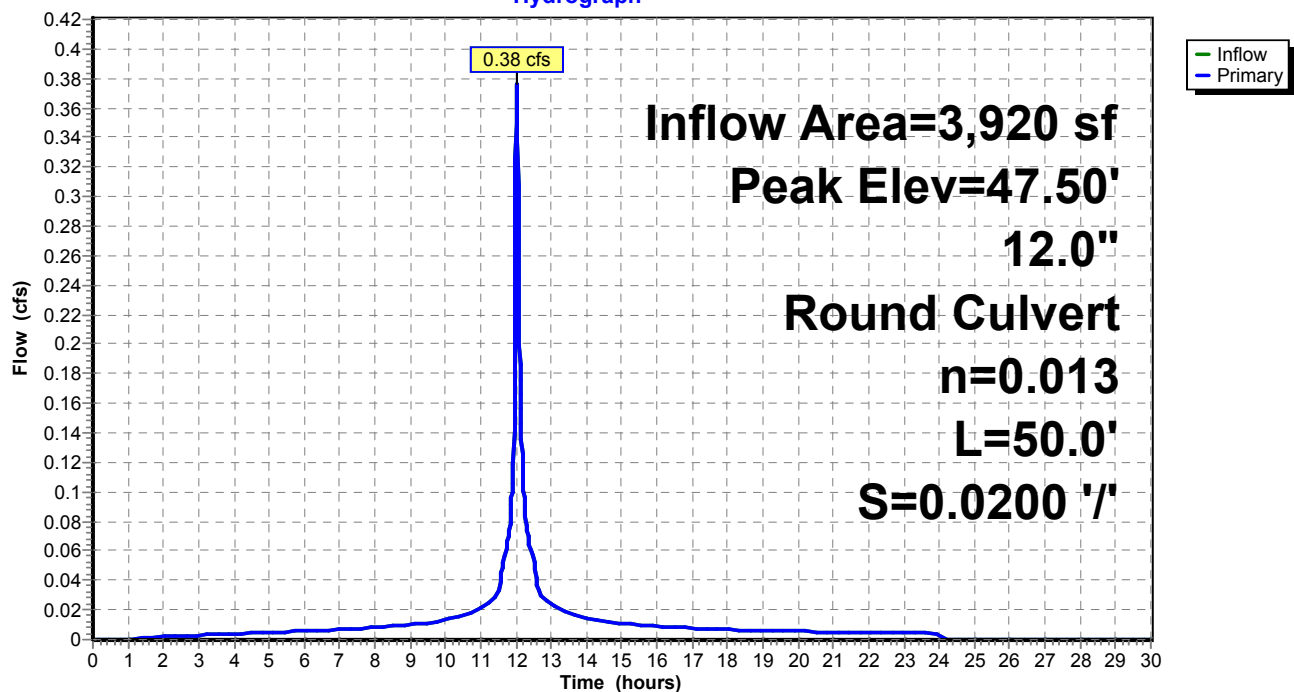
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.37 cfs @ 12.03 hrs HW=47.50' (Free Discharge)

↑1=Culvert (Inlet Controls 0.37 cfs @ 1.87 fps)

Pond 79P: CB-8

Hydrograph



Proposed Conditions

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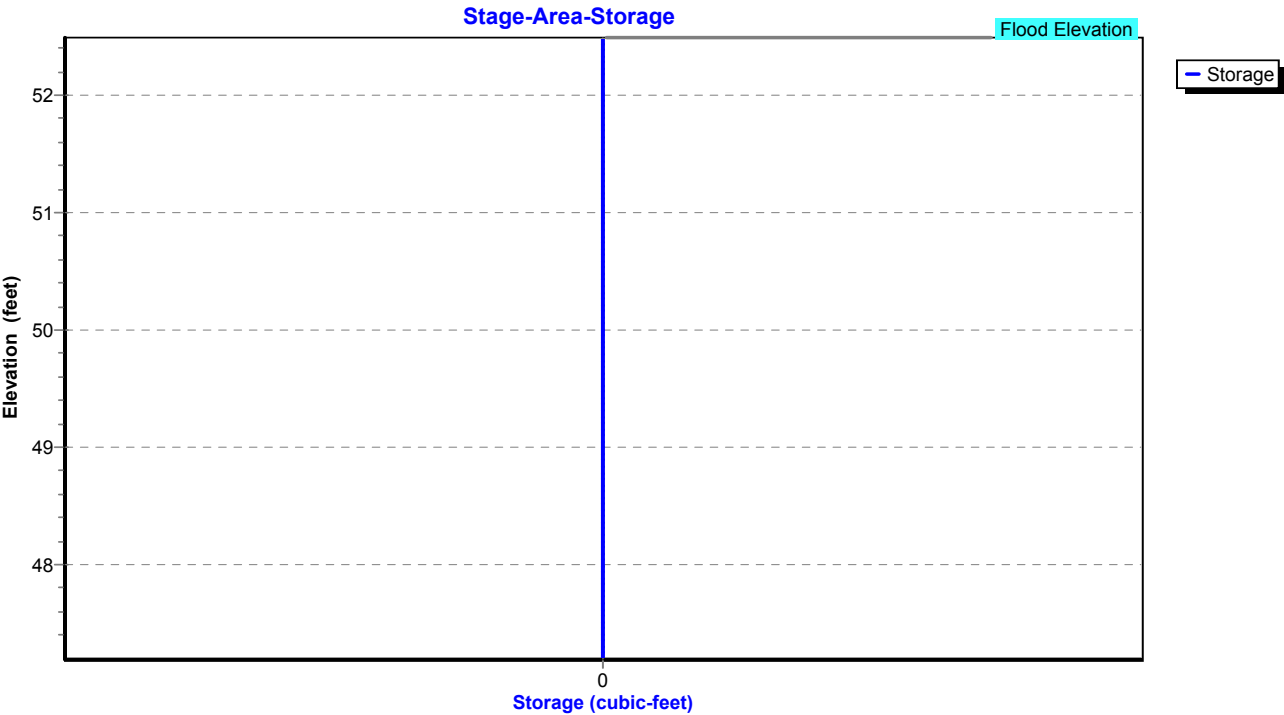
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Pond 79P: CB-8



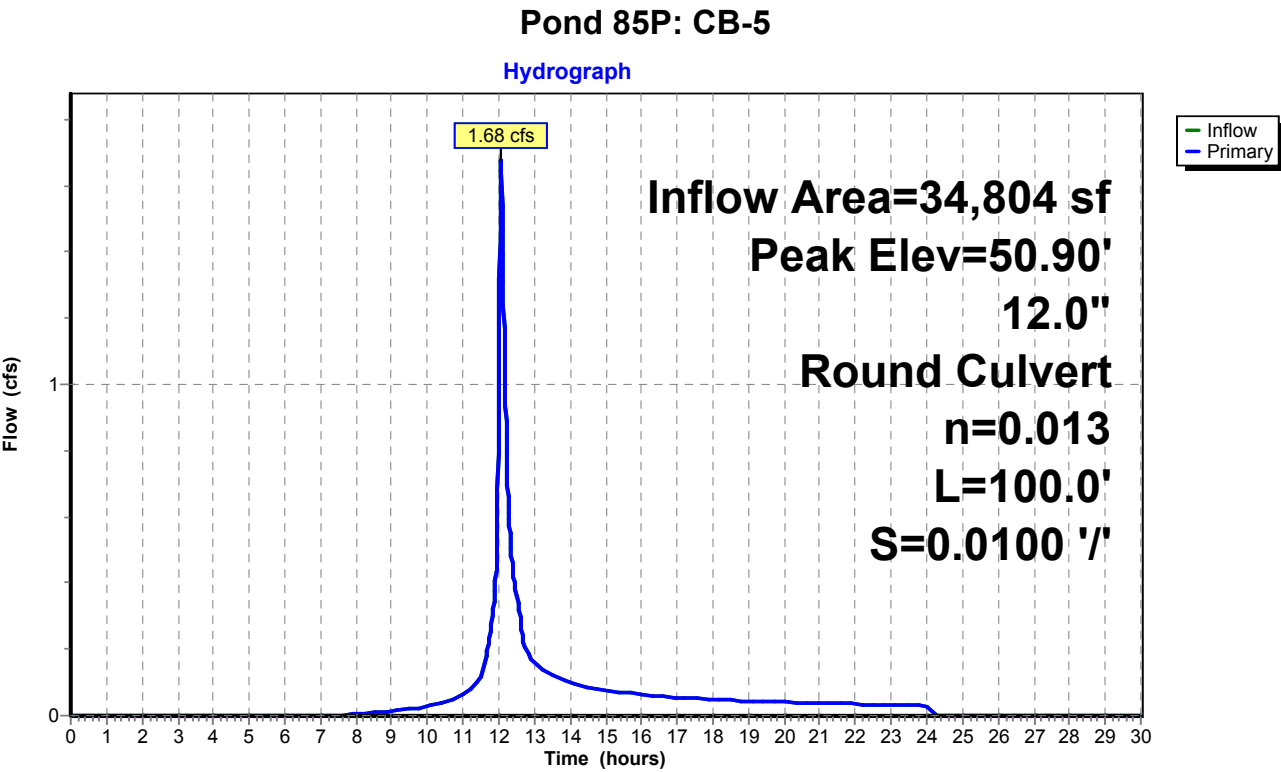
Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 1.77" for 2 year event
Inflow = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf
Outflow = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.68 cfs @ 12.07 hrs, Volume= 5,122 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.90' @ 12.07 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.67 cfs @ 12.07 hrs HW=50.90' (Free Discharge)
1=Culvert (Inlet Controls 1.67 cfs @ 2.85 fps)



Proposed Conditions

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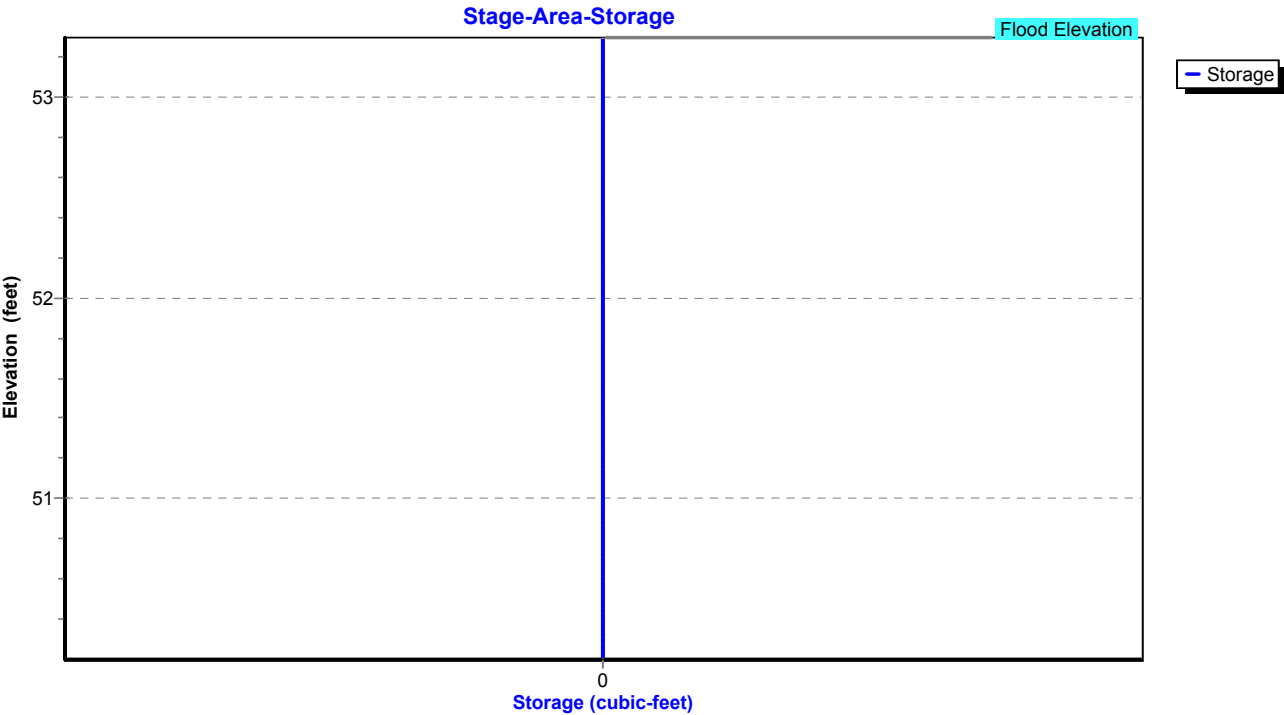
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Pond 85P: CB-5



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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 3.25" for 2 year event
Inflow = 1.62 cfs @ 12.03 hrs, Volume= 4,573 cf
Outflow = 0.50 cfs @ 12.18 hrs, Volume= 4,573 cf, Atten= 69%, Lag= 9.4 min
Primary = 0.50 cfs @ 12.18 hrs, Volume= 4,573 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 52.90' @ 12.18 hrs Surf.Area= 749 sf Storage= 770 cf

Plug-Flow detention time= 18.2 min calculated for 4,571 cf (100% of inflow)

Center-of-Mass det. time= 18.2 min (773.9 - 755.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.50 cfs @ 12.18 hrs HW=52.90' (Free Discharge)

- 1=Culvert (Passes 0.50 cfs of 3.83 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.50 cfs @ 5.69 fps)
- 3=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Proposed Conditions

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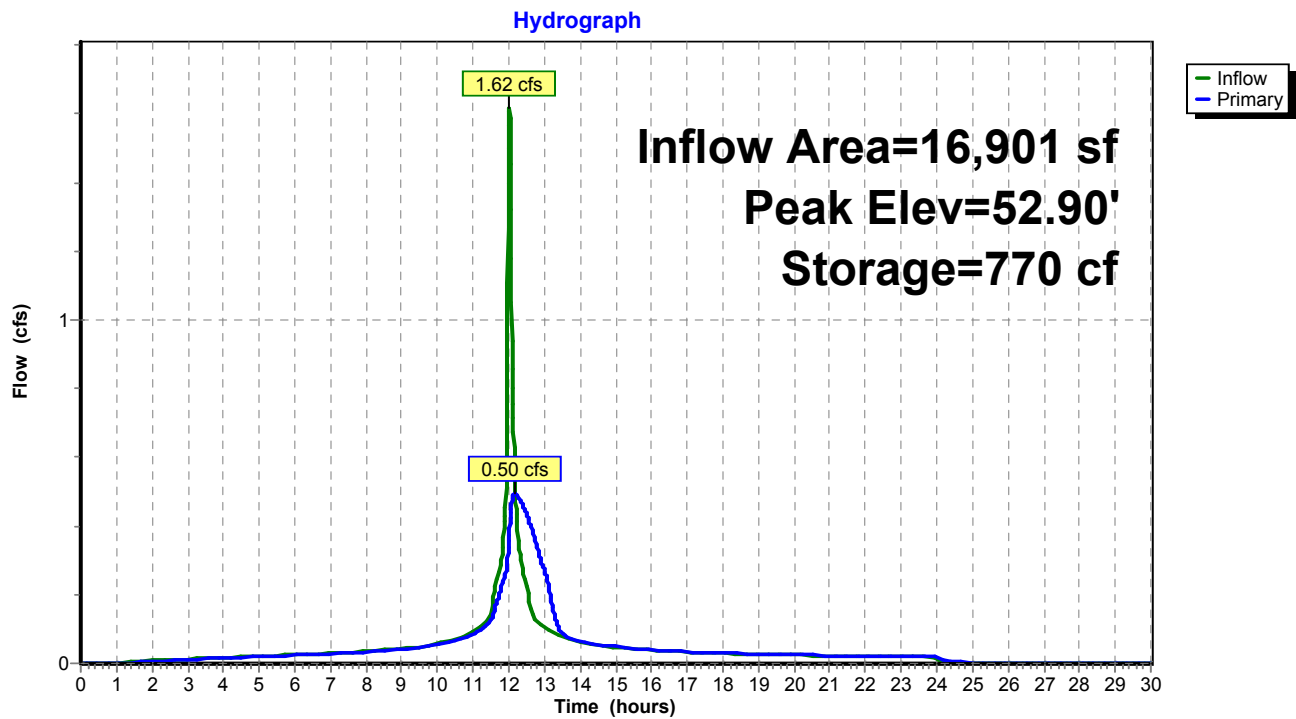
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NORWALK 24-hr S1 2 year Rainfall=3.48"

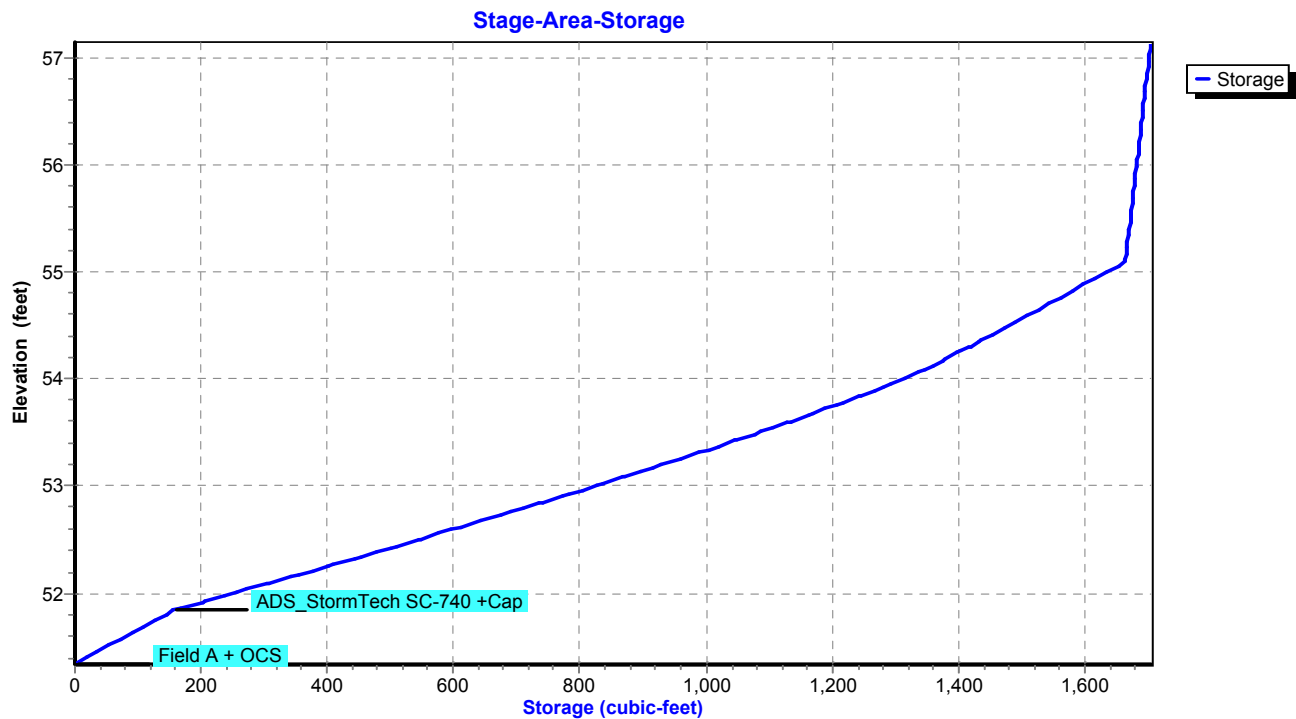
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



Proposed Conditions

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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 4S: Area 4

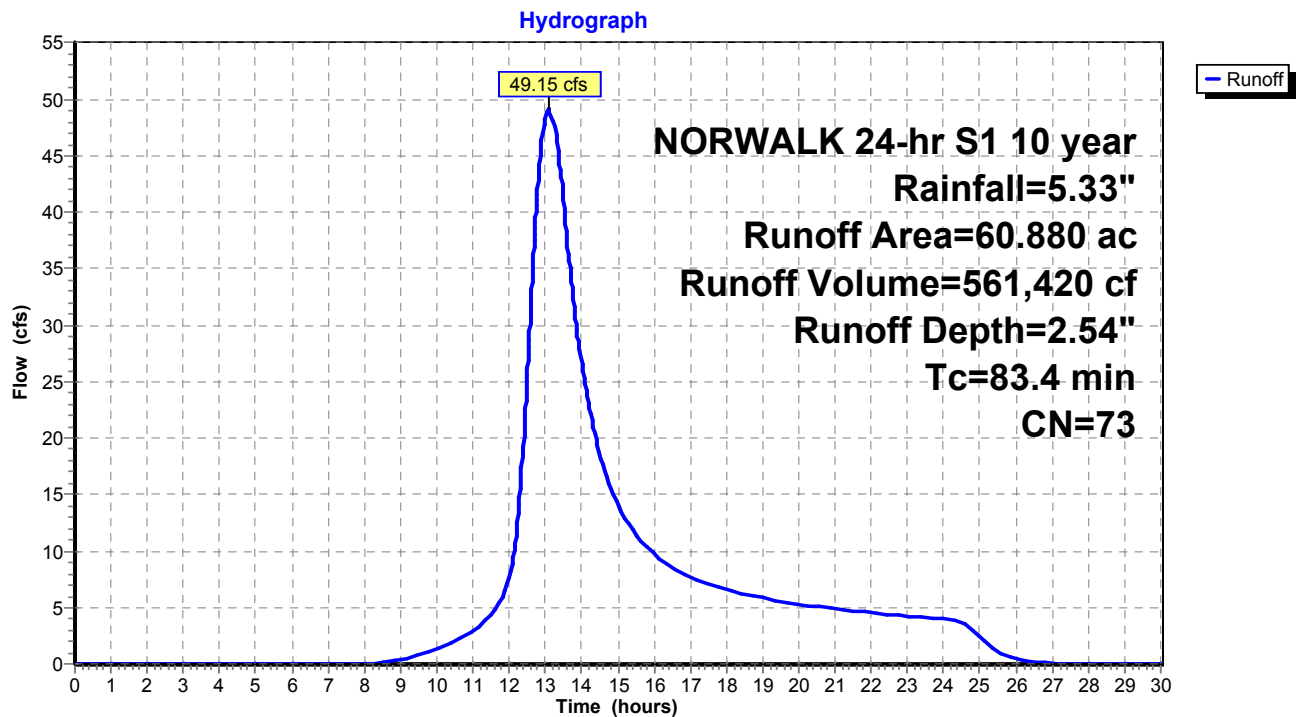
Runoff = 49.15 cfs @ 13.07 hrs, Volume= 561,420 cf, Depth= 2.54"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Summary for Subcatchment 5S: Area 5

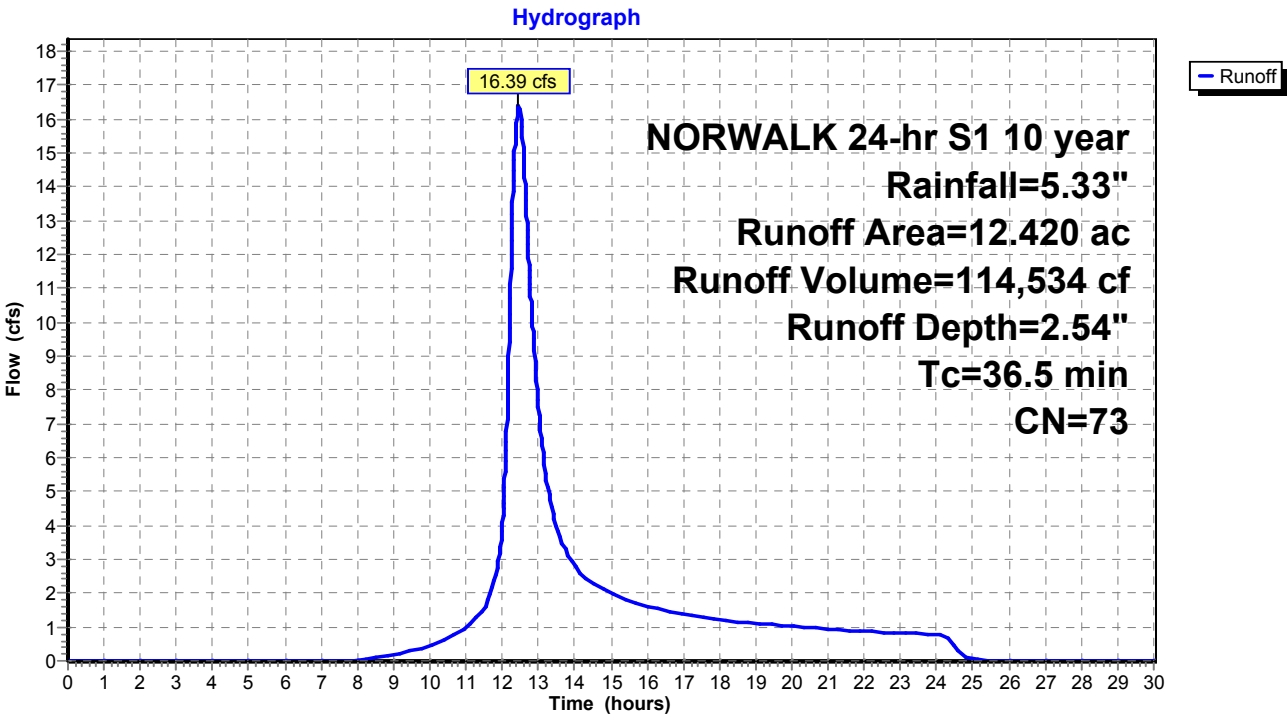
Runoff = 16.39 cfs @ 12.45 hrs, Volume= 114,534 cf, Depth= 2.54"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Summary for Subcatchment 6S: Area 6

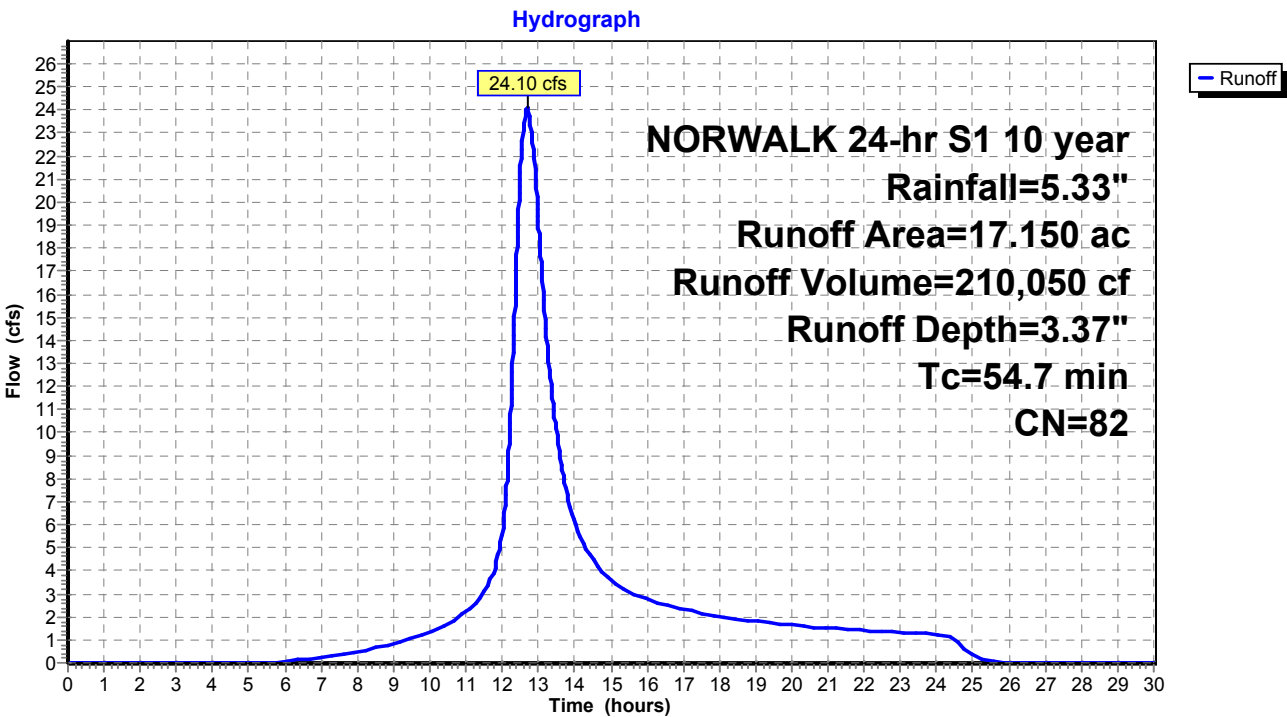
Runoff = 24.10 cfs @ 12.70 hrs, Volume= 210,050 cf, Depth= 3.37"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Summary for Subcatchment 7S: Area 7

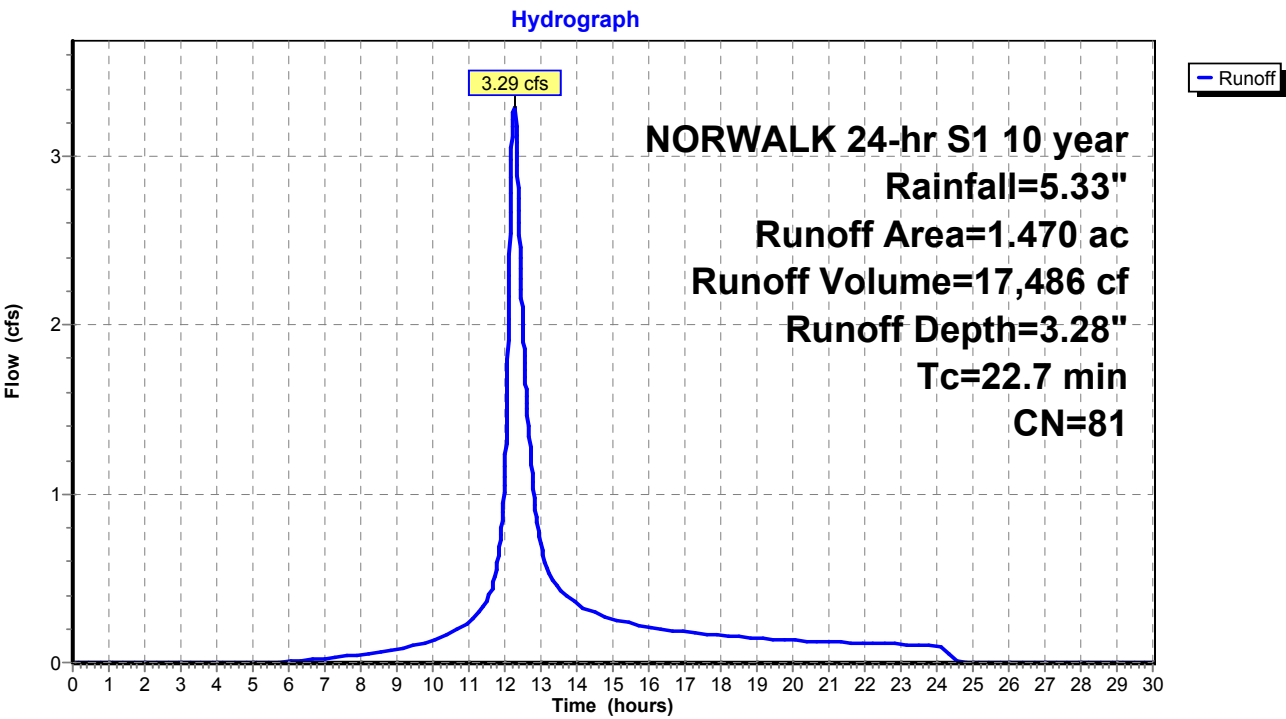
Runoff = 3.29 cfs @ 12.26 hrs, Volume= 17,486 cf, Depth= 3.28"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Summary for Subcatchment 8S: Area 8

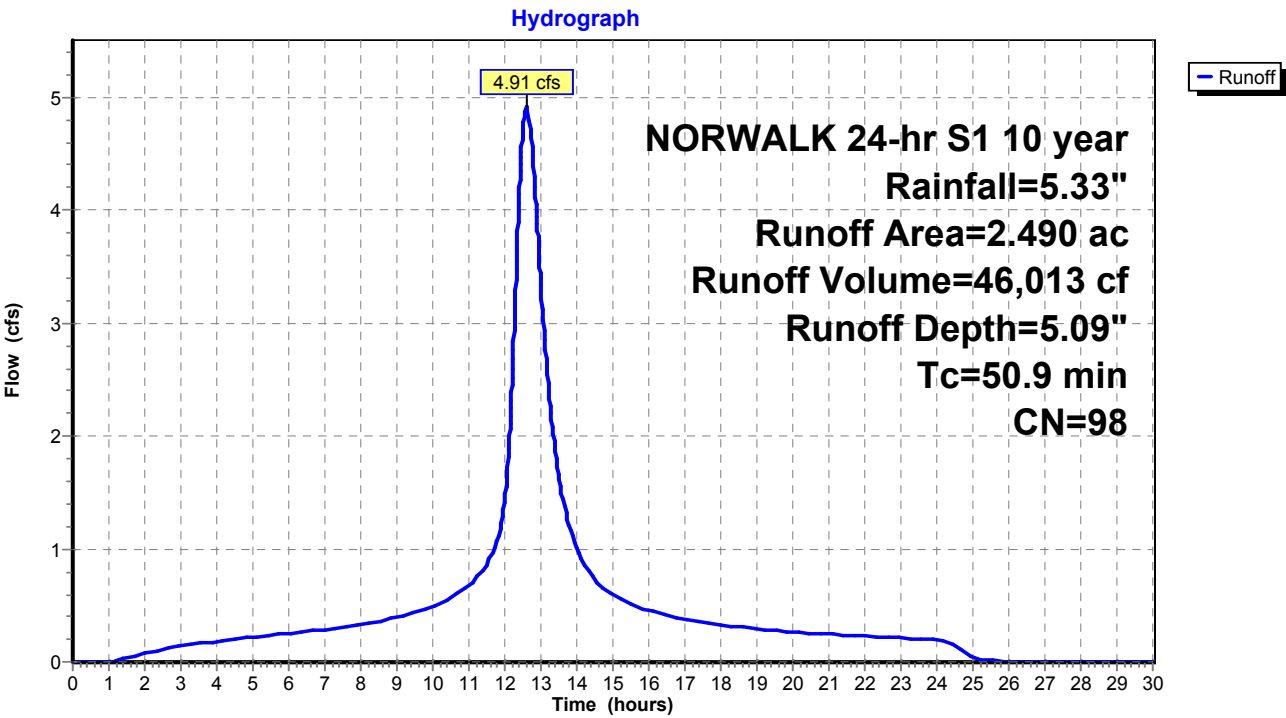
Runoff = 4.91 cfs @ 12.61 hrs, Volume= 46,013 cf, Depth= 5.09"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Summary for Subcatchment 9S: Area 9

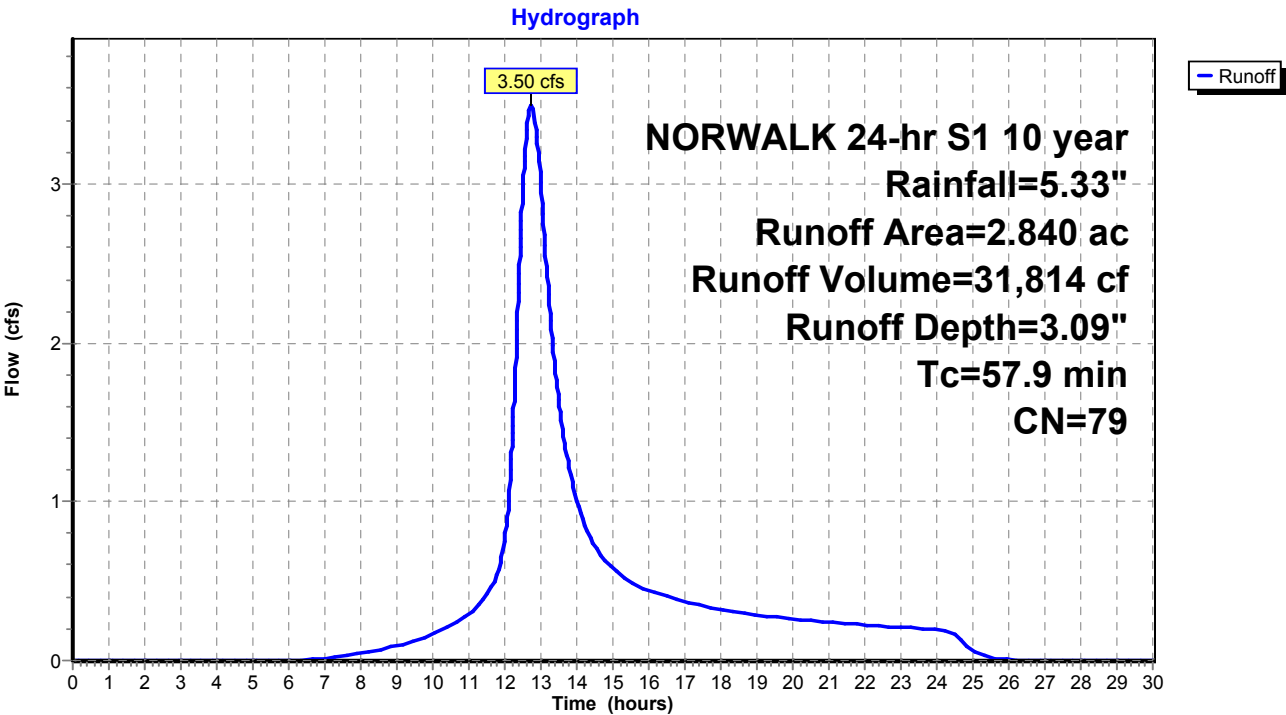
Runoff = 3.50 cfs @ 12.74 hrs, Volume= 31,814 cf, Depth= 3.09"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Summary for Subcatchment 10AS: Area 10A

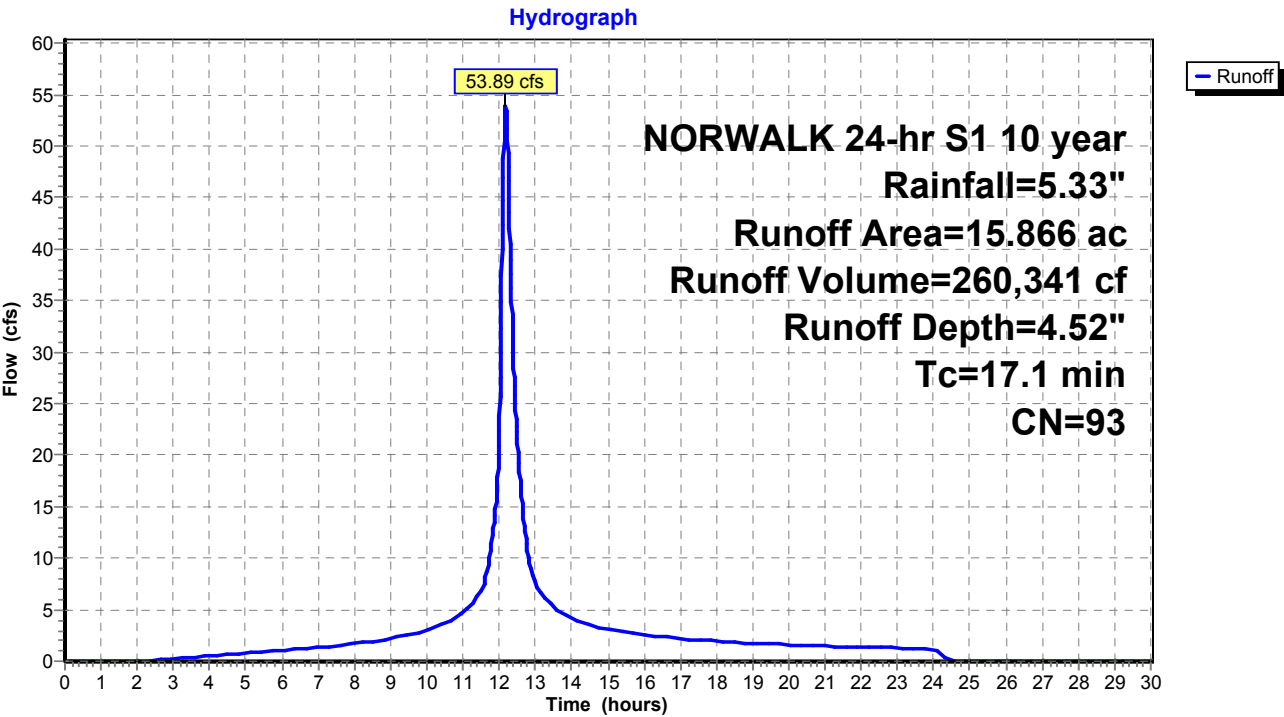
Runoff = 53.89 cfs @ 12.18 hrs, Volume= 260,341 cf, Depth= 4.52"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Summary for Subcatchment 10BS: Area 10B

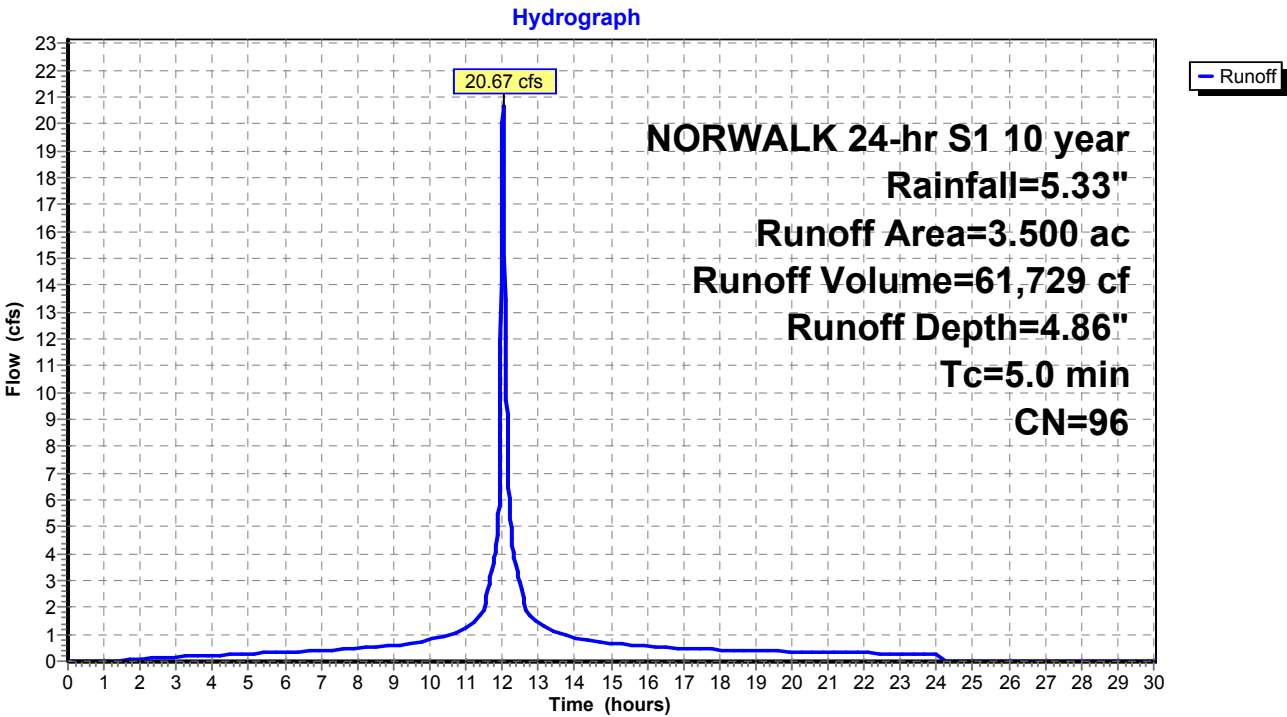
Runoff = 20.67 cfs @ 12.03 hrs, Volume= 61,729 cf, Depth= 4.86"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Summary for Subcatchment 10CS: Area 10C

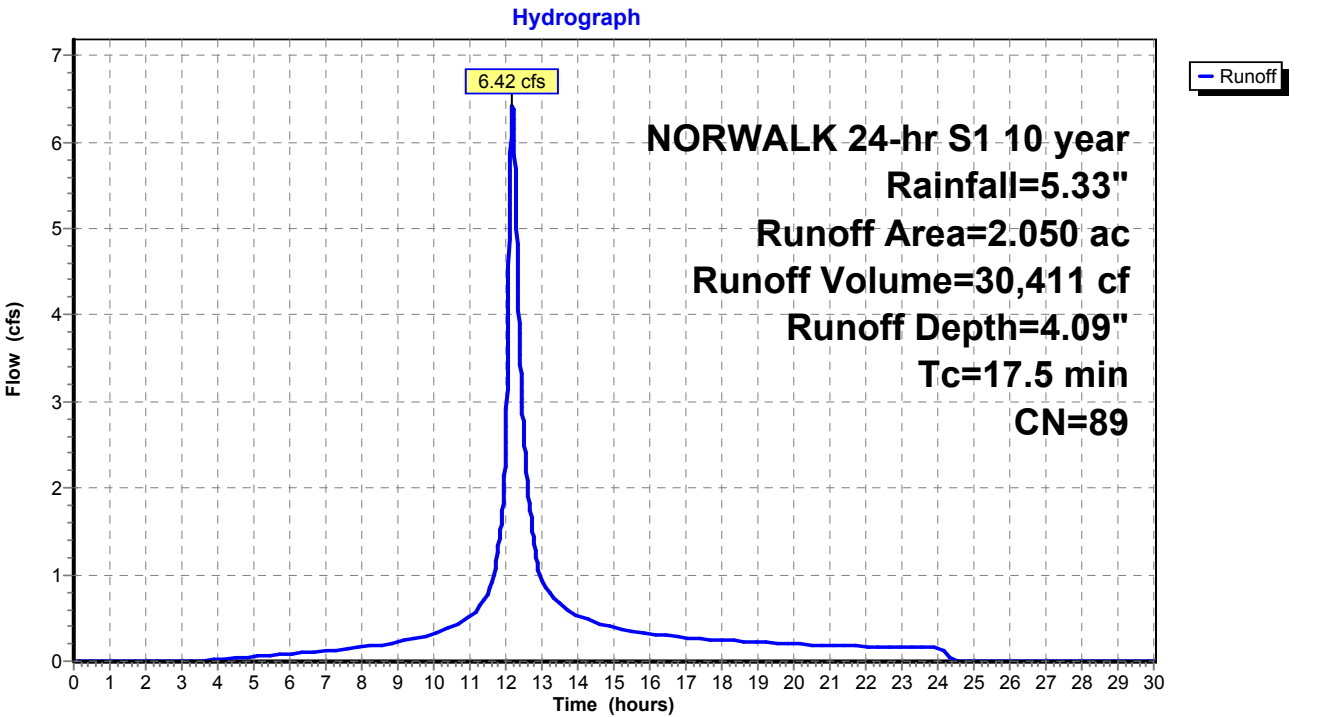
Runoff = 6.42 cfs @ 12.19 hrs, Volume= 30,411 cf, Depth= 4.09"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Summary for Subcatchment 10DS: Area 10D

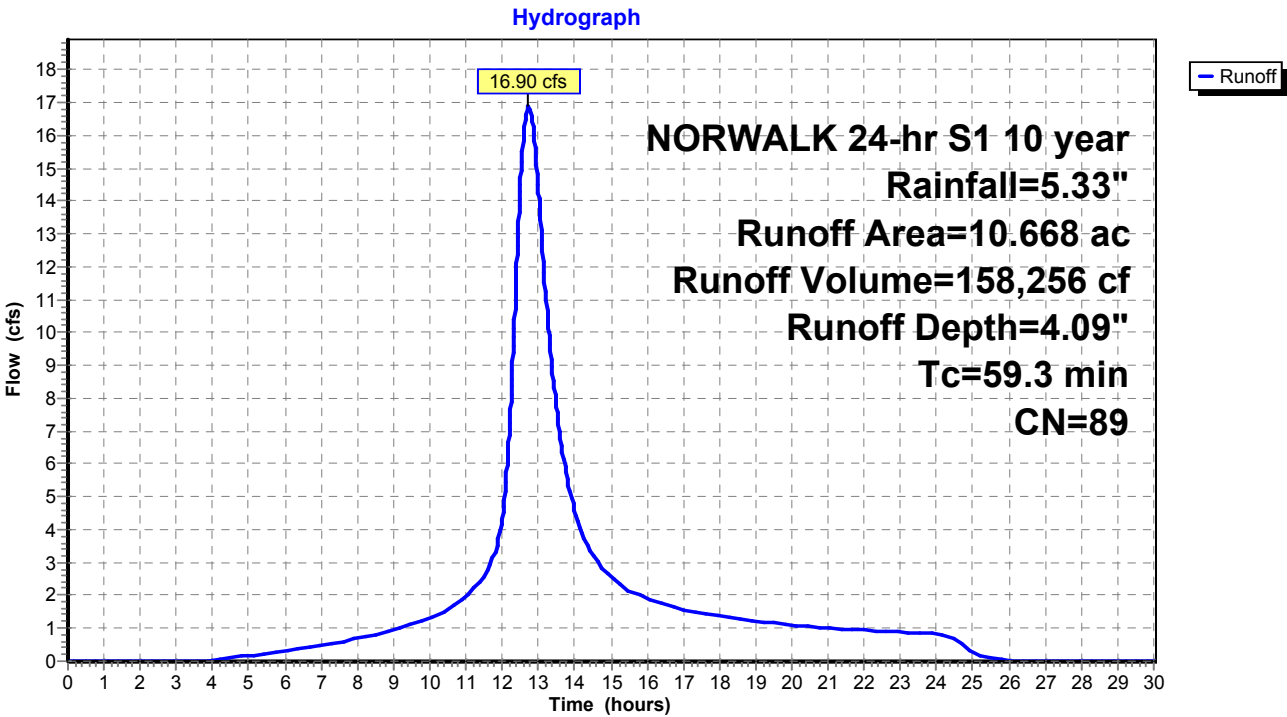
Runoff = 16.90 cfs @ 12.72 hrs, Volume= 158,256 cf, Depth= 4.09"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Summary for Subcatchment 10ES: Area 10E

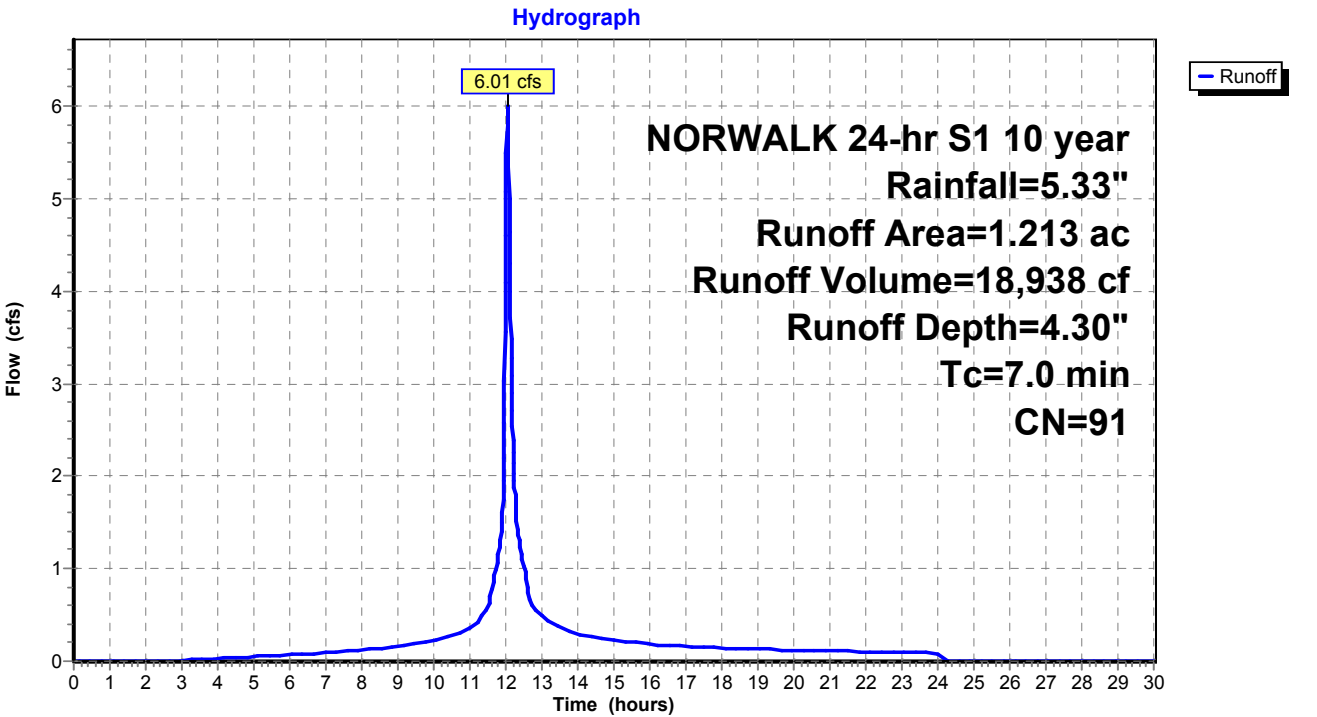
Runoff = 6.01 cfs @ 12.05 hrs, Volume= 18,938 cf, Depth= 4.30"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.781	98	Paved parking, HSG C
0.432	79	50-75% Grass cover, Fair, HSG C
1.213	91	Weighted Average
0.432		35.61% Pervious Area
0.781		64.39% Impervious Area

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

Subcatchment 10ES: Area 10E



Summary for Subcatchment 10FS: Area 10F

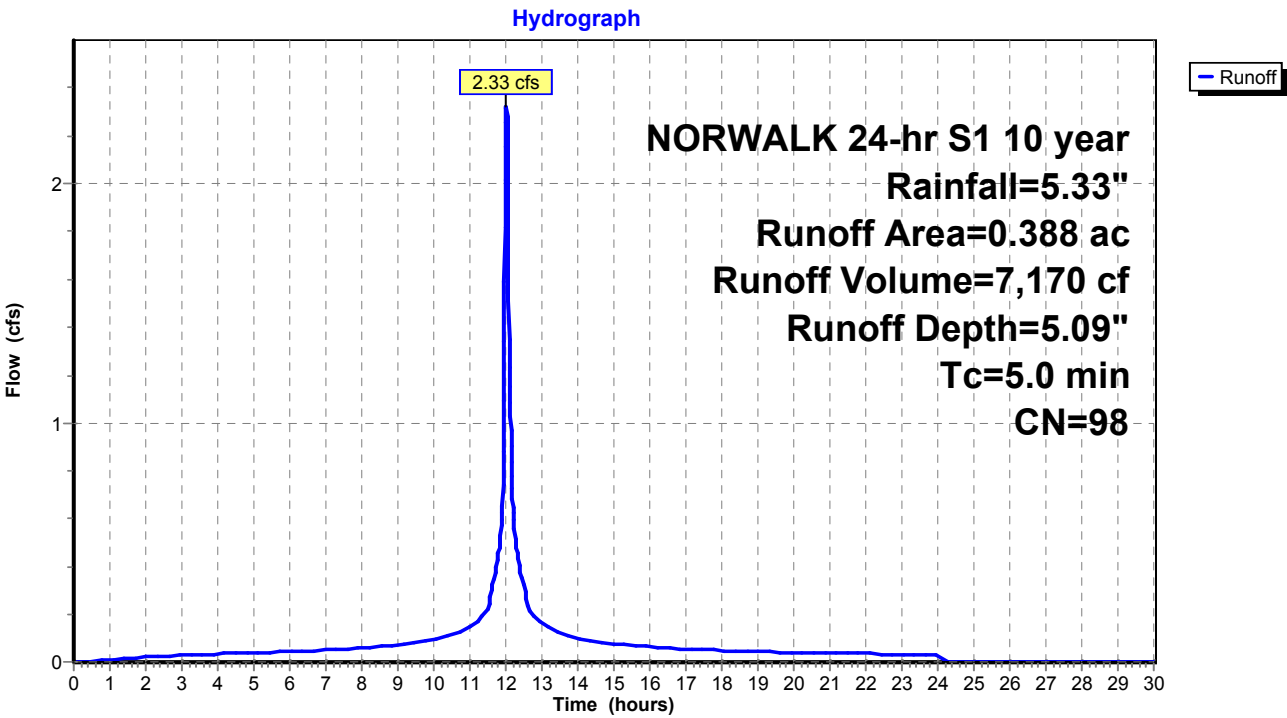
Runoff = 2.33 cfs @ 12.03 hrs, Volume= 7,170 cf, Depth= 5.09"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Summary for Subcatchment 10GS: Area 10G

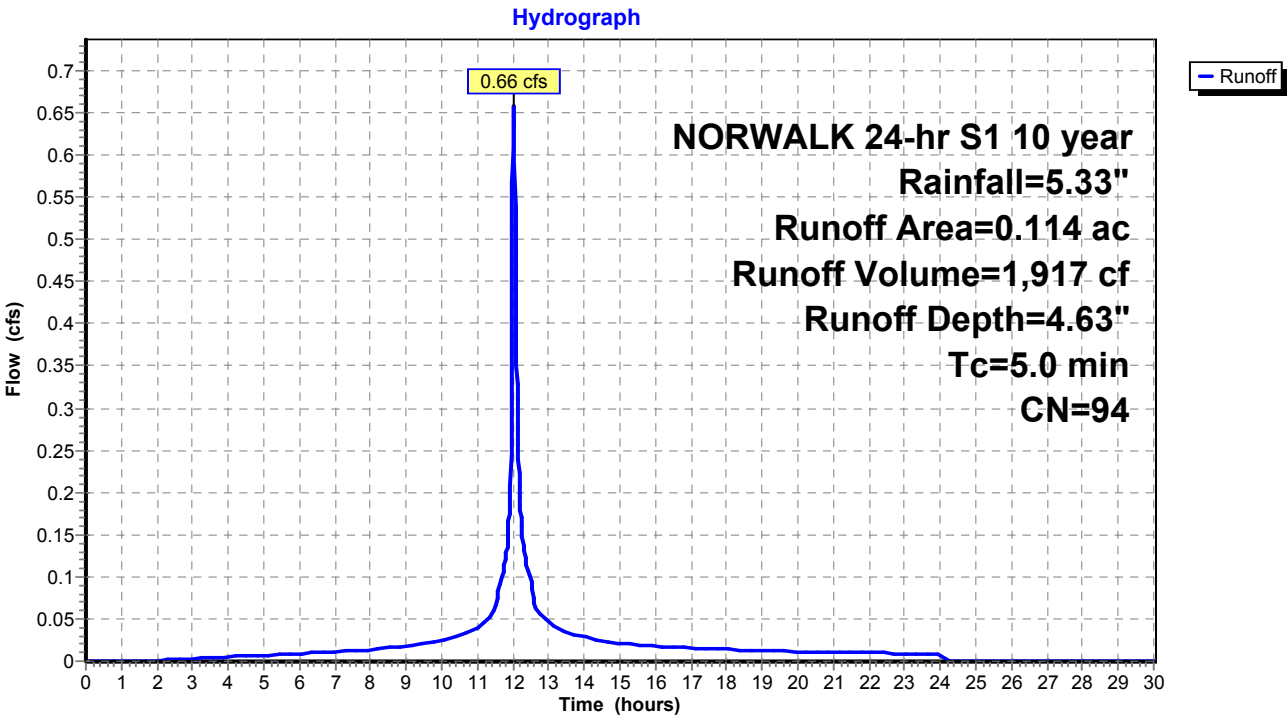
Runoff = 0.66 cfs @ 12.03 hrs, Volume= 1,917 cf, Depth= 4.63"
Routed to Pond 20P : ADS Stormtech (160LP)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
* 0.092	98	Paved parking, HSG C
* 0.022	79	50-75% Grass cover, Fair, HSG C
0.114	94	Weighted Average
0.022		19.30% Pervious Area
0.092		80.70% Impervious Area

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

Subcatchment 10GS: Area 10G



Summary for Subcatchment 11S: Area 11

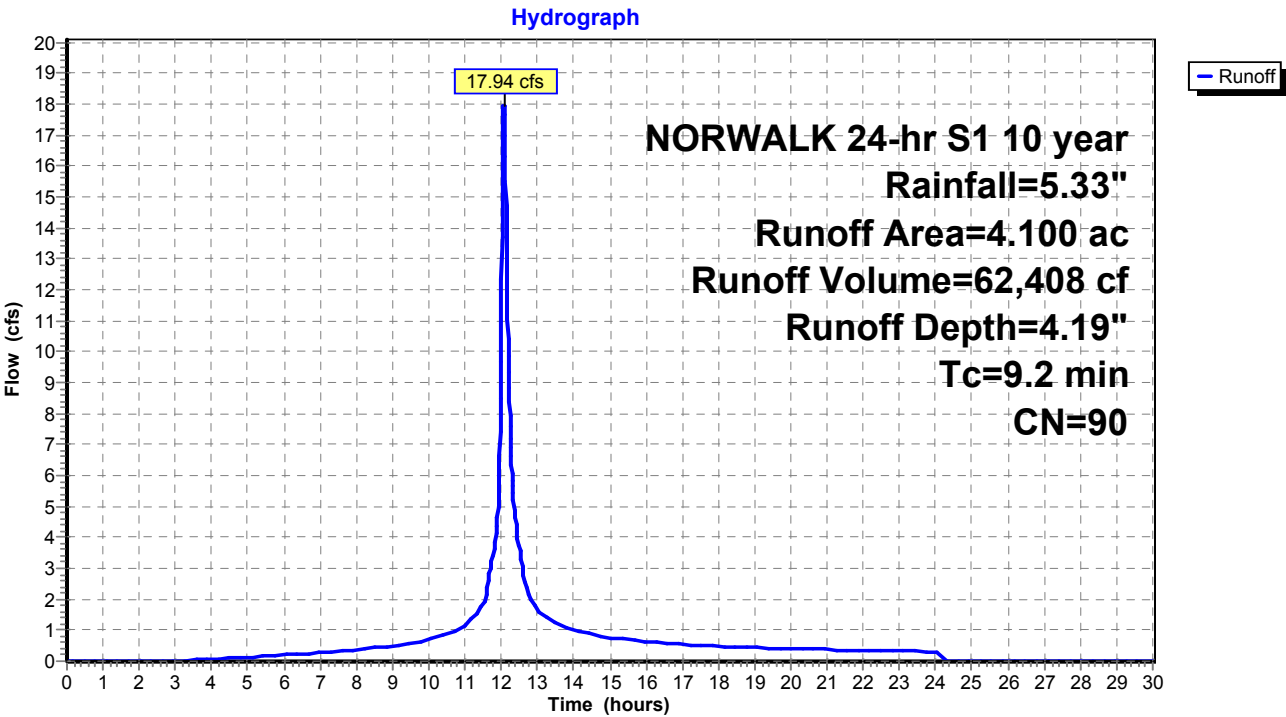
Runoff = 17.94 cfs @ 12.07 hrs, Volume= 62,408 cf, Depth= 4.19"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Summary for Subcatchment 12S: Area 12

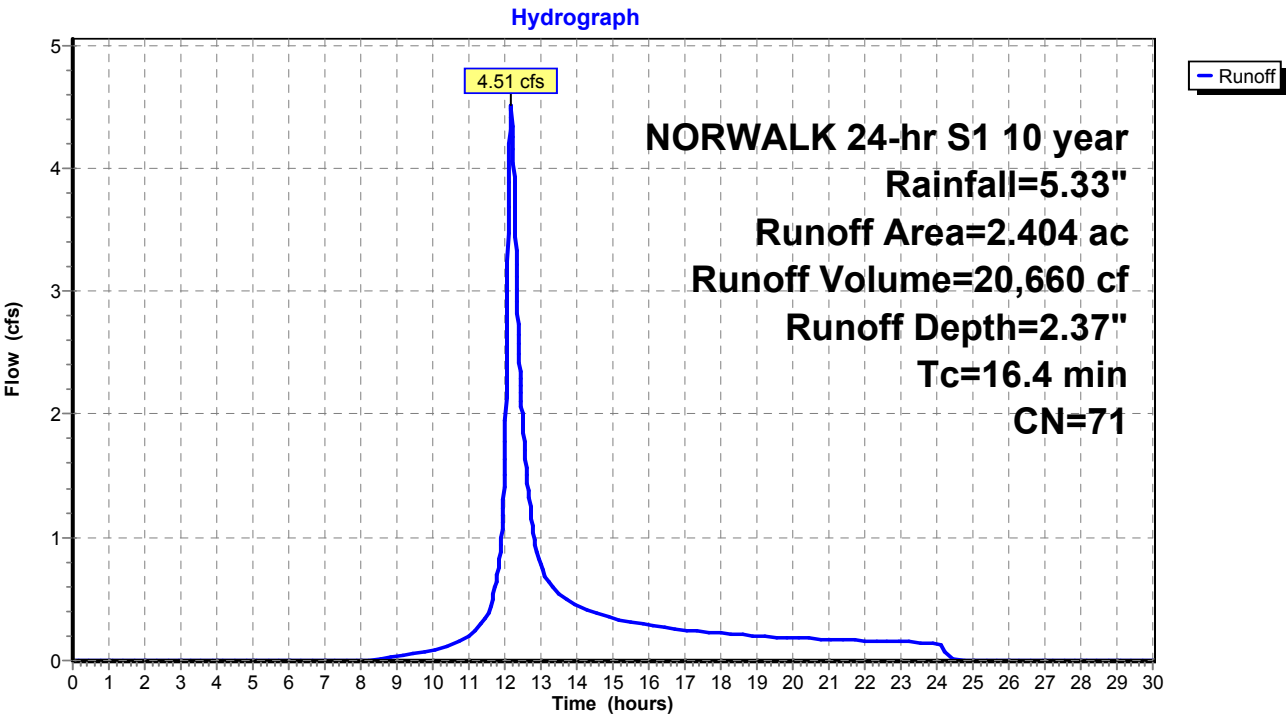
Runoff = 4.51 cfs @ 12.18 hrs, Volume= 20,660 cf, Depth= 2.37"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 13S: Area 13

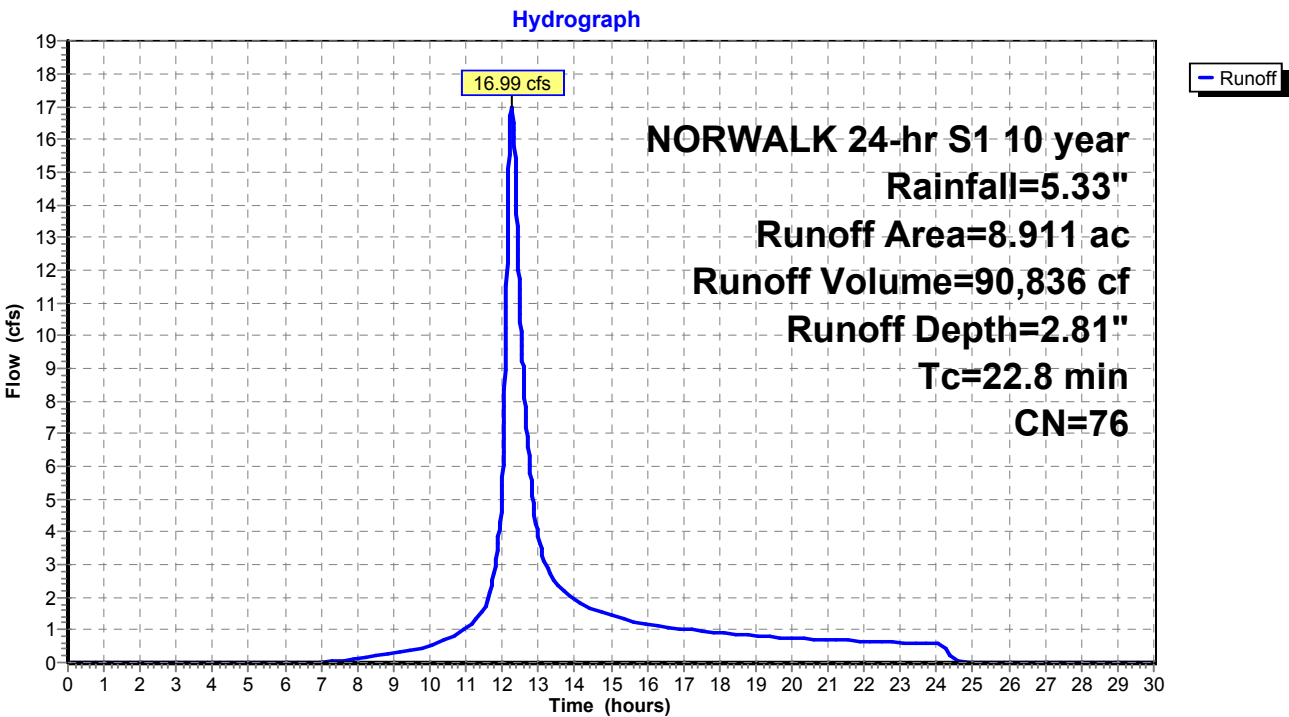
Runoff = 16.99 cfs @ 12.26 hrs, Volume= 90,836 cf, Depth= 2.81"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Summary for Subcatchment 14S: Area 14

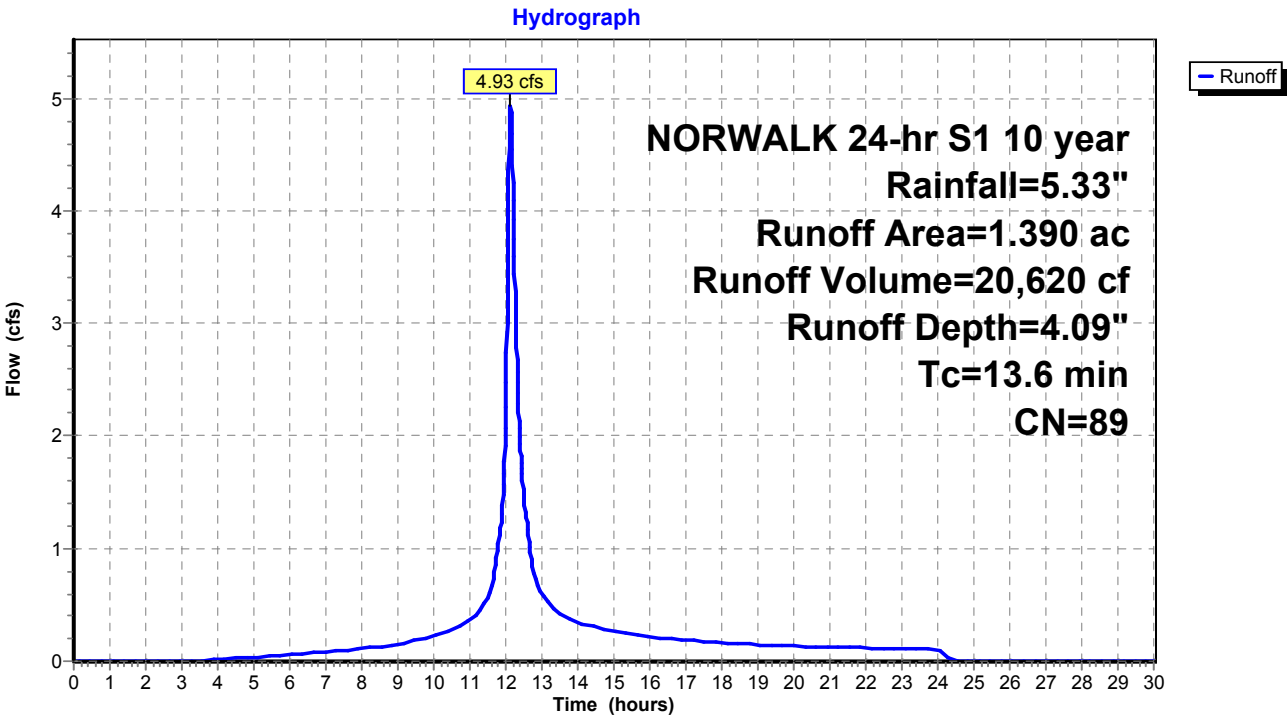
Runoff = 4.93 cfs @ 12.13 hrs, Volume= 20,620 cf, Depth= 4.09"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Summary for Subcatchment 15S: Area 15

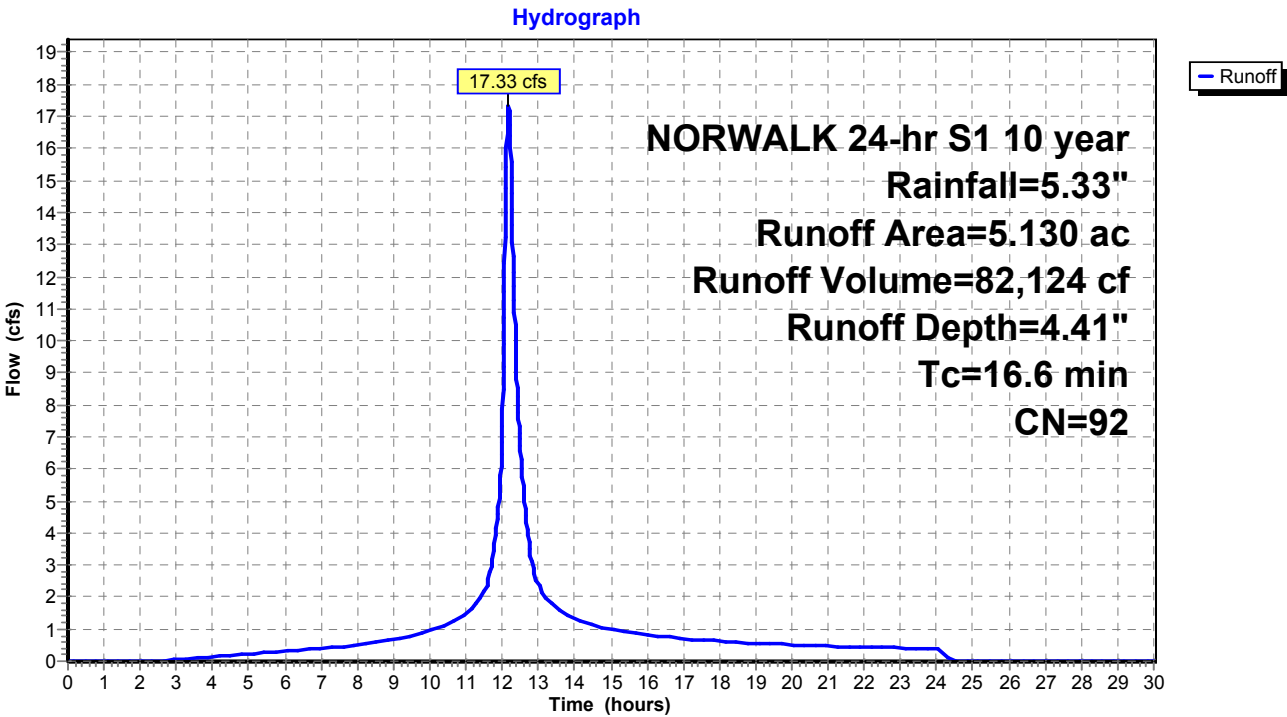
Runoff = 17.33 cfs @ 12.17 hrs, Volume= 82,124 cf, Depth= 4.41"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Summary for Subcatchment 16S: Area 16A

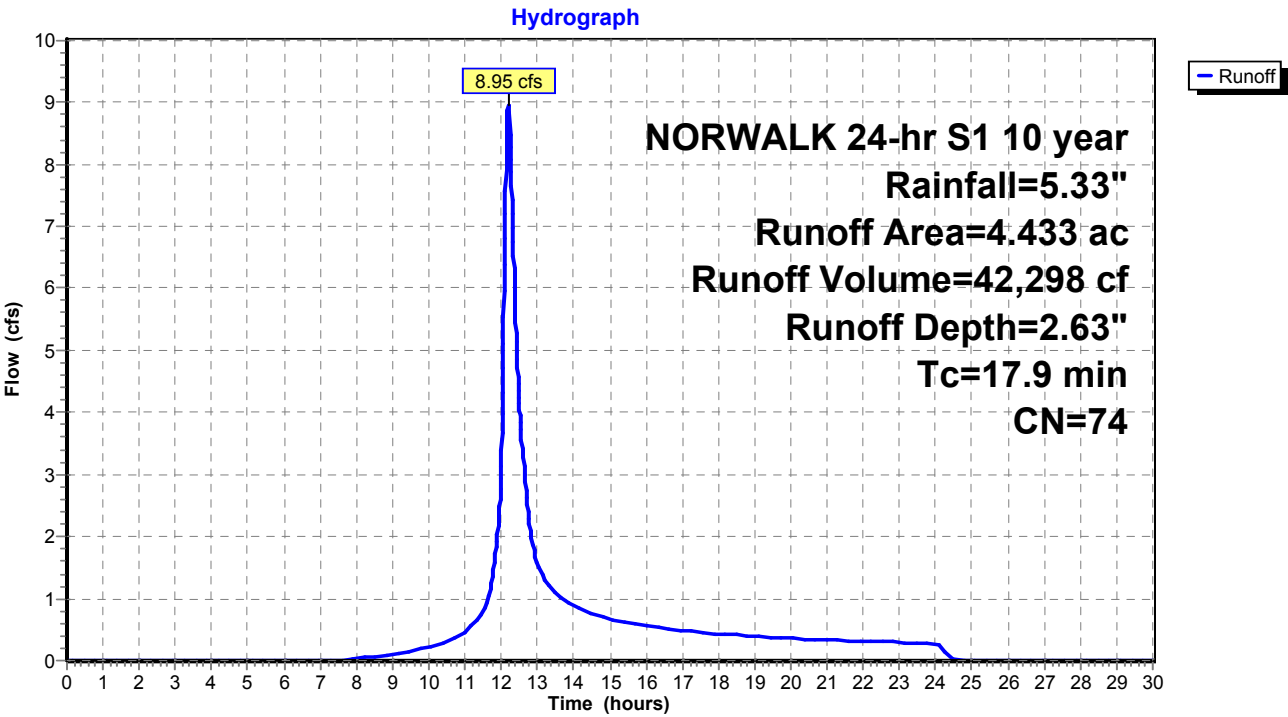
Runoff = 8.95 cfs @ 12.20 hrs, Volume= 42,298 cf, Depth= 2.63"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



Summary for Subcatchment 17S: Area 17

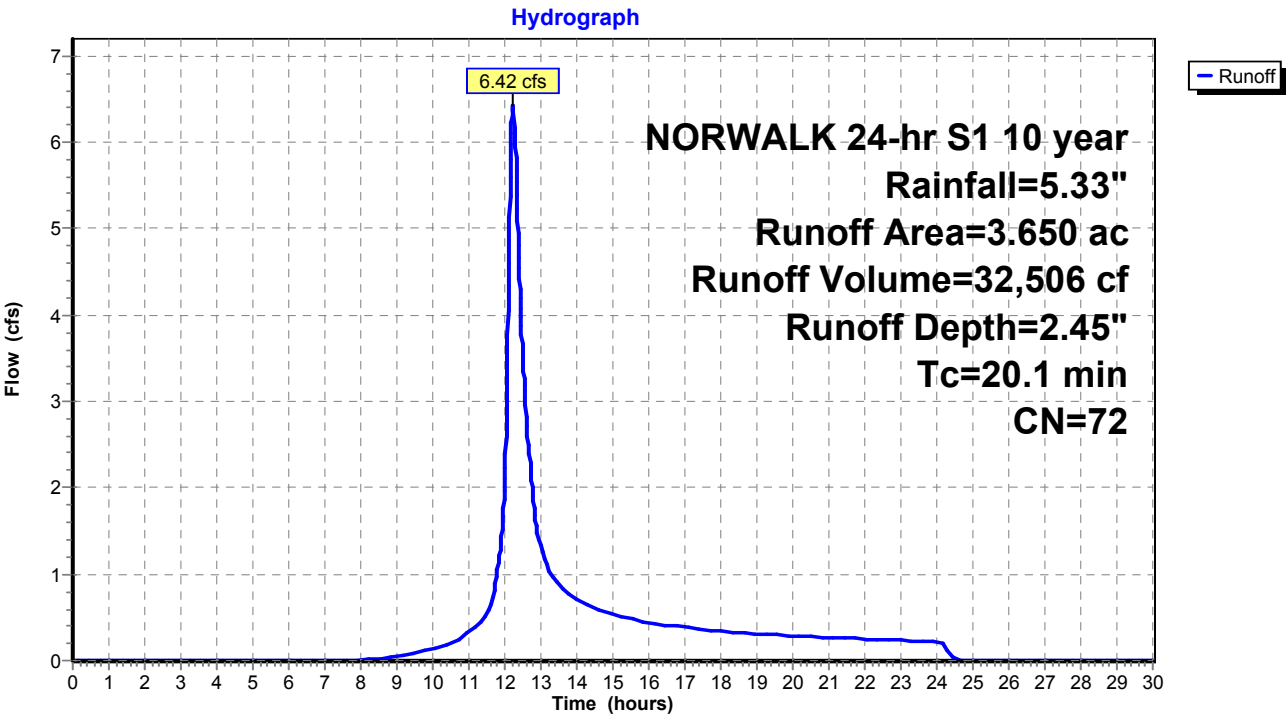
Runoff = 6.42 cfs @ 12.22 hrs, Volume= 32,506 cf, Depth= 2.45"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Summary for Subcatchment 20S: Area 20

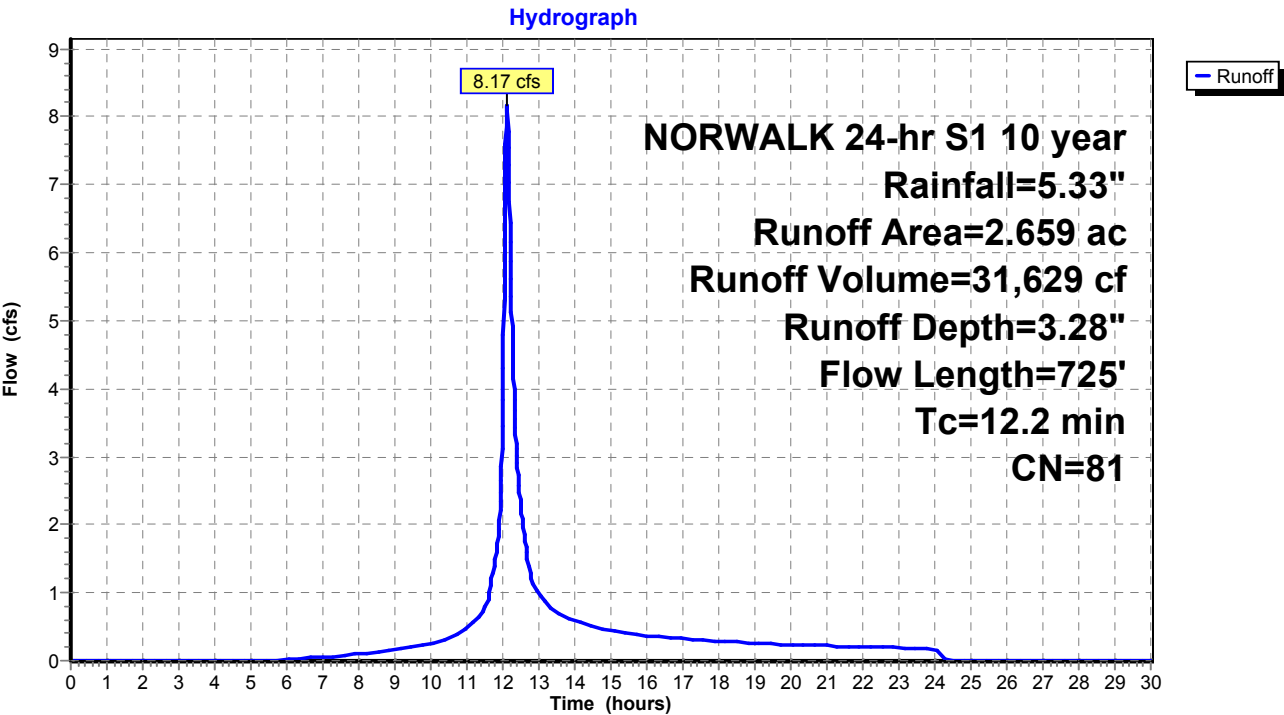
Runoff = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf, Depth= 3.28"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Summary for Subcatchment 21S: Area 21

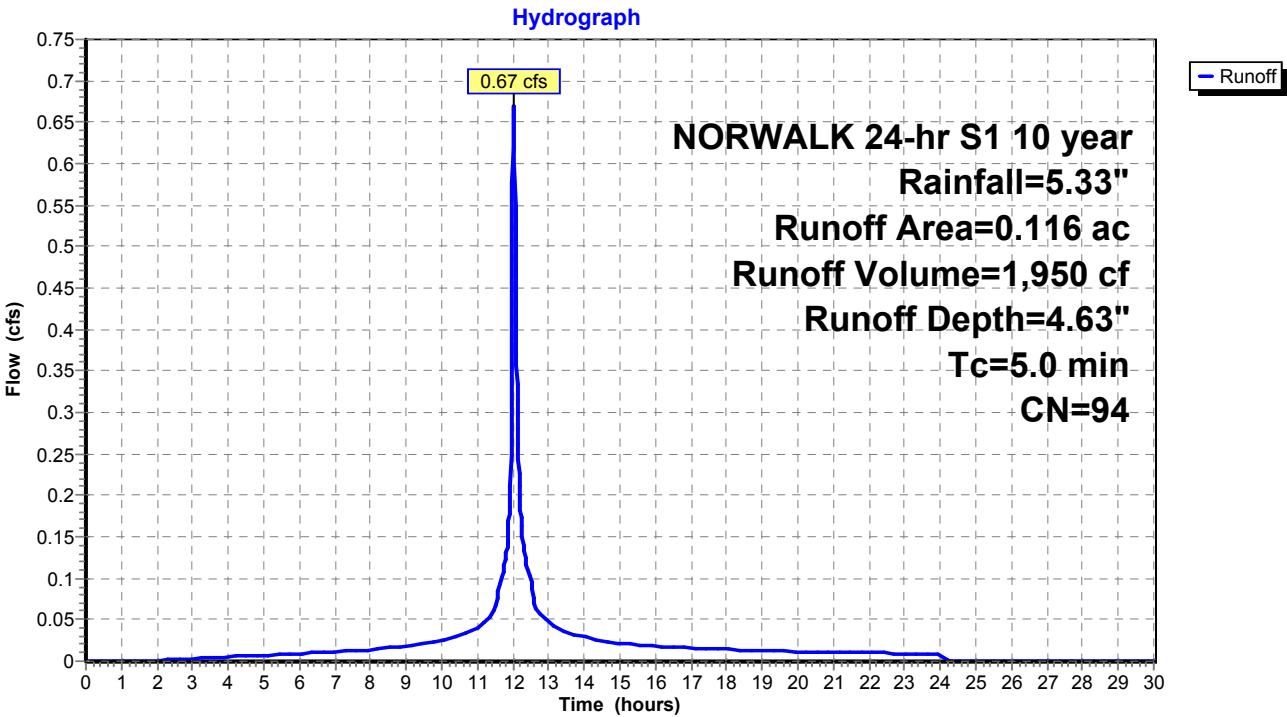
Runoff = 0.67 cfs @ 12.03 hrs, Volume= 1,950 cf, Depth= 4.63"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Summary for Subcatchment 22S: Area 22

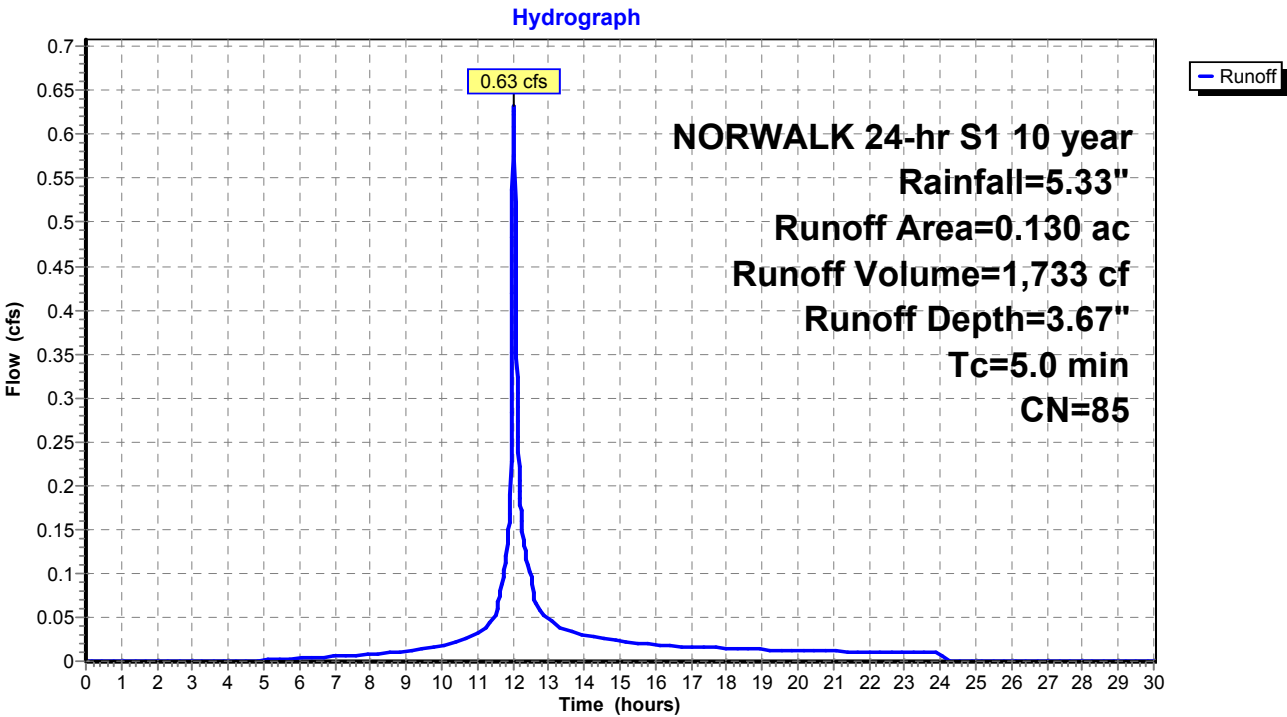
Runoff = 0.63 cfs @ 12.03 hrs, Volume= 1,733 cf, Depth= 3.67"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Summary for Subcatchment 23S: Area 23

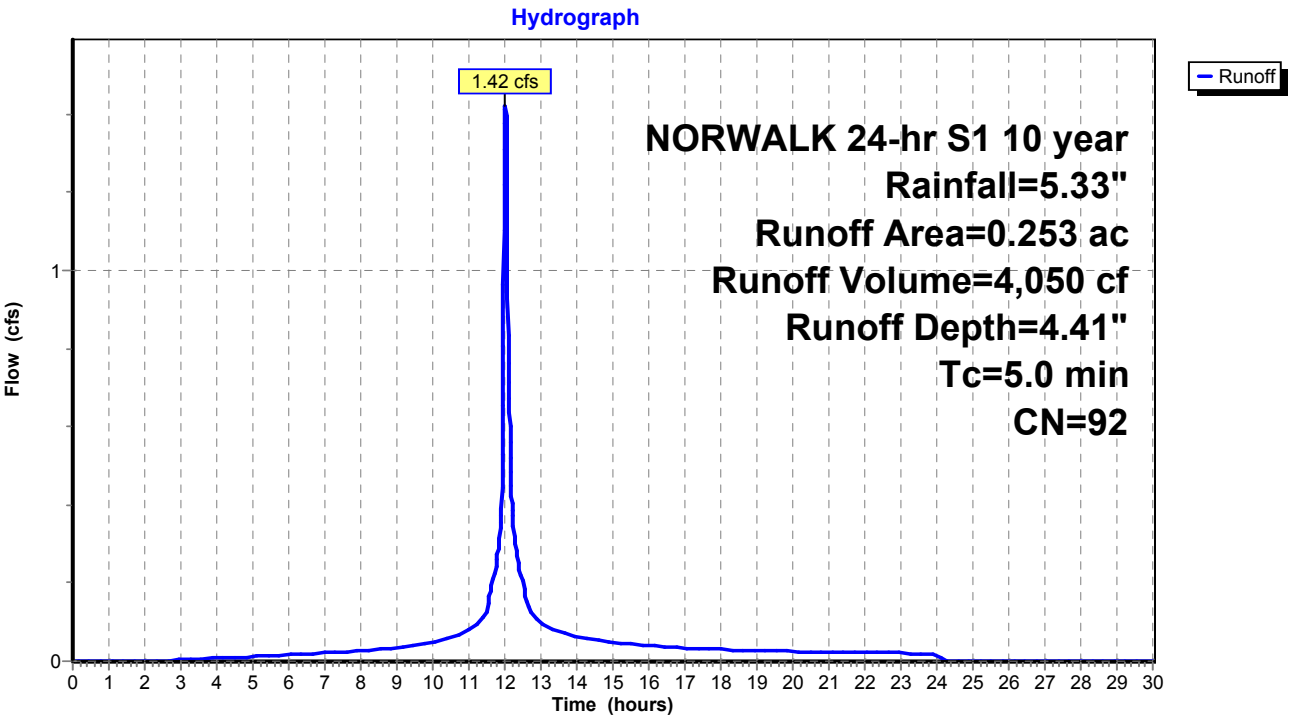
Runoff = 1.42 cfs @ 12.03 hrs, Volume= 4,050 cf, Depth= 4.41"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Summary for Subcatchment 24S: Area 24

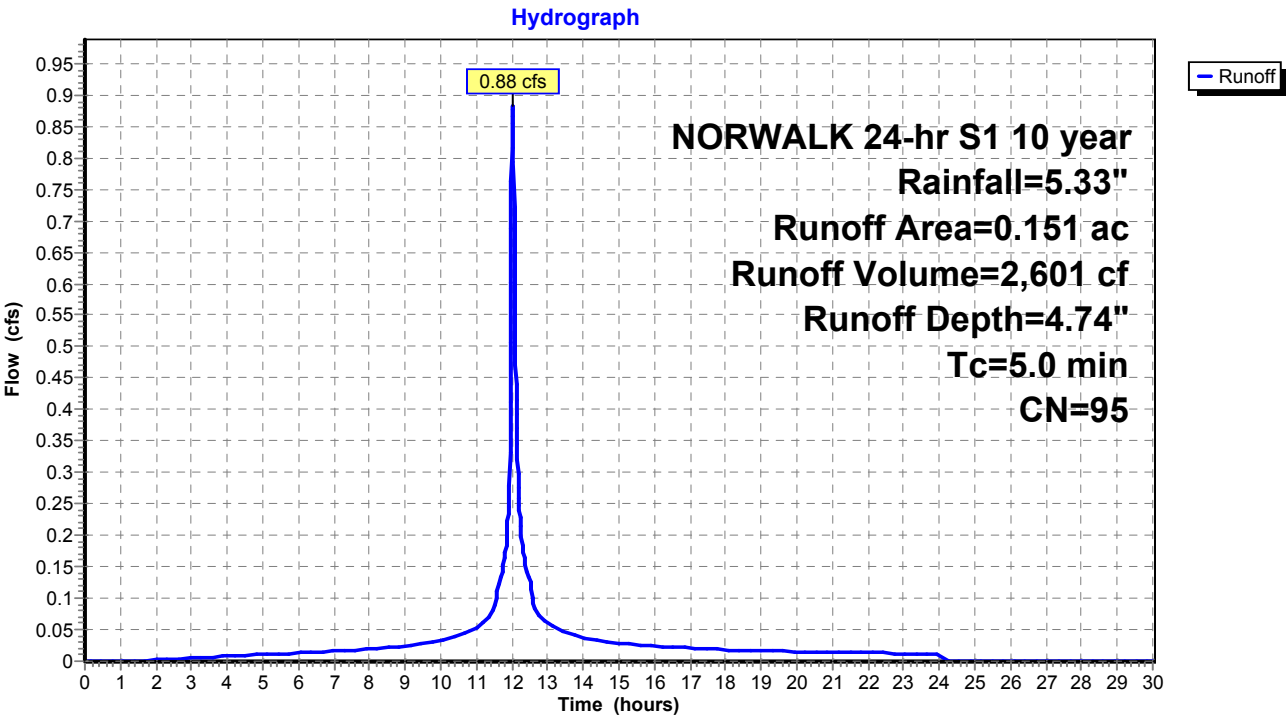
Runoff = 0.88 cfs @ 12.03 hrs, Volume= 2,601 cf, Depth= 4.74"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Summary for Subcatchment 25S: Area 25

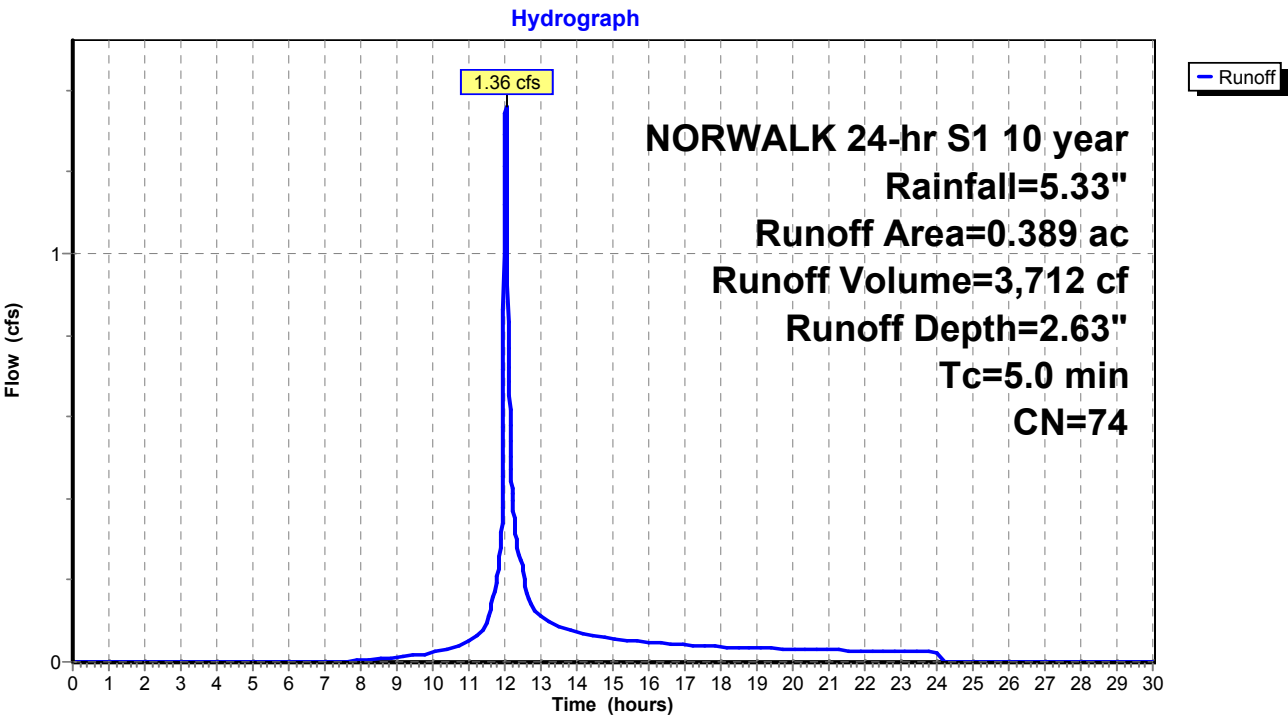
Runoff = 1.36 cfs @ 12.03 hrs, Volume= 3,712 cf, Depth= 2.63"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Summary for Subcatchment 26S: Area 26

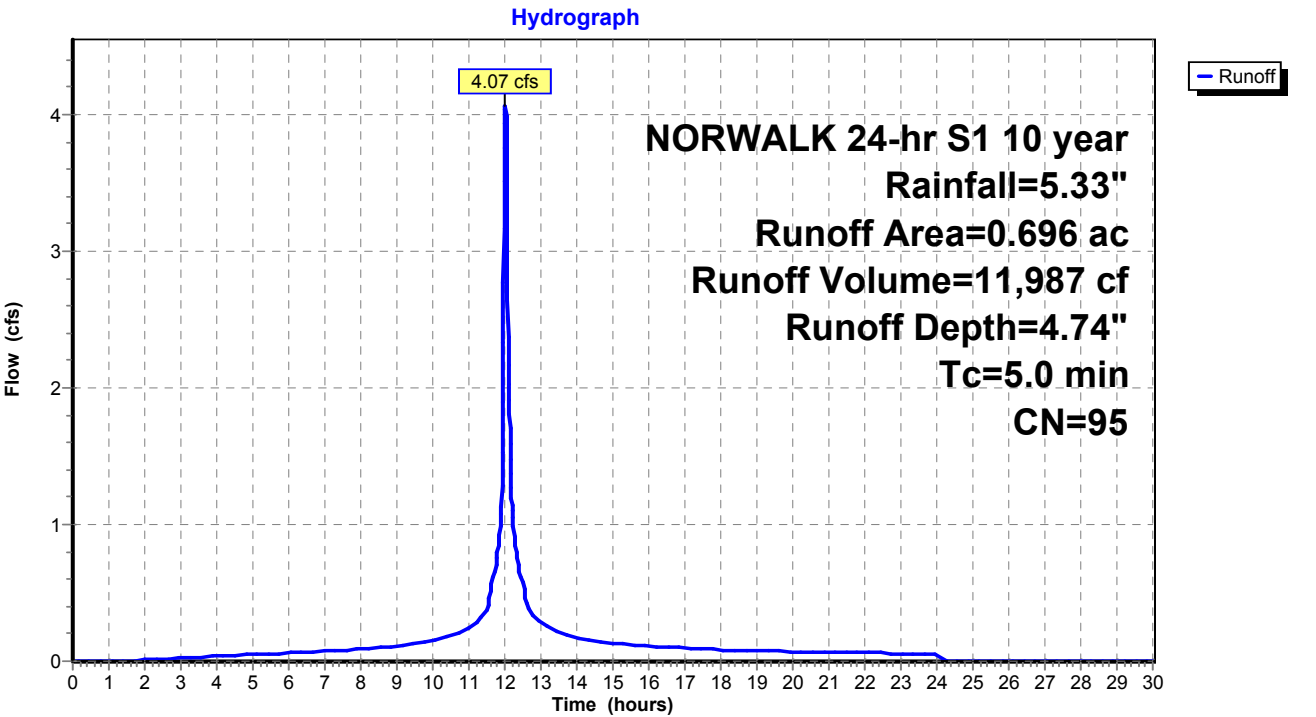
Runoff = 4.07 cfs @ 12.03 hrs, Volume= 11,987 cf, Depth= 4.74"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Summary for Subcatchment 27S: Area 27

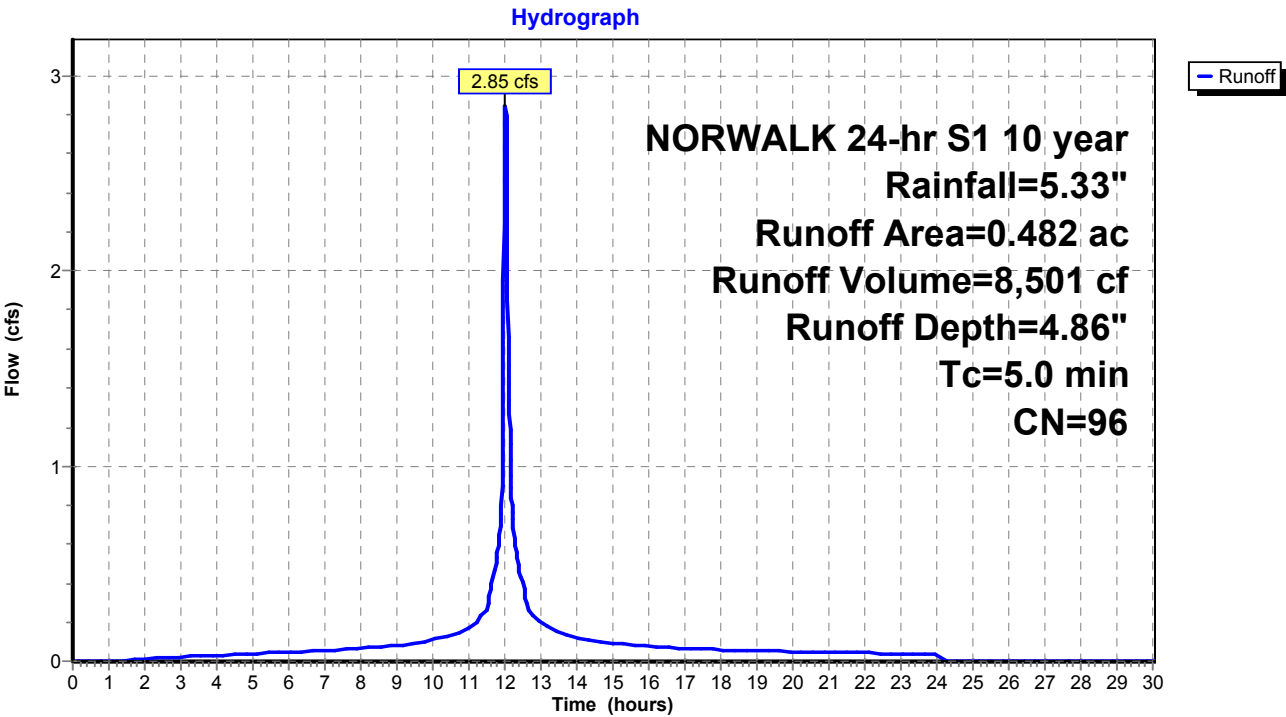
Runoff = 2.85 cfs @ 12.03 hrs, Volume= 8,501 cf, Depth= 4.86"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



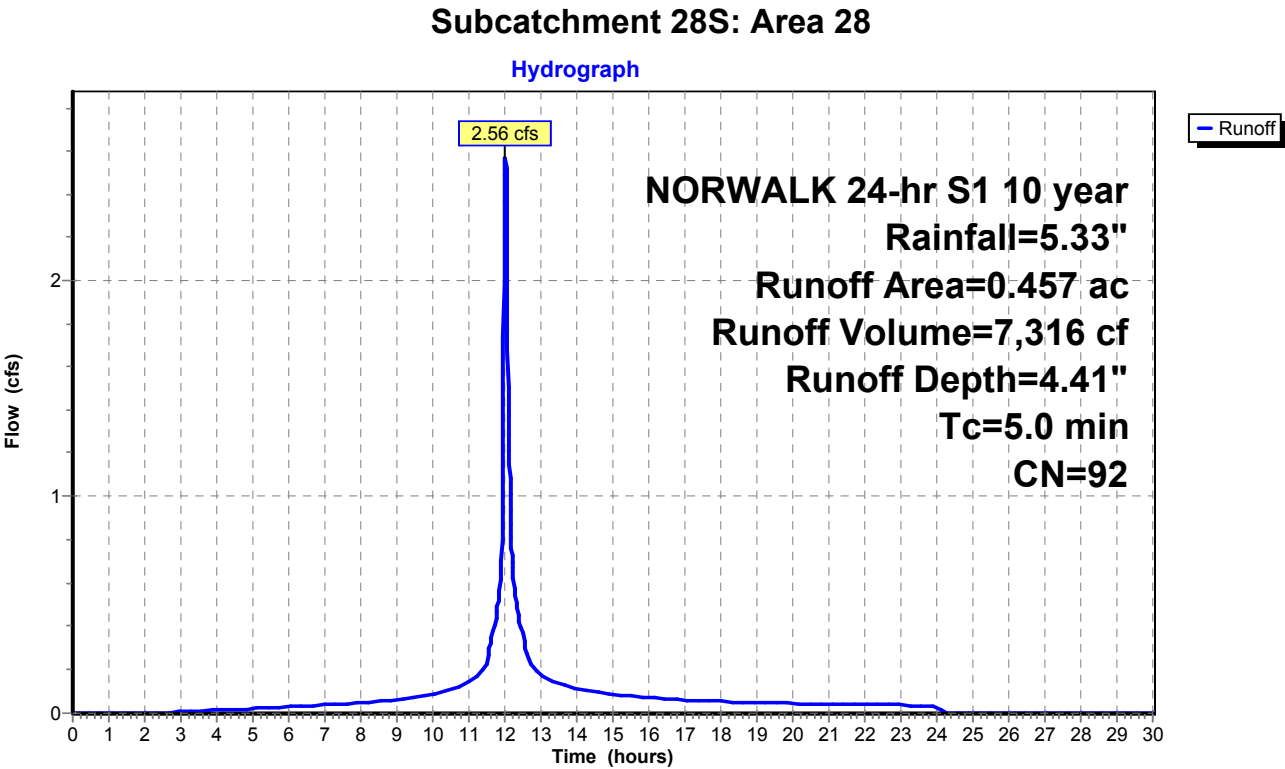
Summary for Subcatchment 28S: Area 28

Runoff = 2.56 cfs @ 12.03 hrs, Volume= 7,316 cf, Depth= 4.41"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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



Summary for Subcatchment 29S: Area 29

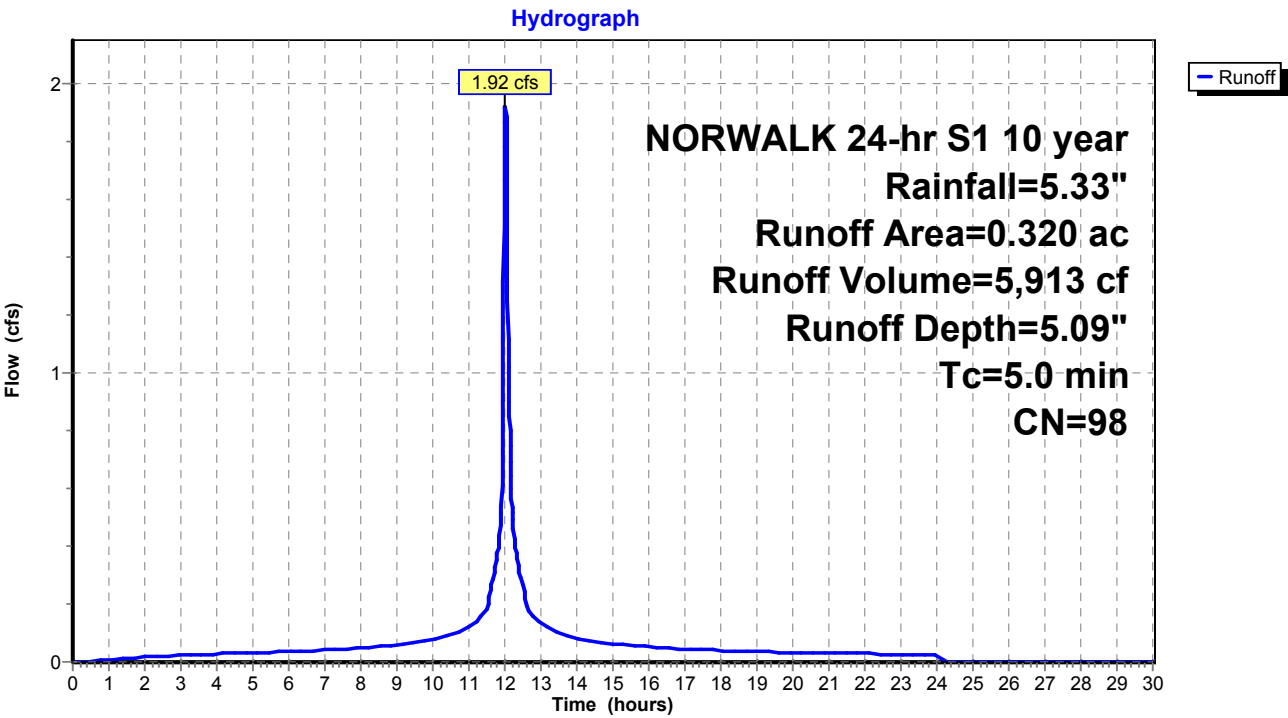
Runoff = 1.92 cfs @ 12.03 hrs, Volume= 5,913 cf, Depth= 5.09"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Summary for Subcatchment 30S: Area 30

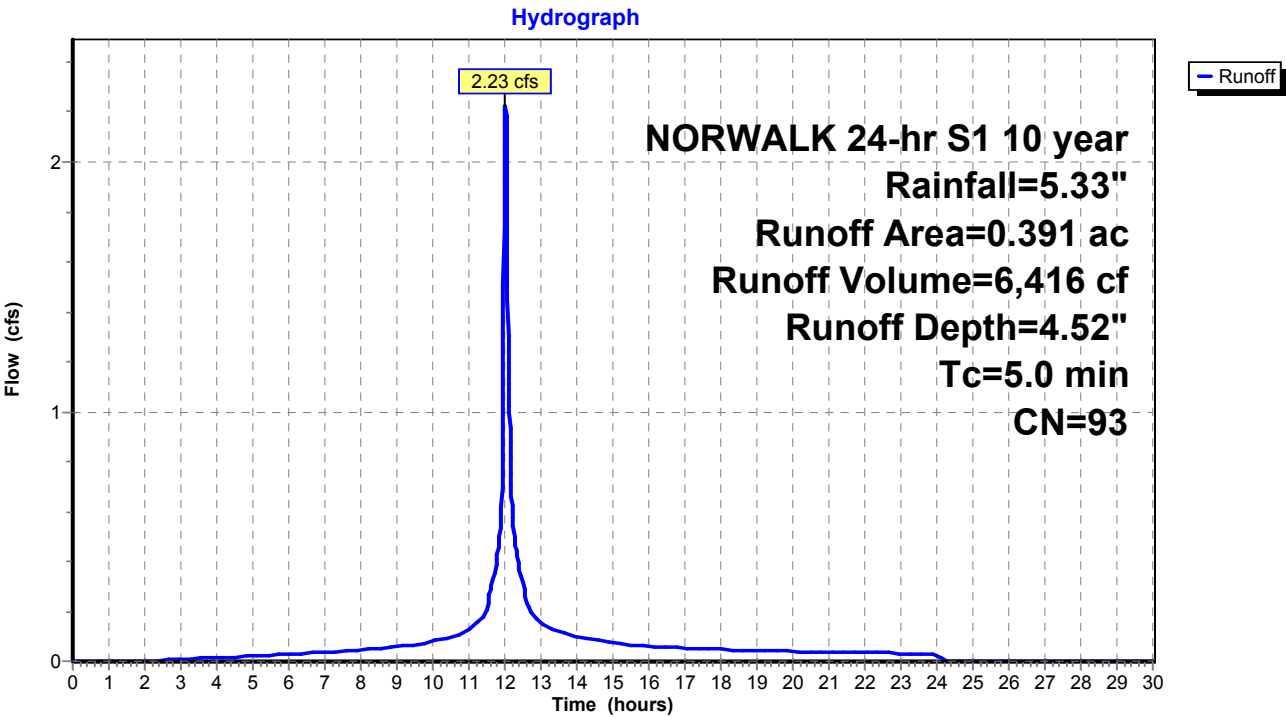
Runoff = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf, Depth= 4.52"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



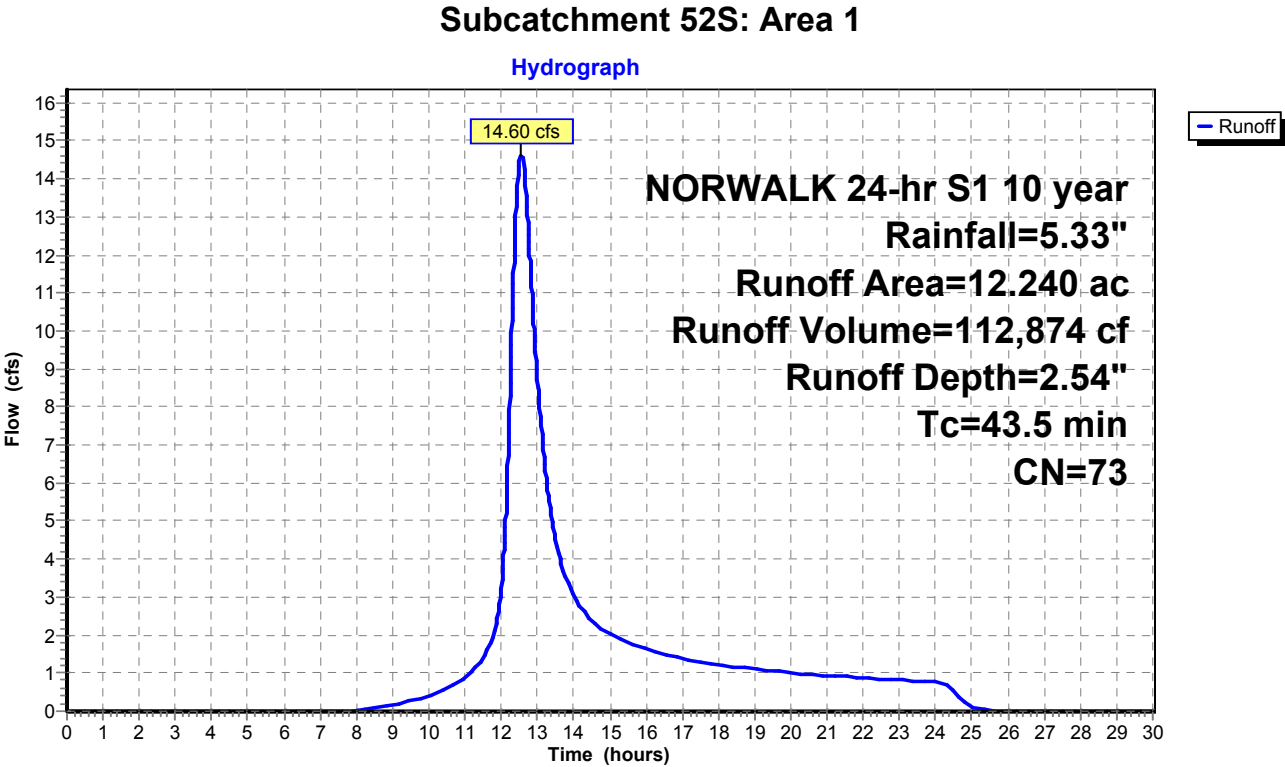
Summary for Subcatchment 52S: Area 1

Runoff = 14.60 cfs @ 12.53 hrs, Volume= 112,874 cf, Depth= 2.54"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 53S: Area 2

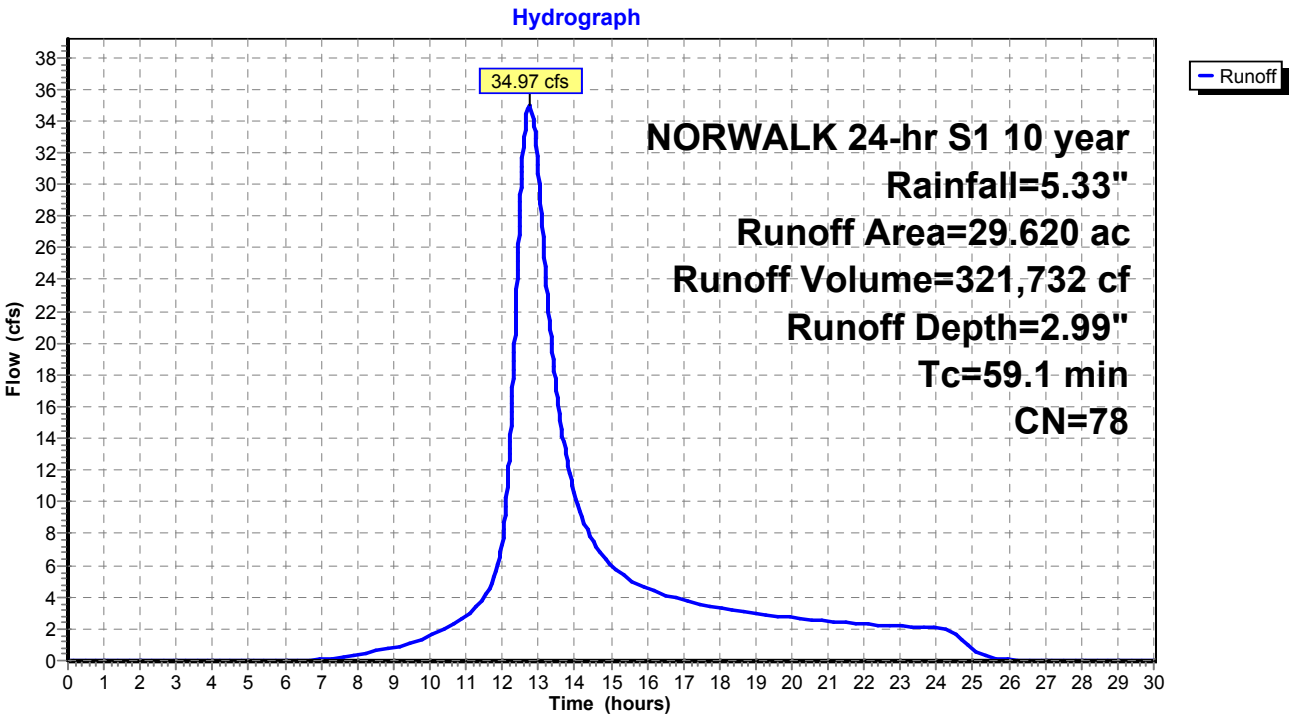
Runoff = 34.97 cfs @ 12.74 hrs, Volume= 321,732 cf, Depth= 2.99"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 54S: Area 3

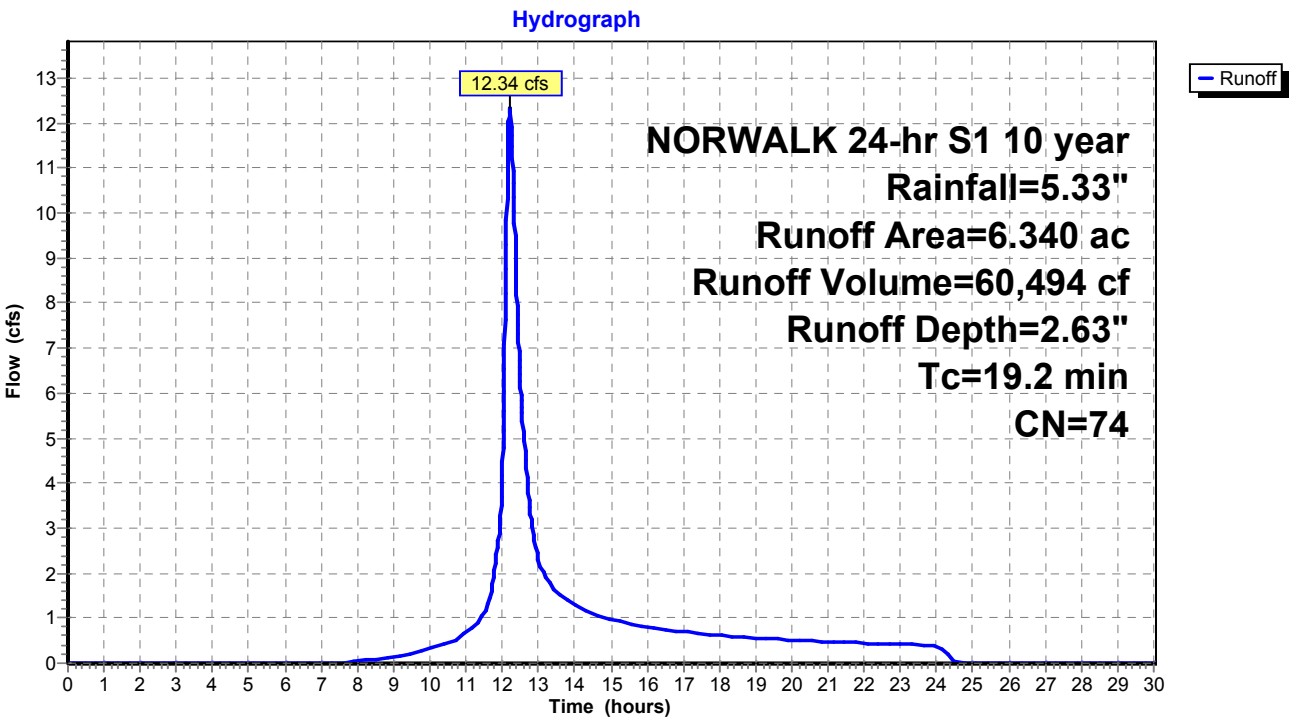
Runoff = 12.34 cfs @ 12.22 hrs, Volume= 60,494 cf, Depth= 2.63"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Summary for Subcatchment 56S: Area 35

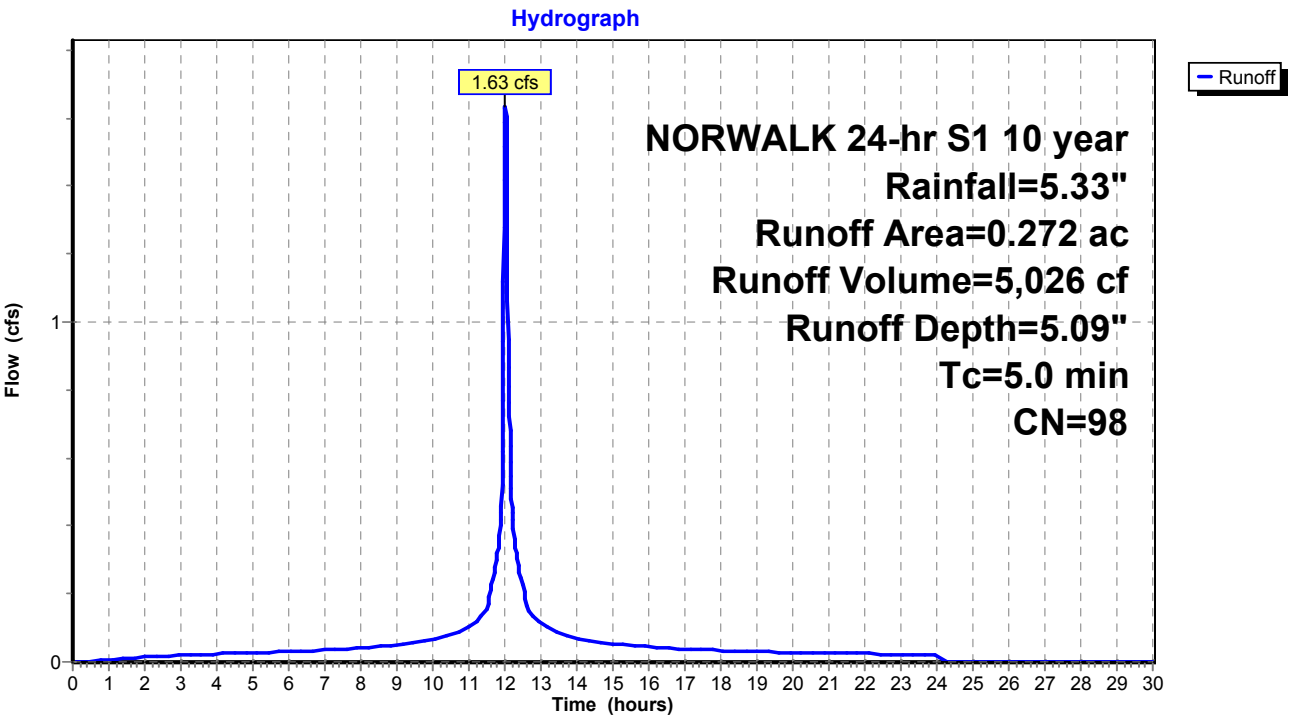
Runoff = 1.63 cfs @ 12.03 hrs, Volume= 5,026 cf, Depth= 5.09"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 60S: Area 37

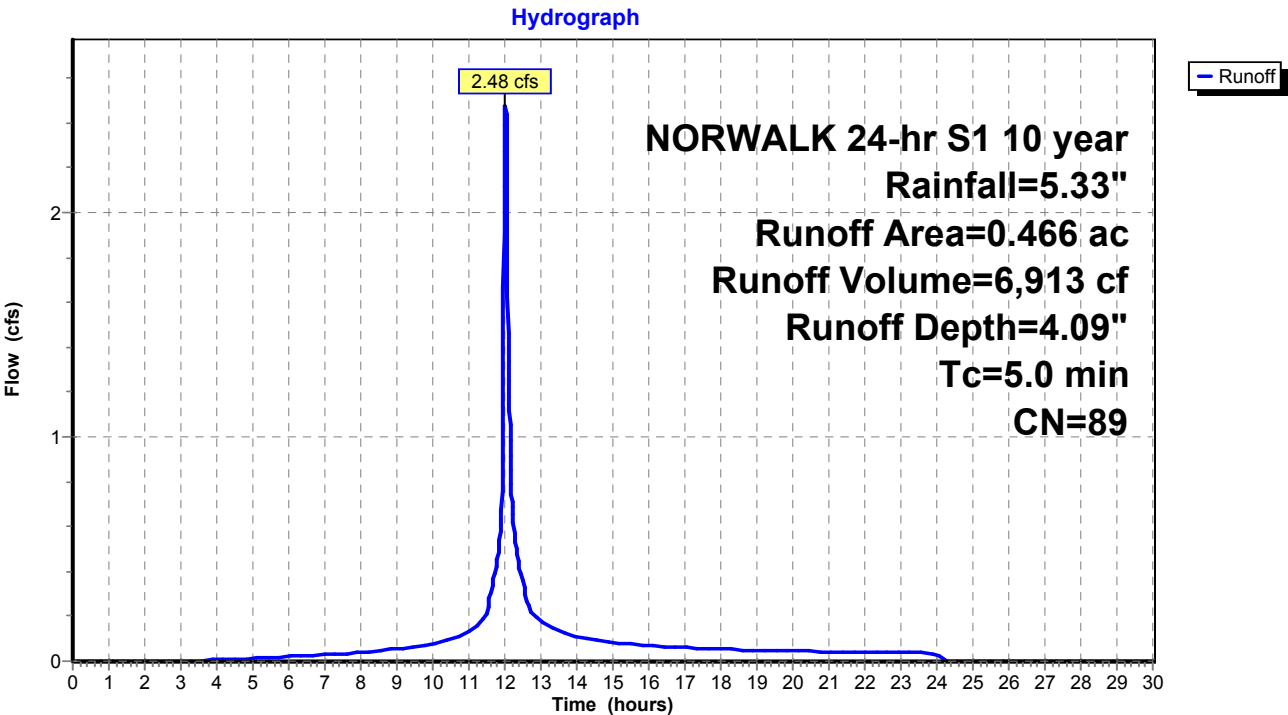
Runoff = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf, Depth= 4.09"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Summary for Subcatchment 62S: Area 38

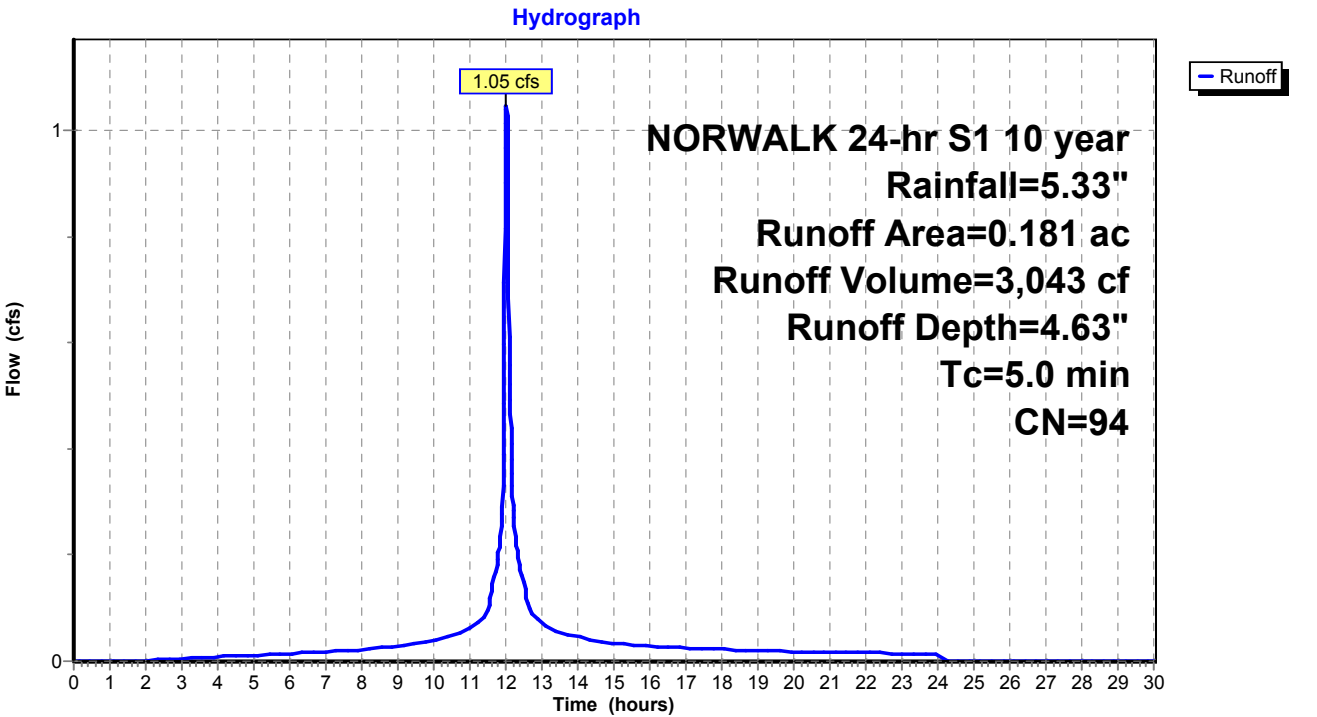
Runoff = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf, Depth= 4.63"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Summary for Subcatchment 65S: Area 41

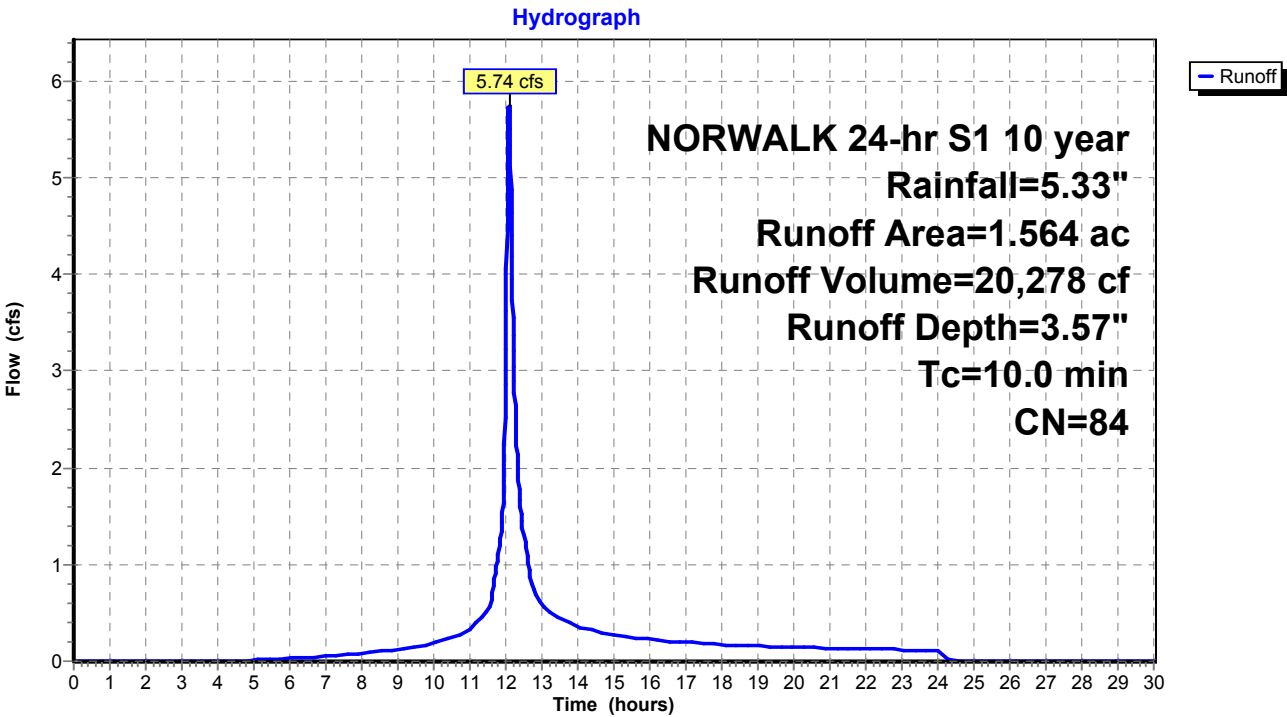
Runoff = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf, Depth= 3.57"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Summary for Subcatchment 68S: Area 36

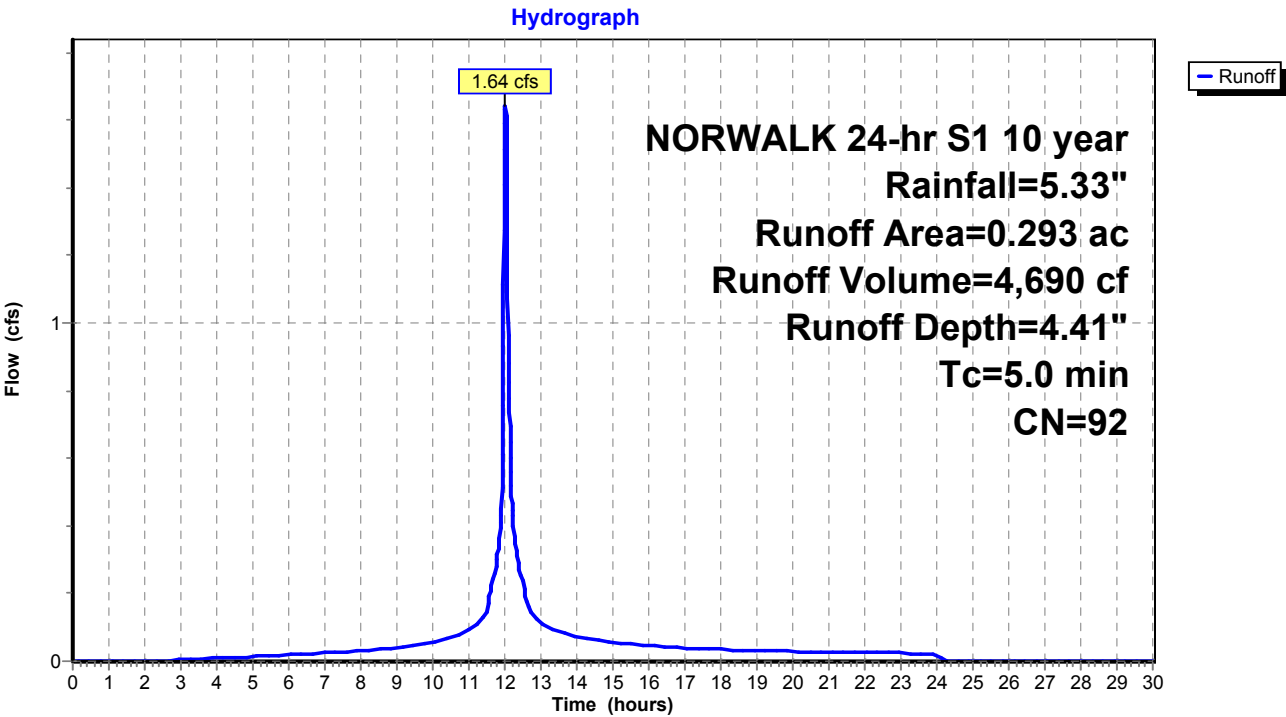
Runoff = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf, Depth= 4.41"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Summary for Subcatchment 69S: Area 40

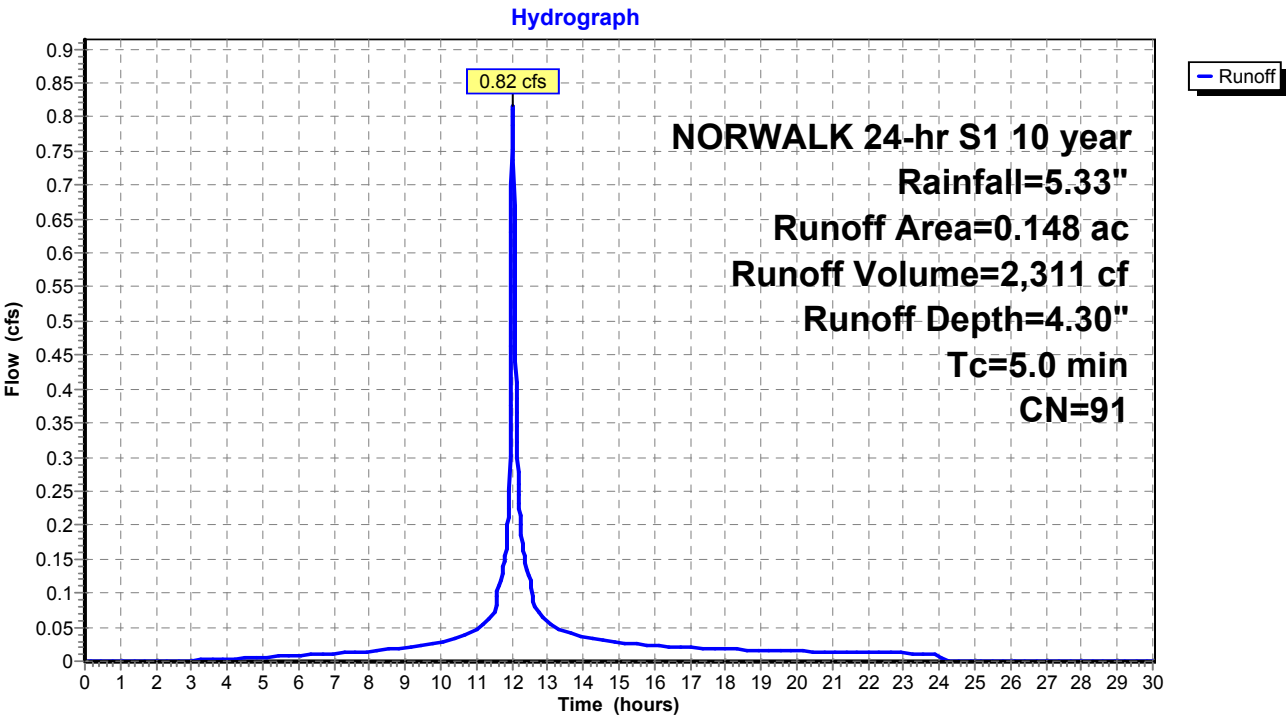
Runoff = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf, Depth= 4.30"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Summary for Subcatchment 71S: Area 34

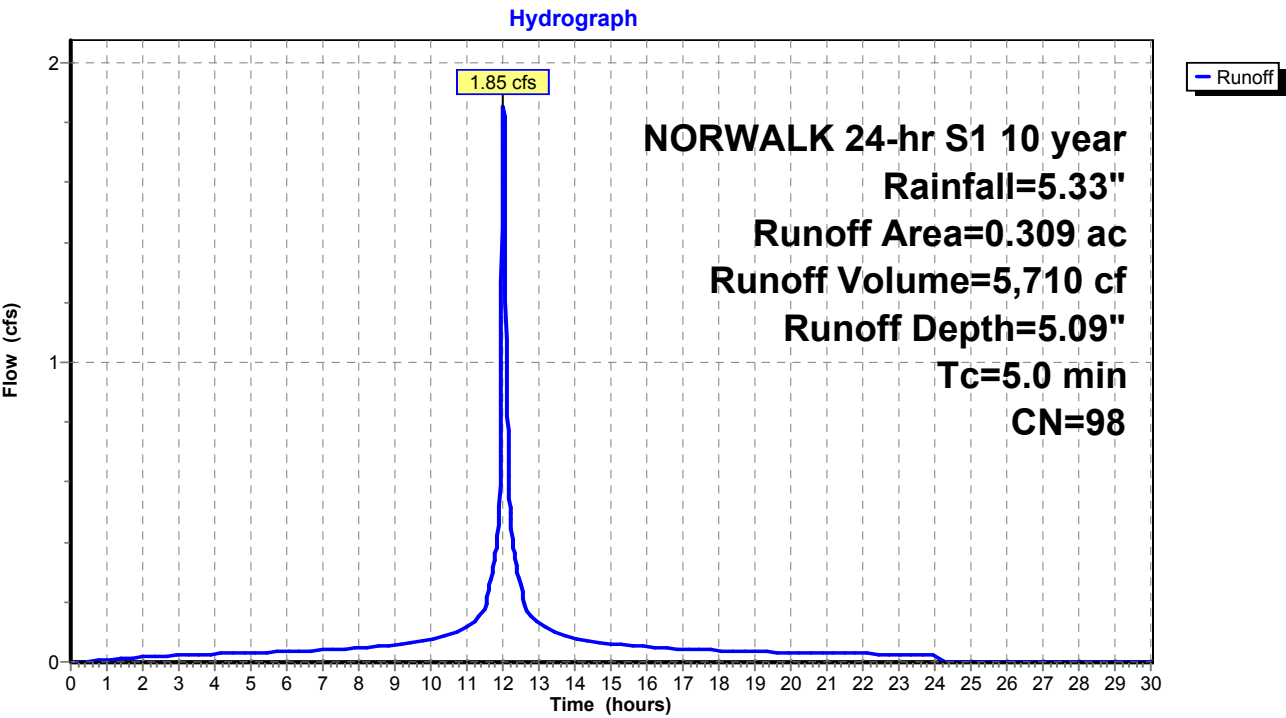
Runoff = 1.85 cfs @ 12.03 hrs, Volume= 5,710 cf, Depth= 5.09"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Subcatchment 75S: Area 32

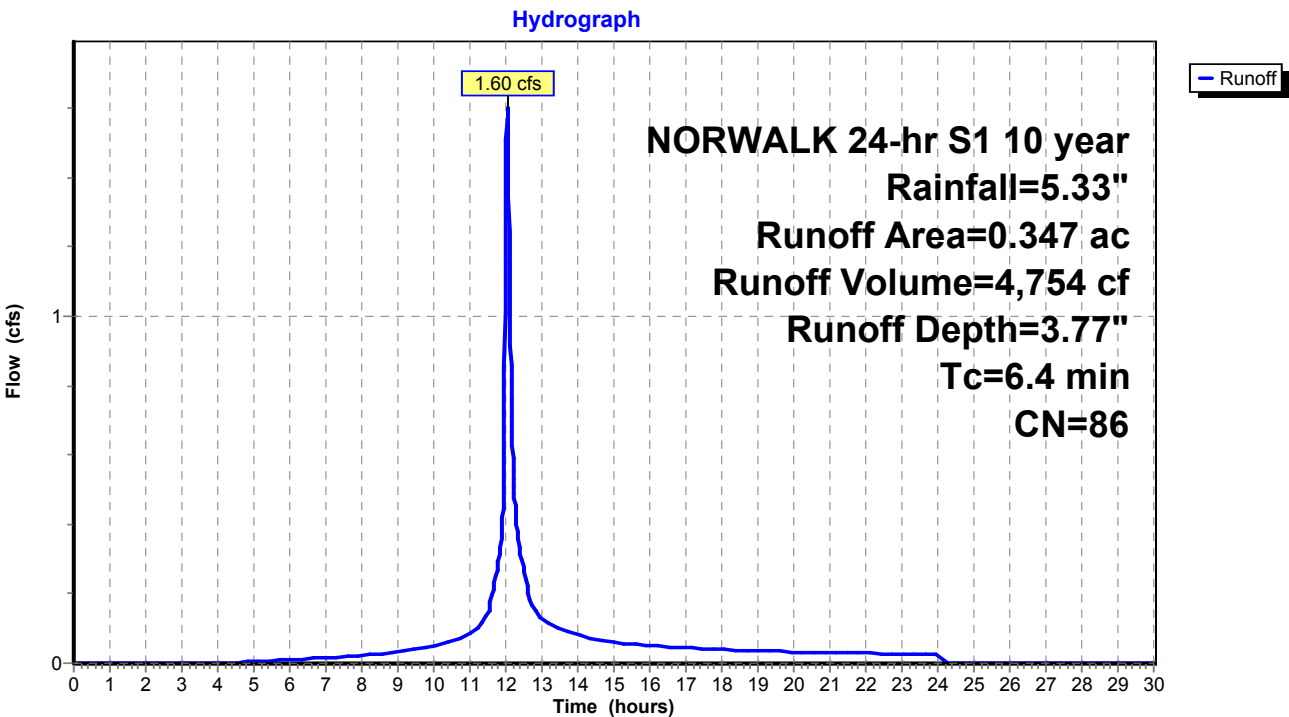
Runoff = 1.60 cfs @ 12.04 hrs, Volume= 4,754 cf, Depth= 3.77"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Summary for Subcatchment 76S: Area 33

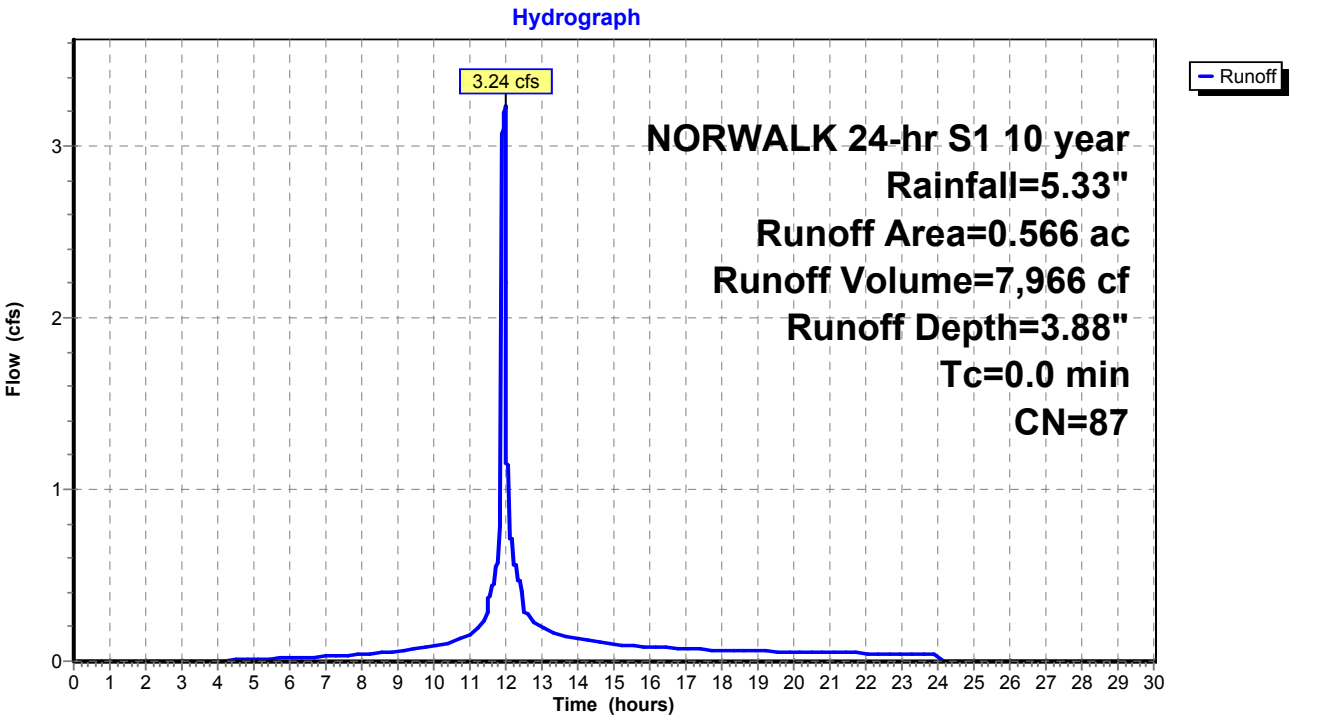
Runoff = 3.24 cfs @ 11.99 hrs, Volume= 7,966 cf, Depth= 3.88"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Summary for Subcatchment 78S: Area 39

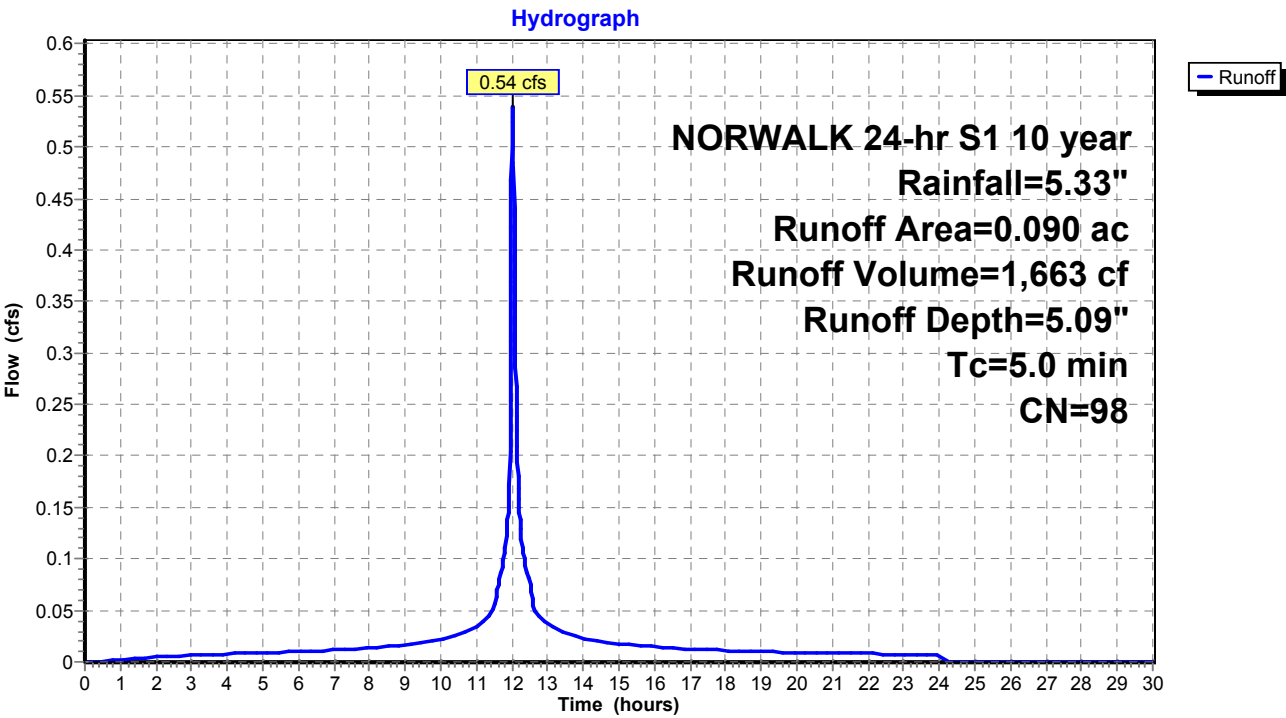
Runoff = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf, Depth= 5.09"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Summary for Subcatchment 84S: Area 31

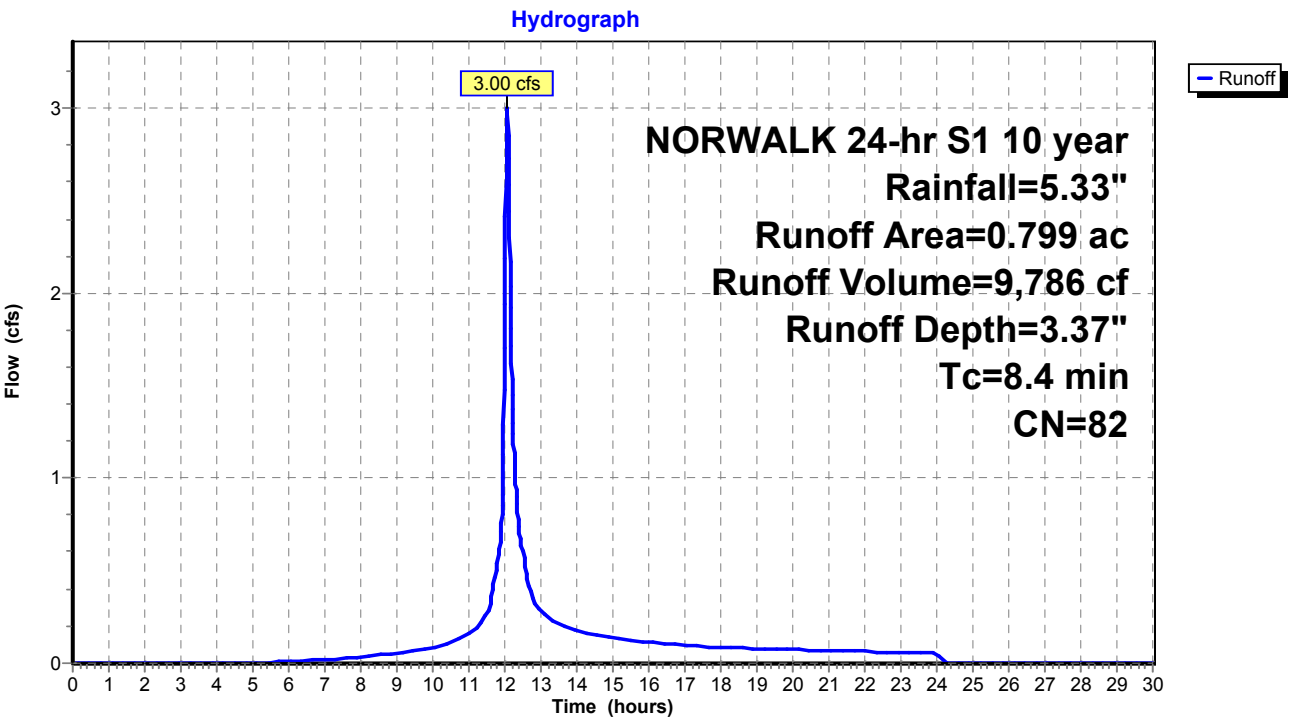
Runoff = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf, Depth= 3.37"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Summary for Subcatchment 100S: Area 16B

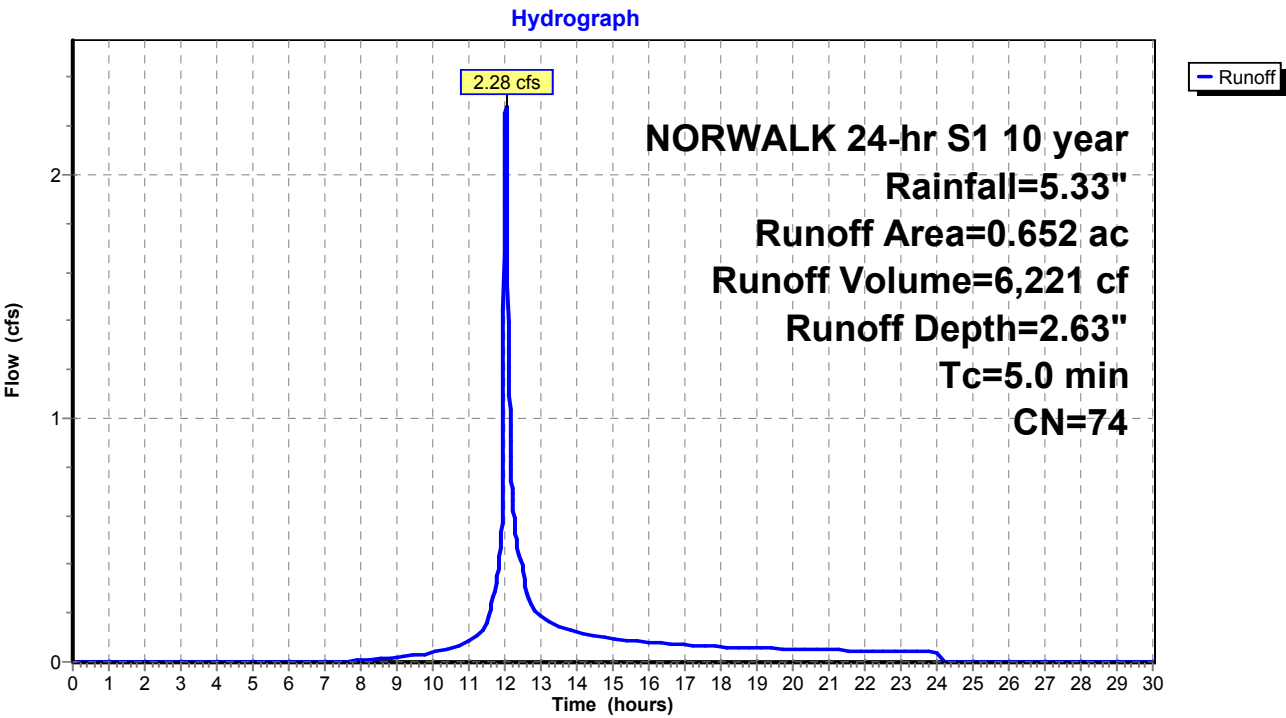
Runoff = 2.28 cfs @ 12.03 hrs, Volume= 6,221 cf, Depth= 2.63"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



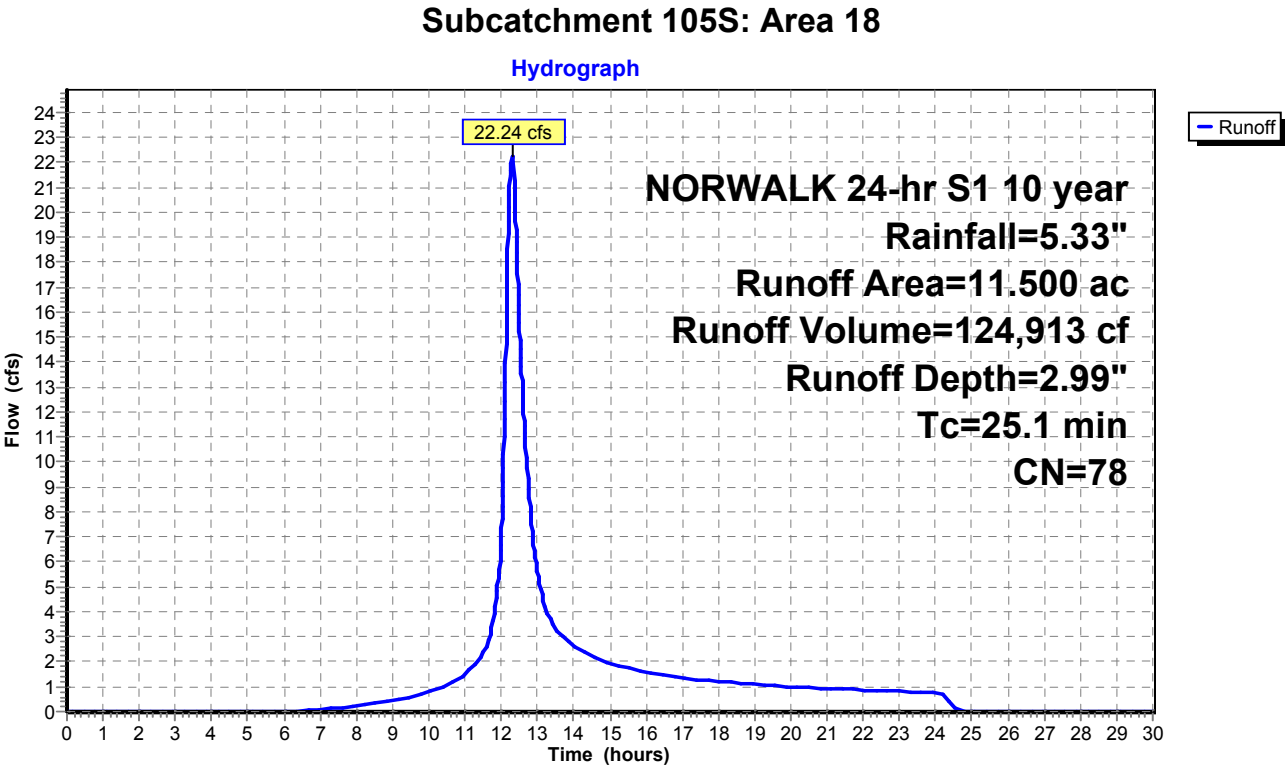
Summary for Subcatchment 105S: Area 18

Runoff = 22.24 cfs @ 12.30 hrs, Volume= 124,913 cf, Depth= 2.99"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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



Summary for Subcatchment BLDG: EX-BLDG

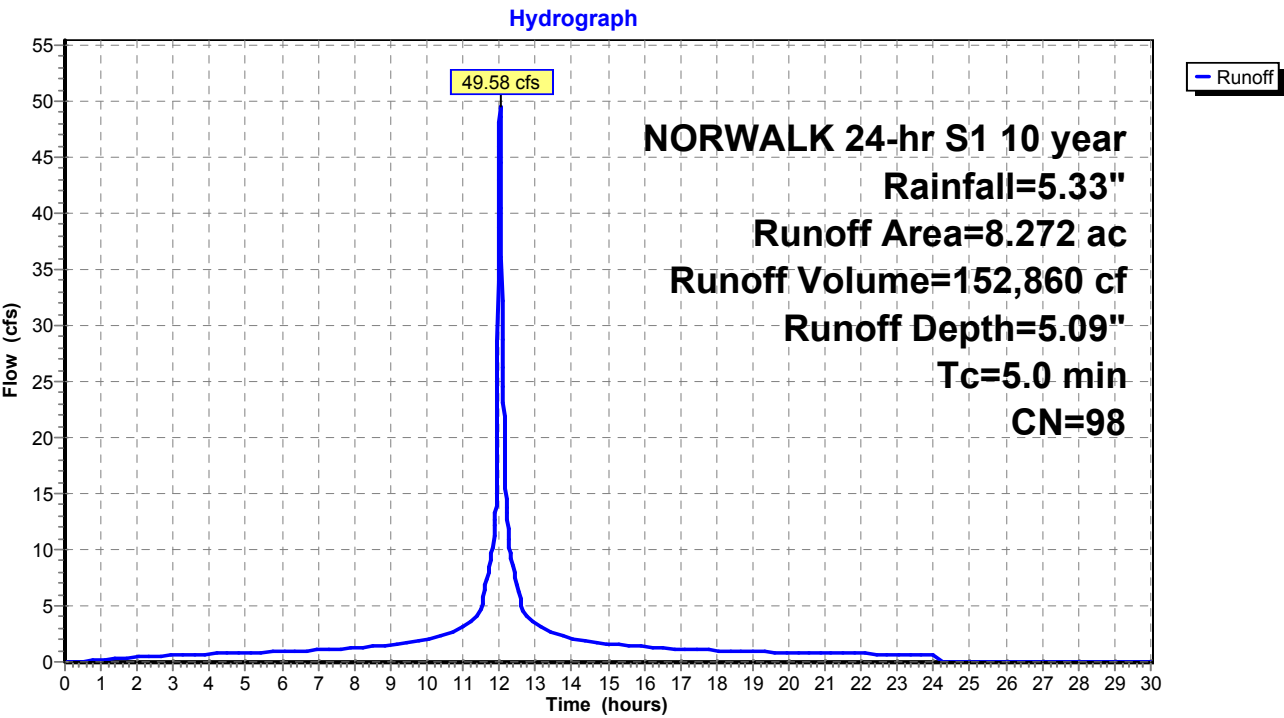
Runoff = 49.58 cfs @ 12.03 hrs, Volume= 152,860 cf, Depth= 5.09"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 10 year Rainfall=5.33"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 3.25" for 10 year event
Inflow = 180.82 cfs @ 12.21 hrs, Volume= 1,777,066 cf
Outflow = 180.82 cfs @ 12.21 hrs, Volume= 1,777,066 cf, Atten= 0%, Lag= 0.0 min
Primary = 31.54 cfs @ 12.21 hrs, Volume= 986,424 cf
Secondary = 149.28 cfs @ 12.21 hrs, Volume= 790,642 cf
Routed to Pond 24P : RR Culvert 3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 13.80' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 ' / Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

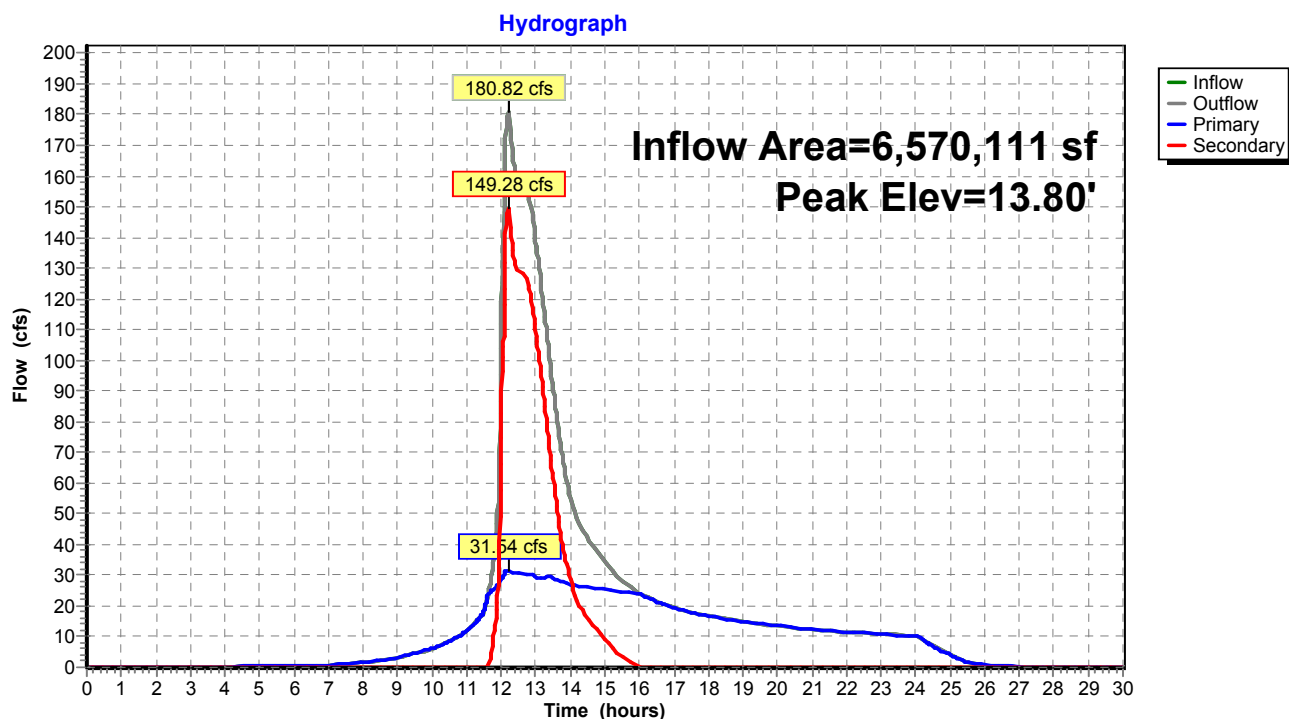
Primary OutFlow Max=31.55 cfs @ 12.21 hrs HW=13.80' (Free Discharge)

↑**2=Culvert** (Barrel Controls 31.55 cfs @ 5.26 fps)

Secondary OutFlow Max=149.11 cfs @ 12.21 hrs HW=13.80' (Free Discharge)

↑**1=Custom Weir/Orifice** (Weir Controls 149.11 cfs @ 3.72 fps)

Pond 1P: RR Culvert 2



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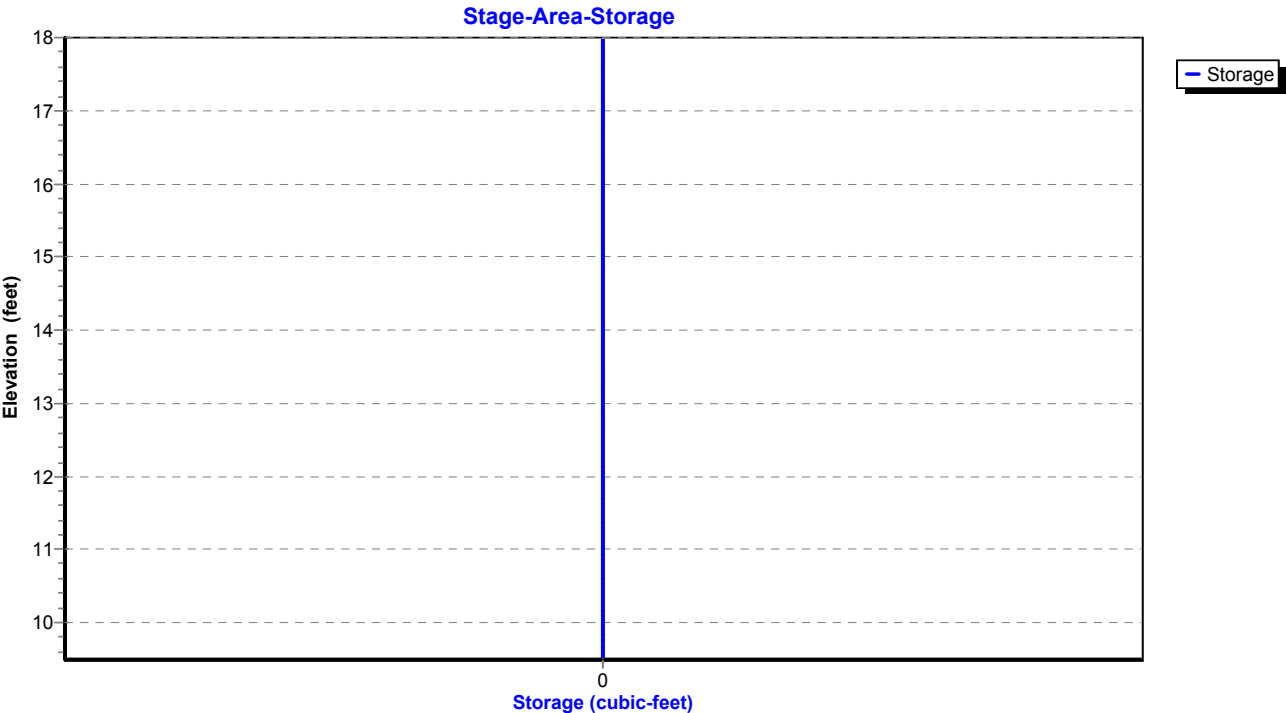
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Pond 1P: RR Culvert 2



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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.67% Impervious, Inflow Depth = 3.90" for 10 year event
Inflow = 126.02 cfs @ 12.04 hrs, Volume= 1,111,450 cf
Outflow = 126.02 cfs @ 12.04 hrs, Volume= 1,111,450 cf, Atten= 0%, Lag= 0.0 min
Primary = 47.54 cfs @ 12.04 hrs, Volume= 866,638 cf
Secondary = 78.48 cfs @ 12.04 hrs, Volume= 244,812 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 29.18' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

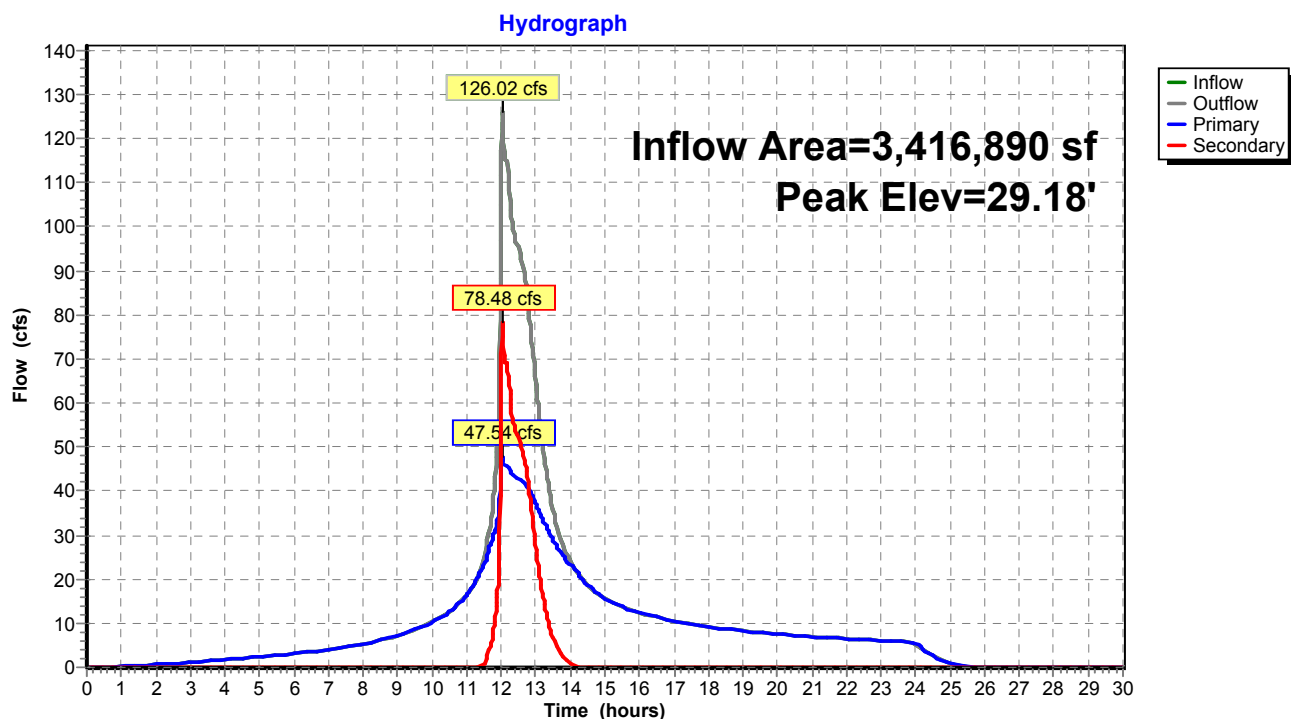
Primary OutFlow Max=47.53 cfs @ 12.04 hrs HW=29.18' (Free Discharge)

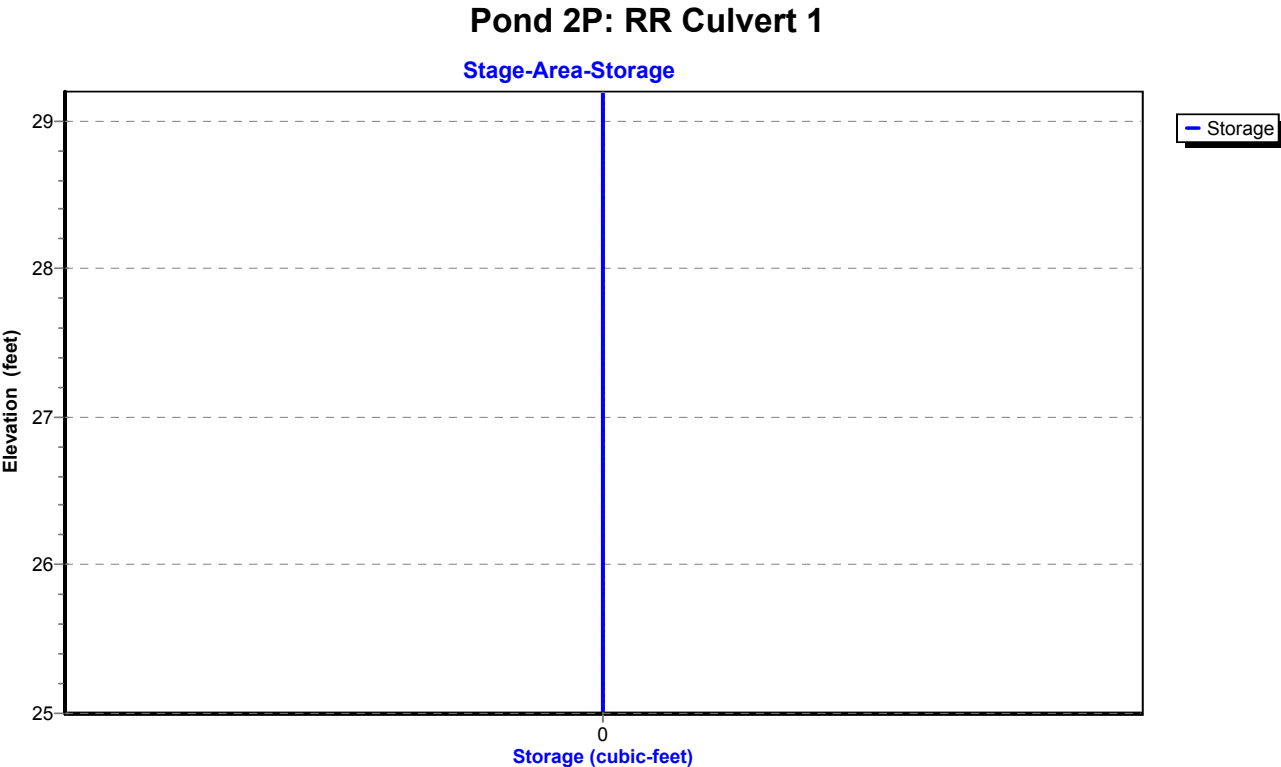
↑**1=Culvert** (Inlet Controls 47.53 cfs @ 8.25 fps)

Secondary OutFlow Max=78.41 cfs @ 12.04 hrs HW=29.18' (Free Discharge)

↑**2=Custom Weir/Orifice** (Orifice Controls 78.41 cfs @ 6.53 fps)

Pond 2P: RR Culvert 1





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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 3.97" for 10 year event
 Inflow = 24.01 cfs @ 12.03 hrs, Volume= 87,093 cf
 Outflow = 3.87 cfs @ 12.61 hrs, Volume= 71,317 cf, Atten= 84%, Lag= 34.6 min
 Primary = 3.87 cfs @ 12.61 hrs, Volume= 71,317 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 49.59' @ 12.61 hrs Surf.Area= 11,287 sf Storage= 38,892 cf

Plug-Flow detention time= 221.3 min calculated for 71,317 cf (82% of inflow)
 Center-of-Mass det. time= 133.8 min (961.3 - 827.5)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.87 cfs @ 12.61 hrs HW=49.59' (Free Discharge)

1=Culvert (Passes 3.87 cfs of 18.72 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 3.87 cfs @ 7.10 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Proposed Conditions

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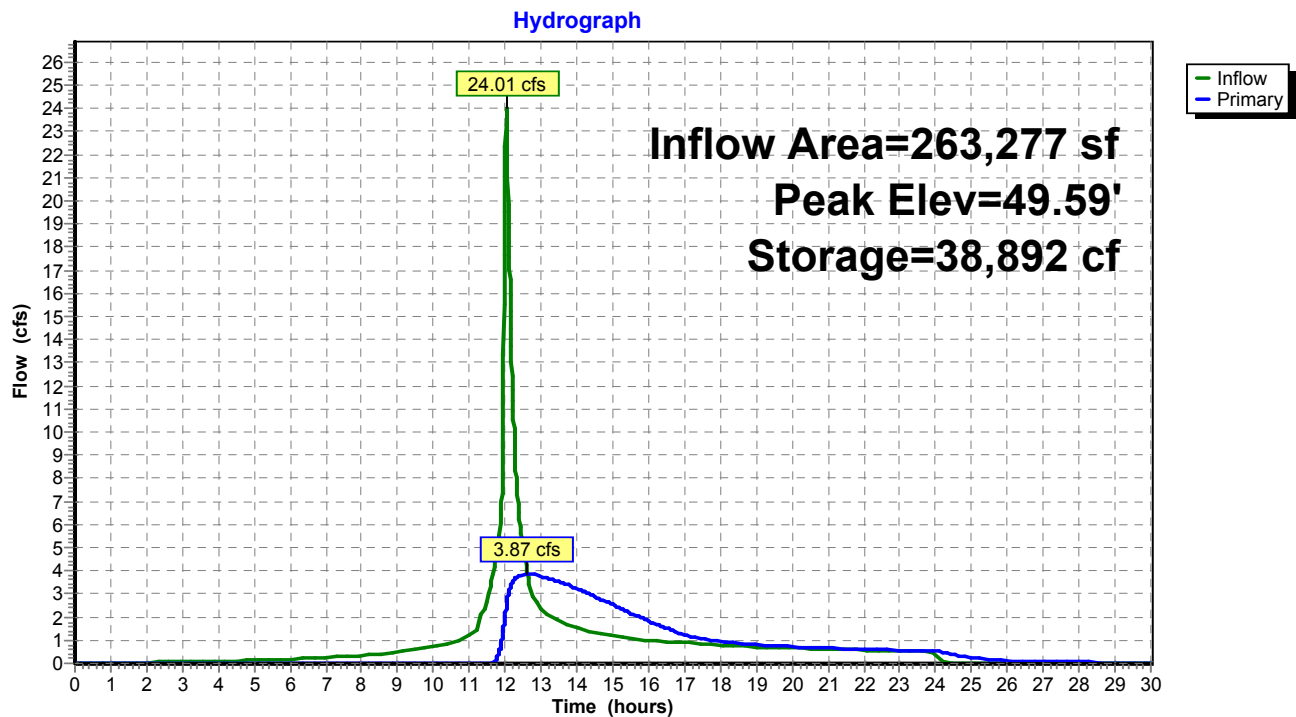
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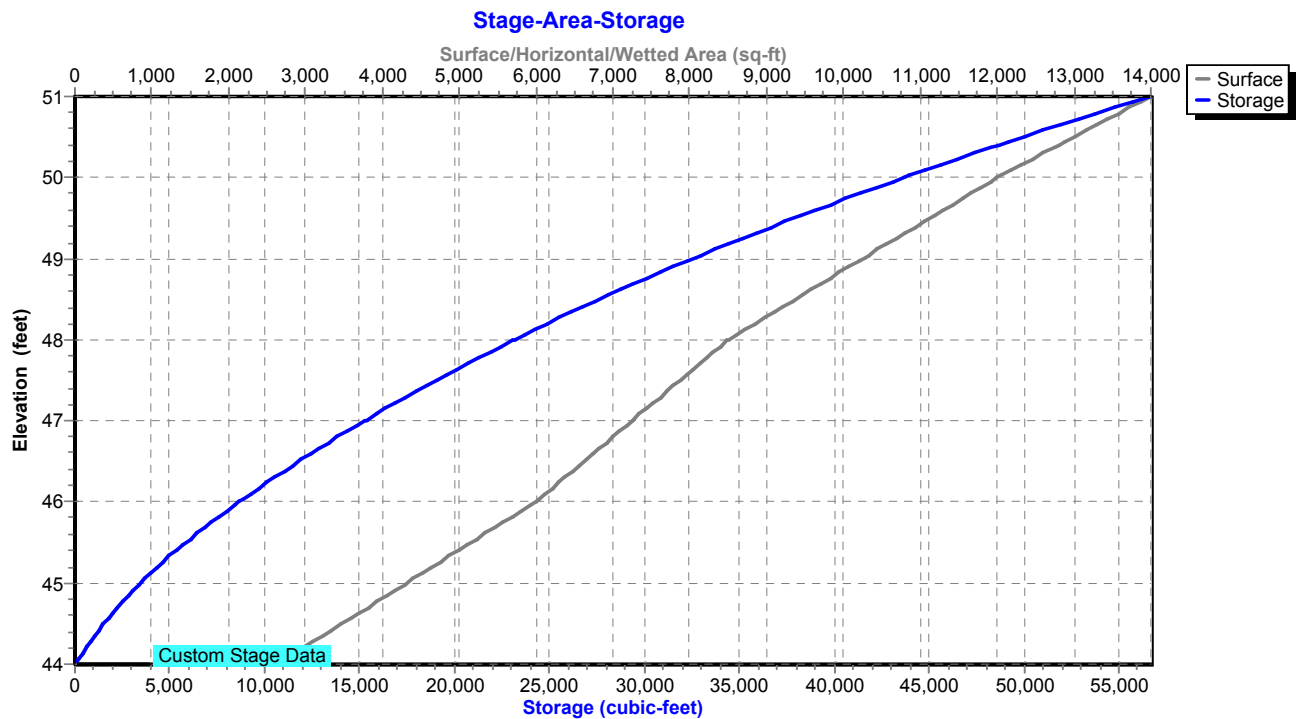
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 2.54" for 10 year event
 Inflow = 16.39 cfs @ 12.45 hrs, Volume= 114,534 cf
 Outflow = 14.99 cfs @ 12.58 hrs, Volume= 114,533 cf, Atten= 9%, Lag= 8.0 min
 Primary = 14.99 cfs @ 12.58 hrs, Volume= 114,533 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 80.12' @ 12.58 hrs Storage= 4,872 cf

Plug-Flow detention time= 6.2 min calculated for 114,533 cf (100% of inflow)

Center-of-Mass det. time= 6.2 min (897.9 - 891.7)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=14.99 cfs @ 12.58 hrs HW=80.12' (Free Discharge)↑ **1=Culvert** (Inlet Controls 14.99 cfs @ 4.77 fps)

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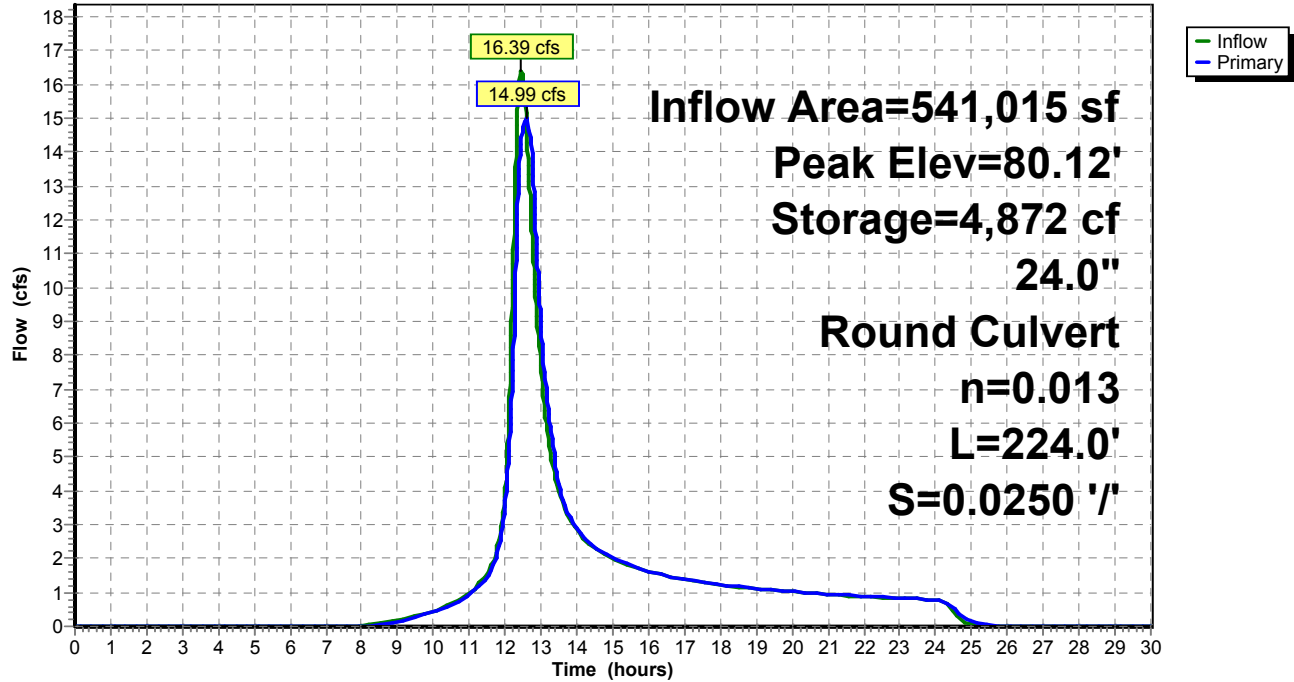
NORWALK 24-hr S1 10 year Rainfall=5.33"

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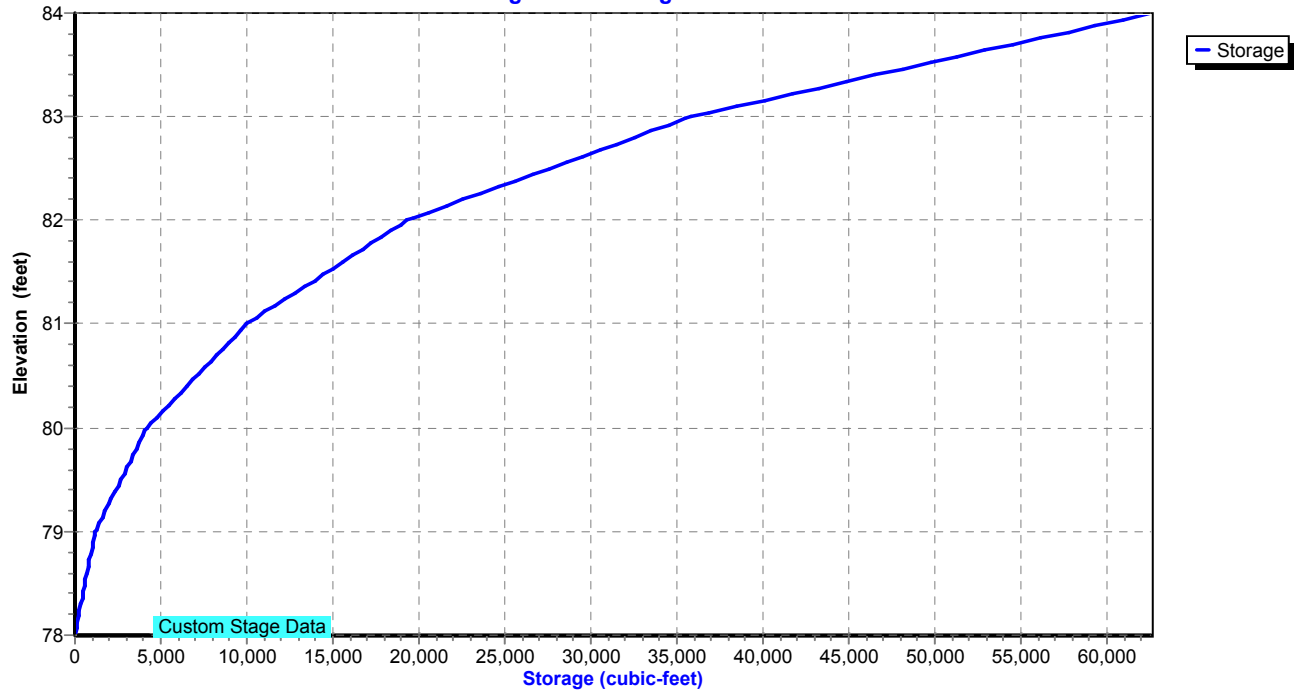
Pond 5P: DET 5 Culvert

Hydrograph



Pond 5P: DET 5 Culvert

Stage-Area-Storage



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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 3.37" for 10 year event
 Inflow = 24.10 cfs @ 12.70 hrs, Volume= 210,050 cf
 Outflow = 24.05 cfs @ 12.71 hrs, Volume= 210,050 cf, Atten= 0%, Lag= 0.7 min
 Primary = 24.05 cfs @ 12.71 hrs, Volume= 210,050 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 90.91' @ 12.71 hrs Storage= 689 cf

Plug-Flow detention time= 0.4 min calculated for 210,050 cf (100% of inflow)
 Center-of-Mass det. time= 0.4 min (878.6 - 878.2)

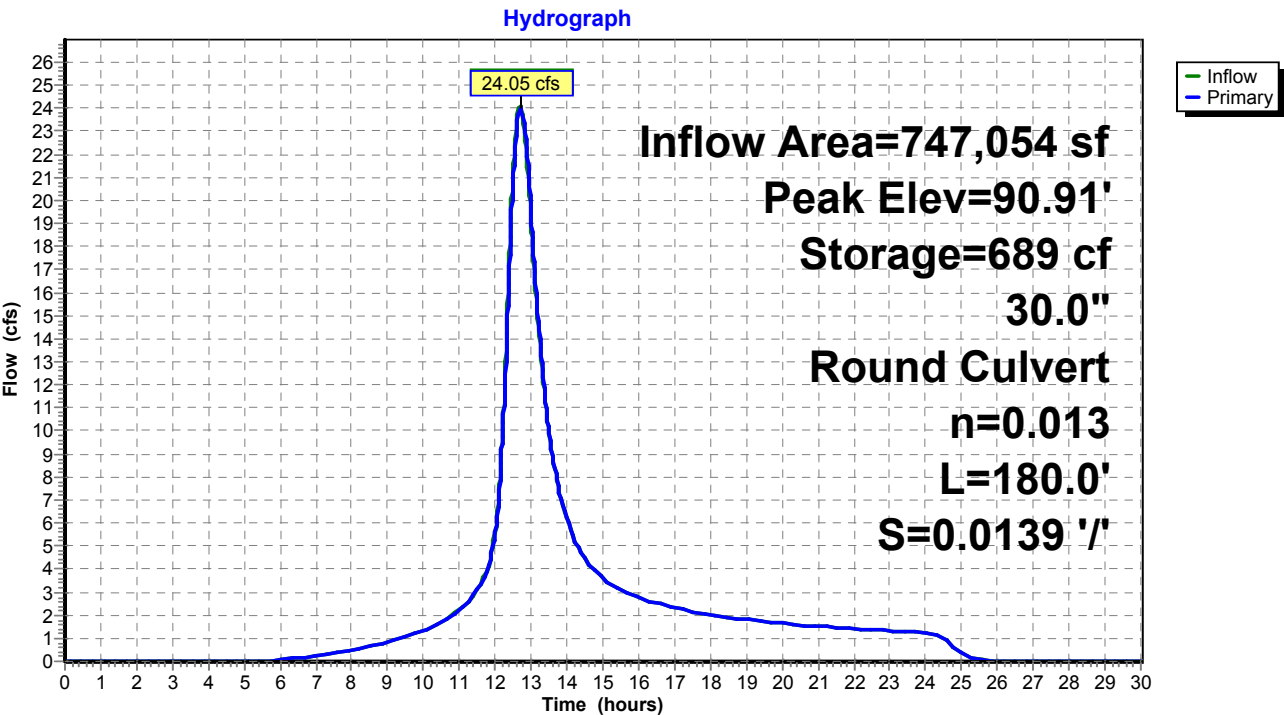
Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

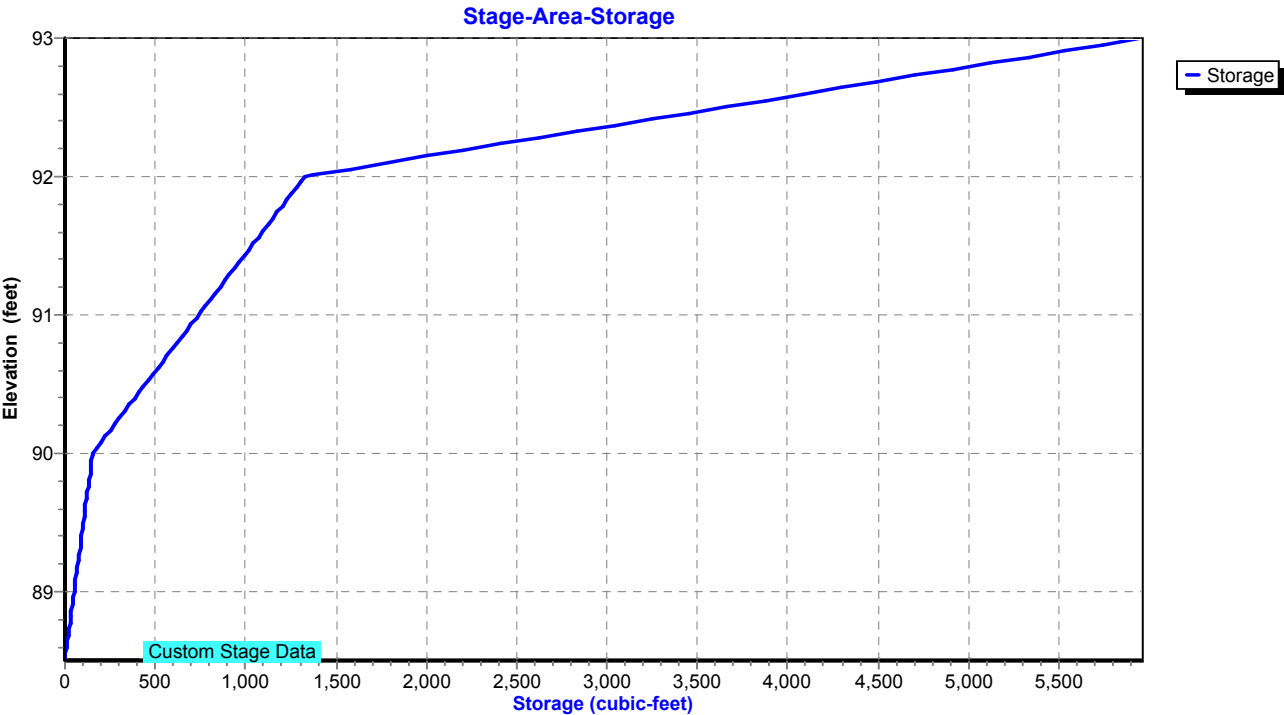
Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=24.06 cfs @ 12.71 hrs HW=90.91' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 24.06 cfs @ 4.96 fps)

Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 3.28" for 10 year event
Inflow = 3.29 cfs @ 12.26 hrs, Volume= 17,486 cf
Outflow = 2.21 cfs @ 12.46 hrs, Volume= 17,486 cf, Atten= 33%, Lag= 12.1 min
Primary = 2.21 cfs @ 12.46 hrs, Volume= 17,486 cf
Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.27' @ 12.46 hrs Storage= 1,651 cf

Plug-Flow detention time= 6.0 min calculated for 17,480 cf (100% of inflow)

Center-of-Mass det. time= 6.1 min (858.1 - 852.0)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.21 cfs @ 12.46 hrs HW=93.27' (Free Discharge)↑**1=Culvert** (Inlet Controls 2.21 cfs @ 2.80 fps)

Proposed Conditions

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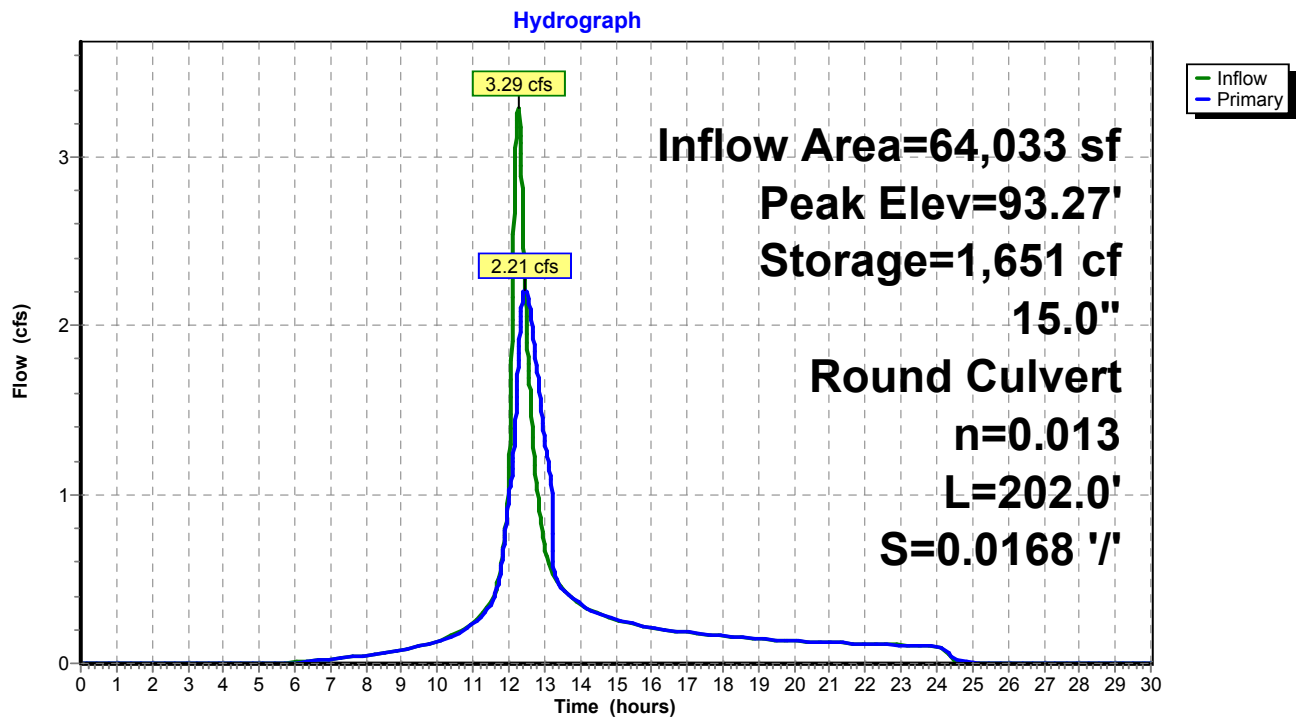
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NORWALK 24-hr S1 10 year Rainfall=5.33"

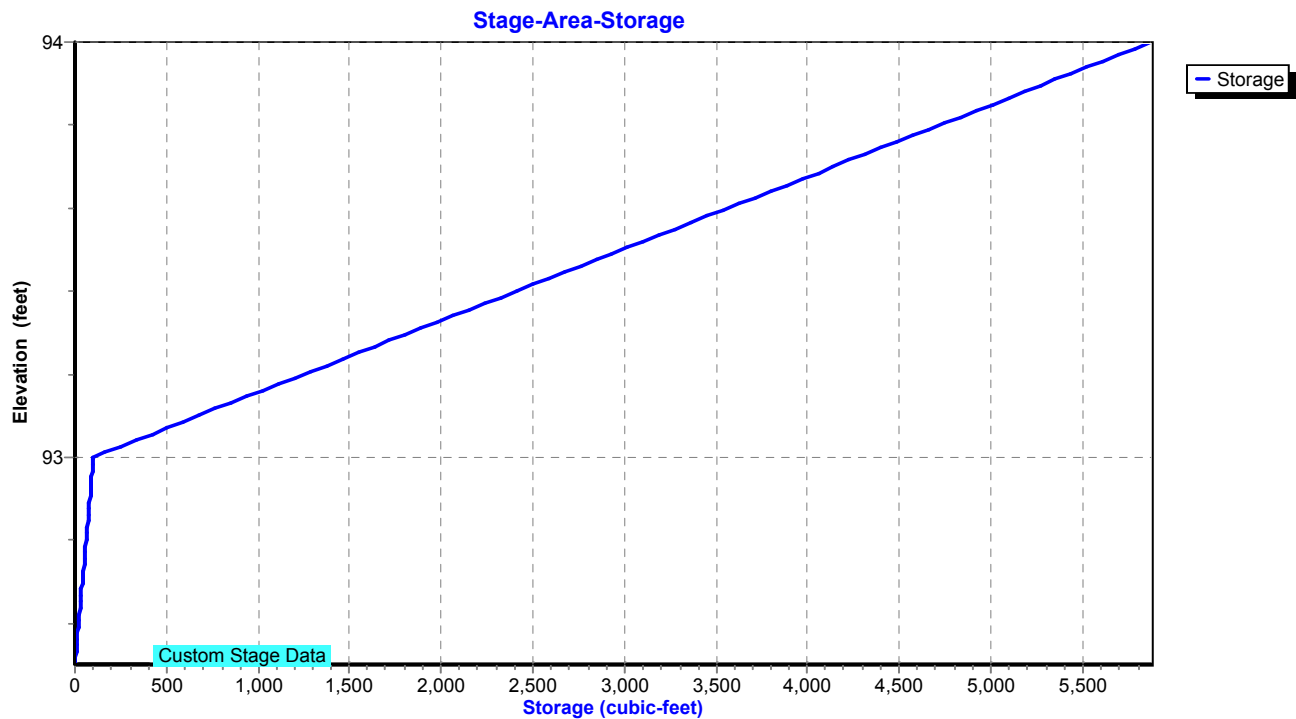
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 3.18" for 10 year event
 Inflow = 48.91 cfs @ 12.65 hrs, Volume= 419,897 cf
 Outflow = 48.91 cfs @ 12.66 hrs, Volume= 419,897 cf, Atten= 0%, Lag= 0.1 min
 Primary = 48.91 cfs @ 12.66 hrs, Volume= 419,897 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 71.28' @ 12.66 hrs Storage= 85 cf

Plug-Flow detention time= 0.0 min calculated for 419,757 cf (100% of inflow)
 Center-of-Mass det. time= 0.0 min (874.3 - 874.3)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

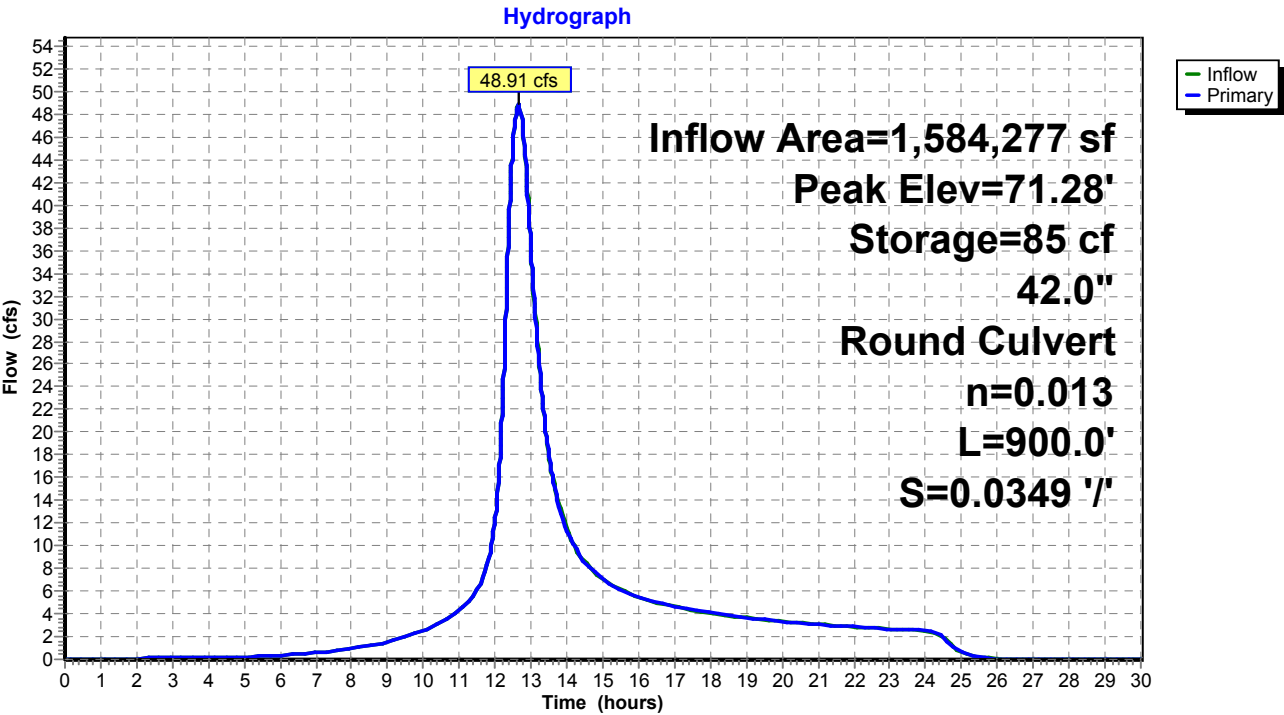
Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

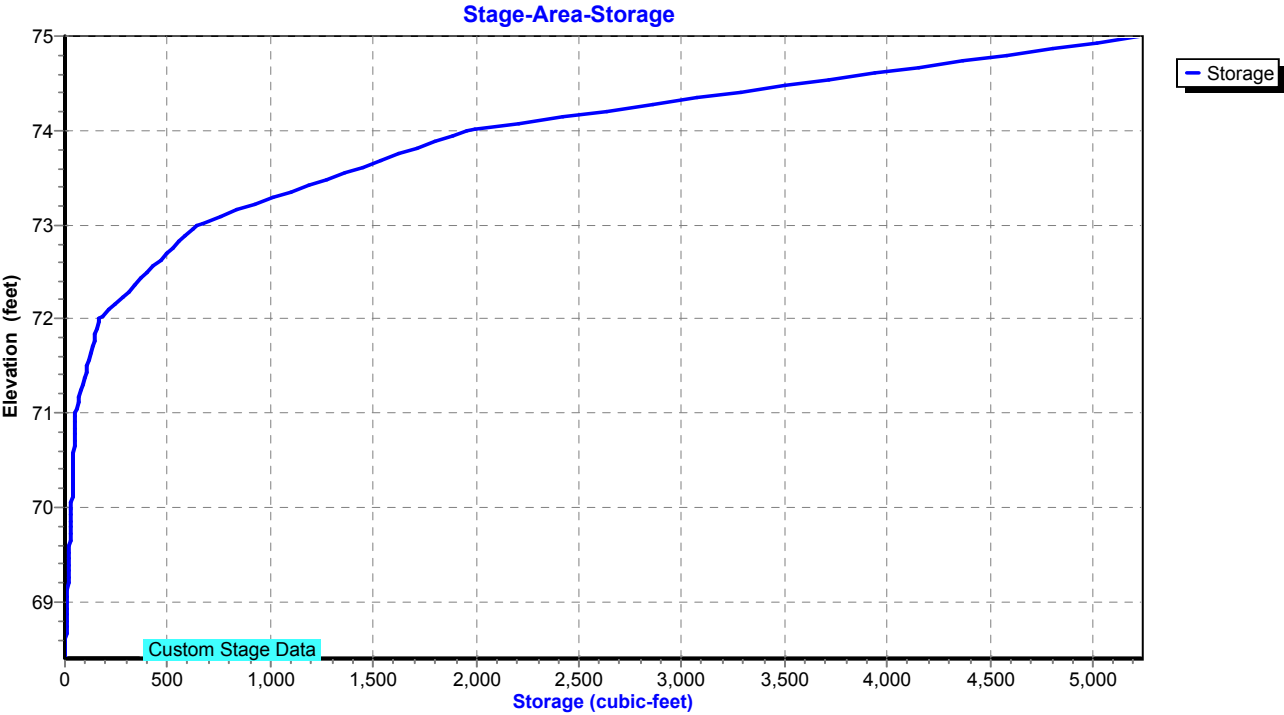
Primary OutFlow Max=48.91 cfs @ 12.66 hrs HW=71.28' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 48.91 cfs @ 5.78 fps)

Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



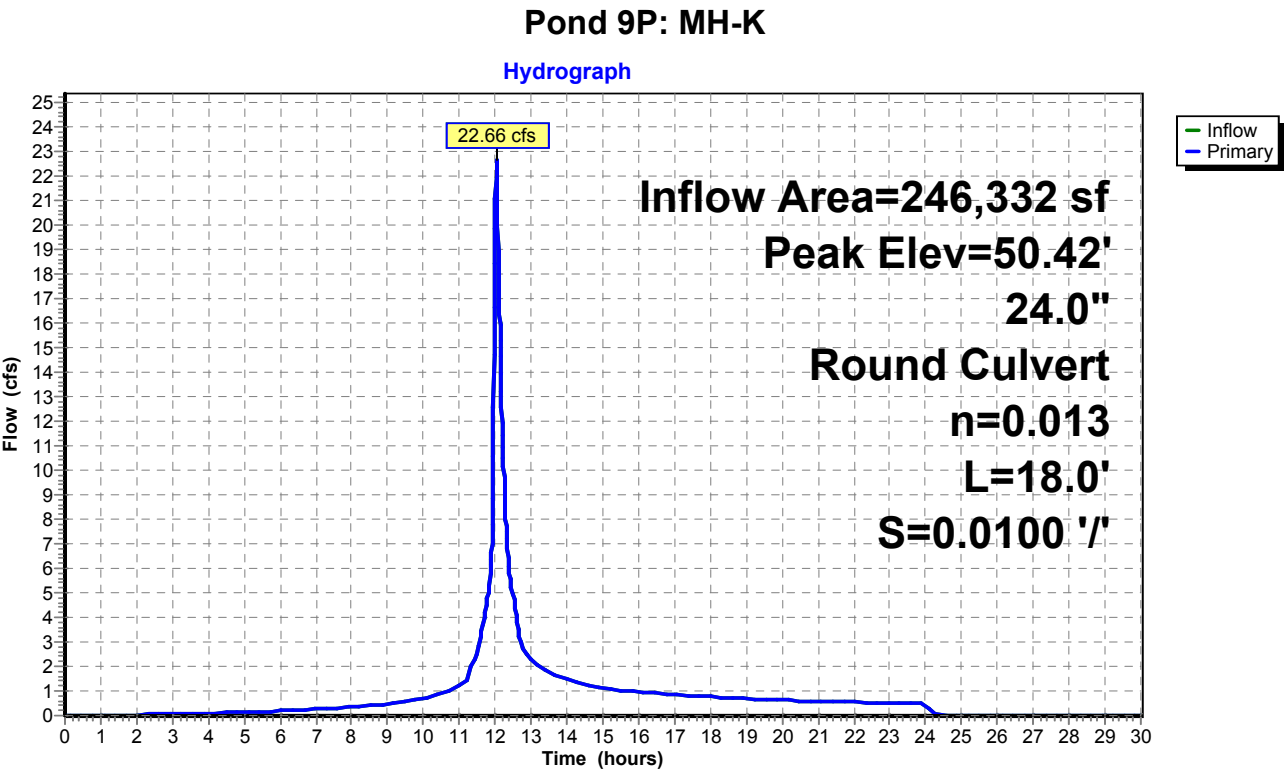
Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 4.06" for 10 year event
Inflow = 22.66 cfs @ 12.03 hrs, Volume= 83,382 cf
Outflow = 22.66 cfs @ 12.03 hrs, Volume= 83,382 cf, Atten= 0%, Lag= 0.0 min
Primary = 22.66 cfs @ 12.03 hrs, Volume= 83,382 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.42' @ 12.03 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=22.59 cfs @ 12.03 hrs HW=50.41' (Free Discharge)
1=Culvert (Inlet Controls 22.59 cfs @ 7.19 fps)



Proposed Conditions

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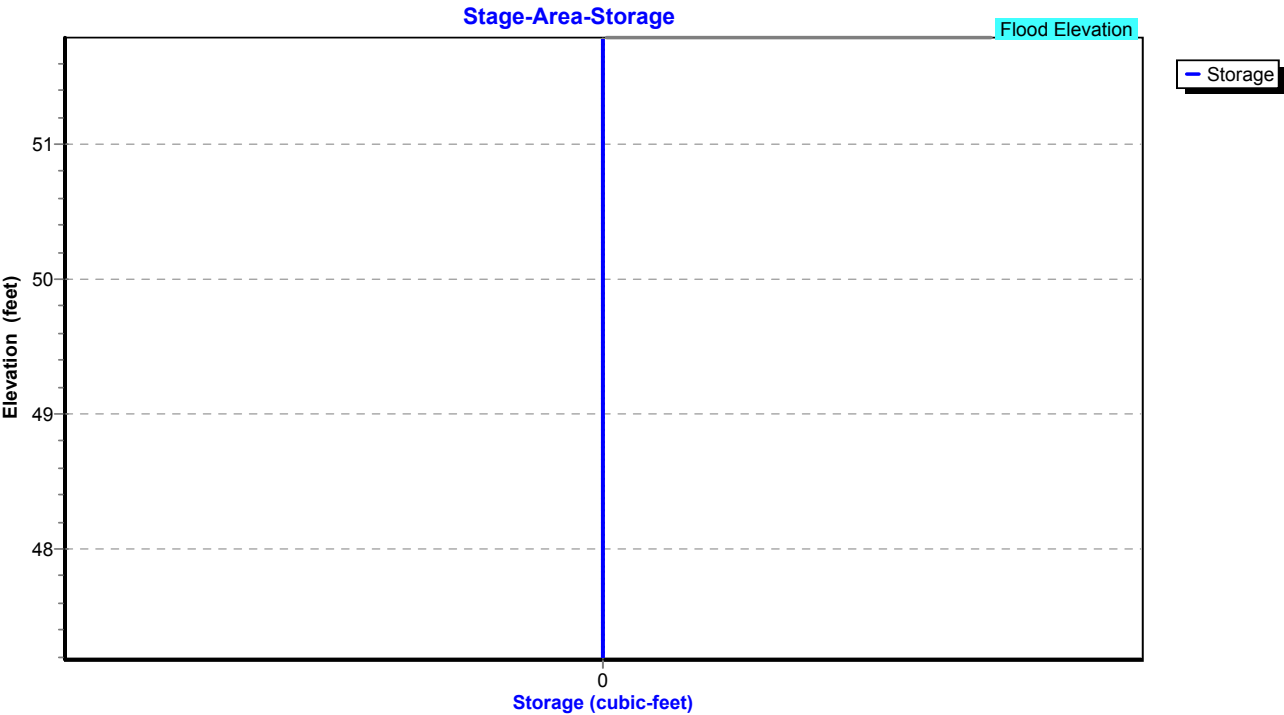
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Pond 9P: MH-K



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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 4.91" for 10 year event
Inflow = 9.67 cfs @ 12.03 hrs, Volume= 29,431 cf
Outflow = 9.67 cfs @ 12.03 hrs, Volume= 29,431 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.67 cfs @ 12.03 hrs, Volume= 29,431 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.36' @ 12.03 hrs

Flood Elev= 53.00'

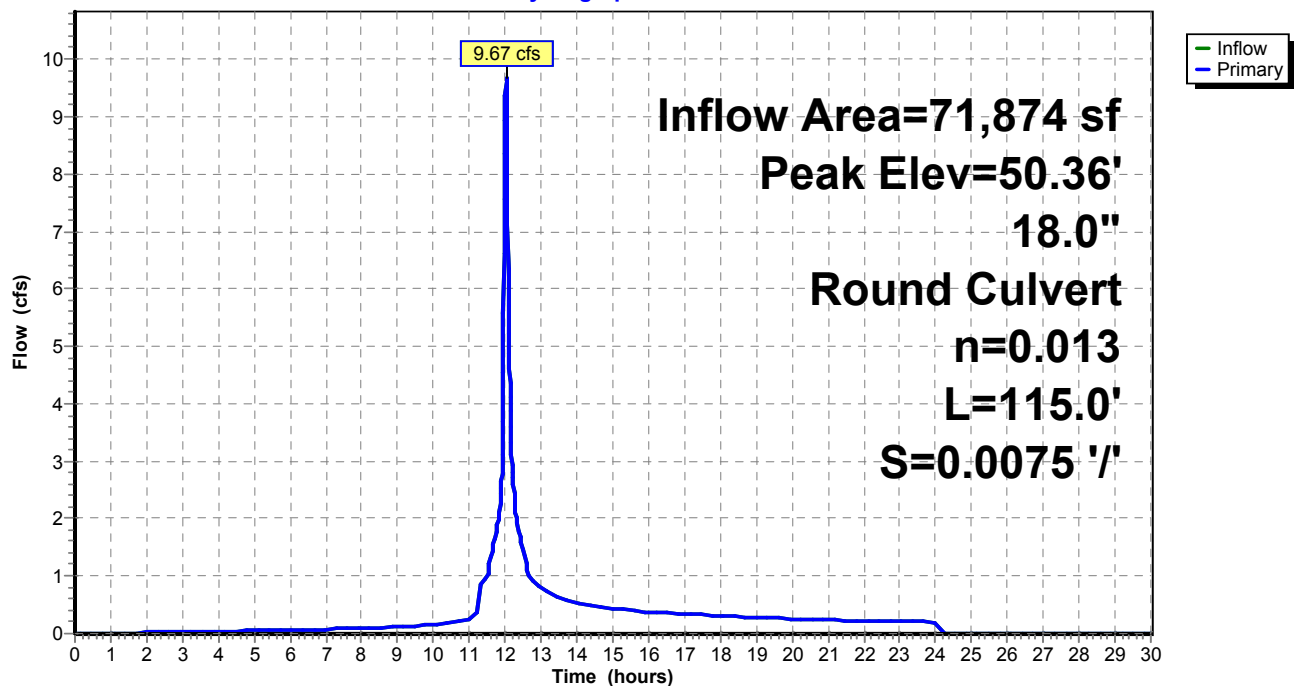
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=9.63 cfs @ 12.03 hrs HW=50.34' (Free Discharge)

↑1=Culvert (Barrel Controls 9.63 cfs @ 5.45 fps)

Pond 10P: MH-L

Hydrograph



Proposed Conditions

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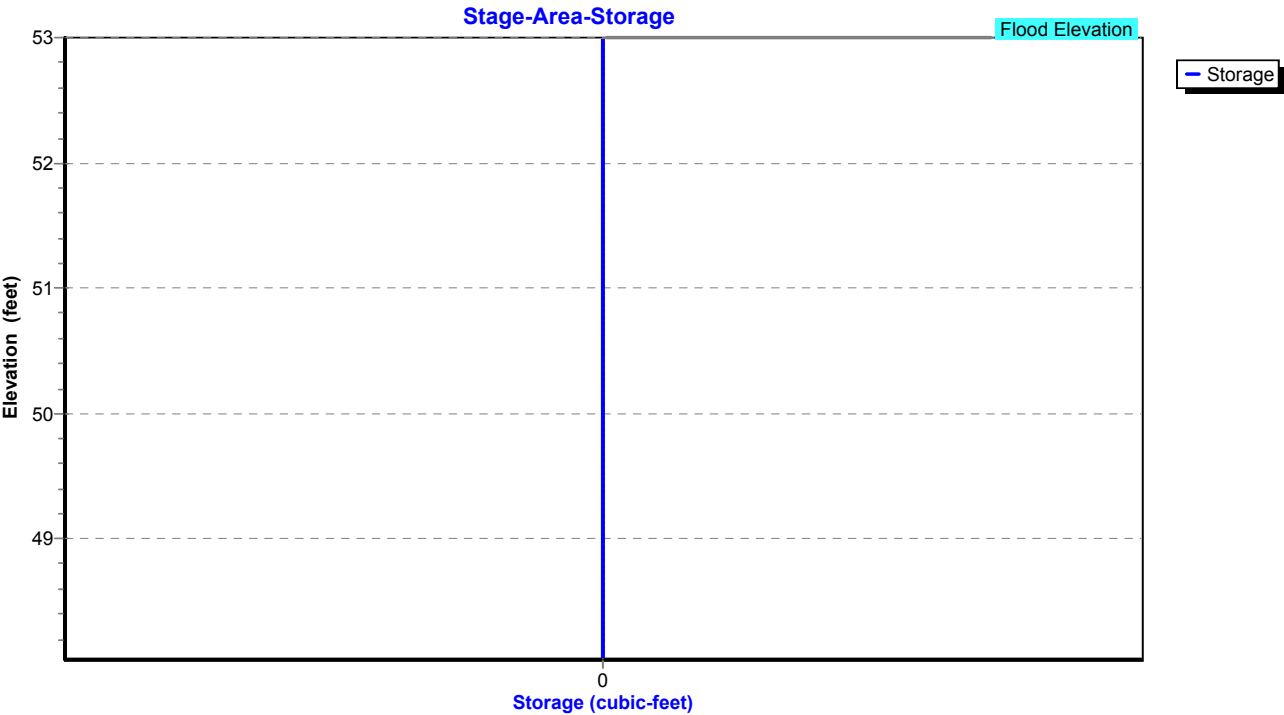
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NORWALK 24-hr S1 10 year Rainfall=5.33"

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Pond 10P: MH-L



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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 4.64" for 10 year event
Inflow = 5.41 cfs @ 12.03 hrs, Volume= 15,817 cf
Outflow = 5.53 cfs @ 12.03 hrs, Volume= 17,102 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.53 cfs @ 12.03 hrs, Volume= 17,102 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 51.36' @ 12.03 hrs Storage= 0.081 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 126.1 min (901.5 - 775.4)

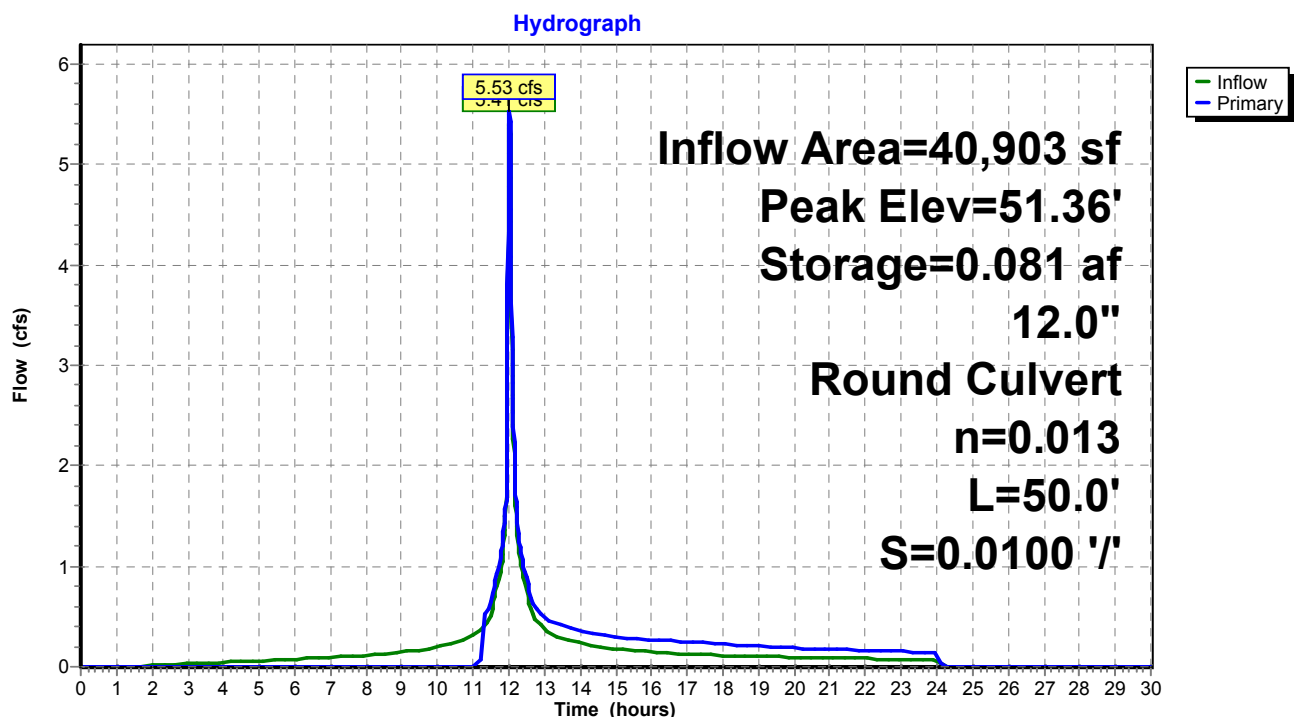
Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

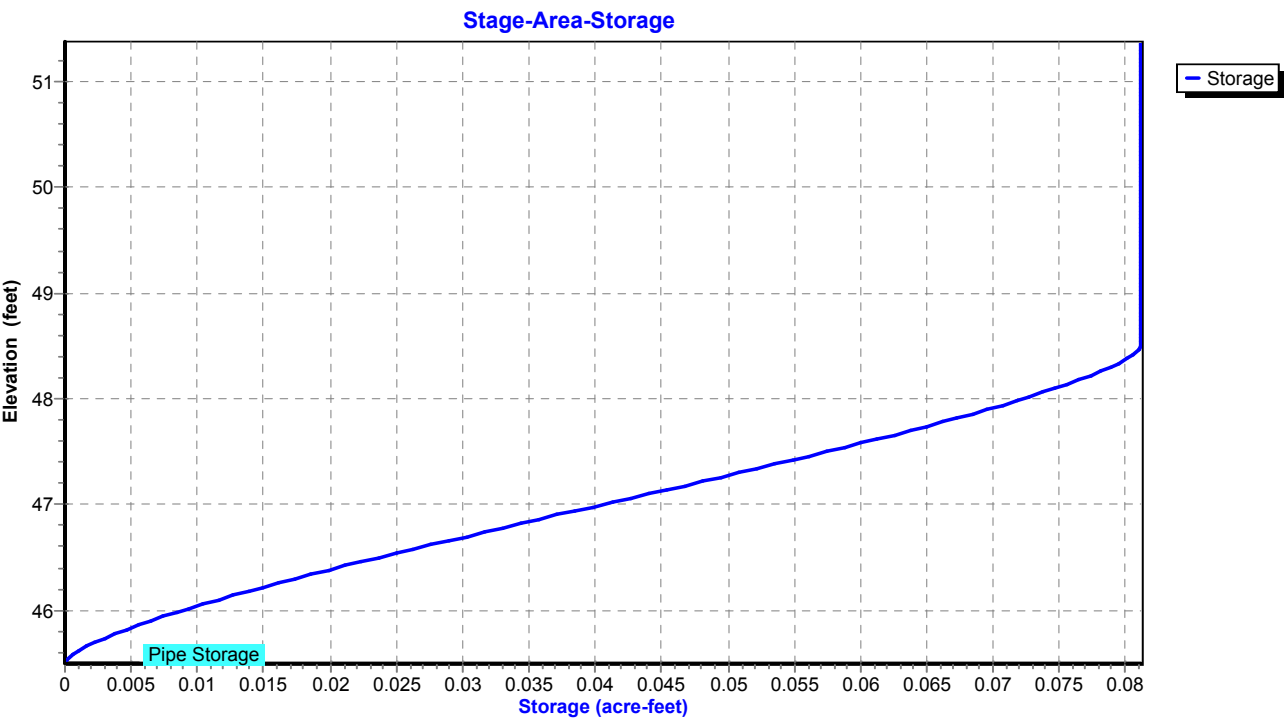
Primary OutFlow Max=5.51 cfs @ 12.03 hrs HW=51.34' (Free Discharge)

↑1=Culvert (Barrel Controls 5.51 cfs @ 7.01 fps)

Pond 11P: Pipe Storage



Pond 11P: Pipe Storage



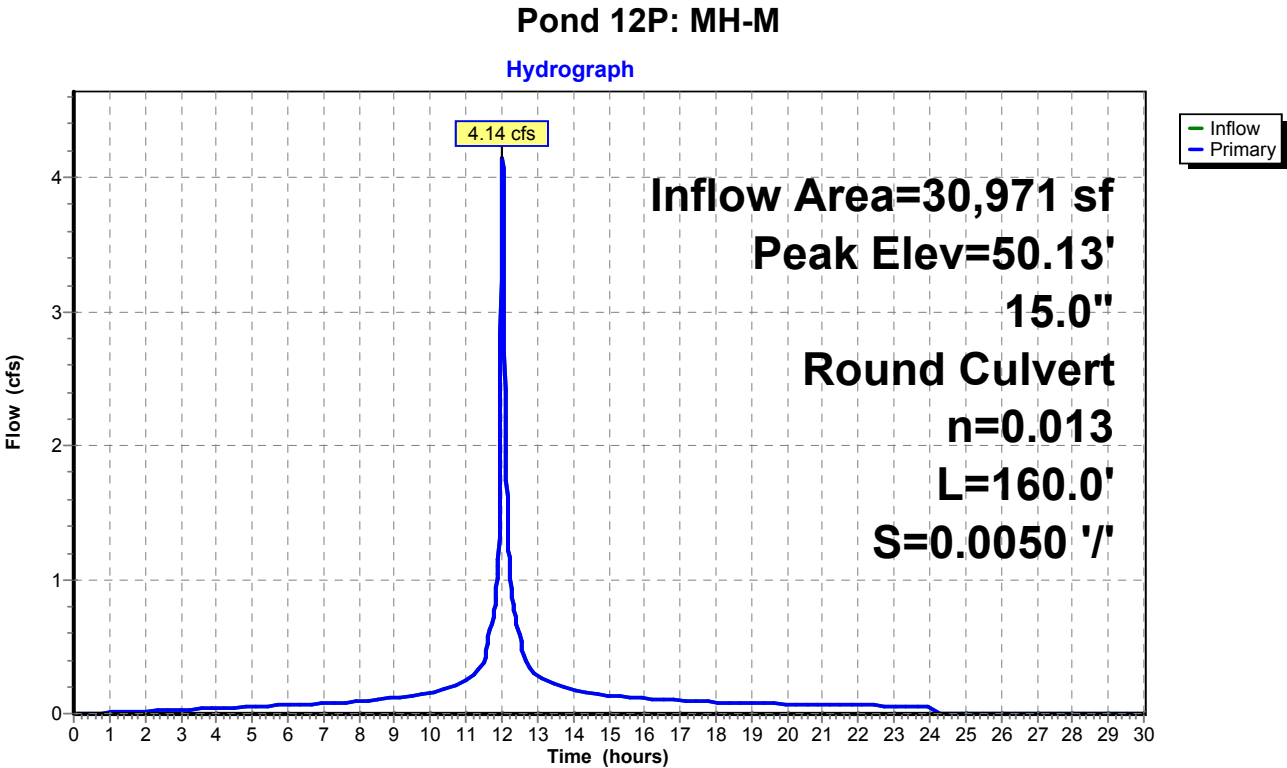
Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 4.78" for 10 year event
Inflow = 4.14 cfs @ 12.03 hrs, Volume= 12,329 cf
Outflow = 4.14 cfs @ 12.03 hrs, Volume= 12,329 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.14 cfs @ 12.03 hrs, Volume= 12,329 cf
Routed to Pond 10P : MH-L

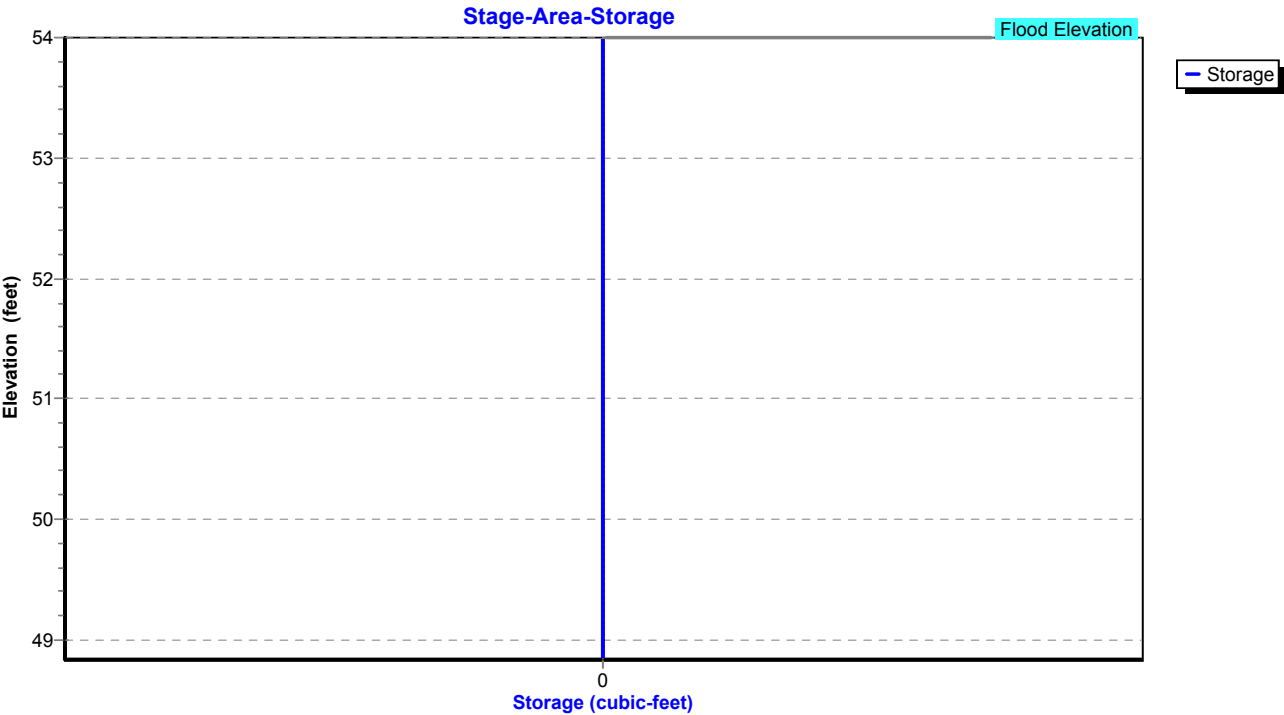
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.13' @ 12.03 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.13 cfs @ 12.03 hrs HW=50.13' (Free Discharge)
1=Culvert (Barrel Controls 4.13 cfs @ 4.06 fps)



Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 4.52" for 10 year event
Inflow = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf
Outflow = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.23 cfs @ 12.03 hrs, Volume= 6,416 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.57' @ 12.03 hrs

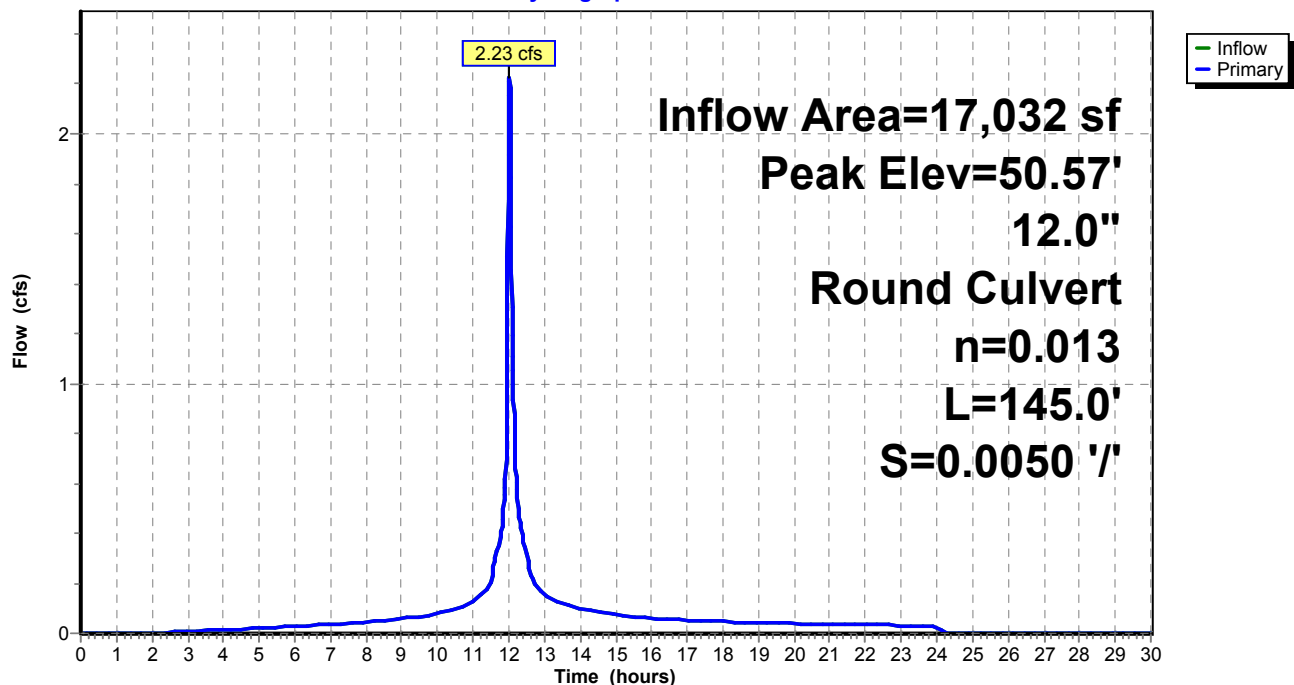
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.22 cfs @ 12.03 hrs HW=50.56' (Free Discharge)

↑1=Culvert (Barrel Controls 2.22 cfs @ 3.53 fps)

Pond 13P: MH-J

Hydrograph



Proposed Conditions

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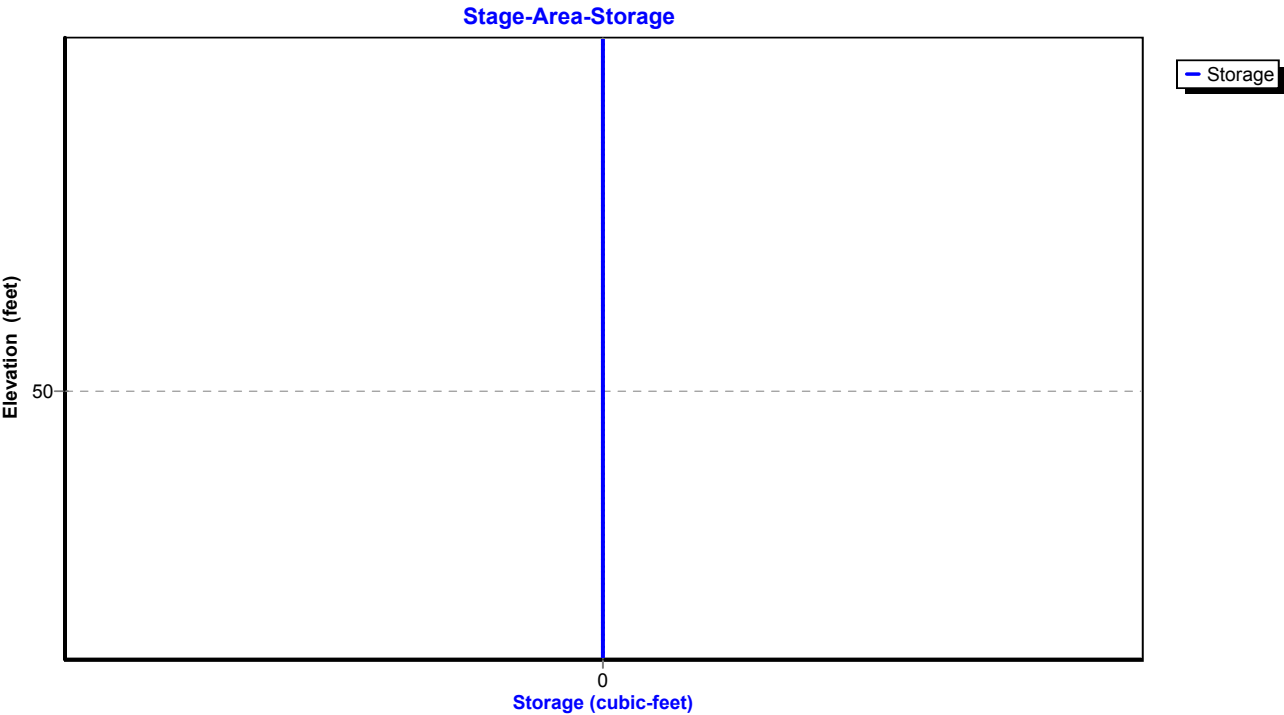
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Pond 13P: MH-J



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Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 3.49" for 10 year event
Inflow = 9.99 cfs @ 12.10 hrs, Volume= 41,963 cf
Outflow = 9.99 cfs @ 12.10 hrs, Volume= 41,963 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.99 cfs @ 12.10 hrs, Volume= 41,963 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.15' @ 12.10 hrs

Flood Elev= 51.80'

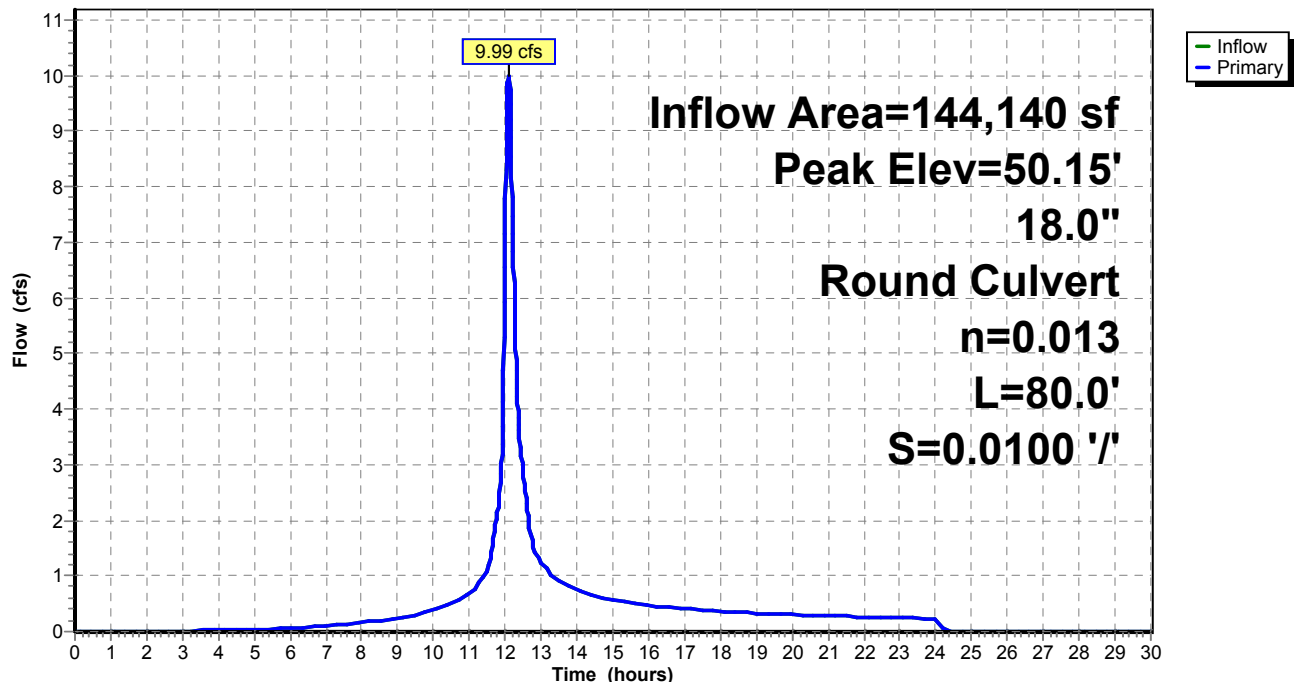
Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=9.98 cfs @ 12.10 hrs HW=50.15' (Free Discharge)

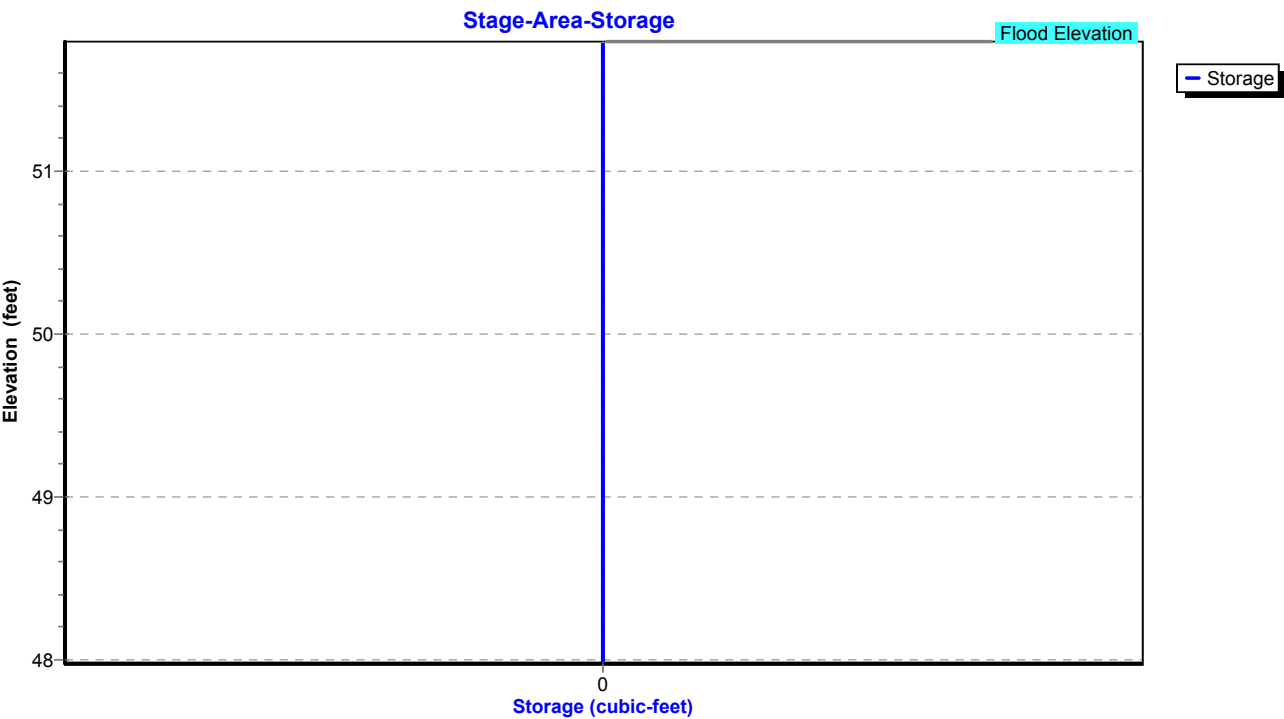
↑1=Culvert (Barrel Controls 9.98 cfs @ 5.65 fps)

Pond 14P: MH-O

Hydrograph



Pond 14P: MH-O



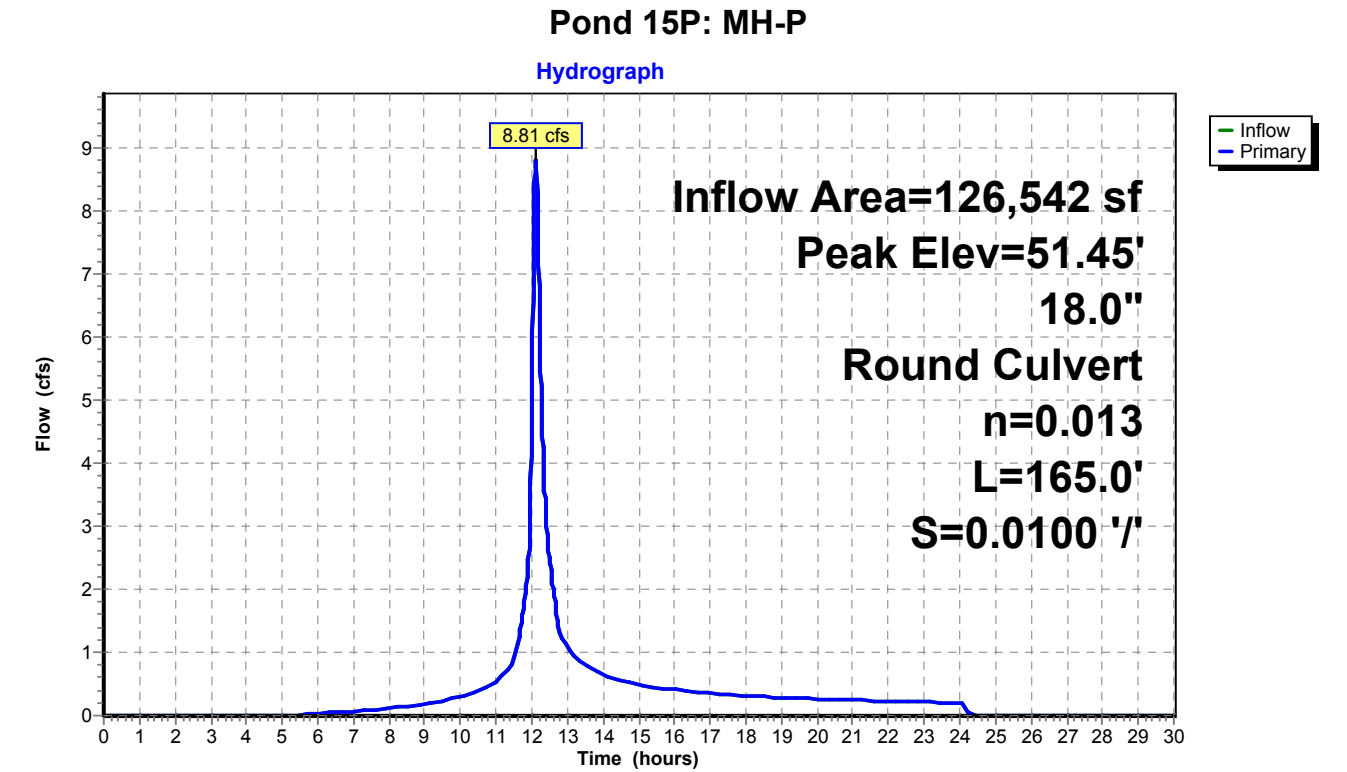
Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 3.35" for 10 year event
Inflow = 8.81 cfs @ 12.11 hrs, Volume= 35,313 cf
Outflow = 8.81 cfs @ 12.11 hrs, Volume= 35,313 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.81 cfs @ 12.11 hrs, Volume= 35,313 cf
Routed to Pond 14P : MH-O

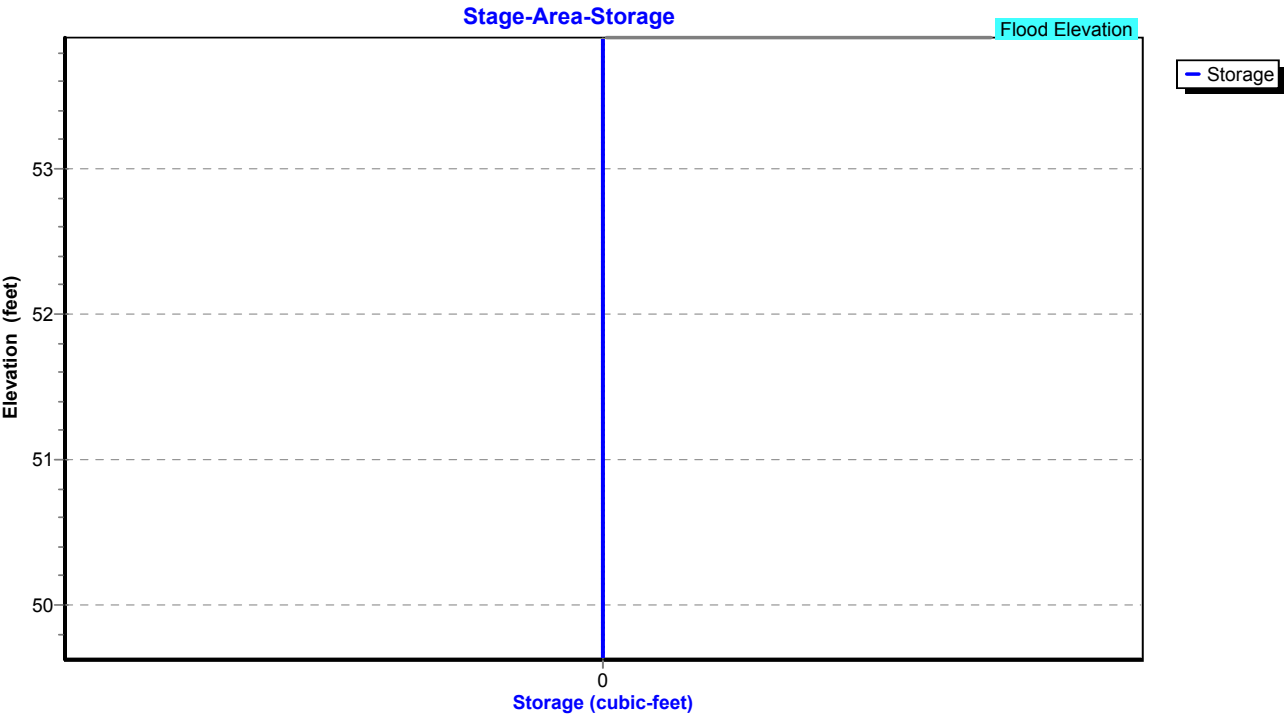
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.45' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=8.81 cfs @ 12.11 hrs HW=51.45' (Free Discharge)
1=Culvert (Inlet Controls 8.81 cfs @ 4.98 fps)



Pond 15P: MH-P



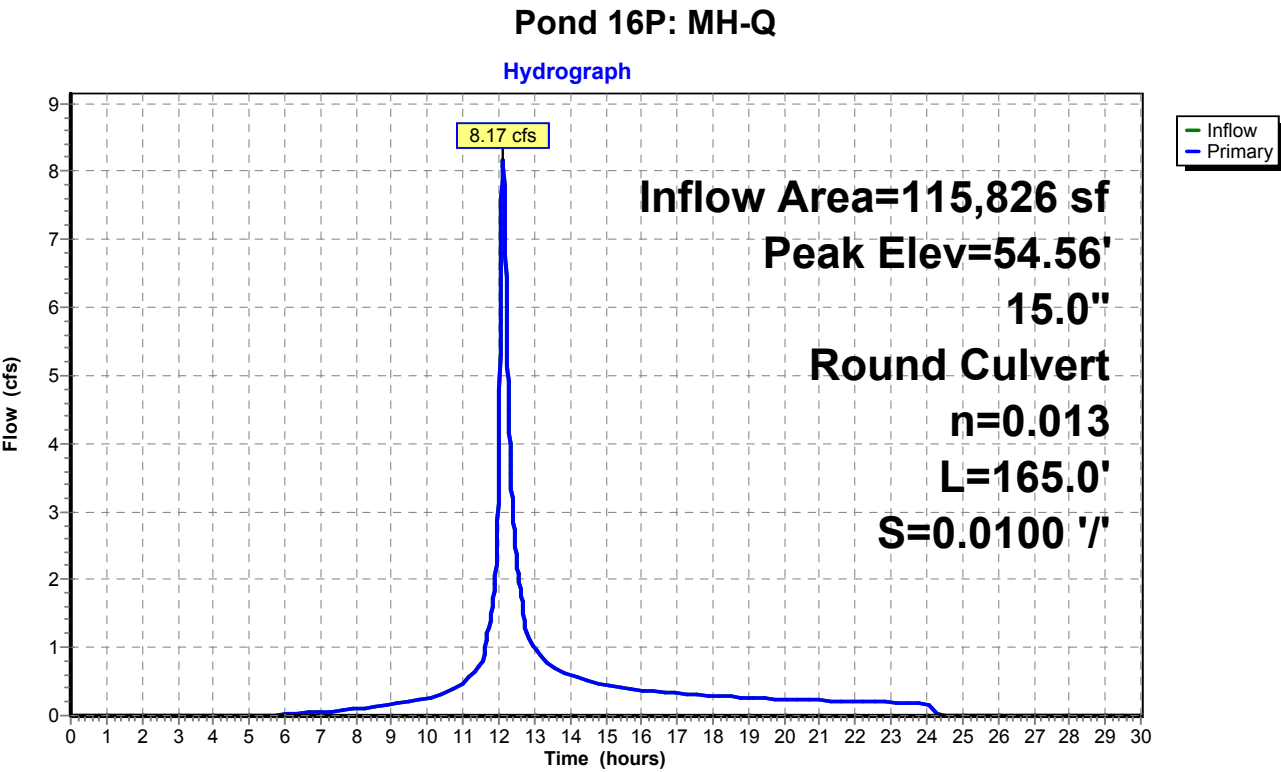
Summary for Pond 16P: MH-Q

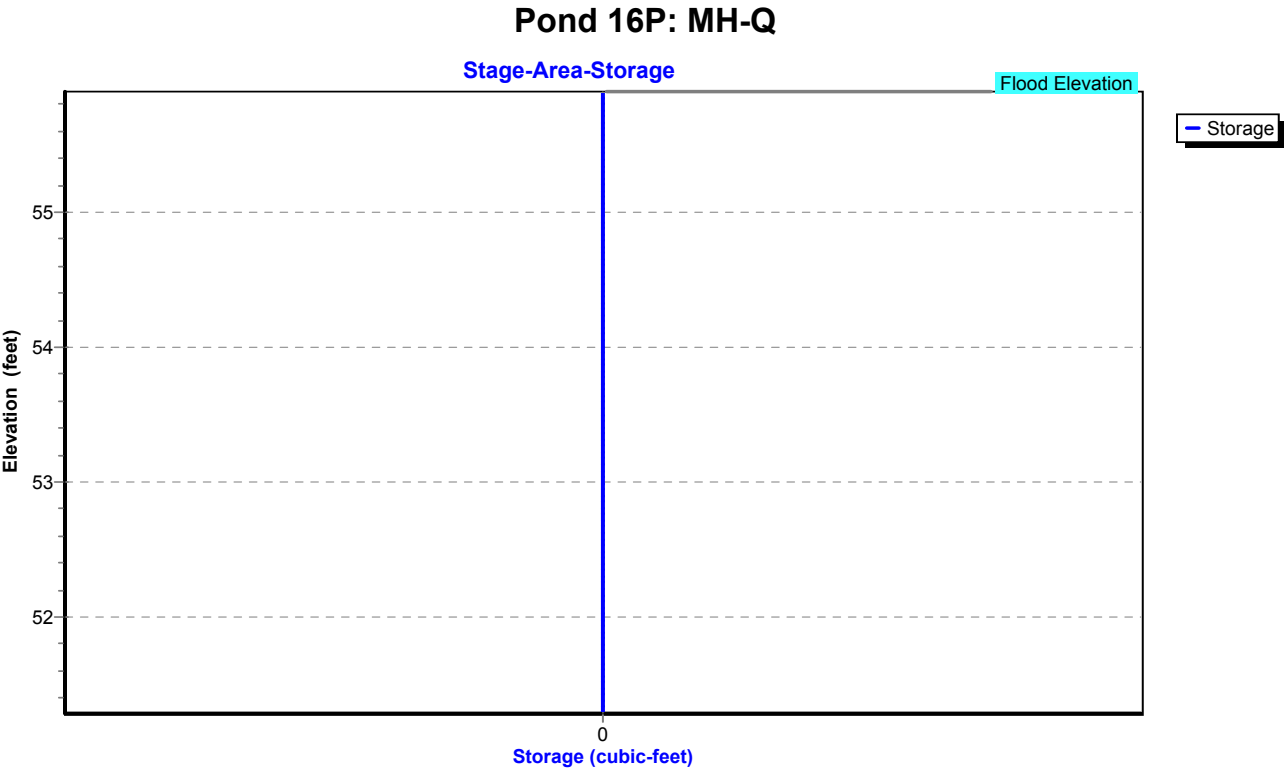
Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 3.28" for 10 year event
Inflow = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf
Outflow = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.17 cfs @ 12.12 hrs, Volume= 31,629 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 54.56' @ 12.12 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=8.16 cfs @ 12.12 hrs HW=54.55' (Free Discharge)
1=Culvert (Barrel Controls 8.16 cfs @ 6.65 fps)





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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 2.63" for 10 year event
 Inflow = 51.37 cfs @ 13.08 hrs, Volume= 644,488 cf
 Outflow = 51.25 cfs @ 13.11 hrs, Volume= 644,488 cf, Atten= 0%, Lag= 1.6 min
 Primary = 51.25 cfs @ 13.11 hrs, Volume= 644,488 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 46.37' @ 13.11 hrs Surf.Area= 3,343 sf Storage= 4,272 cf

Plug-Flow detention time= 1.6 min calculated for 644,273 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (922.4 - 920.8)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=51.24 cfs @ 13.11 hrs HW=46.37' (Free Discharge)

↑**1=Culvert** (Inlet Controls 51.24 cfs @ 5.46 fps)

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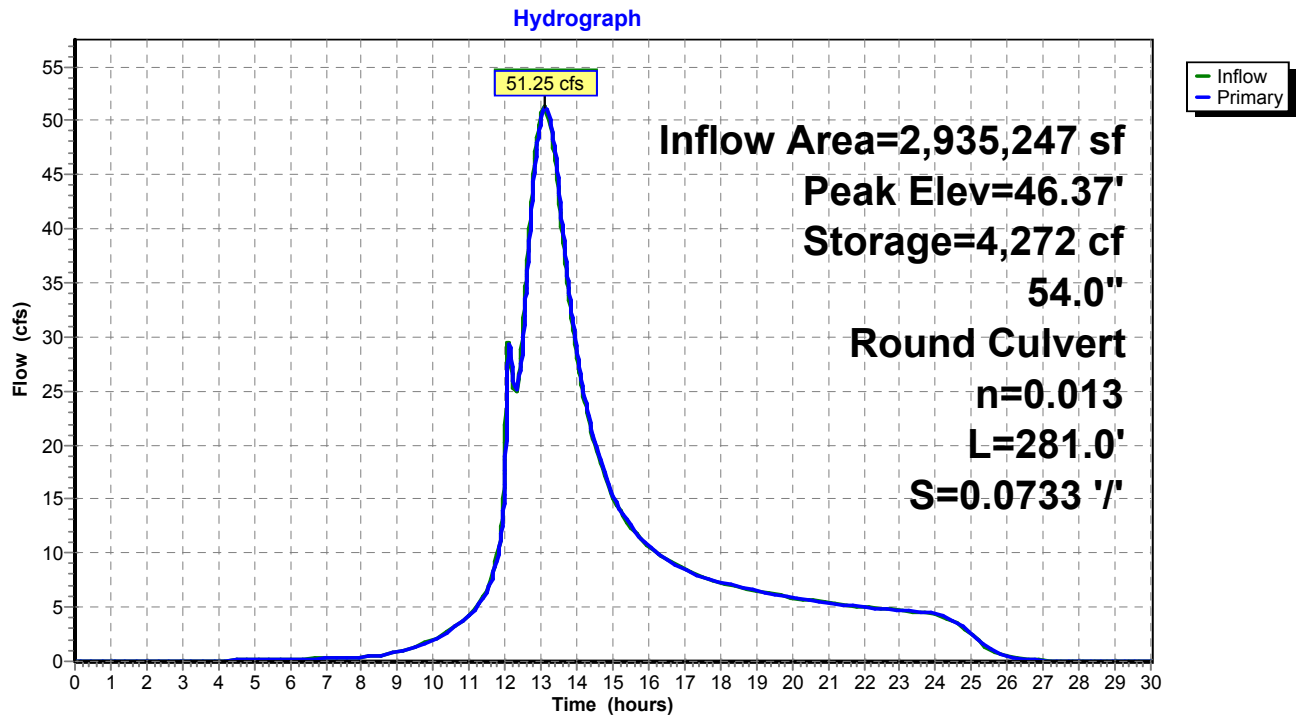
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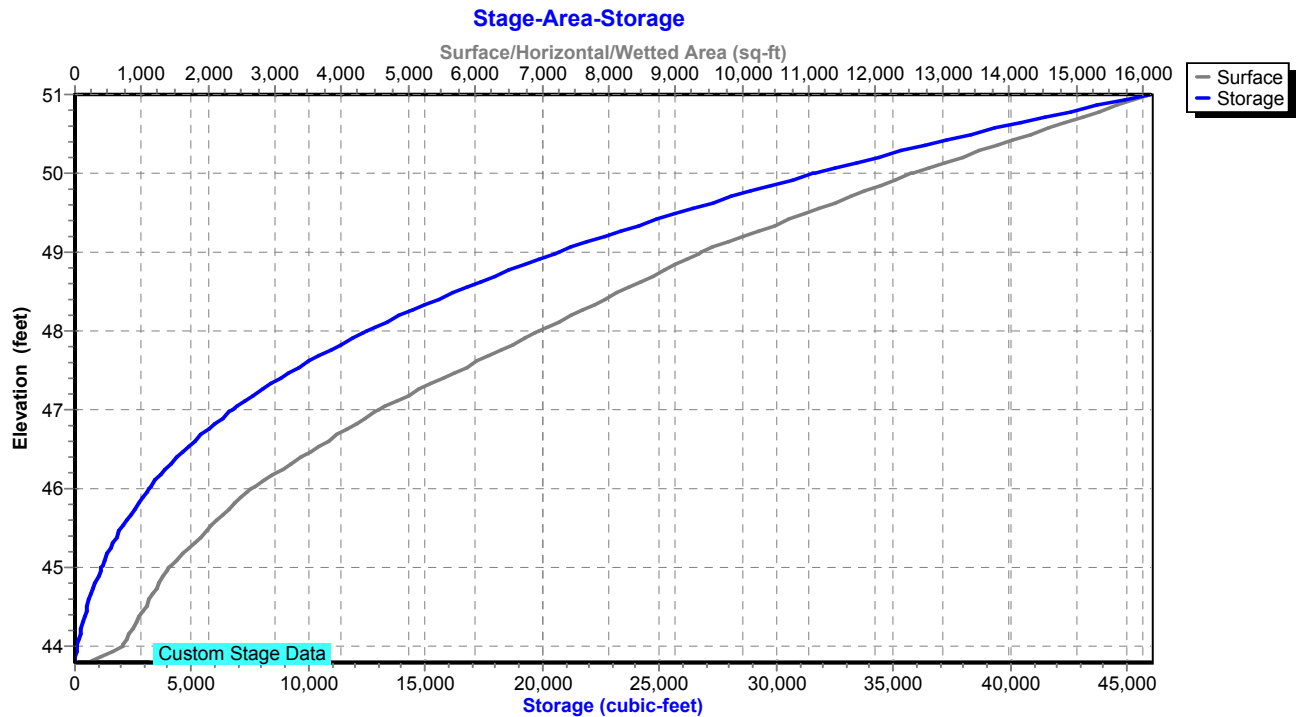
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Pond 17P: DET 12 Culvert



Pond 17P: DET 12 Culvert



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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 2.54" for 10 year event
 Inflow = 49.15 cfs @ 13.07 hrs, Volume= 561,420 cf
 Outflow = 49.10 cfs @ 13.08 hrs, Volume= 561,420 cf, Atten= 0%, Lag= 0.8 min
 Primary = 49.10 cfs @ 13.08 hrs, Volume= 561,420 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 65.58' @ 13.08 hrs Surf.Area= 526 sf Storage= 691 cf

Plug-Flow detention time= 0.2 min calculated for 561,233 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (935.4 - 935.3)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / S= 0.0521 ' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=49.09 cfs @ 13.08 hrs HW=65.58' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 49.09 cfs @ 6.95 fps)

Proposed Conditions

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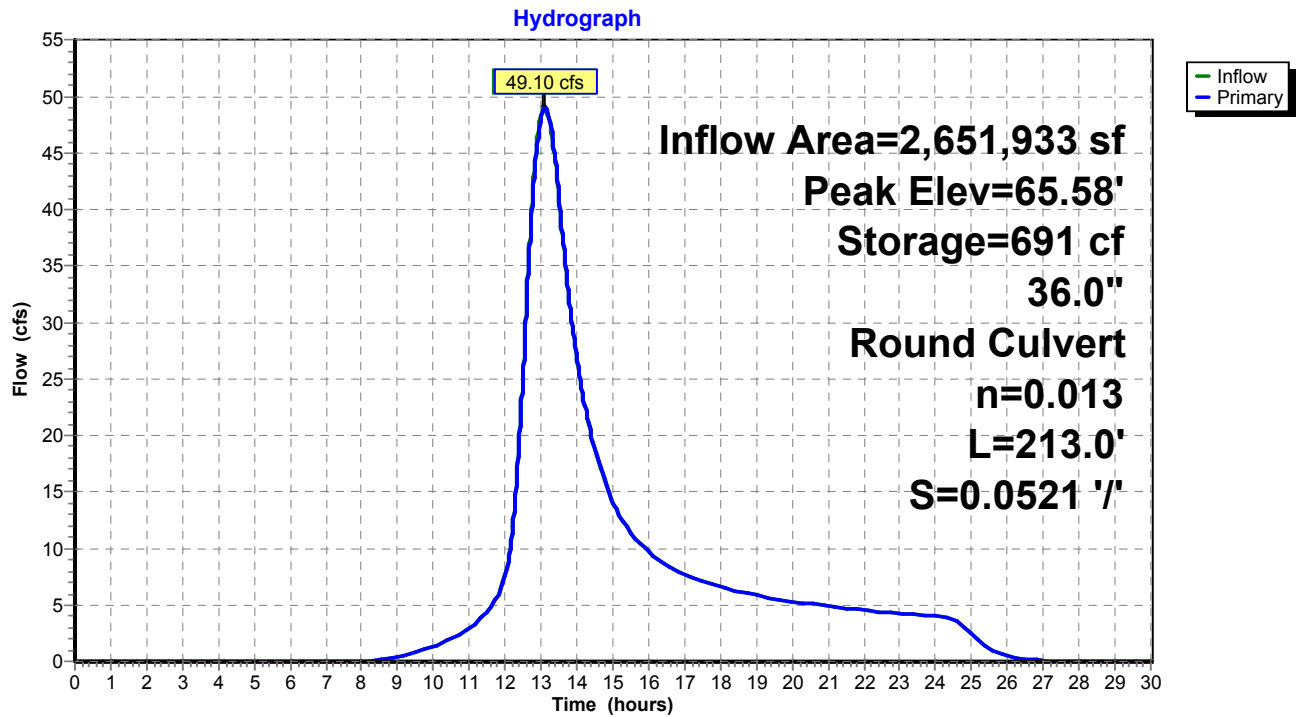
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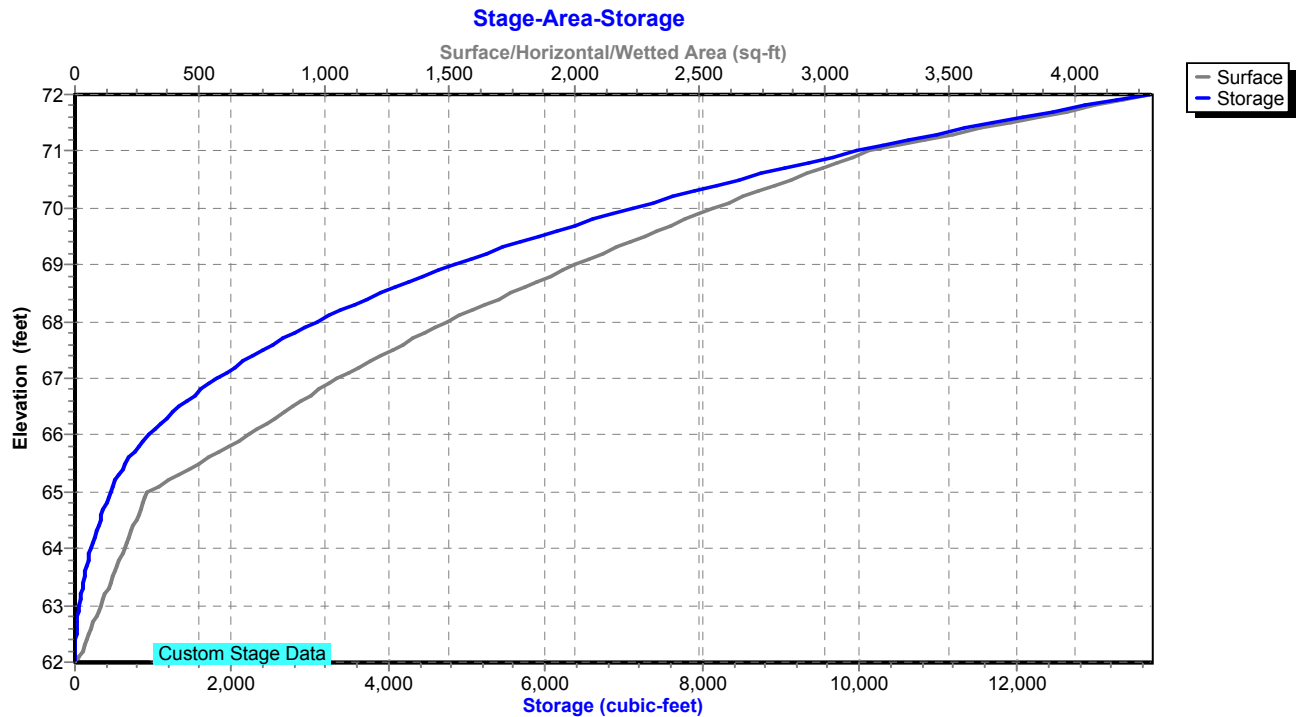
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Pond 18P: DET 4 Culvert



Pond 18P: DET 4 Culvert



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Summary for Pond 20P: ADS Stormtech (160LP)

Inflow Area = 4,966 sf, 80.70% Impervious, Inflow Depth = 4.63" for 10 year event
Inflow = 0.66 cfs @ 12.03 hrs, Volume= 1,917 cf
Outflow = 0.34 cfs @ 12.11 hrs, Volume= 1,848 cf, Atten= 48%, Lag= 4.8 min
Primary = 0.34 cfs @ 12.11 hrs, Volume= 1,848 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 74.59' @ 12.11 hrs Surf.Area= 365 sf Storage= 315 cf

Plug-Flow detention time= 55.5 min calculated for 1,848 cf (96% of inflow)
Center-of-Mass det. time= 32.9 min (810.3 - 777.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	227 cf	14.50'W x 23.83'L x 2.00'H Field A 691 cf Overall - 123 cf Embedded = 568 cf x 40.0% Voids
#2A	73.50'	123 cf	ADS_StormTech SC-160LP +Cap x 18 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 6 Rows
#3	73.50'	22 cf	5.00'D x 1.10'H OCS
		372 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	12.0" Round Culvert L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 73.00' S= 0.0313 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	74.40'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 2.75 2.75 Width (feet) 0.33 0.33 5.00
#3	Device 1	73.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.34 cfs @ 12.11 hrs HW=74.59' (Free Discharge)

- 1=Culvert (Passes 0.34 cfs of 2.91 cfs potential flow)
- 2=Custom Weir/Orifice (Weir Controls 0.09 cfs @ 1.44 fps)
- 3=Orifice/Grate (Orifice Controls 0.25 cfs @ 5.03 fps)

Proposed Conditions

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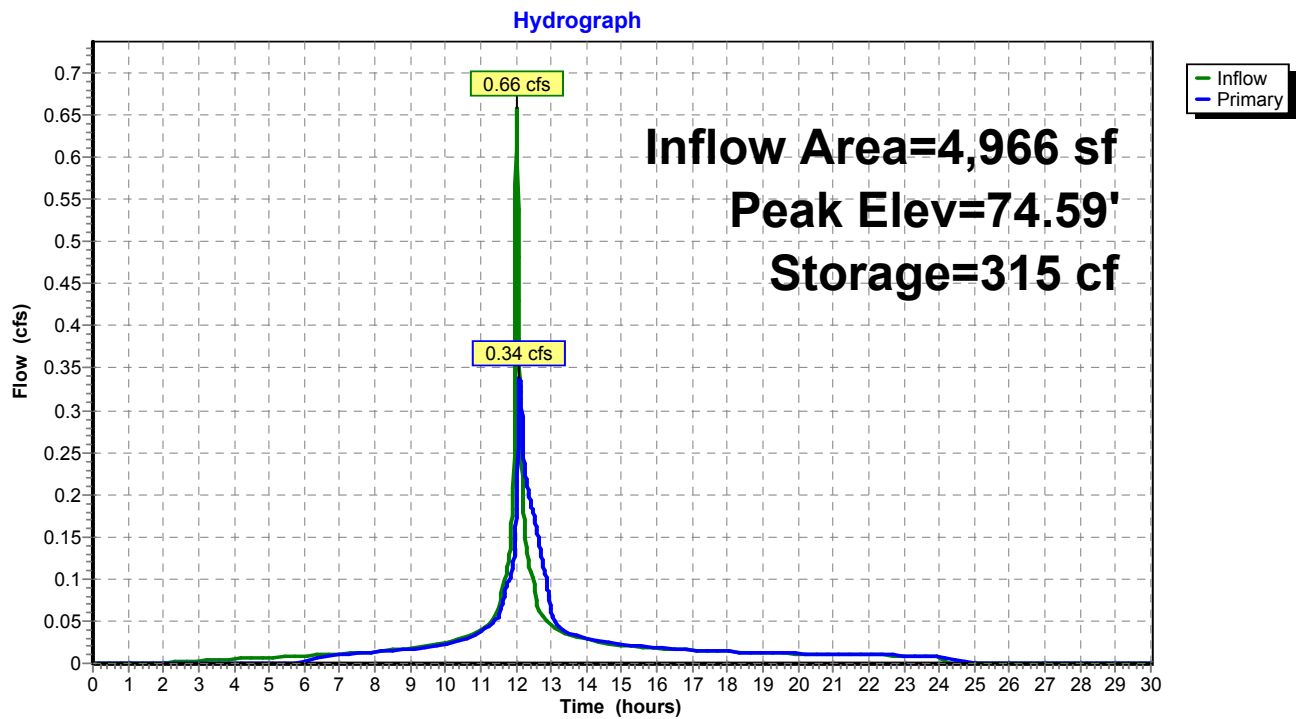
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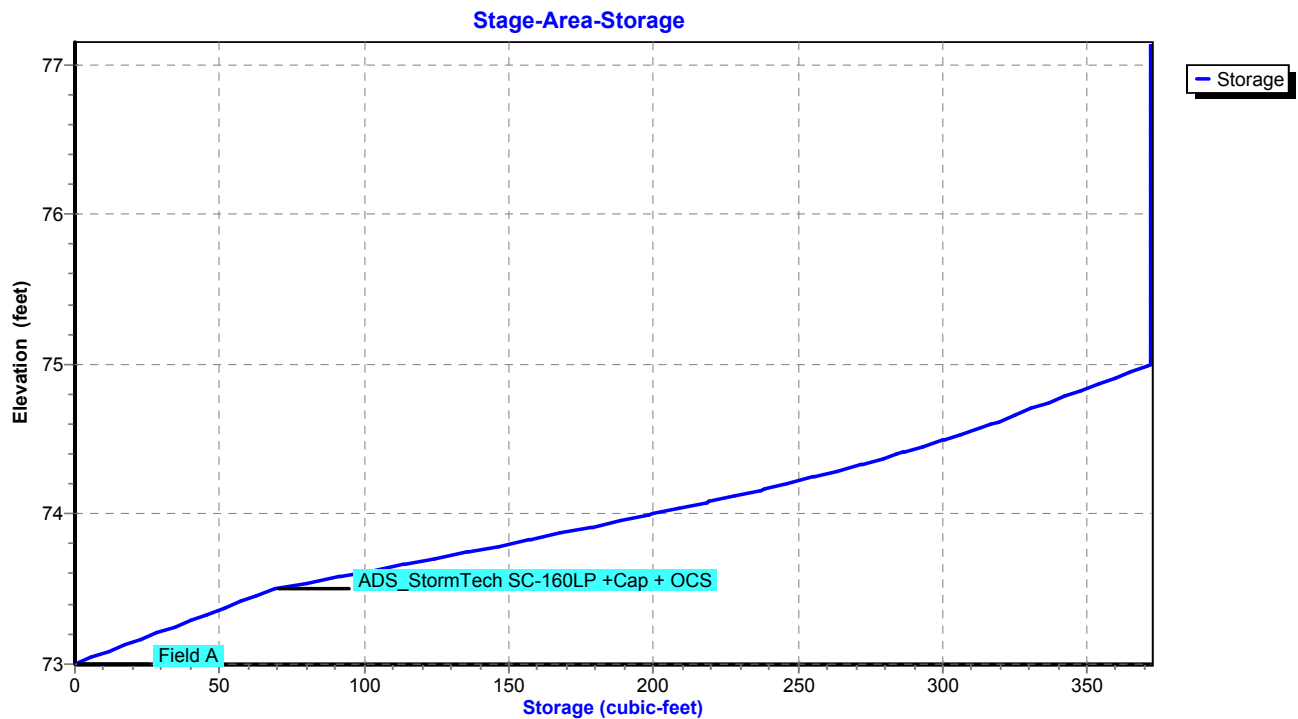
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Pond 20P: ADS Stormtech (160LP)



Pond 20P: ADS Stormtech (160LP)



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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 2.54" for 10 year event
 Inflow = 14.60 cfs @ 12.53 hrs, Volume= 112,874 cf
 Outflow = 14.59 cfs @ 12.56 hrs, Volume= 112,874 cf, Atten= 0%, Lag= 2.1 min
 Primary = 14.59 cfs @ 12.56 hrs, Volume= 112,874 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 38.92' @ 12.56 hrs Surf.Area= 448 sf Storage= 442 cf

Plug-Flow detention time= 0.5 min calculated for 112,837 cf (100% of inflow)
 Center-of-Mass det. time= 0.5 min (898.8 - 898.2)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=14.59 cfs @ 12.56 hrs HW=38.92' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 14.59 cfs @ 4.71 fps)

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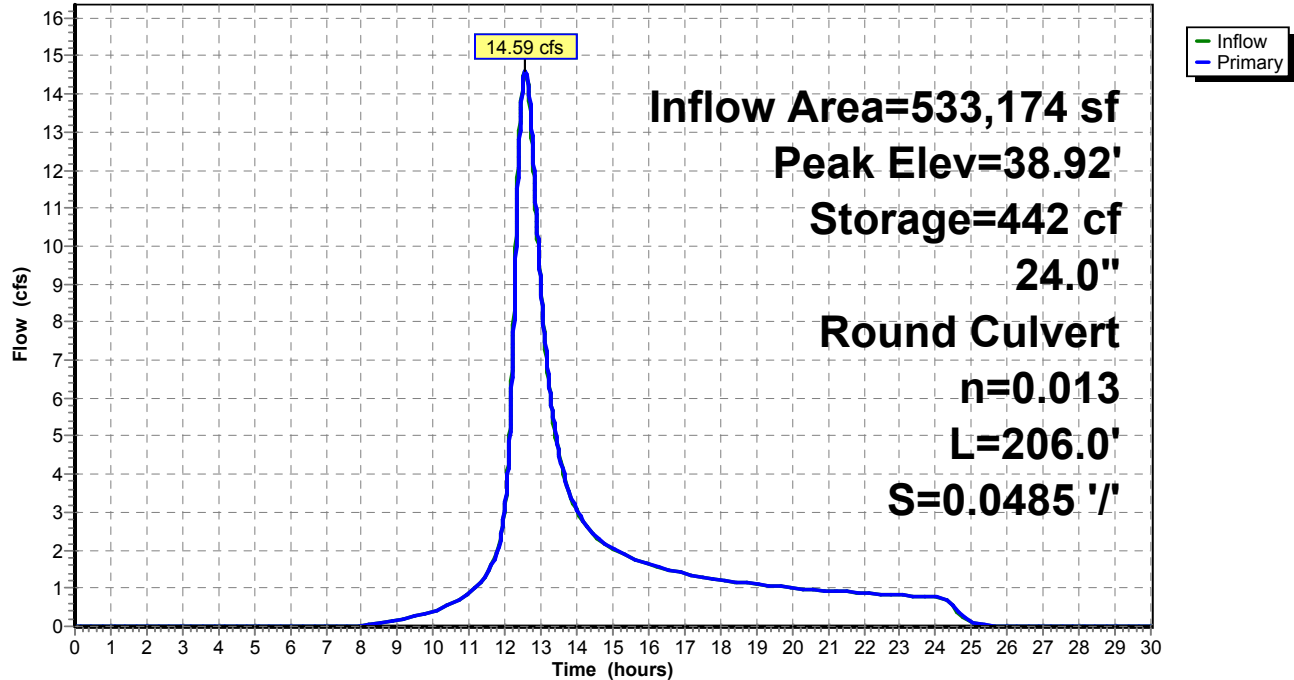
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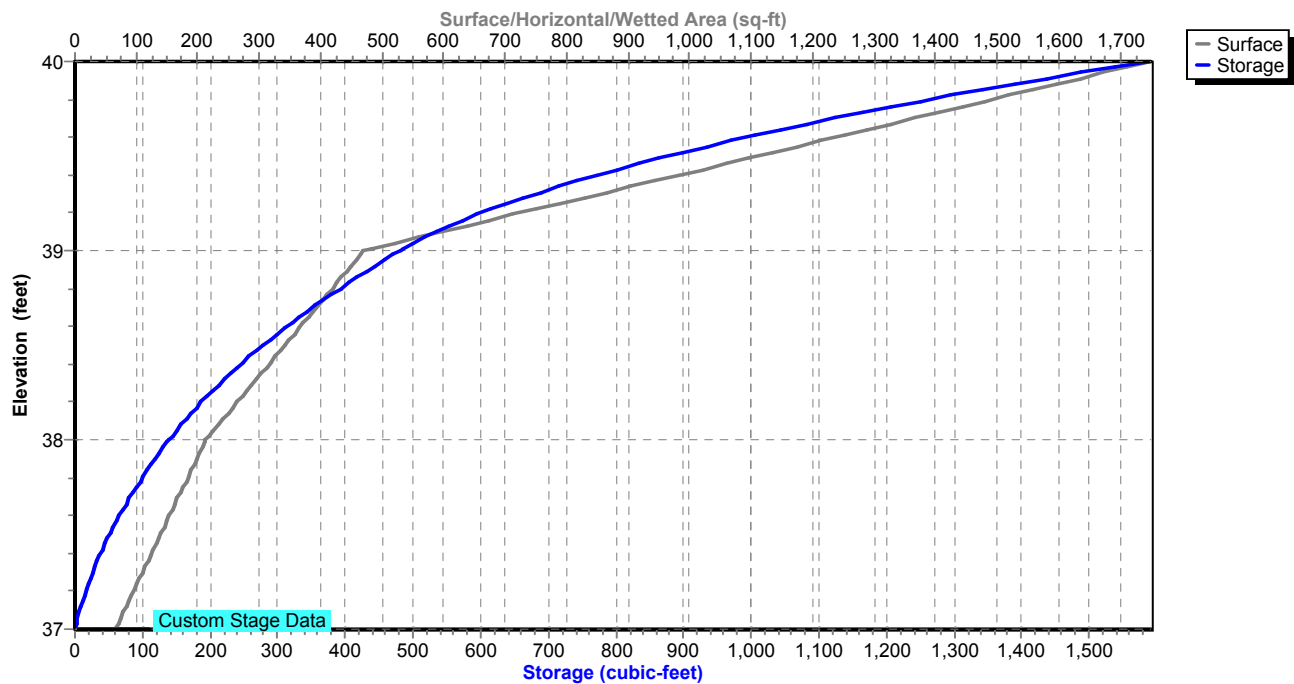
Pond 21P: DET 1 Culvert

Hydrograph



Pond 21P: DET 1 Culvert

Stage-Area-Storage



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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 2.99" for 10 year event
 Inflow = 34.97 cfs @ 12.74 hrs, Volume= 321,732 cf
 Outflow = 31.92 cfs @ 12.96 hrs, Volume= 321,732 cf, Atten= 9%, Lag= 13.0 min
 Primary = 31.92 cfs @ 12.96 hrs, Volume= 321,732 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 37.87' @ 12.96 hrs Surf.Area= 10,516 sf Storage= 13,440 cf

Plug-Flow detention time= 4.4 min calculated for 321,732 cf (100% of inflow)
 Center-of-Mass det. time= 4.4 min (900.6 - 896.2)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=31.92 cfs @ 12.96 hrs HW=37.87' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 31.92 cfs @ 6.50 fps)

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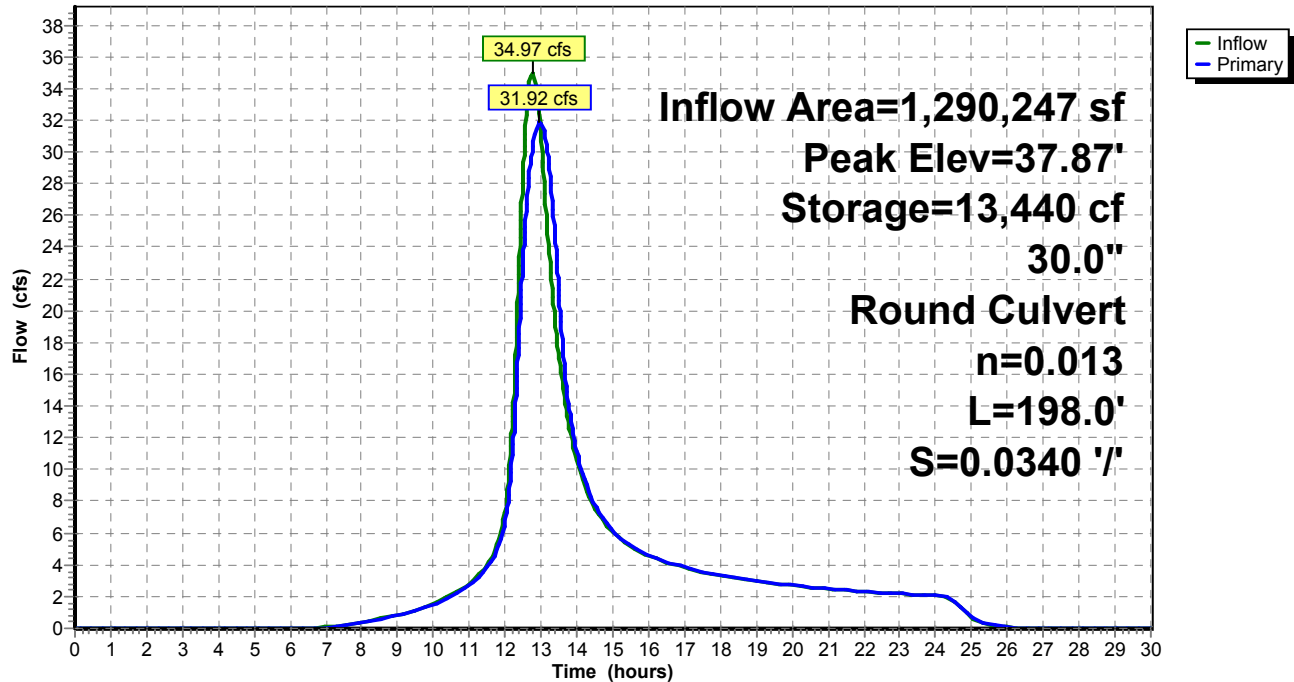
NORWALK 24-hr S1 10 year Rainfall=5.33"

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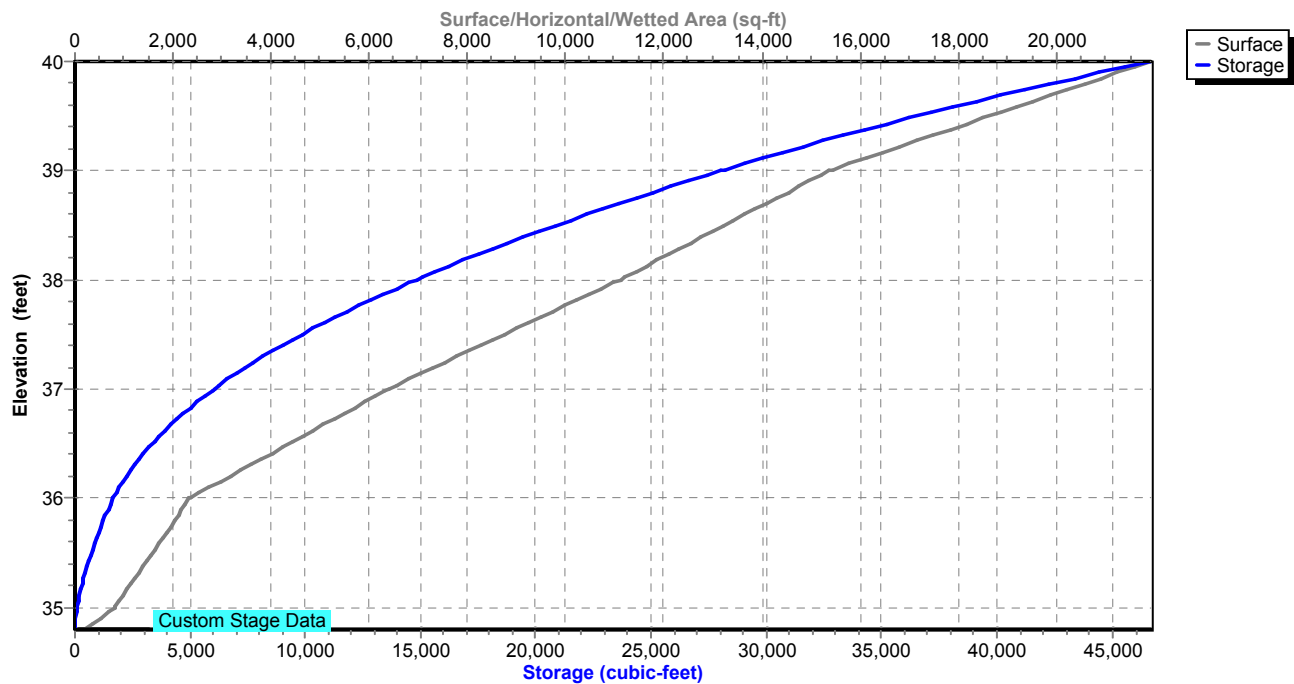
Pond 22P: DET 2 Culvert

Hydrograph



Pond 22P: DET 2 Culvert

Stage-Area-Storage



Proposed Conditions

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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 2.63" for 10 year event
 Inflow = 12.34 cfs @ 12.22 hrs, Volume= 60,494 cf
 Outflow = 12.24 cfs @ 12.24 hrs, Volume= 60,494 cf, Atten= 1%, Lag= 1.0 min
 Primary = 12.24 cfs @ 12.24 hrs, Volume= 60,494 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 44.16' @ 12.24 hrs Surf.Area= 739 sf Storage= 543 cf

Plug-Flow detention time= 0.6 min calculated for 60,474 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (873.1 - 872.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.24 cfs @ 12.24 hrs HW=44.16' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 12.24 cfs @ 4.39 fps)

Proposed Conditions

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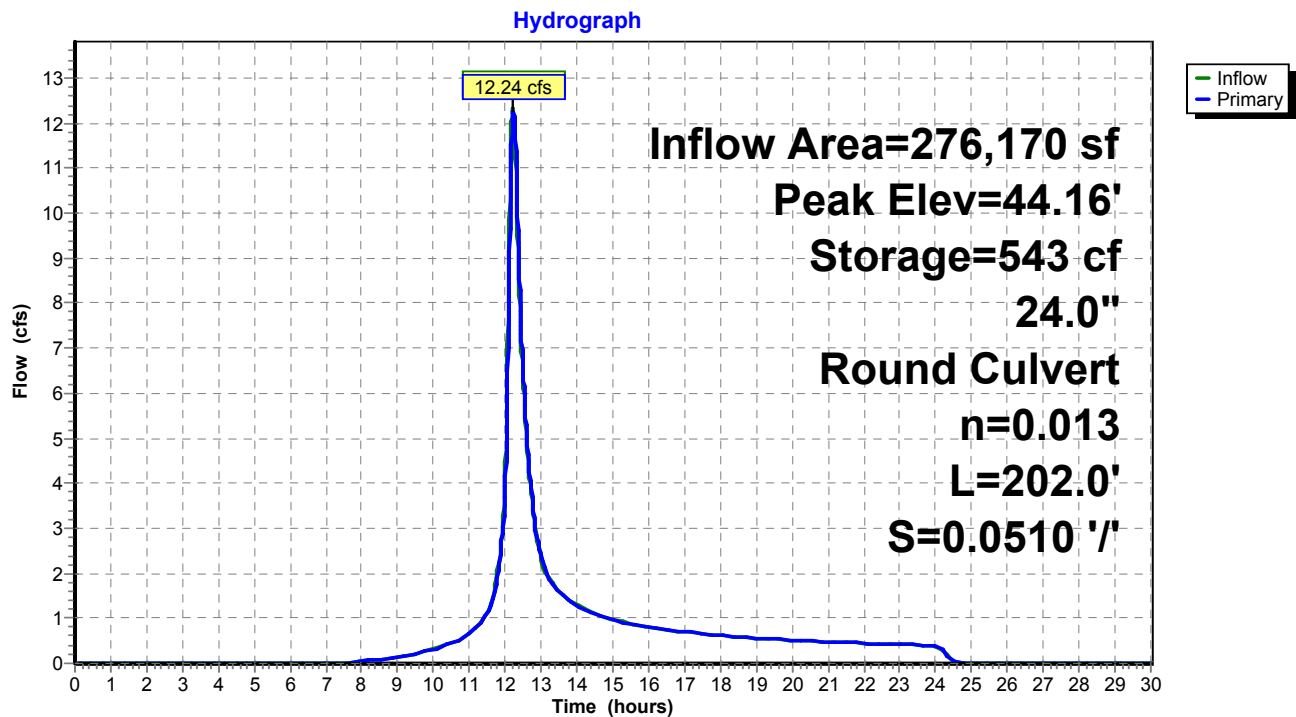
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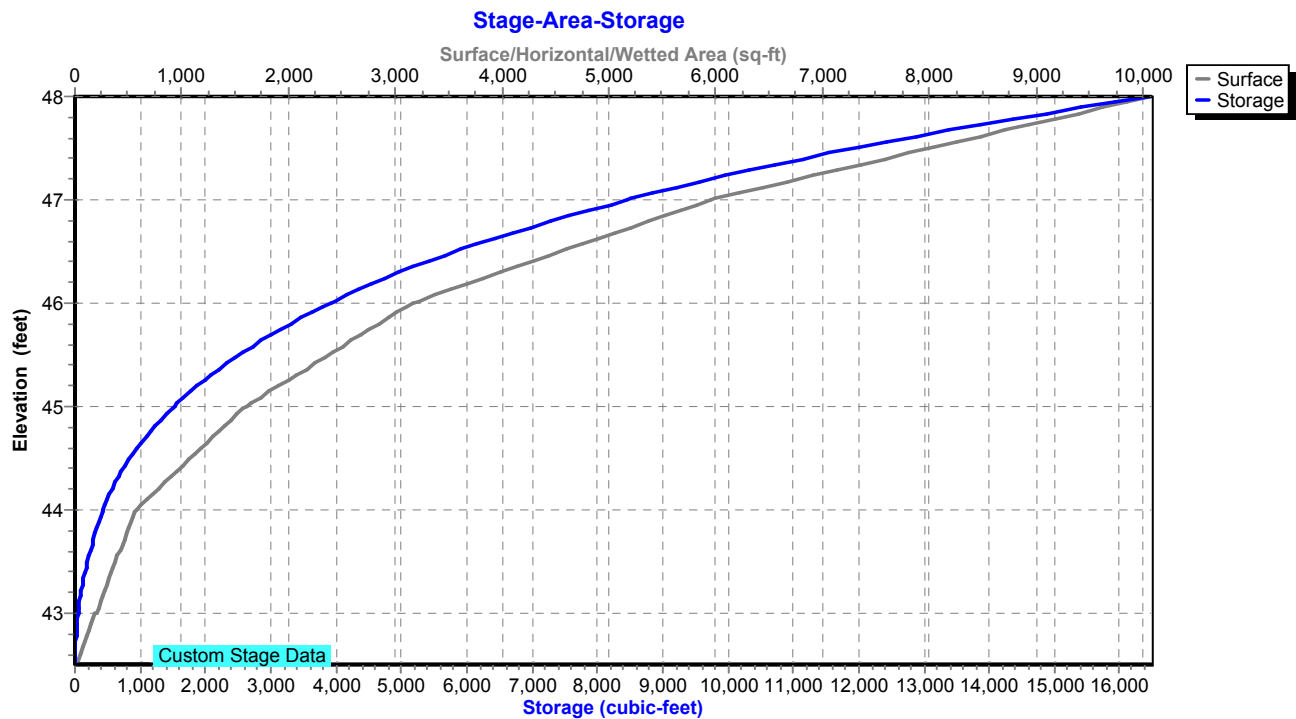
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 21.93" for 10 year event
 Inflow = 169.79 cfs @ 12.22 hrs, Volume= 915,555 cf
 Outflow = 44.37 cfs @ 13.75 hrs, Volume= 915,549 cf, Atten= 74%, Lag= 92.0 min
 Primary = 44.37 cfs @ 13.75 hrs, Volume= 915,549 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 12.50' @ 13.75 hrs Storage= 502,963 cf

Plug-Flow detention time= 127.1 min calculated for 915,549 cf (100% of inflow)
 Center-of-Mass det. time= 127.1 min (915.3 - 788.2)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=44.37 cfs @ 13.75 hrs HW=12.50' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 44.37 cfs @ 5.37 fps)

Proposed Conditions

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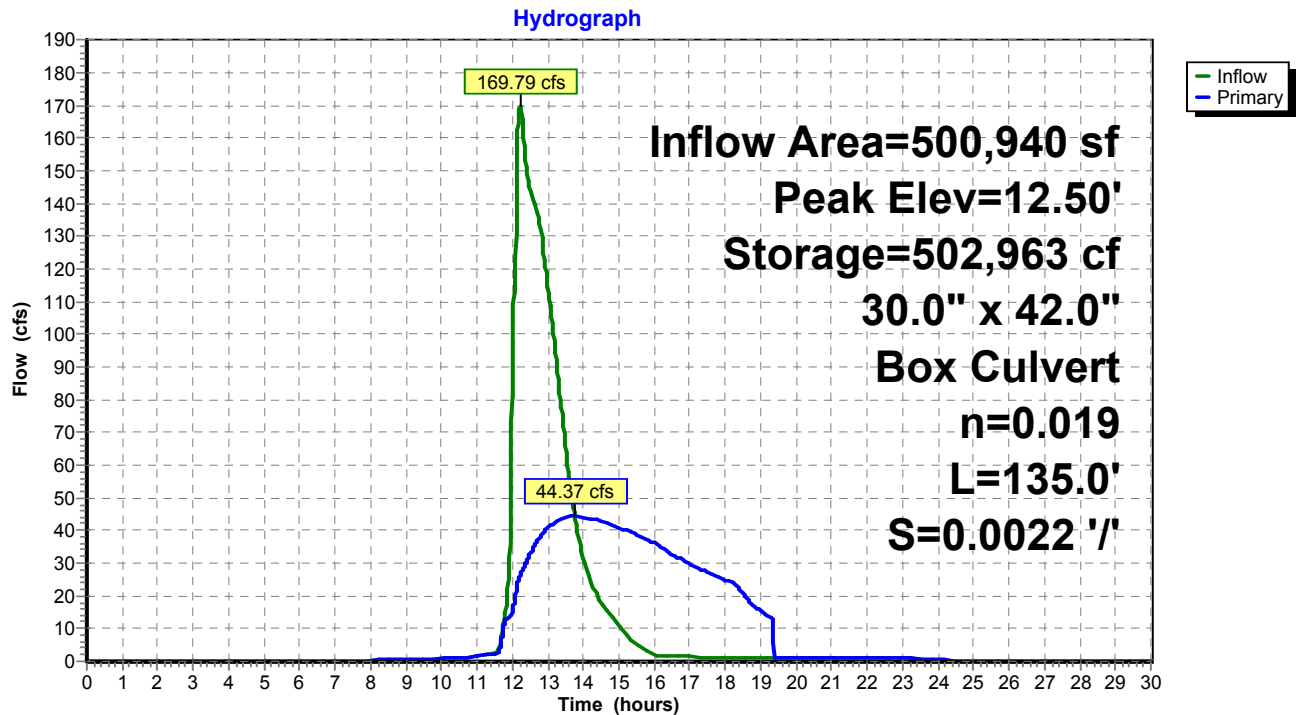
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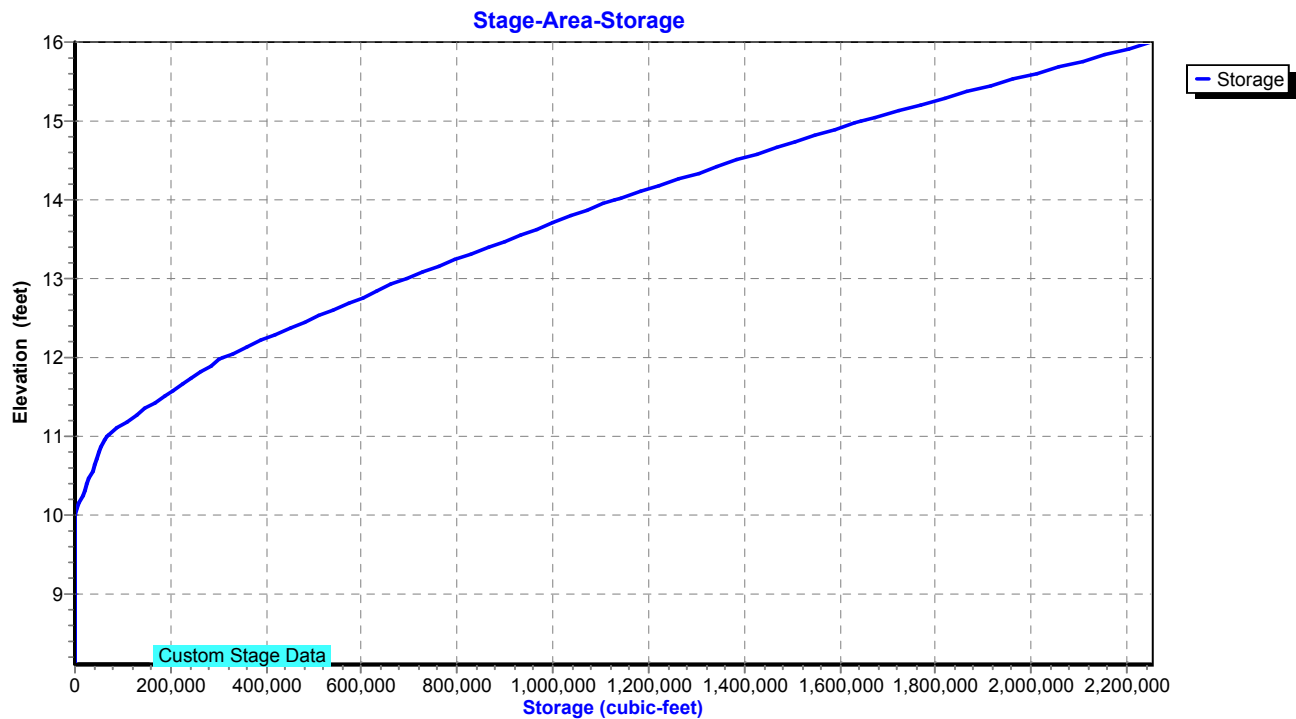
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Pond 24P: RR Culvert 3



Pond 24P: RR Culvert 3



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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 2.72" for 10 year event
 Inflow = 27.61 cfs @ 12.21 hrs, Volume= 176,385 cf
 Outflow = 27.60 cfs @ 12.21 hrs, Volume= 176,377 cf, Atten= 0%, Lag= 0.1 min
 Primary = 27.60 cfs @ 12.21 hrs, Volume= 176,377 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 20.07' @ 12.21 hrs Surf.Area= 2,197 sf Storage= 2,544 cf

Plug-Flow detention time= 0.7 min calculated for 176,318 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (900.9 - 900.3)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' / Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=26.93 cfs @ 12.21 hrs HW=20.07' (Free Discharge)

1=Culvert (Inlet Controls 12.31 cfs @ 10.03 fps)
2=Custom Weir/Orifice (Weir Controls 14.61 cfs @ 1.08 fps)

Proposed Conditions

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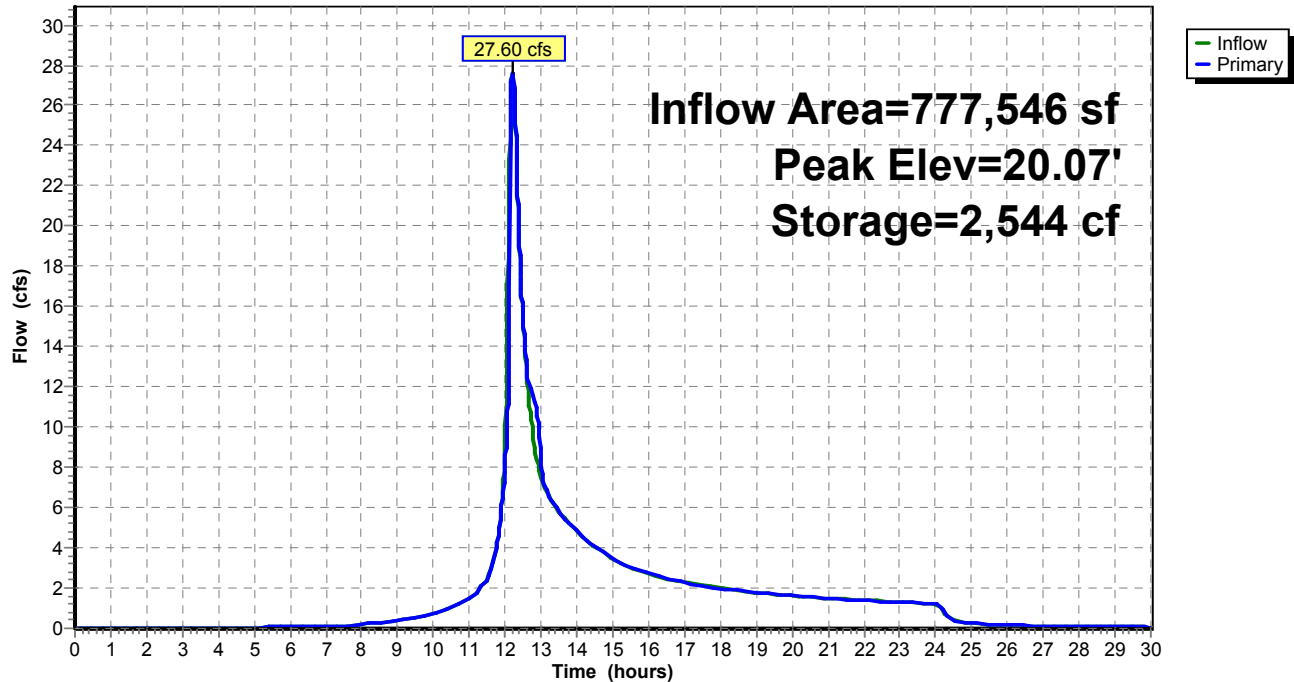
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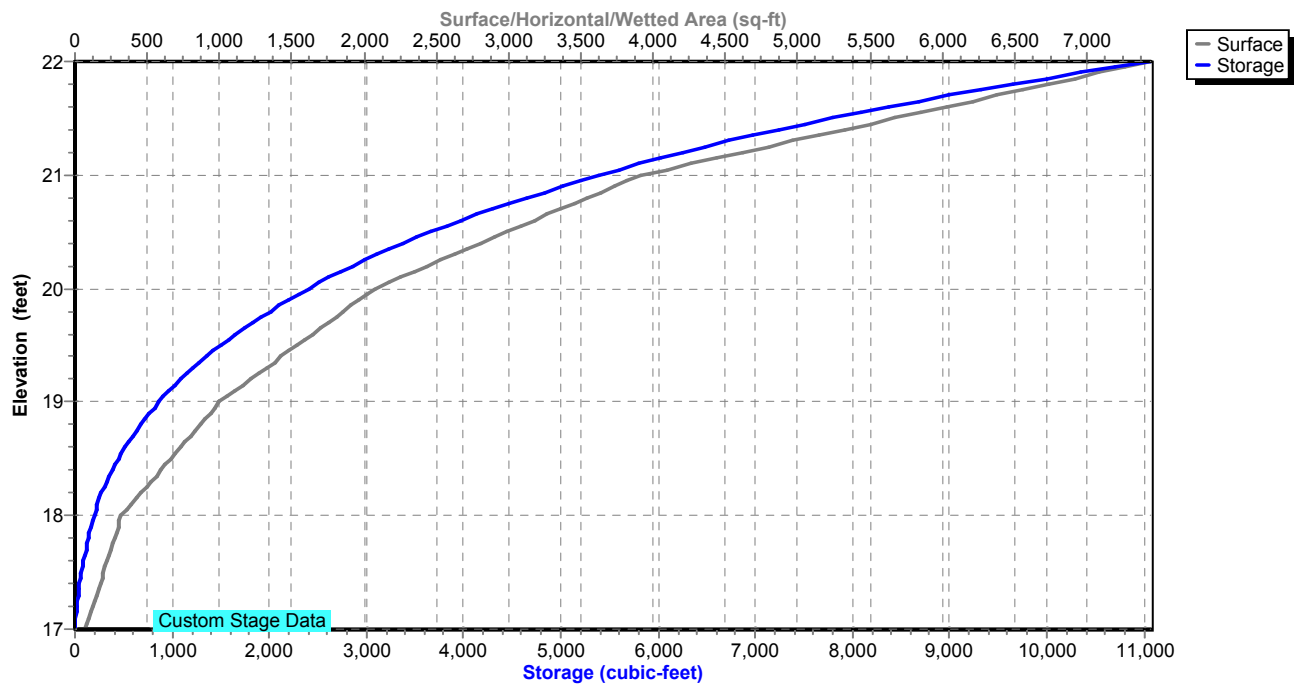
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 2.99" for 10 year event
 Inflow = 49.31 cfs @ 12.66 hrs, Volume= 549,236 cf
 Outflow = 49.30 cfs @ 12.67 hrs, Volume= 549,236 cf, Atten= 0%, Lag= 0.6 min
 Primary = 49.30 cfs @ 12.67 hrs, Volume= 549,236 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 18.74' @ 12.67 hrs Surf.Area= 10,562 sf Storage= 10,309 cf

Plug-Flow detention time= 3.7 min calculated for 549,053 cf (100% of inflow)
 Center-of-Mass det. time= 3.7 min (887.6 - 883.9)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=49.04 cfs @ 12.67 hrs HW=18.74' (Free Discharge)

1=Culvert (Inlet Controls 13.96 cfs @ 7.90 fps)

2=Custom Weir/Orifice (Weir Controls 35.08 cfs @ 1.82 fps)

Proposed Conditions

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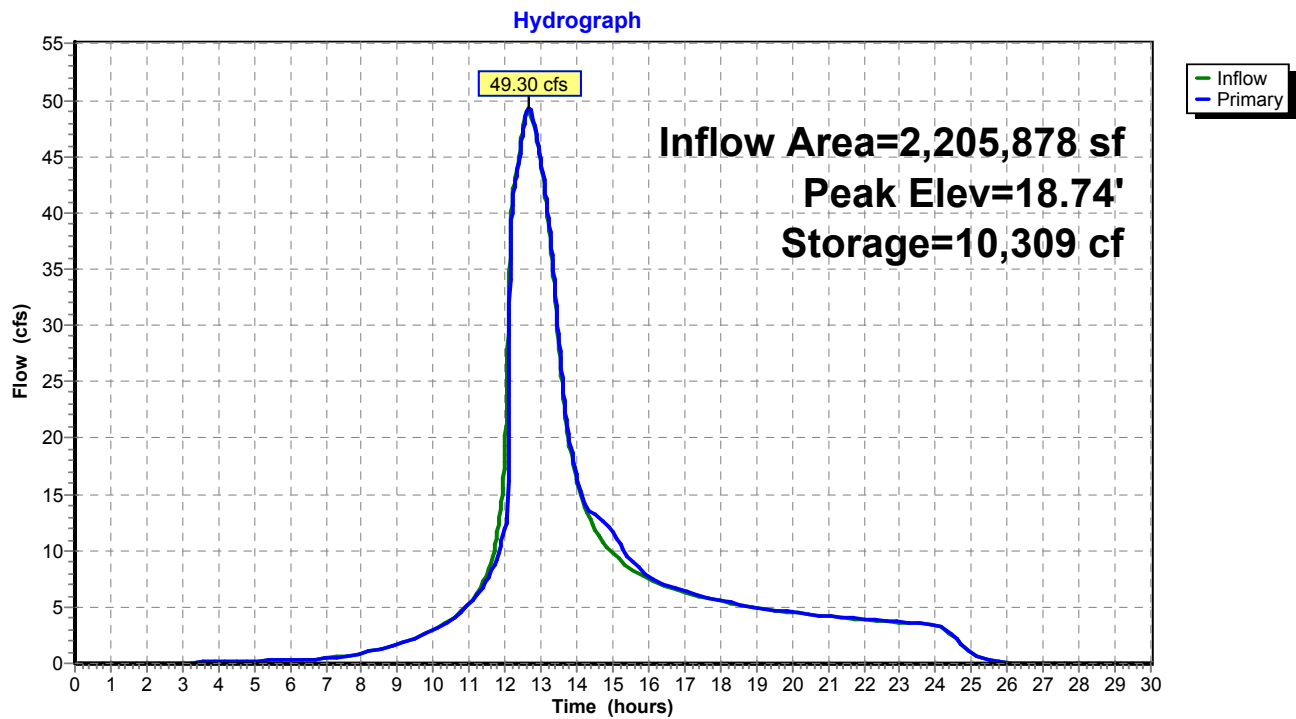
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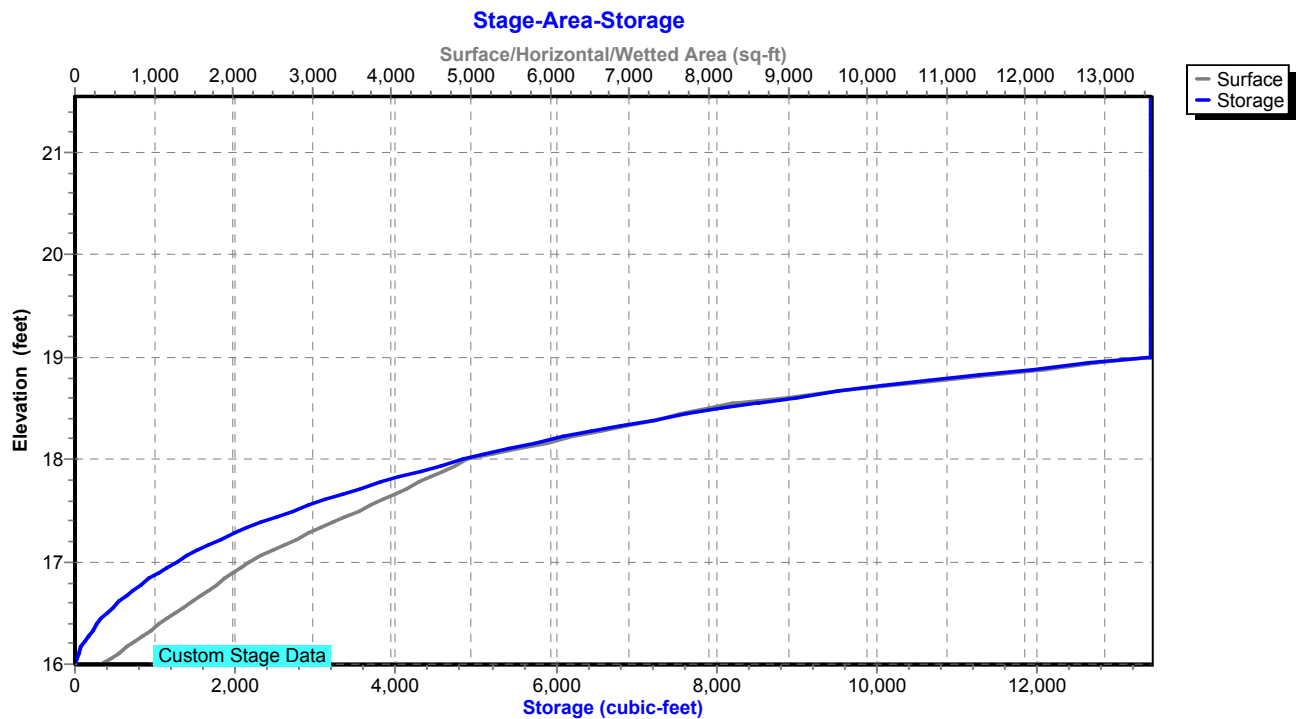
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 3.80" for 10 year event
Inflow = 22.29 cfs @ 12.04 hrs, Volume= 78,362 cf
Outflow = 3.14 cfs @ 12.63 hrs, Volume= 52,973 cf, Atten= 86%, Lag= 35.6 min
Primary = 3.14 cfs @ 12.63 hrs, Volume= 52,973 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 27.69' @ 12.63 hrs Surf.Area= 14,532 sf Storage= 40,335 cf

Plug-Flow detention time= 303.9 min calculated for 52,973 cf (68% of inflow)
Center-of-Mass det. time= 180.2 min (989.0 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

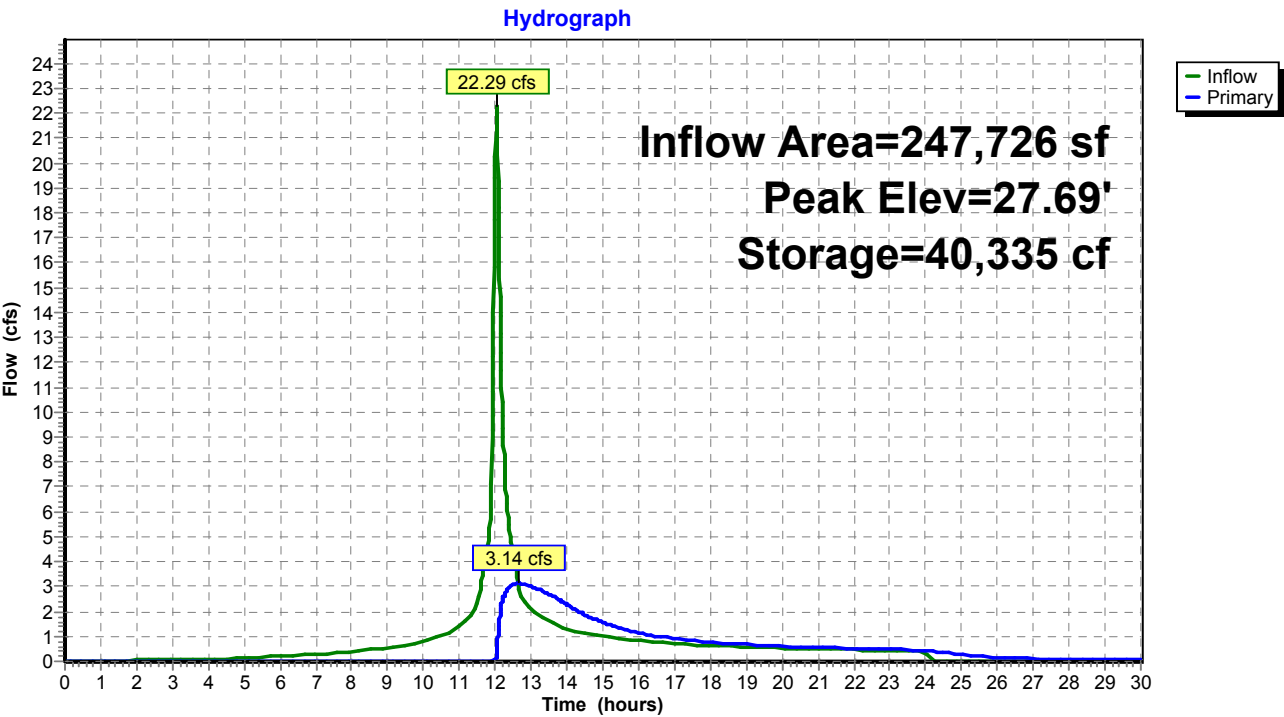
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / S= 0.0333 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

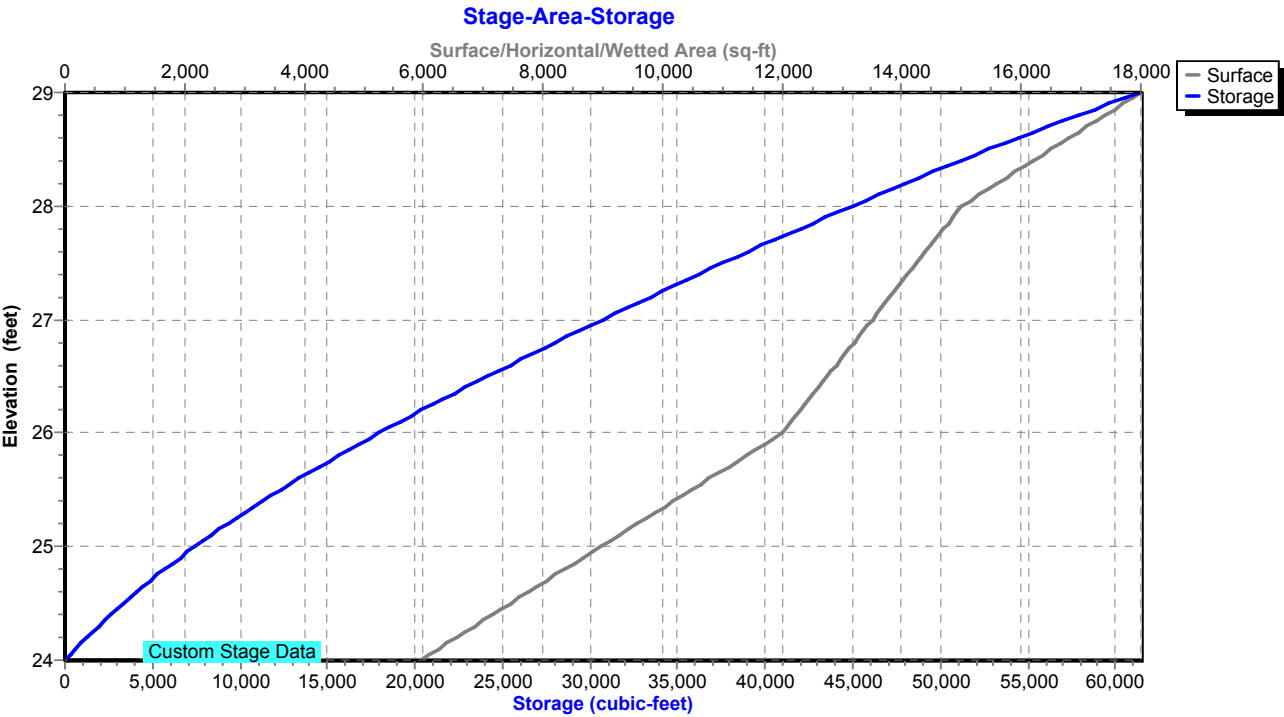
Primary OutFlow Max=3.14 cfs @ 12.63 hrs HW=27.69' (Free Discharge)

1=Culvert (Passes 3.14 cfs of 14.58 cfs potential flow)
2=Orifice/Grate (Orifice Controls 3.14 cfs @ 3.99 fps)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



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Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 3.95" for 10 year event
Inflow = 20.06 cfs @ 12.04 hrs, Volume= 72,141 cf
Outflow = 20.06 cfs @ 12.04 hrs, Volume= 72,141 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.06 cfs @ 12.04 hrs, Volume= 72,141 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 46.76' @ 12.04 hrs

Flood Elev= 51.00'

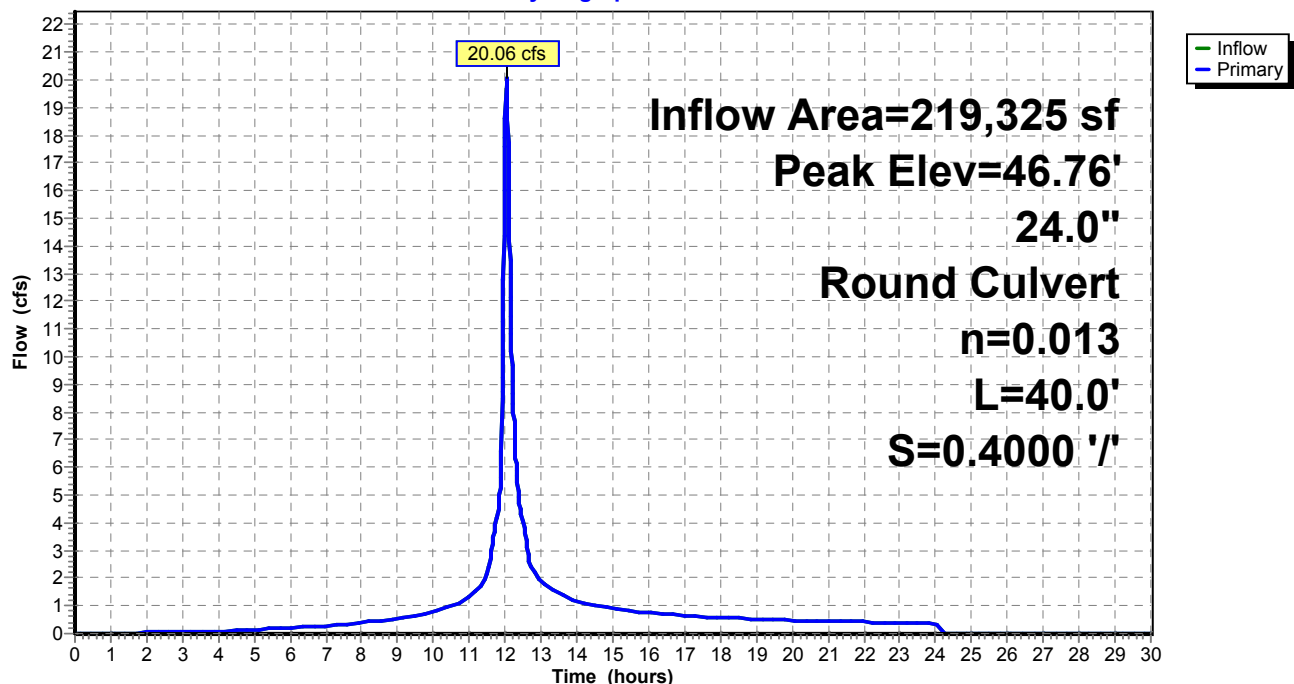
Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

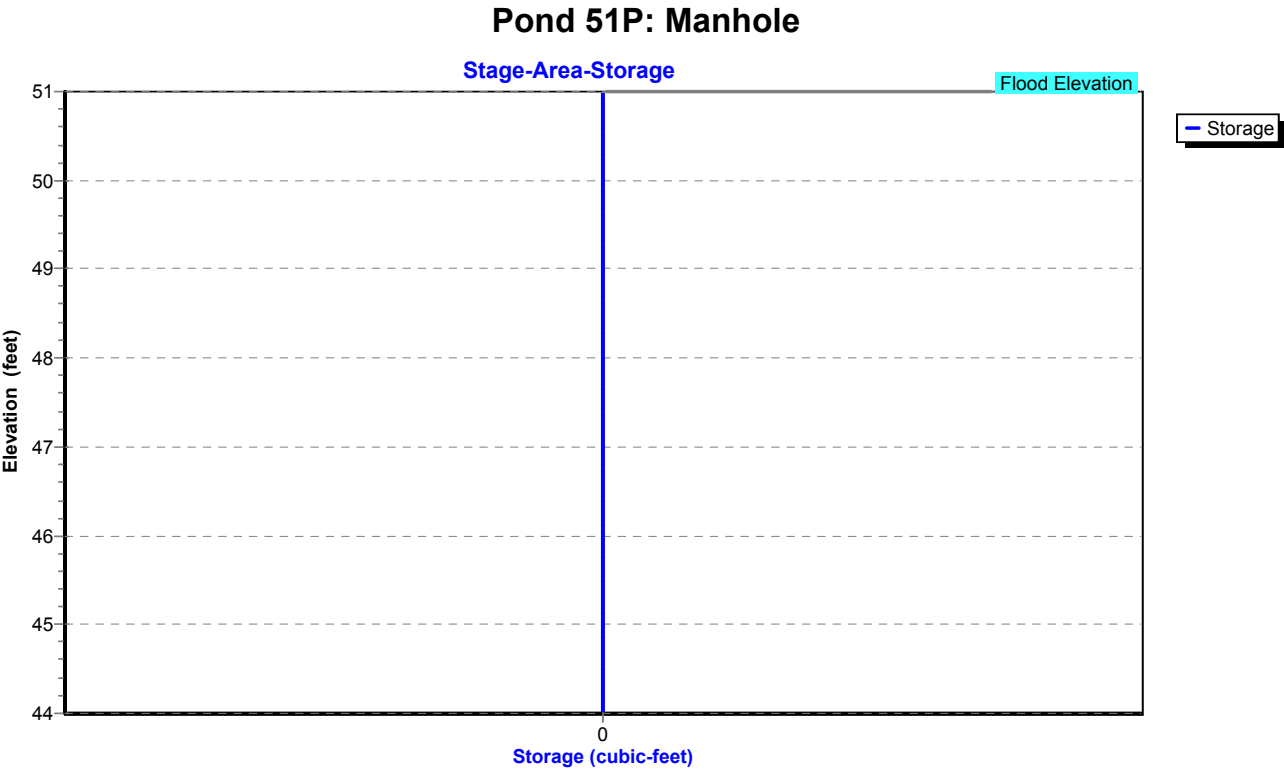
Primary OutFlow Max=20.04 cfs @ 12.04 hrs HW=46.76' (Free Discharge)

↑1=Culvert (Inlet Controls 20.04 cfs @ 6.38 fps)

Pond 51P: Manhole

Hydrograph





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Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 4.01" for 10 year event
Inflow = 12.72 cfs @ 12.04 hrs, Volume= 43,925 cf
Outflow = 12.72 cfs @ 12.04 hrs, Volume= 43,925 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.72 cfs @ 12.04 hrs, Volume= 43,925 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 46.26' @ 12.04 hrs

Flood Elev= 49.00'

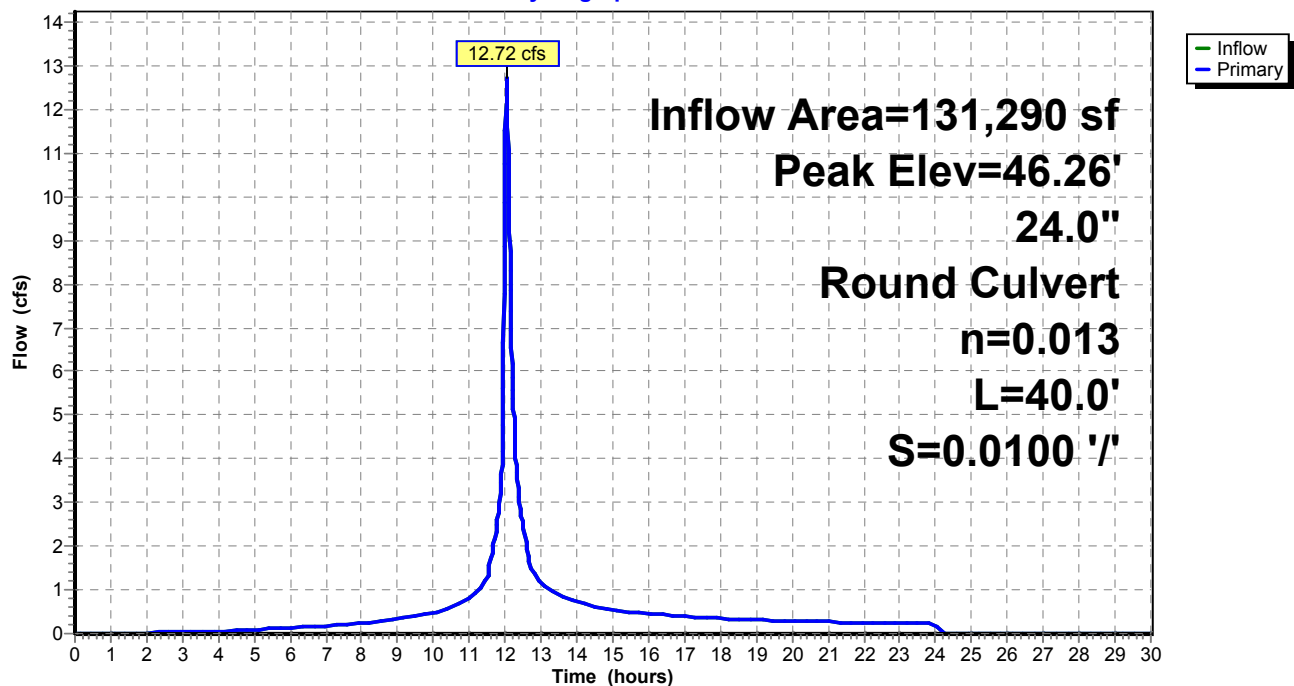
Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=12.70 cfs @ 12.04 hrs HW=46.26' (Free Discharge)

↑1=Culvert (Barrel Controls 12.70 cfs @ 5.42 fps)

Pond 57P: CB-1

Hydrograph



Proposed Conditions

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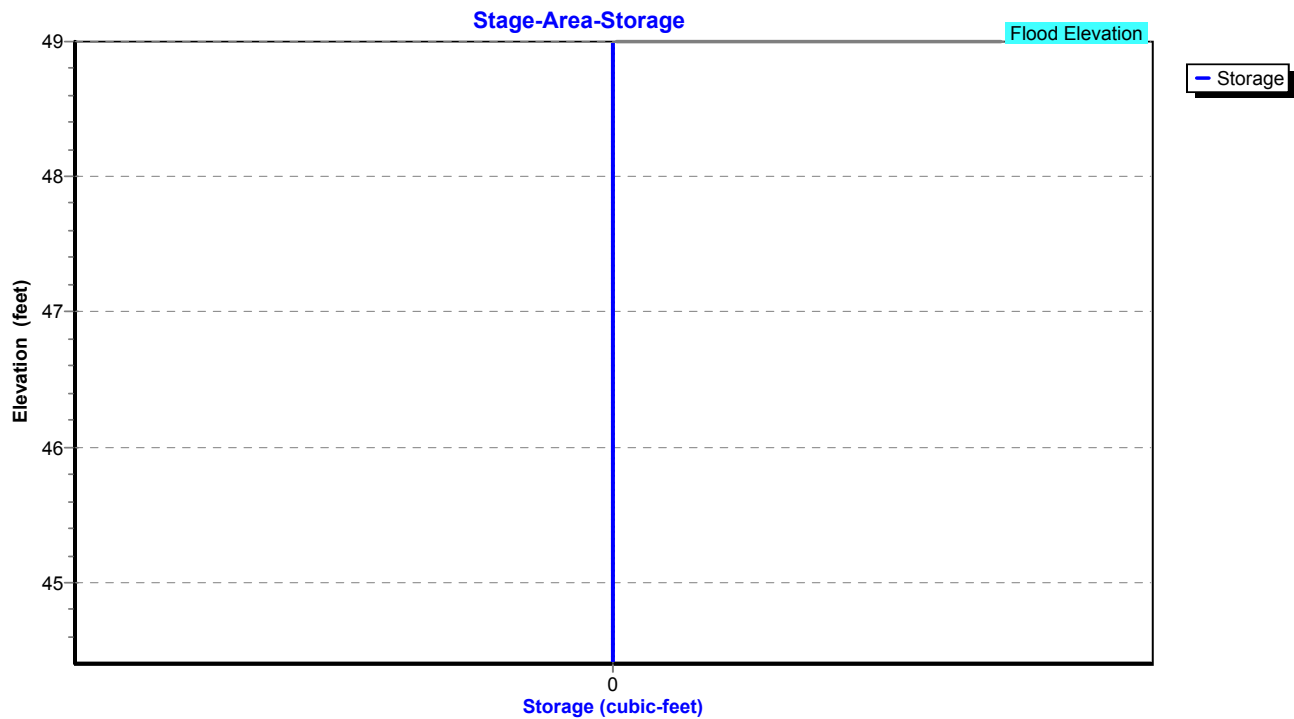
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Pond 57P: CB-1



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Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 3.91" for 10 year event
Inflow = 11.15 cfs @ 12.04 hrs, Volume= 38,899 cf
Outflow = 11.15 cfs @ 12.04 hrs, Volume= 38,899 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.15 cfs @ 12.04 hrs, Volume= 38,899 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.39' @ 12.04 hrs

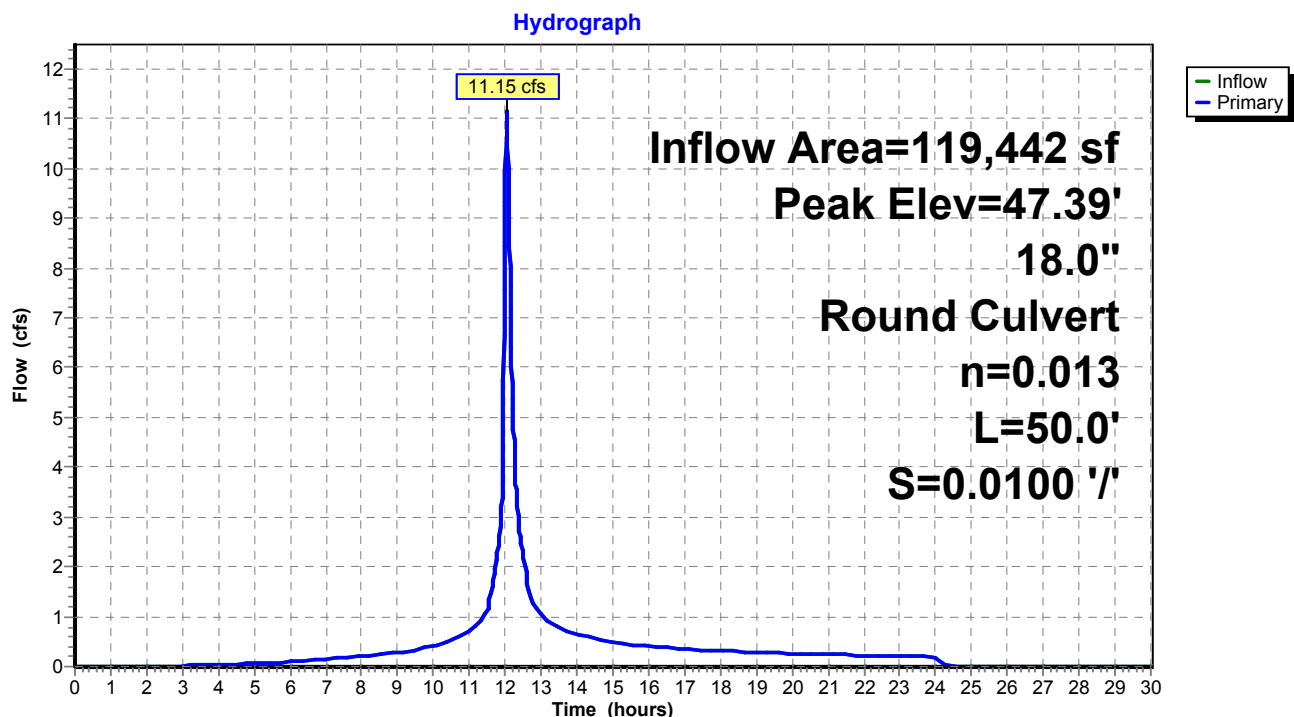
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=11.13 cfs @ 12.04 hrs HW=47.39' (Free Discharge)

↑1=Culvert (Barrel Controls 11.13 cfs @ 6.30 fps)

Pond 58P: Manhole



Proposed Conditions

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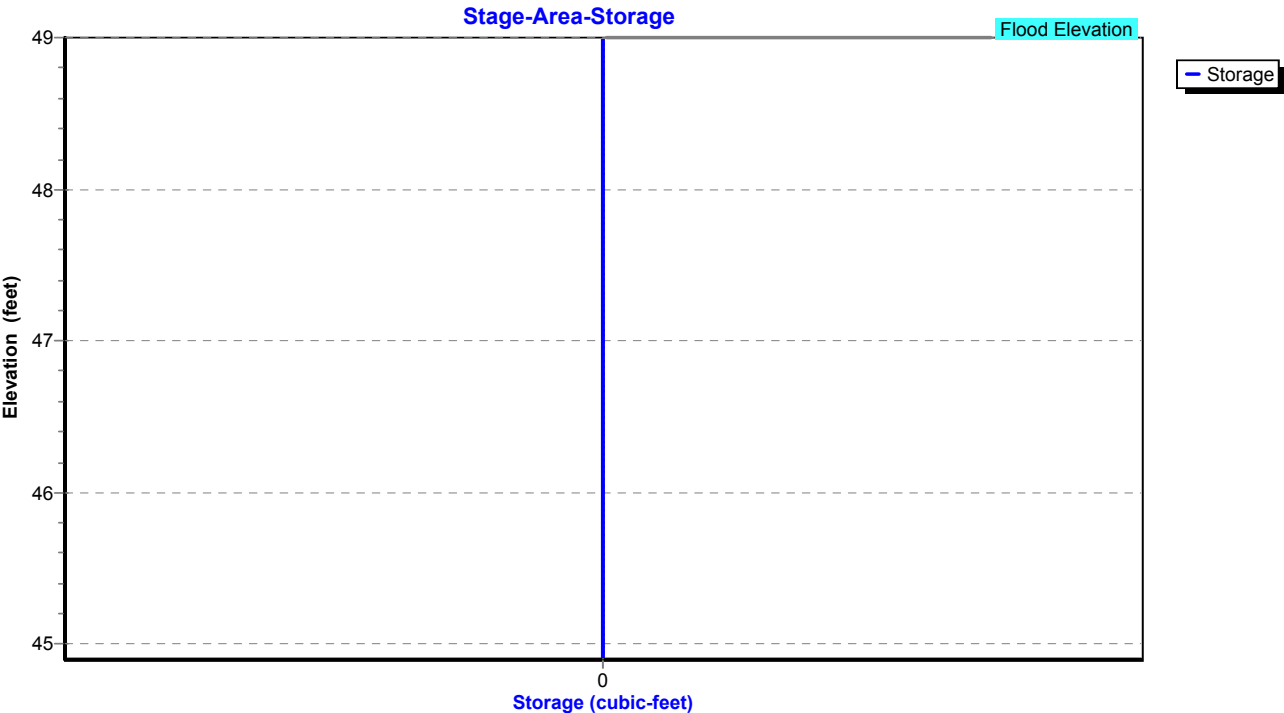
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Pond 58P: Manhole



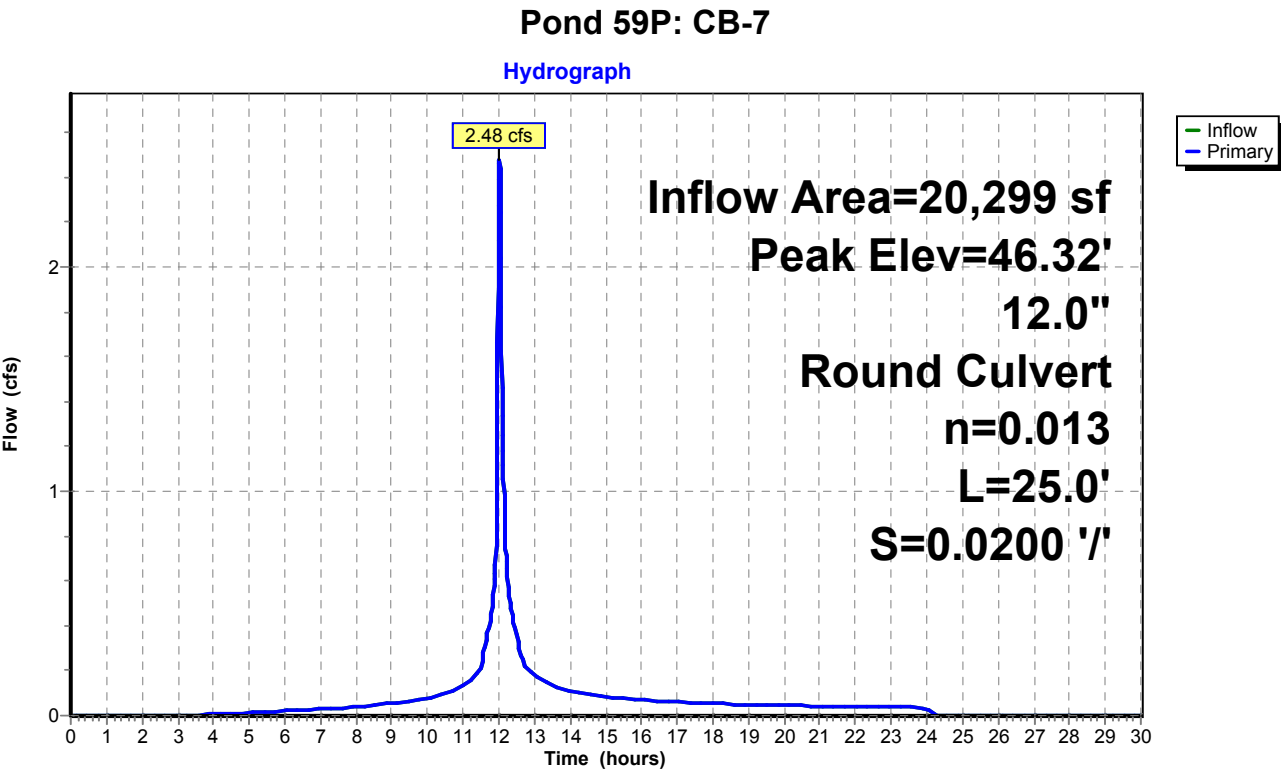
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 4.09" for 10 year event
Inflow = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf
Outflow = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.48 cfs @ 12.03 hrs, Volume= 6,913 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.32' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.47 cfs @ 12.03 hrs HW=46.32' (Free Discharge)
1=Culvert (Inlet Controls 2.47 cfs @ 3.27 fps)



Proposed Conditions

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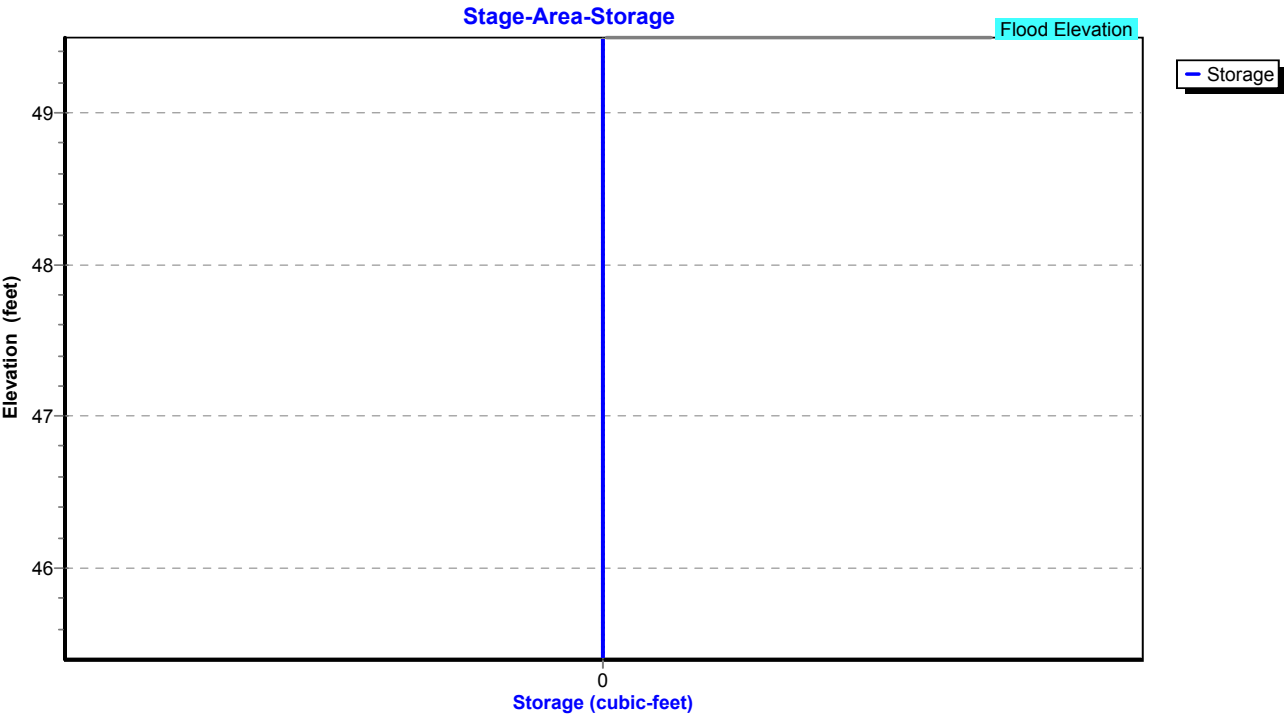
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Pond 59P: CB-7



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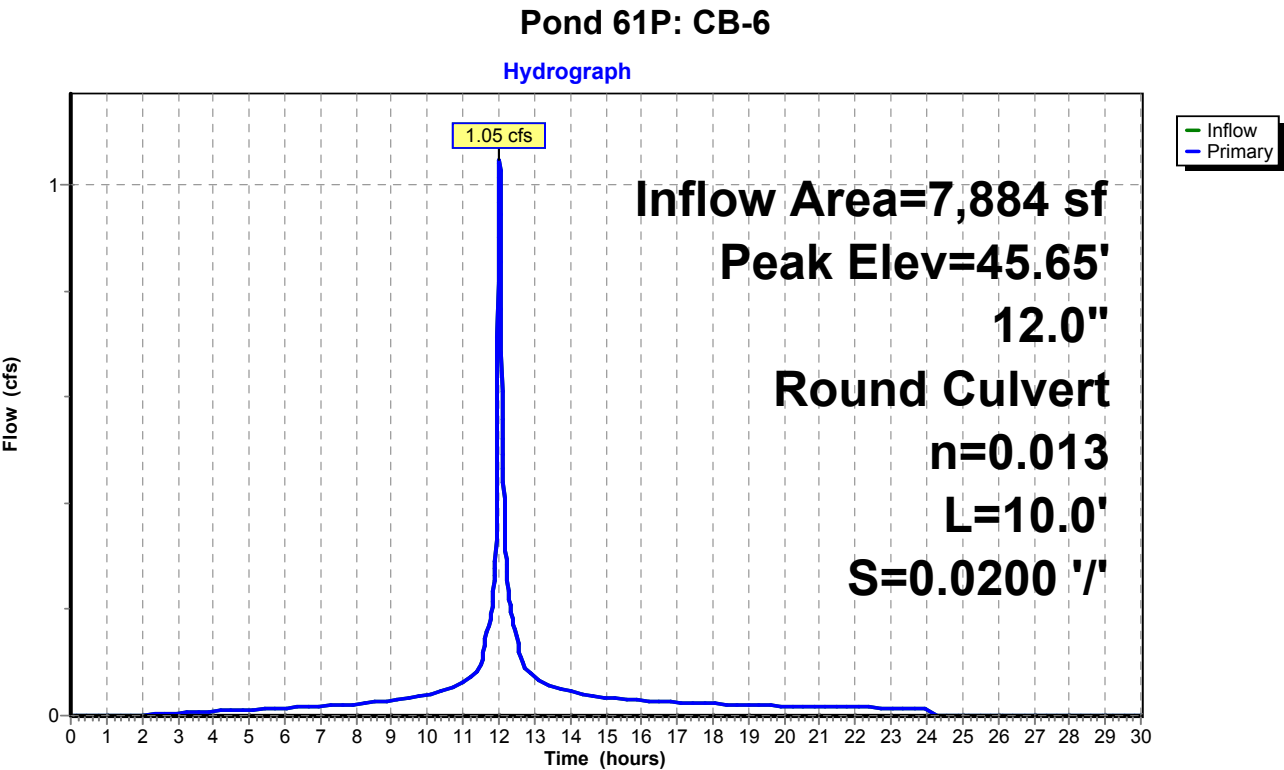
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 4.63" for 10 year event
Inflow = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf
Outflow = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.05 cfs @ 12.03 hrs, Volume= 3,043 cf
Routed to Pond 58P : Manhole

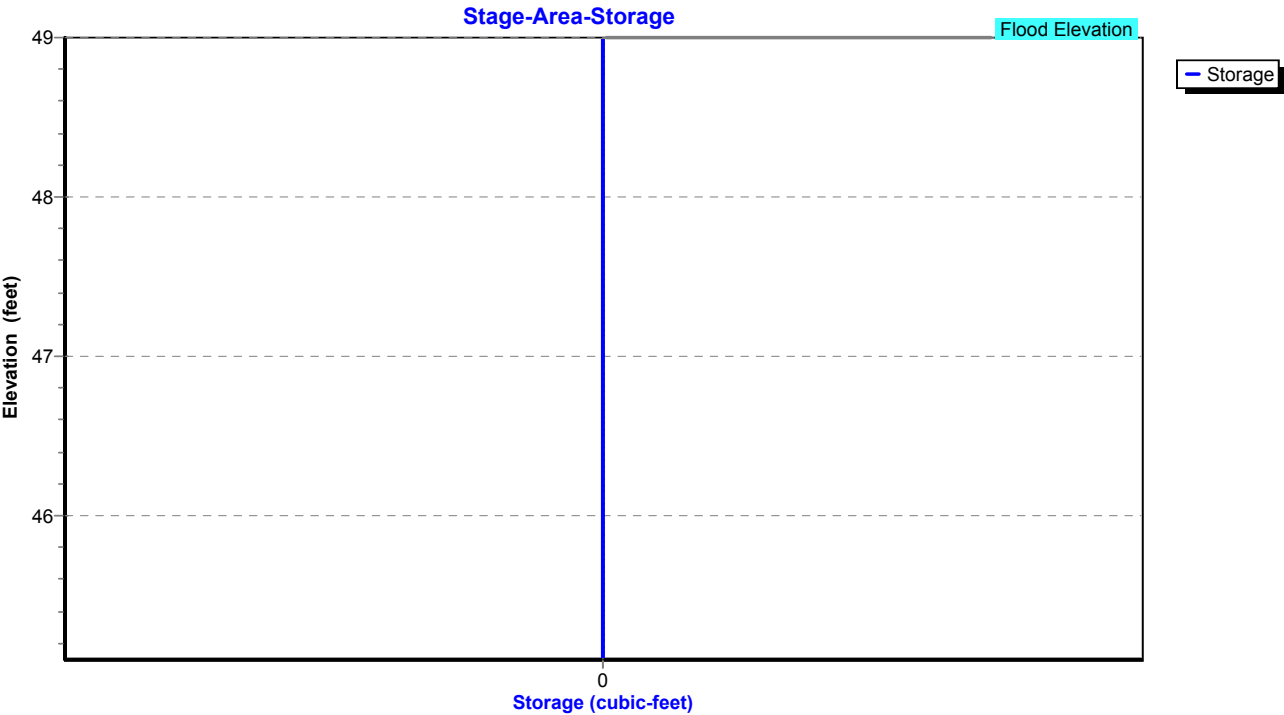
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.65' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.04 cfs @ 12.03 hrs HW=45.65' (Free Discharge)
↑1=Culvert (Barrel Controls 1.04 cfs @ 3.41 fps)



Pond 61P: CB-6



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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 3.81" for 10 year event
Inflow = 7.91 cfs @ 12.06 hrs, Volume= 28,943 cf
Outflow = 7.91 cfs @ 12.06 hrs, Volume= 28,943 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.91 cfs @ 12.06 hrs, Volume= 28,943 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 49.07' @ 12.06 hrs

Flood Elev= 51.00'

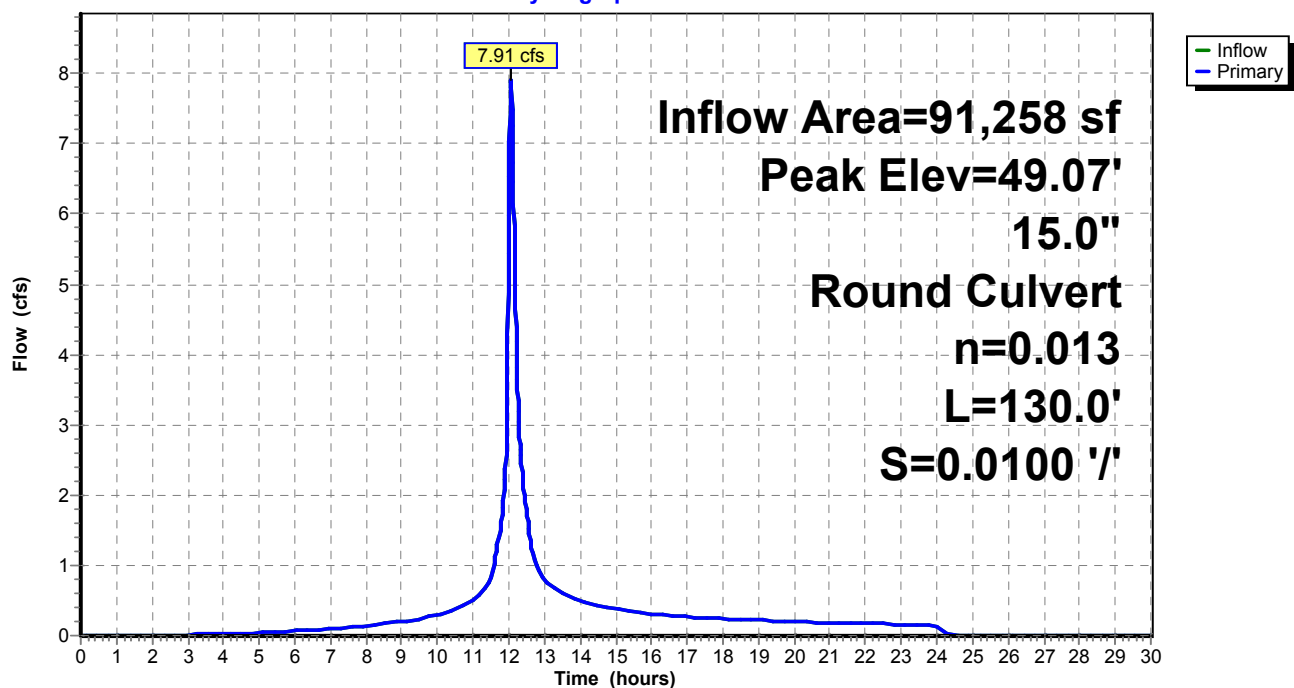
Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.90 cfs @ 12.06 hrs HW=49.06' (Free Discharge)

↑1=Culvert (Barrel Controls 7.90 cfs @ 6.44 fps)

Pond 63P: Manhole

Hydrograph



Proposed Conditions

Prepared by Tighe & Bond

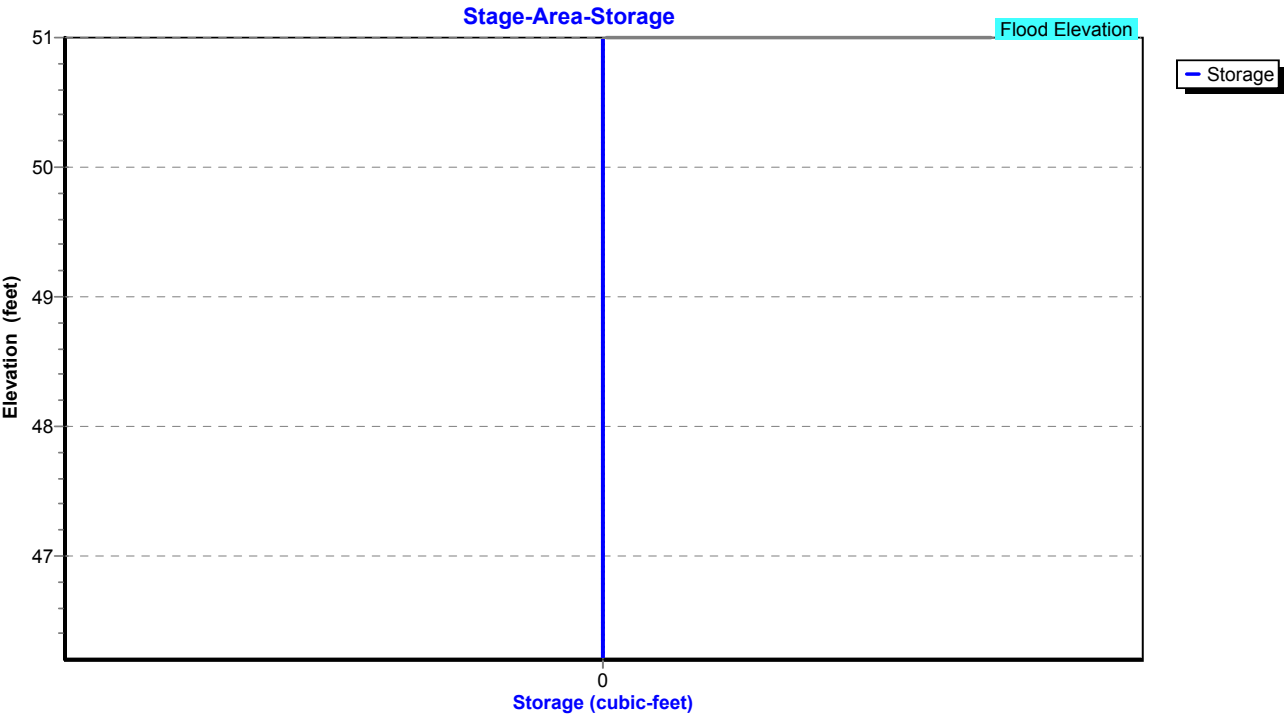
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Pond 63P: Manhole



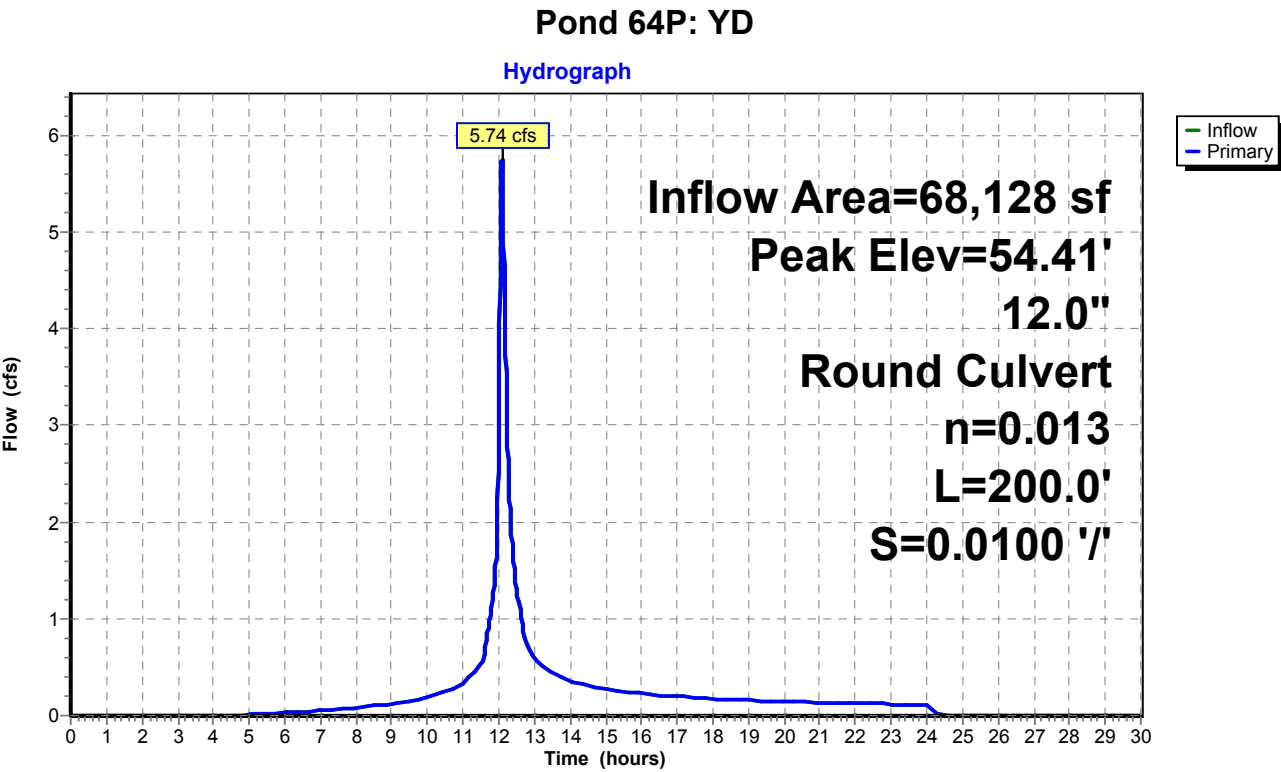
Summary for Pond 64P: YD

Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 3.57" for 10 year event
Inflow = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf
Outflow = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.74 cfs @ 12.08 hrs, Volume= 20,278 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 54.41' @ 12.08 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=5.73 cfs @ 12.08 hrs HW=54.38' (Free Discharge)
1=Culvert (Barrel Controls 5.73 cfs @ 7.30 fps)



Proposed Conditions

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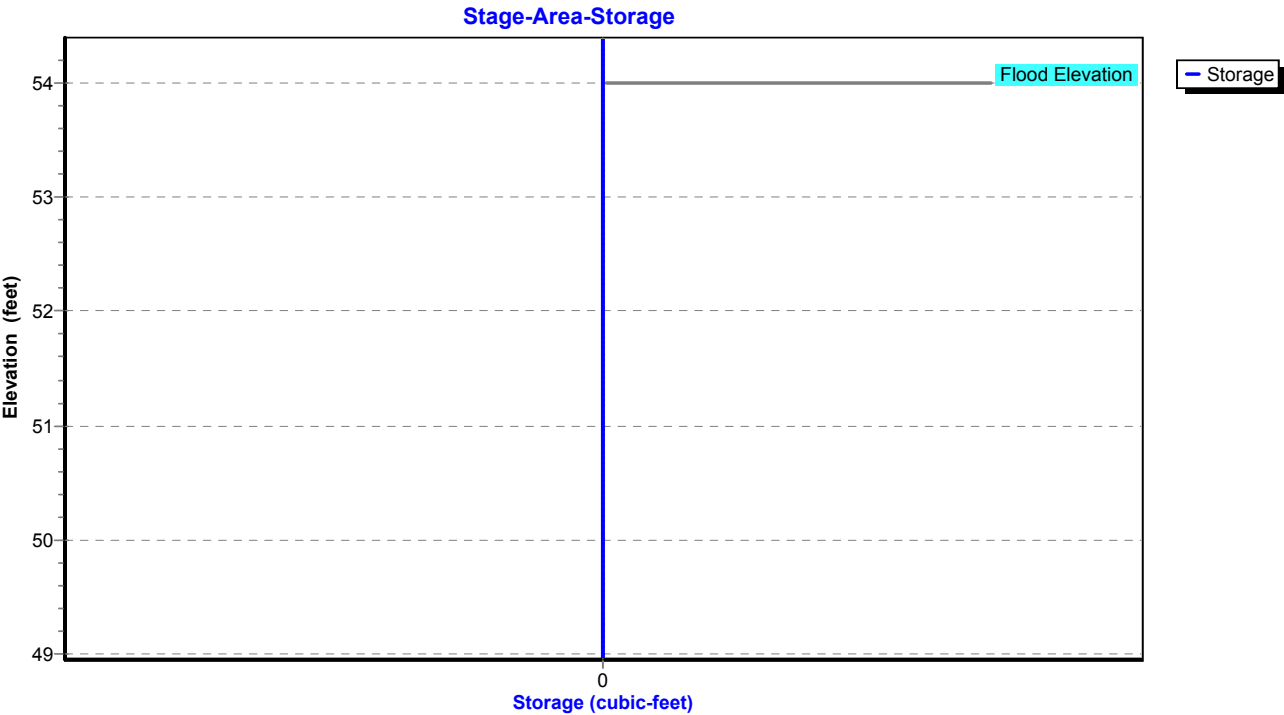
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 4.41" for 10 year event
Inflow = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf
Outflow = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.64 cfs @ 12.03 hrs, Volume= 4,690 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.24' @ 12.03 hrs

Flood Elev= 53.00'

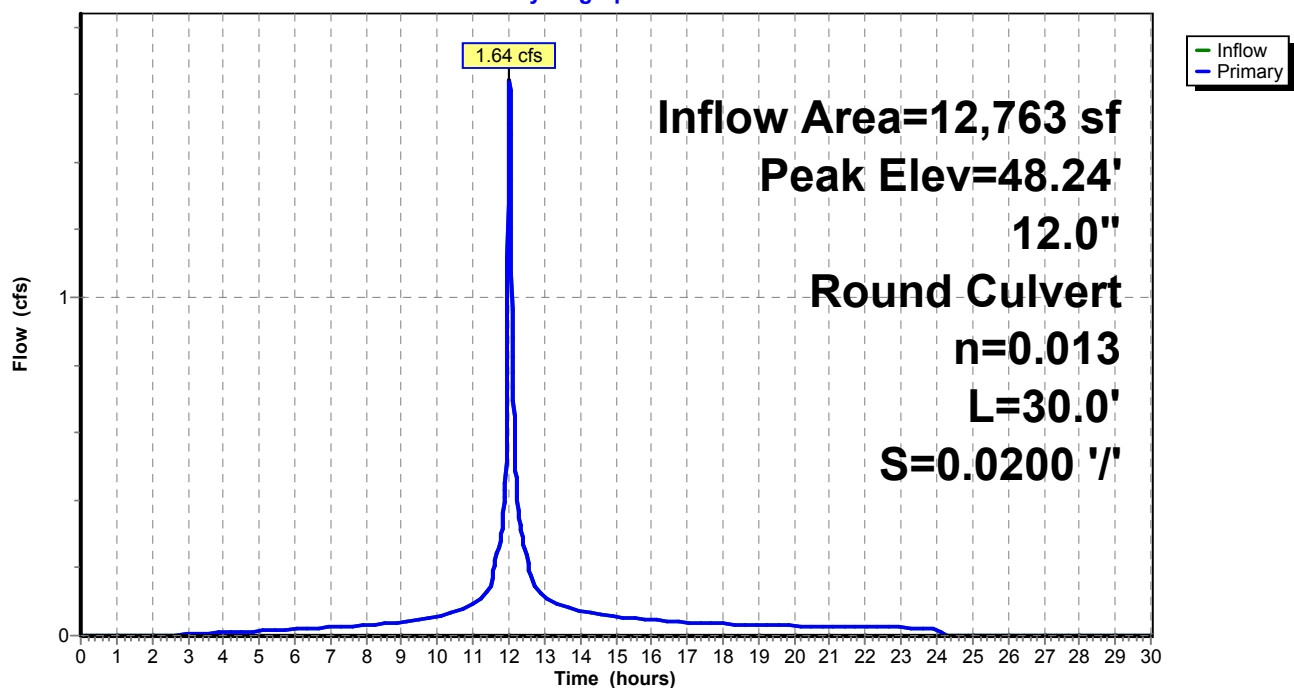
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

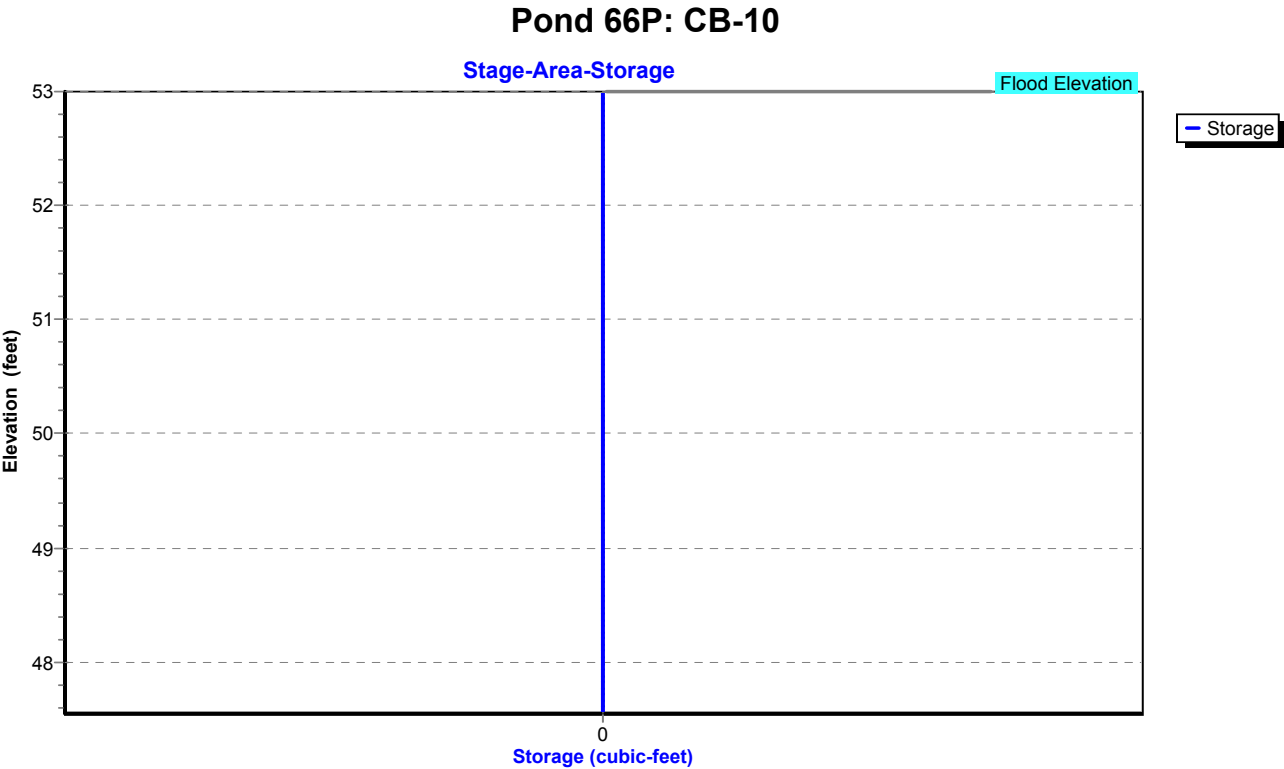
Primary OutFlow Max=1.64 cfs @ 12.03 hrs HW=48.24' (Free Discharge)

↑1=Culvert (Inlet Controls 1.64 cfs @ 2.83 fps)

Pond 66P: CB-10

Hydrograph





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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 4.30" for 10 year event
Inflow = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf
Outflow = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.82 cfs @ 12.03 hrs, Volume= 2,311 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.62' @ 12.03 hrs

Flood Elev= 52.00'

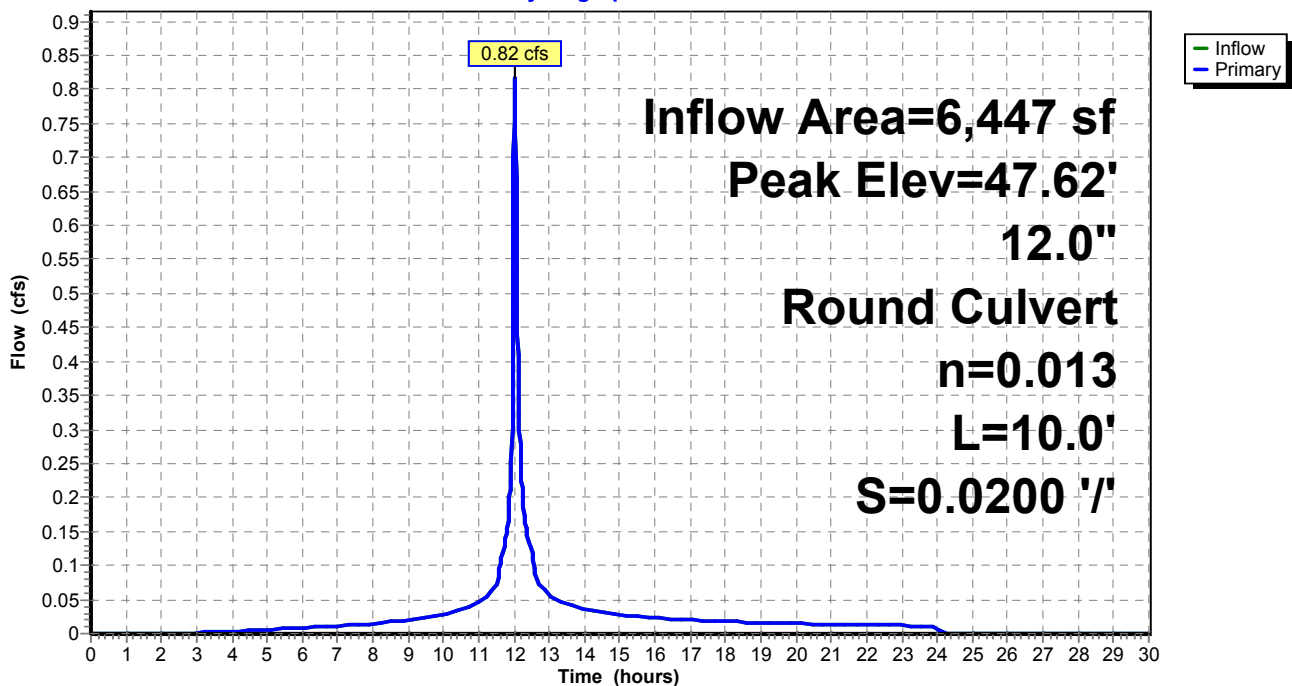
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.81 cfs @ 12.03 hrs HW=47.62' (Free Discharge)

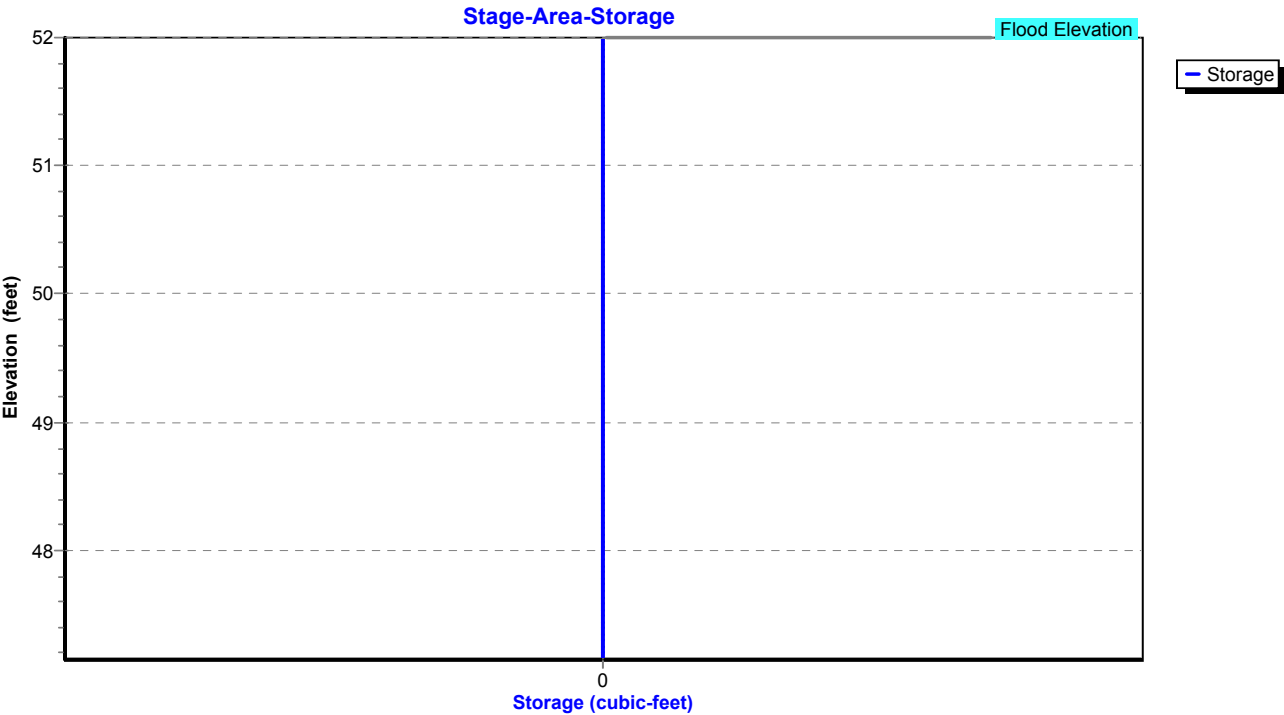
↑1=Culvert (Barrel Controls 0.81 cfs @ 3.25 fps)

Pond 67P: CB-9

Hydrograph



Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 3.85" for 10 year event
Inflow = 7.70 cfs @ 11.99 hrs, Volume= 28,216 cf
Outflow = 7.70 cfs @ 11.99 hrs, Volume= 28,216 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.70 cfs @ 11.99 hrs, Volume= 28,216 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.66' @ 11.99 hrs

Flood Elev= 53.30'

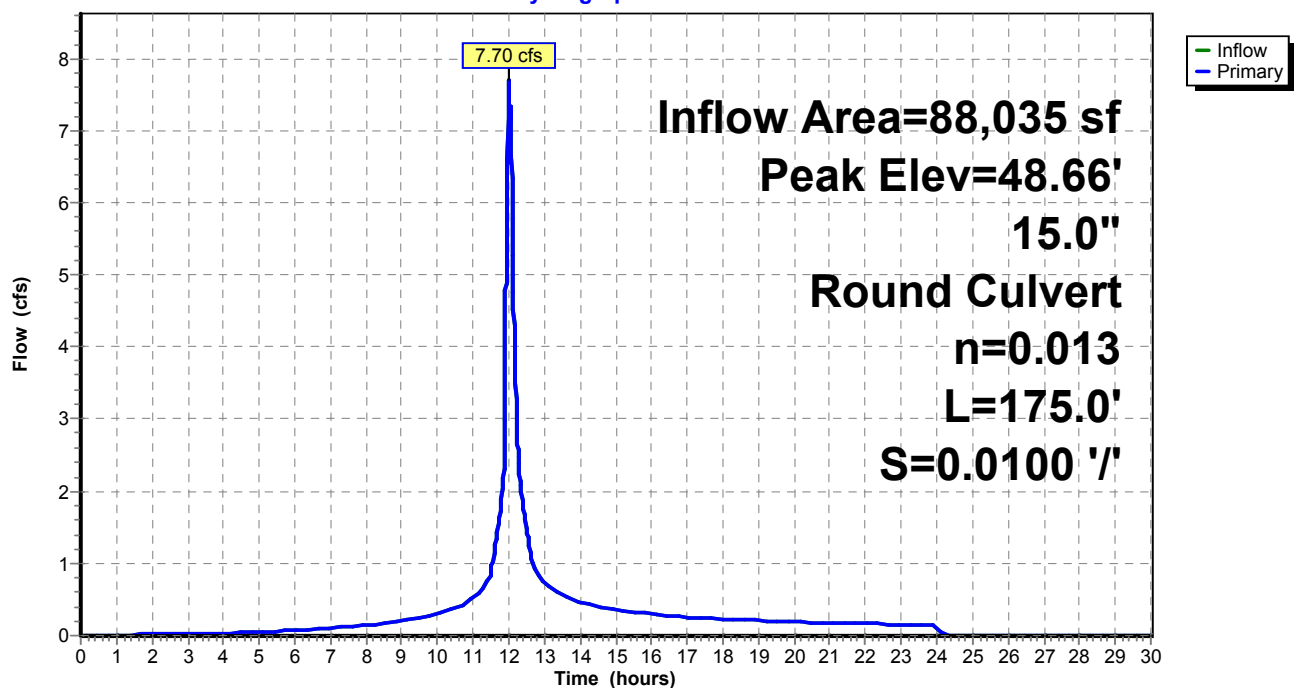
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.70 cfs @ 11.99 hrs HW=48.66' (Free Discharge)

↑1=Culvert (Barrel Controls 7.70 cfs @ 6.27 fps)

Pond 70P: CB-2

Hydrograph



Proposed Conditions

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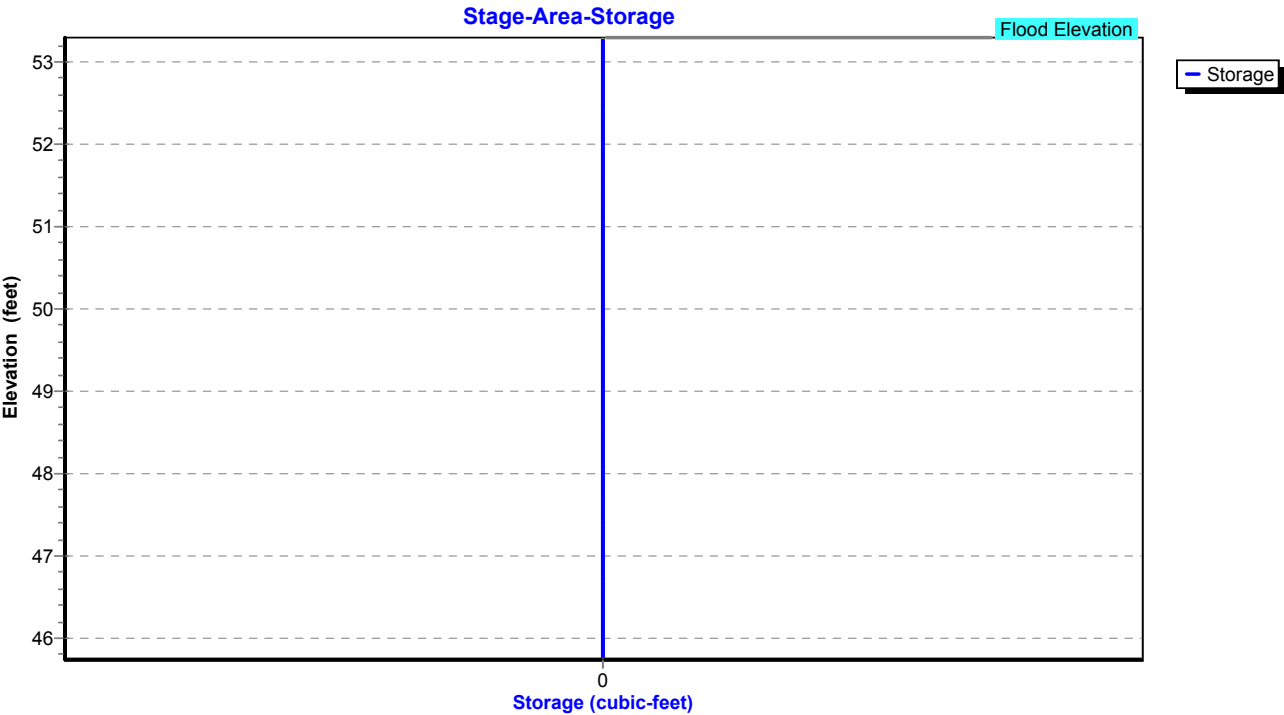
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Pond 70P: CB-2



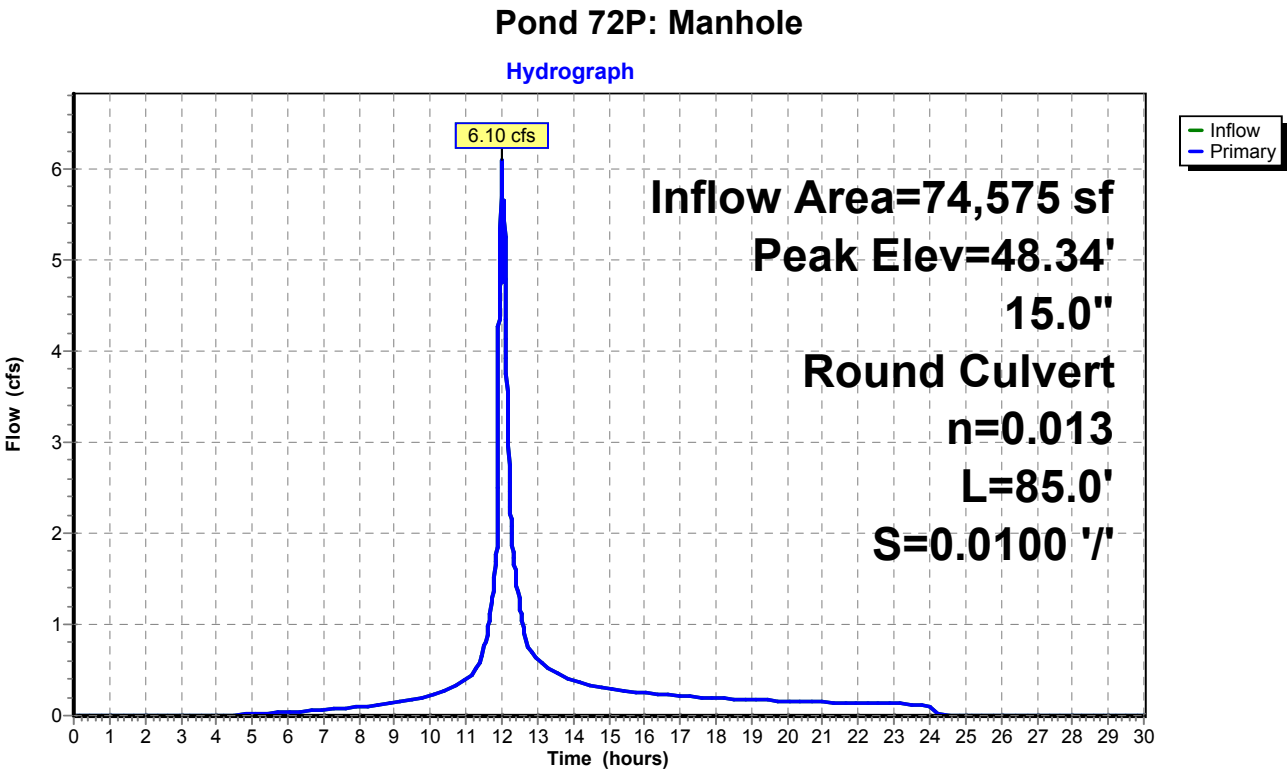
Summary for Pond 72P: Manhole

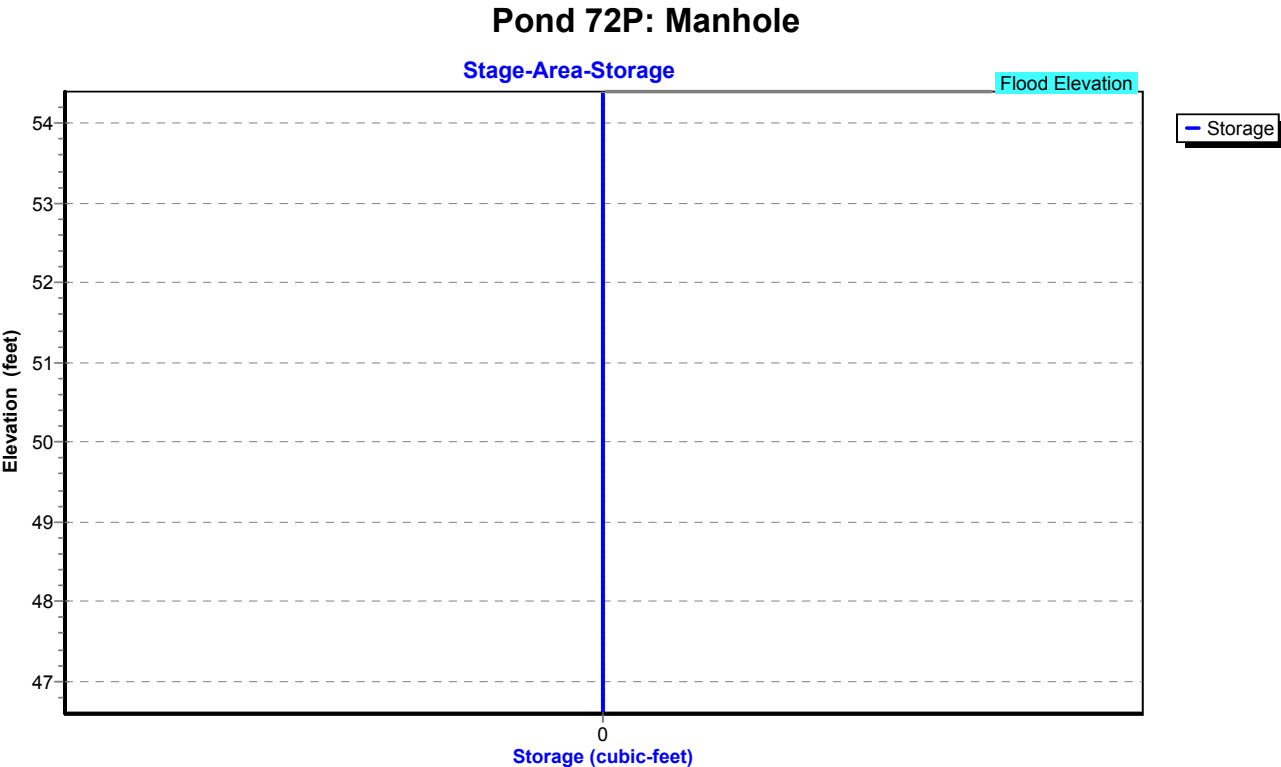
Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 3.62" for 10 year event
Inflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Outflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.34' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.04 cfs @ 11.99 hrs HW=48.31' (Free Discharge)
1=Culvert (Barrel Controls 6.04 cfs @ 4.92 fps)





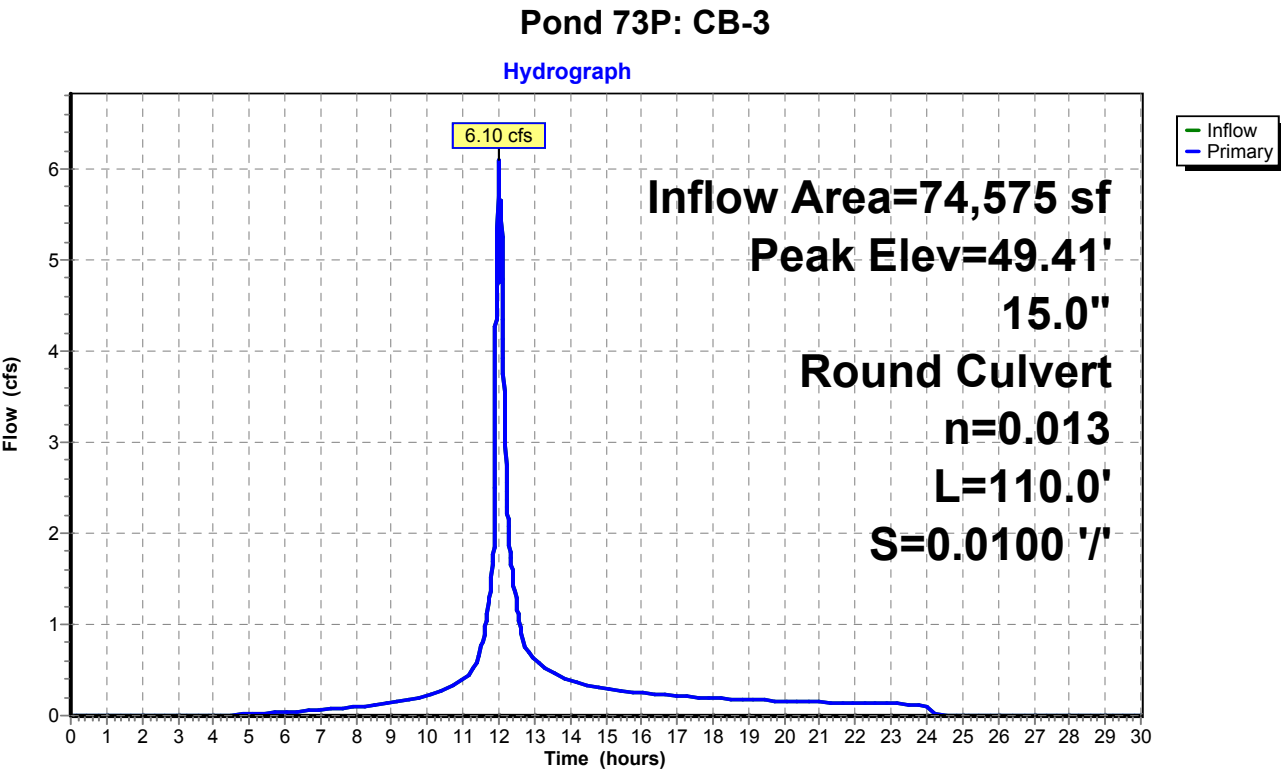
Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 3.62" for 10 year event
Inflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Outflow = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.10 cfs @ 11.99 hrs, Volume= 22,506 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.41' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.06 cfs @ 11.99 hrs HW=49.39' (Free Discharge)
1=Culvert (Barrel Controls 6.06 cfs @ 4.94 fps)



Proposed Conditions

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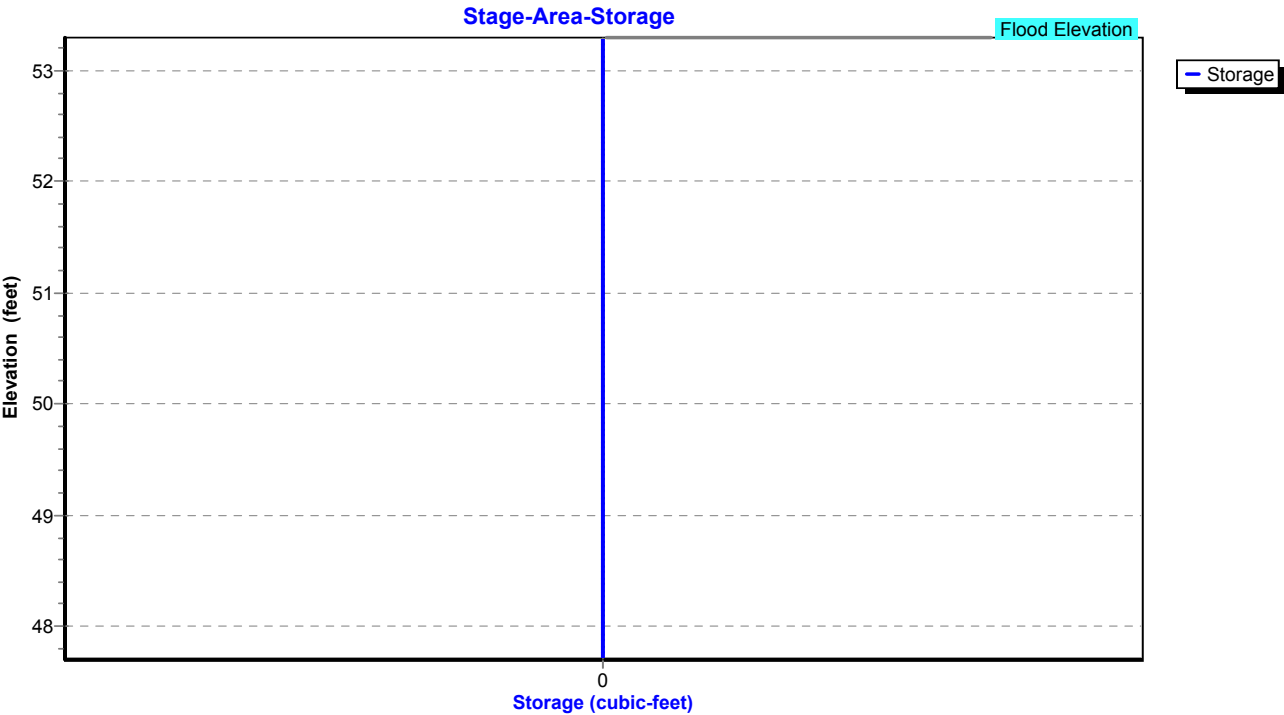
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Pond 73P: CB-3



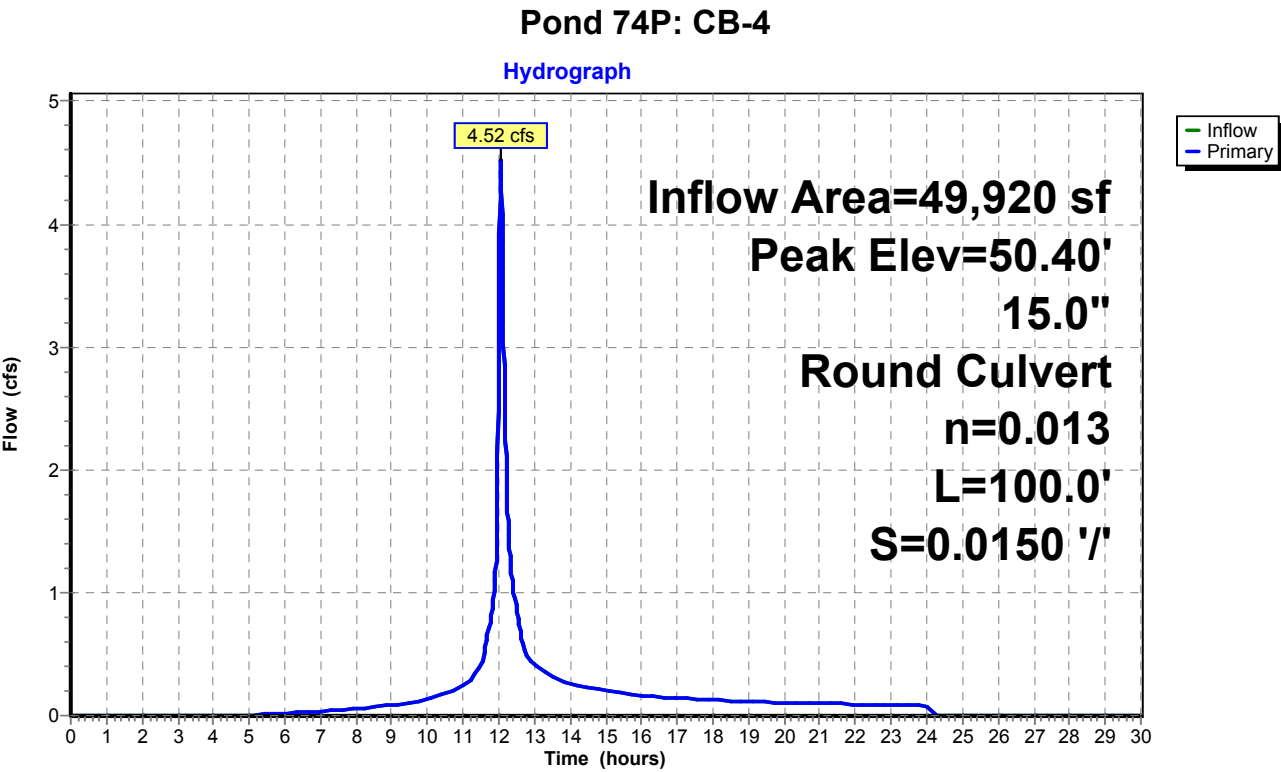
Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 3.50" for 10 year event
Inflow = 4.52 cfs @ 12.06 hrs, Volume= 14,540 cf
Outflow = 4.52 cfs @ 12.06 hrs, Volume= 14,540 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.52 cfs @ 12.06 hrs, Volume= 14,540 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.40' @ 12.06 hrs
Flood Elev= 53.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.51 cfs @ 12.06 hrs HW=50.40' (Free Discharge)
1=Culvert (Inlet Controls 4.51 cfs @ 3.73 fps)



Proposed Conditions

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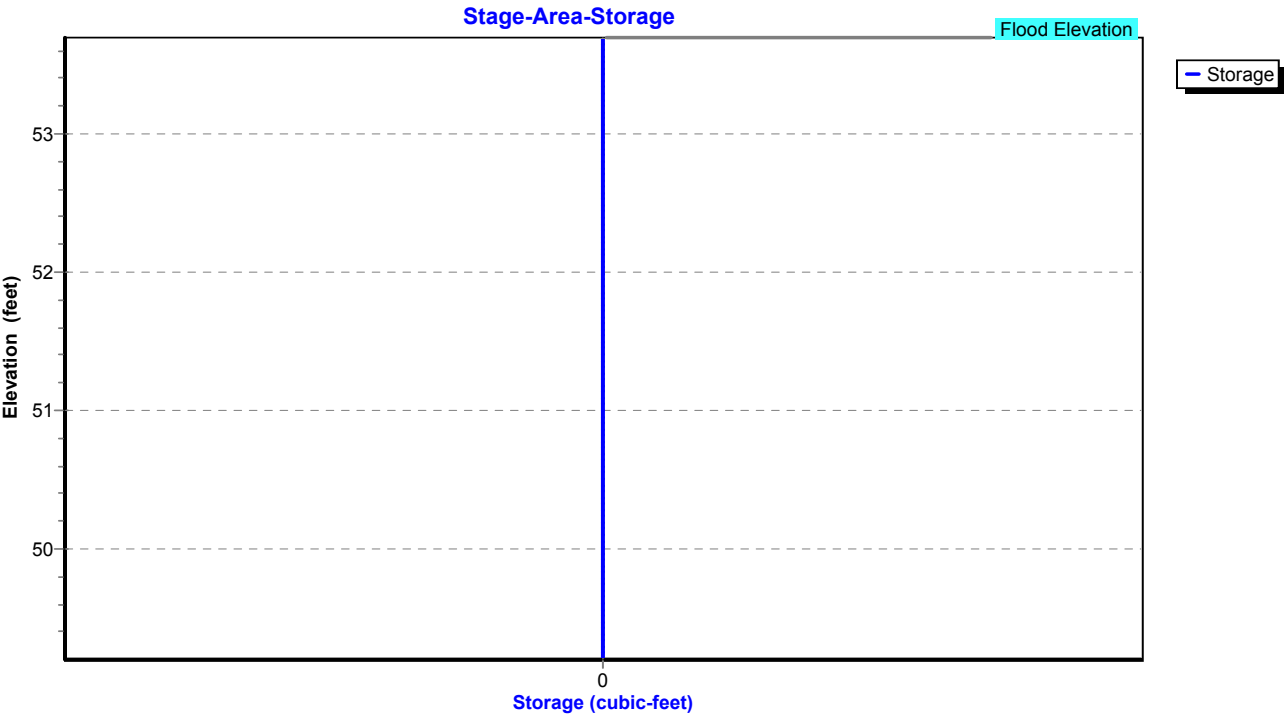
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Pond 74P: CB-4



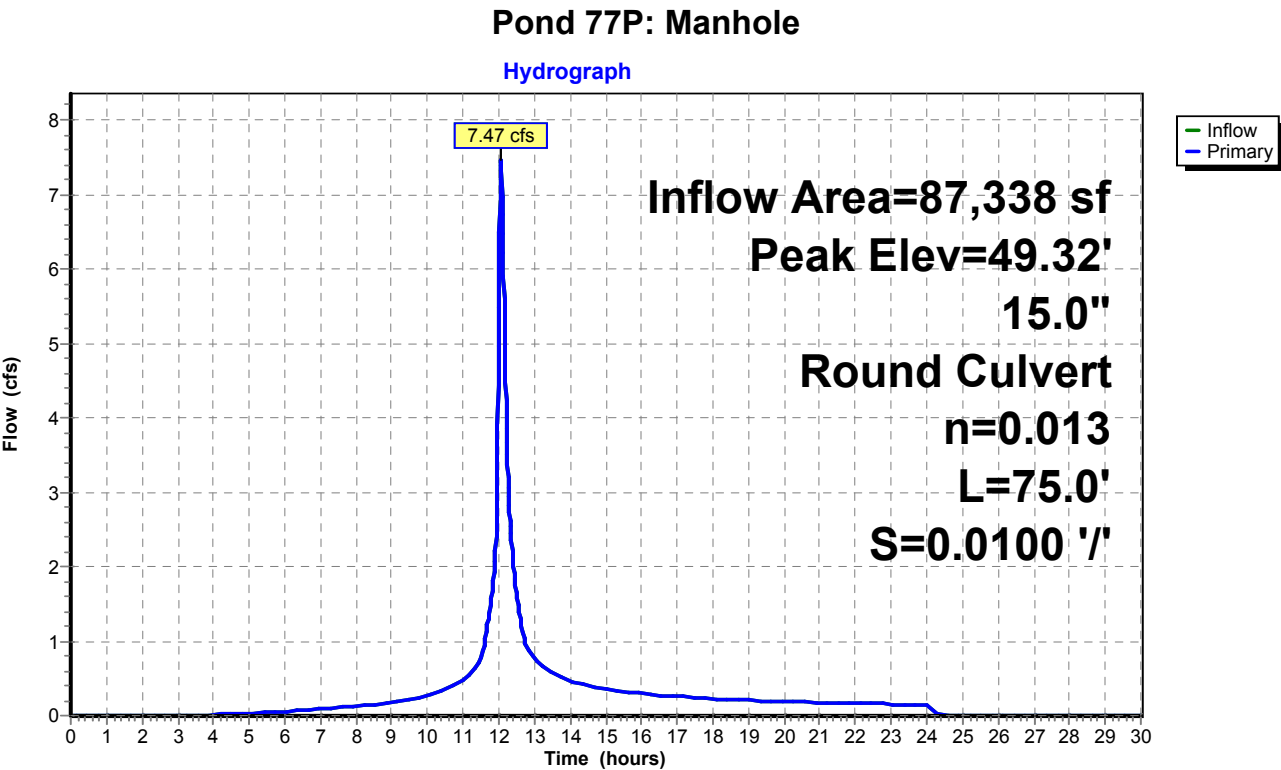
Summary for Pond 77P: Manhole

Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 3.75" for 10 year event
Inflow = 7.47 cfs @ 12.06 hrs, Volume= 27,279 cf
Outflow = 7.47 cfs @ 12.06 hrs, Volume= 27,279 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.47 cfs @ 12.06 hrs, Volume= 27,279 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.32' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.46 cfs @ 12.06 hrs HW=49.31' (Free Discharge)
1=Culvert (Barrel Controls 7.46 cfs @ 6.08 fps)



Proposed Conditions

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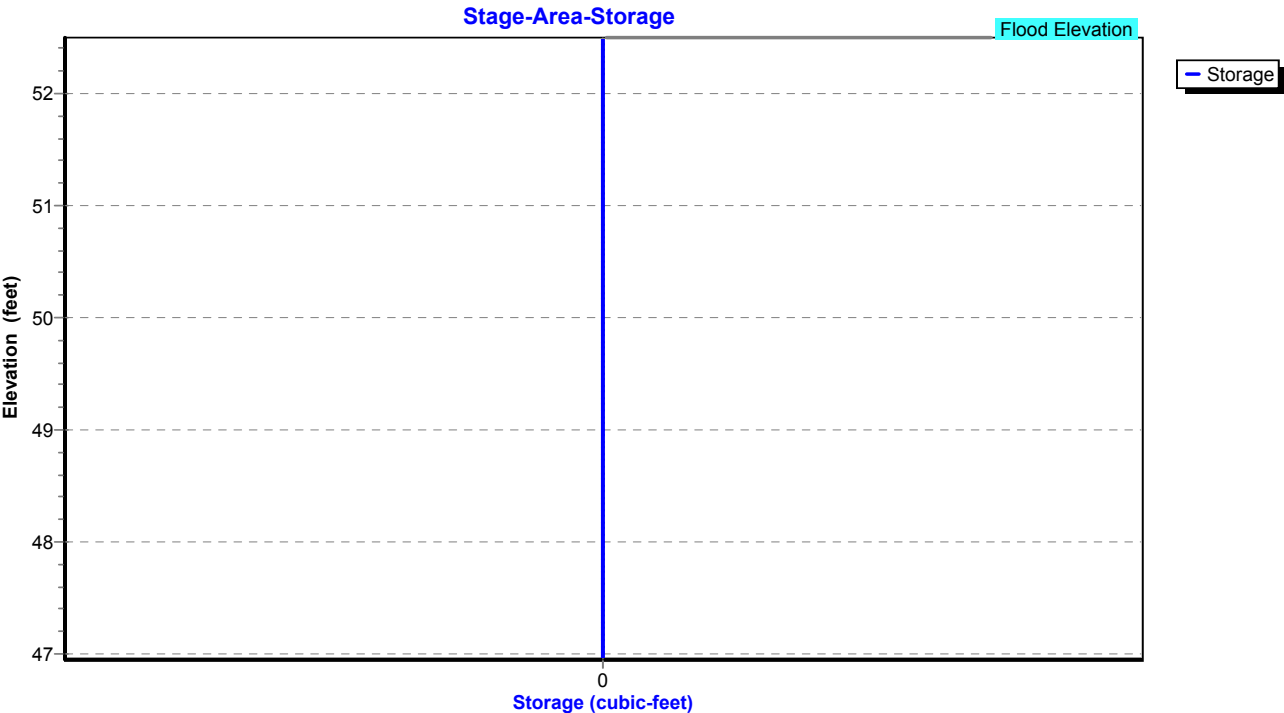
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Pond 77P: Manhole



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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 5.09" for 10 year event
Inflow = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf
Outflow = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.54 cfs @ 12.03 hrs, Volume= 1,663 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.57' @ 12.03 hrs

Flood Elev= 52.50'

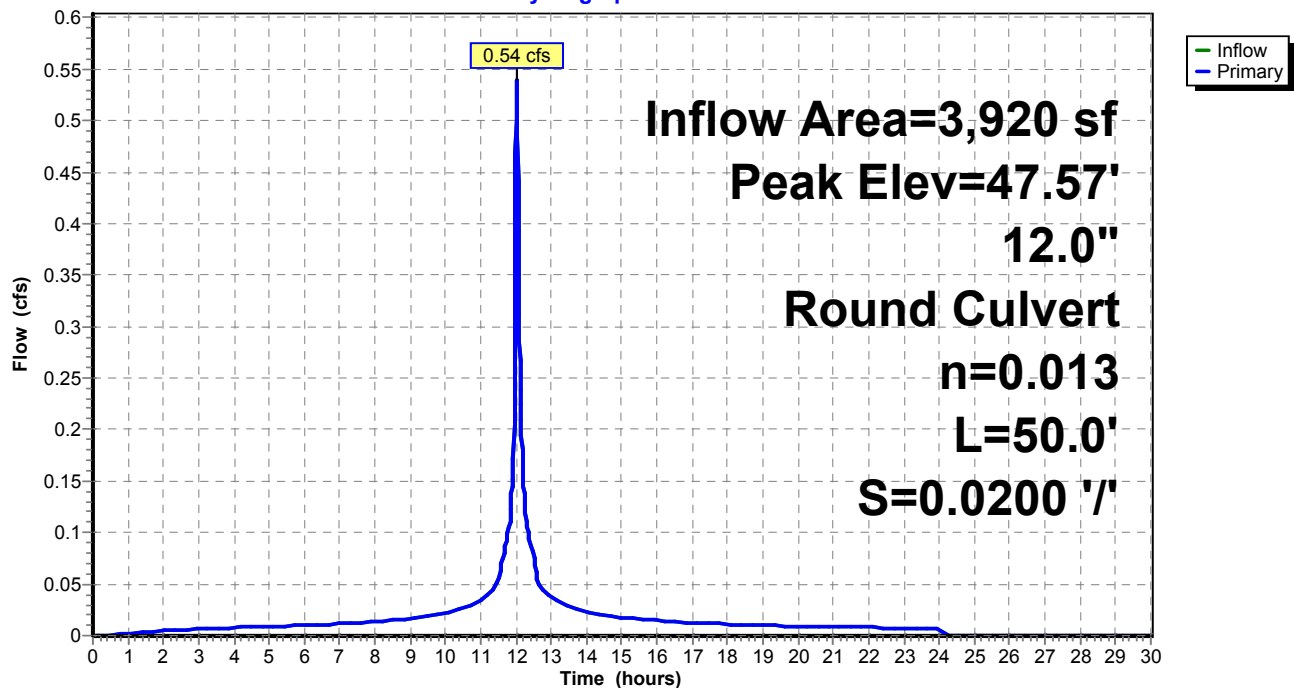
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.54 cfs @ 12.03 hrs HW=47.57' (Free Discharge)

↑1=Culvert (Inlet Controls 0.54 cfs @ 2.06 fps)

Pond 79P: CB-8

Hydrograph



Proposed Conditions

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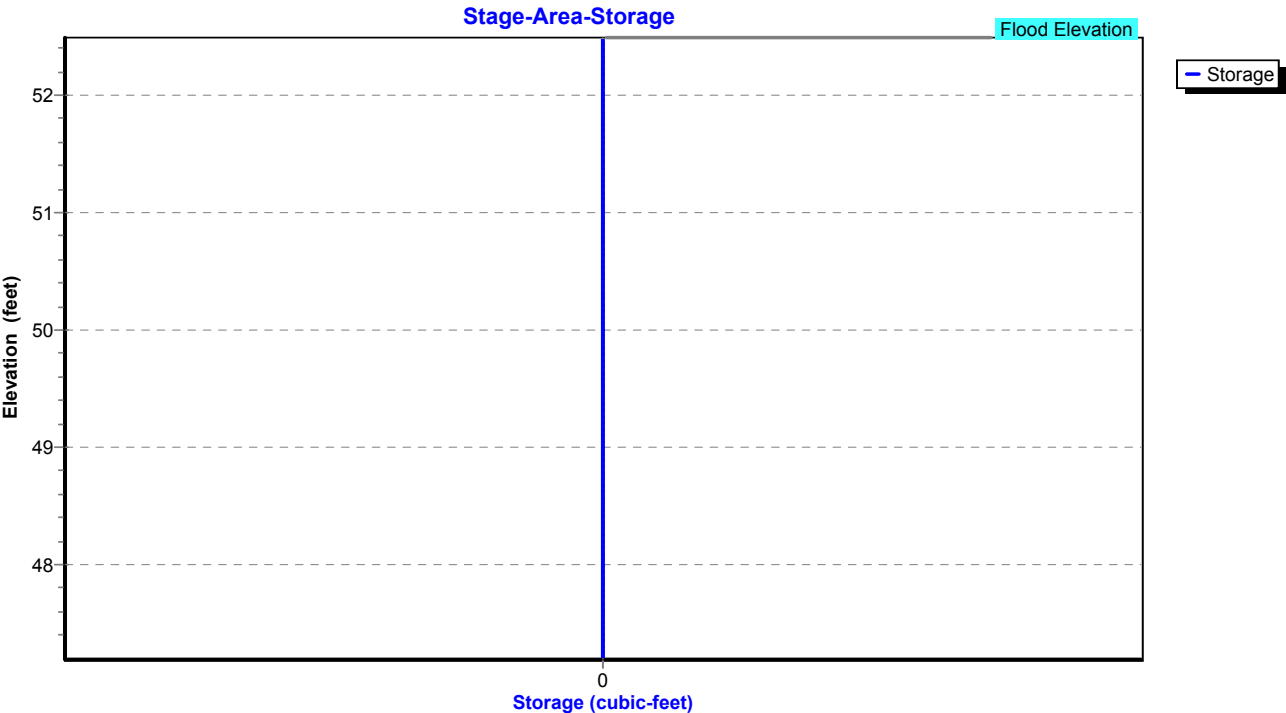
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Pond 79P: CB-8



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Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 3.37" for 10 year event
Inflow = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf
Outflow = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.00 cfs @ 12.07 hrs, Volume= 9,786 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.33' @ 12.07 hrs

Flood Elev= 53.30'

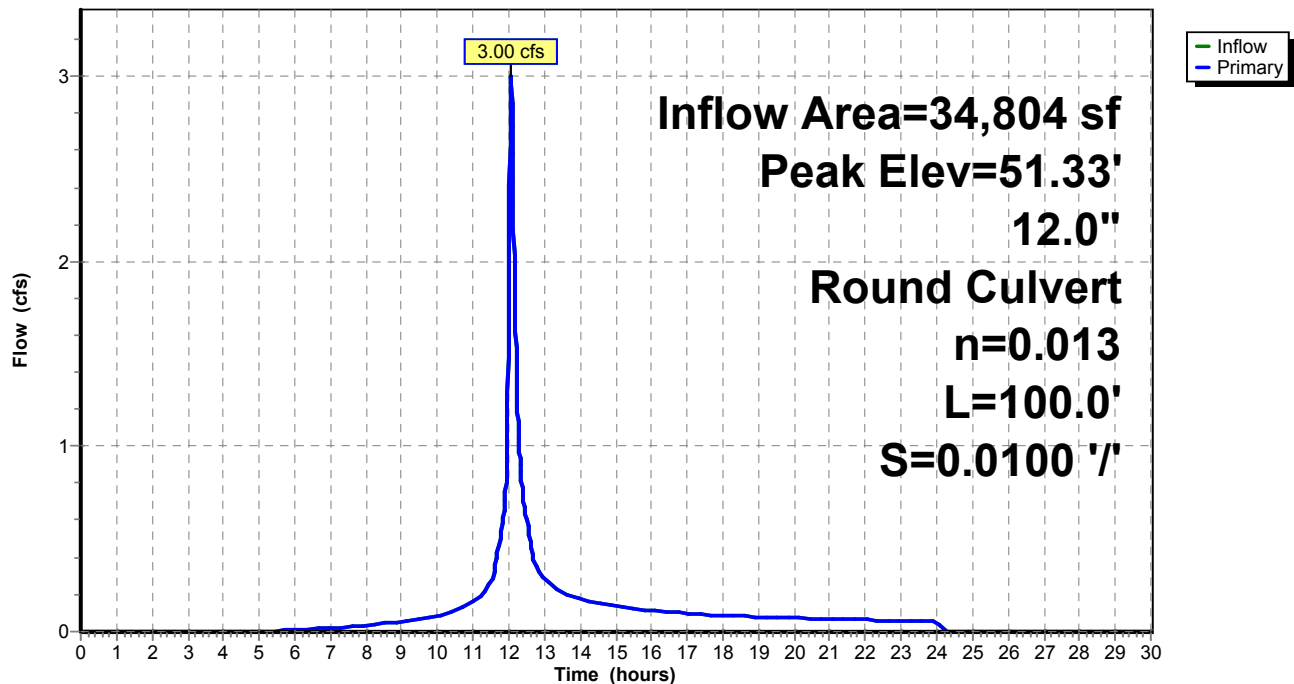
Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.99 cfs @ 12.07 hrs HW=51.33' (Free Discharge)

↑1=Culvert (Inlet Controls 2.99 cfs @ 3.81 fps)

Pond 85P: CB-5

Hydrograph



Proposed Conditions

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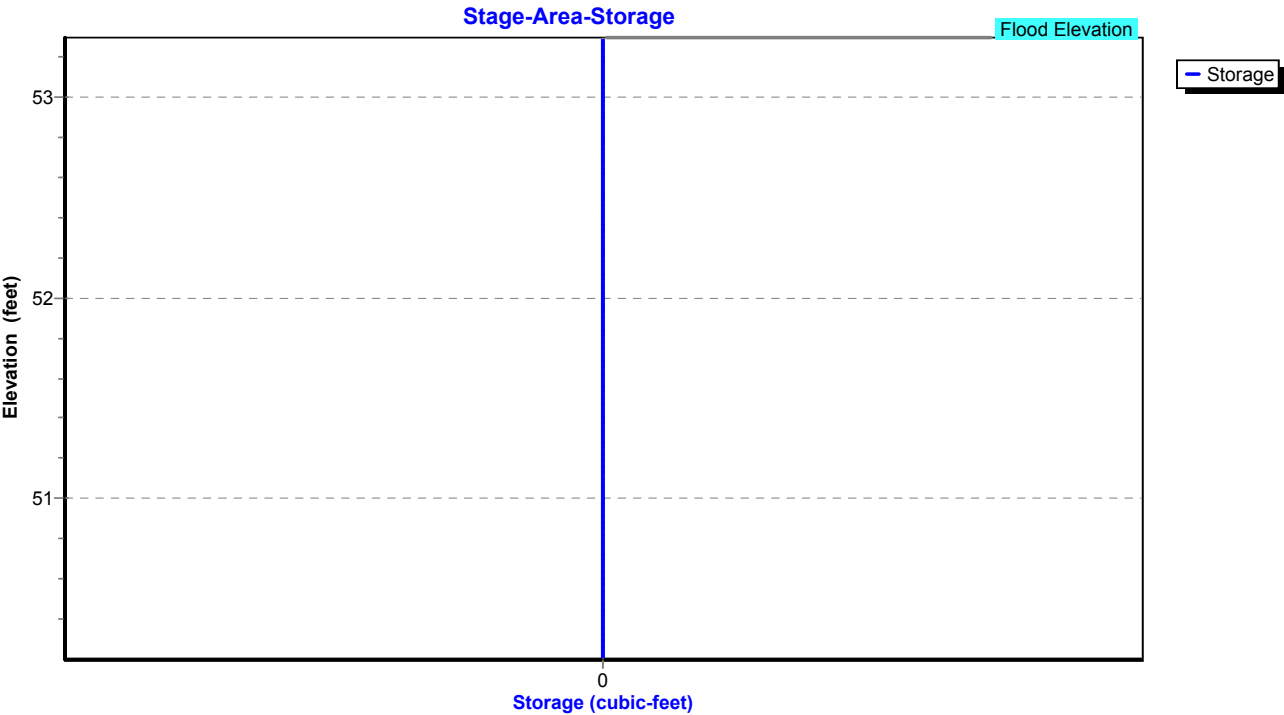
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Pond 85P: CB-5



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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 5.09" for 10 year event
 Inflow = 2.33 cfs @ 12.03 hrs, Volume= 7,170 cf
 Outflow = 0.64 cfs @ 12.20 hrs, Volume= 7,170 cf, Atten= 73%, Lag= 10.8 min
 Primary = 0.64 cfs @ 12.20 hrs, Volume= 7,170 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 53.79' @ 12.20 hrs Surf.Area= 749 sf Storage= 1,222 cf

Plug-Flow detention time= 18.7 min calculated for 7,170 cf (100% of inflow)

Center-of-Mass det. time= 18.6 min (765.9 - 747.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.64 cfs @ 12.20 hrs HW=53.79' (Free Discharge)

- 1=Culvert (Passes 0.64 cfs of 5.28 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.64 cfs @ 7.28 fps)
 3=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Proposed Conditions

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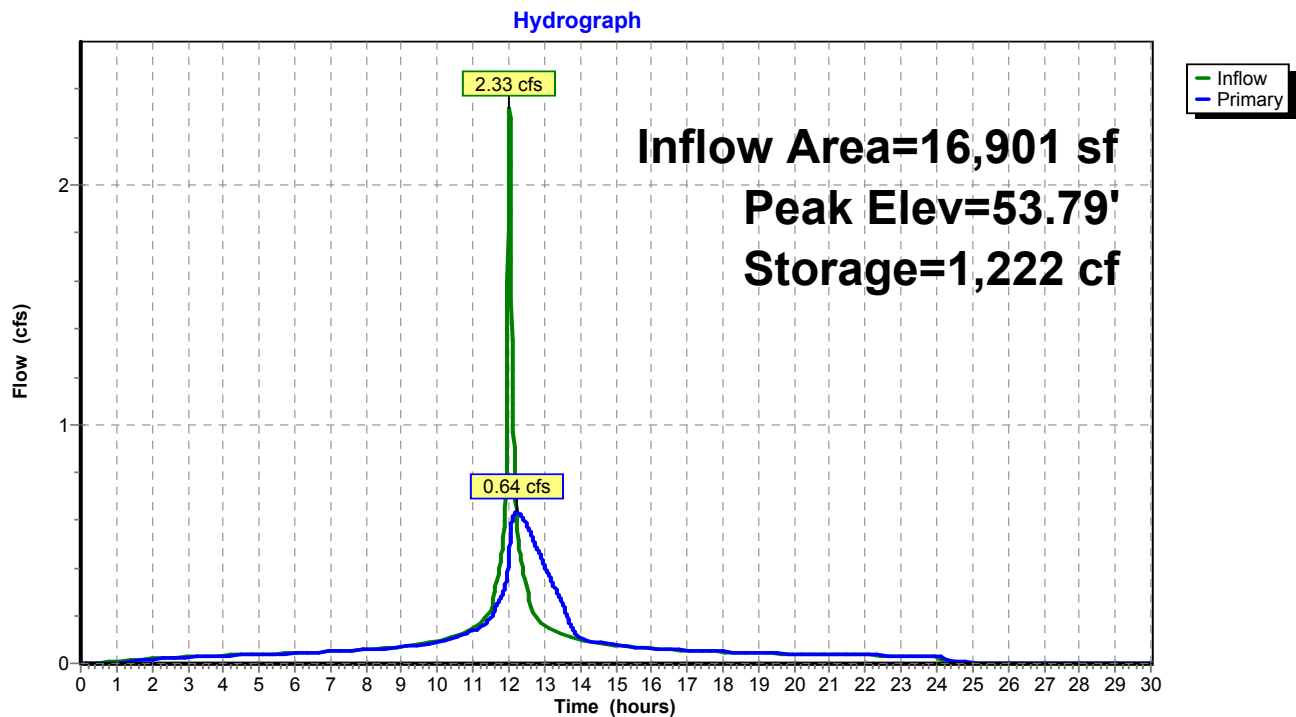
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NORWALK 24-hr S1 10 year Rainfall=5.33"

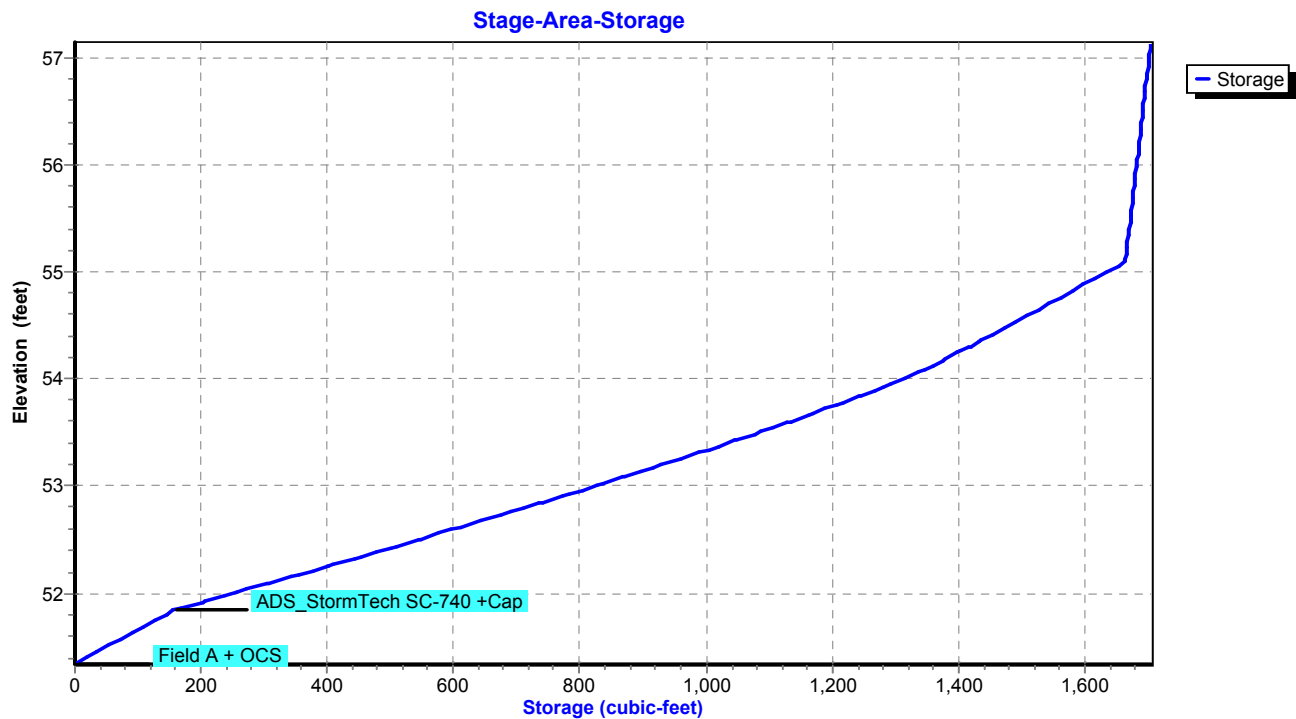
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 4S: Area 4

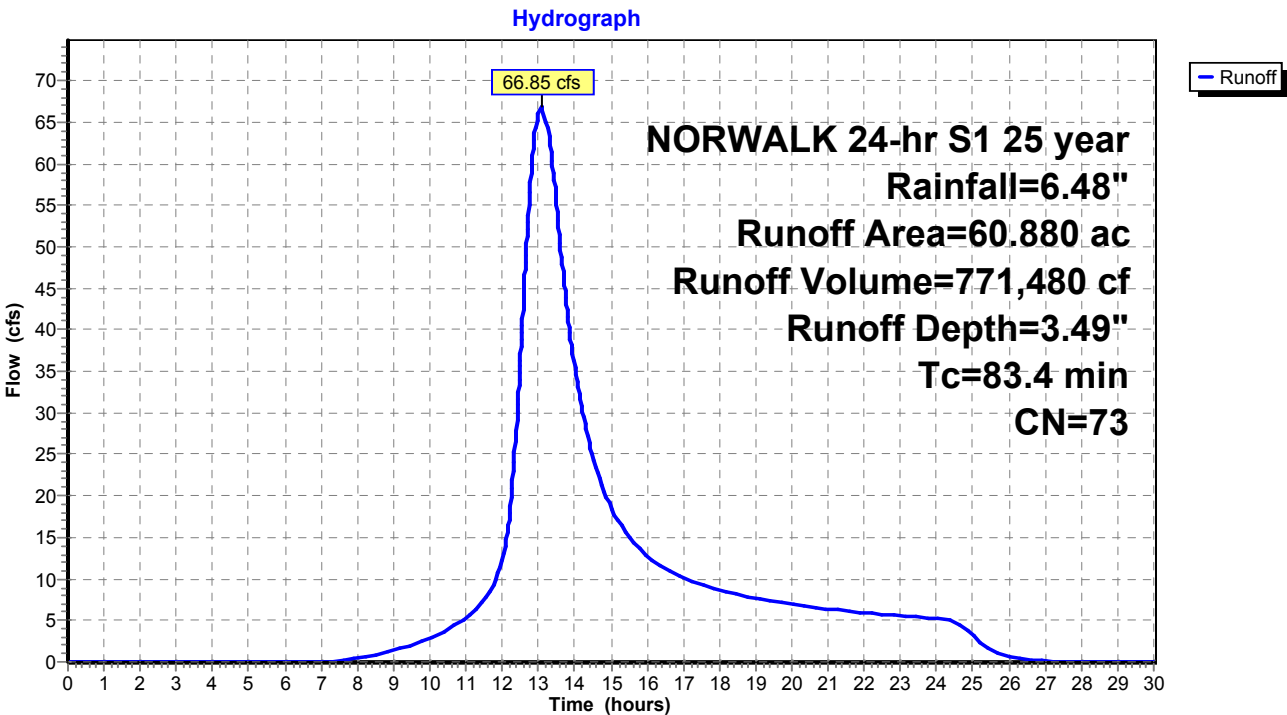
Runoff = 66.85 cfs @ 13.07 hrs, Volume= 771,480 cf, Depth= 3.49"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Summary for Subcatchment 5S: Area 5

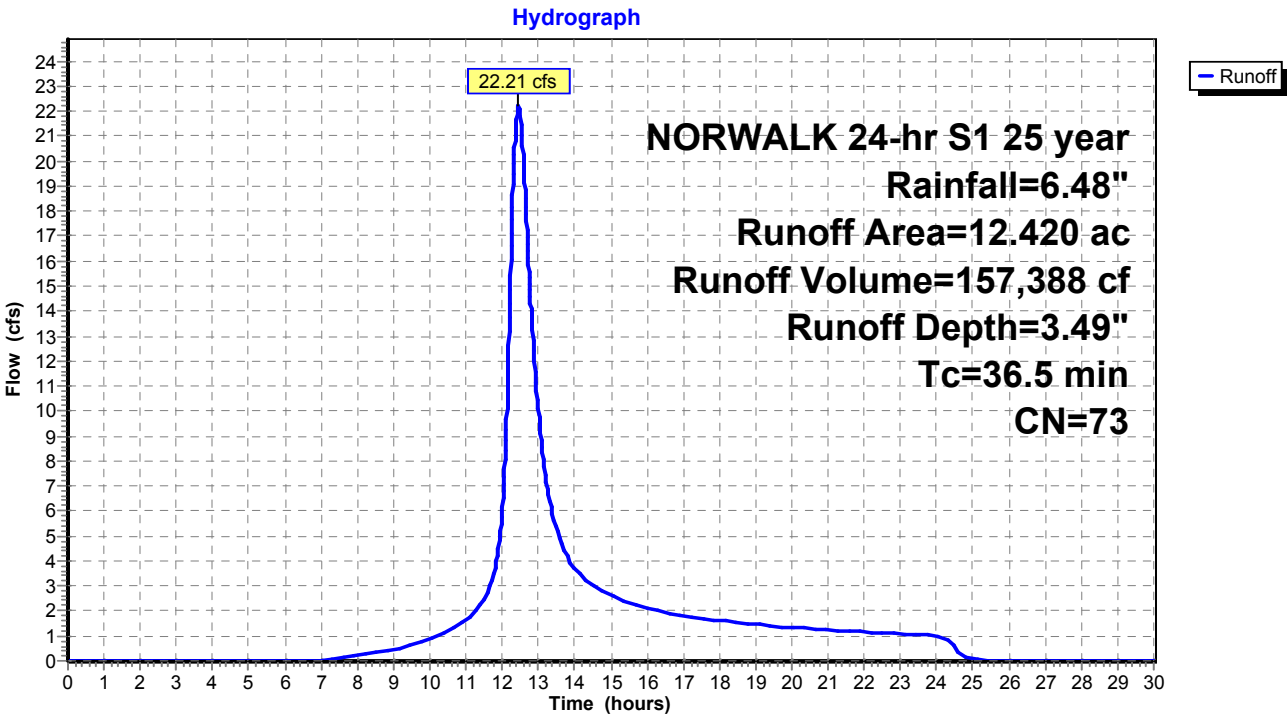
Runoff = 22.21 cfs @ 12.45 hrs, Volume= 157,388 cf, Depth= 3.49"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Summary for Subcatchment 6S: Area 6

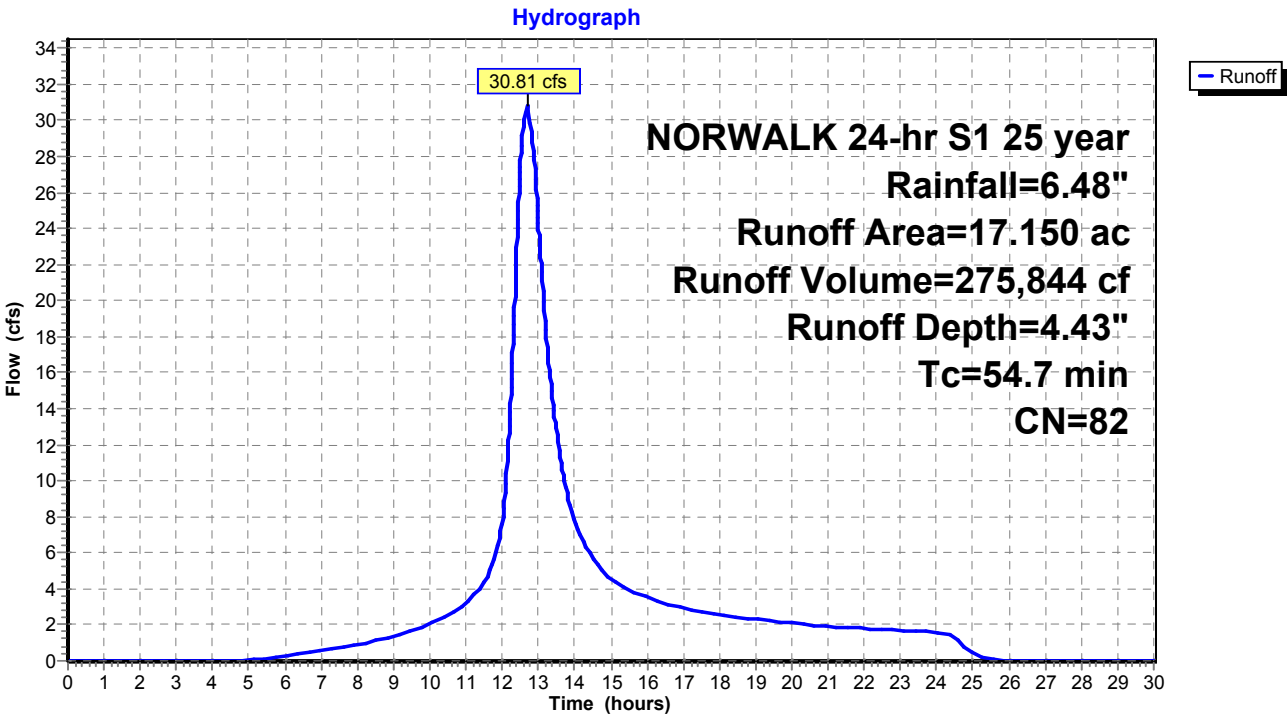
Runoff = 30.81 cfs @ 12.70 hrs, Volume= 275,844 cf, Depth= 4.43"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 7S: Area 7

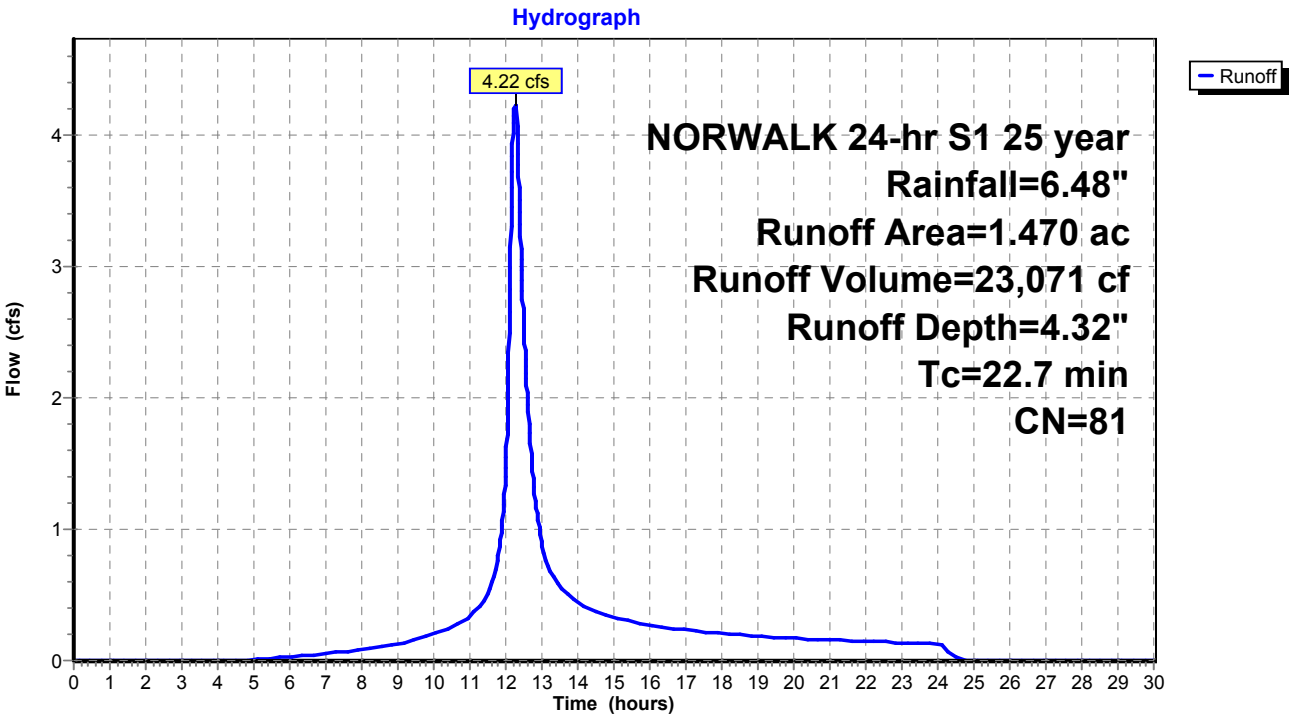
Runoff = 4.22 cfs @ 12.26 hrs, Volume= 23,071 cf, Depth= 4.32"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Summary for Subcatchment 8S: Area 8

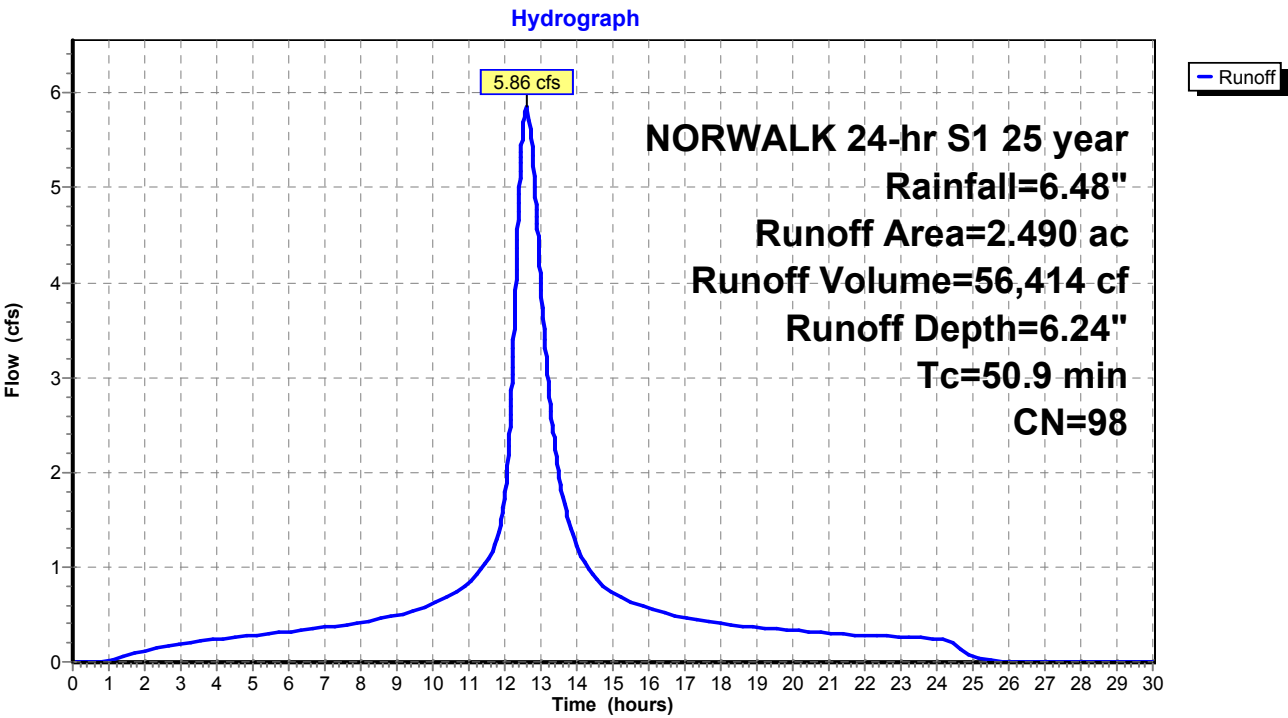
Runoff = 5.86 cfs @ 12.61 hrs, Volume= 56,414 cf, Depth= 6.24"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Summary for Subcatchment 9S: Area 9

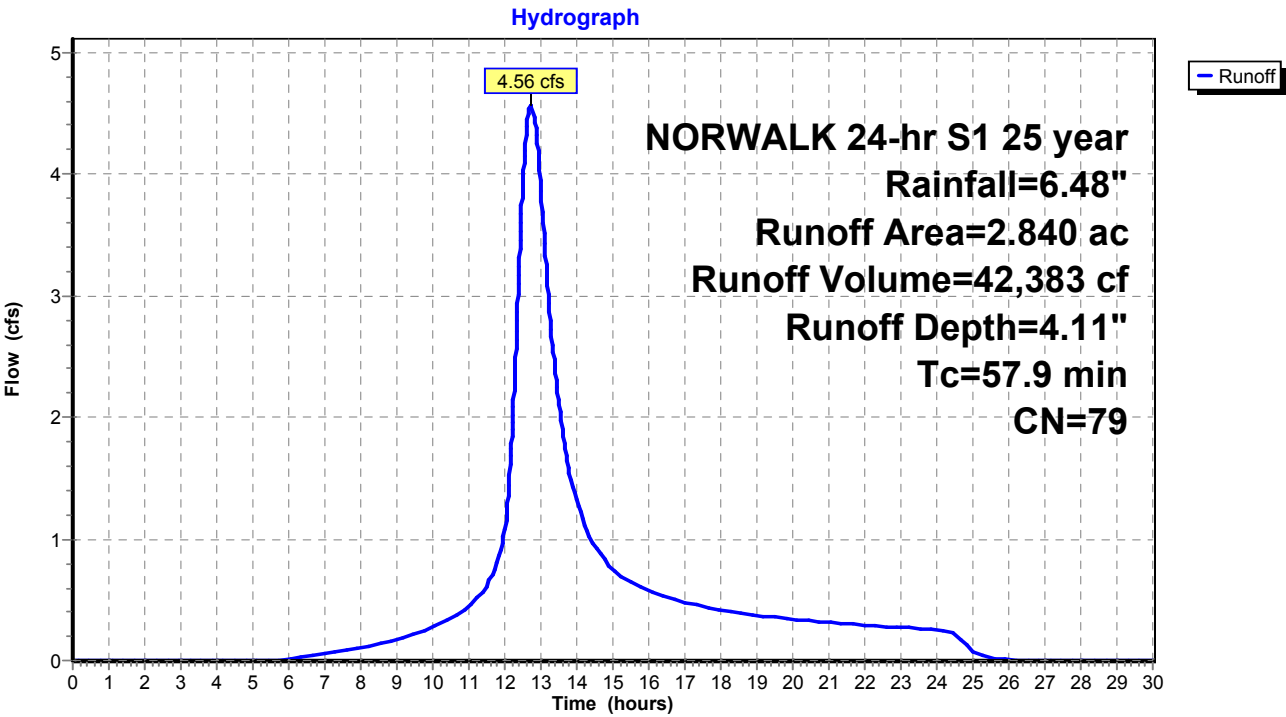
Runoff = 4.56 cfs @ 12.73 hrs, Volume= 42,383 cf, Depth= 4.11"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Summary for Subcatchment 10AS: Area 10A

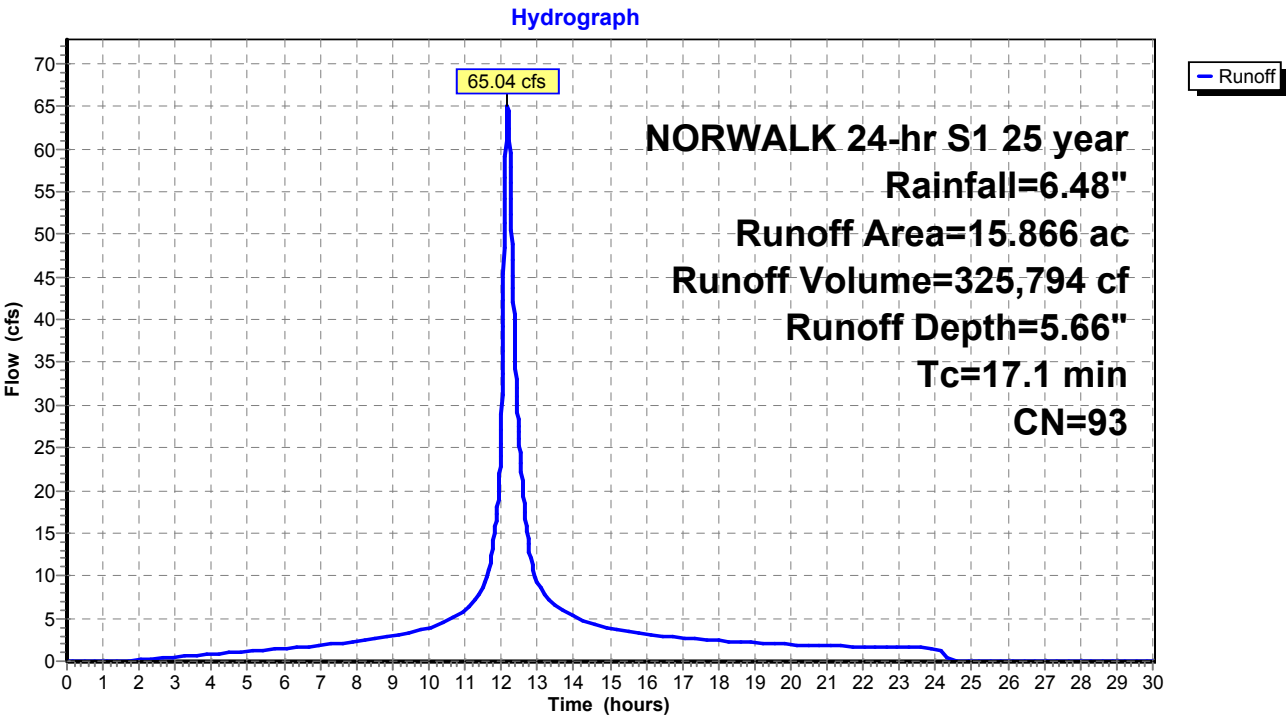
Runoff = 65.04 cfs @ 12.18 hrs, Volume= 325,794 cf, Depth= 5.66"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Summary for Subcatchment 10BS: Area 10B

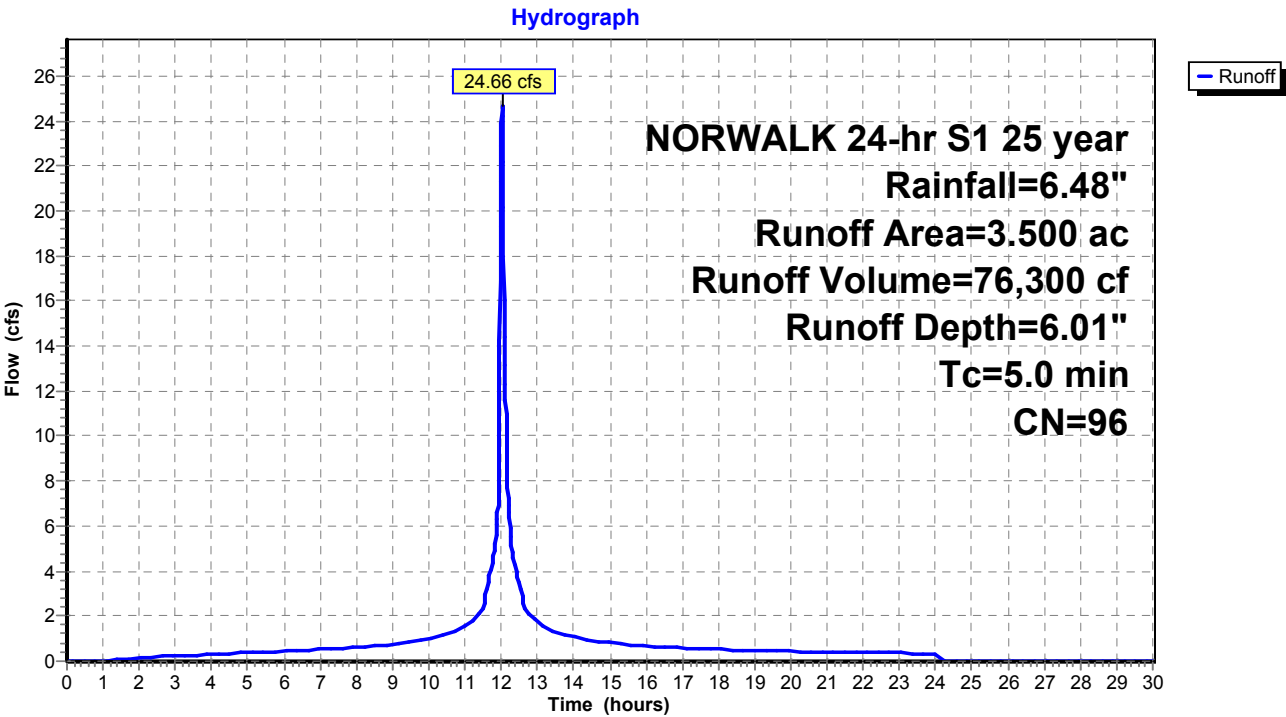
Runoff = 24.66 cfs @ 12.03 hrs, Volume= 76,300 cf, Depth= 6.01"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Summary for Subcatchment 10CS: Area 10C

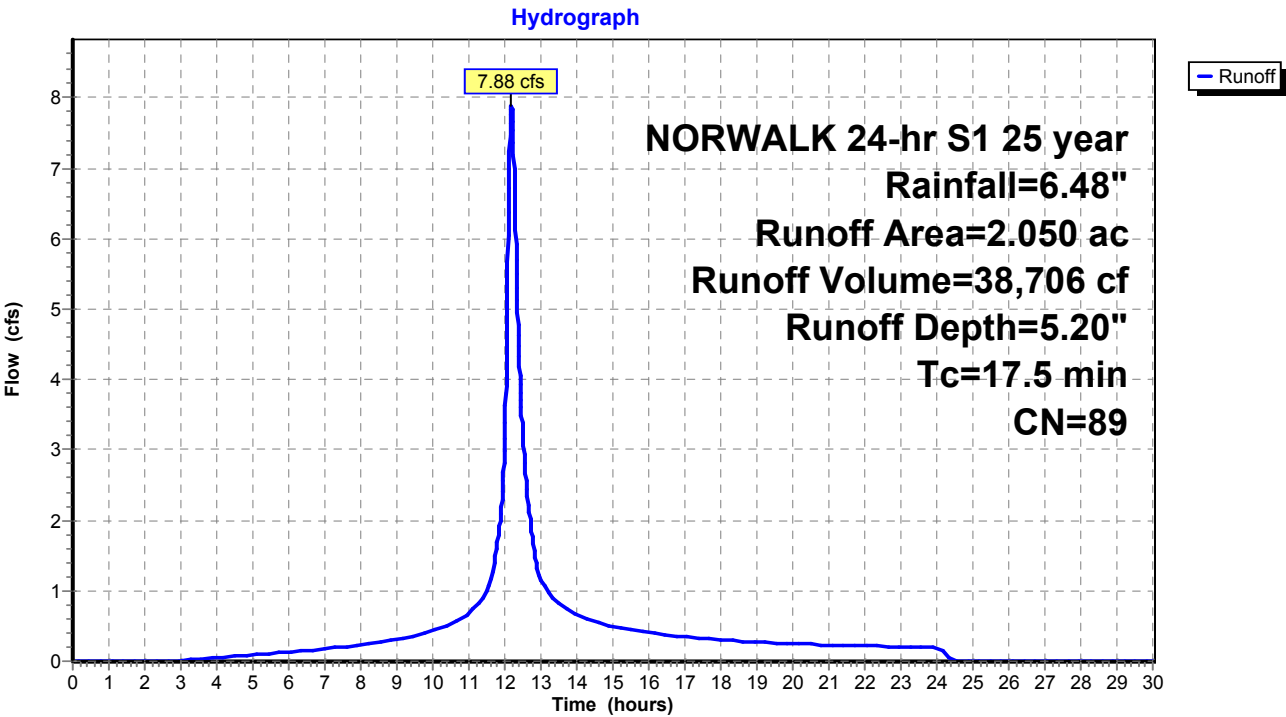
Runoff = 7.88 cfs @ 12.19 hrs, Volume= 38,706 cf, Depth= 5.20"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



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Summary for Subcatchment 10DS: Area 10D

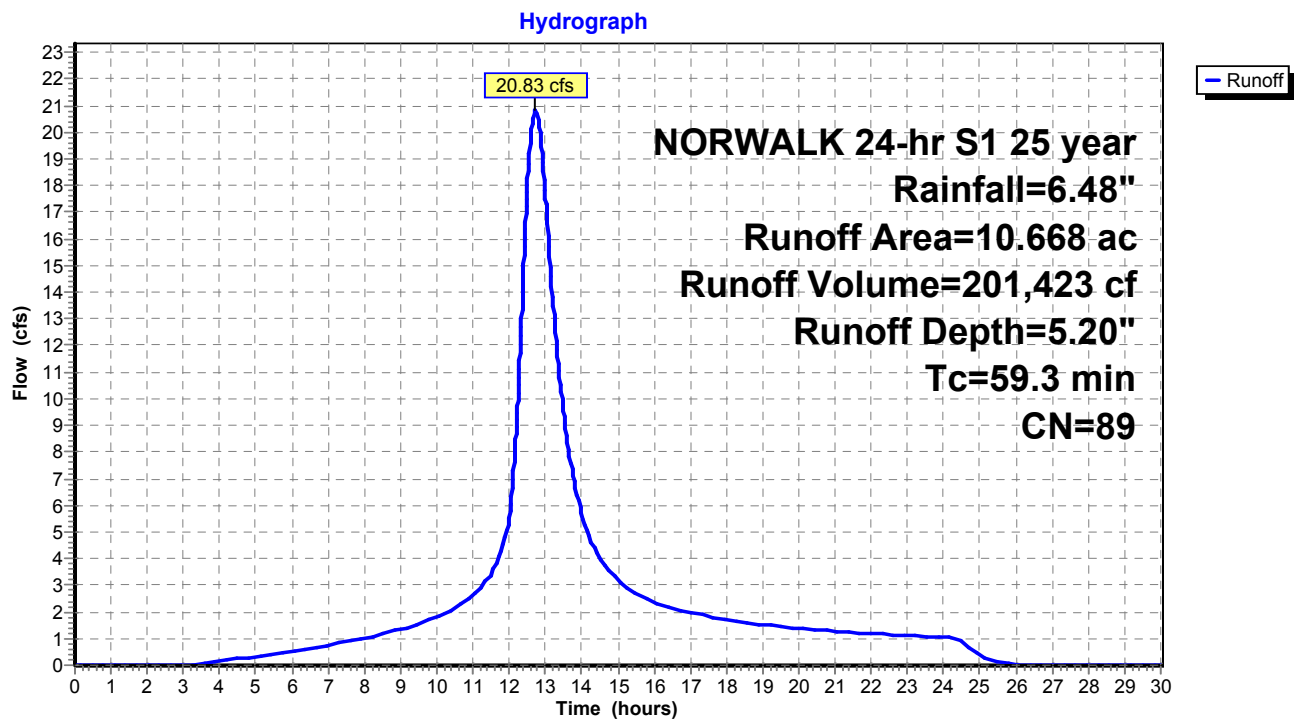
Runoff = 20.83 cfs @ 12.72 hrs, Volume= 201,423 cf, Depth= 5.20"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Summary for Subcatchment 10ES: Area 10E

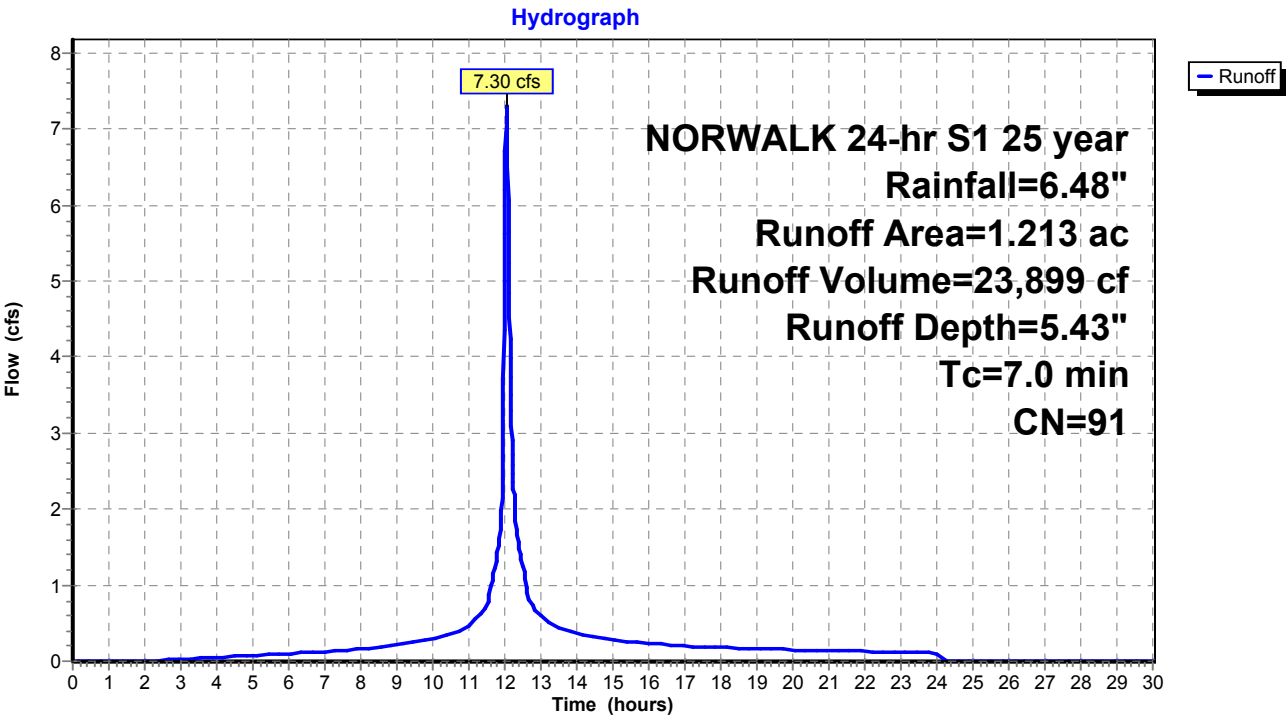
Runoff = 7.30 cfs @ 12.05 hrs, Volume= 23,899 cf, Depth= 5.43"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.781	98	Paved parking, HSG C
0.432	79	50-75% Grass cover, Fair, HSG C
1.213	91	Weighted Average
0.432		35.61% Pervious Area
0.781		64.39% Impervious Area

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

Subcatchment 10ES: Area 10E



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10FS: Area 10F

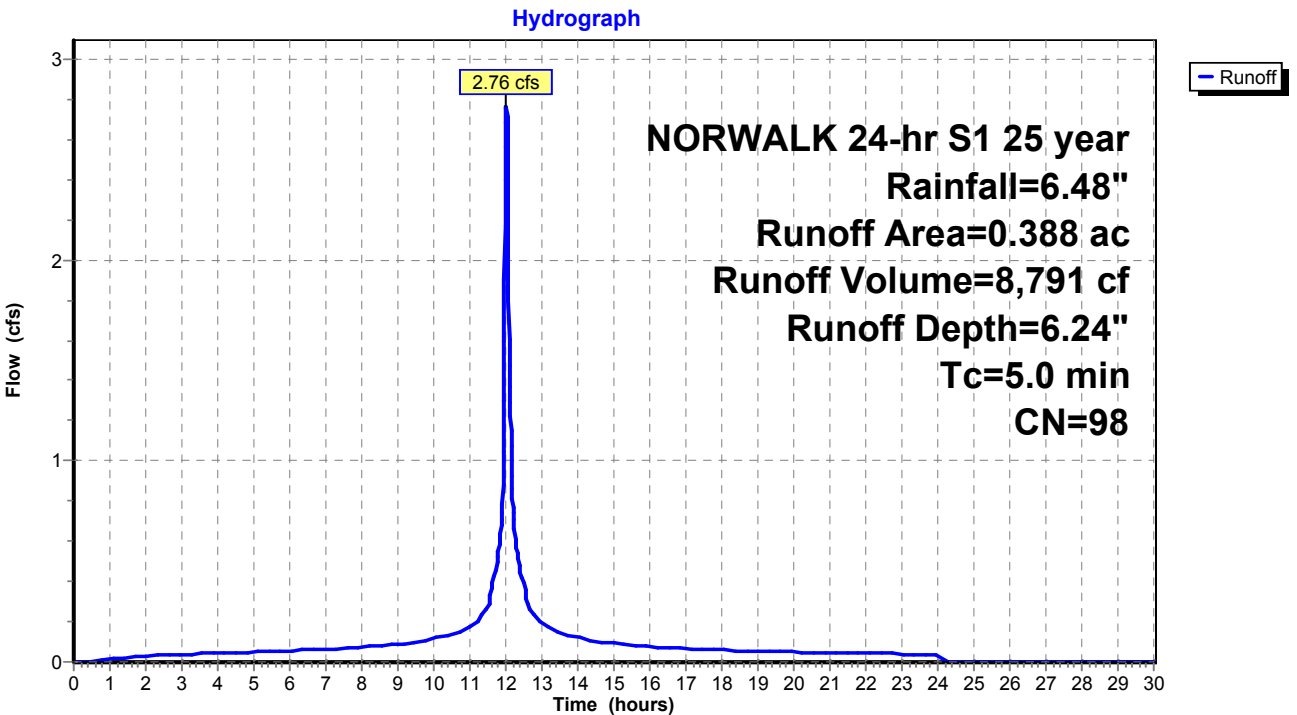
Runoff = 2.76 cfs @ 12.03 hrs, Volume= 8,791 cf, Depth= 6.24"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 10GS: Area 10G

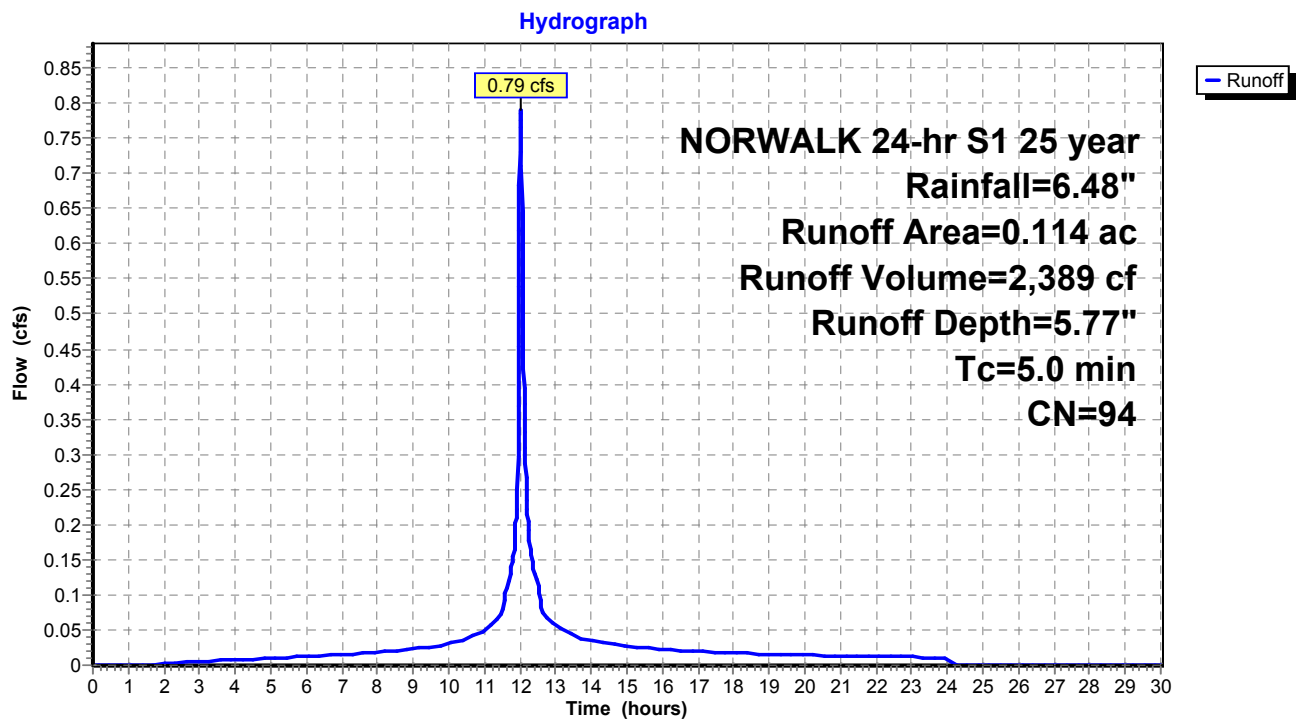
Runoff = 0.79 cfs @ 12.03 hrs, Volume= 2,389 cf, Depth= 5.77"
Routed to Pond 20P : ADS Stormtech (160LP)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
* 0.092	98	Paved parking, HSG C
* 0.022	79	50-75% Grass cover, Fair, HSG C
0.114	94	Weighted Average
0.022		19.30% Pervious Area
0.092		80.70% Impervious Area

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

Subcatchment 10GS: Area 10G



Summary for Subcatchment 11S: Area 11

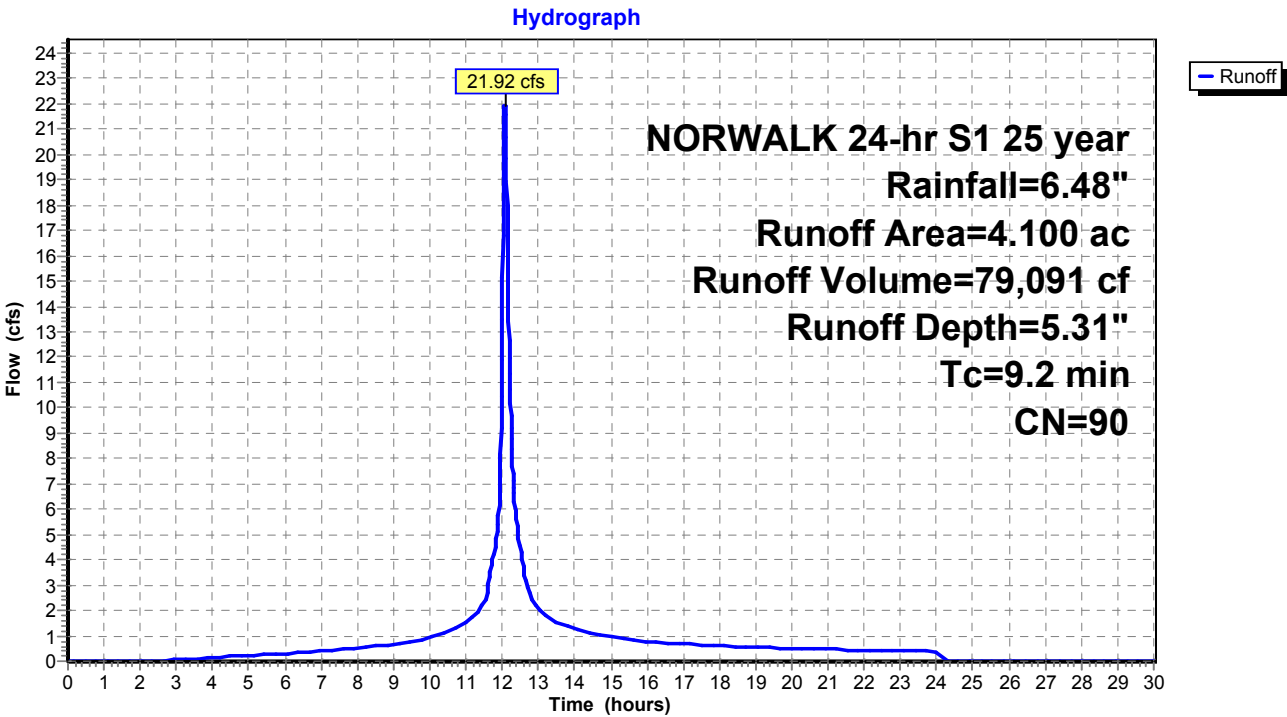
Runoff = 21.92 cfs @ 12.07 hrs, Volume= 79,091 cf, Depth= 5.31"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Summary for Subcatchment 12S: Area 12

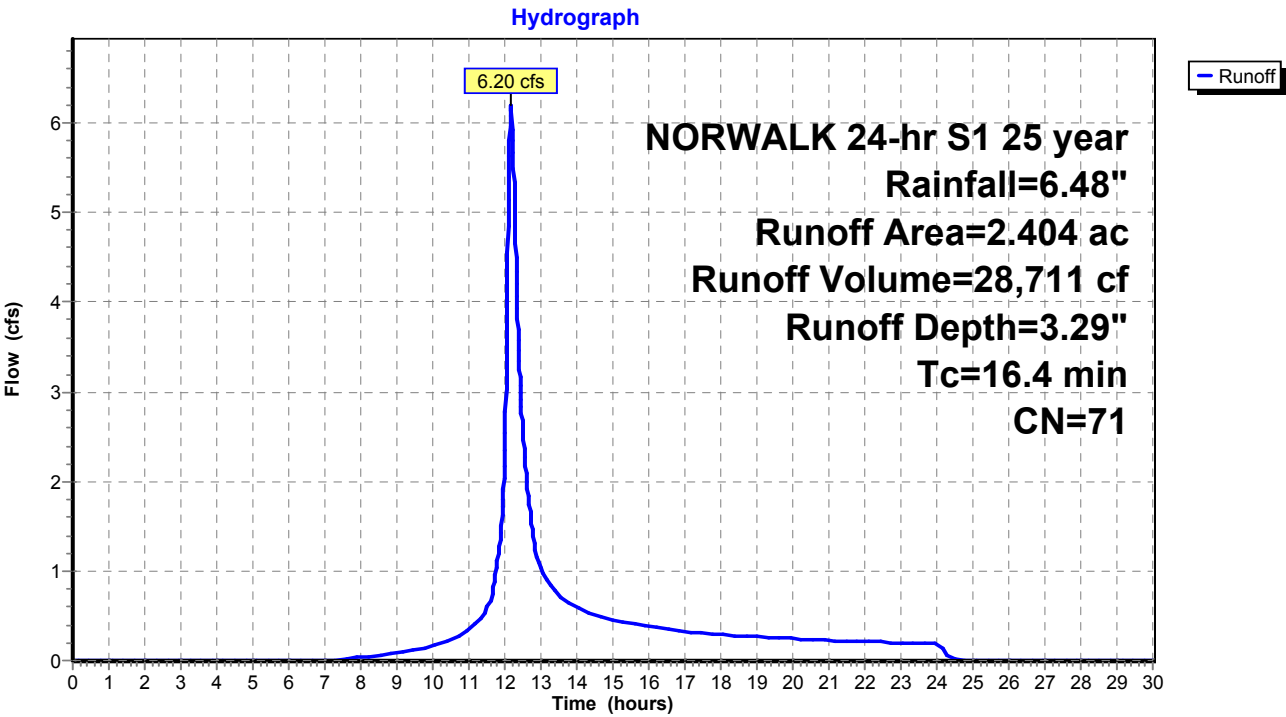
Runoff = 6.20 cfs @ 12.18 hrs, Volume= 28,711 cf, Depth= 3.29"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Summary for Subcatchment 13S: Area 13

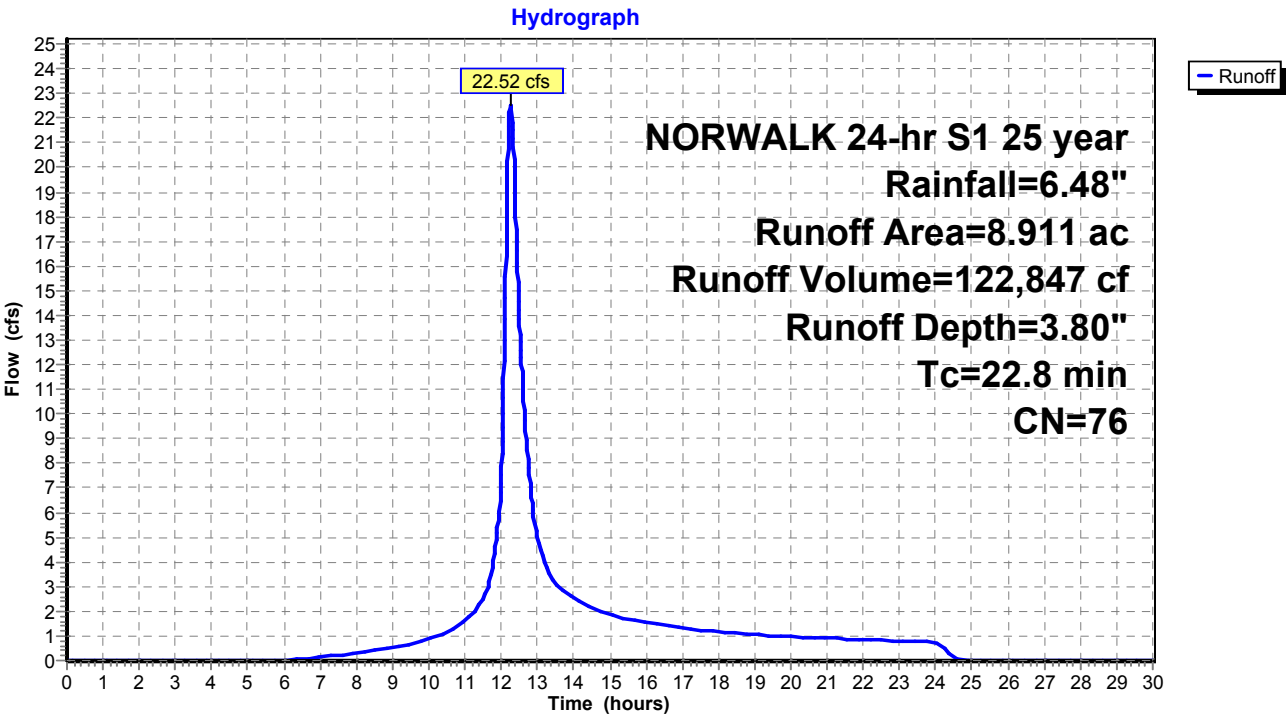
Runoff = 22.52 cfs @ 12.26 hrs, Volume= 122,847 cf, Depth= 3.80"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 14S: Area 14

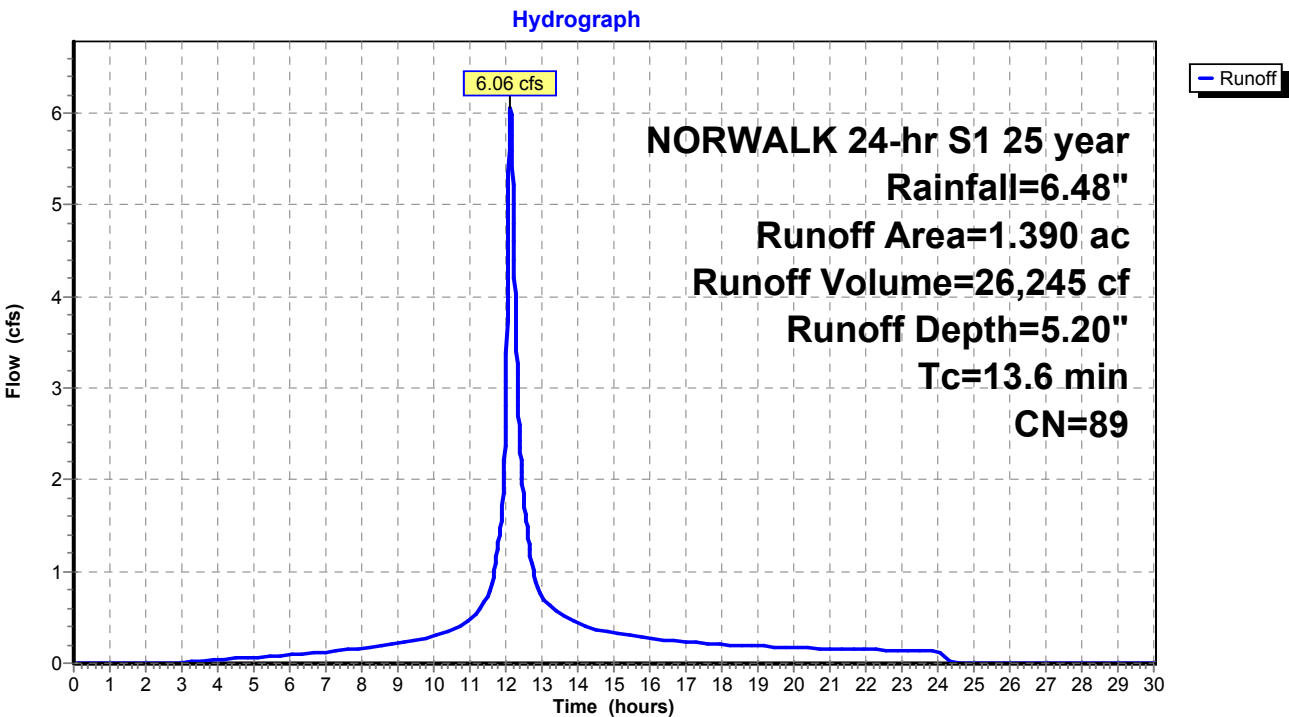
Runoff = 6.06 cfs @ 12.13 hrs, Volume= 26,245 cf, Depth= 5.20"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Summary for Subcatchment 15S: Area 15

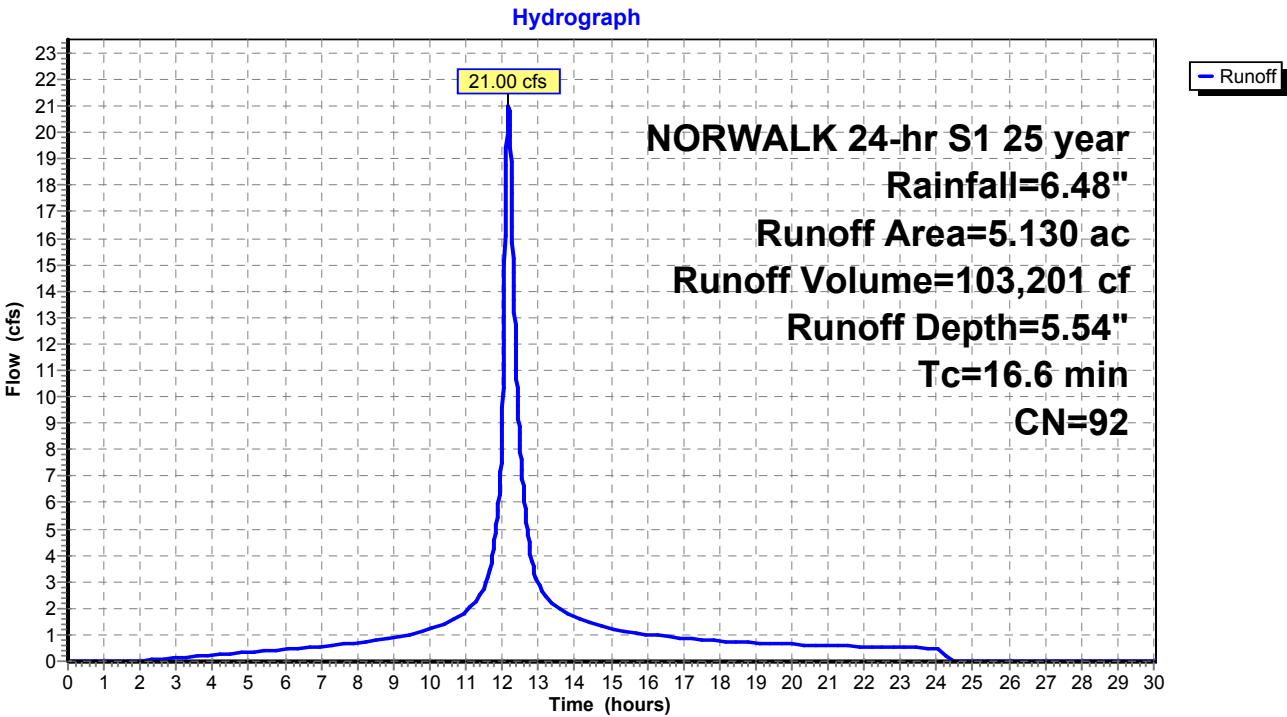
Runoff = 21.00 cfs @ 12.17 hrs, Volume= 103,201 cf, Depth= 5.54"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 16S: Area 16A

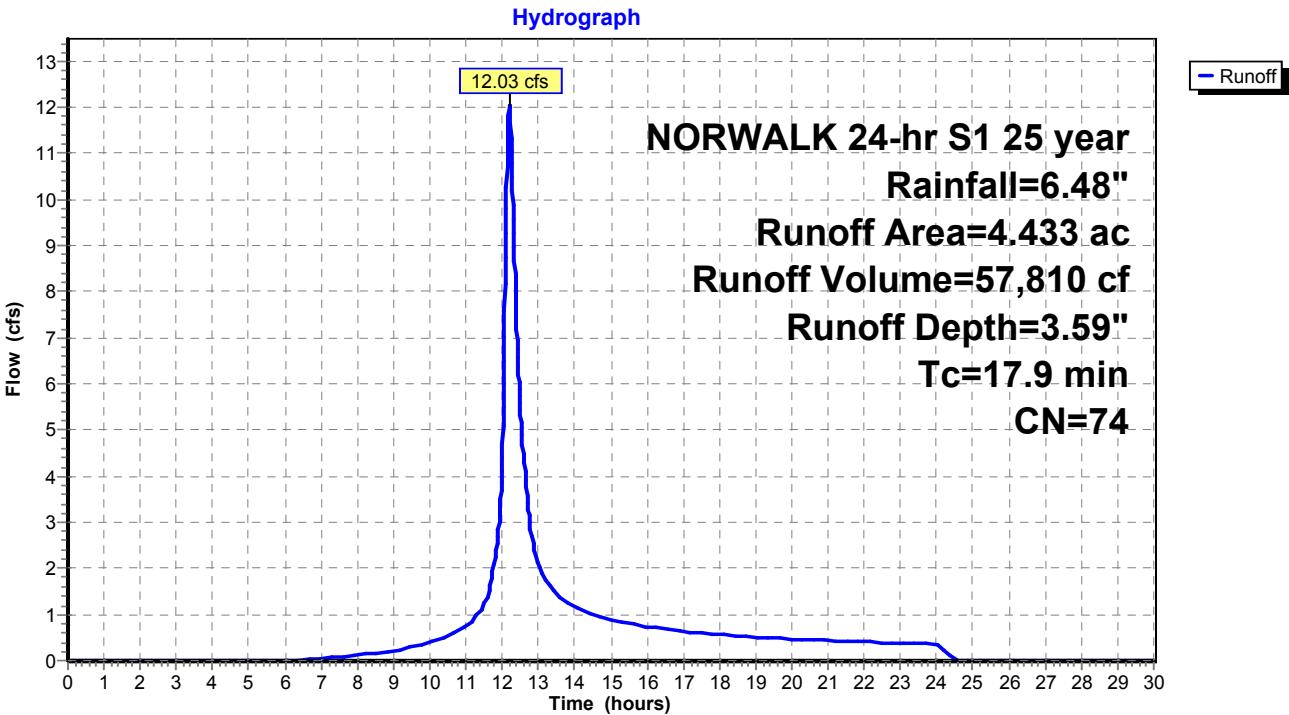
Runoff = 12.03 cfs @ 12.19 hrs, Volume= 57,810 cf, Depth= 3.59"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



Summary for Subcatchment 17S: Area 17

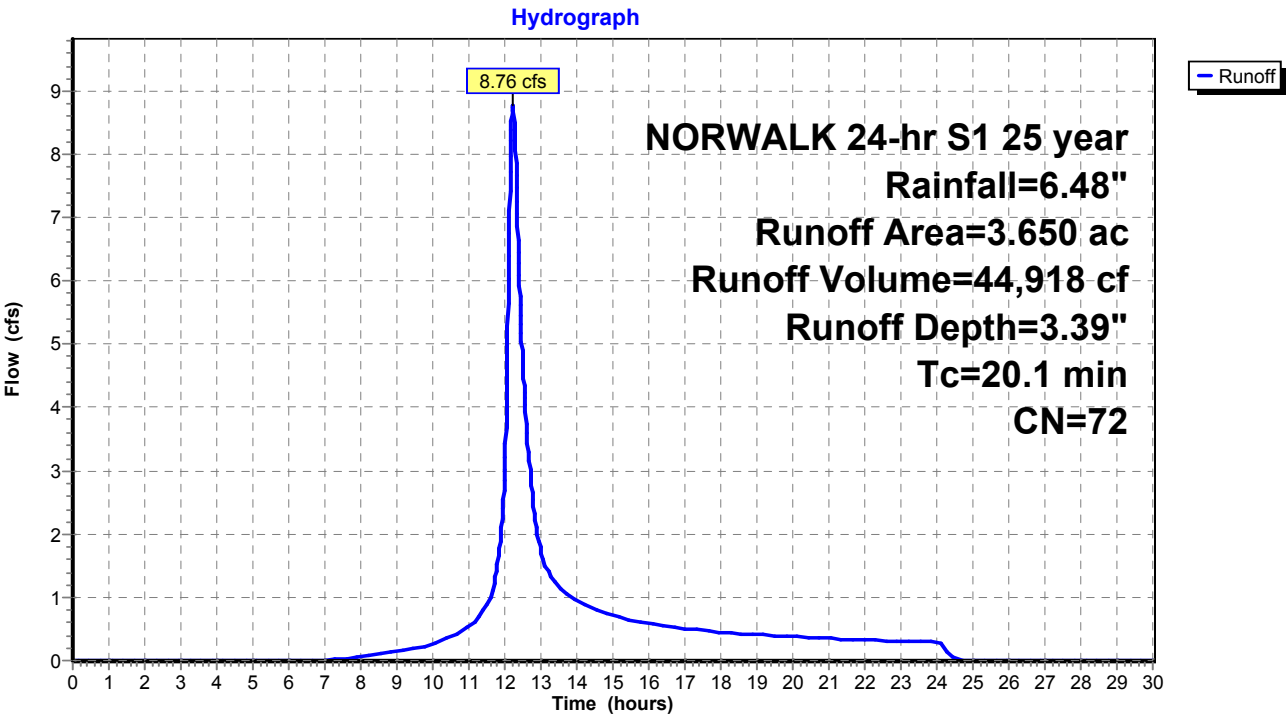
Runoff = 8.76 cfs @ 12.22 hrs, Volume= 44,918 cf, Depth= 3.39"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 20S: Area 20

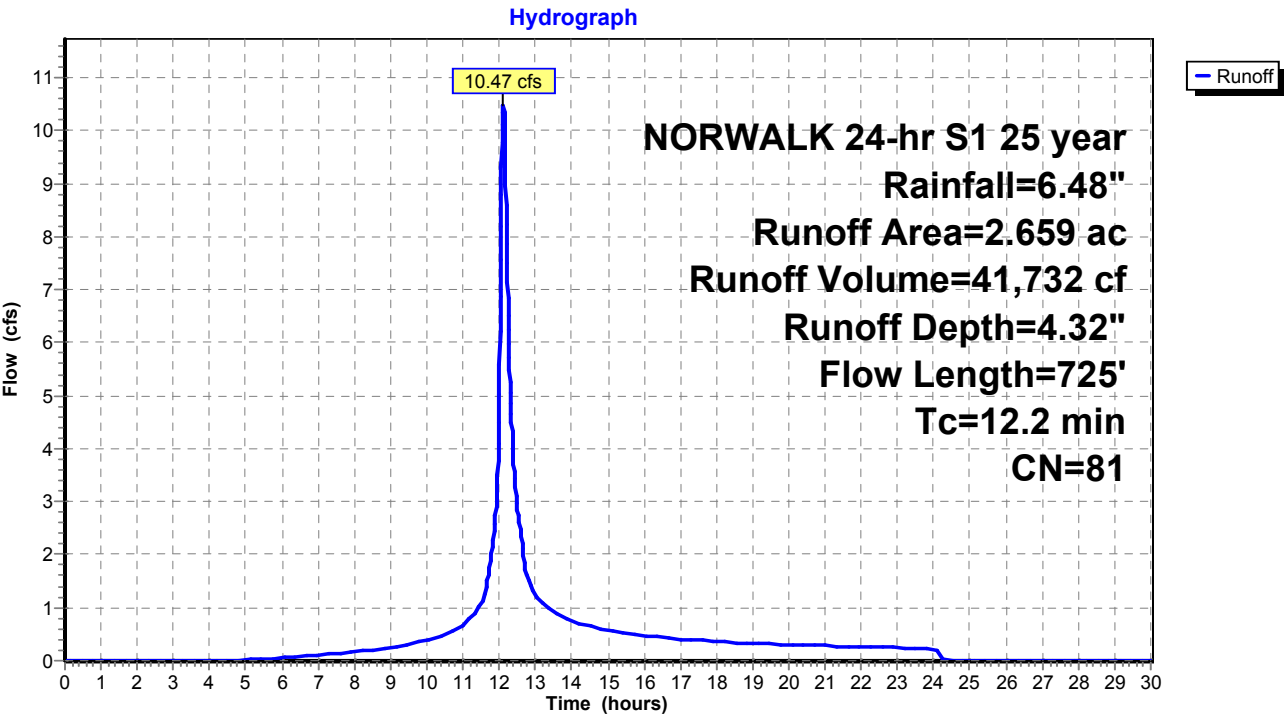
Runoff = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf, Depth= 4.32"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Summary for Subcatchment 21S: Area 21

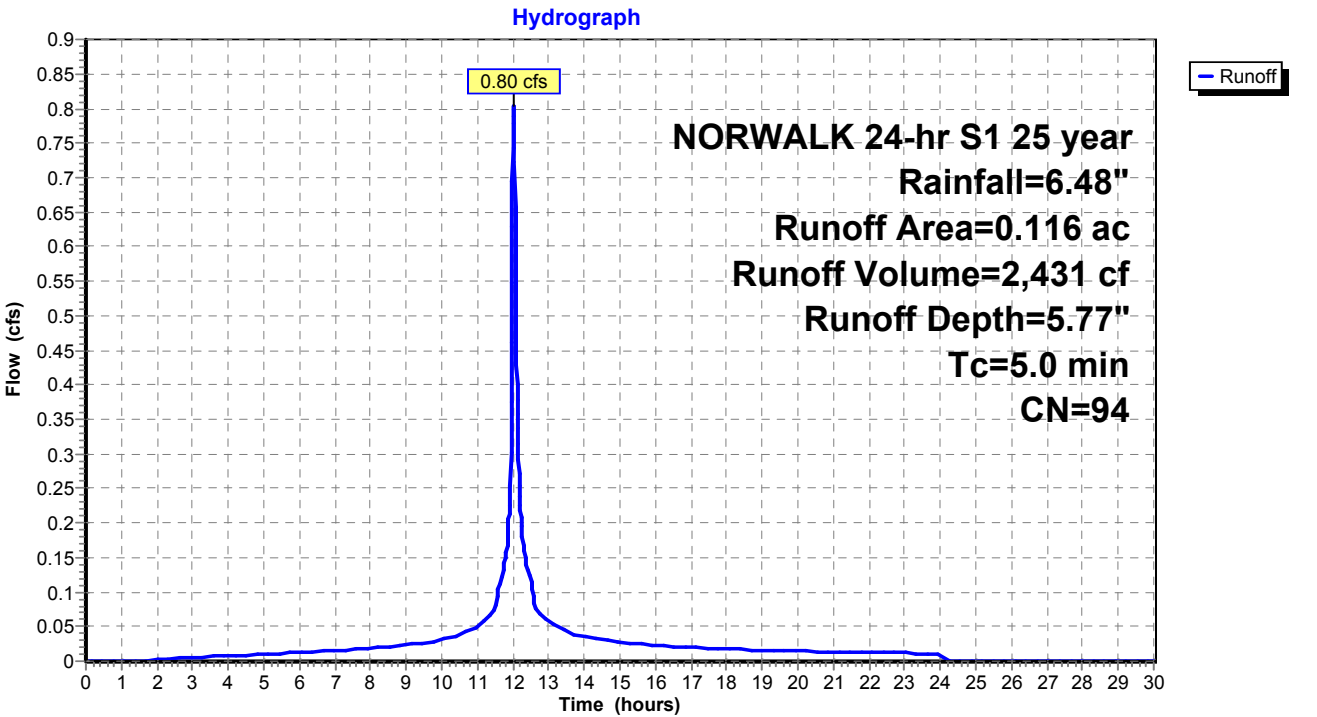
Runoff = 0.80 cfs @ 12.03 hrs, Volume= 2,431 cf, Depth= 5.77"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Summary for Subcatchment 22S: Area 22

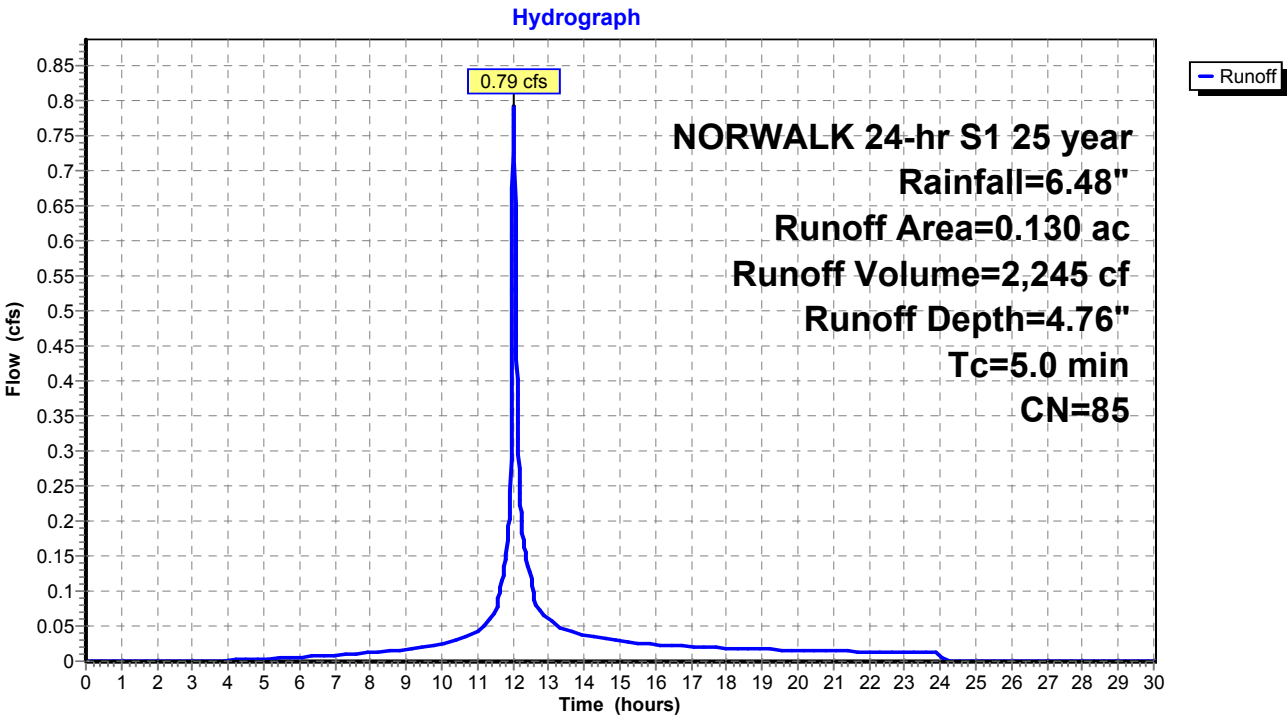
Runoff = 0.79 cfs @ 12.03 hrs, Volume= 2,245 cf, Depth= 4.76"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Summary for Subcatchment 23S: Area 23

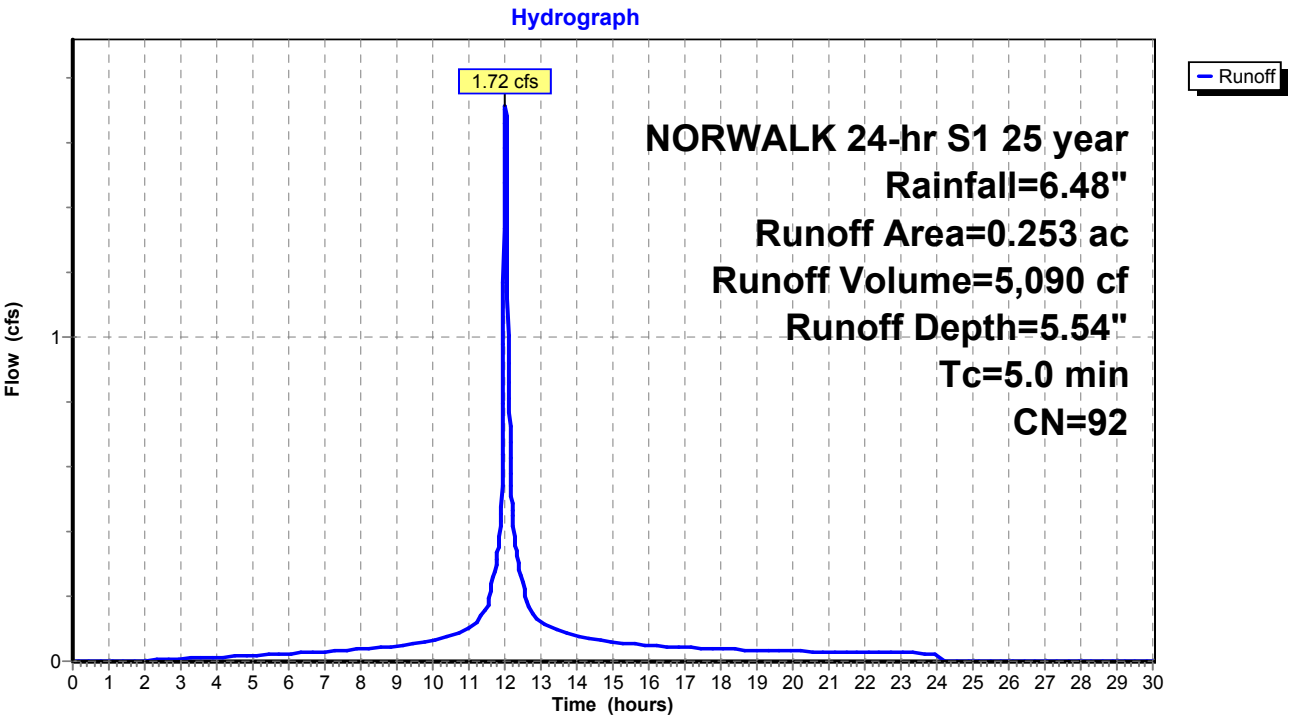
Runoff = 1.72 cfs @ 12.03 hrs, Volume= 5,090 cf, Depth= 5.54"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Summary for Subcatchment 24S: Area 24

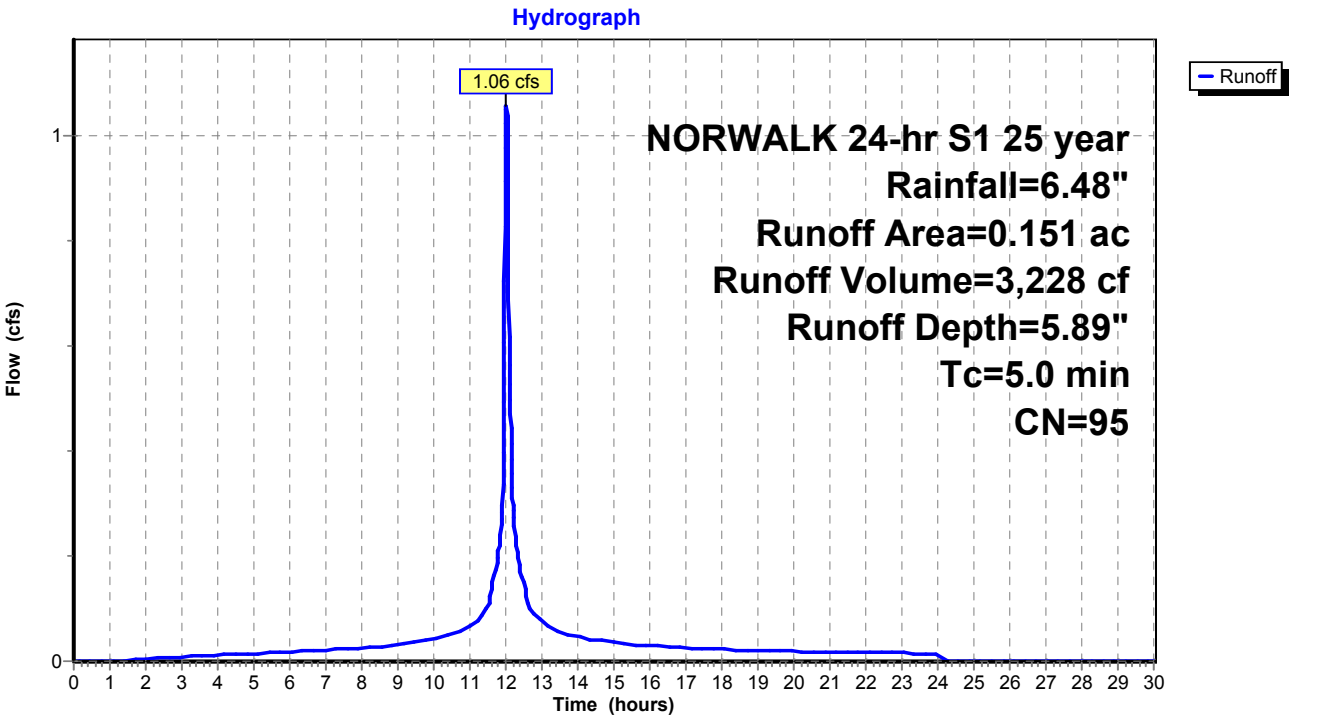
Runoff = 1.06 cfs @ 12.03 hrs, Volume= 3,228 cf, Depth= 5.89"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 25S: Area 25

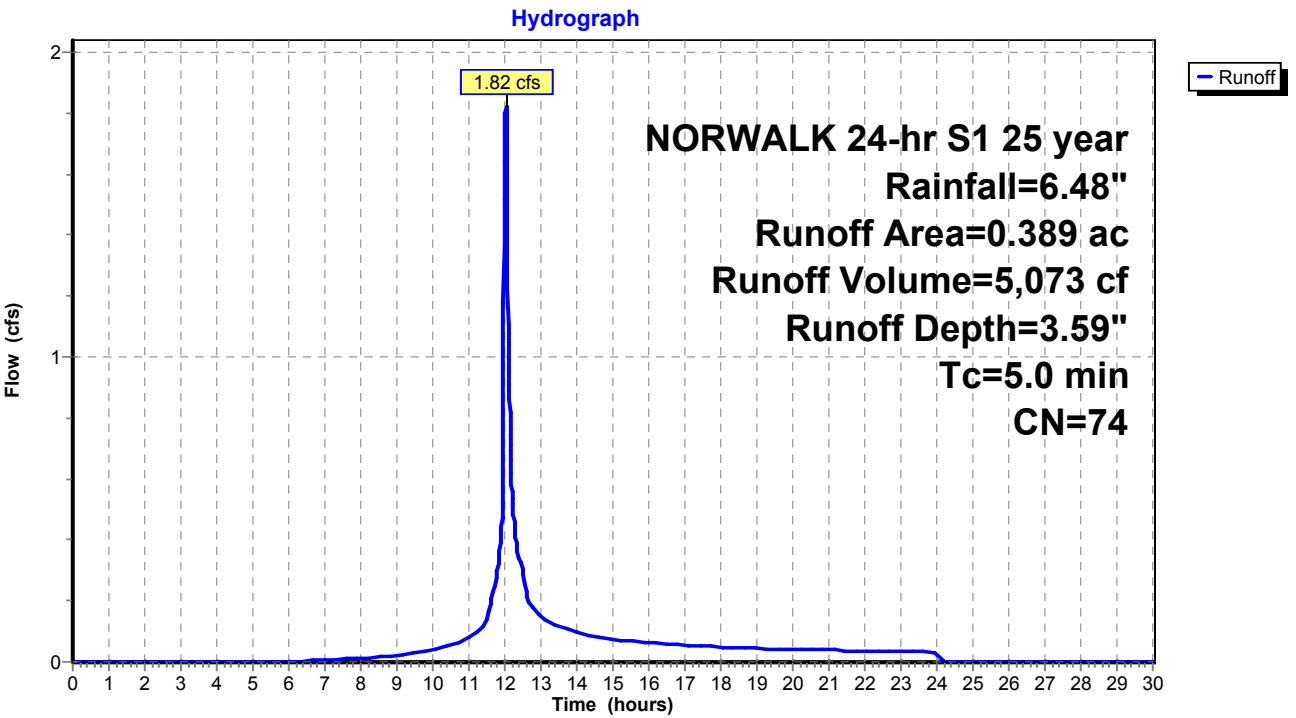
Runoff = 1.82 cfs @ 12.03 hrs, Volume= 5,073 cf, Depth= 3.59"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Summary for Subcatchment 26S: Area 26

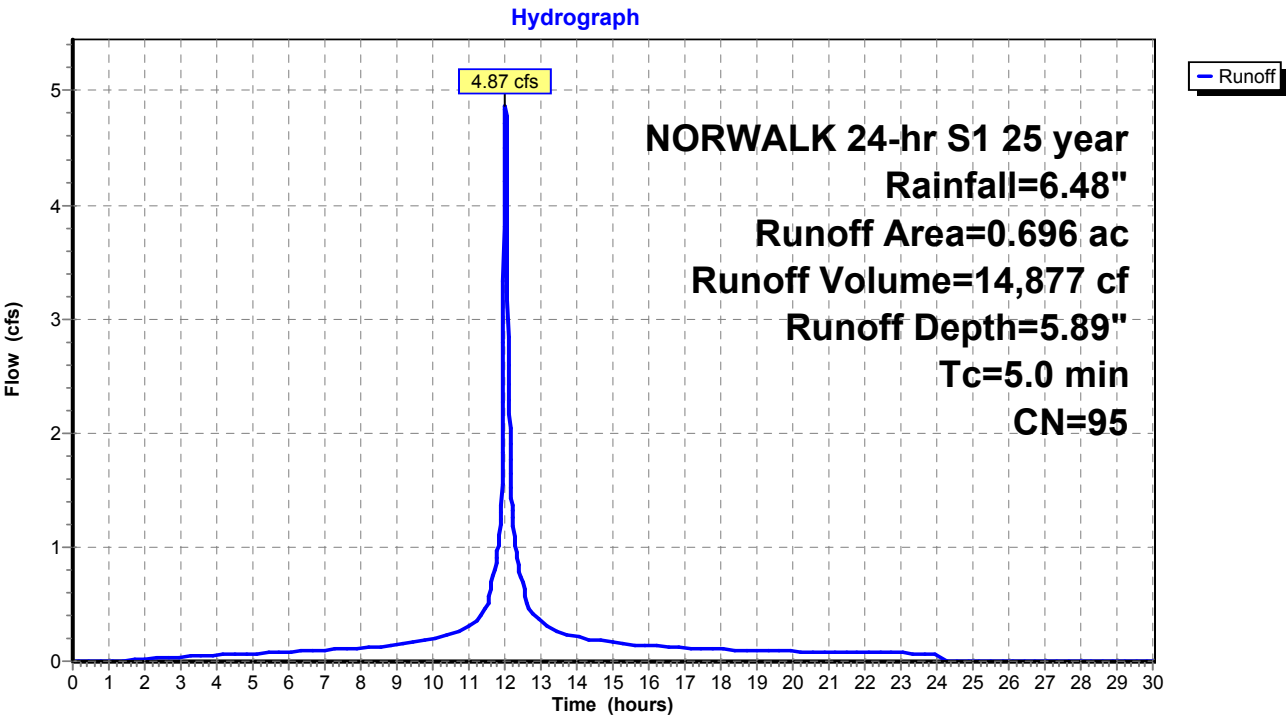
Runoff = 4.87 cfs @ 12.03 hrs, Volume= 14,877 cf, Depth= 5.89"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Summary for Subcatchment 27S: Area 27

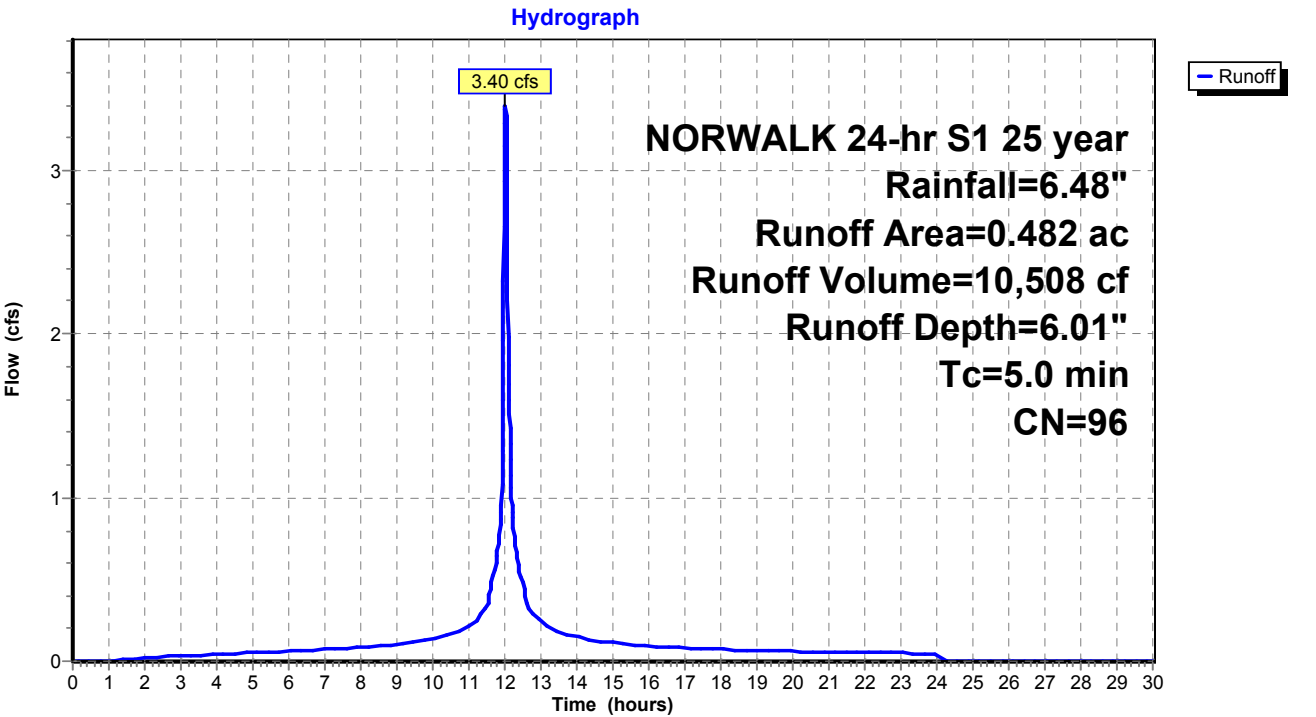
Runoff = 3.40 cfs @ 12.03 hrs, Volume= 10,508 cf, Depth= 6.01"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Summary for Subcatchment 28S: Area 28

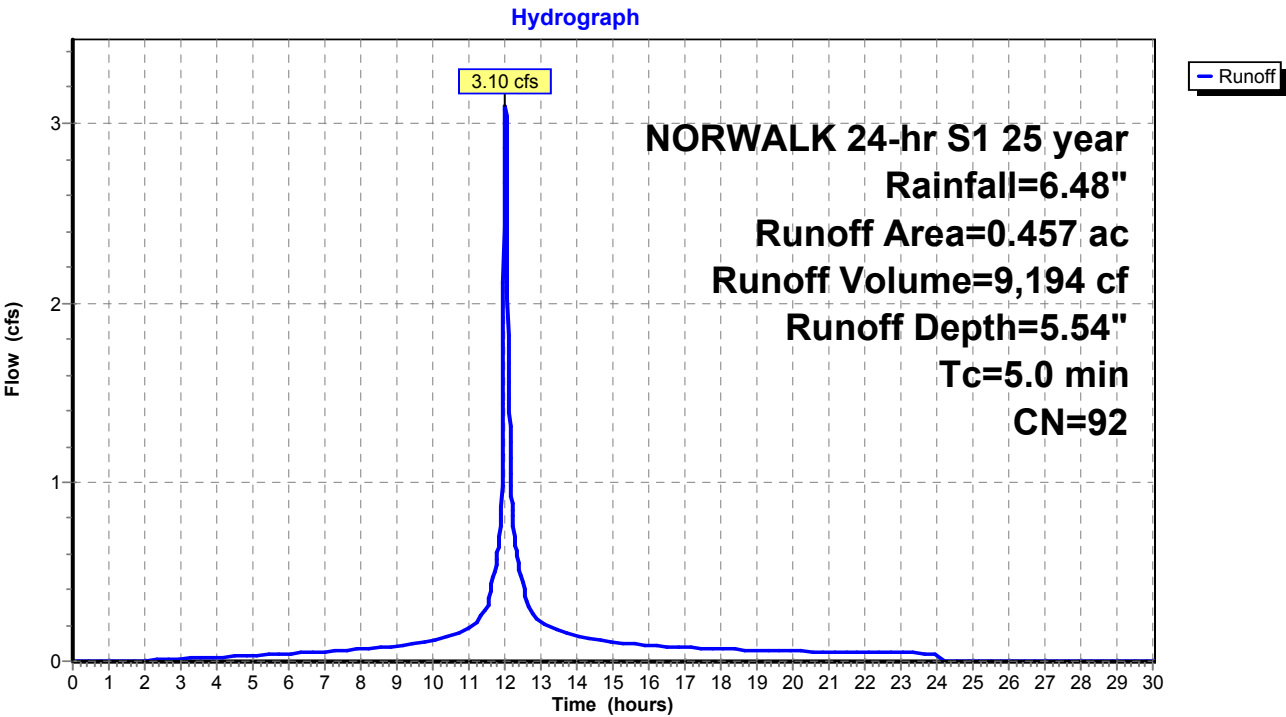
Runoff = 3.10 cfs @ 12.03 hrs, Volume= 9,194 cf, Depth= 5.54"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Summary for Subcatchment 29S: Area 29

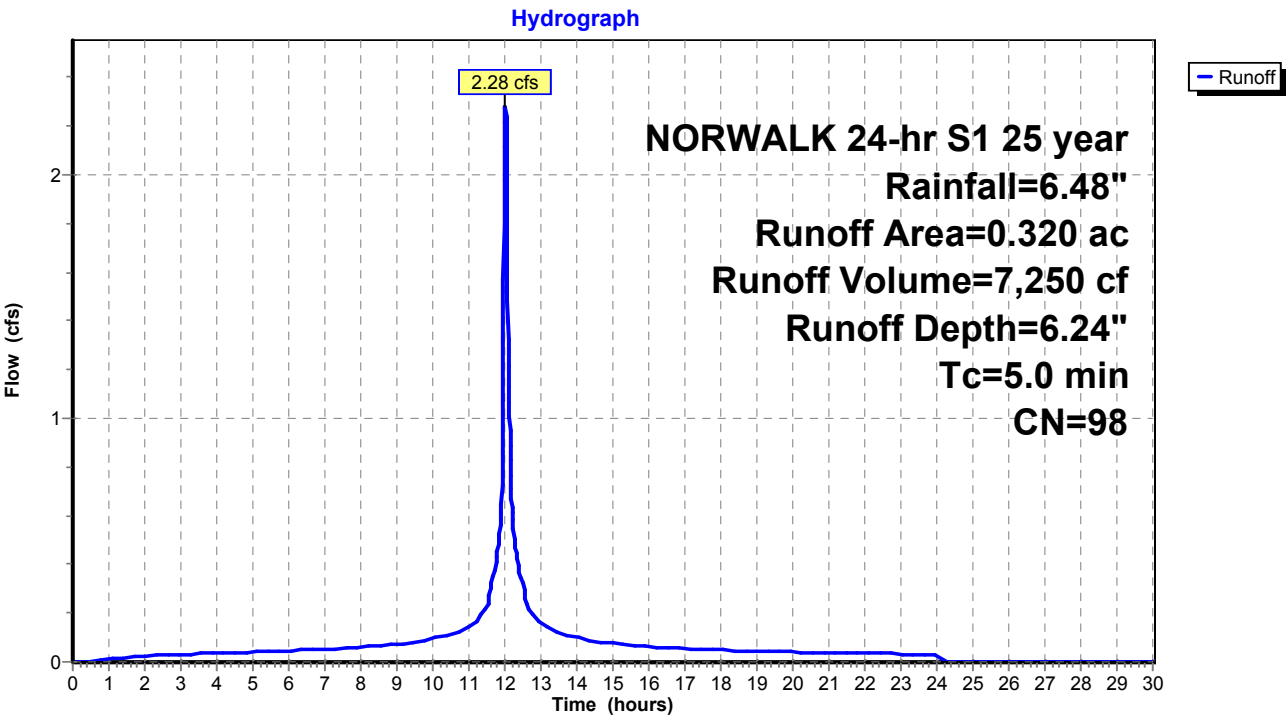
Runoff = 2.28 cfs @ 12.03 hrs, Volume= 7,250 cf, Depth= 6.24"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Summary for Subcatchment 30S: Area 30

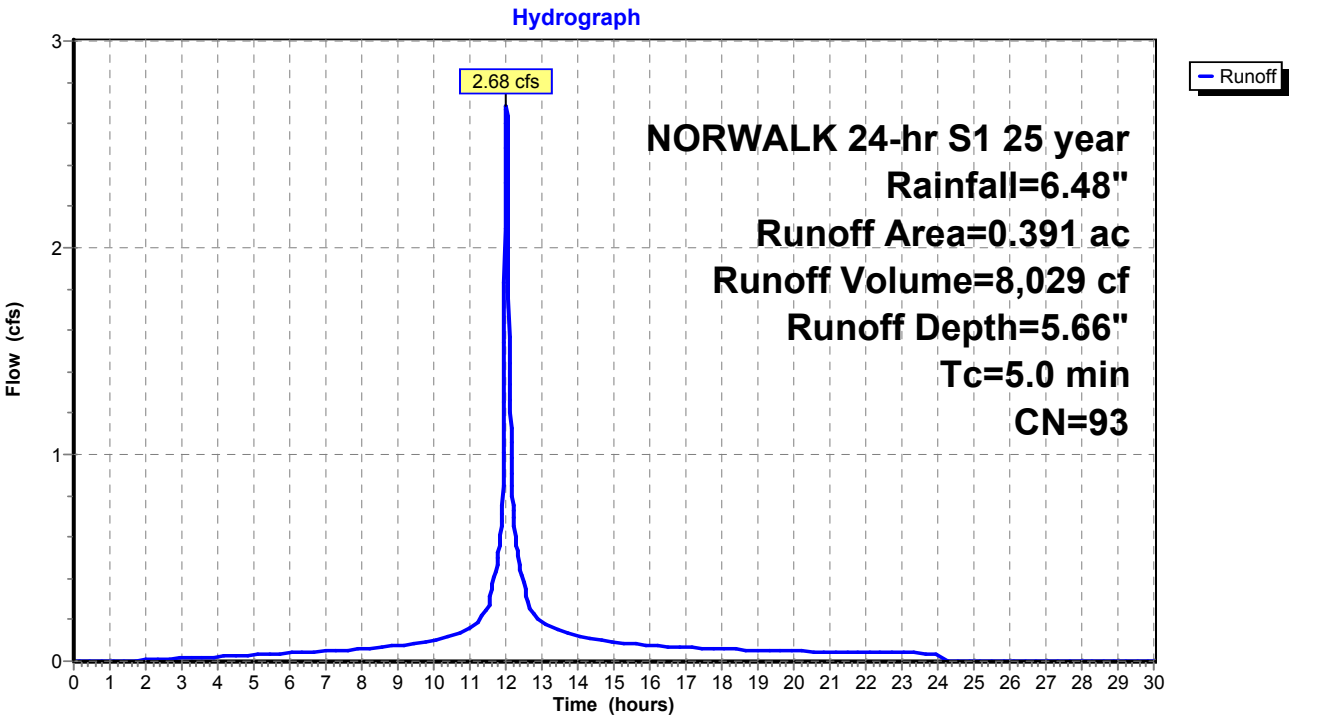
Runoff = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf, Depth= 5.66"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



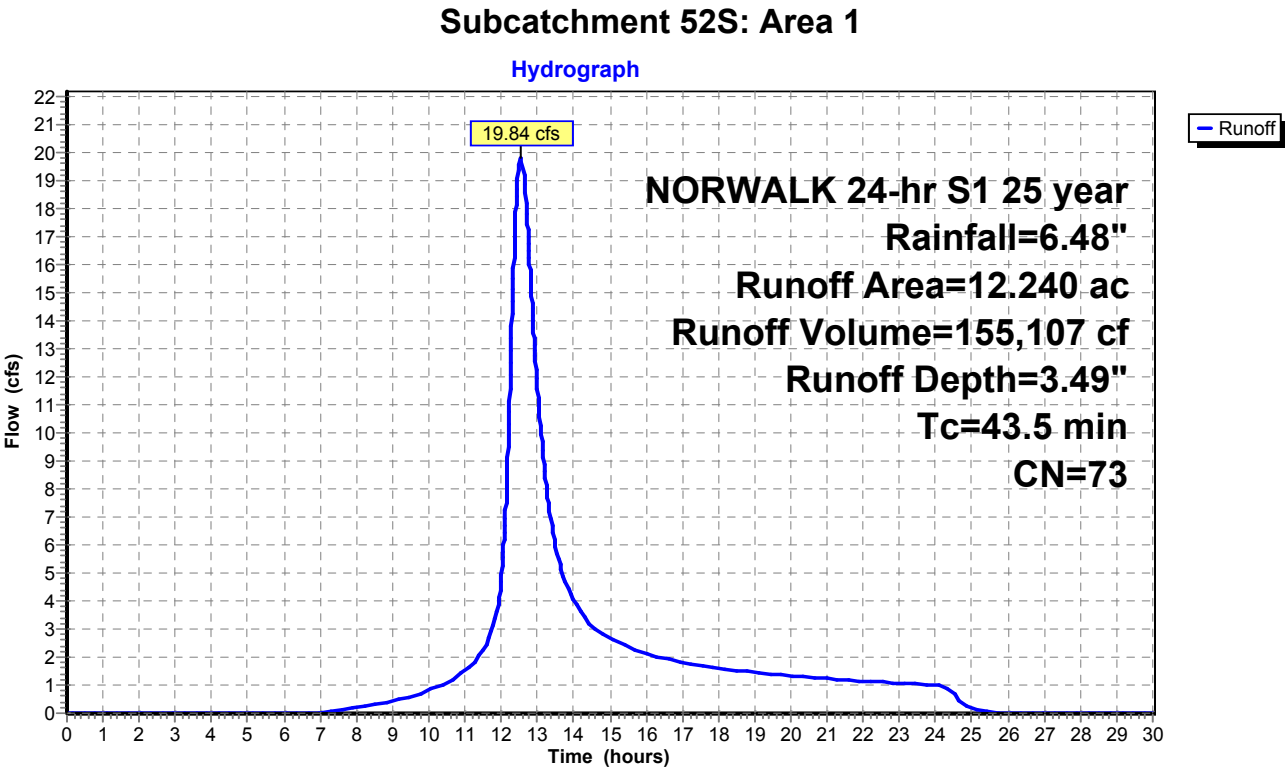
Summary for Subcatchment 52S: Area 1

Runoff = 19.84 cfs @ 12.52 hrs, Volume= 155,107 cf, Depth= 3.49"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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



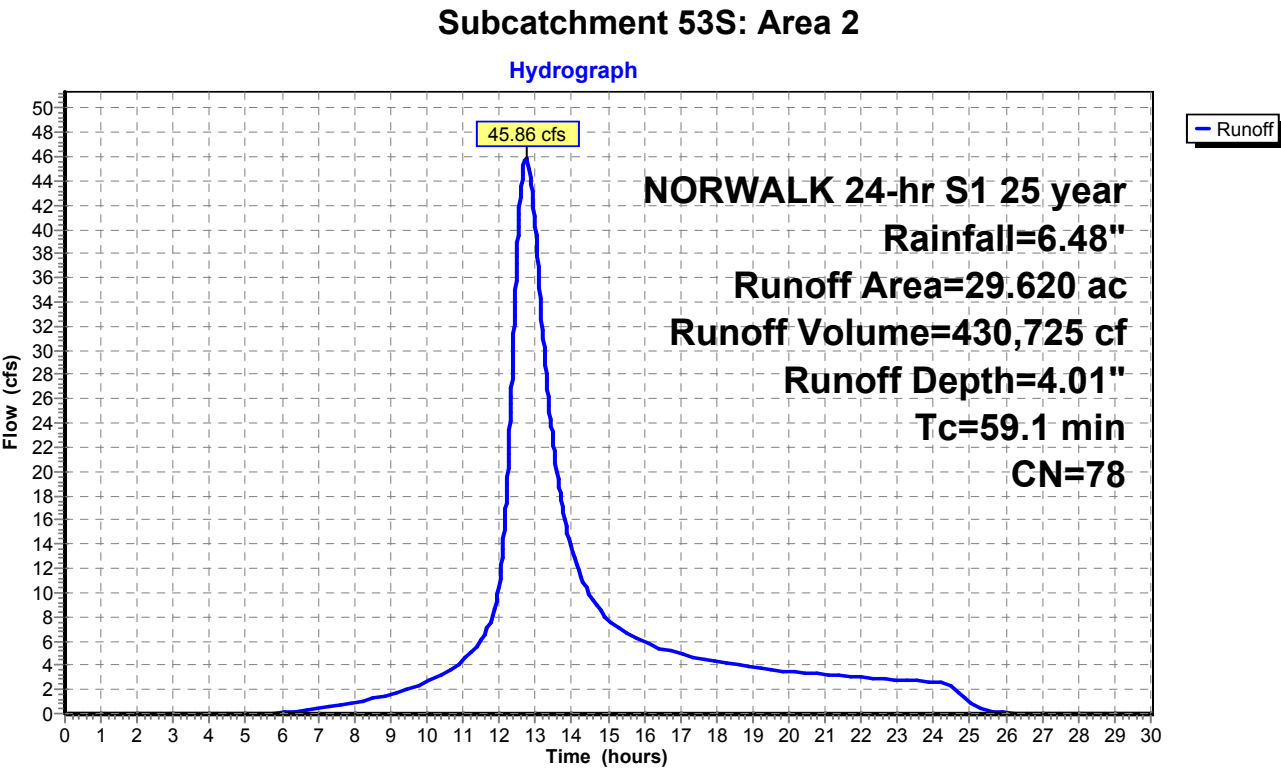
Summary for Subcatchment 53S: Area 2

Runoff = 45.86 cfs @ 12.74 hrs, Volume= 430,725 cf, Depth= 4.01"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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



Summary for Subcatchment 54S: Area 3

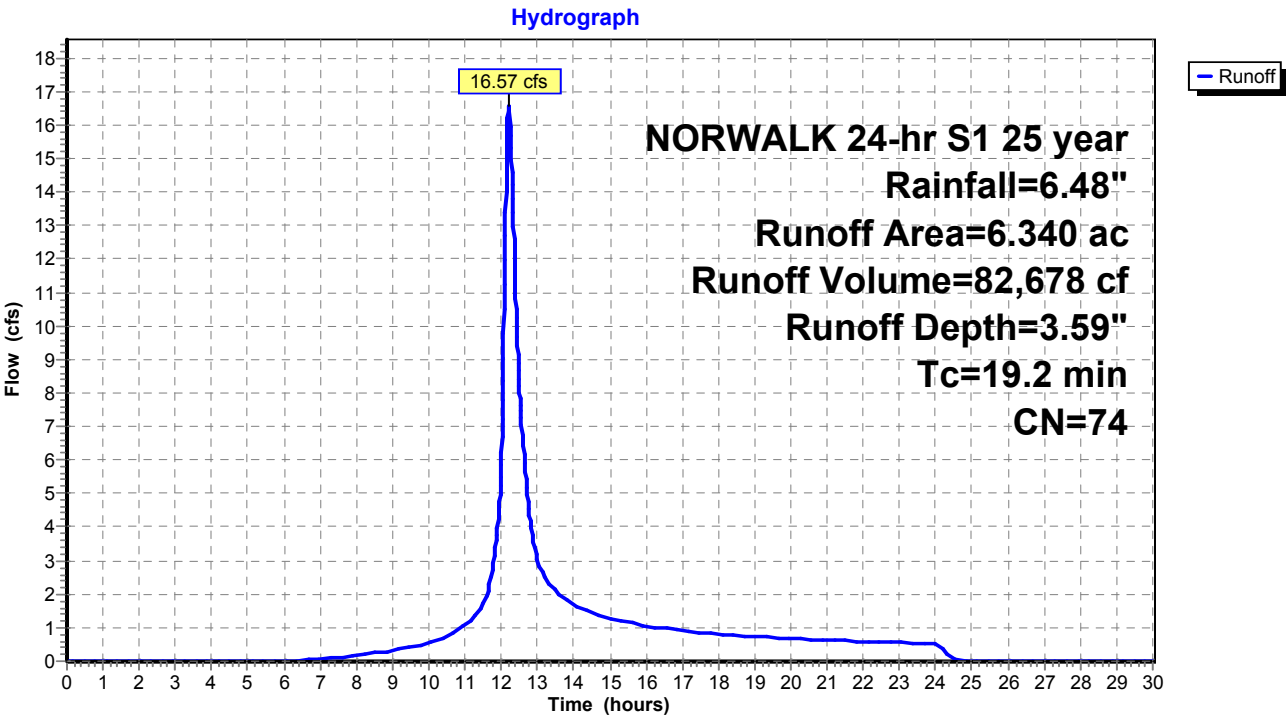
Runoff = 16.57 cfs @ 12.22 hrs, Volume= 82,678 cf, Depth= 3.59"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Summary for Subcatchment 56S: Area 35

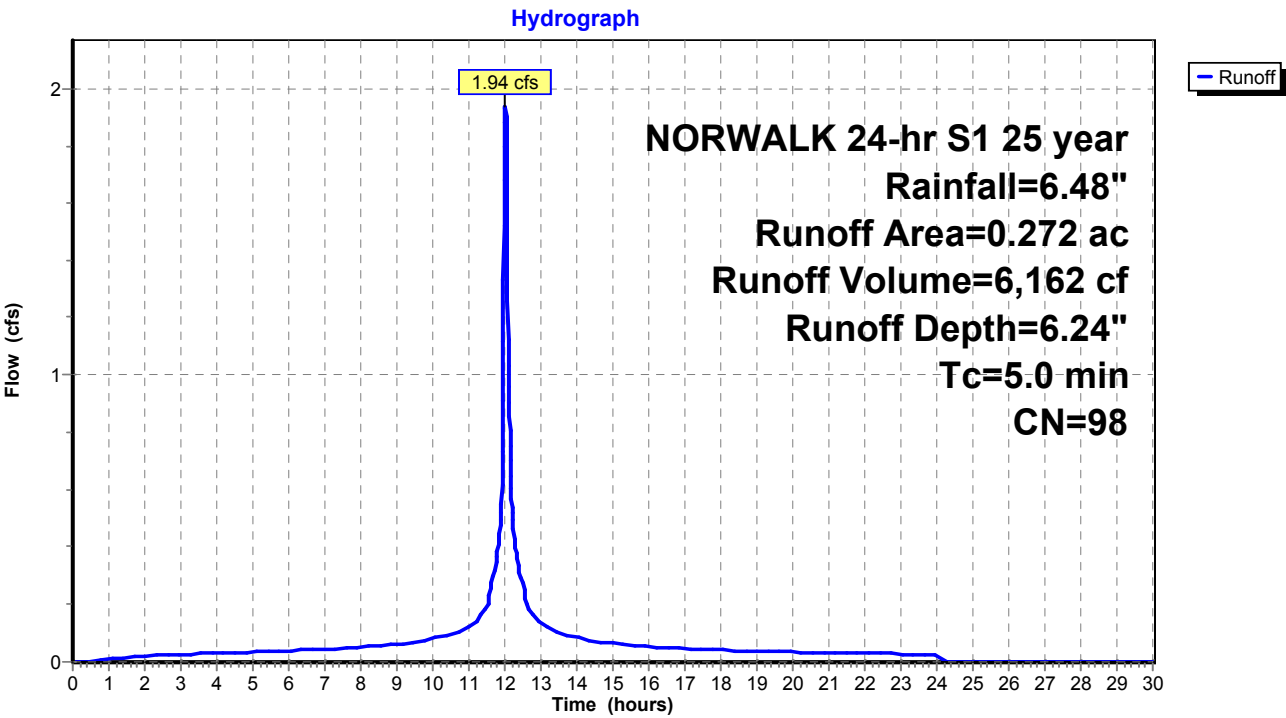
Runoff = 1.94 cfs @ 12.03 hrs, Volume= 6,162 cf, Depth= 6.24"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Summary for Subcatchment 60S: Area 37

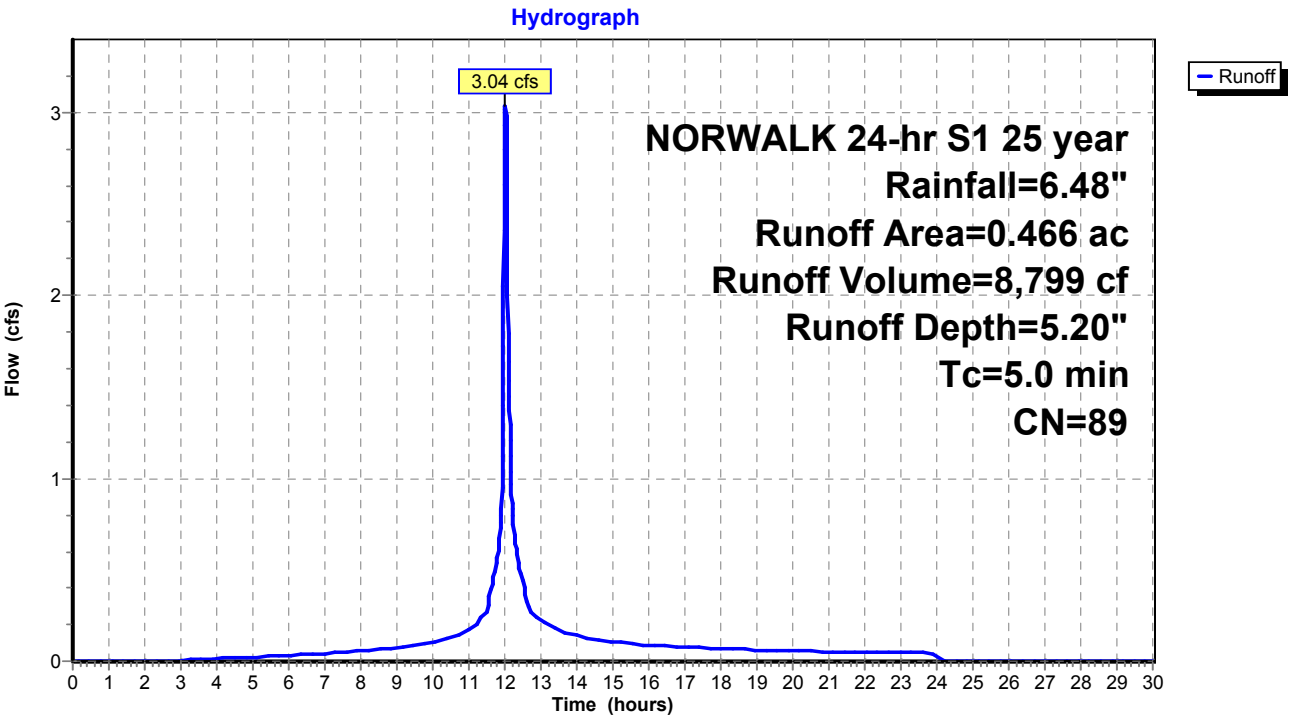
Runoff = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf, Depth= 5.20"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 62S: Area 38

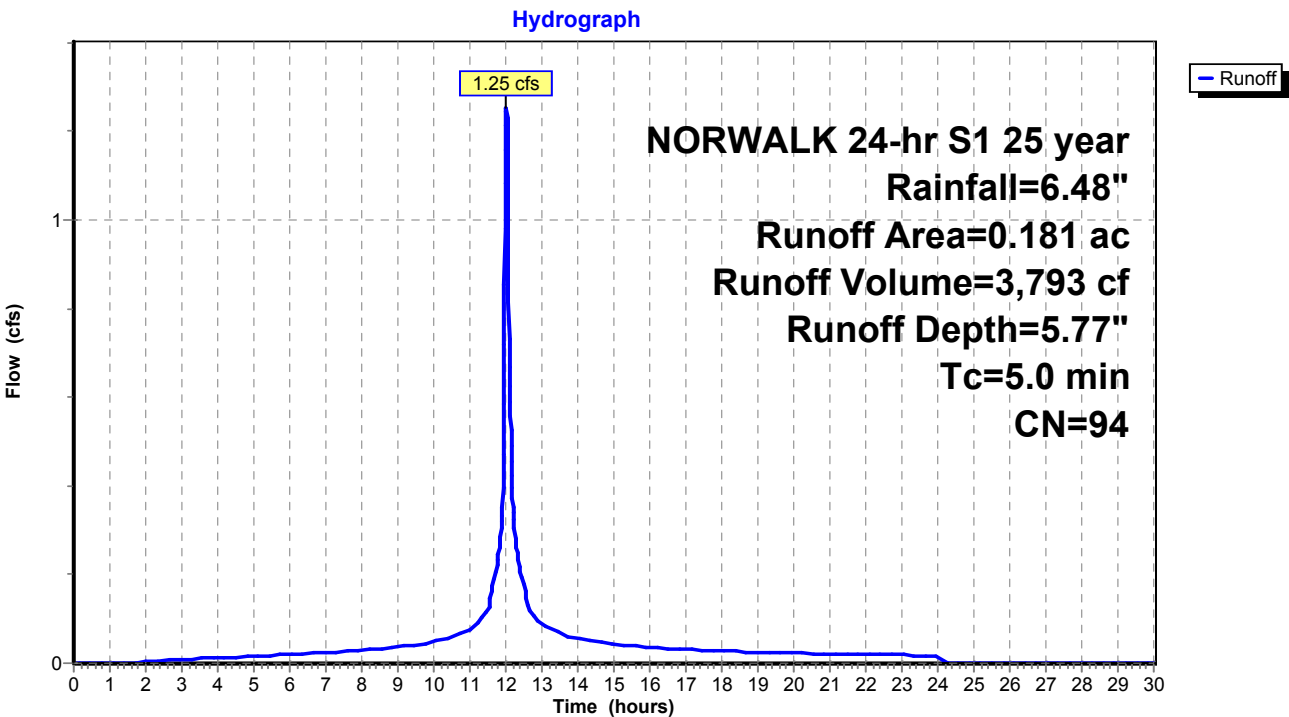
Runoff = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf, Depth= 5.77"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Summary for Subcatchment 65S: Area 41

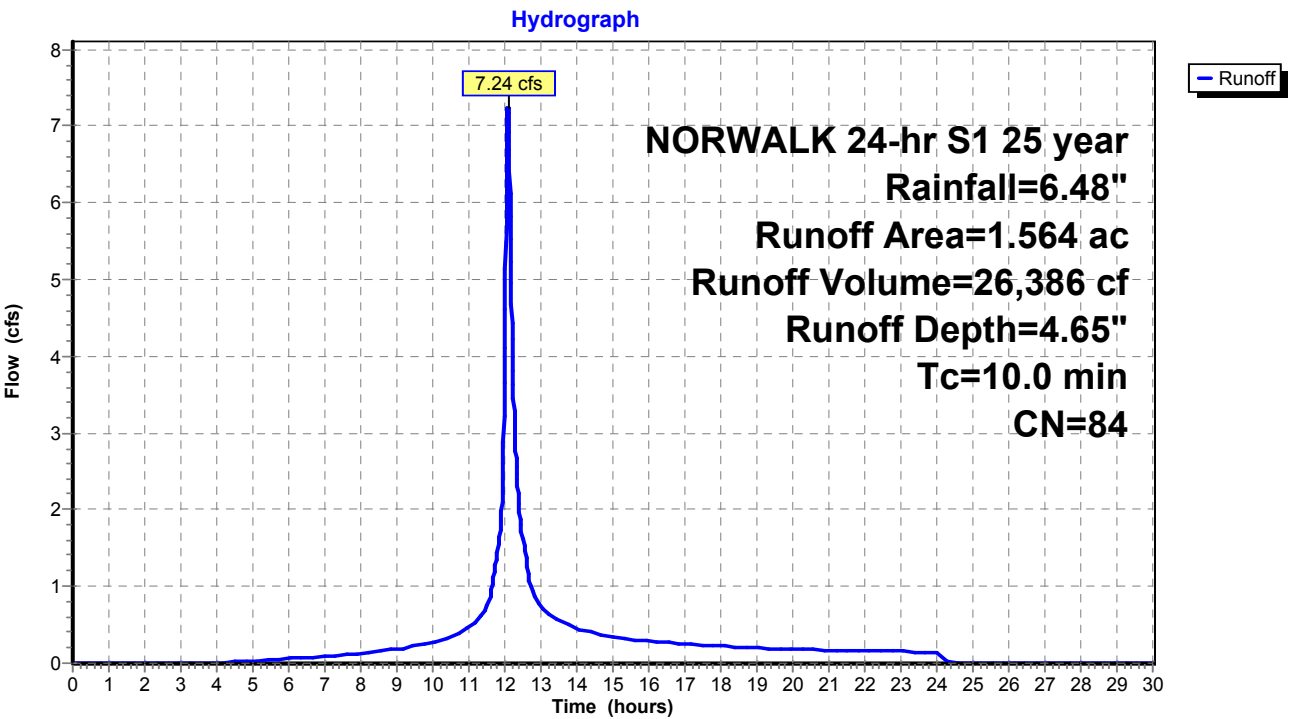
Runoff = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf, Depth= 4.65"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Summary for Subcatchment 68S: Area 36

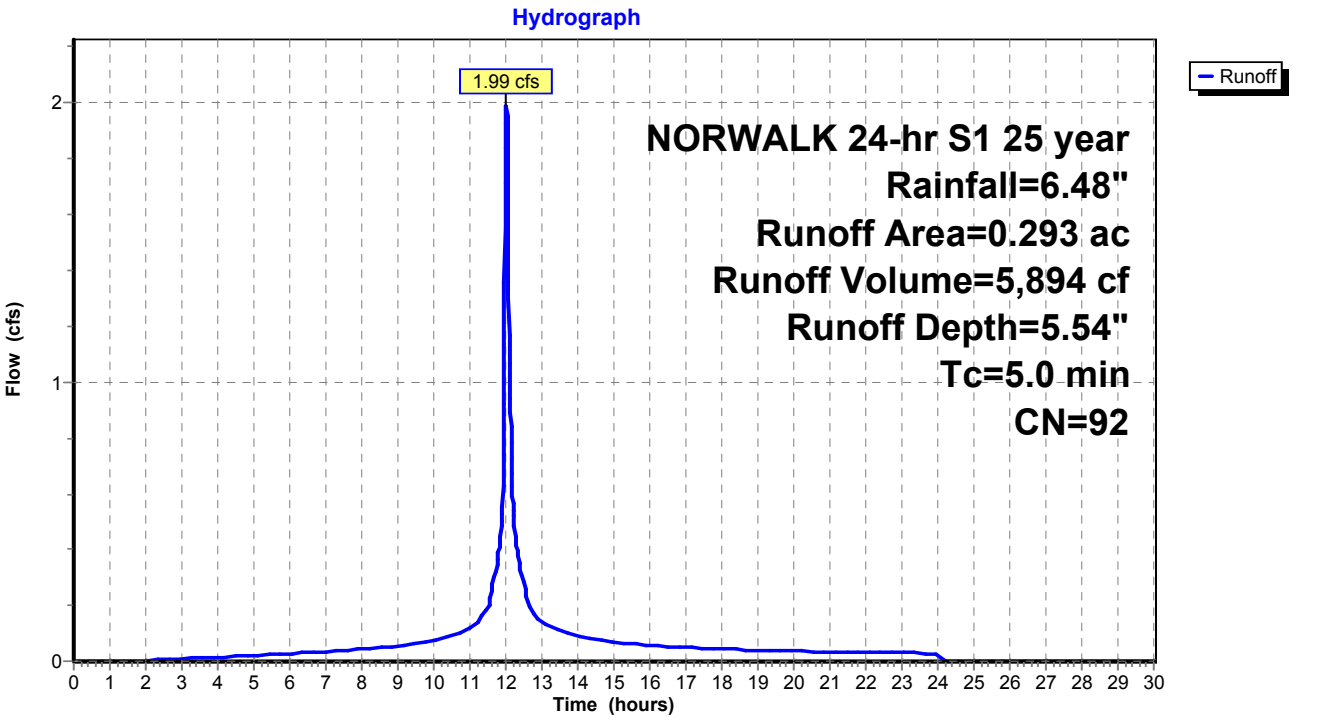
Runoff = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf, Depth= 5.54"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Summary for Subcatchment 69S: Area 40

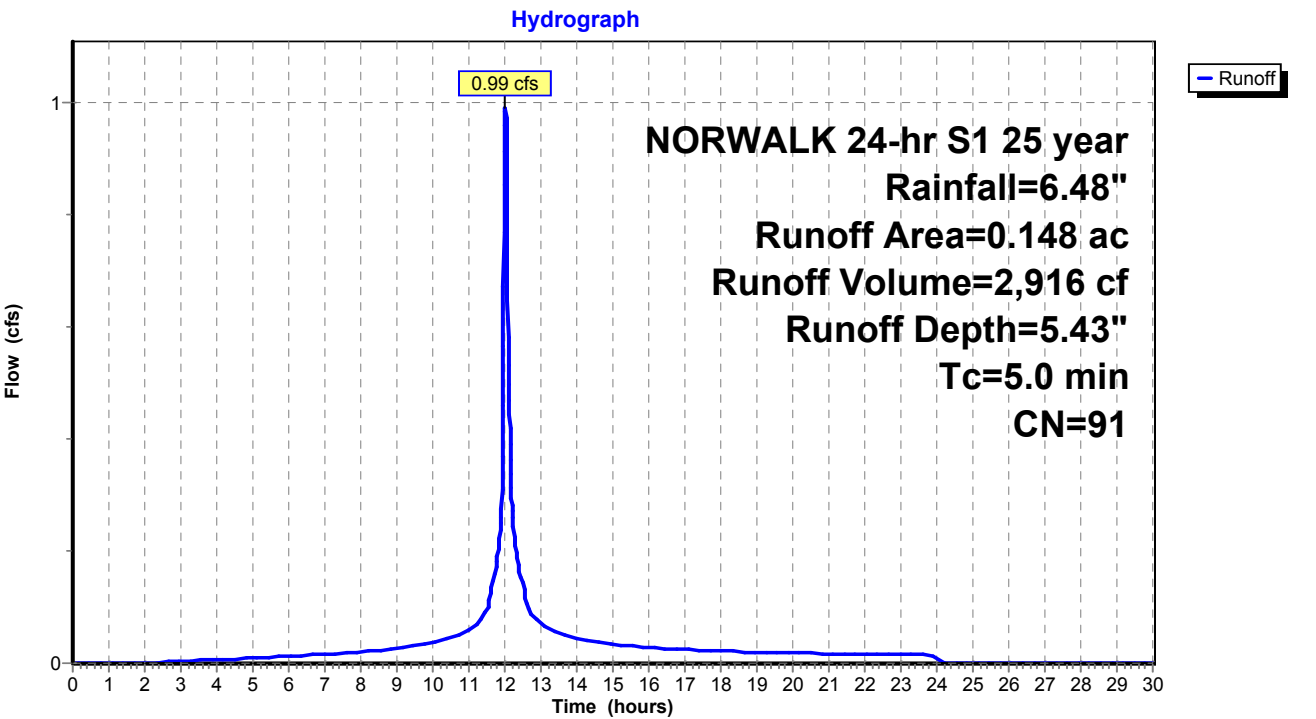
Runoff = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf, Depth= 5.43"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Subcatchment 71S: Area 34

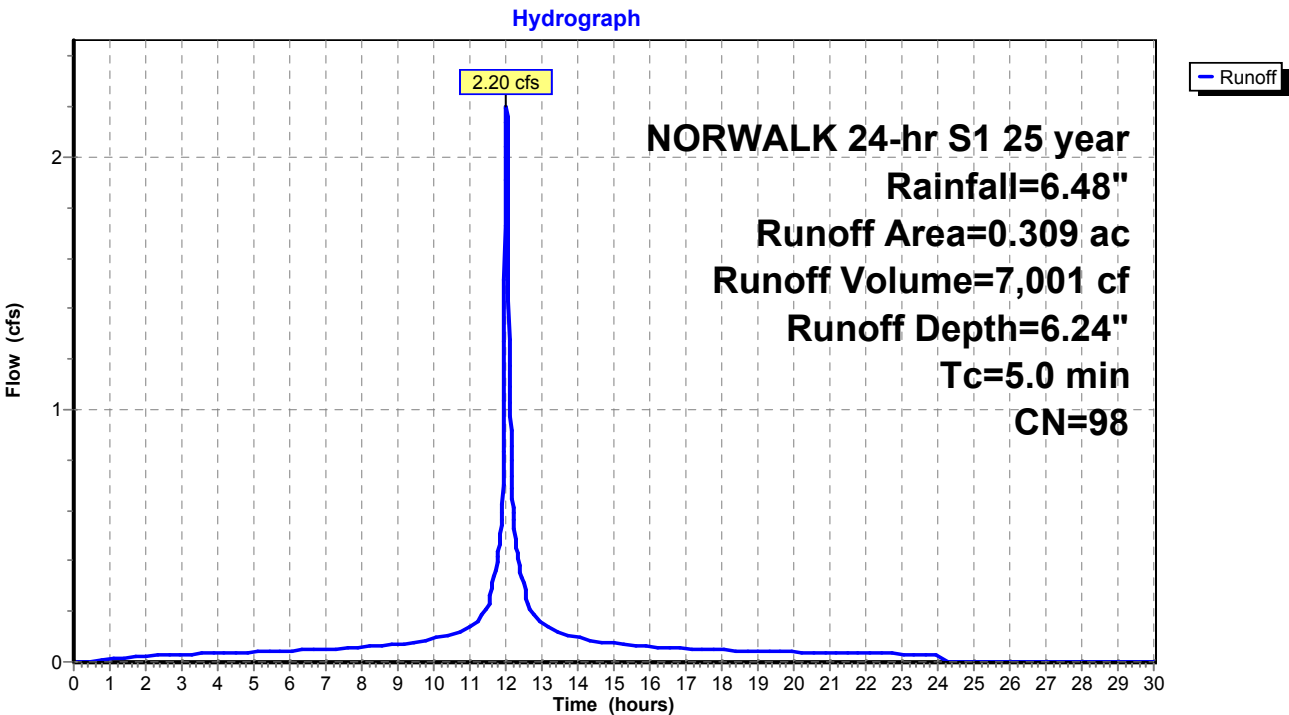
Runoff = 2.20 cfs @ 12.03 hrs, Volume= 7,001 cf, Depth= 6.24"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Summary for Subcatchment 75S: Area 32

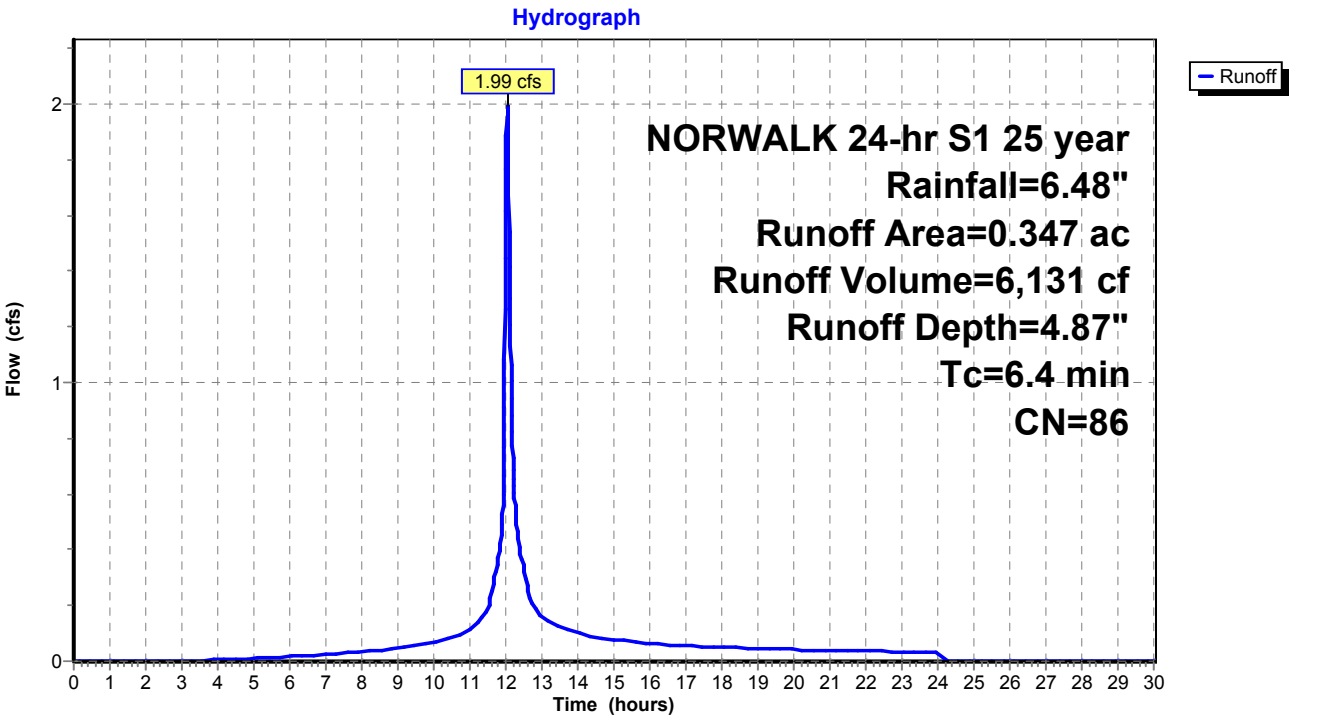
Runoff = 1.99 cfs @ 12.04 hrs, Volume= 6,131 cf, Depth= 4.87"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Summary for Subcatchment 76S: Area 33

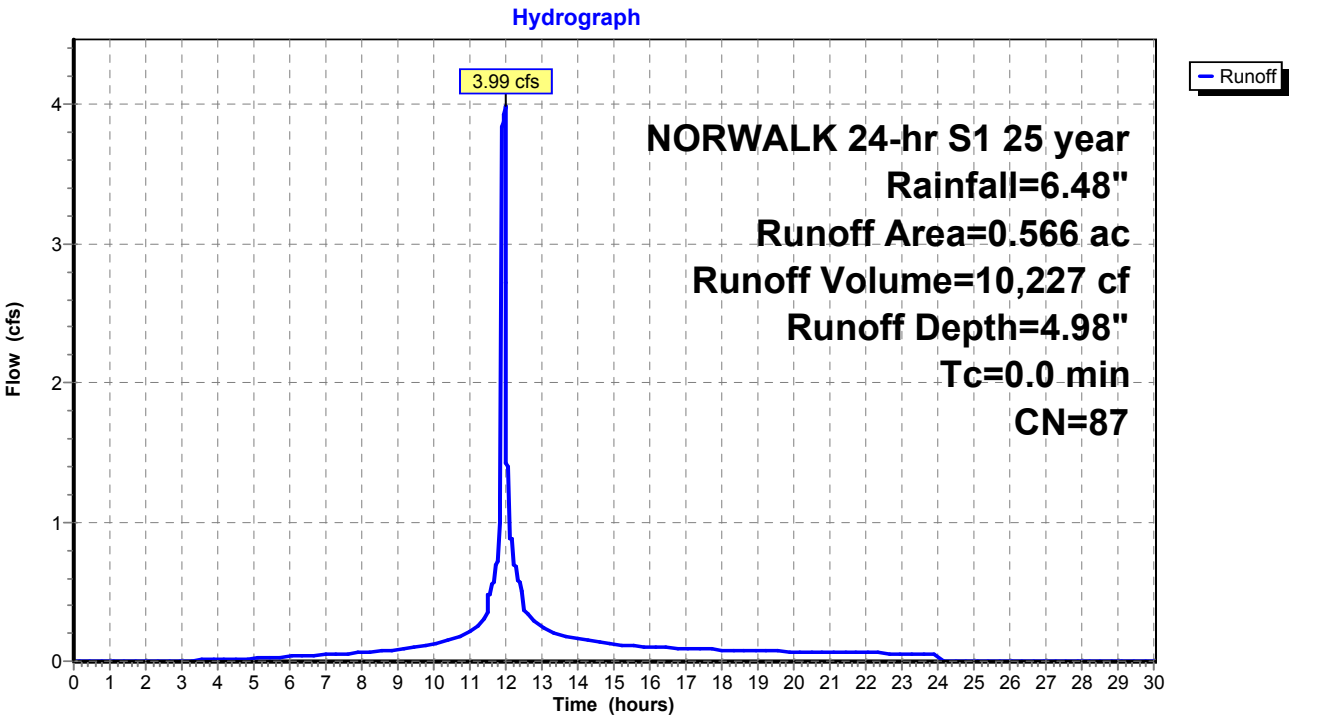
Runoff = 3.99 cfs @ 11.99 hrs, Volume= 10,227 cf, Depth= 4.98"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Summary for Subcatchment 78S: Area 39

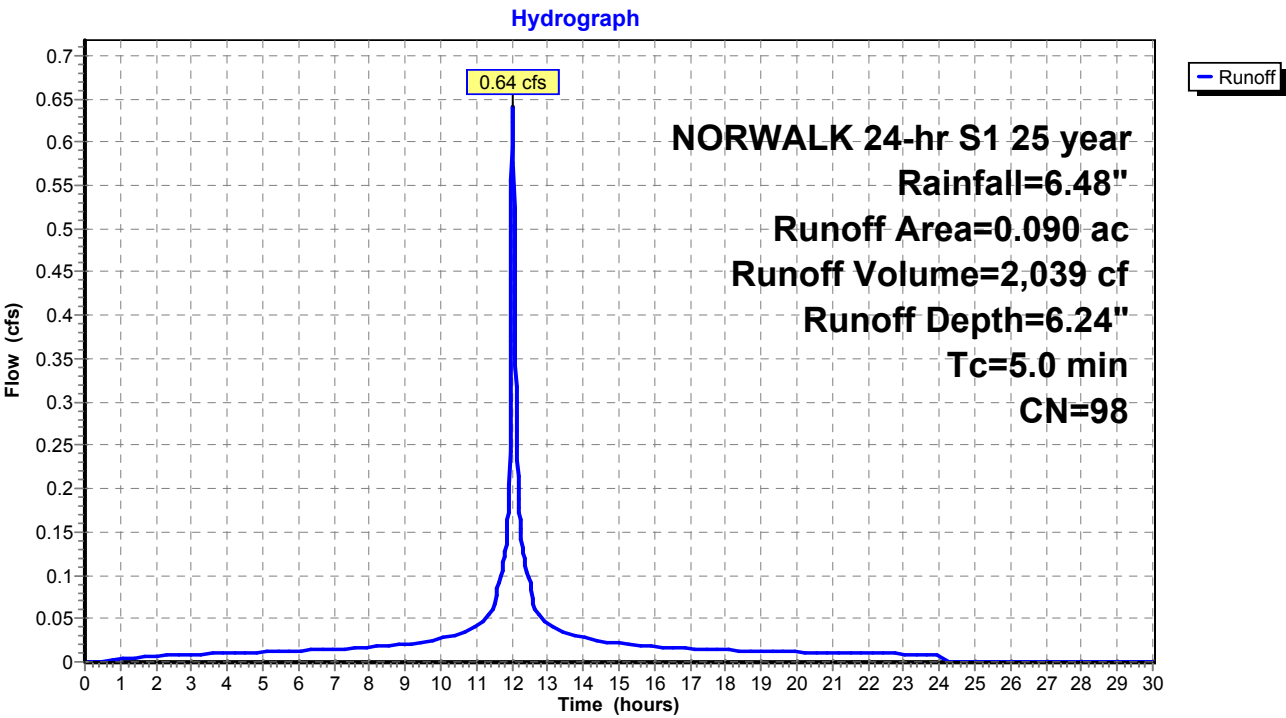
Runoff = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf, Depth= 6.24"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Summary for Subcatchment 84S: Area 31

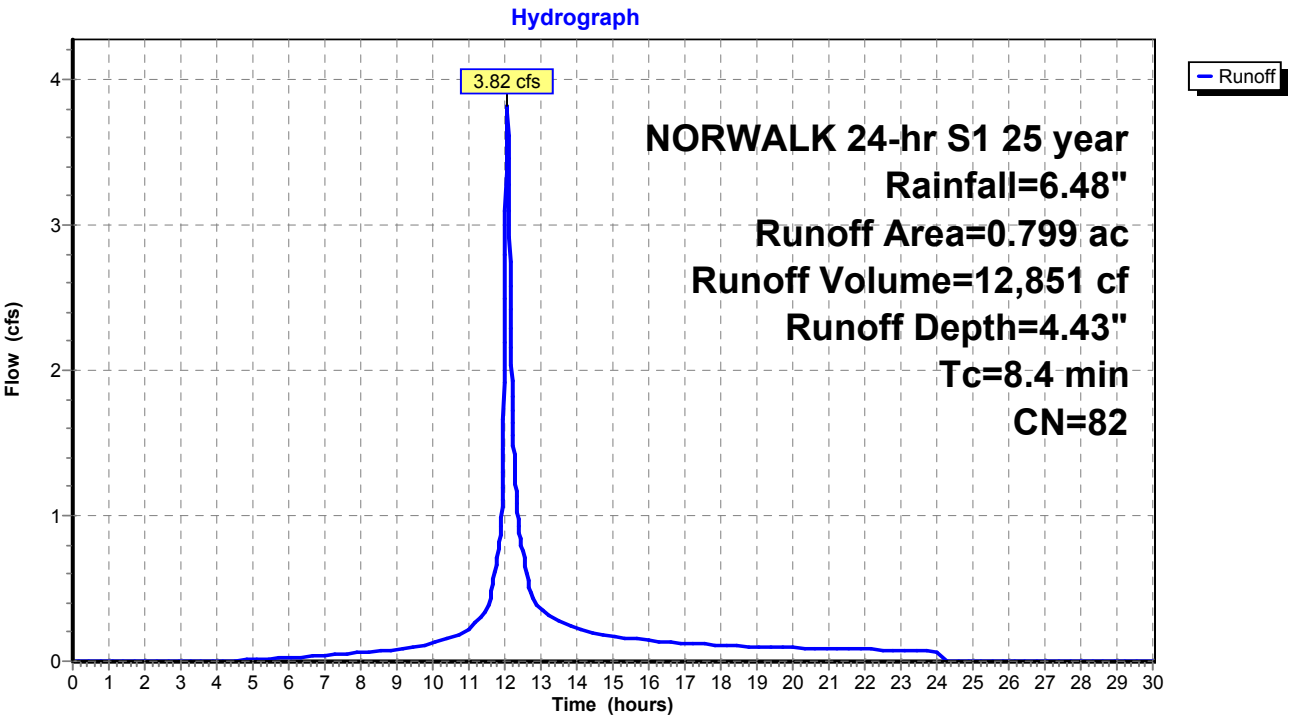
Runoff = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf, Depth= 4.43"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Summary for Subcatchment 100S: Area 16B

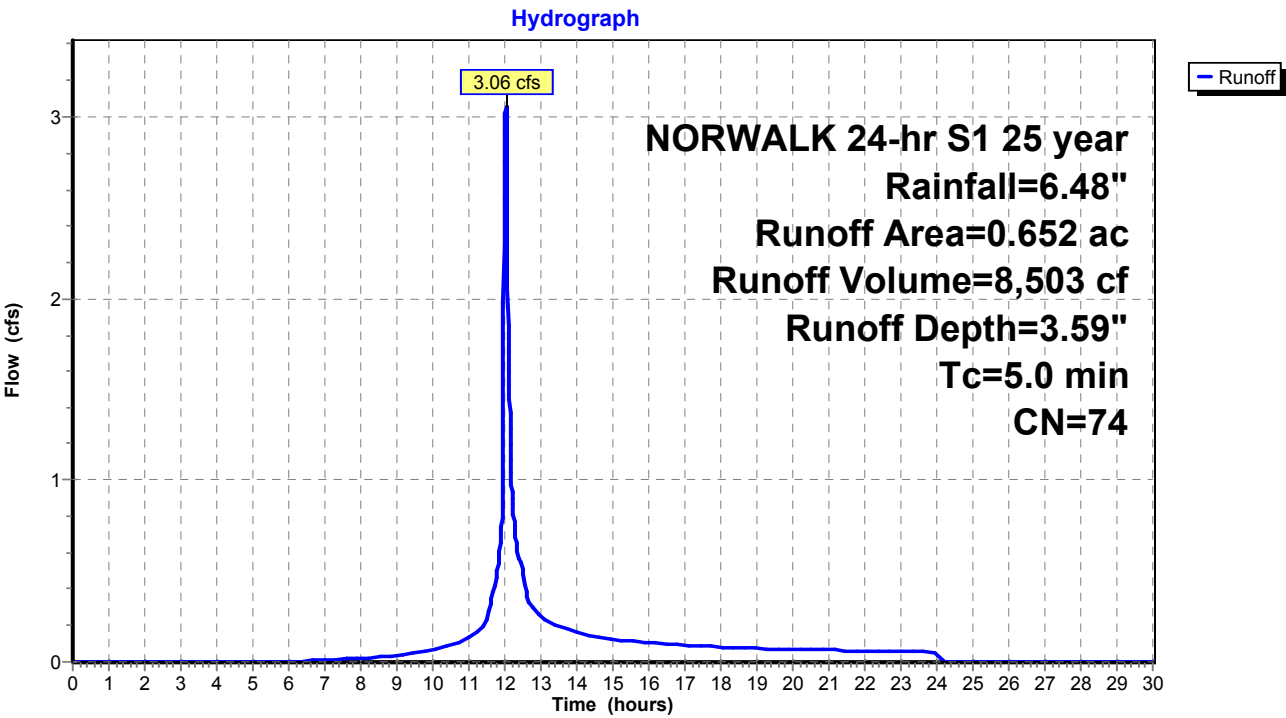
Runoff = 3.06 cfs @ 12.03 hrs, Volume= 8,503 cf, Depth= 3.59"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Summary for Subcatchment 105S: Area 18

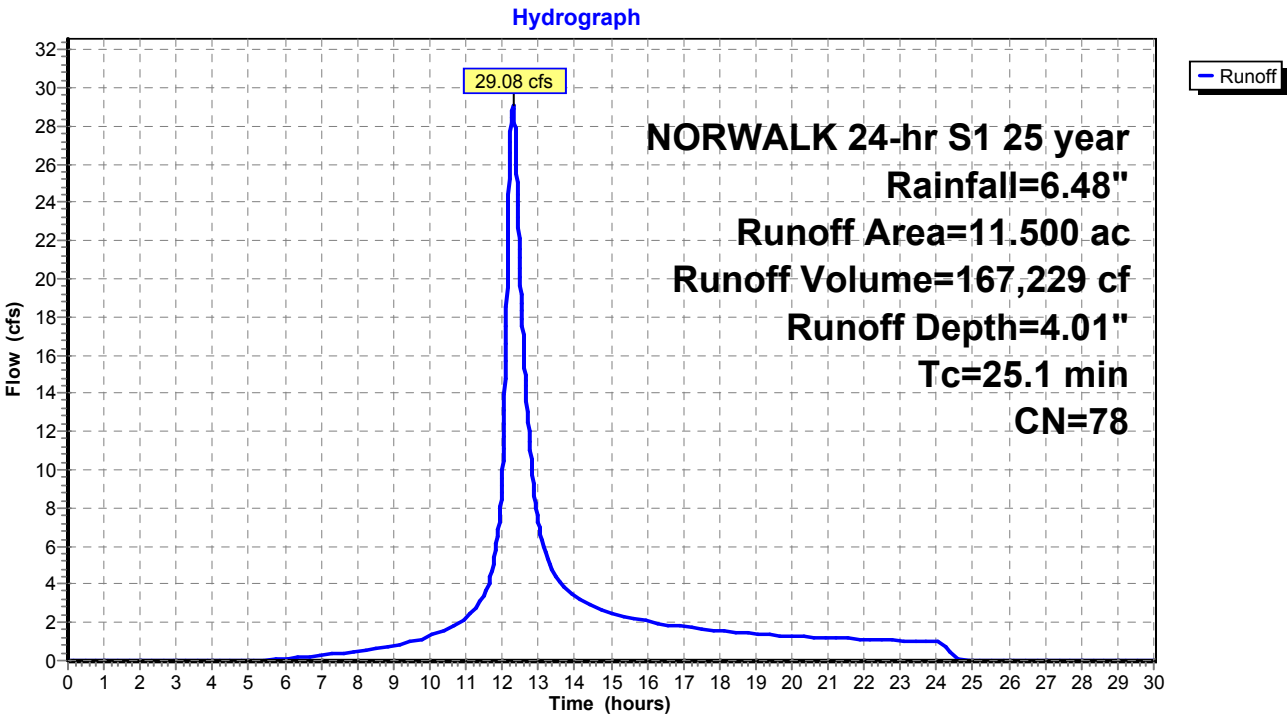
Runoff = 29.08 cfs @ 12.30 hrs, Volume= 167,229 cf, Depth= 4.01"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Summary for Subcatchment BLDG: EX-BLDG

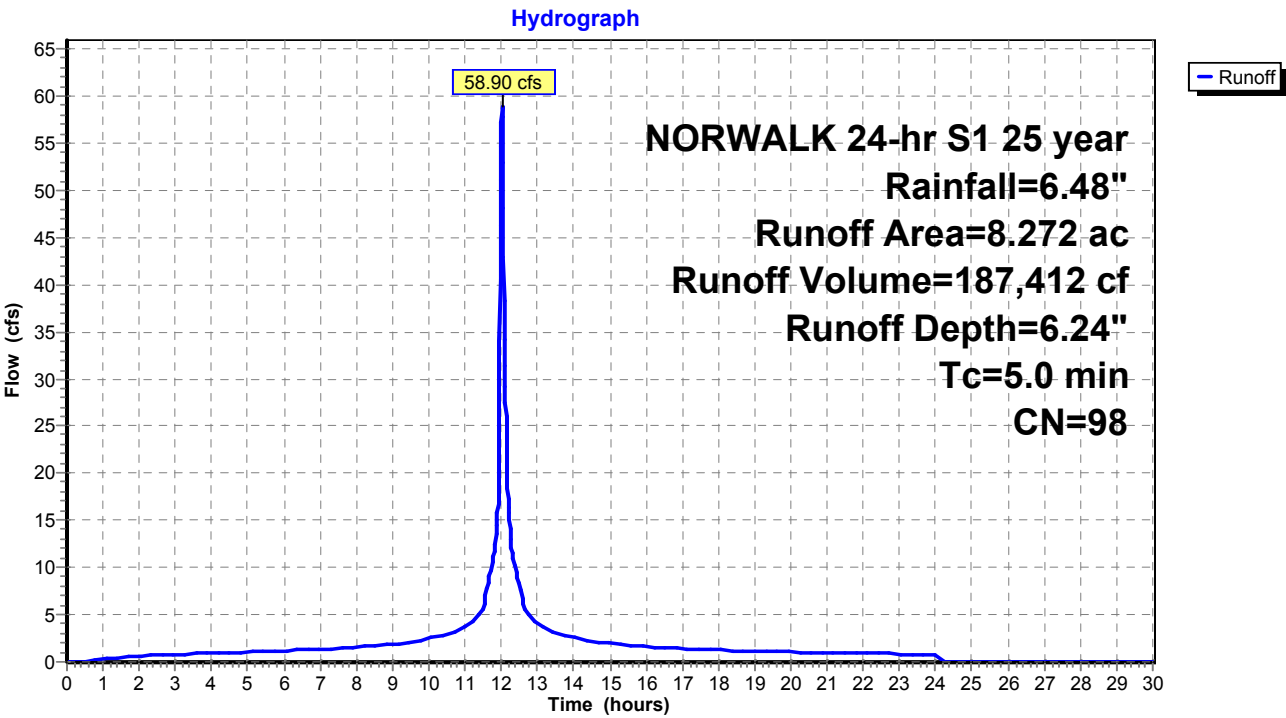
Runoff = 58.90 cfs @ 12.03 hrs, Volume= 187,412 cf, Depth= 6.24"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 25 year Rainfall=6.48"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Summary for Pond 1P: RR Culvert 2

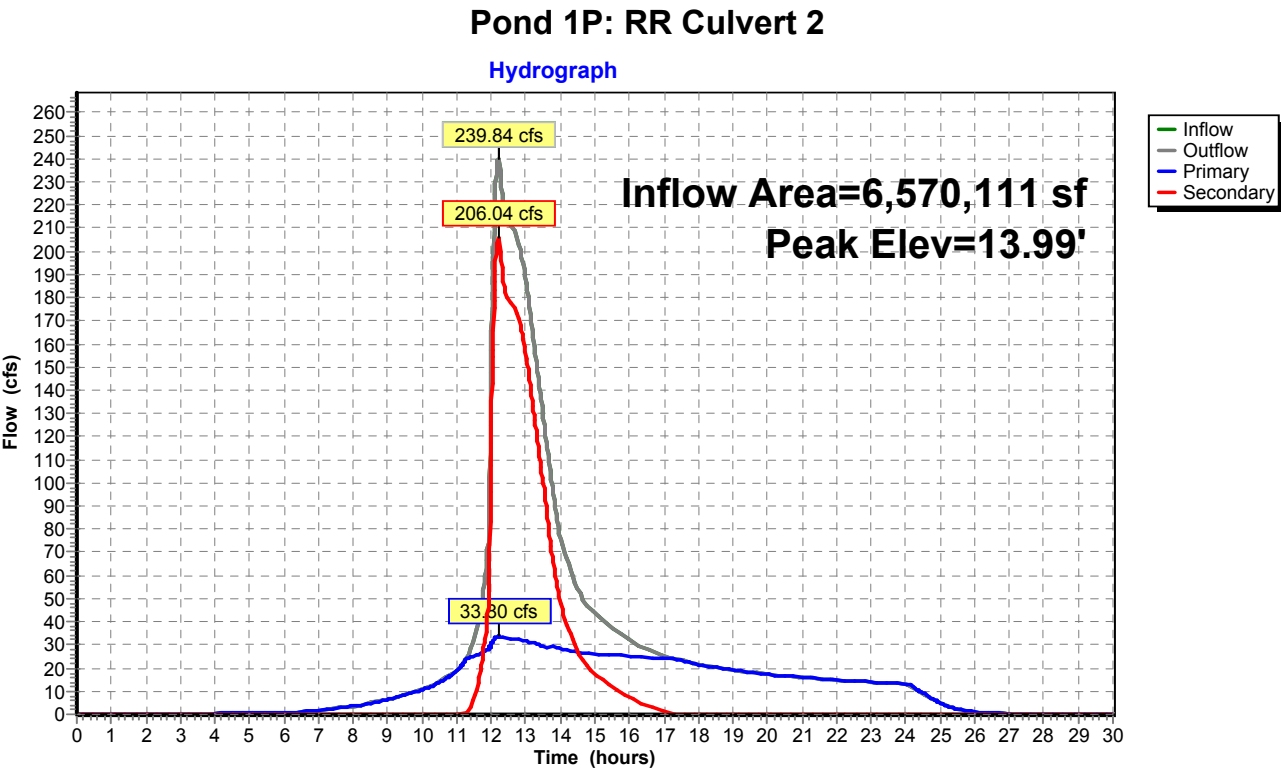
Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 4.42" for 25 year event
Inflow = 239.84 cfs @ 12.21 hrs, Volume= 2,419,731 cf
Outflow = 239.84 cfs @ 12.21 hrs, Volume= 2,419,731 cf, Atten= 0%, Lag= 0.0 min
Primary = 33.80 cfs @ 12.21 hrs, Volume= 1,193,822 cf
Secondary = 206.04 cfs @ 12.21 hrs, Volume= 1,225,909 cf
Routed to Pond 24P : RR Culvert 3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 13.99' @ 12.21 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 '/' Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

Primary OutFlow Max=33.80 cfs @ 12.21 hrs HW=13.99' (Free Discharge)
 ↑**2=Culvert** (Barrel Controls 33.80 cfs @ 5.63 fps)

Secondary OutFlow Max=205.98 cfs @ 12.21 hrs HW=13.99' (Free Discharge)
 ↑**1=Custom Weir/Orifice** (Weir Controls 205.98 cfs @ 4.15 fps)



Proposed Conditions

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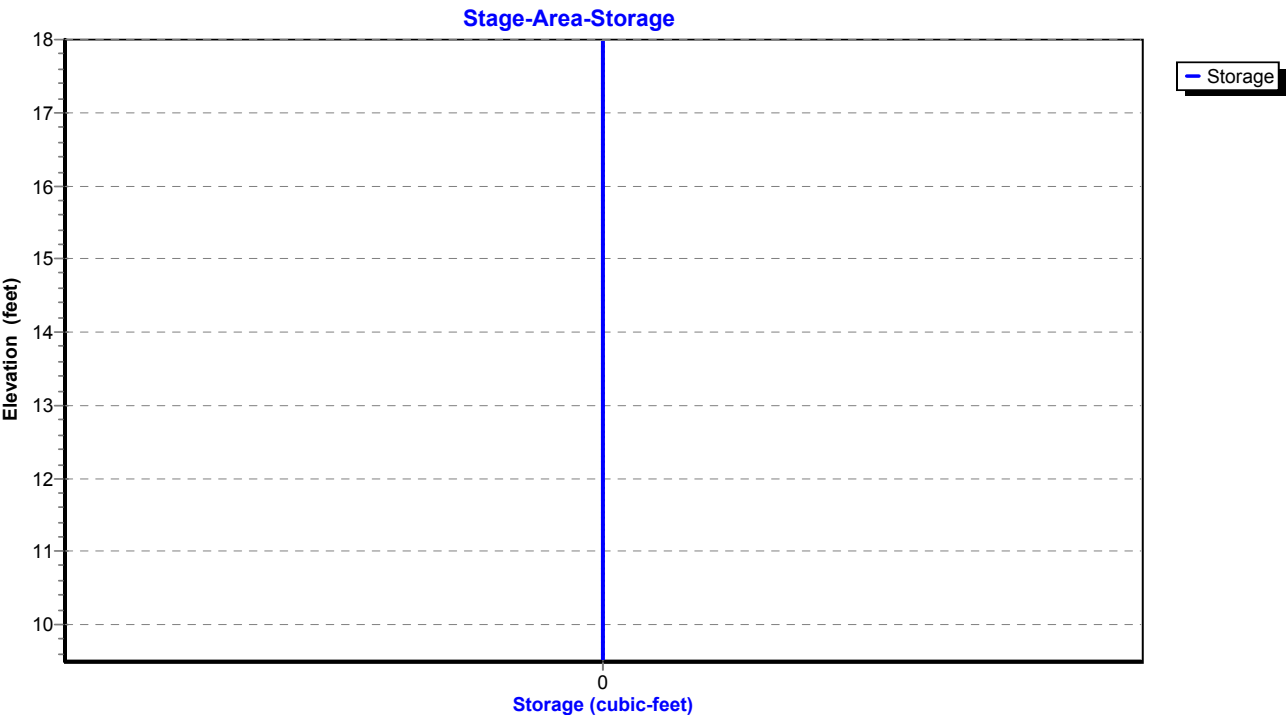
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Pond 1P: RR Culvert 2



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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.67% Impervious, Inflow Depth = 4.99" for 25 year event
Inflow = 153.33 cfs @ 12.04 hrs, Volume= 1,419,742 cf
Outflow = 153.33 cfs @ 12.04 hrs, Volume= 1,419,742 cf, Atten= 0%, Lag= 0.0 min
Primary = 52.74 cfs @ 12.04 hrs, Volume= 1,060,096 cf
Secondary = 100.59 cfs @ 12.04 hrs, Volume= 359,647 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 29.85' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

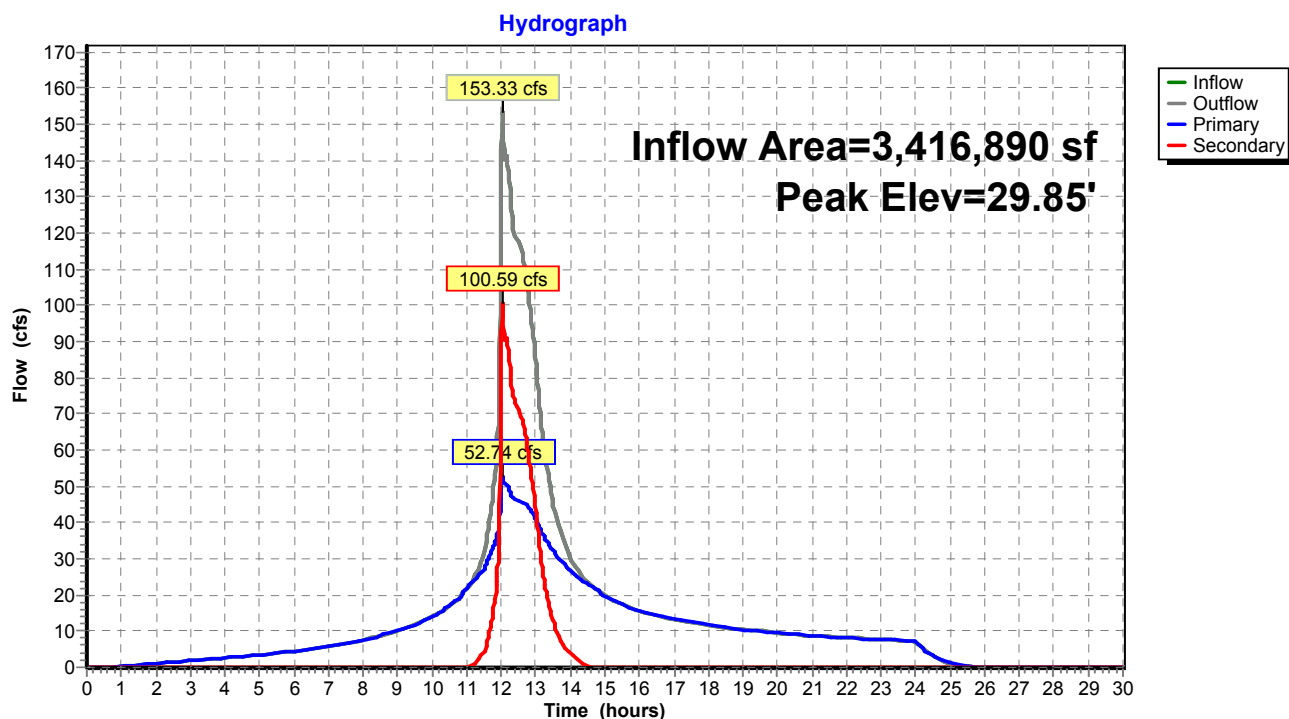
Primary OutFlow Max=52.73 cfs @ 12.04 hrs HW=29.85' (Free Discharge)

↑1=Culvert (Inlet Controls 52.73 cfs @ 9.15 fps)

Secondary OutFlow Max=100.53 cfs @ 12.04 hrs HW=29.85' (Free Discharge)

↑2=Custom Weir/Orifice (Orifice Controls 100.53 cfs @ 8.38 fps)

Pond 2P: RR Culvert 1



Proposed Conditions

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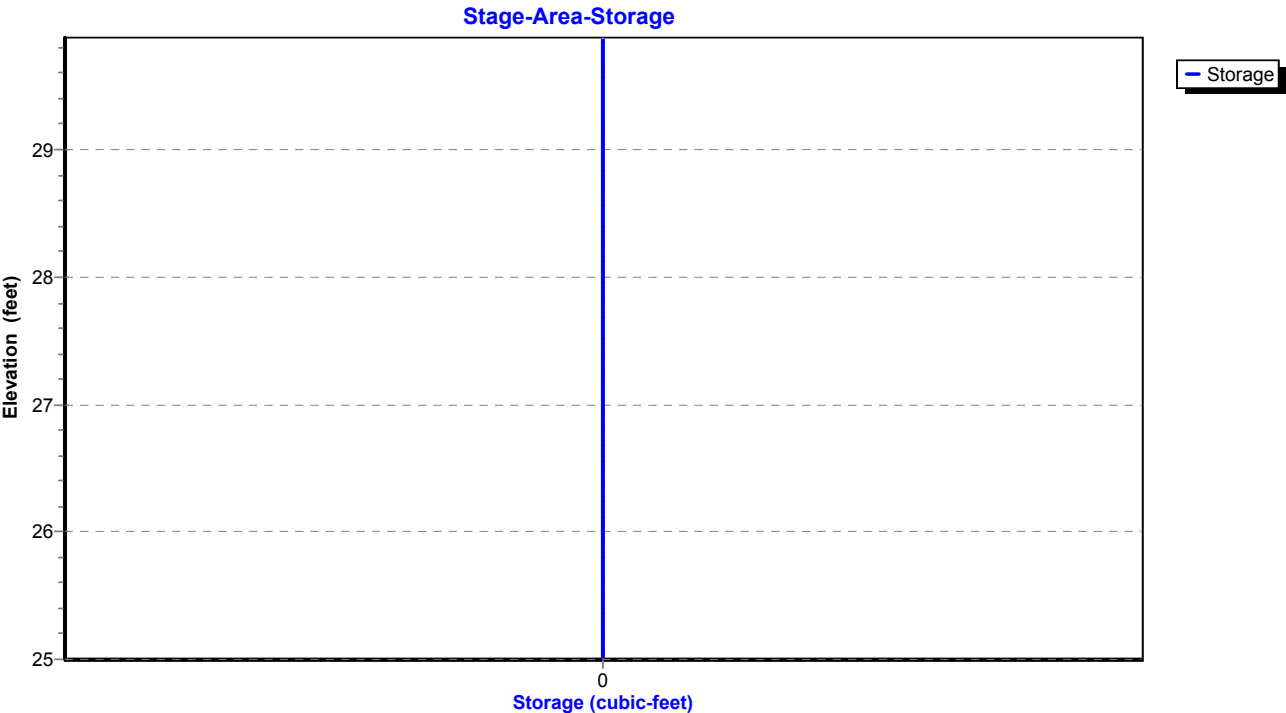
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Pond 2P: RR Culvert 1



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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 4.45" for 25 year event
 Inflow = 29.16 cfs @ 12.03 hrs, Volume= 97,738 cf
 Outflow = 4.45 cfs @ 12.61 hrs, Volume= 81,966 cf, Atten= 85%, Lag= 34.4 min
 Primary = 4.45 cfs @ 12.61 hrs, Volume= 81,966 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 50.29' @ 12.61 hrs Surf.Area= 12,581 sf Storage= 47,206 cf

Plug-Flow detention time= 218.9 min calculated for 81,939 cf (84% of inflow)
 Center-of-Mass det. time= 140.4 min (937.2 - 796.8)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.45 cfs @ 12.61 hrs HW=50.29' (Free Discharge)

- 1=Culvert (Passes 4.45 cfs of 20.03 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 4.45 cfs @ 8.16 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Proposed Conditions

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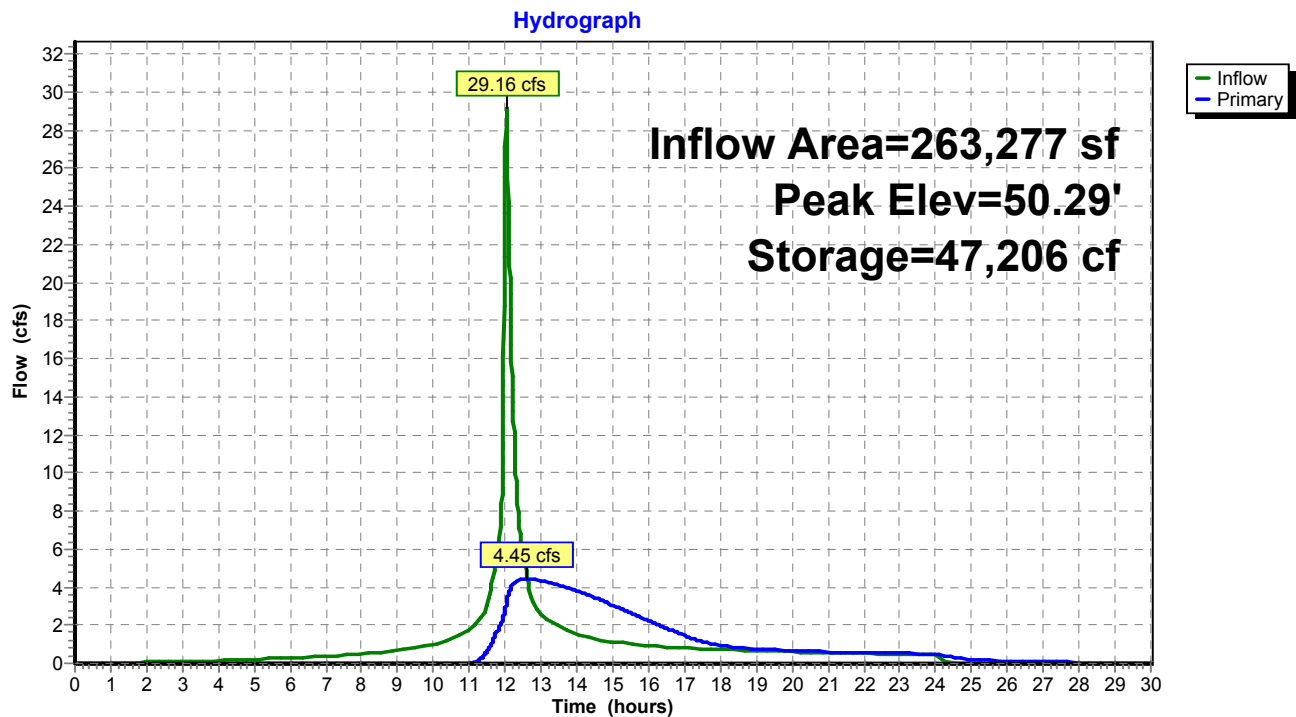
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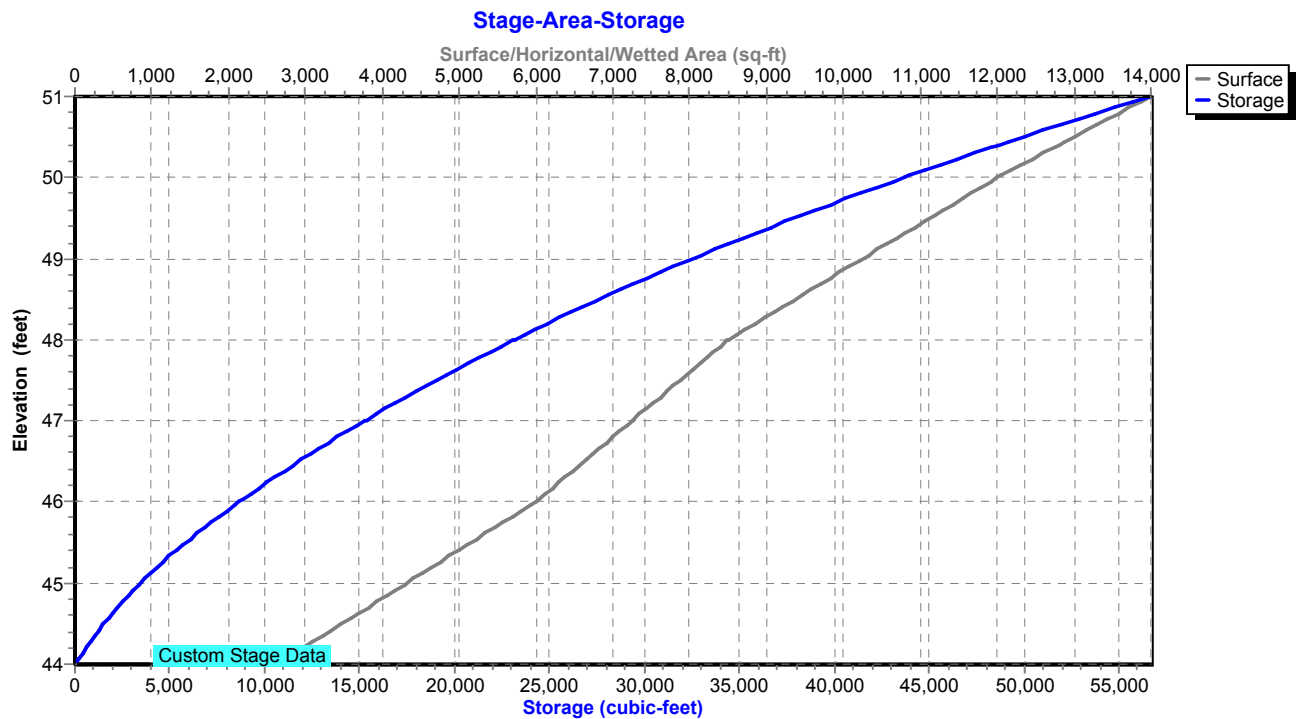
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 3.49" for 25 year event
 Inflow = 22.21 cfs @ 12.45 hrs, Volume= 157,388 cf
 Outflow = 18.94 cfs @ 12.63 hrs, Volume= 157,387 cf, Atten= 15%, Lag= 10.6 min
 Primary = 18.94 cfs @ 12.63 hrs, Volume= 157,387 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 80.78' @ 12.63 hrs Storage= 8,732 cf

Plug-Flow detention time= 6.3 min calculated for 157,387 cf (100% of inflow)

Center-of-Mass det. time= 6.3 min (887.5 - 881.2)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=18.94 cfs @ 12.63 hrs HW=80.78' (Free Discharge)↑**1=Culvert** (Inlet Controls 18.94 cfs @ 6.03 fps)

Proposed Conditions

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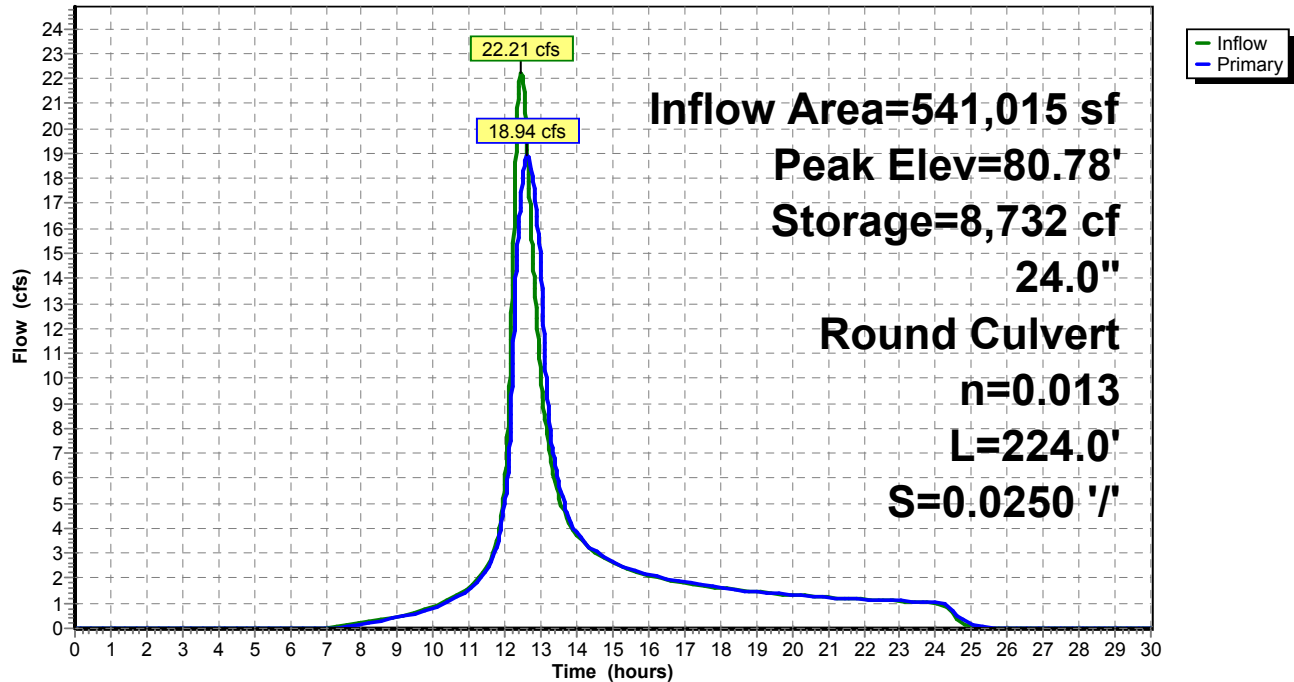
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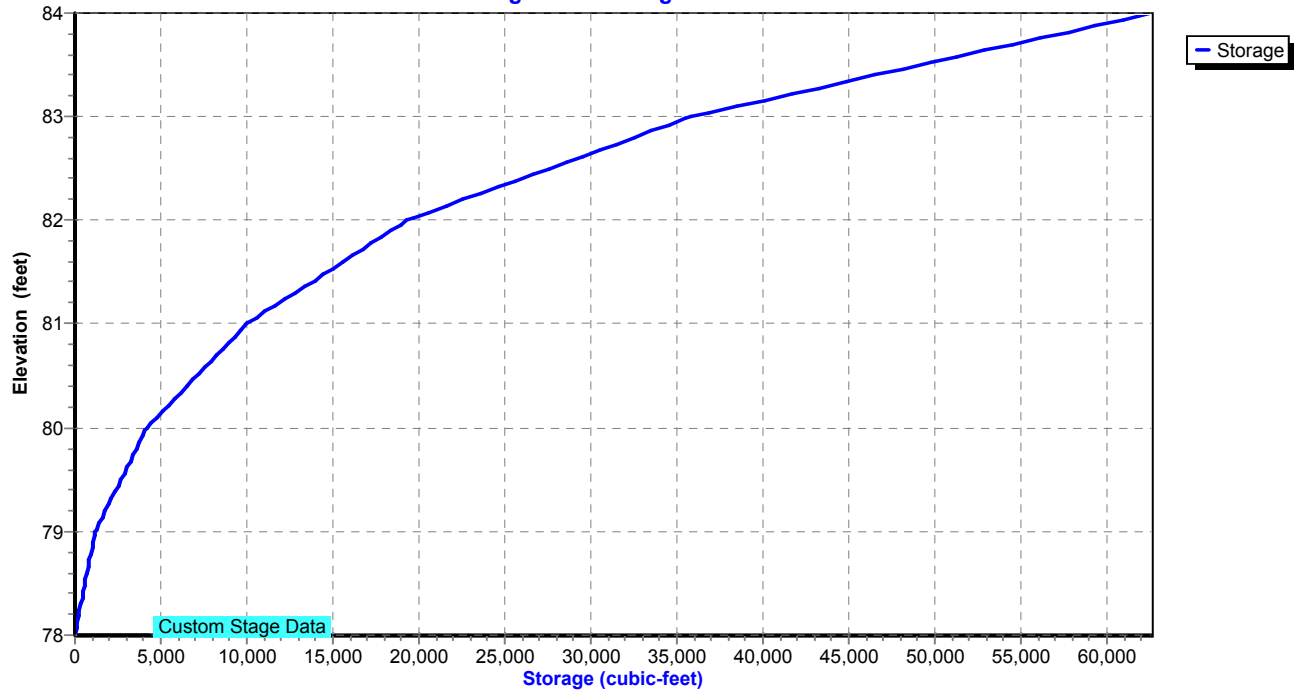
Pond 5P: DET 5 Culvert

Hydrograph



Pond 5P: DET 5 Culvert

Stage-Area-Storage



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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 4.43" for 25 year event
 Inflow = 30.81 cfs @ 12.70 hrs, Volume= 275,844 cf
 Outflow = 30.74 cfs @ 12.71 hrs, Volume= 275,844 cf, Atten= 0%, Lag= 0.7 min
 Primary = 30.74 cfs @ 12.71 hrs, Volume= 275,844 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 91.67' @ 12.71 hrs Storage= 1,138 cf

Plug-Flow detention time= 0.5 min calculated for 275,844 cf (100% of inflow)

Center-of-Mass det. time= 0.4 min (869.5 - 869.0)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=30.74 cfs @ 12.71 hrs HW=91.67' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 30.74 cfs @ 6.26 fps)

Proposed Conditions

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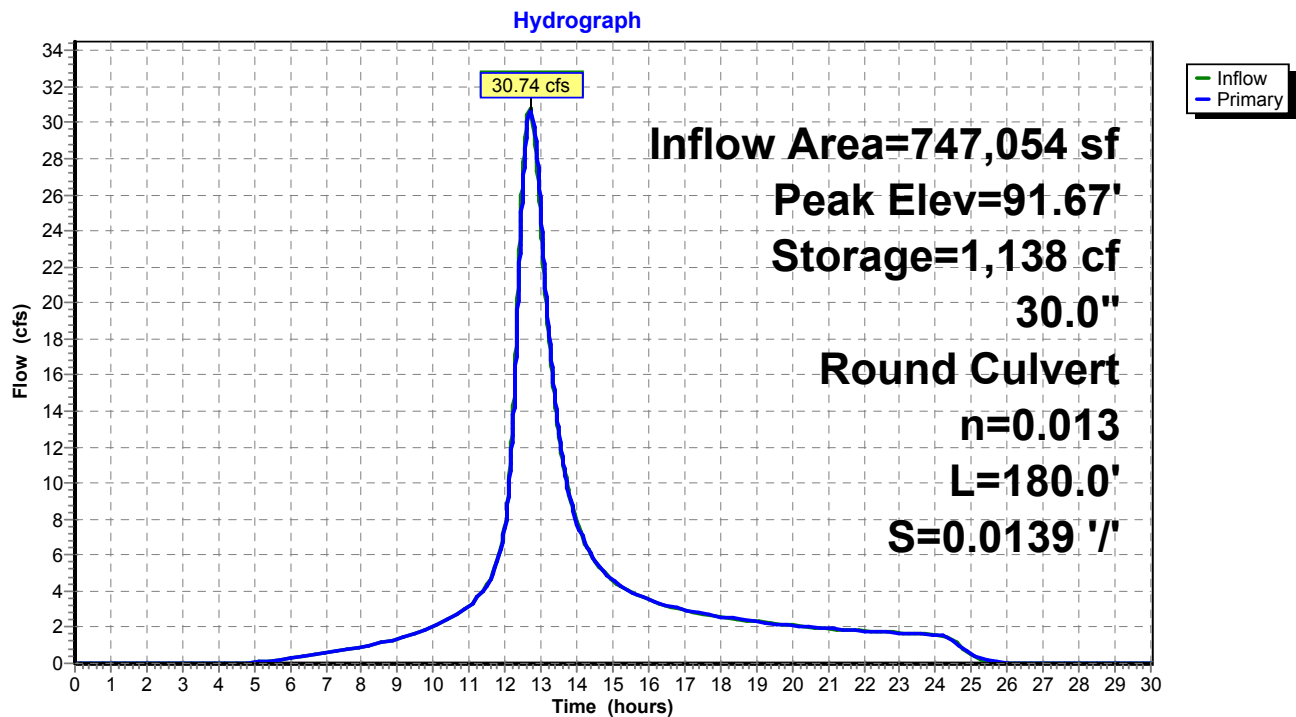
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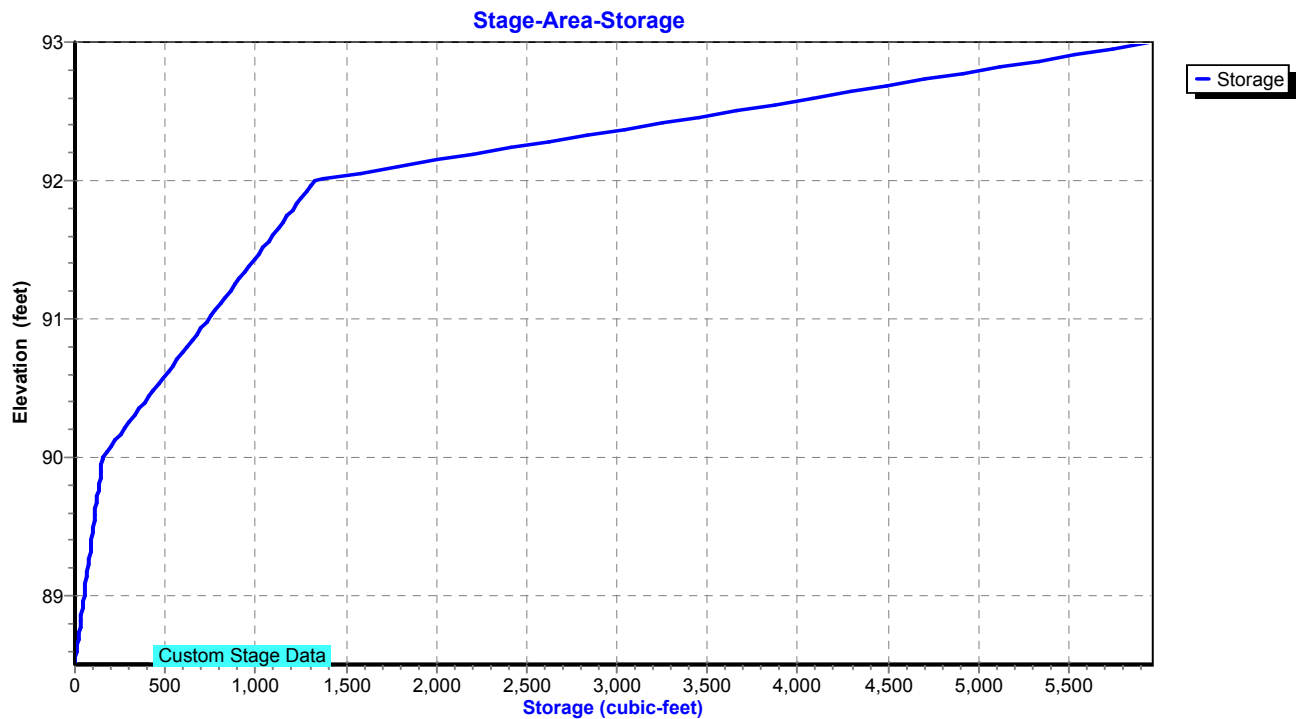
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 4.32" for 25 year event
 Inflow = 4.22 cfs @ 12.26 hrs, Volume= 23,071 cf
 Outflow = 2.81 cfs @ 12.46 hrs, Volume= 23,071 cf, Atten= 33%, Lag= 12.2 min
 Primary = 2.81 cfs @ 12.46 hrs, Volume= 23,071 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.39' @ 12.46 hrs Storage= 2,350 cf

Plug-Flow detention time= 6.6 min calculated for 23,071 cf (100% of inflow)

Center-of-Mass det. time= 6.6 min (849.3 - 842.7)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=2.81 cfs @ 12.46 hrs HW=93.39' (Free Discharge)↑**1=Culvert** (Inlet Controls 2.81 cfs @ 3.01 fps)

Proposed Conditions

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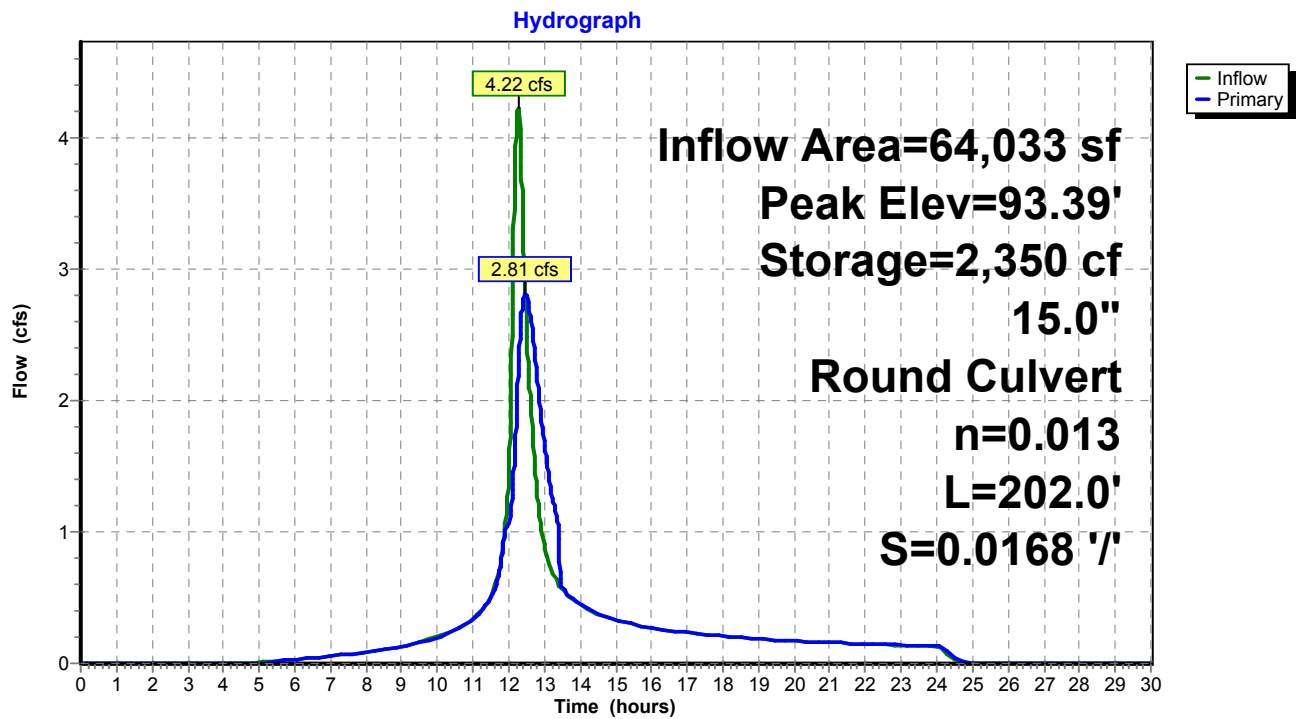
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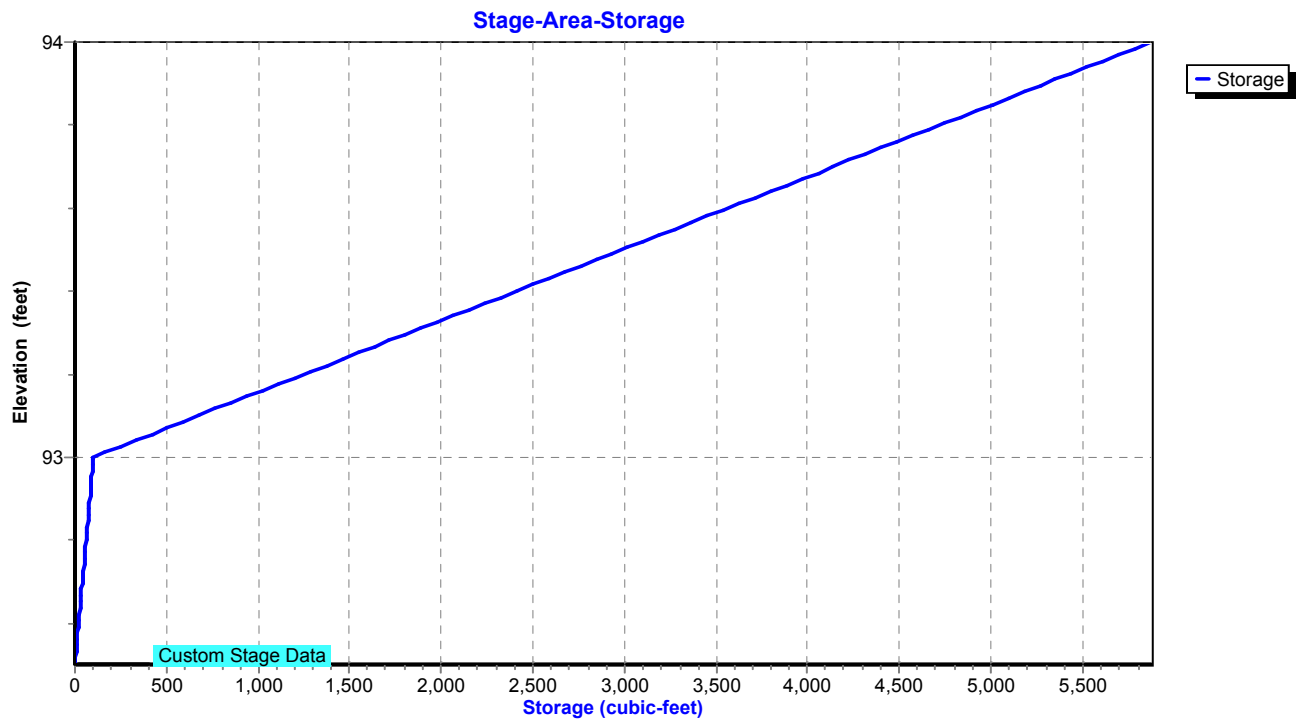
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 4.20" for 25 year event
 Inflow = 62.19 cfs @ 12.67 hrs, Volume= 555,099 cf
 Outflow = 62.19 cfs @ 12.67 hrs, Volume= 555,099 cf, Atten= 0%, Lag= 0.1 min
 Primary = 62.19 cfs @ 12.67 hrs, Volume= 555,099 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 71.95' @ 12.67 hrs Storage= 164 cf

Plug-Flow detention time= 0.0 min calculated for 555,099 cf (100% of inflow)
 Center-of-Mass det. time= 0.0 min (866.3 - 866.3)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=62.19 cfs @ 12.67 hrs HW=71.95' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 62.19 cfs @ 6.46 fps)

Proposed Conditions

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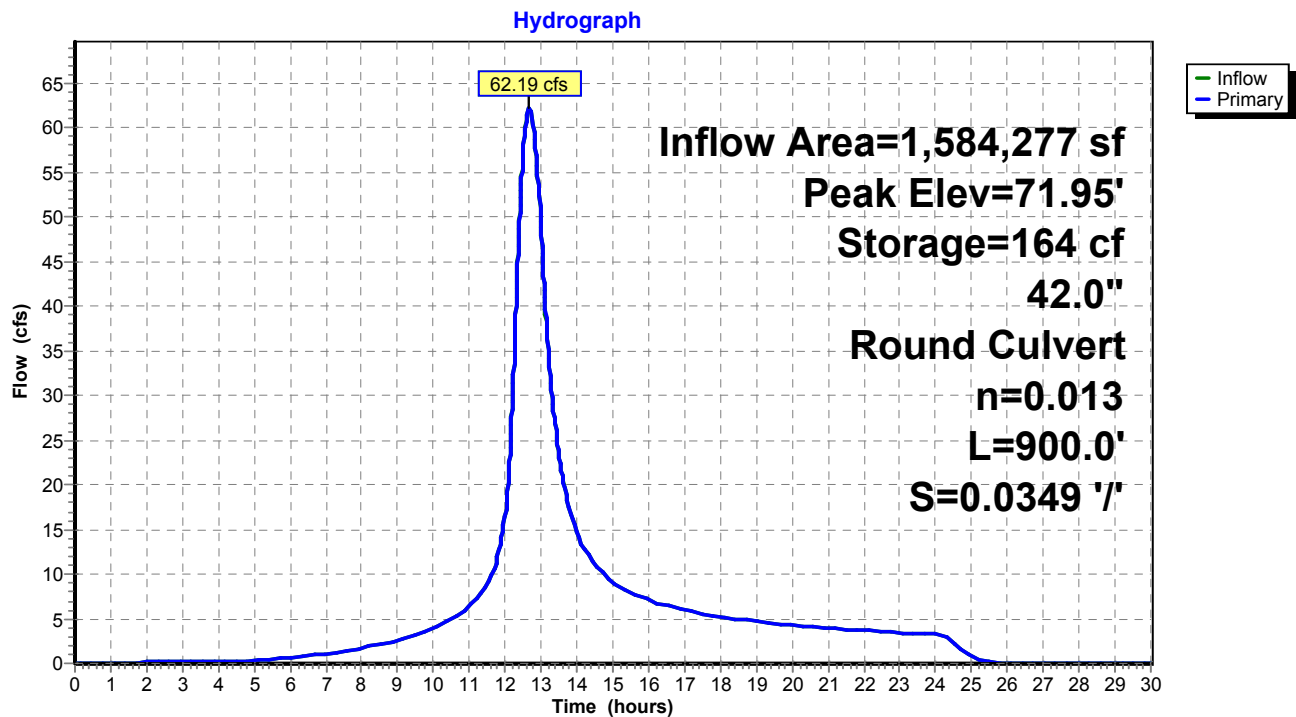
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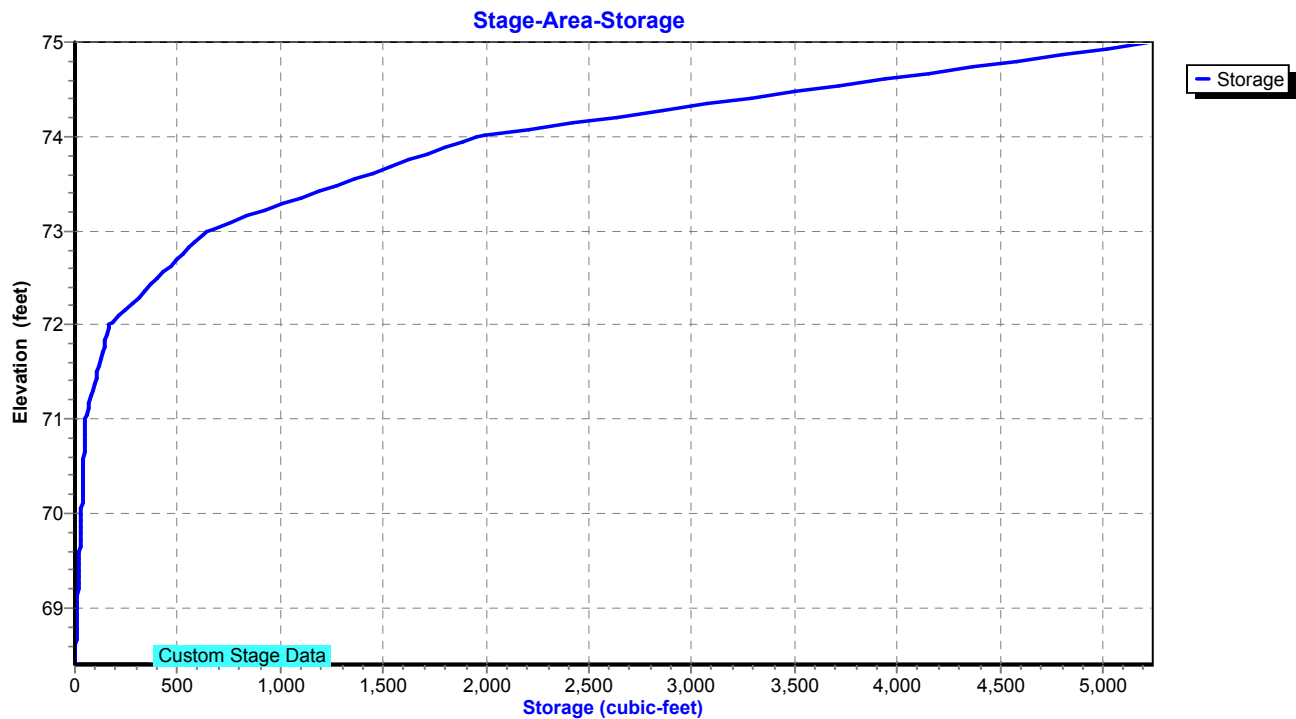
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



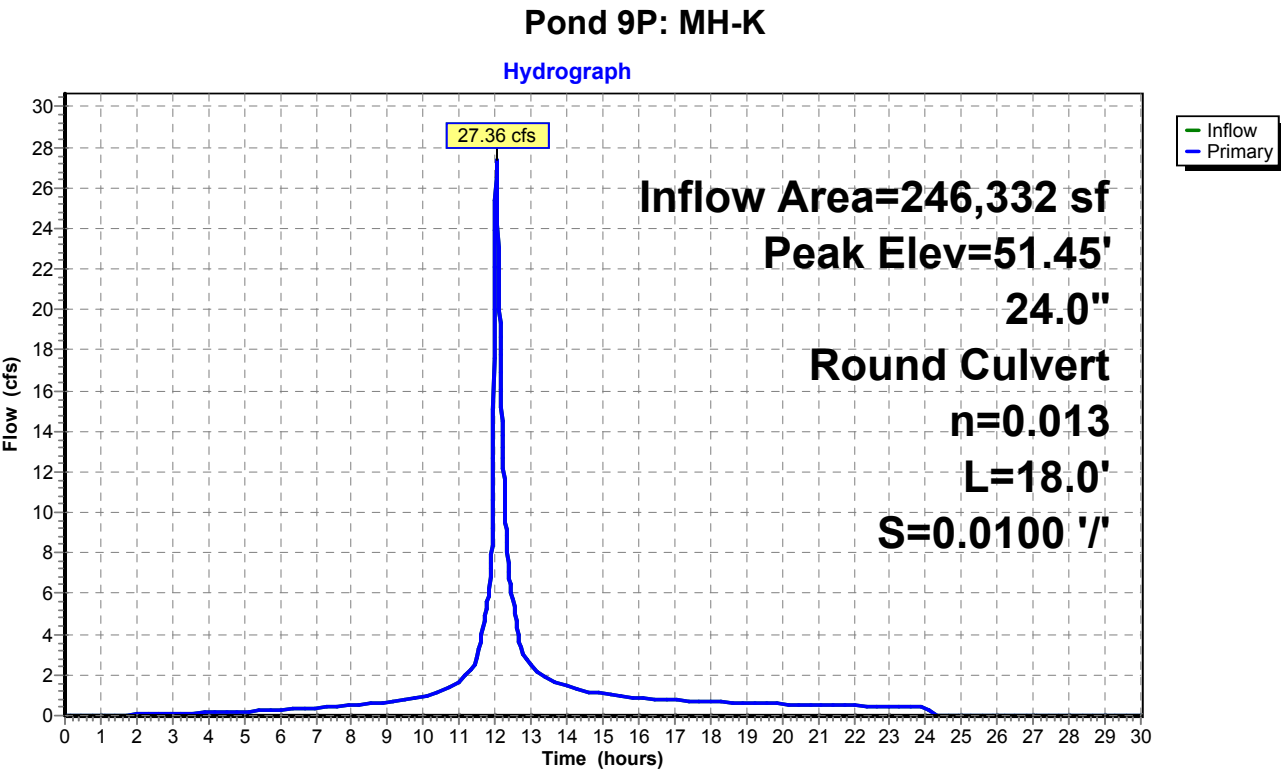
Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 4.51" for 25 year event
Inflow = 27.36 cfs @ 12.04 hrs, Volume= 92,665 cf
Outflow = 27.36 cfs @ 12.04 hrs, Volume= 92,665 cf, Atten= 0%, Lag= 0.0 min
Primary = 27.36 cfs @ 12.04 hrs, Volume= 92,665 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.45' @ 12.04 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=27.27 cfs @ 12.04 hrs HW=51.43' (Free Discharge)
1=Culvert (Inlet Controls 27.27 cfs @ 8.68 fps)



Proposed Conditions

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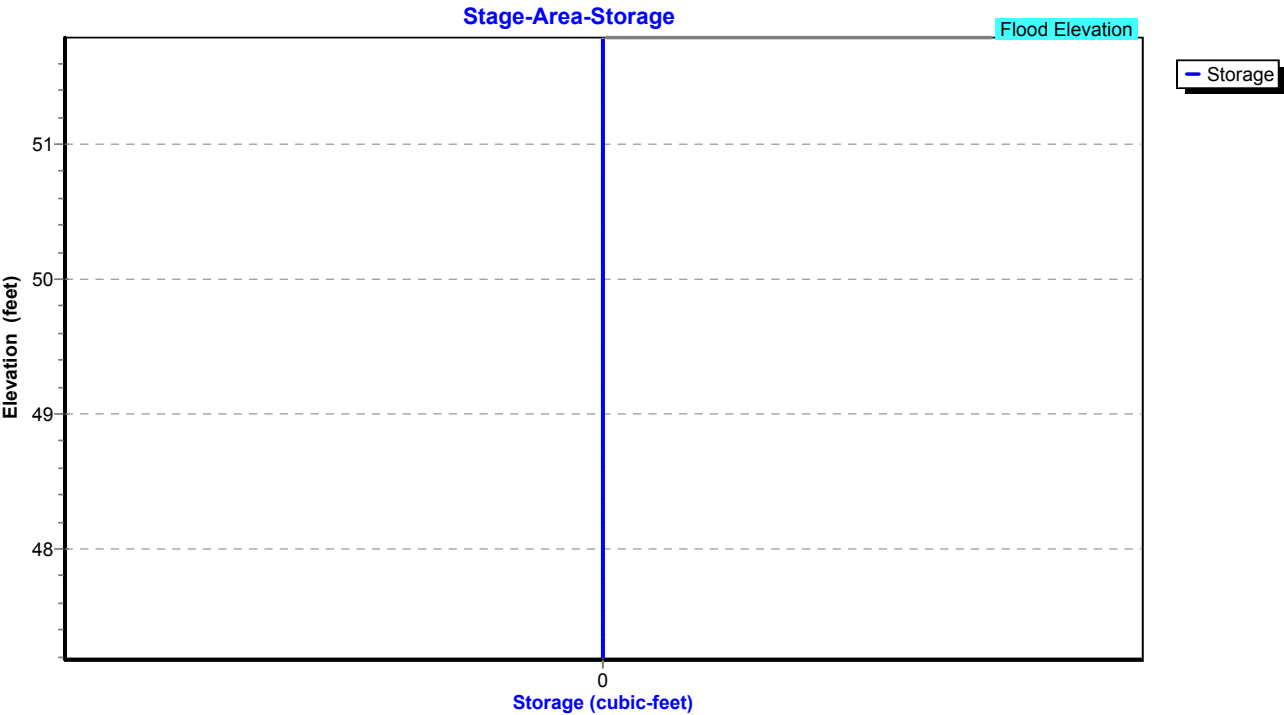
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Pond 9P: MH-K



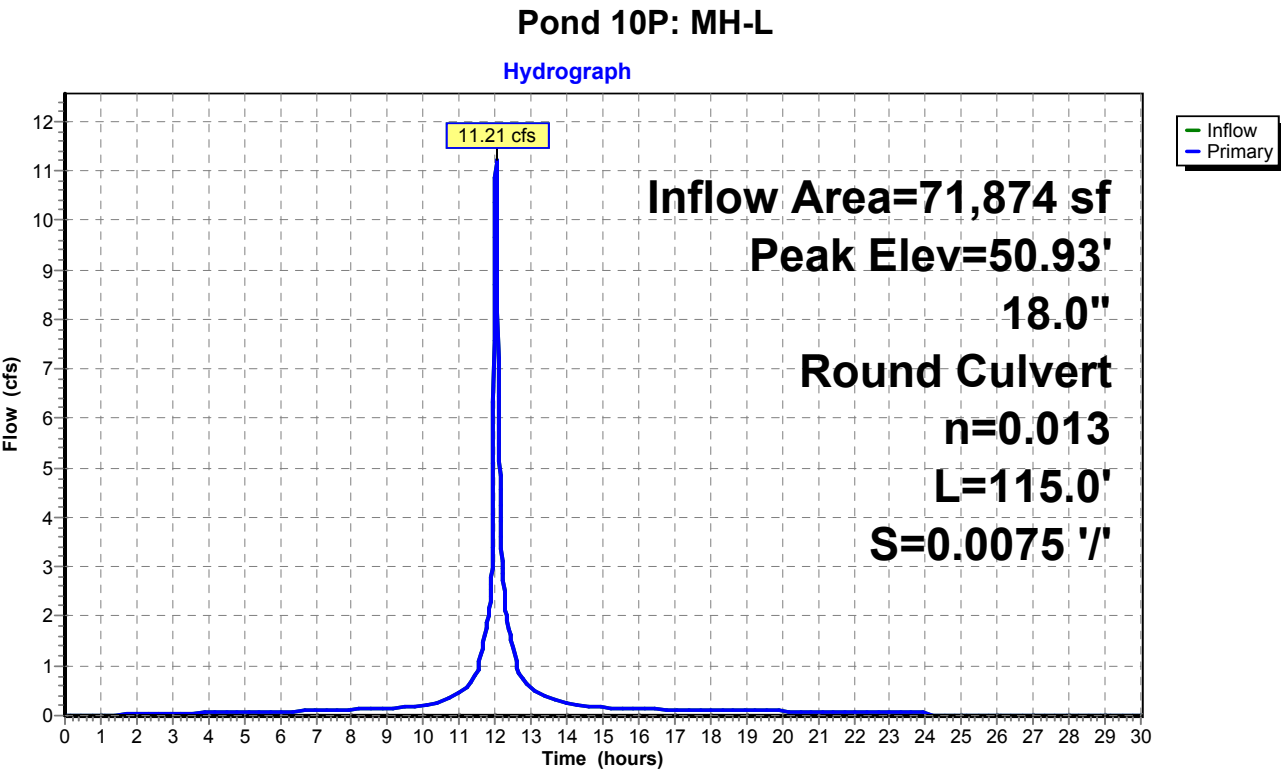
Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 3.85" for 25 year event
Inflow = 11.21 cfs @ 12.03 hrs, Volume= 23,062 cf
Outflow = 11.21 cfs @ 12.03 hrs, Volume= 23,062 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.21 cfs @ 12.03 hrs, Volume= 23,062 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.93' @ 12.03 hrs
Flood Elev= 53.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=11.16 cfs @ 12.03 hrs HW=50.91' (Free Discharge)
1=Culvert (Barrel Controls 11.16 cfs @ 6.32 fps)



Proposed Conditions

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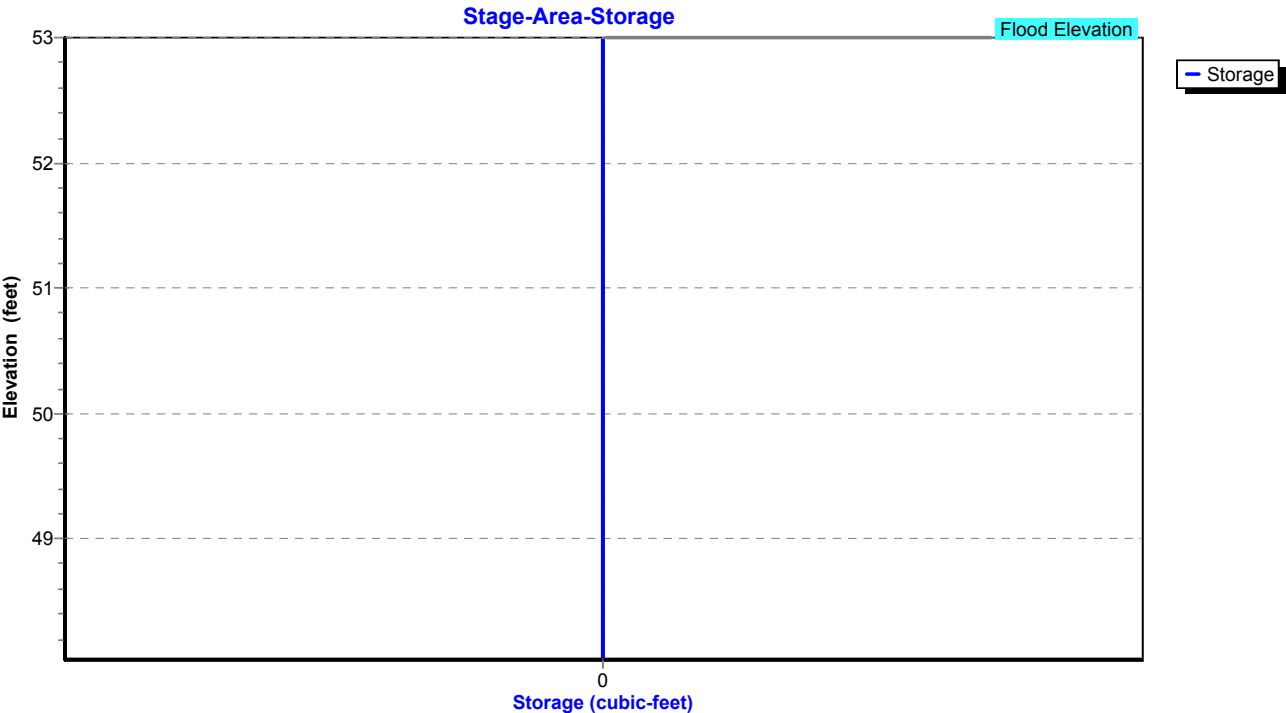
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Pond 10P: MH-L



Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 5.78" for 25 year event
Inflow = 6.50 cfs @ 12.03 hrs, Volume= 19,701 cf
Outflow = 6.25 cfs @ 12.03 hrs, Volume= 7,784 cf, Atten= 4%, Lag= 0.0 min
Primary = 6.25 cfs @ 12.03 hrs, Volume= 7,784 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 52.02' @ 12.03 hrs Storage= 0.081 af

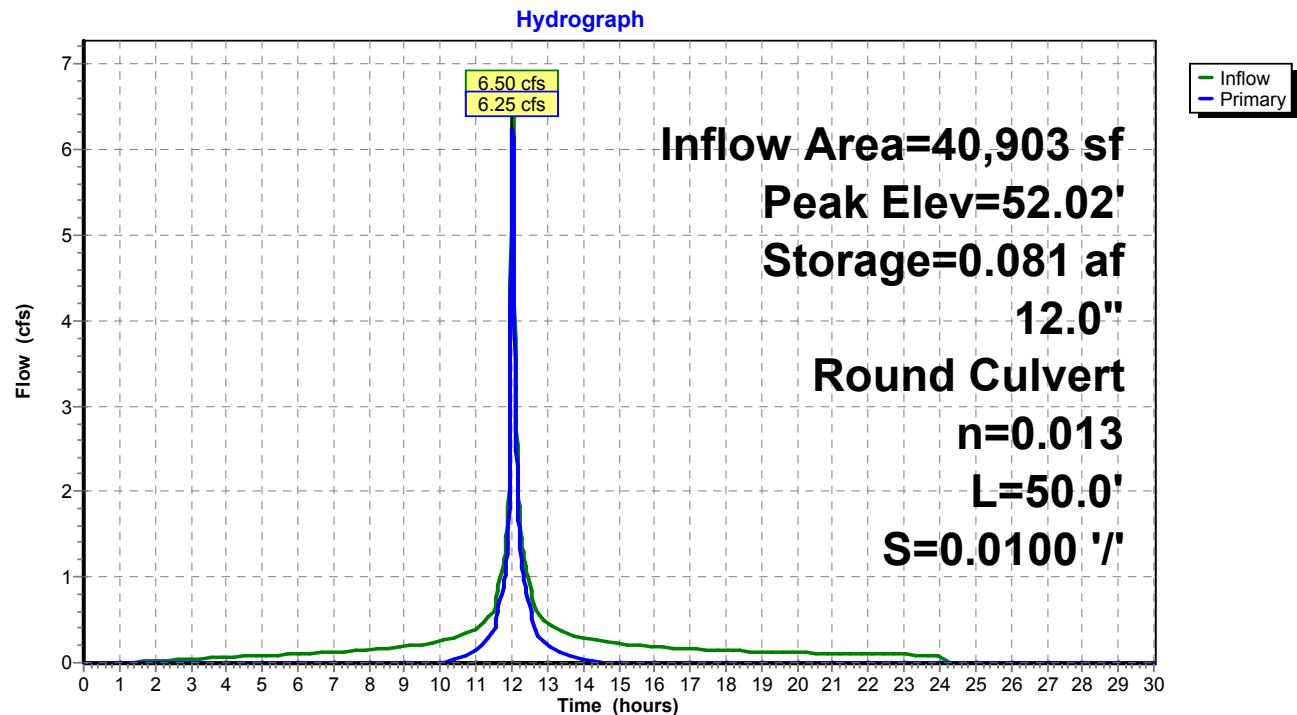
Plug-Flow detention time= 146.8 min calculated for 7,781 cf (39% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

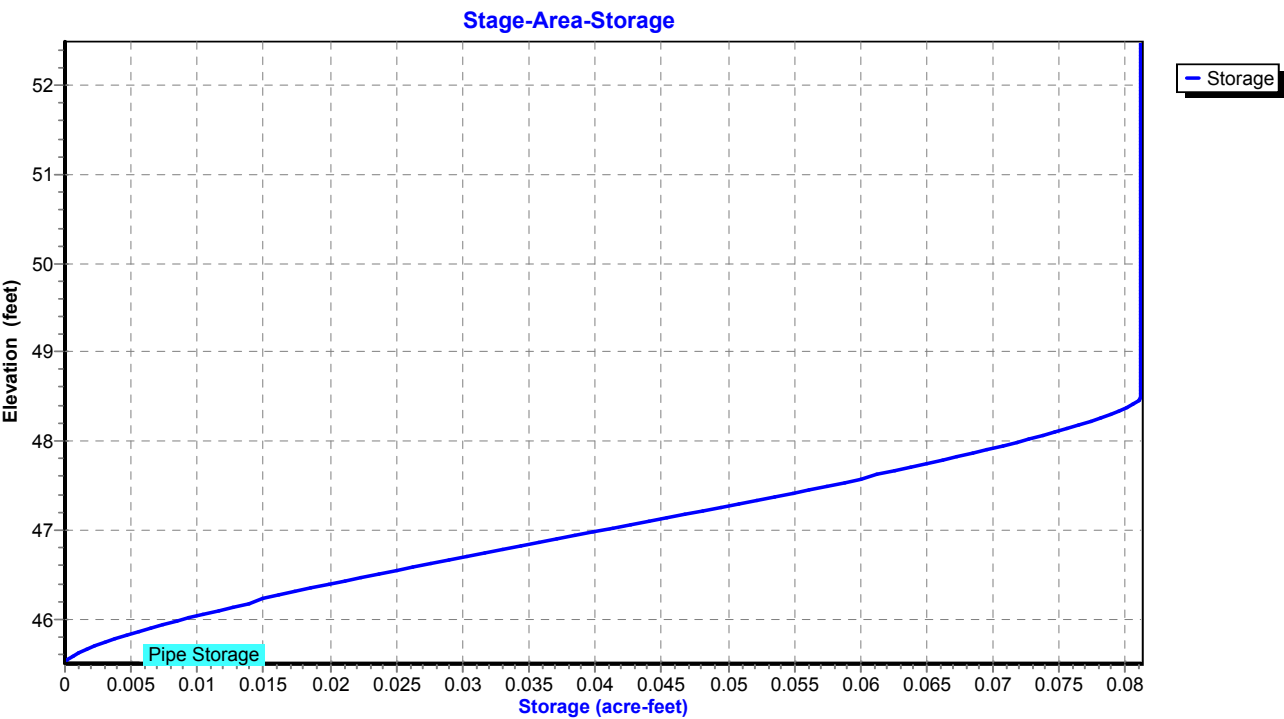
Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=6.22 cfs @ 12.03 hrs HW=51.99' (Free Discharge)
↑1=Culvert (Barrel Controls 6.22 cfs @ 7.92 fps)

Pond 11P: Pipe Storage



Pond 11P: Pipe Storage



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Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 5.92" for 25 year event
Inflow = 4.96 cfs @ 12.03 hrs, Volume= 15,279 cf
Outflow = 4.96 cfs @ 12.03 hrs, Volume= 15,279 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.96 cfs @ 12.03 hrs, Volume= 15,279 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.64' @ 12.03 hrs

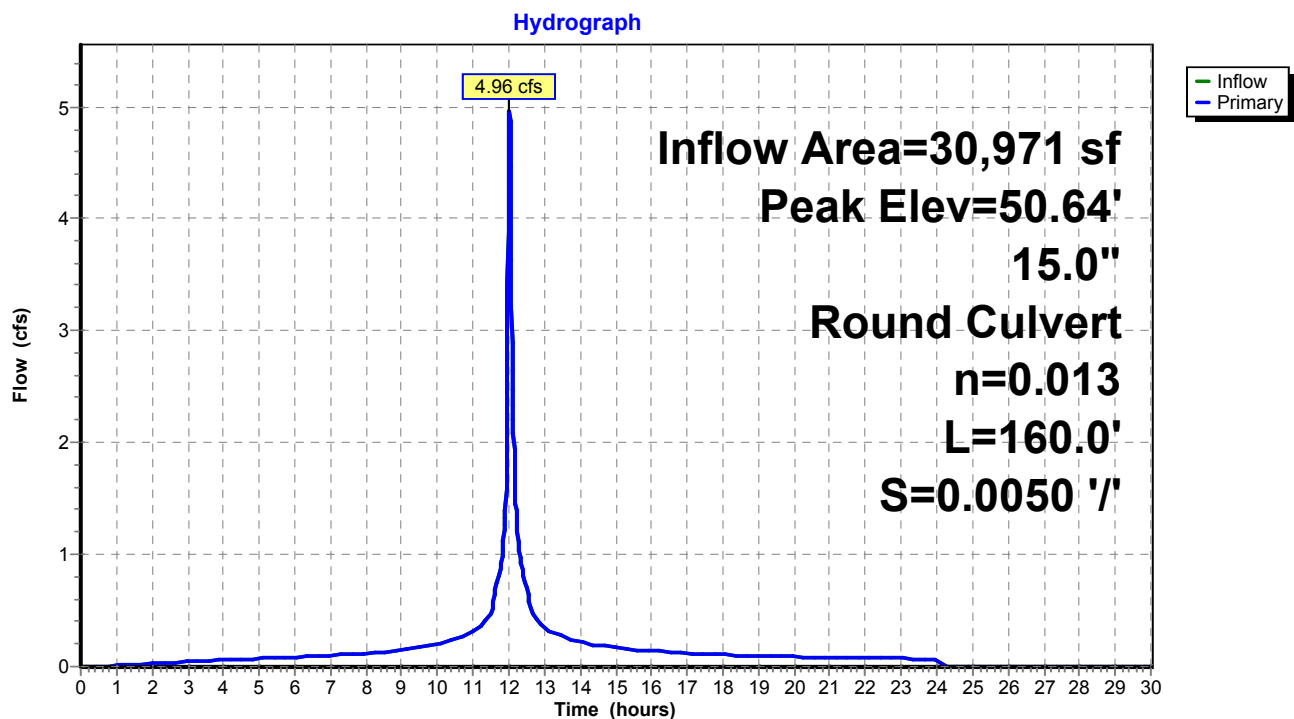
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=4.94 cfs @ 12.03 hrs HW=50.61' (Free Discharge)

↑1=Culvert (Barrel Controls 4.94 cfs @ 4.03 fps)

Pond 12P: MH-M



Proposed Conditions

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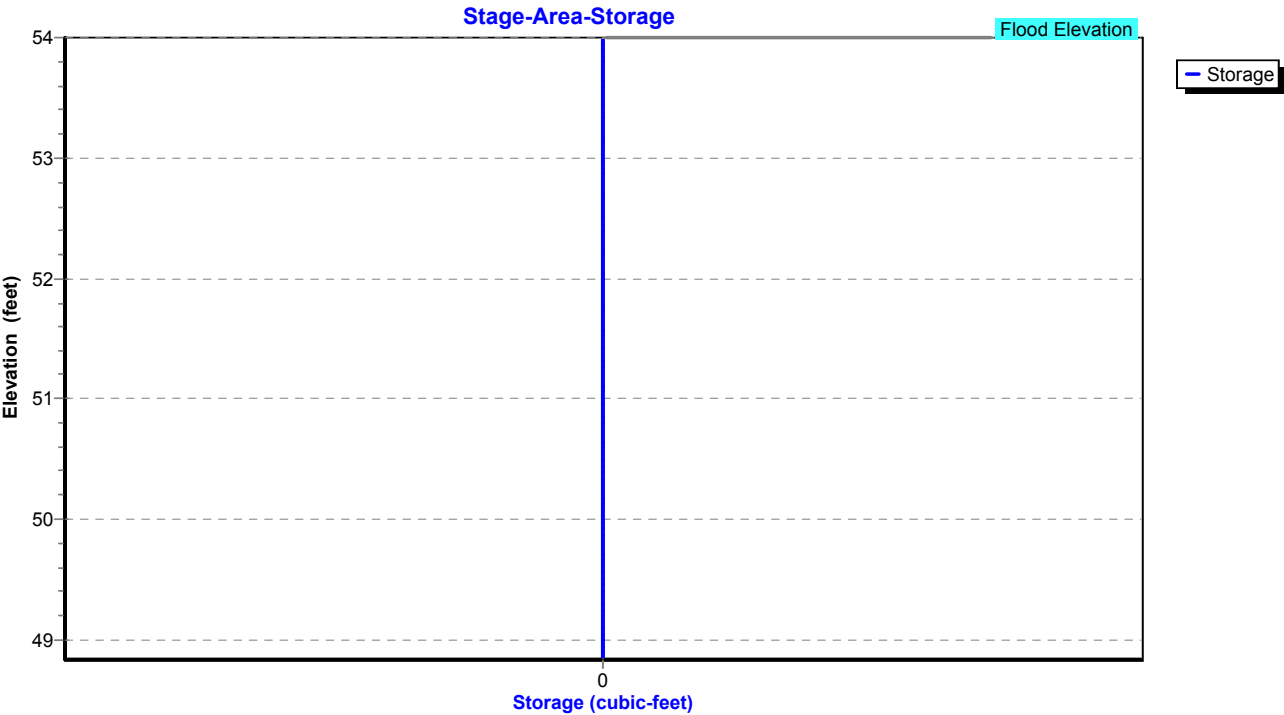
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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 5.66" for 25 year event
Inflow = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf
Outflow = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.68 cfs @ 12.03 hrs, Volume= 8,029 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

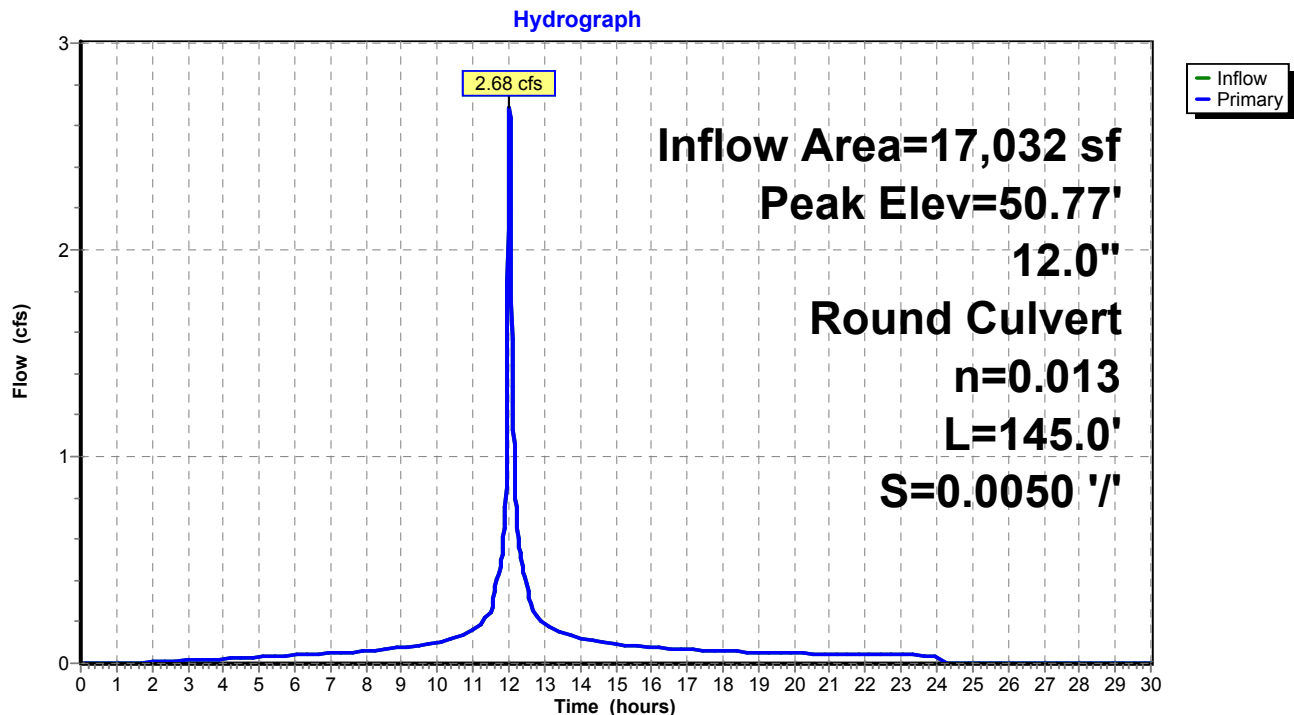
Peak Elev= 50.77' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.67 cfs @ 12.03 hrs HW=50.76' (Free Discharge)

↑1=Culvert (Barrel Controls 2.67 cfs @ 3.61 fps)

Pond 13P: MH-J



Proposed Conditions

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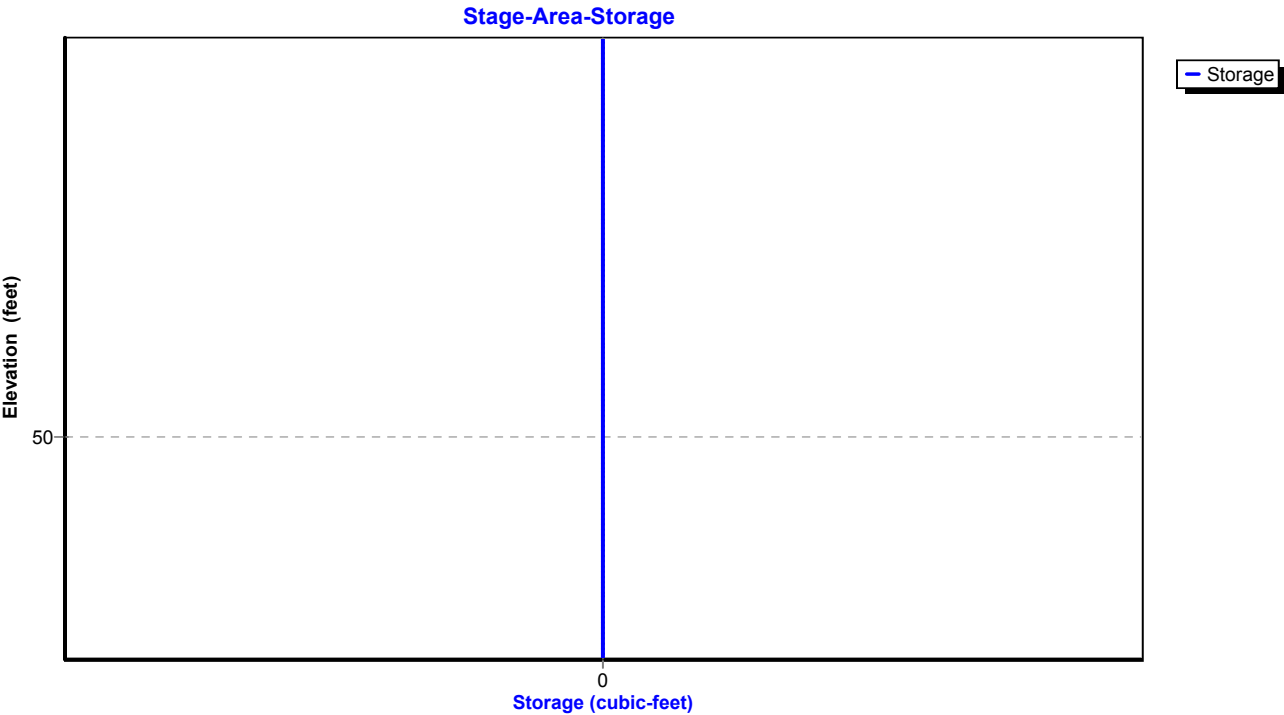
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Pond 13P: MH-J



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Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 4.56" for 25 year event
Inflow = 12.69 cfs @ 12.10 hrs, Volume= 54,725 cf
Outflow = 12.69 cfs @ 12.10 hrs, Volume= 54,725 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.69 cfs @ 12.10 hrs, Volume= 54,725 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.05' @ 12.10 hrs

Flood Elev= 51.80'

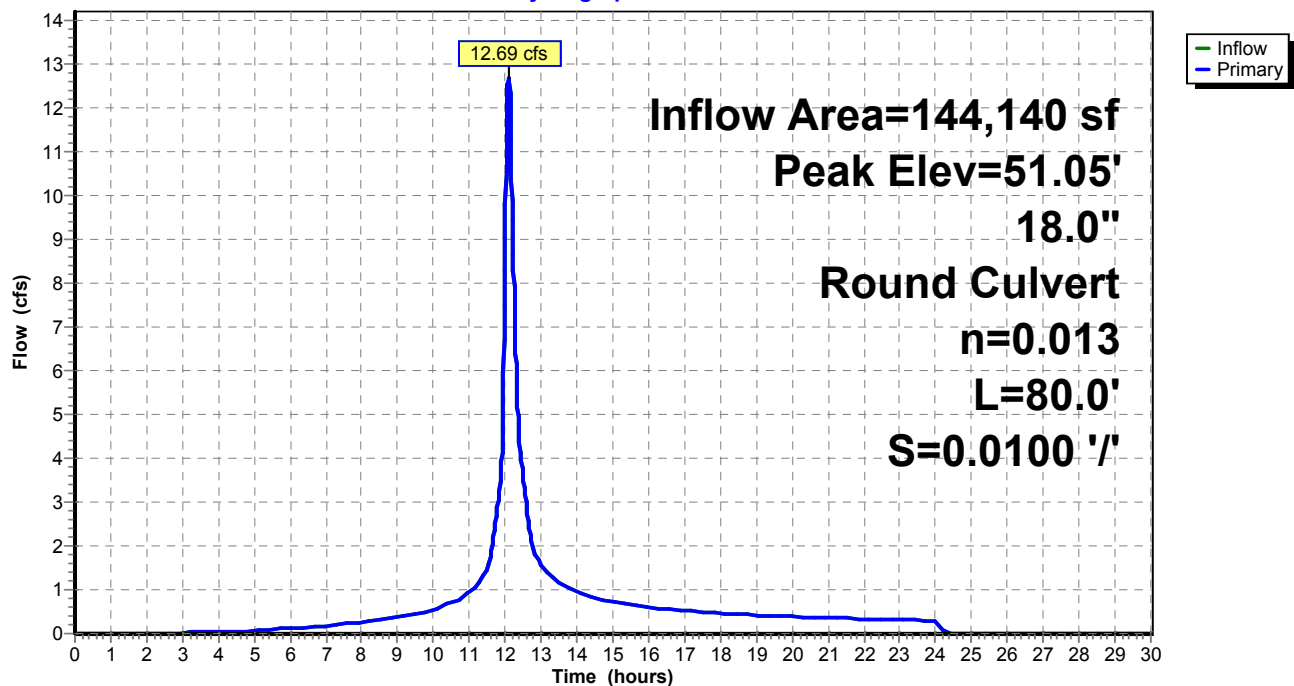
Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=12.68 cfs @ 12.10 hrs HW=51.05' (Free Discharge)

↑1=Culvert (Barrel Controls 12.68 cfs @ 7.18 fps)

Pond 14P: MH-O

Hydrograph



Proposed Conditions

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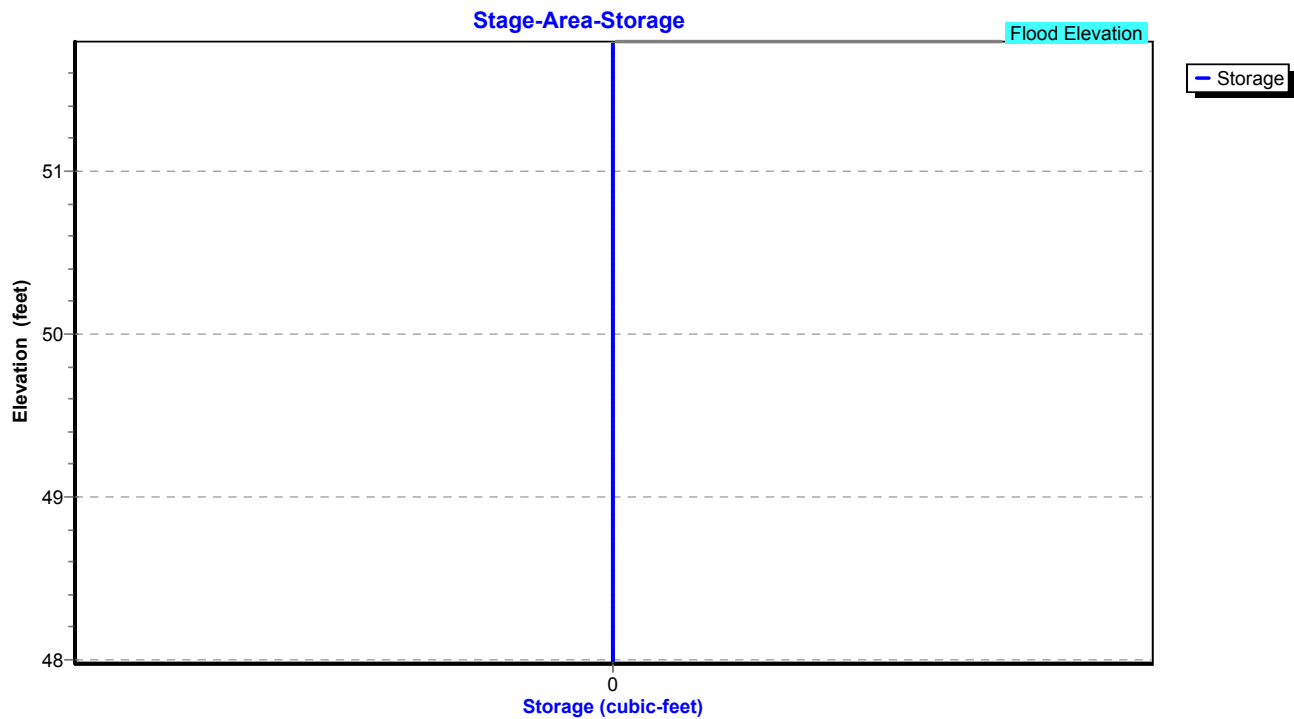
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Pond 14P: MH-O



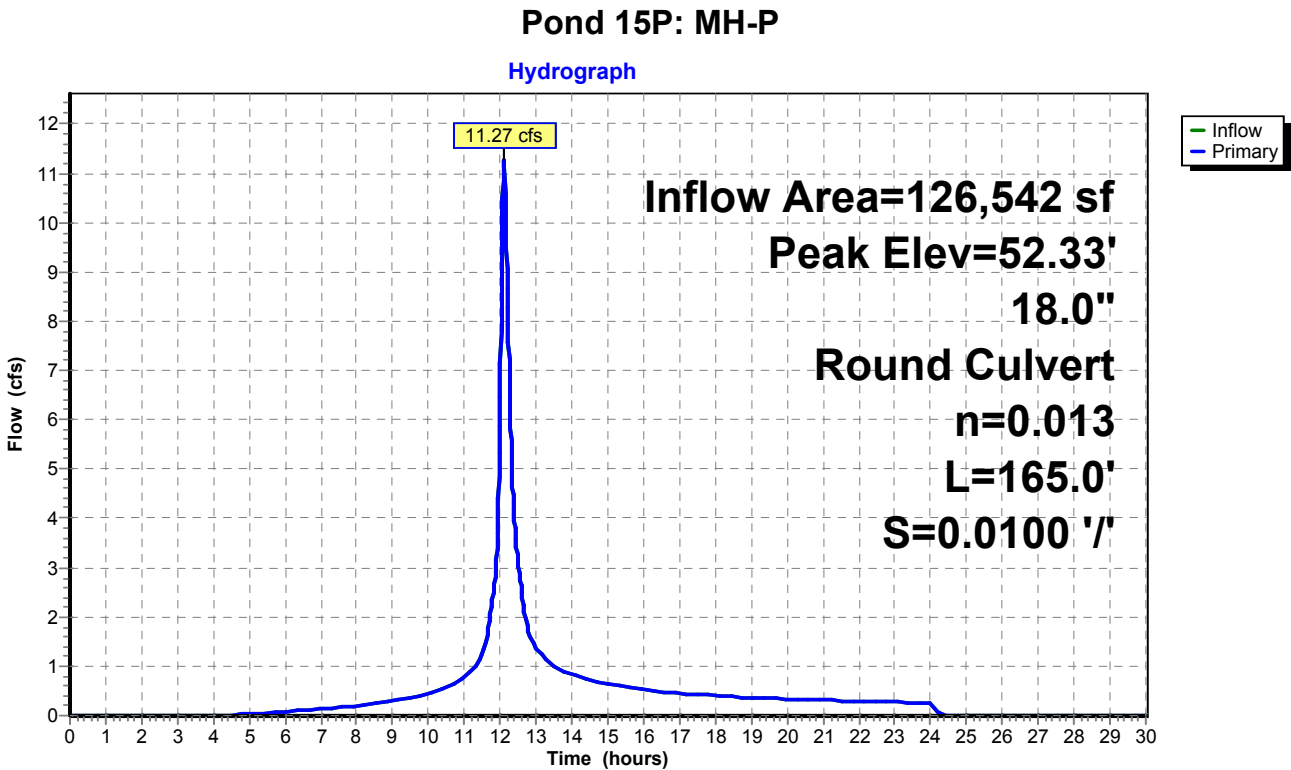
Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 4.40" for 25 year event
Inflow = 11.27 cfs @ 12.11 hrs, Volume= 46,408 cf
Outflow = 11.27 cfs @ 12.11 hrs, Volume= 46,408 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.27 cfs @ 12.11 hrs, Volume= 46,408 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.33' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=11.26 cfs @ 12.11 hrs HW=52.33' (Free Discharge)
1=Culvert (Barrel Controls 11.26 cfs @ 6.37 fps)



Proposed Conditions

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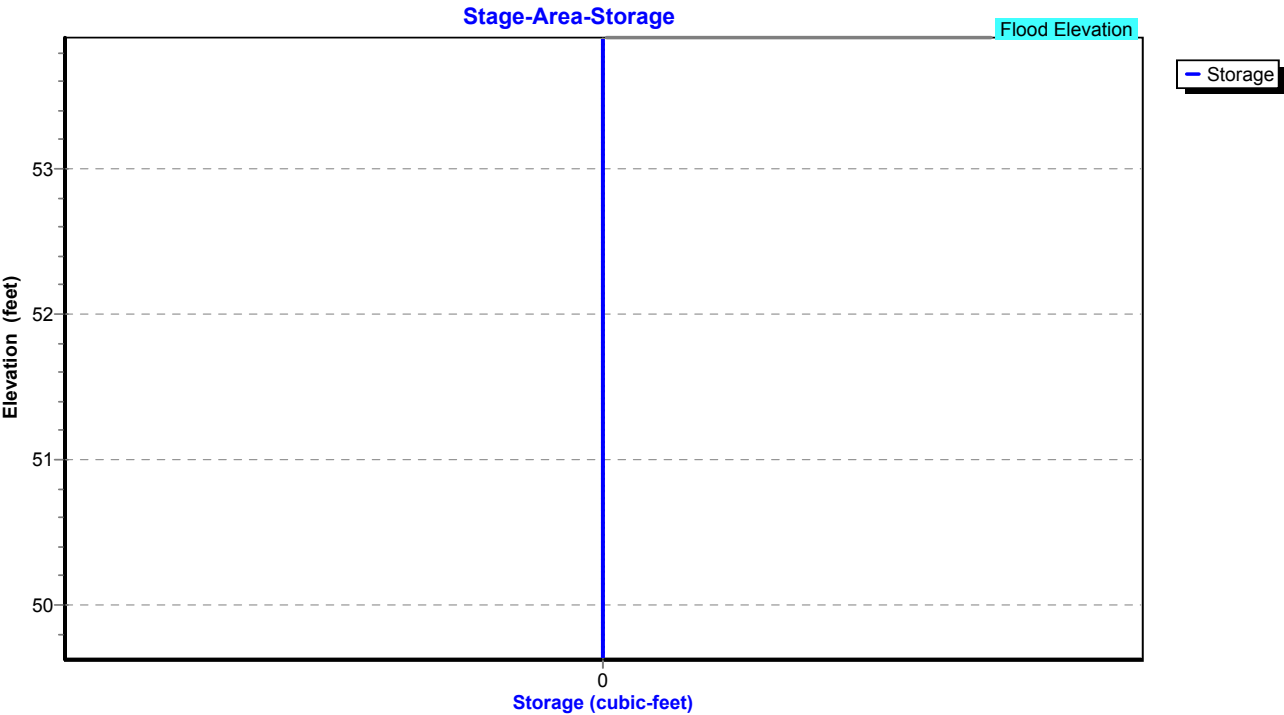
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Pond 15P: MH-P



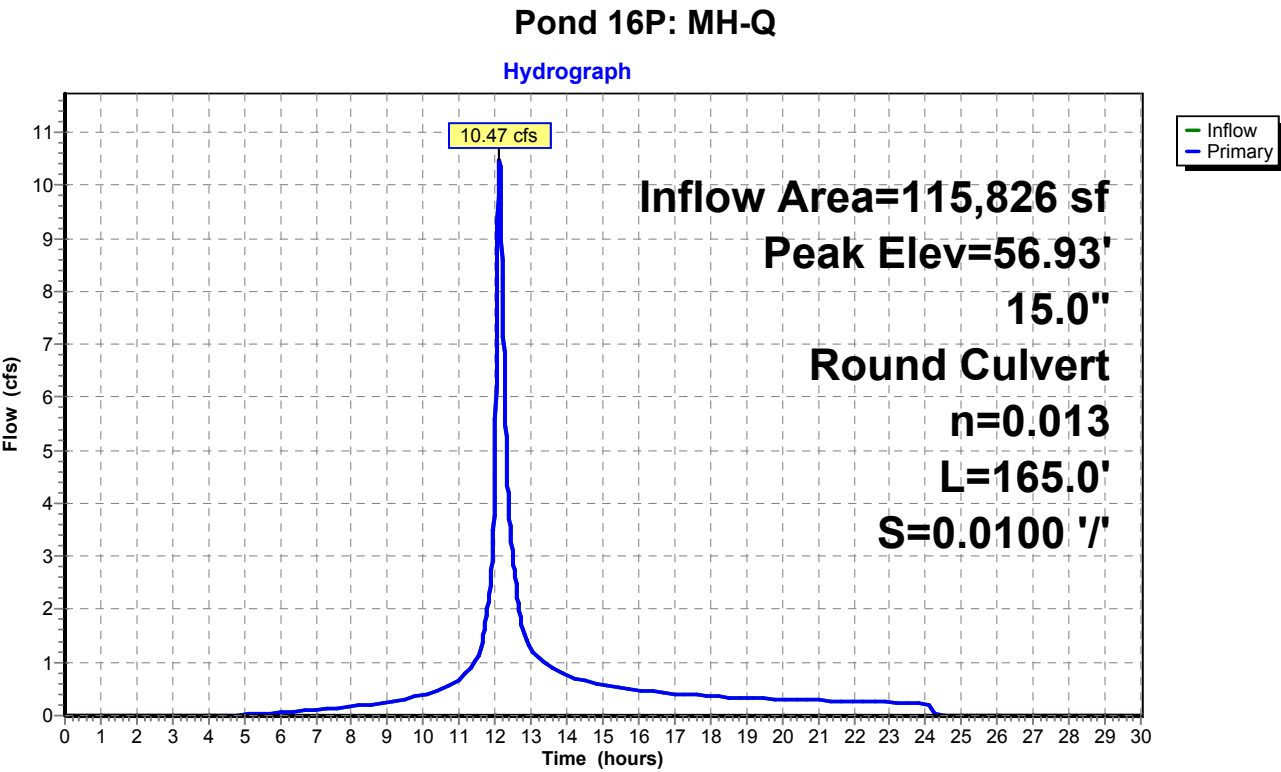
Summary for Pond 16P: MH-Q

Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 4.32" for 25 year event
Inflow = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf
Outflow = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.47 cfs @ 12.12 hrs, Volume= 41,732 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 56.93' @ 12.12 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=10.46 cfs @ 12.12 hrs HW=56.92' (Free Discharge)
1=Culvert (Barrel Controls 10.46 cfs @ 8.53 fps)



Proposed Conditions

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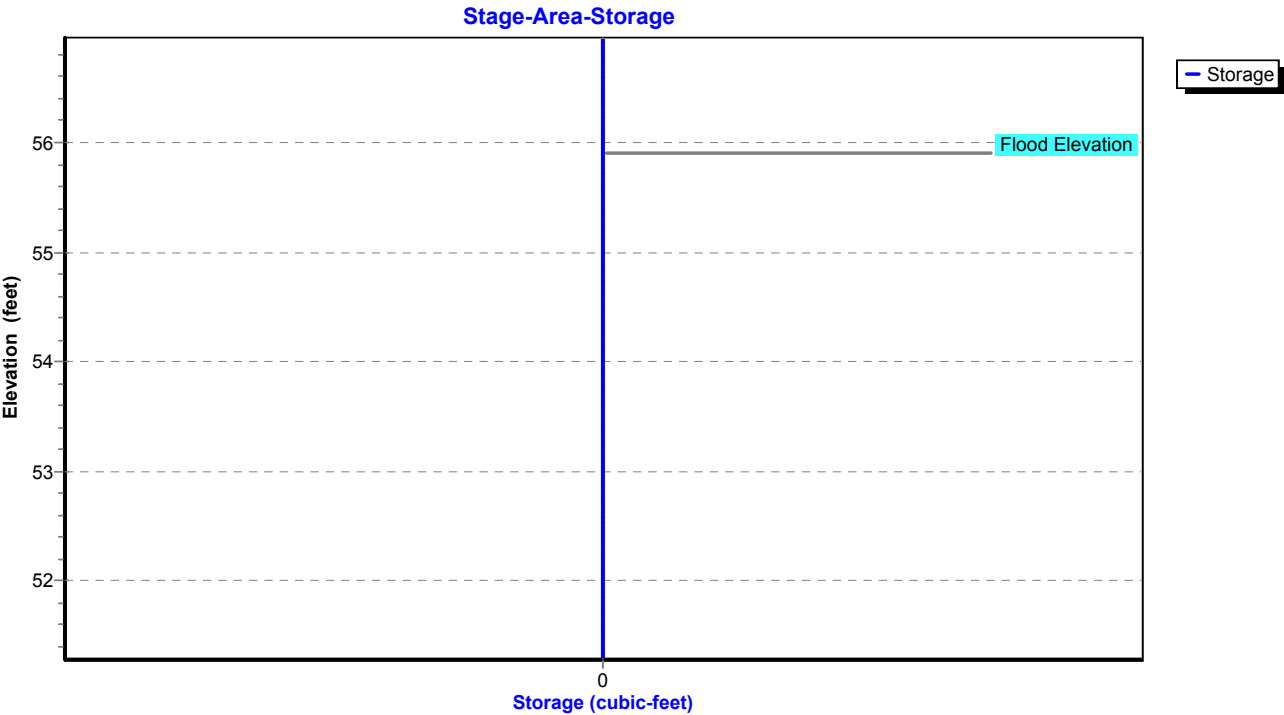
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Pond 16P: MH-Q



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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 3.59" for 25 year event
 Inflow = 69.40 cfs @ 13.09 hrs, Volume= 879,283 cf
 Outflow = 69.26 cfs @ 13.13 hrs, Volume= 879,283 cf, Atten= 0%, Lag= 2.1 min
 Primary = 69.26 cfs @ 13.13 hrs, Volume= 879,283 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 46.88' @ 13.13 hrs Surf.Area= 4,315 sf Storage= 6,218 cf

Plug-Flow detention time= 1.6 min calculated for 879,283 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (913.1 - 911.5)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=69.26 cfs @ 13.13 hrs HW=46.88' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 69.26 cfs @ 5.97 fps)

Proposed Conditions

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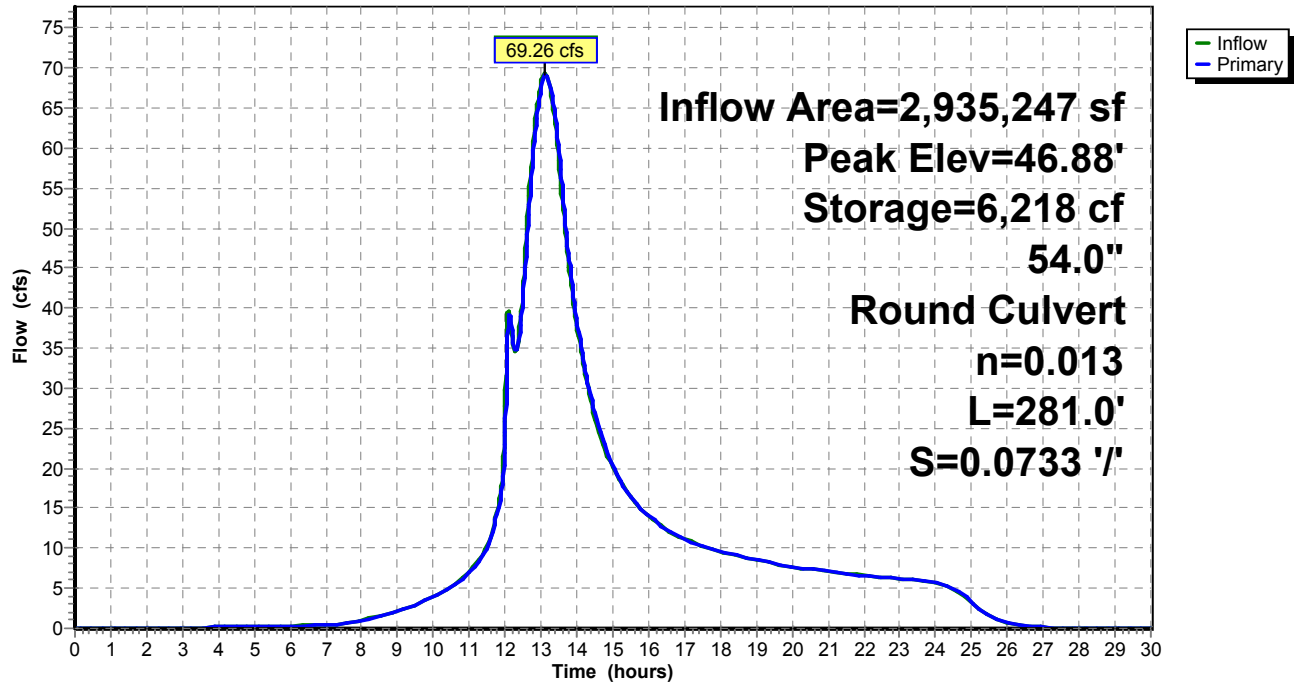
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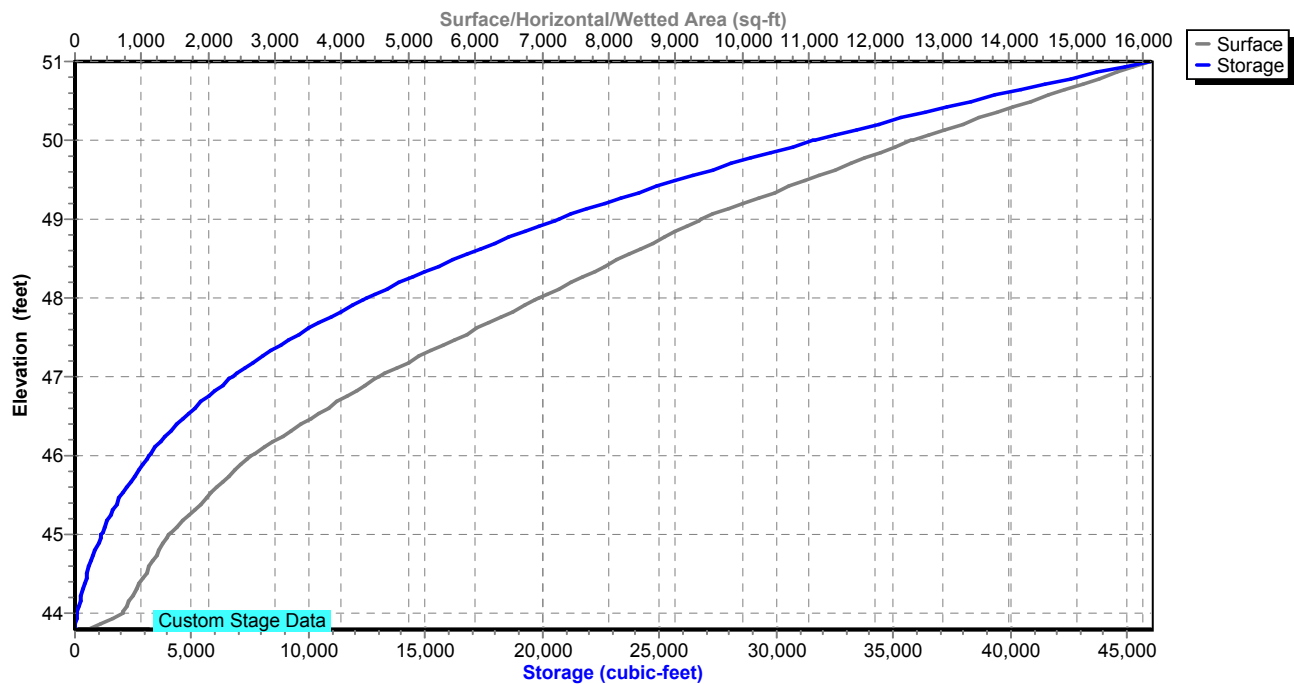
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 3.49" for 25 year event
 Inflow = 66.85 cfs @ 13.07 hrs, Volume= 771,480 cf
 Outflow = 66.55 cfs @ 13.10 hrs, Volume= 771,480 cf, Atten= 0%, Lag= 2.1 min
 Primary = 66.55 cfs @ 13.10 hrs, Volume= 771,480 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 67.32' @ 13.10 hrs Surf.Area= 1,191 sf Storage= 2,181 cf

Plug-Flow detention time= 0.2 min calculated for 771,480 cf (100% of inflow)
 Center-of-Mass det. time= 0.2 min (925.0 - 924.8)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=66.55 cfs @ 13.10 hrs HW=67.32' (Free Discharge)

↑**1=Culvert** (Inlet Controls 66.55 cfs @ 9.42 fps)

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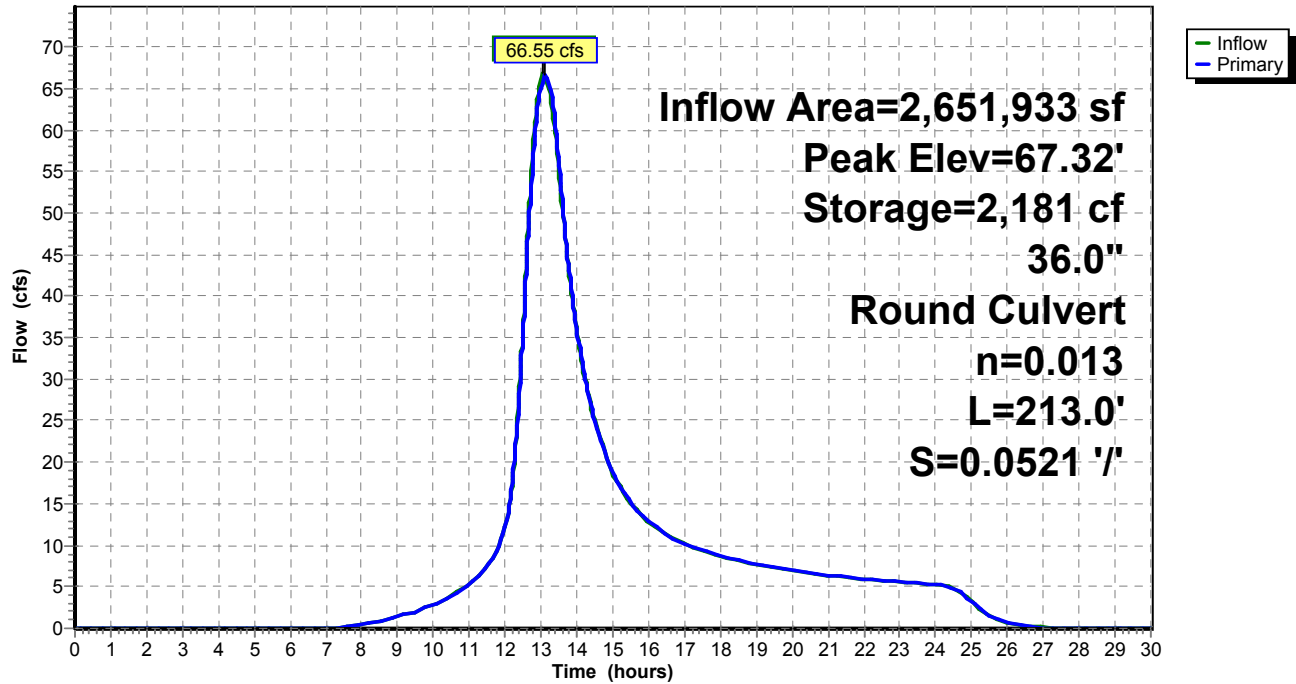
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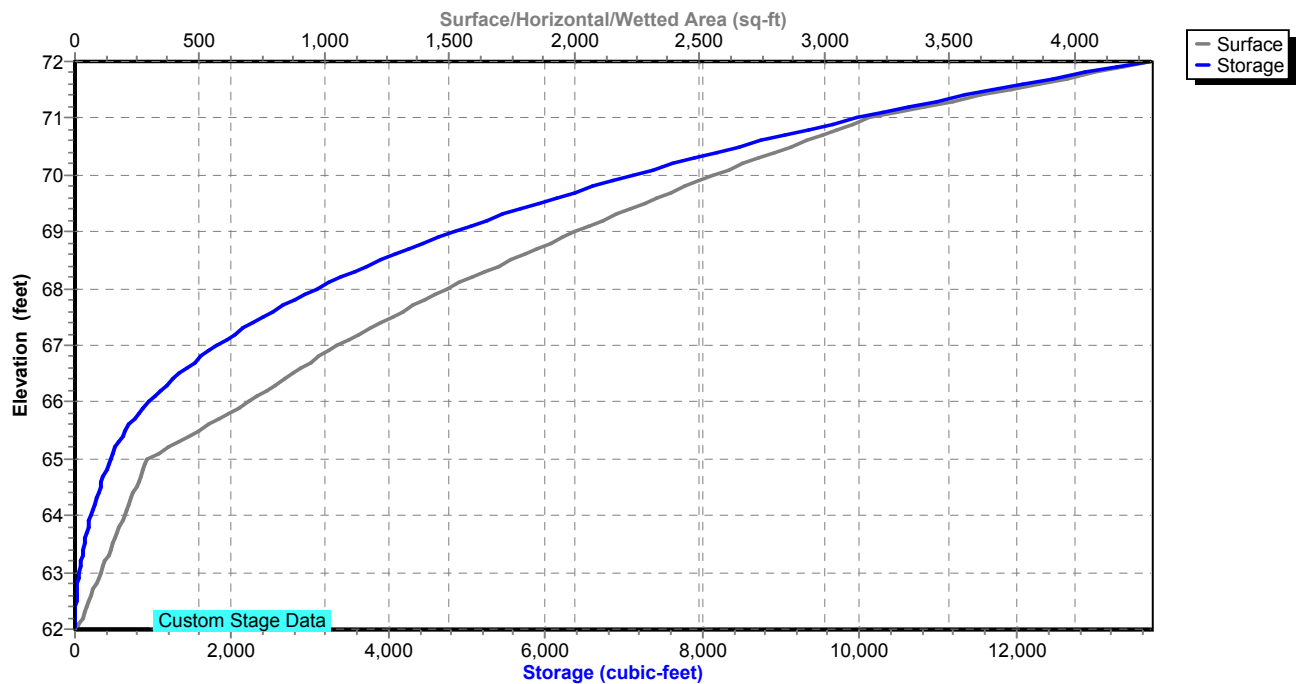
Pond 18P: DET 4 Culvert

Hydrograph



Pond 18P: DET 4 Culvert

Stage-Area-Storage



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Summary for Pond 20P: ADS Stormtech (160LP)

Inflow Area = 4,966 sf, 80.70% Impervious, Inflow Depth = 5.77" for 25 year event
 Inflow = 0.79 cfs @ 12.03 hrs, Volume= 2,389 cf
 Outflow = 0.53 cfs @ 12.08 hrs, Volume= 2,320 cf, Atten= 33%, Lag= 3.2 min
 Primary = 0.53 cfs @ 12.08 hrs, Volume= 2,320 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 74.79' @ 12.08 hrs Surf.Area= 365 sf Storage= 343 cf

Plug-Flow detention time= 47.8 min calculated for 2,320 cf (97% of inflow)
 Center-of-Mass det. time= 29.2 min (800.4 - 771.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	227 cf	14.50'W x 23.83'L x 2.00'H Field A 691 cf Overall - 123 cf Embedded = 568 cf x 40.0% Voids
#2A	73.50'	123 cf	ADS_StormTech SC-160LP +Cap x 18 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 6 Rows
#3	73.50'	22 cf	5.00'D x 1.10'H OCS
		372 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	12.0" Round Culvert L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 73.00' S= 0.0313 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	74.40'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 2.75 2.75 Width (feet) 0.33 0.33 5.00
#3	Device 1	73.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.53 cfs @ 12.08 hrs HW=74.79' (Free Discharge)

- 1=Culvert (Passes 0.53 cfs of 3.36 cfs potential flow)
- 2=Custom Weir/Orifice (Weir Controls 0.26 cfs @ 2.04 fps)
- 3=Orifice/Grate (Orifice Controls 0.27 cfs @ 5.47 fps)

Proposed Conditions

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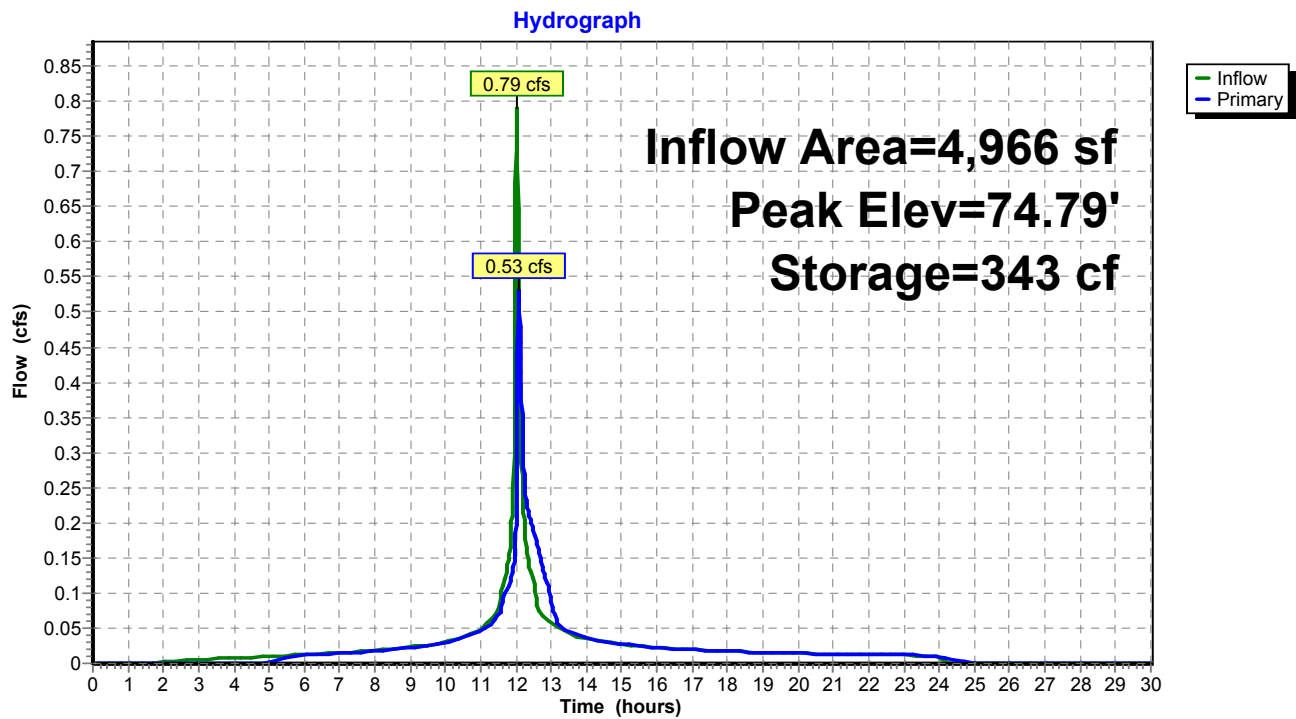
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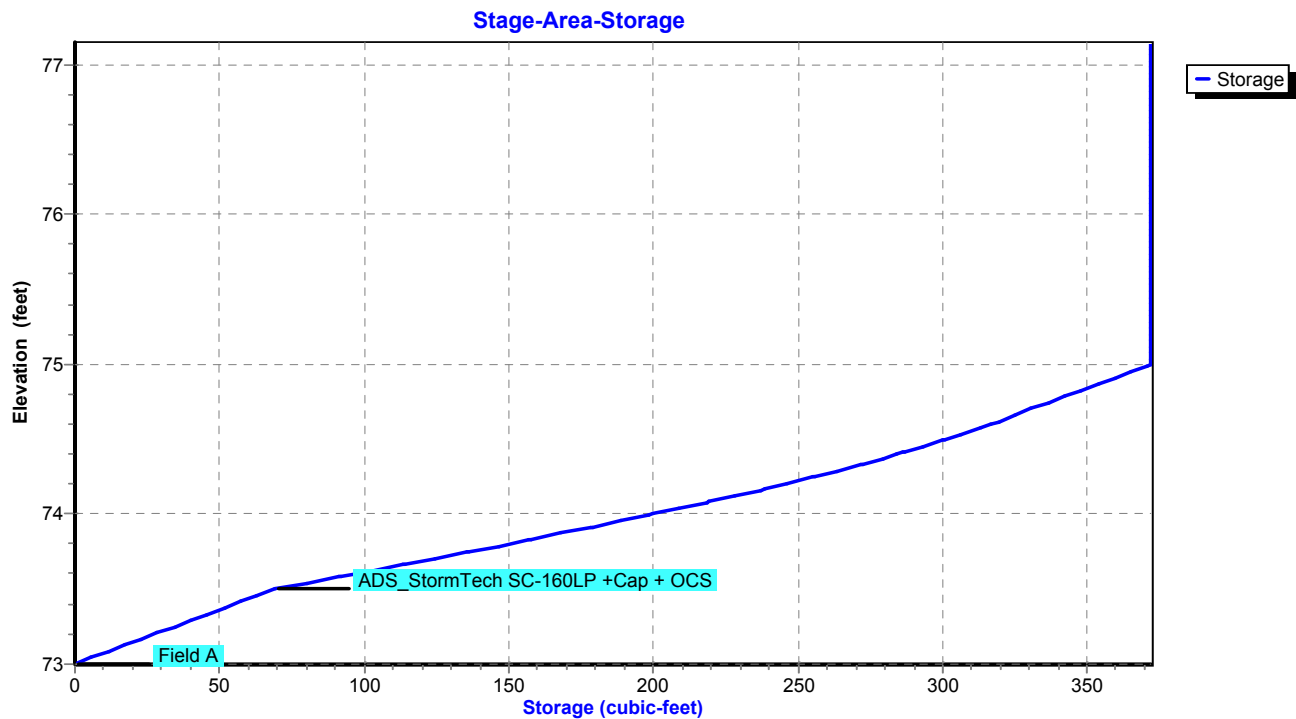
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Pond 20P: ADS Stormtech (160LP)



Pond 20P: ADS Stormtech (160LP)



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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 3.49" for 25 year event
 Inflow = 19.84 cfs @ 12.52 hrs, Volume= 155,107 cf
 Outflow = 19.57 cfs @ 12.60 hrs, Volume= 155,107 cf, Atten= 1%, Lag= 4.5 min
 Primary = 19.57 cfs @ 12.60 hrs, Volume= 155,107 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 39.67' @ 12.60 hrs Surf.Area= 1,331 sf Storage= 1,087 cf

Plug-Flow detention time= 0.6 min calculated for 155,055 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (888.3 - 887.8)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=19.56 cfs @ 12.60 hrs HW=39.67' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 19.56 cfs @ 6.23 fps)

Proposed Conditions

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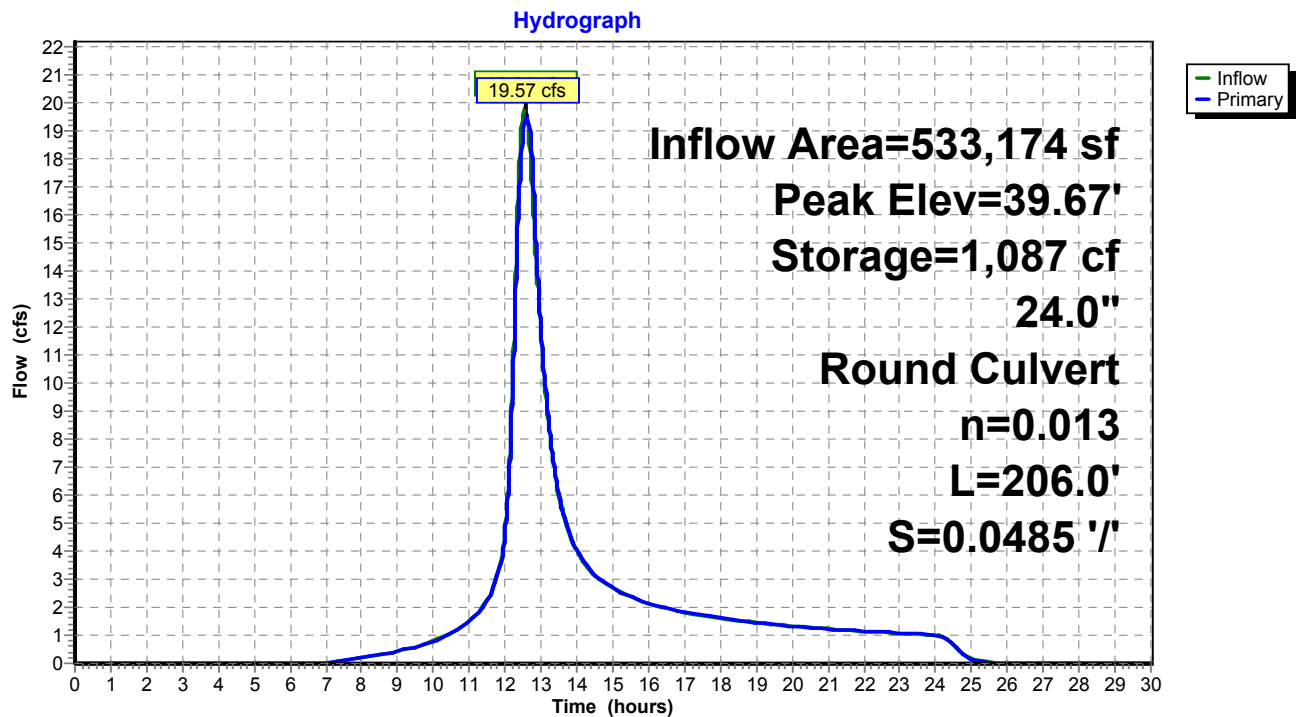
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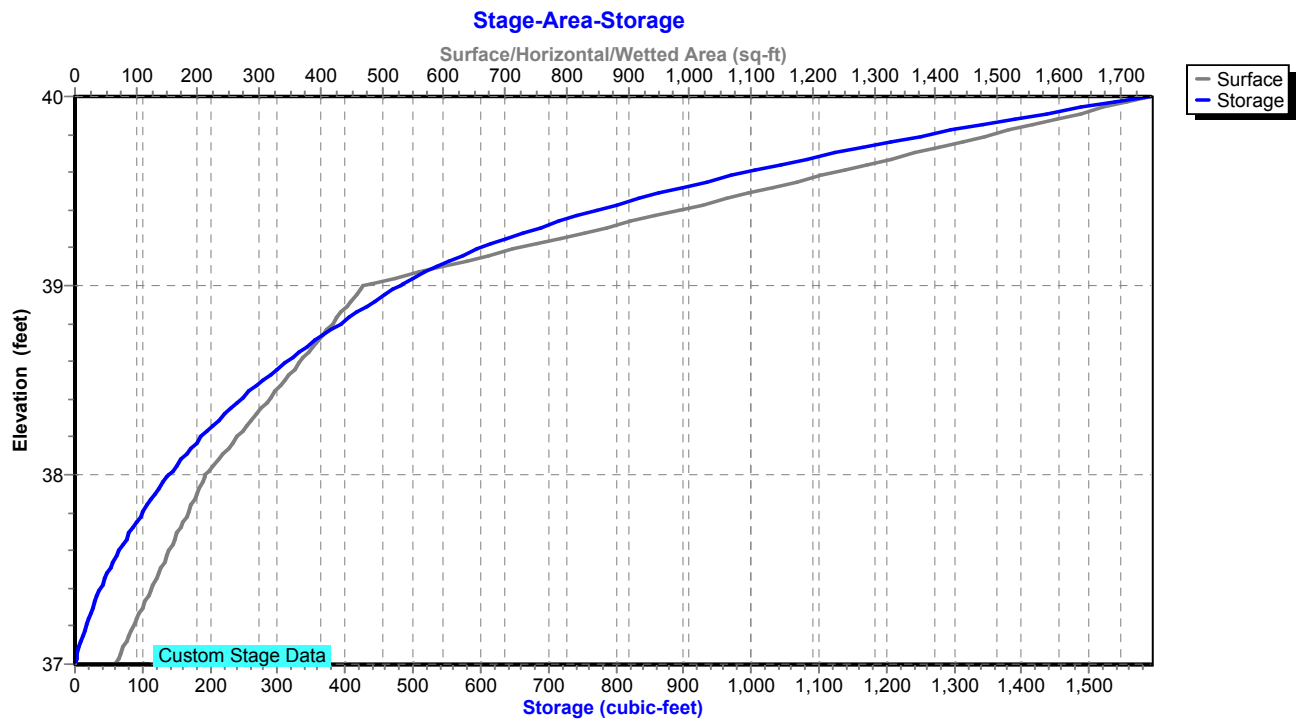
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 4.01" for 25 year event
 Inflow = 45.86 cfs @ 12.74 hrs, Volume= 430,725 cf
 Outflow = 39.05 cfs @ 13.02 hrs, Volume= 430,725 cf, Atten= 15%, Lag= 17.0 min
 Primary = 39.05 cfs @ 13.02 hrs, Volume= 430,725 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 38.78' @ 13.02 hrs Surf.Area= 14,427 sf Storage= 24,760 cf

Plug-Flow detention time= 5.4 min calculated for 430,725 cf (100% of inflow)
 Center-of-Mass det. time= 5.4 min (891.8 - 886.5)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=39.05 cfs @ 13.02 hrs HW=38.78' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 39.05 cfs @ 7.95 fps)

Proposed Conditions

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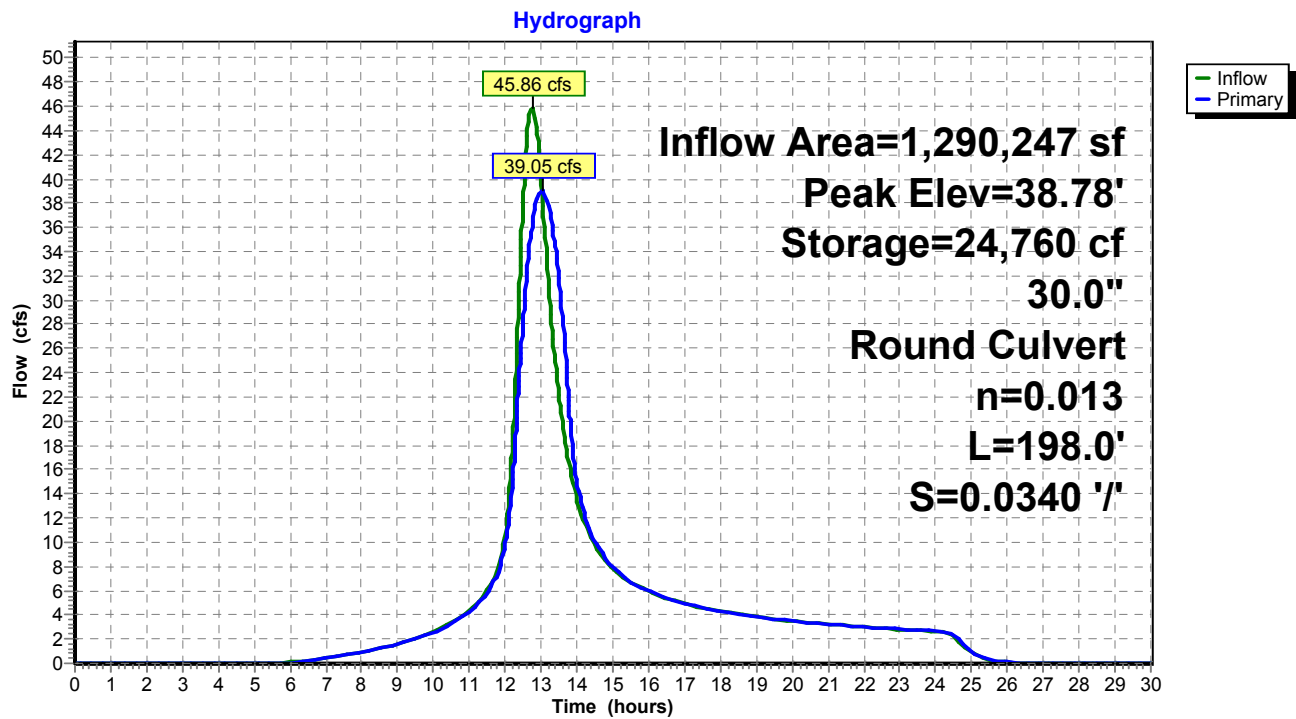
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NORWALK 24-hr S1 25 year Rainfall=6.48"

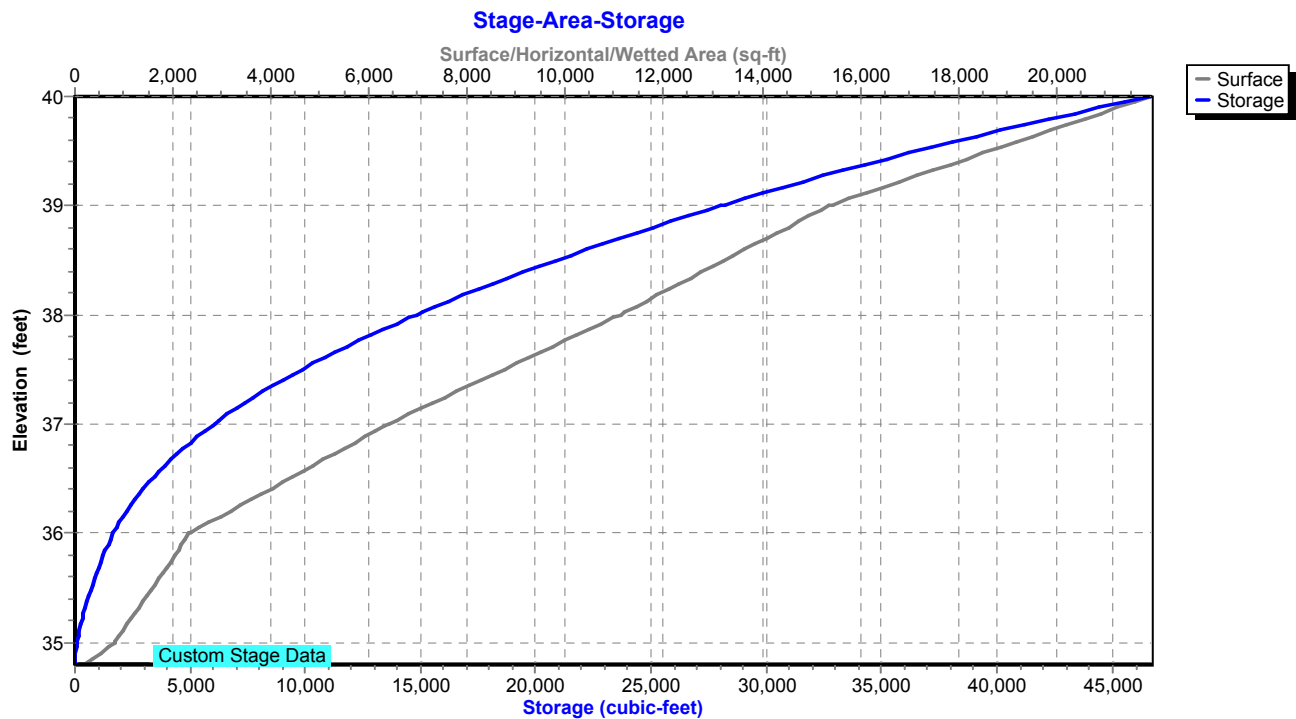
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Pond 22P: DET 2 Culvert



Pond 22P: DET 2 Culvert



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 3.59" for 25 year event
 Inflow = 16.57 cfs @ 12.22 hrs, Volume= 82,678 cf
 Outflow = 16.10 cfs @ 12.25 hrs, Volume= 82,678 cf, Atten= 3%, Lag= 2.1 min
 Primary = 16.10 cfs @ 12.25 hrs, Volume= 82,678 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 44.63' @ 12.25 hrs Surf.Area= 1,227 sf Storage= 1,006 cf

Plug-Flow detention time= 0.7 min calculated for 82,651 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (862.8 - 862.1)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=16.09 cfs @ 12.25 hrs HW=44.63' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 16.09 cfs @ 5.12 fps)

Proposed Conditions

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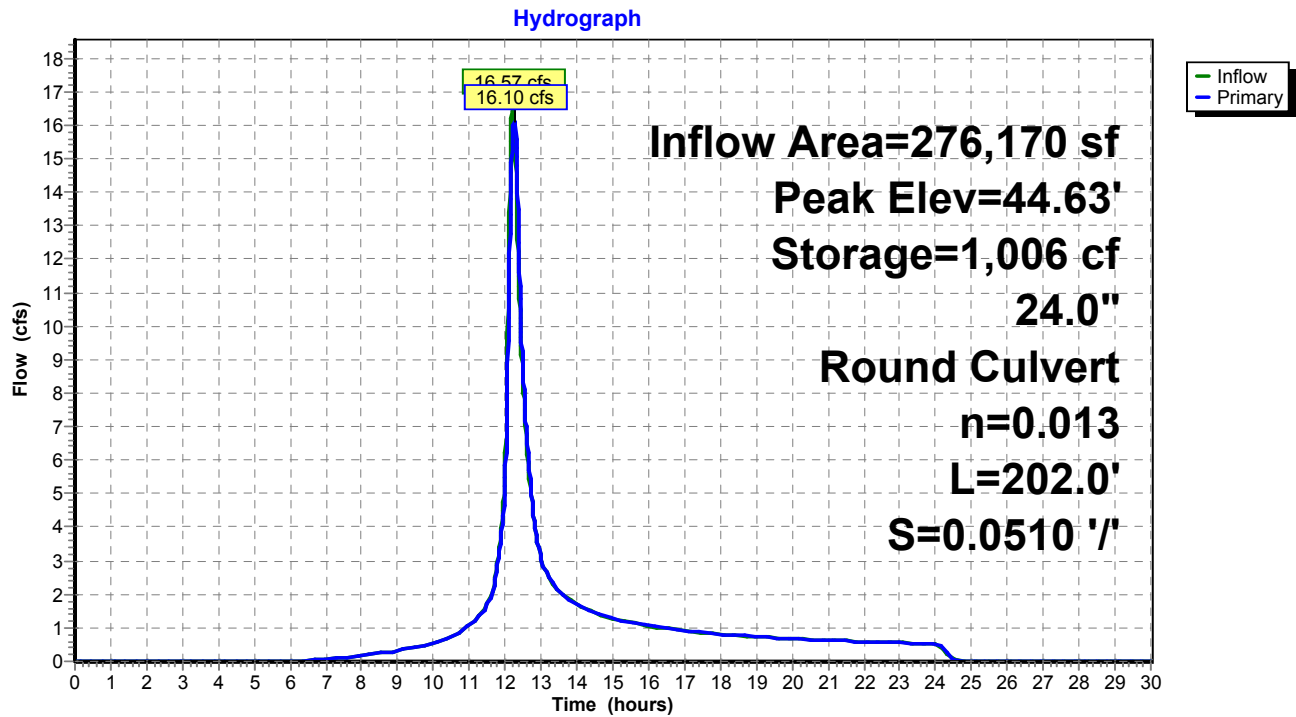
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NORWALK 24-hr S1 25 year Rainfall=6.48"

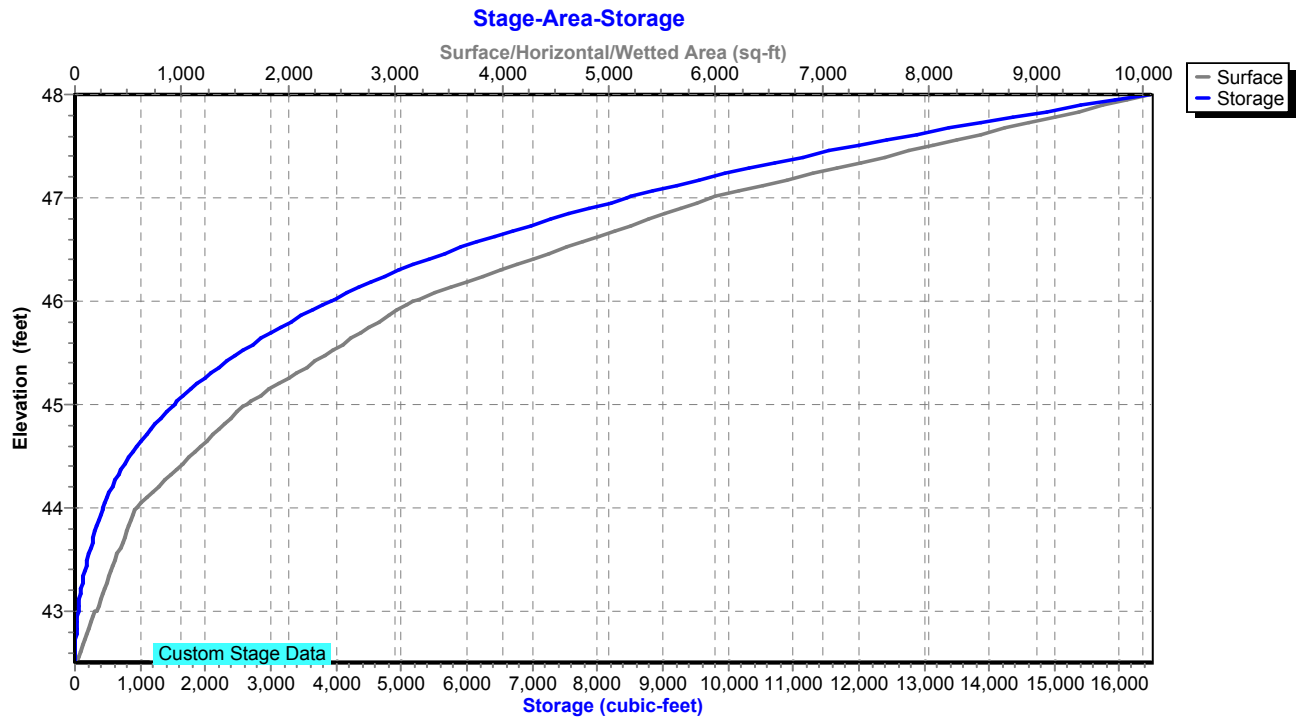
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 33.37" for 25 year event
 Inflow = 233.21 cfs @ 12.22 hrs, Volume= 1,393,138 cf
 Outflow = 51.45 cfs @ 14.01 hrs, Volume= 1,393,192 cf, Atten= 78%, Lag= 107.3 min
 Primary = 51.45 cfs @ 14.01 hrs, Volume= 1,393,192 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 13.27' @ 14.01 hrs Storage= 811,560 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 175.3 min (966.5 - 791.2)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=51.45 cfs @ 14.01 hrs HW=13.27' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 51.45 cfs @ 5.88 fps)

Proposed Conditions

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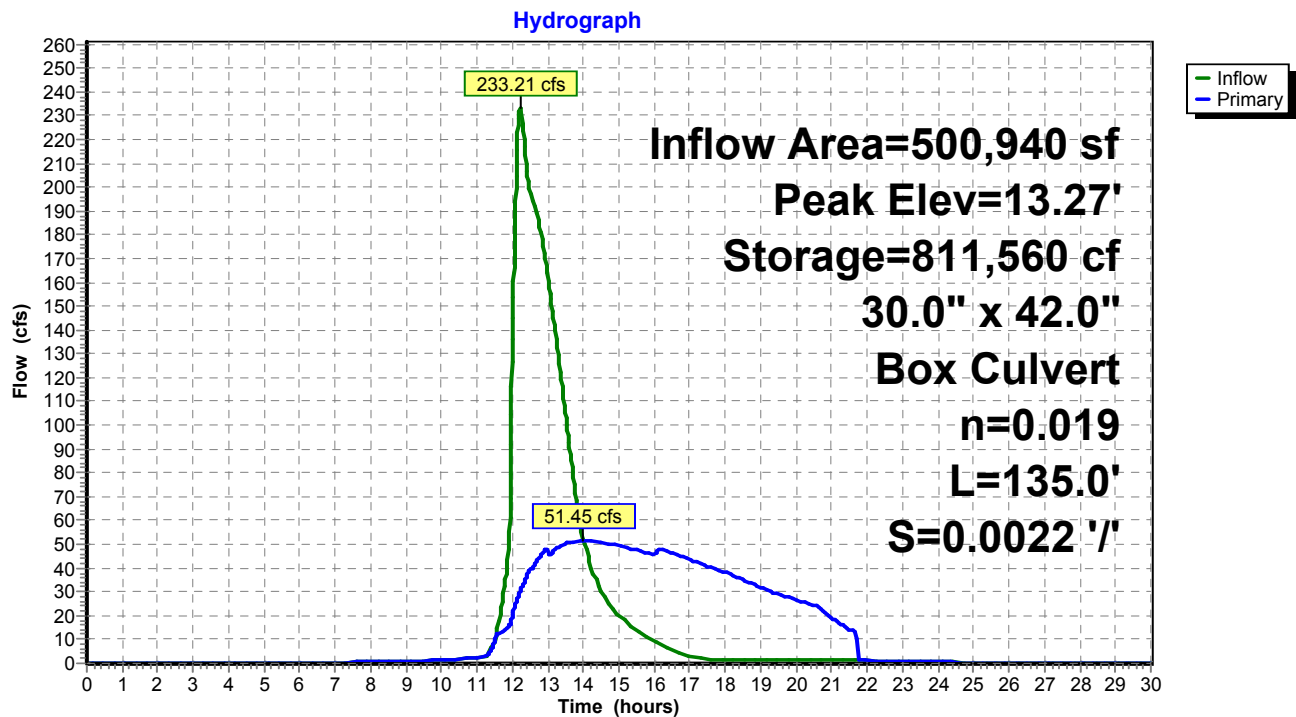
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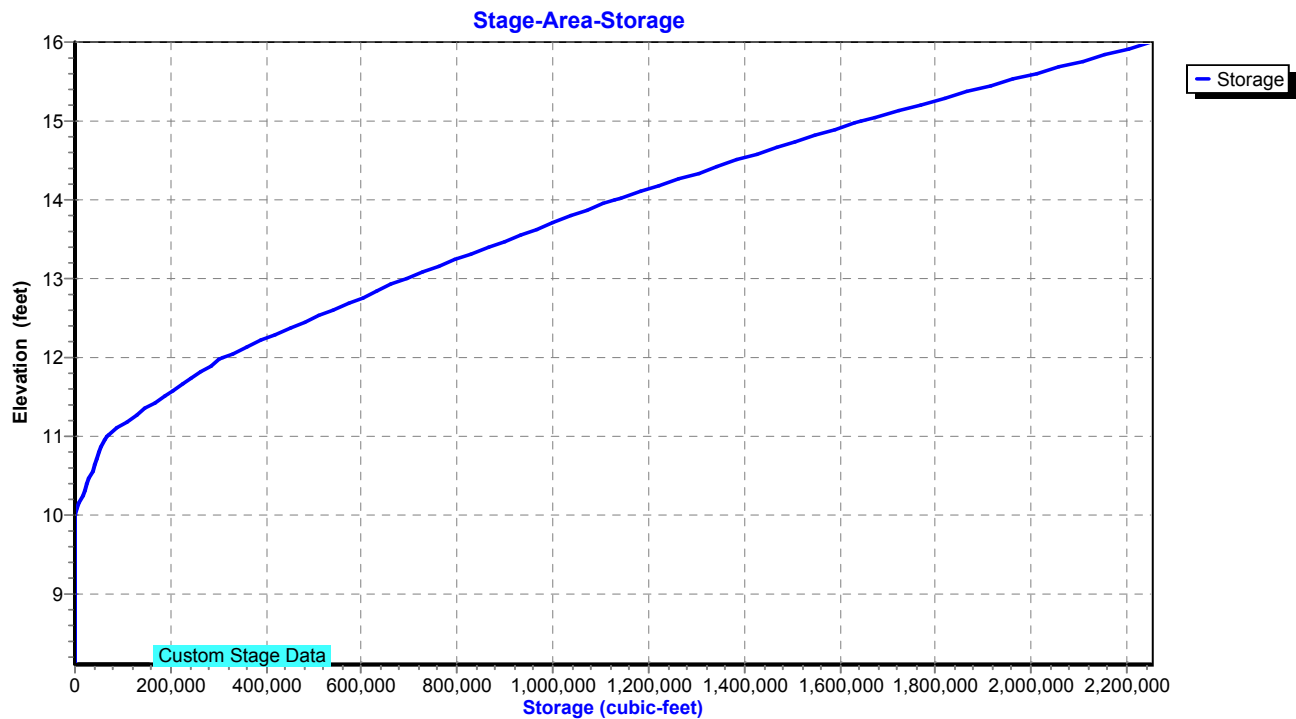
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Pond 24P: RR Culvert 3



Pond 24P: RR Culvert 3



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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 3.73" for 25 year event
 Inflow = 36.64 cfs @ 12.21 hrs, Volume= 241,993 cf
 Outflow = 36.63 cfs @ 12.21 hrs, Volume= 242,038 cf, Atten= 0%, Lag= 0.1 min
 Primary = 36.63 cfs @ 12.21 hrs, Volume= 242,038 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 20.09' @ 12.21 hrs Surf.Area= 2,246 sf Storage= 2,602 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 0.7 min (889.4 - 888.8)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' S= 0.0691 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=36.33 cfs @ 12.21 hrs HW=20.09' (Free Discharge)

1=Culvert (Inlet Controls 12.35 cfs @ 10.06 fps)
 2=Custom Weir/Orifice (Weir Controls 23.98 cfs @ 1.28 fps)

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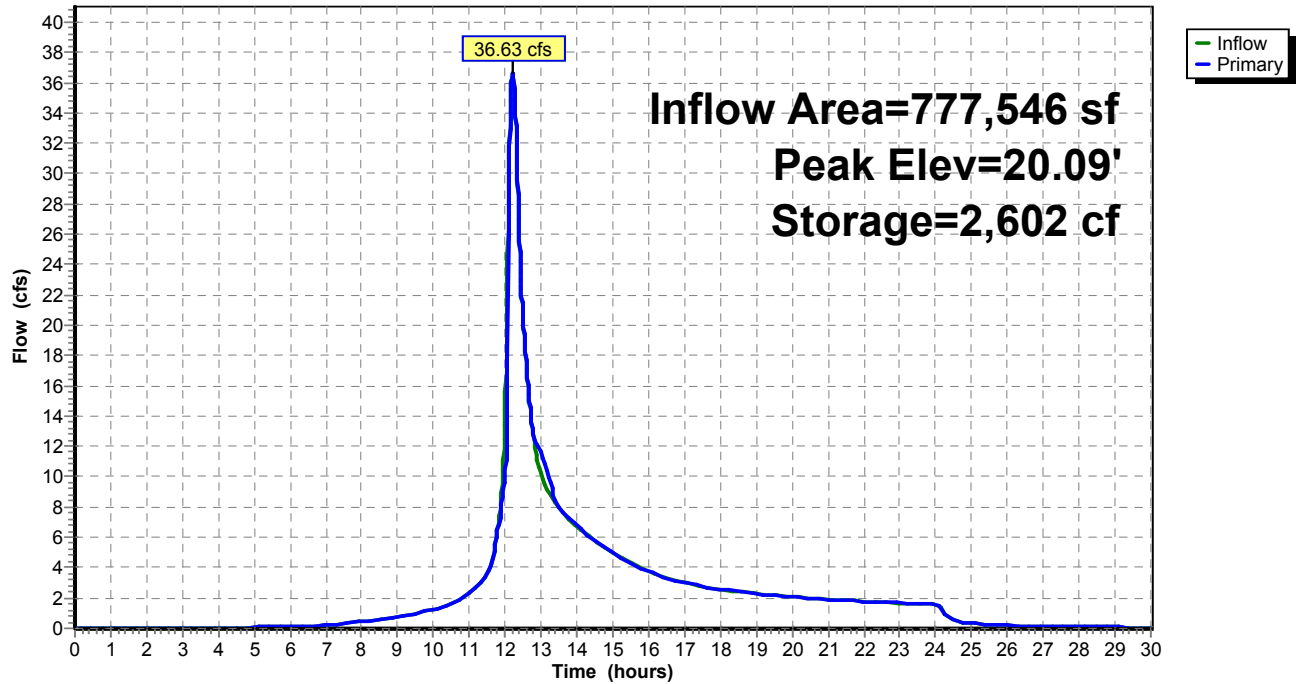
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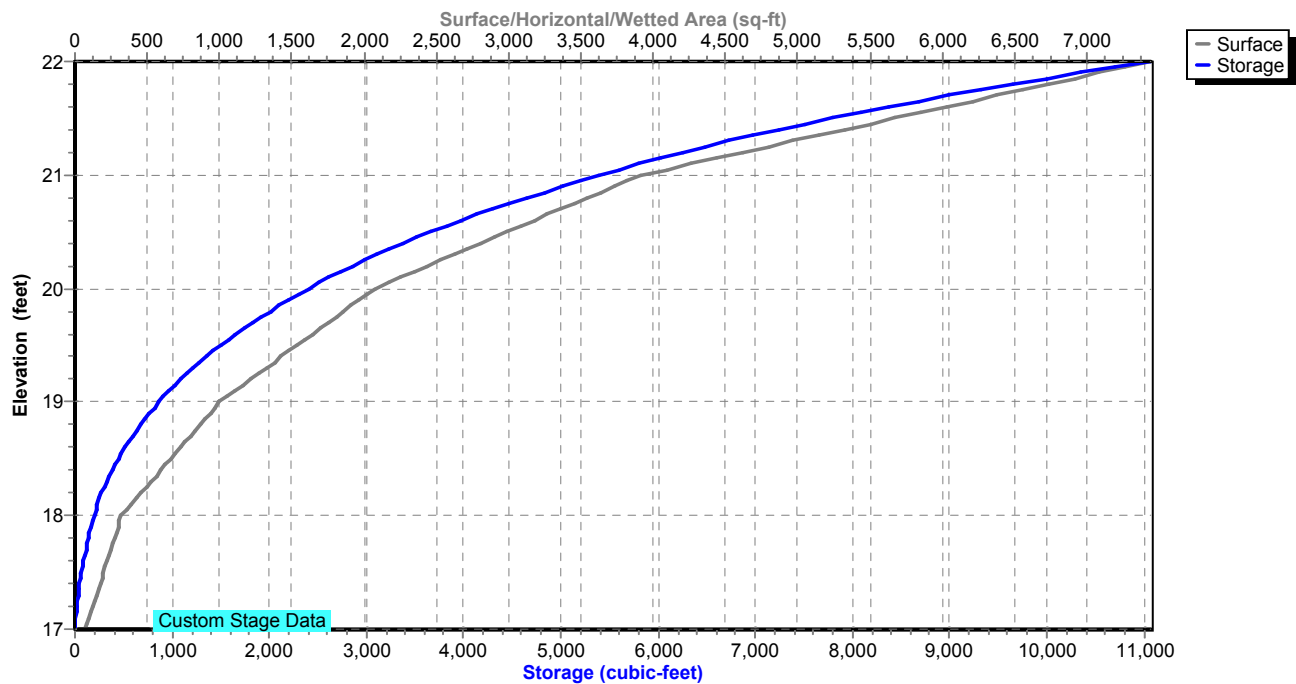
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 3.99" for 25 year event
 Inflow = 61.95 cfs @ 12.67 hrs, Volume= 733,950 cf
 Outflow = 61.94 cfs @ 12.67 hrs, Volume= 733,950 cf, Atten= 0%, Lag= 0.5 min
 Primary = 61.94 cfs @ 12.67 hrs, Volume= 733,950 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 18.79' @ 12.67 hrs Surf.Area= 11,074 sf Storage= 10,782 cf

Plug-Flow detention time= 3.8 min calculated for 733,950 cf (100% of inflow)
 Center-of-Mass det. time= 3.8 min (879.5 - 875.8)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=61.78 cfs @ 12.67 hrs HW=18.79' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 14.07 cfs @ 7.96 fps)

└ **2=Custom Weir/Orifice** (Weir Controls 47.71 cfs @ 2.02 fps)

Proposed Conditions

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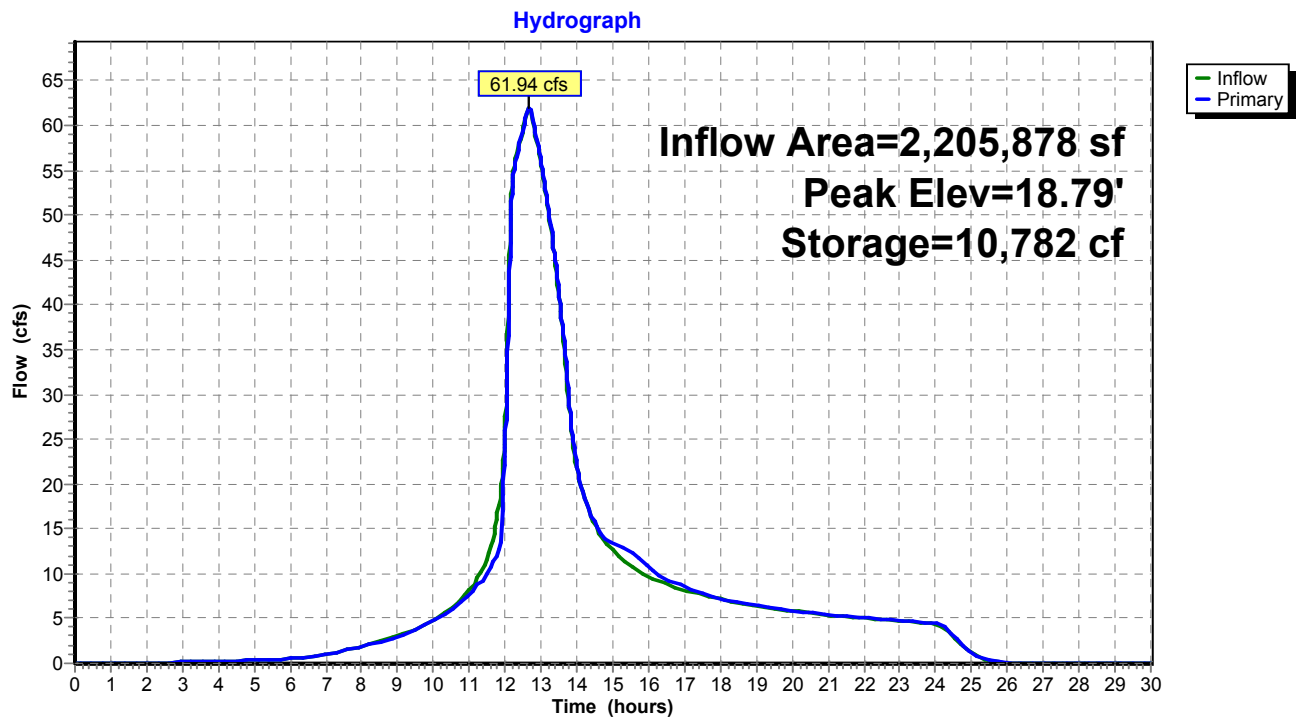
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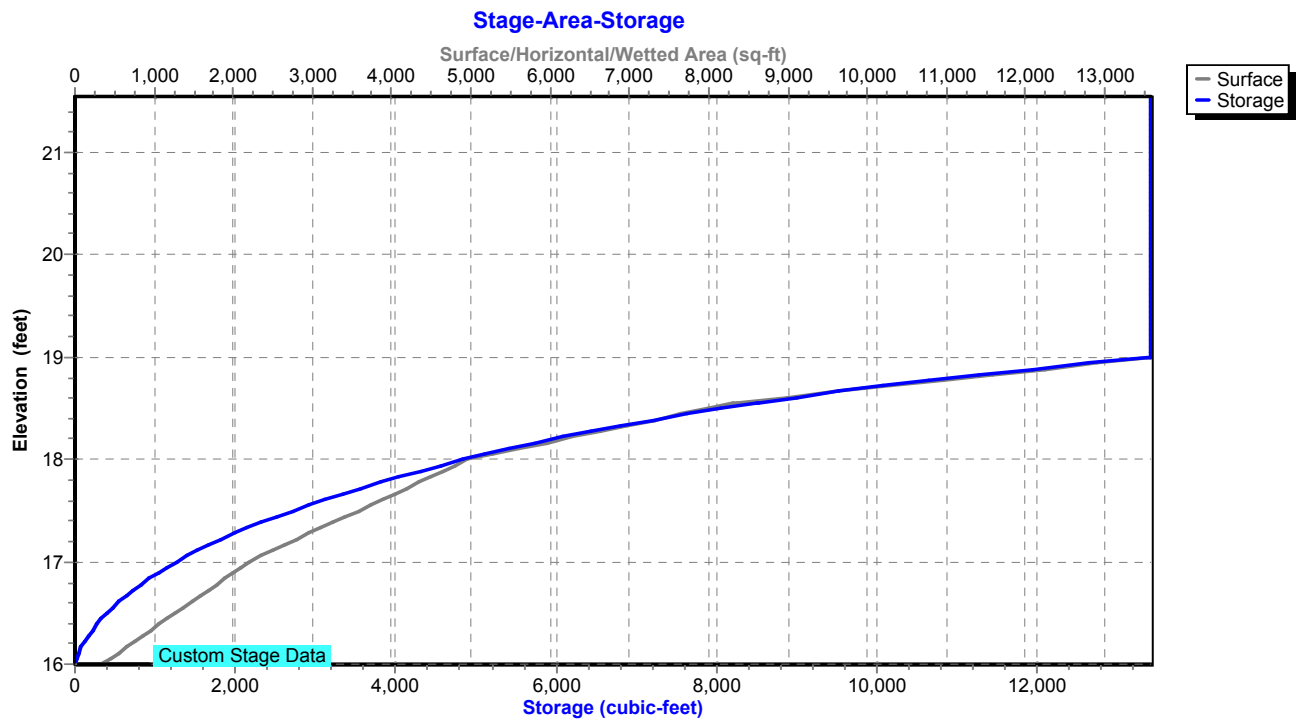
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 4.88" for 25 year event
 Inflow = 27.74 cfs @ 12.04 hrs, Volume= 100,701 cf
 Outflow = 4.39 cfs @ 12.59 hrs, Volume= 75,261 cf, Atten= 84%, Lag= 32.8 min
 Primary = 4.39 cfs @ 12.59 hrs, Volume= 75,261 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 28.35' @ 12.59 hrs Surf.Area= 16,050 sf Storage= 50,377 cf

Plug-Flow detention time= 275.1 min calculated for 75,261 cf (75% of inflow)
 Center-of-Mass det. time= 166.3 min (968.3 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / S= 0.0333 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.39 cfs @ 12.59 hrs HW=28.35' (Free Discharge)

1=Culvert (Passes 4.39 cfs of 16.14 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 4.39 cfs @ 5.59 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Proposed Conditions

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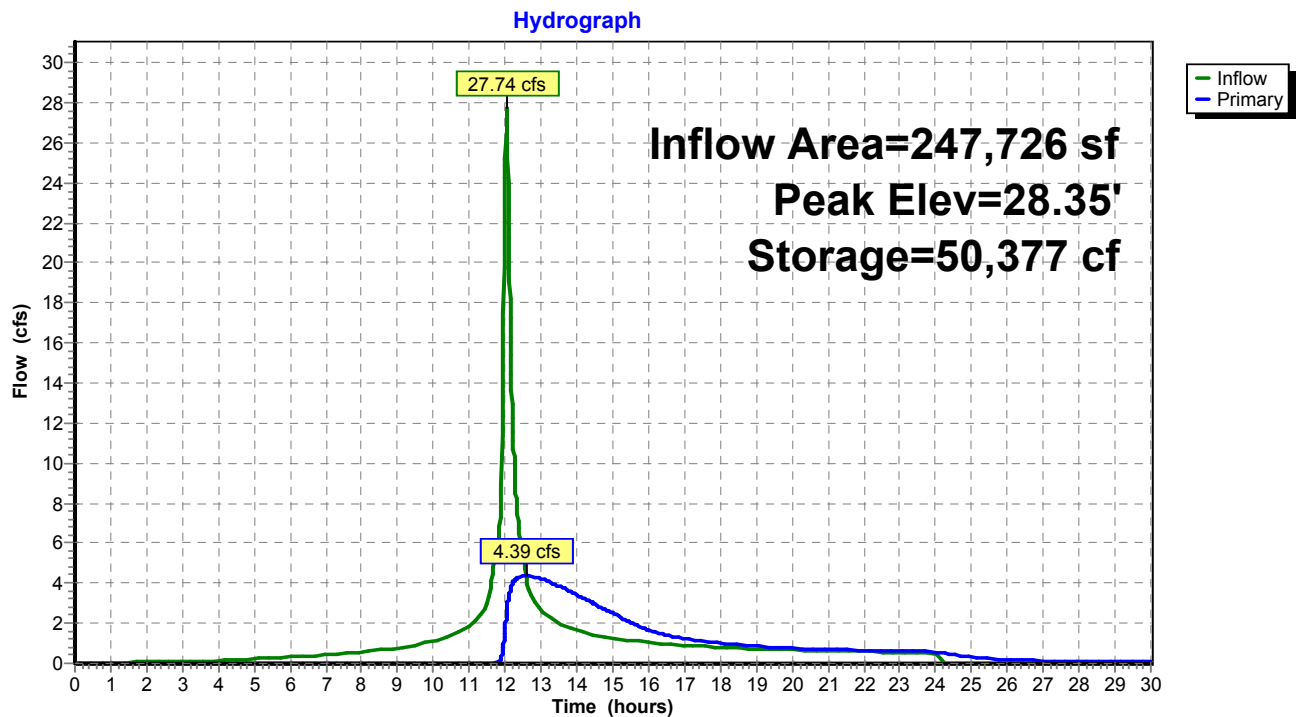
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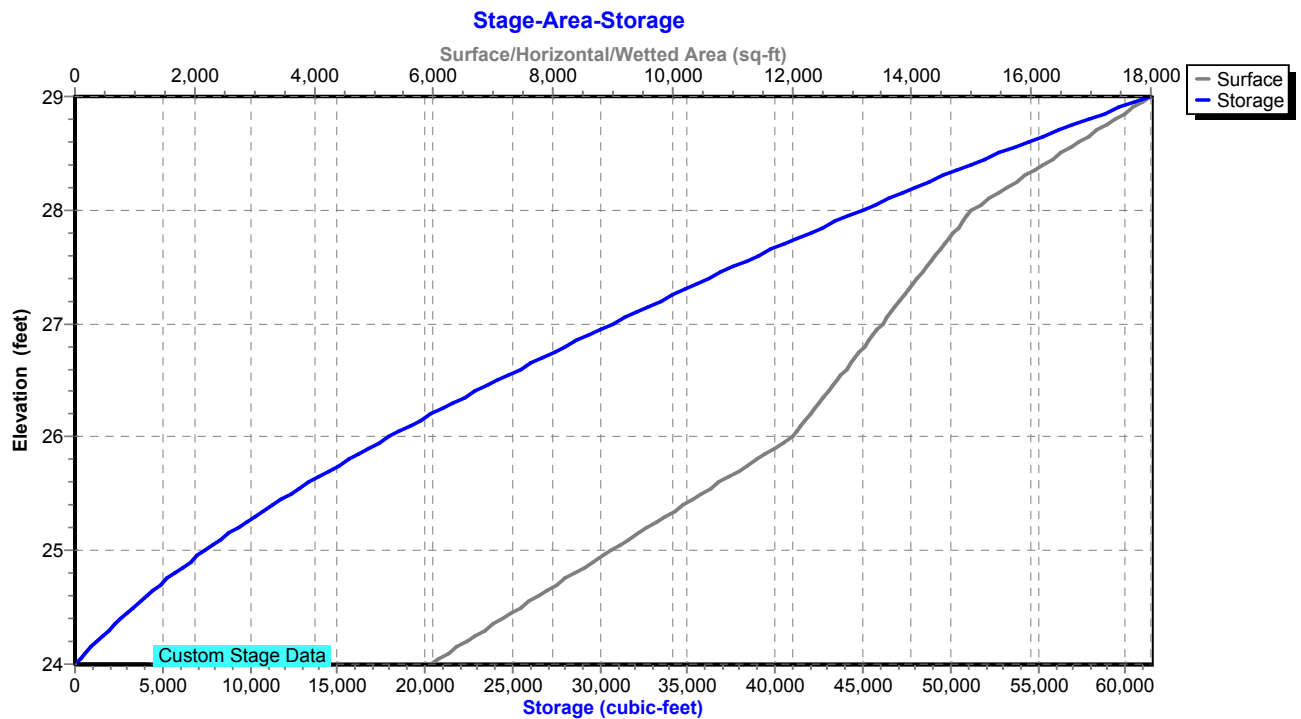
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



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Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 5.04" for 25 year event
Inflow = 24.76 cfs @ 12.04 hrs, Volume= 92,199 cf
Outflow = 24.76 cfs @ 12.04 hrs, Volume= 92,199 cf, Atten= 0%, Lag= 0.0 min
Primary = 24.76 cfs @ 12.04 hrs, Volume= 92,199 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.68' @ 12.04 hrs

Flood Elev= 51.00'

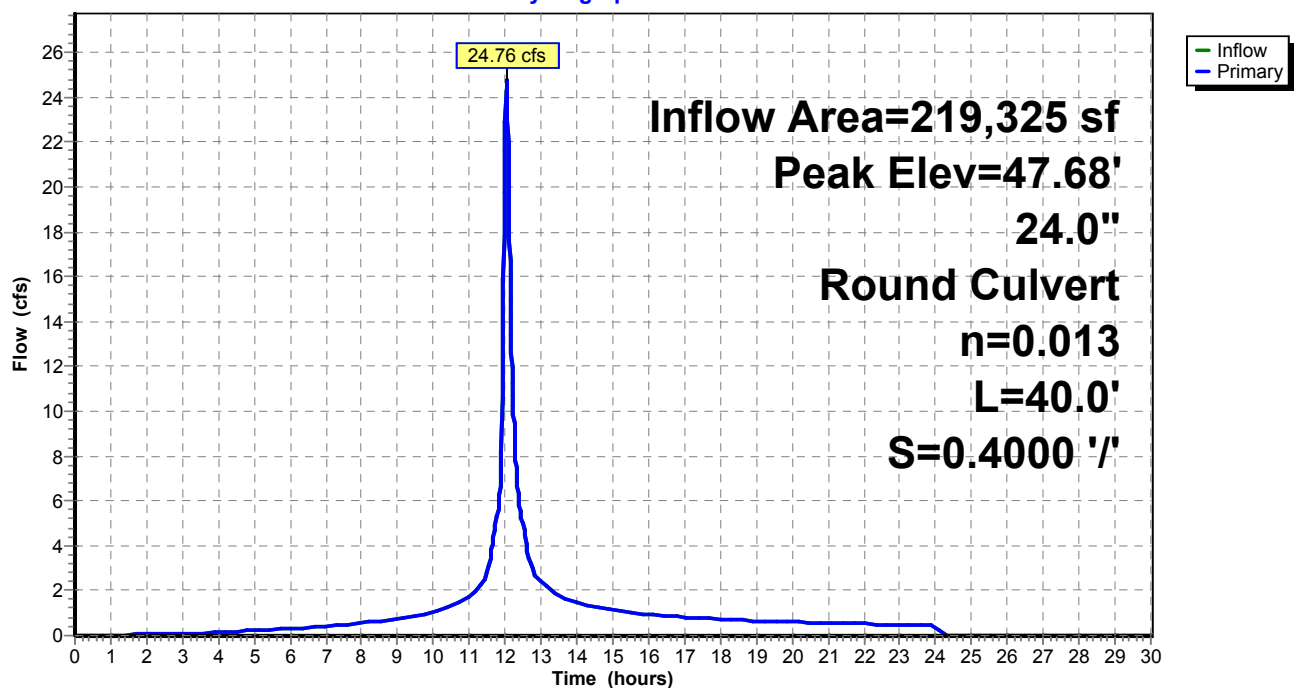
Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=24.73 cfs @ 12.04 hrs HW=47.67' (Free Discharge)

↑1=Culvert (Inlet Controls 24.73 cfs @ 7.87 fps)

Pond 51P: Manhole

Hydrograph



Proposed Conditions

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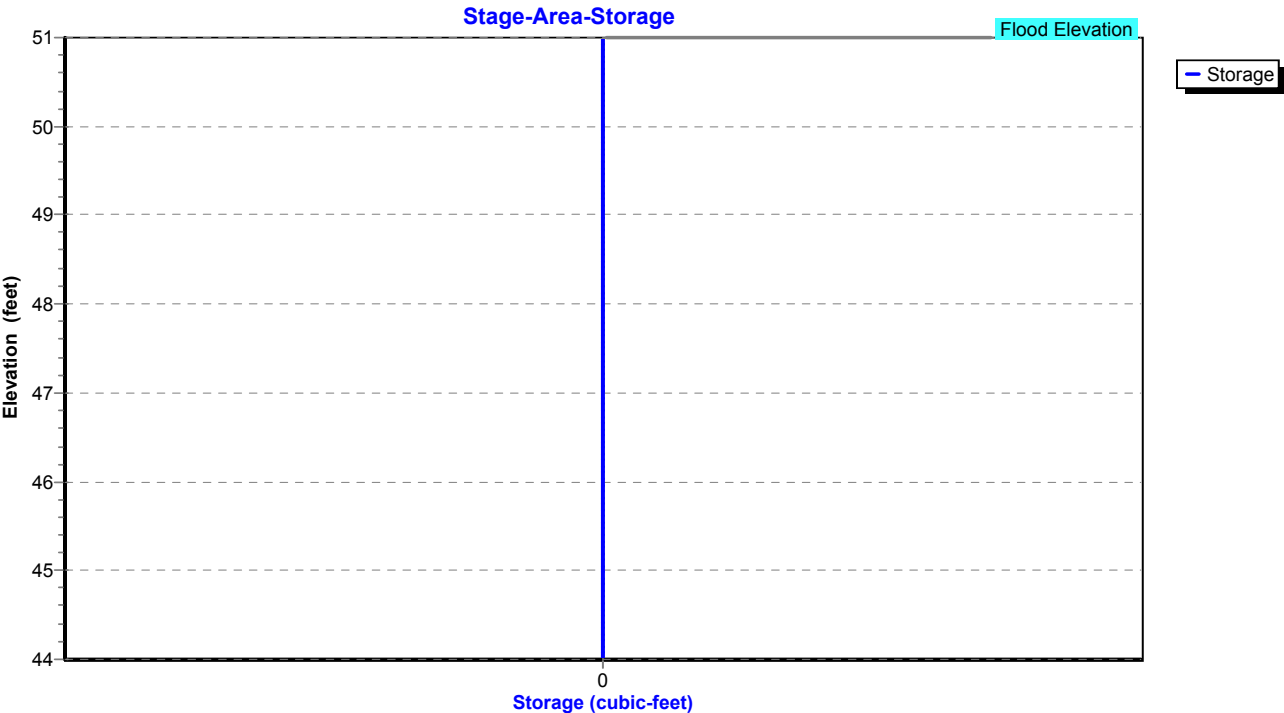
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Pond 51P: Manhole



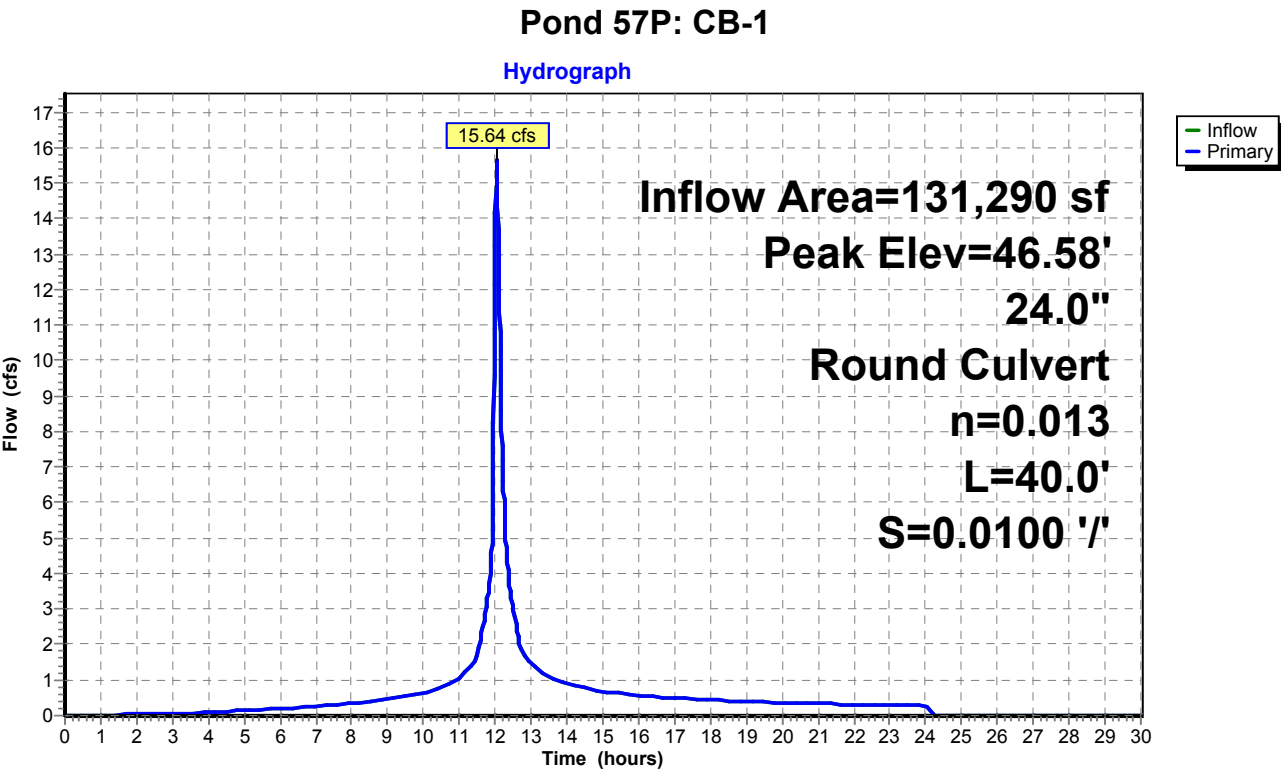
Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 5.12" for 25 year event
Inflow = 15.64 cfs @ 12.04 hrs, Volume= 55,989 cf
Outflow = 15.64 cfs @ 12.04 hrs, Volume= 55,989 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.64 cfs @ 12.04 hrs, Volume= 55,989 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.58' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=15.63 cfs @ 12.04 hrs HW=46.58' (Free Discharge)
1=Culvert (Barrel Controls 15.63 cfs @ 5.68 fps)



Proposed Conditions

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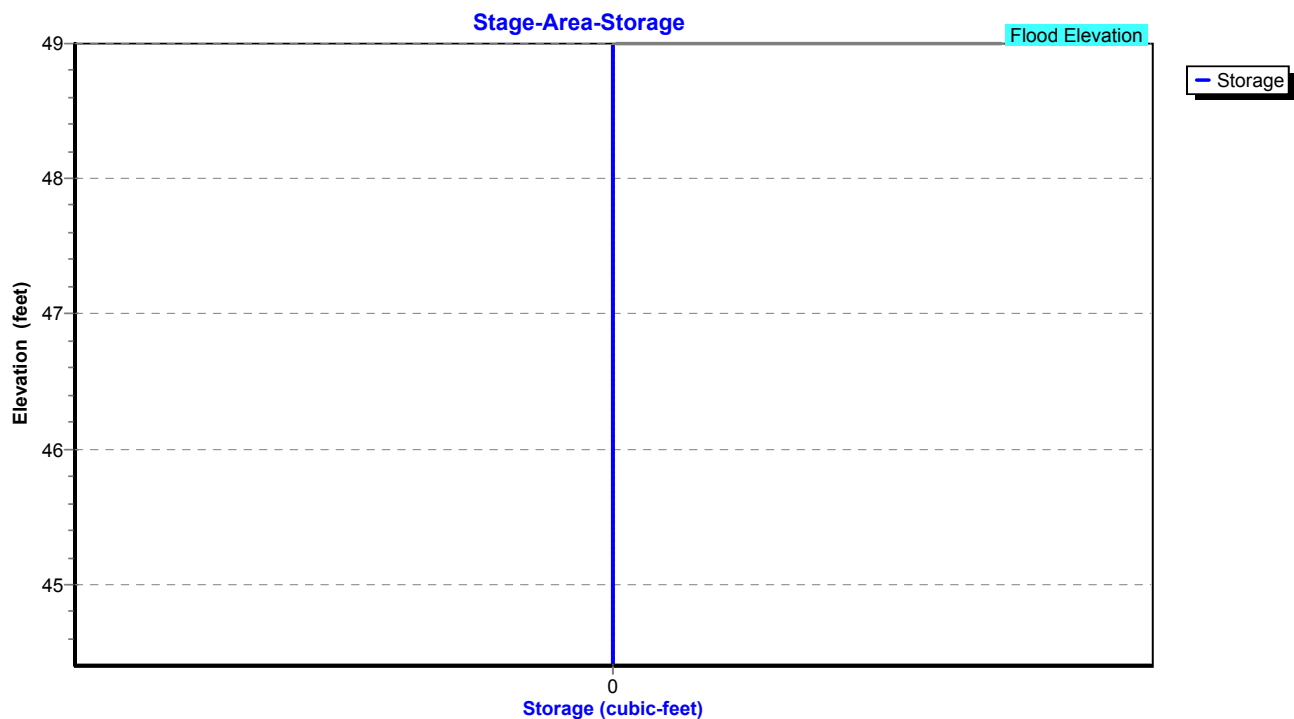
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Pond 57P: CB-1



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Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 5.01" for 25 year event
Inflow = 13.78 cfs @ 12.04 hrs, Volume= 49,826 cf
Outflow = 13.78 cfs @ 12.04 hrs, Volume= 49,826 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.78 cfs @ 12.04 hrs, Volume= 49,826 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.27' @ 12.04 hrs

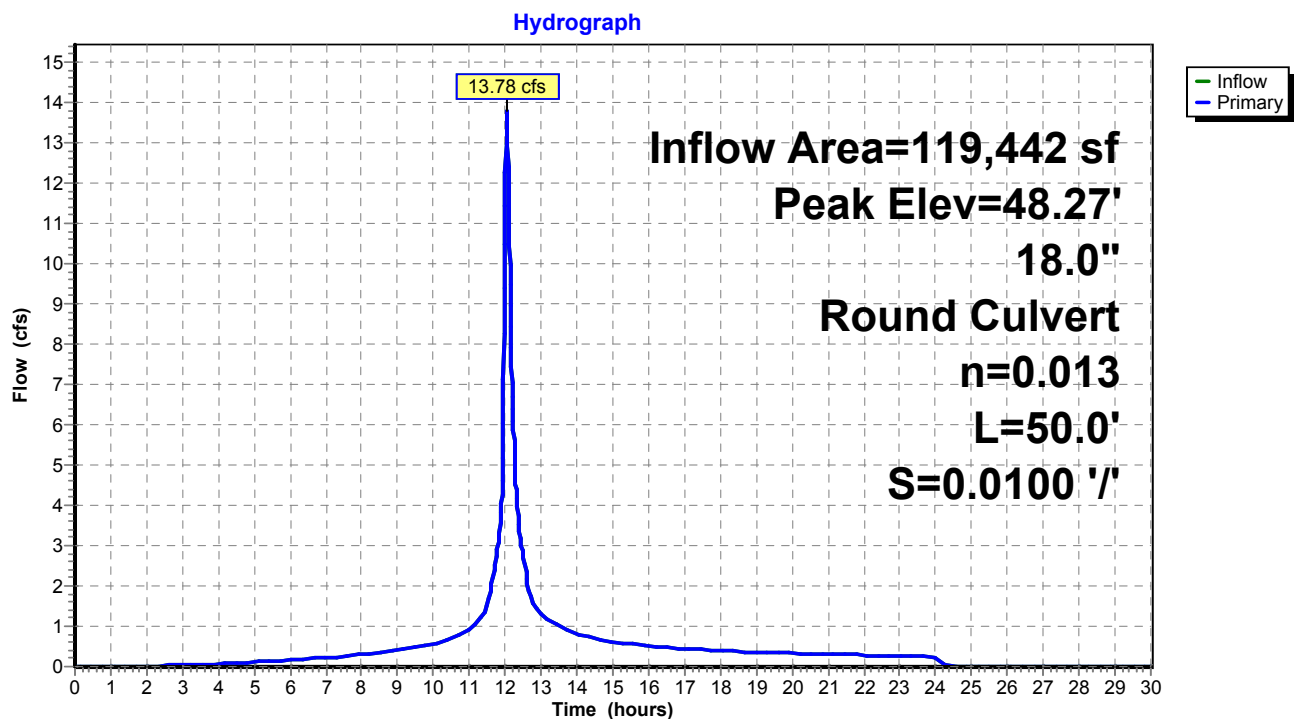
Flood Elev= 49.00'

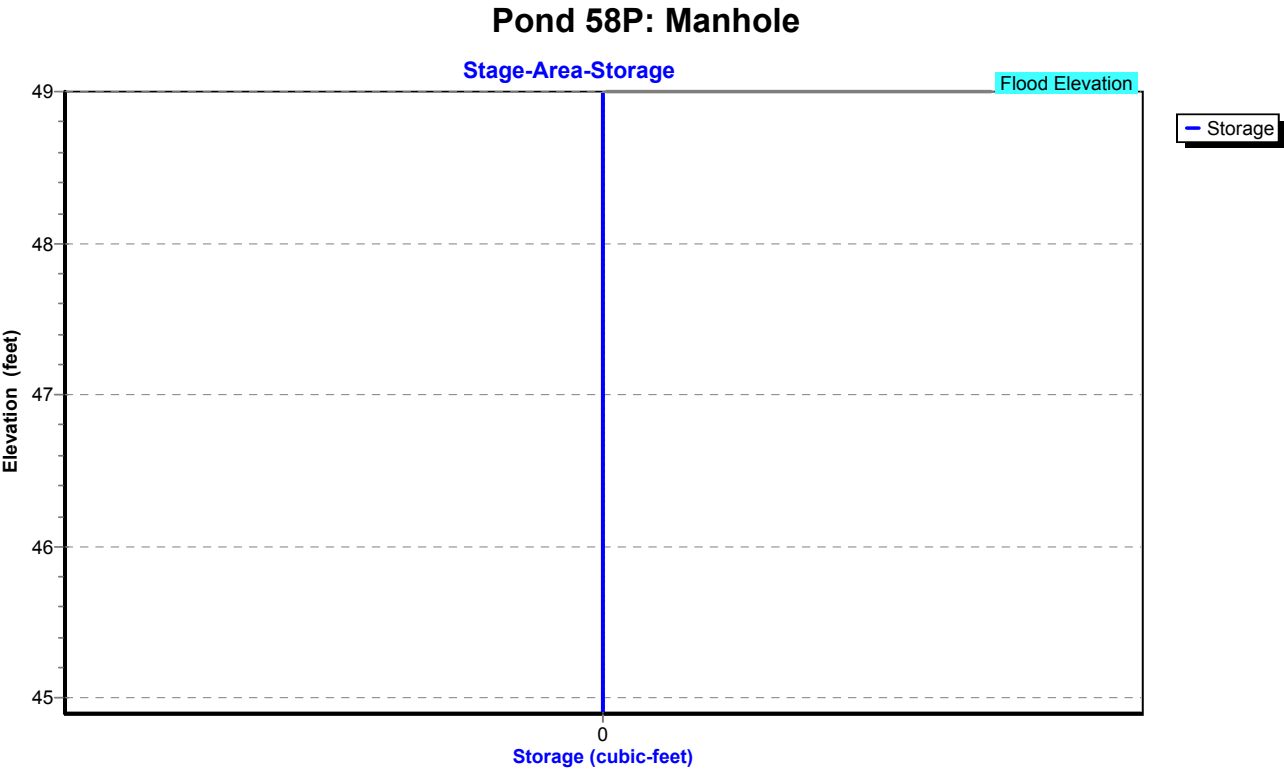
Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=13.75 cfs @ 12.04 hrs HW=48.26' (Free Discharge)

↑1=Culvert (Inlet Controls 13.75 cfs @ 7.78 fps)

Pond 58P: Manhole





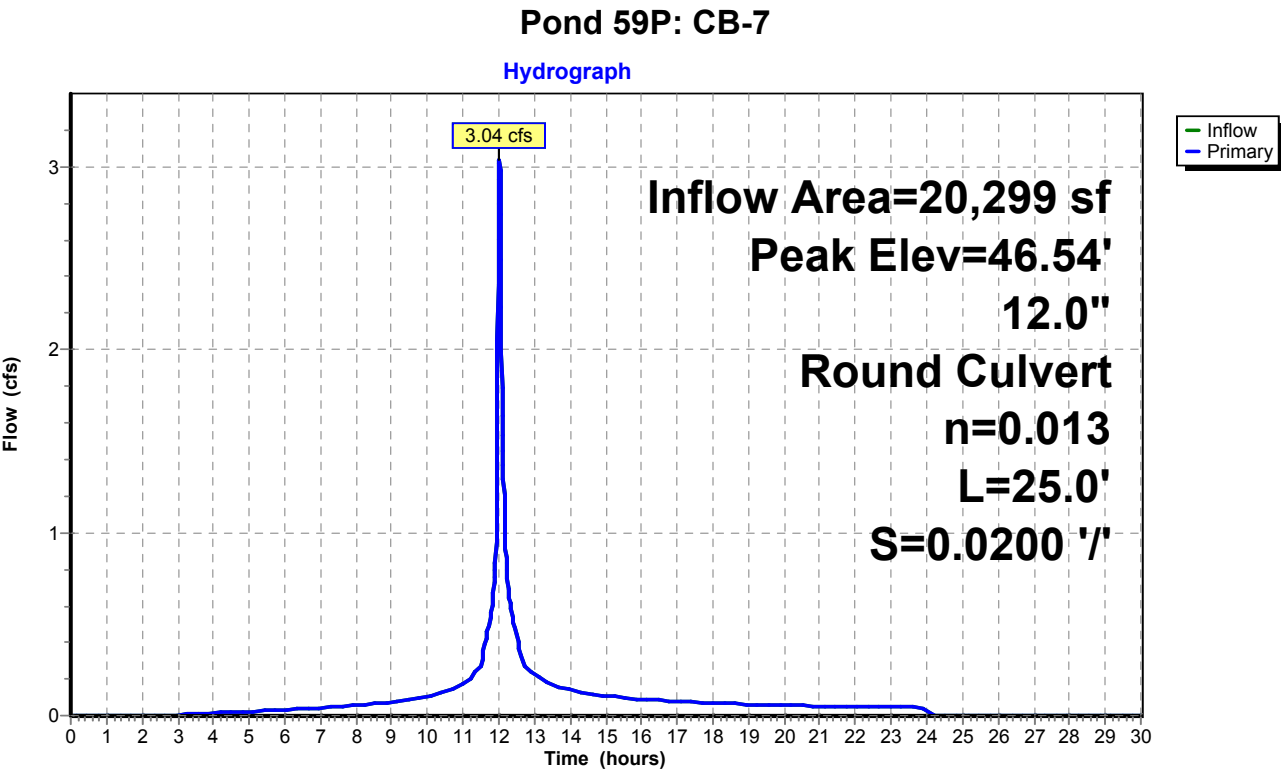
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 5.20" for 25 year event
Inflow = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf
Outflow = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.04 cfs @ 12.03 hrs, Volume= 8,799 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.54' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.02 cfs @ 12.03 hrs HW=46.54' (Free Discharge)
1=Culvert (Inlet Controls 3.02 cfs @ 3.85 fps)



Proposed Conditions

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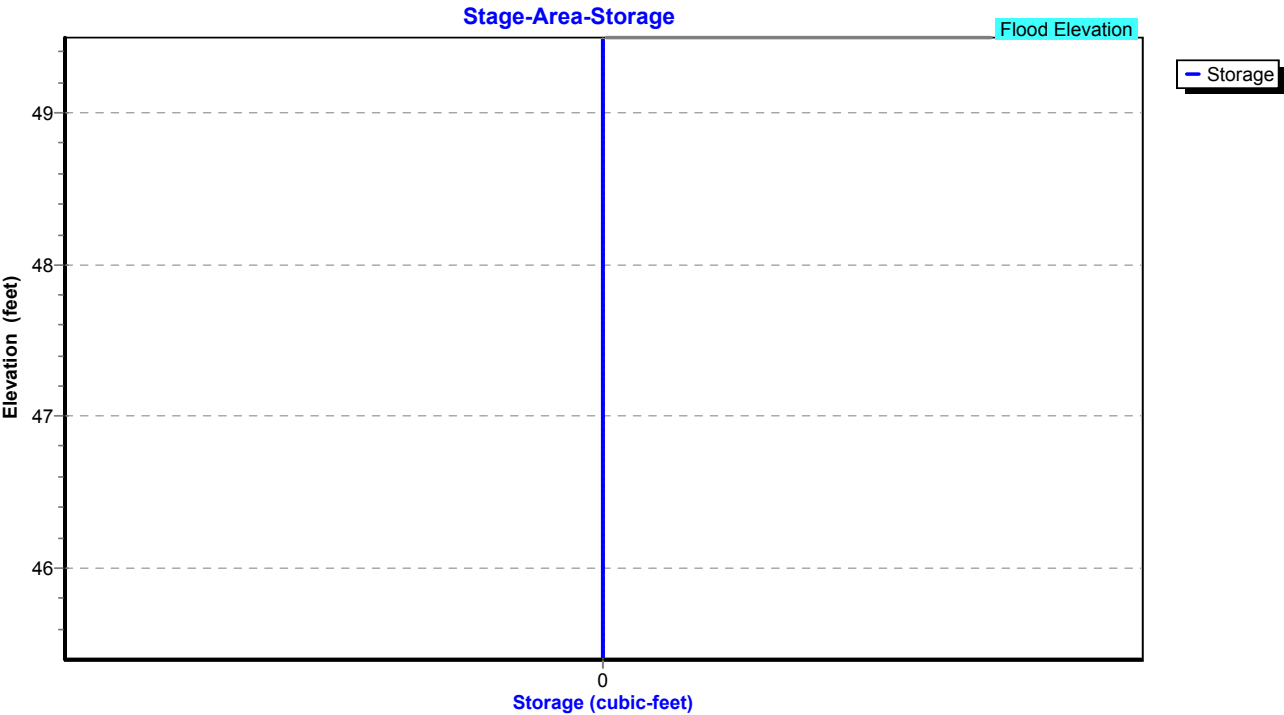
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Pond 59P: CB-7



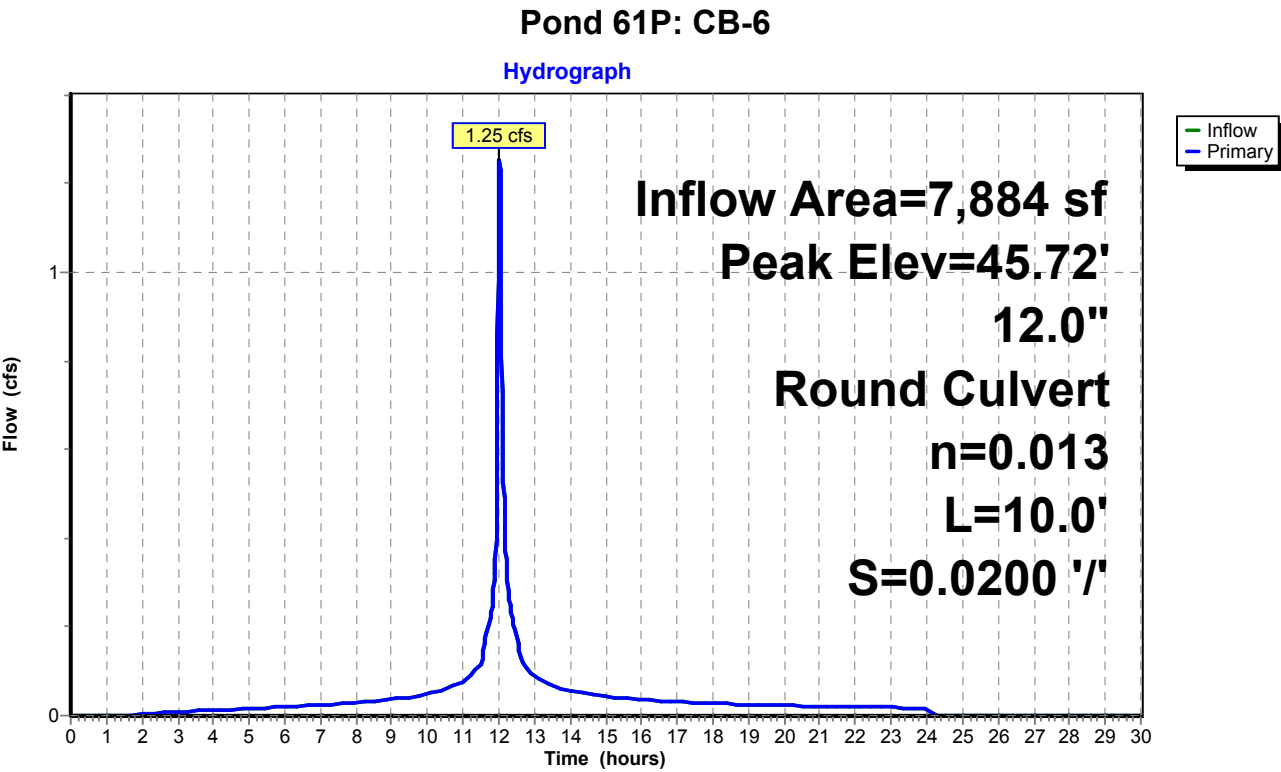
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 5.77" for 25 year event
Inflow = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf
Outflow = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.25 cfs @ 12.03 hrs, Volume= 3,793 cf
Routed to Pond 58P : Manhole

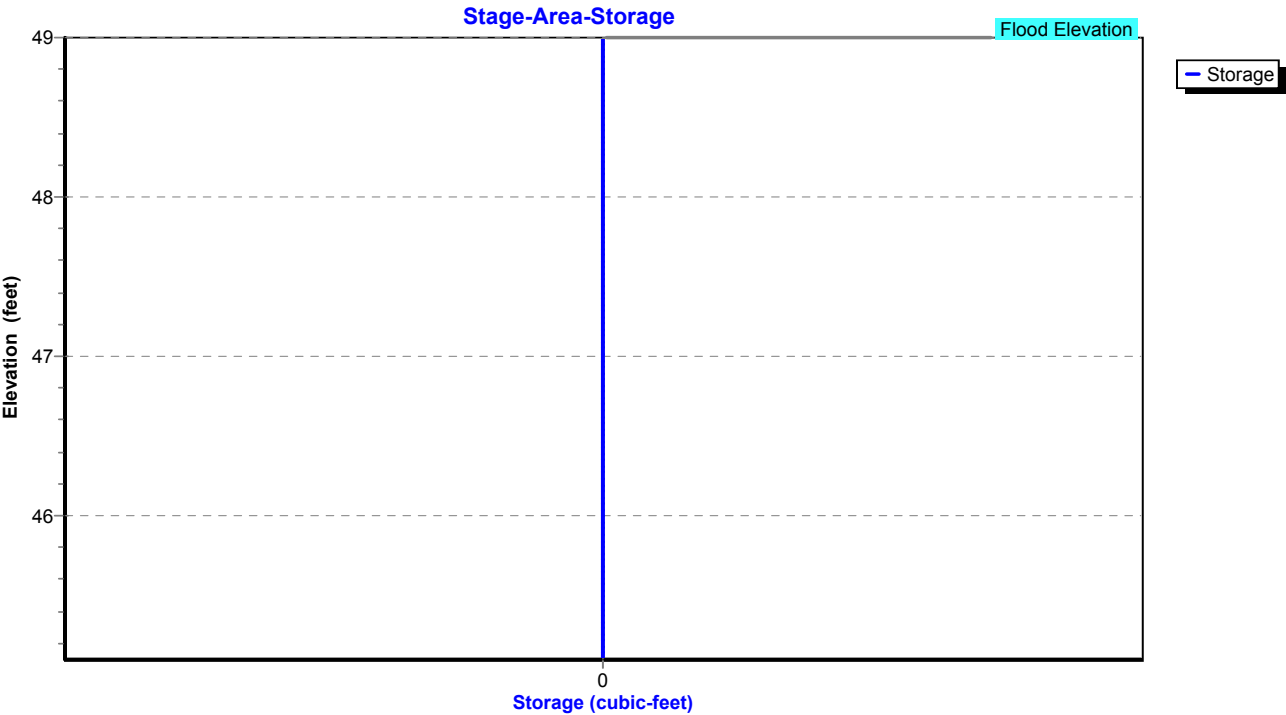
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.72' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.25 cfs @ 12.03 hrs HW=45.72' (Free Discharge)
1=Culvert (Barrel Controls 1.25 cfs @ 3.52 fps)



Pond 61P: CB-6



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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 4.90" for 25 year event
Inflow = 9.85 cfs @ 12.06 hrs, Volume= 37,235 cf
Outflow = 9.85 cfs @ 12.06 hrs, Volume= 37,235 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.85 cfs @ 12.06 hrs, Volume= 37,235 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.68' @ 12.06 hrs

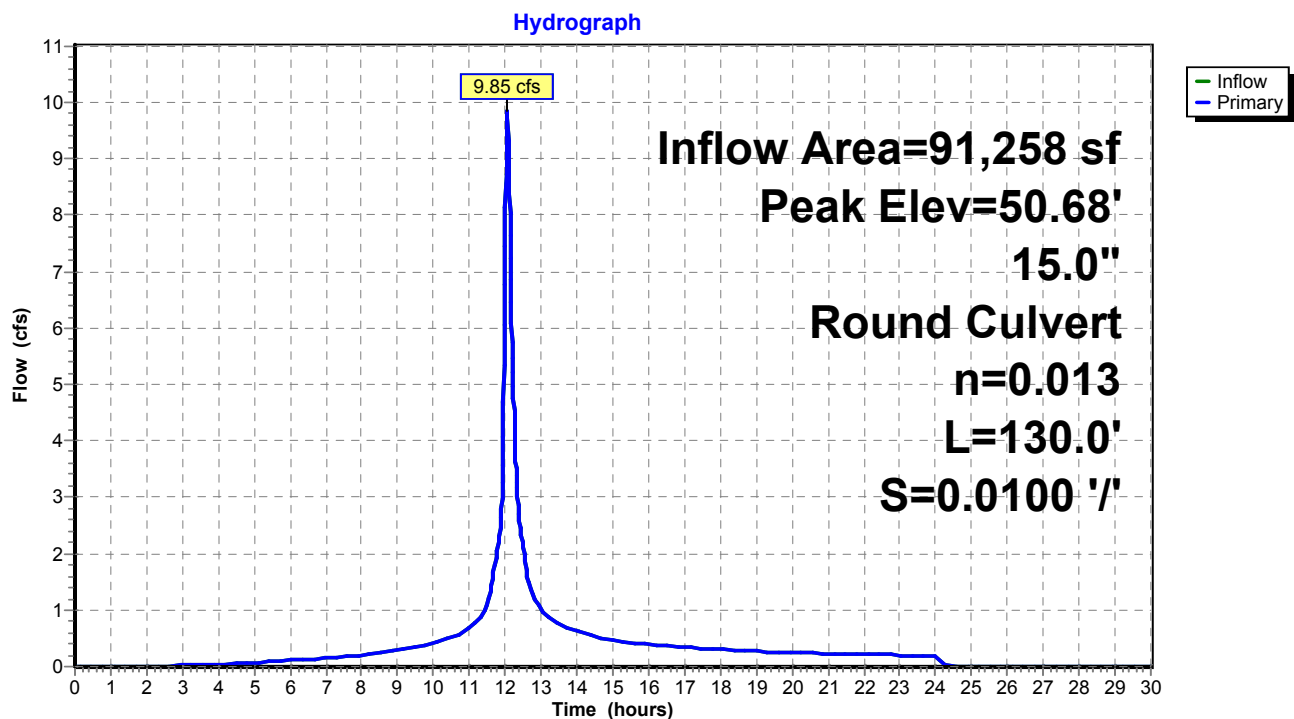
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.84 cfs @ 12.06 hrs HW=50.67' (Free Discharge)

↑1=Culvert (Barrel Controls 9.84 cfs @ 8.02 fps)

Pond 63P: Manhole



Proposed Conditions

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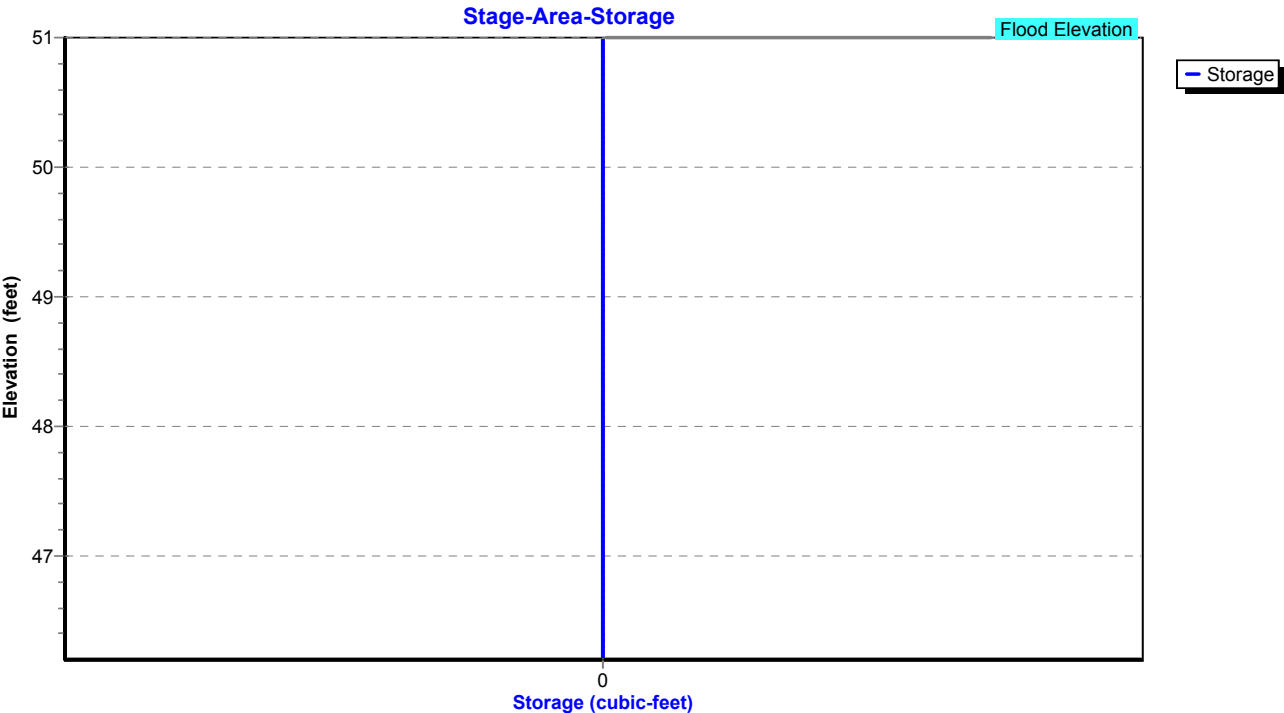
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Pond 63P: Manhole



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NORWALK 24-hr S1 25 year Rainfall=6.48"

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Summary for Pond 64P: YD

Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 4.65" for 25 year event
Inflow = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf
Outflow = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.24 cfs @ 12.08 hrs, Volume= 26,386 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 58.21' @ 12.08 hrs

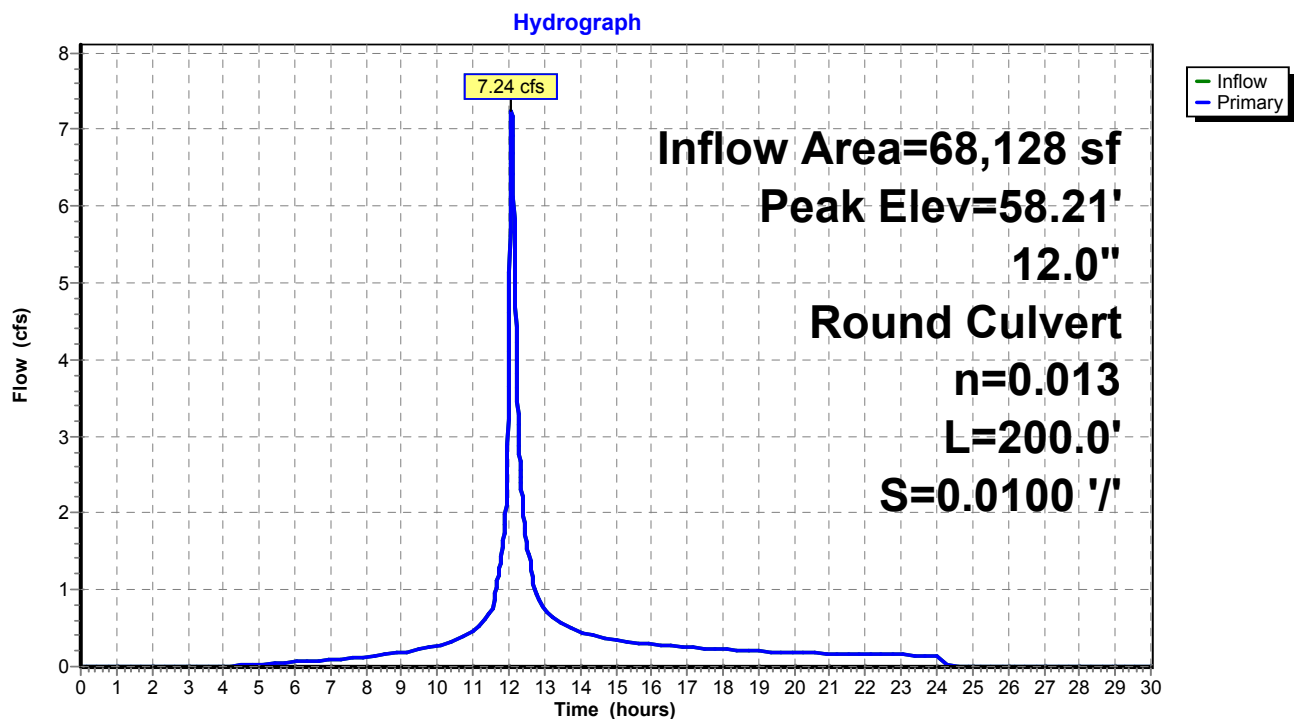
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=7.22 cfs @ 12.08 hrs HW=58.17' (Free Discharge)

↑1=Culvert (Barrel Controls 7.22 cfs @ 9.20 fps)

Pond 64P: YD



Proposed Conditions

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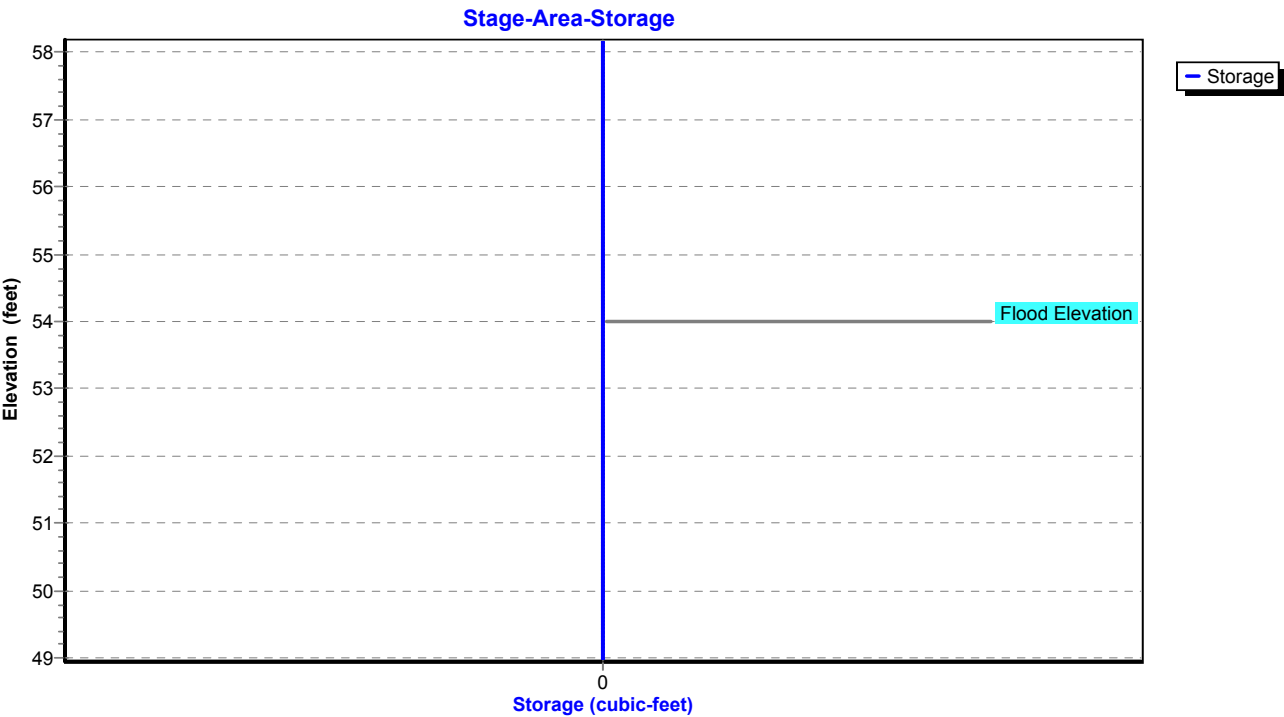
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 5.54" for 25 year event
Inflow = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf
Outflow = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.99 cfs @ 12.03 hrs, Volume= 5,894 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.33' @ 12.03 hrs

Flood Elev= 53.00'

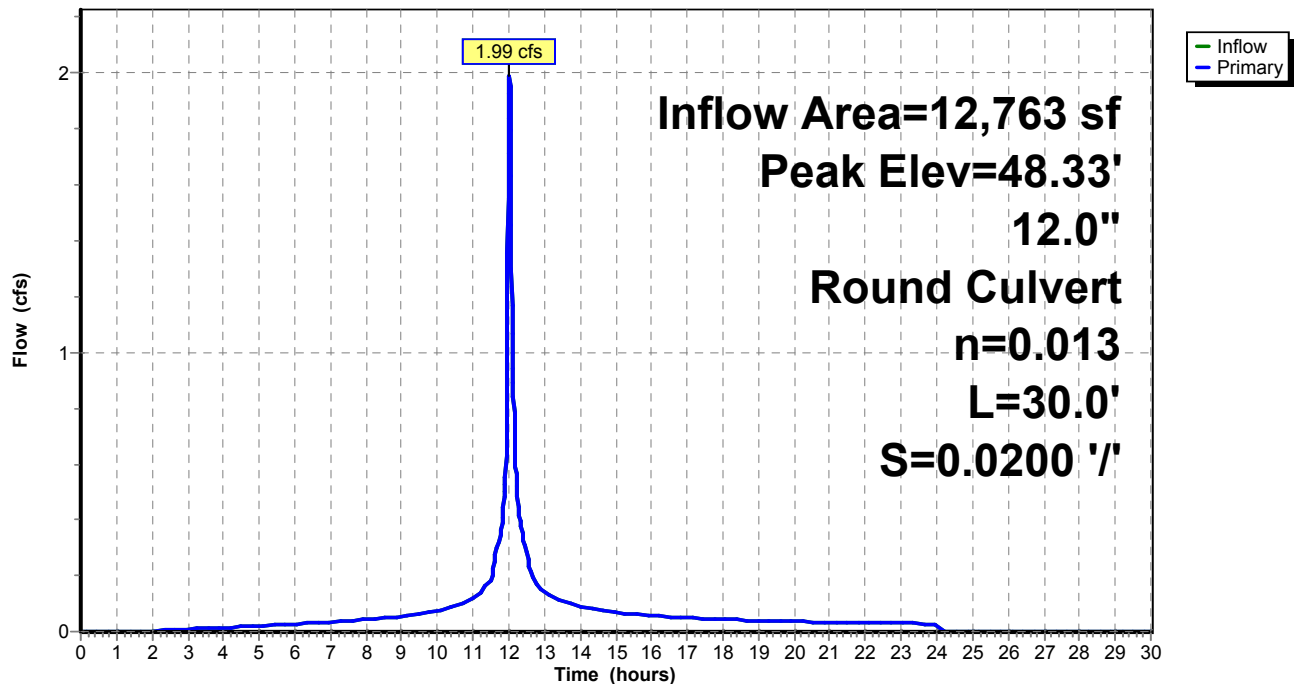
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.98 cfs @ 12.03 hrs HW=48.33' (Free Discharge)

↑1=Culvert (Inlet Controls 1.98 cfs @ 3.01 fps)

Pond 66P: CB-10

Hydrograph



Proposed Conditions

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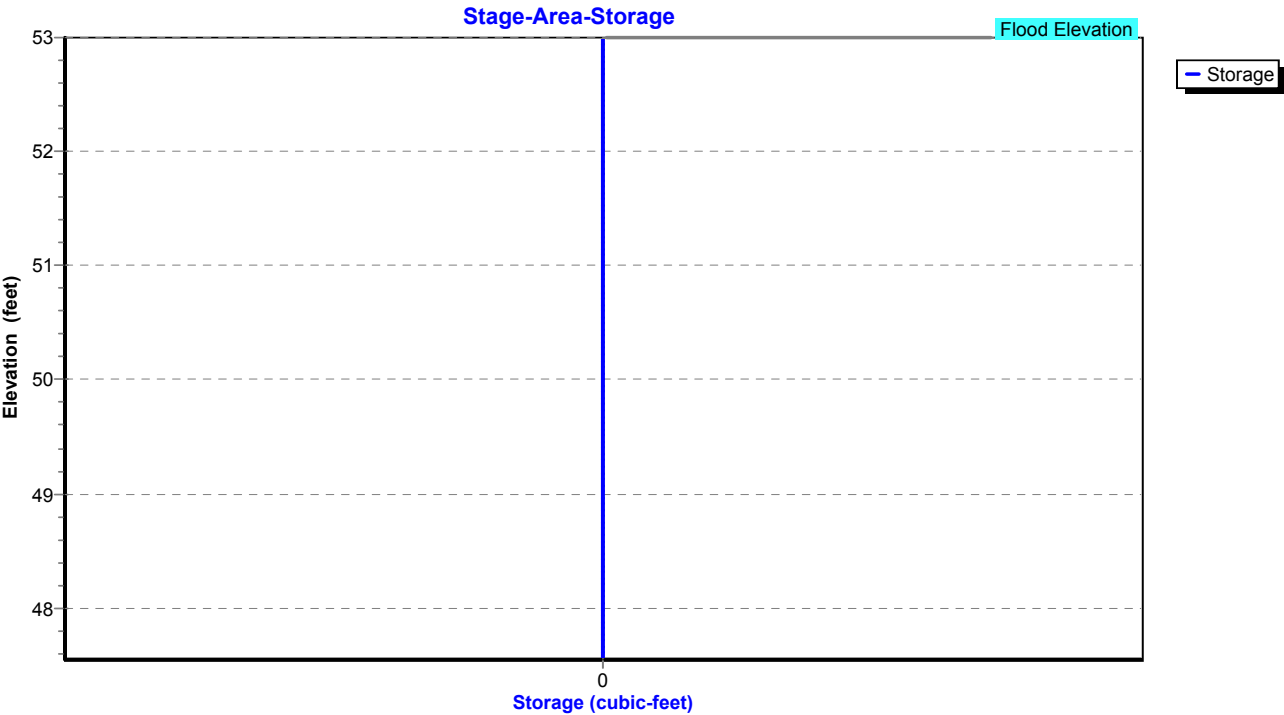
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Pond 66P: CB-10



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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 5.43" for 25 year event
Inflow = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf
Outflow = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.99 cfs @ 12.03 hrs, Volume= 2,916 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.68' @ 12.03 hrs

Flood Elev= 52.00'

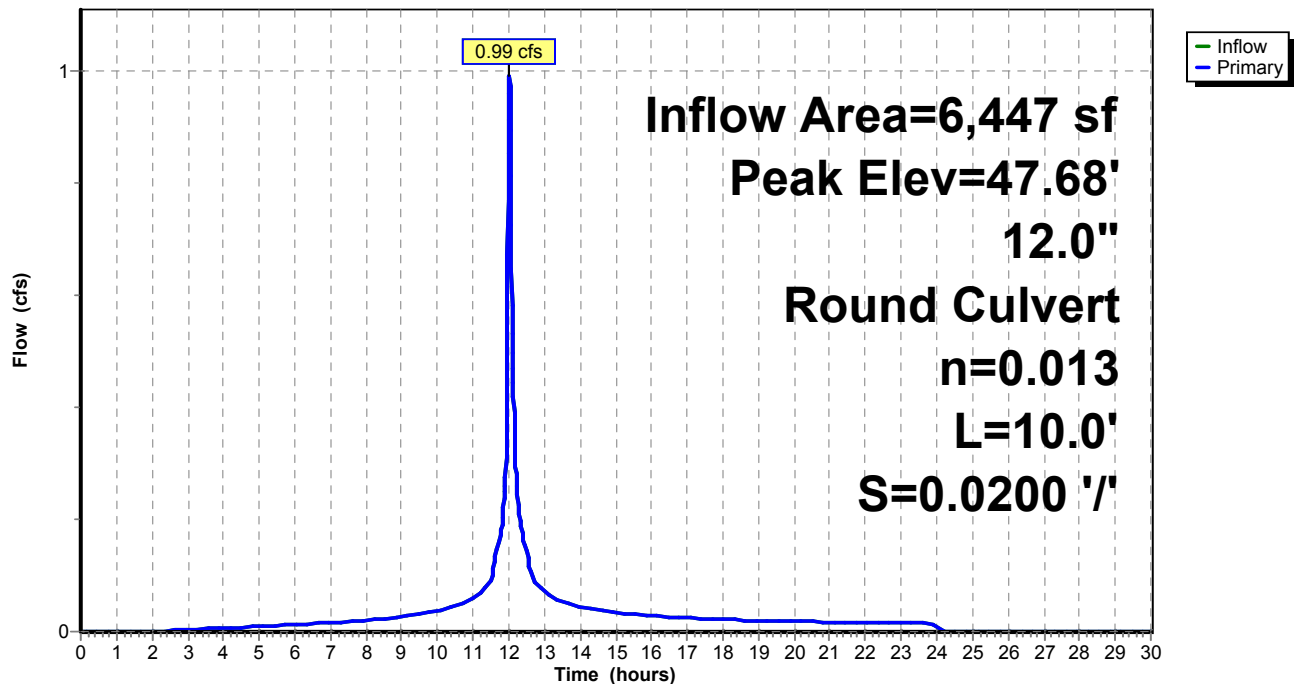
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.99 cfs @ 12.03 hrs HW=47.68' (Free Discharge)

↑1=Culvert (Barrel Controls 0.99 cfs @ 3.37 fps)

Pond 67P: CB-9

Hydrograph



Proposed Conditions

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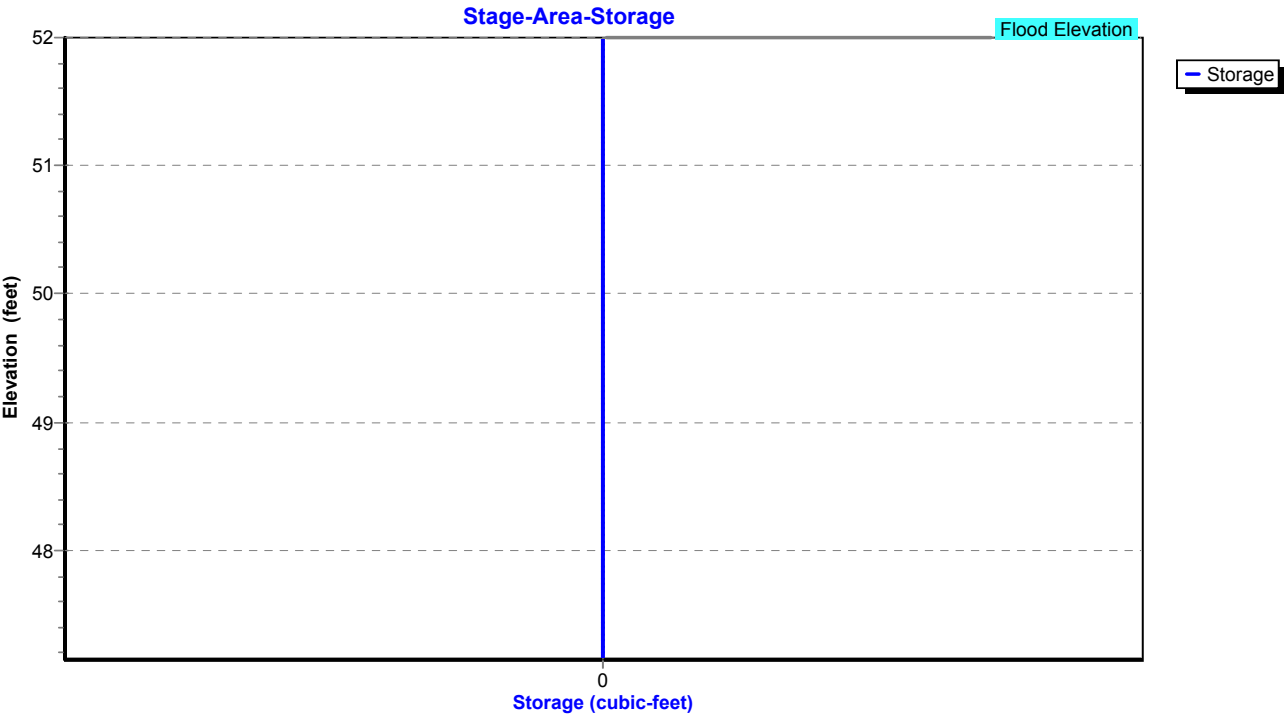
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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 4.94" for 25 year event
Inflow = 9.54 cfs @ 11.99 hrs, Volume= 36,210 cf
Outflow = 9.54 cfs @ 11.99 hrs, Volume= 36,210 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.54 cfs @ 11.99 hrs, Volume= 36,210 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.49' @ 11.99 hrs

Flood Elev= 53.30'

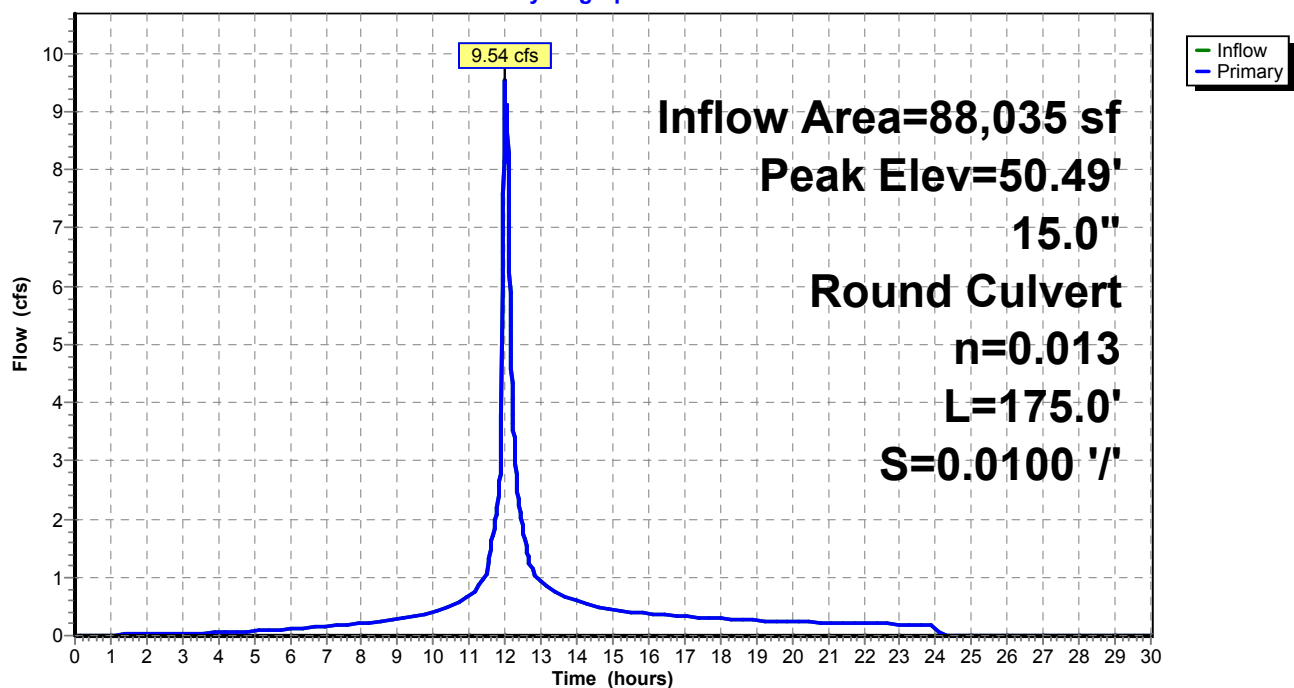
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.54 cfs @ 11.99 hrs HW=50.48' (Free Discharge)

↑1=Culvert (Barrel Controls 9.54 cfs @ 7.77 fps)

Pond 70P: CB-2

Hydrograph



Proposed Conditions

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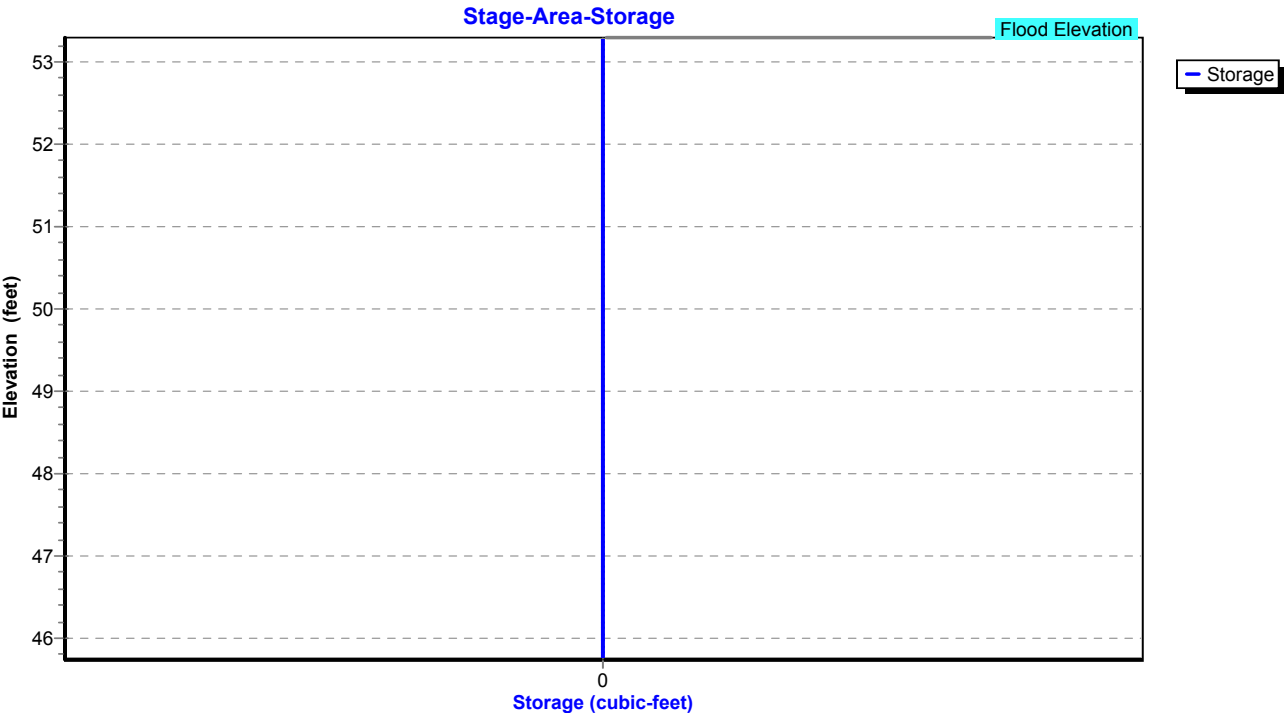
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Pond 70P: CB-2



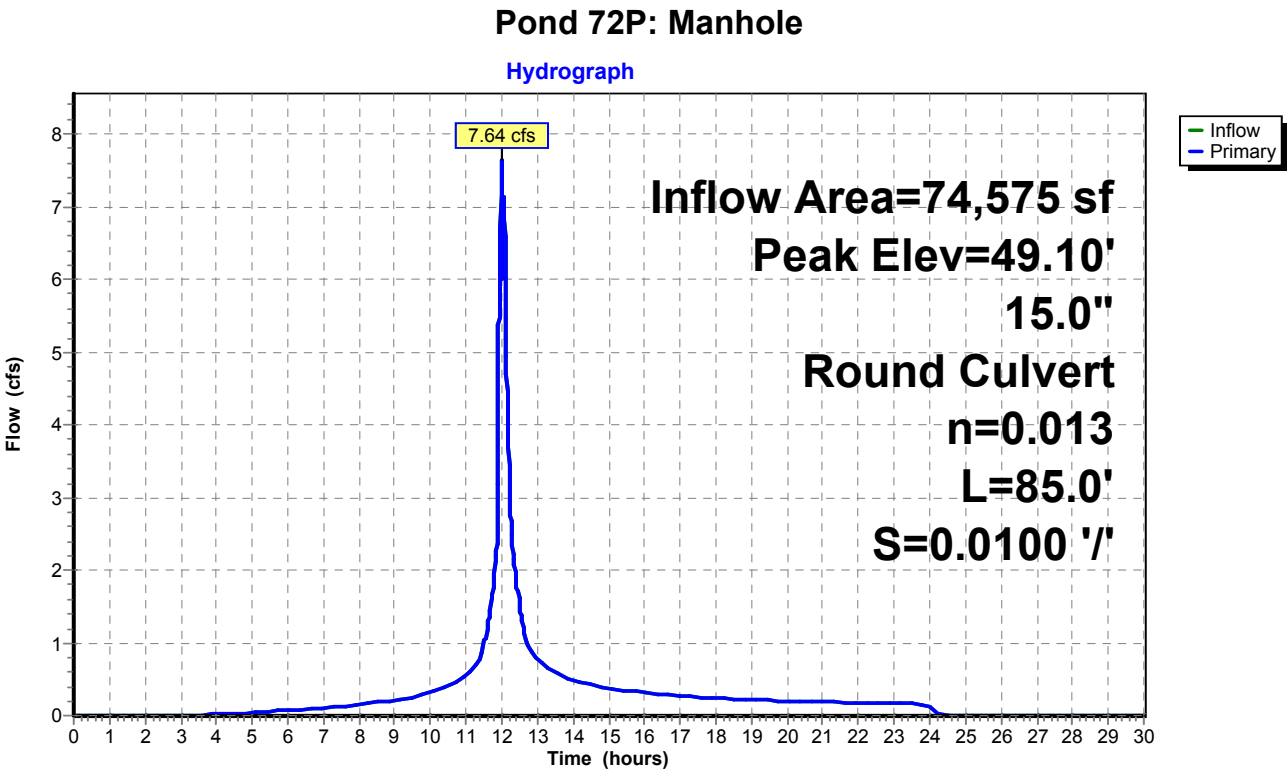
Summary for Pond 72P: Manhole

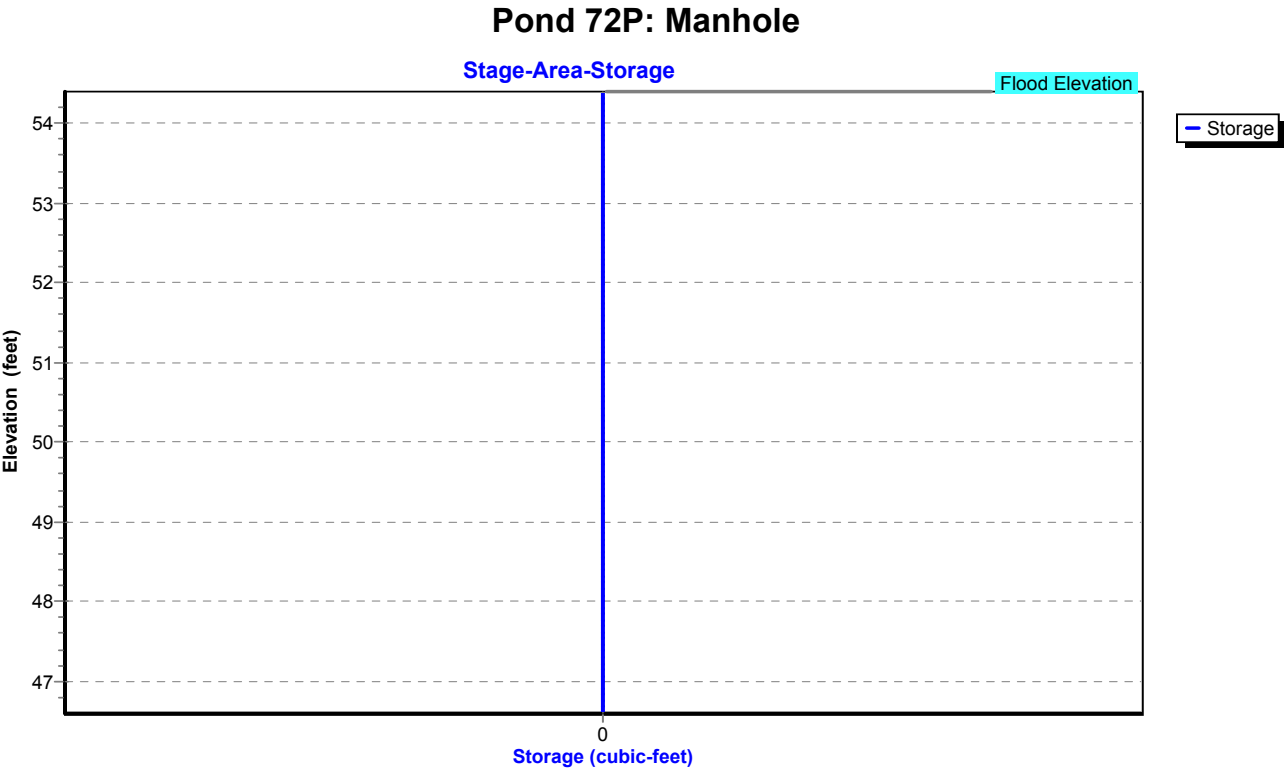
Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 4.70" for 25 year event
Inflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Outflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.10' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.57 cfs @ 11.99 hrs HW=49.06' (Free Discharge)
1=Culvert (Barrel Controls 7.57 cfs @ 6.17 fps)





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Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 4.70" for 25 year event
Inflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Outflow = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.64 cfs @ 11.99 hrs, Volume= 29,209 cf
Routed to Pond 72P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 50.30' @ 11.99 hrs

Flood Elev= 53.30'

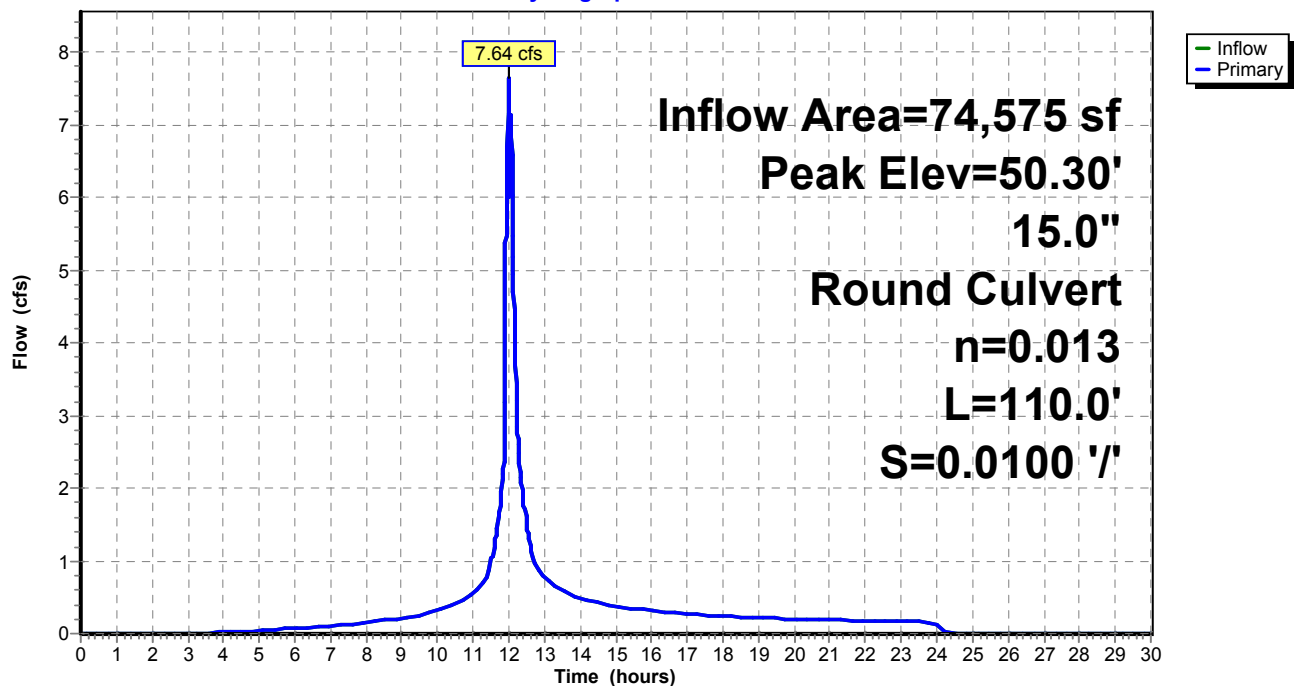
Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.57 cfs @ 11.99 hrs HW=50.25' (Free Discharge)

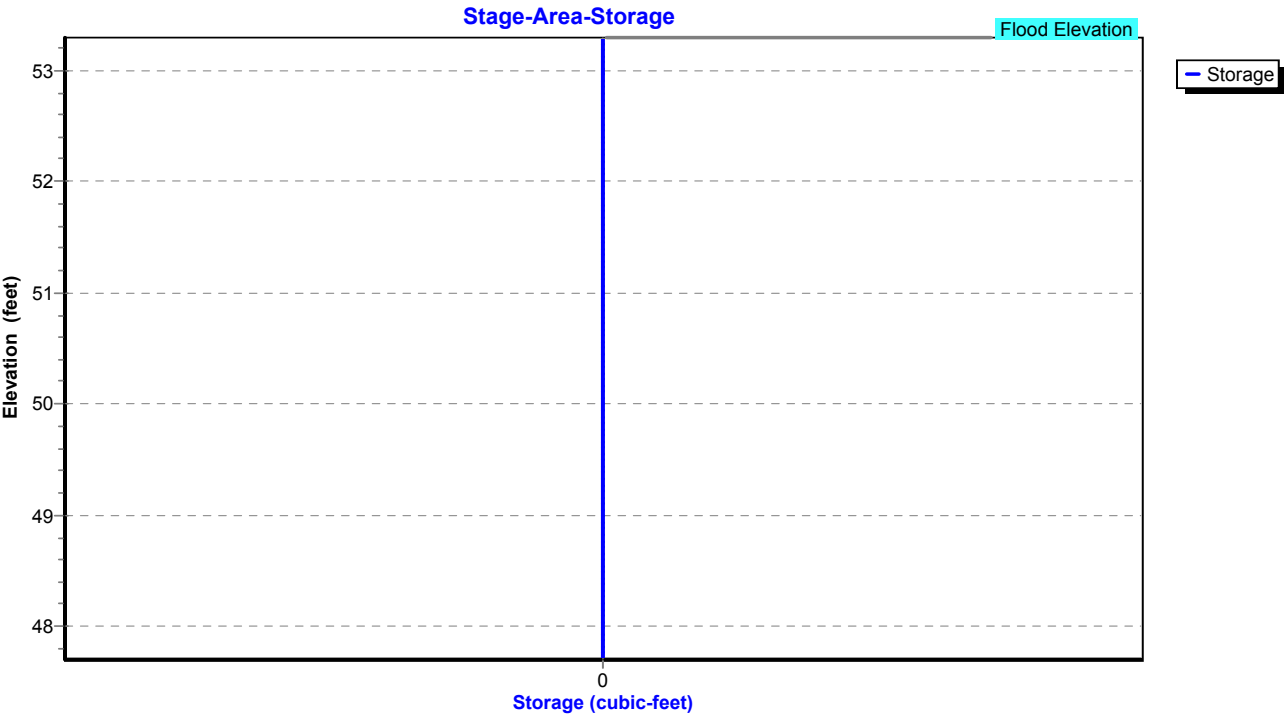
↑1=Culvert (Barrel Controls 7.57 cfs @ 6.17 fps)

Pond 73P: CB-3

Hydrograph



Pond 73P: CB-3



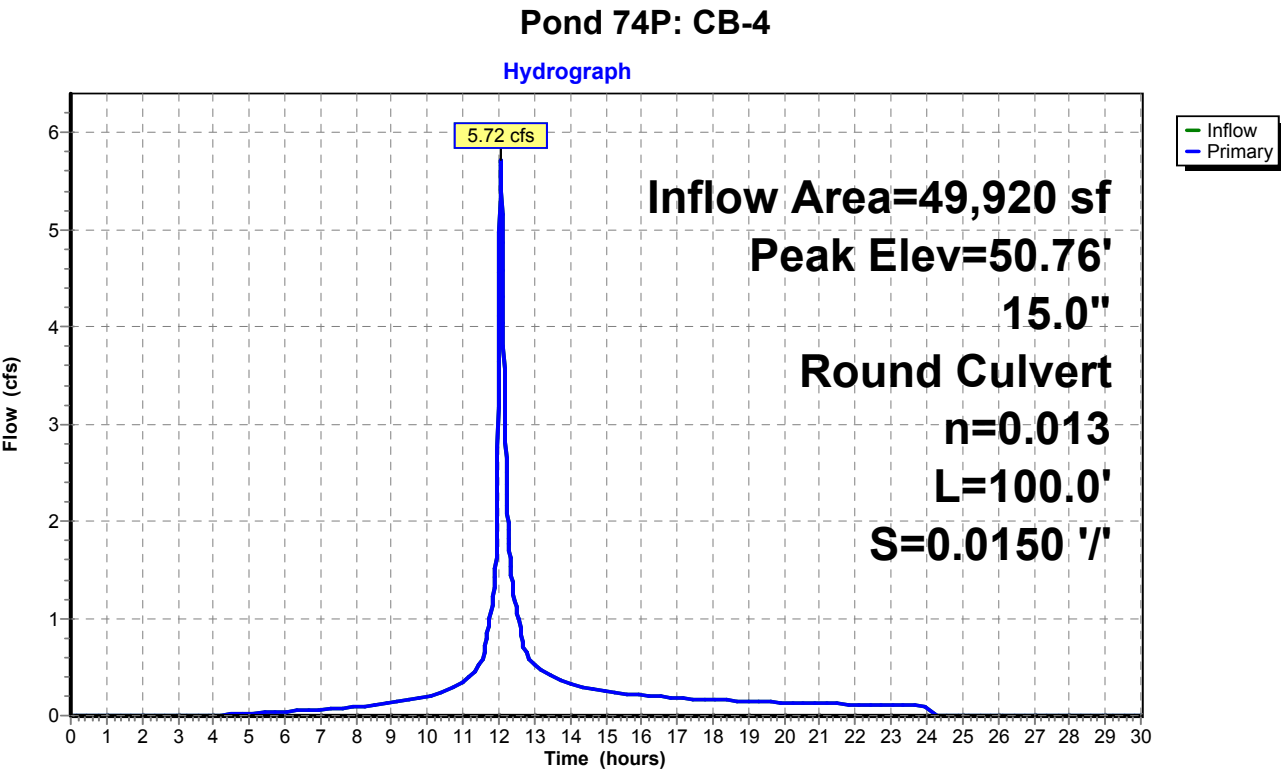
Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 4.56" for 25 year event
Inflow = 5.72 cfs @ 12.06 hrs, Volume= 18,982 cf
Outflow = 5.72 cfs @ 12.06 hrs, Volume= 18,982 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.72 cfs @ 12.06 hrs, Volume= 18,982 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.76' @ 12.06 hrs
Flood Elev= 53.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=5.71 cfs @ 12.06 hrs HW=50.76' (Free Discharge)
↑1=Culvert (Inlet Controls 5.71 cfs @ 4.65 fps)



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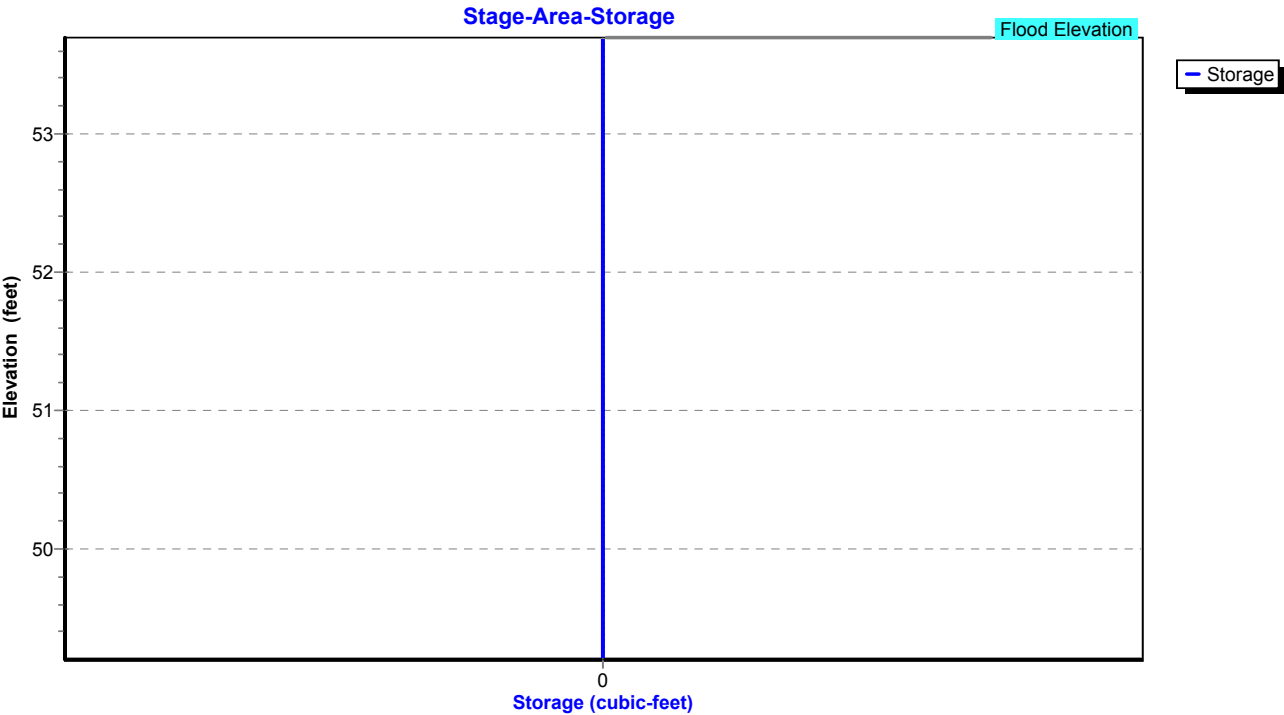
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Pond 74P: CB-4



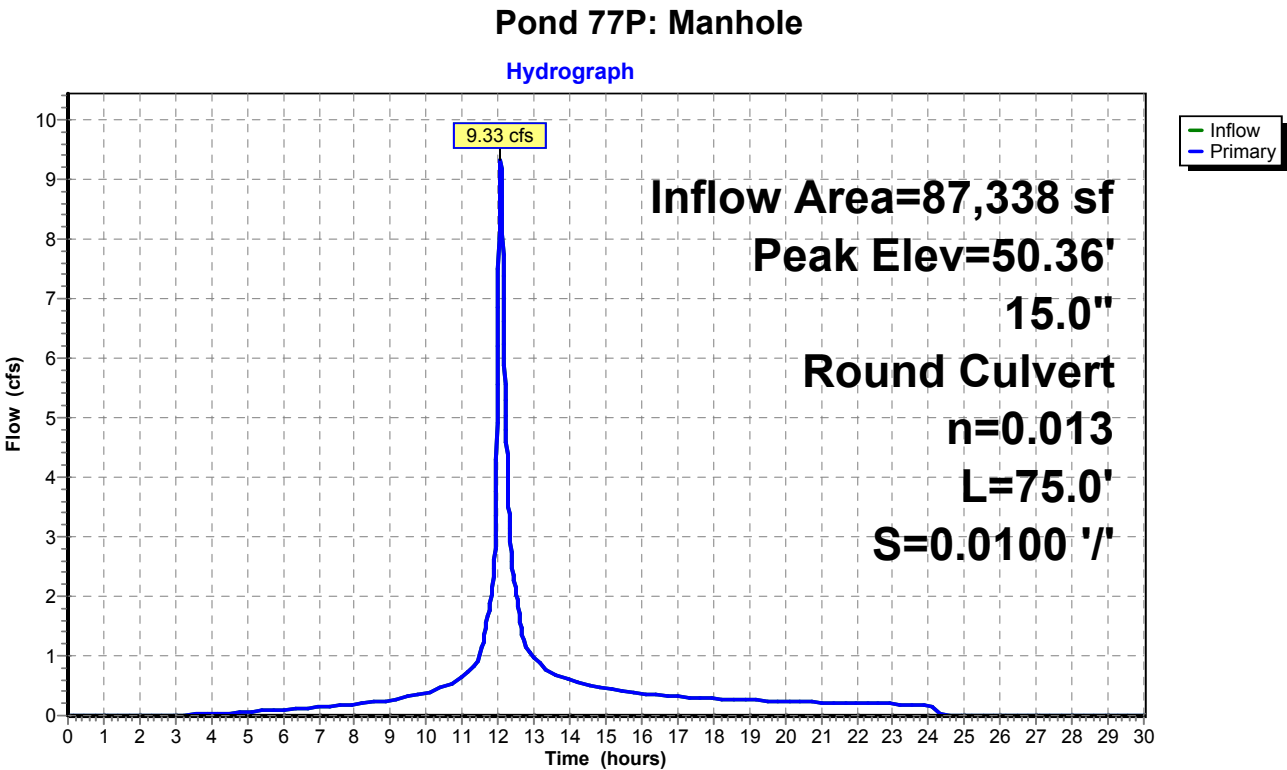
Summary for Pond 77P: Manhole

Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 4.84" for 25 year event
Inflow = 9.33 cfs @ 12.06 hrs, Volume= 35,196 cf
Outflow = 9.33 cfs @ 12.06 hrs, Volume= 35,196 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.33 cfs @ 12.06 hrs, Volume= 35,196 cf
Routed to Pond 63P : Manhole

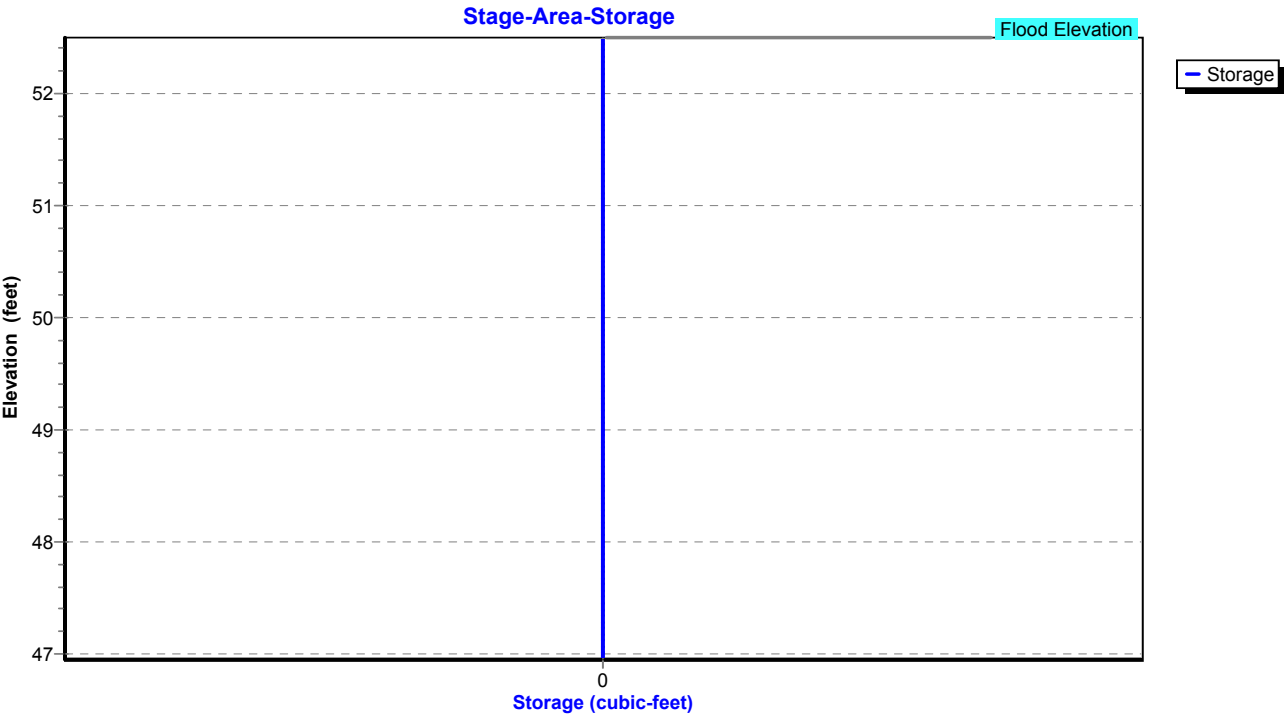
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.36' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.31 cfs @ 12.06 hrs HW=50.36' (Free Discharge)
1=Culvert (Barrel Controls 9.31 cfs @ 7.59 fps)



Pond 77P: Manhole



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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 6.24" for 25 year event
Inflow = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf
Outflow = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.64 cfs @ 12.03 hrs, Volume= 2,039 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.60' @ 12.03 hrs

Flood Elev= 52.50'

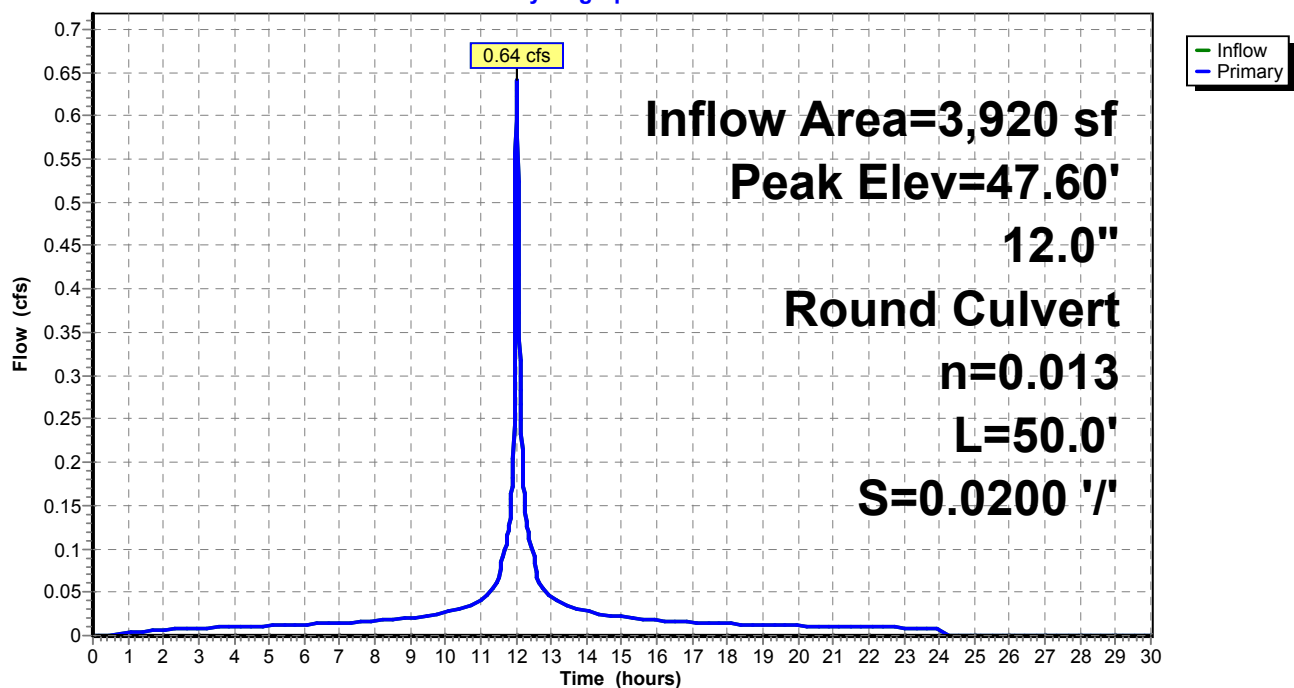
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.64 cfs @ 12.03 hrs HW=47.60' (Free Discharge)

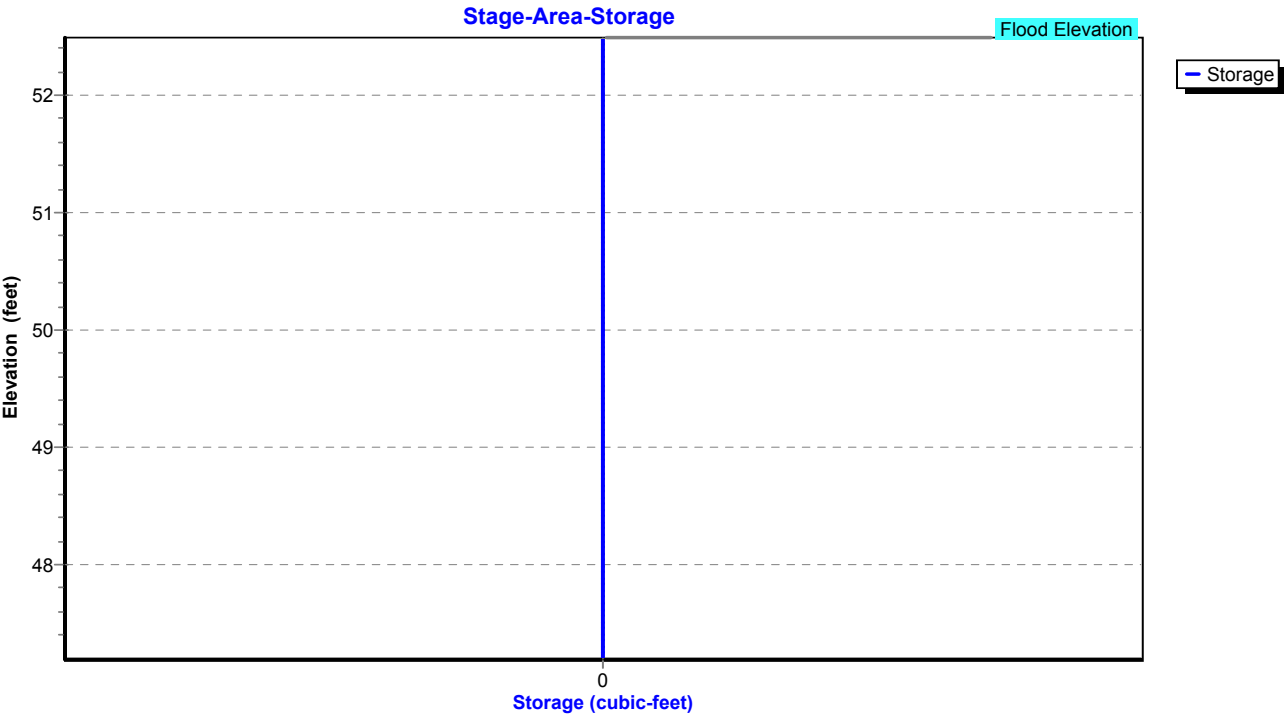
↑1=Culvert (Inlet Controls 0.64 cfs @ 2.16 fps)

Pond 79P: CB-8

Hydrograph



Pond 79P: CB-8



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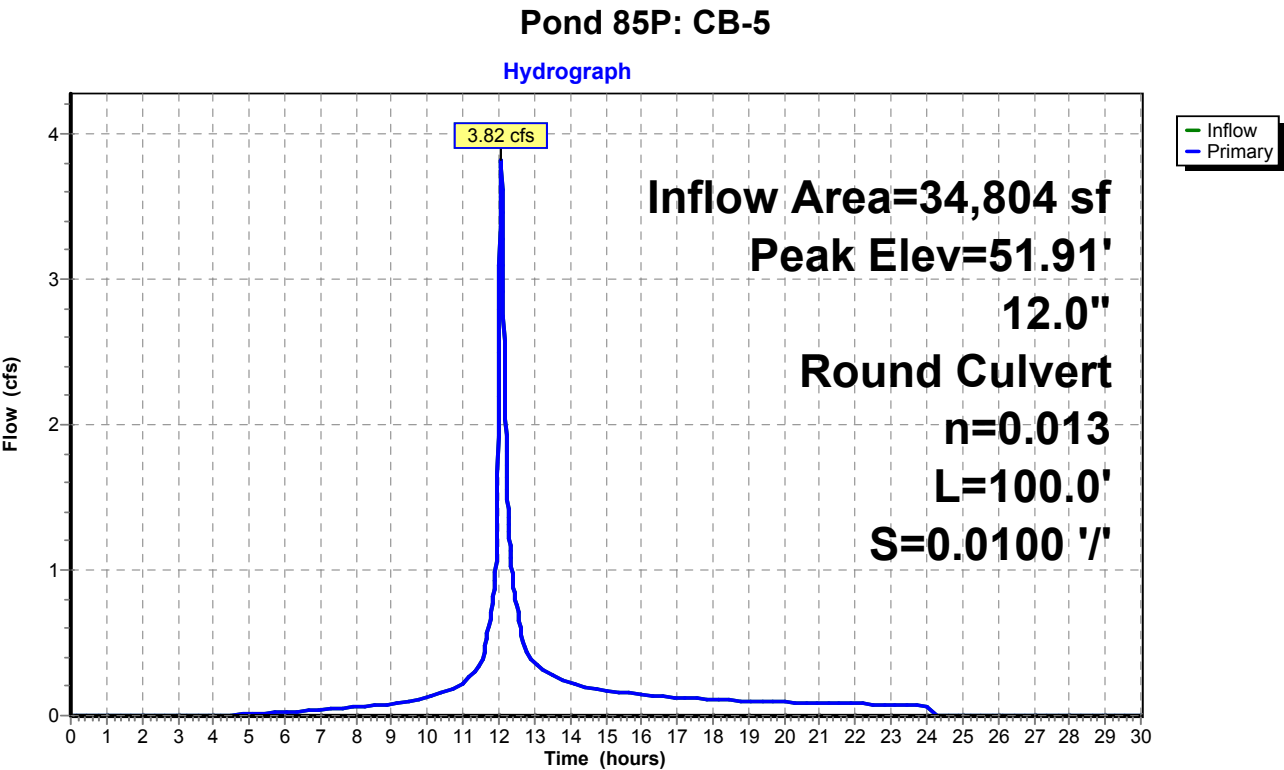
Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 4.43" for 25 year event
Inflow = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf
Outflow = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.82 cfs @ 12.07 hrs, Volume= 12,851 cf
Routed to Pond 74P : CB-4

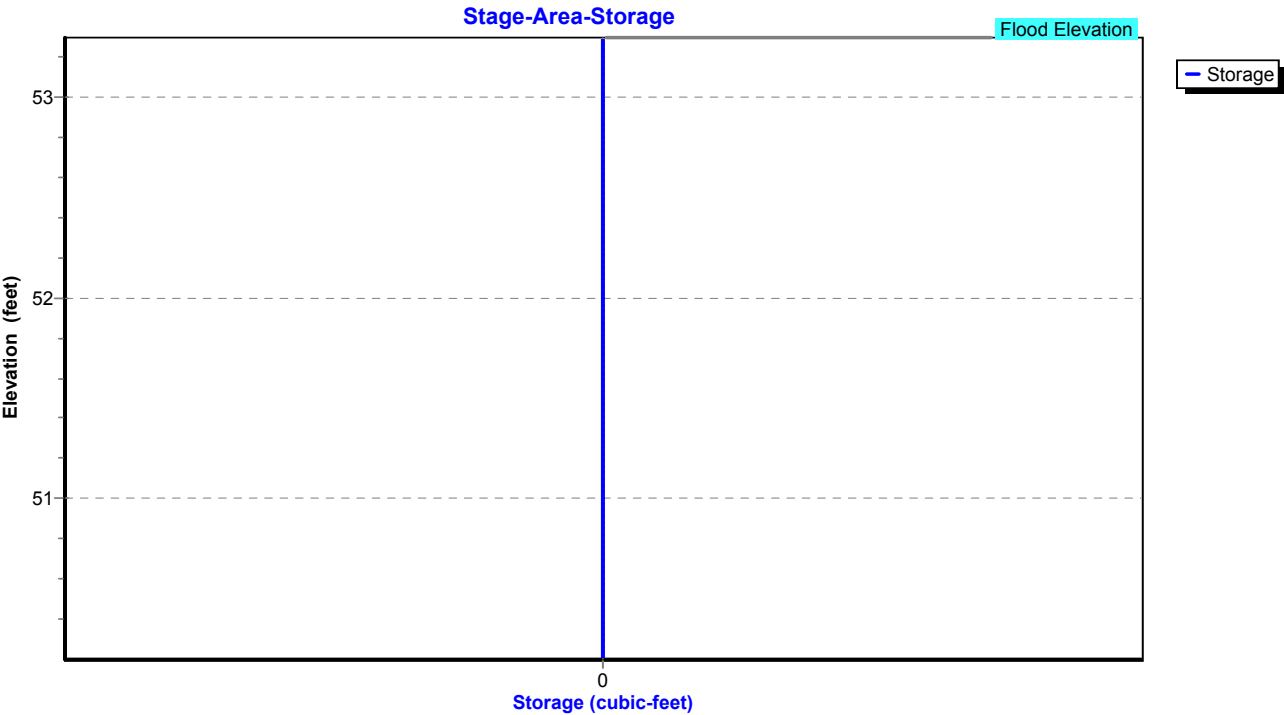
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.91' @ 12.07 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.81 cfs @ 12.07 hrs HW=51.90' (Free Discharge)
↑1=Culvert (Barrel Controls 3.81 cfs @ 4.85 fps)



Pond 85P: CB-5



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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 6.24" for 25 year event
 Inflow = 2.76 cfs @ 12.03 hrs, Volume= 8,791 cf
 Outflow = 1.12 cfs @ 12.14 hrs, Volume= 8,791 cf, Atten= 59%, Lag= 7.2 min
 Primary = 1.12 cfs @ 12.14 hrs, Volume= 8,791 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 54.39' @ 12.14 hrs Surf.Area= 749 sf Storage= 1,447 cf

Plug-Flow detention time= 18.6 min calculated for 8,788 cf (100% of inflow)
 Center-of-Mass det. time= 18.6 min (762.5 - 743.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.10 cfs @ 12.14 hrs HW=54.39' (Free Discharge)

1=Culvert (Passes 1.10 cfs of 6.04 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.71 cfs @ 8.18 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 0.39 cfs @ 0.85 fps)

Proposed Conditions

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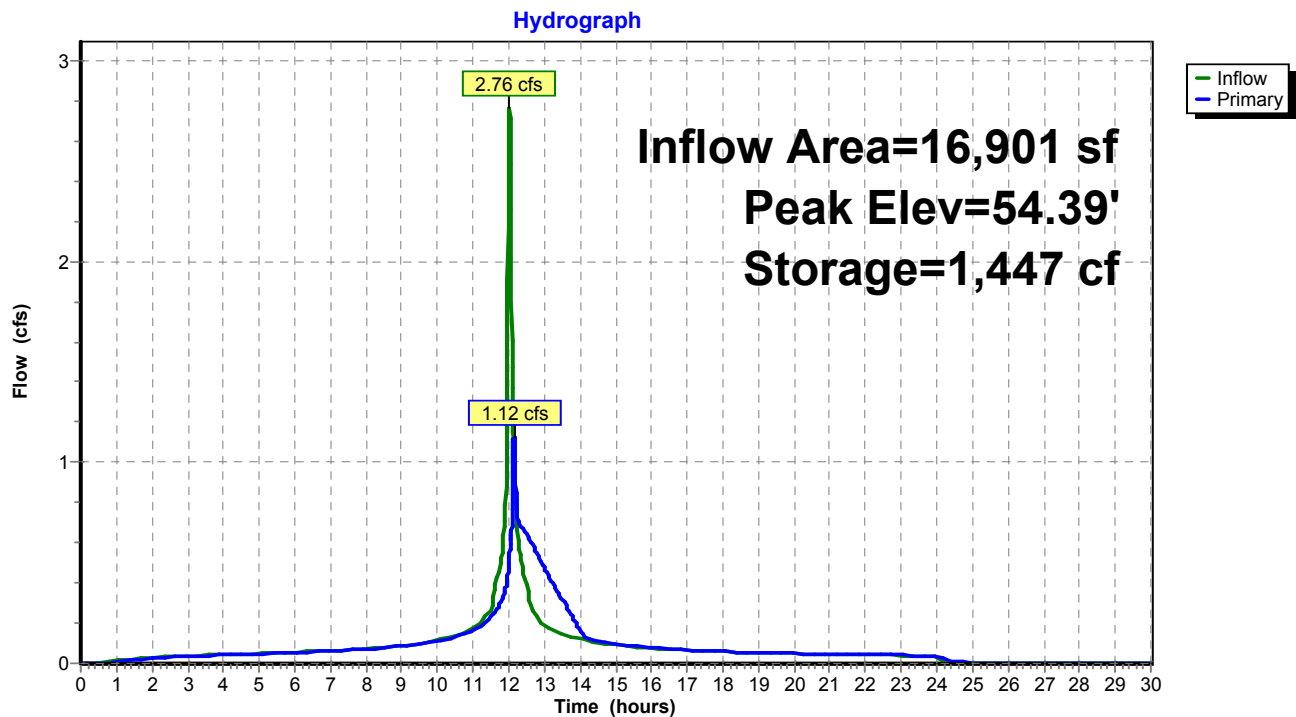
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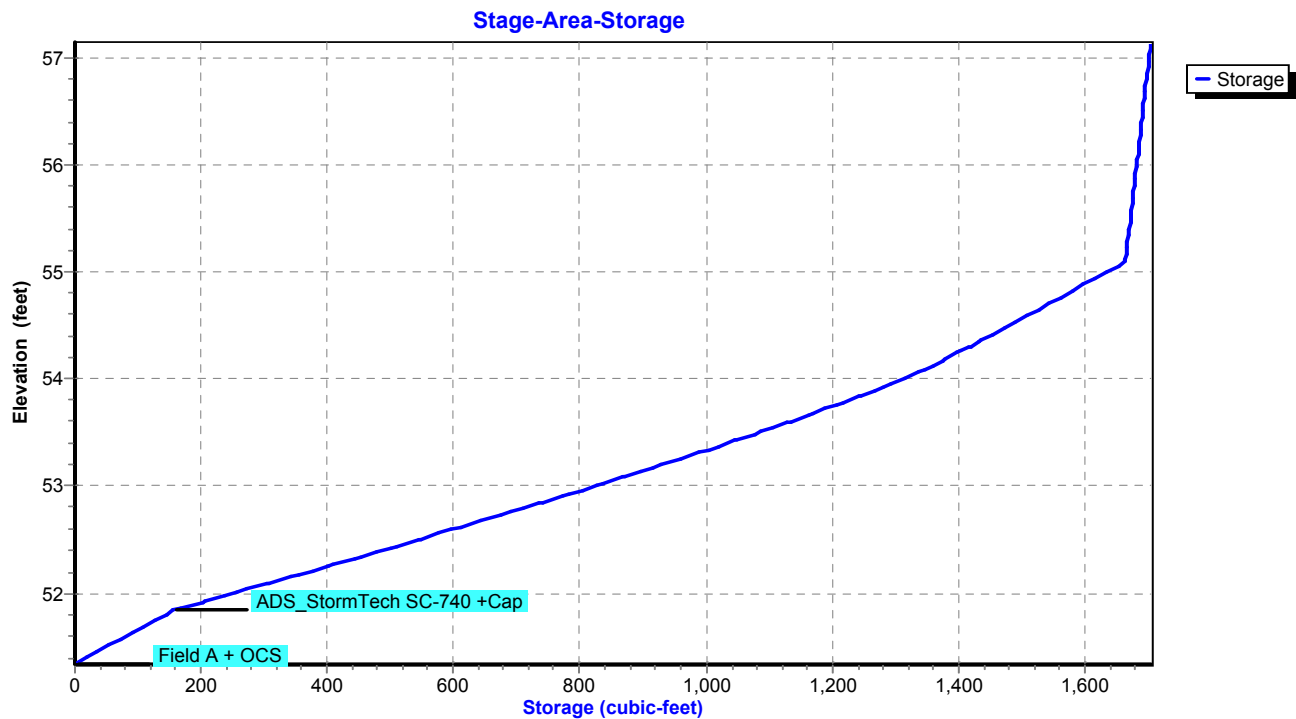
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 4S: Area 4

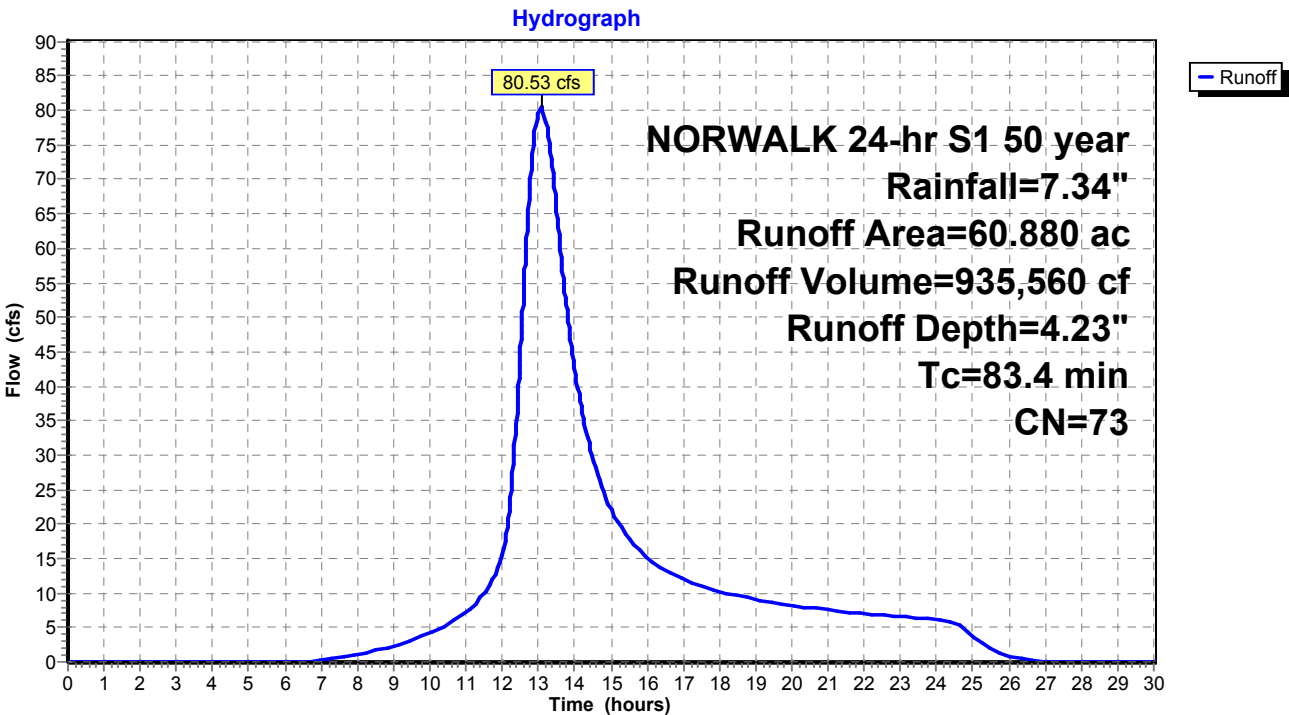
Runoff = 80.53 cfs @ 13.07 hrs, Volume= 935,560 cf, Depth= 4.23"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



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Summary for Subcatchment 5S: Area 5

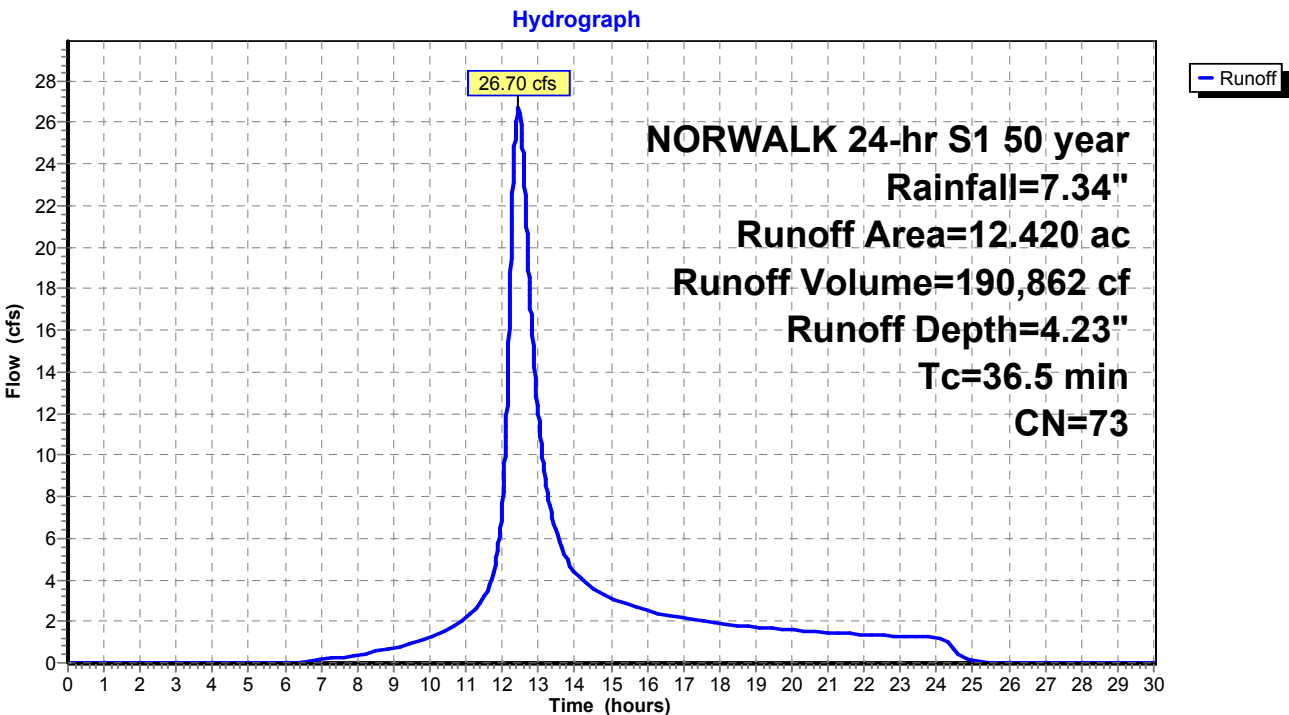
Runoff = 26.70 cfs @ 12.45 hrs, Volume= 190,862 cf, Depth= 4.23"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Summary for Subcatchment 6S: Area 6

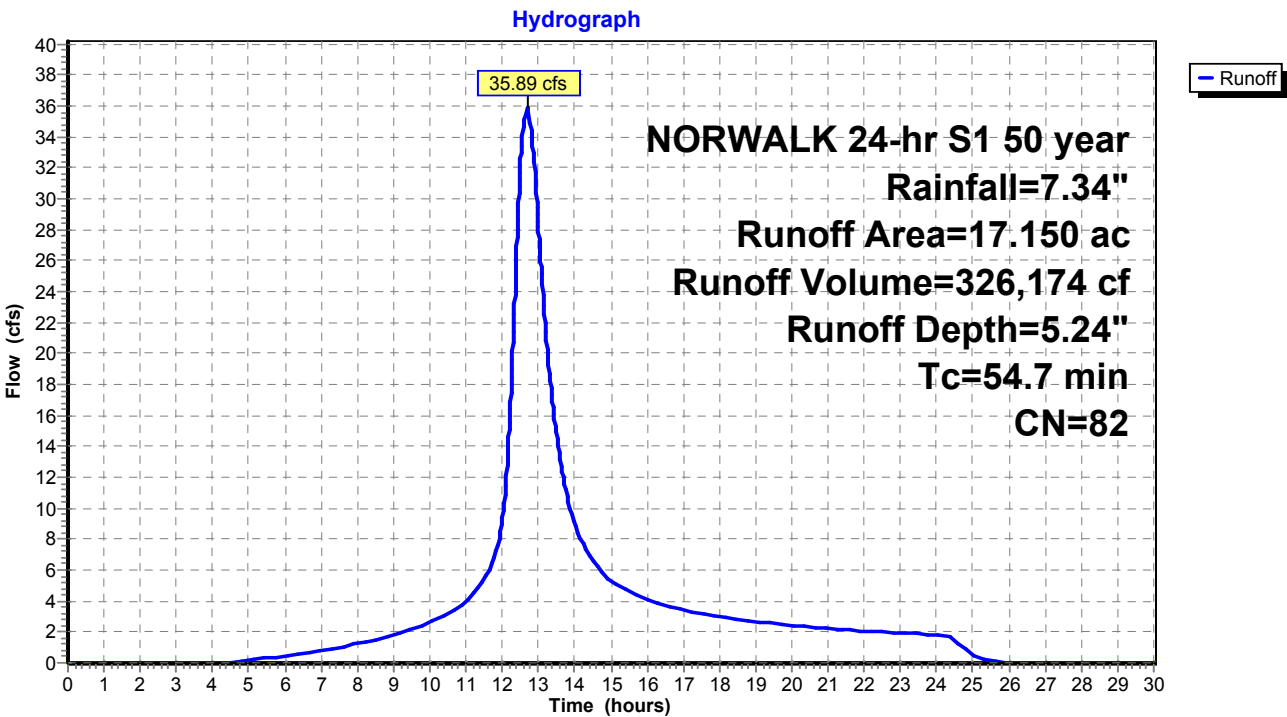
Runoff = 35.89 cfs @ 12.70 hrs, Volume= 326,174 cf, Depth= 5.24"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Summary for Subcatchment 7S: Area 7

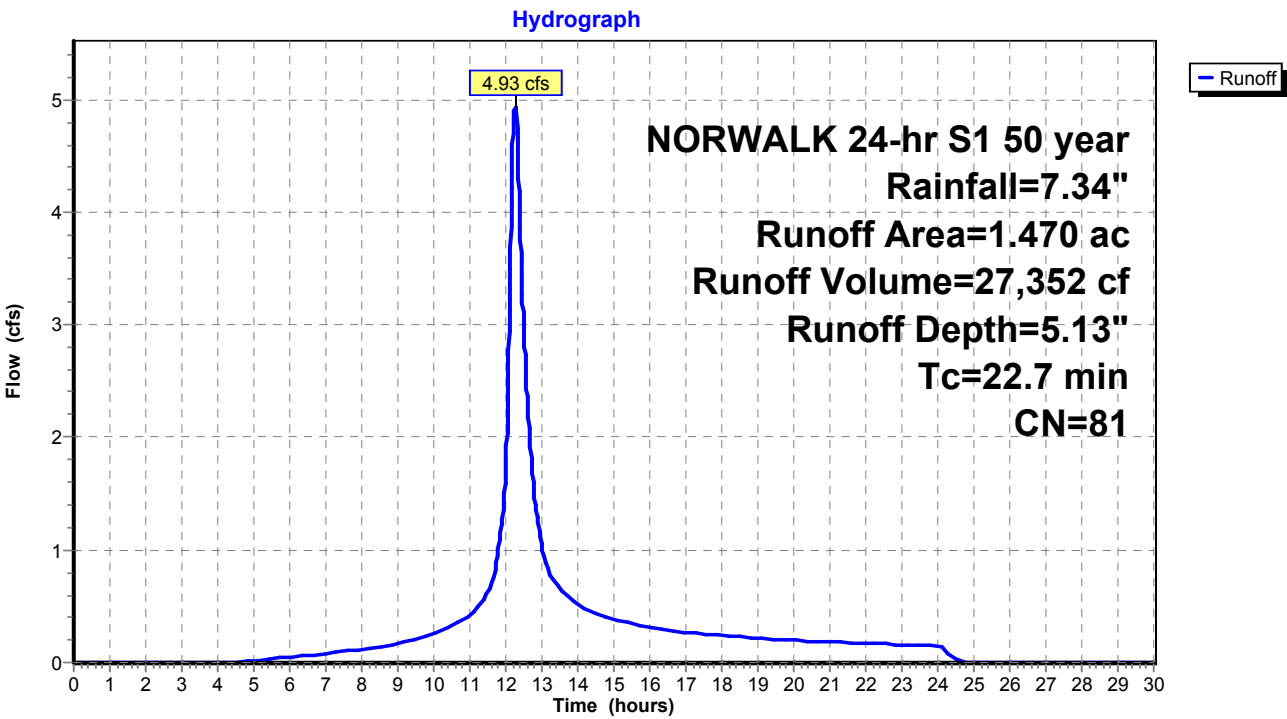
Runoff = 4.93 cfs @ 12.26 hrs, Volume= 27,352 cf, Depth= 5.13"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Summary for Subcatchment 8S: Area 8

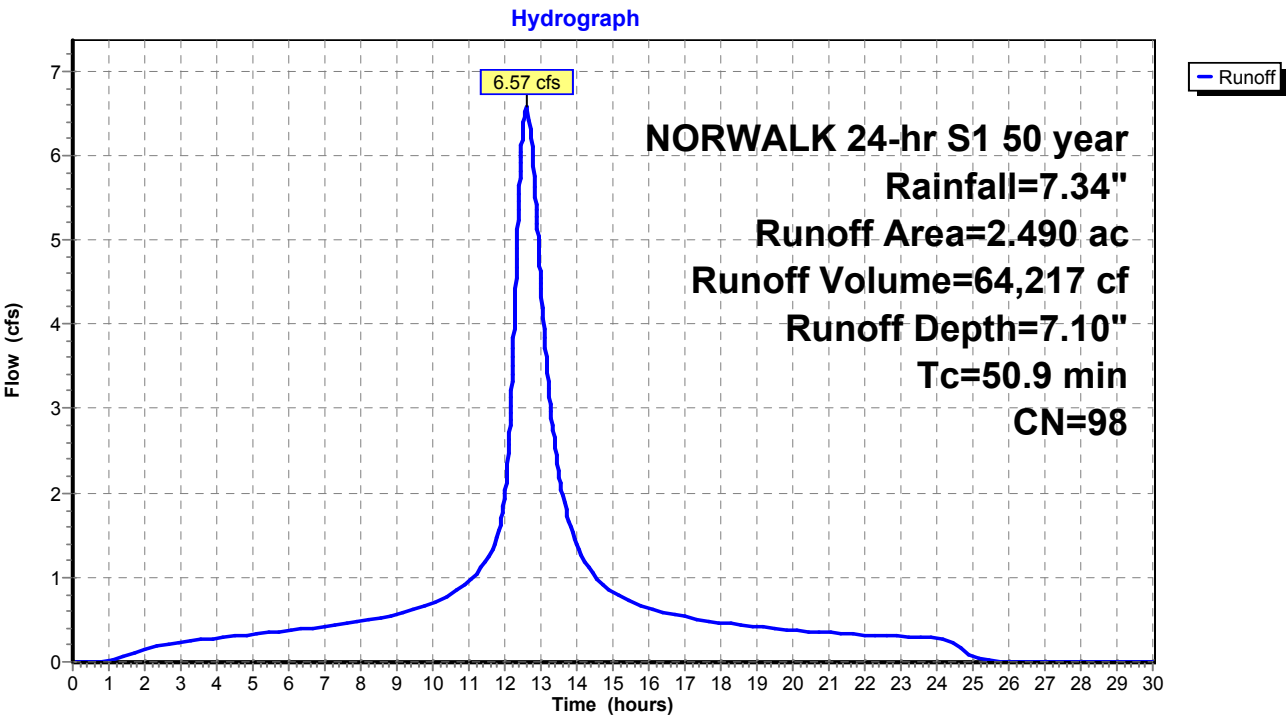
Runoff = 6.57 cfs @ 12.61 hrs, Volume= 64,217 cf, Depth= 7.10"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Summary for Subcatchment 9S: Area 9

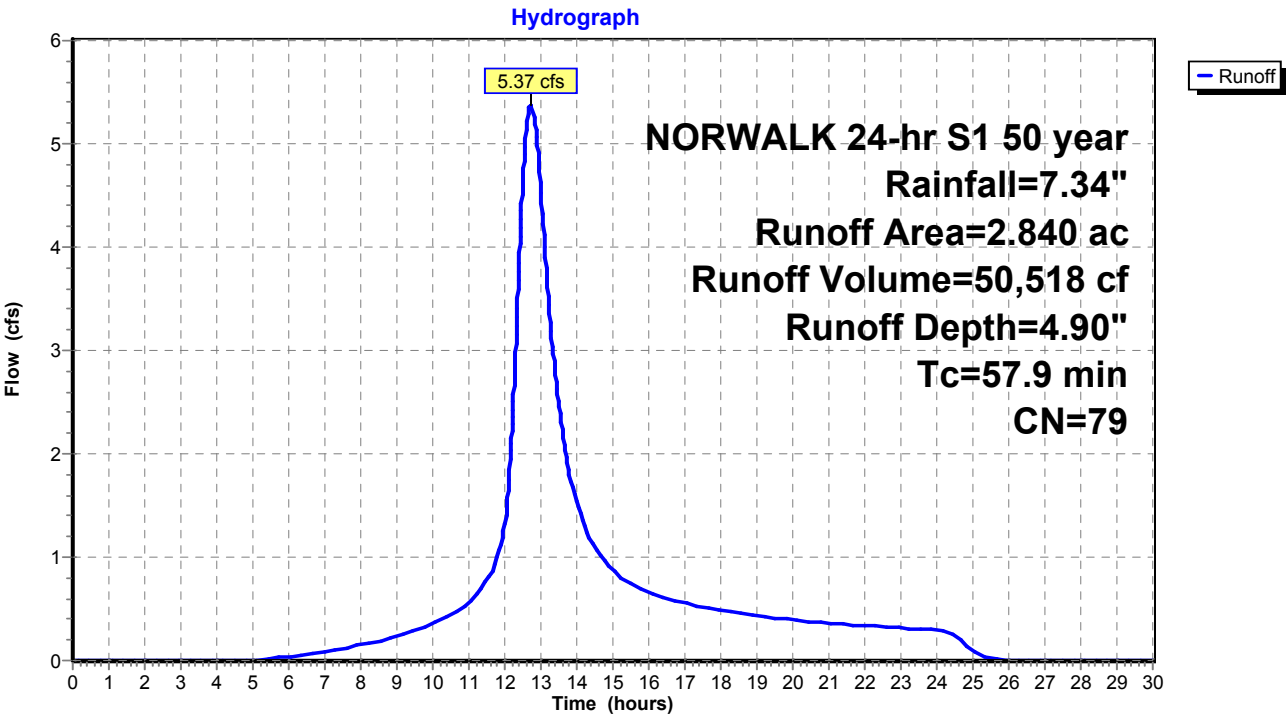
Runoff = 5.37 cfs @ 12.73 hrs, Volume= 50,518 cf, Depth= 4.90"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Summary for Subcatchment 10AS: Area 10A

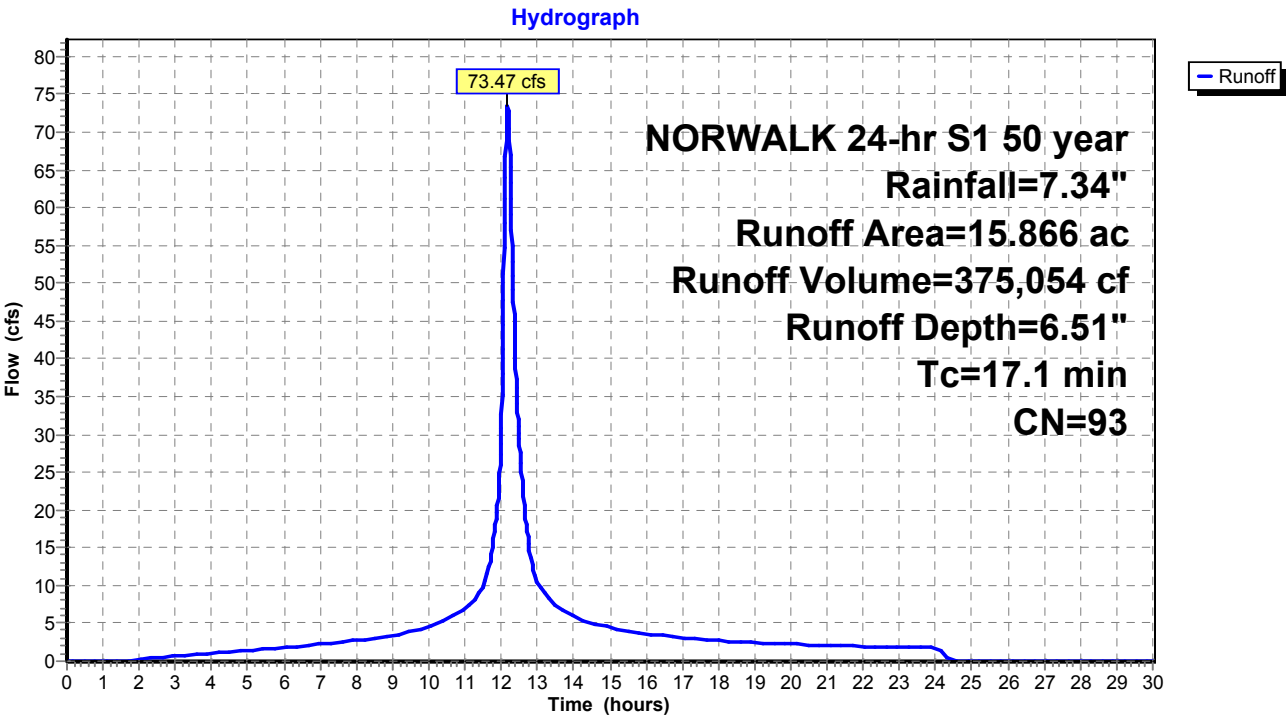
Runoff = 73.47 cfs @ 12.18 hrs, Volume= 375,054 cf, Depth= 6.51"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



Summary for Subcatchment 10BS: Area 10B

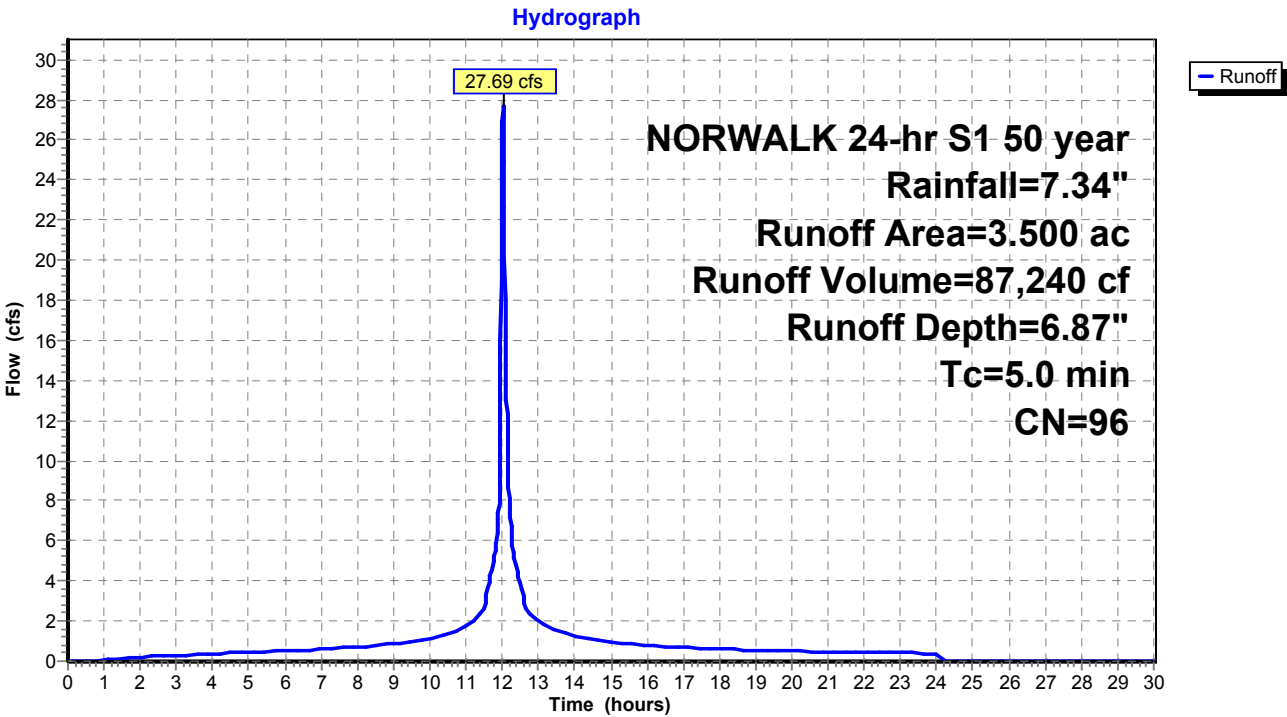
Runoff = 27.69 cfs @ 12.03 hrs, Volume= 87,240 cf, Depth= 6.87"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Summary for Subcatchment 10CS: Area 10C

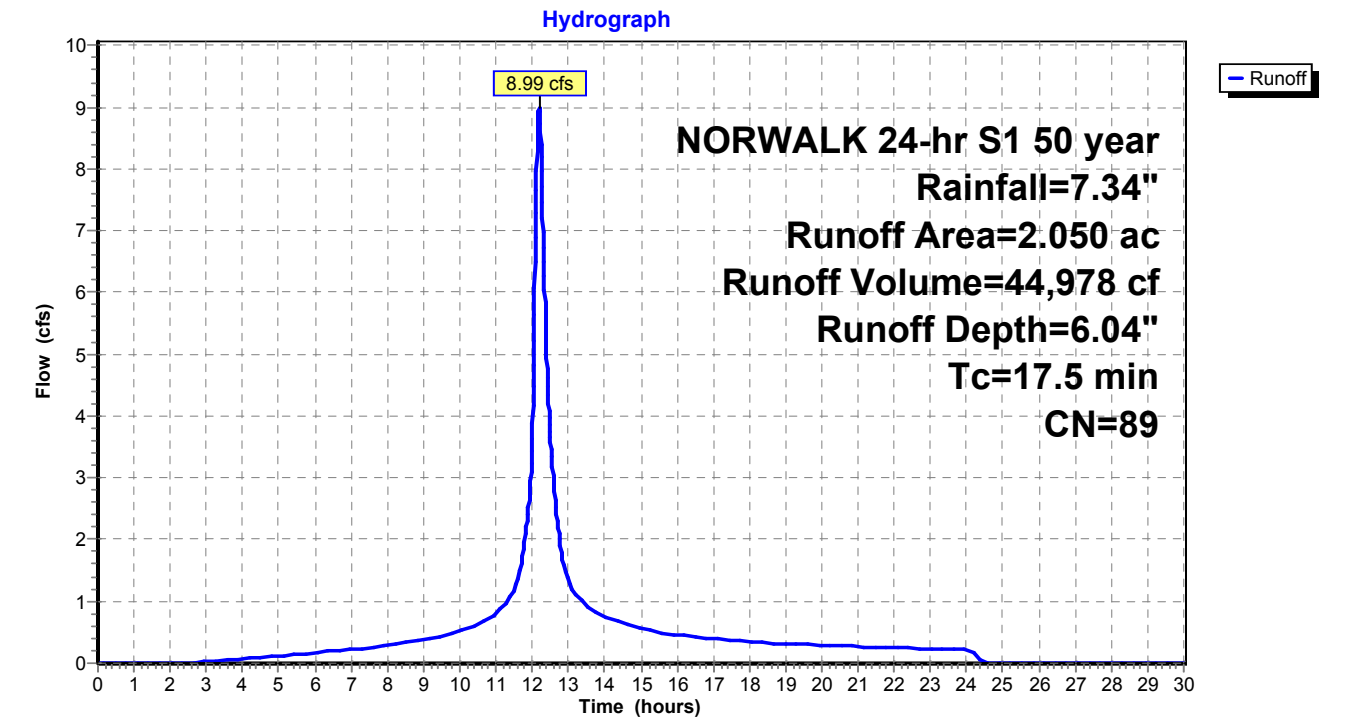
Runoff = 8.99 cfs @ 12.19 hrs, Volume= 44,978 cf, Depth= 6.04"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10DS: Area 10D

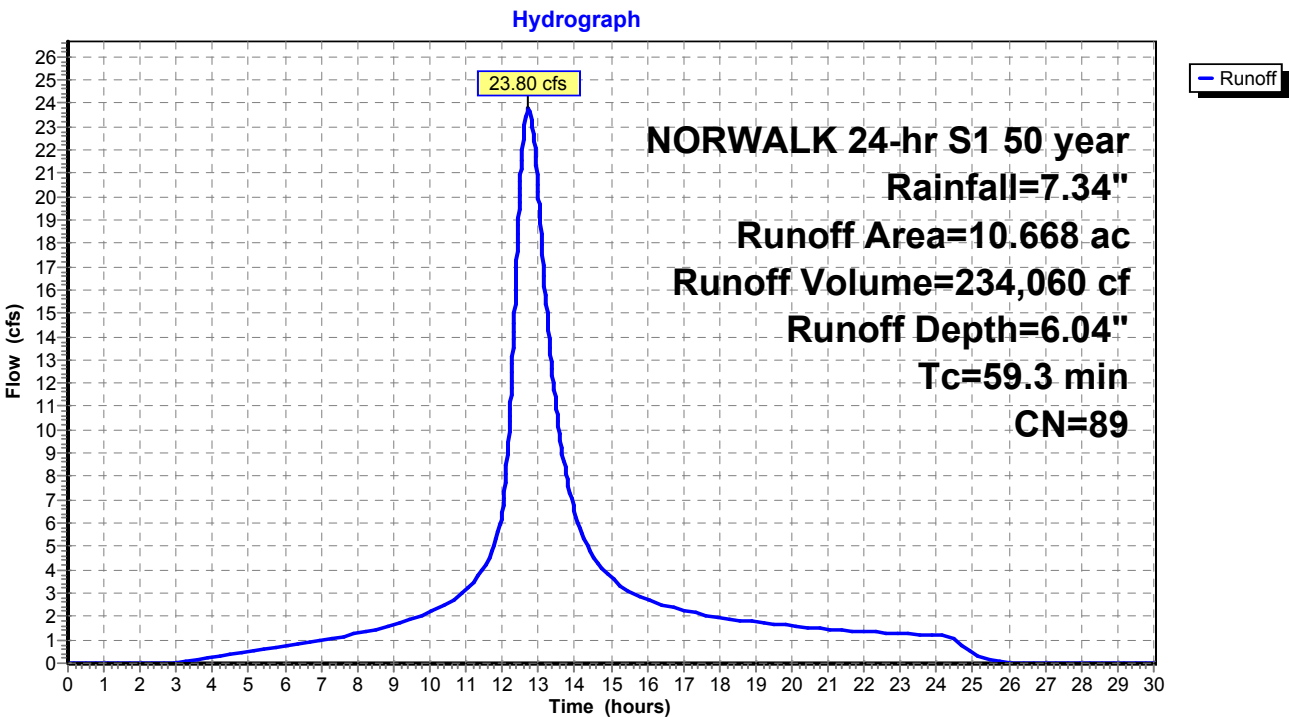
Runoff = 23.80 cfs @ 12.72 hrs, Volume= 234,060 cf, Depth= 6.04"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Summary for Subcatchment 10ES: Area 10E

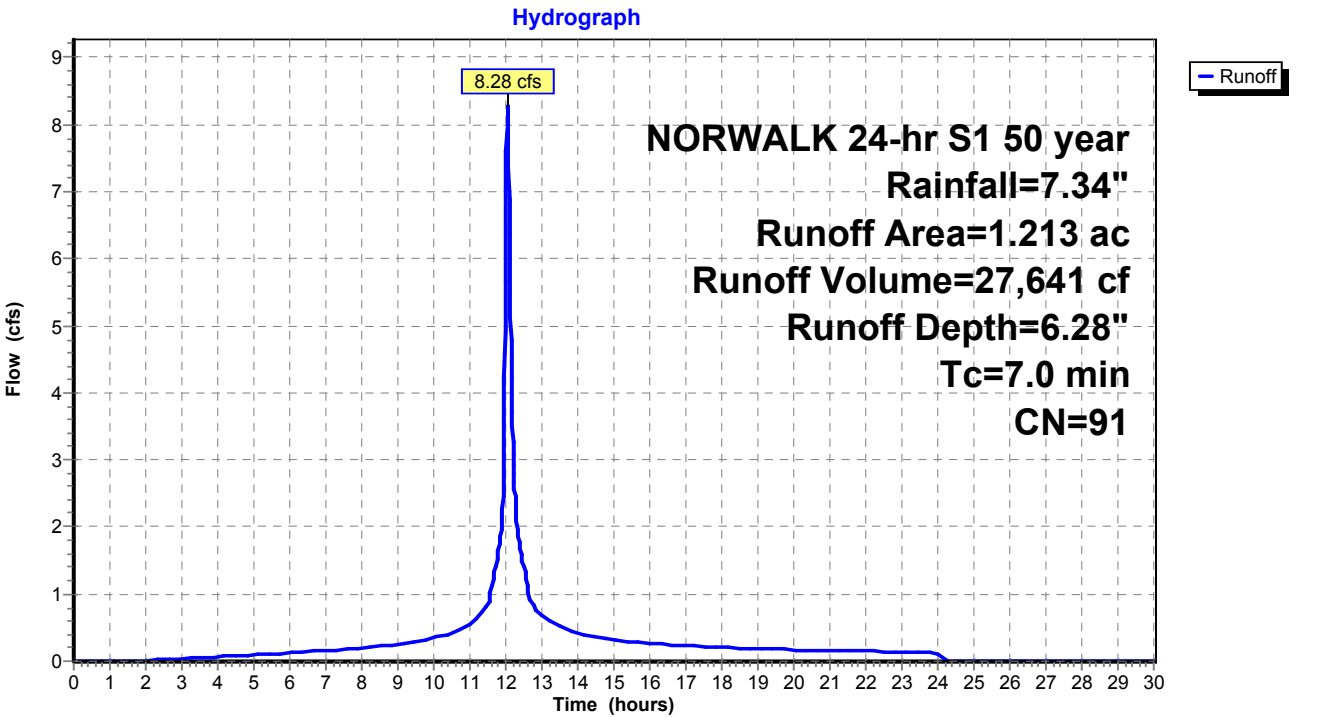
Runoff = 8.28 cfs @ 12.05 hrs, Volume= 27,641 cf, Depth= 6.28"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.781	98	Paved parking, HSG C
0.432	79	50-75% Grass cover, Fair, HSG C
1.213	91	Weighted Average
0.432		35.61% Pervious Area
0.781		64.39% Impervious Area

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

Subcatchment 10ES: Area 10E



Summary for Subcatchment 10FS: Area 10F

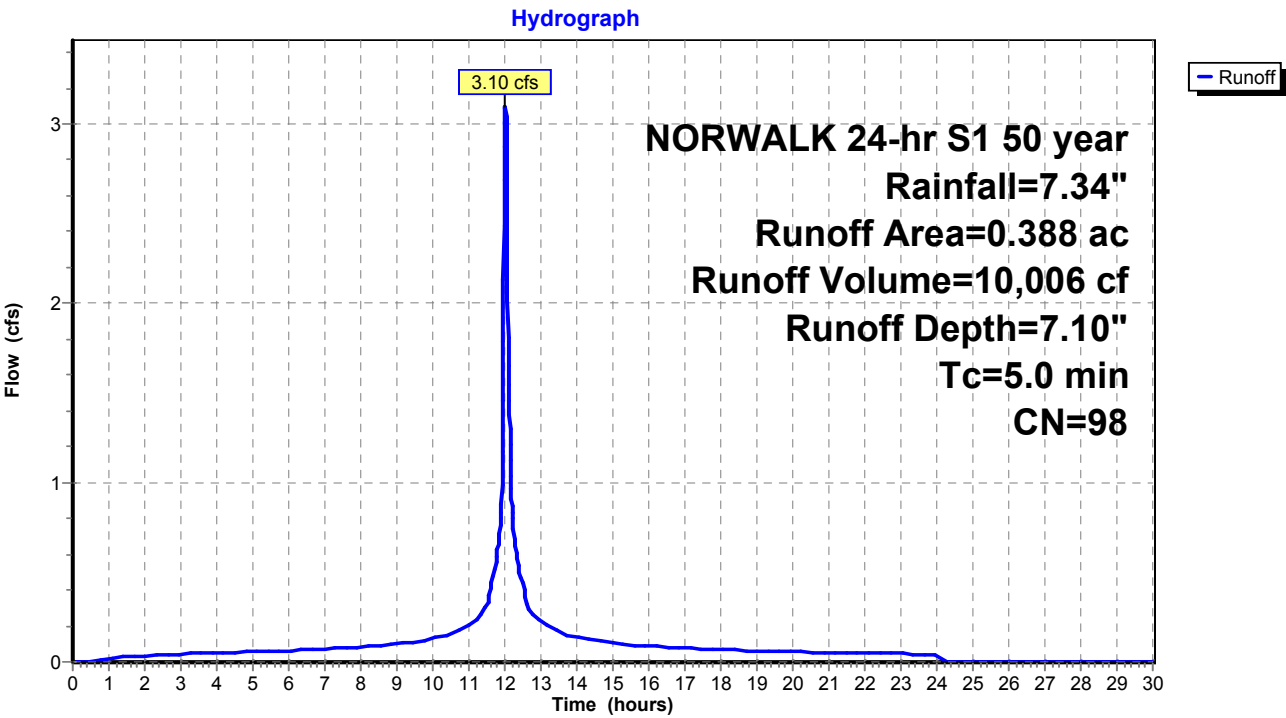
Runoff = 3.10 cfs @ 12.03 hrs, Volume= 10,006 cf, Depth= 7.10"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 10GS: Area 10G

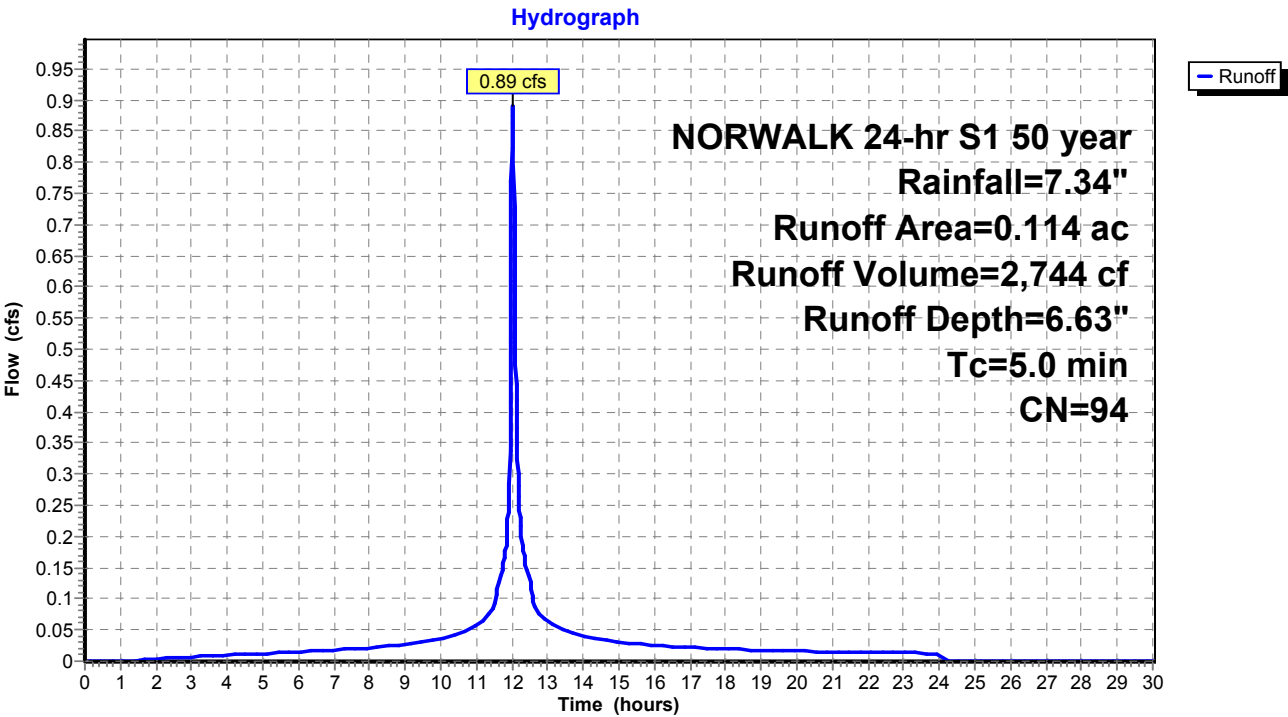
Runoff = 0.89 cfs @ 12.03 hrs, Volume= 2,744 cf, Depth= 6.63"
Routed to Pond 20P : ADS Stormtech (160LP)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
* 0.092	98	Paved parking, HSG C
* 0.022	79	50-75% Grass cover, Fair, HSG C
0.114	94	Weighted Average
0.022		19.30% Pervious Area
0.092		80.70% Impervious Area

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

Subcatchment 10GS: Area 10G



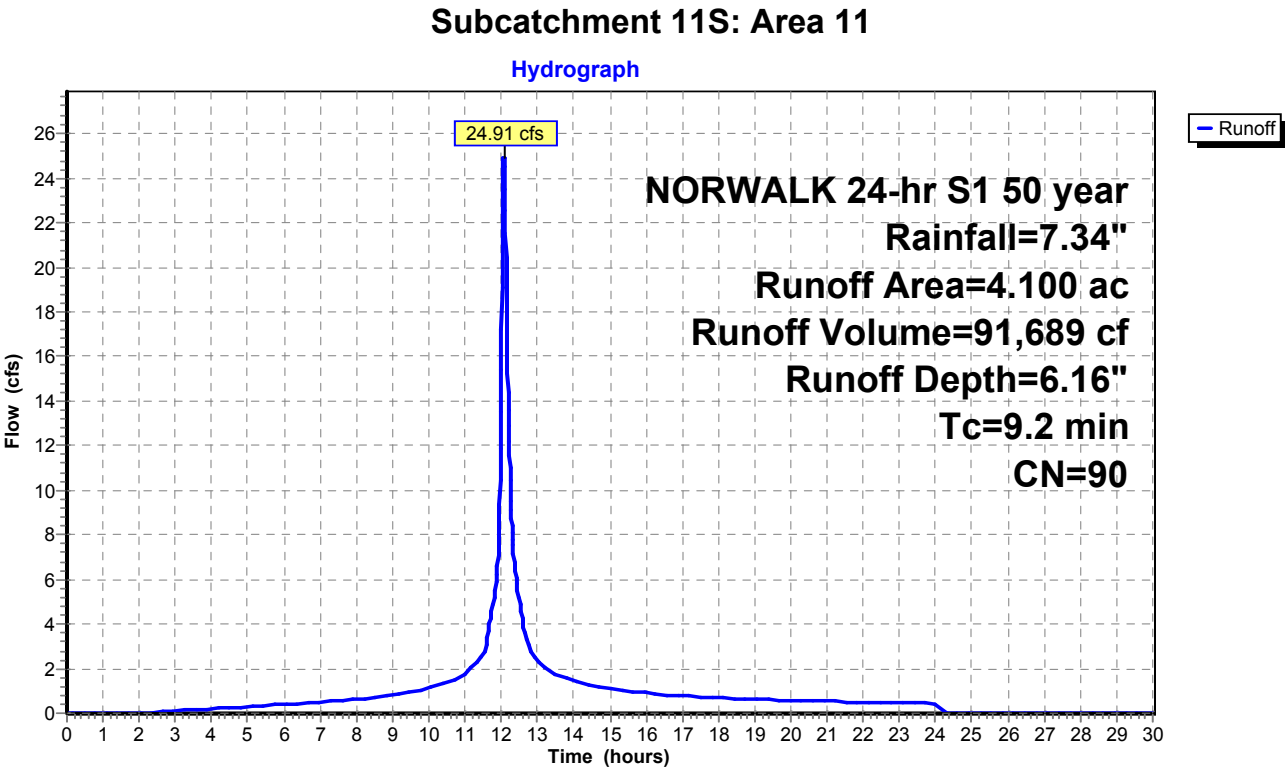
Summary for Subcatchment 11S: Area 11

Runoff = 24.91 cfs @ 12.07 hrs, Volume= 91,689 cf, Depth= 6.16"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 12S: Area 12

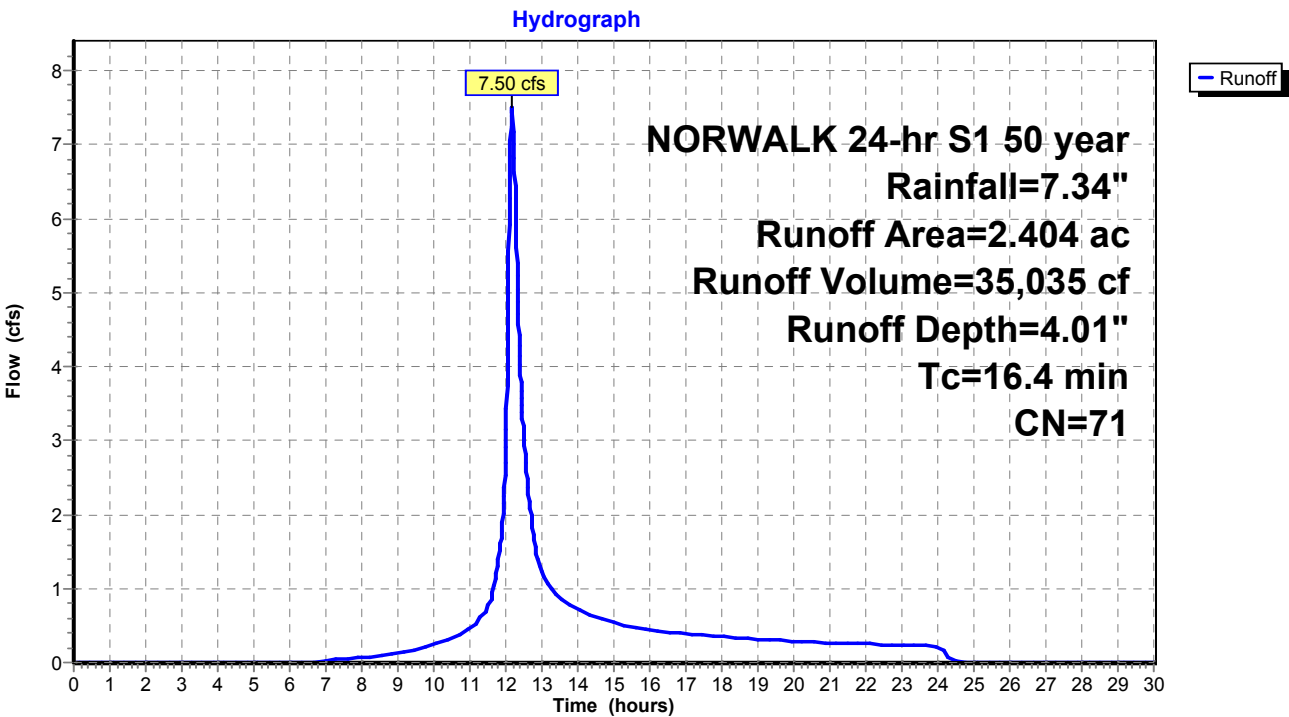
Runoff = 7.50 cfs @ 12.18 hrs, Volume= 35,035 cf, Depth= 4.01"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 13S: Area 13

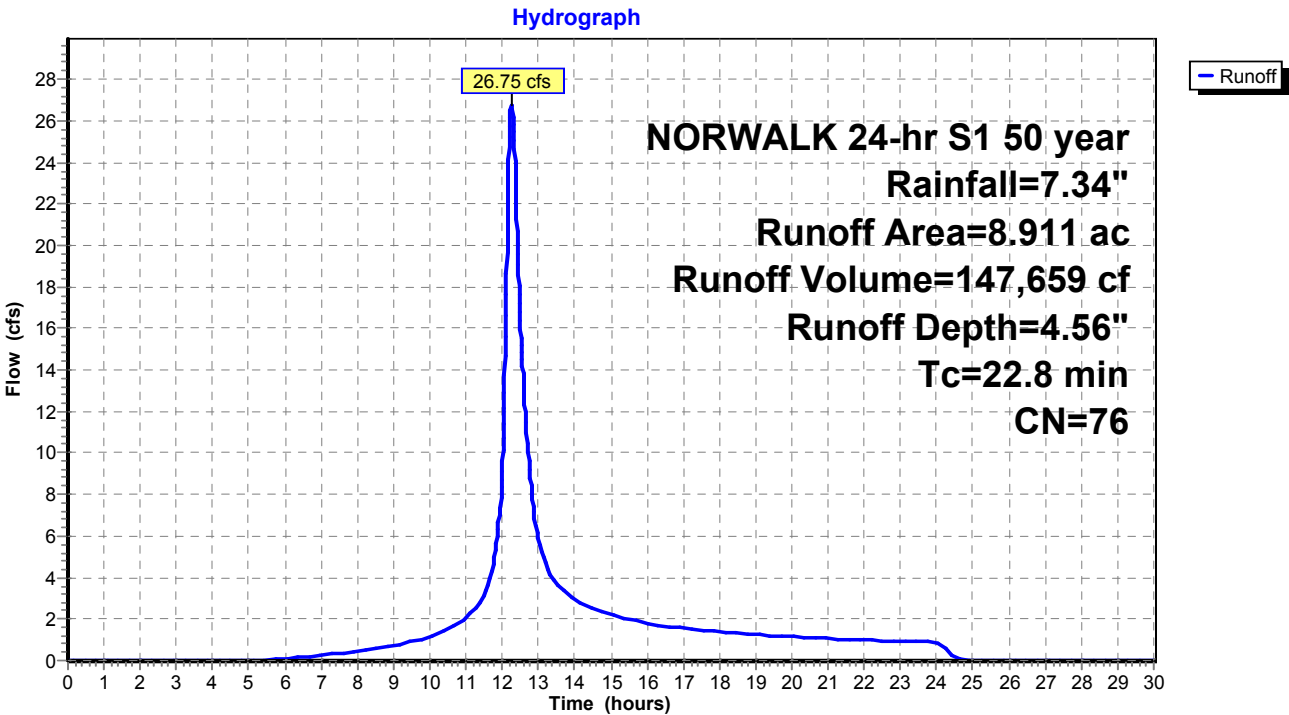
Runoff = 26.75 cfs @ 12.26 hrs, Volume= 147,659 cf, Depth= 4.56"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



Summary for Subcatchment 14S: Area 14

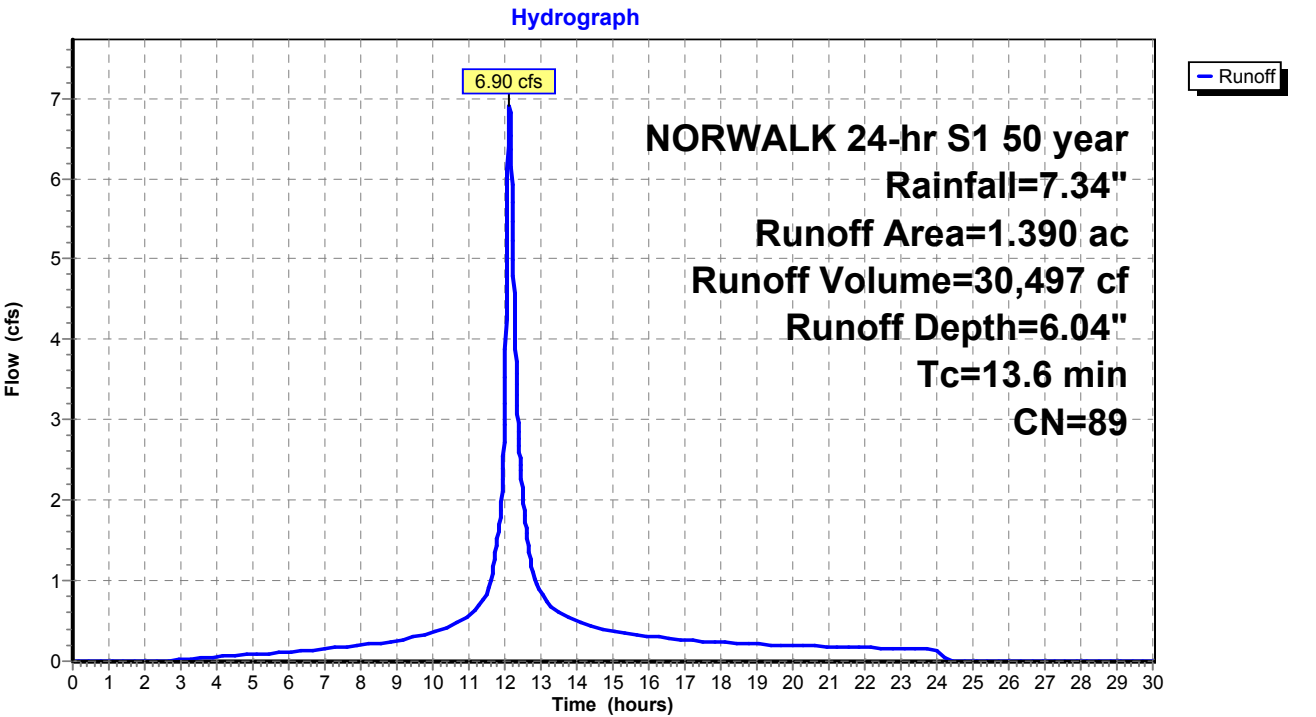
Runoff = 6.90 cfs @ 12.13 hrs, Volume= 30,497 cf, Depth= 6.04"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Summary for Subcatchment 15S: Area 15

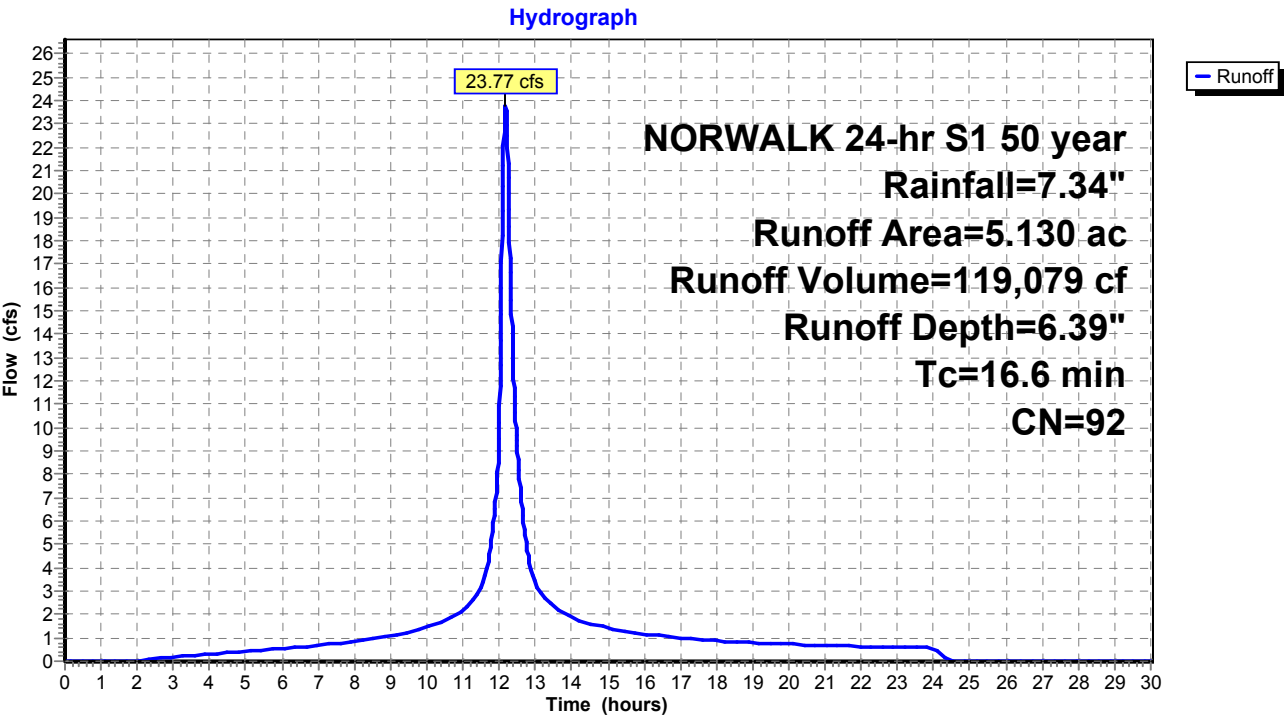
Runoff = 23.77 cfs @ 12.17 hrs, Volume= 119,079 cf, Depth= 6.39"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Summary for Subcatchment 16S: Area 16A

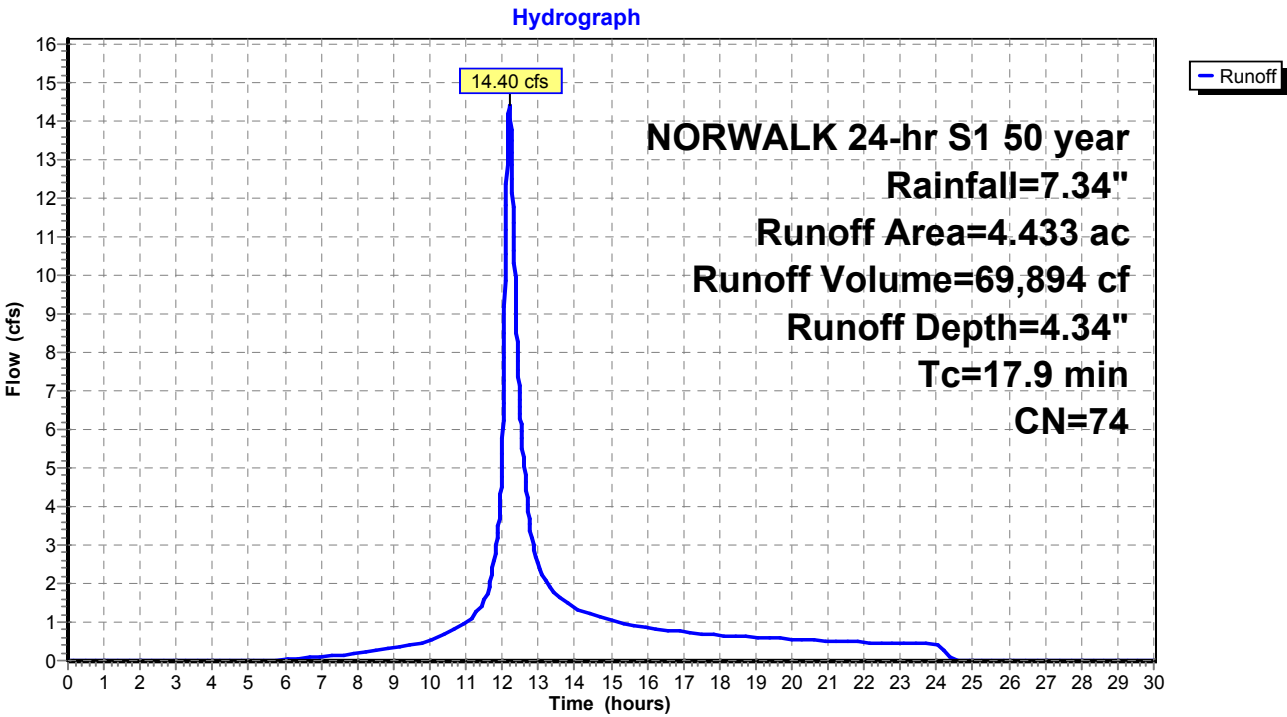
Runoff = 14.40 cfs @ 12.19 hrs, Volume= 69,894 cf, Depth= 4.34"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 17S: Area 17

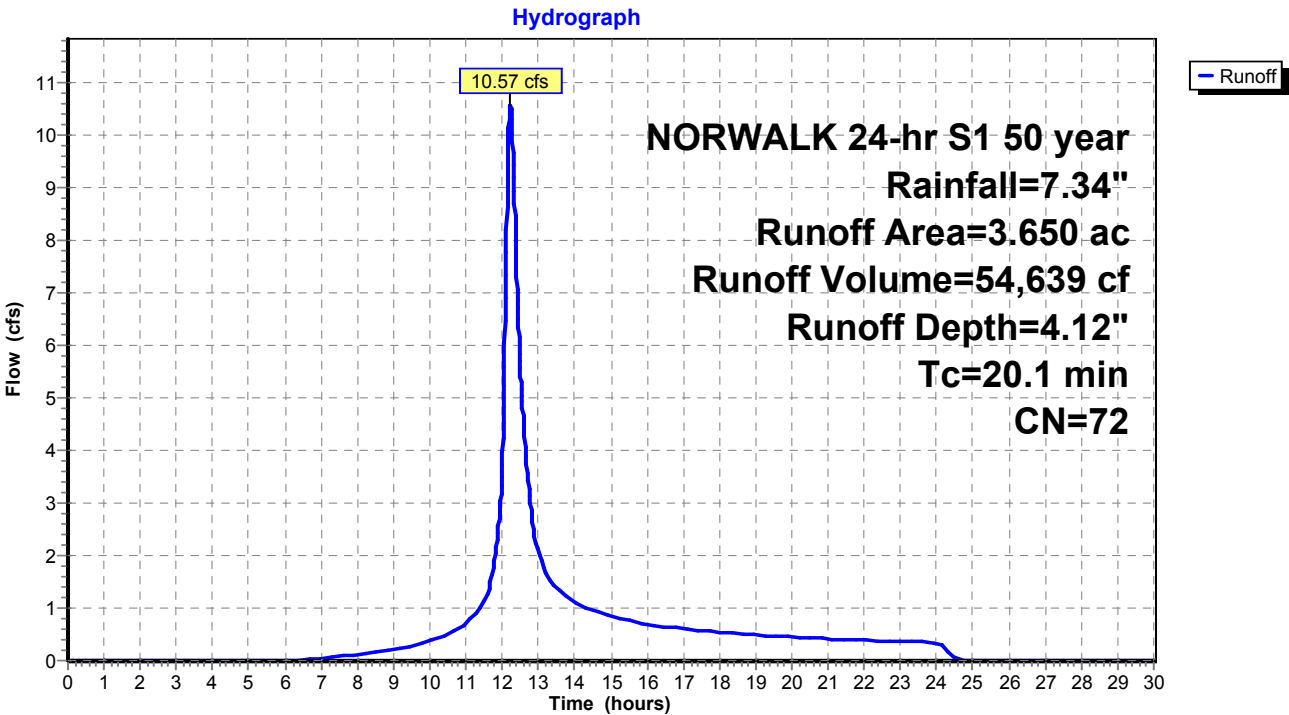
Runoff = 10.57 cfs @ 12.22 hrs, Volume= 54,639 cf, Depth= 4.12"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



Summary for Subcatchment 20S: Area 20

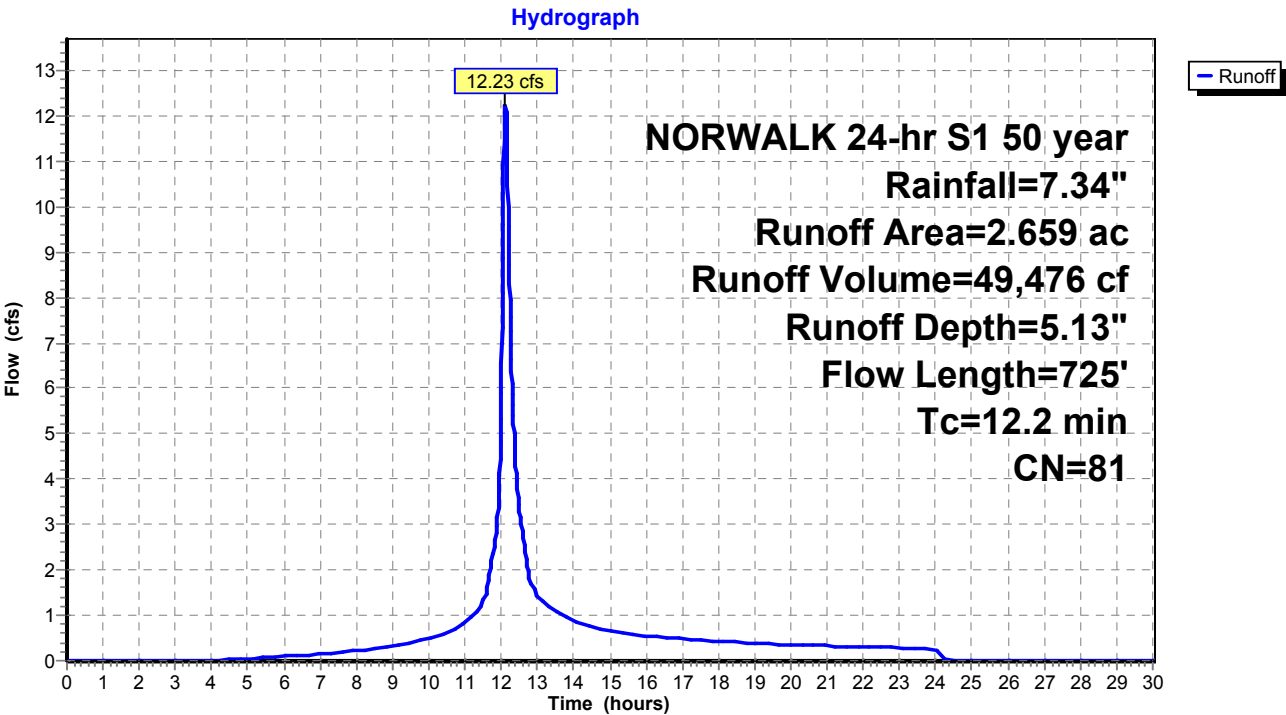
Runoff = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf, Depth= 5.13"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Summary for Subcatchment 21S: Area 21

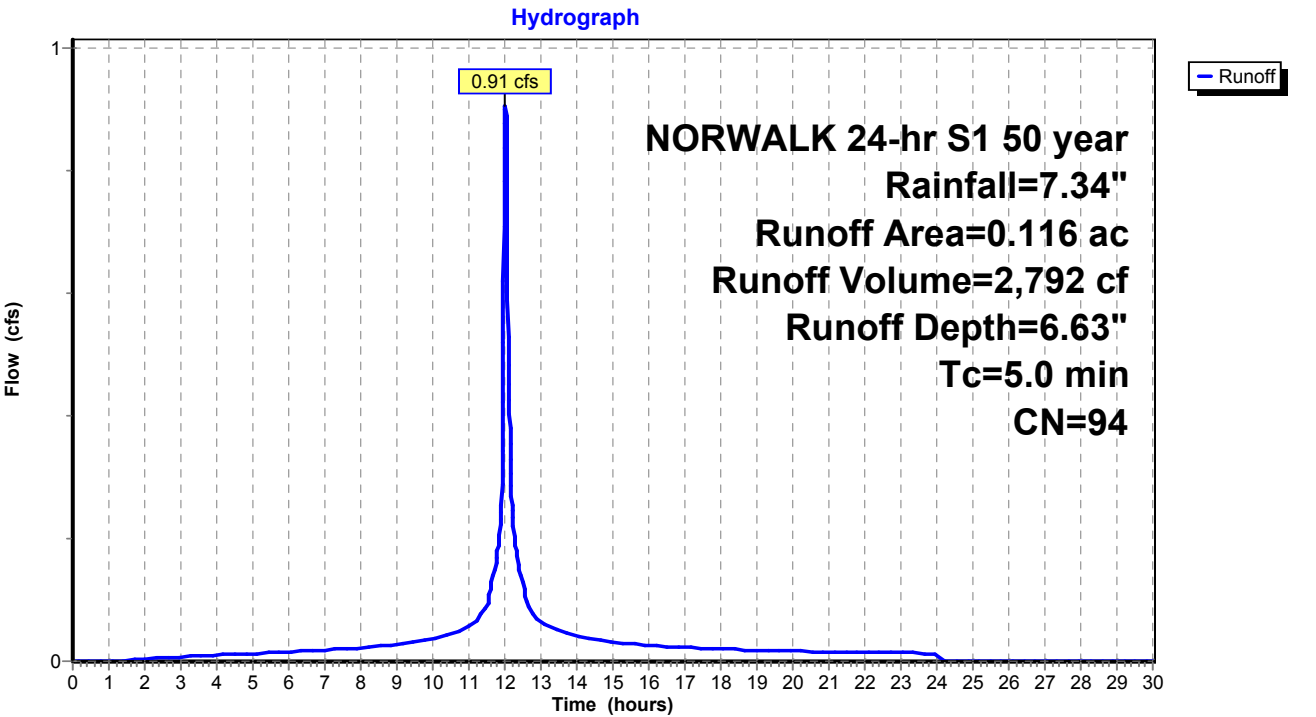
Runoff = 0.91 cfs @ 12.03 hrs, Volume= 2,792 cf, Depth= 6.63"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Summary for Subcatchment 22S: Area 22

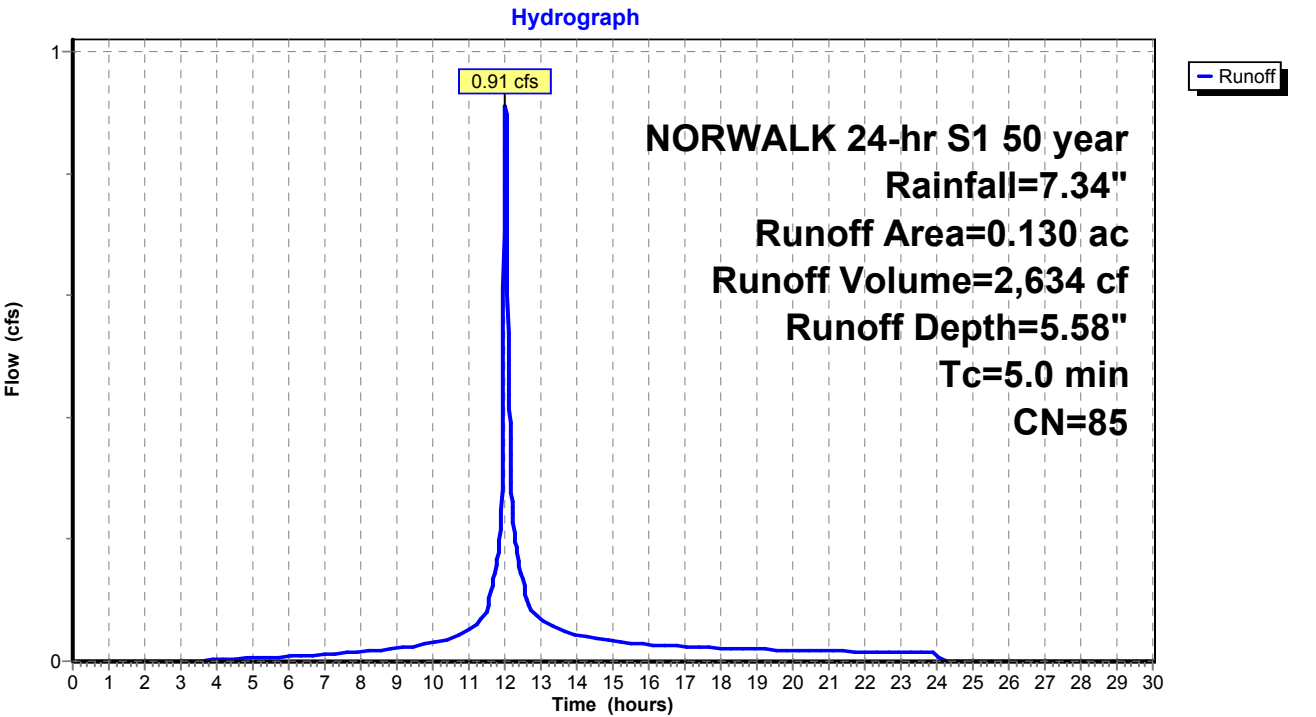
Runoff = 0.91 cfs @ 12.03 hrs, Volume= 2,634 cf, Depth= 5.58"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Summary for Subcatchment 23S: Area 23

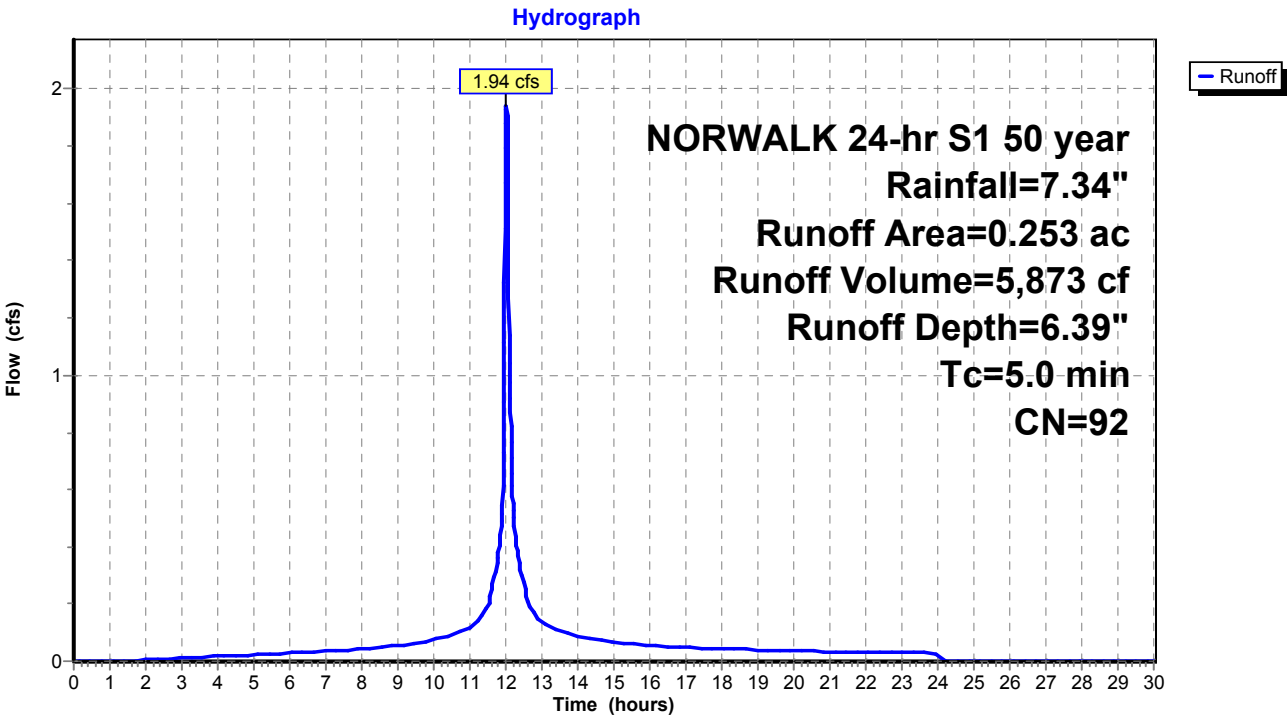
Runoff = 1.94 cfs @ 12.03 hrs, Volume= 5,873 cf, Depth= 6.39"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Summary for Subcatchment 24S: Area 24

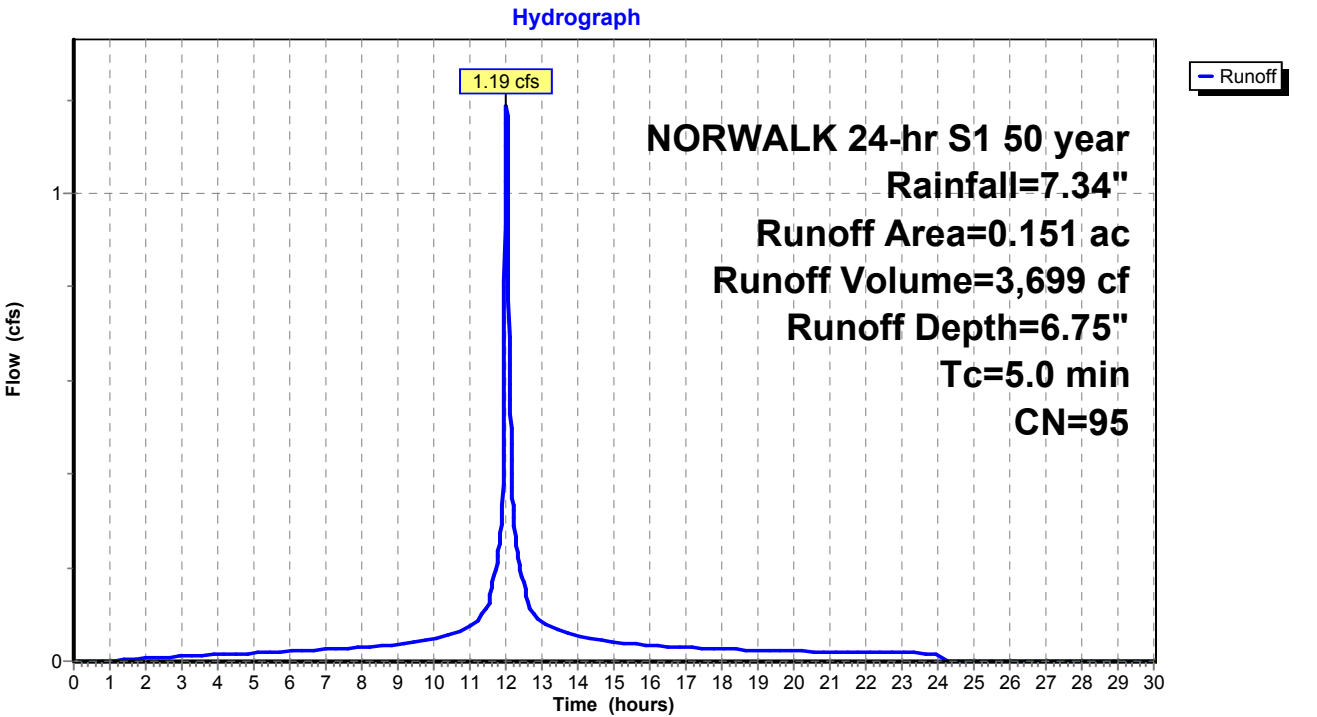
Runoff = 1.19 cfs @ 12.03 hrs, Volume= 3,699 cf, Depth= 6.75"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Summary for Subcatchment 25S: Area 25

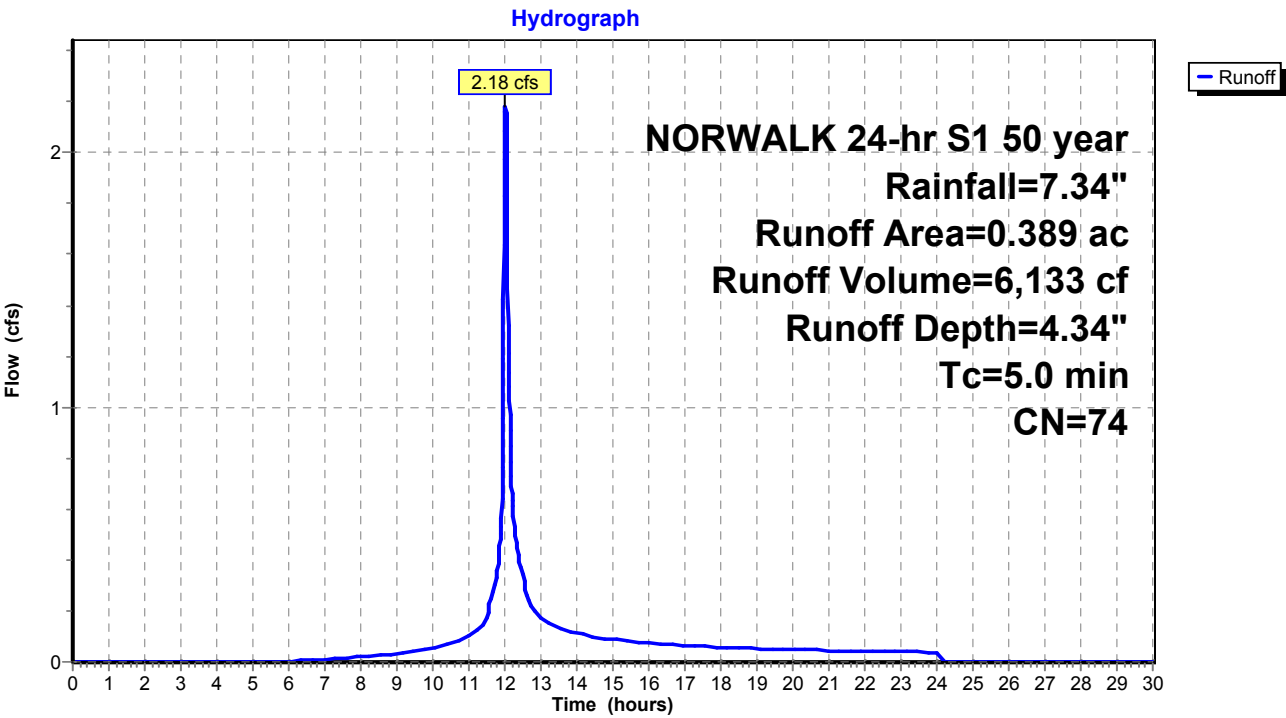
Runoff = 2.18 cfs @ 12.03 hrs, Volume= 6,133 cf, Depth= 4.34"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 26S: Area 26

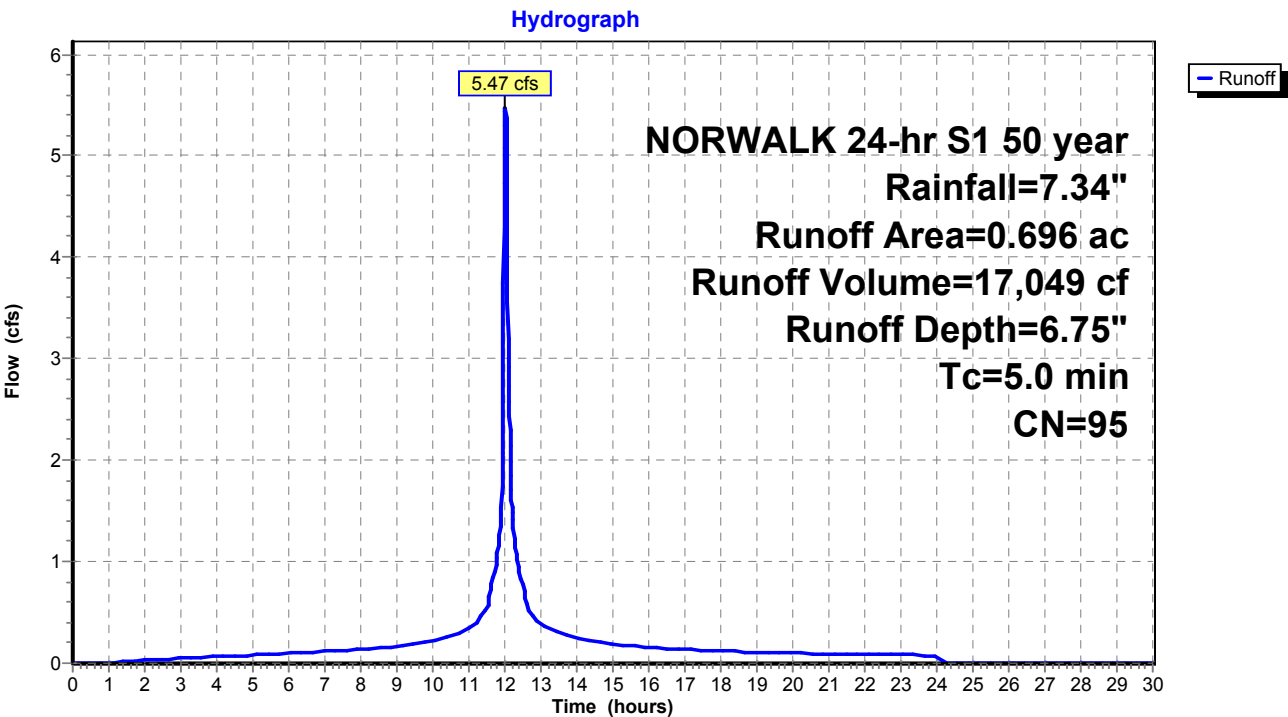
Runoff = 5.47 cfs @ 12.03 hrs, Volume= 17,049 cf, Depth= 6.75"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Summary for Subcatchment 27S: Area 27

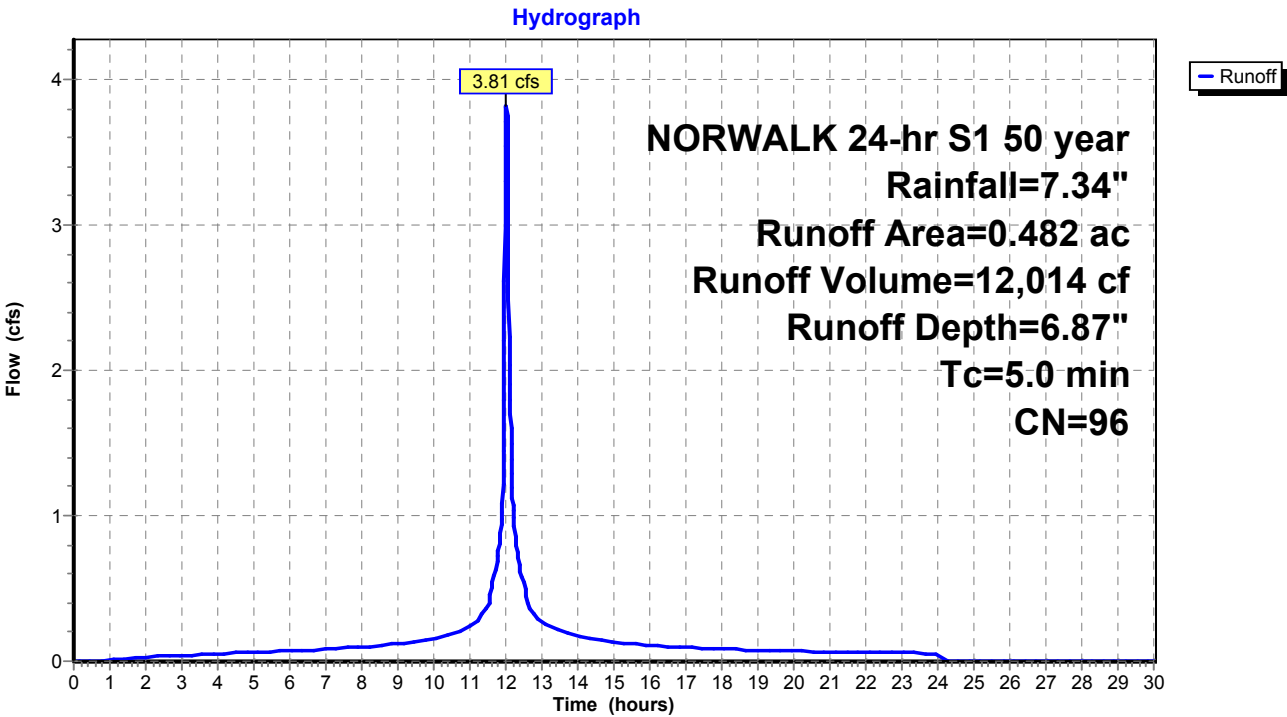
Runoff = 3.81 cfs @ 12.03 hrs, Volume= 12,014 cf, Depth= 6.87"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



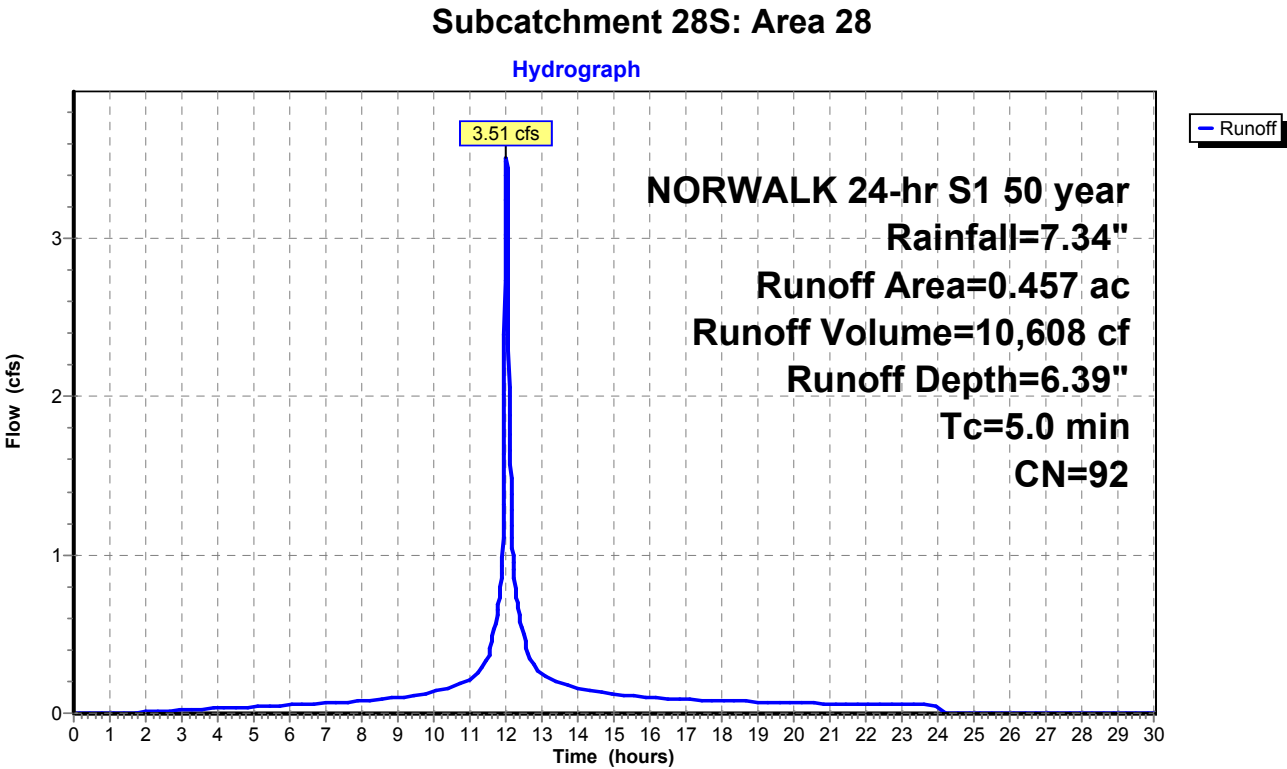
Summary for Subcatchment 28S: Area 28

Runoff = 3.51 cfs @ 12.03 hrs, Volume= 10,608 cf, Depth= 6.39"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 29S: Area 29

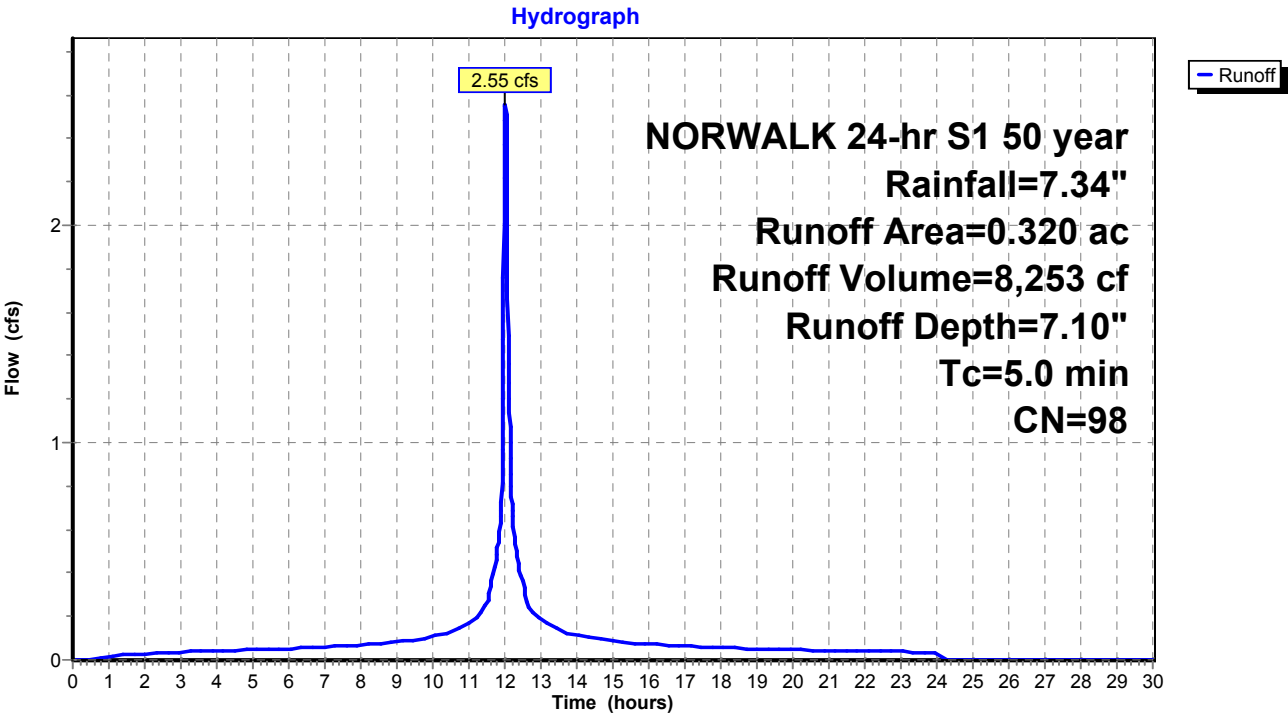
Runoff = 2.55 cfs @ 12.03 hrs, Volume= 8,253 cf, Depth= 7.10"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Summary for Subcatchment 30S: Area 30

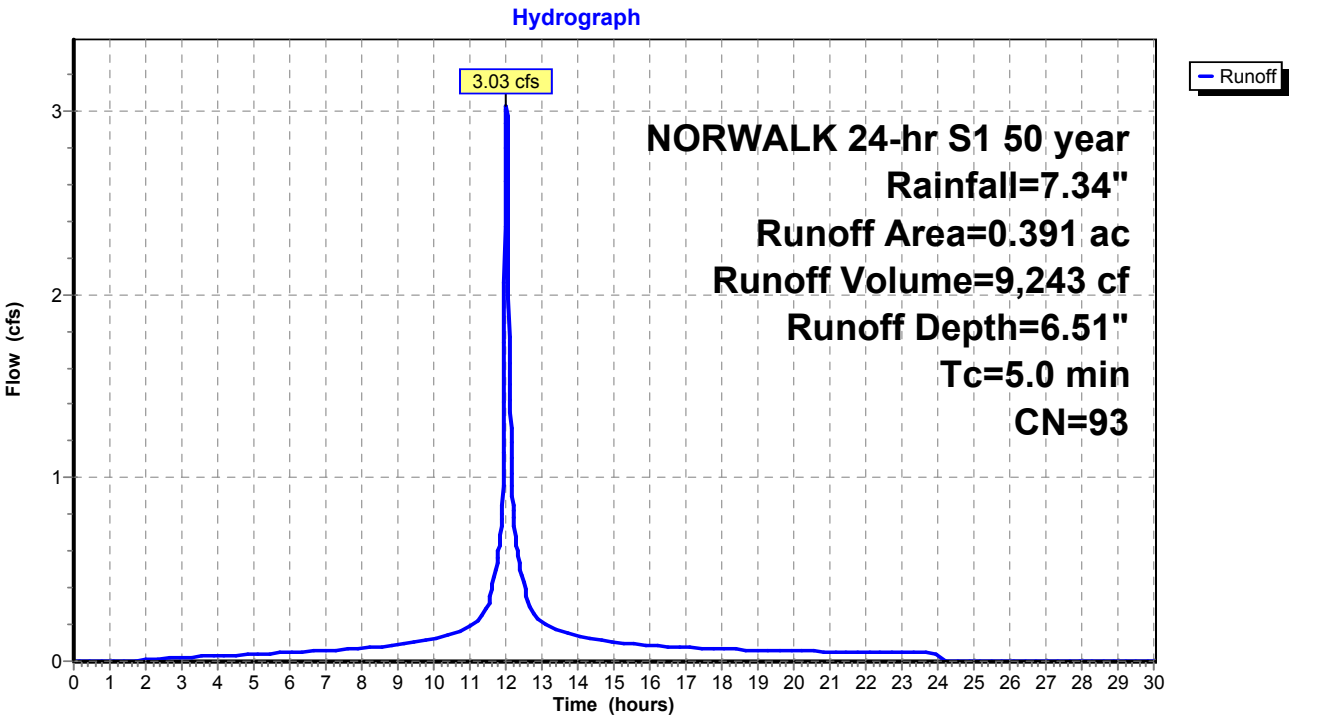
Runoff = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf, Depth= 6.51"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Summary for Subcatchment 52S: Area 1

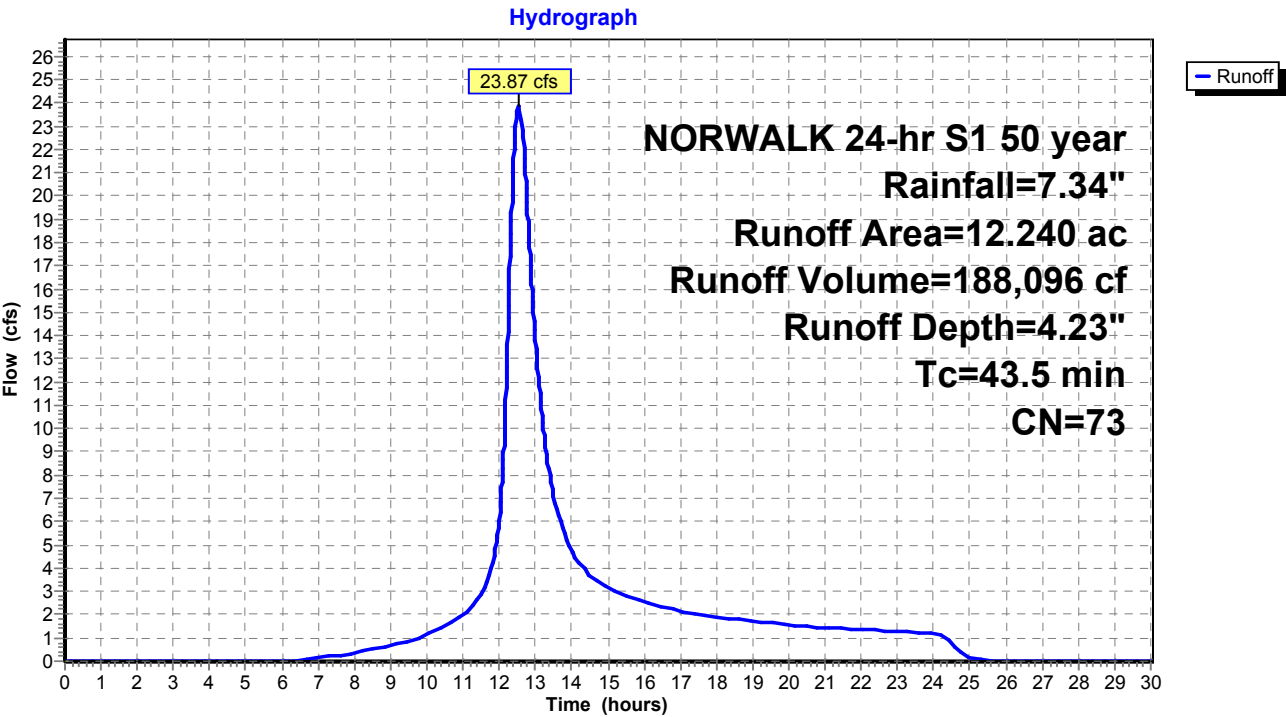
Runoff = 23.87 cfs @ 12.52 hrs, Volume= 188,096 cf, Depth= 4.23"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 53S: Area 2

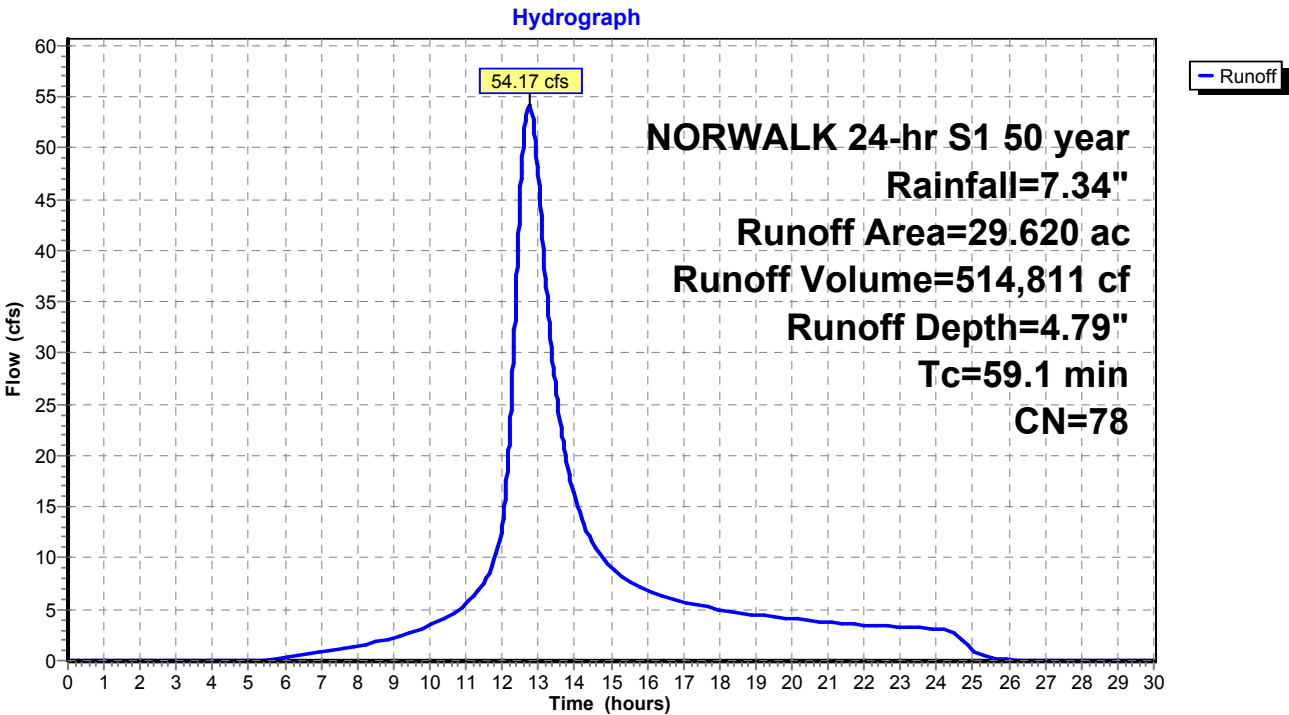
Runoff = 54.17 cfs @ 12.74 hrs, Volume= 514,811 cf, Depth= 4.79"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 54S: Area 3

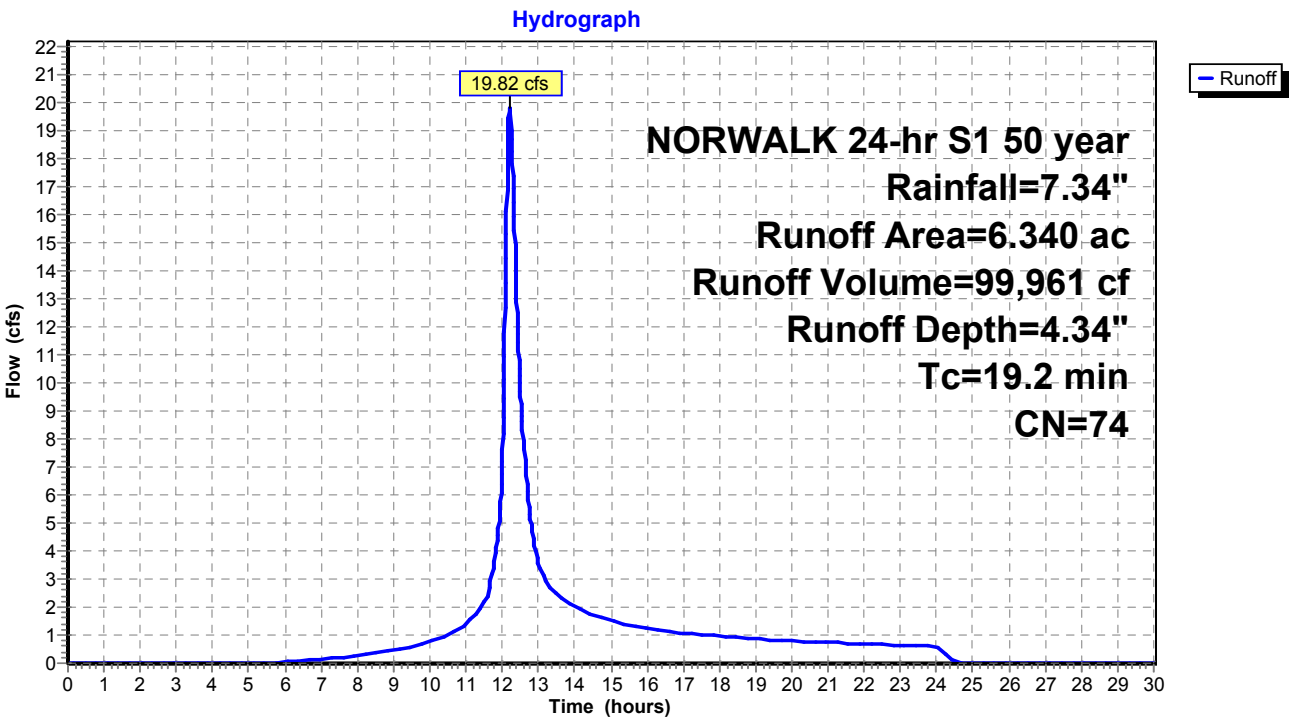
Runoff = 19.82 cfs @ 12.22 hrs, Volume= 99,961 cf, Depth= 4.34"
Routed to Pond 23P : DET 3 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3



Summary for Subcatchment 56S: Area 35

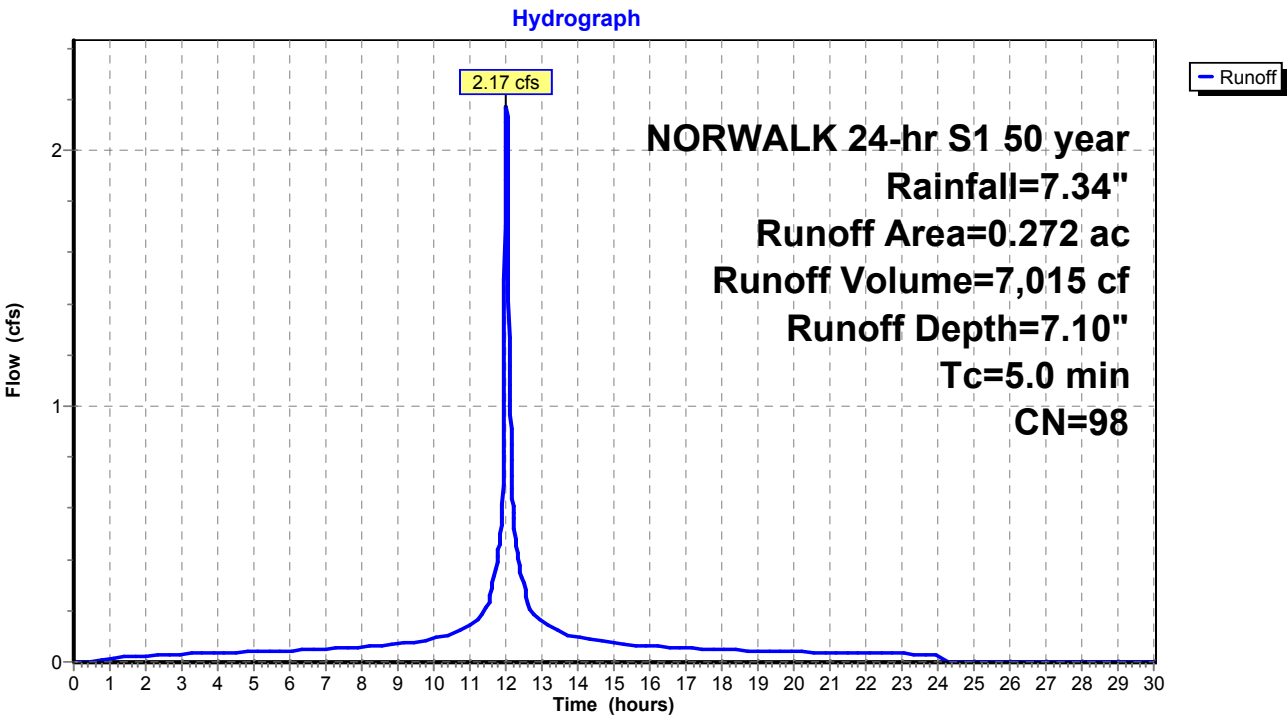
Runoff = 2.17 cfs @ 12.03 hrs, Volume= 7,015 cf, Depth= 7.10"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Summary for Subcatchment 60S: Area 37

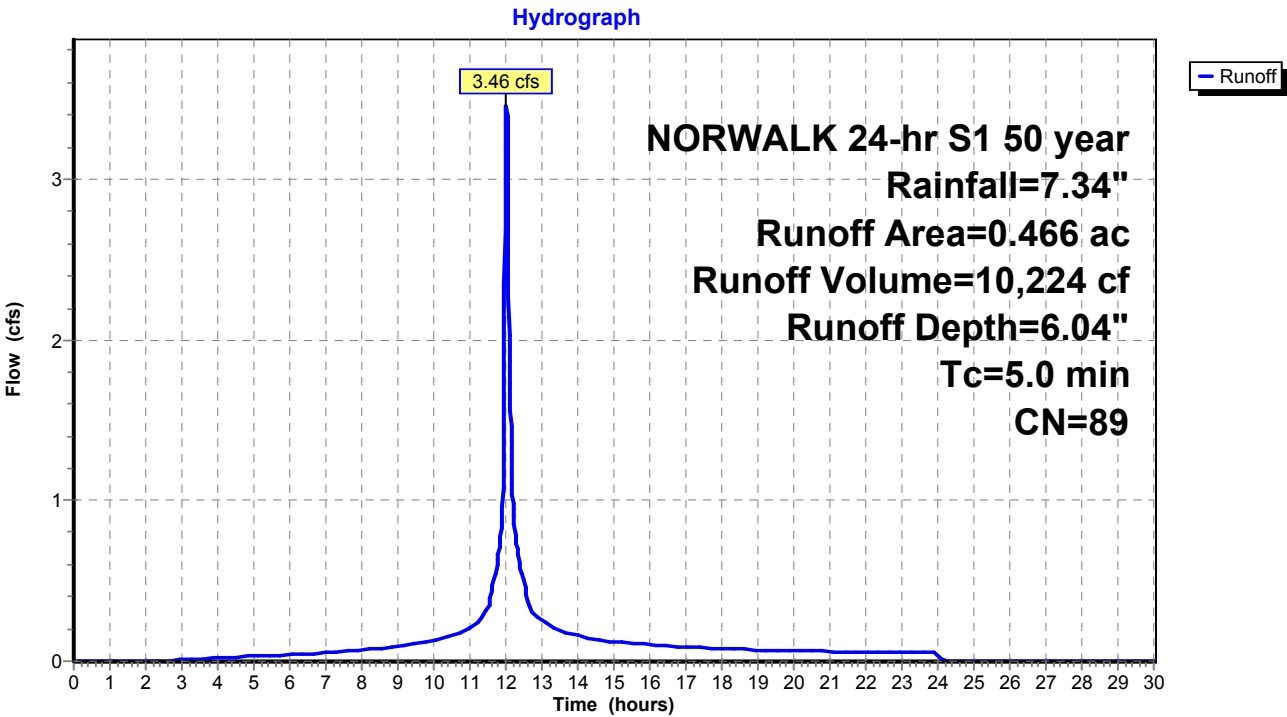
Runoff = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf, Depth= 6.04"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Summary for Subcatchment 62S: Area 38

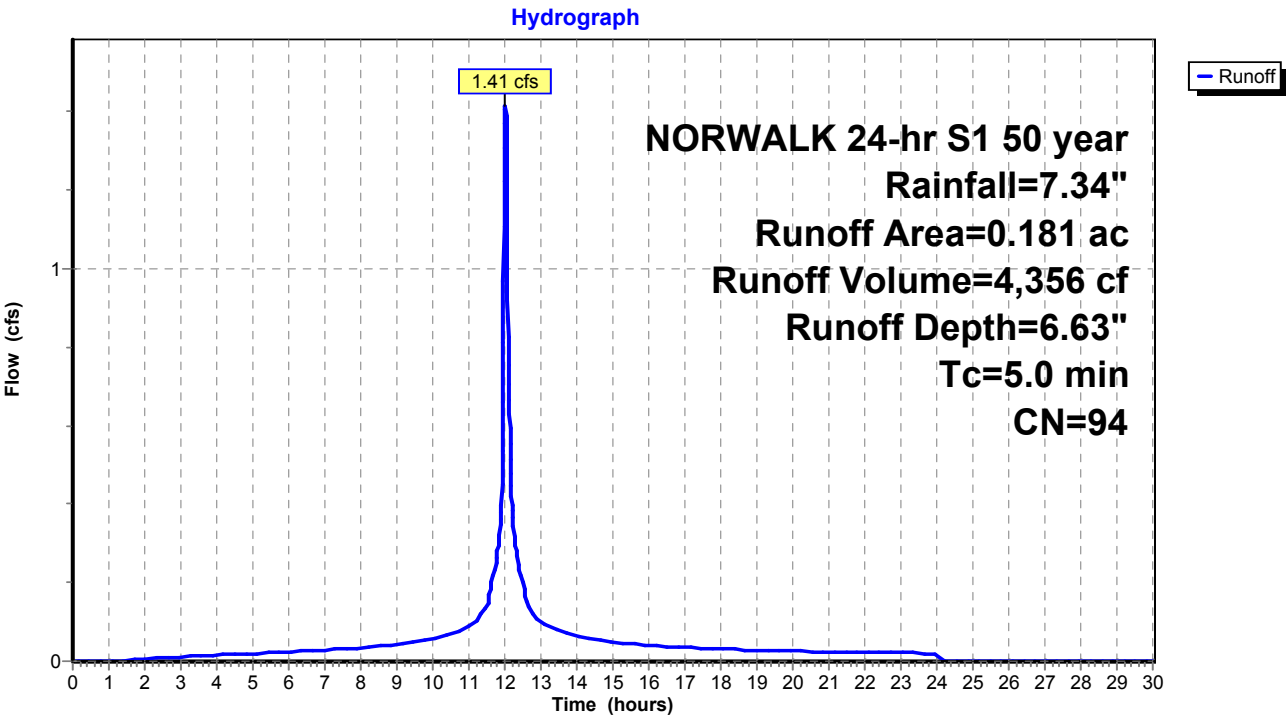
Runoff = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf, Depth= 6.63"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



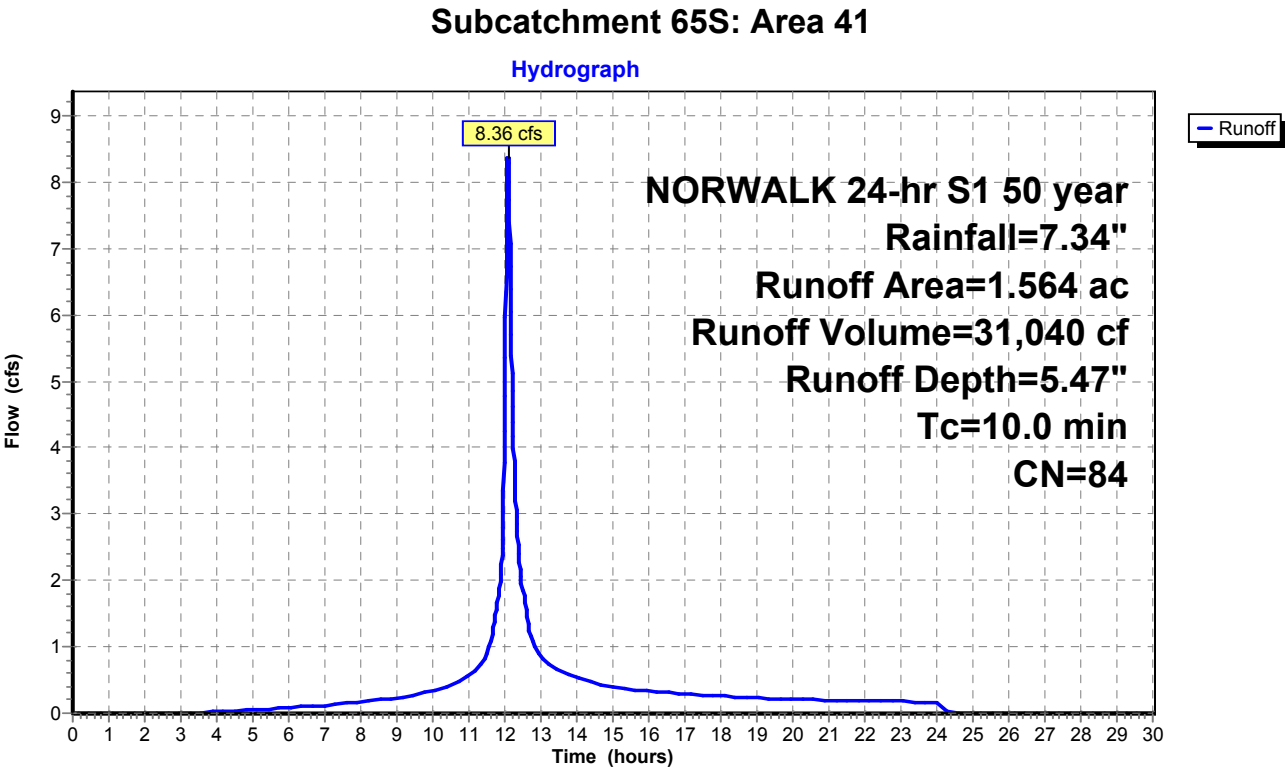
Summary for Subcatchment 65S: Area 41

Runoff = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf, Depth= 5.47"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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



Summary for Subcatchment 68S: Area 36

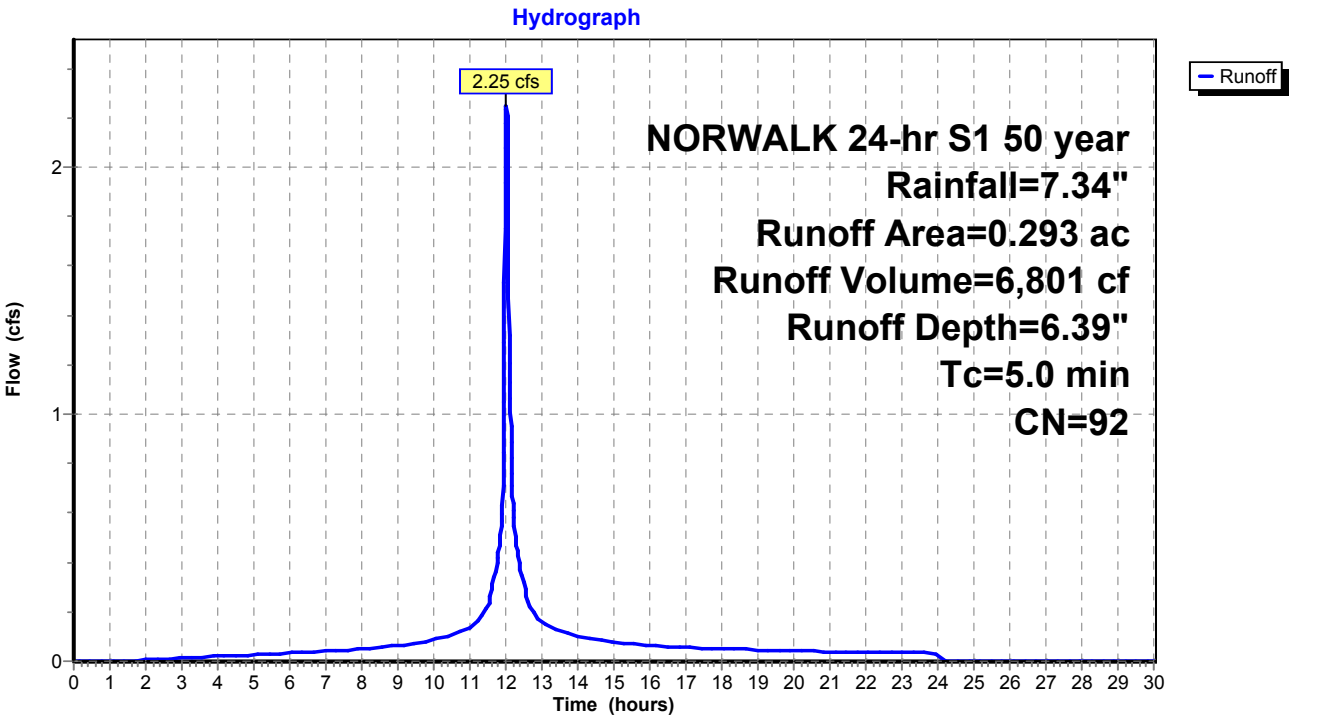
Runoff = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf, Depth= 6.39"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Subcatchment 69S: Area 40

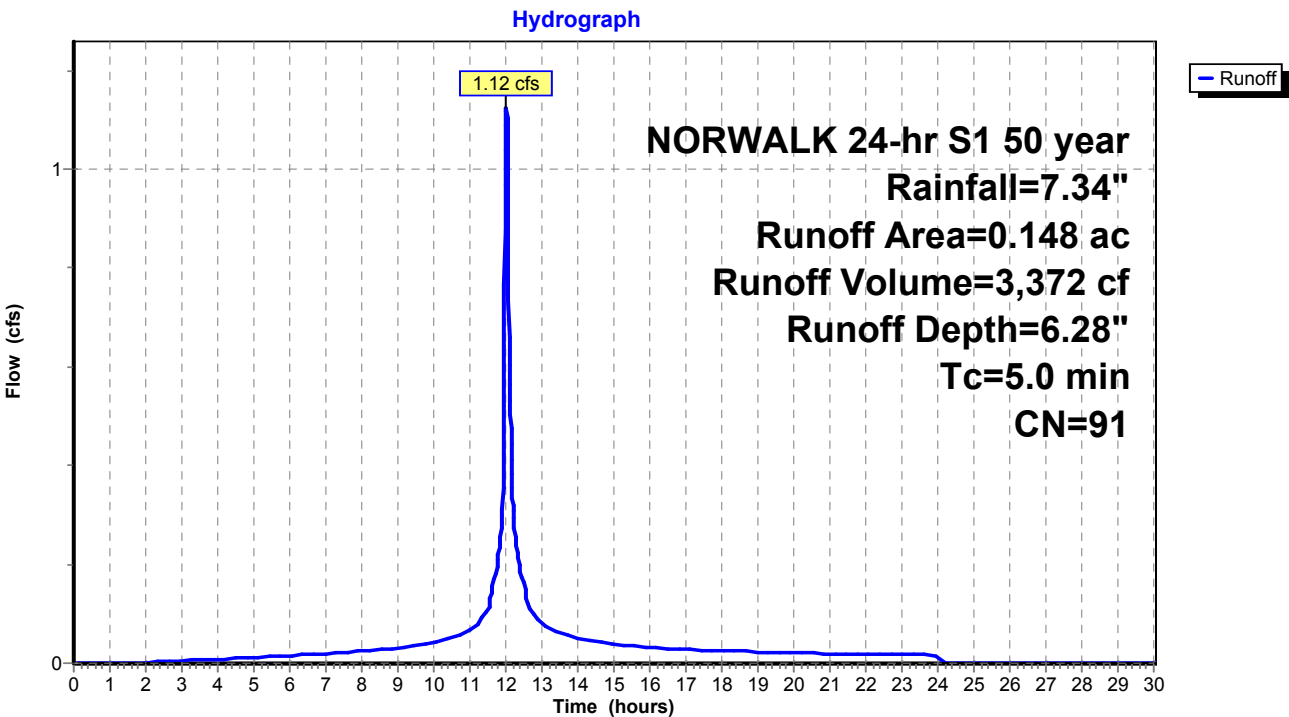
Runoff = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf, Depth= 6.28"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Summary for Subcatchment 71S: Area 34

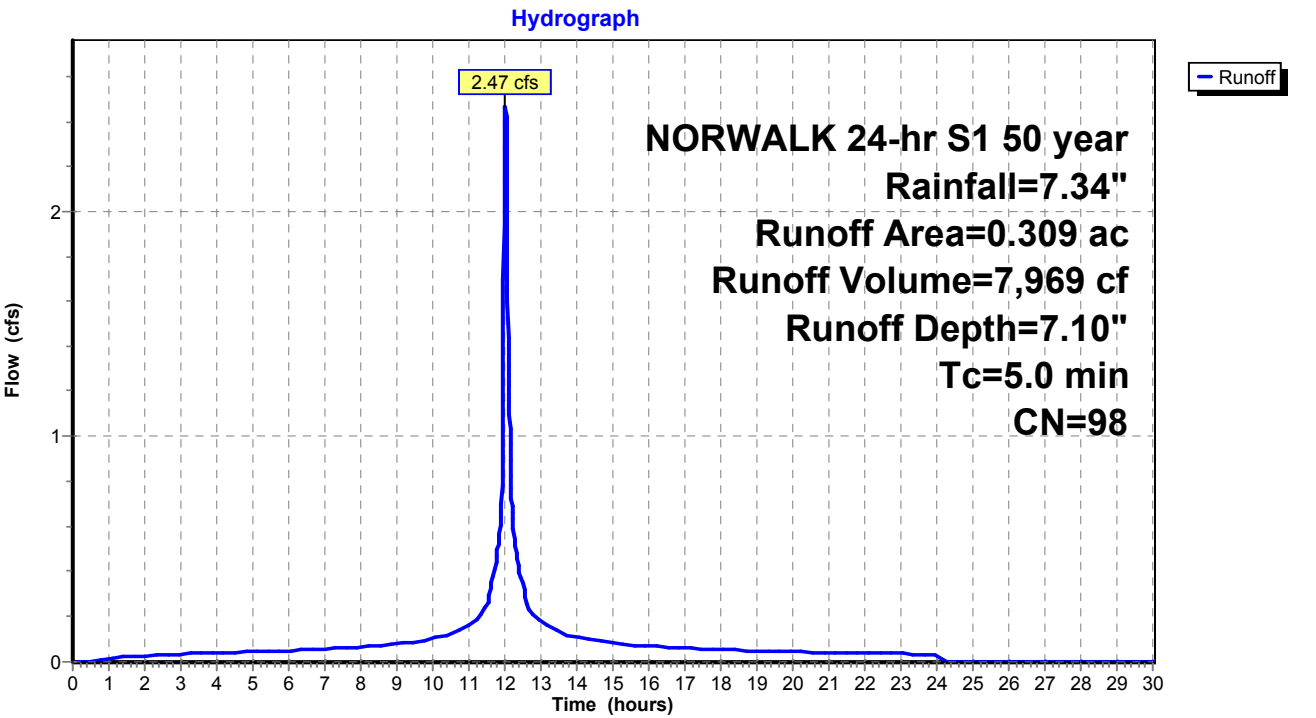
Runoff = 2.47 cfs @ 12.03 hrs, Volume= 7,969 cf, Depth= 7.10"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



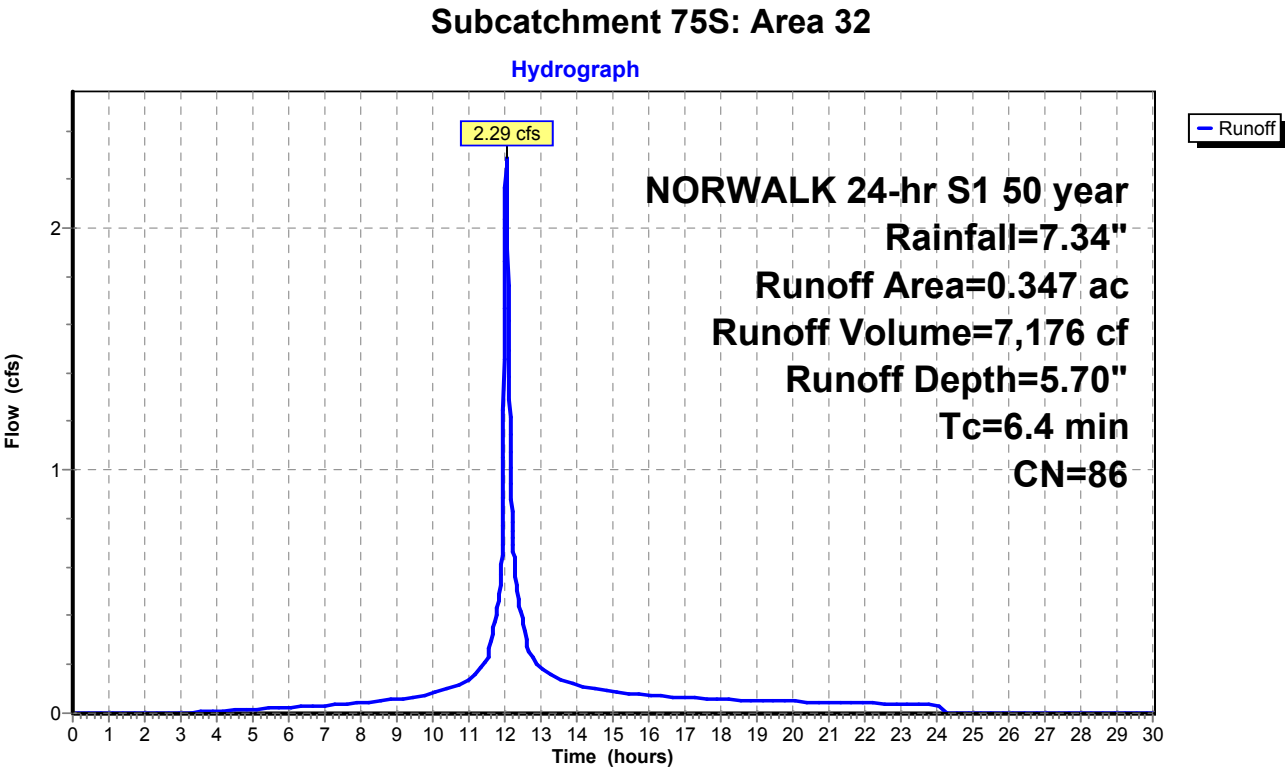
Summary for Subcatchment 75S: Area 32

Runoff = 2.29 cfs @ 12.04 hrs, Volume= 7,176 cf, Depth= 5.70"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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



Summary for Subcatchment 76S: Area 33

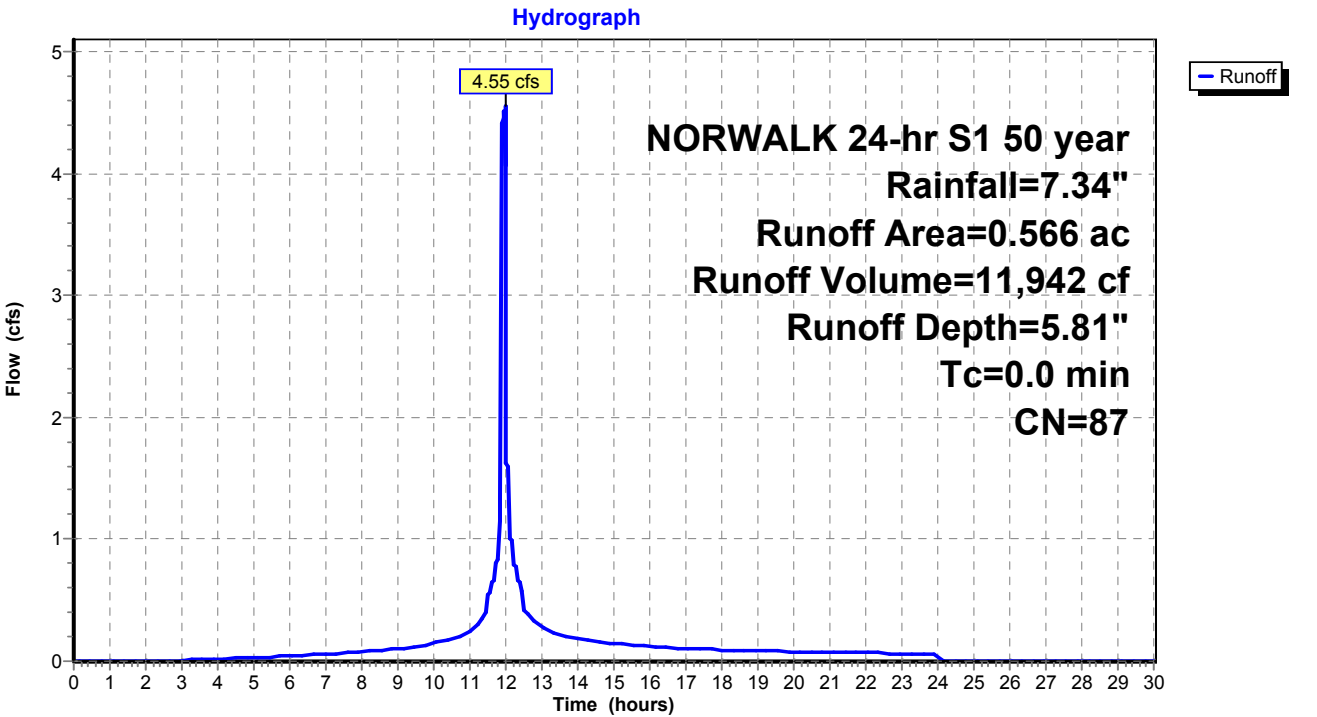
Runoff = 4.55 cfs @ 11.99 hrs, Volume= 11,942 cf, Depth= 5.81"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Summary for Subcatchment 78S: Area 39

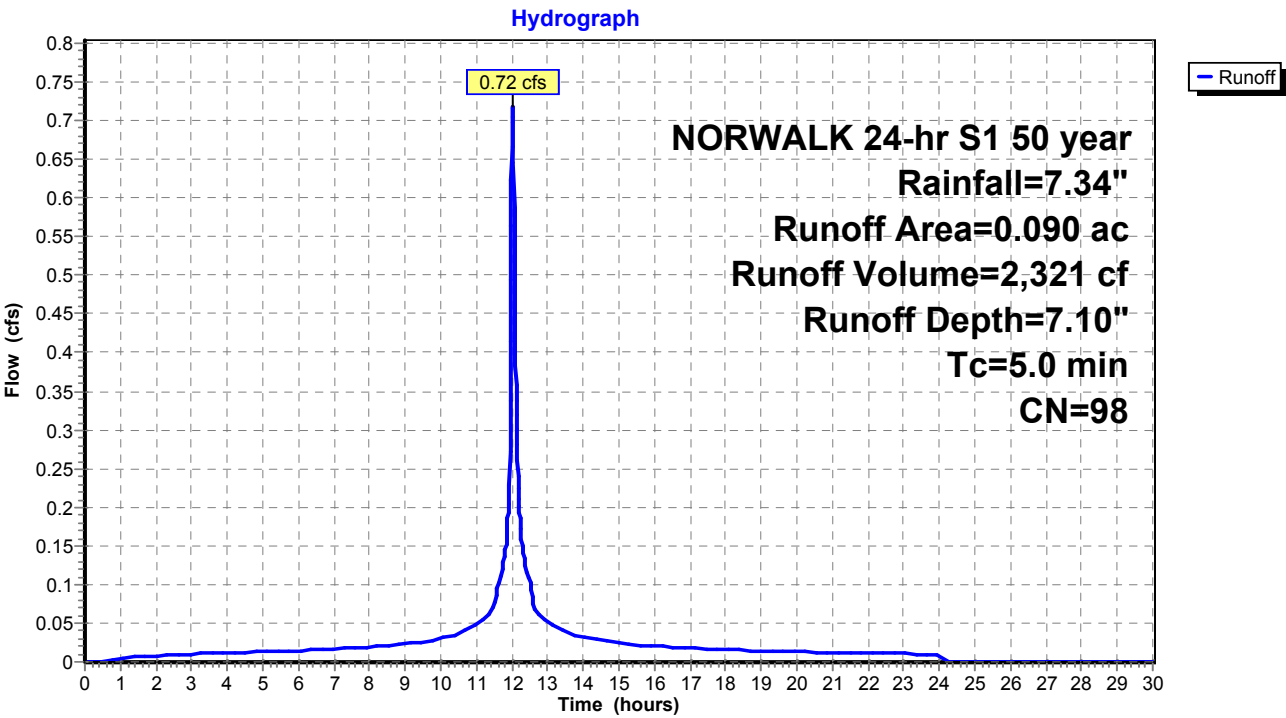
Runoff = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf, Depth= 7.10"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Summary for Subcatchment 84S: Area 31

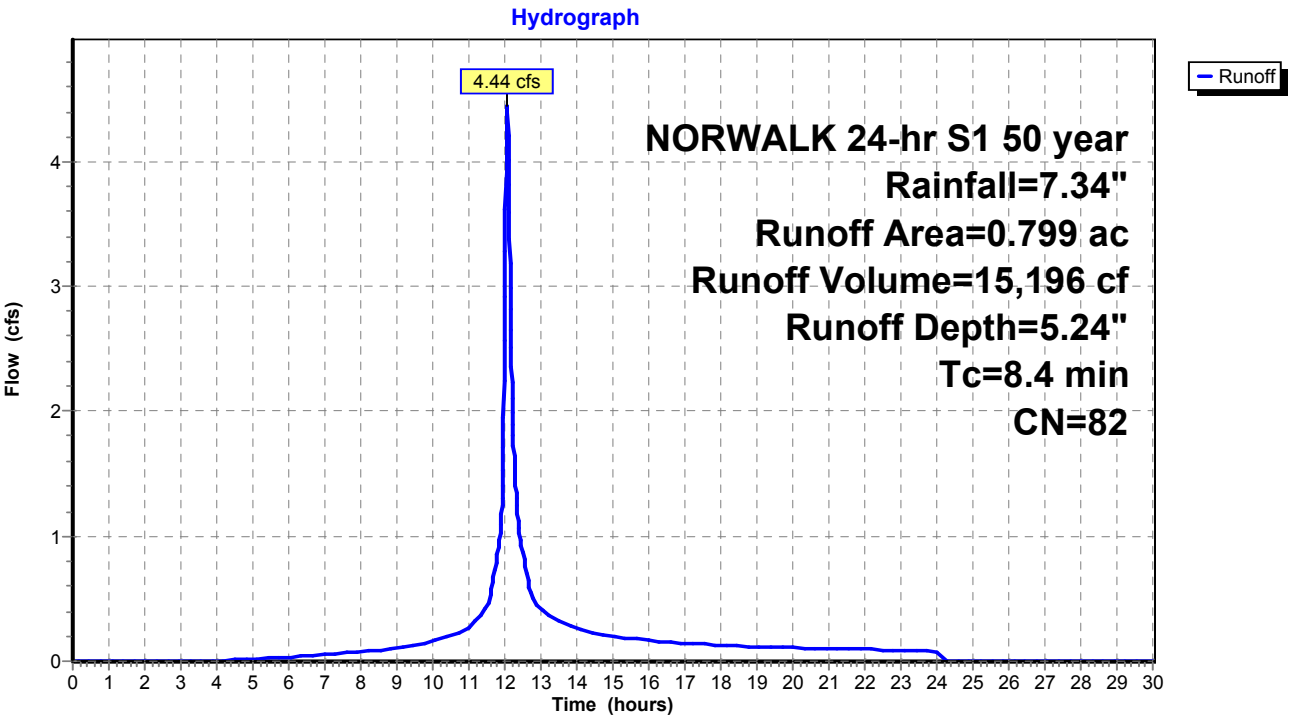
Runoff = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf, Depth= 5.24"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Summary for Subcatchment 100S: Area 16B

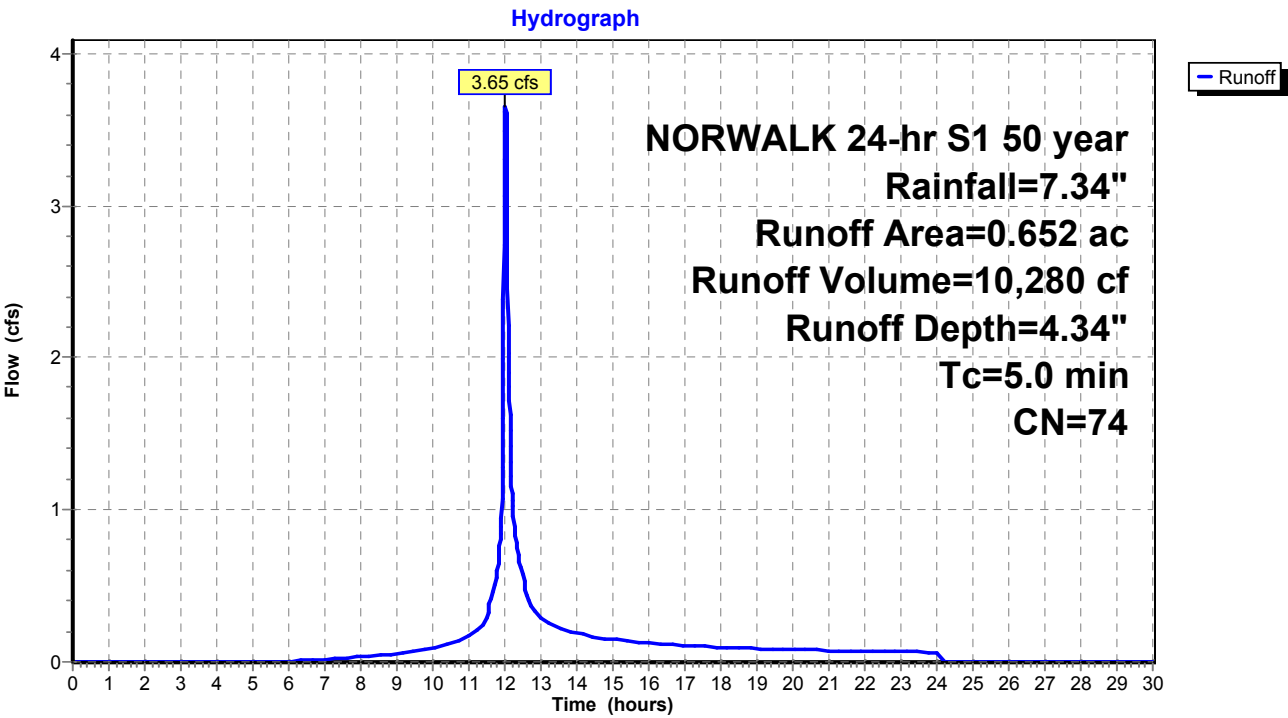
Runoff = 3.65 cfs @ 12.03 hrs, Volume= 10,280 cf, Depth= 4.34"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Summary for Subcatchment 105S: Area 18

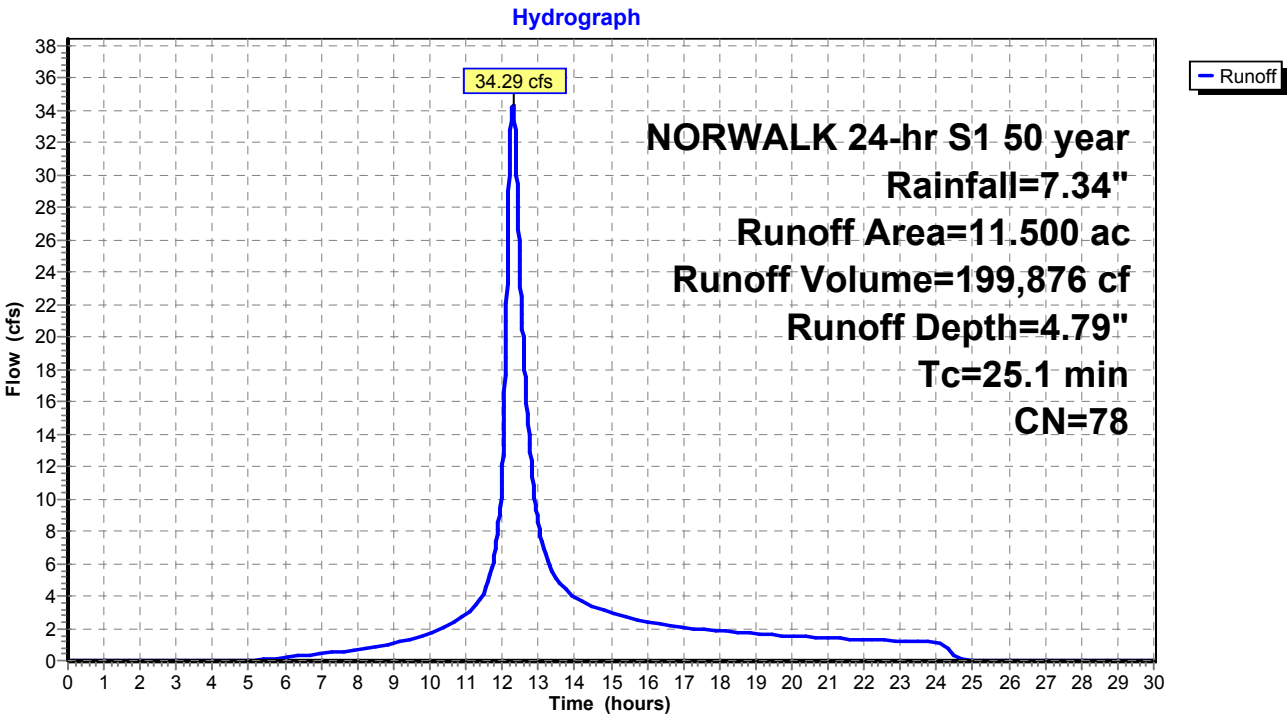
Runoff = 34.29 cfs @ 12.30 hrs, Volume= 199,876 cf, Depth= 4.79"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Summary for Subcatchment BLDG: EX-BLDG

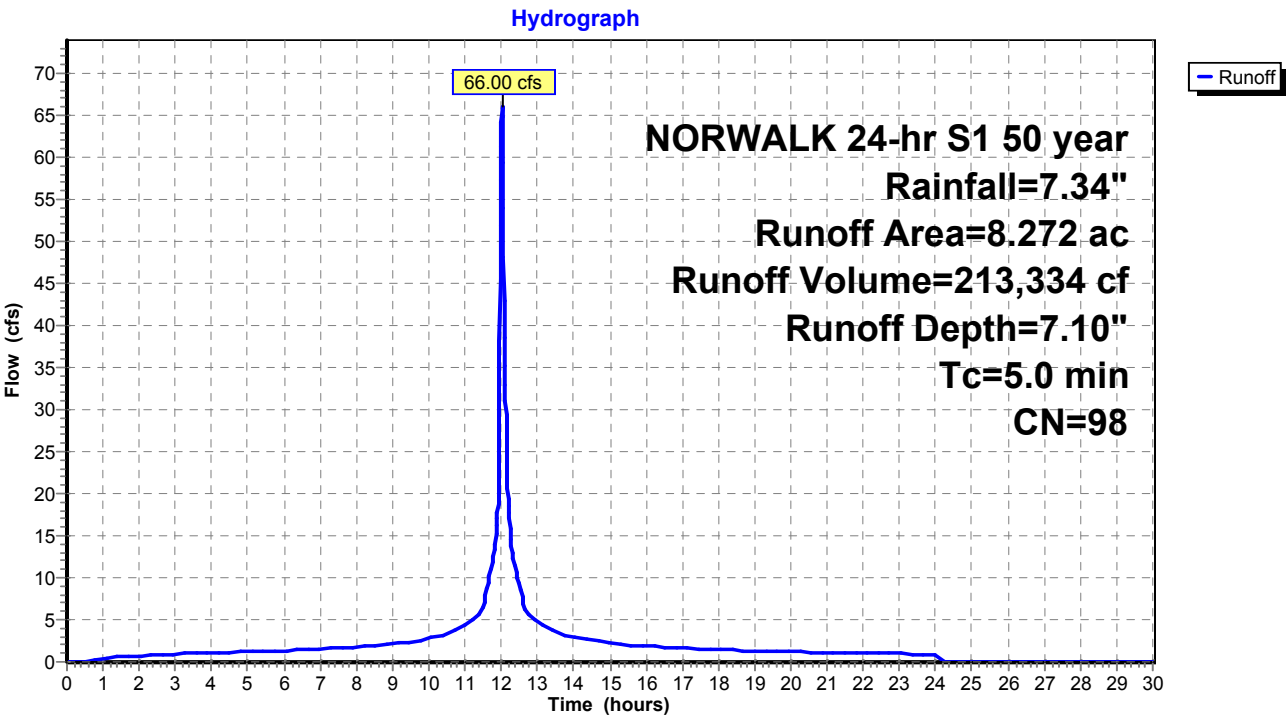
Runoff = 66.00 cfs @ 12.03 hrs, Volume= 213,334 cf, Depth= 7.10"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 50 year Rainfall=7.34"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



Summary for Pond 1P: RR Culvert 2

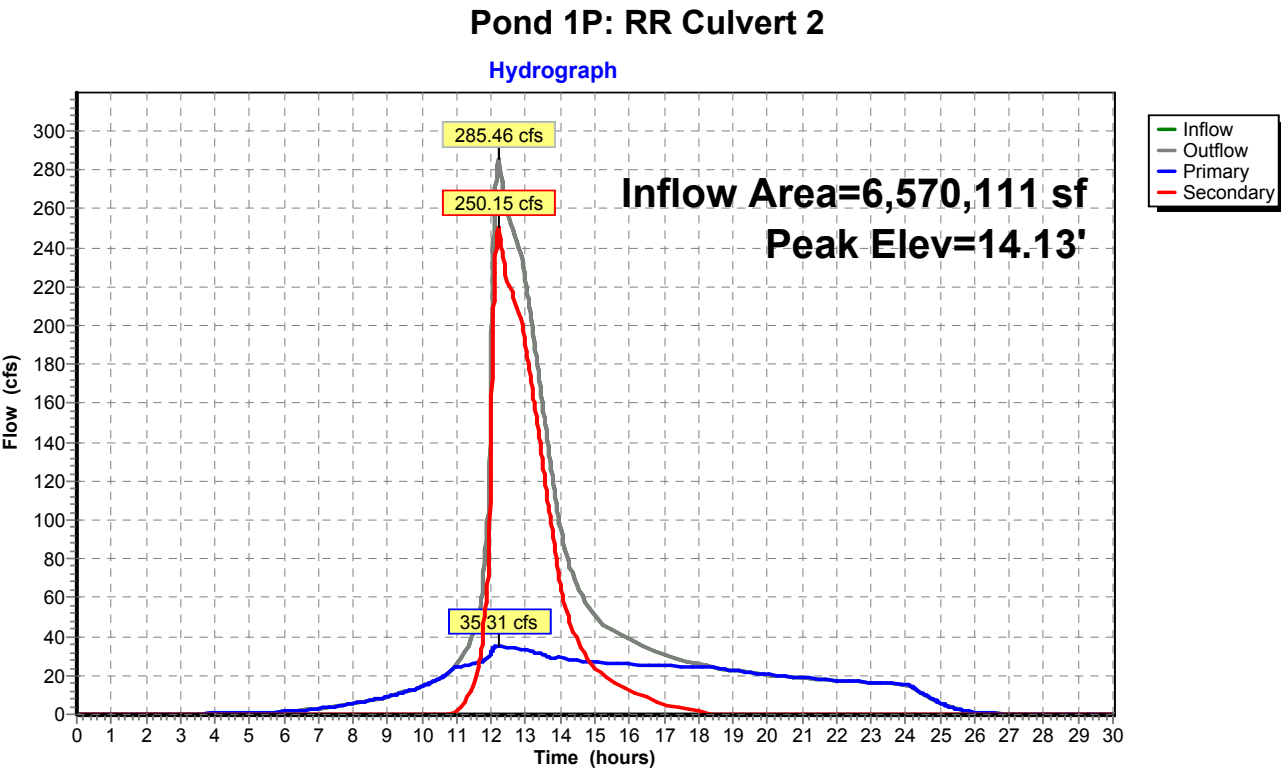
Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 5.37" for 50 year event
Inflow = 285.46 cfs @ 12.23 hrs, Volume= 2,939,779 cf
Outflow = 285.46 cfs @ 12.23 hrs, Volume= 2,939,779 cf, Atten= 0%, Lag= 0.0 min
Primary = 35.31 cfs @ 12.23 hrs, Volume= 1,339,170 cf
Secondary = 250.15 cfs @ 12.23 hrs, Volume= 1,600,608 cf
Routed to Pond 24P : RR Culvert 3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 14.13' @ 12.23 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 '/' Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

Primary OutFlow Max=35.31 cfs @ 12.23 hrs HW=14.13' (Free Discharge)
 ↑**2=Culvert** (Barrel Controls 35.31 cfs @ 5.89 fps)

Secondary OutFlow Max=249.96 cfs @ 12.23 hrs HW=14.13' (Free Discharge)
 ↑**1=Custom Weir/Orifice** (Weir Controls 249.96 cfs @ 4.42 fps)



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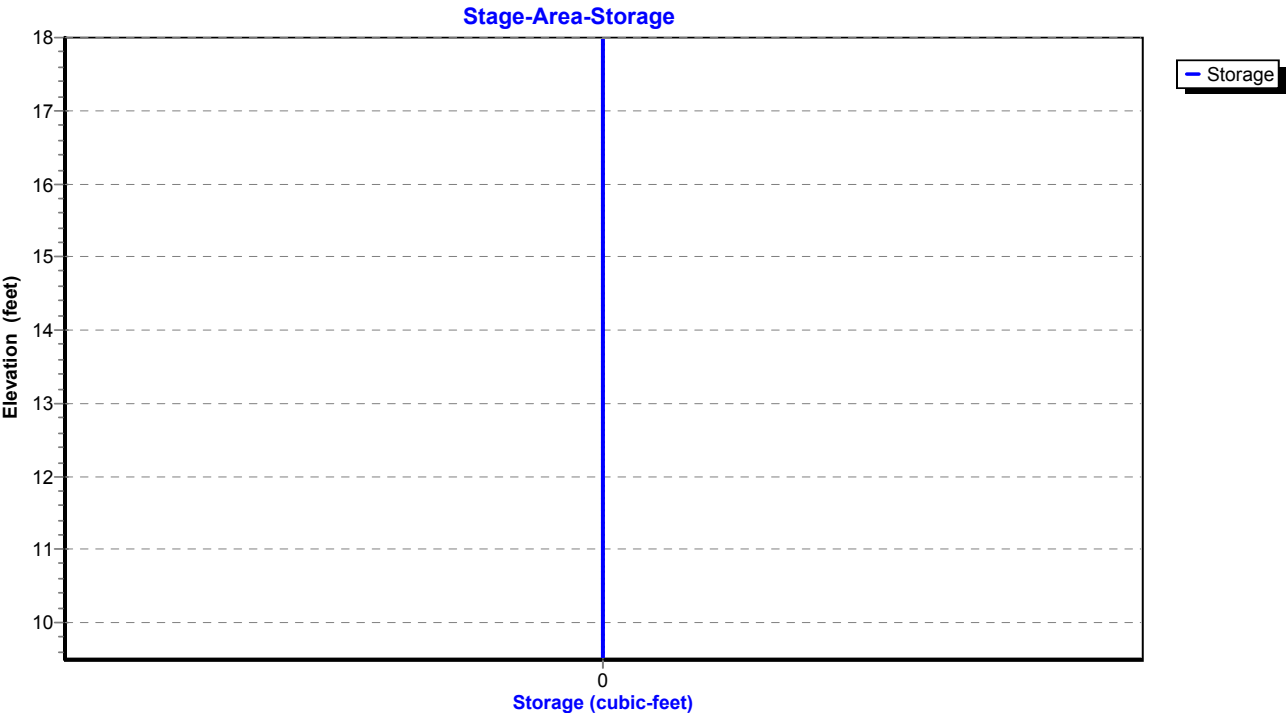
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Pond 1P: RR Culvert 2



Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.67% Impervious, Inflow Depth = 5.81" for 50 year event
Inflow = 174.22 cfs @ 12.04 hrs, Volume= 1,654,109 cf
Outflow = 174.22 cfs @ 12.04 hrs, Volume= 1,654,109 cf, Atten= 0%, Lag= 0.0 min
Primary = 57.16 cfs @ 12.04 hrs, Volume= 1,200,118 cf
Secondary = 117.06 cfs @ 12.04 hrs, Volume= 453,991 cf
Routed to Pond 1P : RR Culvert 2

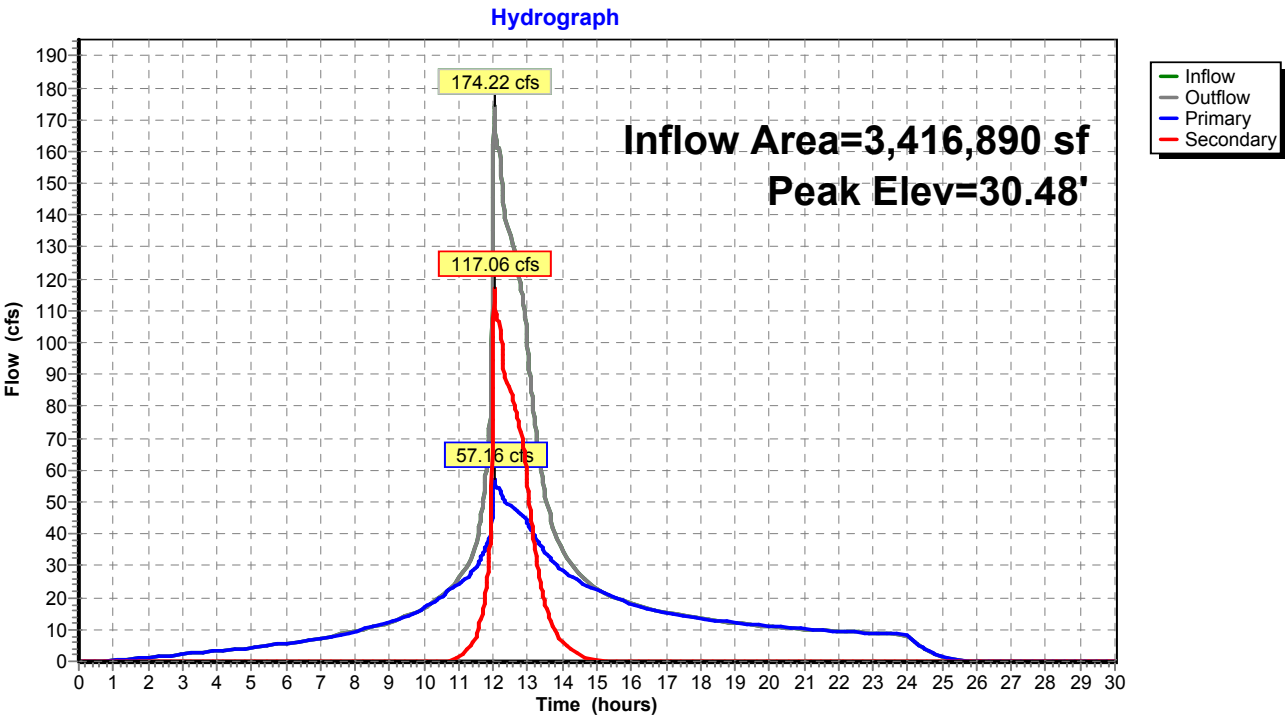
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 30.48' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

Primary OutFlow Max=57.15 cfs @ 12.04 hrs HW=30.47' (Free Discharge)
↑1=Culvert (Inlet Controls 57.15 cfs @ 9.92 fps)

Secondary OutFlow Max=117.03 cfs @ 12.04 hrs HW=30.47' (Free Discharge)
↑2=Custom Weir/Orifice (Orifice Controls 117.03 cfs @ 9.75 fps)

Pond 2P: RR Culvert 1



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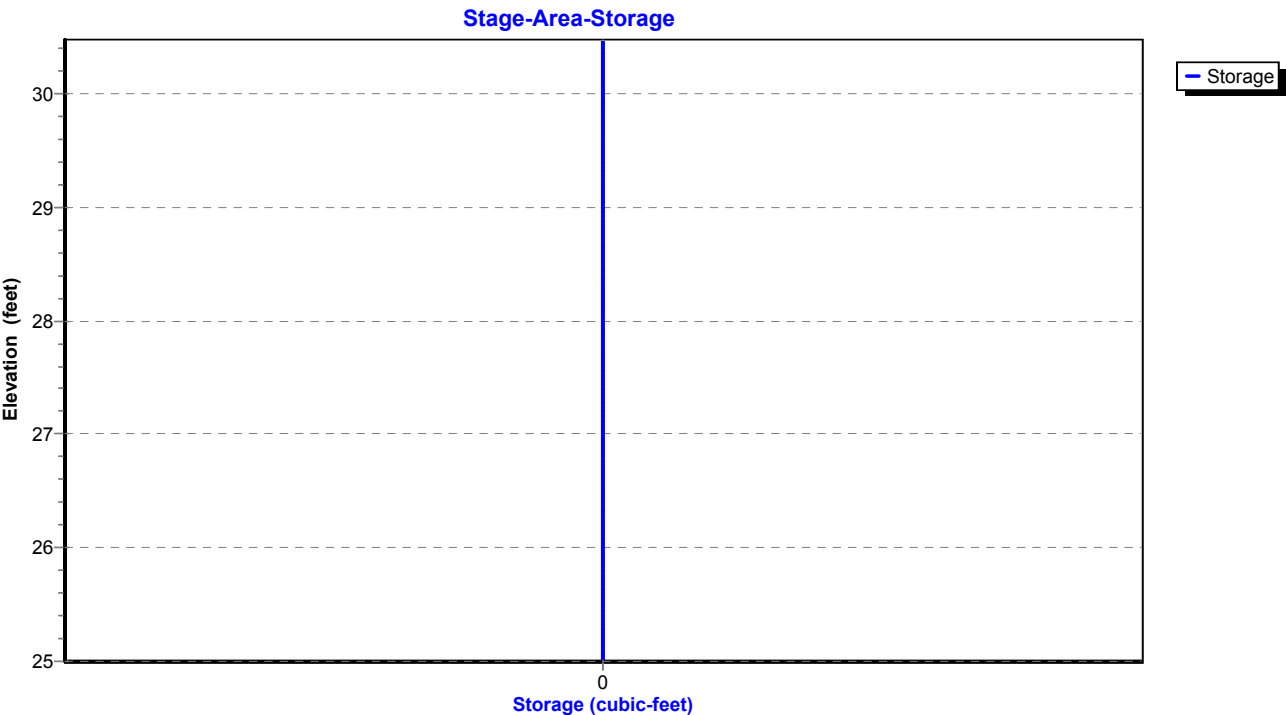
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Pond 2P: RR Culvert 1



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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 5.58" for 50 year event
Inflow = 33.56 cfs @ 12.03 hrs, Volume= 122,454 cf
Outflow = 9.05 cfs @ 12.37 hrs, Volume= 106,665 cf, Atten= 73%, Lag= 20.3 min
Primary = 9.05 cfs @ 12.37 hrs, Volume= 106,665 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 50.63' @ 12.37 hrs Surf.Area= 13,260 sf Storage= 51,596 cf

Plug-Flow detention time= 198.4 min calculated for 106,665 cf (87% of inflow)
Center-of-Mass det. time= 131.2 min (932.1 - 800.8)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.02 cfs @ 12.37 hrs HW=50.63' (Free Discharge)

1=Culvert (Passes 9.02 cfs of 20.63 cfs potential flow)
2=Orifice/Grate (Orifice Controls 4.71 cfs @ 8.63 fps)
3=Orifice/Grate (Weir Controls 4.31 cfs @ 1.57 fps)

Proposed Conditions

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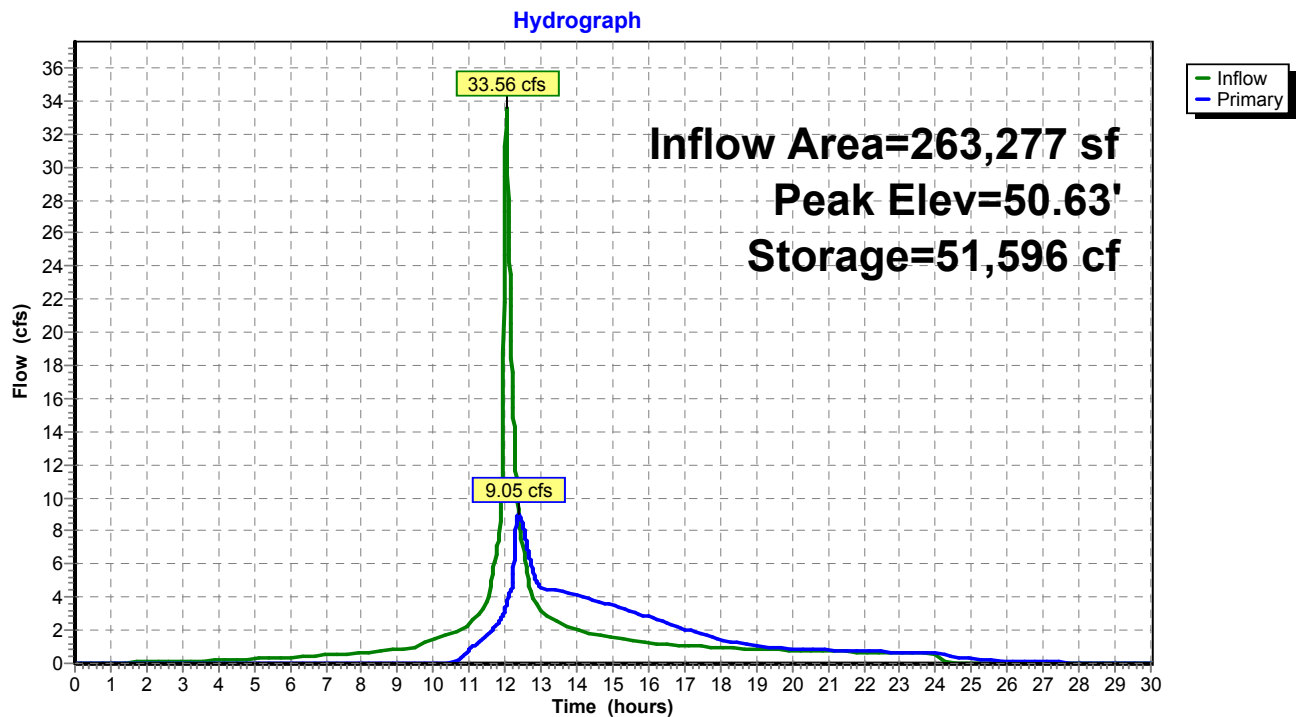
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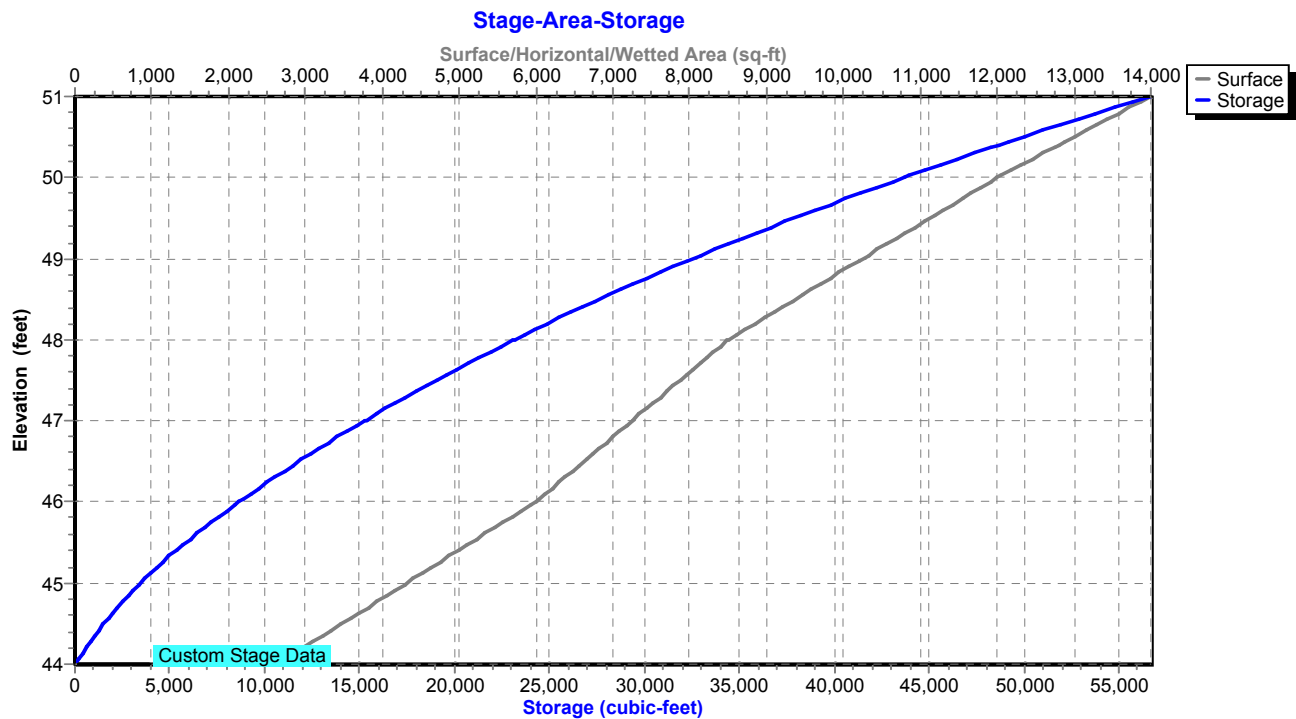
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 4.23" for 50 year event
 Inflow = 26.70 cfs @ 12.45 hrs, Volume= 190,862 cf
 Outflow = 21.38 cfs @ 12.66 hrs, Volume= 190,861 cf, Atten= 20%, Lag= 12.6 min
 Primary = 21.38 cfs @ 12.66 hrs, Volume= 190,861 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 81.27' @ 12.66 hrs Storage= 12,522 cf

Plug-Flow detention time= 6.6 min calculated for 190,861 cf (100% of inflow)

Center-of-Mass det. time= 6.6 min (881.0 - 874.5)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=21.38 cfs @ 12.66 hrs HW=81.27' (Free Discharge)↑**1=Culvert** (Inlet Controls 21.38 cfs @ 6.80 fps)

Proposed Conditions

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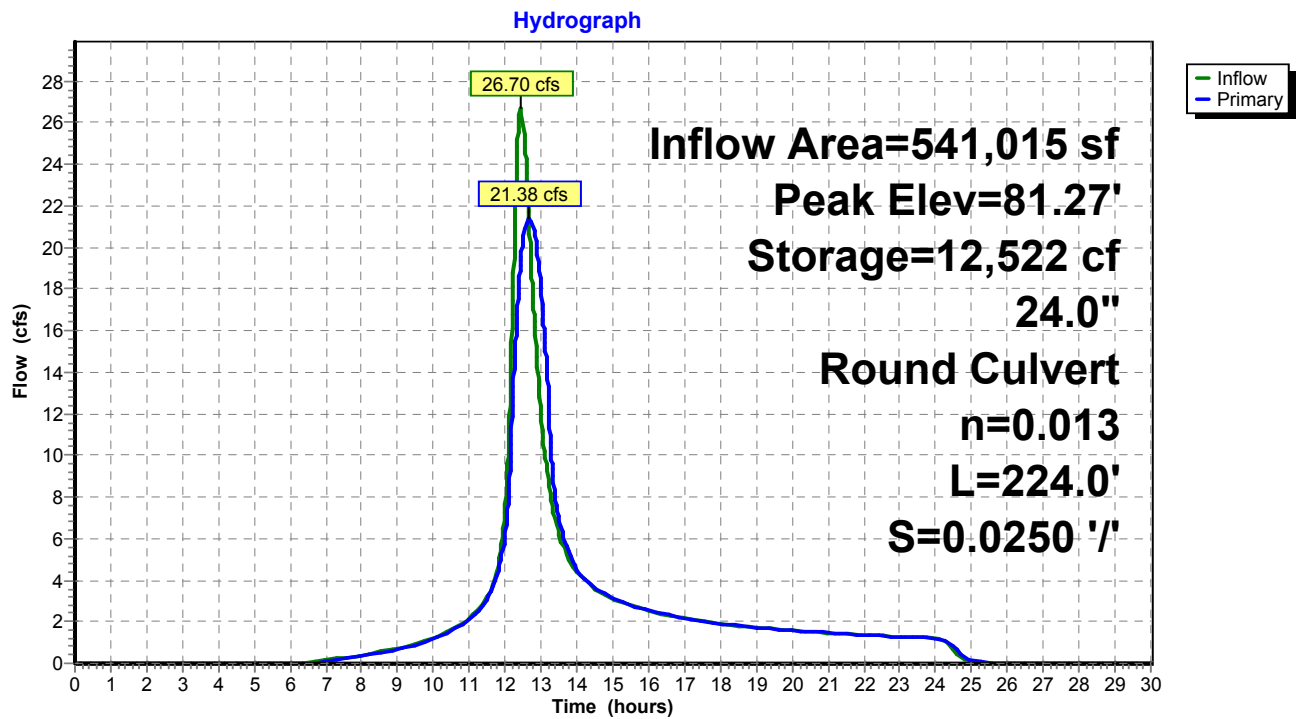
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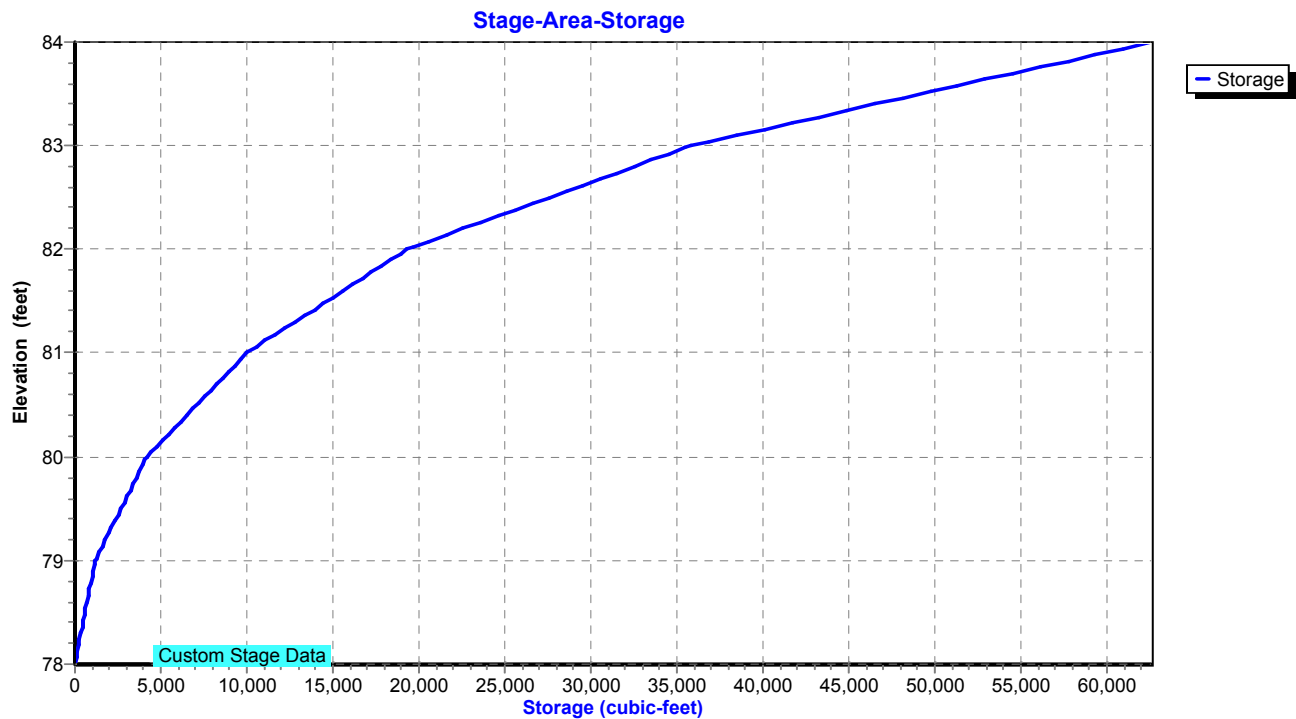
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Pond 5P: DET 5 Culvert



Pond 5P: DET 5 Culvert



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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 5.24" for 50 year event
 Inflow = 35.89 cfs @ 12.70 hrs, Volume= 326,174 cf
 Outflow = 34.79 cfs @ 12.78 hrs, Volume= 326,174 cf, Atten= 3%, Lag= 5.1 min
 Primary = 34.79 cfs @ 12.78 hrs, Volume= 326,174 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 92.22' @ 12.78 hrs Storage= 2,324 cf

Plug-Flow detention time= 0.5 min calculated for 326,065 cf (100% of inflow)

Center-of-Mass det. time= 0.5 min (863.6 - 863.1)

Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=34.79 cfs @ 12.78 hrs HW=92.22' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 34.79 cfs @ 7.09 fps)

Proposed Conditions

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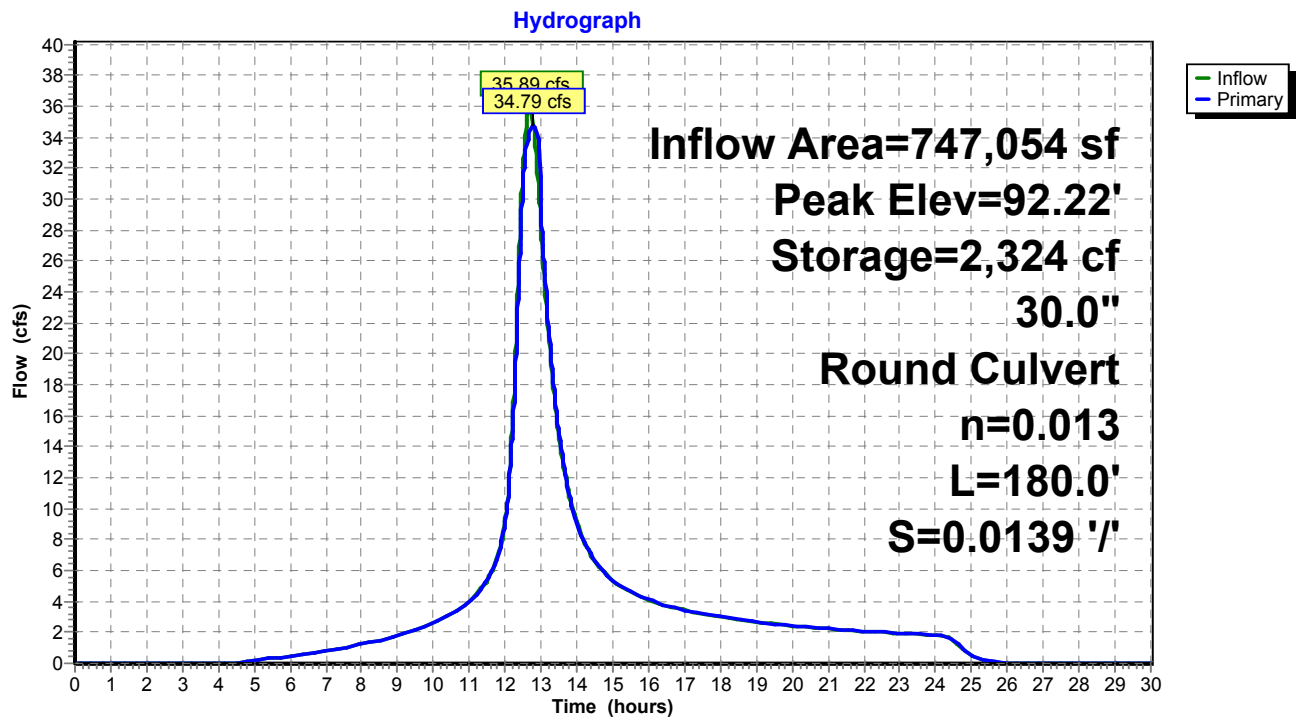
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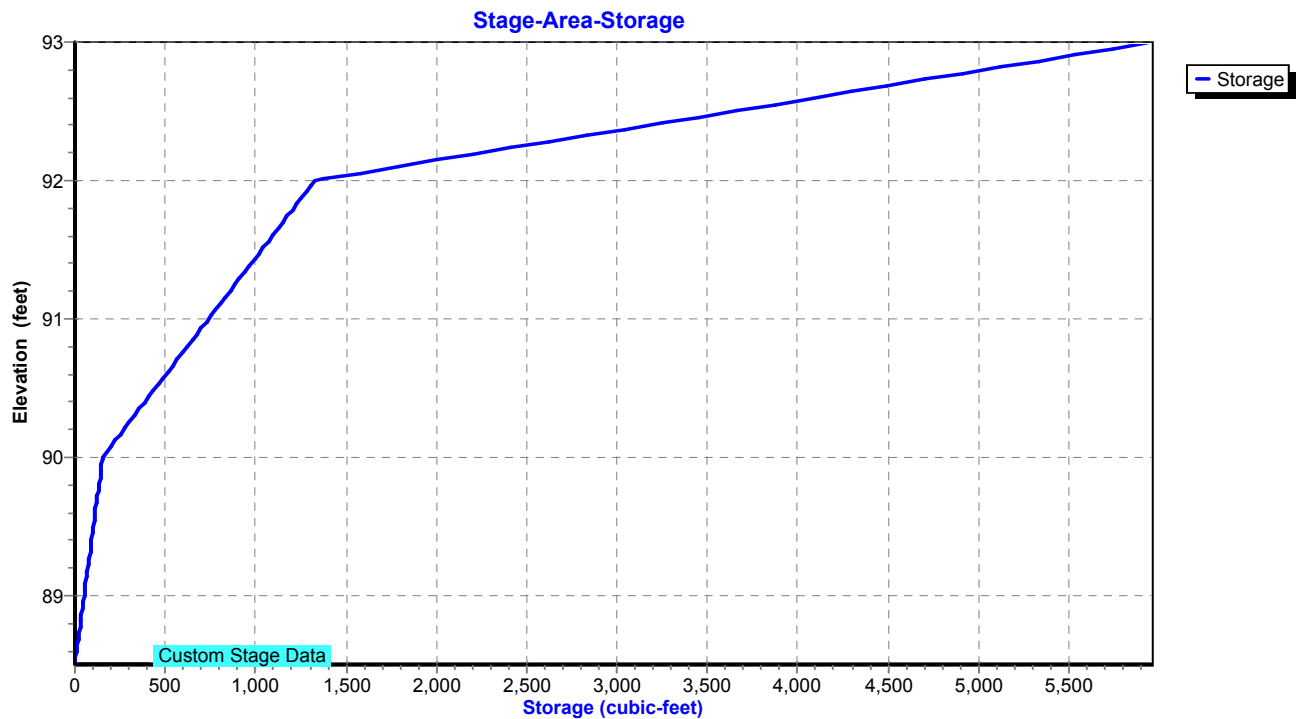
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Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 5.13" for 50 year event
 Inflow = 4.93 cfs @ 12.26 hrs, Volume= 27,352 cf
 Outflow = 3.27 cfs @ 12.46 hrs, Volume= 27,352 cf, Atten= 34%, Lag= 12.2 min
 Primary = 3.27 cfs @ 12.46 hrs, Volume= 27,352 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.48' @ 12.46 hrs Storage= 2,887 cf

Plug-Flow detention time= 6.9 min calculated for 27,352 cf (100% of inflow)

Center-of-Mass det. time= 6.9 min (843.6 - 836.7)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.27 cfs @ 12.46 hrs HW=93.48' (Free Discharge)↑ **1=Culvert** (Inlet Controls 3.27 cfs @ 3.16 fps)

Proposed Conditions

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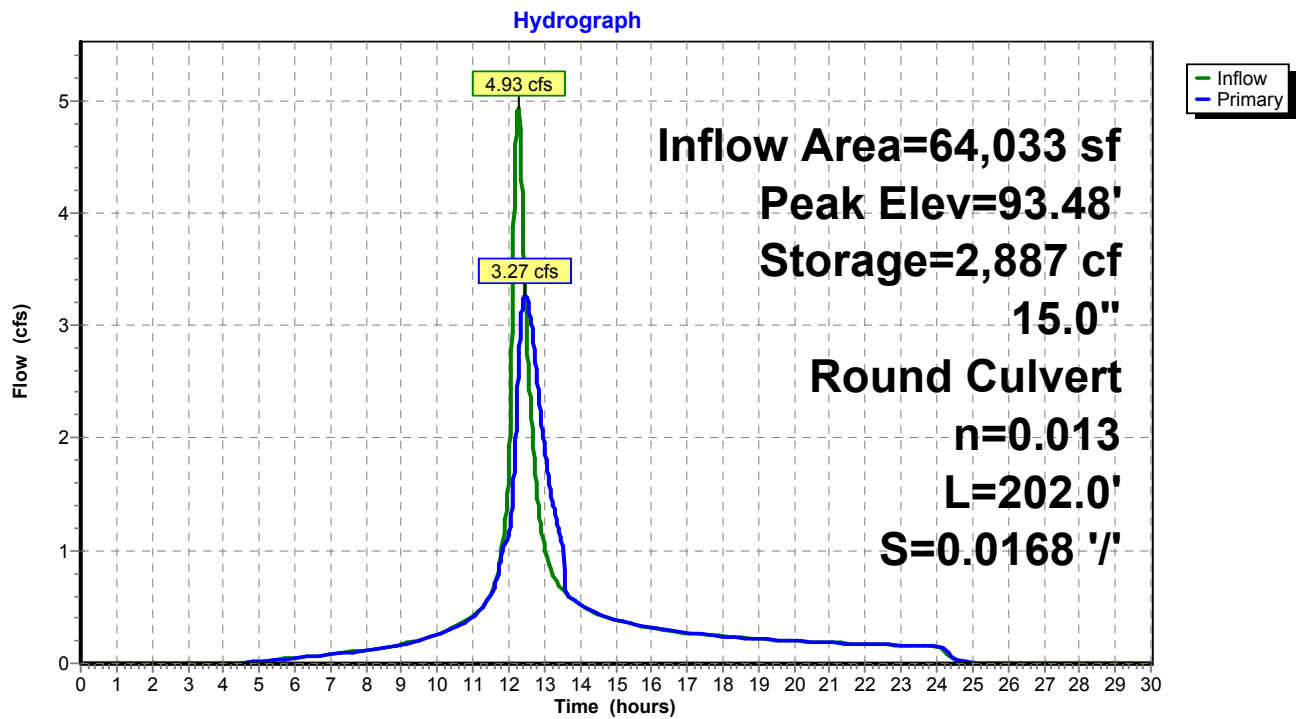
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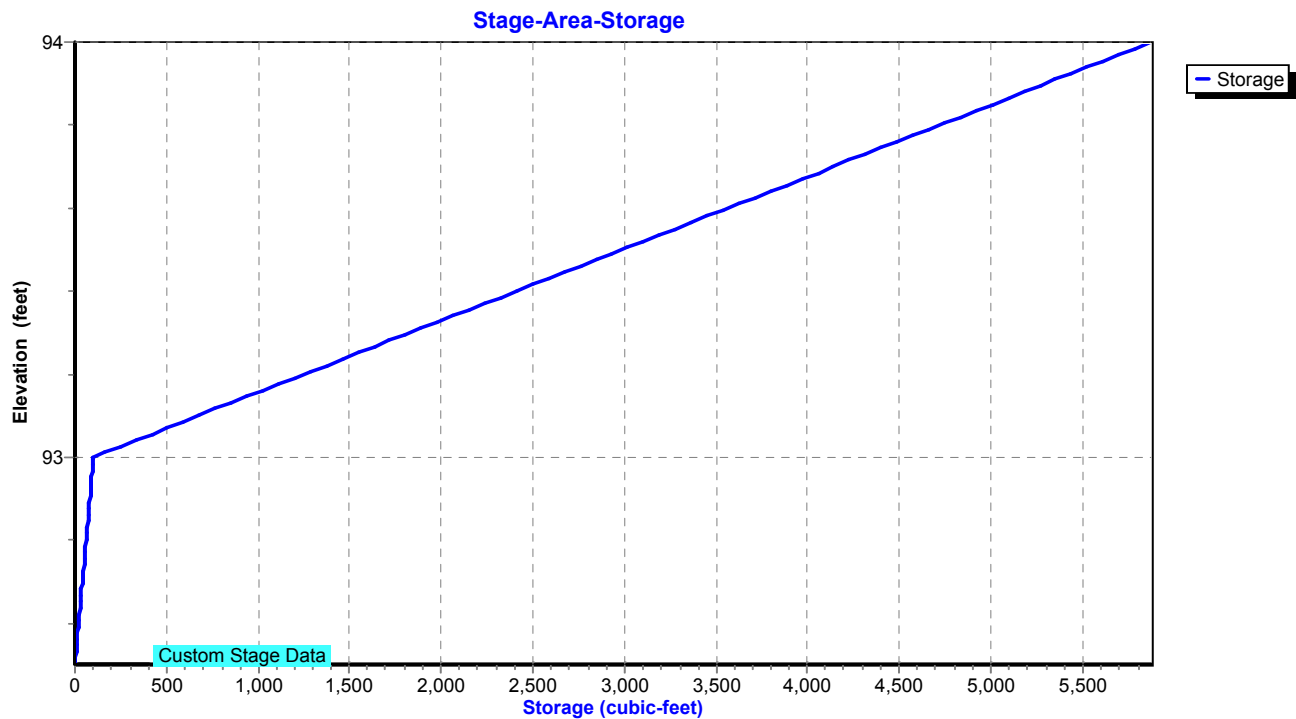
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 4.99" for 50 year event
 Inflow = 70.33 cfs @ 12.69 hrs, Volume= 659,122 cf
 Outflow = 70.32 cfs @ 12.70 hrs, Volume= 659,122 cf, Atten= 0%, Lag= 0.6 min
 Primary = 70.32 cfs @ 12.70 hrs, Volume= 659,122 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 72.45' @ 12.70 hrs Storage= 384 cf

Plug-Flow detention time= 0.0 min calculated for 658,902 cf (100% of inflow)
 Center-of-Mass det. time= 0.0 min (861.1 - 861.1)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / S= 0.0349 ' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=70.33 cfs @ 12.70 hrs HW=72.45' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 70.33 cfs @ 7.31 fps)

Proposed Conditions

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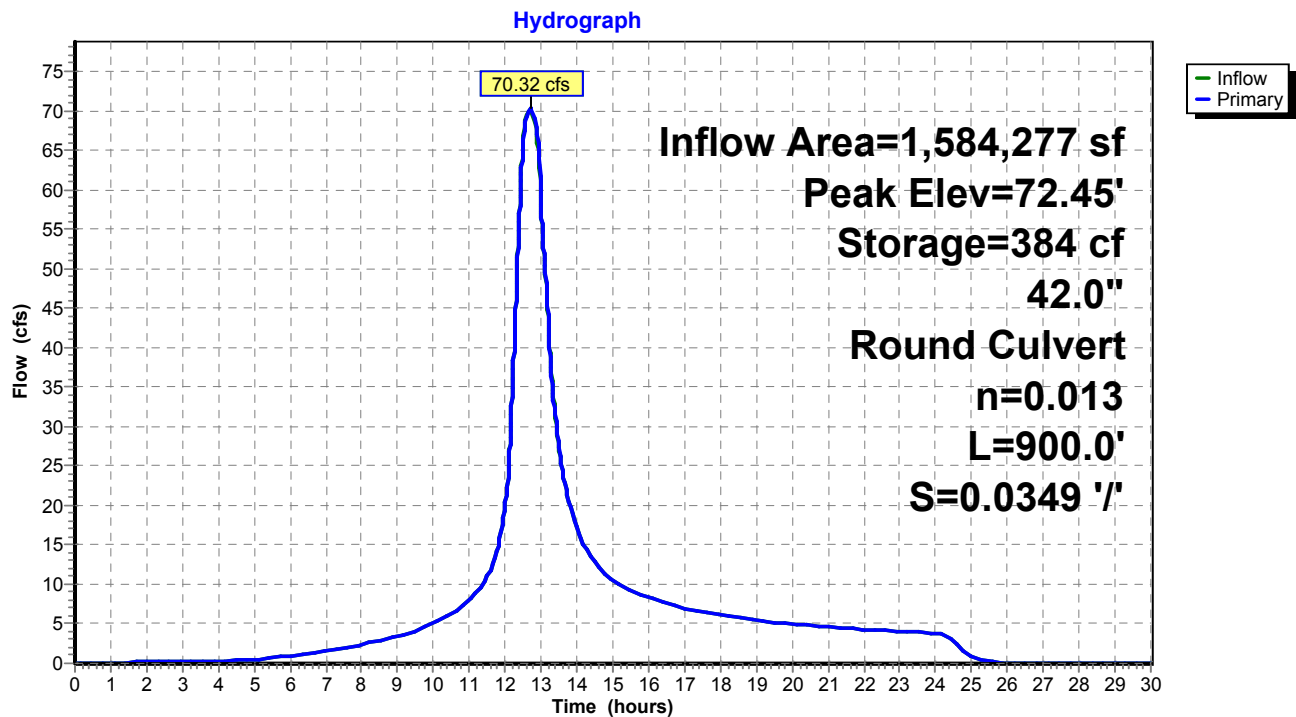
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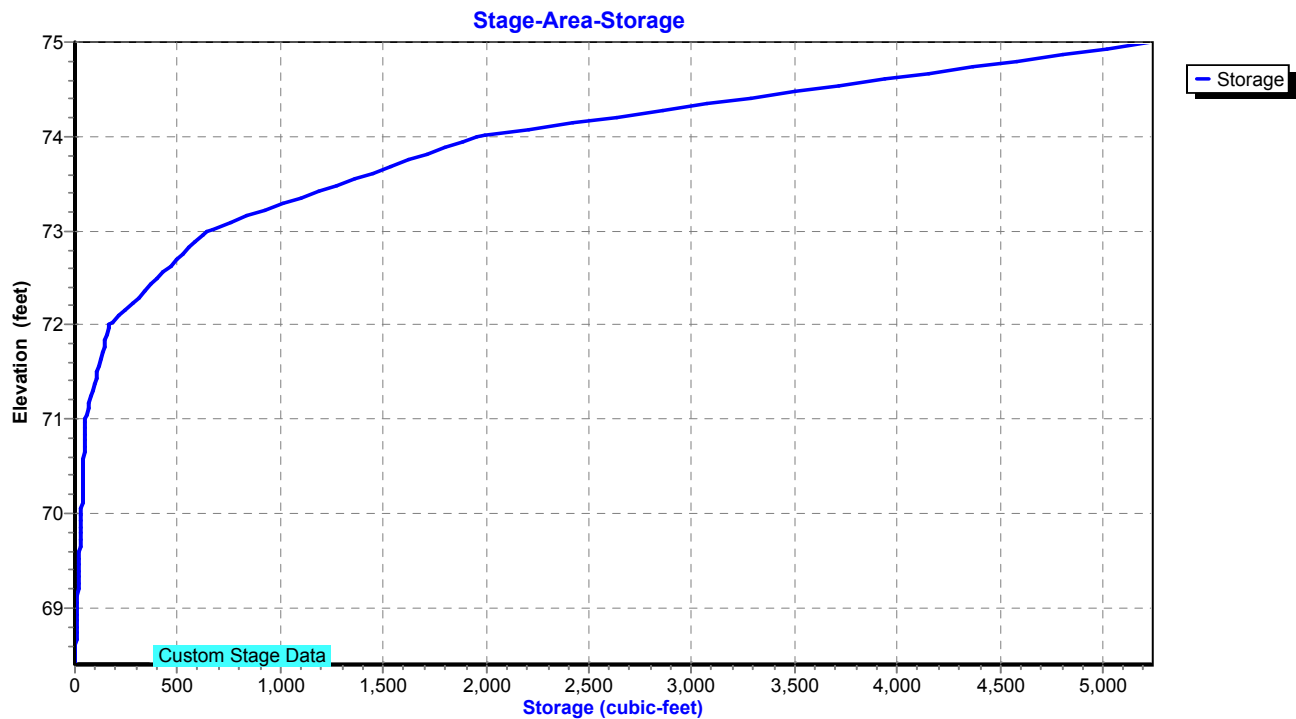
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



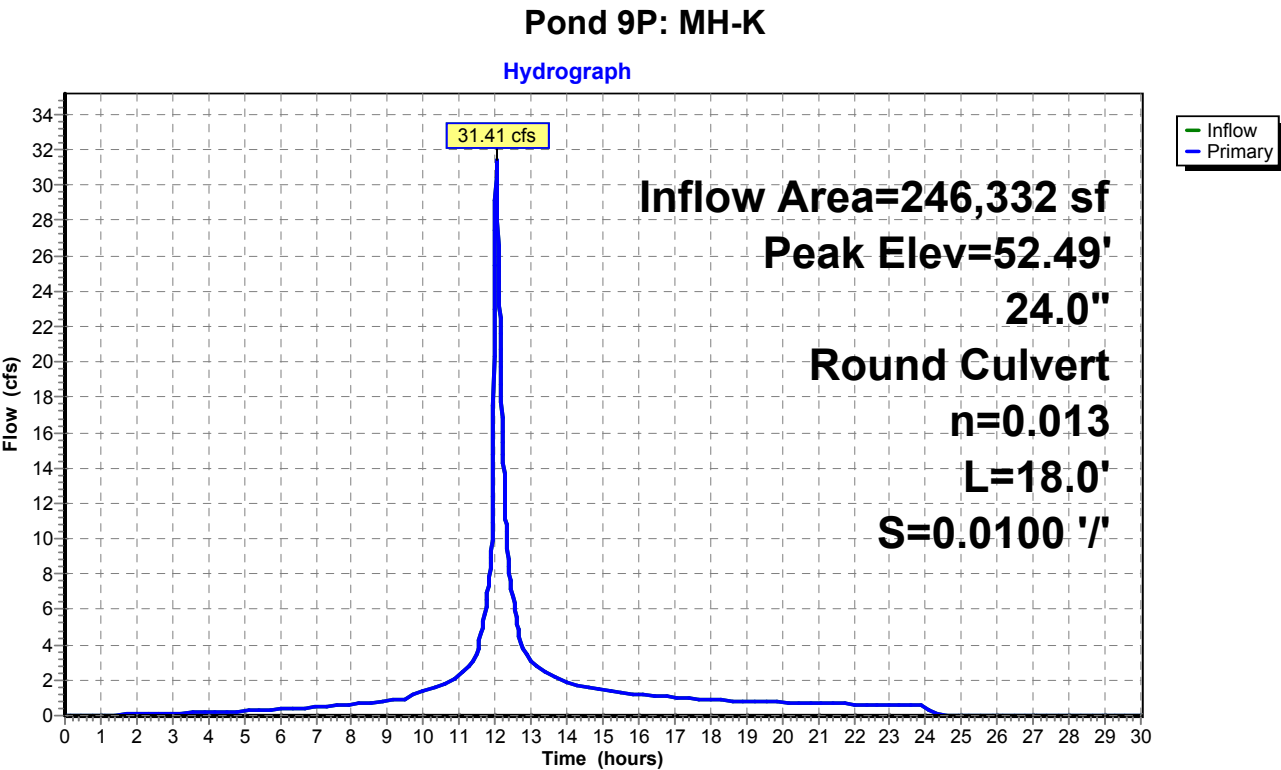
Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 5.67" for 50 year event
Inflow = 31.41 cfs @ 12.04 hrs, Volume= 116,321 cf
Outflow = 31.41 cfs @ 12.04 hrs, Volume= 116,321 cf, Atten= 0%, Lag= 0.0 min
Primary = 31.41 cfs @ 12.04 hrs, Volume= 116,321 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.49' @ 12.04 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=31.31 cfs @ 12.04 hrs HW=52.46' (Free Discharge)
1=Culvert (Inlet Controls 31.31 cfs @ 9.97 fps)



Proposed Conditions

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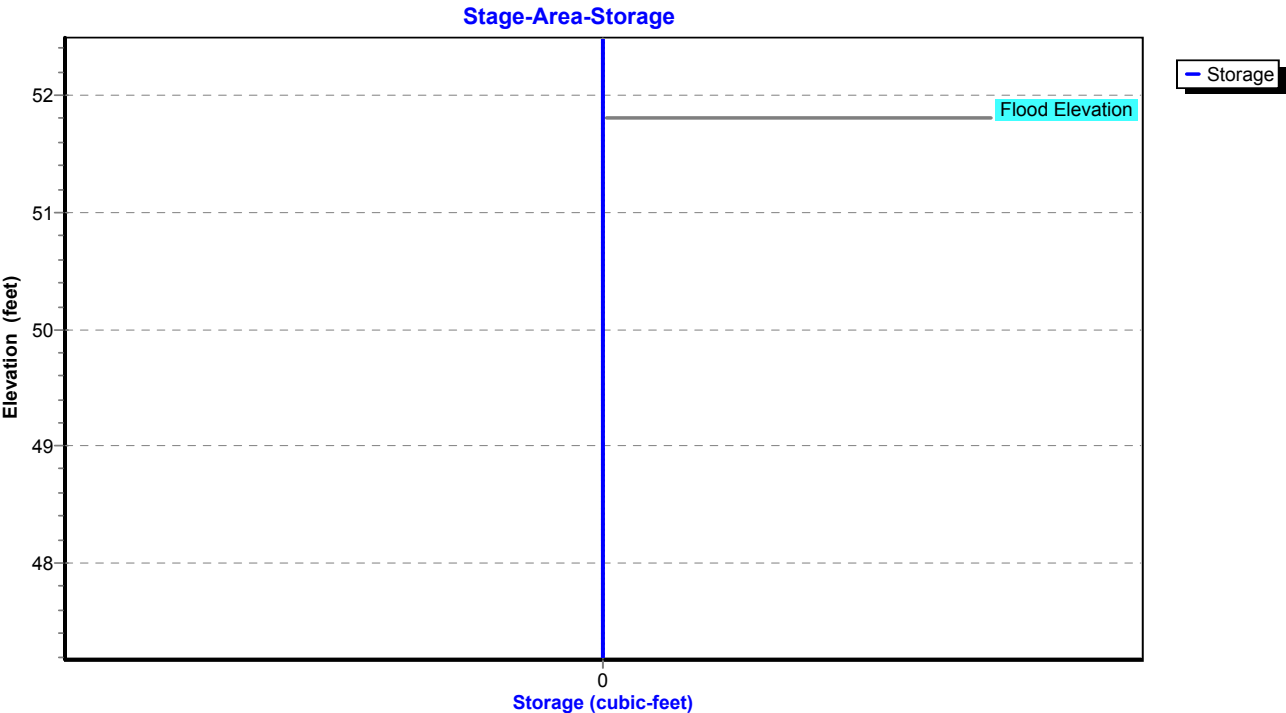
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Pond 9P: MH-K



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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 5.81" for 50 year event
Inflow = 12.87 cfs @ 12.03 hrs, Volume= 34,798 cf
Outflow = 12.87 cfs @ 12.03 hrs, Volume= 34,798 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.87 cfs @ 12.03 hrs, Volume= 34,798 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.65' @ 12.03 hrs

Flood Elev= 53.00'

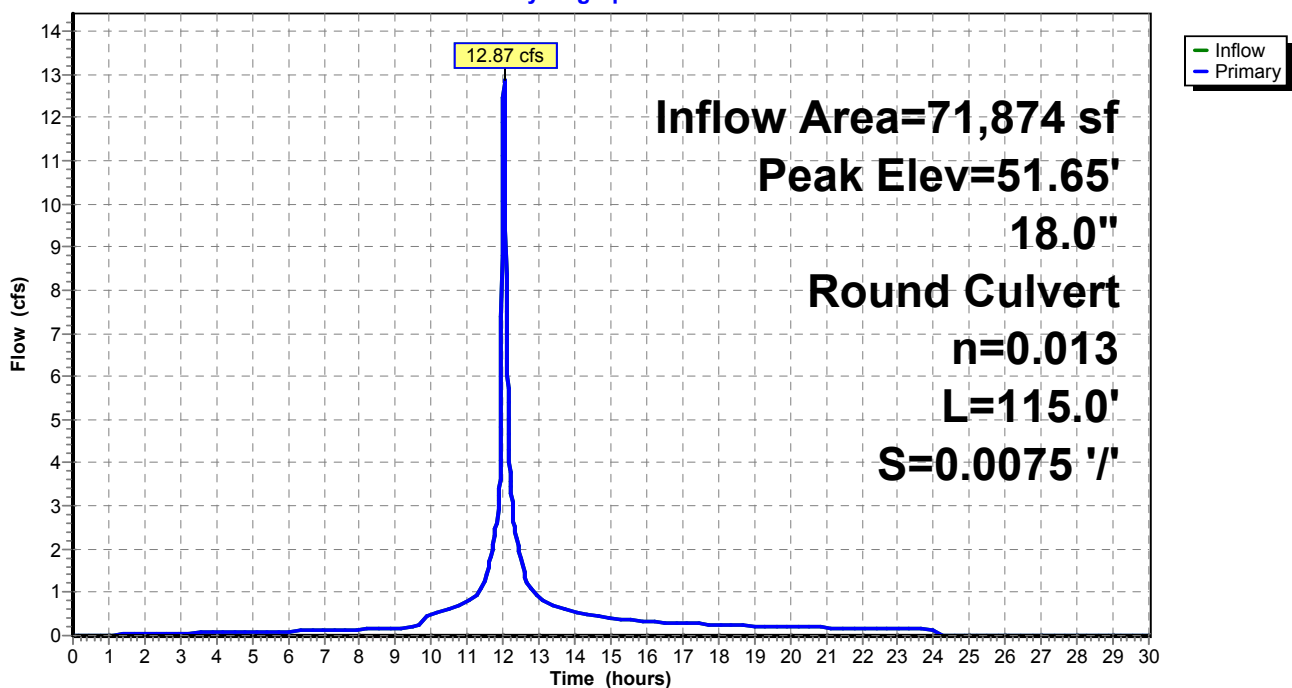
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=12.81 cfs @ 12.03 hrs HW=51.62' (Free Discharge)

↑1=Culvert (Barrel Controls 12.81 cfs @ 7.25 fps)

Pond 10P: MH-L

Hydrograph



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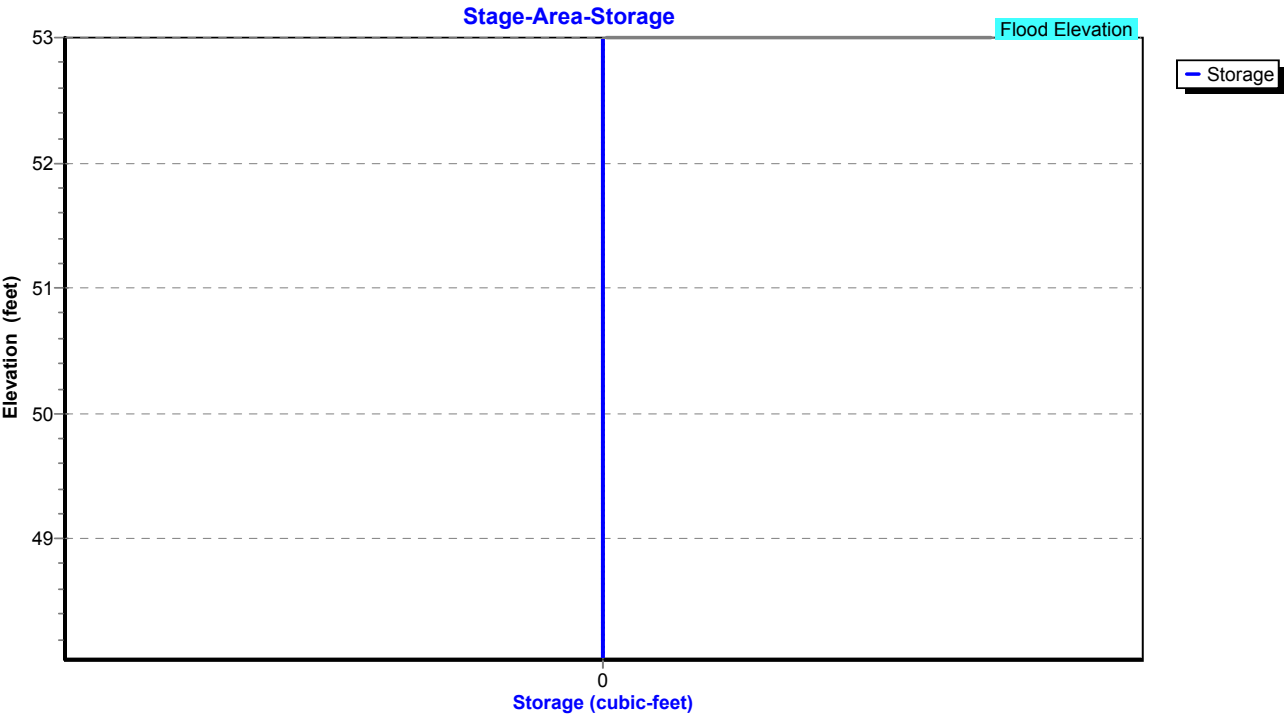
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Pond 10P: MH-L



Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 6.64" for 50 year event
Inflow = 7.32 cfs @ 12.03 hrs, Volume= 22,622 cf
Outflow = 7.29 cfs @ 12.03 hrs, Volume= 17,303 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.29 cfs @ 12.03 hrs, Volume= 17,303 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 53.10' @ 12.03 hrs Storage= 0.081 af

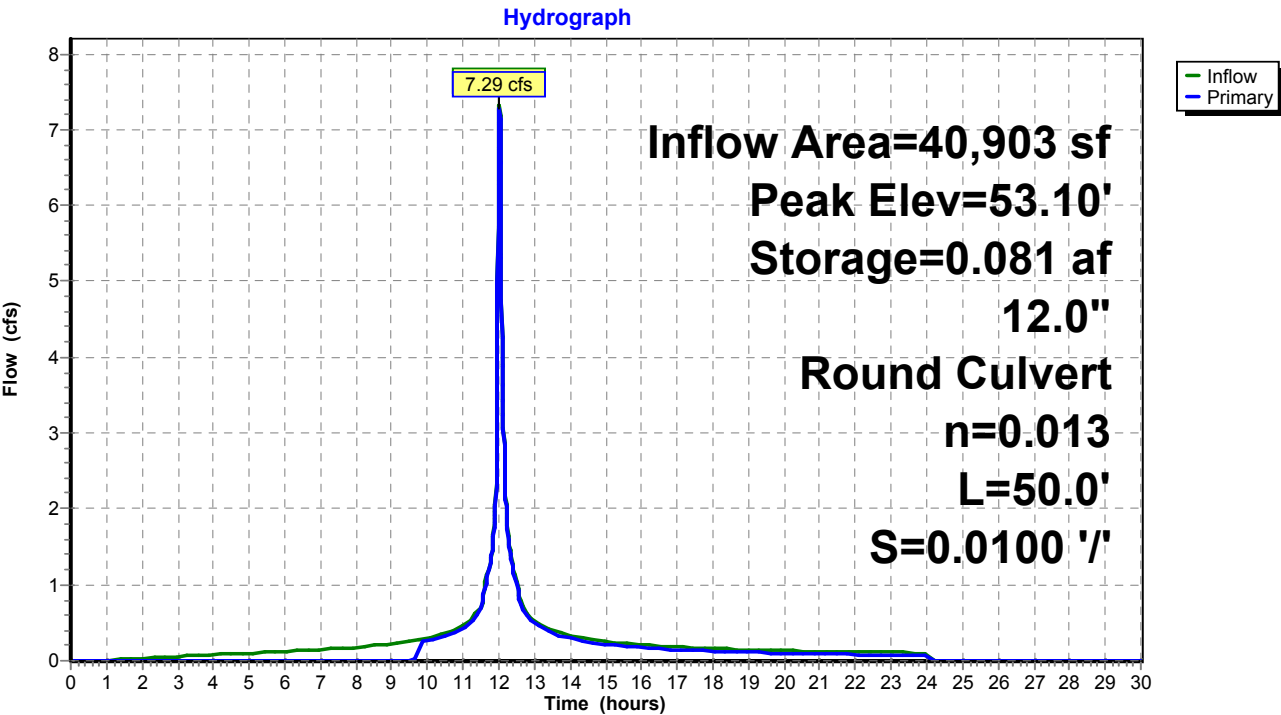
Plug-Flow detention time= 153.6 min calculated for 17,303 cf (76% of inflow)
Center-of-Mass det. time= 47.8 min (813.8 - 766.0)

Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

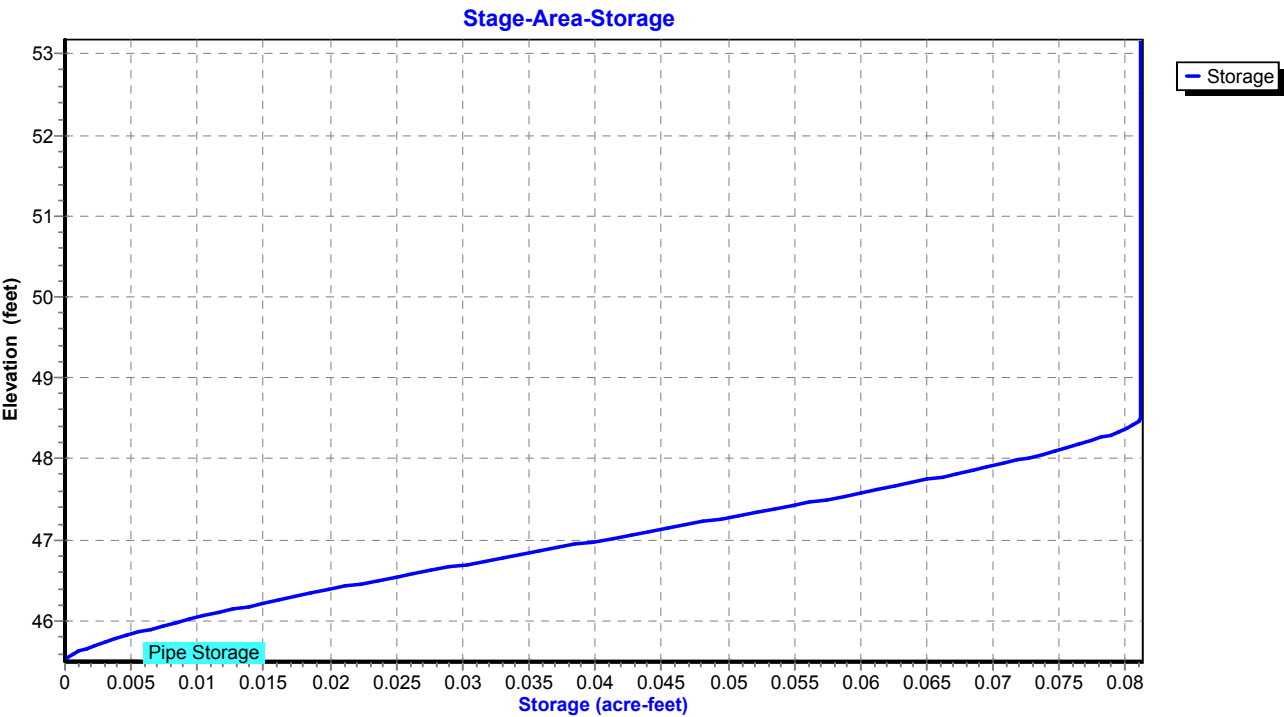
Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=7.26 cfs @ 12.03 hrs HW=53.07' (Free Discharge)
↑1=Culvert (Barrel Controls 7.26 cfs @ 9.24 fps)

Pond 11P: Pipe Storage



Pond 11P: Pipe Storage



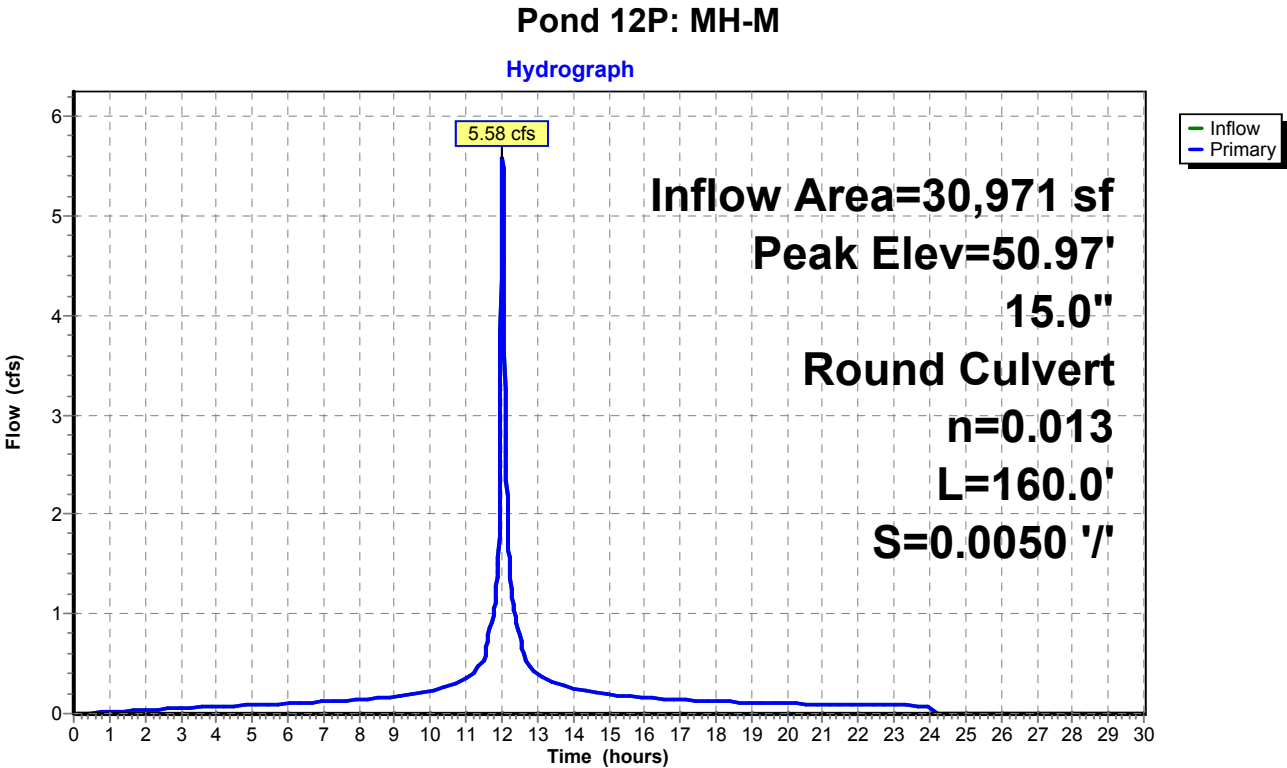
Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 6.78" for 50 year event
Inflow = 5.58 cfs @ 12.03 hrs, Volume= 17,496 cf
Outflow = 5.58 cfs @ 12.03 hrs, Volume= 17,496 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.58 cfs @ 12.03 hrs, Volume= 17,496 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.97' @ 12.03 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=5.56 cfs @ 12.03 hrs HW=50.96' (Free Discharge)
1=Culvert (Barrel Controls 5.56 cfs @ 4.53 fps)



Proposed Conditions

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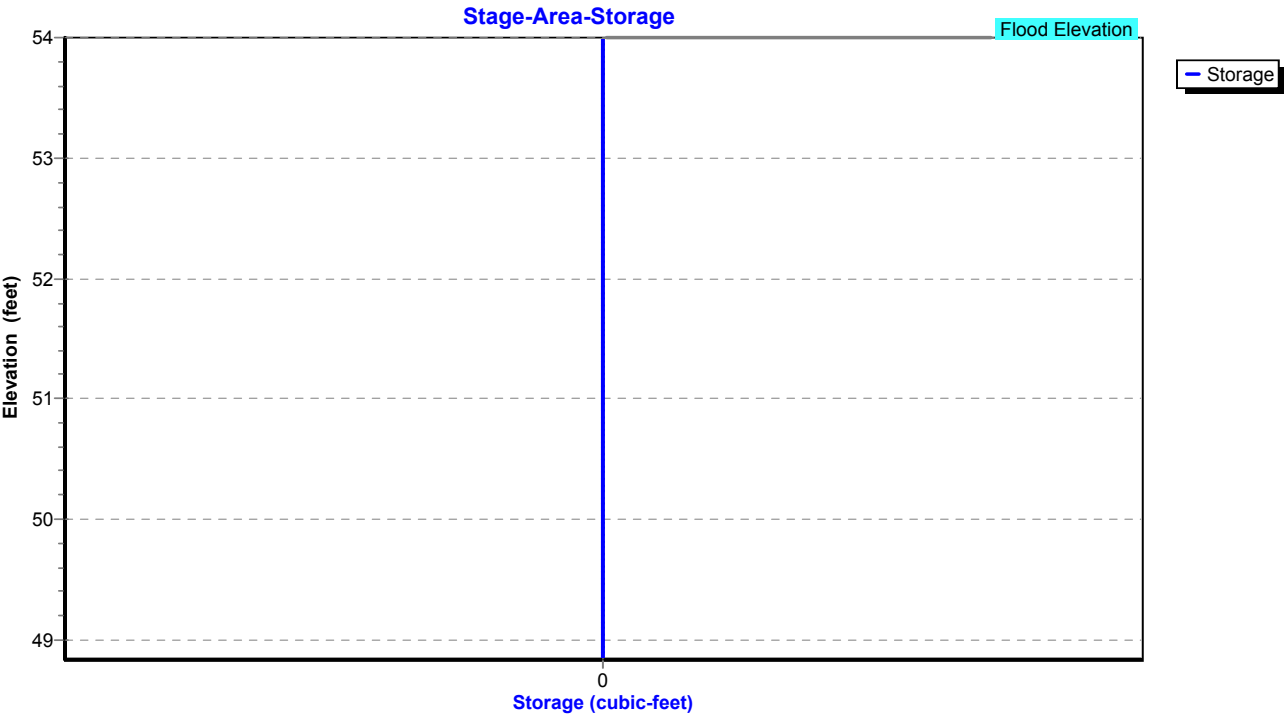
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Pond 12P: MH-M



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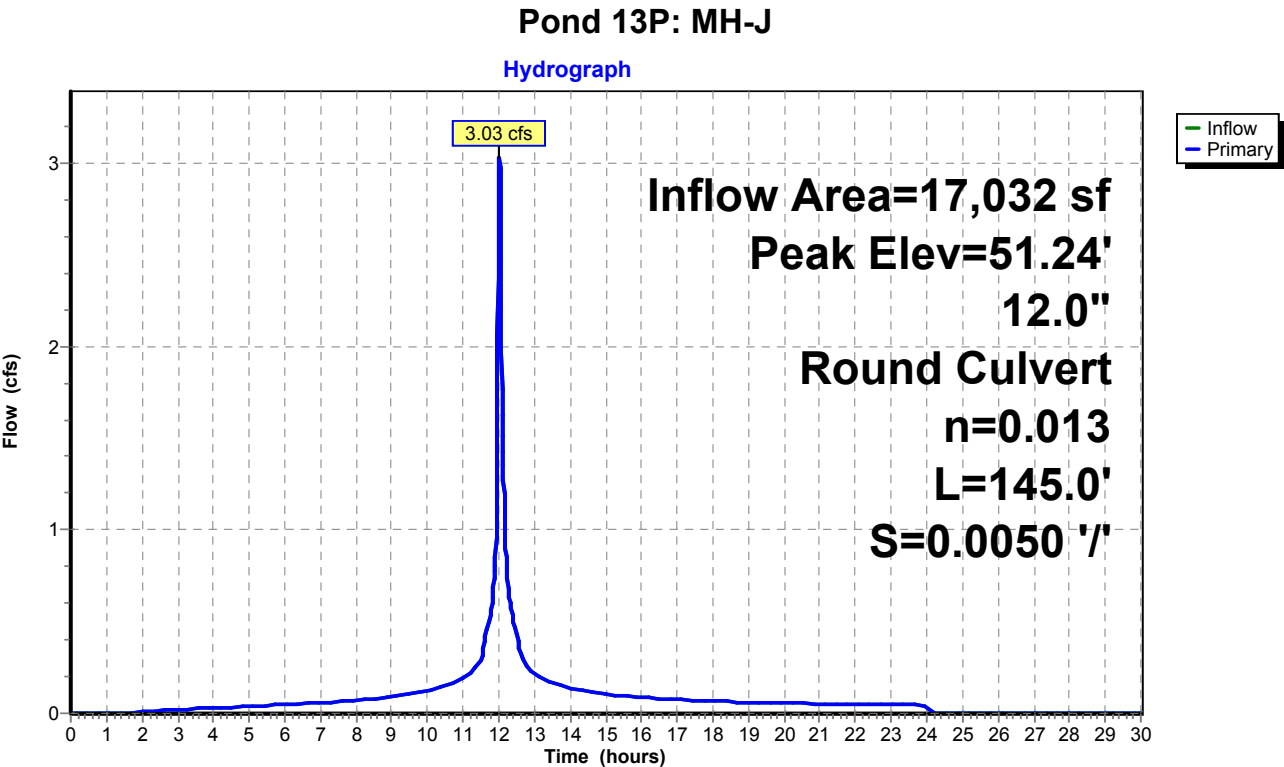
Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 6.51" for 50 year event
Inflow = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf
Outflow = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.03 cfs @ 12.03 hrs, Volume= 9,243 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.24' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.02 cfs @ 12.03 hrs HW=51.23' (Free Discharge)
↑1=Culvert (Barrel Controls 3.02 cfs @ 3.84 fps)



Proposed Conditions

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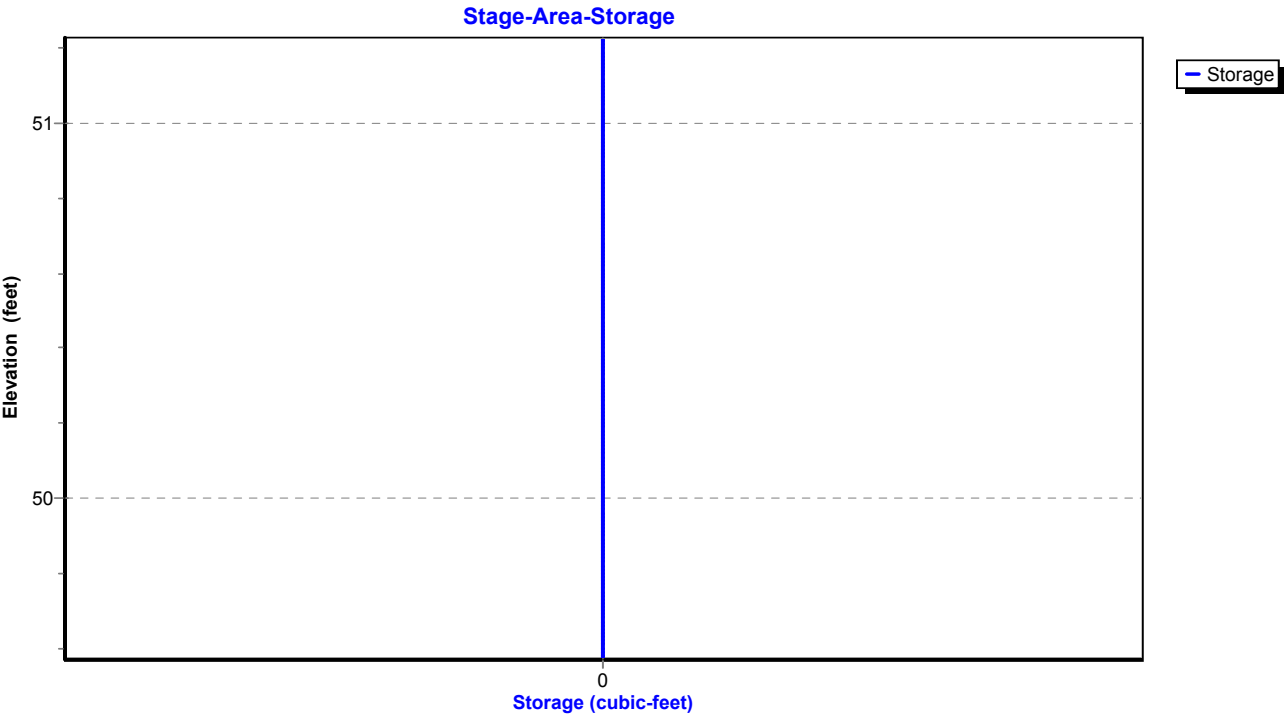
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Pond 13P: MH-J



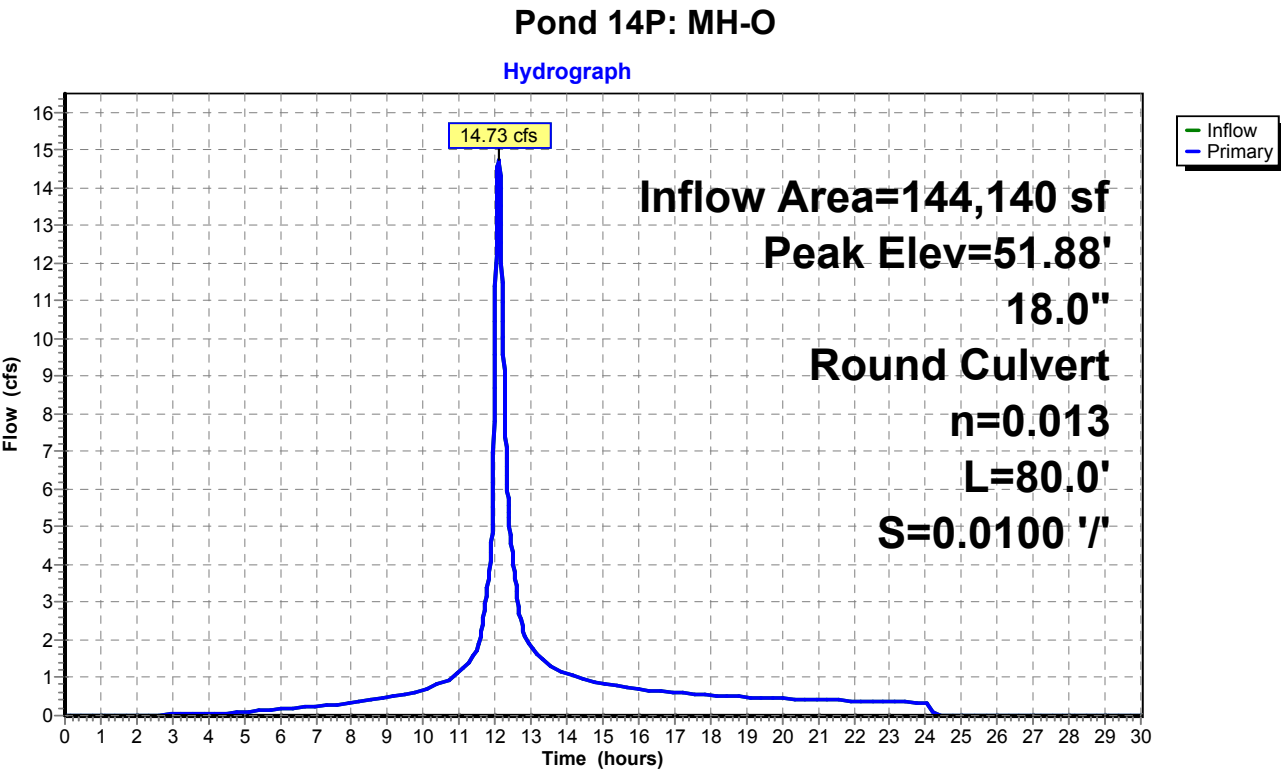
Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 5.37" for 50 year event
Inflow = 14.73 cfs @ 12.10 hrs, Volume= 64,474 cf
Outflow = 14.73 cfs @ 12.10 hrs, Volume= 64,474 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.73 cfs @ 12.10 hrs, Volume= 64,474 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.88' @ 12.10 hrs
Flood Elev= 51.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=14.73 cfs @ 12.10 hrs HW=51.88' (Free Discharge)
1=Culvert (Barrel Controls 14.73 cfs @ 8.33 fps)



Proposed Conditions

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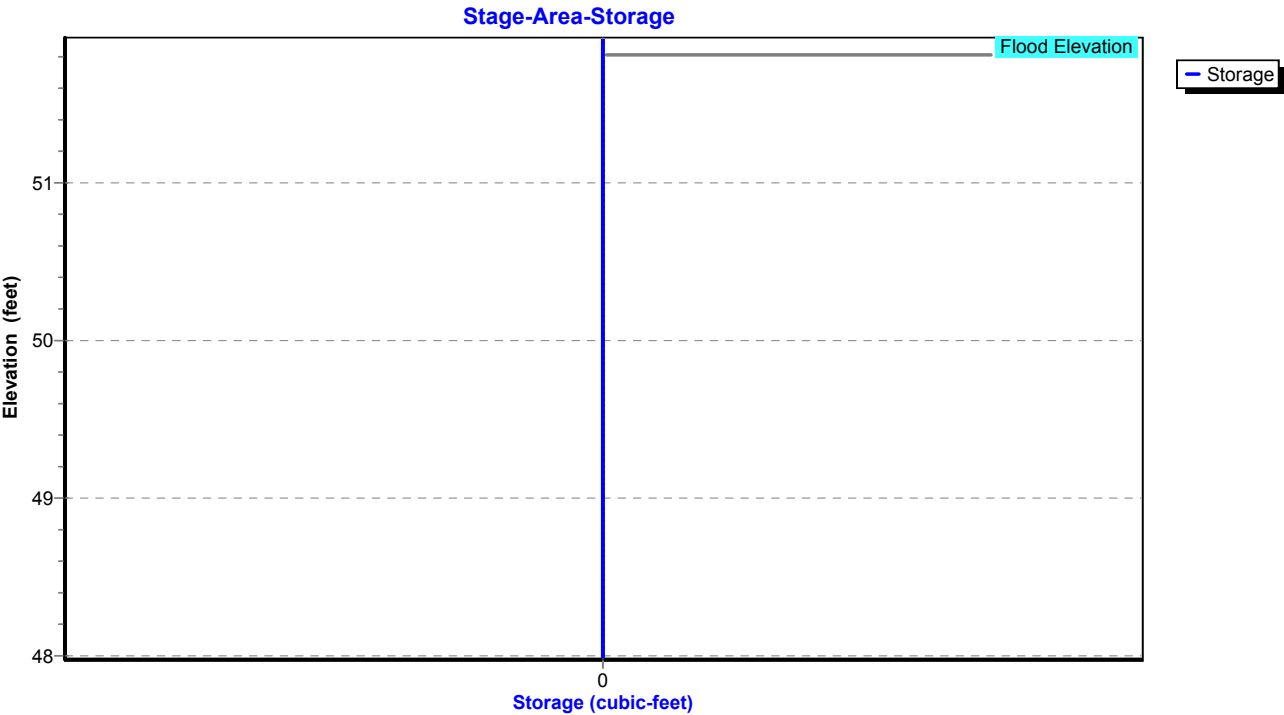
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Pond 14P: MH-O



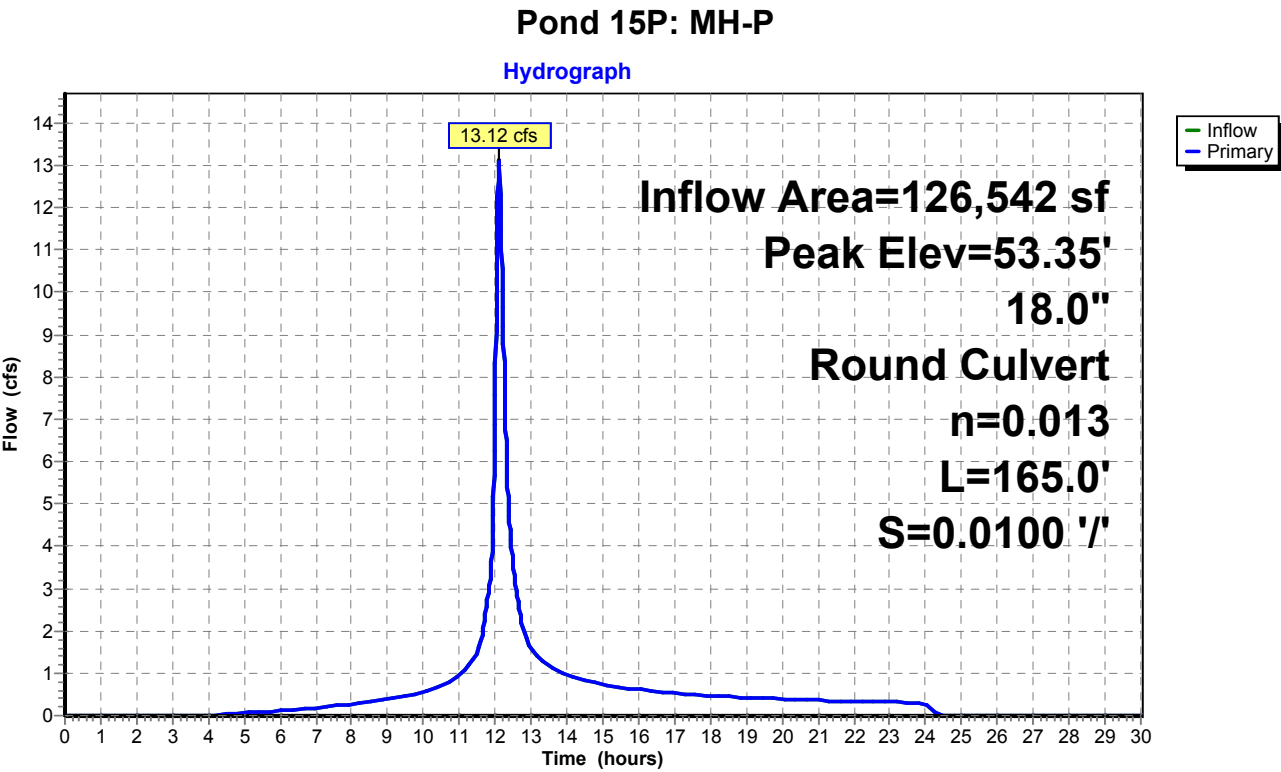
Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 5.21" for 50 year event
Inflow = 13.12 cfs @ 12.11 hrs, Volume= 54,902 cf
Outflow = 13.12 cfs @ 12.11 hrs, Volume= 54,902 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.12 cfs @ 12.11 hrs, Volume= 54,902 cf
Routed to Pond 14P : MH-O

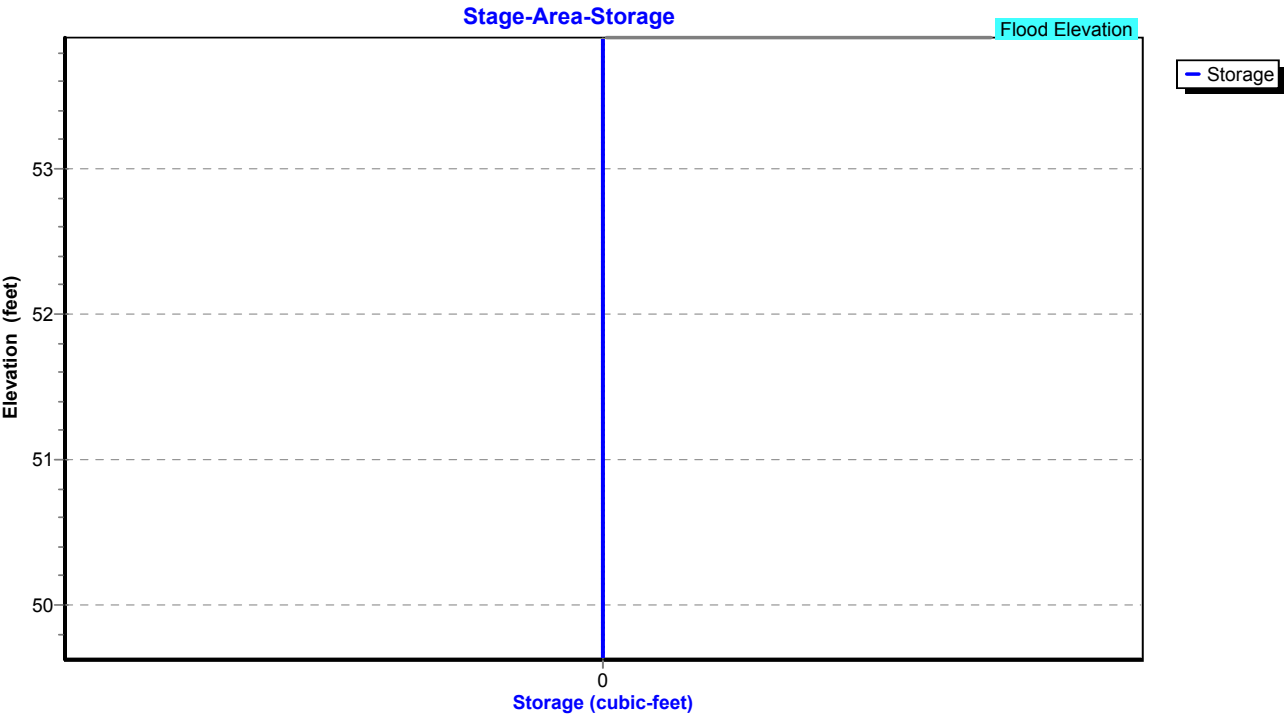
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 53.35' @ 12.11 hrs
Flood Elev= 53.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=13.12 cfs @ 12.11 hrs HW=53.35' (Free Discharge)
1=Culvert (Barrel Controls 13.12 cfs @ 7.42 fps)



Pond 15P: MH-P



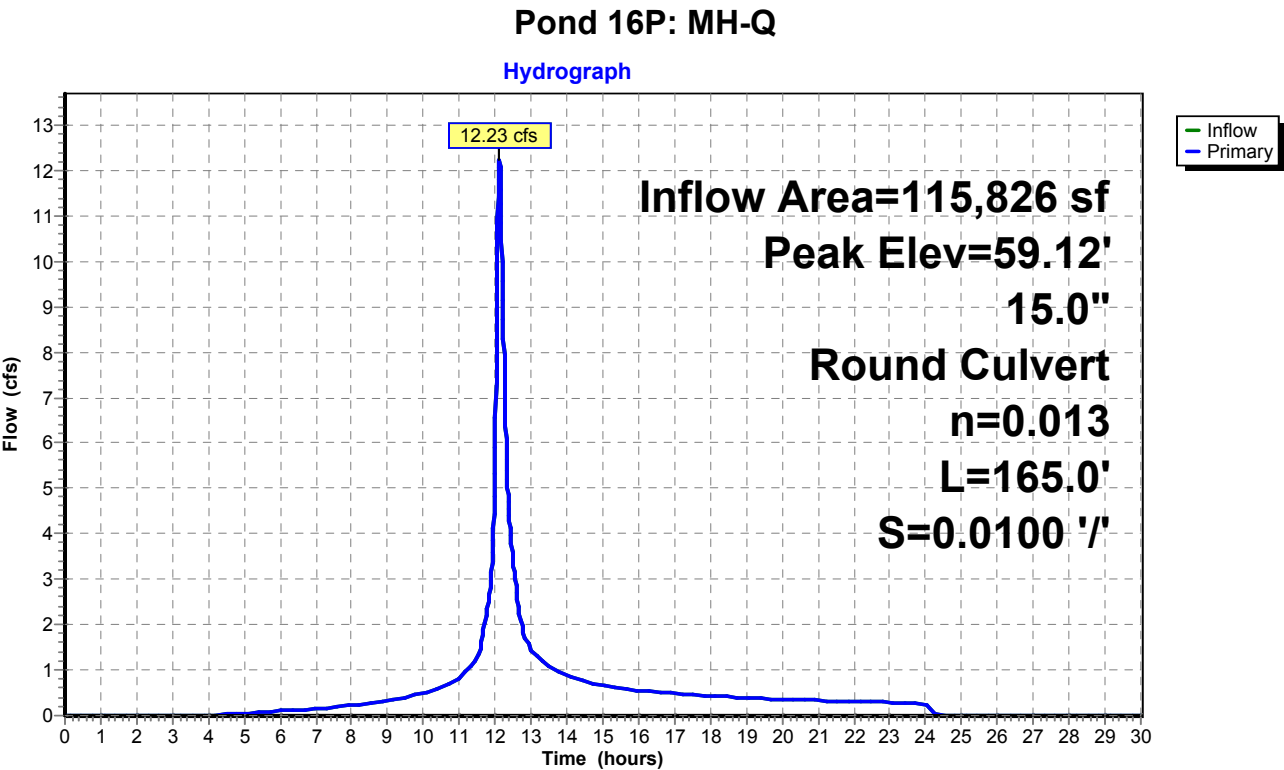
Summary for Pond 16P: MH-Q

Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 5.13" for 50 year event
Inflow = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf
Outflow = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.23 cfs @ 12.11 hrs, Volume= 49,476 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 59.12' @ 12.11 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.21 cfs @ 12.11 hrs HW=59.10' (Free Discharge)
1=Culvert (Barrel Controls 12.21 cfs @ 9.95 fps)



Proposed Conditions

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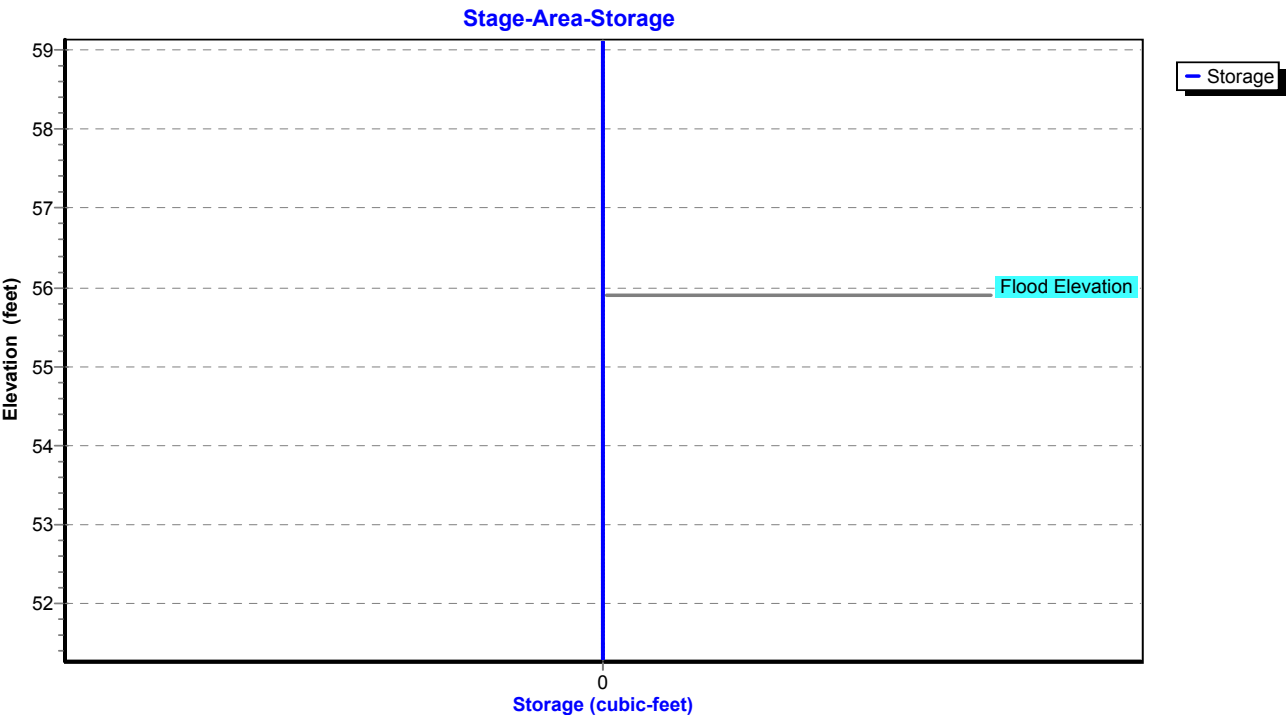
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Pond 16P: MH-Q



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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 4.34" for 50 year event
 Inflow = 82.95 cfs @ 13.12 hrs, Volume= 1,062,284 cf
 Outflow = 82.80 cfs @ 13.17 hrs, Volume= 1,062,284 cf, Atten= 0%, Lag= 2.6 min
 Primary = 82.80 cfs @ 13.17 hrs, Volume= 1,062,284 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 47.25' @ 13.17 hrs Surf.Area= 5,155 sf Storage= 7,977 cf

Plug-Flow detention time= 1.5 min calculated for 1,061,930 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (907.0 - 905.4)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=82.80 cfs @ 13.17 hrs HW=47.25' (Free Discharge)

↑**1=Culvert** (Inlet Controls 82.80 cfs @ 6.33 fps)

Proposed Conditions

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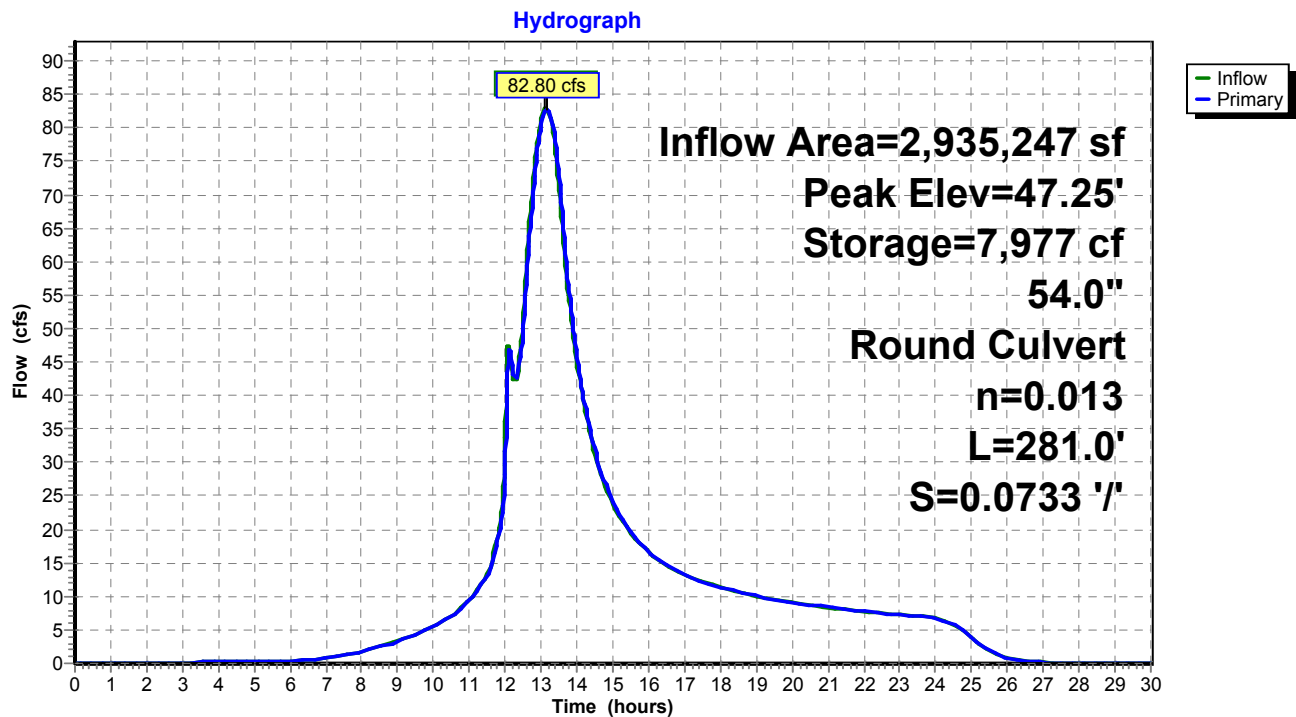
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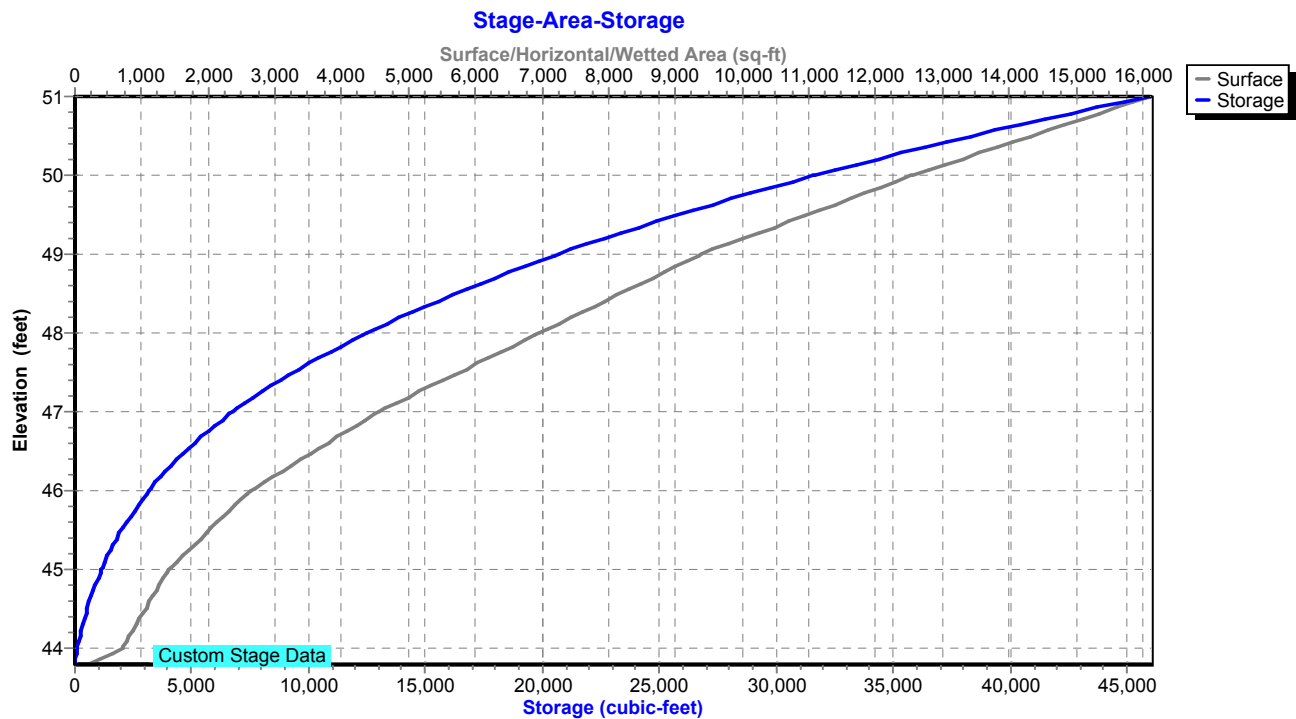
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Pond 17P: DET 12 Culvert



Pond 17P: DET 12 Culvert



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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 4.23" for 50 year event
 Inflow = 80.53 cfs @ 13.07 hrs, Volume= 935,560 cf
 Outflow = 79.72 cfs @ 13.13 hrs, Volume= 935,560 cf, Atten= 1%, Lag= 4.0 min
 Primary = 79.72 cfs @ 13.13 hrs, Volume= 935,560 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 68.99' @ 13.13 hrs Surf.Area= 1,997 sf Storage= 4,806 cf

Plug-Flow detention time= 0.3 min calculated for 935,249 cf (100% of inflow)
 Center-of-Mass det. time= 0.3 min (918.3 - 918.0)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' /' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=79.72 cfs @ 13.13 hrs HW=68.99' (Free Discharge)

↑**1=Culvert** (Inlet Controls 79.72 cfs @ 11.28 hrs)

Proposed Conditions

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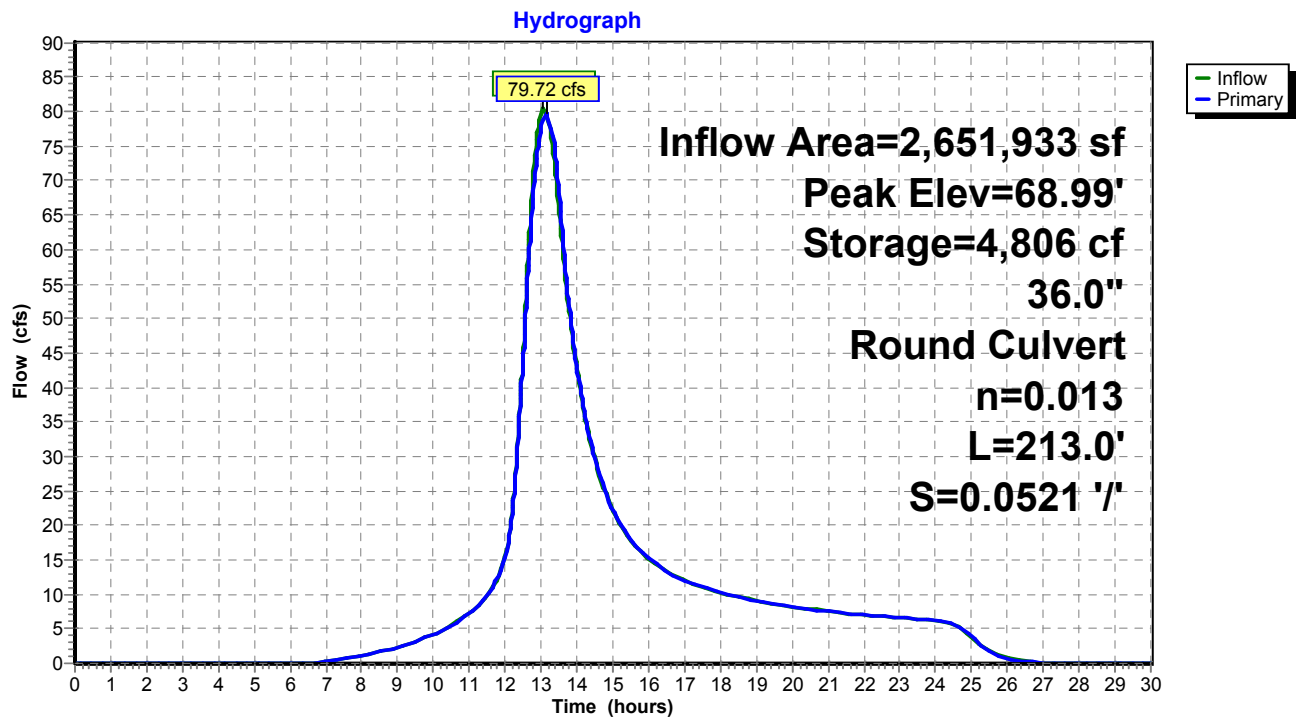
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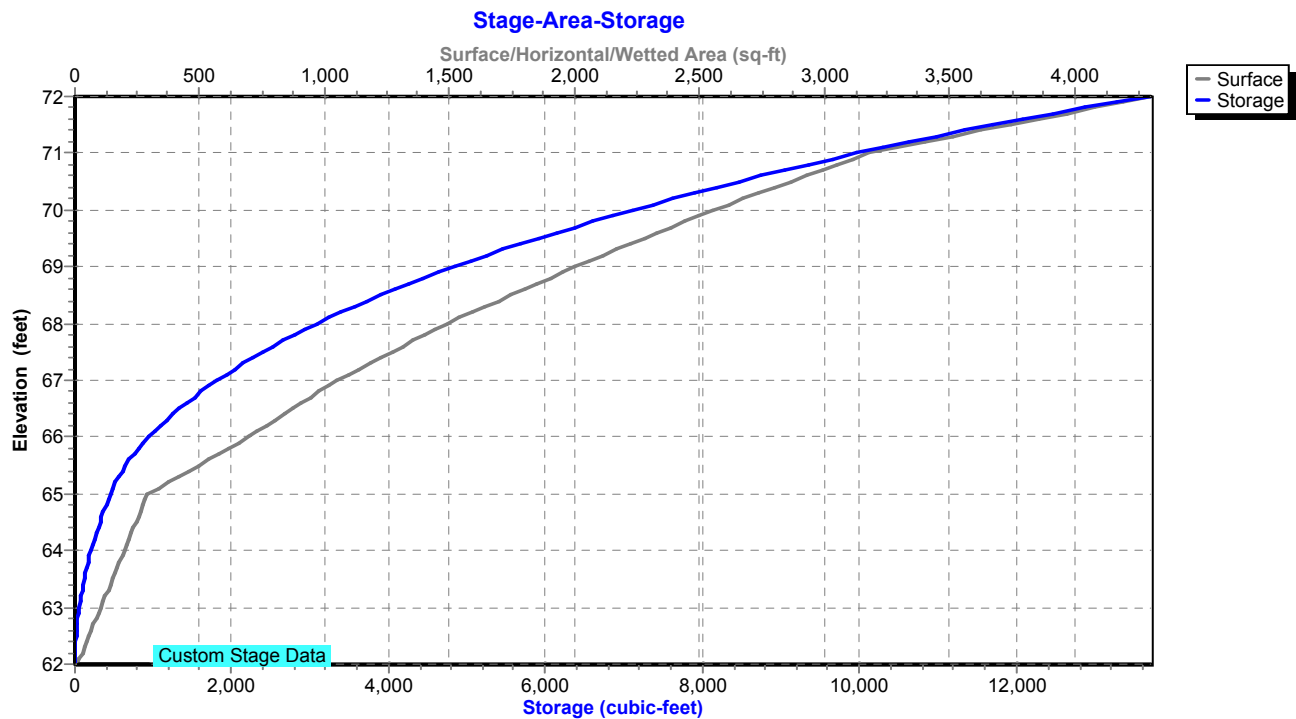
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Pond 18P: DET 4 Culvert



Pond 18P: DET 4 Culvert



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Summary for Pond 20P: ADS Stormtech (160LP)

Inflow Area = 4,966 sf, 80.70% Impervious, Inflow Depth = 6.63" for 50 year event
Inflow = 0.89 cfs @ 12.03 hrs, Volume= 2,744 cf
Outflow = 0.68 cfs @ 12.07 hrs, Volume= 2,674 cf, Atten= 24%, Lag= 2.5 min
Primary = 0.68 cfs @ 12.07 hrs, Volume= 2,674 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 74.91' @ 12.07 hrs Surf.Area= 365 sf Storage= 360 cf

Plug-Flow detention time= 43.4 min calculated for 2,674 cf (97% of inflow)
Center-of-Mass det. time= 27.0 min (794.4 - 767.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	227 cf	14.50'W x 23.83'L x 2.00'H Field A 691 cf Overall - 123 cf Embedded = 568 cf x 40.0% Voids
#2A	73.50'	123 cf	ADS_StormTech SC-160LP +Cap x 18 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 6 Rows
#3	73.50'	22 cf	5.00'D x 1.10'H OCS
		372 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	12.0" Round Culvert L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 73.00' S= 0.0313 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	74.40'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 2.75 2.75 Width (feet) 0.33 0.33 5.00
#3	Device 1	73.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.67 cfs @ 12.07 hrs HW=74.91' (Free Discharge)

- 1=Culvert (Passes 0.67 cfs of 3.61 cfs potential flow)
- 2=Custom Weir/Orifice (Weir Controls 0.39 cfs @ 2.34 fps)
- 3=Orifice/Grate (Orifice Controls 0.28 cfs @ 5.72 fps)

Proposed Conditions

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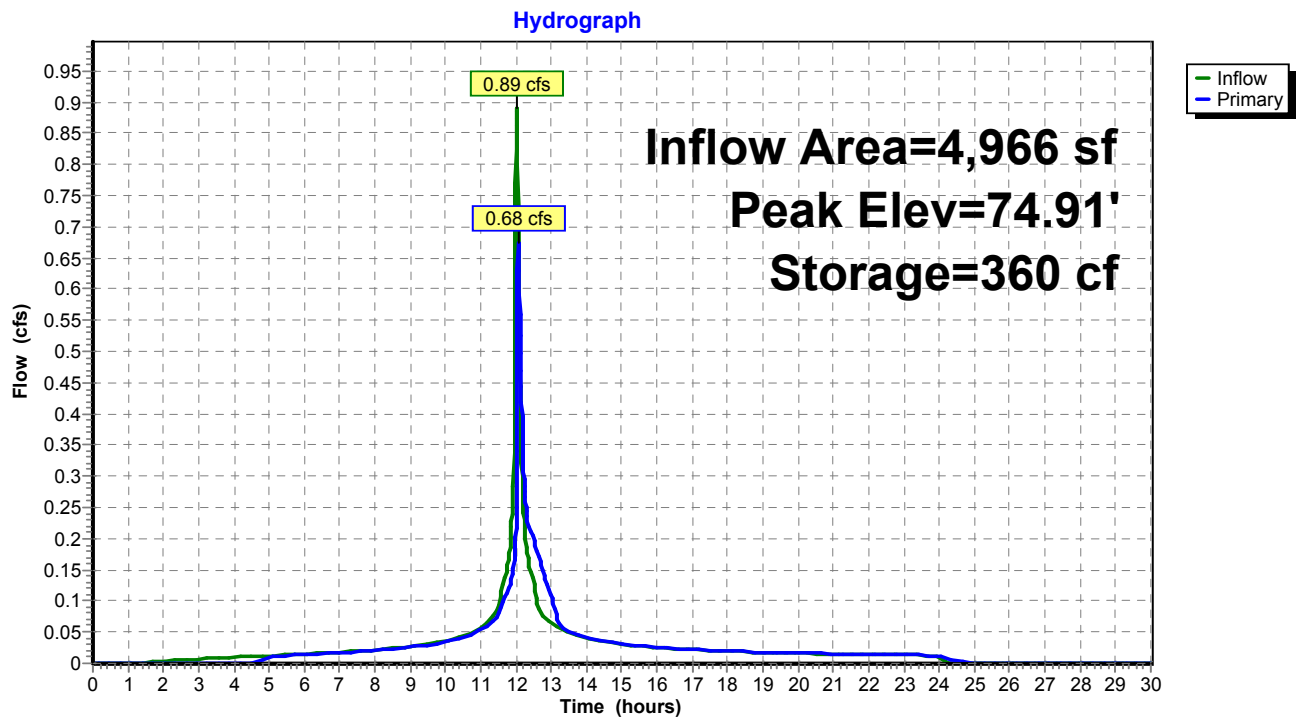
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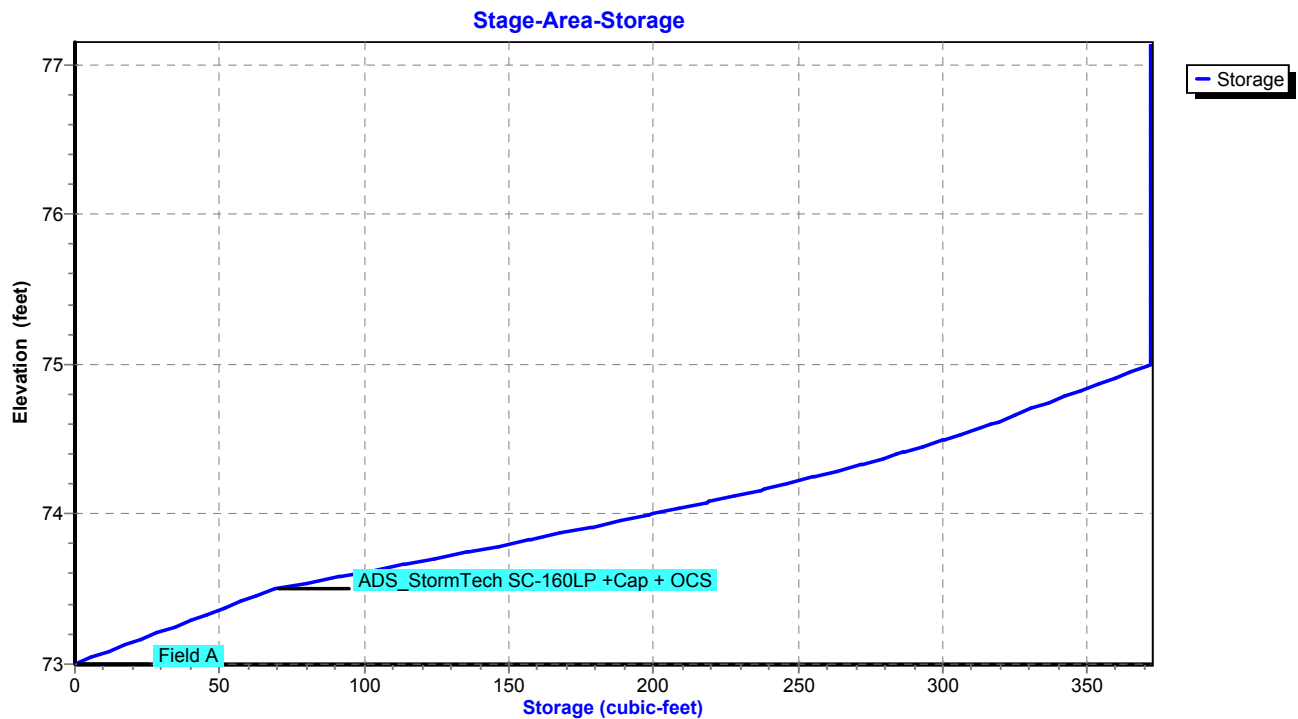
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Pond 20P: ADS Stormtech (160LP)



Pond 20P: ADS Stormtech (160LP)



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 4.23" for 50 year event
 Inflow = 23.87 cfs @ 12.52 hrs, Volume= 188,096 cf
 Outflow = 24.57 cfs @ 12.52 hrs, Volume= 188,096 cf, Atten= 0%, Lag= 0.0 min
 Primary = 24.57 cfs @ 12.52 hrs, Volume= 188,096 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 40.64' @ 12.52 hrs Surf.Area= 1,750 sf Storage= 1,591 cf

Plug-Flow detention time= 0.6 min calculated for 188,033 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (881.6 - 881.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=24.55 cfs @ 12.52 hrs HW=40.63' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 24.55 cfs @ 7.81 fps)

Proposed Conditions

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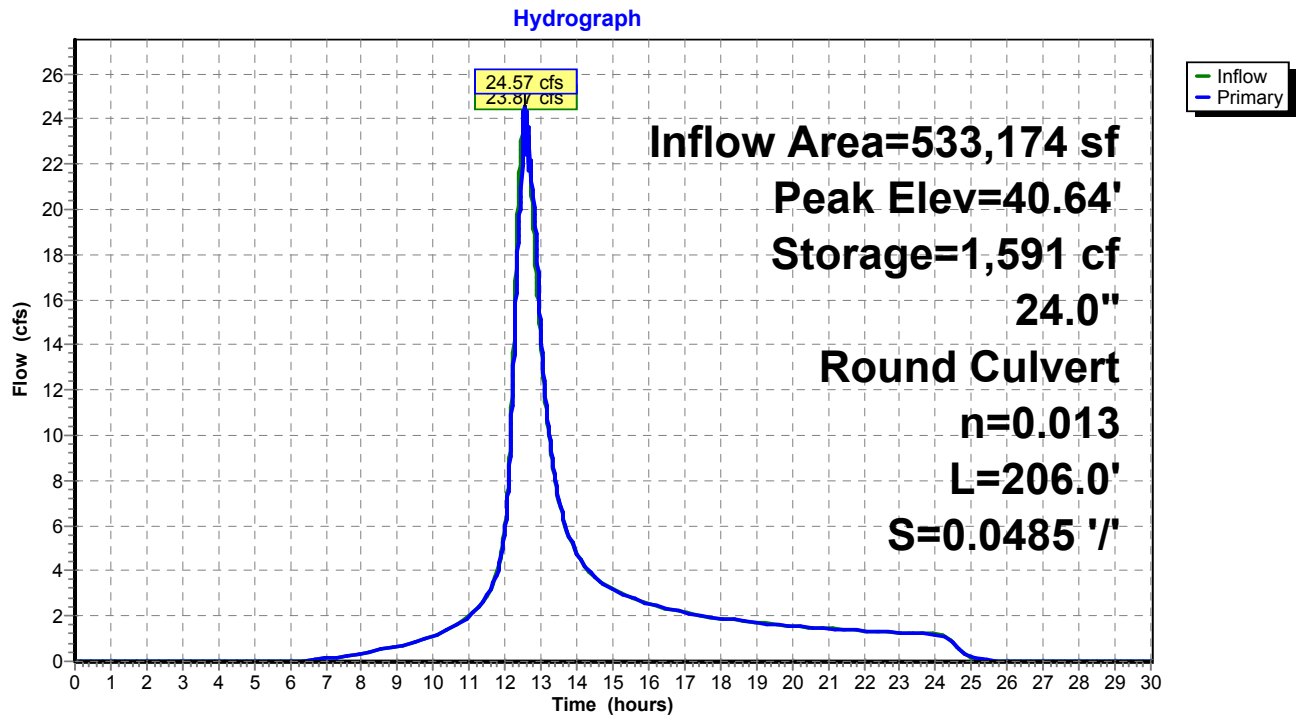
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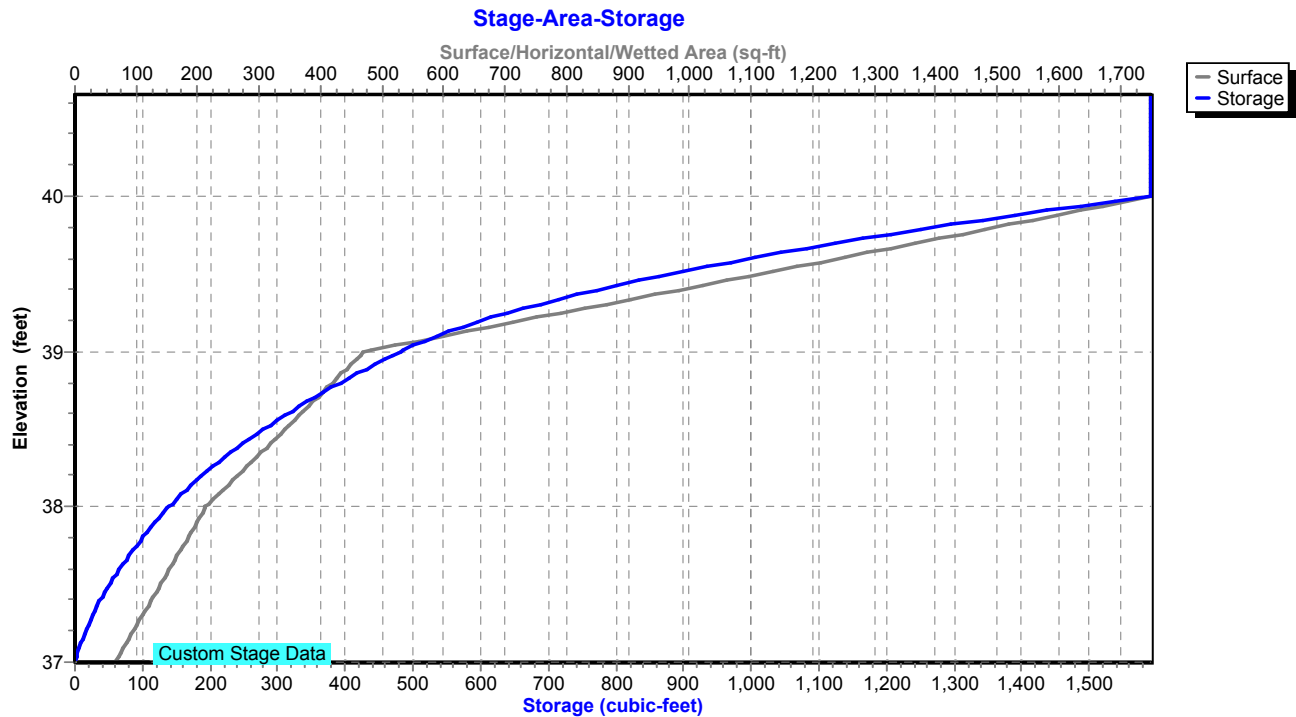
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 4.79" for 50 year event
 Inflow = 54.17 cfs @ 12.74 hrs, Volume= 514,811 cf
 Outflow = 43.66 cfs @ 13.07 hrs, Volume= 514,811 cf, Atten= 19%, Lag= 19.8 min
 Primary = 43.66 cfs @ 13.07 hrs, Volume= 514,811 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 39.46' @ 13.07 hrs Surf.Area= 18,393 sf Storage= 35,833 cf

Plug-Flow detention time= 6.4 min calculated for 514,811 cf (100% of inflow)
 Center-of-Mass det. time= 6.3 min (886.5 - 880.2)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 ' / Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=43.66 cfs @ 13.07 hrs HW=39.46' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 43.66 cfs @ 8.89 fps)

Proposed Conditions

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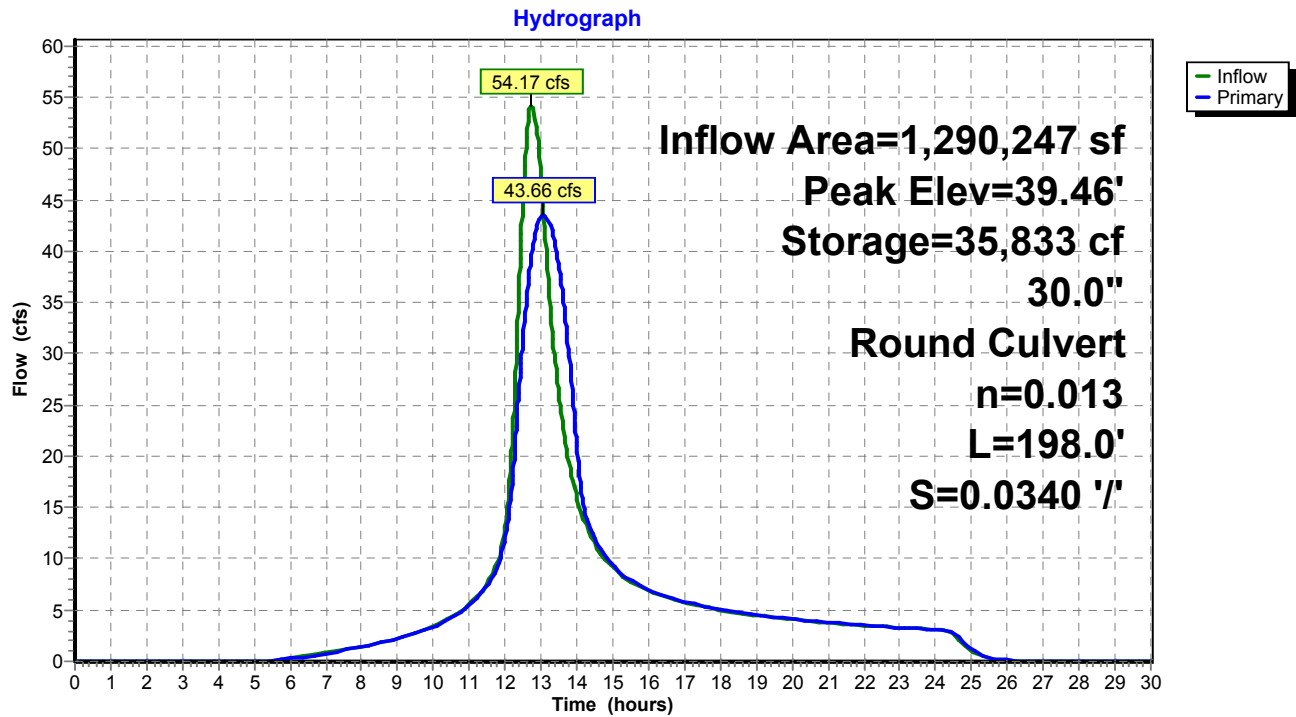
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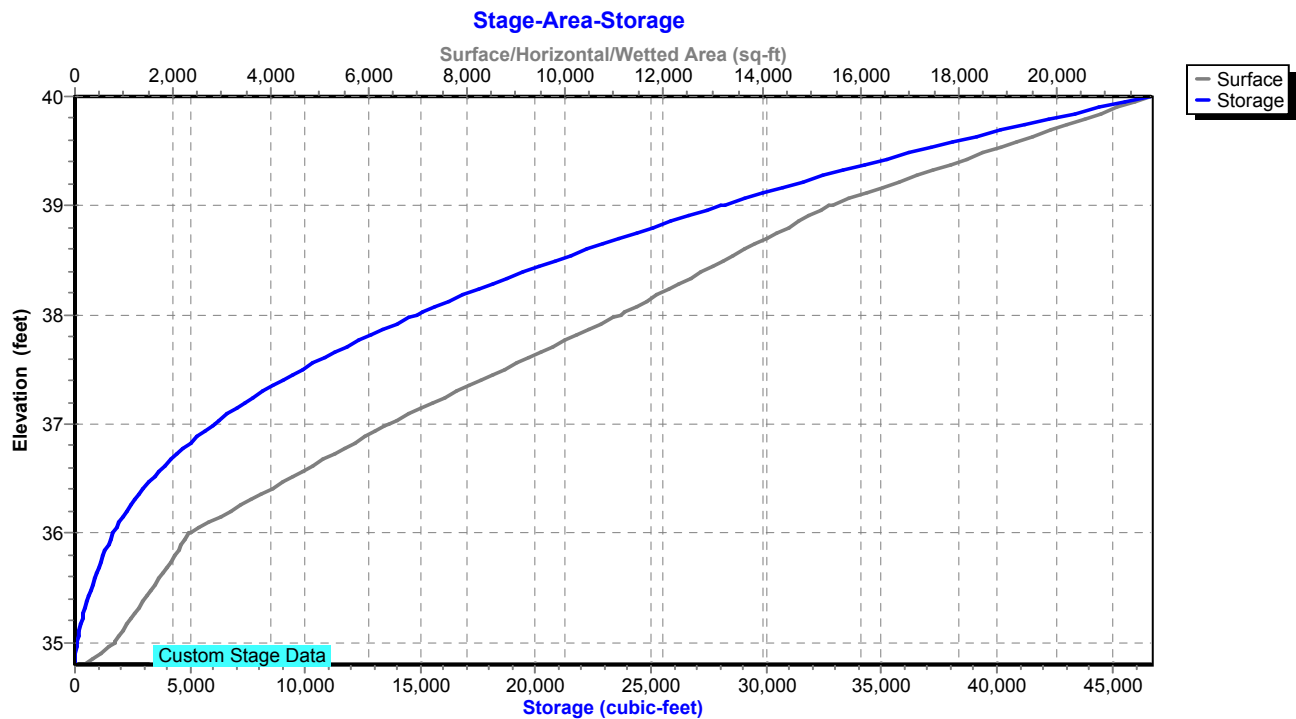
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Pond 22P: DET 2 Culvert



Pond 22P: DET 2 Culvert



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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 4.34" for 50 year event
 Inflow = 19.82 cfs @ 12.22 hrs, Volume= 99,961 cf
 Outflow = 18.82 cfs @ 12.27 hrs, Volume= 99,961 cf, Atten= 5%, Lag= 3.0 min
 Primary = 18.82 cfs @ 12.27 hrs, Volume= 99,961 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 45.05' @ 12.27 hrs Surf.Area= 1,681 sf Storage= 1,605 cf

Plug-Flow detention time= 0.7 min calculated for 99,928 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (856.2 - 855.5)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=18.82 cfs @ 12.27 hrs HW=45.05' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 18.82 cfs @ 5.99 fps)

Proposed Conditions

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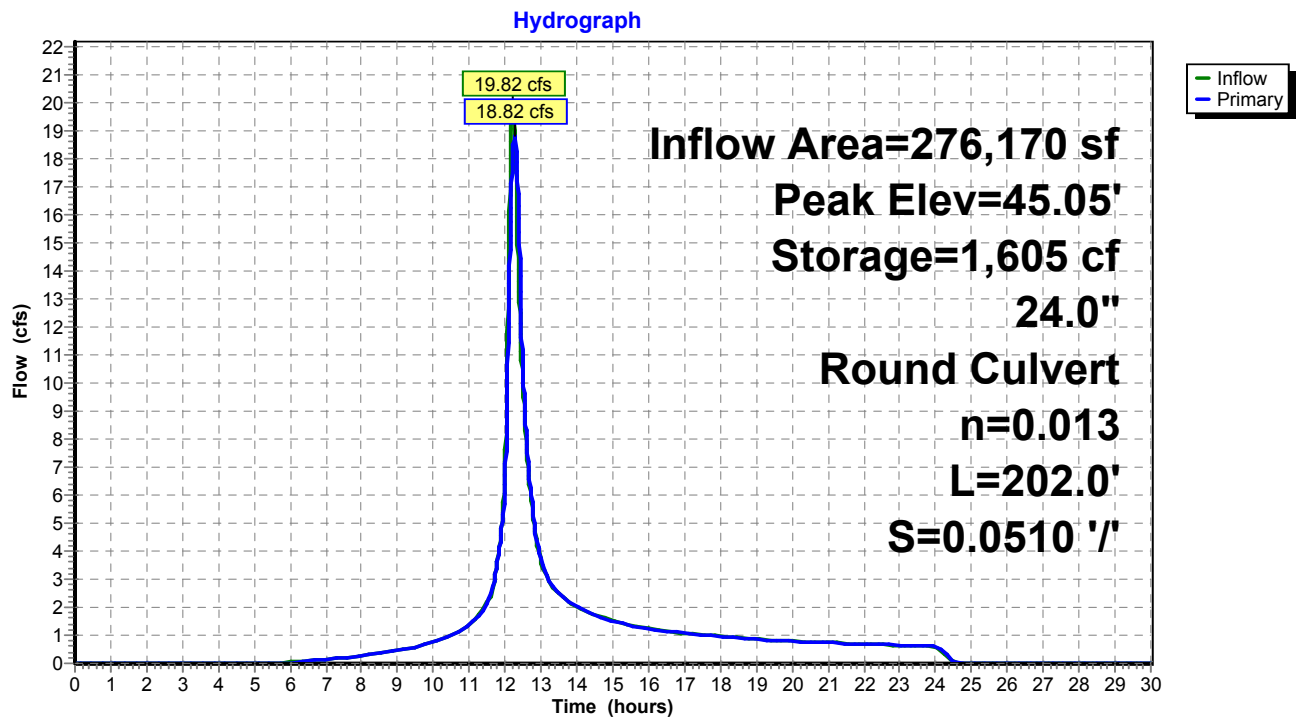
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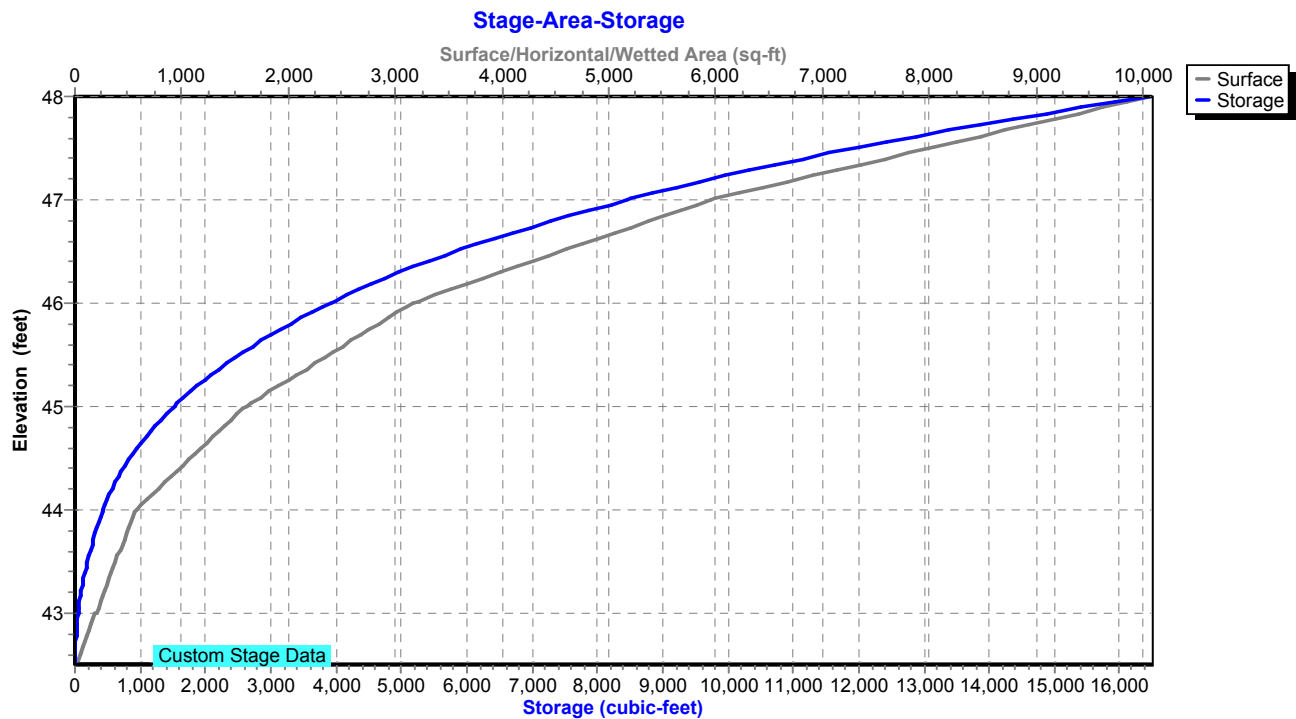
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Pond 23P: DET 3 Culvert



Pond 23P: DET 3 Culvert



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 43.13" for 50 year event
 Inflow = 283.04 cfs @ 12.24 hrs, Volume= 1,800,484 cf
 Outflow = 58.61 cfs @ 14.15 hrs, Volume= 1,800,528 cf, Atten= 79%, Lag= 114.6 min
 Primary = 58.61 cfs @ 14.15 hrs, Volume= 1,800,528 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 13.86' @ 14.15 hrs Storage= 1,067,096 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)

Center-of-Mass det. time= 207.1 min (1,001.0 - 793.9)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 '/' Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=58.61 cfs @ 14.15 hrs HW=13.86' (Free Discharge)↑**1=Culvert** (Barrel Controls 58.61 cfs @ 6.70 fps)

Proposed Conditions

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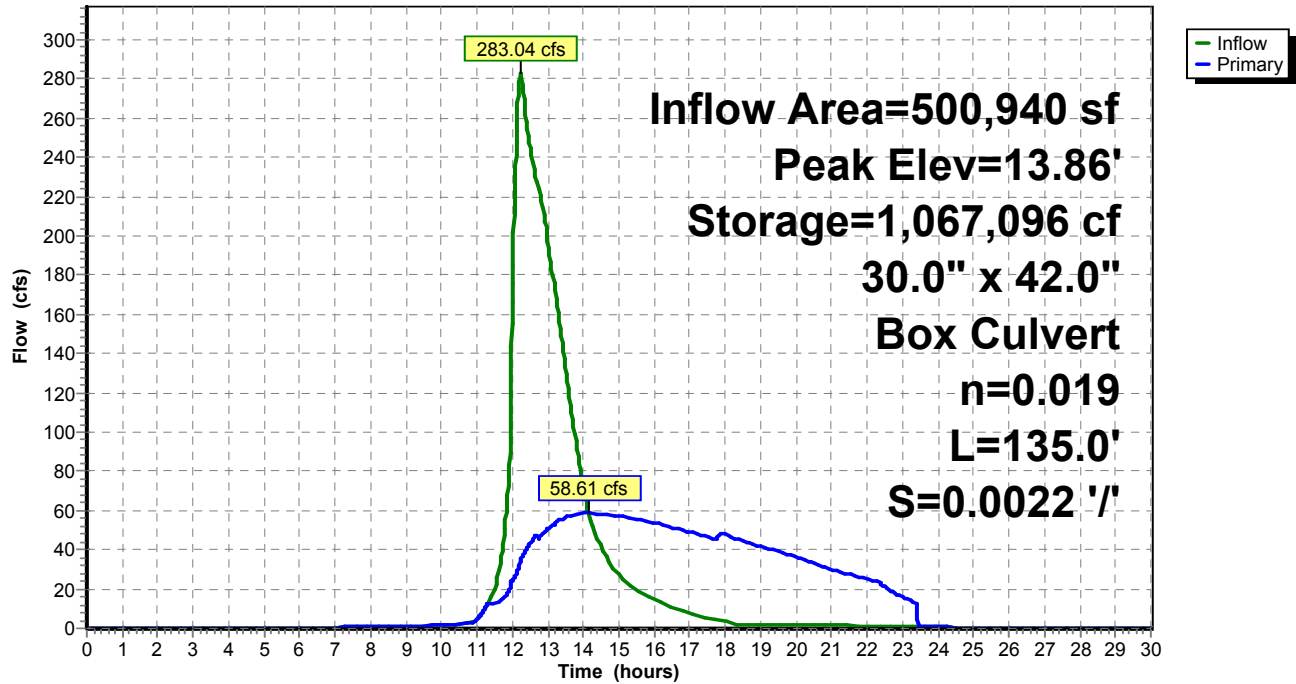
NORWALK 24-hr S1 50 year Rainfall=7.34"

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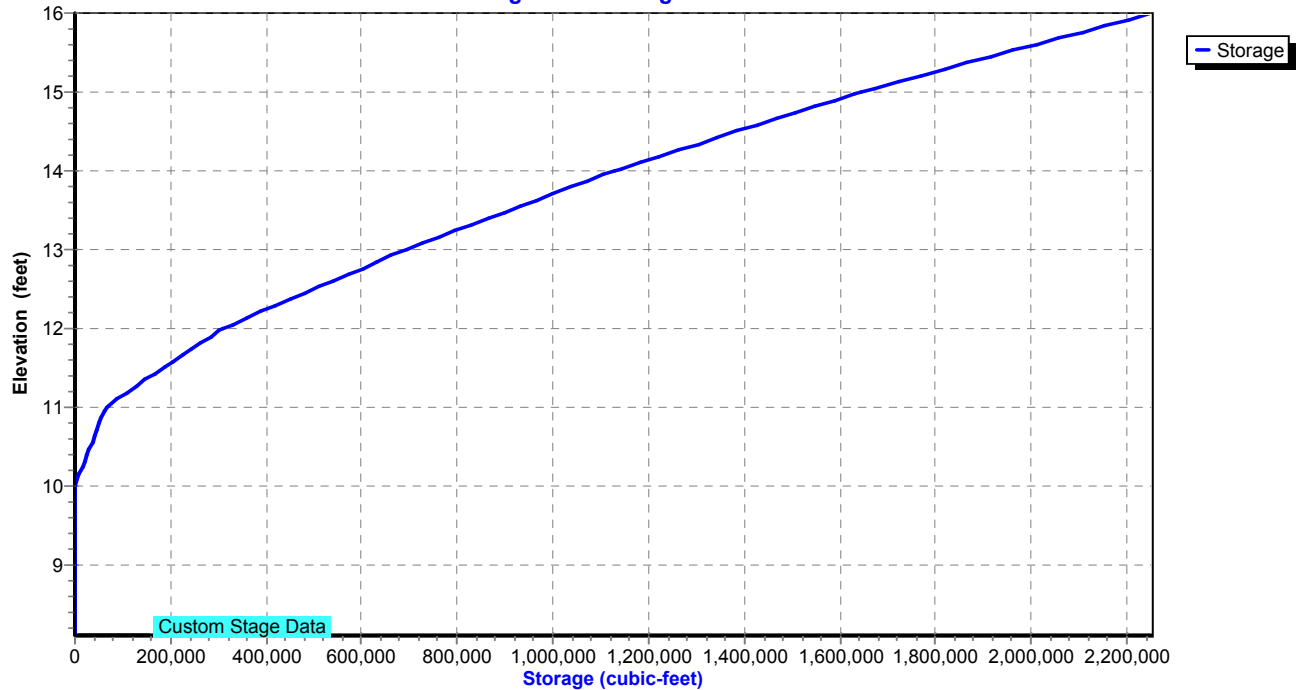
Pond 24P: RR Culvert 3

Hydrograph



Pond 24P: RR Culvert 3

Stage-Area-Storage



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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 4.52" for 50 year event
 Inflow = 43.85 cfs @ 12.23 hrs, Volume= 292,573 cf
 Outflow = 43.84 cfs @ 12.23 hrs, Volume= 292,555 cf, Atten= 0%, Lag= 0.1 min
 Primary = 43.84 cfs @ 12.23 hrs, Volume= 292,555 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 20.11' @ 12.23 hrs Surf.Area= 2,278 sf Storage= 2,642 cf

Plug-Flow detention time= 0.8 min calculated for 292,555 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (881.6 - 880.9)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' S= 0.0691 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=43.44 cfs @ 12.23 hrs HW=20.11' (Free Discharge)

1=Culvert (Inlet Controls 12.38 cfs @ 10.08 fps)
 2=Custom Weir/Orifice (Weir Controls 31.06 cfs @ 1.39 fps)

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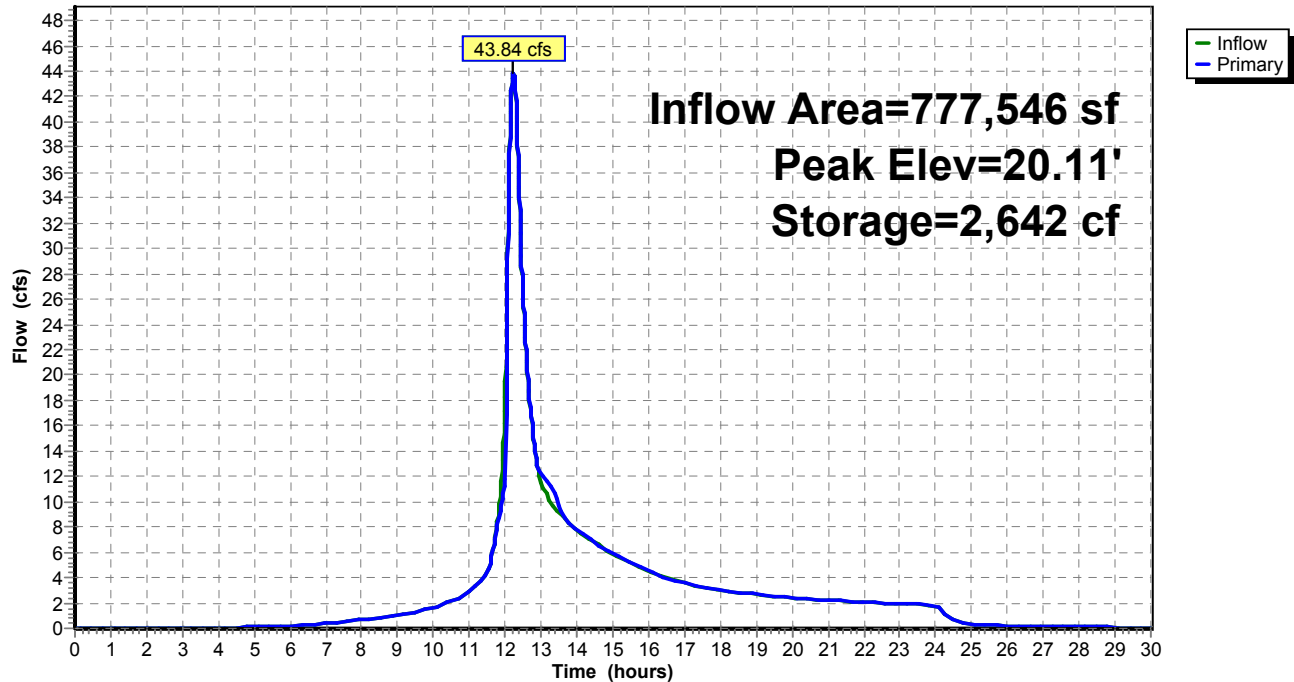
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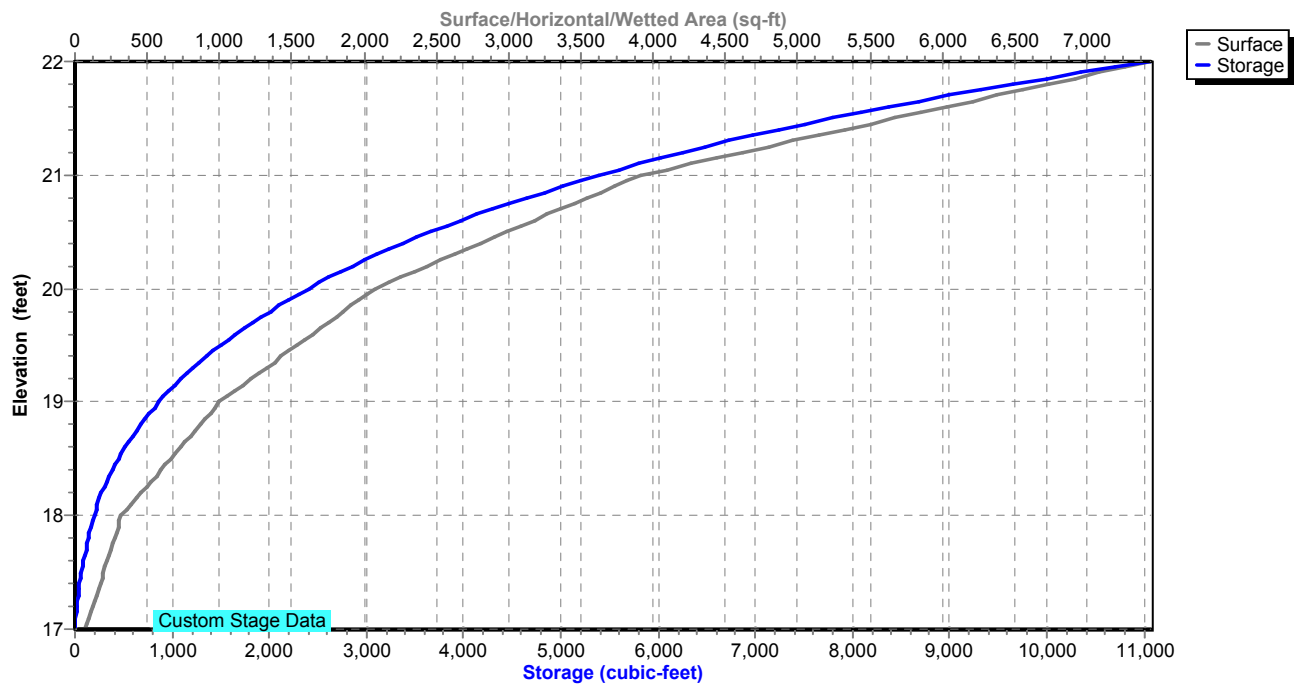
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 4.77" for 50 year event
 Inflow = 71.25 cfs @ 12.60 hrs, Volume= 876,625 cf
 Outflow = 70.56 cfs @ 12.62 hrs, Volume= 876,625 cf, Atten= 1%, Lag= 1.0 min
 Primary = 70.56 cfs @ 12.62 hrs, Volume= 876,625 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 18.81' @ 12.62 hrs Surf.Area= 11,393 sf Storage= 11,088 cf

Plug-Flow detention time= 3.9 min calculated for 876,625 cf (100% of inflow)
 Center-of-Mass det. time= 3.9 min (874.5 - 870.6)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=70.35 cfs @ 12.62 hrs HW=18.81' (Free Discharge)

1=Culvert (Inlet Controls 14.14 cfs @ 8.00 fps)

2=Custom Weir/Orifice (Weir Controls 56.20 cfs @ 2.14 fps)

Proposed Conditions

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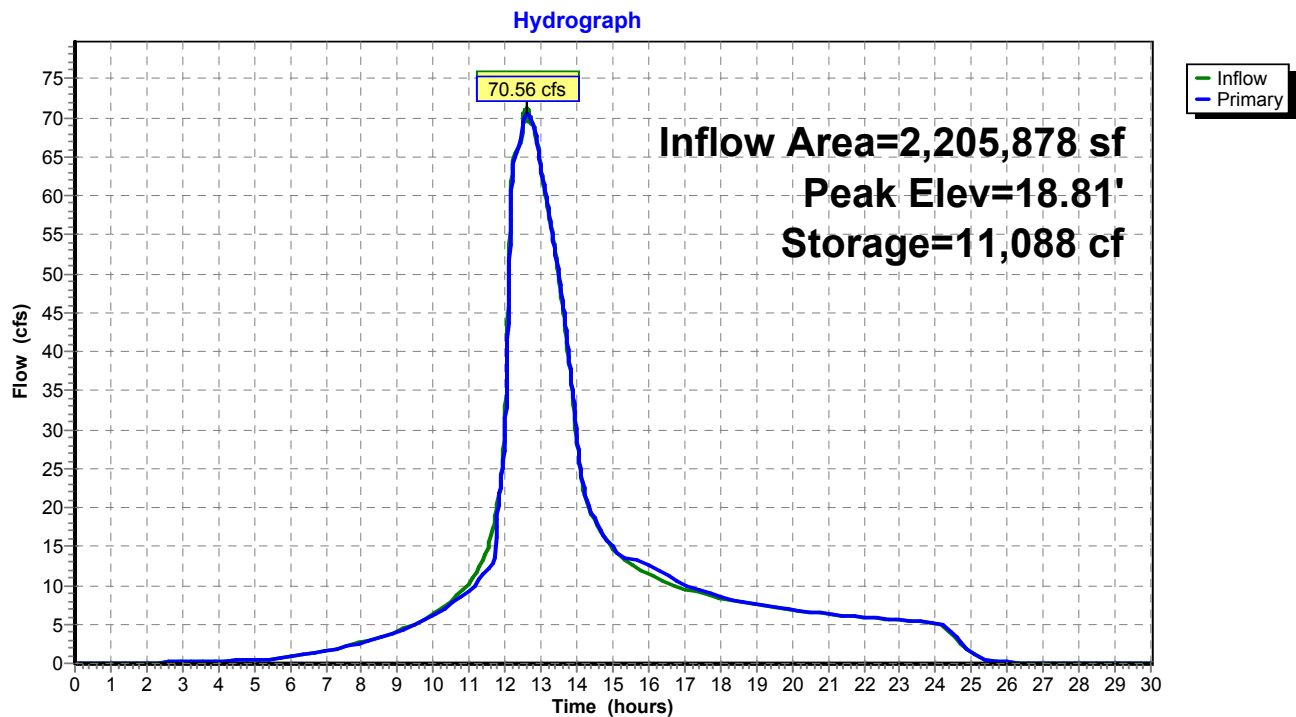
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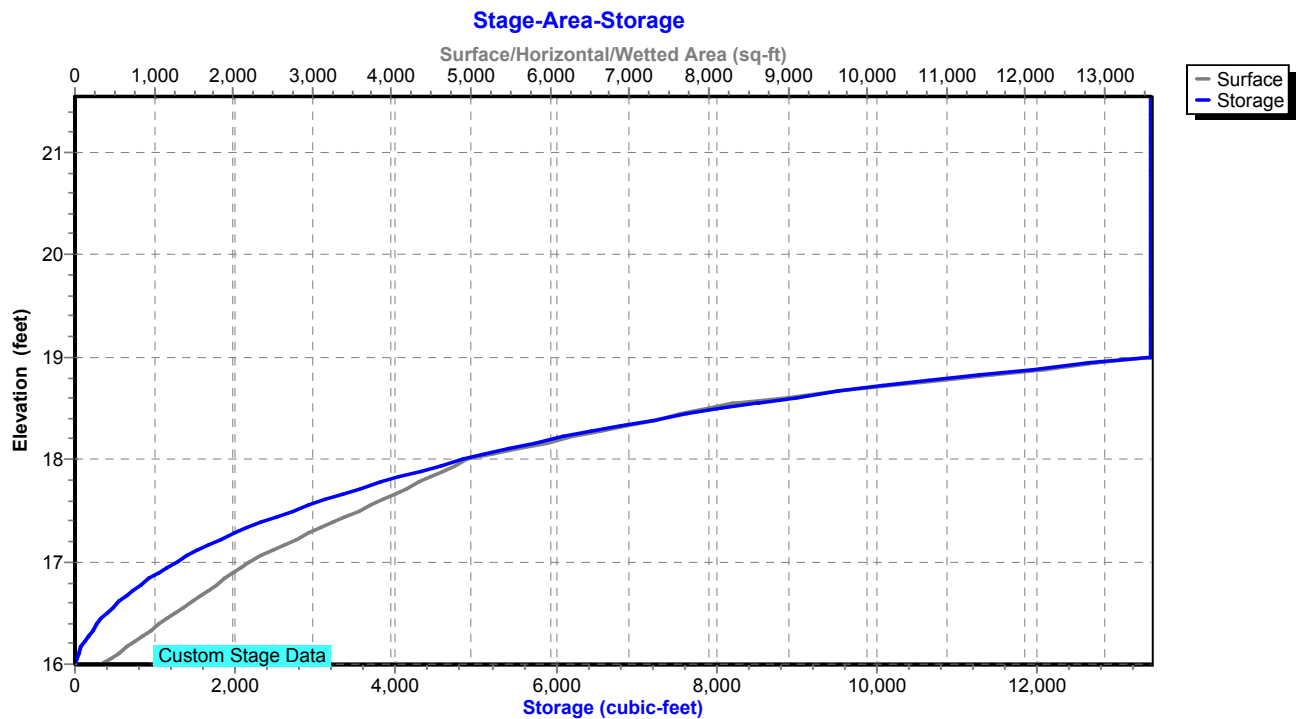
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Pond 27P: DET 17 Culvert



Pond 27P: DET 17 Culvert



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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 5.70" for 50 year event
Inflow = 31.87 cfs @ 12.04 hrs, Volume= 117,693 cf
Outflow = 7.75 cfs @ 12.38 hrs, Volume= 92,221 cf, Atten= 76%, Lag= 20.2 min
Primary = 7.75 cfs @ 12.38 hrs, Volume= 92,221 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 28.67' @ 12.38 hrs Surf.Area= 17,023 sf Storage= 55,735 cf

Plug-Flow detention time= 256.6 min calculated for 92,221 cf (78% of inflow)
Center-of-Mass det. time= 157.4 min (954.9 - 797.5)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.73 cfs @ 12.38 hrs HW=28.67' (Free Discharge)

1=Culvert (Passes 7.73 cfs of 16.86 cfs potential flow)
2=Orifice/Grate (Orifice Controls 4.89 cfs @ 6.23 fps)
3=Orifice/Grate (Weir Controls 2.84 cfs @ 1.36 fps)

Proposed Conditions

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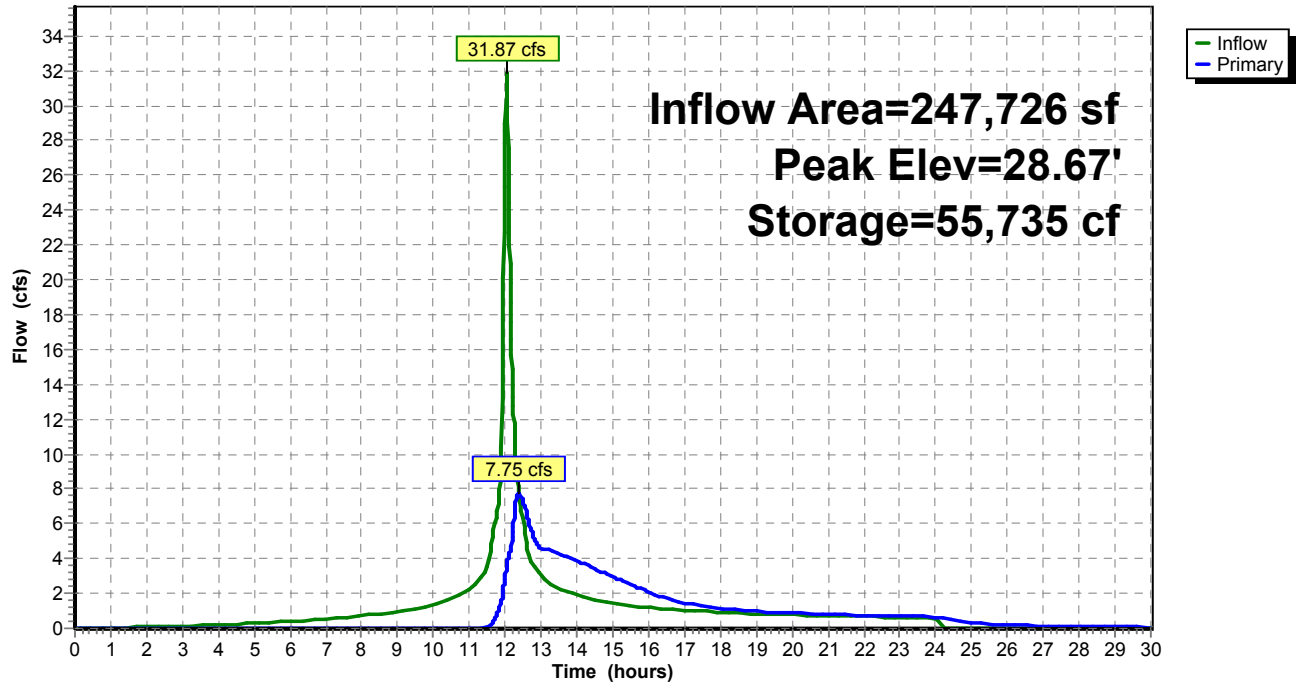
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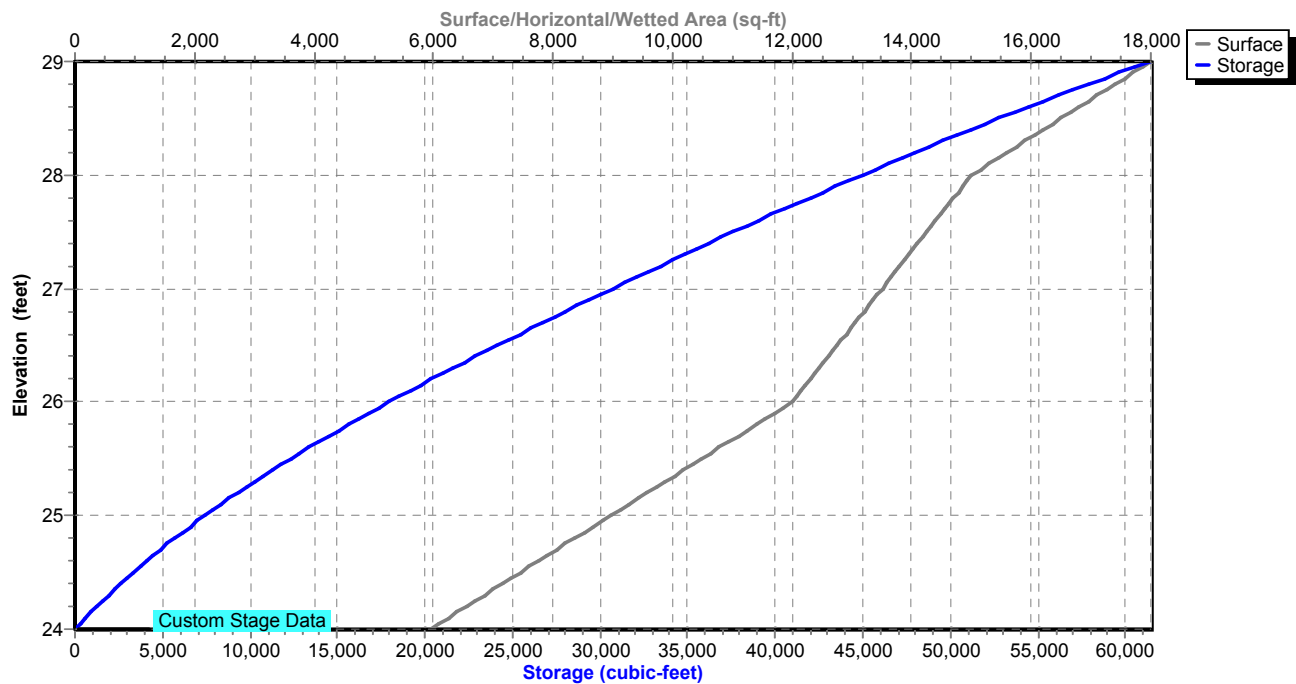
Pond 50P: DET BASIN #1

Hydrograph



Pond 50P: DET BASIN #1

Stage-Area-Storage



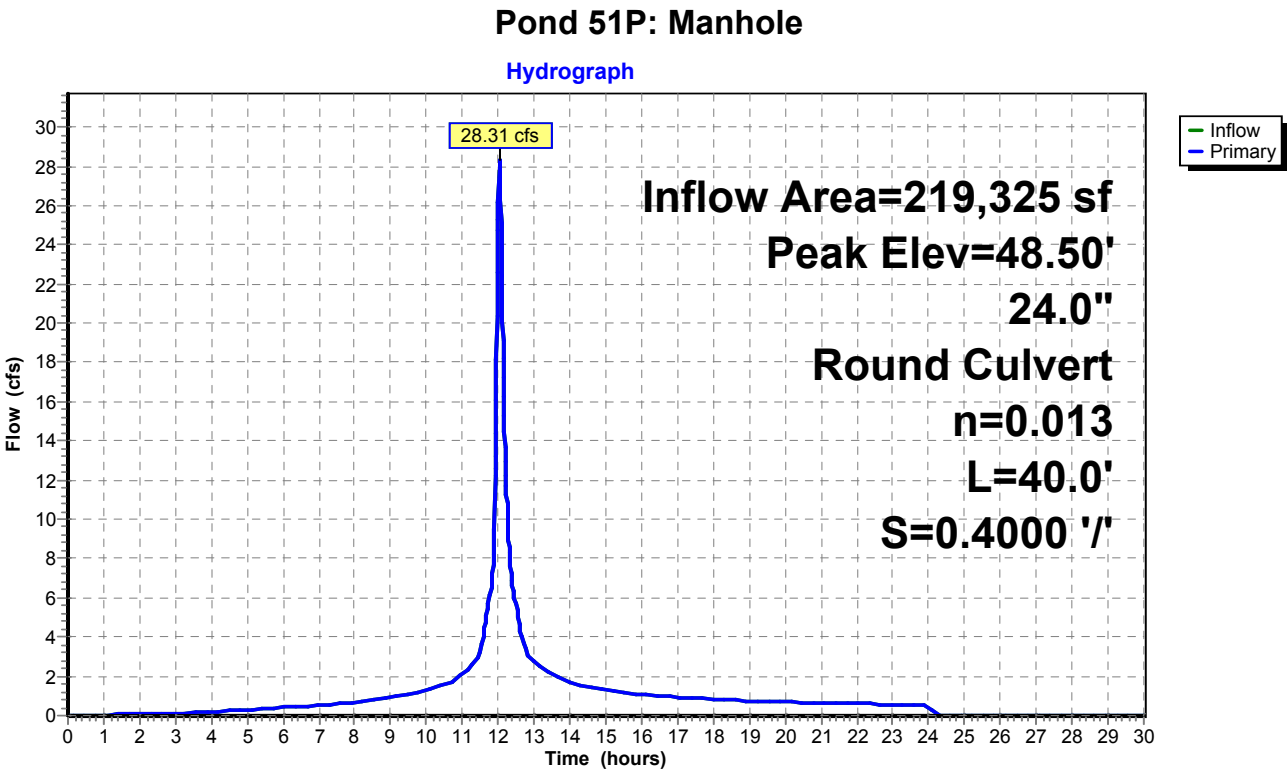
Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 5.88" for 50 year event
Inflow = 28.31 cfs @ 12.04 hrs, Volume= 107,413 cf
Outflow = 28.31 cfs @ 12.04 hrs, Volume= 107,413 cf, Atten= 0%, Lag= 0.0 min
Primary = 28.31 cfs @ 12.04 hrs, Volume= 107,413 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.50' @ 12.04 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=28.28 cfs @ 12.04 hrs HW=48.49' (Free Discharge)
1=Culvert (Inlet Controls 28.28 cfs @ 9.00 fps)



Proposed Conditions

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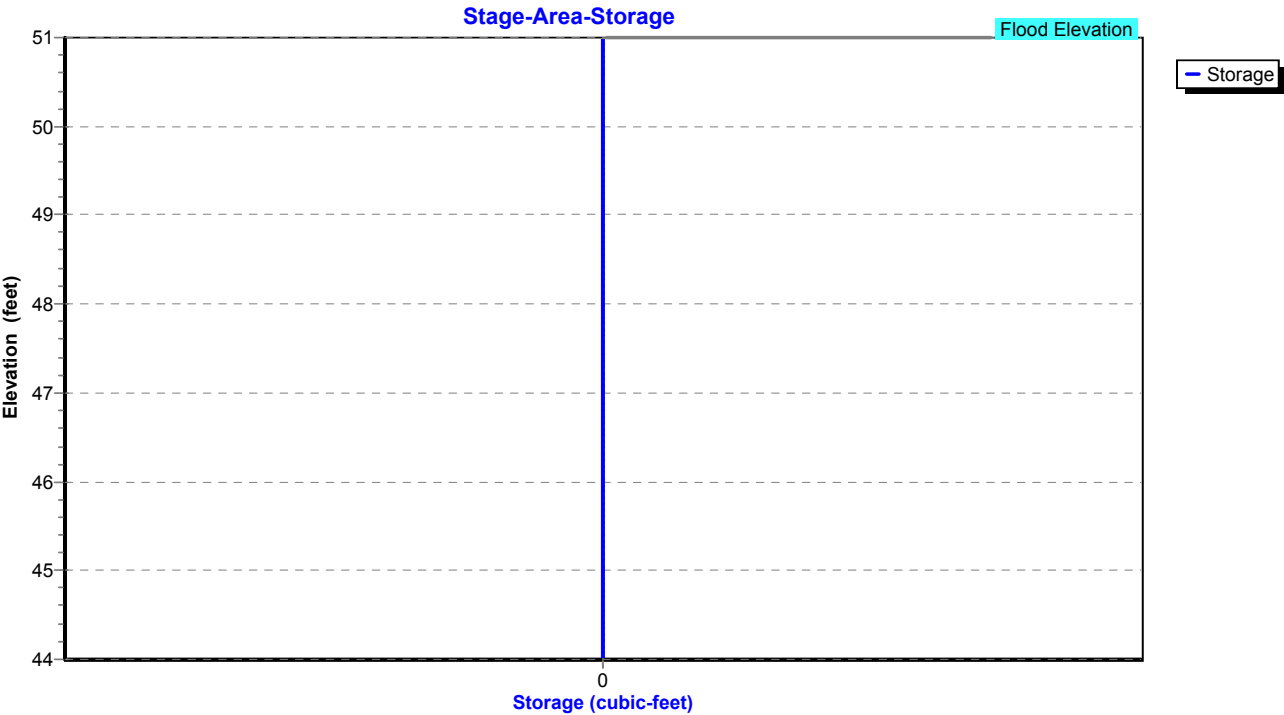
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Pond 51P: Manhole



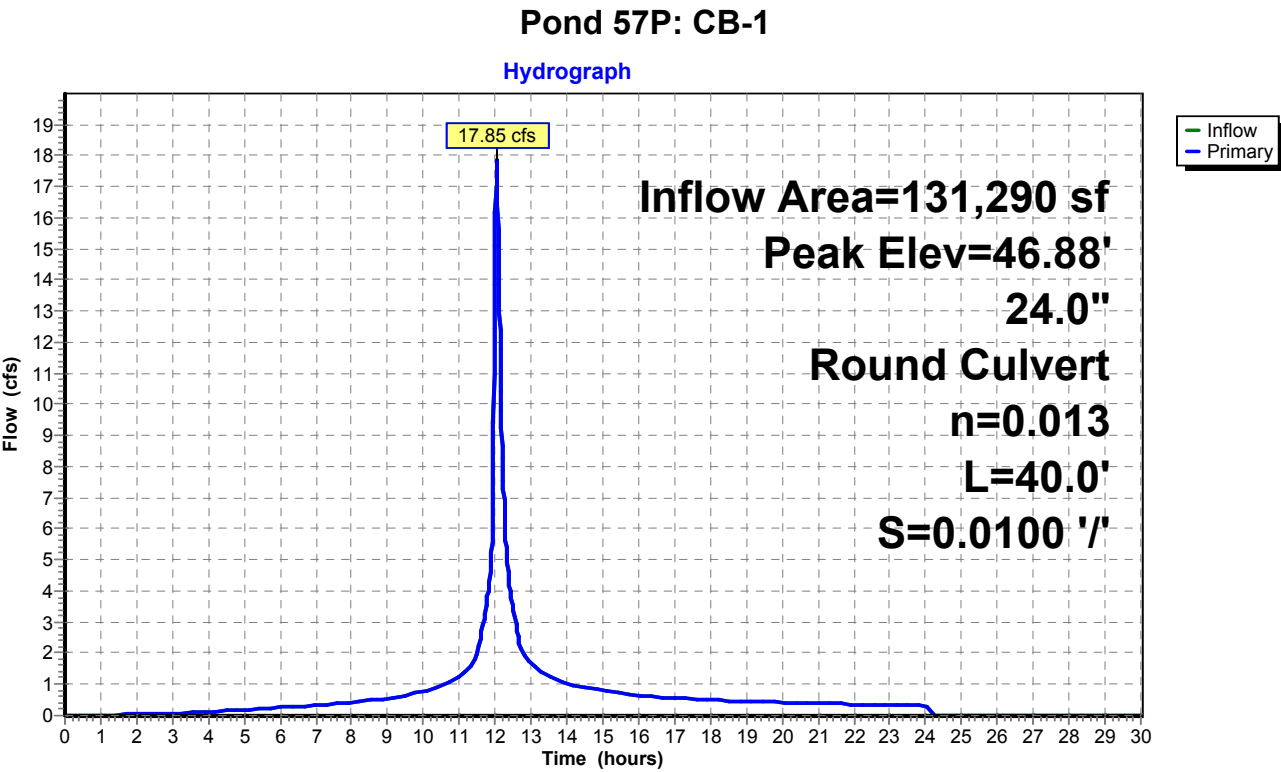
Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 5.95" for 50 year event
Inflow = 17.85 cfs @ 12.04 hrs, Volume= 65,130 cf
Outflow = 17.85 cfs @ 12.04 hrs, Volume= 65,130 cf, Atten= 0%, Lag= 0.0 min
Primary = 17.85 cfs @ 12.04 hrs, Volume= 65,130 cf
Routed to Pond 51P : Manhole

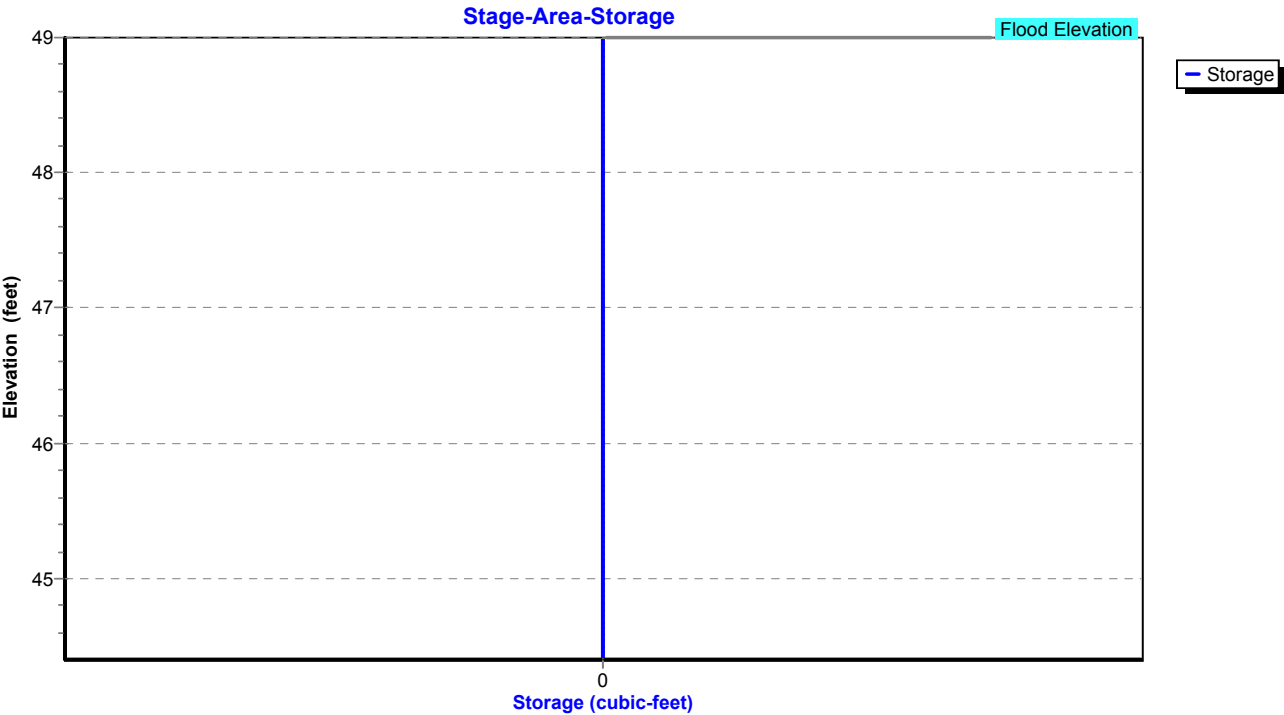
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.88' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=17.84 cfs @ 12.04 hrs HW=46.87' (Free Discharge)
1=Culvert (Barrel Controls 17.84 cfs @ 5.87 fps)



Pond 57P: CB-1



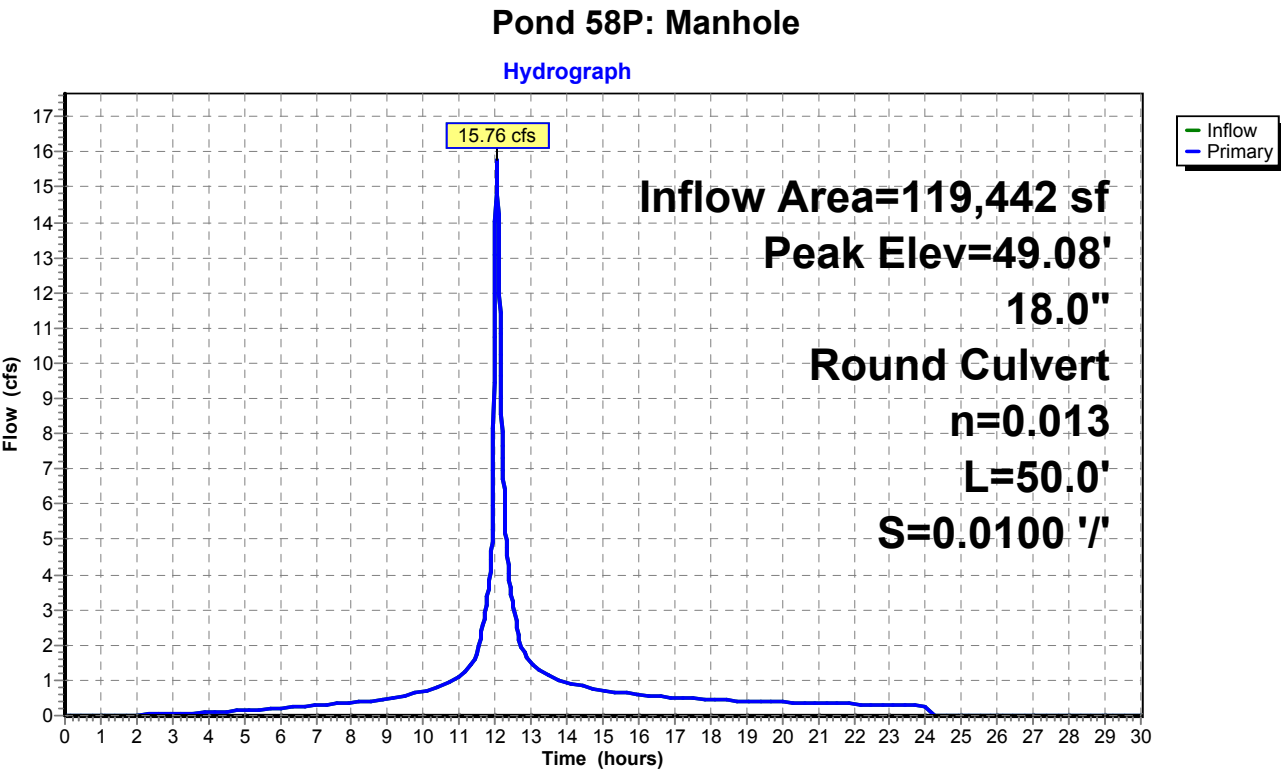
Summary for Pond 58P: Manhole

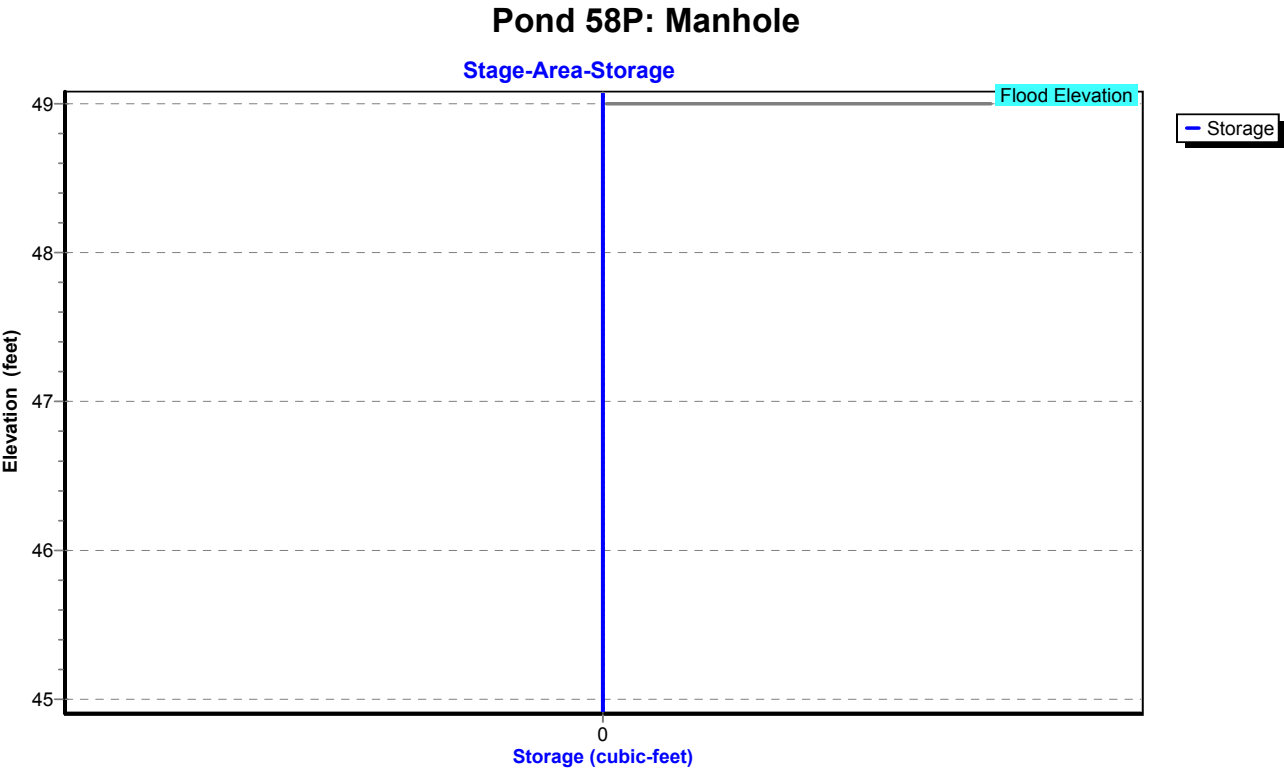
Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 5.84" for 50 year event
Inflow = 15.76 cfs @ 12.04 hrs, Volume= 58,115 cf
Outflow = 15.76 cfs @ 12.04 hrs, Volume= 58,115 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.76 cfs @ 12.04 hrs, Volume= 58,115 cf
Routed to Pond 57P : CB-1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.08' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=15.73 cfs @ 12.04 hrs HW=49.07' (Free Discharge)
1=Culvert (Inlet Controls 15.73 cfs @ 8.90 fps)





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Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 6.04" for 50 year event
Inflow = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf
Outflow = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.46 cfs @ 12.03 hrs, Volume= 10,224 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 46.74' @ 12.03 hrs

Flood Elev= 49.50'

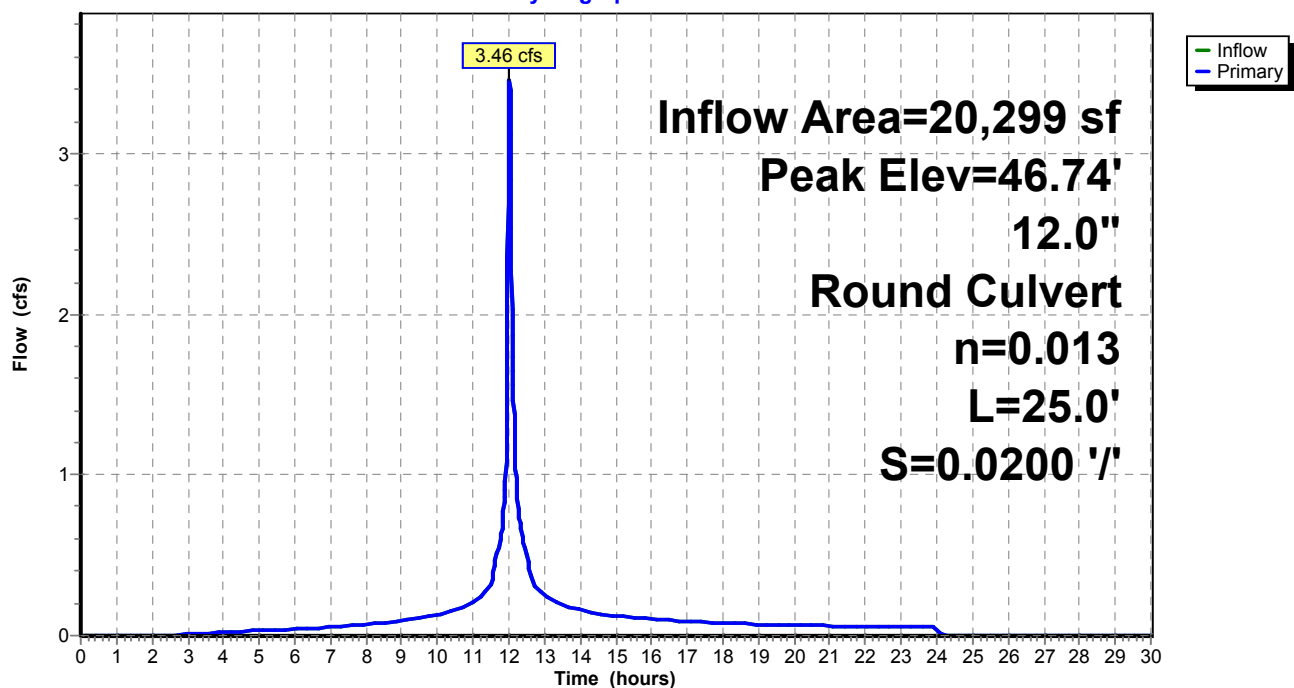
Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.44 cfs @ 12.03 hrs HW=46.73' (Free Discharge)

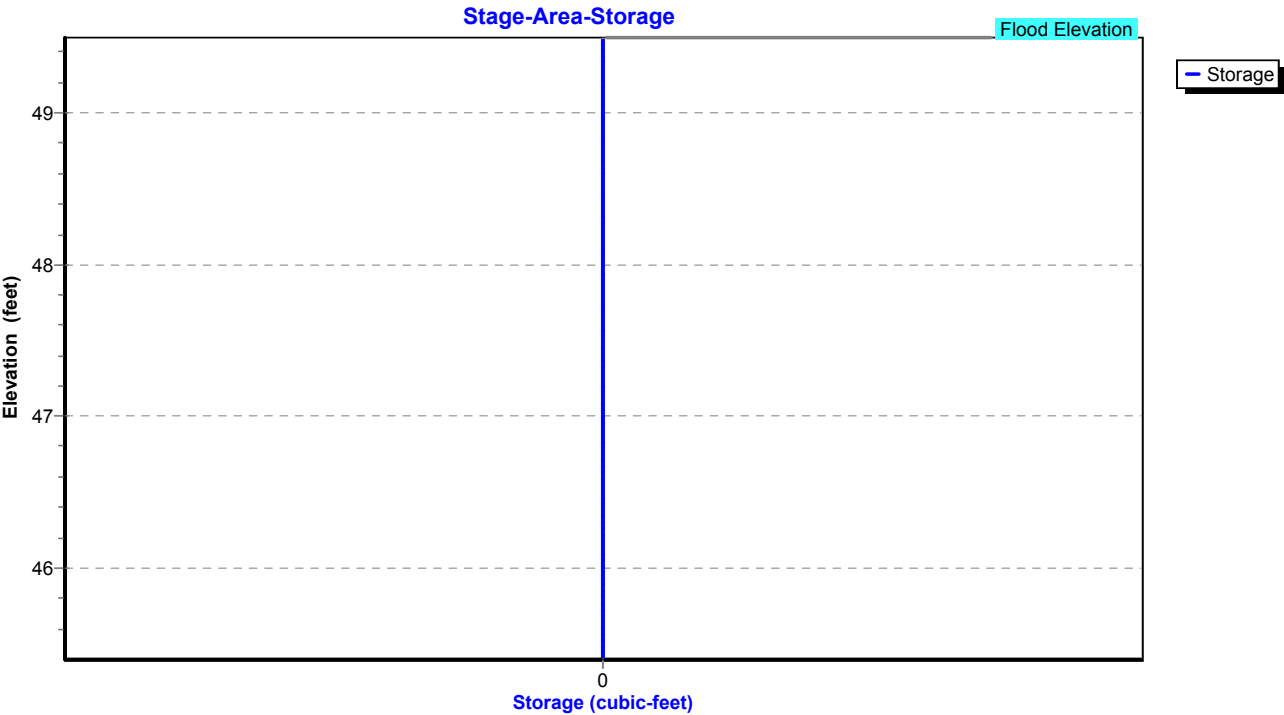
↑1=Culvert (Inlet Controls 3.44 cfs @ 4.39 fps)

Pond 59P: CB-7

Hydrograph



Pond 59P: CB-7



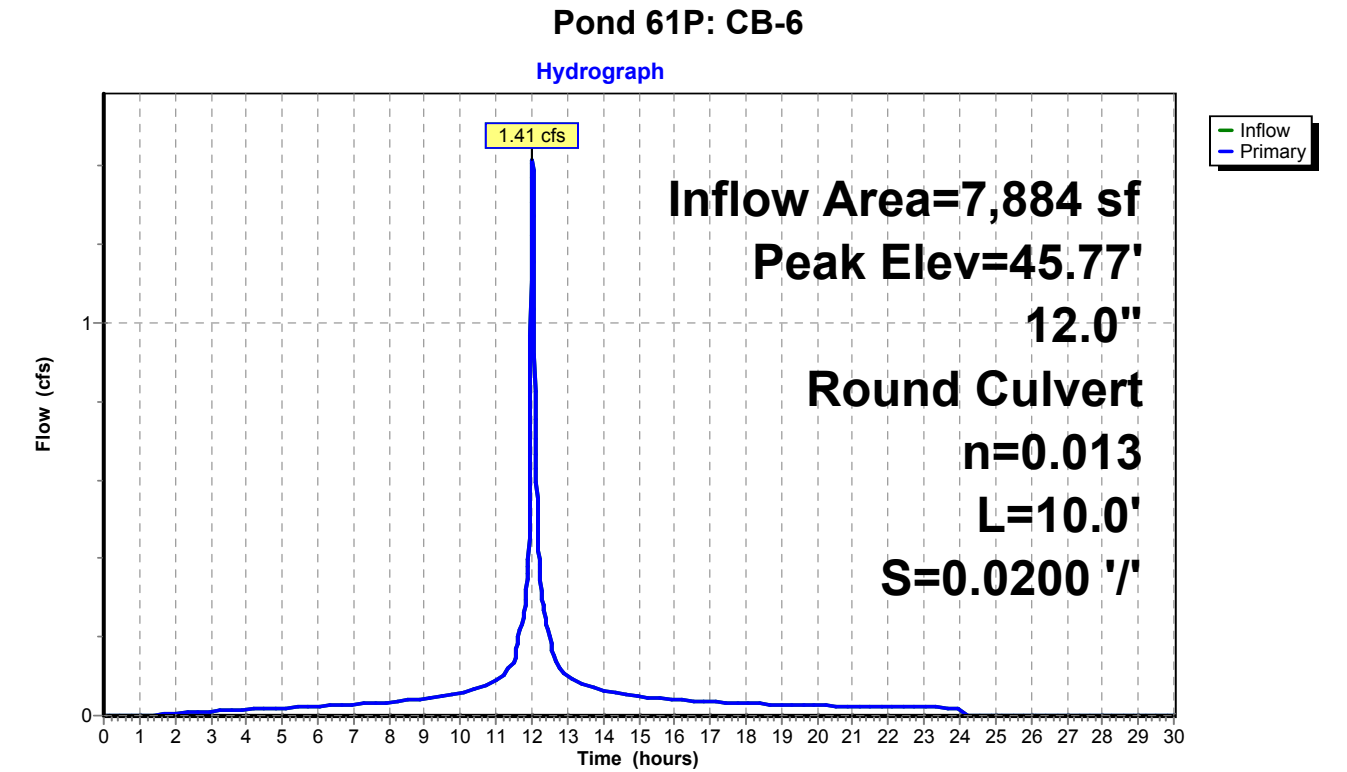
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 6.63" for 50 year event
Inflow = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf
Outflow = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.41 cfs @ 12.03 hrs, Volume= 4,356 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.77' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.41 cfs @ 12.03 hrs HW=45.76' (Free Discharge)
1=Culvert (Barrel Controls 1.41 cfs @ 3.60 fps)



Proposed Conditions

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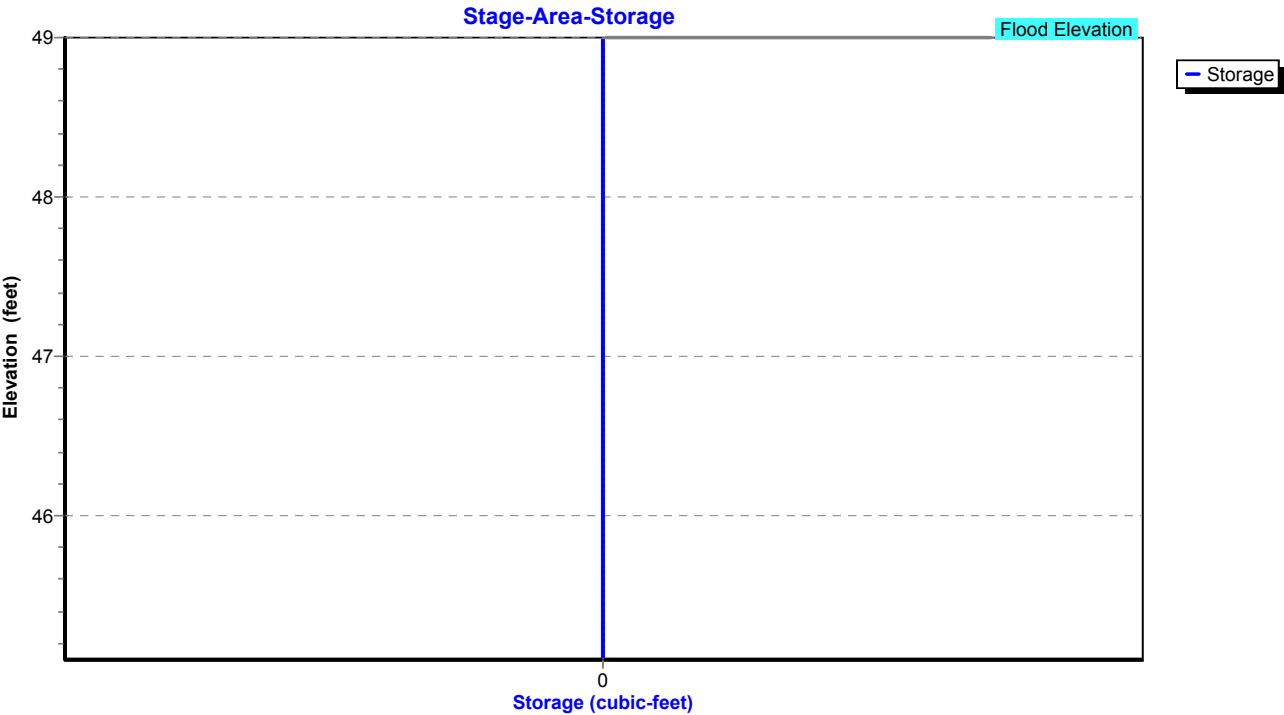
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Pond 61P: CB-6



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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 5.72" for 50 year event
Inflow = 11.31 cfs @ 12.06 hrs, Volume= 43,535 cf
Outflow = 11.31 cfs @ 12.06 hrs, Volume= 43,535 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.31 cfs @ 12.06 hrs, Volume= 43,535 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.13' @ 12.06 hrs

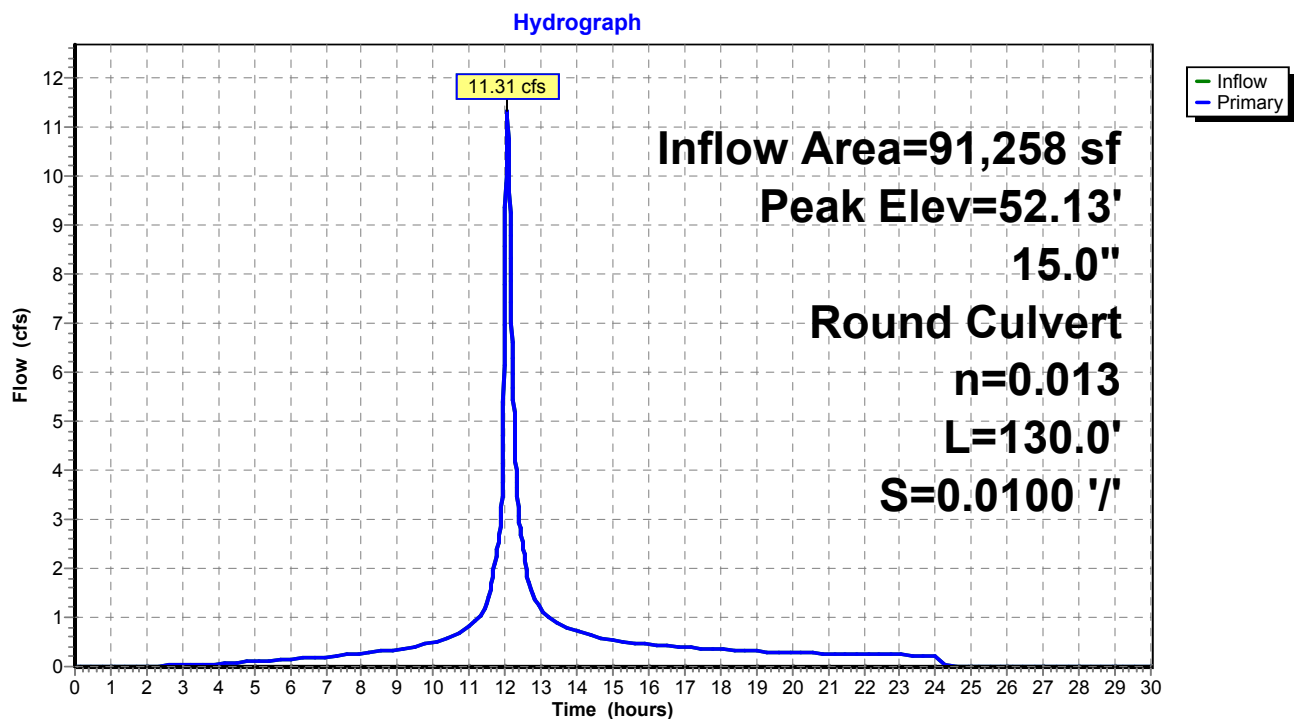
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=11.30 cfs @ 12.06 hrs HW=52.12' (Free Discharge)

↑1=Culvert (Barrel Controls 11.30 cfs @ 9.21 fps)

Pond 63P: Manhole



Proposed Conditions

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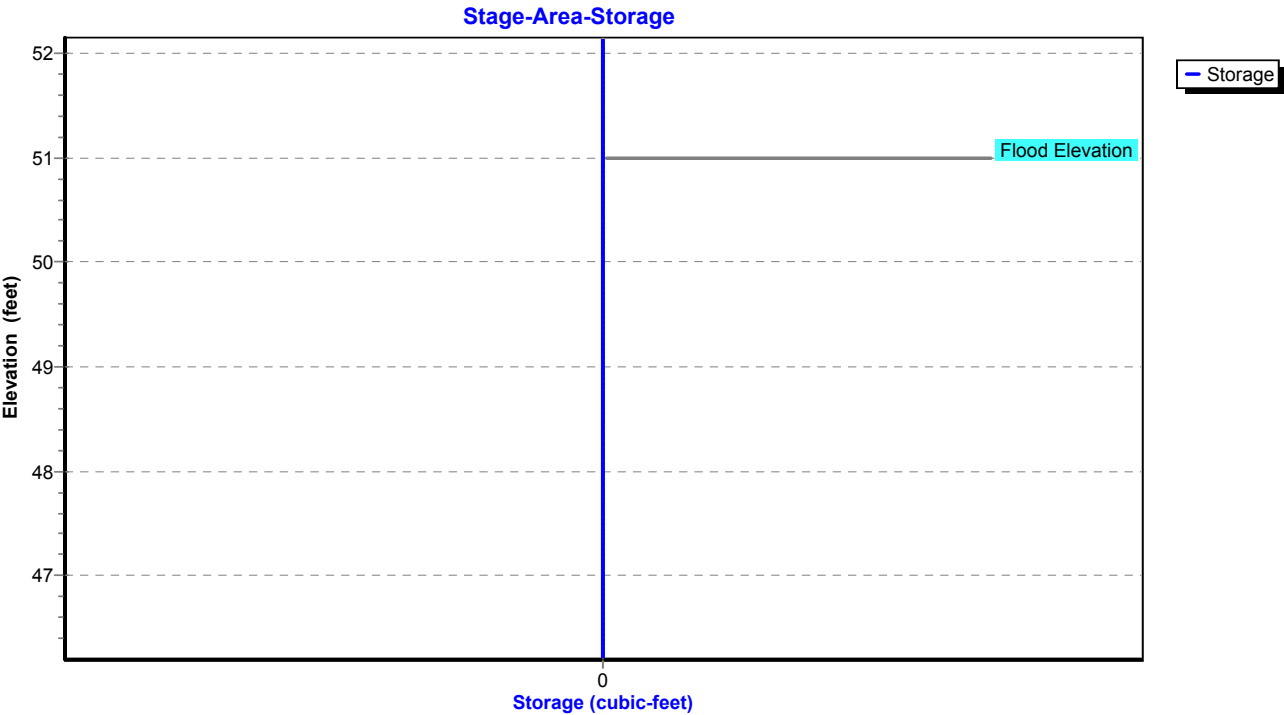
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Pond 63P: Manhole



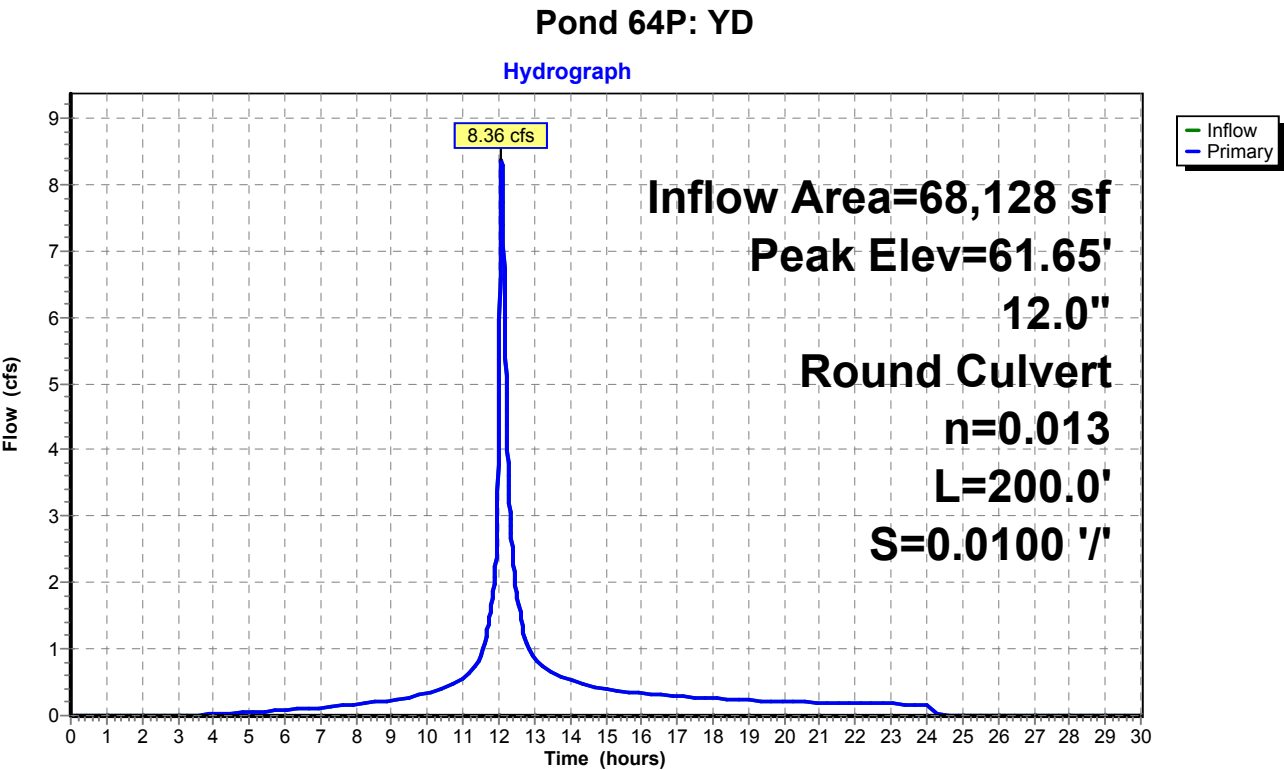
Summary for Pond 64P: YD

Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 5.47" for 50 year event
Inflow = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf
Outflow = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.36 cfs @ 12.08 hrs, Volume= 31,040 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 61.65' @ 12.08 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=8.35 cfs @ 12.08 hrs HW=61.59' (Free Discharge)
1=Culvert (Barrel Controls 8.35 cfs @ 10.63 fps)



Proposed Conditions

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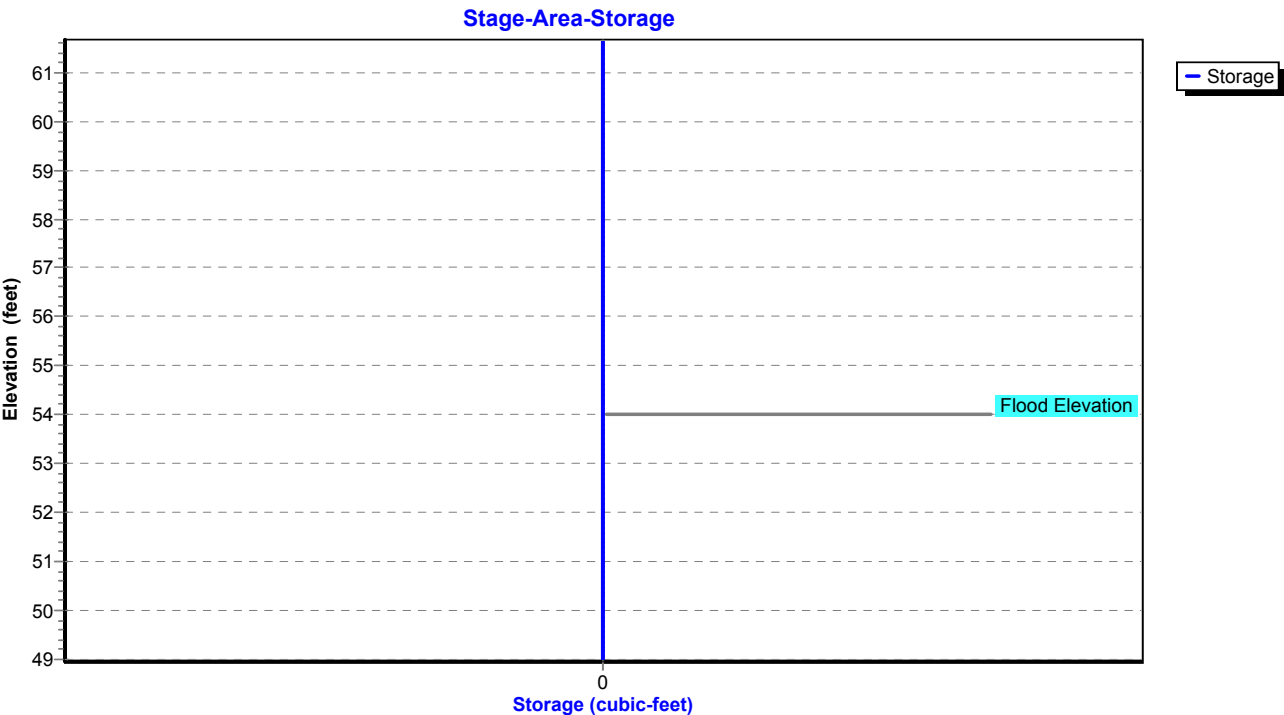
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Pond 64P: YD



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Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 6.39" for 50 year event
Inflow = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf
Outflow = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.25 cfs @ 12.03 hrs, Volume= 6,801 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 48.40' @ 12.03 hrs

Flood Elev= 53.00'

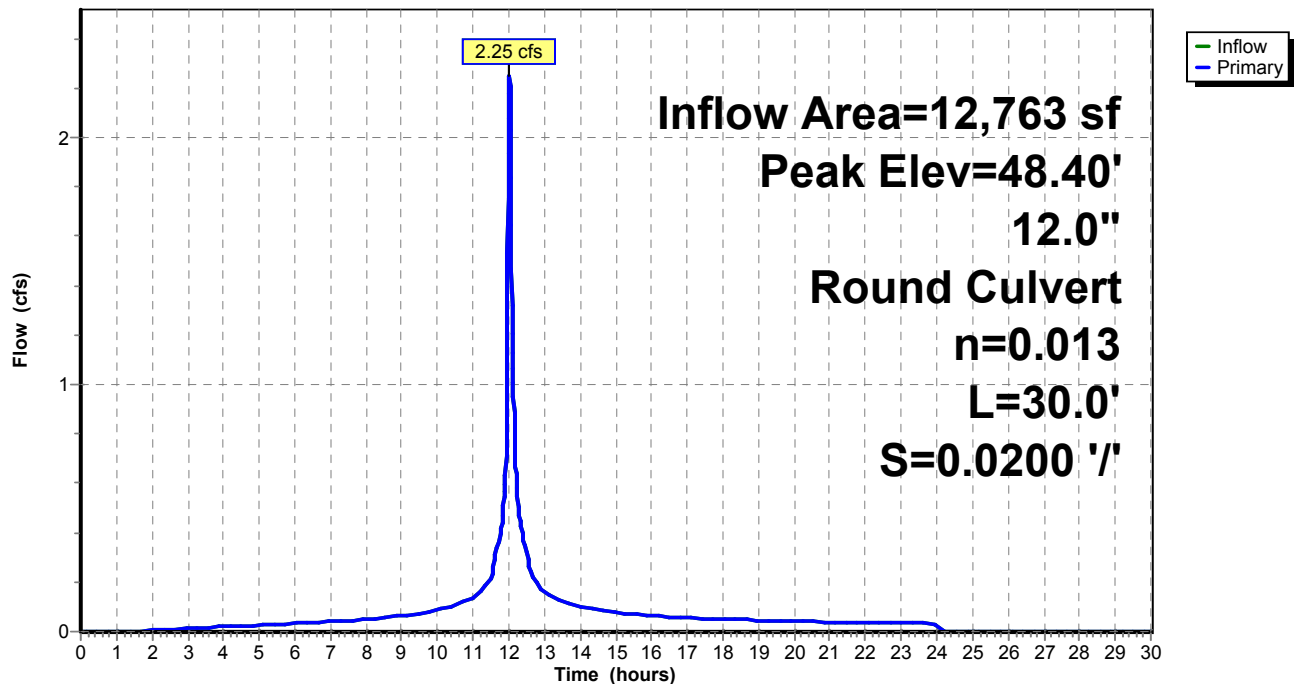
Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

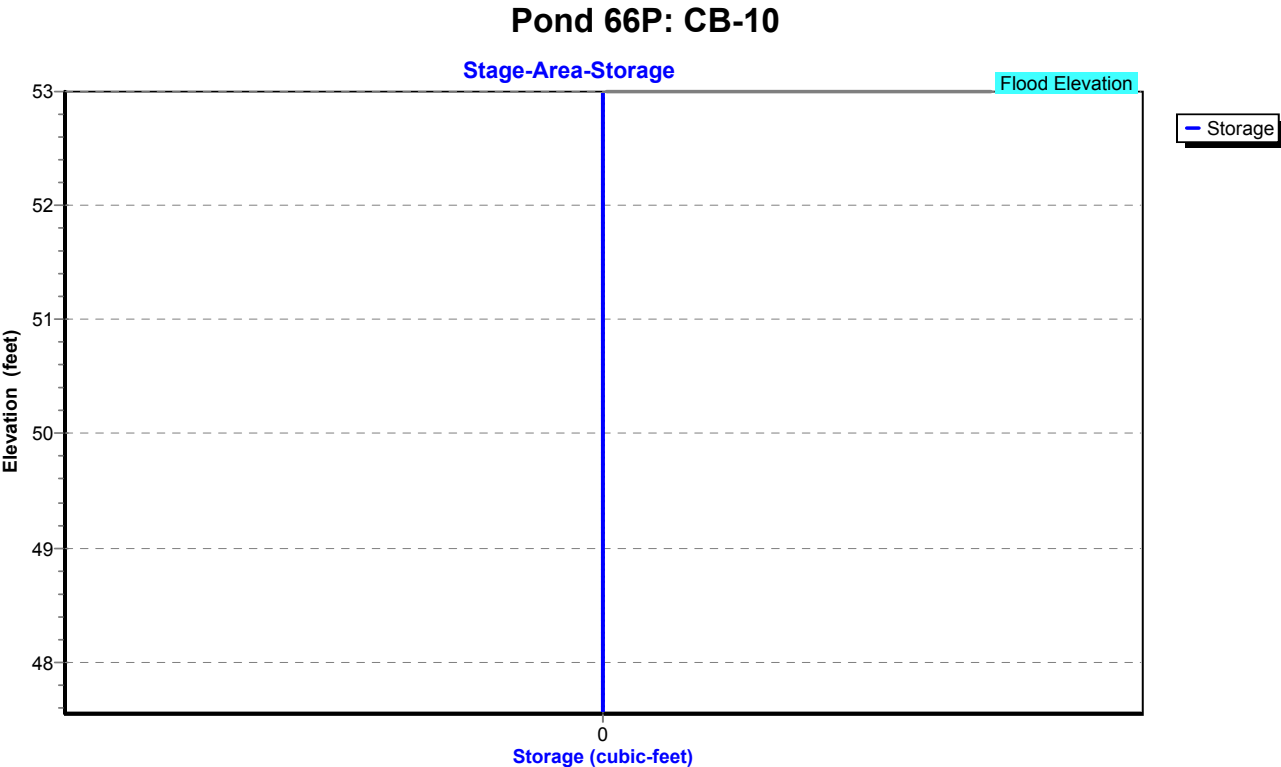
Primary OutFlow Max=2.24 cfs @ 12.03 hrs HW=48.40' (Free Discharge)

↑1=Culvert (Inlet Controls 2.24 cfs @ 3.14 fps)

Pond 66P: CB-10

Hydrograph





Proposed Conditions

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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 6.28" for 50 year event
Inflow = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf
Outflow = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.12 cfs @ 12.03 hrs, Volume= 3,372 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.73' @ 12.03 hrs

Flood Elev= 52.00'

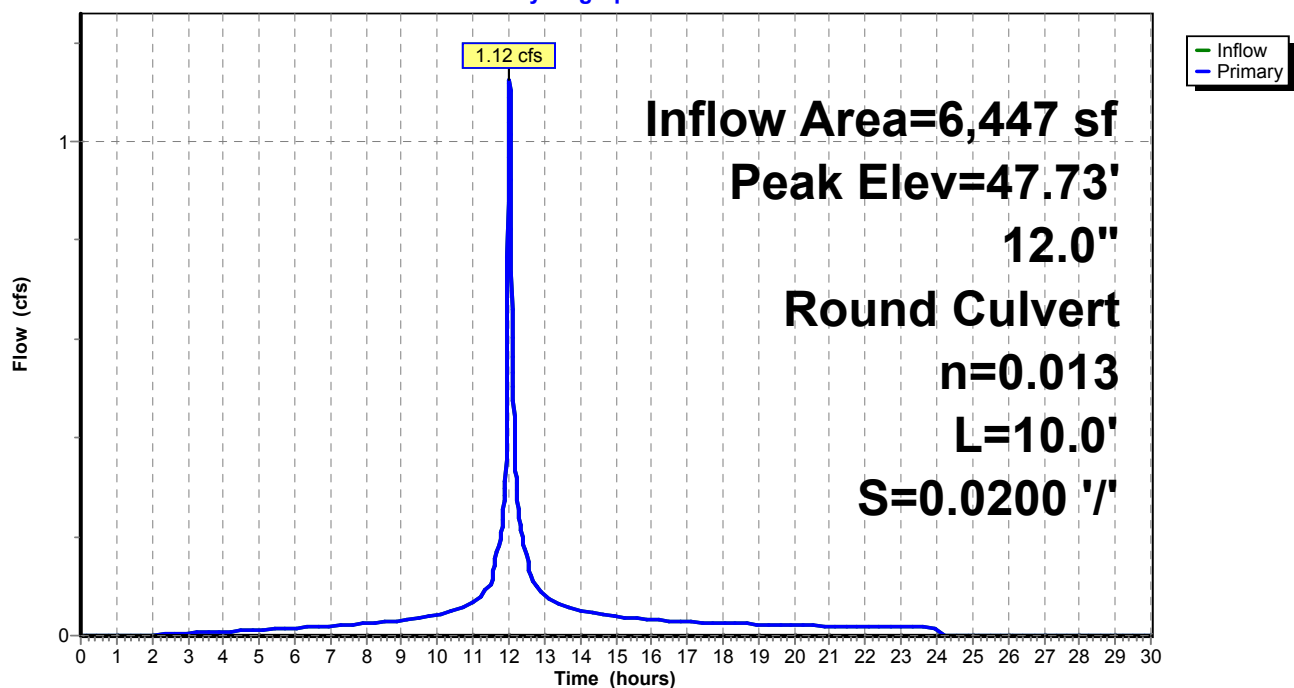
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.12 cfs @ 12.03 hrs HW=47.73' (Free Discharge)

↑1=Culvert (Barrel Controls 1.12 cfs @ 3.45 fps)

Pond 67P: CB-9

Hydrograph



Proposed Conditions

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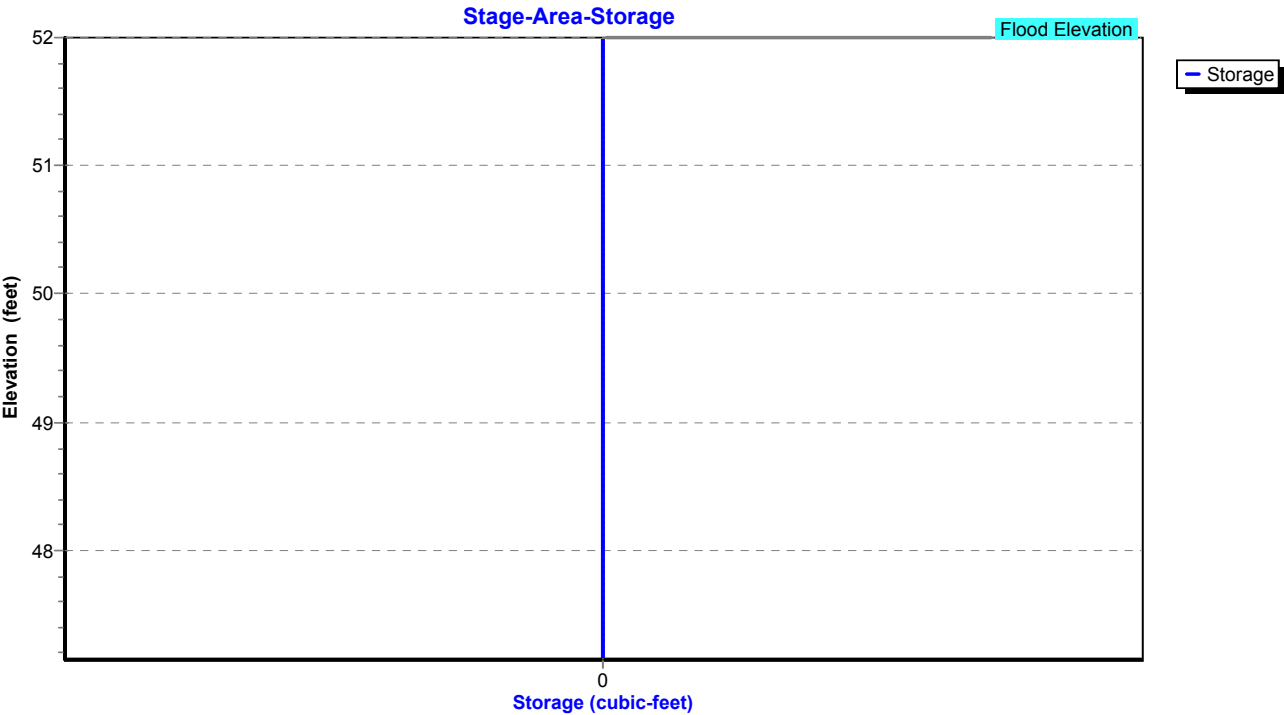
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 67P: CB-9



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 5.76" for 50 year event
Inflow = 10.93 cfs @ 11.99 hrs, Volume= 42,283 cf
Outflow = 10.93 cfs @ 11.99 hrs, Volume= 42,283 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.93 cfs @ 11.99 hrs, Volume= 42,283 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.12' @ 11.99 hrs

Flood Elev= 53.30'

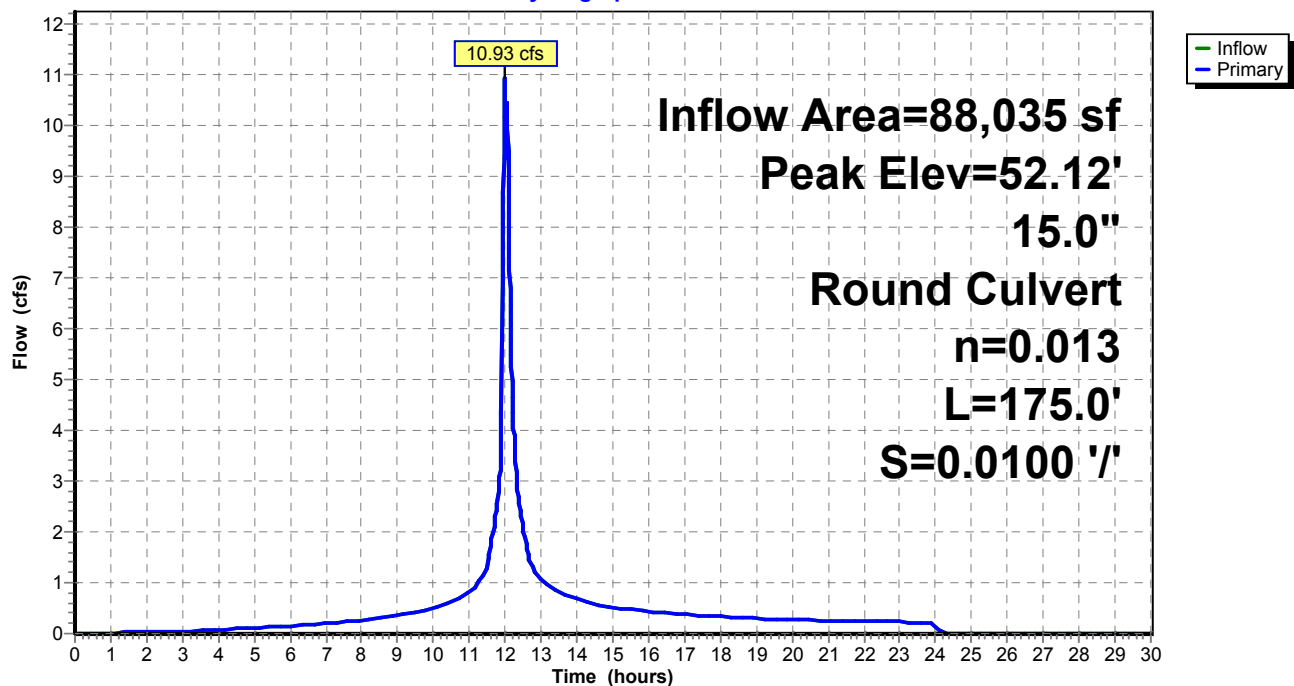
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=10.92 cfs @ 11.99 hrs HW=52.12' (Free Discharge)

↑1=Culvert (Barrel Controls 10.92 cfs @ 8.90 fps)

Pond 70P: CB-2

Hydrograph



Proposed Conditions

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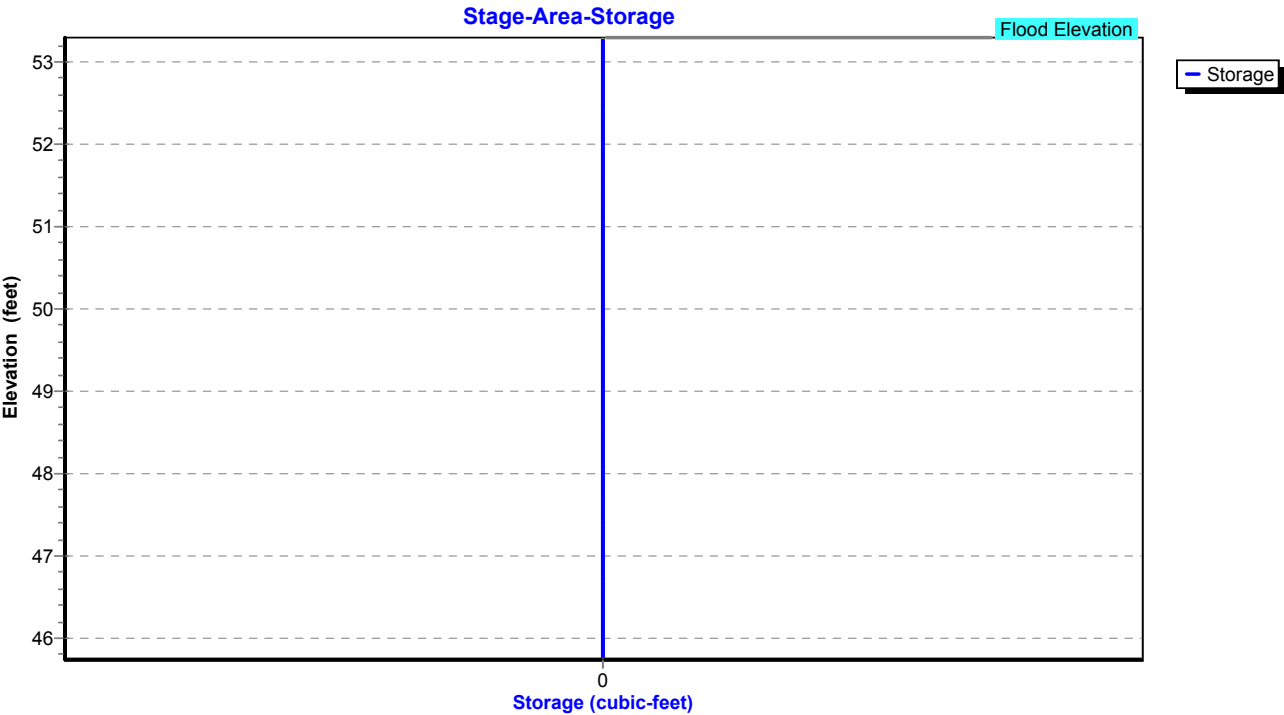
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 70P: CB-2



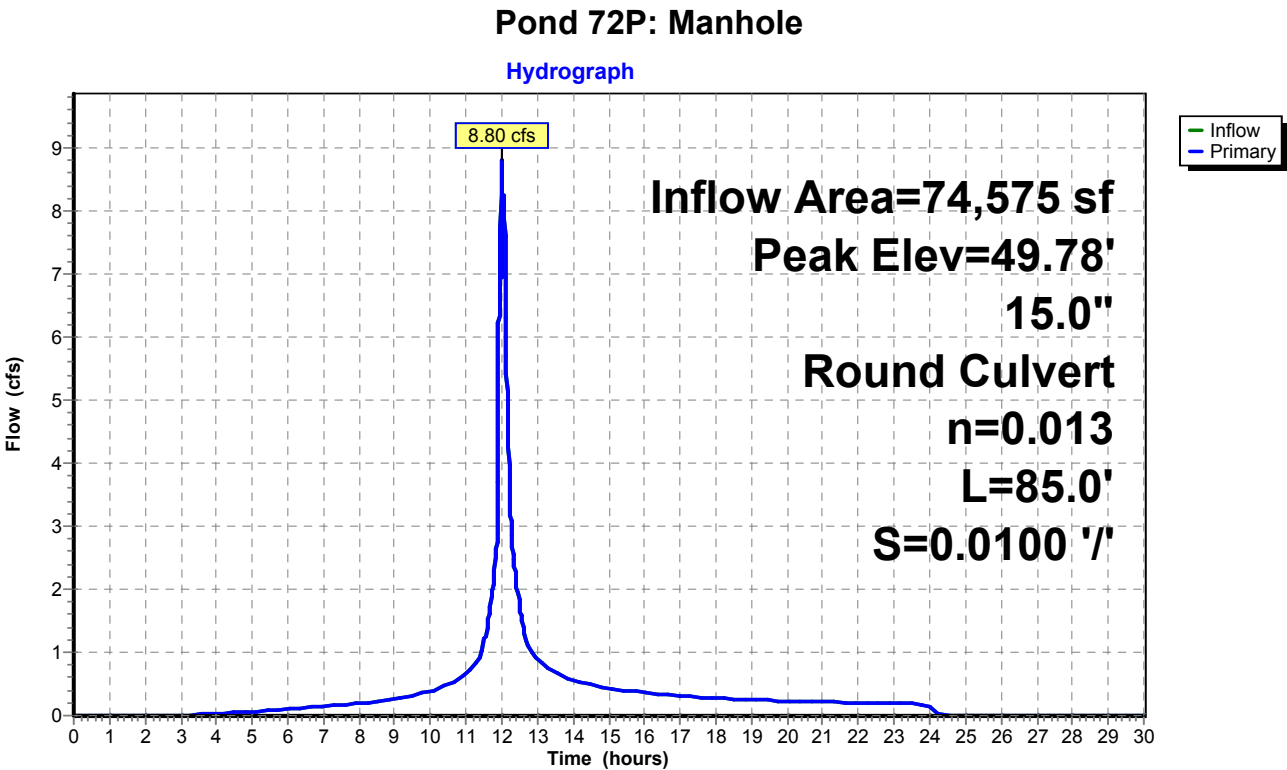
Summary for Pond 72P: Manhole

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 5.52" for 50 year event
Inflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Outflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Routed to Pond 70P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.78' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=8.72 cfs @ 11.99 hrs HW=49.73' (Free Discharge)
1=Culvert (Barrel Controls 8.72 cfs @ 7.11 fps)



Proposed Conditions

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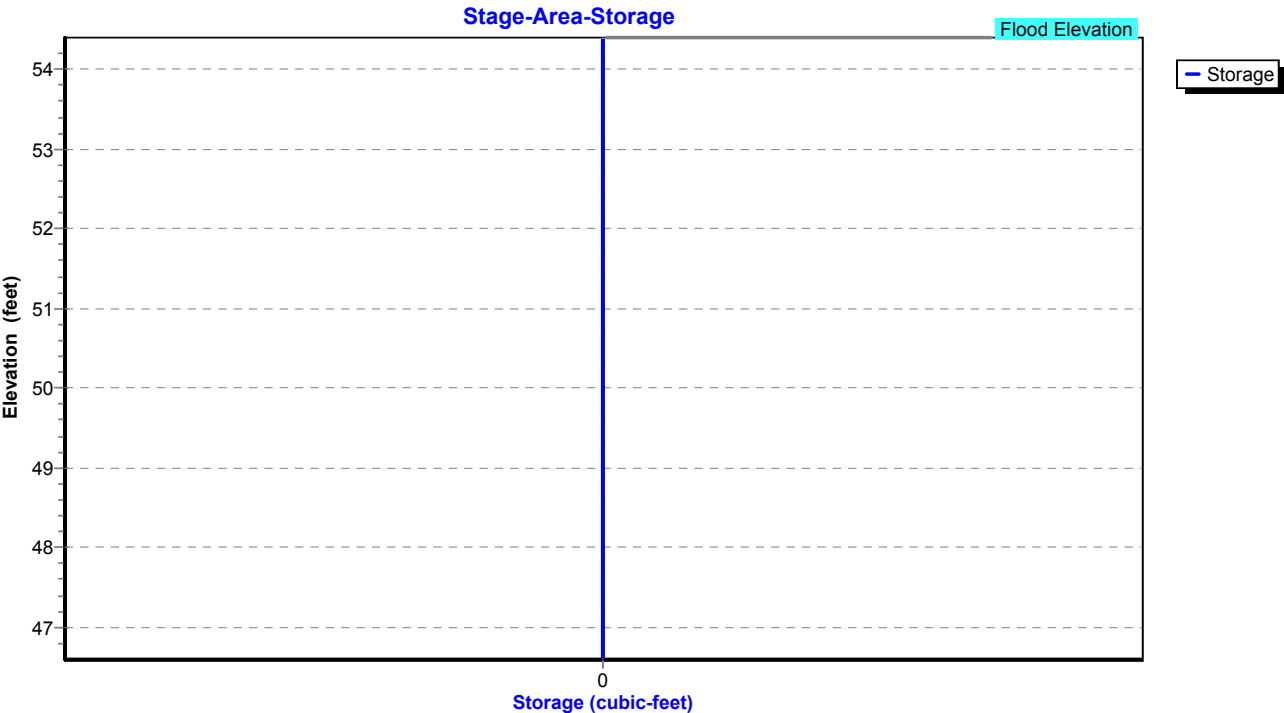
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 72P: Manhole



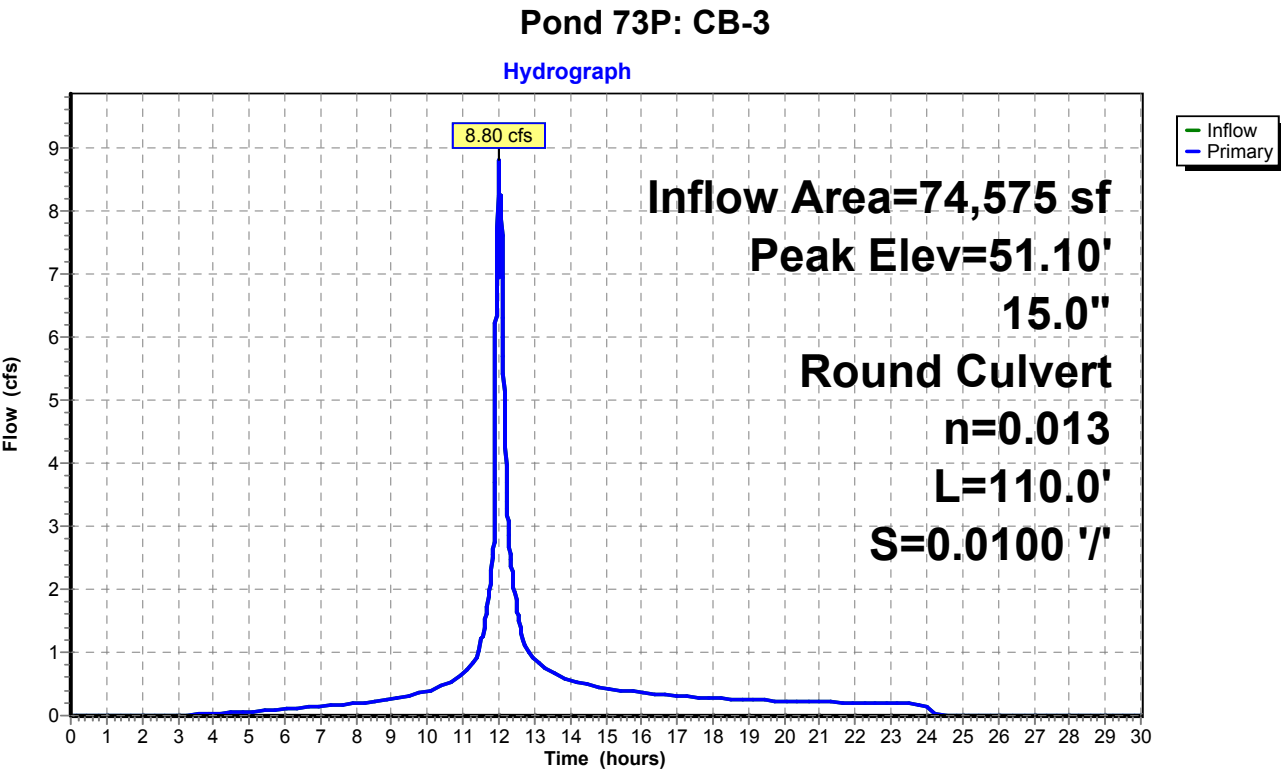
Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 5.52" for 50 year event
Inflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Outflow = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.80 cfs @ 11.99 hrs, Volume= 34,314 cf
Routed to Pond 72P : Manhole

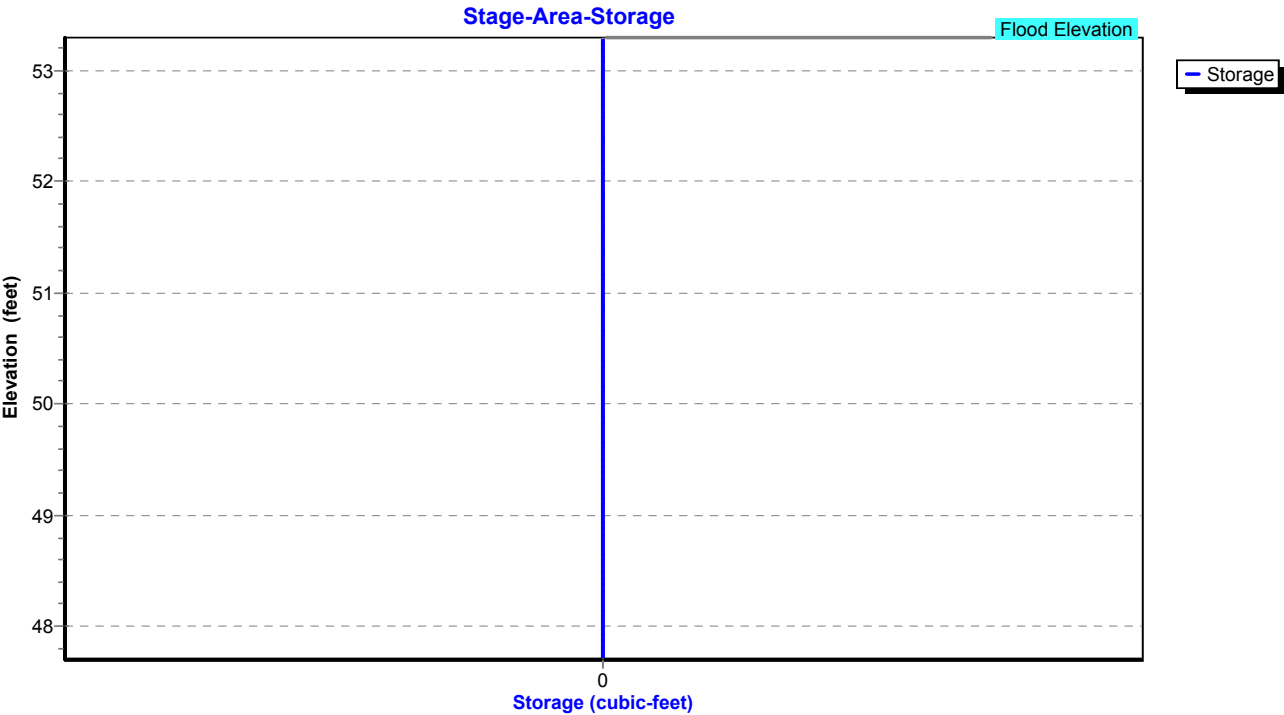
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.10' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=8.72 cfs @ 11.99 hrs HW=51.04' (Free Discharge)
1=Culvert (Barrel Controls 8.72 cfs @ 7.11 fps)



Pond 73P: CB-3



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Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 5.38" for 50 year event
Inflow = 6.62 cfs @ 12.06 hrs, Volume= 22,372 cf
Outflow = 6.62 cfs @ 12.06 hrs, Volume= 22,372 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.62 cfs @ 12.06 hrs, Volume= 22,372 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.08' @ 12.06 hrs

Flood Elev= 53.70'

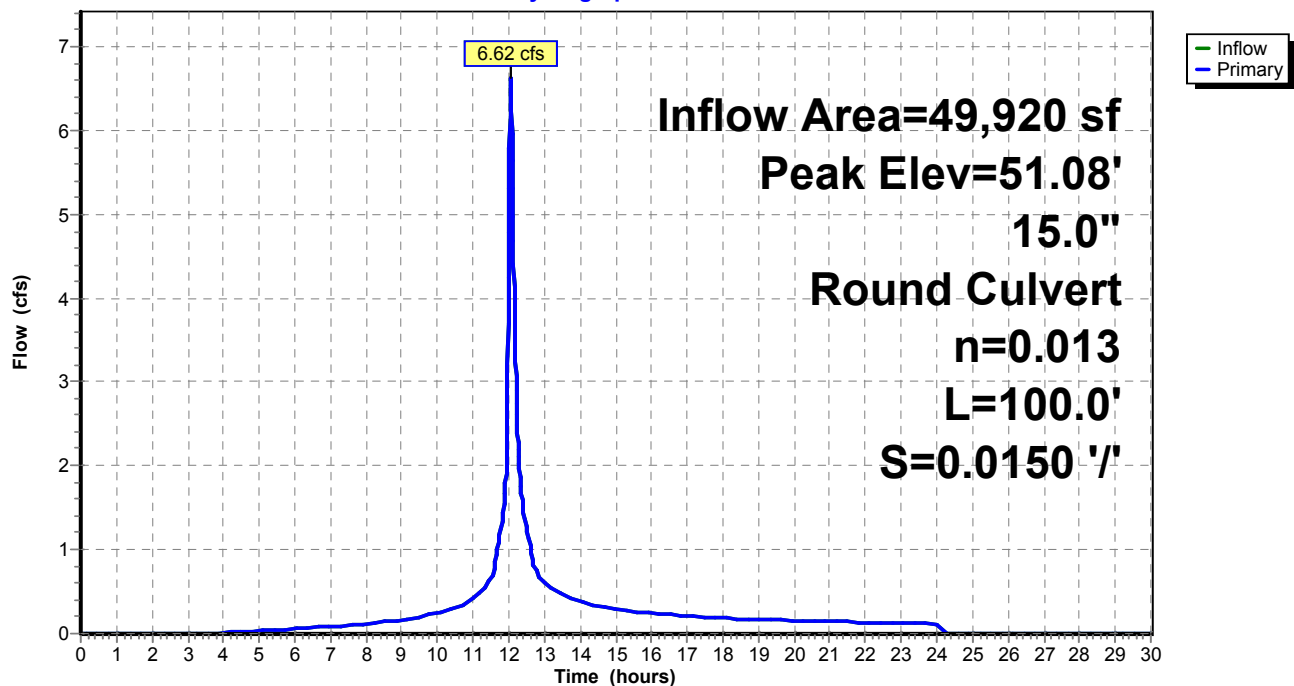
Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.61 cfs @ 12.06 hrs HW=51.08' (Free Discharge)

↑1=Culvert (Inlet Controls 6.61 cfs @ 5.38 fps)

Pond 74P: CB-4

Hydrograph



Proposed Conditions

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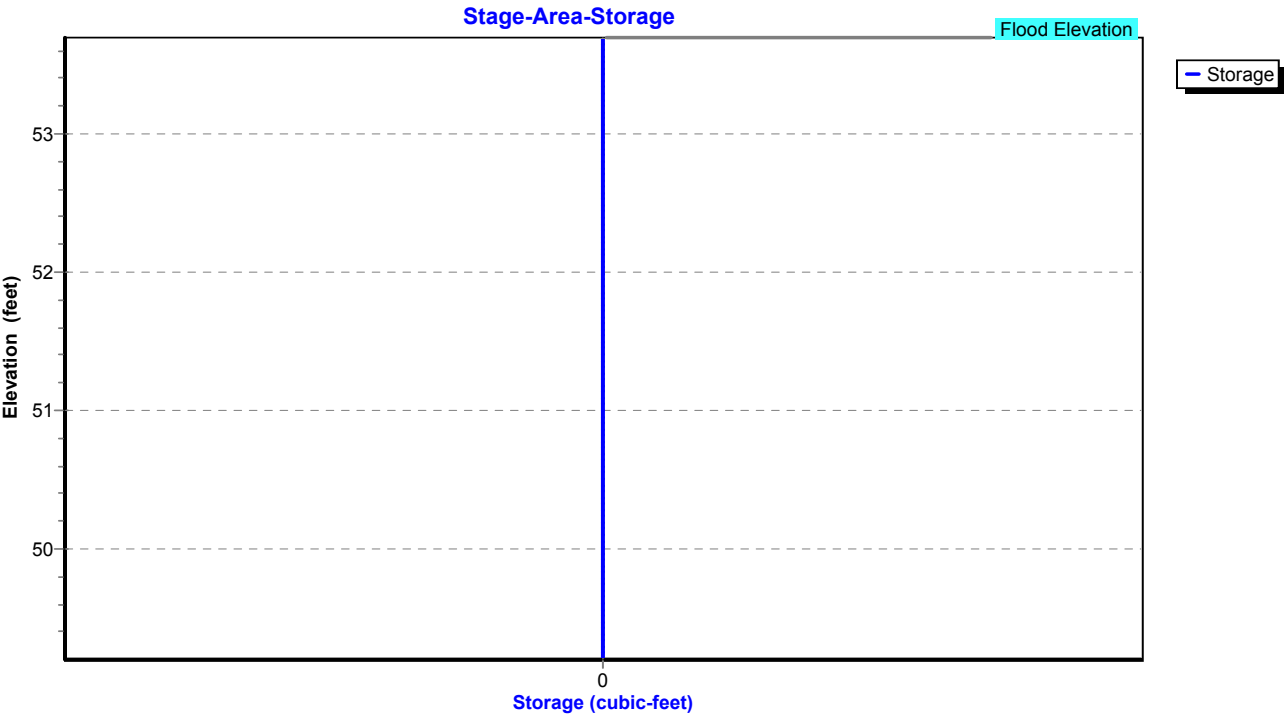
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Pond 74P: CB-4



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Summary for Pond 77P: Manhole

Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 5.66" for 50 year event
Inflow = 10.73 cfs @ 12.06 hrs, Volume= 41,214 cf
Outflow = 10.73 cfs @ 12.06 hrs, Volume= 41,214 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.73 cfs @ 12.06 hrs, Volume= 41,214 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.31' @ 12.06 hrs

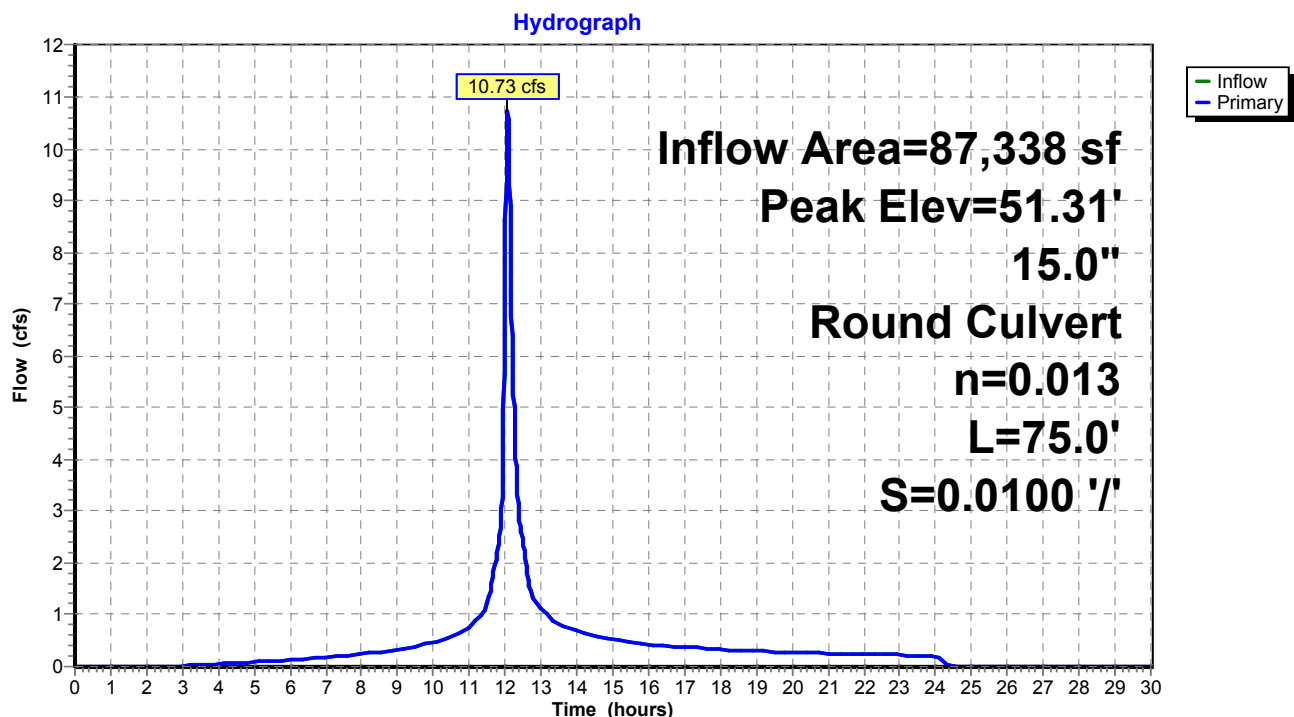
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

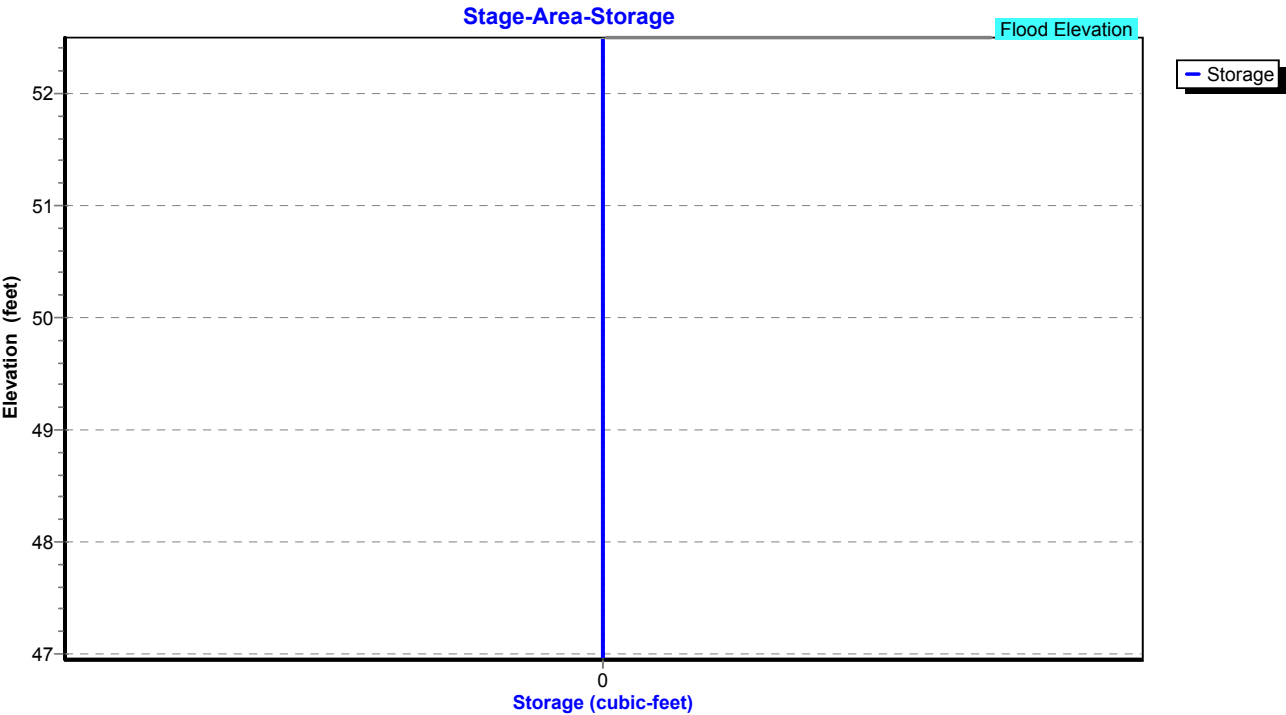
Primary OutFlow Max=10.71 cfs @ 12.06 hrs HW=51.30' (Free Discharge)

↑1=Culvert (Barrel Controls 10.71 cfs @ 8.73 fps)

Pond 77P: Manhole



Pond 77P: Manhole



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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 7.10" for 50 year event
Inflow = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf
Outflow = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.72 cfs @ 12.03 hrs, Volume= 2,321 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.63' @ 12.03 hrs

Flood Elev= 52.50'

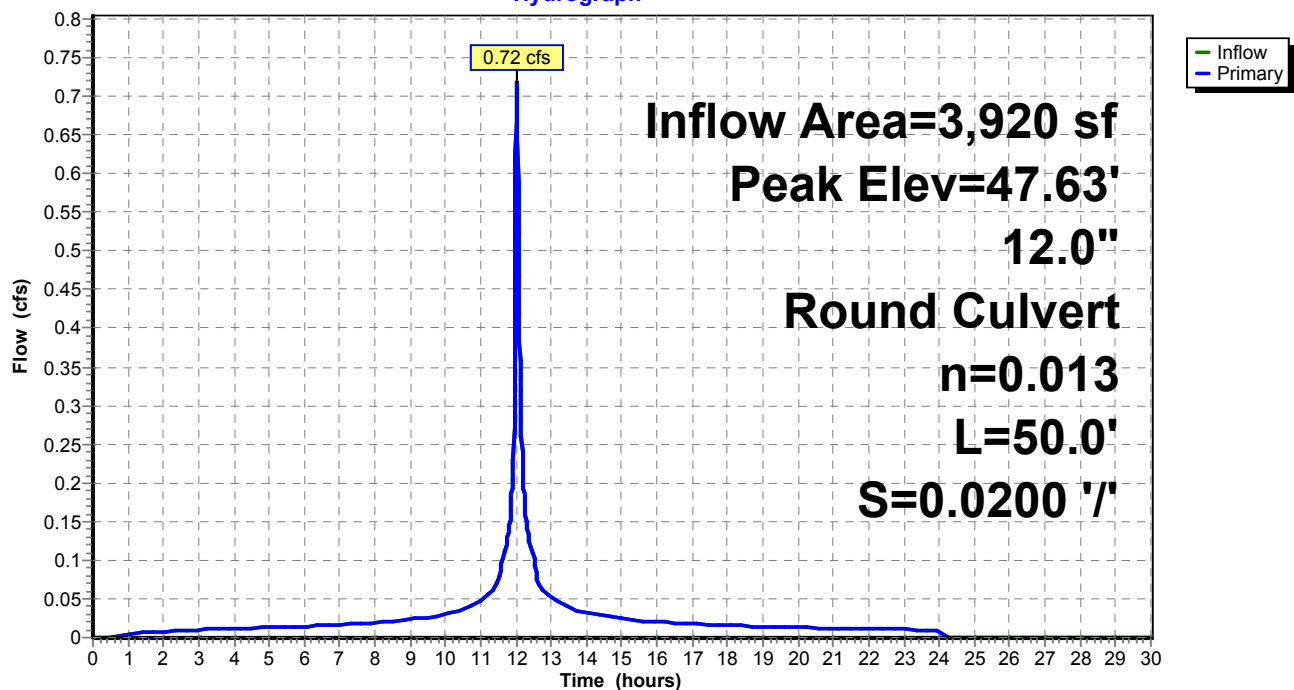
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.71 cfs @ 12.03 hrs HW=47.63' (Free Discharge)

↑1=Culvert (Inlet Controls 0.71 cfs @ 2.23 fps)

Pond 79P: CB-8

Hydrograph



Proposed Conditions

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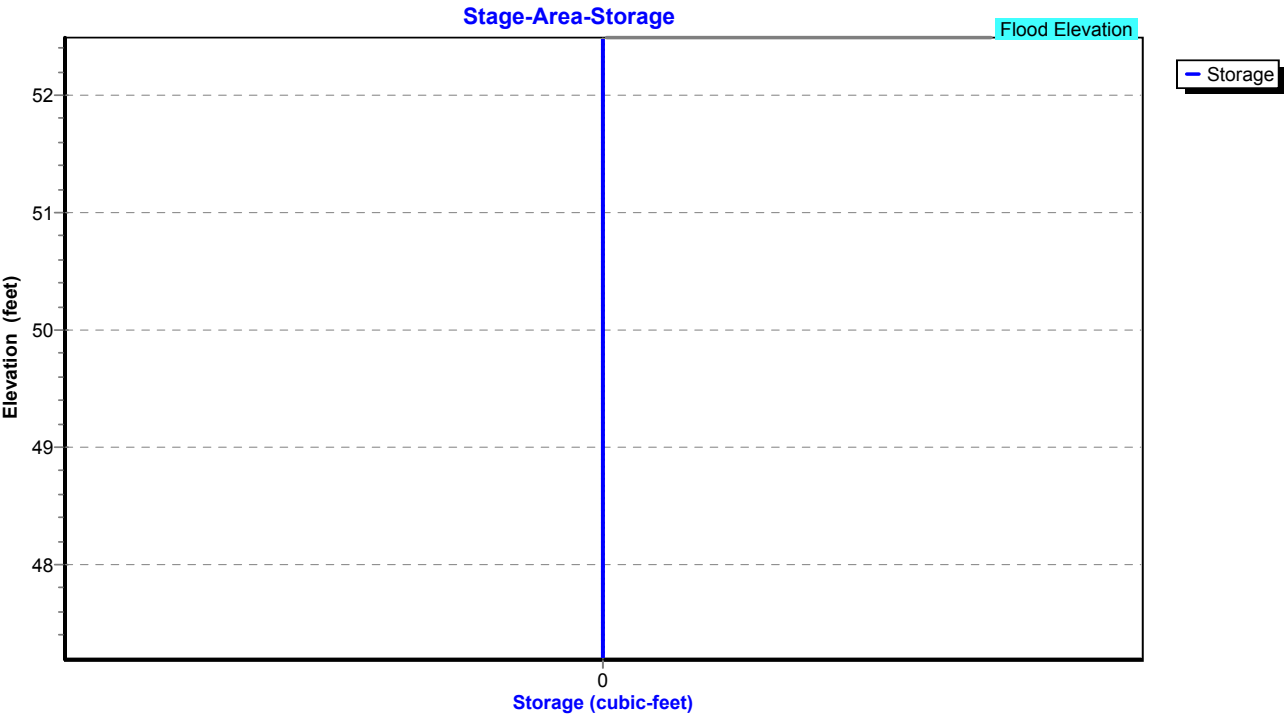
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 79P: CB-8



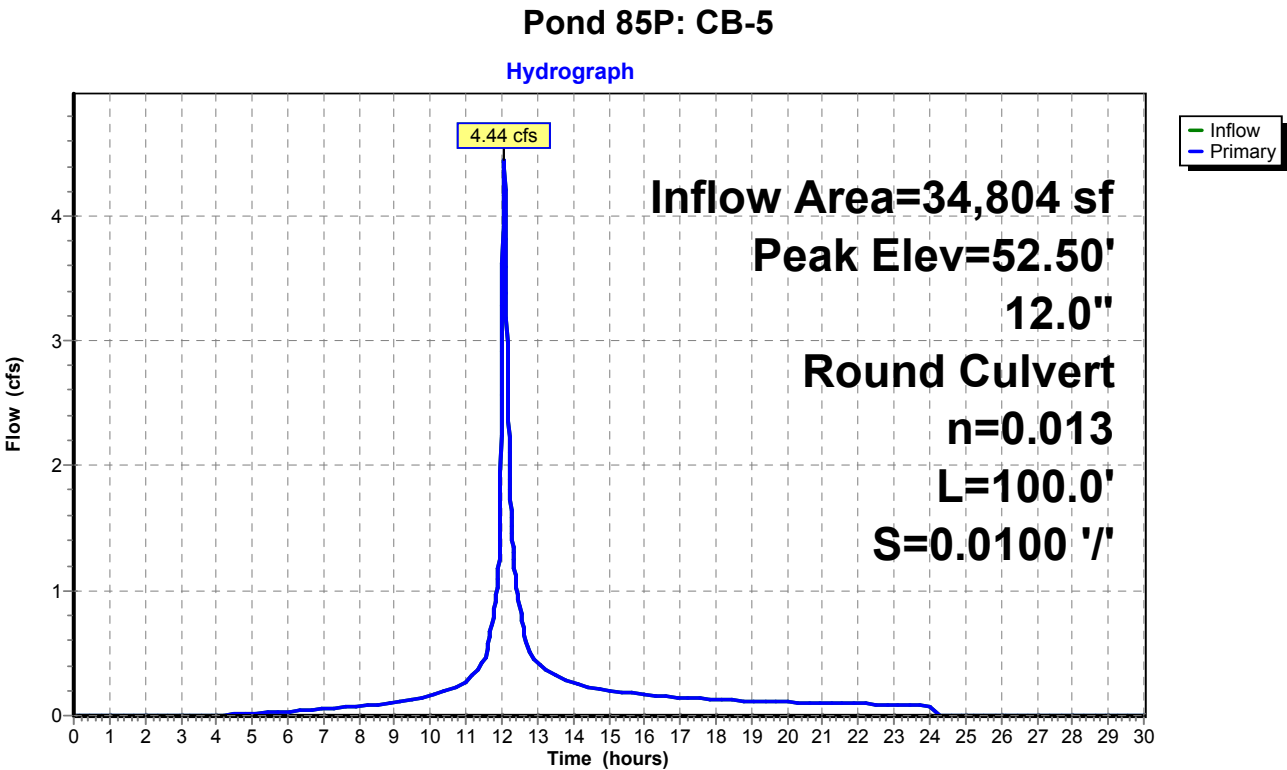
Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 5.24" for 50 year event
Inflow = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf
Outflow = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.44 cfs @ 12.07 hrs, Volume= 15,196 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.50' @ 12.07 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=4.43 cfs @ 12.07 hrs HW=52.49' (Free Discharge)
1=Culvert (Barrel Controls 4.43 cfs @ 5.64 fps)



Proposed Conditions

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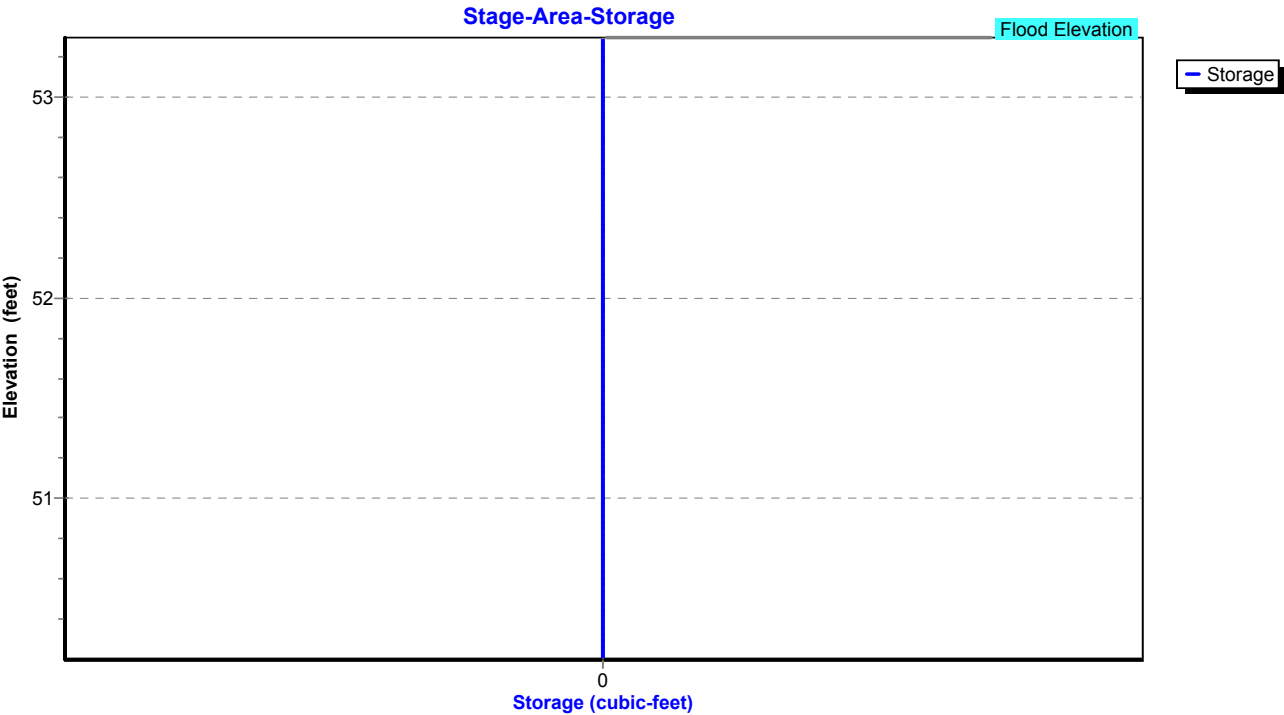
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NORWALK 24-hr S1 50 year Rainfall=7.34"

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Pond 85P: CB-5



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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 7.10" for 50 year event
 Inflow = 3.10 cfs @ 12.03 hrs, Volume= 10,006 cf
 Outflow = 1.87 cfs @ 12.09 hrs, Volume= 10,007 cf, Atten= 40%, Lag= 3.8 min
 Primary = 1.87 cfs @ 12.09 hrs, Volume= 10,007 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 54.49' @ 12.09 hrs Surf.Area= 749 sf Storage= 1,477 cf

Plug-Flow detention time= 17.7 min calculated for 10,004 cf (100% of inflow)
 Center-of-Mass det. time= 17.8 min (759.8 - 742.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 ' / Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.85 cfs @ 12.09 hrs HW=54.49' (Free Discharge)

1=Culvert (Passes 1.85 cfs of 6.15 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.73 cfs @ 8.31 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.12 cfs @ 1.21 fps)

Proposed Conditions

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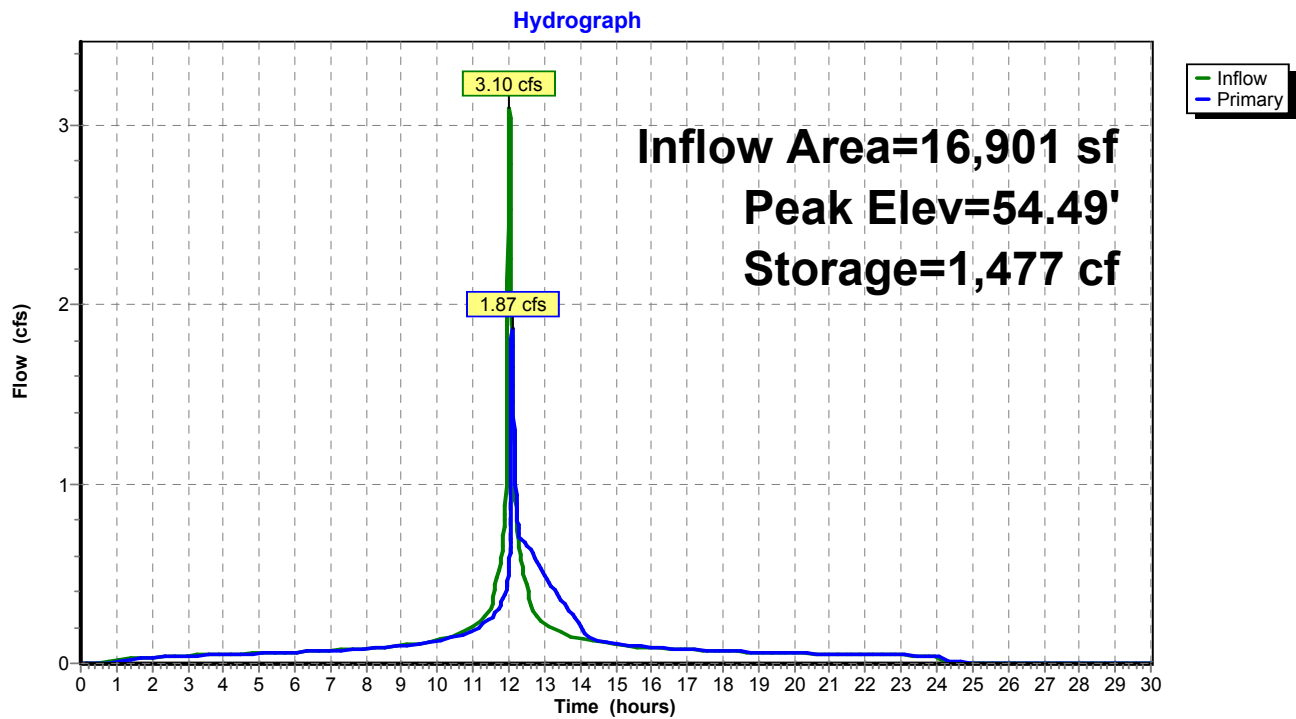
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NORWALK 24-hr S1 50 year Rainfall=7.34"

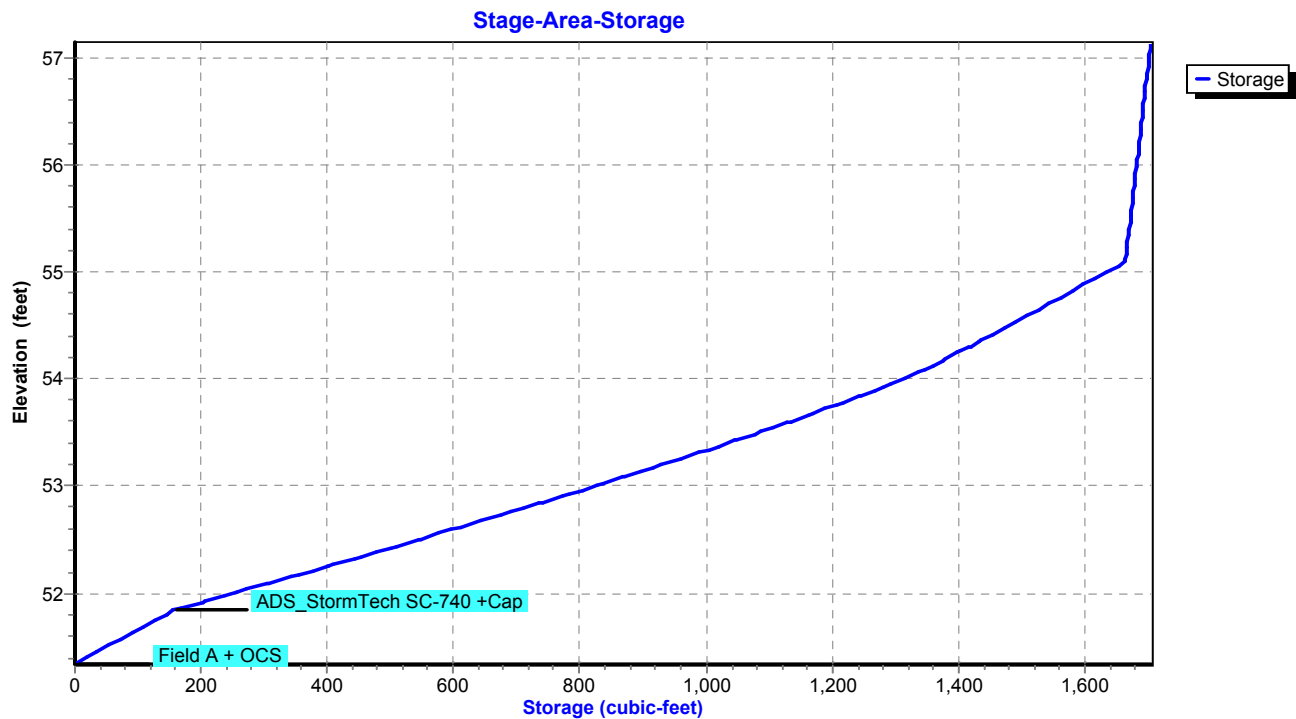
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Pond P: ADS Stormtech



Pond P: ADS Stormtech



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 4S: Area 4

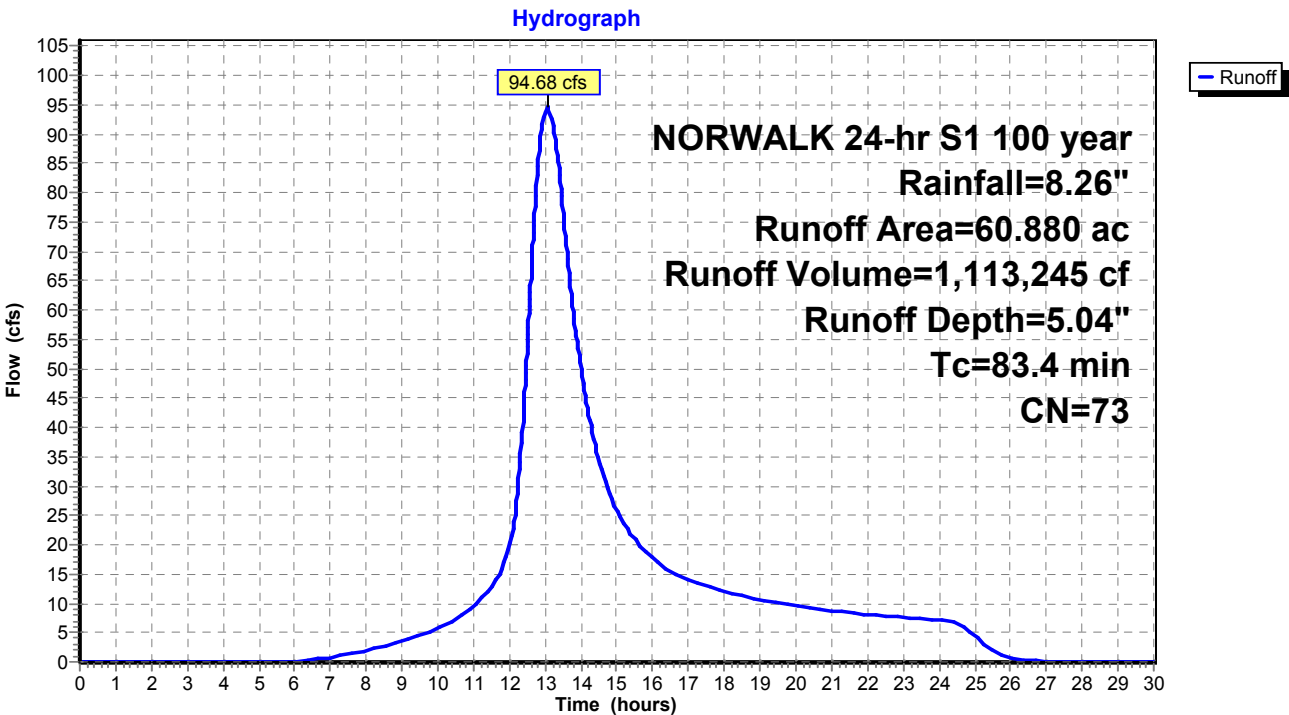
Runoff = 94.68 cfs @ 13.07 hrs, Volume= 1,113,245 cf, Depth= 5.04"
Routed to Pond 18P : DET 4 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
8.210	61	>75% Grass cover, Good, HSG B
0.140	74	>75% Grass cover, Good, HSG C
0.380	80	>75% Grass cover, Good, HSG D
25.920	70	1/2 acre lots, 25% imp, HSG B
22.630	80	1/2 acre lots, 25% imp, HSG C
3.600	85	1/2 acre lots, 25% imp, HSG D
60.880	73	Weighted Average
47.842		78.58% Pervious Area
13.037		21.42% Impervious Area

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

Subcatchment 4S: Area 4



Summary for Subcatchment 5S: Area 5

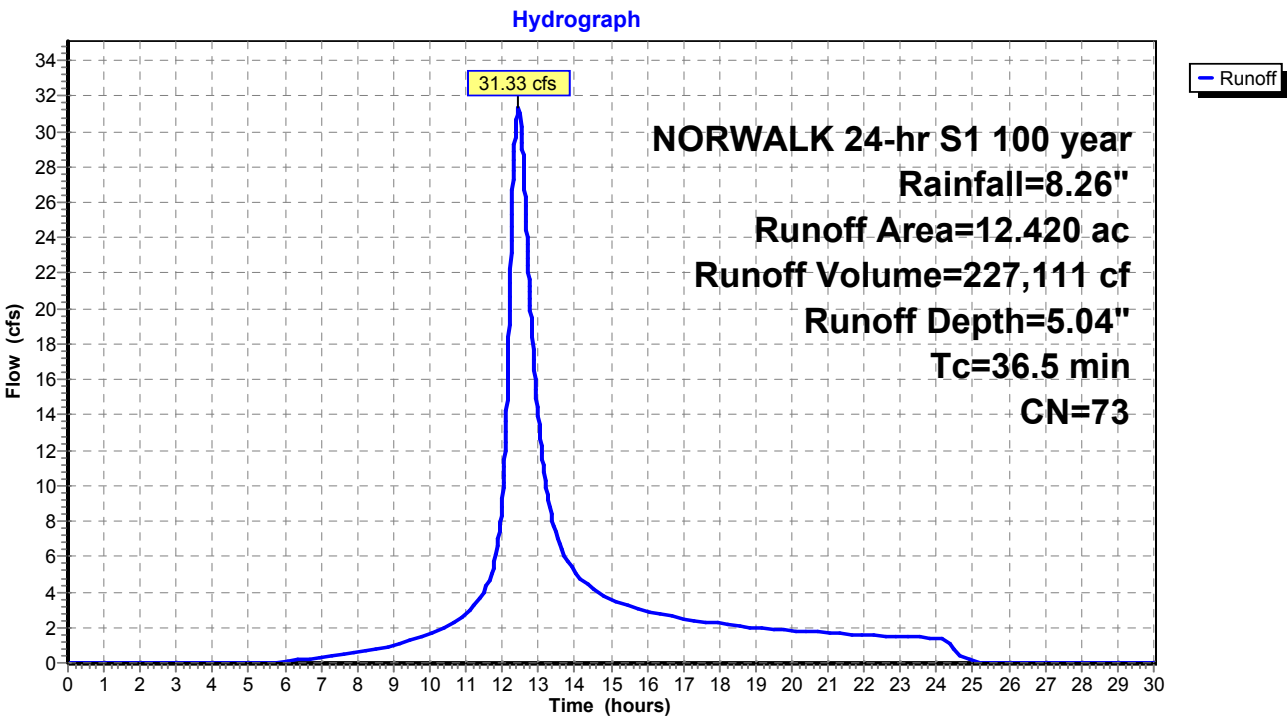
Runoff = 31.33 cfs @ 12.45 hrs, Volume= 227,111 cf, Depth= 5.04"
Routed to Pond 5P : DET 5 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
4.770	61	>75% Grass cover, Good, HSG B
5.210	74	>75% Grass cover, Good, HSG C
0.390	80	>75% Grass cover, Good, HSG D
2.050	98	Paved parking & roofs
12.420	73	Weighted Average
10.370		83.49% Pervious Area
2.050		16.51% Impervious Area

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

Subcatchment 5S: Area 5



Summary for Subcatchment 6S: Area 6

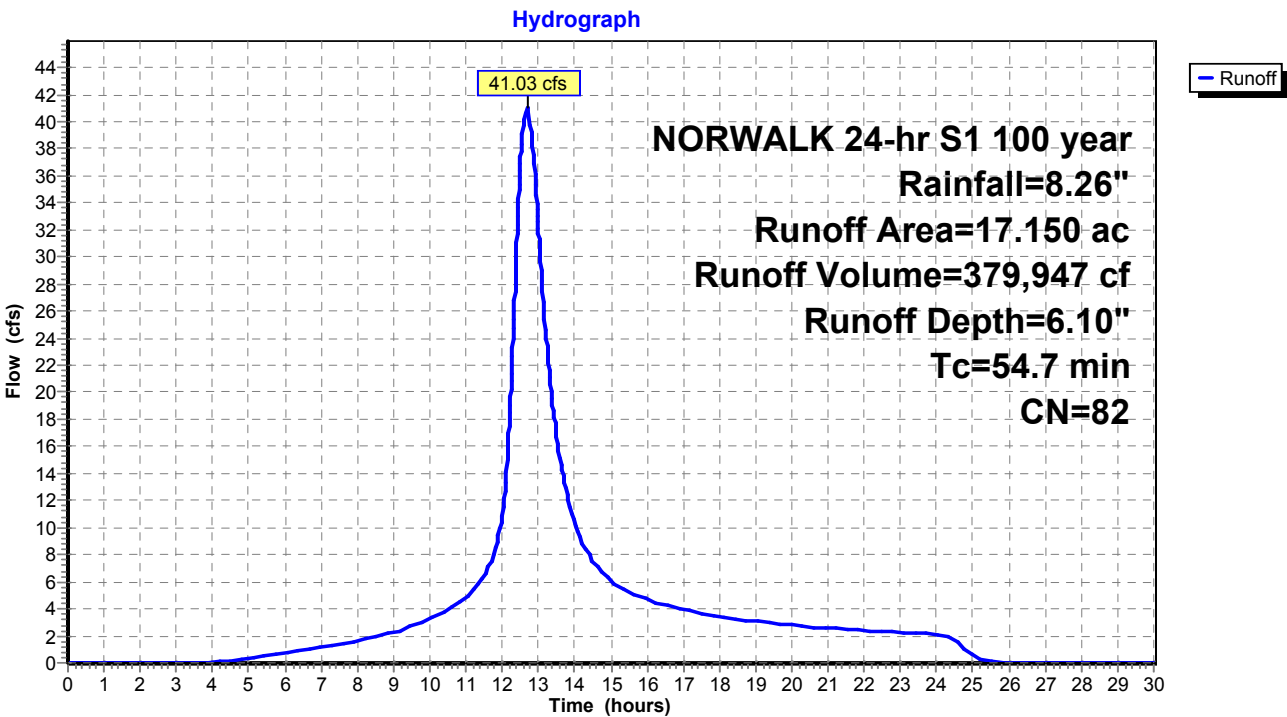
Runoff = 41.03 cfs @ 12.70 hrs, Volume= 379,947 cf, Depth= 6.10"
Routed to Pond 6P : DET 6 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
9.290	71	Meadow, non-grazed, HSG C
5.410	98	Paved parking & roofs
1.480	77	Woods, Good, HSG D
0.970	98	Paved parking & roofs
17.150	82	Weighted Average
10.770		62.80% Pervious Area
6.380		37.20% Impervious Area

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

Subcatchment 6S: Area 6



Summary for Subcatchment 7S: Area 7

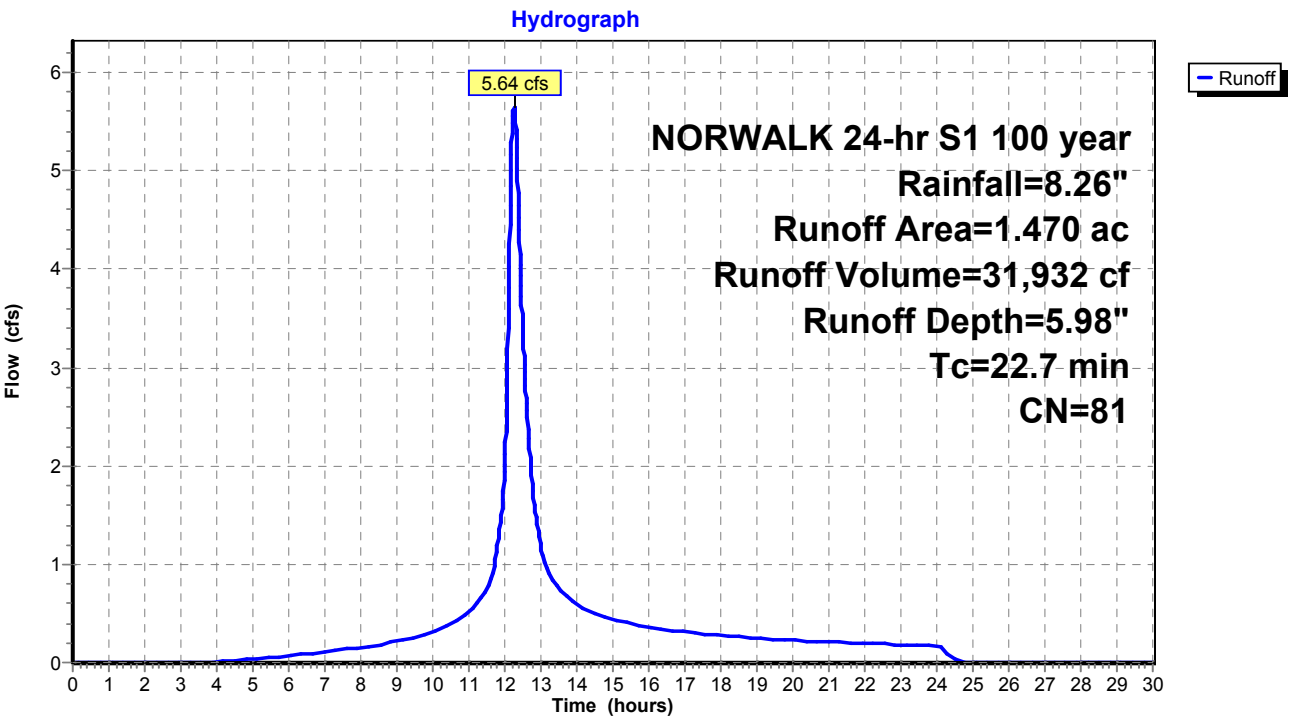
Runoff = 5.64 cfs @ 12.25 hrs, Volume= 31,932 cf, Depth= 5.98"
Routed to Pond 7P : DET 7 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.890	79	50-75% Grass cover, Fair, HSG C
0.580	84	50-75% Grass cover, Fair, HSG D
1.470	81	Weighted Average
1.470		100.00% Pervious Area

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

Subcatchment 7S: Area 7



Summary for Subcatchment 8S: Area 8

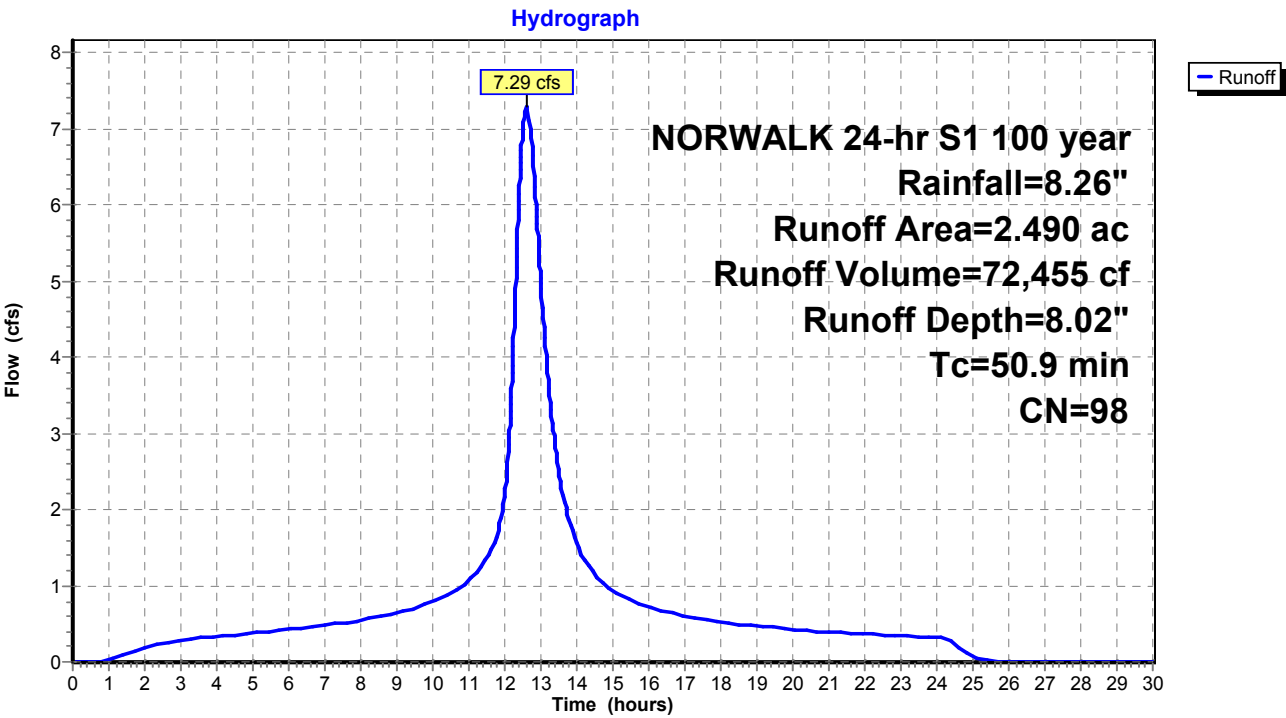
Runoff = 7.29 cfs @ 12.61 hrs, Volume= 72,455 cf, Depth= 8.02"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.490	98	Paved parking & roofs
2.490		100.00% Impervious Area

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

Subcatchment 8S: Area 8



Summary for Subcatchment 9S: Area 9

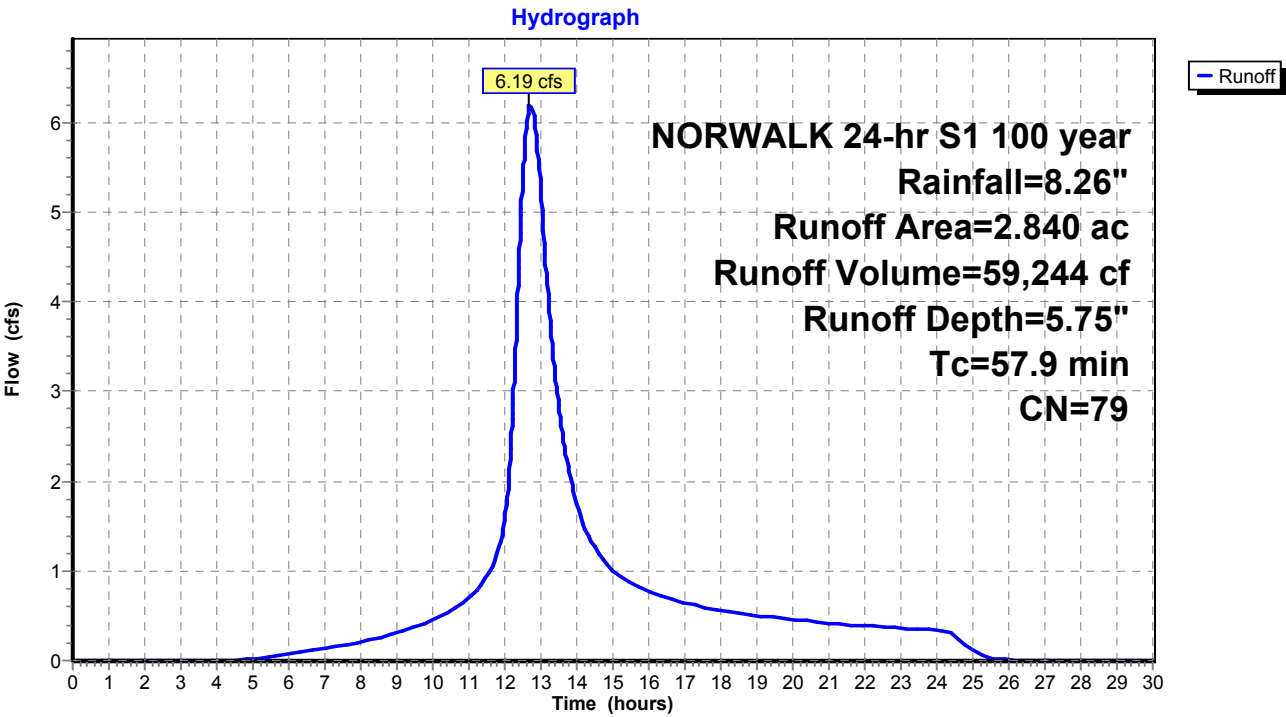
Runoff = 6.19 cfs @ 12.68 hrs, Volume= 59,244 cf, Depth= 5.75"
Routed to Pond 8P : Comb. 5,6,7,8,9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.530	74	>75% Grass cover, Good, HSG C
2.310	80	>75% Grass cover, Good, HSG D
2.840	79	Weighted Average
2.840		100.00% Pervious Area

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

Subcatchment 9S: Area 9



Summary for Subcatchment 10AS: Area 10A

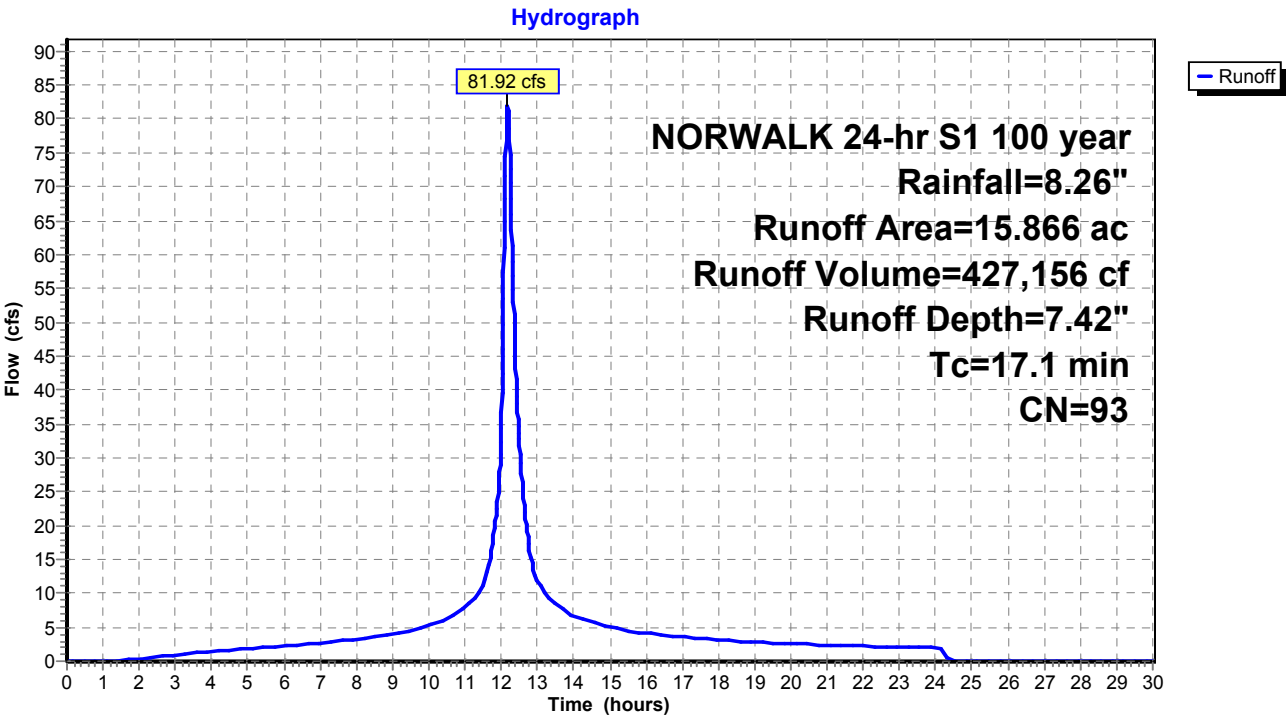
Runoff = 81.92 cfs @ 12.18 hrs, Volume= 427,156 cf, Depth= 7.42"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
3.905	79	50-75% Grass cover, Fair, HSG C
11.961	98	Paved roads w/curbs & sewers, HSG C
15.866	93	Weighted Average
3.905		24.61% Pervious Area
11.961		75.39% Impervious Area

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

Subcatchment 10AS: Area 10A



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 10BS: Area 10B

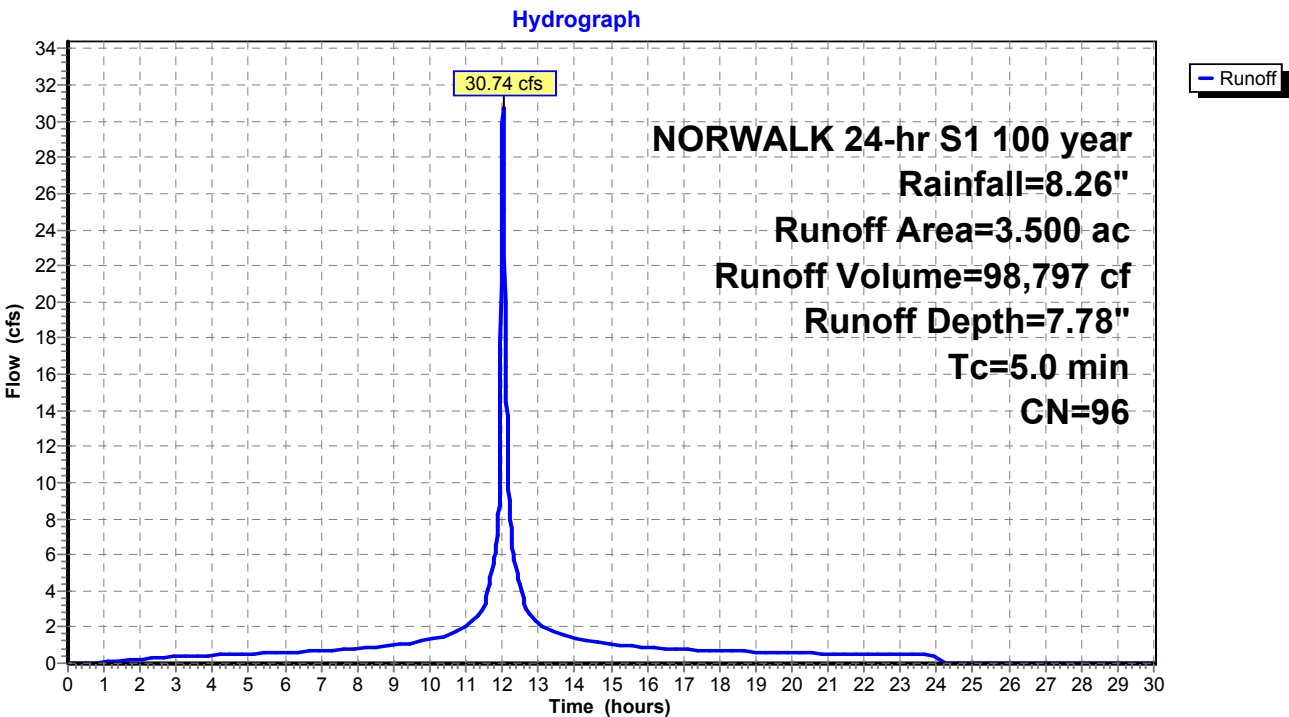
Runoff = 30.74 cfs @ 12.03 hrs, Volume= 98,797 cf, Depth= 7.78"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
3.308	98	Paved parking & roofs
0.192	61	>75% Grass cover, Good, HSG B
3.500	96	Weighted Average
0.192		5.49% Pervious Area
3.308		94.51% Impervious Area

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

Subcatchment 10BS: Area 10B



Summary for Subcatchment 10CS: Area 10C

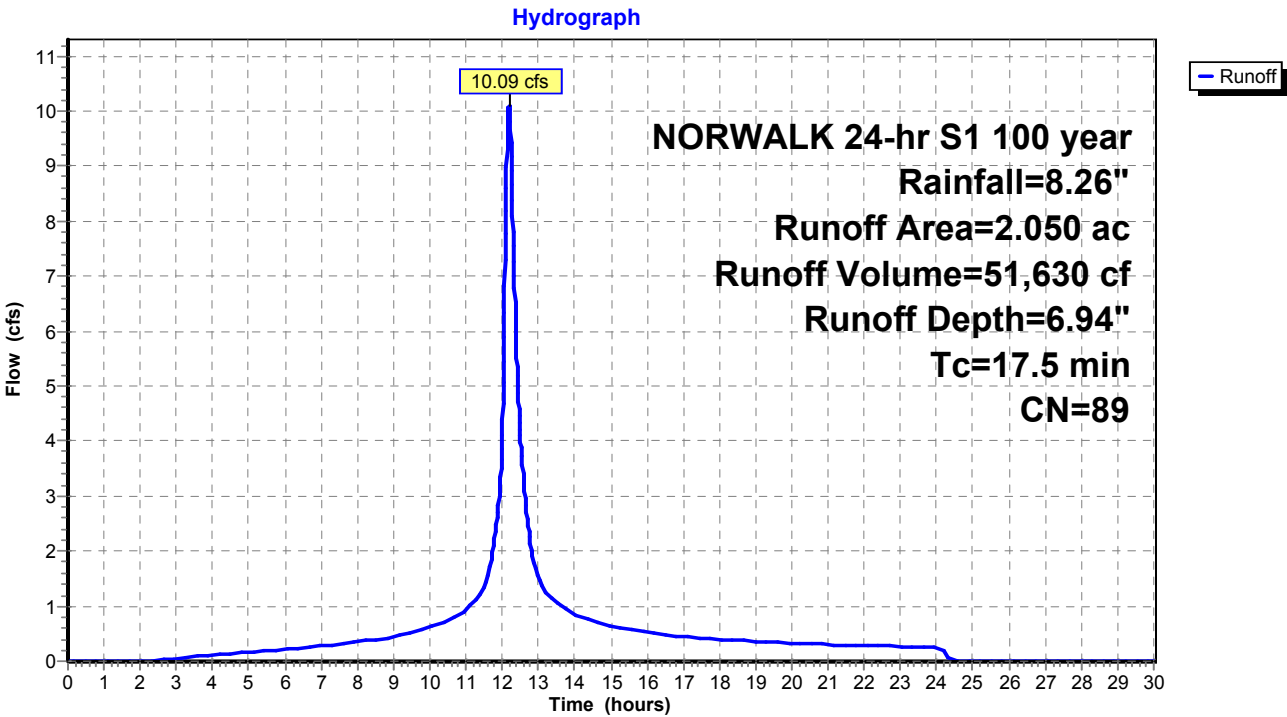
Runoff = 10.09 cfs @ 12.19 hrs, Volume= 51,630 cf, Depth= 6.94"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.526	98	Paved parking & roofs
0.524	61	>75% Grass cover, Good, HSG B
2.050	89	Weighted Average
0.524		25.56% Pervious Area
1.526		74.44% Impervious Area

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

Subcatchment 10CS: Area 10C



Summary for Subcatchment 10DS: Area 10D

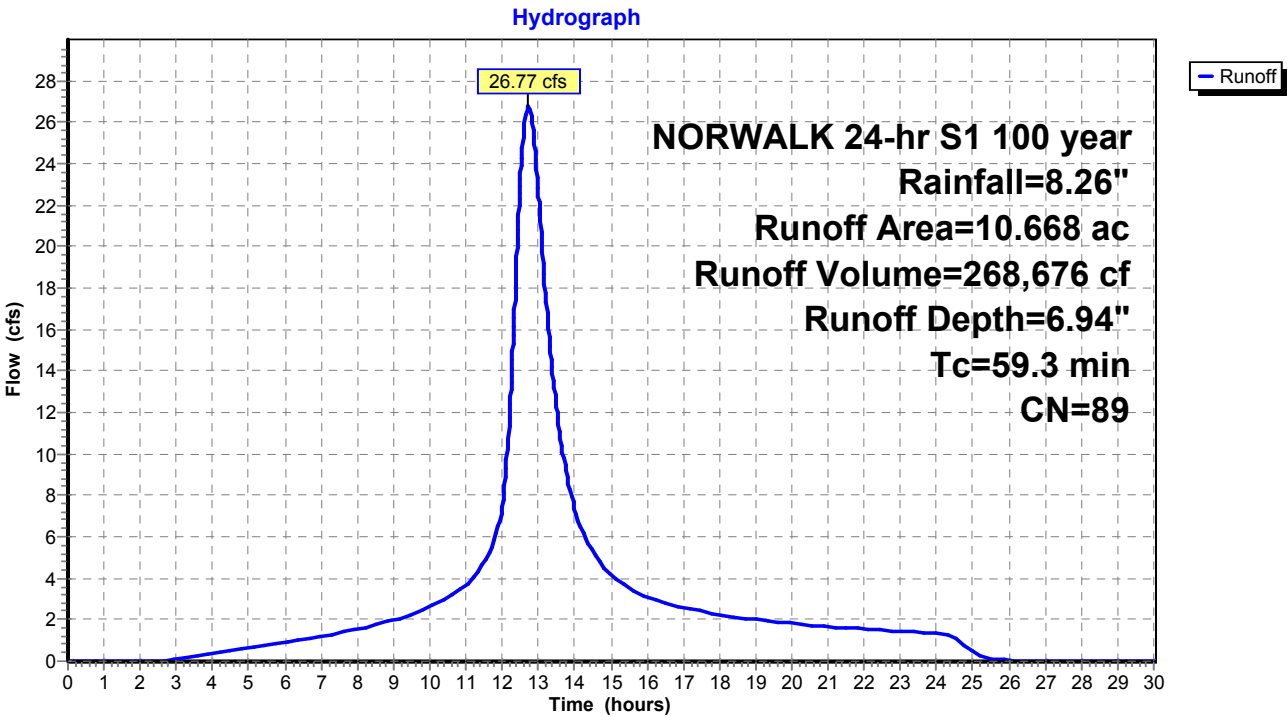
Runoff = 26.77 cfs @ 12.72 hrs, Volume= 268,676 cf, Depth= 6.94"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
5.033	79	50-75% Grass cover, Fair, HSG C
5.635	98	Paved parking, HSG C
10.668	89	Weighted Average
5.033		47.18% Pervious Area
5.635		52.82% Impervious Area

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

Subcatchment 10DS: Area 10D



Summary for Subcatchment 10ES: Area 10E

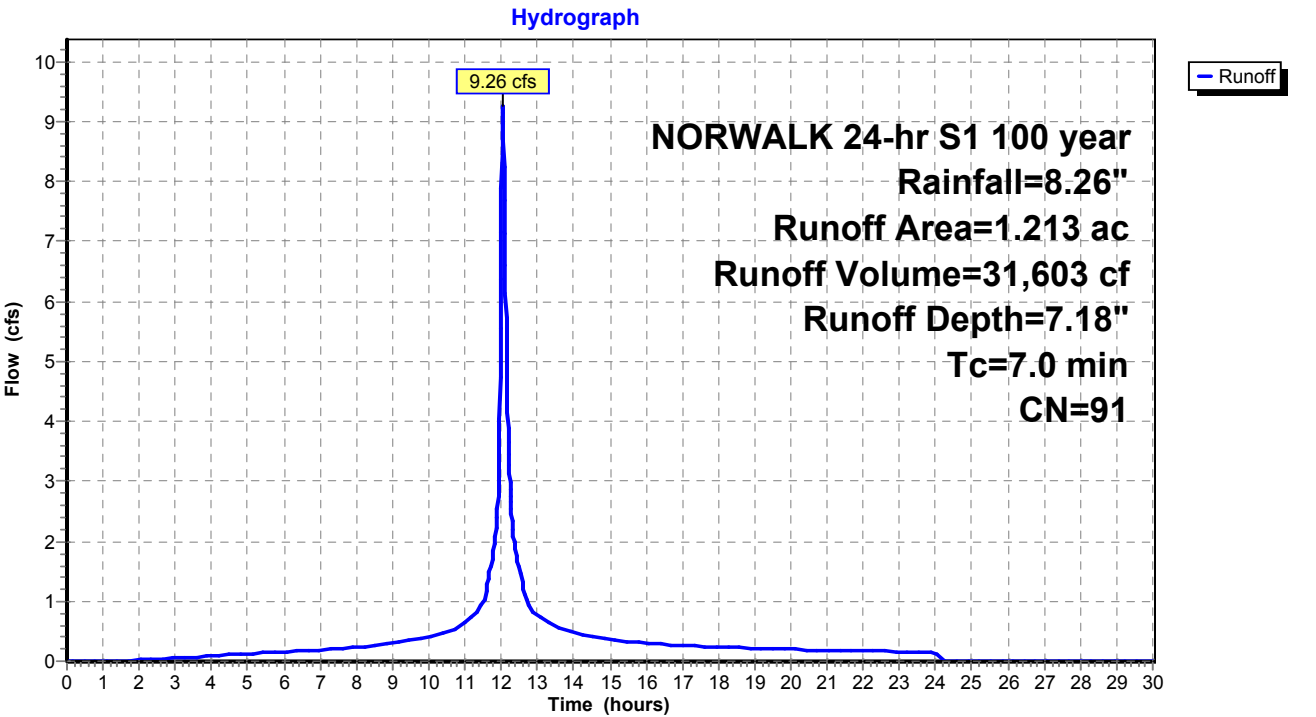
Runoff = 9.26 cfs @ 12.05 hrs, Volume= 31,603 cf, Depth= 7.18"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.781	98	Paved parking, HSG C
0.432	79	50-75% Grass cover, Fair, HSG C
1.213	91	Weighted Average
0.432		35.61% Pervious Area
0.781		64.39% Impervious Area

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

Subcatchment 10ES: Area 10E



Summary for Subcatchment 10FS: Area 10F

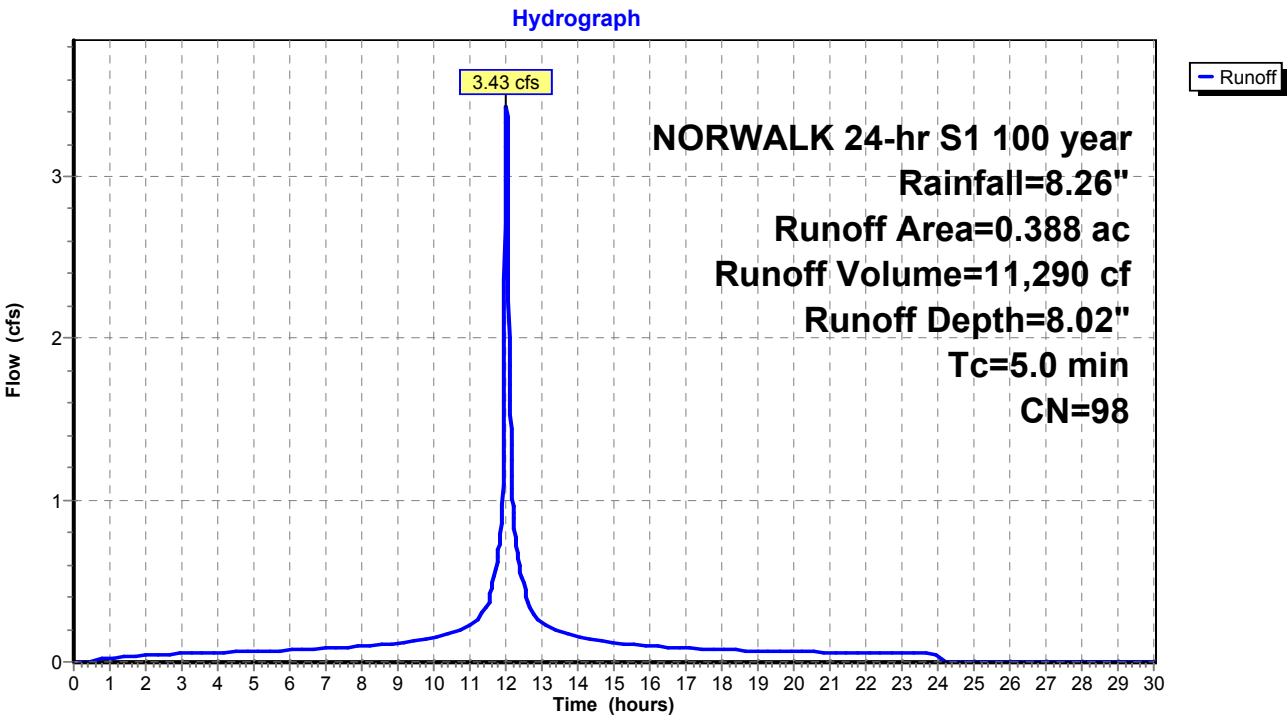
Runoff = 3.43 cfs @ 12.03 hrs, Volume= 11,290 cf, Depth= 8.02"
Routed to Pond P : ADS Stormtech

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.388	98	Paved roads w/curbs & sewers, HSG C
0.388		100.00% Impervious Area

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

Subcatchment 10FS: Area 10F



Summary for Subcatchment 10GS: Area 10G

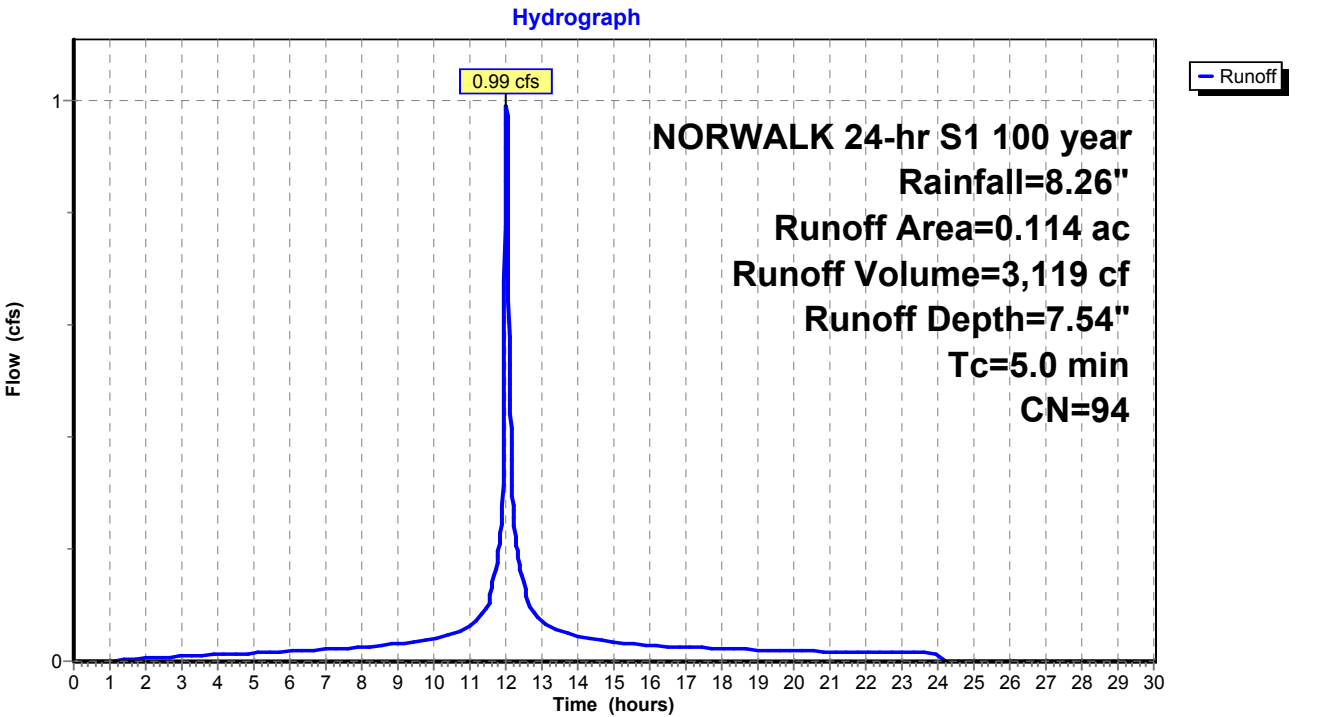
Runoff = 0.99 cfs @ 12.03 hrs, Volume= 3,119 cf, Depth= 7.54"
Routed to Pond 20P : ADS Stormtech (160LP)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
* 0.092	98	Paved parking, HSG C
* 0.022	79	50-75% Grass cover, Fair, HSG C
0.114	94	Weighted Average
0.022		19.30% Pervious Area
0.092		80.70% Impervious Area

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

Subcatchment 10GS: Area 10G



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 11S: Area 11

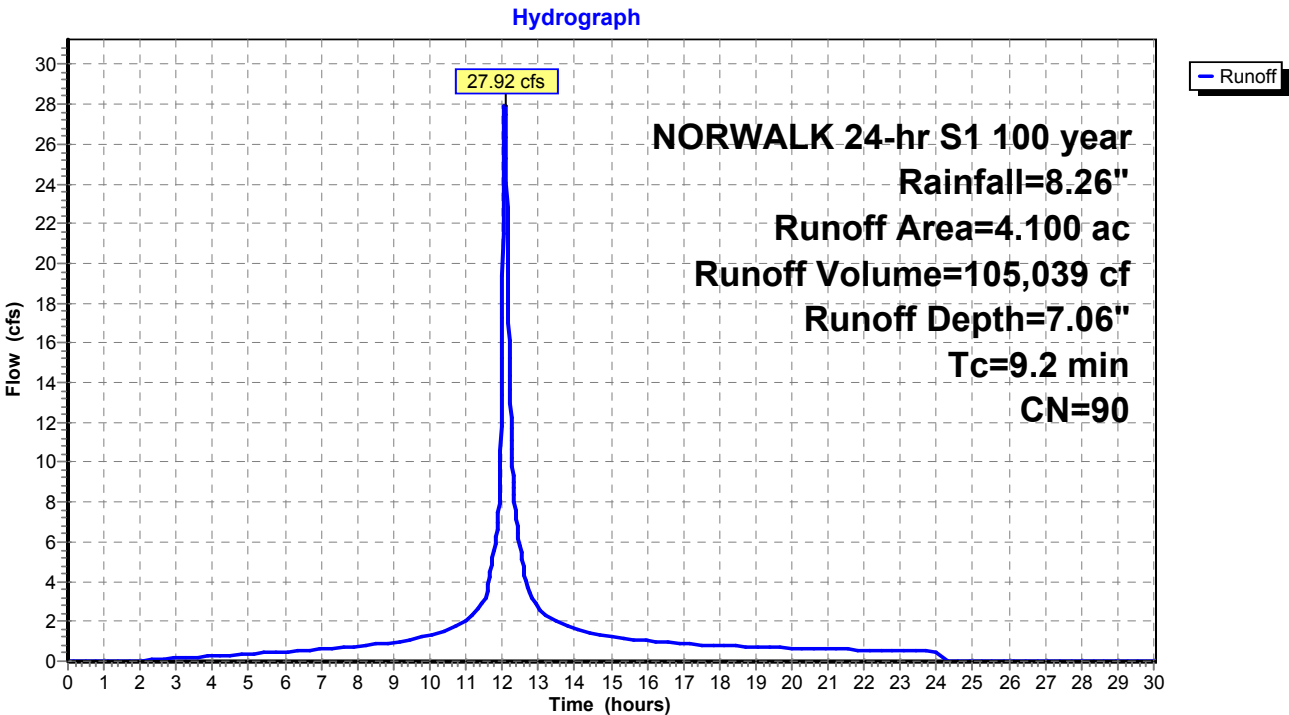
Runoff = 27.92 cfs @ 12.07 hrs, Volume= 105,039 cf, Depth= 7.06"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.450	74	>75% Grass cover, Good, HSG C
2.650	98	Paved parking & roofs
4.100	90	Weighted Average
1.450		35.37% Pervious Area
2.650		64.63% Impervious Area

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

Subcatchment 11S: Area 11



Summary for Subcatchment 12S: Area 12

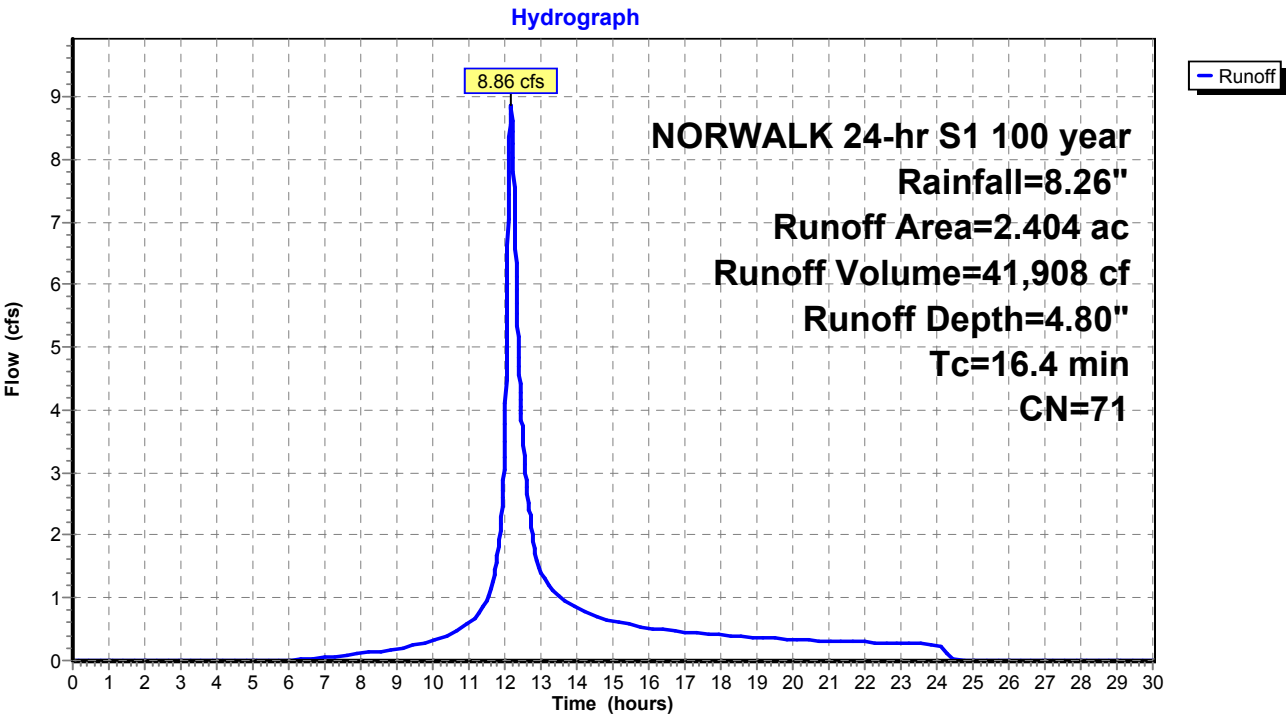
Runoff = 8.86 cfs @ 12.17 hrs, Volume= 41,908 cf, Depth= 4.80"
Routed to Pond 17P : DET 12 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.054	70	Woods, Good, HSG C
0.350	77	Woods, Good, HSG D
2.404	71	Weighted Average
2.404		100.00% Pervious Area

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

Subcatchment 12S: Area 12



Summary for Subcatchment 13S: Area 13

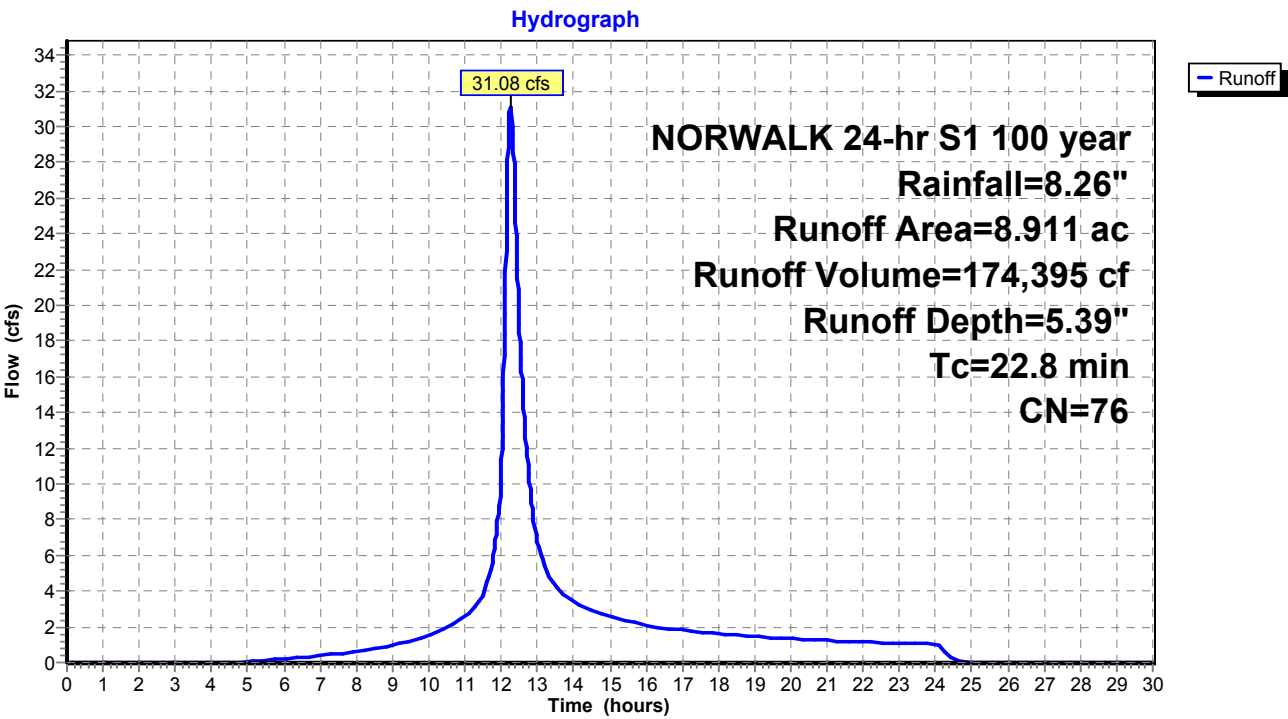
Runoff = 31.08 cfs @ 12.26 hrs, Volume= 174,395 cf, Depth= 5.39"
Routed to Pond 1P : RR Culvert 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.220	70	Woods, Good, HSG C
7.691	77	Woods, Good, HSG D
8.911	76	Weighted Average
8.911		100.00% Pervious Area

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

Subcatchment 13S: Area 13



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 14S: Area 14

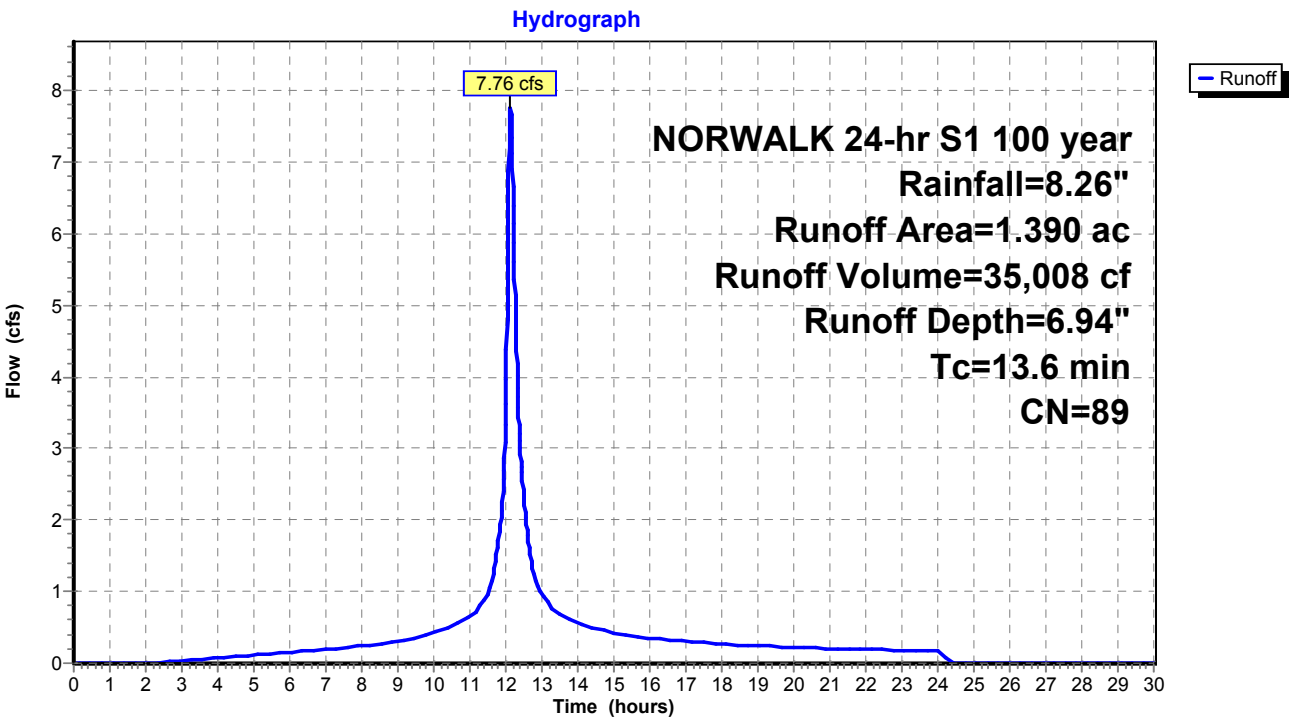
Runoff = 7.76 cfs @ 12.13 hrs, Volume= 35,008 cf, Depth= 6.94"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.510	74	>75% Grass cover, Good, HSG C
0.880	98	Paved parking & roofs
1.390	89	Weighted Average
0.510		36.69% Pervious Area
0.880		63.31% Impervious Area

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

Subcatchment 14S: Area 14



Summary for Subcatchment 15S: Area 15

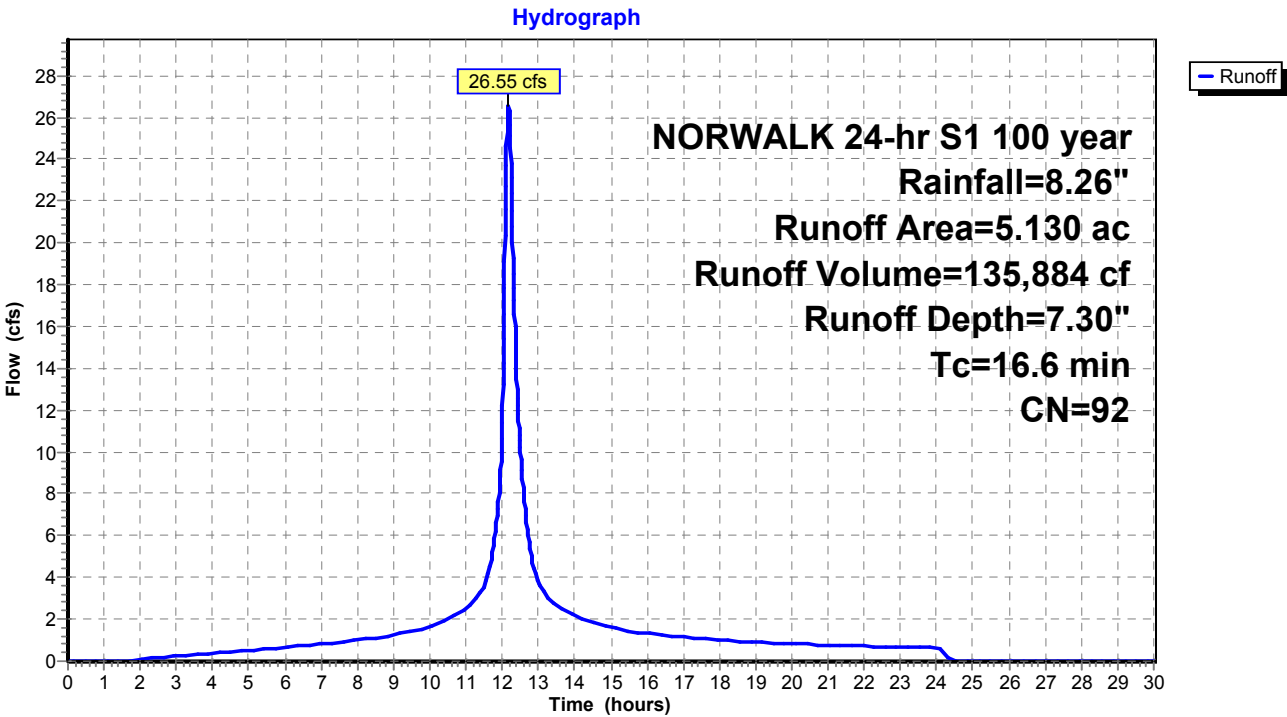
Runoff = 26.55 cfs @ 12.17 hrs, Volume= 135,884 cf, Depth= 7.30"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.250	74	>75% Grass cover, Good, HSG C
3.880	98	Paved parking & roofs
5.130	92	Weighted Average
1.250		24.37% Pervious Area
3.880		75.63% Impervious Area

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

Subcatchment 15S: Area 15



Summary for Subcatchment 16S: Area 16A

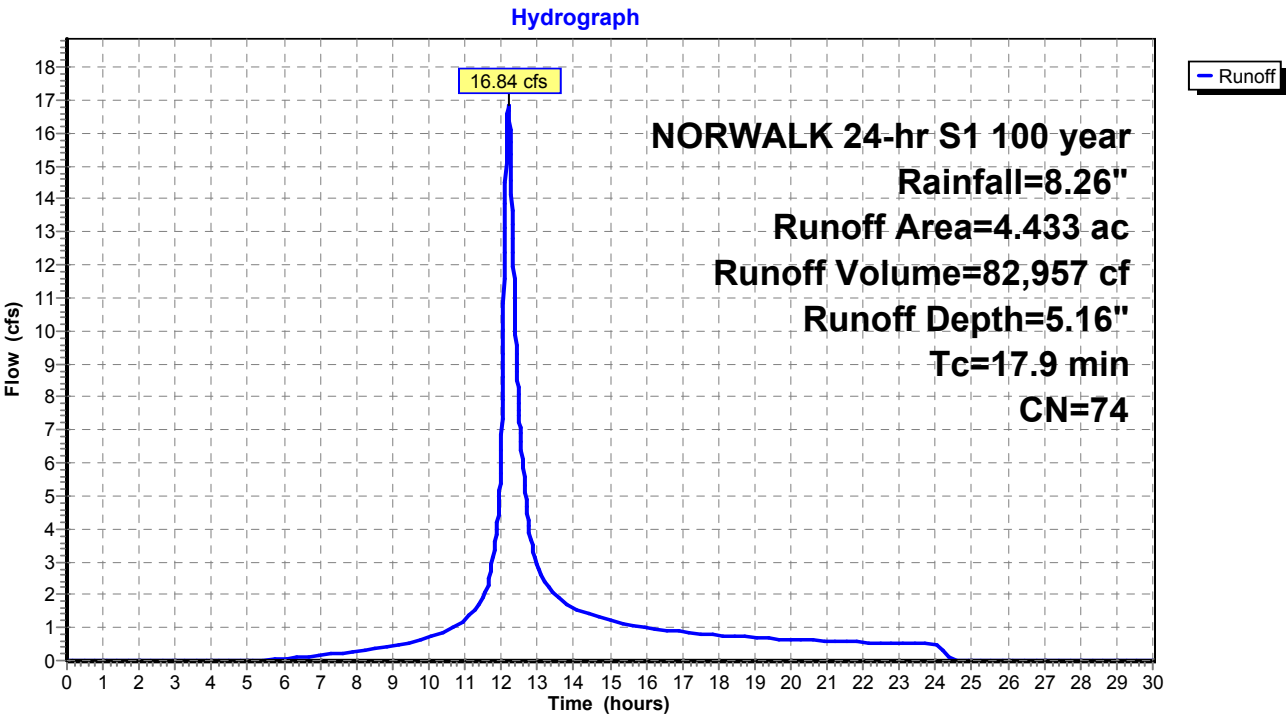
Runoff = 16.84 cfs @ 12.19 hrs, Volume= 82,957 cf, Depth= 5.16"
Routed to Pond 26P : DET 16 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.030	70	Woods, Good, HSG C
2.060	77	Woods, Good, HSG D
0.150	89	Gravel roads, HSG C
0.193	74	>75% Grass cover, Good, HSG C
4.433	74	Weighted Average
4.433		100.00% Pervious Area

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

Subcatchment 16S: Area 16A



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 17S: Area 17

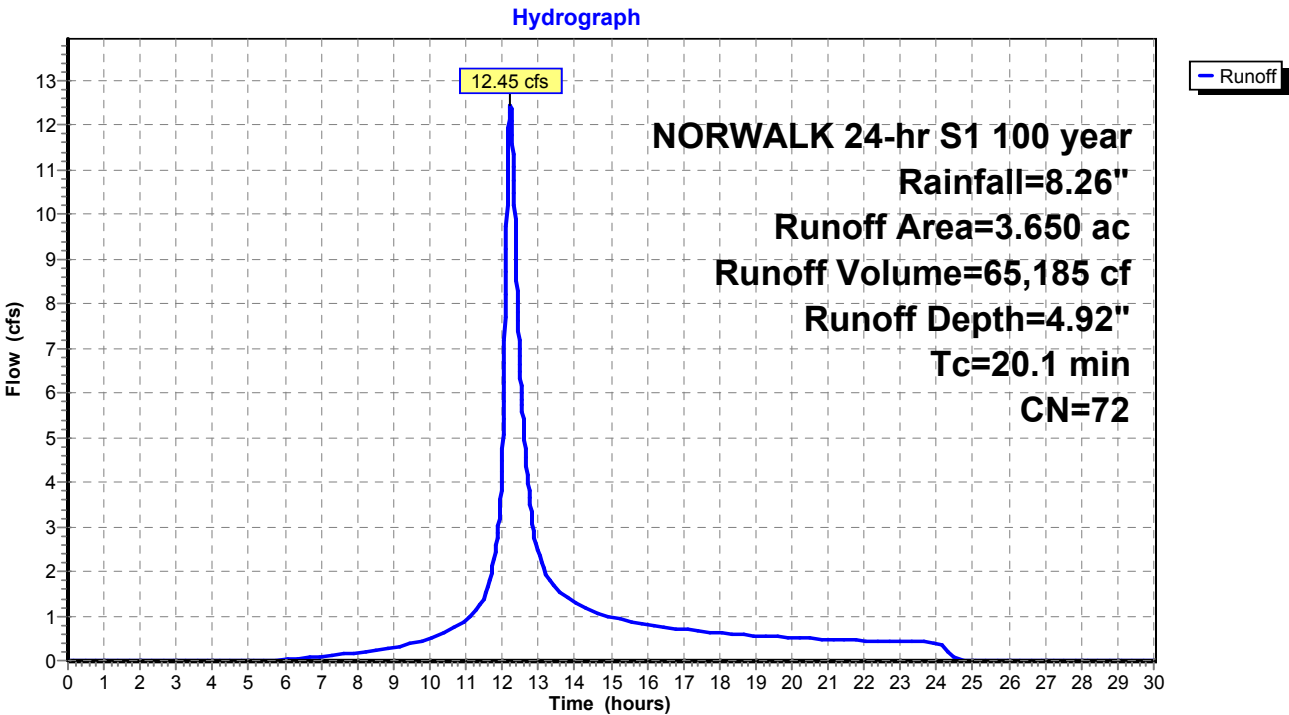
Runoff = 12.45 cfs @ 12.22 hrs, Volume= 65,185 cf, Depth= 4.92"
Routed to Pond 27P : DET 17 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
2.630	70	Woods, Good, HSG C
0.960	77	Woods, Good, HSG D
0.060	98	Paved parking & roofs
3.650	72	Weighted Average
3.590		98.36% Pervious Area
0.060		1.64% Impervious Area

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

Subcatchment 17S: Area 17



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 20S: Area 20

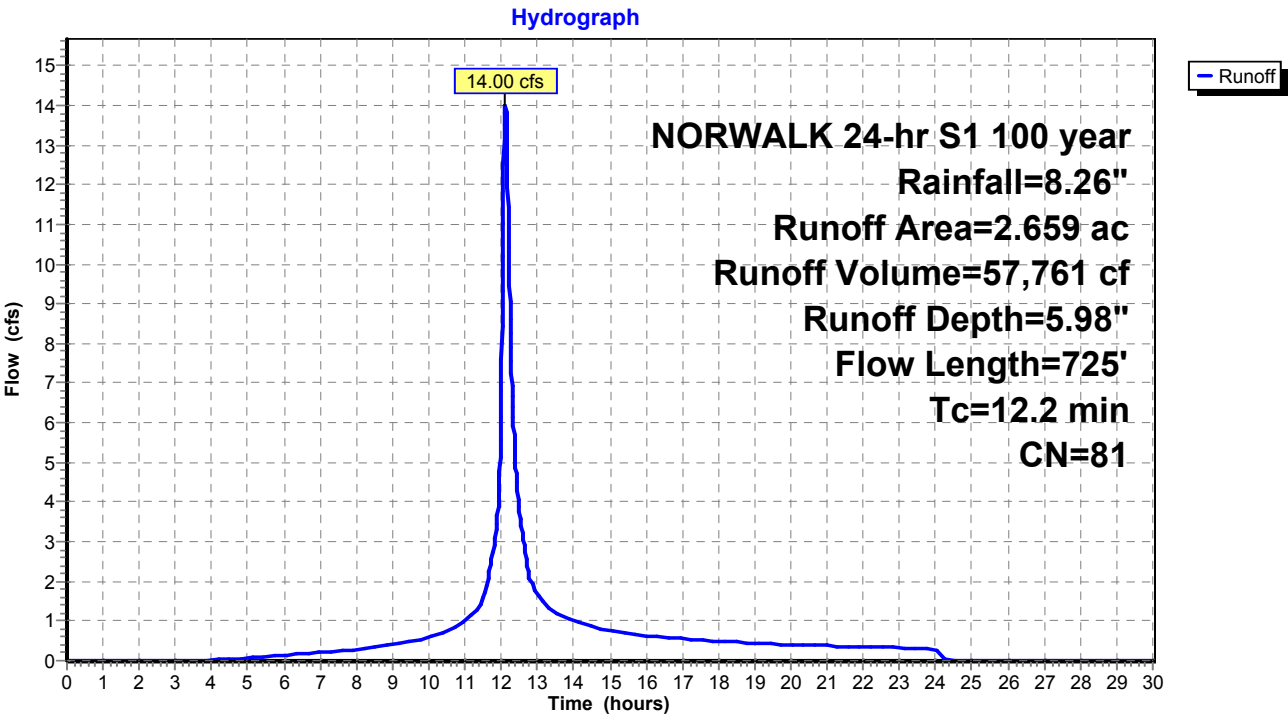
Runoff = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf, Depth= 5.98"
Routed to Pond 16P : MH-Q

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
1.030	98	Paved parking & roofs
1.629	70	Woods, Good, HSG C
2.659	81	Weighted Average
1.629		61.26% Pervious Area
1.030		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	125	0.2400	0.19		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.40"
1.2	600	0.0200	8.41	14.86	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013
12.2	725	Total			

Subcatchment 20S: Area 20



Summary for Subcatchment 21S: Area 21

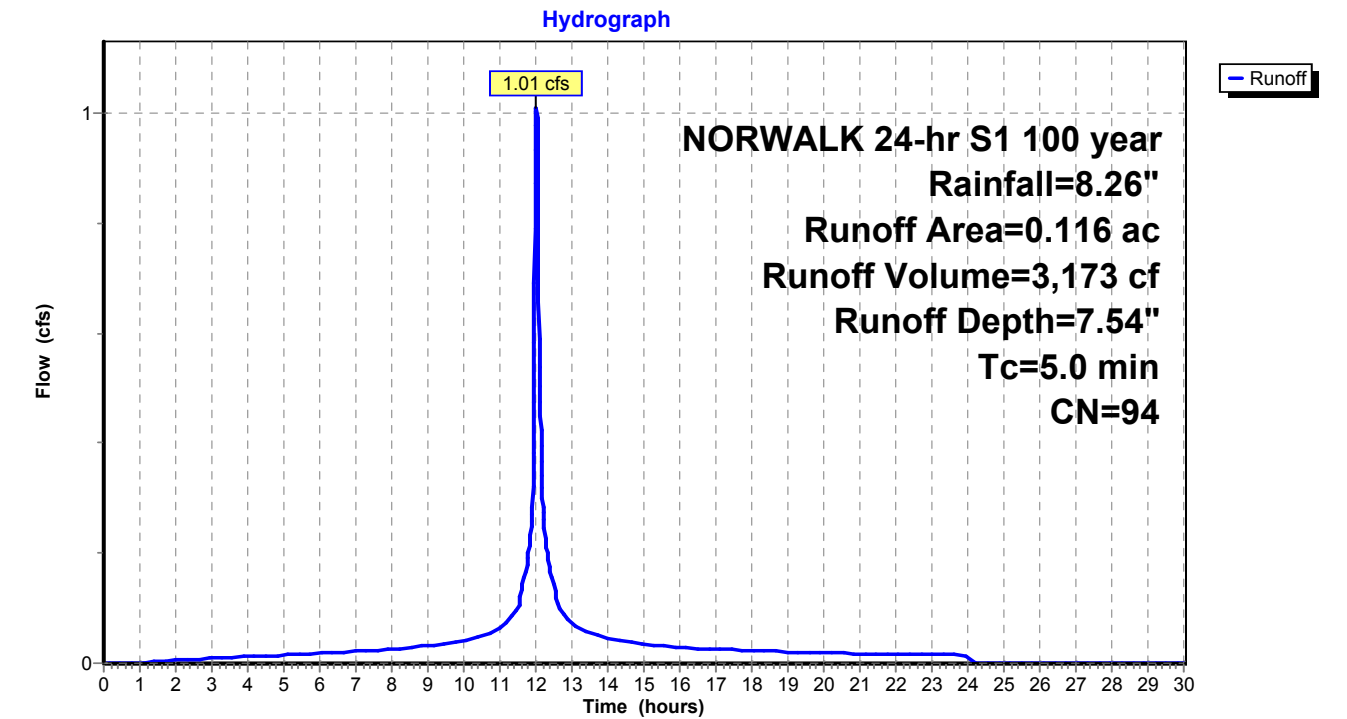
Runoff = 1.01 cfs @ 12.03 hrs, Volume= 3,173 cf, Depth= 7.54"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.020	74	>75% Grass cover, Good, HSG C
0.096	98	Paved parking & roofs
0.116	94	Weighted Average
0.020		17.24% Pervious Area
0.096		82.76% Impervious Area

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

Subcatchment 21S: Area 21



Summary for Subcatchment 22S: Area 22

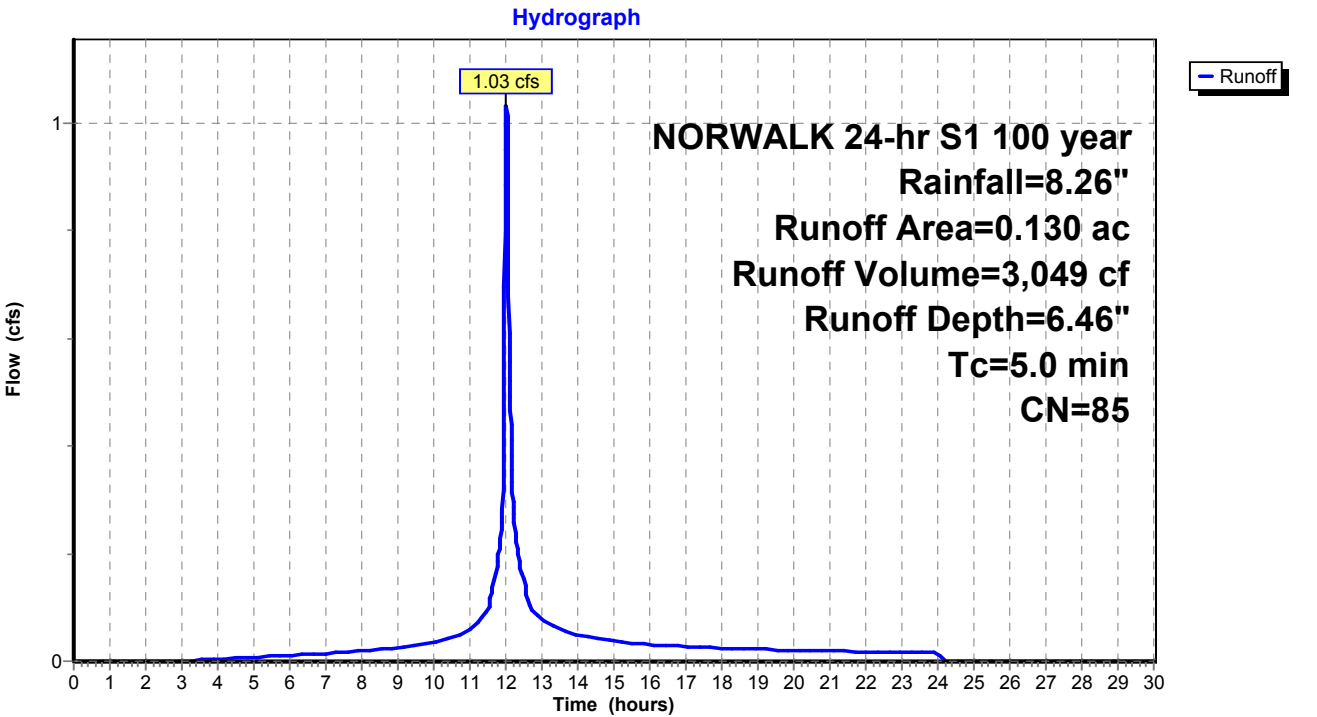
Runoff = 1.03 cfs @ 12.03 hrs, Volume= 3,049 cf, Depth= 6.46"
Routed to Pond 15P : MH-P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.068	74	>75% Grass cover, Good, HSG C
0.062	98	Paved parking & roofs
0.130	85	Weighted Average
0.068		52.31% Pervious Area
0.062		47.69% Impervious Area

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

Subcatchment 22S: Area 22



Summary for Subcatchment 23S: Area 23

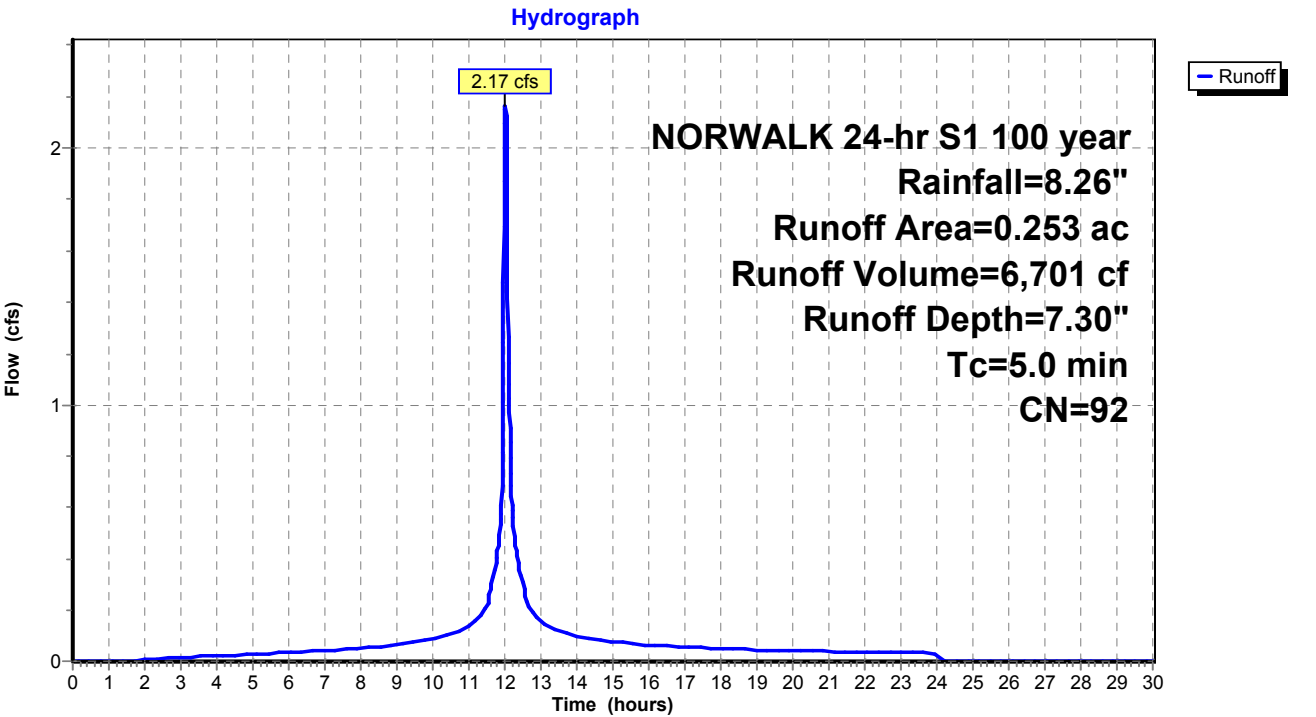
Runoff = 2.17 cfs @ 12.03 hrs, Volume= 6,701 cf, Depth= 7.30"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.188	98	Paved parking & roofs
0.065	74	>75% Grass cover, Good, HSG C
0.253	92	Weighted Average
0.065		25.69% Pervious Area
0.188		74.31% Impervious Area

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

Subcatchment 23S: Area 23



Summary for Subcatchment 24S: Area 24

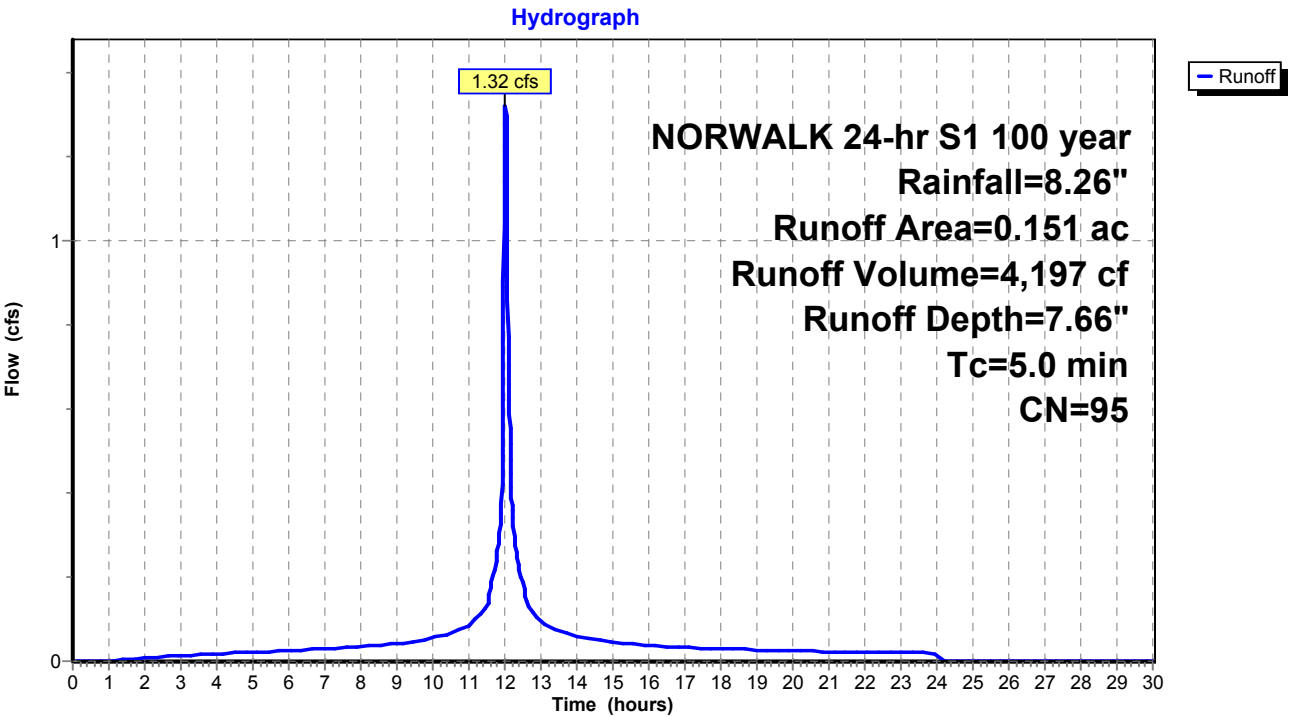
Runoff = 1.32 cfs @ 12.03 hrs, Volume= 4,197 cf, Depth= 7.66"
Routed to Pond 14P : MH-O

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.125	98	Paved parking & roofs
0.026	80	>75% Grass cover, Good, HSG D
0.151	95	Weighted Average
0.026		17.22% Pervious Area
0.125		82.78% Impervious Area

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

Subcatchment 24S: Area 24



Summary for Subcatchment 25S: Area 25

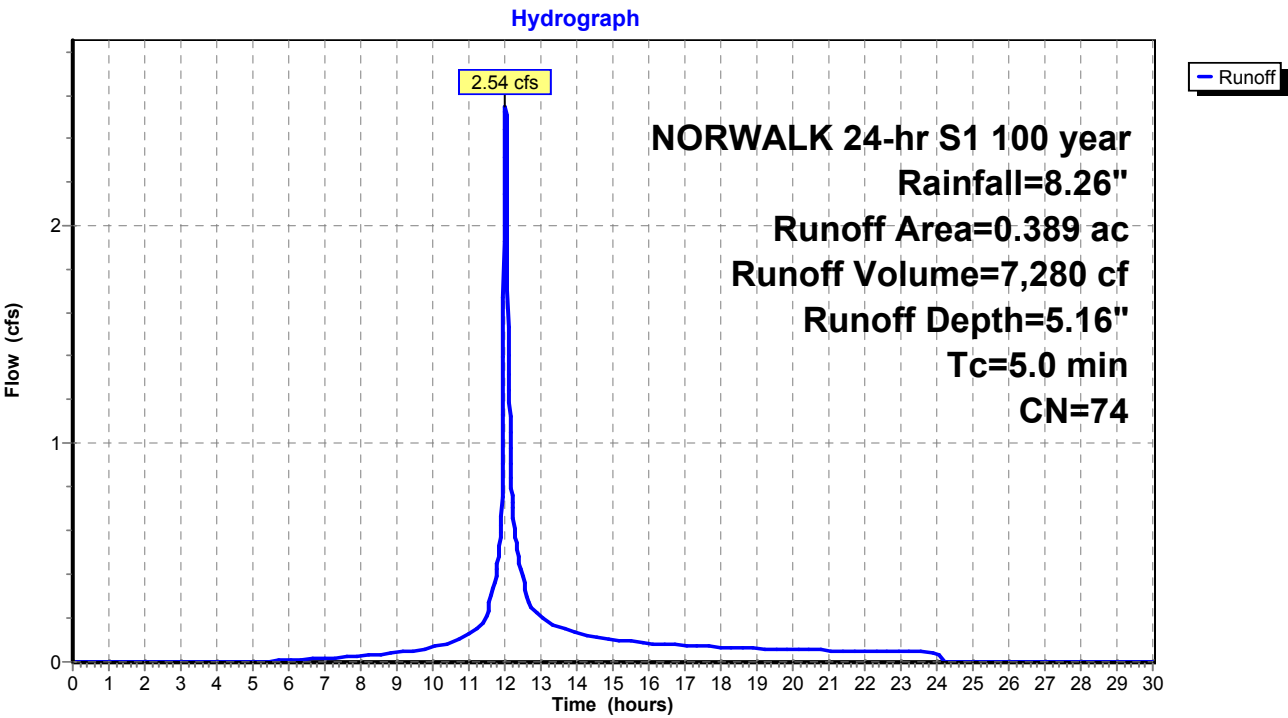
Runoff = 2.54 cfs @ 12.03 hrs, Volume= 7,280 cf, Depth= 5.16"
Routed to Pond 3P : DETENTION BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.389	74	>75% Grass cover, Good, HSG C
0.389		100.00% Pervious Area

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

Subcatchment 25S: Area 25



Summary for Subcatchment 26S: Area 26

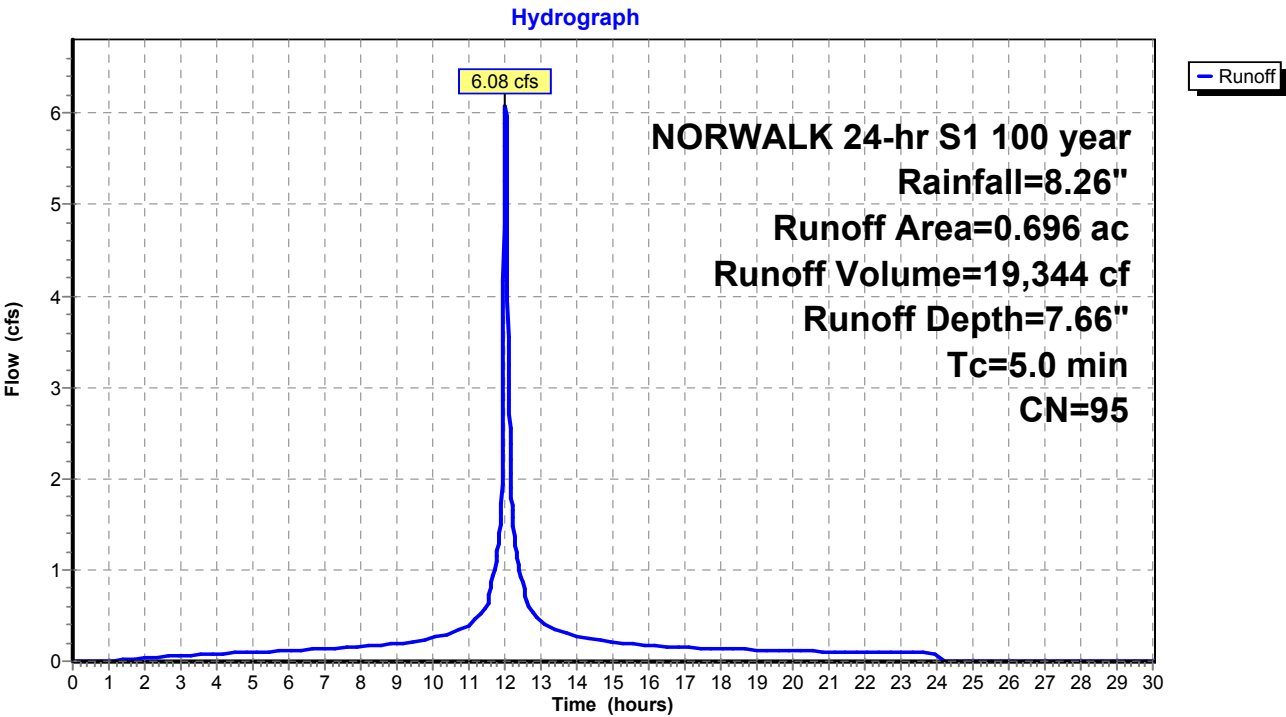
Runoff = 6.08 cfs @ 12.03 hrs, Volume= 19,344 cf, Depth= 7.66"
Routed to Pond 9P : MH-K

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.612	98	Paved parking & roofs
0.084	74	>75% Grass cover, Good, HSG C
0.696	95	Weighted Average
0.084		12.07% Pervious Area
0.612		87.93% Impervious Area

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

Subcatchment 26S: Area 26



Summary for Subcatchment 27S: Area 27

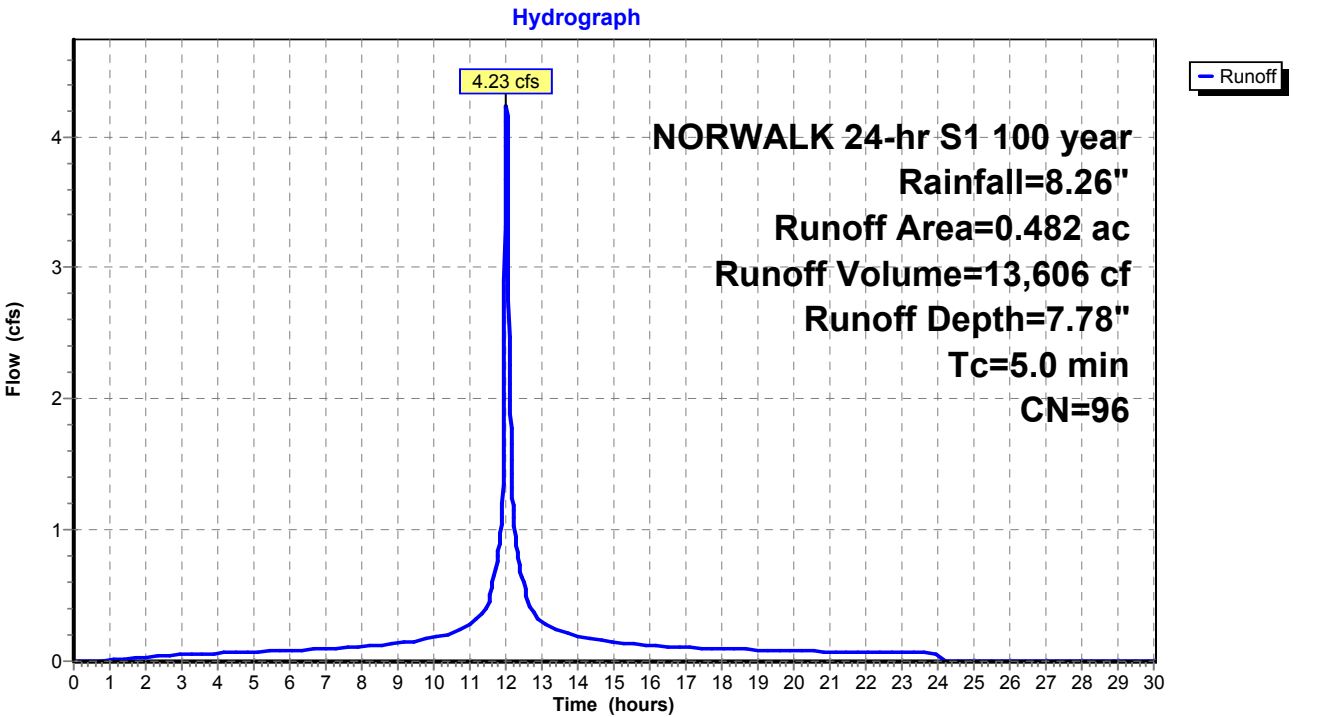
Runoff = 4.23 cfs @ 12.03 hrs, Volume= 13,606 cf, Depth= 7.78"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.436	98	Paved parking & roofs
0.046	74	>75% Grass cover, Good, HSG C
0.482	96	Weighted Average
0.046		9.54% Pervious Area
0.436		90.46% Impervious Area

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

Subcatchment 27S: Area 27



Proposed Conditions

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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 28S: Area 28

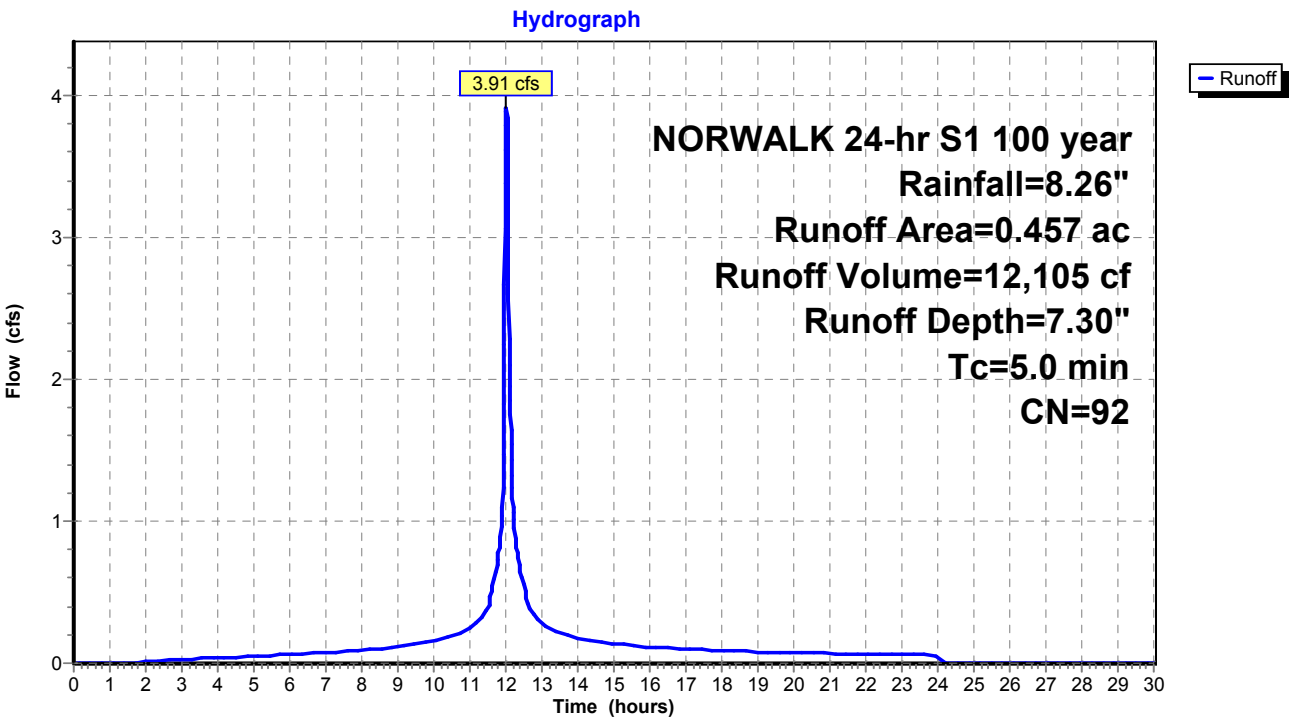
Runoff = 3.91 cfs @ 12.03 hrs, Volume= 12,105 cf, Depth= 7.30"
Routed to Pond 11P : Pipe Storage

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.342	98	Paved parking & roofs
0.115	74	>75% Grass cover, Good, HSG C
0.457	92	Weighted Average
0.115		25.16% Pervious Area
0.342		74.84% Impervious Area

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

Subcatchment 28S: Area 28



Summary for Subcatchment 29S: Area 29

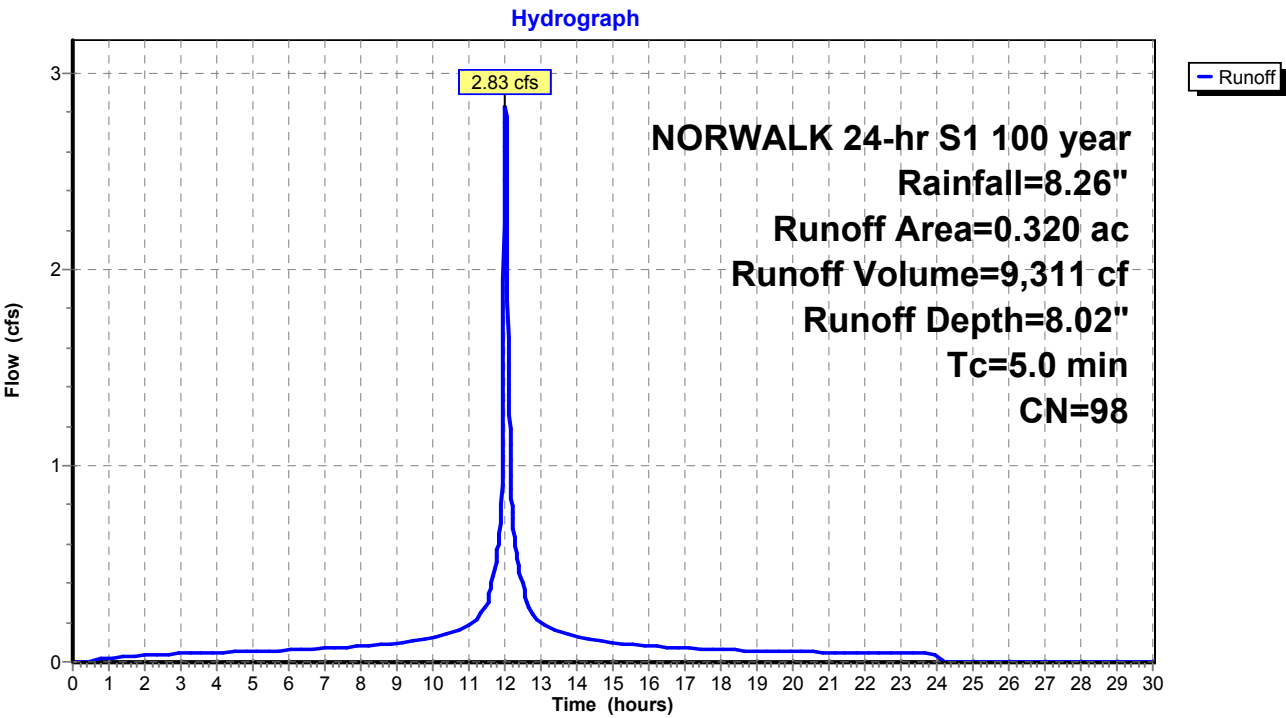
Runoff = 2.83 cfs @ 12.03 hrs, Volume= 9,311 cf, Depth= 8.02"
Routed to Pond 12P : MH-M

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.320	98	Paved parking & roofs
0.320		100.00% Impervious Area

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

Subcatchment 29S: Area 29



Summary for Subcatchment 30S: Area 30

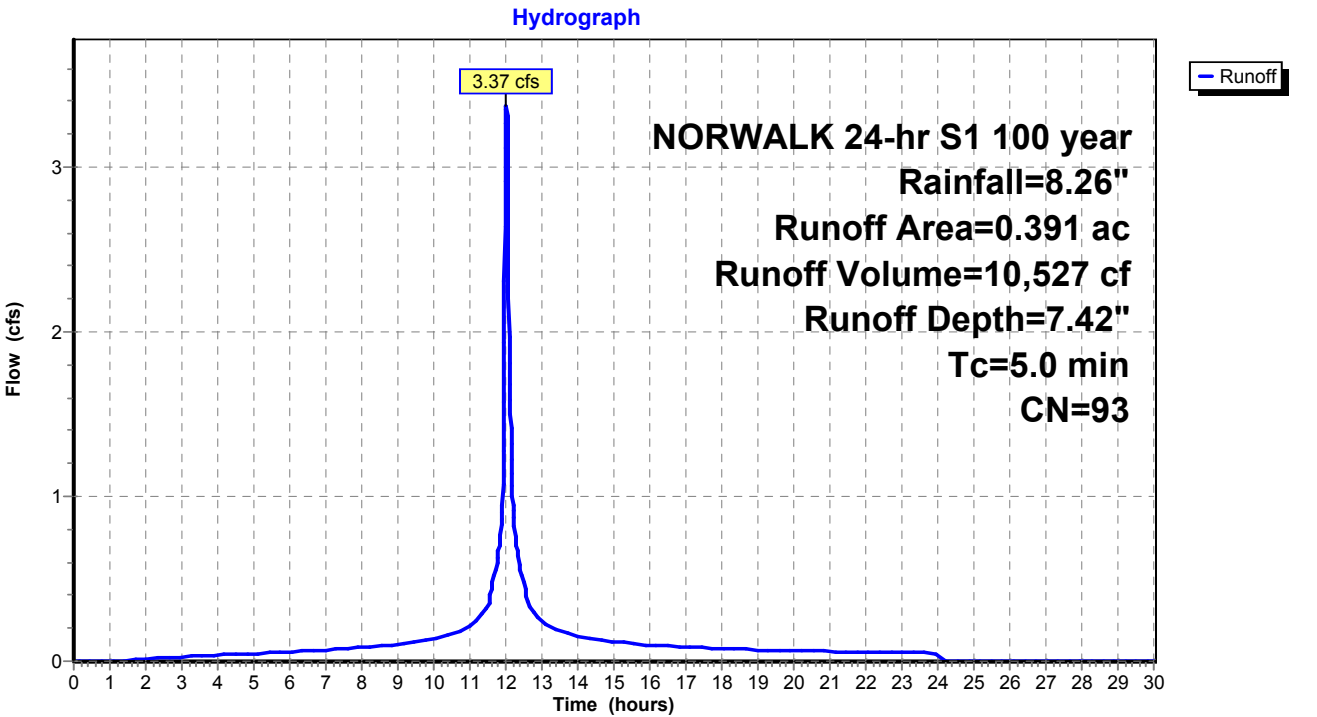
Runoff = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf, Depth= 7.42"
Routed to Pond 13P : MH-J

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.082	74	>75% Grass cover, Good, HSG C
0.391	93	Weighted Average
0.082		20.97% Pervious Area
0.309		79.03% Impervious Area

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

Subcatchment 30S: Area 30



Summary for Subcatchment 52S: Area 1

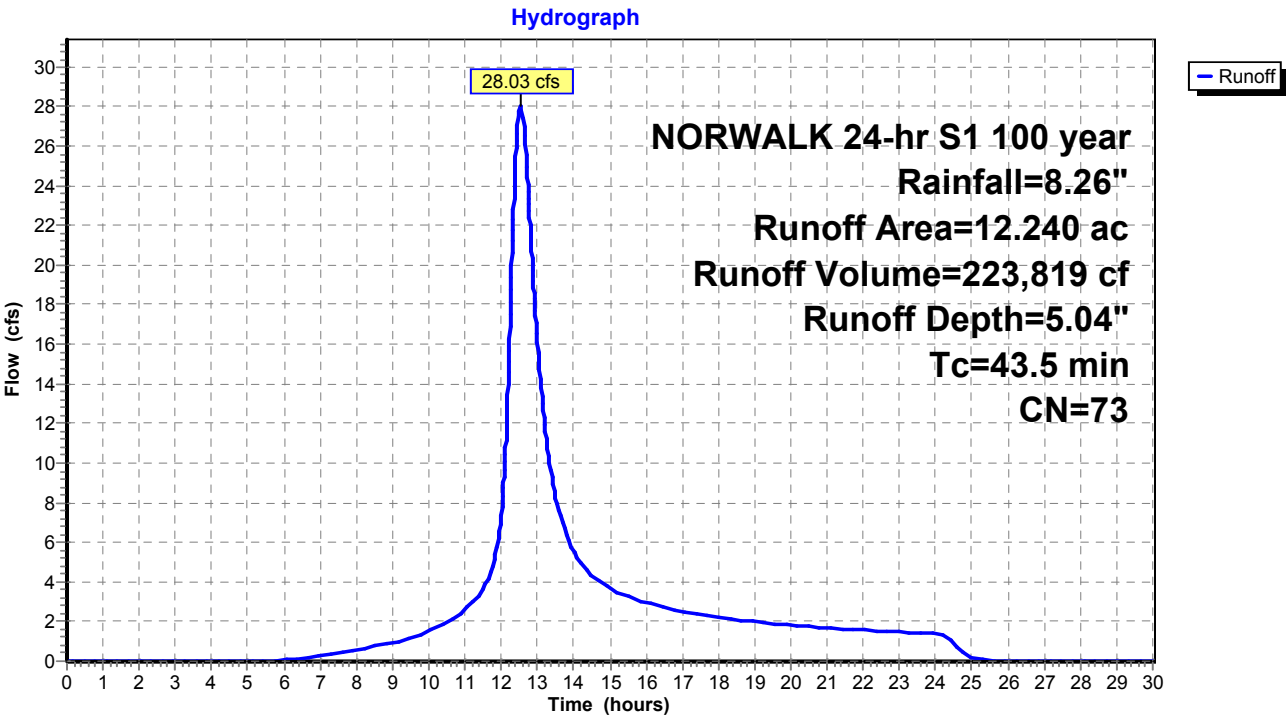
Runoff = 28.03 cfs @ 12.52 hrs, Volume= 223,819 cf, Depth= 5.04"
Routed to Pond 21P : DET 1 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
9.070	70	1/2 acre lots, 25% imp, HSG B
3.170	80	1/2 acre lots, 25% imp, HSG C
12.240	73	Weighted Average
9.180		75.00% Pervious Area
3.060		25.00% Impervious Area

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

Subcatchment 52S: Area 1



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 53S: Area 2

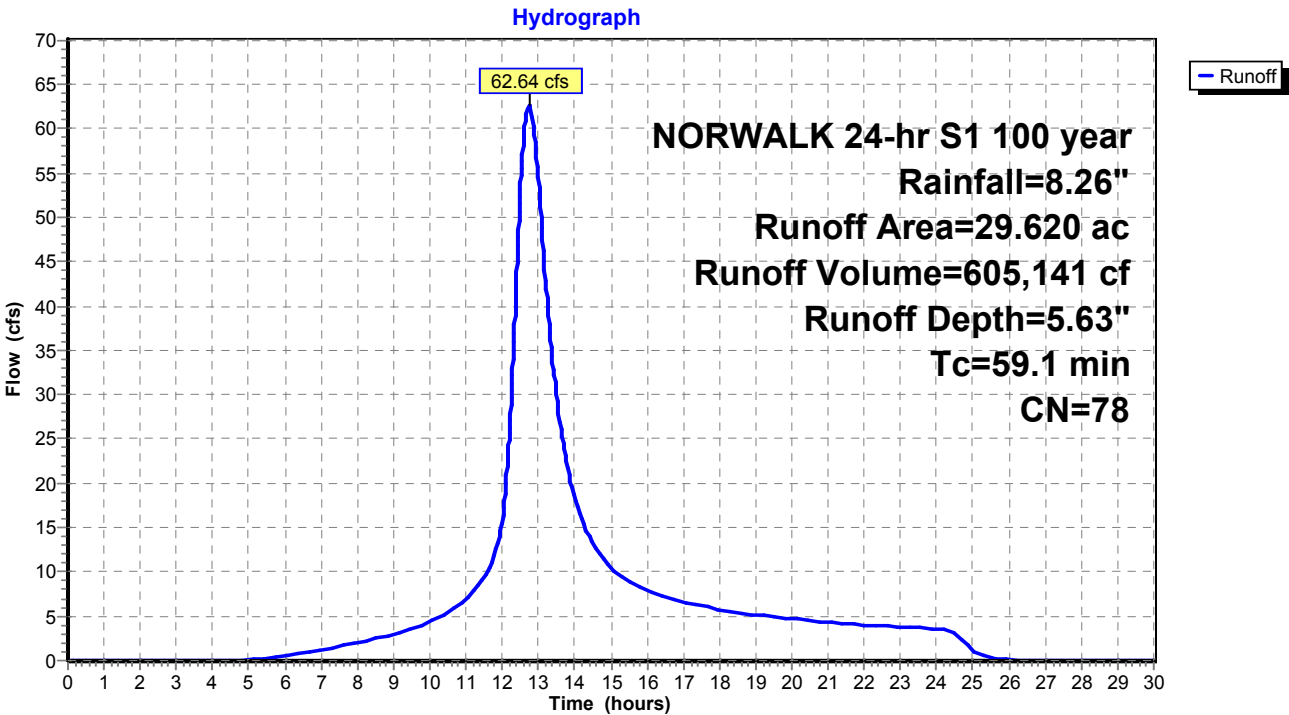
Runoff = 62.64 cfs @ 12.74 hrs, Volume= 605,141 cf, Depth= 5.63"
Routed to Pond 22P : DET 2 Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
7.290	70	1/2 acre lots, 25% imp, HSG B
19.200	80	1/2 acre lots, 25% imp, HSG C
3.130	85	1/2 acre lots, 25% imp, HSG D
29.620	78	Weighted Average
22.215		75.00% Pervious Area
7.405		25.00% Impervious Area

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

Subcatchment 53S: Area 2



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Subcatchment 54S: Area 3

Runoff = 23.17 cfs @ 12.22 hrs, Volume= 118,644 cf, Depth= 5.16"
Routed to Pond 23P : DET 3 Culvert

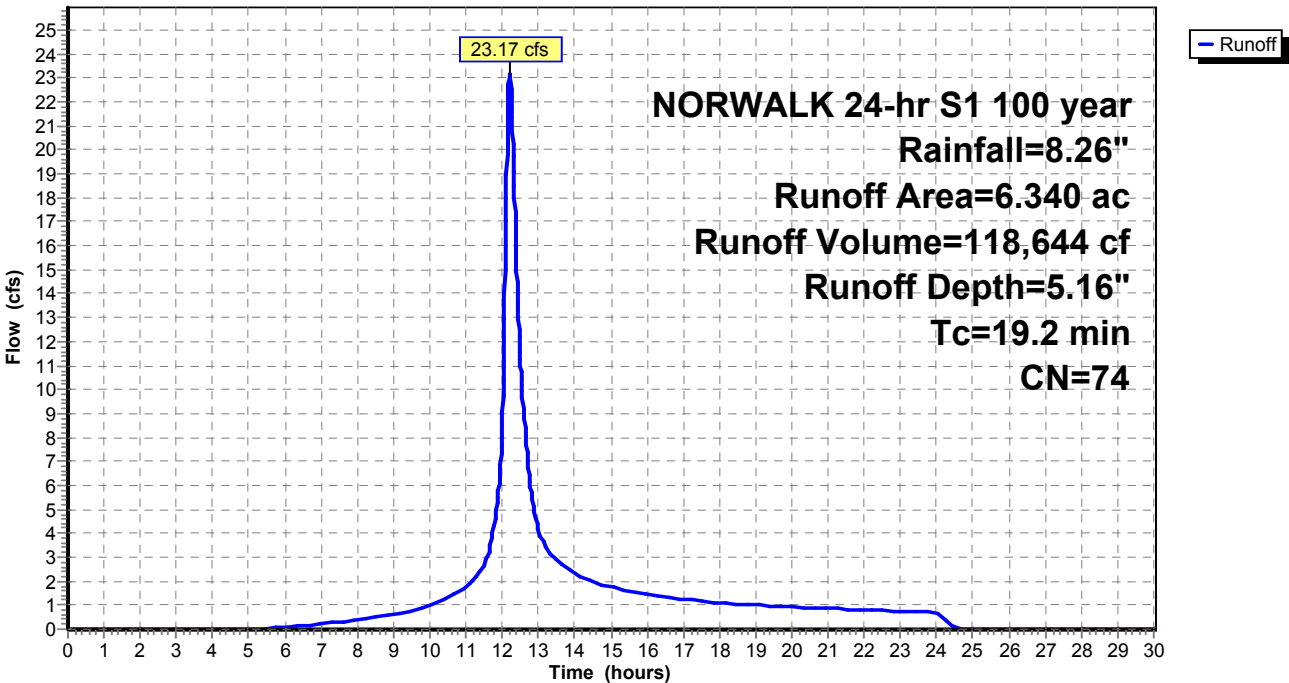
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
3.500	70	1/2 acre lots, 25% imp, HSG B
2.840	80	1/2 acre lots, 25% imp, HSG C
6.340	74	Weighted Average
4.755		75.00% Pervious Area
1.585		25.00% Impervious Area

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

Subcatchment 54S: Area 3

Hydrograph



Summary for Subcatchment 56S: Area 35

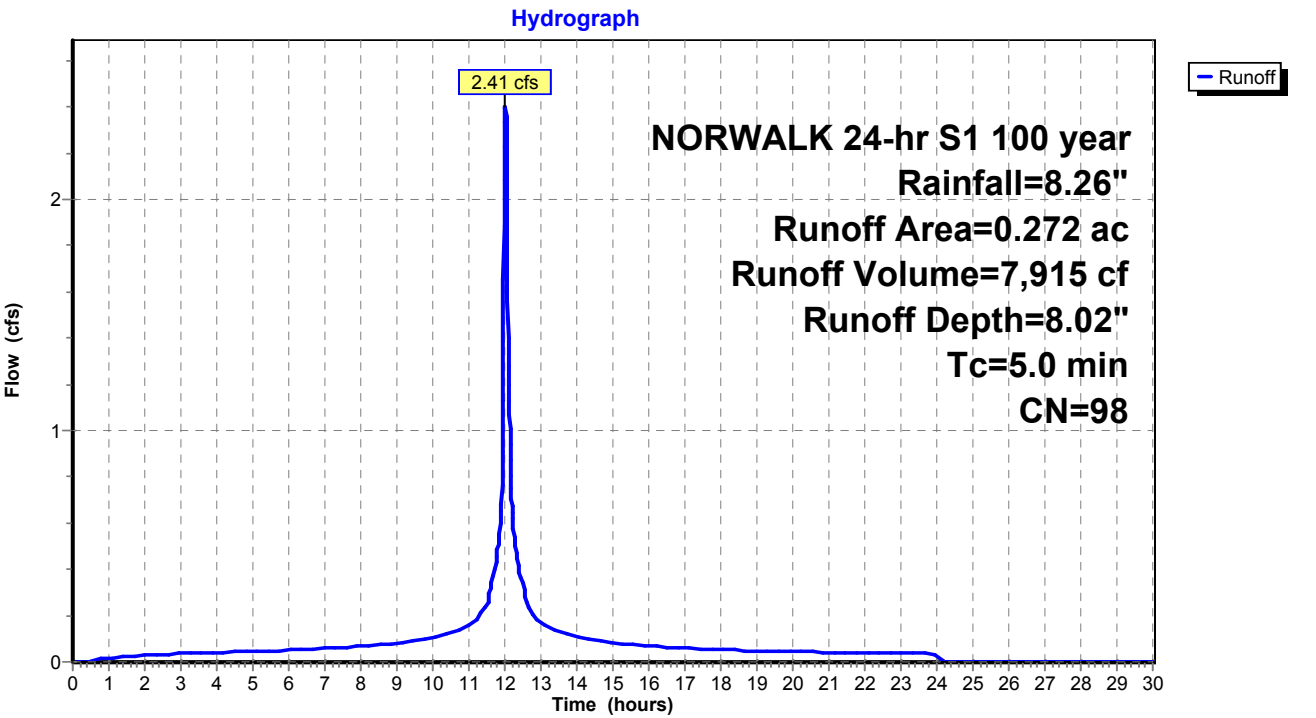
Runoff = 2.41 cfs @ 12.03 hrs, Volume= 7,915 cf, Depth= 8.02"
Routed to Pond 57P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.272	98	Paved parking & roofs
0.272		100.00% Impervious Area

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

Subcatchment 56S: Area 35



Summary for Subcatchment 60S: Area 37

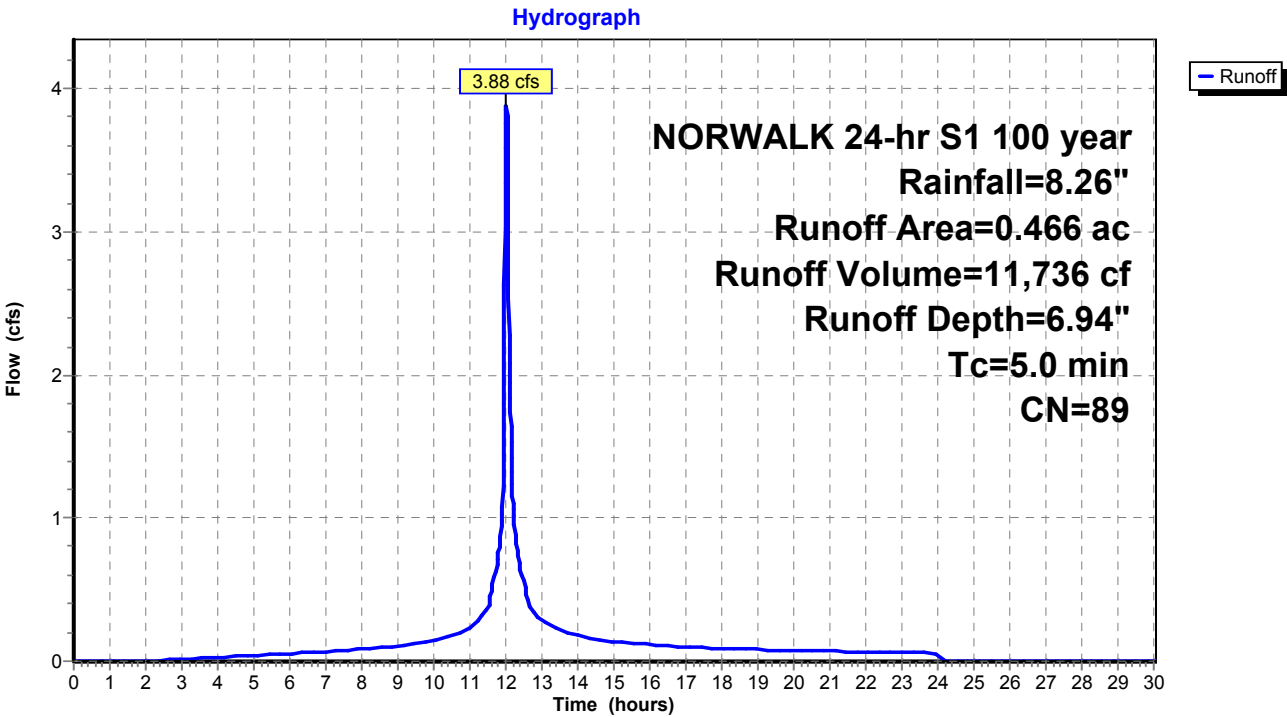
Runoff = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf, Depth= 6.94"
Routed to Pond 59P : CB-7

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.294	98	Paved parking & roofs
0.172	74	>75% Grass cover, Good, HSG C
0.466	89	Weighted Average
0.172		36.91% Pervious Area
0.294		63.09% Impervious Area

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

Subcatchment 60S: Area 37



Summary for Subcatchment 62S: Area 38

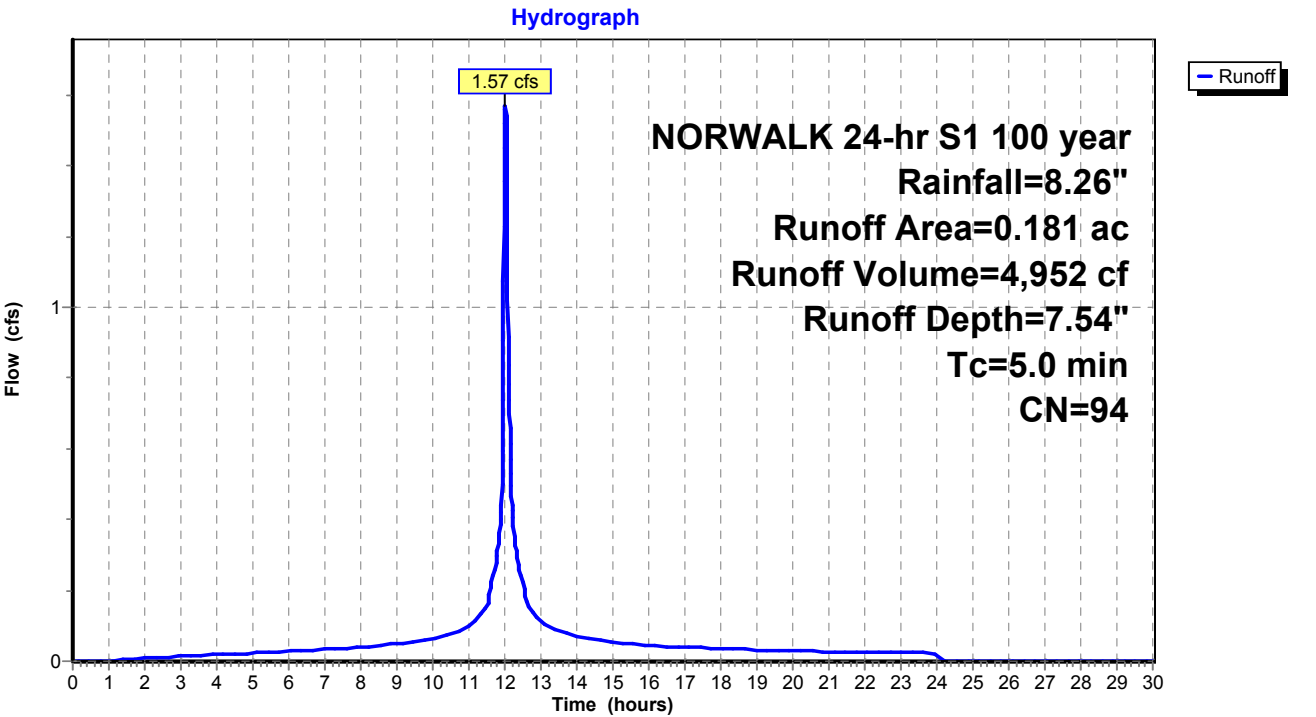
Runoff = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf, Depth= 7.54"
Routed to Pond 61P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.149	98	Paved parking & roofs
0.032	74	>75% Grass cover, Good, HSG C
0.181	94	Weighted Average
0.032		17.68% Pervious Area
0.149		82.32% Impervious Area

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

Subcatchment 62S: Area 38



Summary for Subcatchment 65S: Area 41

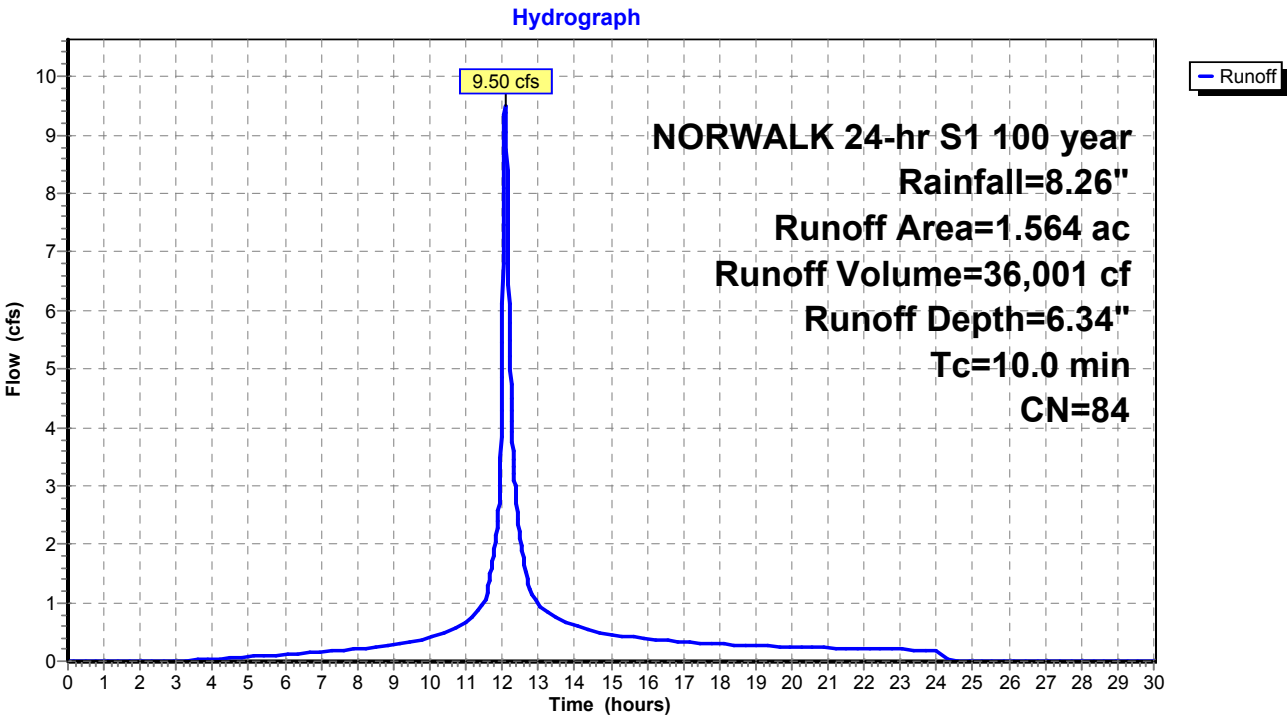
Runoff = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf, Depth= 6.34"
Routed to Pond 64P : YD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.653	98	Paved parking & roofs
0.911	74	>75% Grass cover, Good, HSG C
1.564	84	Weighted Average
0.911		58.25% Pervious Area
0.653		41.75% Impervious Area

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

Subcatchment 65S: Area 41



Summary for Subcatchment 68S: Area 36

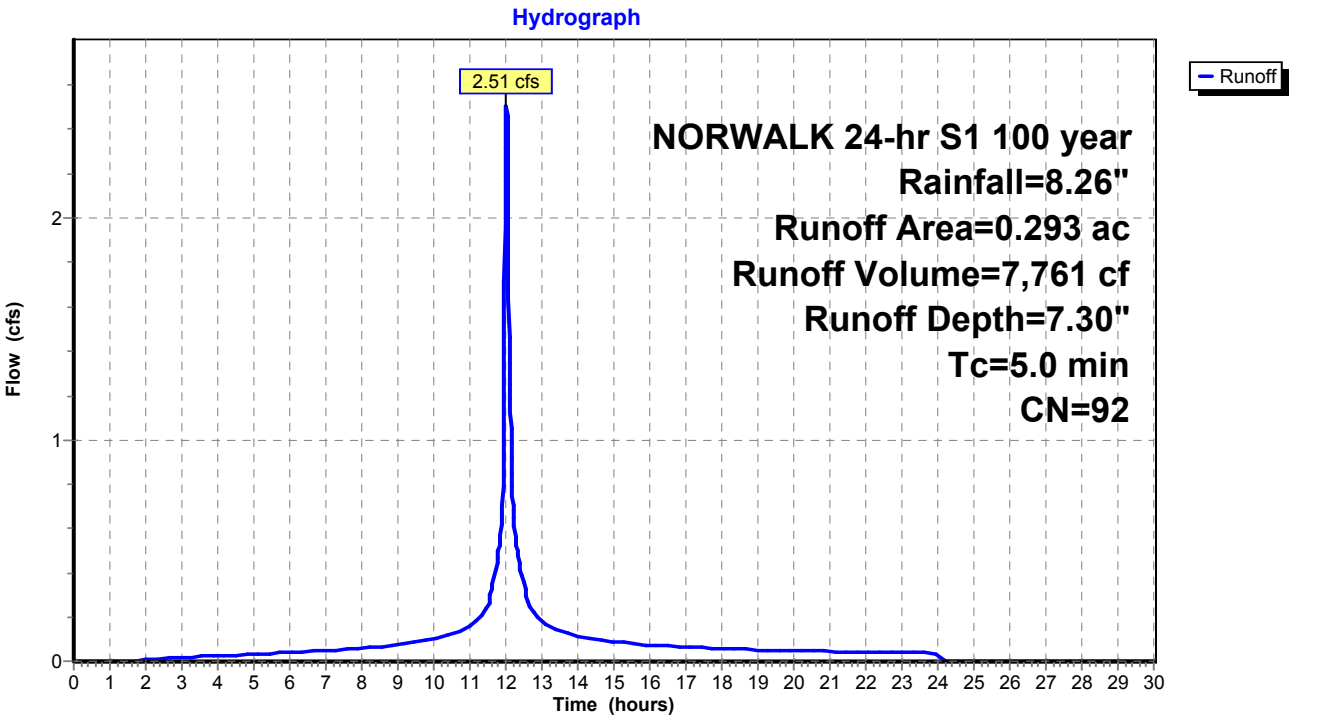
Runoff = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf, Depth= 7.30"
Routed to Pond 66P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.214	98	Paved parking & roofs
0.079	74	>75% Grass cover, Good, HSG C
0.293	92	Weighted Average
0.079		26.96% Pervious Area
0.214		73.04% Impervious Area

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

Subcatchment 68S: Area 36



Summary for Subcatchment 69S: Area 40

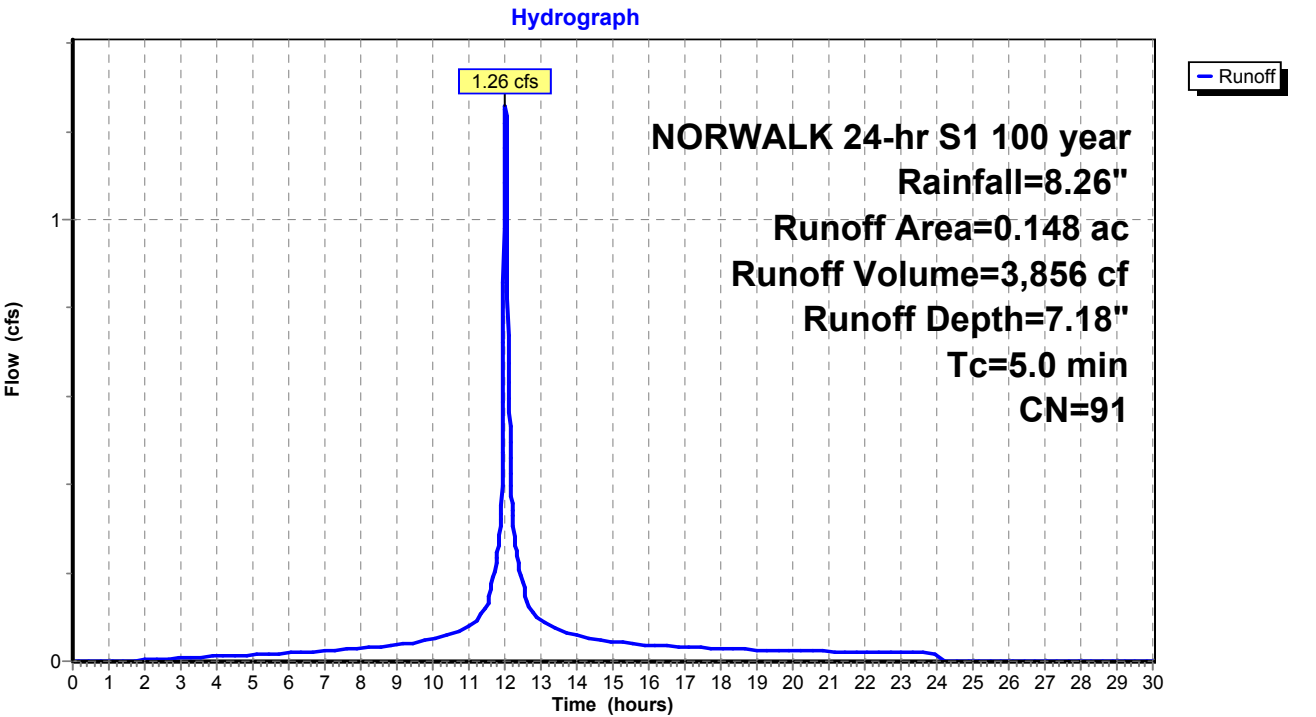
Runoff = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf, Depth= 7.18"
Routed to Pond 67P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.103	98	Paved parking & roofs
0.045	74	>75% Grass cover, Good, HSG C
0.148	91	Weighted Average
0.045		30.41% Pervious Area
0.103		69.59% Impervious Area

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

Subcatchment 69S: Area 40



Summary for Subcatchment 71S: Area 34

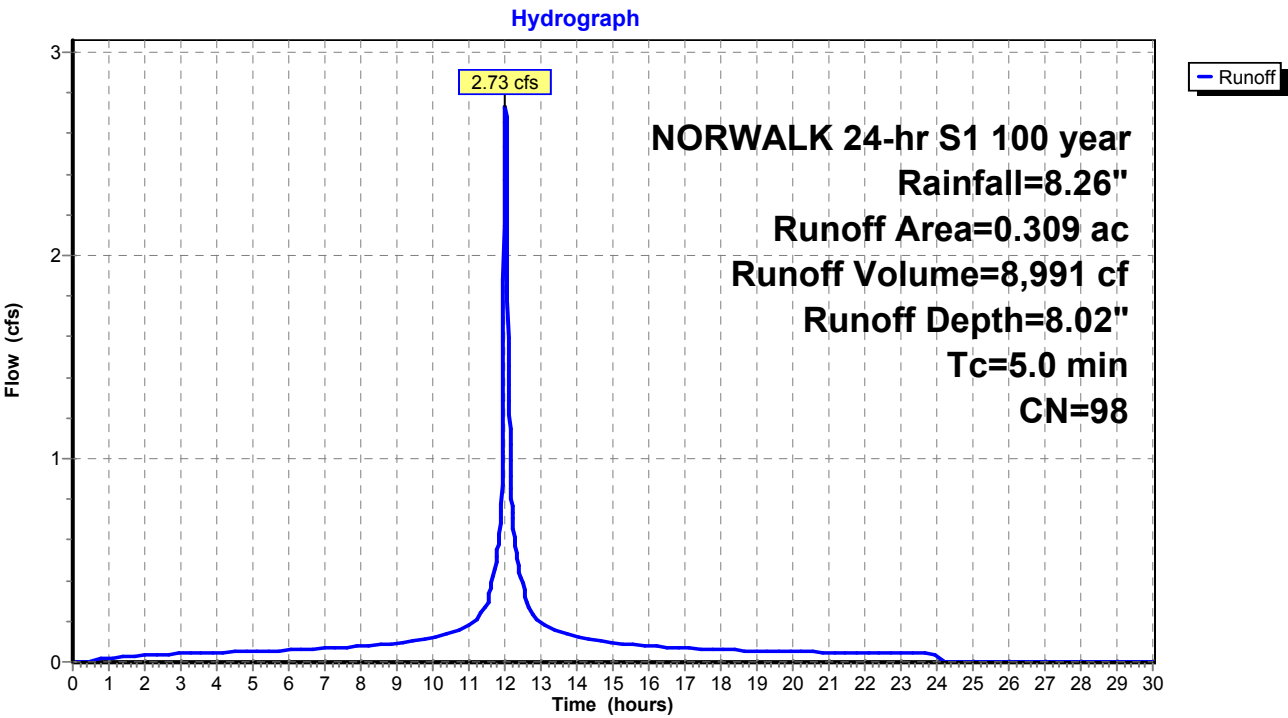
Runoff = 2.73 cfs @ 12.03 hrs, Volume= 8,991 cf, Depth= 8.02"
Routed to Pond 70P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.309	98	Paved parking & roofs
0.309		100.00% Impervious Area

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

Subcatchment 71S: Area 34



Summary for Subcatchment 75S: Area 32

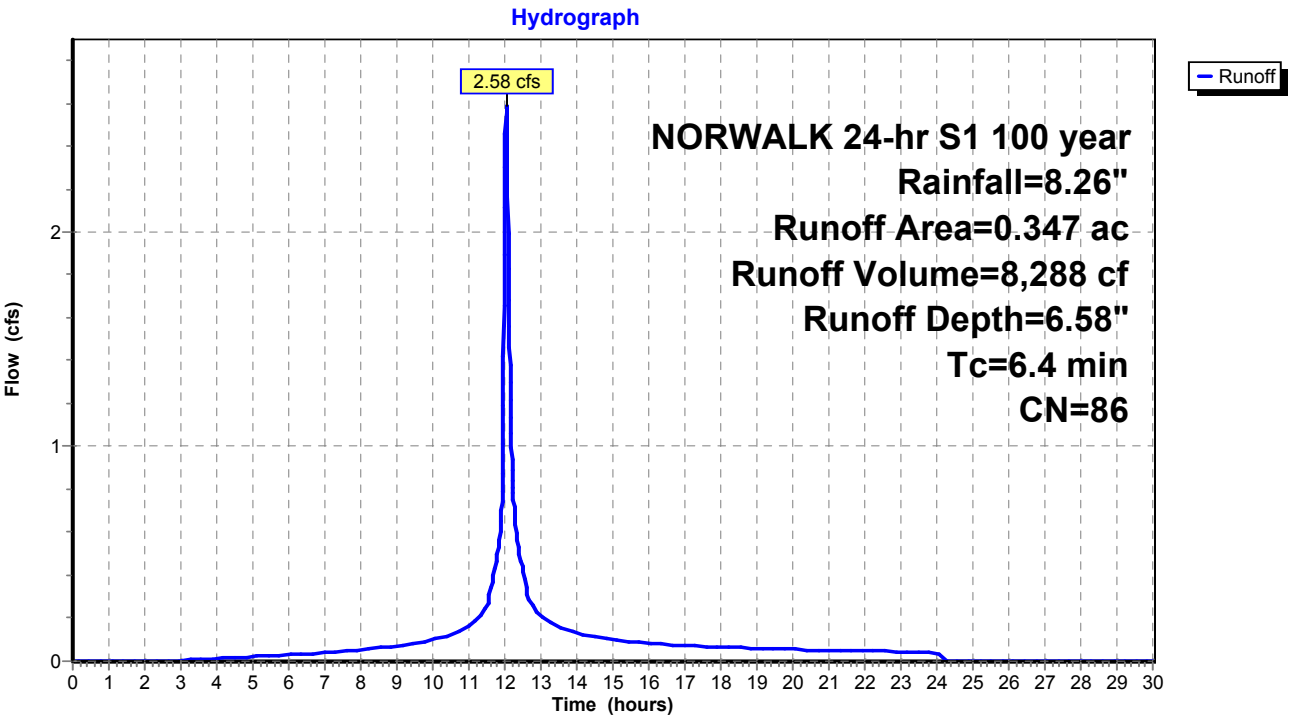
Runoff = 2.58 cfs @ 12.04 hrs, Volume= 8,288 cf, Depth= 6.58"
Routed to Pond 74P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.196	98	Paved parking & roofs
0.151	70	Woods, Good, HSG C
0.347	86	Weighted Average
0.151		43.52% Pervious Area
0.196		56.48% Impervious Area

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

Subcatchment 75S: Area 32



Summary for Subcatchment 76S: Area 33

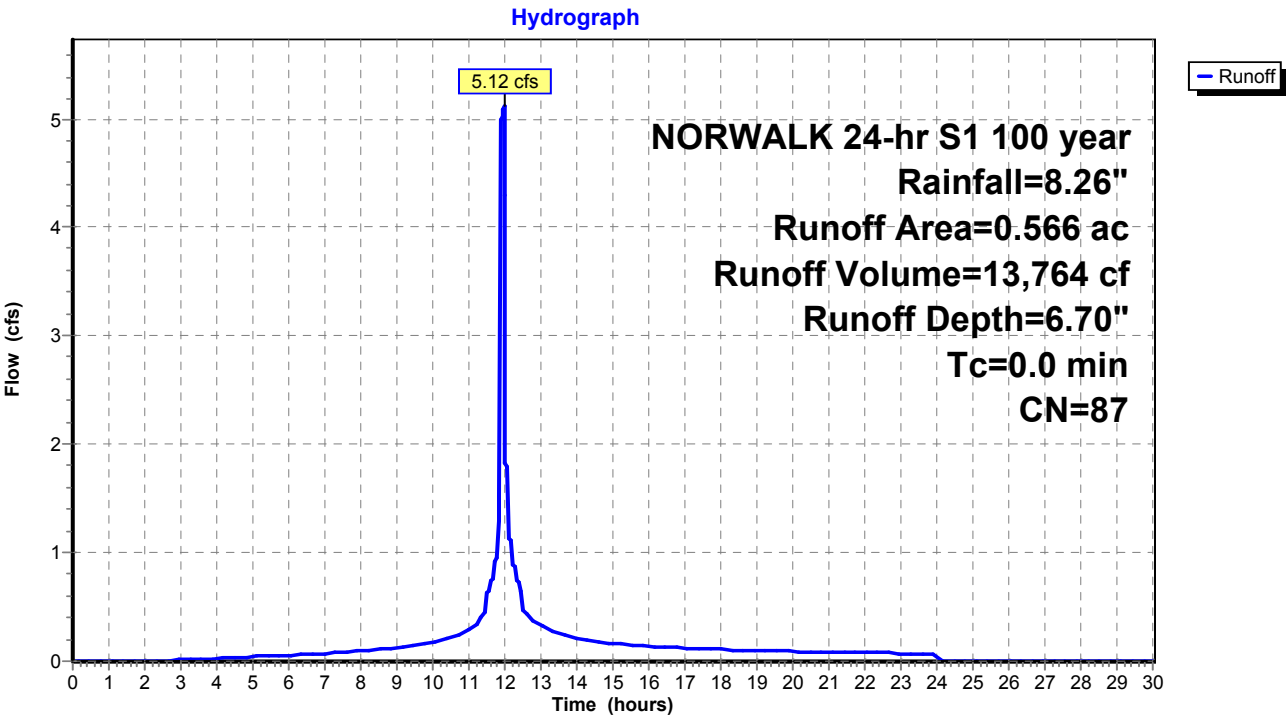
Runoff = 5.12 cfs @ 11.99 hrs, Volume= 13,764 cf, Depth= 6.70"
Routed to Pond 73P : CB-3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.338	98	Paved parking & roofs
0.228	70	Woods, Good, HSG C
0.566	87	Weighted Average
0.228		40.28% Pervious Area
0.338		59.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, 7

Subcatchment 76S: Area 33



Summary for Subcatchment 78S: Area 39

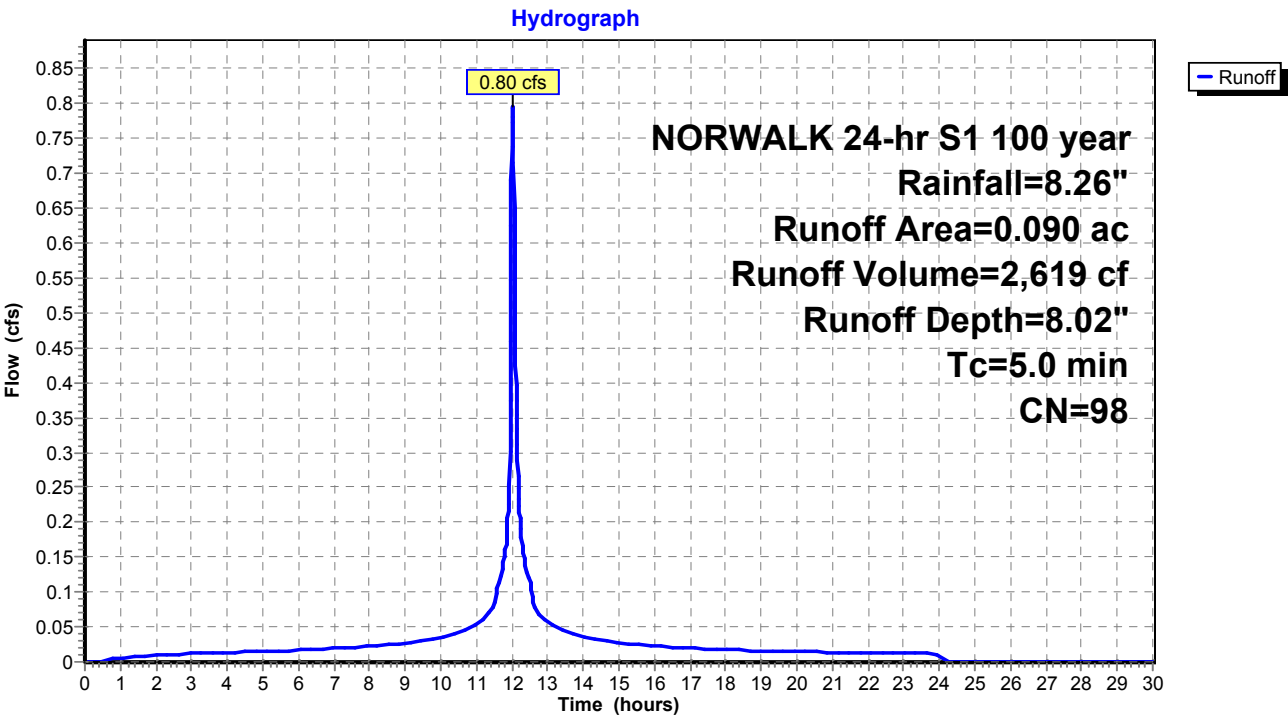
Runoff = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf, Depth= 8.02"
Routed to Pond 79P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.090	98	Paved parking & roofs
0.090		100.00% Impervious Area

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

Subcatchment 78S: Area 39



Summary for Subcatchment 84S: Area 31

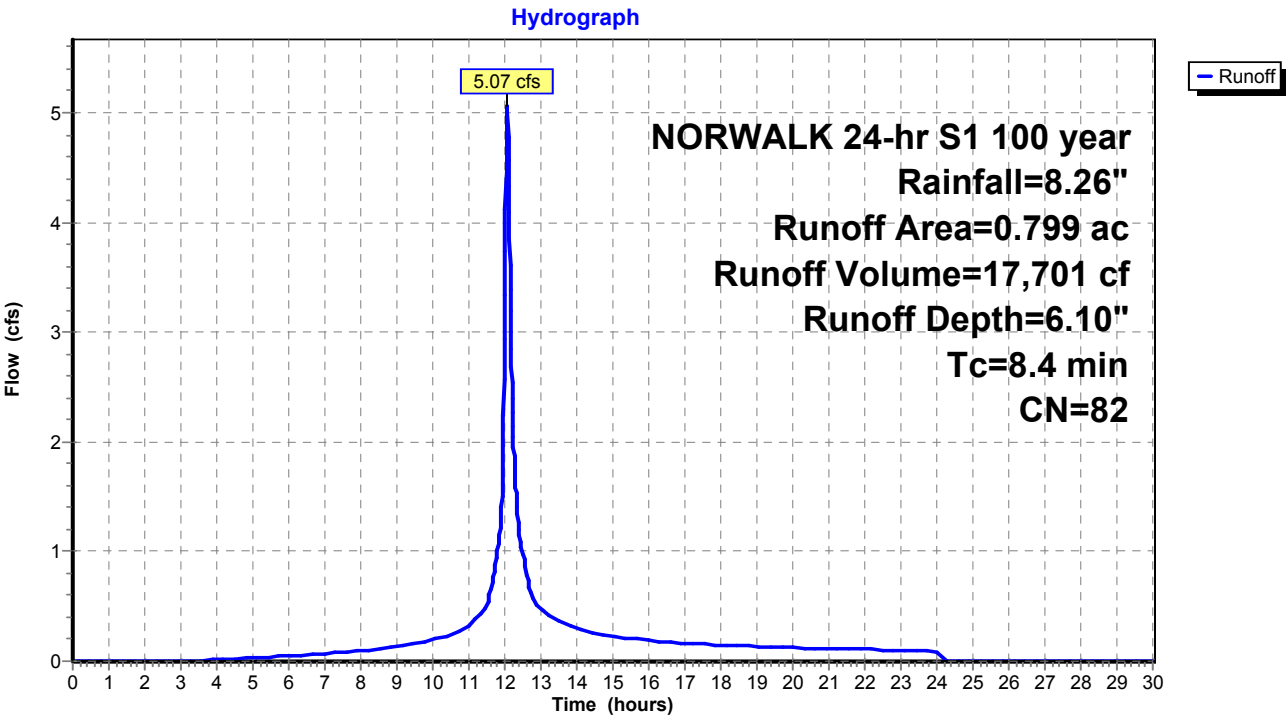
Runoff = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf, Depth= 6.10"
Routed to Pond 85P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.337	98	Paved parking & roofs
0.462	70	Woods, Good, HSG C
0.799	82	Weighted Average
0.462		57.82% Pervious Area
0.337		42.18% Impervious Area

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

Subcatchment 84S: Area 31



Summary for Subcatchment 100S: Area 16B

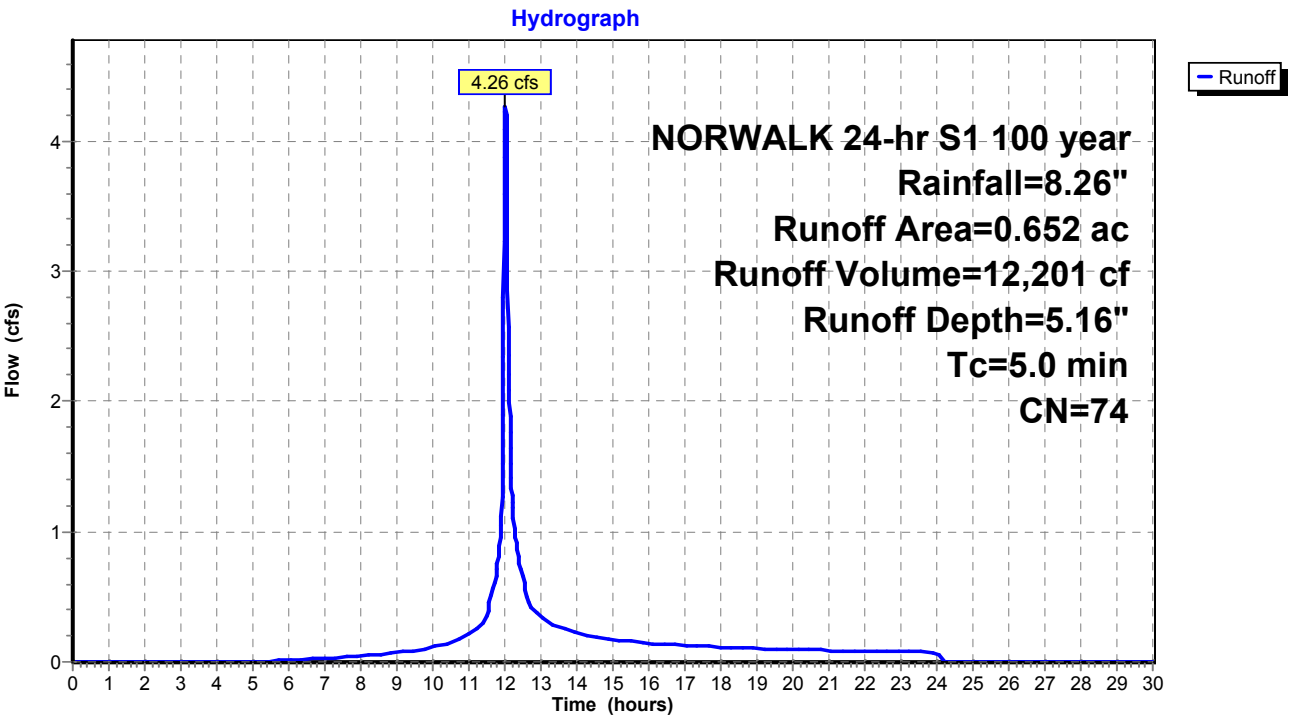
Runoff = 4.26 cfs @ 12.03 hrs, Volume= 12,201 cf, Depth= 5.16"
Routed to Pond 50P : DET BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.652		100.00% Pervious Area

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

Subcatchment 100S: Area 16B



Summary for Subcatchment 105S: Area 18

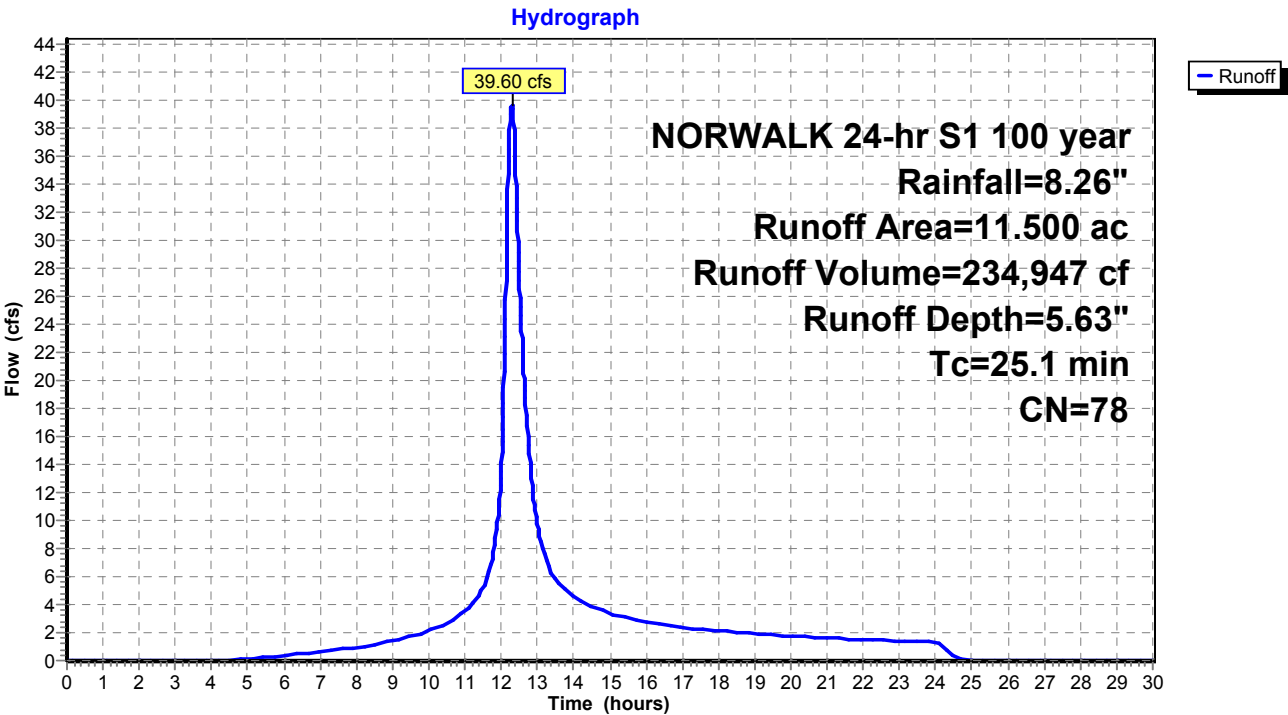
Runoff = 39.60 cfs @ 12.30 hrs, Volume= 234,947 cf, Depth= 5.63"
Routed to Pond 24P : RR Culvert 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
0.734	70	Woods, Good, HSG C
10.216	77	Woods, Good, HSG D
0.550	98	Paved parking, HSG C
11.500	78	Weighted Average
10.950		95.22% Pervious Area
0.550		4.78% Impervious Area

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

Subcatchment 105S: Area 18



Summary for Subcatchment BLDG: EX-BLDG

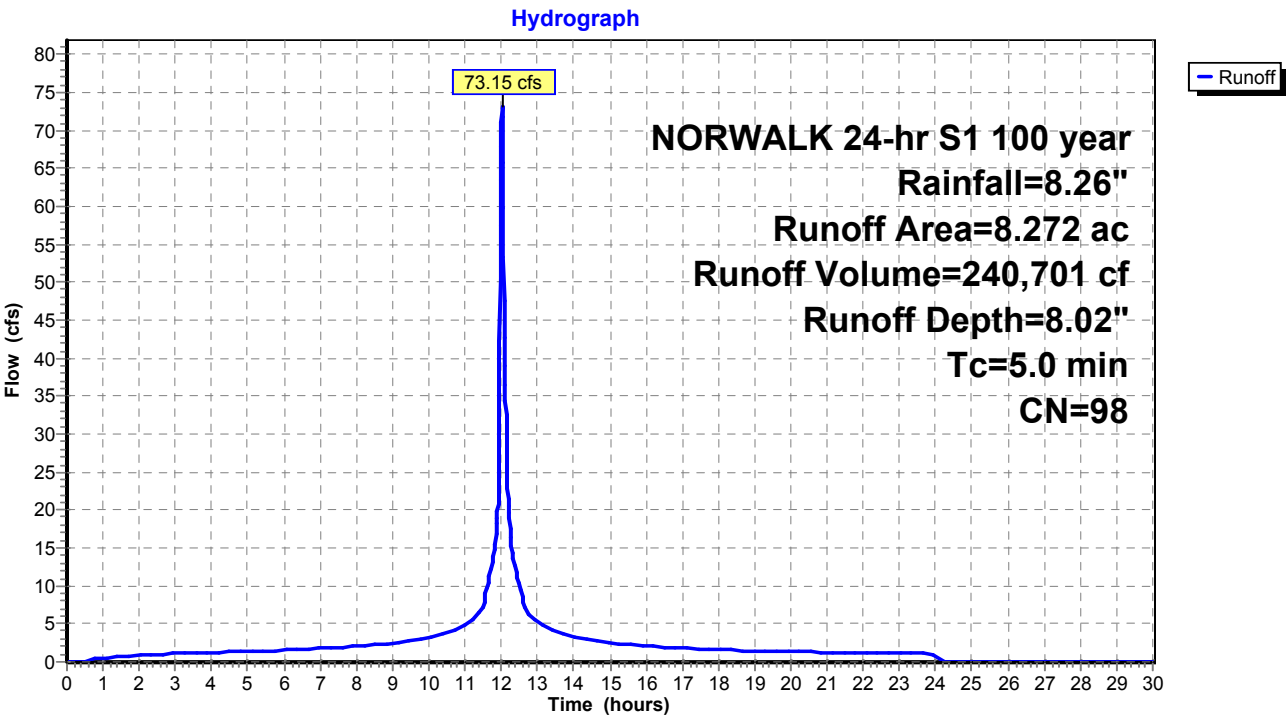
Runoff = 73.15 cfs @ 12.03 hrs, Volume= 240,701 cf, Depth= 8.02"
Routed to Pond 2P : RR Culvert 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
NORWALK 24-hr S1 100 year Rainfall=8.26"

Area (ac)	CN	Description
8.272	98	Roofs, HSG B
8.272		100.00% Impervious Area

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

Subcatchment BLDG: EX-BLDG



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 1P: RR Culvert 2

Inflow Area = 6,570,111 sf, 25.88% Impervious, Inflow Depth > 6.39" for 100 year event
Inflow = 343.61 cfs @ 12.22 hrs, Volume= 3,496,111 cf
Outflow = 343.61 cfs @ 12.22 hrs, Volume= 3,496,111 cf, Atten= 0%, Lag= 0.0 min
Primary = 37.05 cfs @ 12.22 hrs, Volume= 1,475,491 cf
Secondary = 306.57 cfs @ 12.22 hrs, Volume= 2,020,620 cf
Routed to Pond 24P : RR Culvert 3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 14.29' @ 12.22 hrs

Device	Routing	Invert	Outlet Devices
#1	Secondary	13.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Width (feet) 50.00 50.00 50.00 50.00 50.00 50.00
#2	Primary	9.50'	24.0" W x 36.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 9.50' / 9.50' S= 0.0000 ' / Cc= 0.900 n= 0.014, Flow Area= 6.00 sf

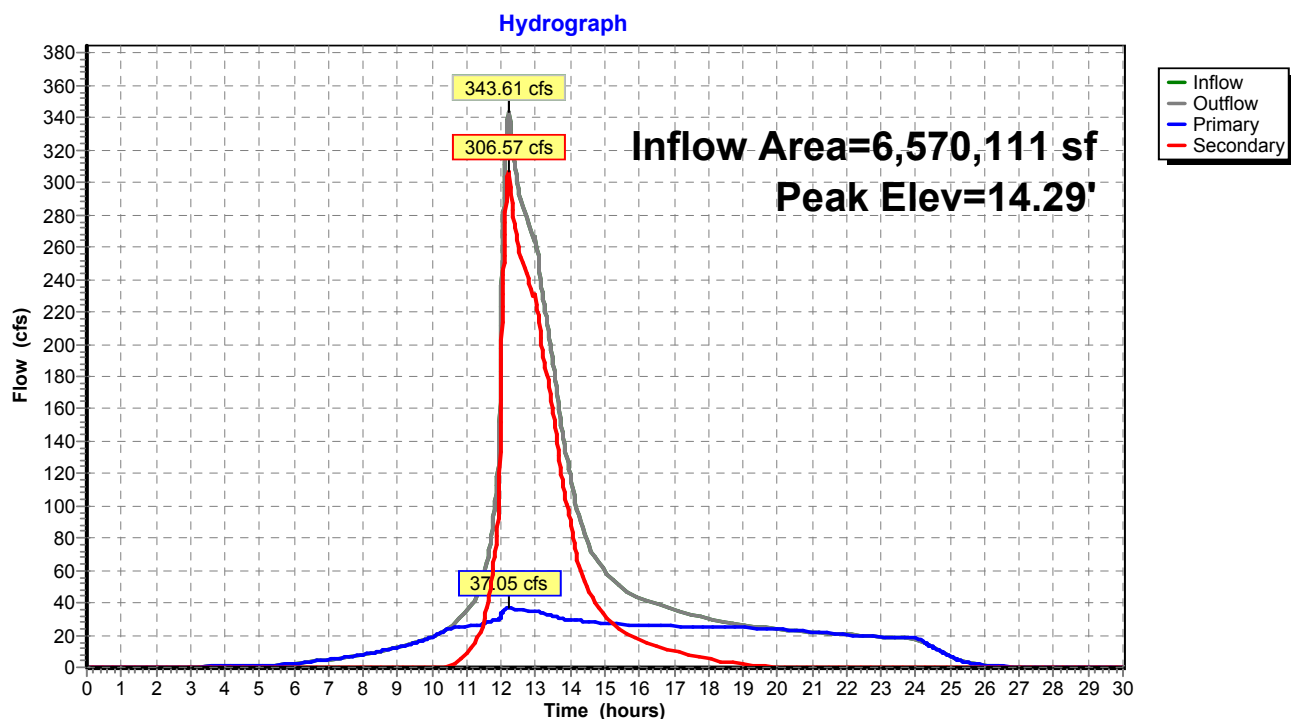
Primary OutFlow Max=37.05 cfs @ 12.22 hrs HW=14.29' (Free Discharge)

↑**2=Culvert** (Barrel Controls 37.05 cfs @ 6.17 fps)

Secondary OutFlow Max=306.36 cfs @ 12.22 hrs HW=14.29' (Free Discharge)

↑**1=Custom Weir/Orifice** (Weir Controls 306.36 cfs @ 4.74 fps)

Pond 1P: RR Culvert 2



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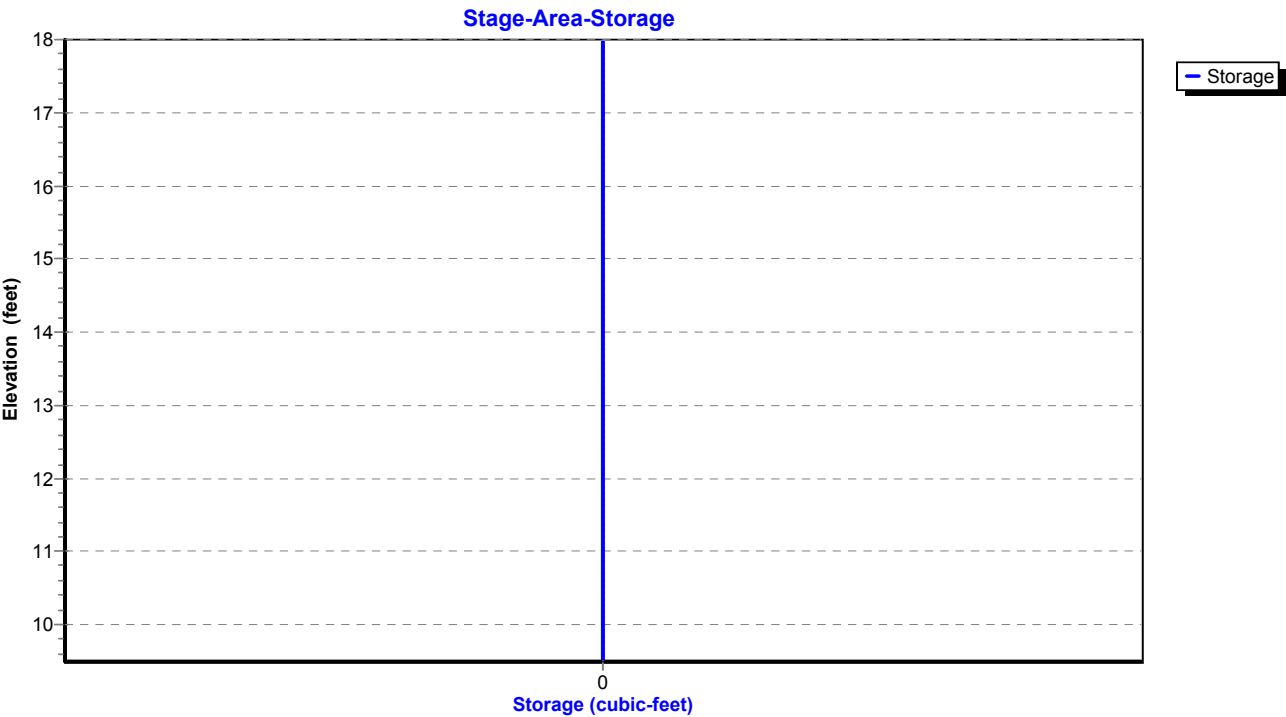
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 1P: RR Culvert 2



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 2P: RR Culvert 1

Inflow Area = 3,416,890 sf, 54.67% Impervious, Inflow Depth = 6.69" for 100 year event
Inflow = 195.77 cfs @ 12.04 hrs, Volume= 1,903,589 cf
Outflow = 195.77 cfs @ 12.04 hrs, Volume= 1,903,589 cf, Atten= 0%, Lag= 0.0 min
Primary = 61.96 cfs @ 12.04 hrs, Volume= 1,346,353 cf
Secondary = 133.80 cfs @ 12.04 hrs, Volume= 557,236 cf
Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 31.22' @ 12.04 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	25.00'	28.8" W x 28.8" H Box Culvert L= 123.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 25.00' / 23.60' S= 0.0114 '/' Cc= 0.900 n= 0.014, Flow Area= 5.76 sf
#2	Secondary	27.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 6.00 6.00 6.00

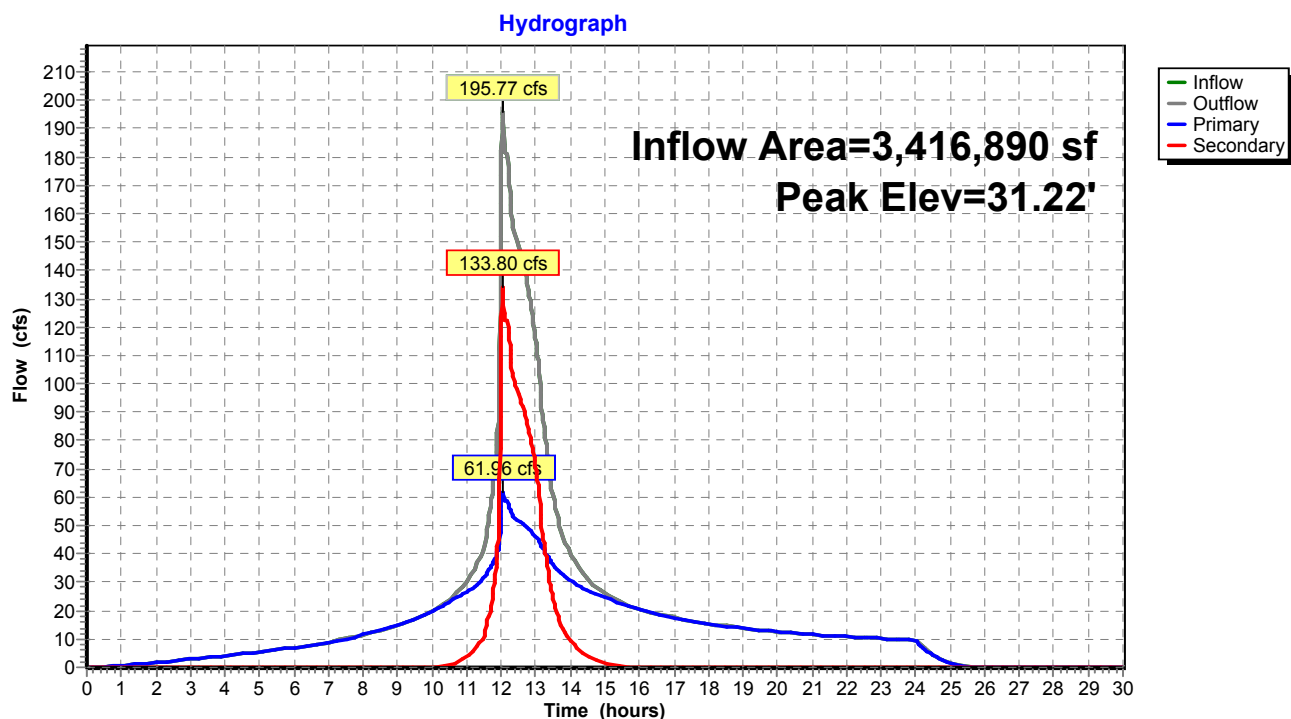
Primary OutFlow Max=61.91 cfs @ 12.04 hrs HW=31.21' (Free Discharge)

↑**1=Culvert** (Inlet Controls 61.91 cfs @ 10.75 fps)

Secondary OutFlow Max=133.63 cfs @ 12.04 hrs HW=31.21' (Free Discharge)

↑**2=Custom Weir/Orifice** (Orifice Controls 133.63 cfs @ 11.14 fps)

Pond 2P: RR Culvert 1



Proposed Conditions

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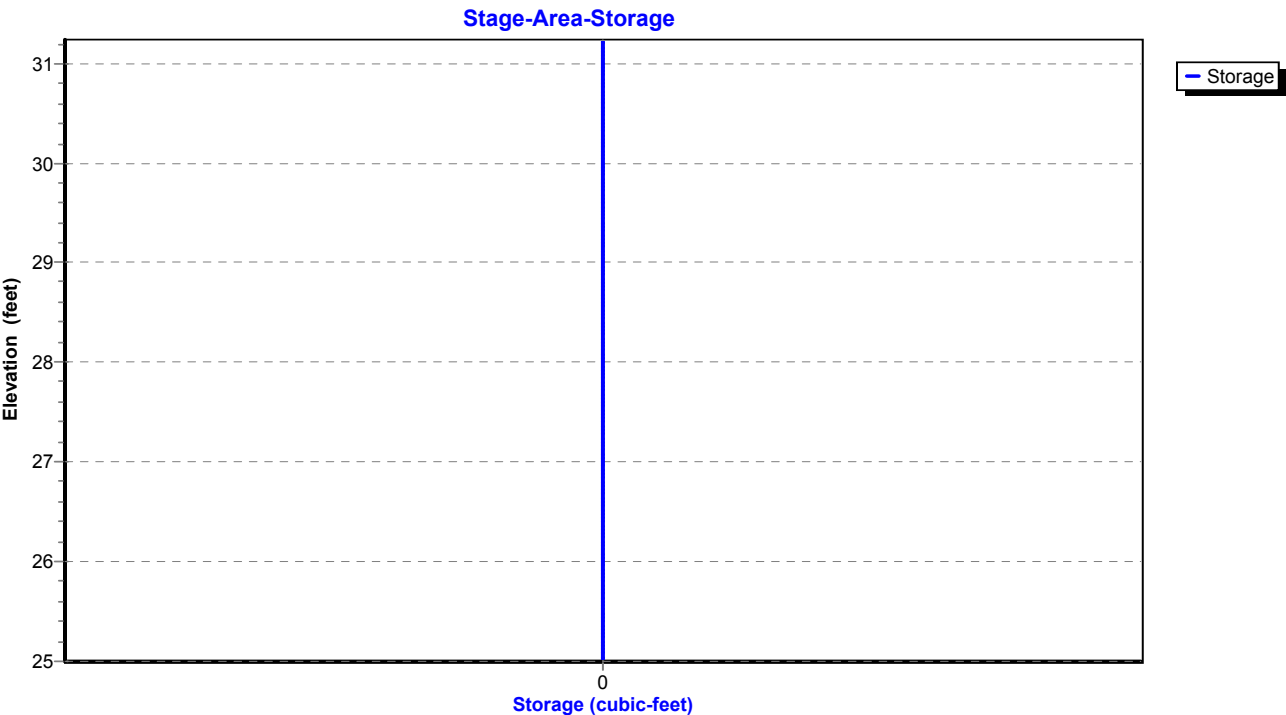
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Pond 2P: RR Culvert 1



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Summary for Pond 3P: DETENTION BASIN #2

Inflow Area = 263,277 sf, 58.24% Impervious, Inflow Depth = 6.53" for 100 year event
 Inflow = 37.82 cfs @ 12.03 hrs, Volume= 143,174 cf
 Outflow = 14.55 cfs @ 12.26 hrs, Volume= 127,372 cf, Atten= 62%, Lag= 13.8 min
 Primary = 14.55 cfs @ 12.26 hrs, Volume= 127,372 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 50.80' @ 12.26 hrs Surf.Area= 13,591 sf Storage= 53,817 cf

Plug-Flow detention time= 182.9 min calculated for 127,329 cf (89% of inflow)
 Center-of-Mass det. time= 123.1 min (922.3 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	44.00'	56,637 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
44.00	2,637	0	0
46.00	6,000	8,637	8,637
48.00	8,500	14,500	23,137
50.00	12,000	20,500	43,637
51.00	14,000	13,000	56,637

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 30.00' S= 0.1750 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	47.00'	10.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	50.40'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=14.53 cfs @ 12.26 hrs HW=50.80' (Free Discharge)

1=Culvert (Passes 14.53 cfs of 20.92 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 4.83 cfs @ 8.85 fps)
 3=Orifice/Grate (Weir Controls 9.71 cfs @ 2.06 fps)

Proposed Conditions

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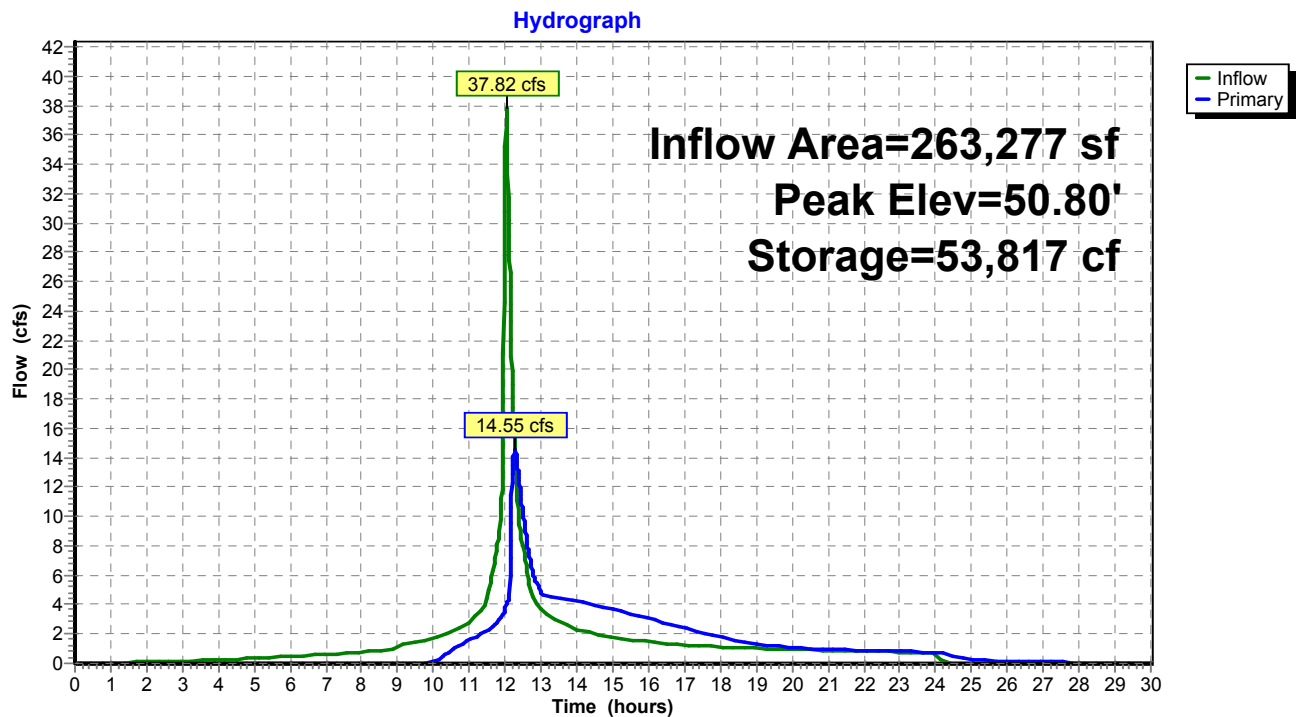
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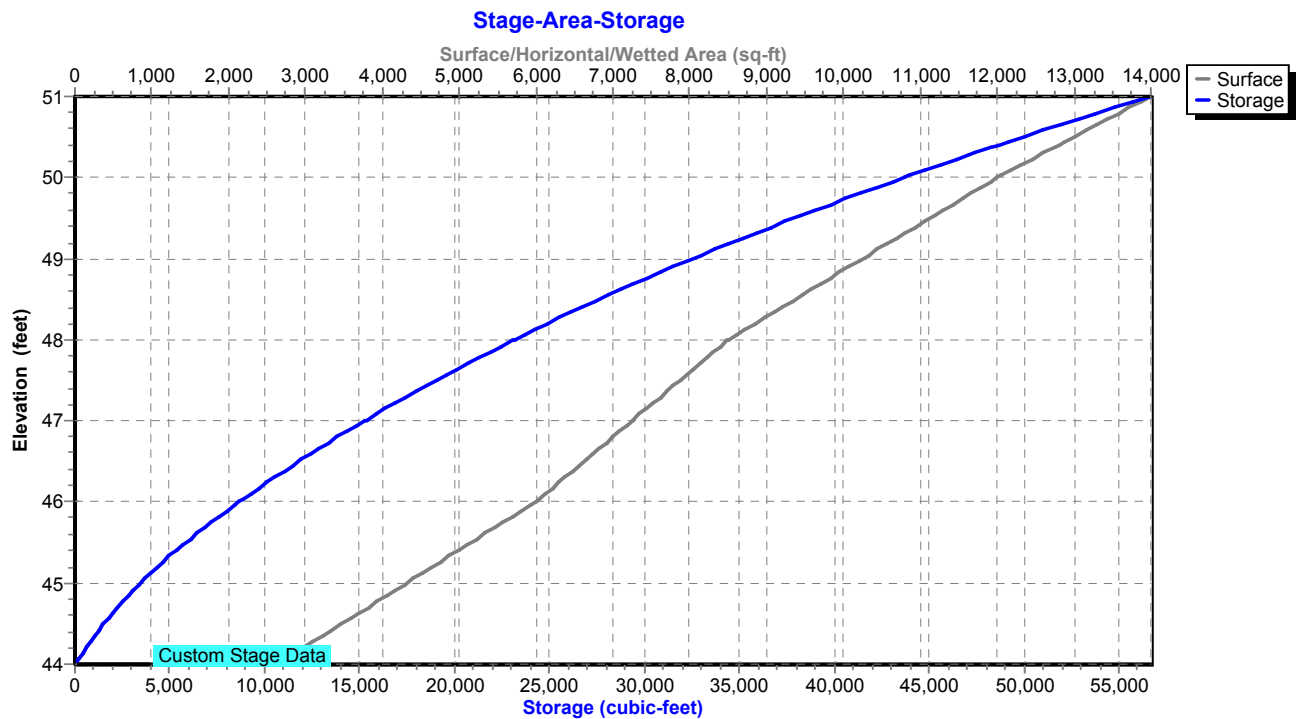
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Pond 3P: DETENTION BASIN #2



Pond 3P: DETENTION BASIN #2



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Summary for Pond 5P: DET 5 Culvert

Inflow Area = 541,015 sf, 16.51% Impervious, Inflow Depth = 5.04" for 100 year event
 Inflow = 31.33 cfs @ 12.45 hrs, Volume= 227,111 cf
 Outflow = 23.65 cfs @ 12.69 hrs, Volume= 227,110 cf, Atten= 25%, Lag= 14.5 min
 Primary = 23.65 cfs @ 12.69 hrs, Volume= 227,110 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 81.78' @ 12.69 hrs Storage= 17,276 cf

Plug-Flow detention time= 7.1 min calculated for 227,110 cf (100% of inflow)

Center-of-Mass det. time= 7.0 min (875.5 - 868.5)

Volume	Invert	Avail.Storage	Storage Description
#1	78.00'	62,584 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
78.00	0	0
79.00	1,179	1,179
80.00	3,009	4,188
81.00	5,795	9,983
82.00	9,335	19,318
83.00	16,518	35,836
84.00	26,748	62,584

Device	Routing	Invert	Outlet Devices
#1	Primary	78.00'	24.0" Round Culvert L= 224.0' Ke= 0.600 Inlet / Outlet Invert= 78.00' / 72.40' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=23.65 cfs @ 12.69 hrs HW=81.78' (Free Discharge)↑**1=Culvert** (Inlet Controls 23.65 cfs @ 7.53 fps)

Proposed Conditions

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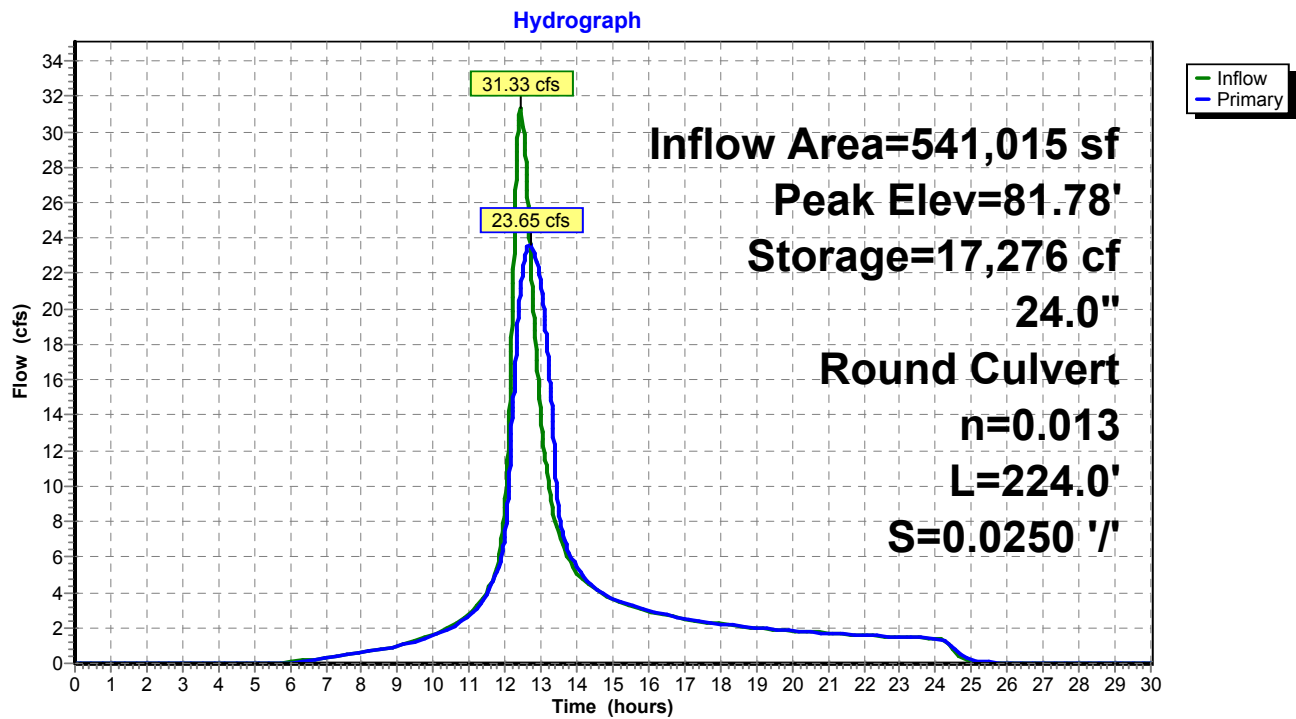
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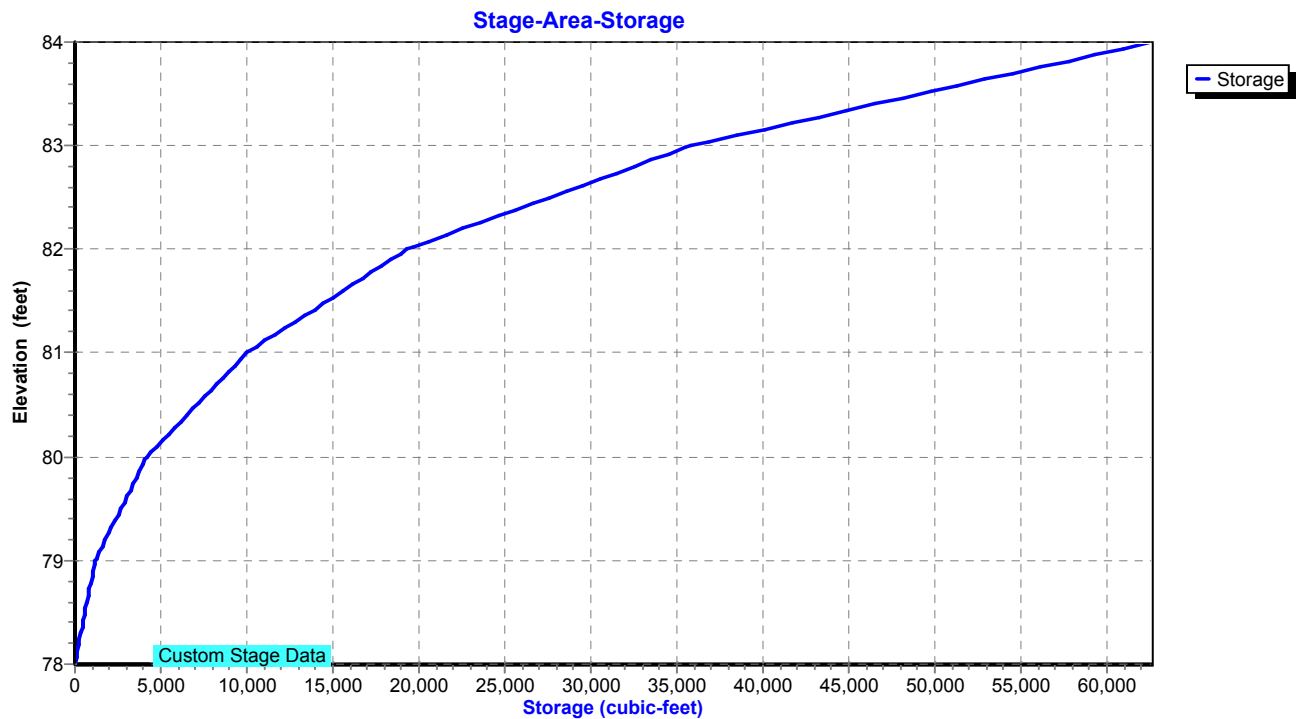
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Pond 5P: DET 5 Culvert



Pond 5P: DET 5 Culvert



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 6P: DET 6 Culvert

Inflow Area = 747,054 sf, 37.20% Impervious, Inflow Depth = 6.10" for 100 year event
 Inflow = 41.03 cfs @ 12.70 hrs, Volume= 379,947 cf
 Outflow = 38.84 cfs @ 12.82 hrs, Volume= 379,947 cf, Atten= 5%, Lag= 7.5 min
 Primary = 38.84 cfs @ 12.82 hrs, Volume= 379,947 cf
 Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 92.82' @ 12.82 hrs Storage= 5,136 cf

Plug-Flow detention time= 0.7 min calculated for 379,821 cf (100% of inflow)

Center-of-Mass det. time= 0.7 min (858.6 - 857.9)

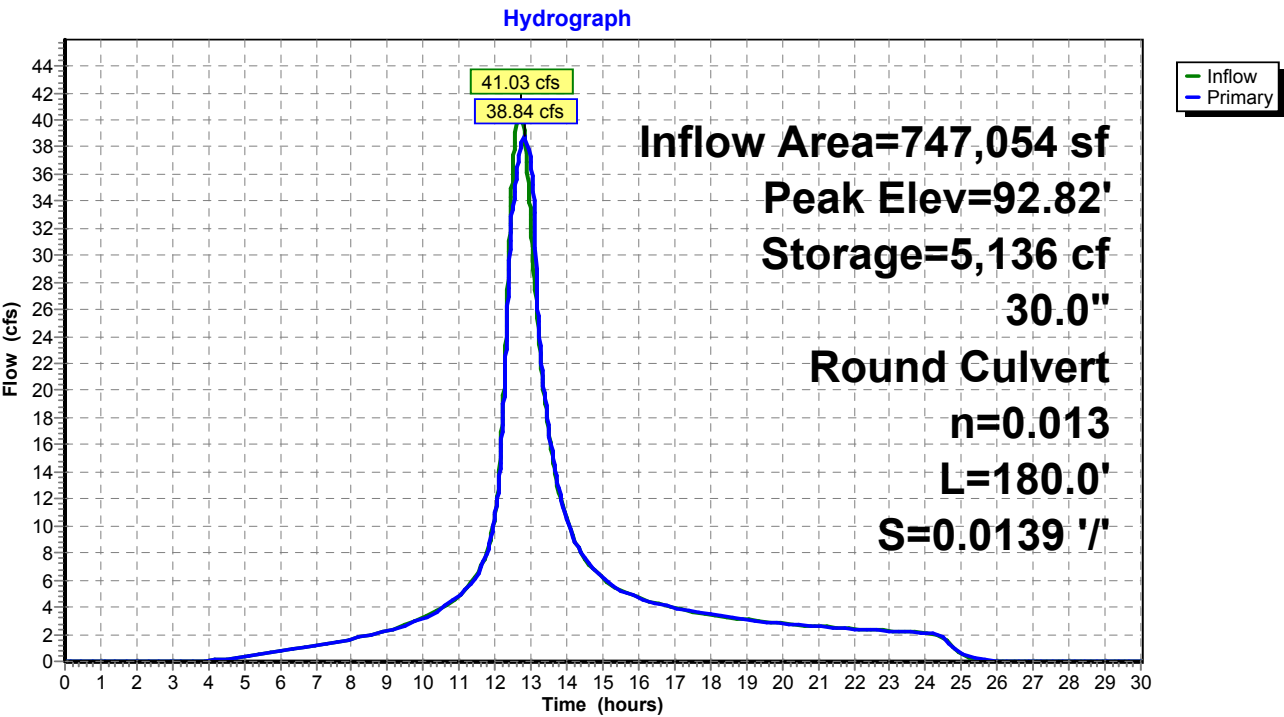
Volume	Invert	Avail.Storage	Storage Description
#1	88.50'	5,954 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
88.50	0	0
90.00	154	154
92.00	1,175	1,329
93.00	4,625	5,954

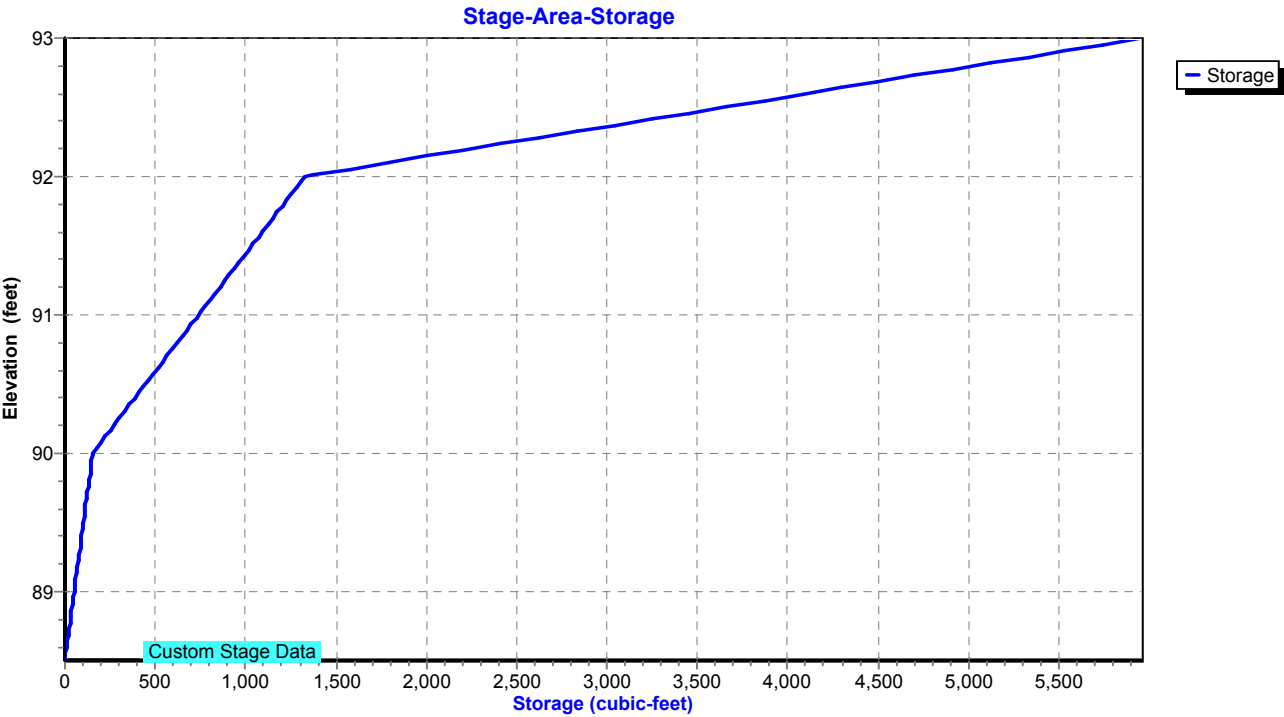
Device	Routing	Invert	Outlet Devices
#1	Primary	88.50'	30.0" Round Culvert L= 180.0' Ke= 0.600 Inlet / Outlet Invert= 88.50' / 86.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=38.84 cfs @ 12.82 hrs HW=92.82' (Free Discharge)↑ **1=Culvert** (Inlet Controls 38.84 cfs @ 7.91 fps)

Pond 6P: DET 6 Culvert



Pond 6P: DET 6 Culvert



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Summary for Pond 7P: DET 7 Culvert

Inflow Area = 64,033 sf, 0.00% Impervious, Inflow Depth = 5.98" for 100 year event
Inflow = 5.64 cfs @ 12.25 hrs, Volume= 31,932 cf
Outflow = 3.73 cfs @ 12.46 hrs, Volume= 31,932 cf, Atten= 34%, Lag= 12.3 min
Primary = 3.73 cfs @ 12.46 hrs, Volume= 31,932 cf
Routed to Pond 8P : Comb. 5,6,7,8,9

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 93.58' @ 12.46 hrs Storage= 3,442 cf

Plug-Flow detention time= 7.2 min calculated for 31,932 cf (100% of inflow)

Center-of-Mass det. time= 7.1 min (838.6 - 831.5)

Volume	Invert	Avail.Storage	Storage Description
#1	92.50'	5,874 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
92.50	0	0
93.00	103	103
94.00	5,771	5,874

Device	Routing	Invert	Outlet Devices
#1	Primary	92.50'	15.0" Round Culvert L= 202.0' Ke= 0.600 Inlet / Outlet Invert= 92.50' / 89.11' S= 0.0168 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=3.73 cfs @ 12.46 hrs HW=93.58' (Free Discharge)↑**1=Culvert** (Inlet Controls 3.73 cfs @ 3.31 fps)

Proposed Conditions

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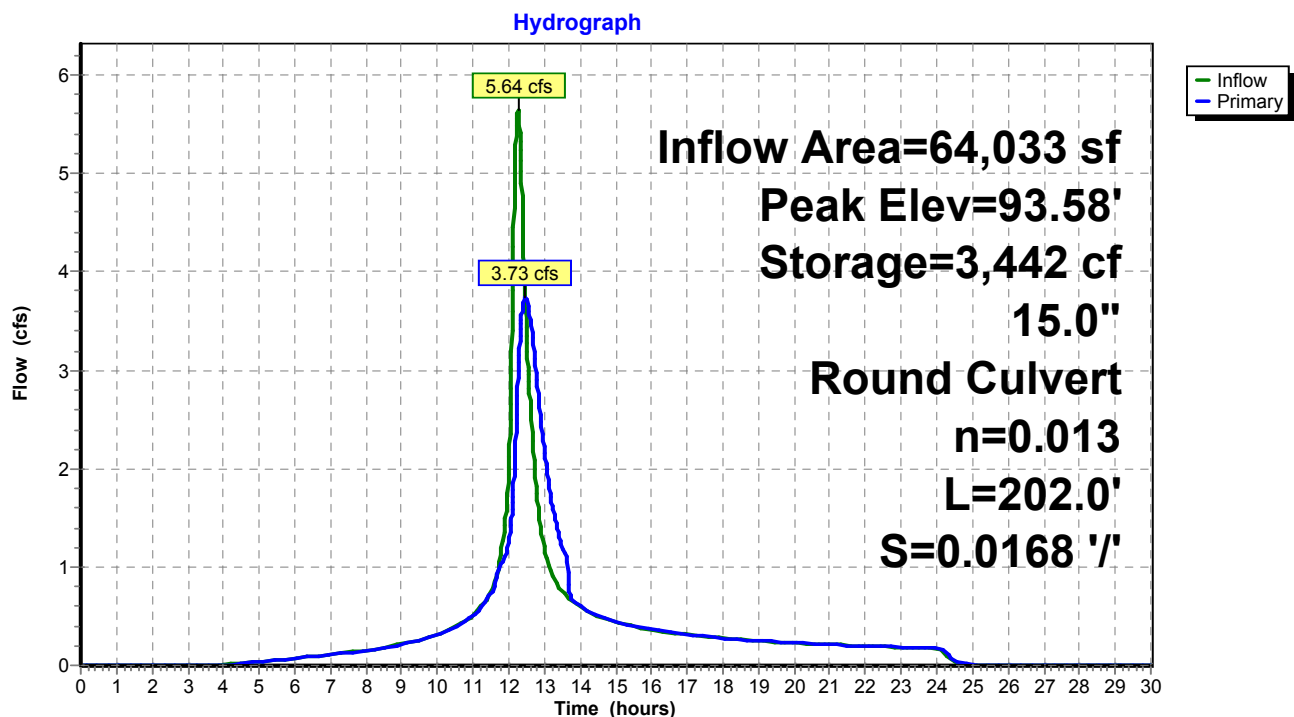
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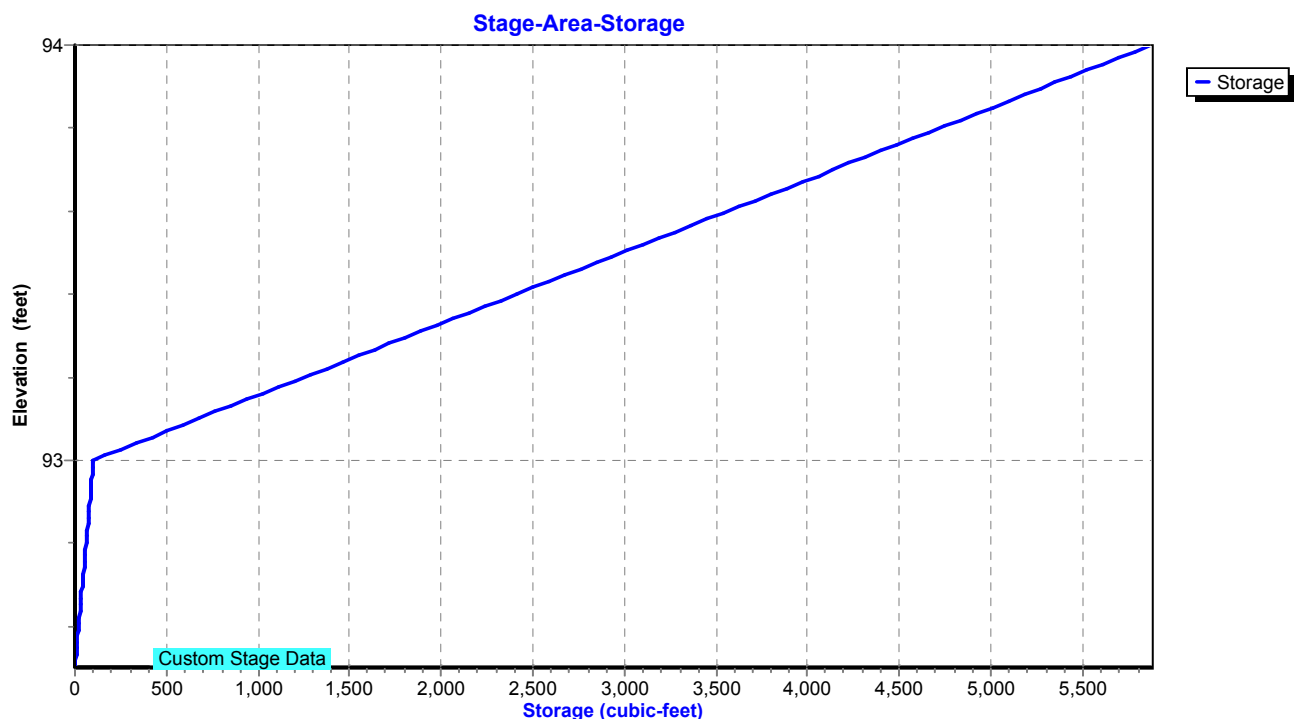
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Pond 7P: DET 7 Culvert



Pond 7P: DET 7 Culvert



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Summary for Pond 8P: Comb. 5,6,7,8,9

Inflow Area = 1,584,277 sf, 30.02% Impervious, Inflow Depth = 5.84" for 100 year event
 Inflow = 78.16 cfs @ 12.73 hrs, Volume= 770,688 cf
 Outflow = 78.15 cfs @ 12.74 hrs, Volume= 770,688 cf, Atten= 0%, Lag= 0.6 min
 Primary = 78.15 cfs @ 12.74 hrs, Volume= 770,688 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 73.00' @ 12.74 hrs Storage= 639 cf

Plug-Flow detention time= 0.1 min calculated for 770,688 cf (100% of inflow)

Center-of-Mass det. time= 0.1 min (856.6 - 856.5)

Volume	Invert	Avail.Storage	Storage Description
#1	68.40'	5,234 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
68.40	0	0
71.00	52	52
72.00	118	170
73.00	471	641
74.00	1,318	1,959
75.00	3,275	5,234

Device	Routing	Invert	Outlet Devices
#1	Primary	68.40'	42.0" Round Culvert L= 900.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 68.40' / 36.99' S= 0.0349 ' / Cc= 0.900 n= 0.013, Flow Area= 9.62 sf

Primary OutFlow Max=78.15 cfs @ 12.74 hrs HW=73.00' (Free Discharge)↑**1=Culvert** (Inlet Controls 78.15 cfs @ 8.12 fps)

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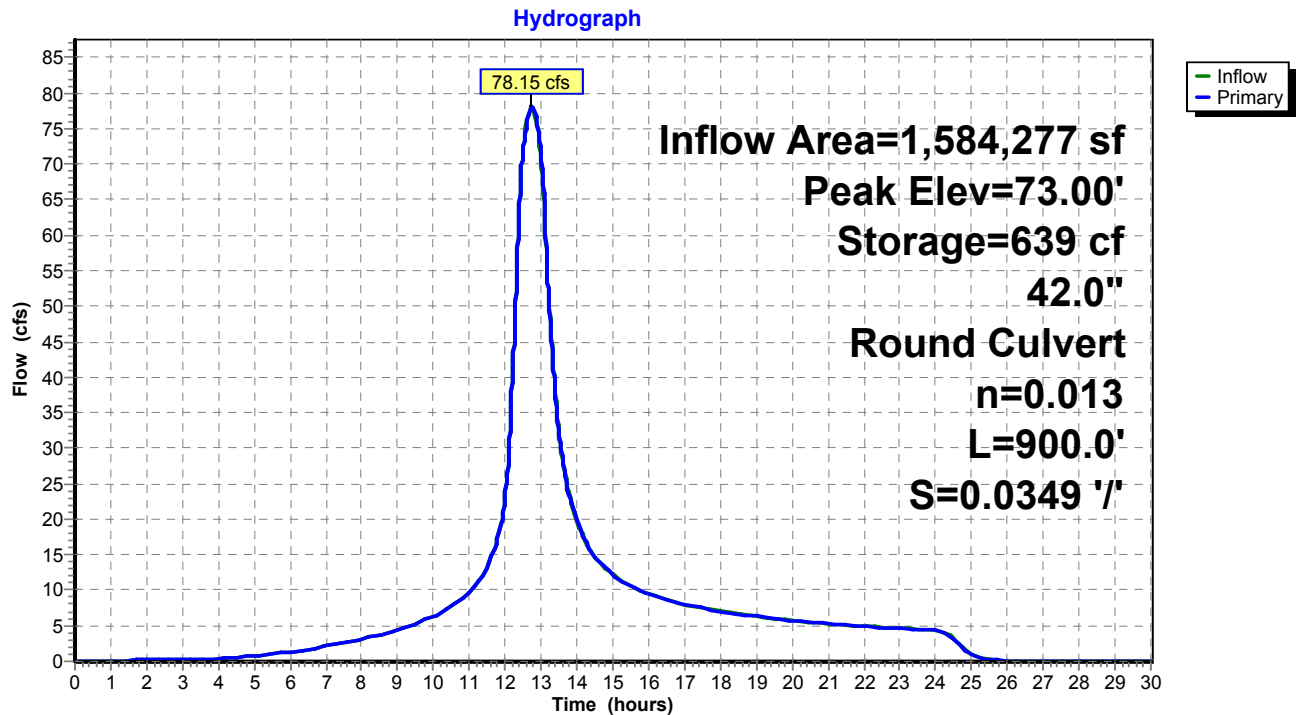
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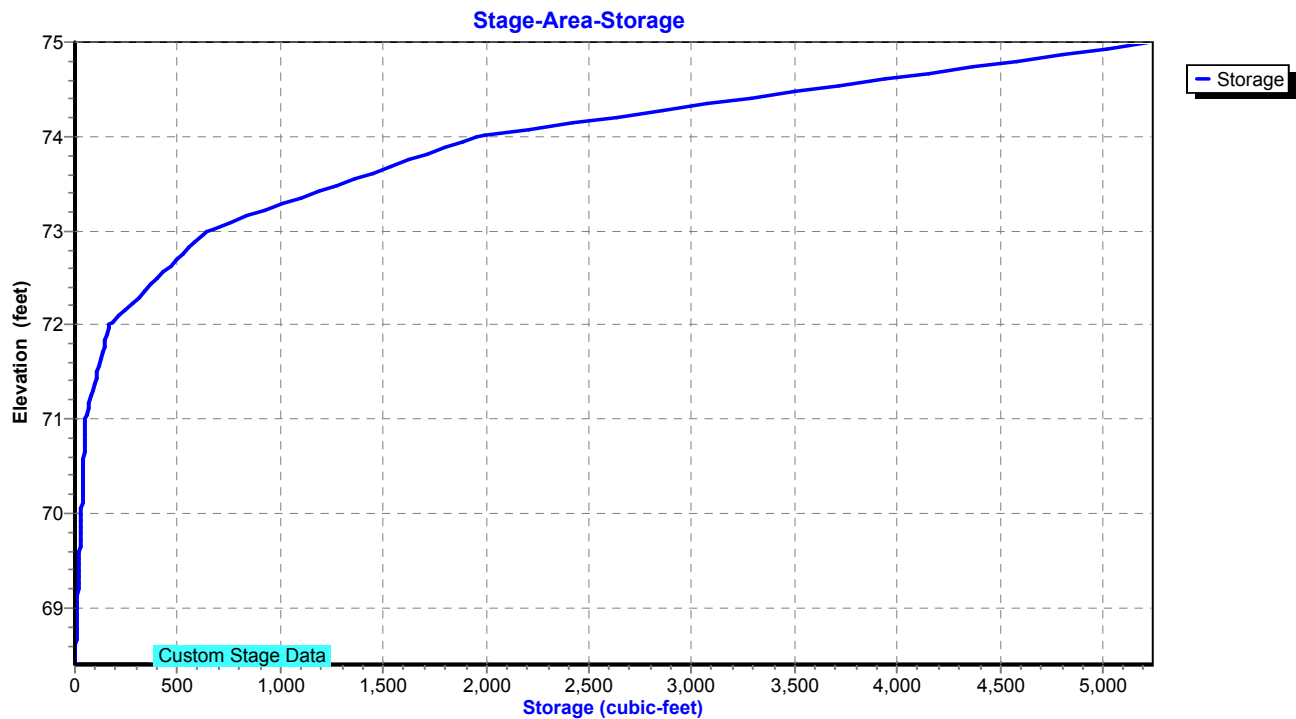
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Pond 8P: Comb. 5,6,7,8,9



Pond 8P: Comb. 5,6,7,8,9



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Summary for Pond 9P: MH-K

Inflow Area = 246,332 sf, 62.25% Impervious, Inflow Depth = 6.62" for 100 year event
Inflow = 35.31 cfs @ 12.04 hrs, Volume= 135,894 cf
Outflow = 35.31 cfs @ 12.04 hrs, Volume= 135,894 cf, Atten= 0%, Lag= 0.0 min
Primary = 35.31 cfs @ 12.04 hrs, Volume= 135,894 cf
Routed to Pond 3P : DETENTION BASIN #2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 53.63' @ 12.04 hrs

Flood Elev= 51.80'

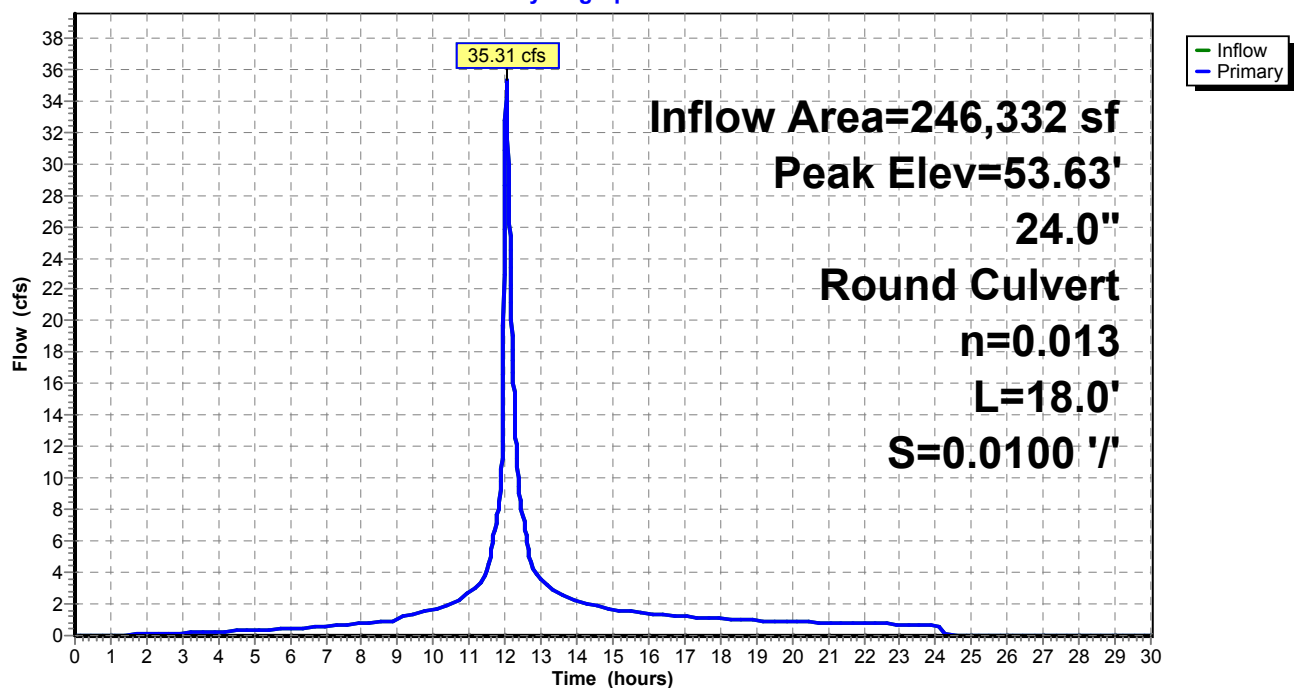
Device	Routing	Invert	Outlet Devices
#1	Primary	47.18'	24.0" Round Culvert L= 18.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.18' / 47.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=35.20 cfs @ 12.04 hrs HW=53.59' (Free Discharge)

↑1=Culvert (Inlet Controls 35.20 cfs @ 11.20 hrs)

Pond 9P: MH-K

Hydrograph



Proposed Conditions

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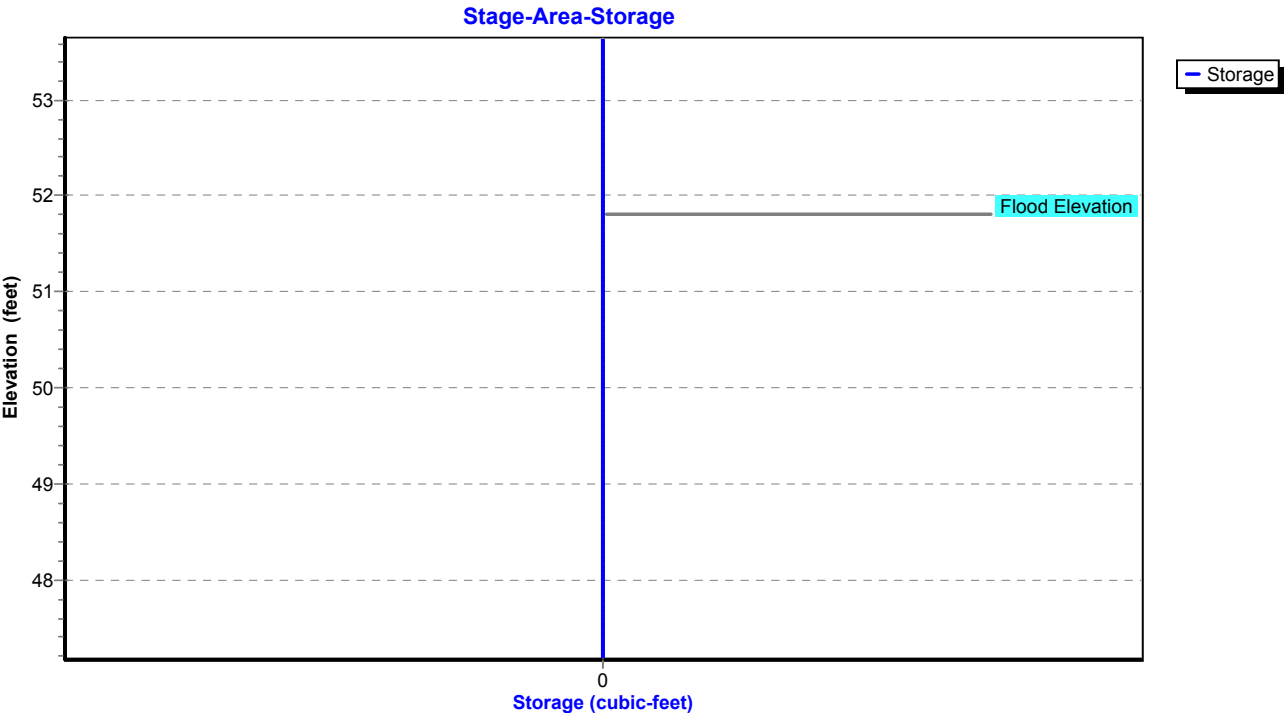
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Pond 9P: MH-K



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Summary for Pond 10P: MH-L

Inflow Area = 71,874 sf, 85.27% Impervious, Inflow Depth = 6.96" for 100 year event
Inflow = 14.35 cfs @ 12.03 hrs, Volume= 41,670 cf
Outflow = 14.35 cfs @ 12.03 hrs, Volume= 41,670 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.35 cfs @ 12.03 hrs, Volume= 41,670 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.37' @ 12.03 hrs

Flood Elev= 53.00'

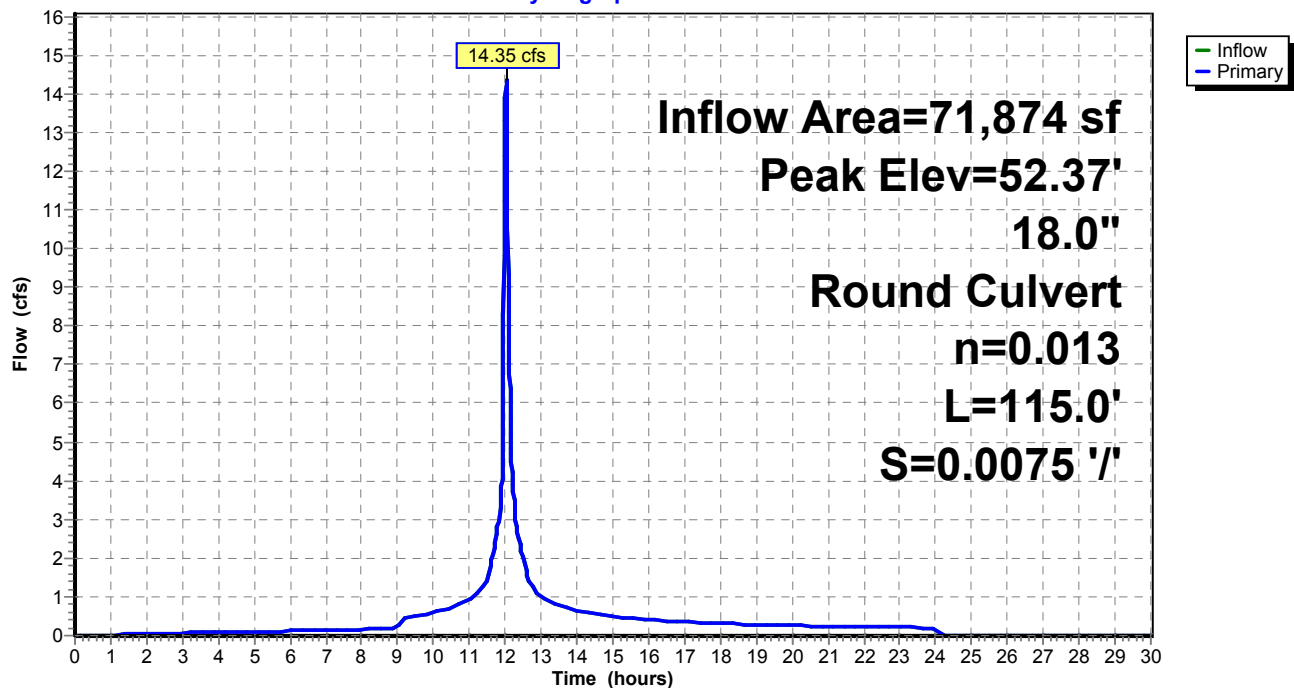
Device	Routing	Invert	Outlet Devices
#1	Primary	48.04'	18.0" Round Culvert L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.04' / 47.18' S= 0.0075 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

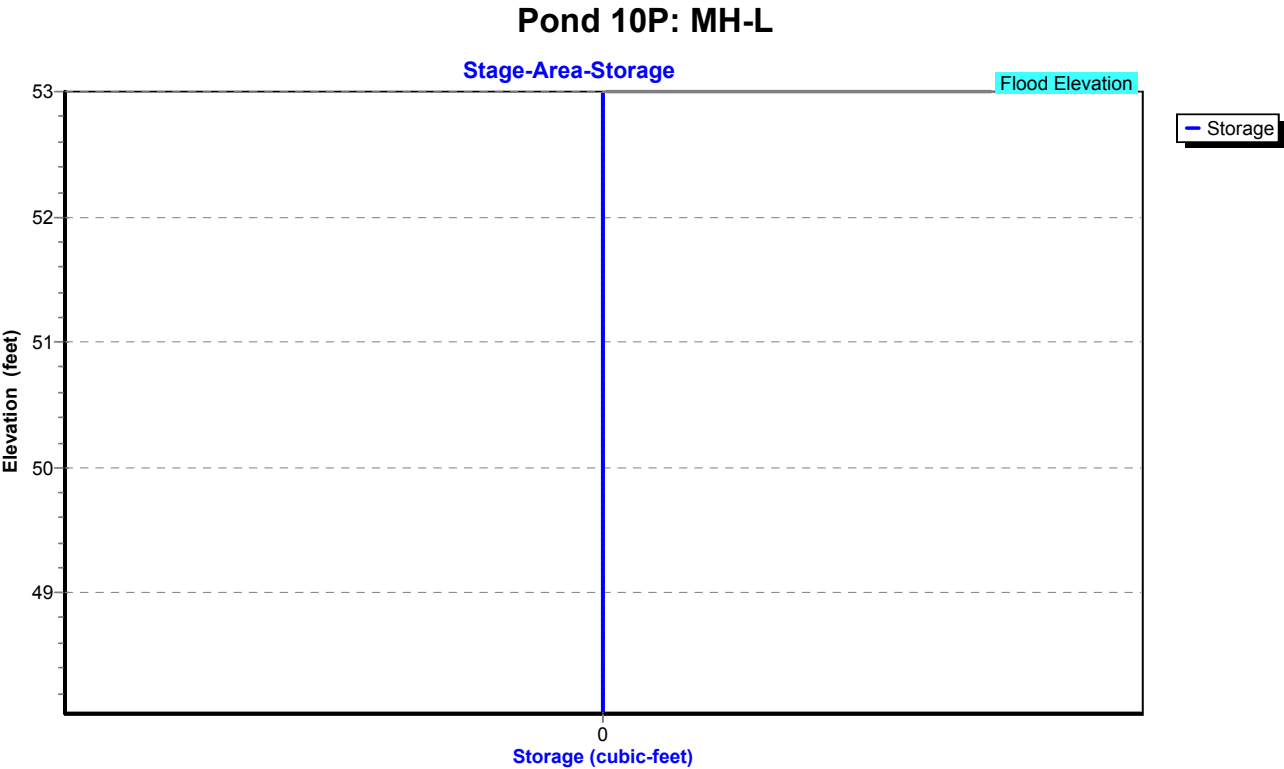
Primary OutFlow Max=14.29 cfs @ 12.03 hrs HW=52.34' (Free Discharge)

↑1=Culvert (Barrel Controls 14.29 cfs @ 8.09 fps)

Pond 10P: MH-L

Hydrograph





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Summary for Pond 11P: Pipe Storage

Inflow Area = 40,903 sf, 82.85% Impervious, Inflow Depth = 7.54" for 100 year event
Inflow = 8.15 cfs @ 12.03 hrs, Volume= 25,711 cf
Outflow = 8.14 cfs @ 12.03 hrs, Volume= 21,832 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.14 cfs @ 12.03 hrs, Volume= 21,832 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 54.12' @ 12.03 hrs Storage= 0.081 af

Plug-Flow detention time= 138.7 min calculated for 21,832 cf (85% of inflow)

Center-of-Mass det. time= 59.6 min (822.5 - 762.9)

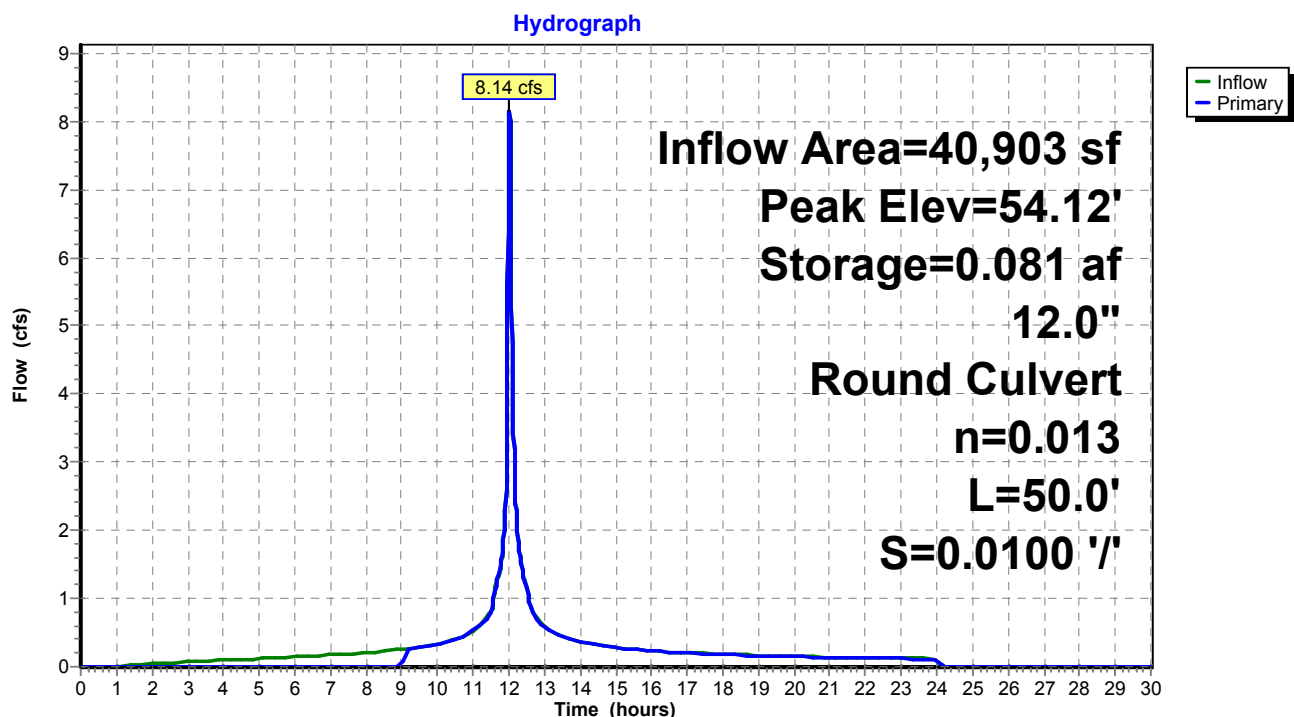
Volume	Invert	Avail.Storage	Storage Description
#1	45.50'	0.081 af	36.0" Round Pipe Storage x 2 L= 250.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.50'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.50' / 48.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

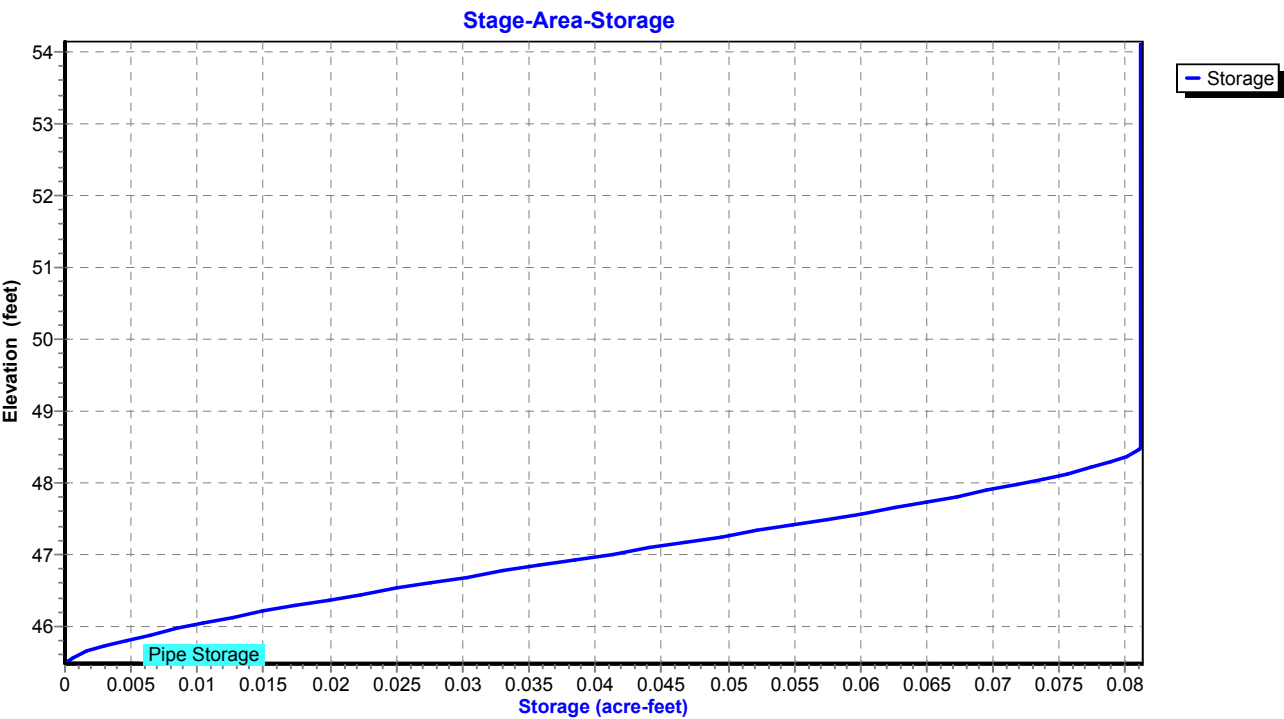
Primary OutFlow Max=8.11 cfs @ 12.03 hrs HW=54.08' (Free Discharge)

↑1=Culvert (Barrel Controls 8.11 cfs @ 10.32 fps)

Pond 11P: Pipe Storage



Pond 11P: Pipe Storage



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Summary for Pond 12P: MH-M

Inflow Area = 30,971 sf, 88.47% Impervious, Inflow Depth = 7.69" for 100 year event
Inflow = 6.20 cfs @ 12.03 hrs, Volume= 19,838 cf
Outflow = 6.20 cfs @ 12.03 hrs, Volume= 19,838 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.20 cfs @ 12.03 hrs, Volume= 19,838 cf
Routed to Pond 10P : MH-L

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.37' @ 12.03 hrs

Flood Elev= 54.00'

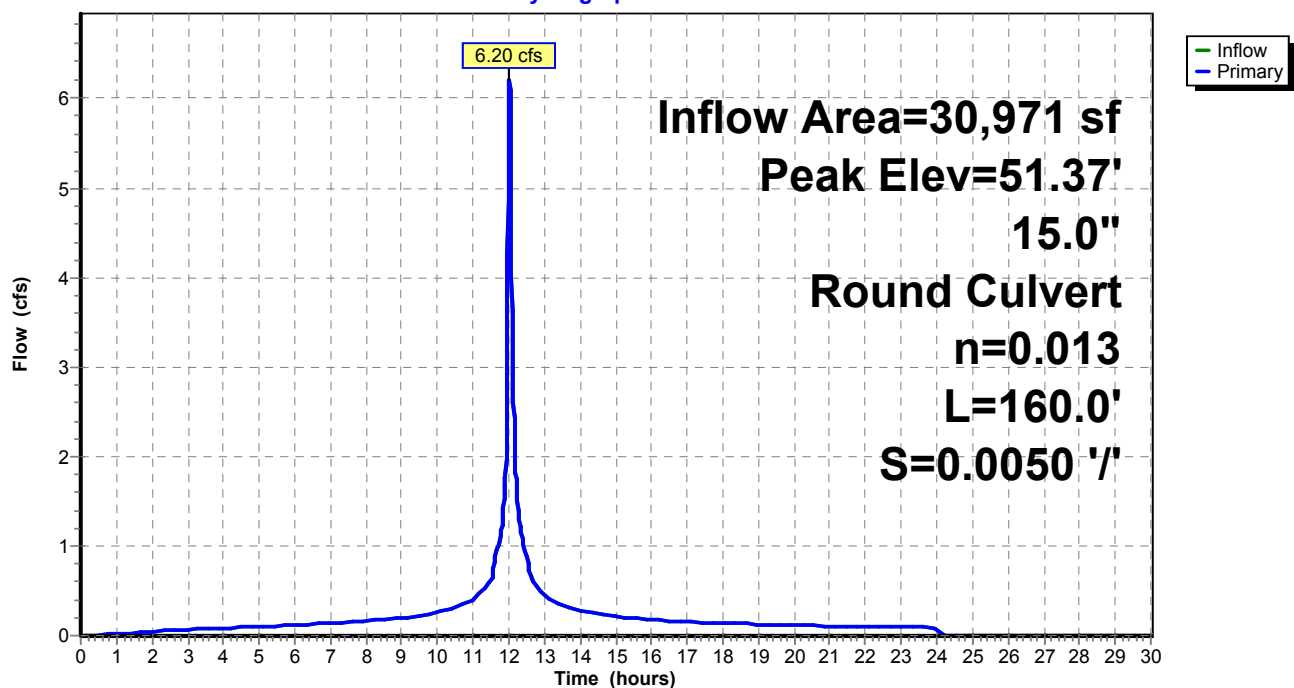
Device	Routing	Invert	Outlet Devices
#1	Primary	48.84'	15.0" Round Culvert L= 160.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.84' / 48.04' S= 0.0050 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=6.18 cfs @ 12.03 hrs HW=51.35' (Free Discharge)

↑1=Culvert (Barrel Controls 6.18 cfs @ 5.04 fps)

Pond 12P: MH-M

Hydrograph



Proposed Conditions

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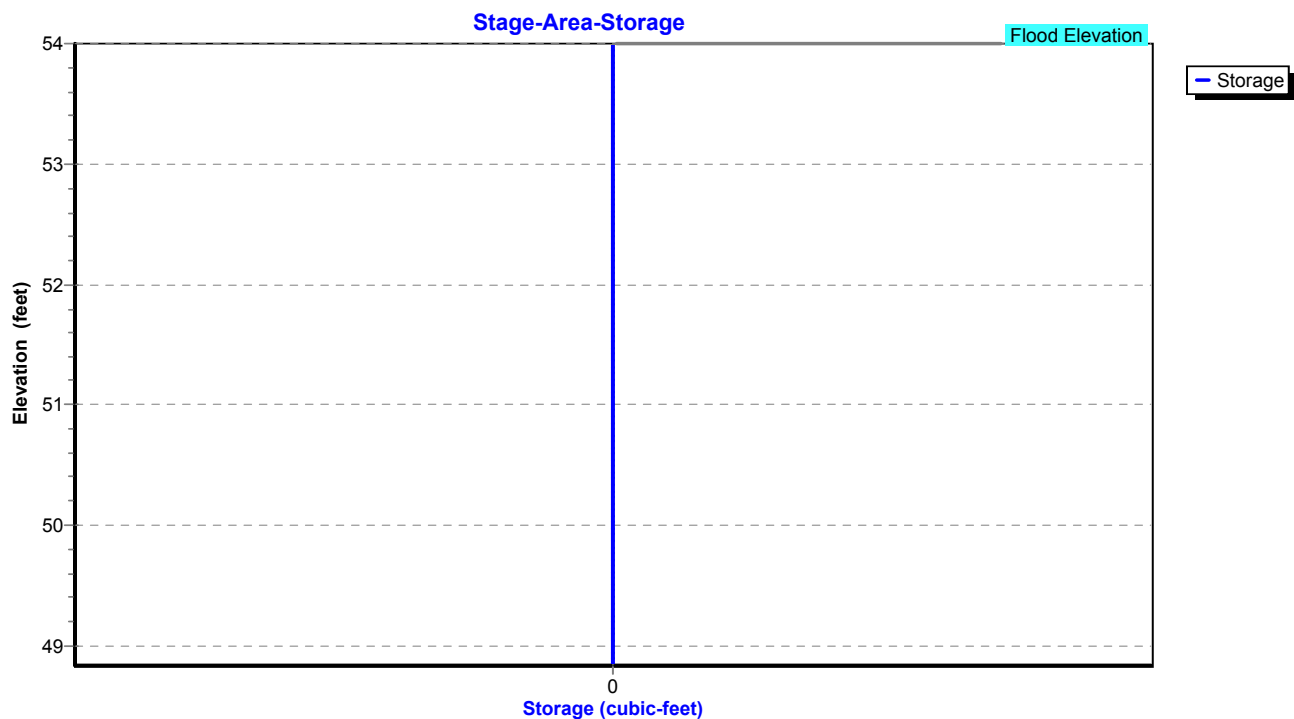
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Pond 12P: MH-M



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Summary for Pond 13P: MH-J

Inflow Area = 17,032 sf, 79.03% Impervious, Inflow Depth = 7.42" for 100 year event
Inflow = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf
Outflow = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.37 cfs @ 12.03 hrs, Volume= 10,527 cf
Routed to Pond 12P : MH-M

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 51.58' @ 12.03 hrs

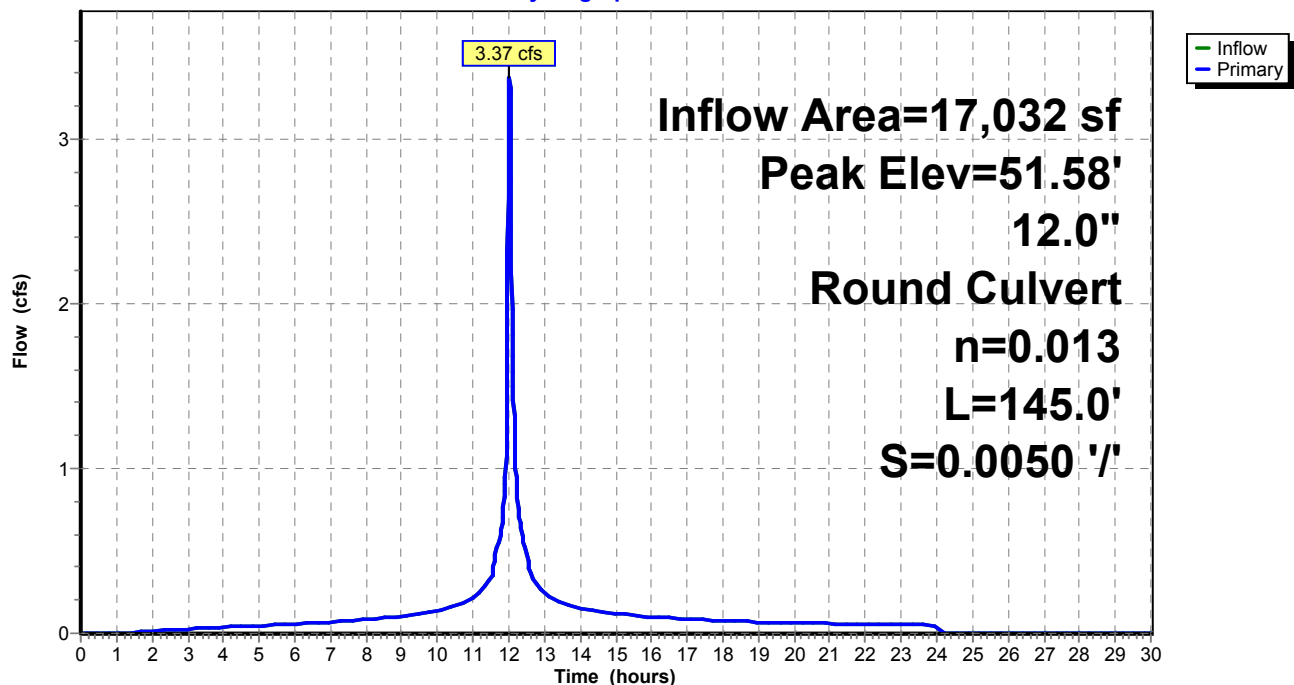
Device	Routing	Invert	Outlet Devices
#1	Primary	49.57'	12.0" Round Culvert L= 145.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.57' / 48.84' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.36 cfs @ 12.03 hrs HW=51.56' (Free Discharge)

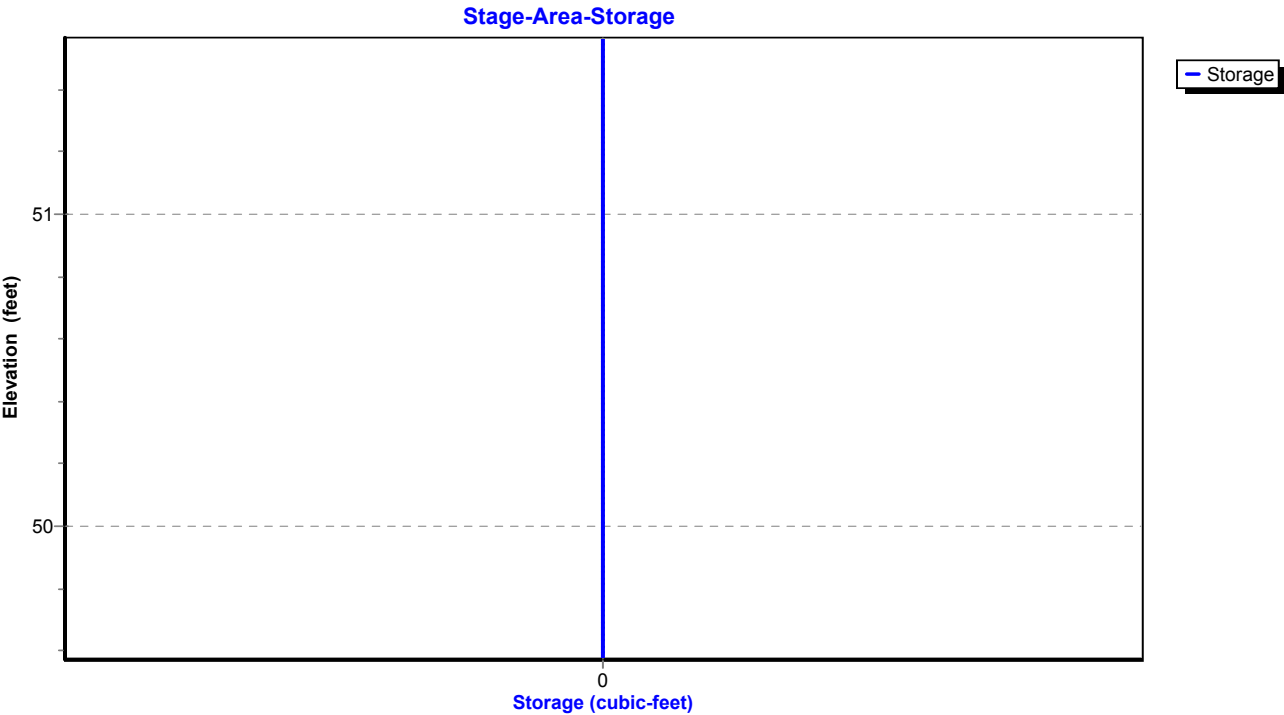
↑1=Culvert (Barrel Controls 3.36 cfs @ 4.28 fps)

Pond 13P: MH-J

Hydrograph



Pond 13P: MH-J



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Summary for Pond 14P: MH-O

Inflow Area = 144,140 sf, 45.36% Impervious, Inflow Depth = 6.23" for 100 year event
Inflow = 16.80 cfs @ 12.10 hrs, Volume= 74,881 cf
Outflow = 16.80 cfs @ 12.10 hrs, Volume= 74,881 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.80 cfs @ 12.10 hrs, Volume= 74,881 cf
Routed to Pond 9P : MH-K

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 52.84' @ 12.10 hrs

Flood Elev= 51.80'

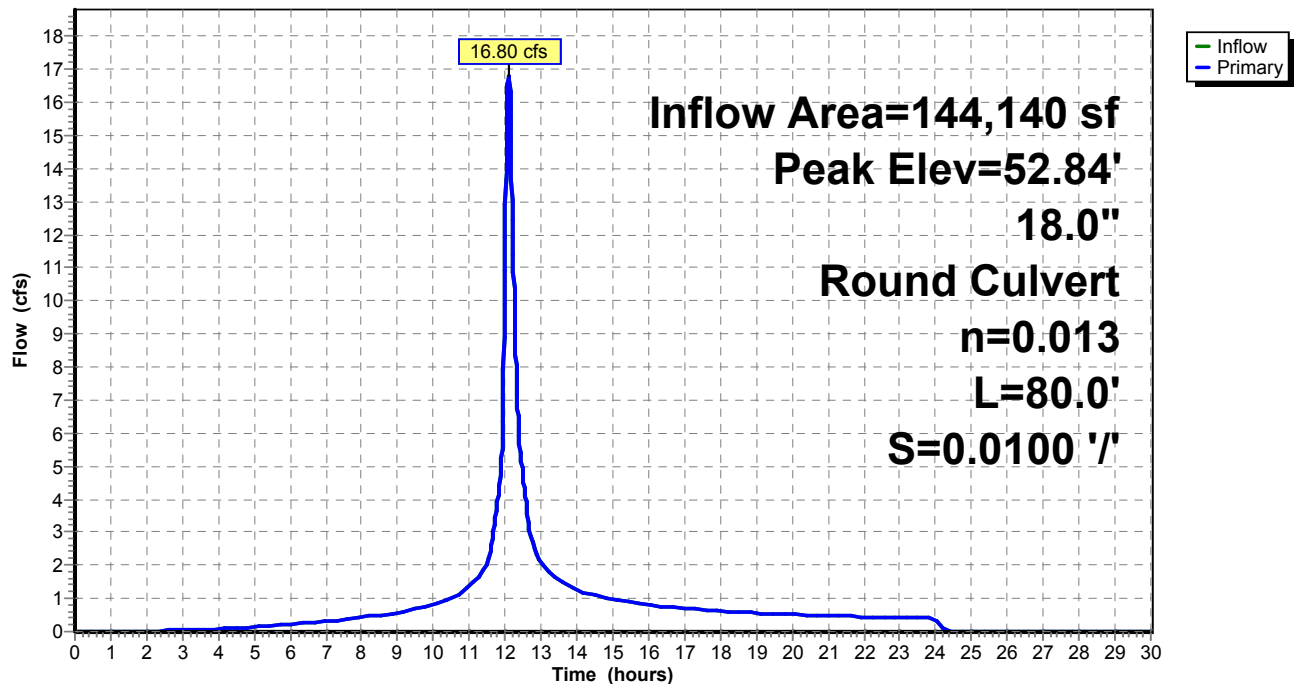
Device	Routing	Invert	Outlet Devices
#1	Primary	47.98'	18.0" Round Culvert L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.98' / 47.18' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=16.79 cfs @ 12.10 hrs HW=52.84' (Free Discharge)

↑1=Culvert (Barrel Controls 16.79 cfs @ 9.50 fps)

Pond 14P: MH-O

Hydrograph



Proposed Conditions

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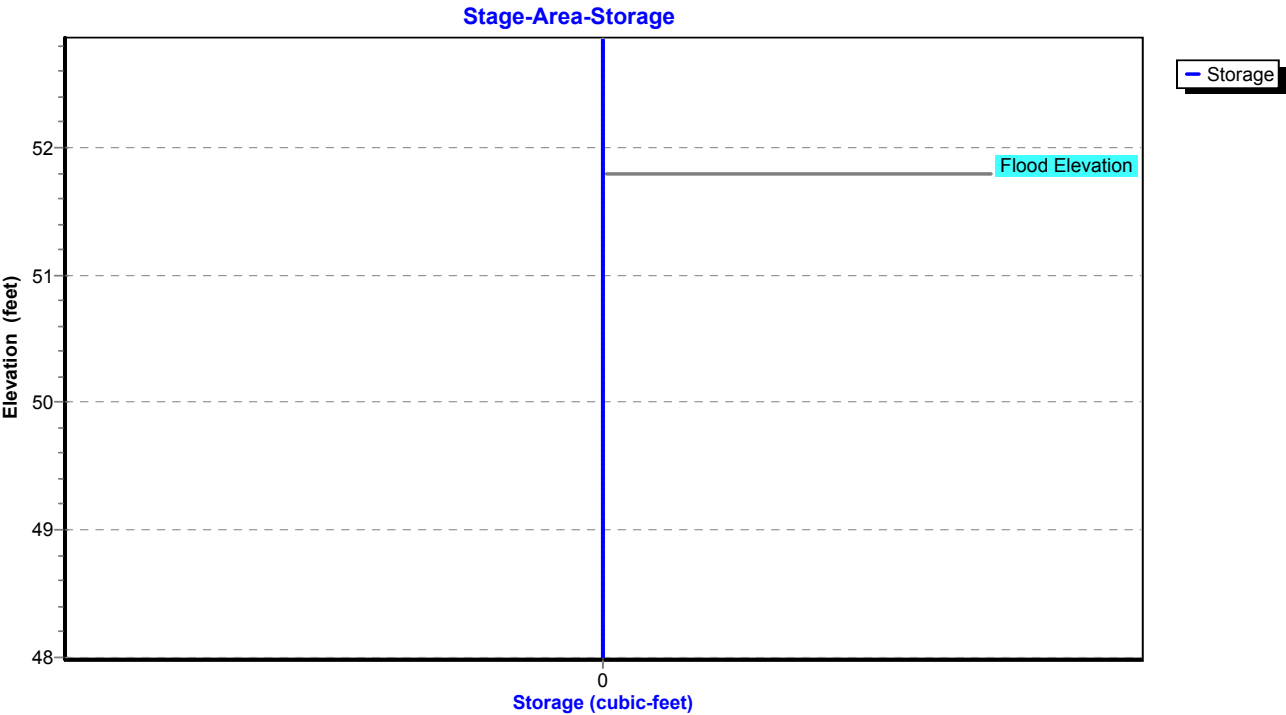
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Pond 14P: MH-O



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Summary for Pond 15P: MH-P

Inflow Area = 126,542 sf, 40.90% Impervious, Inflow Depth = 6.07" for 100 year event
Inflow = 15.01 cfs @ 12.11 hrs, Volume= 63,983 cf
Outflow = 15.01 cfs @ 12.11 hrs, Volume= 63,983 cf, Atten= 0%, Lag= 0.0 min
Primary = 15.01 cfs @ 12.11 hrs, Volume= 63,983 cf
Routed to Pond 14P : MH-O

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 54.54' @ 12.11 hrs

Flood Elev= 53.90'

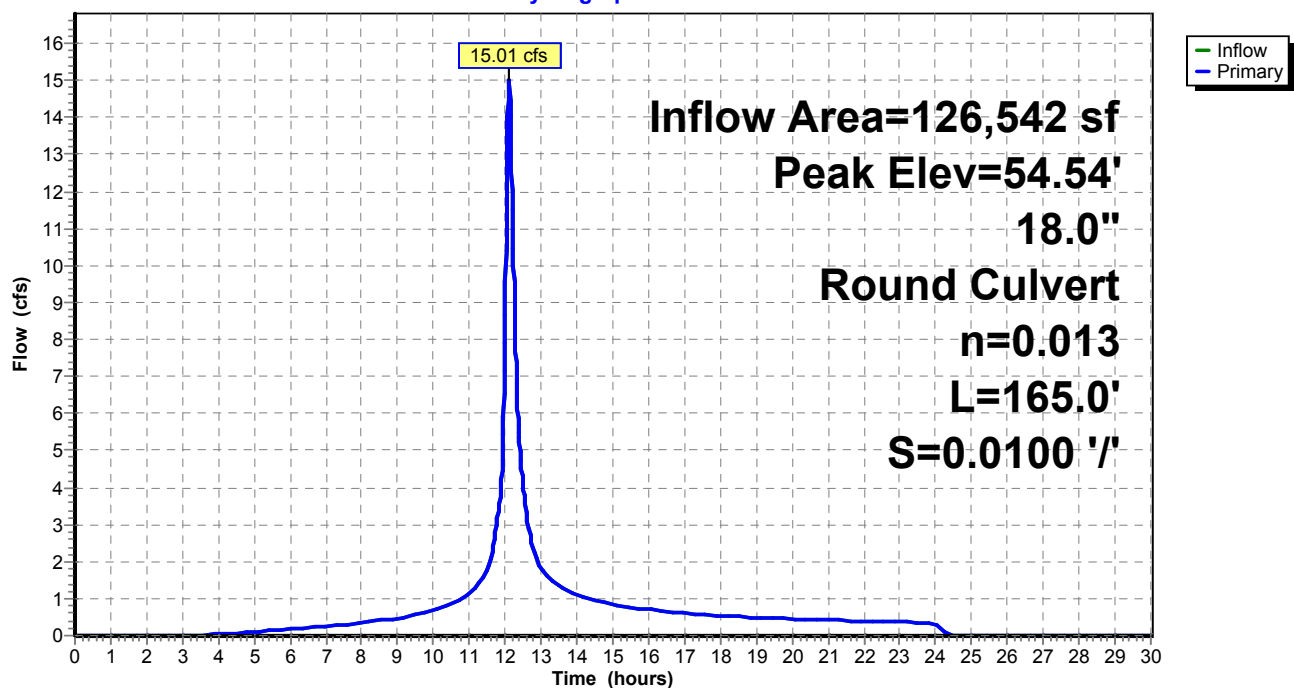
Device	Routing	Invert	Outlet Devices
#1	Primary	49.63'	18.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.63' / 47.98' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=15.00 cfs @ 12.11 hrs HW=54.54' (Free Discharge)

↑1=Culvert (Barrel Controls 15.00 cfs @ 8.49 fps)

Pond 15P: MH-P

Hydrograph



Proposed Conditions

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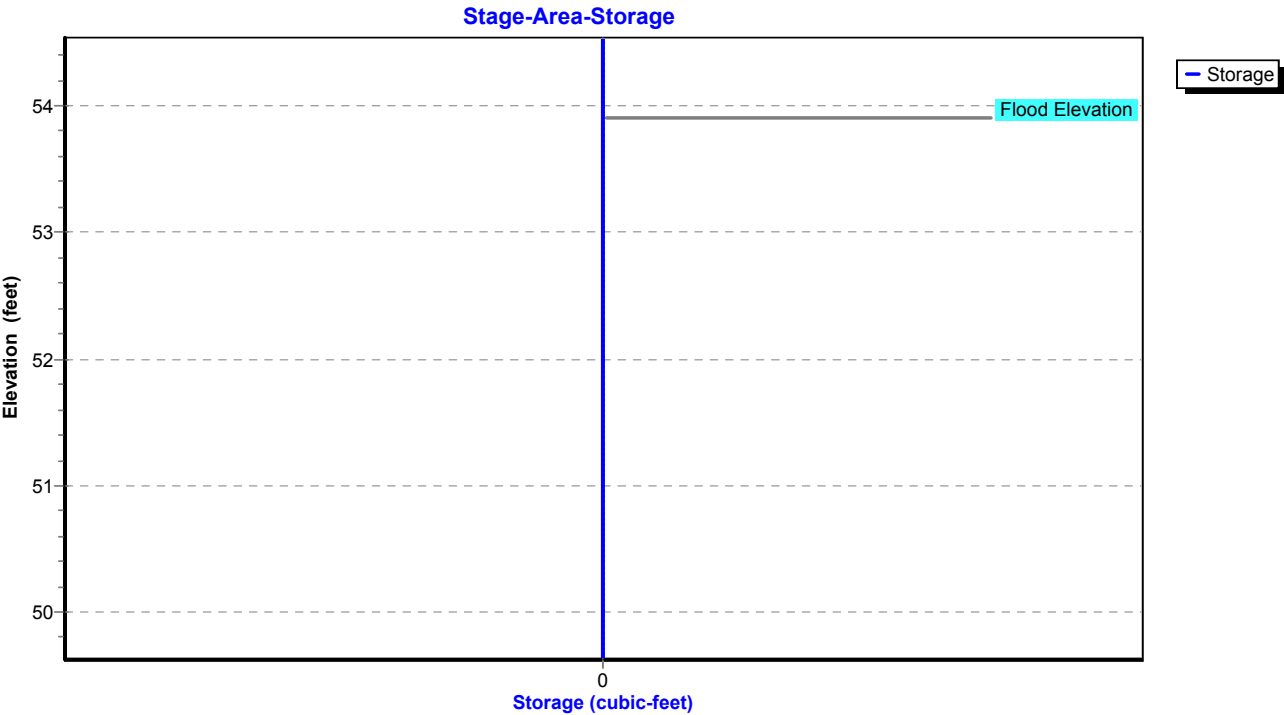
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Pond 15P: MH-P



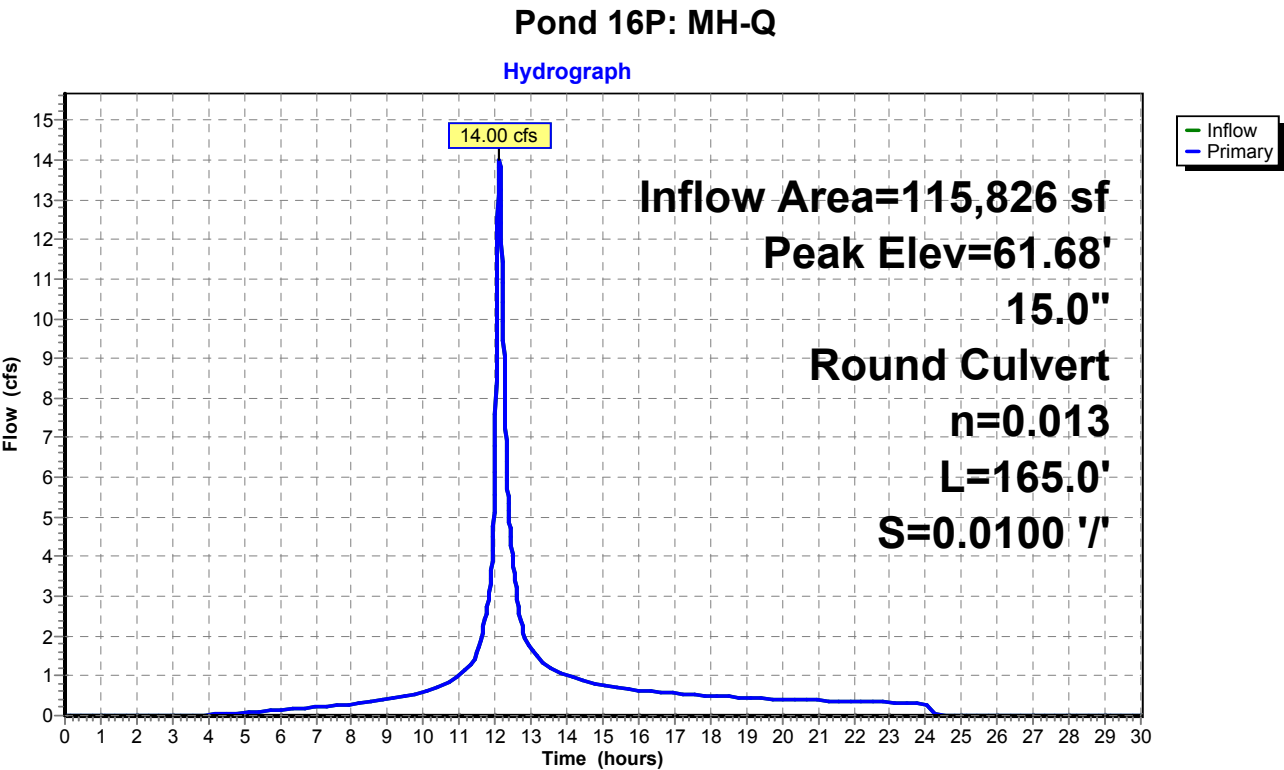
Summary for Pond 16P: MH-Q

Inflow Area = 115,826 sf, 38.74% Impervious, Inflow Depth = 5.98" for 100 year event
Inflow = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf
Outflow = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.00 cfs @ 12.11 hrs, Volume= 57,761 cf
Routed to Pond 15P : MH-P

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 61.68' @ 12.11 hrs
Flood Elev= 55.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	51.28'	15.0" Round Culvert L= 165.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.28' / 49.63' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=13.98 cfs @ 12.11 hrs HW=61.66' (Free Discharge)
1=Culvert (Barrel Controls 13.98 cfs @ 11.39 fps)



Proposed Conditions

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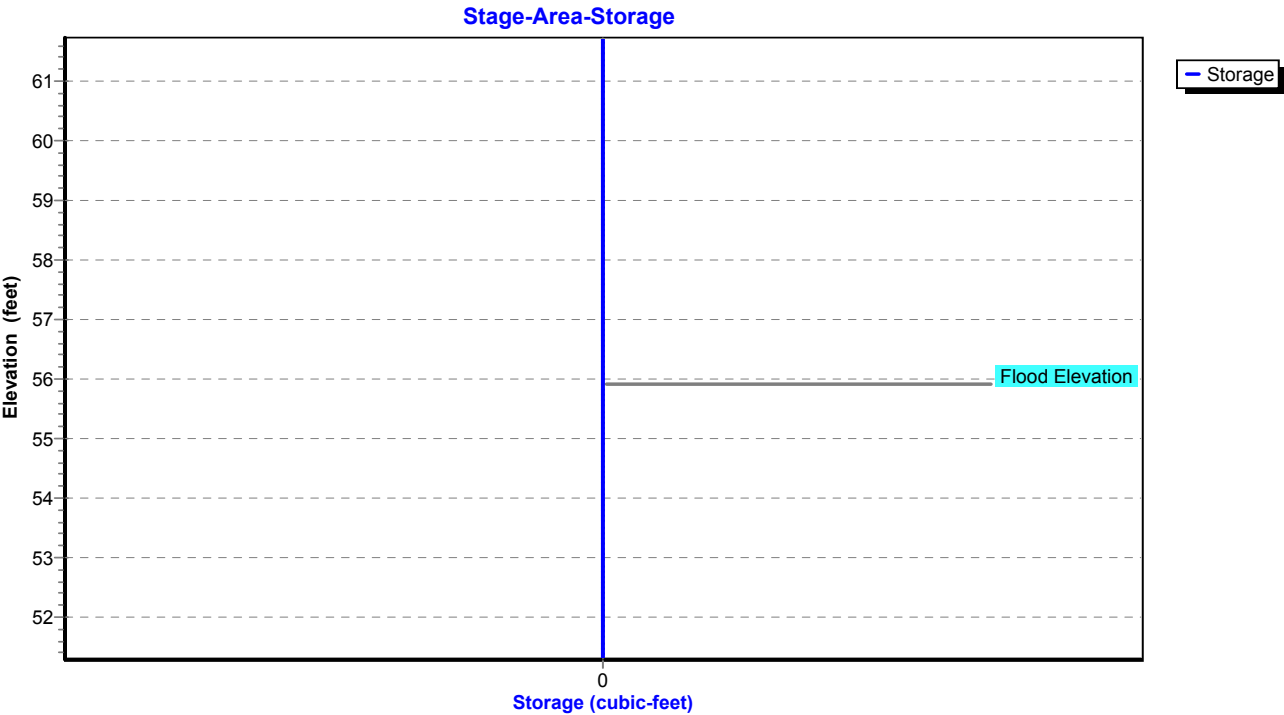
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Pond 16P: MH-Q



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Summary for Pond 17P: DET 12 Culvert

Inflow Area = 2,935,247 sf, 23.28% Impervious, Inflow Depth = 5.15" for 100 year event
 Inflow = 96.34 cfs @ 13.17 hrs, Volume= 1,260,192 cf
 Outflow = 96.12 cfs @ 13.21 hrs, Volume= 1,260,192 cf, Atten= 0%, Lag= 2.9 min
 Primary = 96.12 cfs @ 13.21 hrs, Volume= 1,260,192 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 47.63' @ 13.21 hrs Surf.Area= 6,069 sf Storage= 10,103 cf

Plug-Flow detention time= 1.6 min calculated for 1,259,772 cf (100% of inflow)
 Center-of-Mass det. time= 1.6 min (901.7 - 900.1)

Volume	Invert	Avail.Storage	Storage Description
#1	43.80'	45,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
43.80	222	0	0
44.00	709	93	93
45.00	1,401	1,055	1,148
46.00	2,634	2,018	3,166
47.00	4,548	3,591	6,757
48.00	6,960	5,754	12,511
49.00	9,390	8,175	20,686
50.00	12,553	10,972	31,657
51.00	16,122	14,338	45,995

Device	Routing	Invert	Outlet Devices
#1	Primary	43.80'	54.0" Round Culvert L= 281.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 43.80' / 23.20' S= 0.0733 ' / Cc= 0.900 n= 0.013, Flow Area= 15.90 sf

Primary OutFlow Max=96.12 cfs @ 13.21 hrs HW=47.63' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 96.12 cfs @ 6.66 fps)

Proposed Conditions

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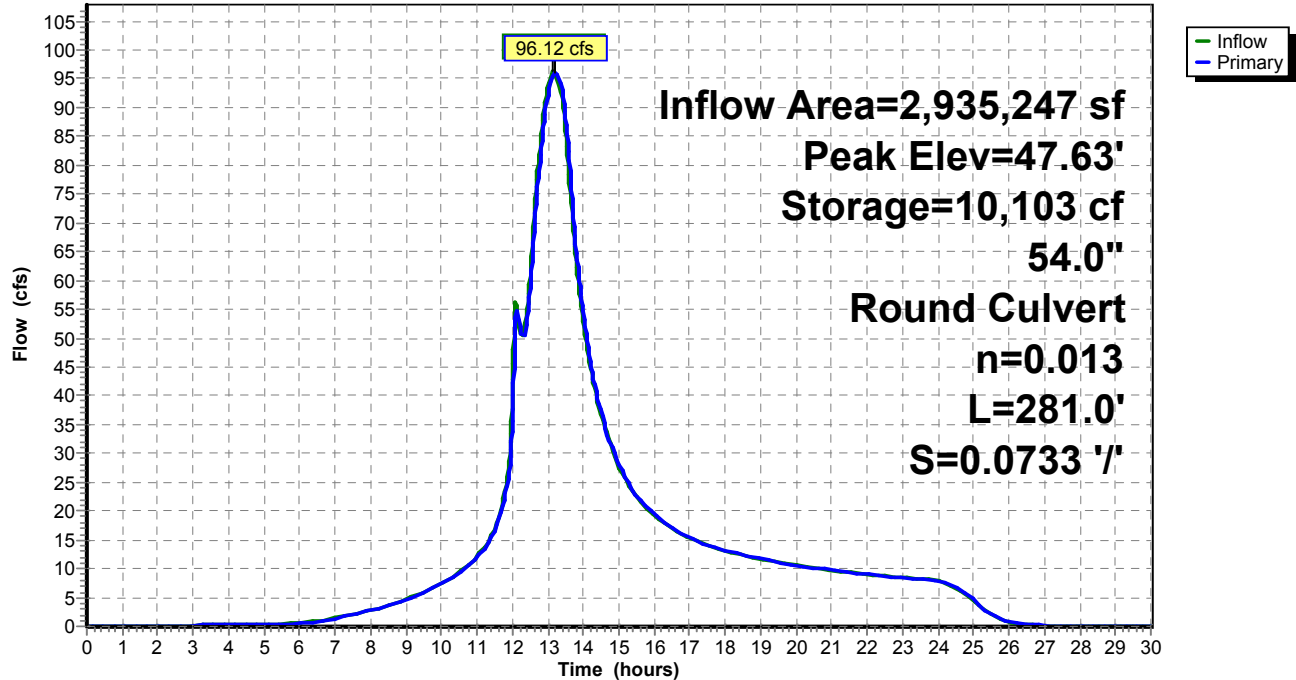
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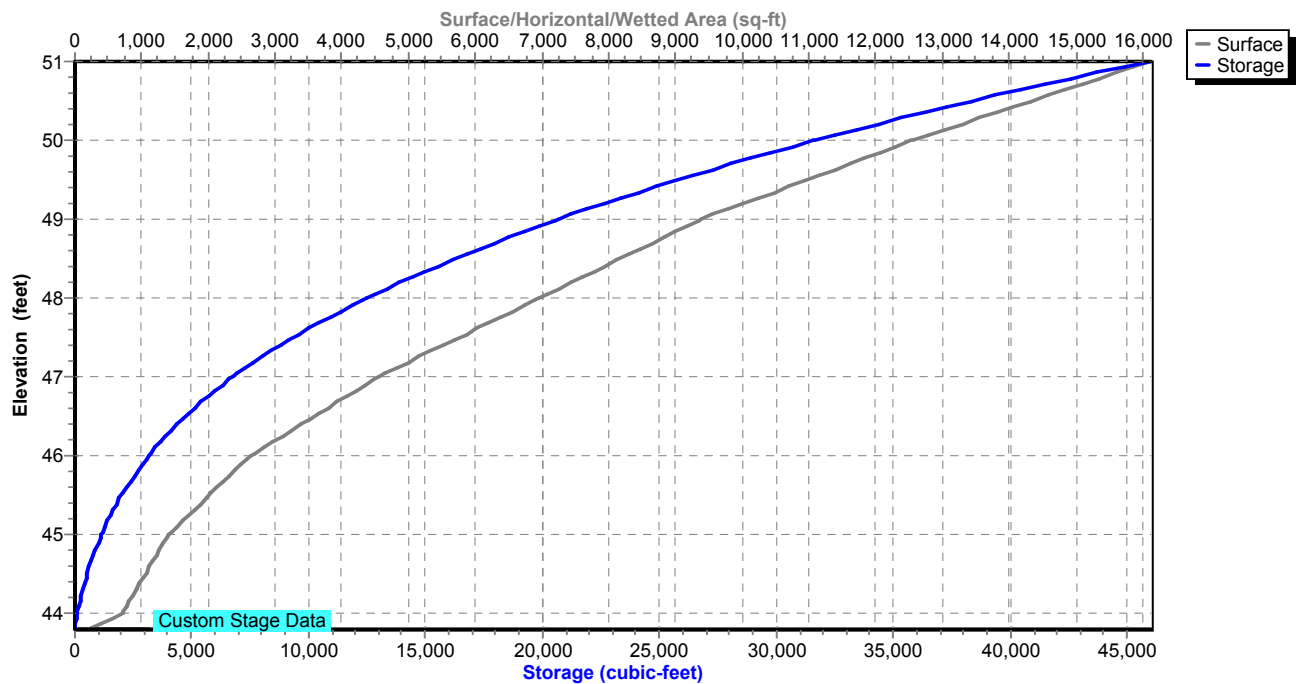
Pond 17P: DET 12 Culvert

Hydrograph



Pond 17P: DET 12 Culvert

Stage-Area-Storage



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Summary for Pond 18P: DET 4 Culvert

Inflow Area = 2,651,933 sf, 21.42% Impervious, Inflow Depth = 5.04" for 100 year event
 Inflow = 94.68 cfs @ 13.07 hrs, Volume= 1,113,245 cf
 Outflow = 92.74 cfs @ 13.18 hrs, Volume= 1,113,245 cf, Atten= 2%, Lag= 6.6 min
 Primary = 92.74 cfs @ 13.18 hrs, Volume= 1,113,245 cf
 Routed to Pond 17P : DET 12 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 70.93' @ 13.18 hrs Surf.Area= 3,131 sf Storage= 9,738 cf

Plug-Flow detention time= 0.5 min calculated for 1,112,874 cf (100% of inflow)
 Center-of-Mass det. time= 0.5 min (912.6 - 912.1)

Volume	Invert	Avail.Storage	Storage Description
#1	62.00'	13,716 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
62.00	10	0	0
65.00	292	453	453
66.00	695	494	947
67.00	1,049	872	1,819
68.00	1,488	1,269	3,087
69.00	2,004	1,746	4,833
70.00	2,550	2,277	7,110
71.00	3,178	2,864	9,974
72.00	4,305	3,742	13,716

Device	Routing	Invert	Outlet Devices
#1	Primary	62.00'	36.0" Round Culvert L= 213.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 62.00' / 50.90' S= 0.0521 ' / Cc= 0.900 n= 0.013, Flow Area= 7.07 sf

Primary OutFlow Max=92.74 cfs @ 13.18 hrs HW=70.92' (Free Discharge)

↑**1=Culvert** (Inlet Controls 92.74 cfs @ 13.12 hrs)

Proposed Conditions

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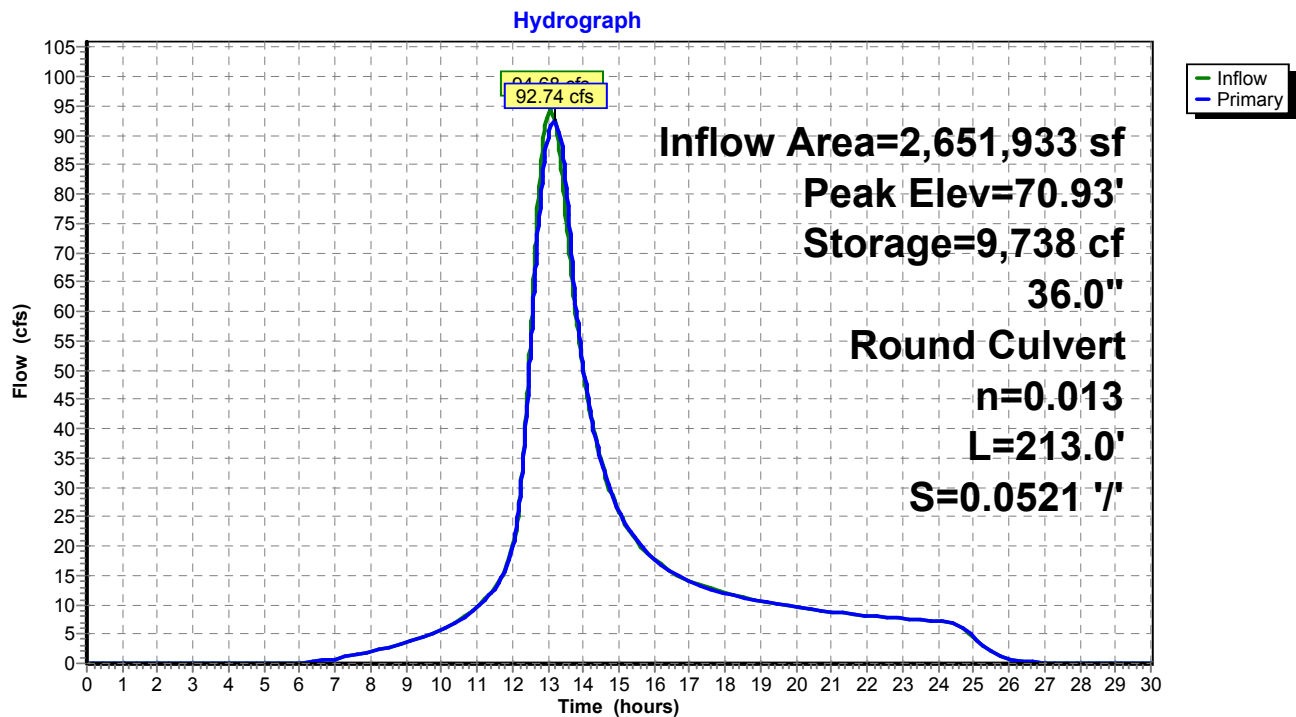
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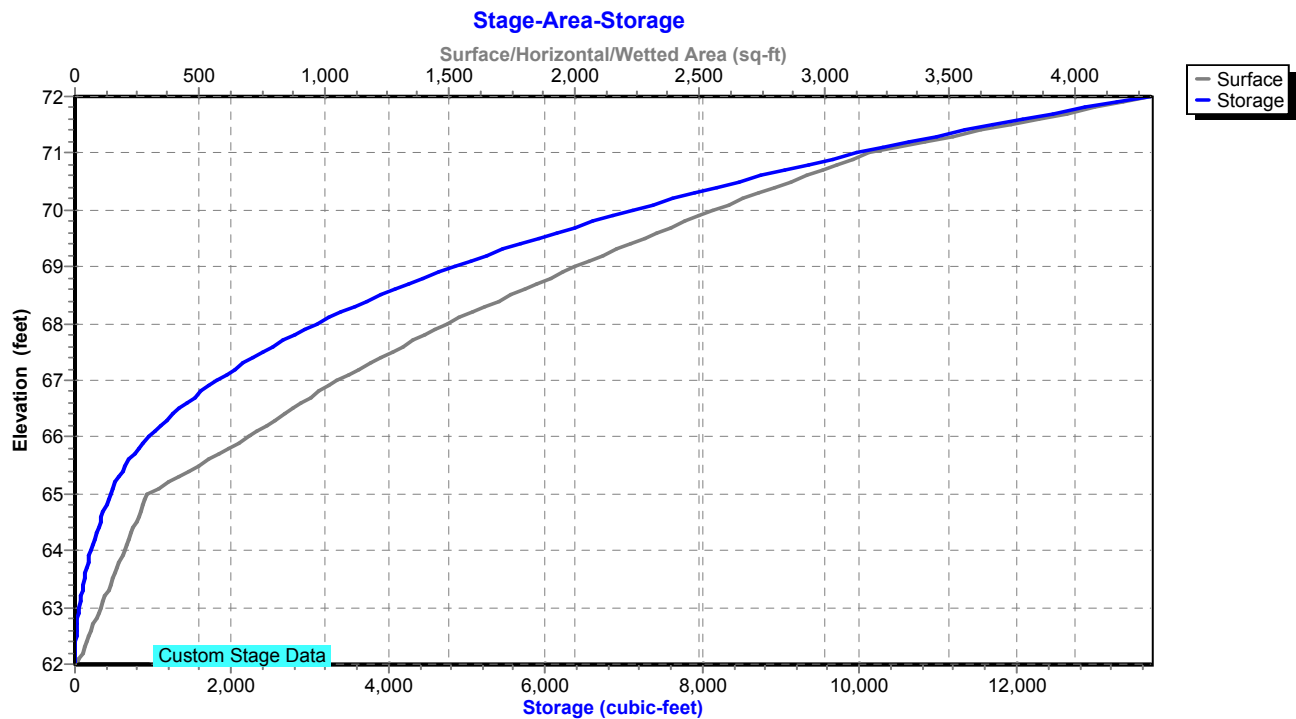
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Pond 18P: DET 4 Culvert



Pond 18P: DET 4 Culvert



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Summary for Pond 20P: ADS Stormtech (160LP)

Inflow Area = 4,966 sf, 80.70% Impervious, Inflow Depth = 7.54" for 100 year event
 Inflow = 0.99 cfs @ 12.03 hrs, Volume= 3,119 cf
 Outflow = 0.89 cfs @ 12.06 hrs, Volume= 3,050 cf, Atten= 10%, Lag= 2.0 min
 Primary = 0.89 cfs @ 12.06 hrs, Volume= 3,050 cf
 Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 75.07' @ 12.06 hrs Surf.Area= 365 sf Storage= 372 cf

Plug-Flow detention time= 39.7 min calculated for 3,050 cf (98% of inflow)
 Center-of-Mass det. time= 25.1 min (789.3 - 764.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	73.00'	227 cf	14.50'W x 23.83'L x 2.00'H Field A 691 cf Overall - 123 cf Embedded = 568 cf x 40.0% Voids
#2A	73.50'	123 cf	ADS_StormTech SC-160LP +Cap x 18 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 6 Rows
#3	73.50'	22 cf	5.00'D x 1.10'H OCS
		372 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	73.50'	12.0" Round Culvert L= 16.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 73.50' / 73.00' S= 0.0313 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	74.40'	Custom Weir/Orifice, Cv= 2.62 (C= 3.28) Head (feet) 0.00 2.75 2.75 Width (feet) 0.33 0.33 5.00
#3	Device 1	73.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.88 cfs @ 12.06 hrs HW=75.06' (Free Discharge)

- 1=Culvert (Passes 0.88 cfs of 3.90 cfs potential flow)
- 2=Custom Weir/Orifice (Weir Controls 0.58 cfs @ 2.67 fps)
- 3=Orifice/Grate (Orifice Controls 0.30 cfs @ 6.02 fps)

Proposed Conditions

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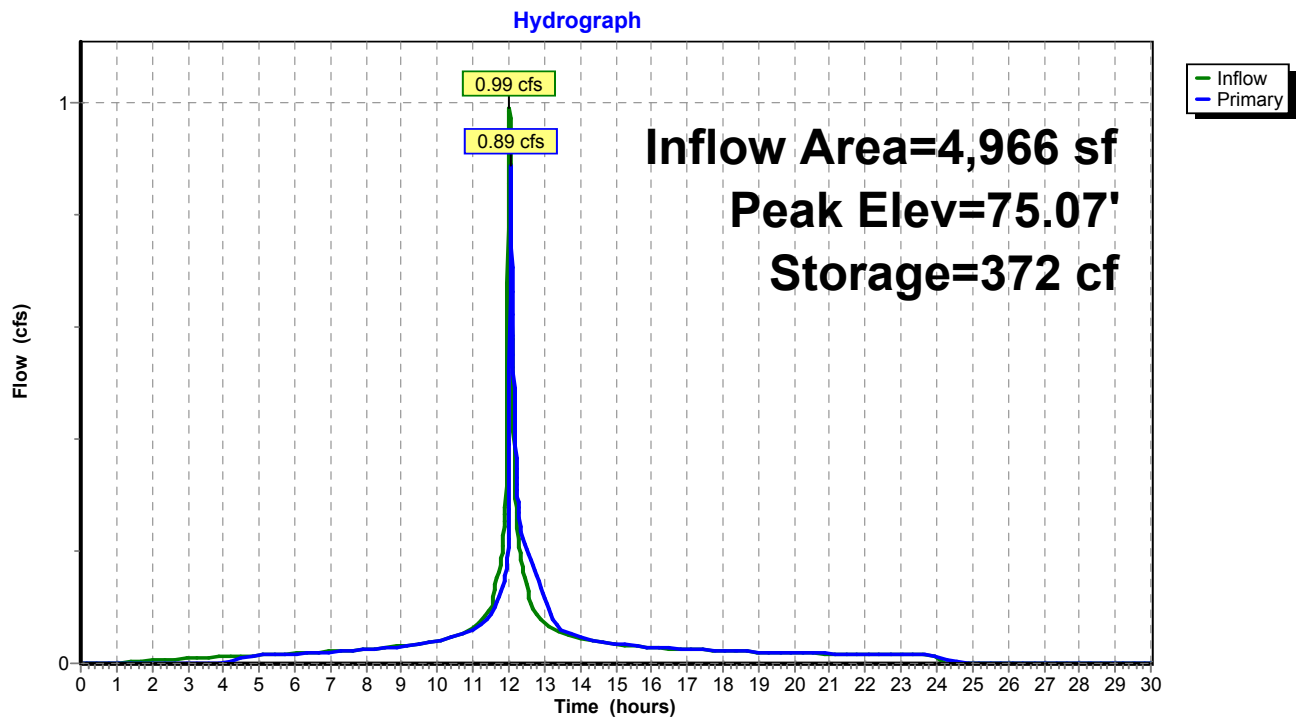
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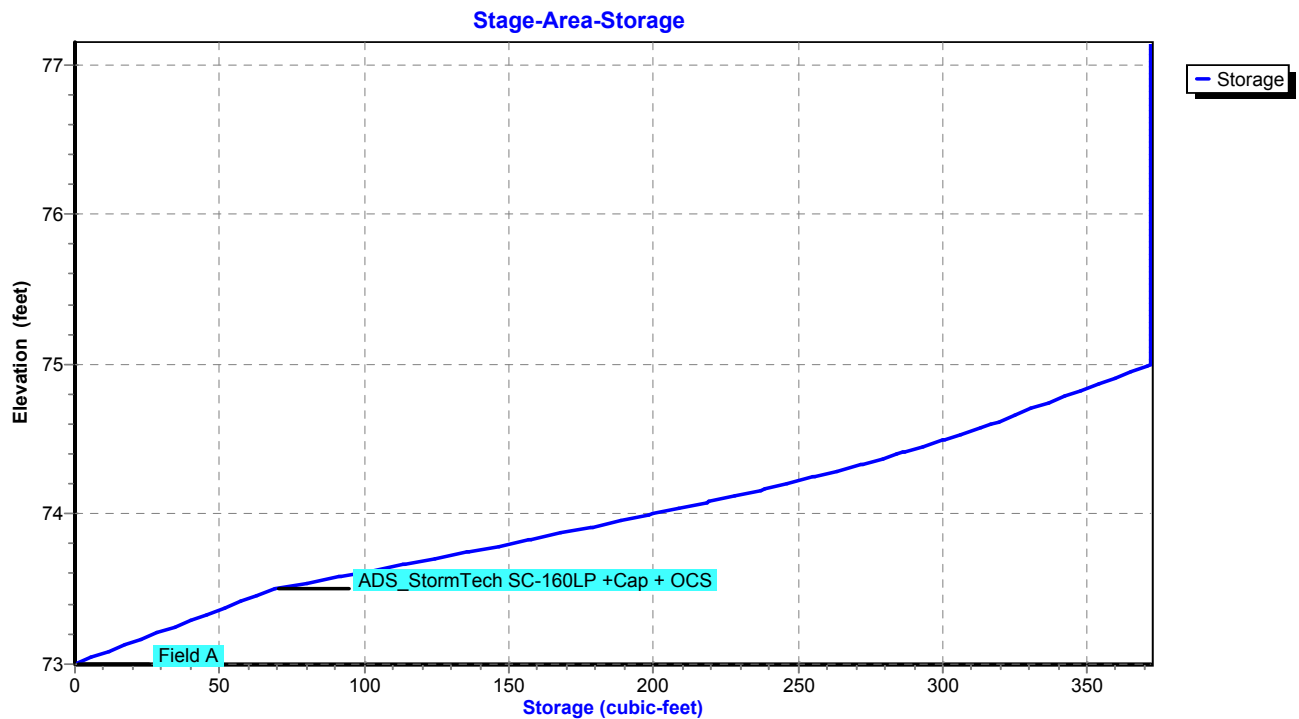
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Pond 20P: ADS Stormtech (160LP)



Pond 20P: ADS Stormtech (160LP)



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Summary for Pond 21P: DET 1 Culvert

Inflow Area = 533,174 sf, 25.00% Impervious, Inflow Depth = 5.04" for 100 year event
 Inflow = 28.03 cfs @ 12.52 hrs, Volume= 223,819 cf
 Outflow = 28.03 cfs @ 12.53 hrs, Volume= 223,819 cf, Atten= 0%, Lag= 0.3 min
 Primary = 28.03 cfs @ 12.53 hrs, Volume= 223,819 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 41.43' @ 12.53 hrs Surf.Area= 1,750 sf Storage= 1,591 cf

Plug-Flow detention time= 0.6 min calculated for 223,745 cf (100% of inflow)
 Center-of-Mass det. time= 0.6 min (875.7 - 875.0)

Volume	Invert	Avail.Storage	Storage Description
#1	37.00'	1,591 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
37.00	66	0	0
38.00	213	140	140
39.00	470	342	481
40.00	1,750	1,110	1,591

Device	Routing	Invert	Outlet Devices
#1	Primary	37.00'	24.0" Round Culvert L= 206.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 37.00' / 27.01' S= 0.0485 ' S= 0.0485 ' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=28.02 cfs @ 12.53 hrs HW=41.43' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 28.02 cfs @ 8.92 fps)

Proposed Conditions

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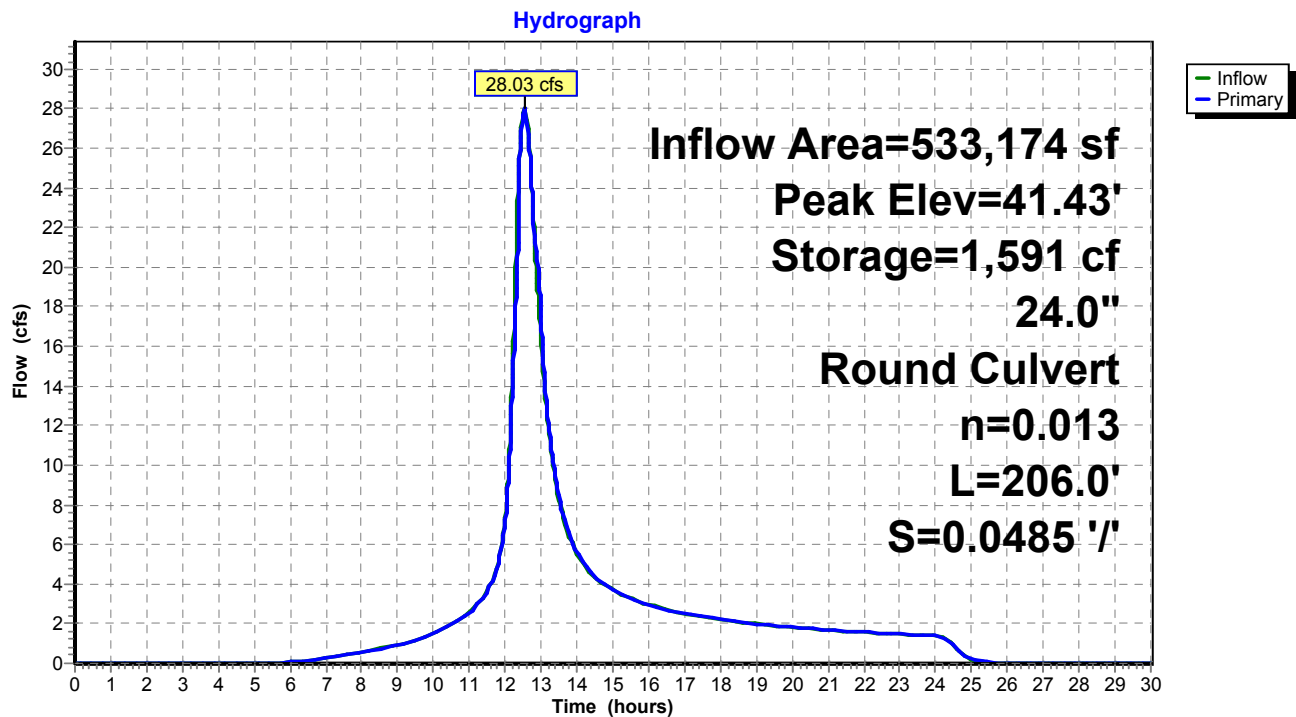
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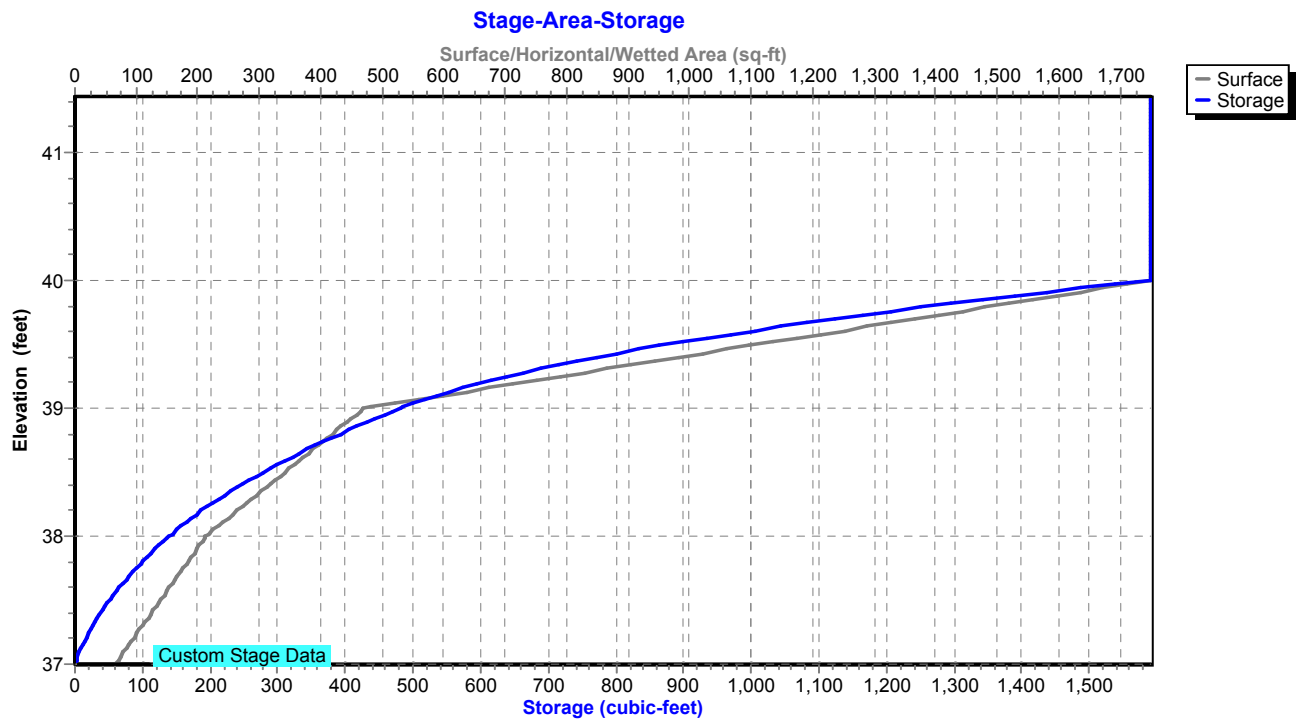
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Pond 21P: DET 1 Culvert



Pond 21P: DET 1 Culvert



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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Summary for Pond 22P: DET 2 Culvert

Inflow Area = 1,290,247 sf, 25.00% Impervious, Inflow Depth = 5.63" for 100 year event
 Inflow = 62.64 cfs @ 12.74 hrs, Volume= 605,141 cf
 Outflow = 63.23 cfs @ 12.97 hrs, Volume= 605,141 cf, Atten= 0%, Lag= 13.9 min
 Primary = 63.23 cfs @ 12.97 hrs, Volume= 605,141 cf
 Routed to Pond 27P : DET 17 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 43.21' @ 12.97 hrs Surf.Area= 21,926 sf Storage= 46,687 cf

Plug-Flow detention time= 7.3 min calculated for 605,141 cf (100% of inflow)
 Center-of-Mass det. time= 7.3 min (881.9 - 874.6)

Volume	Invert	Avail.Storage	Storage Description
#1	34.80'	46,687 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
34.80	185	0	0
35.00	813	100	100
36.00	2,345	1,579	1,679
37.00	6,398	4,372	6,050
38.00	11,111	8,755	14,805
39.00	15,364	13,238	28,042
40.00	21,926	18,645	46,687

Device	Routing	Invert	Outlet Devices
#1	Primary	34.80'	30.0" Round Culvert L= 198.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 34.80' / 28.07' S= 0.0340 '/' Cc= 0.900 n= 0.013, Flow Area= 4.91 sf

Primary OutFlow Max=63.00 cfs @ 12.97 hrs HW=43.15' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 63.00 cfs @ 12.83 fps)

Proposed Conditions

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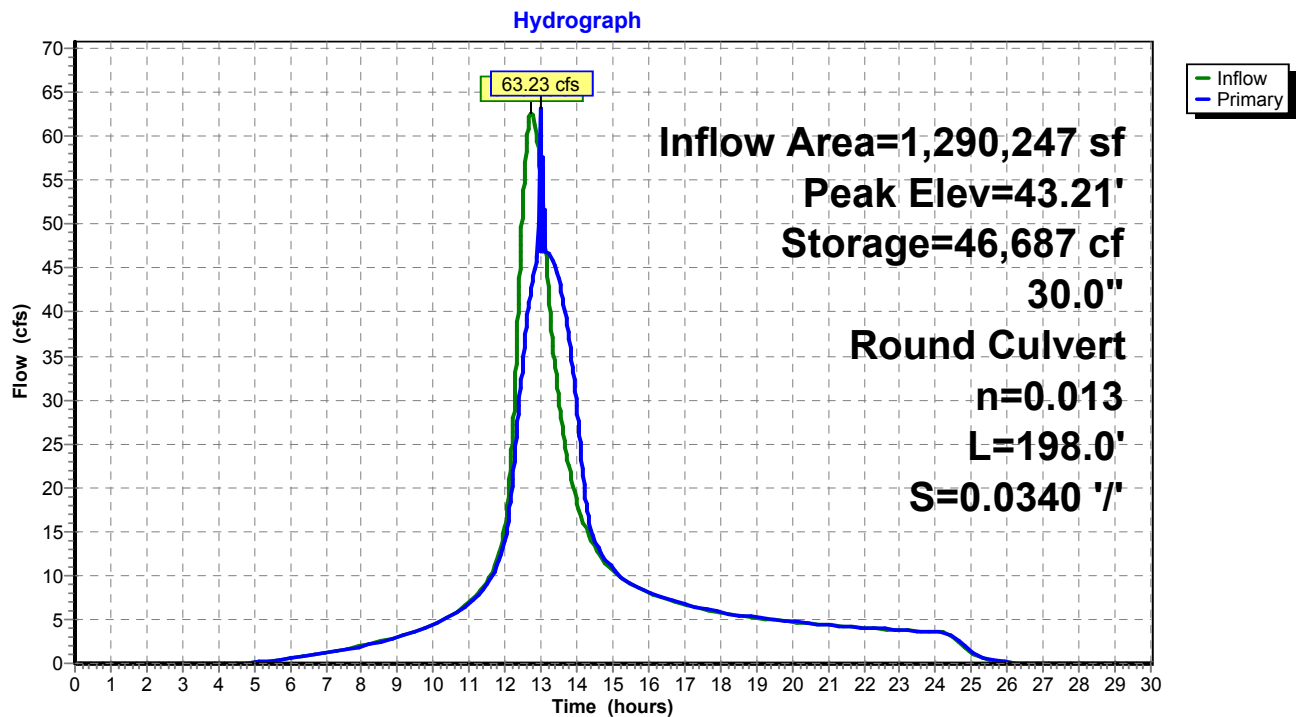
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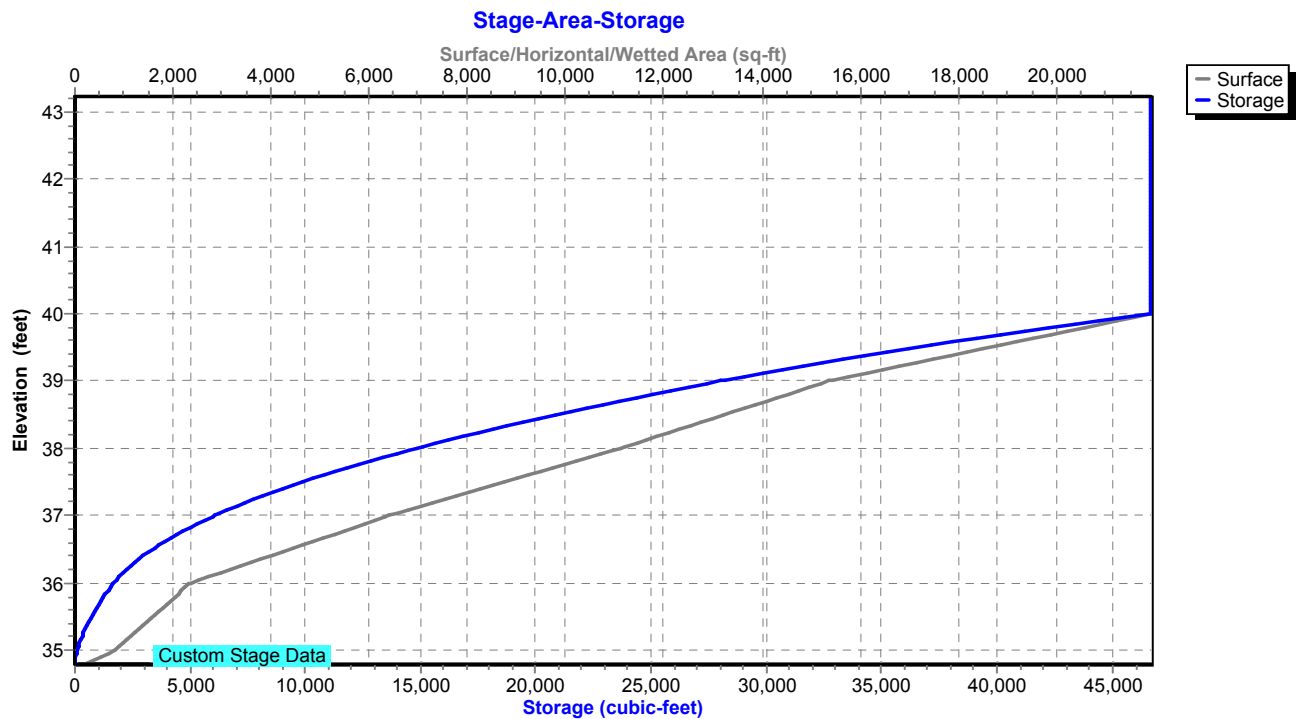
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Pond 22P: DET 2 Culvert



Pond 22P: DET 2 Culvert



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Summary for Pond 23P: DET 3 Culvert

Inflow Area = 276,170 sf, 25.00% Impervious, Inflow Depth = 5.16" for 100 year event
 Inflow = 23.17 cfs @ 12.22 hrs, Volume= 118,644 cf
 Outflow = 21.27 cfs @ 12.28 hrs, Volume= 118,644 cf, Atten= 8%, Lag= 3.9 min
 Primary = 21.27 cfs @ 12.28 hrs, Volume= 118,644 cf
 Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 45.48' @ 12.28 hrs Surf.Area= 2,348 sf Storage= 2,472 cf

Plug-Flow detention time= 0.8 min calculated for 118,605 cf (100% of inflow)
 Center-of-Mass det. time= 0.8 min (850.4 - 849.6)

Volume	Invert	Avail.Storage	Storage Description
#1	42.50'	16,475 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
42.50	10	0	0
43.00	198	52	52
44.00	572	385	437
45.00	1,607	1,090	1,527
46.00	3,156	2,382	3,908
47.00	5,953	4,555	8,463
48.00	10,072	8,013	16,475

Device	Routing	Invert	Outlet Devices
#1	Primary	42.50'	24.0" Round Culvert L= 202.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 42.50' / 32.20' S= 0.0510 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=21.27 cfs @ 12.28 hrs HW=45.48' (Free Discharge)
 ↑**1=Culvert** (Inlet Controls 21.27 cfs @ 6.77 fps)

Proposed Conditions

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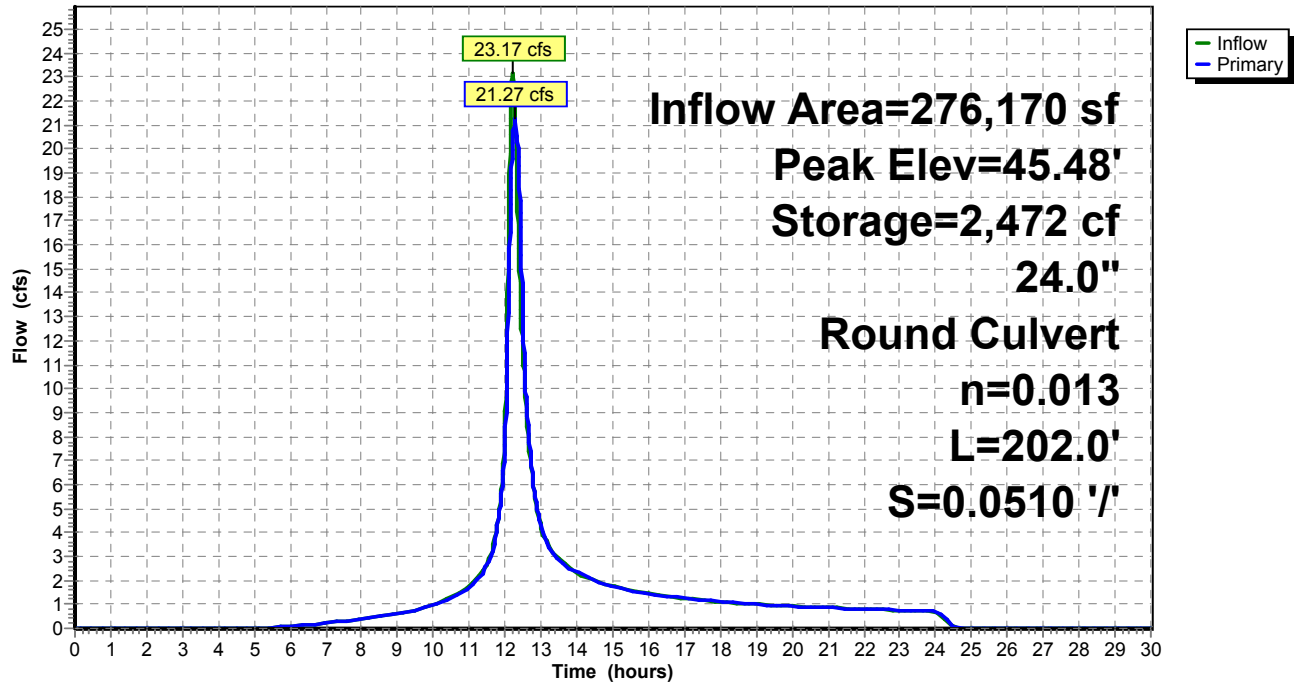
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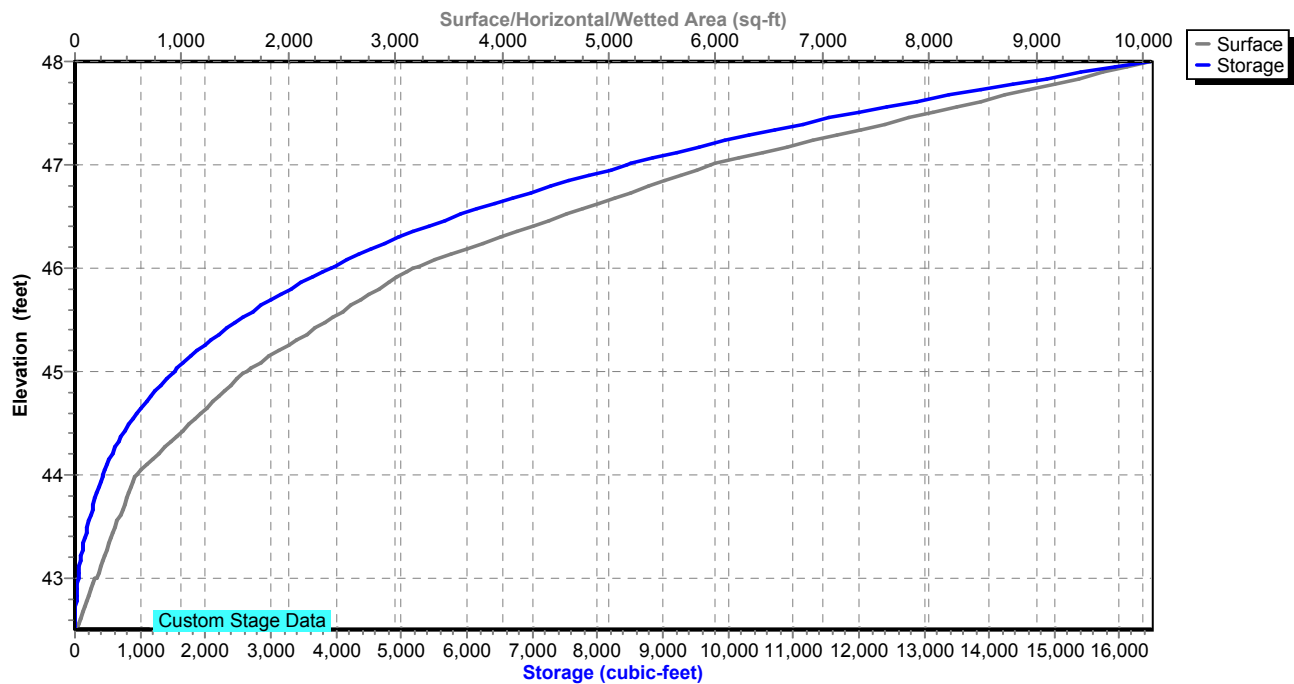
Pond 23P: DET 3 Culvert

Hydrograph



Pond 23P: DET 3 Culvert

Stage-Area-Storage



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Summary for Pond 24P: RR Culvert 3

Inflow Area = 500,940 sf, 4.78% Impervious, Inflow Depth = 54.03" for 100 year event
 Inflow = 343.84 cfs @ 12.23 hrs, Volume= 2,255,567 cf
 Outflow = 64.79 cfs @ 14.29 hrs, Volume= 2,255,626 cf, Atten= 81%, Lag= 123.7 min
 Primary = 64.79 cfs @ 14.29 hrs, Volume= 2,255,626 cf

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 14.43' @ 14.29 hrs Storage= 1,348,308 cf

Plug-Flow detention time= 237.7 min calculated for 2,254,874 cf (100% of inflow)

Center-of-Mass det. time= 237.6 min (1,034.8 - 797.1)

Volume	Invert	Avail.Storage	Storage Description
#1	8.10'	2,250,385 cf	Custom Stage Data Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
8.10	0	0
9.00	9	9
10.00	148	157
11.00	64,834	64,991
12.00	244,457	309,448
13.00	383,724	693,172
14.00	435,183	1,128,355
15.00	514,834	1,643,189
16.00	607,196	2,250,385

Device	Routing	Invert	Outlet Devices
#1	Primary	8.10'	30.0" W x 42.0" H Box Culvert L= 135.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 8.10' / 7.80' S= 0.0022 ' / Cc= 0.900 n= 0.019, Flow Area= 8.75 sf

Primary OutFlow Max=64.79 cfs @ 14.29 hrs HW=14.43' (Free Discharge)↑**1=Culvert** (Barrel Controls 64.79 cfs @ 7.40 fps)

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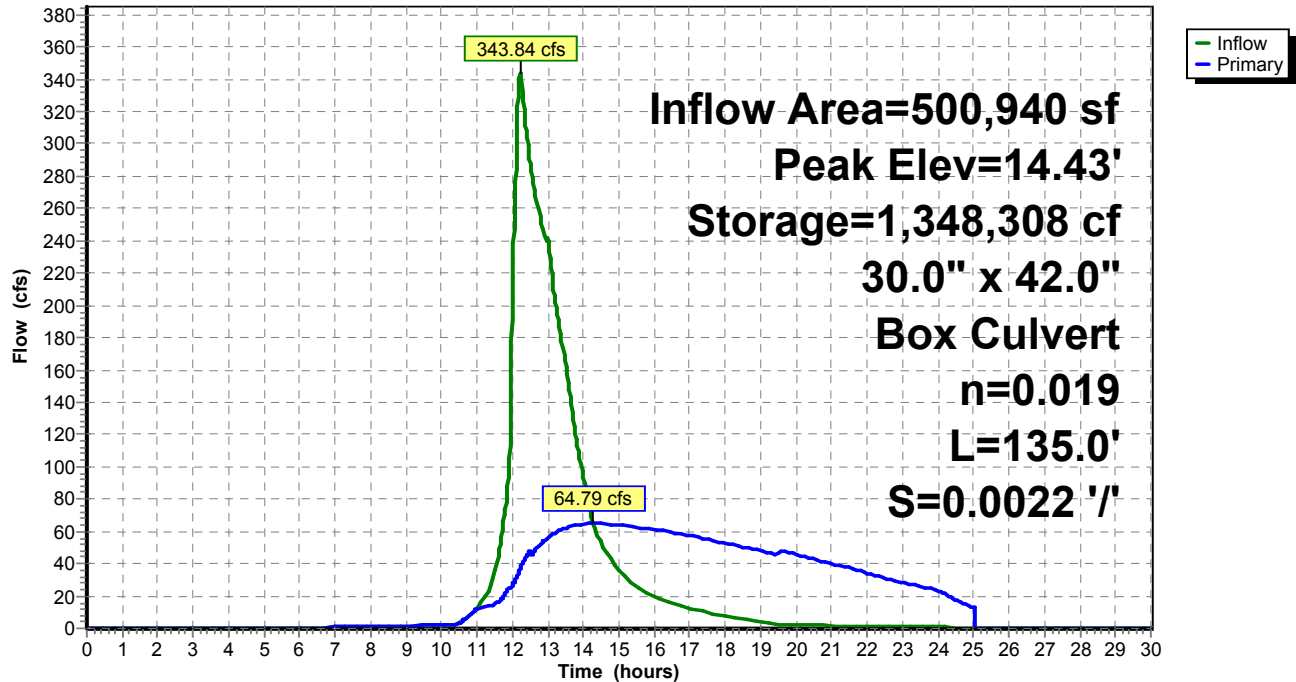
NORWALK 24-hr S1 100 year Rainfall=8.26"

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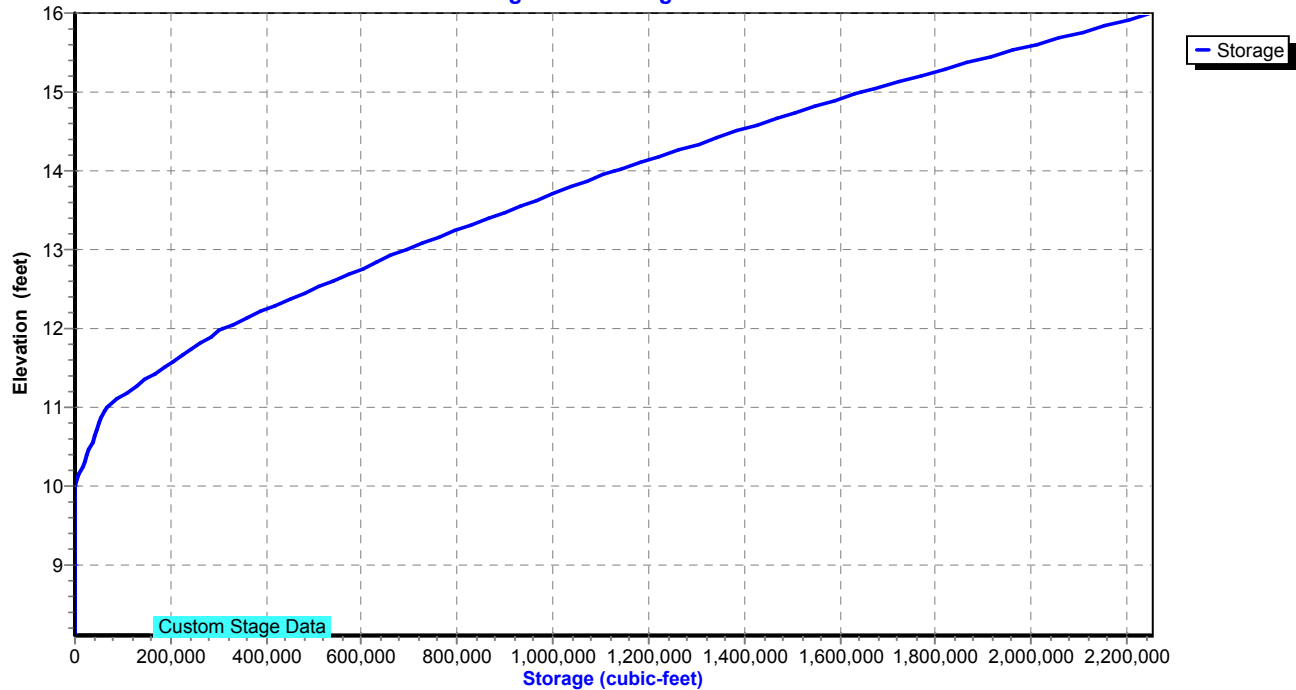
Pond 24P: RR Culvert 3

Hydrograph



Pond 24P: RR Culvert 3

Stage-Area-Storage



Proposed Conditions

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Summary for Pond 26P: DET 16 Culvert

Inflow Area = 777,546 sf, 30.36% Impervious, Inflow Depth > 5.35" for 100 year event
 Inflow = 56.55 cfs @ 12.21 hrs, Volume= 346,893 cf
 Outflow = 56.54 cfs @ 12.21 hrs, Volume= 346,887 cf, Atten= 0%, Lag= 0.1 min
 Primary = 56.54 cfs @ 12.21 hrs, Volume= 346,887 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 20.14' @ 12.21 hrs Surf.Area= 2,331 sf Storage= 2,709 cf

Plug-Flow detention time= 0.7 min calculated for 346,887 cf (100% of inflow)
 Center-of-Mass det. time= 0.7 min (873.6 - 872.9)

Volume	Invert	Avail.Storage	Storage Description
#1	17.00'	11,069 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
17.00	76	0	0
18.00	323	200	200
19.00	1,002	663	862
20.00	2,073	1,538	2,400
21.00	3,912	2,993	5,392
22.00	7,442	5,677	11,069

Device	Routing	Invert	Outlet Devices
#1	Primary	15.10'	15.0" Round Culvert L= 55.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.10' / 11.30' S= 0.0691 ' S= 0.0691 ' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	20.00'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 Width (feet) 200.00 200.00 200.00

Primary OutFlow Max=56.18 cfs @ 12.21 hrs HW=20.14' (Free Discharge)

1=Culvert (Inlet Controls 12.42 cfs @ 10.12 fps)
 2=Custom Weir/Orifice (Weir Controls 43.76 cfs @ 1.56 fps)

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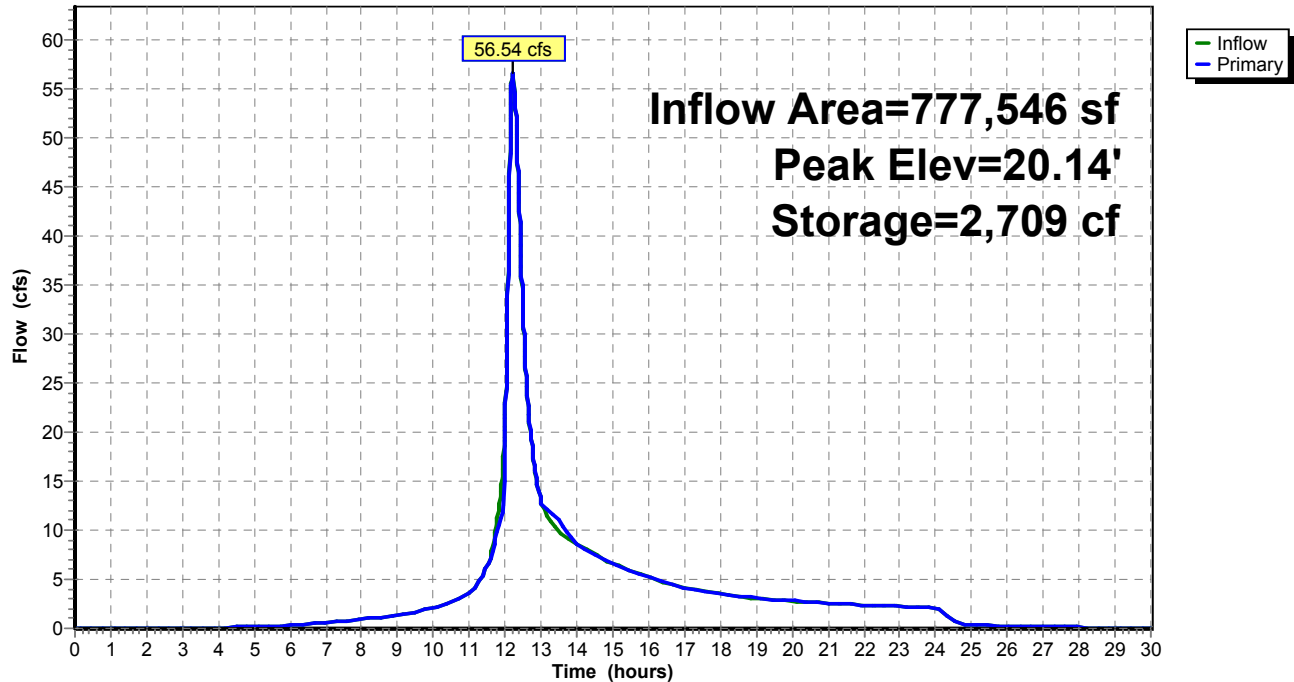
NORWALK 24-hr S1 100 year Rainfall=8.26"

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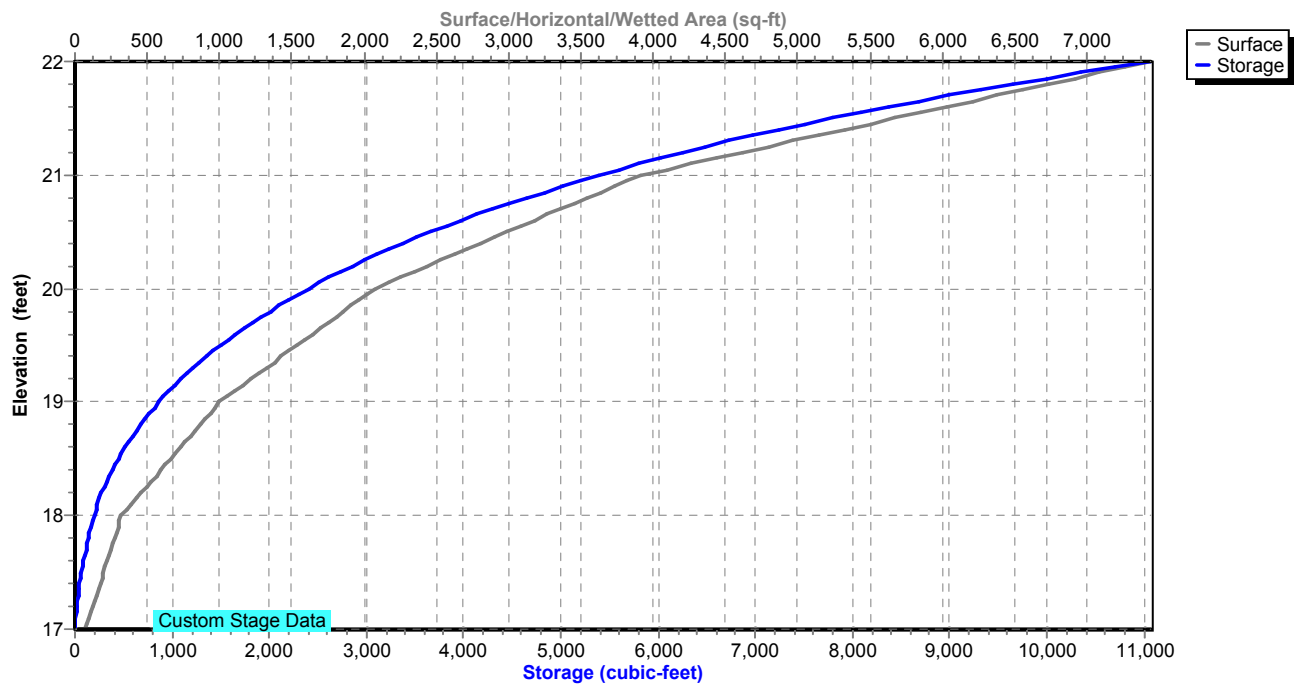
Pond 26P: DET 16 Culvert

Hydrograph



Pond 26P: DET 16 Culvert

Stage-Area-Storage



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Summary for Pond 27P: DET 17 Culvert

Inflow Area = 2,205,878 sf, 28.45% Impervious, Inflow Depth = 5.60" for 100 year event
 Inflow = 88.18 cfs @ 12.97 hrs, Volume= 1,030,029 cf
 Outflow = 79.77 cfs @ 12.98 hrs, Volume= 1,030,029 cf, Atten= 10%, Lag= 0.9 min
 Primary = 79.77 cfs @ 12.98 hrs, Volume= 1,030,029 cf
 Routed to Pond 1P : RR Culvert 2

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
 Peak Elev= 18.84' @ 12.98 hrs Surf.Area= 11,721 sf Storage= 11,412 cf

Plug-Flow detention time= 4.0 min calculated for 1,029,685 cf (100% of inflow)
 Center-of-Mass det. time= 4.0 min (870.1 - 866.1)

Volume	Invert	Avail.Storage	Storage Description
#1	16.00'	13,420 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
16.00	340	0	0
17.00	2,203	1,272	1,272
18.00	4,950	3,577	4,848
18.55	8,311	3,647	8,495
19.00	13,580	4,925	13,420

Device	Routing	Invert	Outlet Devices
#1	Primary	15.30'	18.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 15.30' / 14.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	18.55'	Custom Weir/Orifice, Cv= 3.33 (C= 4.16) Head (feet) 0.00 1.00 2.00 3.00 Width (feet) 100.00 100.00 100.00 100.00

Primary OutFlow Max=79.40 cfs @ 12.98 hrs HW=18.84' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 14.21 cfs @ 8.04 fps)

└ **2=Custom Weir/Orifice** (Weir Controls 65.19 cfs @ 2.24 fps)

Proposed Conditions

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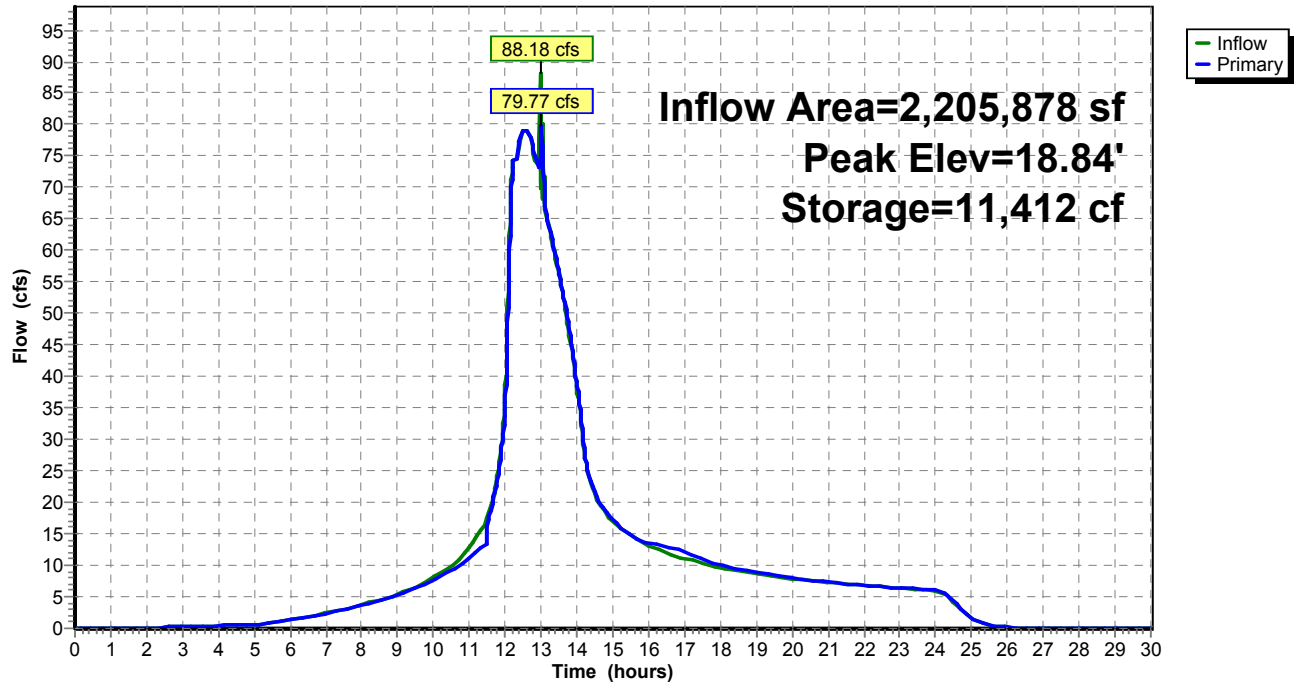
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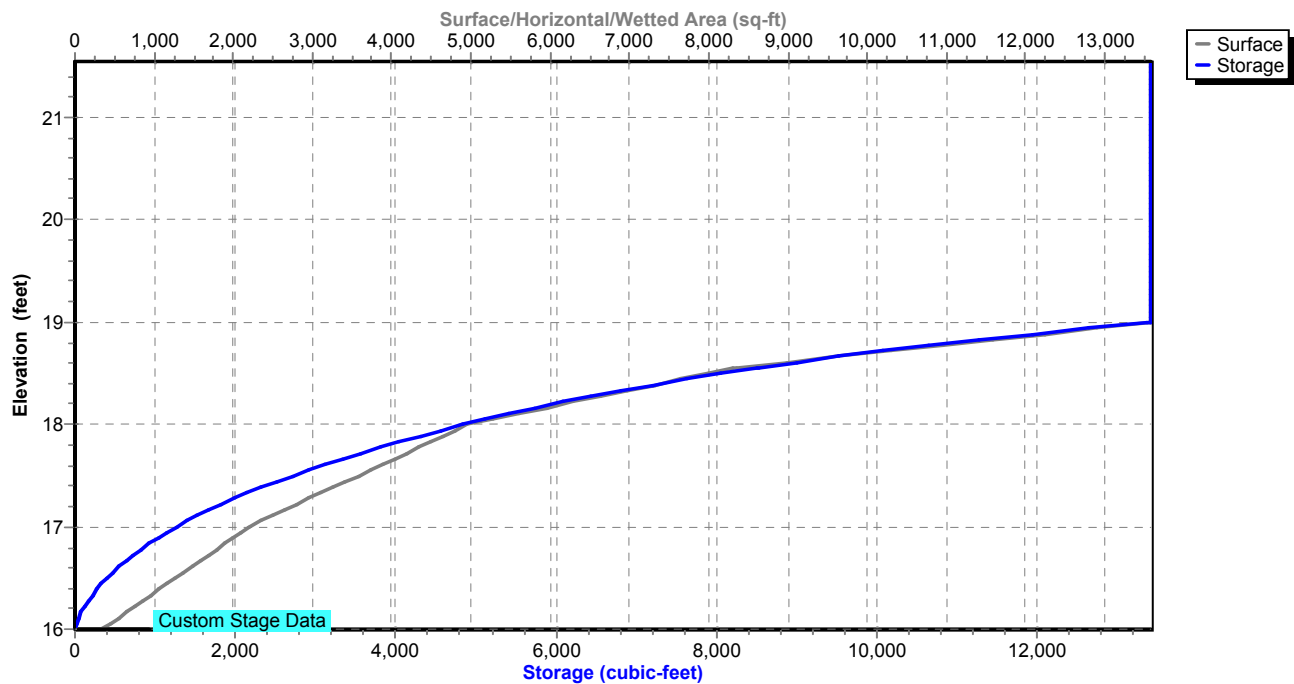
Pond 27P: DET 17 Culvert

Hydrograph



Pond 27P: DET 17 Culvert

Stage-Area-Storage



Proposed Conditions

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Summary for Pond 50P: DET BASIN #1

Inflow Area = 247,726 sf, 51.96% Impervious, Inflow Depth = 6.58" for 100 year event
Inflow = 36.04 cfs @ 12.04 hrs, Volume= 135,786 cf
Outflow = 13.36 cfs @ 12.24 hrs, Volume= 110,284 cf, Atten= 63%, Lag= 12.0 min
Primary = 13.36 cfs @ 12.24 hrs, Volume= 110,284 cf
Routed to Pond 26P : DET 16 Culvert

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 28.85' @ 12.24 hrs Surf.Area= 17,561 sf Storage= 58,839 cf

Plug-Flow detention time= 237.3 min calculated for 110,247 cf (81% of inflow)
Center-of-Mass det. time= 146.7 min (940.3 - 793.5)

Volume	Invert	Avail.Storage	Storage Description
#1	24.00'	61,441 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
24.00	5,941	0	0
26.00	12,000	17,941	17,941
28.00	15,000	27,000	44,941
29.00	18,000	16,500	61,441

Device	Routing	Invert	Outlet Devices
#1	Primary	24.00'	18.0" Round Culvert L= 120.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.00' / 20.00' S= 0.0333 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	26.50'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	28.50'	16.2" x 55.4" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=13.36 cfs @ 12.24 hrs HW=28.85' (Free Discharge)

↑ **1=Culvert** (Passes 13.36 cfs of 17.24 cfs potential flow)
↑ **2=Orifice/Grate** (Orifice Controls 5.15 cfs @ 6.56 fps)
↑ **3=Orifice/Grate** (Weir Controls 8.21 cfs @ 1.94 fps)

Proposed Conditions

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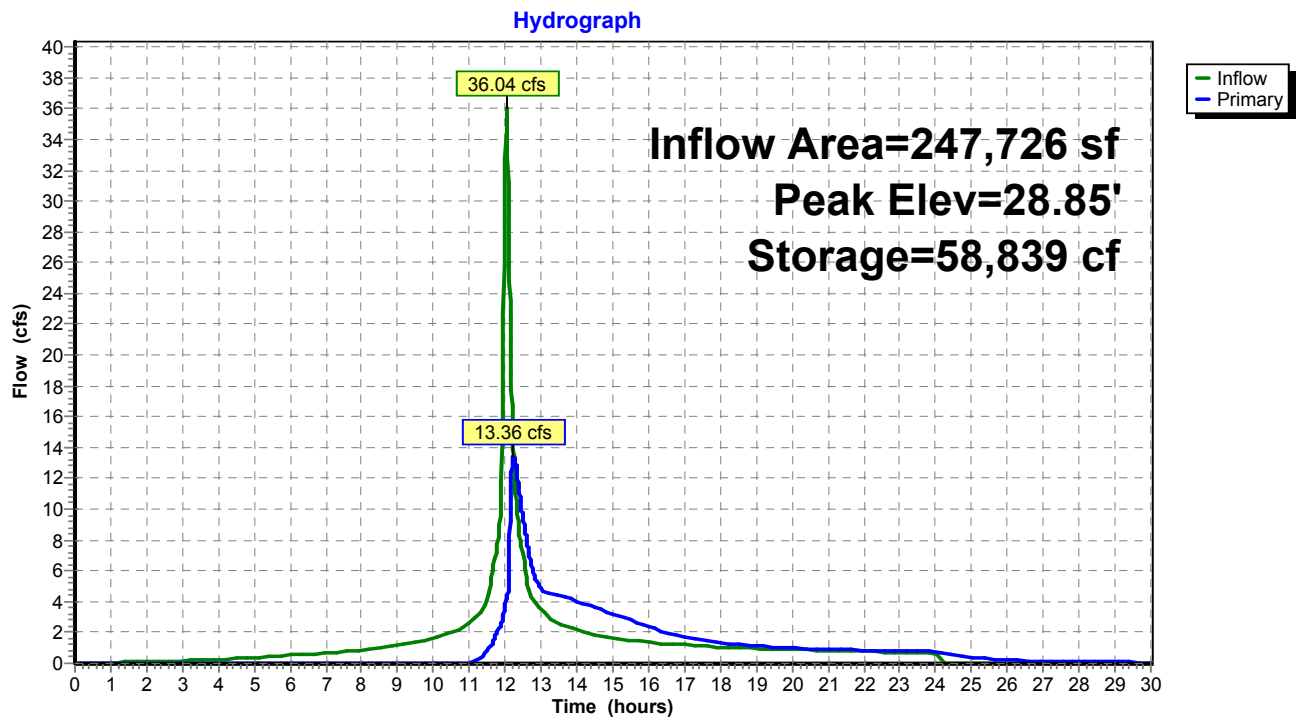
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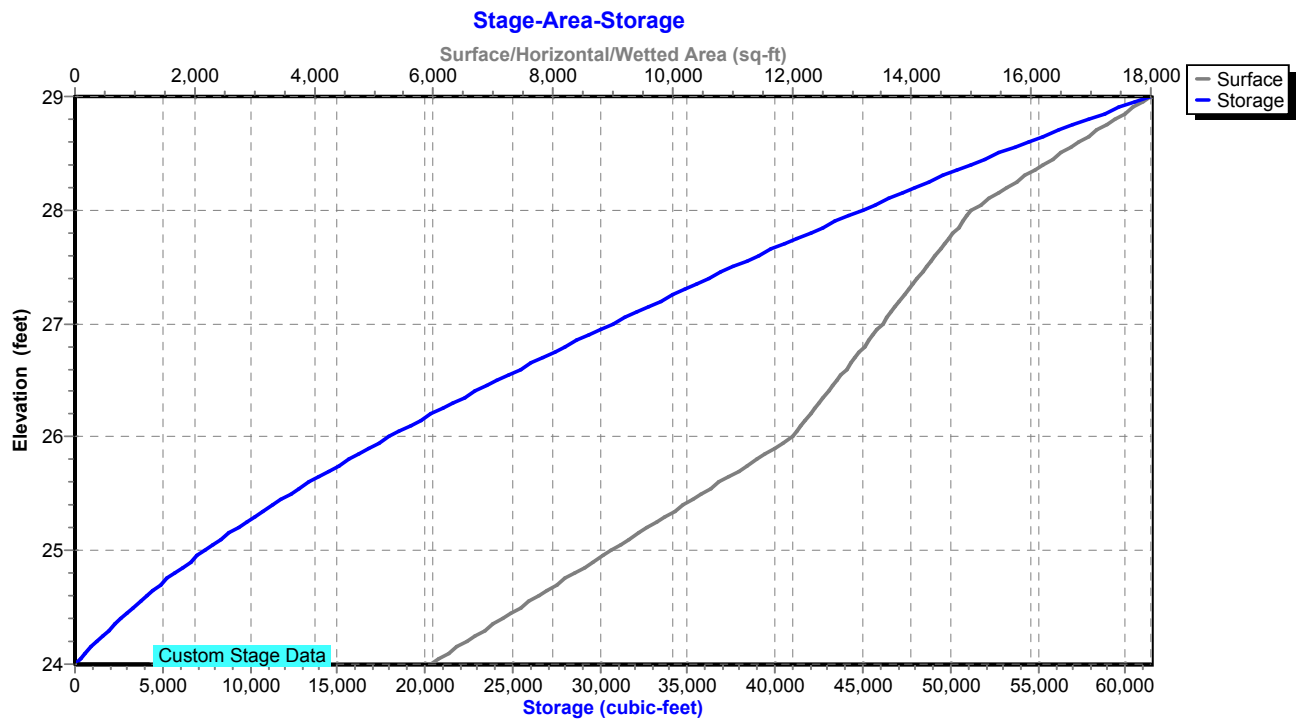
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Pond 50P: DET BASIN #1



Pond 50P: DET BASIN #1



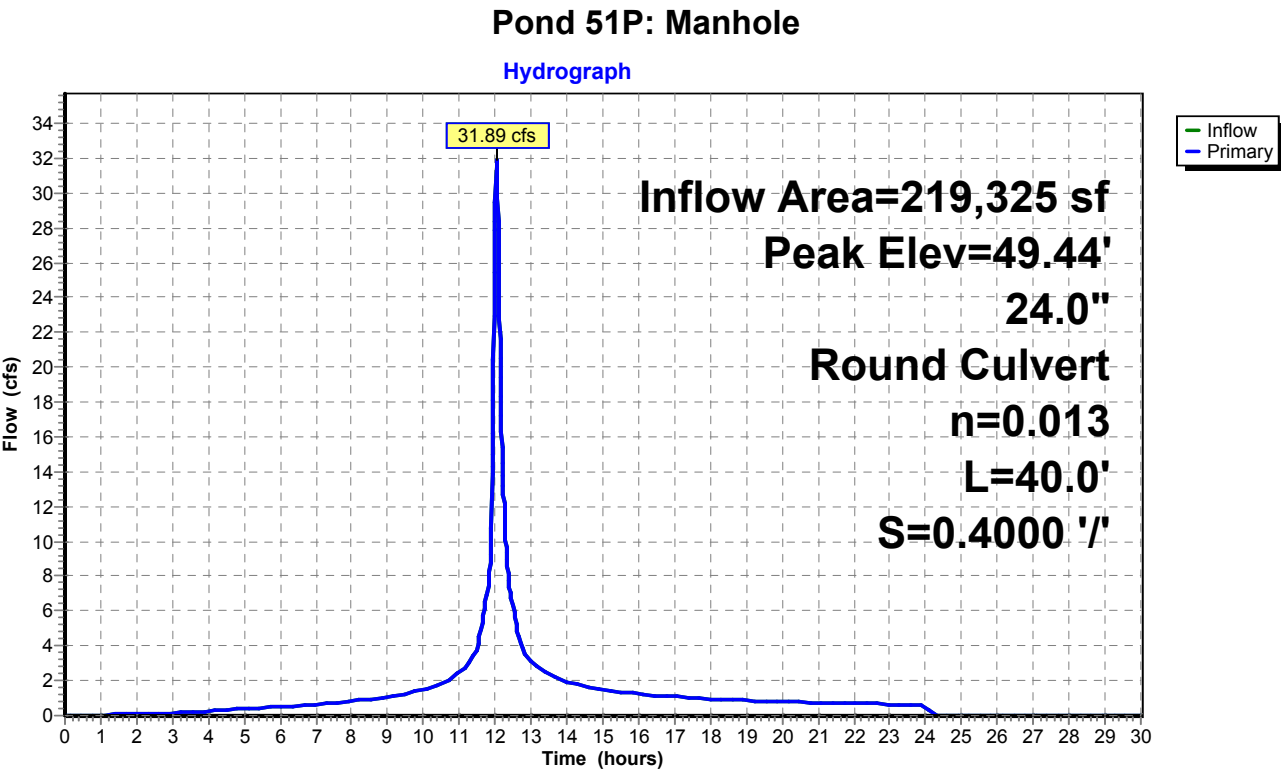
Summary for Pond 51P: Manhole

Inflow Area = 219,325 sf, 58.69% Impervious, Inflow Depth = 6.76" for 100 year event
Inflow = 31.89 cfs @ 12.04 hrs, Volume= 123,585 cf
Outflow = 31.89 cfs @ 12.04 hrs, Volume= 123,585 cf, Atten= 0%, Lag= 0.0 min
Primary = 31.89 cfs @ 12.04 hrs, Volume= 123,585 cf
Routed to Pond 50P : DET BASIN #1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 49.44' @ 12.04 hrs
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.00'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.00' / 28.00' S= 0.4000 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=31.85 cfs @ 12.04 hrs HW=49.43' (Free Discharge)
1=Culvert (Inlet Controls 31.85 cfs @ 10.14 hrs)



Proposed Conditions

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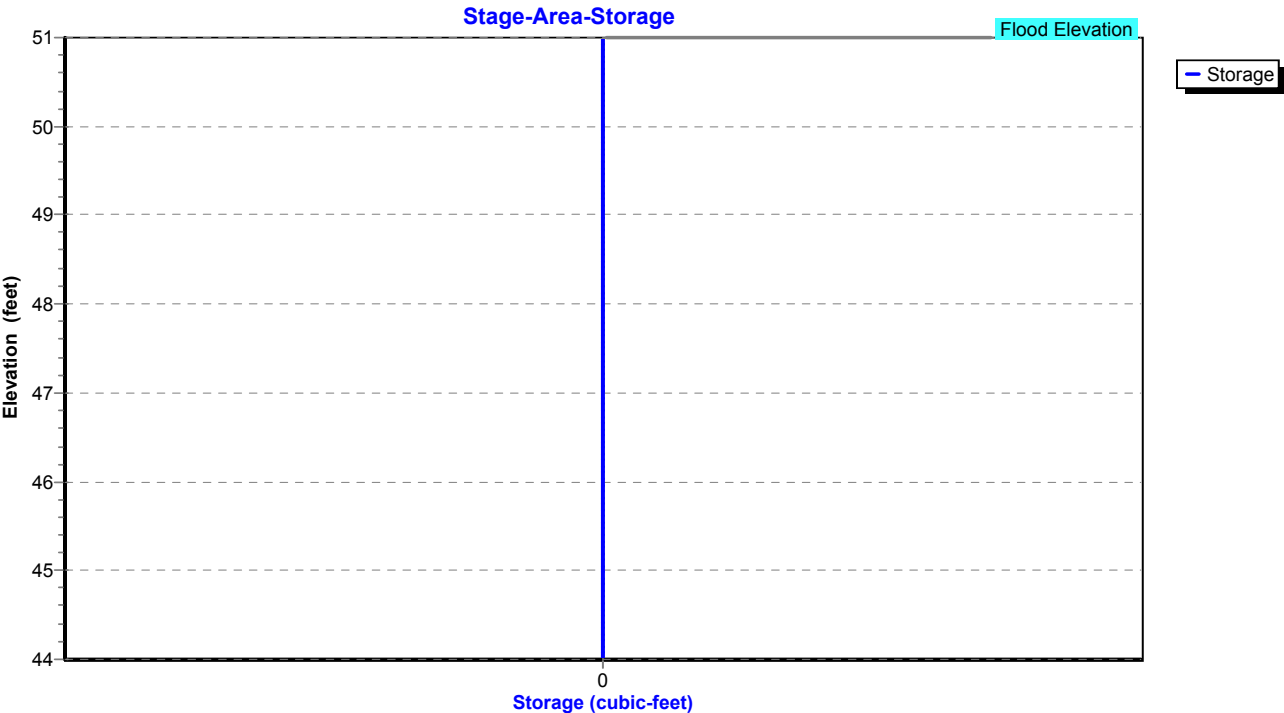
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Pond 51P: Manhole



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Summary for Pond 57P: CB-1

Inflow Area = 131,290 sf, 58.89% Impervious, Inflow Depth = 6.84" for 100 year event
Inflow = 20.07 cfs @ 12.04 hrs, Volume= 74,840 cf
Outflow = 20.07 cfs @ 12.04 hrs, Volume= 74,840 cf, Atten= 0%, Lag= 0.0 min
Primary = 20.07 cfs @ 12.04 hrs, Volume= 74,840 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.27' @ 12.04 hrs

Flood Elev= 49.00'

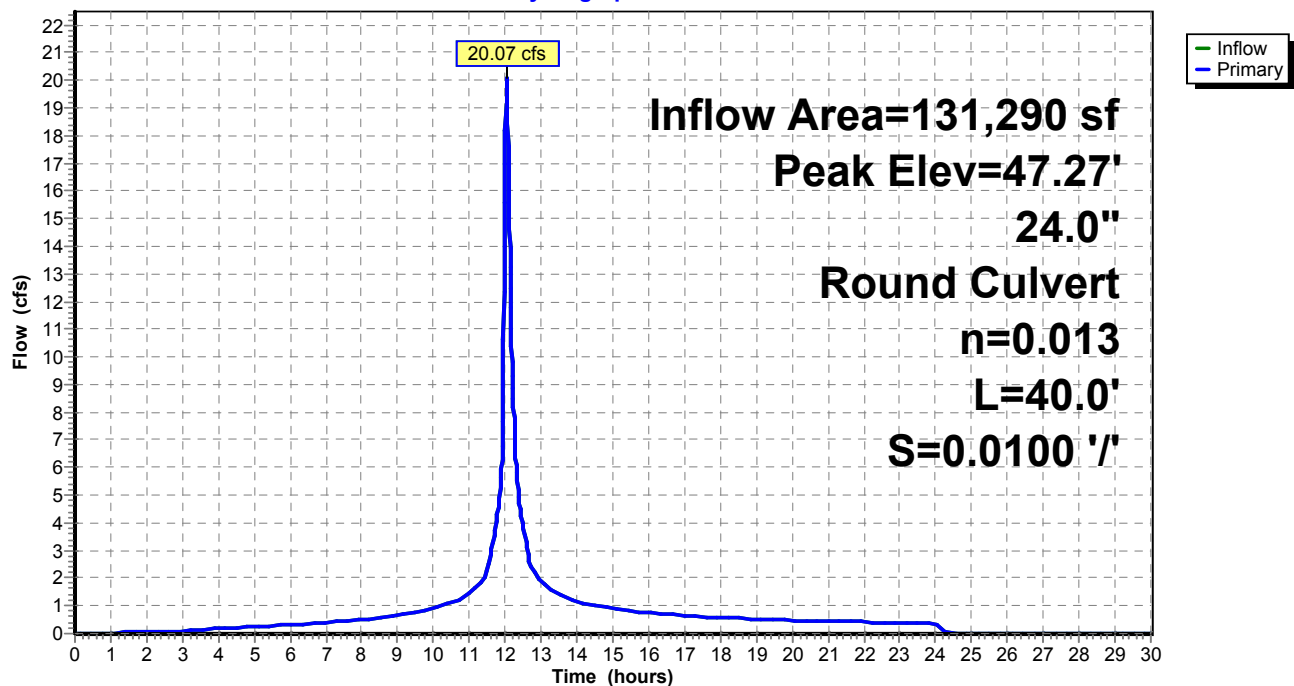
Device	Routing	Invert	Outlet Devices
#1	Primary	44.40'	24.0" Round Culvert L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.40' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf

Primary OutFlow Max=20.06 cfs @ 12.04 hrs HW=47.27' (Free Discharge)

↑1=Culvert (Barrel Controls 20.06 cfs @ 6.39 fps)

Pond 57P: CB-1

Hydrograph



Proposed Conditions

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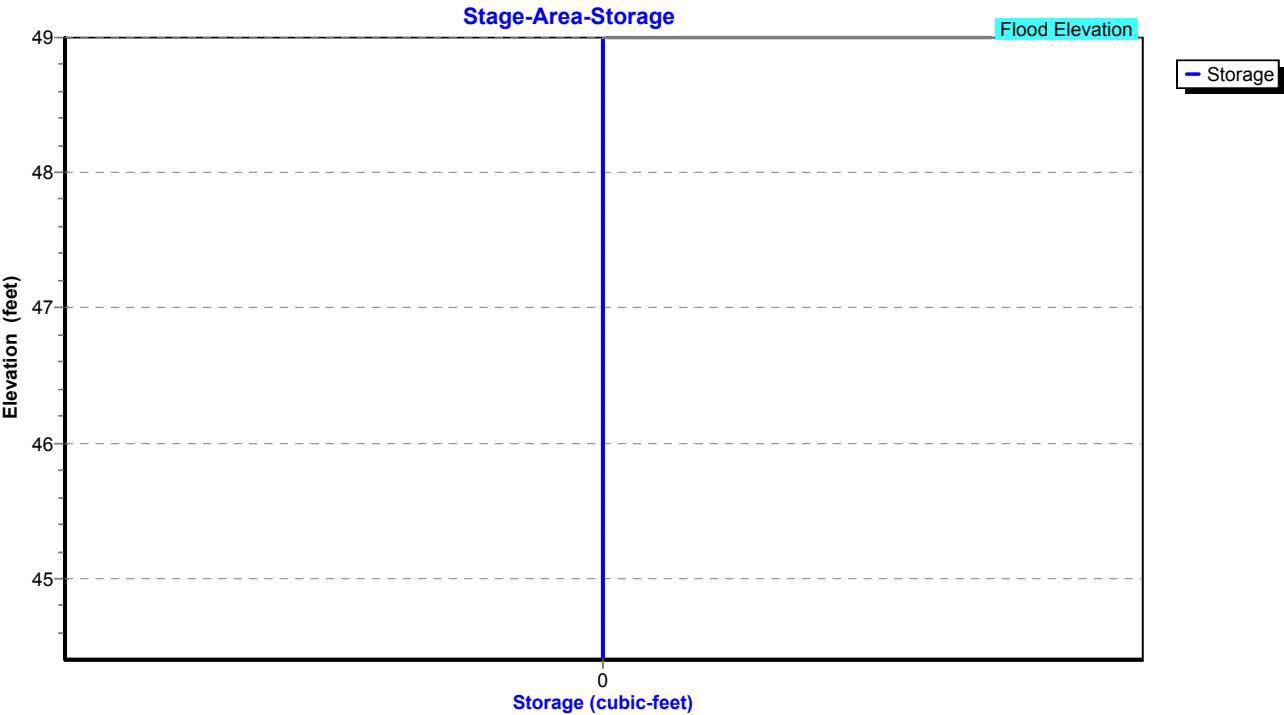
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Pond 57P: CB-1



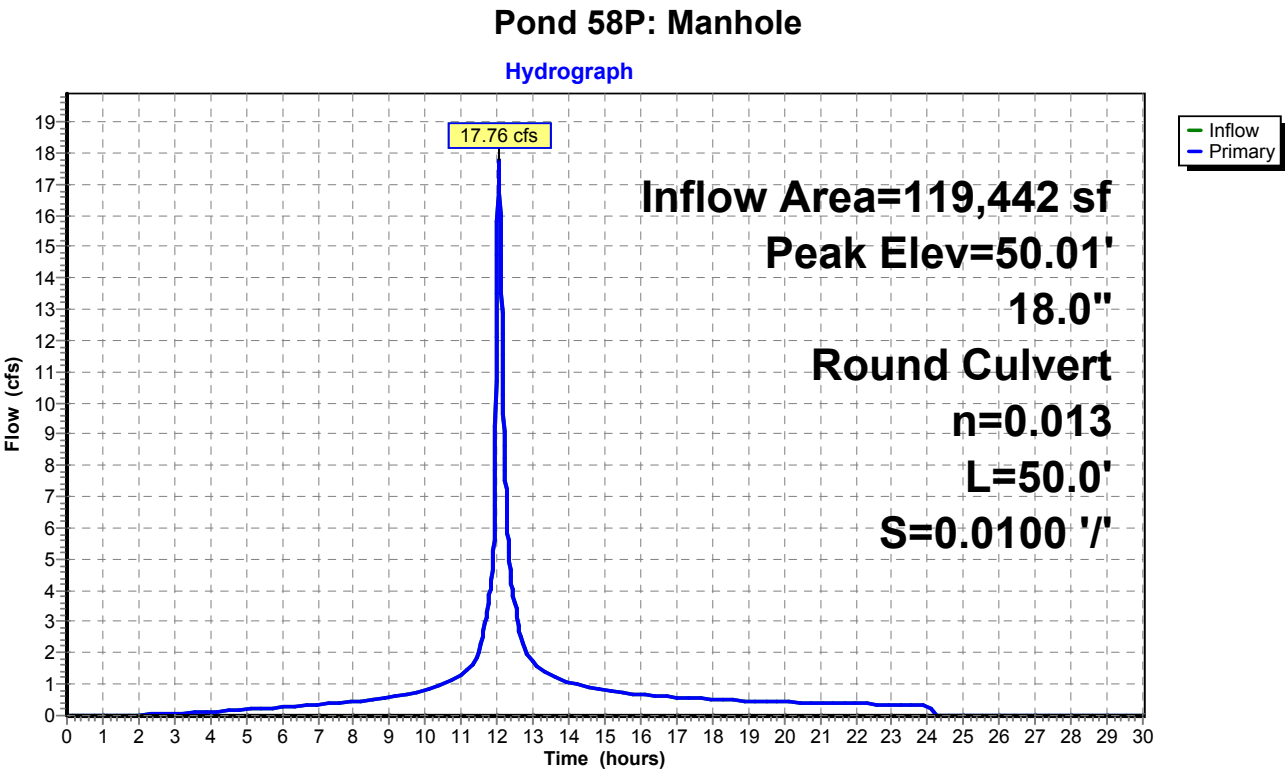
Summary for Pond 58P: Manhole

Inflow Area = 119,442 sf, 54.81% Impervious, Inflow Depth = 6.72" for 100 year event
Inflow = 17.76 cfs @ 12.04 hrs, Volume= 66,925 cf
Outflow = 17.76 cfs @ 12.04 hrs, Volume= 66,925 cf, Atten= 0%, Lag= 0.0 min
Primary = 17.76 cfs @ 12.04 hrs, Volume= 66,925 cf
Routed to Pond 57P : CB-1

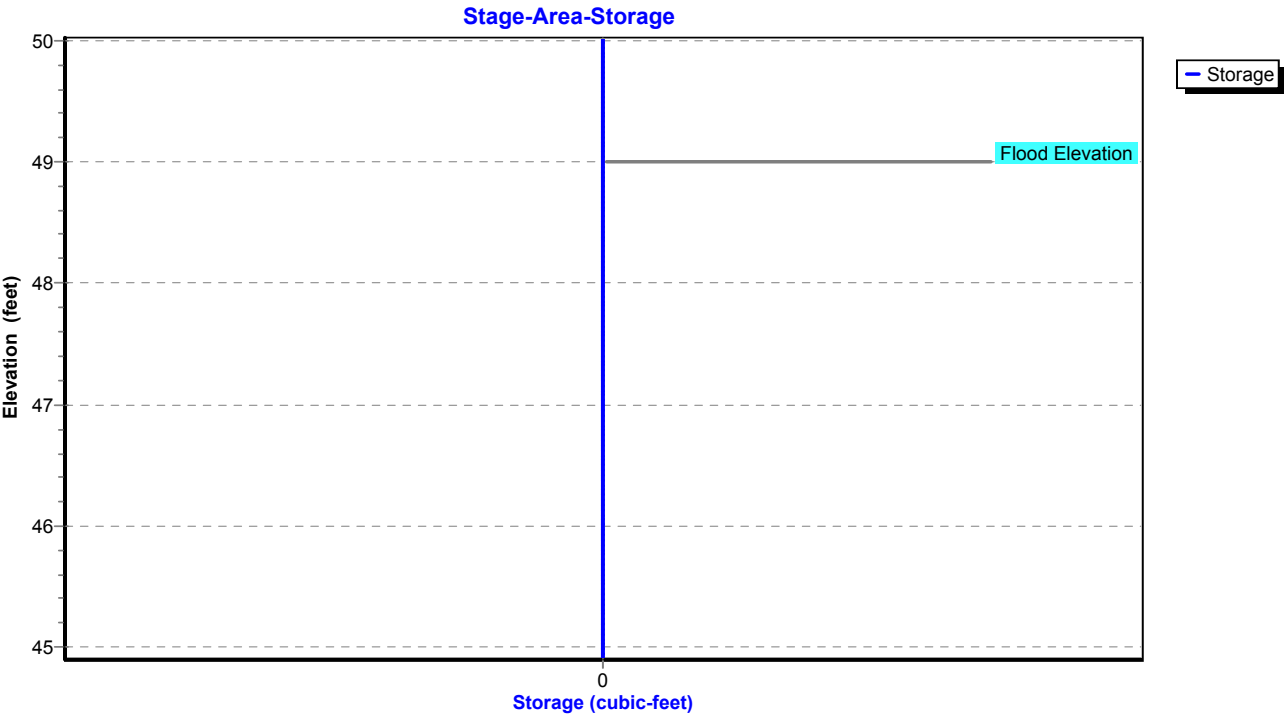
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.01' @ 12.04 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	44.90'	18.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 44.90' / 44.40' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.77 sf

Primary OutFlow Max=17.73 cfs @ 12.04 hrs HW=49.99' (Free Discharge)
1=Culvert (Inlet Controls 17.73 cfs @ 10.03 fps)



Pond 58P: Manhole



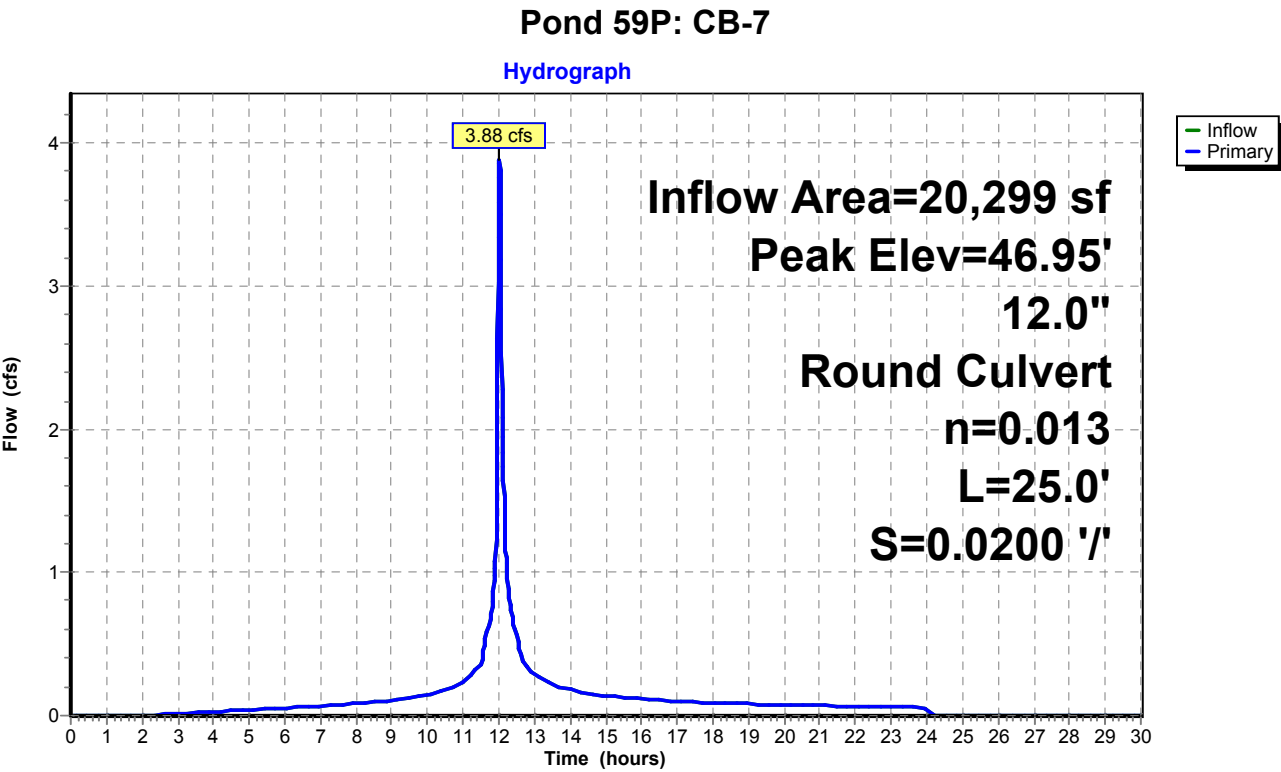
Summary for Pond 59P: CB-7

Inflow Area = 20,299 sf, 63.09% Impervious, Inflow Depth = 6.94" for 100 year event
Inflow = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf
Outflow = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.88 cfs @ 12.03 hrs, Volume= 11,736 cf
Routed to Pond 58P : Manhole

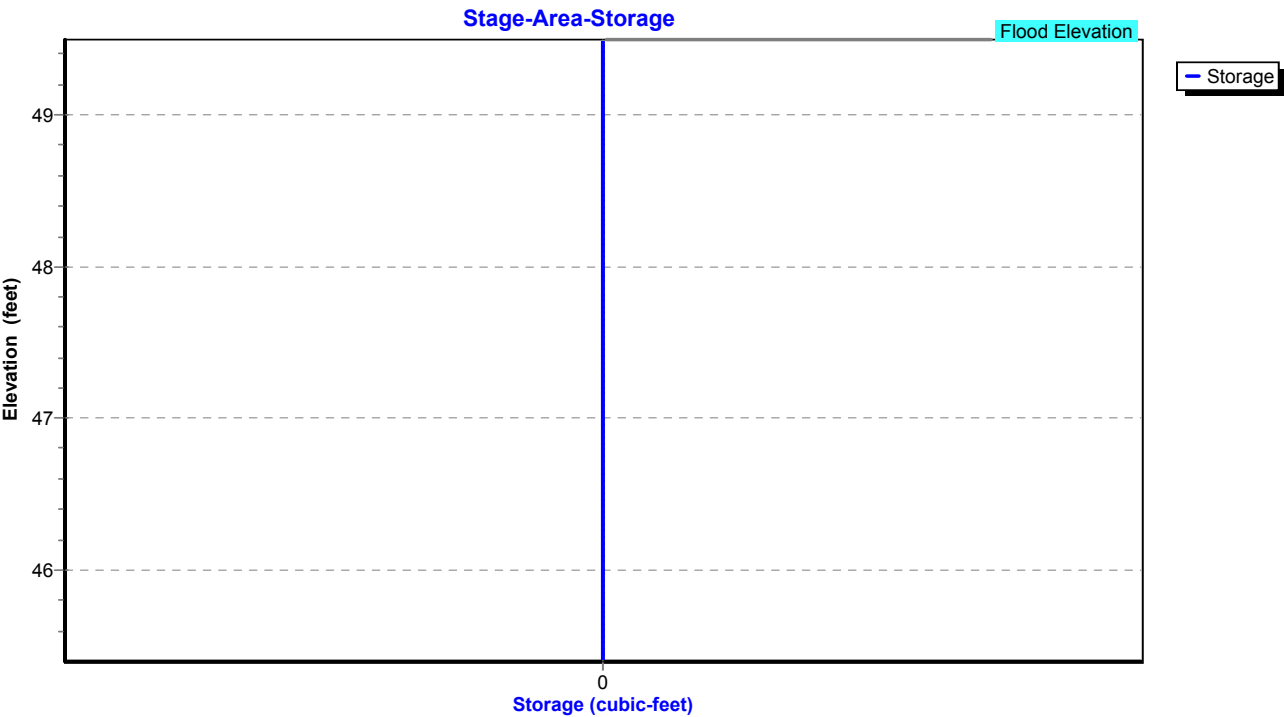
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 46.95' @ 12.03 hrs
Flood Elev= 49.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.40'	12.0" Round Culvert L= 25.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.40' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.87 cfs @ 12.03 hrs HW=46.94' (Free Discharge)
1=Culvert (Inlet Controls 3.87 cfs @ 4.92 fps)



Pond 59P: CB-7



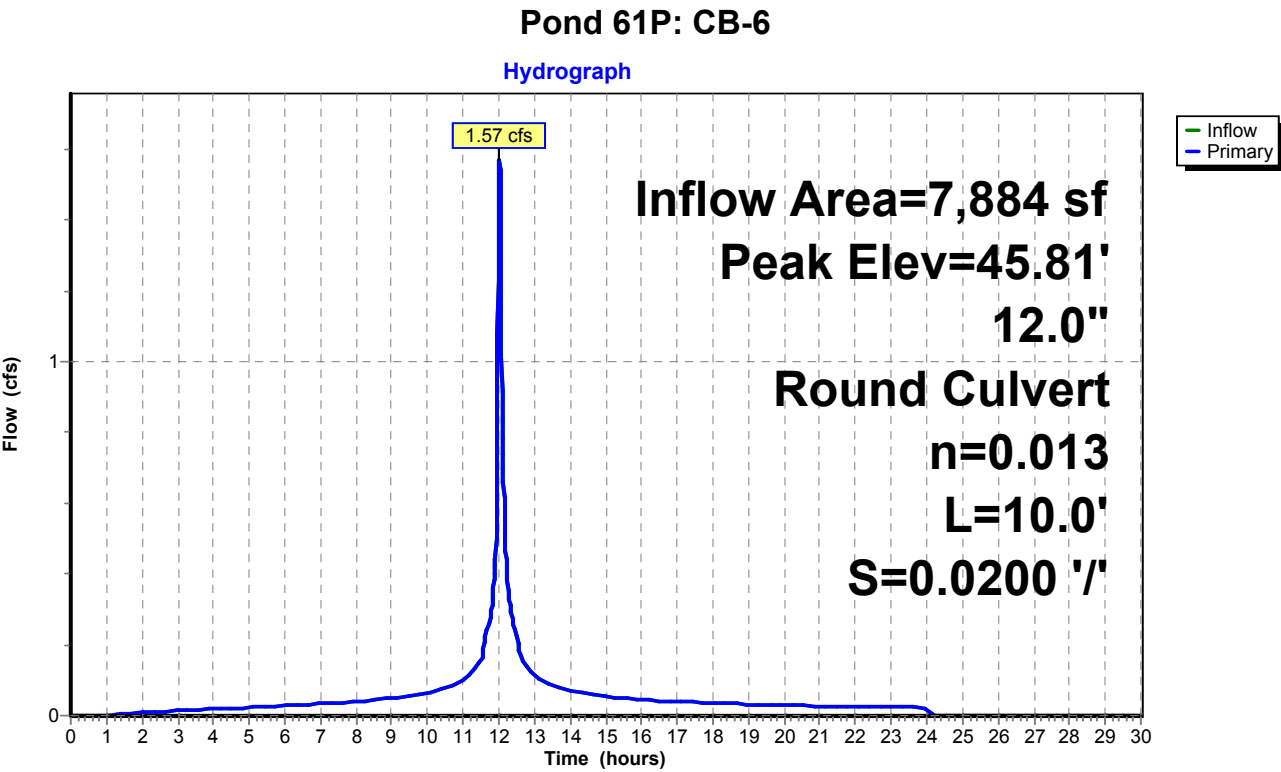
Summary for Pond 61P: CB-6

Inflow Area = 7,884 sf, 82.32% Impervious, Inflow Depth = 7.54" for 100 year event
Inflow = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf
Outflow = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.57 cfs @ 12.03 hrs, Volume= 4,952 cf
Routed to Pond 58P : Manhole

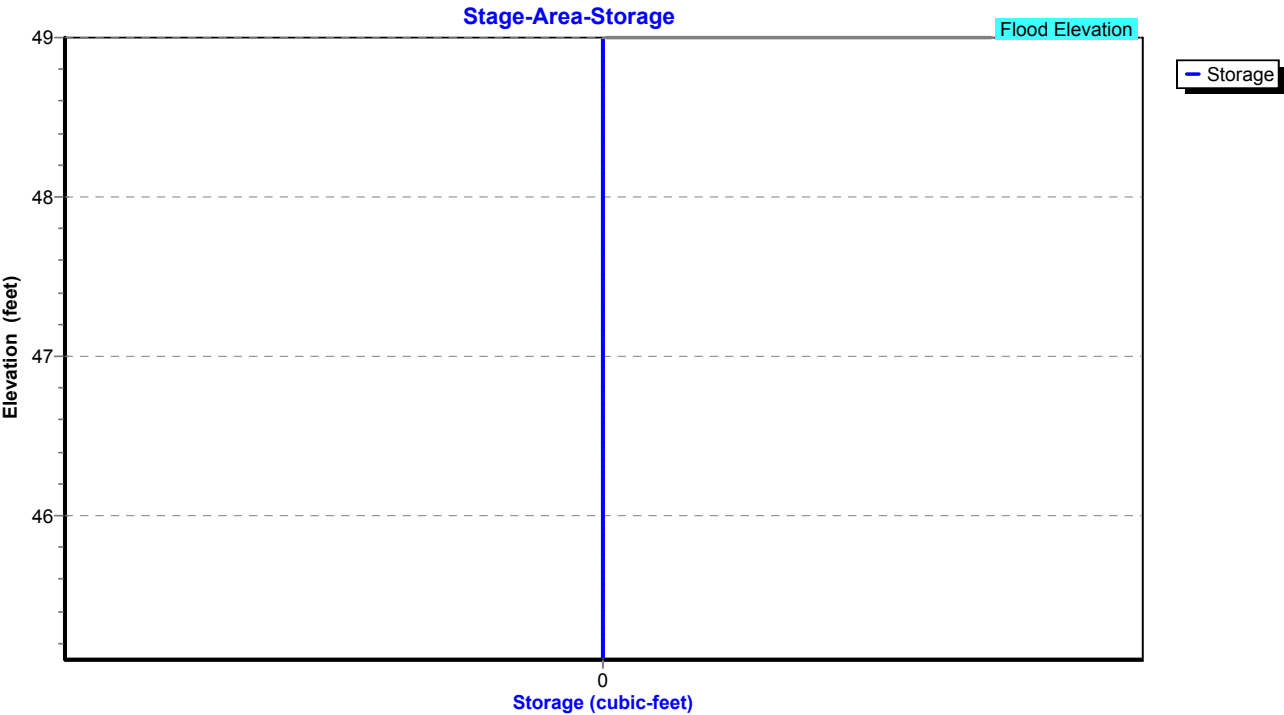
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 45.81' @ 12.03 hrs
Flood Elev= 49.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	45.10'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.10' / 44.90' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.57 cfs @ 12.03 hrs HW=45.81' (Free Discharge)
1=Culvert (Barrel Controls 1.57 cfs @ 3.68 fps)



Pond 61P: CB-6



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Summary for Pond 63P: Manhole

Inflow Area = 91,258 sf, 50.60% Impervious, Inflow Depth = 6.61" for 100 year event
Inflow = 12.79 cfs @ 12.06 hrs, Volume= 50,237 cf
Outflow = 12.79 cfs @ 12.06 hrs, Volume= 50,237 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.79 cfs @ 12.06 hrs, Volume= 50,237 cf
Routed to Pond 58P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 53.79' @ 12.06 hrs

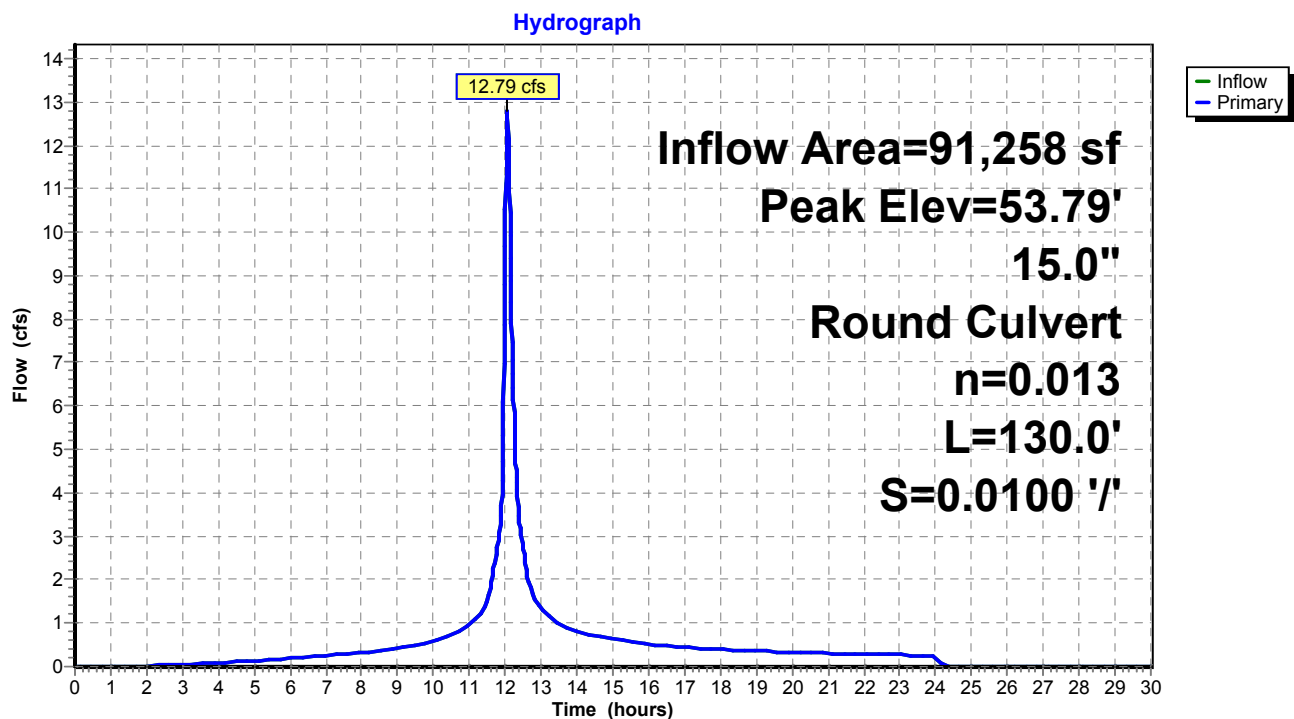
Flood Elev= 51.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.20'	15.0" Round Culvert L= 130.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.20' / 44.90' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.78 cfs @ 12.06 hrs HW=53.78' (Free Discharge)

↑1=Culvert (Barrel Controls 12.78 cfs @ 10.41 fps)

Pond 63P: Manhole



Proposed Conditions

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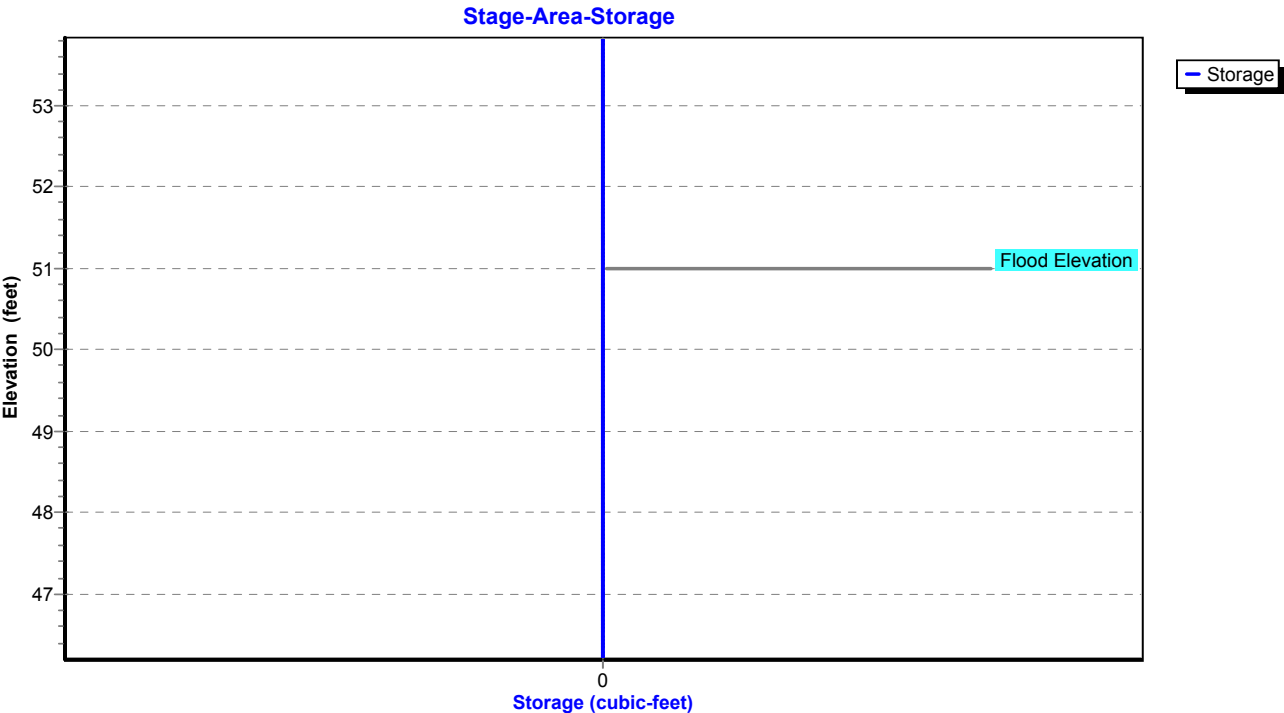
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Pond 63P: Manhole



Summary for Pond 64P: YD

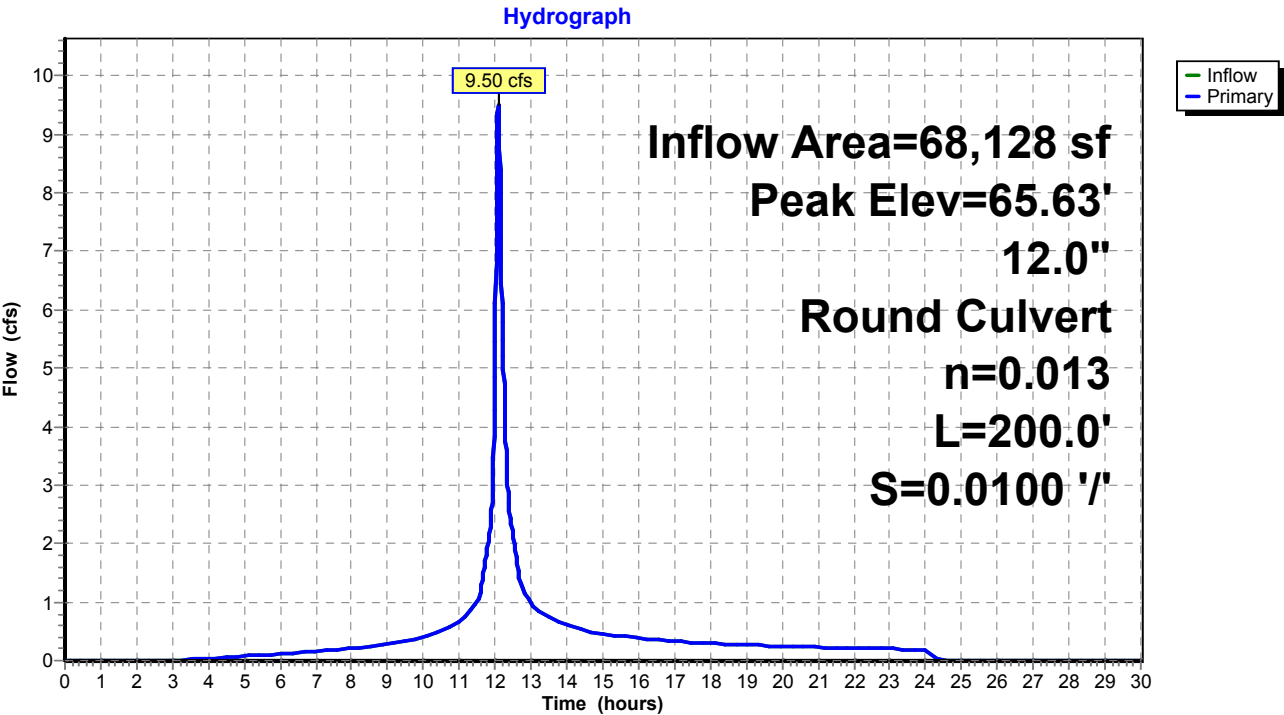
Inflow Area = 68,128 sf, 41.75% Impervious, Inflow Depth = 6.34" for 100 year event
Inflow = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf
Outflow = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.50 cfs @ 12.08 hrs, Volume= 36,001 cf
Routed to Pond 77P : Manhole

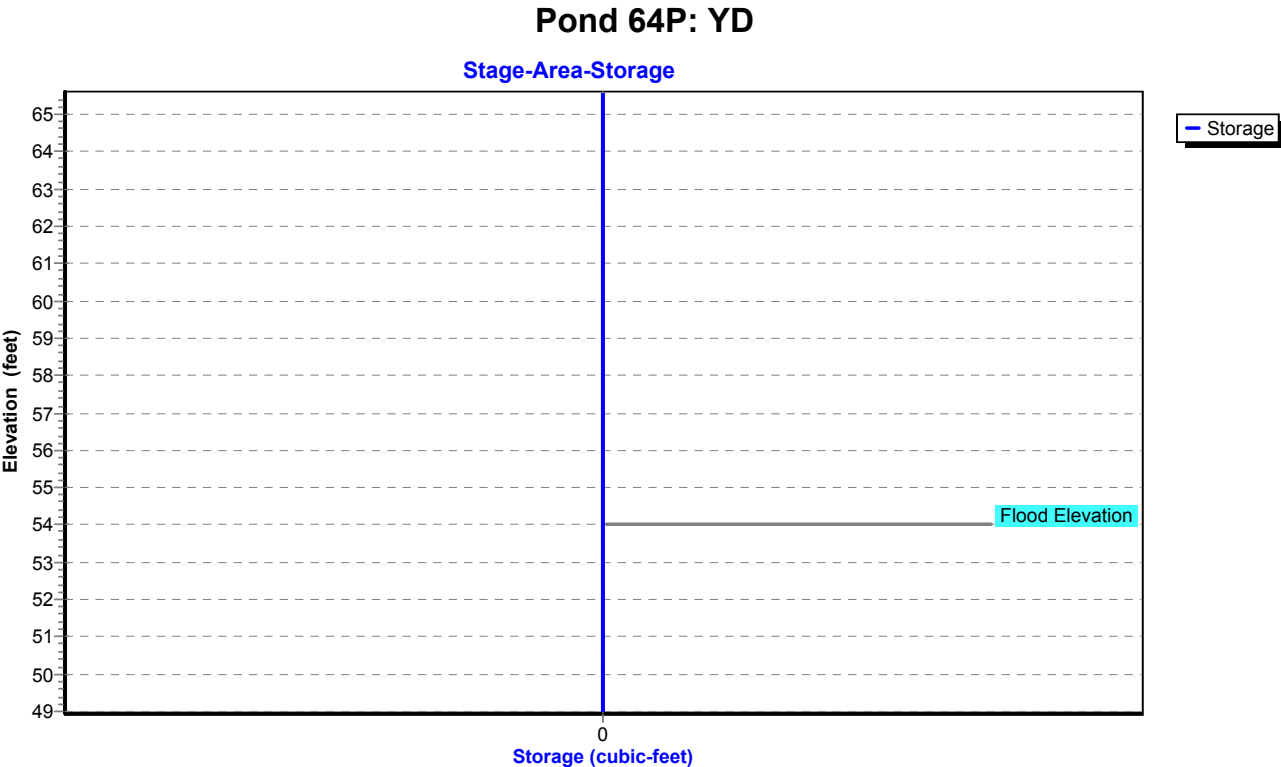
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 65.63' @ 12.08 hrs
Flood Elev= 54.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	48.95'	12.0" Round Culvert L= 200.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 48.95' / 46.95' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=9.48 cfs @ 12.08 hrs HW=65.56' (Free Discharge)
1=Culvert (Barrel Controls 9.48 cfs @ 12.07 fps)

Pond 64P: YD





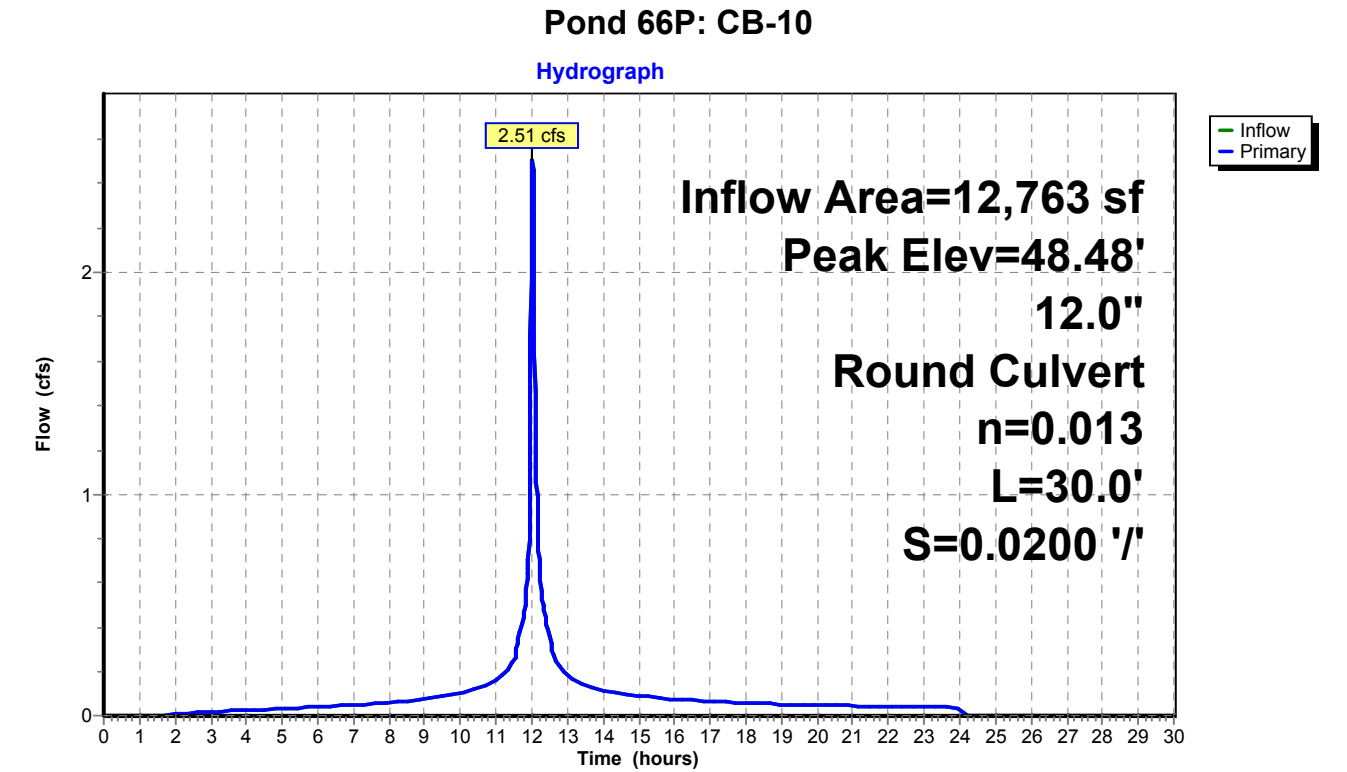
Summary for Pond 66P: CB-10

Inflow Area = 12,763 sf, 73.04% Impervious, Inflow Depth = 7.30" for 100 year event
Inflow = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf
Outflow = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.51 cfs @ 12.03 hrs, Volume= 7,761 cf
Routed to Pond 77P : Manhole

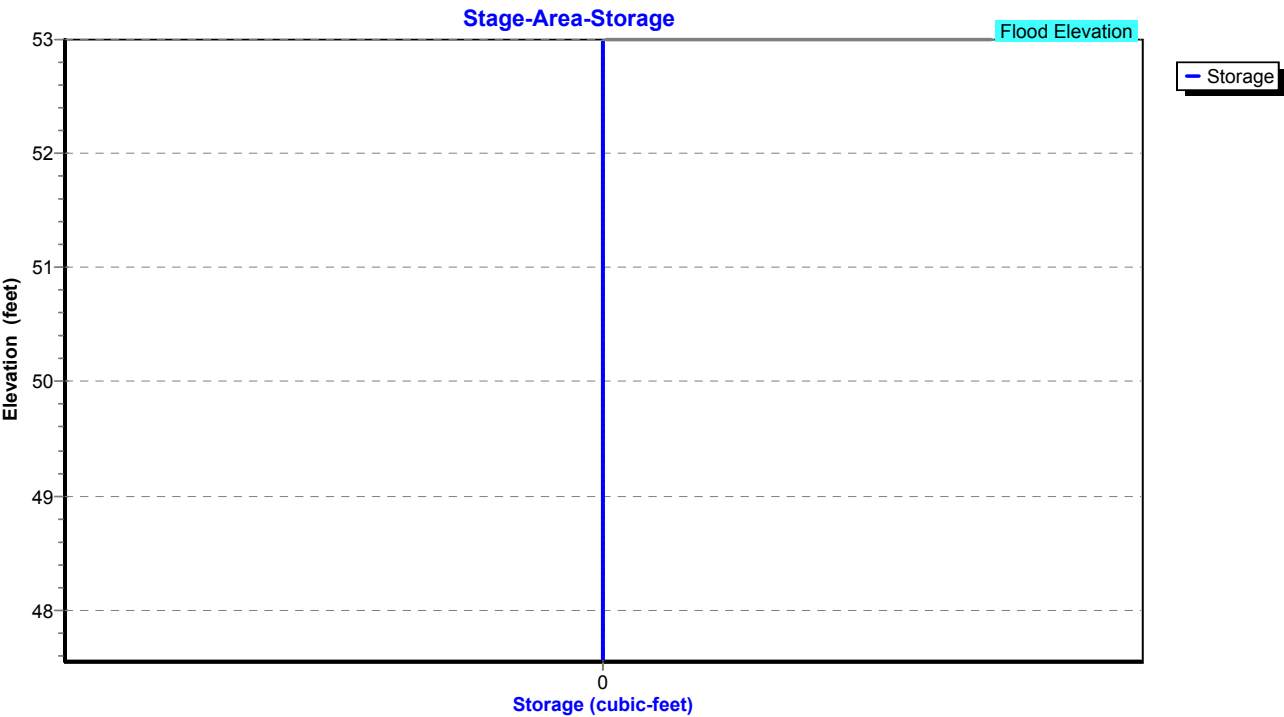
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 48.48' @ 12.03 hrs
Flood Elev= 53.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.55'	12.0" Round Culvert L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.55' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.50 cfs @ 12.03 hrs HW=48.48' (Free Discharge)
↑1=Culvert (Inlet Controls 2.50 cfs @ 3.28 fps)



Pond 66P: CB-10



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Summary for Pond 67P: CB-9

Inflow Area = 6,447 sf, 69.59% Impervious, Inflow Depth = 7.18" for 100 year event
Inflow = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf
Outflow = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.26 cfs @ 12.03 hrs, Volume= 3,856 cf
Routed to Pond 77P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.77' @ 12.03 hrs

Flood Elev= 52.00'

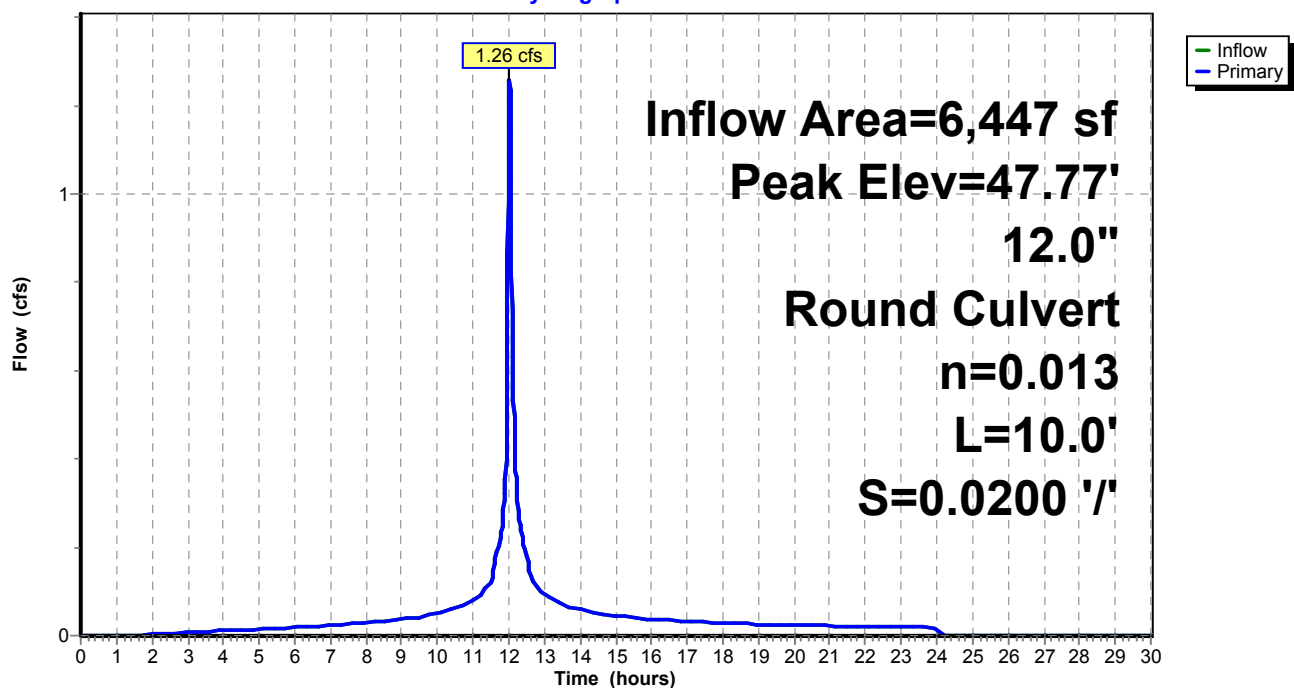
Device	Routing	Invert	Outlet Devices
#1	Primary	47.15'	12.0" Round Culvert L= 10.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.15' / 46.95' S= 0.0200 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=1.25 cfs @ 12.03 hrs HW=47.77' (Free Discharge)

↑1=Culvert (Barrel Controls 1.25 cfs @ 3.52 fps)

Pond 67P: CB-9

Hydrograph



Proposed Conditions

Prepared by Tighe & Bond

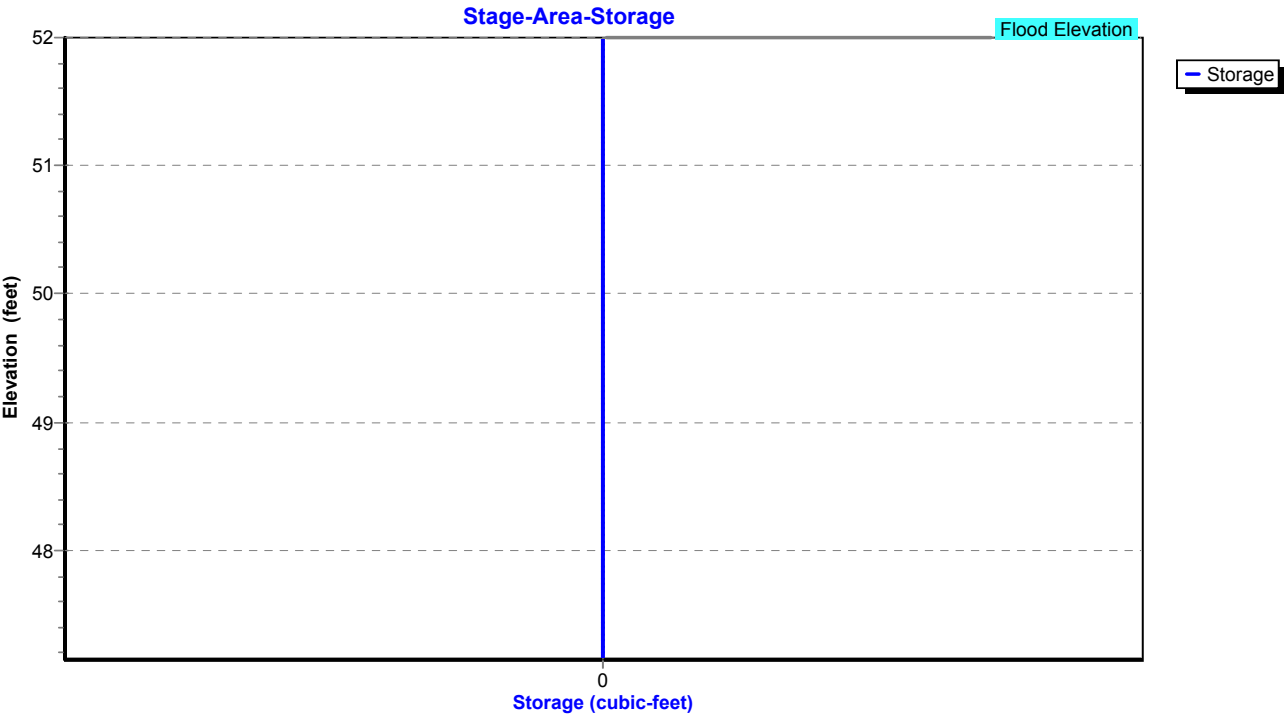
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NORWALK 24-hr S1 100 year Rainfall=8.26"

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Pond 67P: CB-9



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Summary for Pond 70P: CB-2

Inflow Area = 88,035 sf, 58.39% Impervious, Inflow Depth = 6.64" for 100 year event
Inflow = 12.33 cfs @ 11.99 hrs, Volume= 48,745 cf
Outflow = 12.33 cfs @ 11.99 hrs, Volume= 48,745 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.33 cfs @ 11.99 hrs, Volume= 48,745 cf
Routed to Pond 51P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 54.00' @ 11.99 hrs

Flood Elev= 53.30'

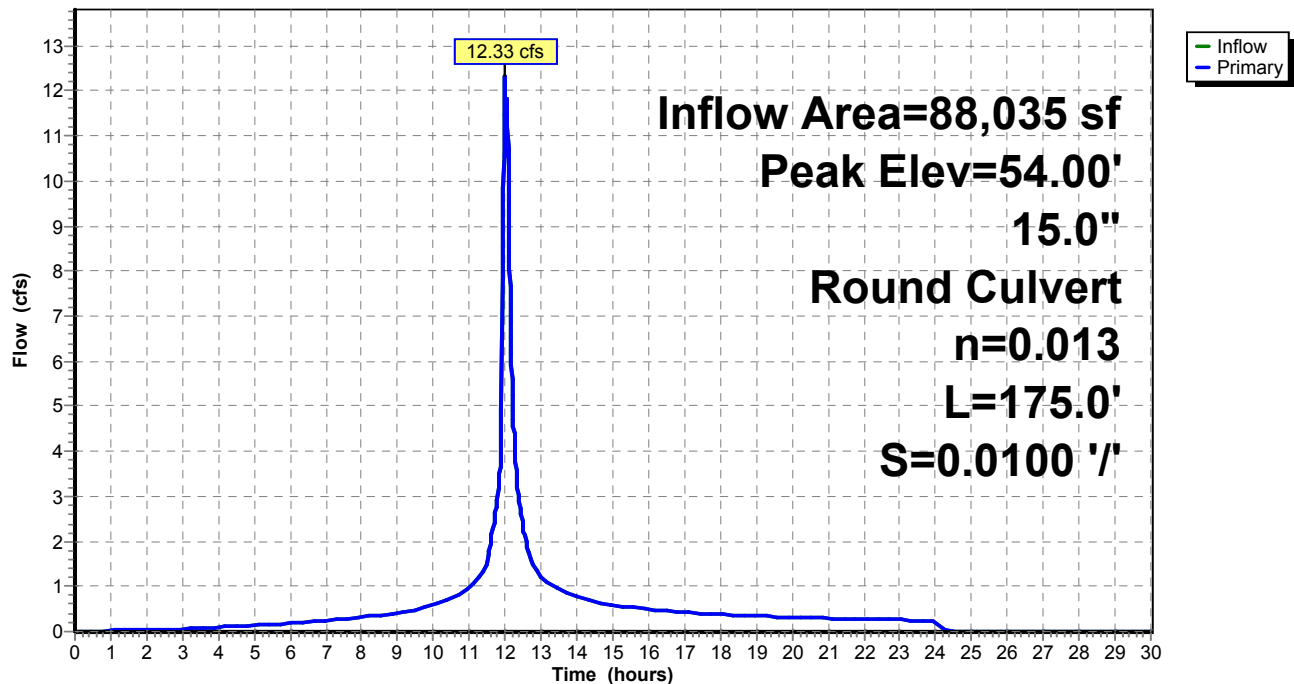
Device	Routing	Invert	Outlet Devices
#1	Primary	45.75'	15.0" Round Culvert L= 175.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 45.75' / 44.00' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.33 cfs @ 11.99 hrs HW=53.99' (Free Discharge)

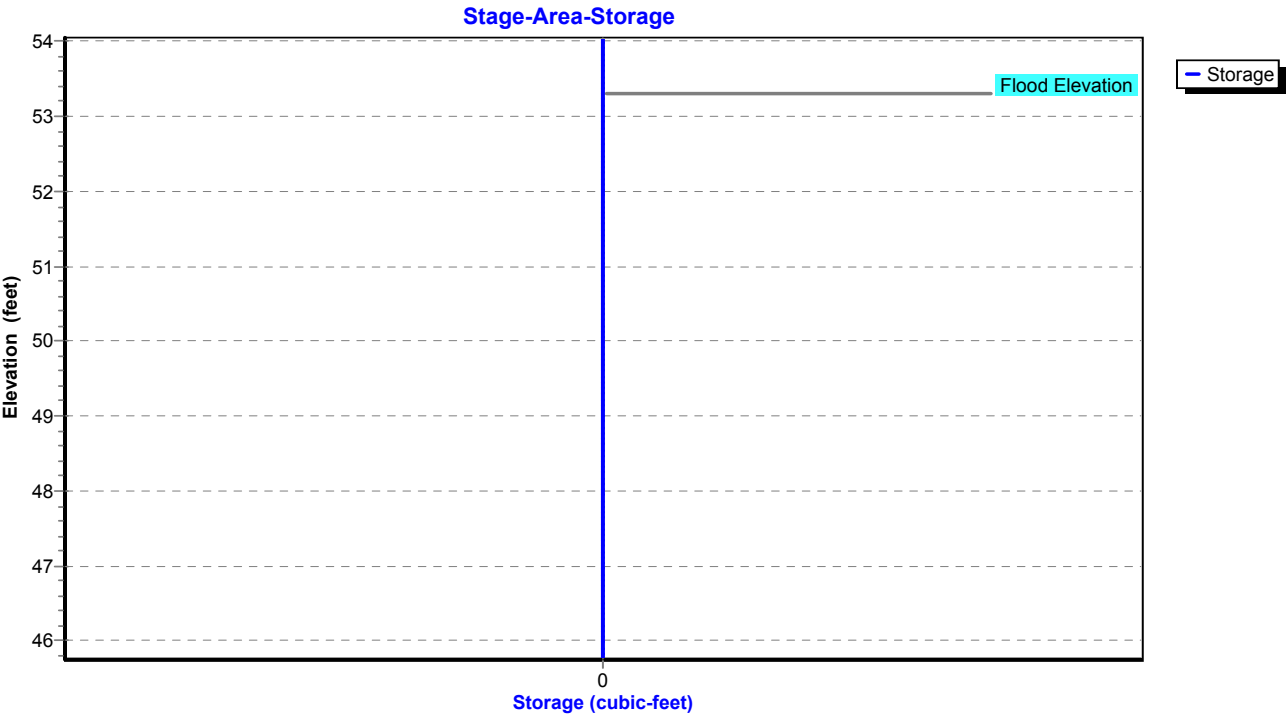
↑1=Culvert (Barrel Controls 12.33 cfs @ 10.04 fps)

Pond 70P: CB-2

Hydrograph



Pond 70P: CB-2



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Summary for Pond 72P: Manhole

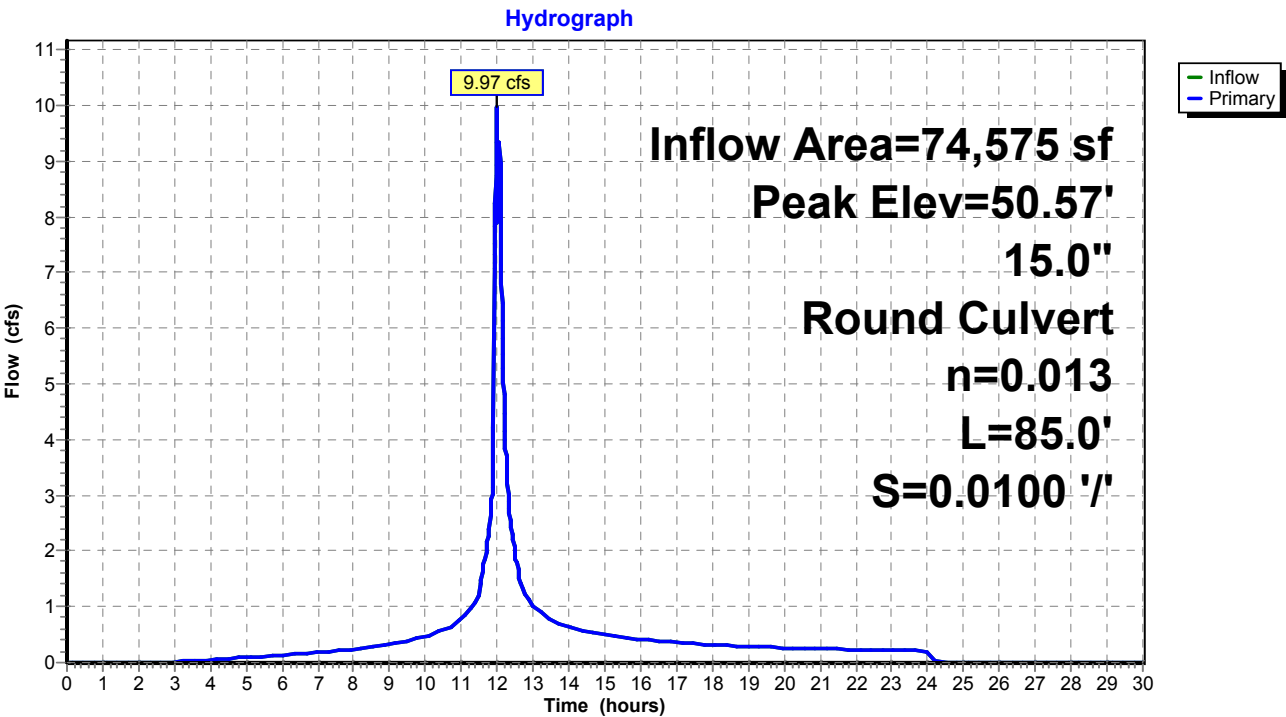
Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 6.40" for 100 year event
Inflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Outflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Routed to Pond 70P : CB-2

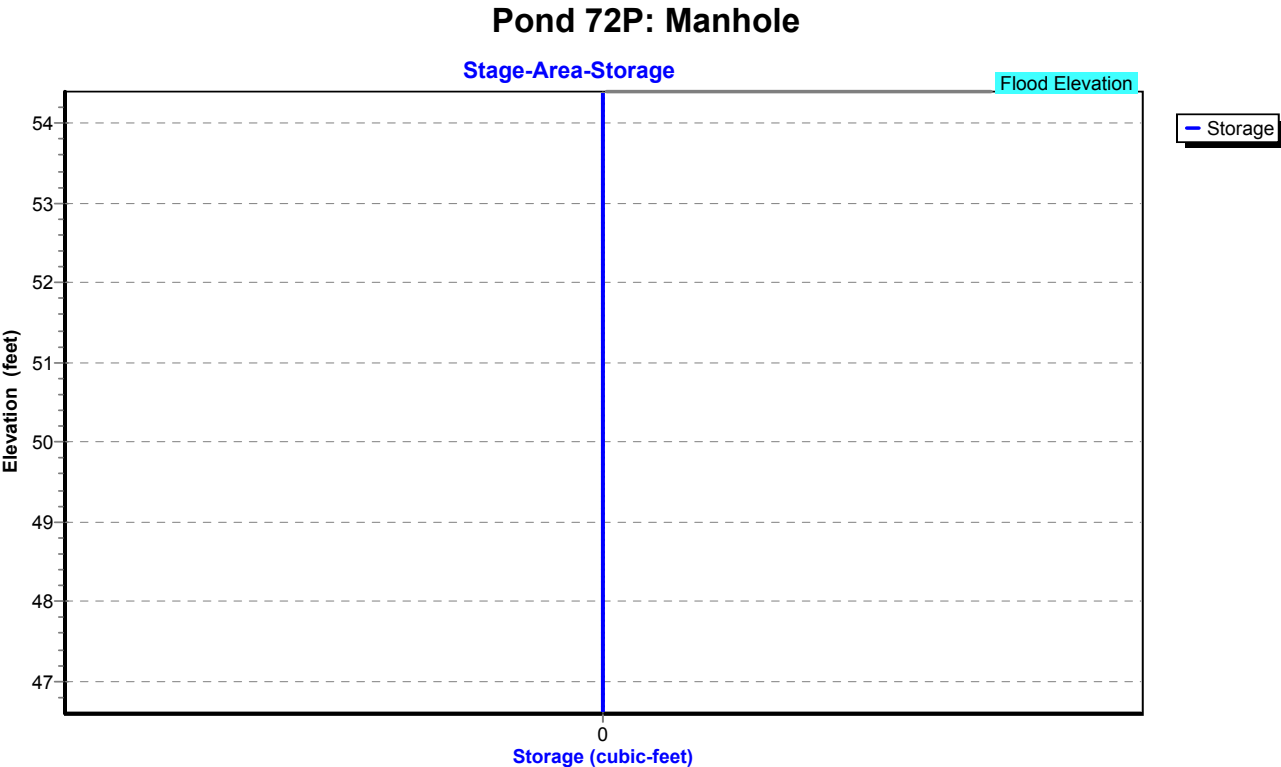
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 50.57' @ 11.99 hrs
Flood Elev= 54.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.60'	15.0" Round Culvert L= 85.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.60' / 45.75' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.89 cfs @ 11.99 hrs HW=50.51' (Free Discharge)
↑1=Culvert (Barrel Controls 9.89 cfs @ 8.06 fps)

Pond 72P: Manhole





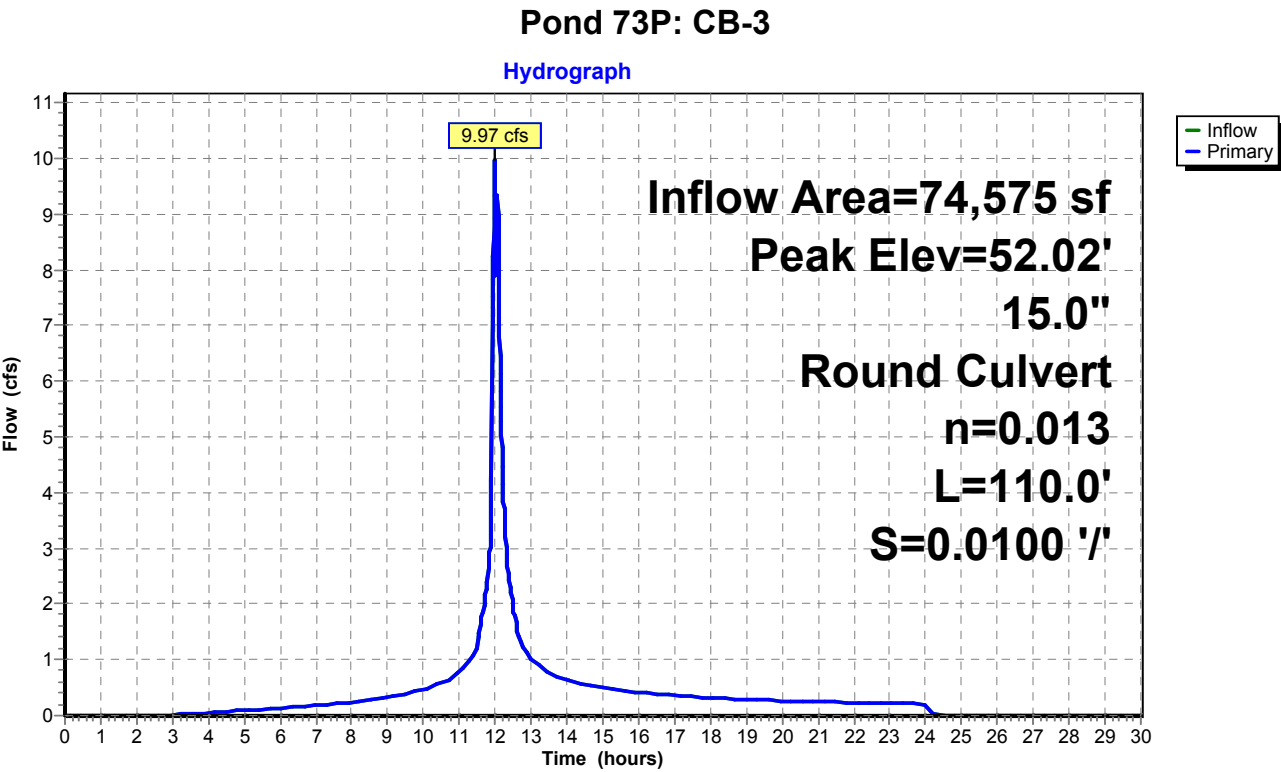
Summary for Pond 73P: CB-3

Inflow Area = 74,575 sf, 50.88% Impervious, Inflow Depth = 6.40" for 100 year event
Inflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Outflow = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.97 cfs @ 11.99 hrs, Volume= 39,753 cf
Routed to Pond 72P : Manhole

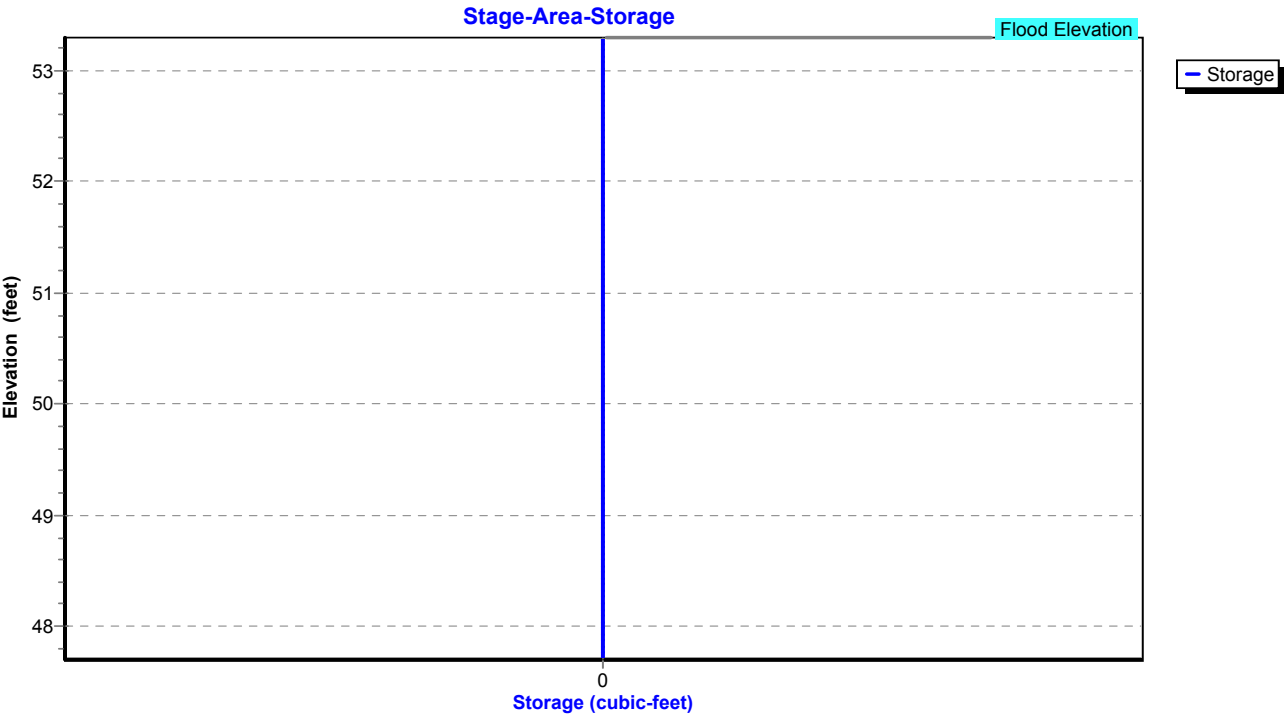
Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.02' @ 11.99 hrs
Flood Elev= 53.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	47.70'	15.0" Round Culvert L= 110.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.70' / 46.60' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=9.89 cfs @ 11.99 hrs HW=51.95' (Free Discharge)
1=Culvert (Barrel Controls 9.89 cfs @ 8.06 fps)



Pond 73P: CB-3



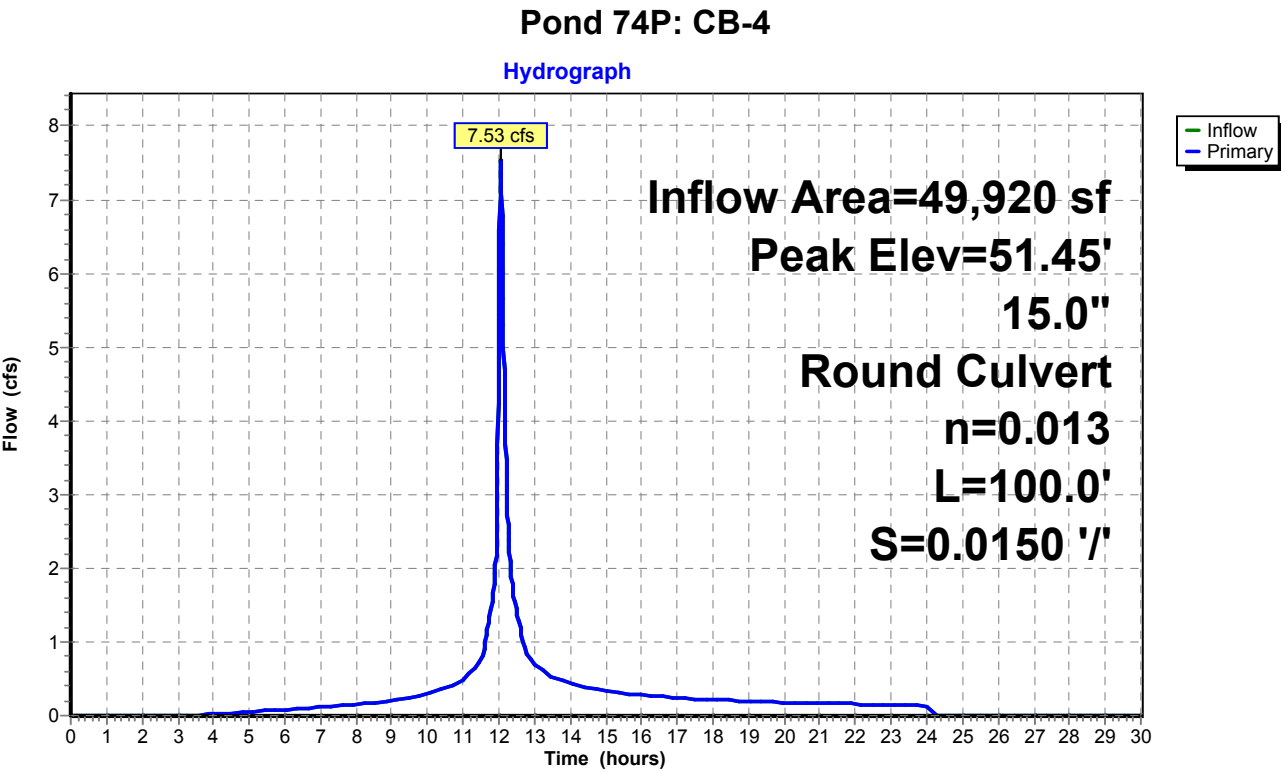
Summary for Pond 74P: CB-4

Inflow Area = 49,920 sf, 46.51% Impervious, Inflow Depth = 6.25" for 100 year event
Inflow = 7.53 cfs @ 12.06 hrs, Volume= 25,989 cf
Outflow = 7.53 cfs @ 12.06 hrs, Volume= 25,989 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.53 cfs @ 12.06 hrs, Volume= 25,989 cf
Routed to Pond 73P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 51.45' @ 12.06 hrs
Flood Elev= 53.70'

Device	Routing	Invert	Outlet Devices
#1	Primary	49.20'	15.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 49.20' / 47.70' S= 0.0150 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=7.52 cfs @ 12.06 hrs HW=51.44' (Free Discharge)
1=Culvert (Inlet Controls 7.52 cfs @ 6.13 fps)



Proposed Conditions

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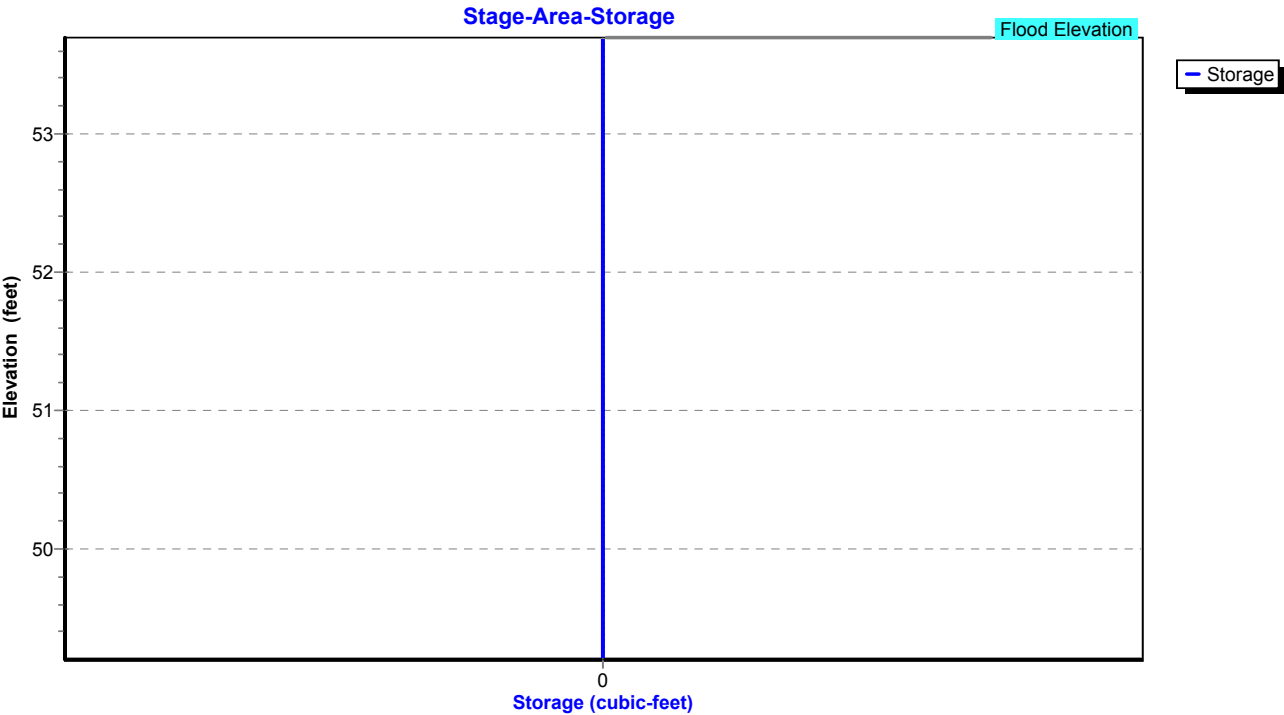
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Pond 74P: CB-4



Summary for Pond 77P: Manhole

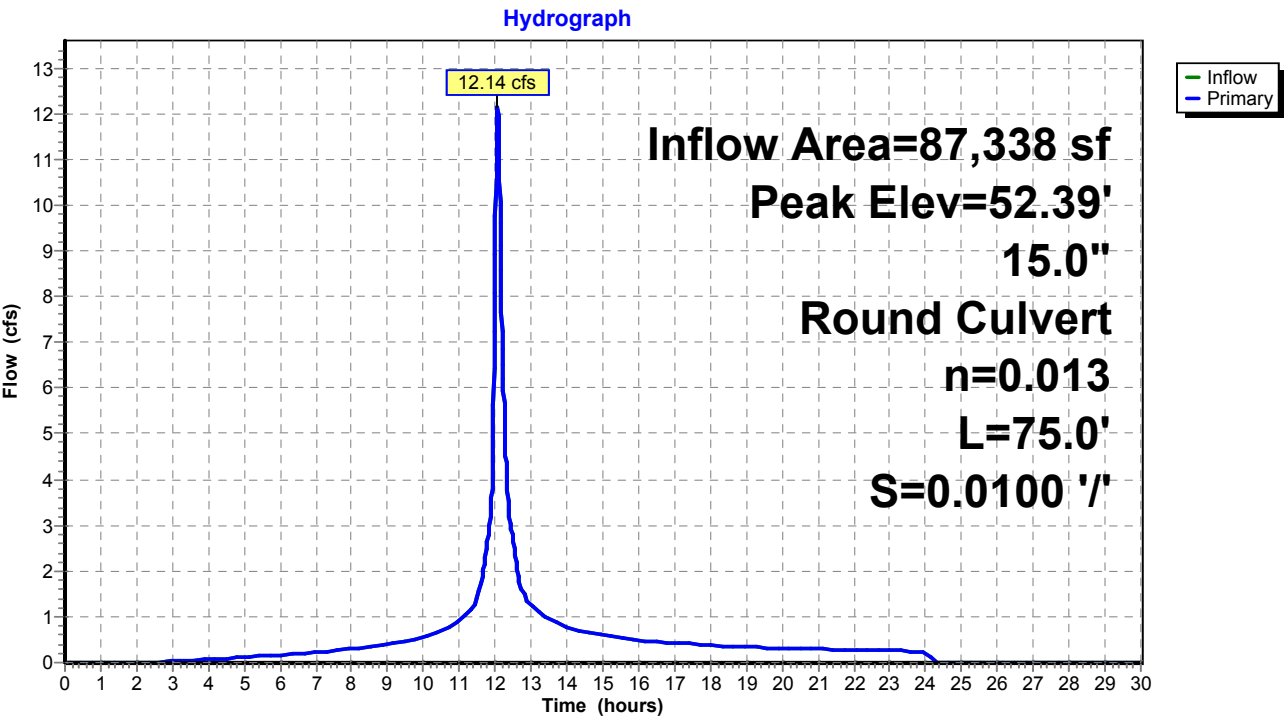
Inflow Area = 87,338 sf, 48.38% Impervious, Inflow Depth = 6.54" for 100 year event
Inflow = 12.14 cfs @ 12.06 hrs, Volume= 47,618 cf
Outflow = 12.14 cfs @ 12.06 hrs, Volume= 47,618 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.14 cfs @ 12.06 hrs, Volume= 47,618 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
Peak Elev= 52.39' @ 12.06 hrs
Flood Elev= 52.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	46.95'	15.0" Round Culvert L= 75.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 46.95' / 46.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=12.13 cfs @ 12.06 hrs HW=52.38' (Free Discharge)
1=Culvert (Barrel Controls 12.13 cfs @ 9.88 fps)

Pond 77P: Manhole



Proposed Conditions

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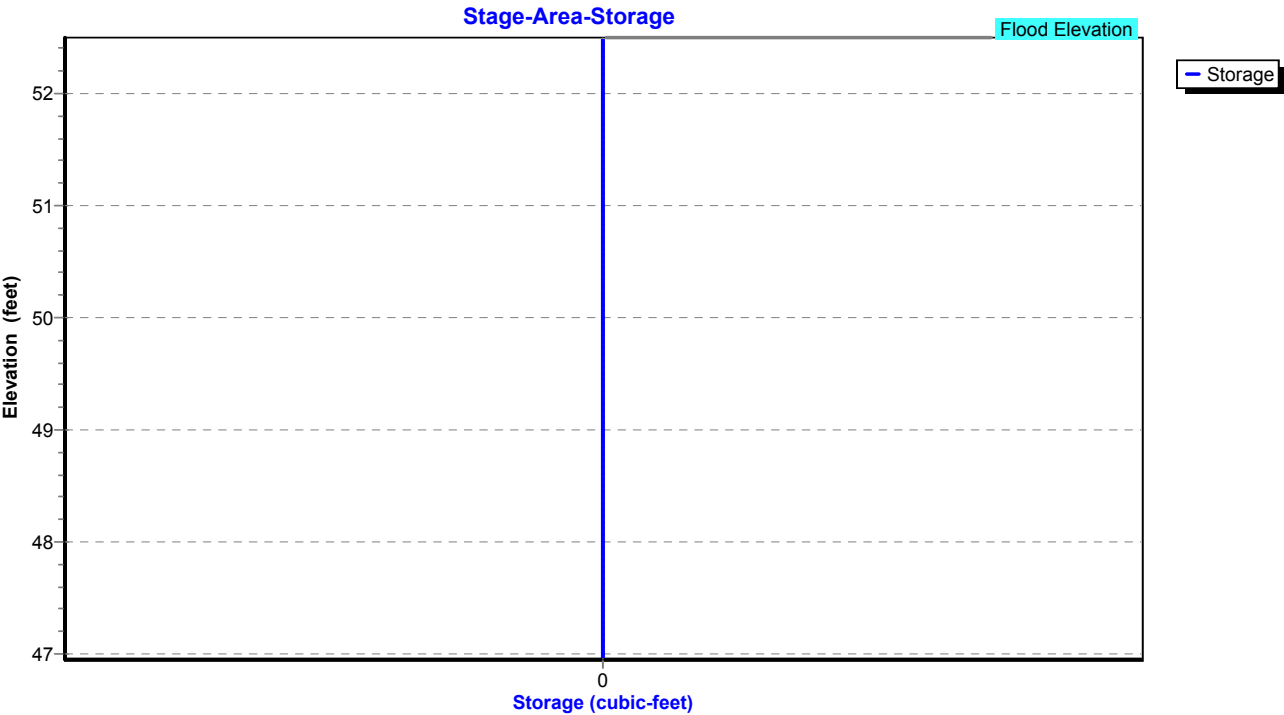
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Pond 77P: Manhole



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Summary for Pond 79P: CB-8

Inflow Area = 3,920 sf, 100.00% Impervious, Inflow Depth = 8.02" for 100 year event
Inflow = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf
Outflow = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.80 cfs @ 12.03 hrs, Volume= 2,619 cf
Routed to Pond 63P : Manhole

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 47.65' @ 12.03 hrs

Flood Elev= 52.50'

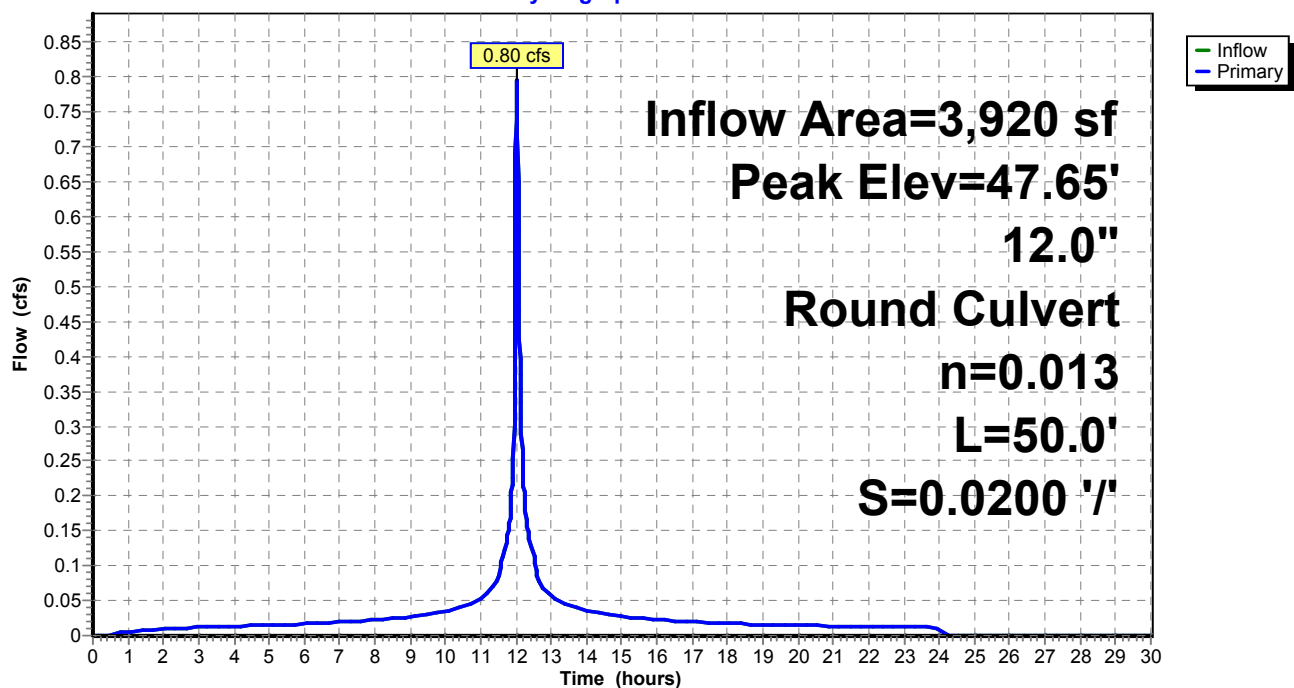
Device	Routing	Invert	Outlet Devices
#1	Primary	47.20'	12.0" Round Culvert L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 47.20' / 46.20' S= 0.0200 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.79 cfs @ 12.03 hrs HW=47.65' (Free Discharge)

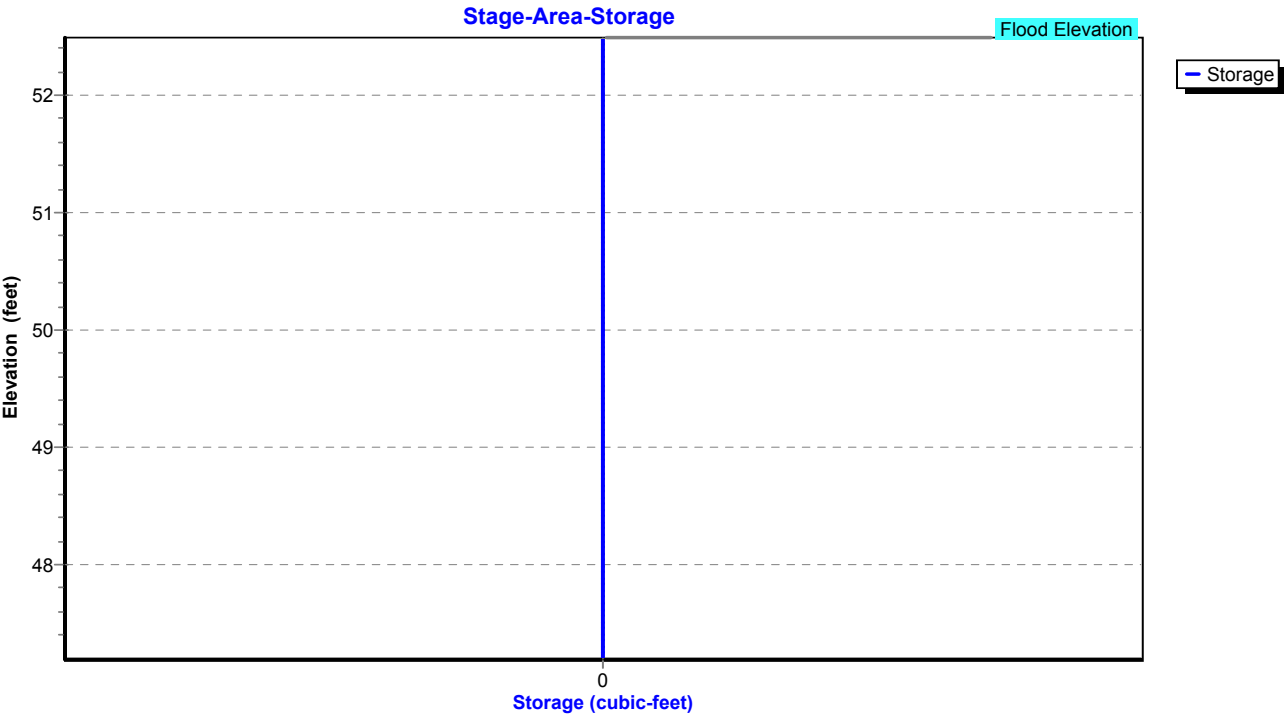
↑1=Culvert (Inlet Controls 0.79 cfs @ 2.29 fps)

Pond 79P: CB-8

Hydrograph



Pond 79P: CB-8



Proposed Conditions

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Summary for Pond 85P: CB-5

Inflow Area = 34,804 sf, 42.18% Impervious, Inflow Depth = 6.10" for 100 year event
Inflow = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf
Outflow = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.07 cfs @ 12.07 hrs, Volume= 17,701 cf
Routed to Pond 74P : CB-4

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

Peak Elev= 53.20' @ 12.07 hrs

Flood Elev= 53.30'

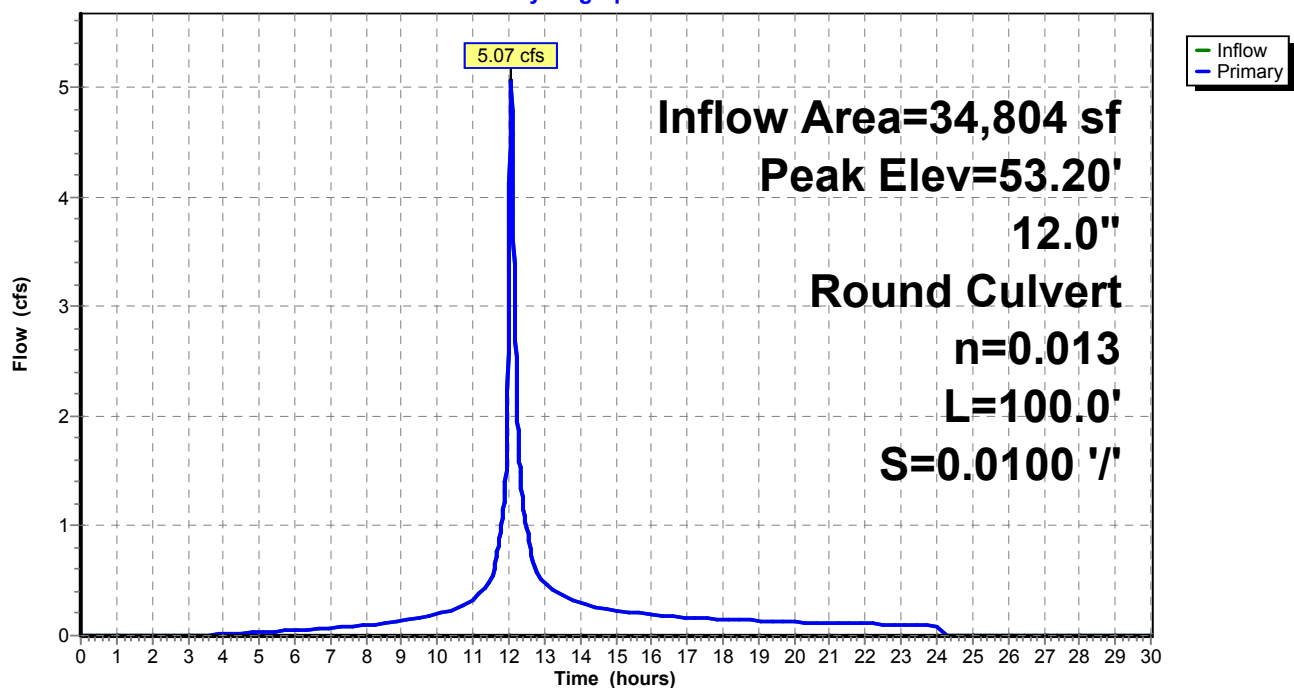
Device	Routing	Invert	Outlet Devices
#1	Primary	50.20'	12.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 50.20' / 49.20' S= 0.0100 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=5.06 cfs @ 12.07 hrs HW=53.19' (Free Discharge)

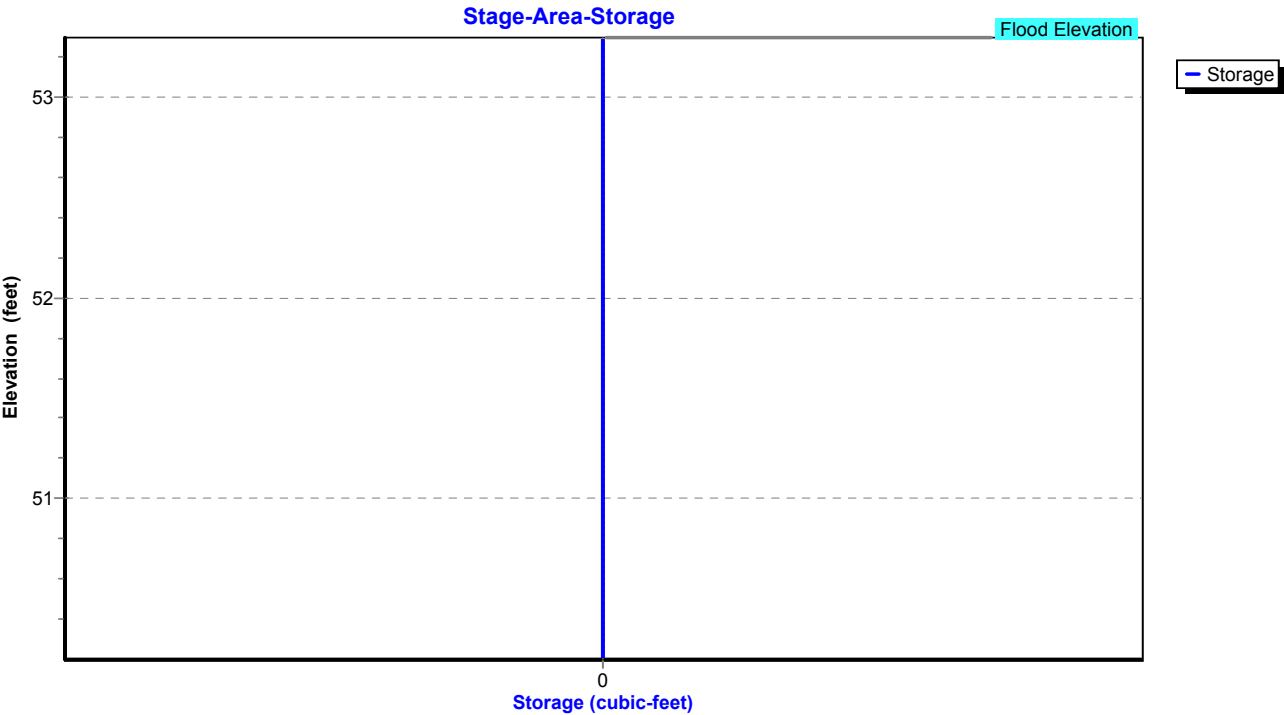
↑1=Culvert (Barrel Controls 5.06 cfs @ 6.44 fps)

Pond 85P: CB-5

Hydrograph



Pond 85P: CB-5



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Summary for Pond P: ADS Stormtech

Inflow Area = 16,901 sf, 100.00% Impervious, Inflow Depth = 8.02" for 100 year event
Inflow = 3.43 cfs @ 12.03 hrs, Volume= 11,290 cf
Outflow = 2.77 cfs @ 12.06 hrs, Volume= 11,288 cf, Atten= 19%, Lag= 2.3 min
Primary = 2.77 cfs @ 12.06 hrs, Volume= 11,288 cf
Routed to Pond 2P : RR Culvert 1

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 54.57' @ 12.06 hrs Surf.Area= 749 sf Storage= 1,503 cf

Plug-Flow detention time= 17.3 min calculated for 11,284 cf (100% of inflow)

Center-of-Mass det. time= 17.2 min (757.5 - 740.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	51.34'	764 cf	15.75'W x 46.34'L x 3.75'H Field A 2,737 cf Overall - 827 cf Embedded = 1,910 cf x 40.0% Voids
#2A	51.84'	827 cf	ADS_StormTech SC-740 +Cap x 18 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 18 Chambers in 3 Rows
#3	51.34'	114 cf	5.00'D x 5.80'H OCS
		1,705 cf	Total Available Storage

Storage Group A created with Chamber Wizard

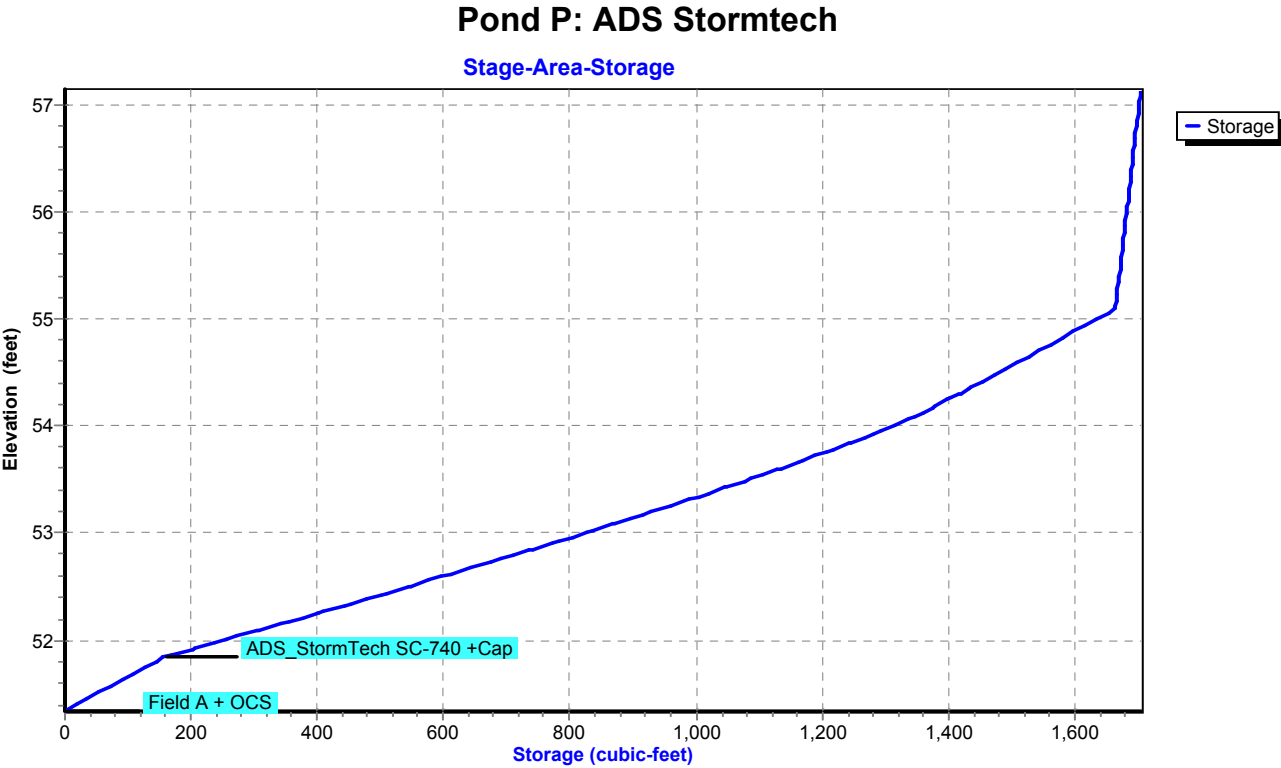
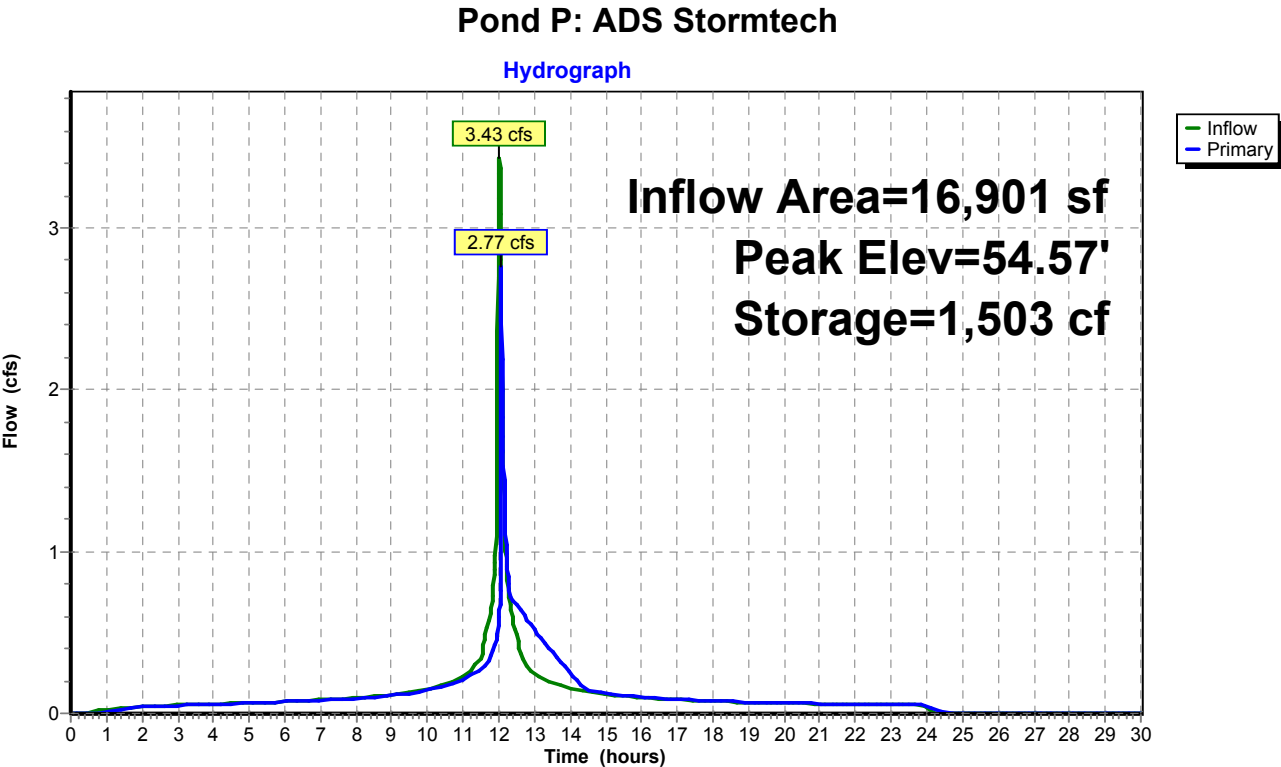
Device	Routing	Invert	Outlet Devices
#1	Primary	51.34'	12.0" Round Culvert L= 4.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 51.34' / 51.30' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	51.34'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	54.30'	5.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.68 cfs @ 12.06 hrs HW=54.57' (Free Discharge)

1=Culvert (Passes 2.68 cfs of 6.24 cfs potential flow)

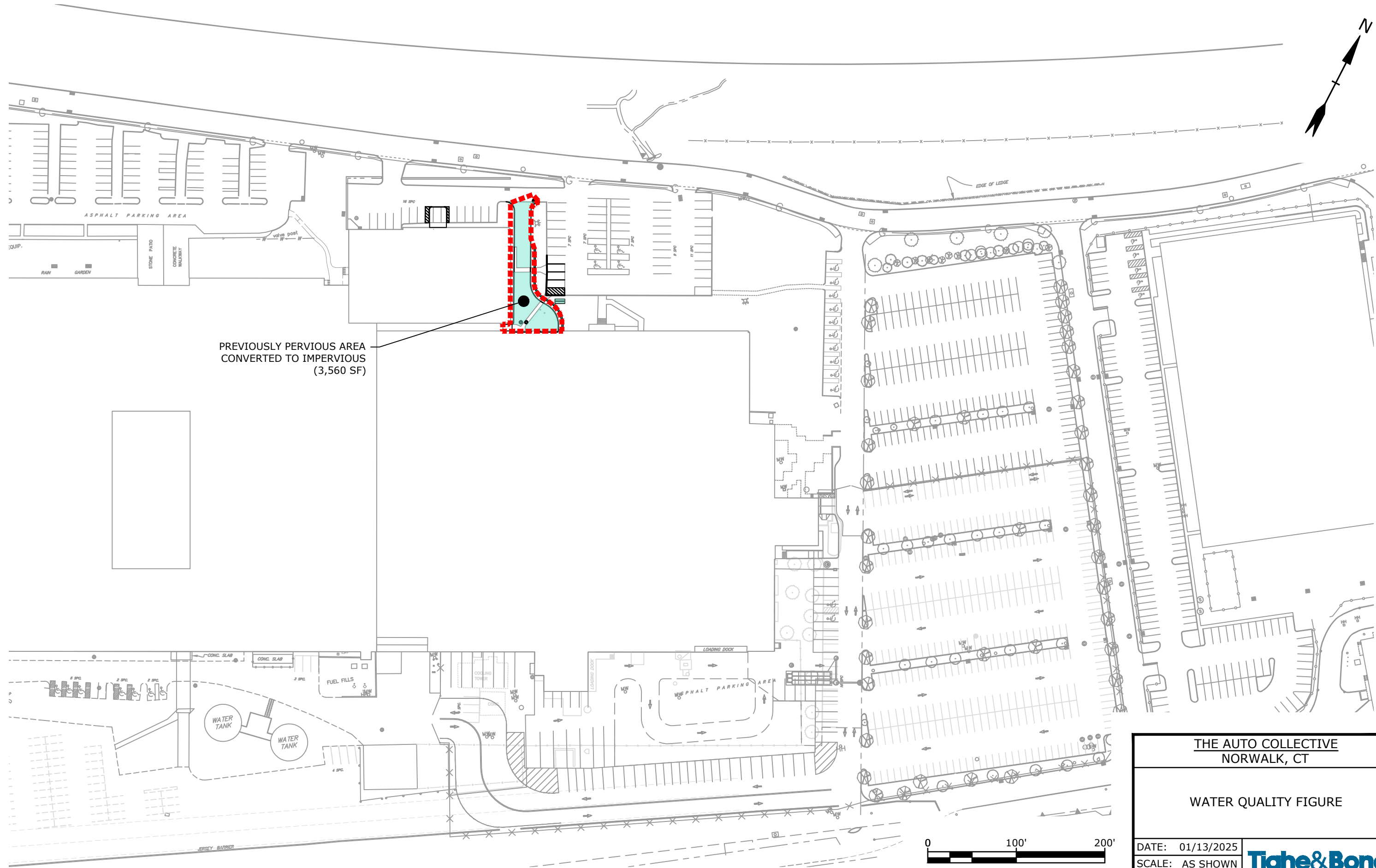
2=Orifice/Grate (Orifice Controls 0.73 cfs @ 8.42 fps)

3=Broad-Crested Rectangular Weir (Weir Controls 1.95 cfs @ 1.46 fps)



APPENDIX E

Plotted On: Jan 15, 2025 3:16pm By: ZHattan
Tighe & Bond\J:\A\A5128 The Auto Collective\0001\Design\Stormwater\A5128-01-WQF.dwg



THE AUTO COLLECTIVE
NORWALK, CT

WATER QUALITY FIGURE

DATE: 01/13/2025
SCALE: AS SHOWN
FIGURE: WQF

Tighe&Bond

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	0.082
Impervious Area in acres	=	0.082
Percent of Impervious Area (I)	=	100
Volumetric Runoff Coefficient (R)		

$$R = 0.05 + 0.009(I) = 0.953$$

$$WQv = \frac{(0.65'')(R)(A)}{12} = \frac{0.0042 \text{ ac}\cdot\text{ft}}{184 \text{ cf}}$$

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0042
Drainage Area (Ac)	=	0.082

$$Q = WQv \cdot 12 / DA = 0.619 \text{ in}$$

Runoff Depth in inches (Q)	=	0.619 in
Design Precipitation in inches (P)	=	0.7 in

$$CN = 1000 / [10 + 5 \cdot P + 10Q - 10 \cdot (Q^2 + 1.25QP)^{1/2}] = 100 \text{ CN}$$

From table 4-1 in chapter 4, TR-55

$$I_a = 0.041 \text{ in}$$
$$I_a / P = 0.063$$

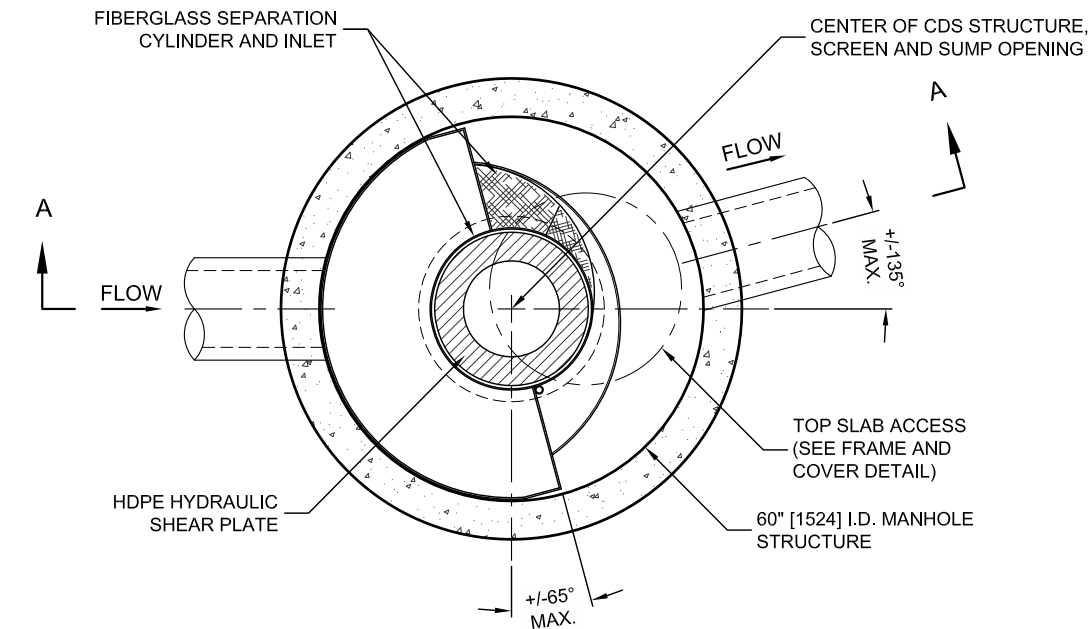
From Exhibit 4-11 in chapter 4, TR-55

$$q_u = 675 \text{ csm/in}$$

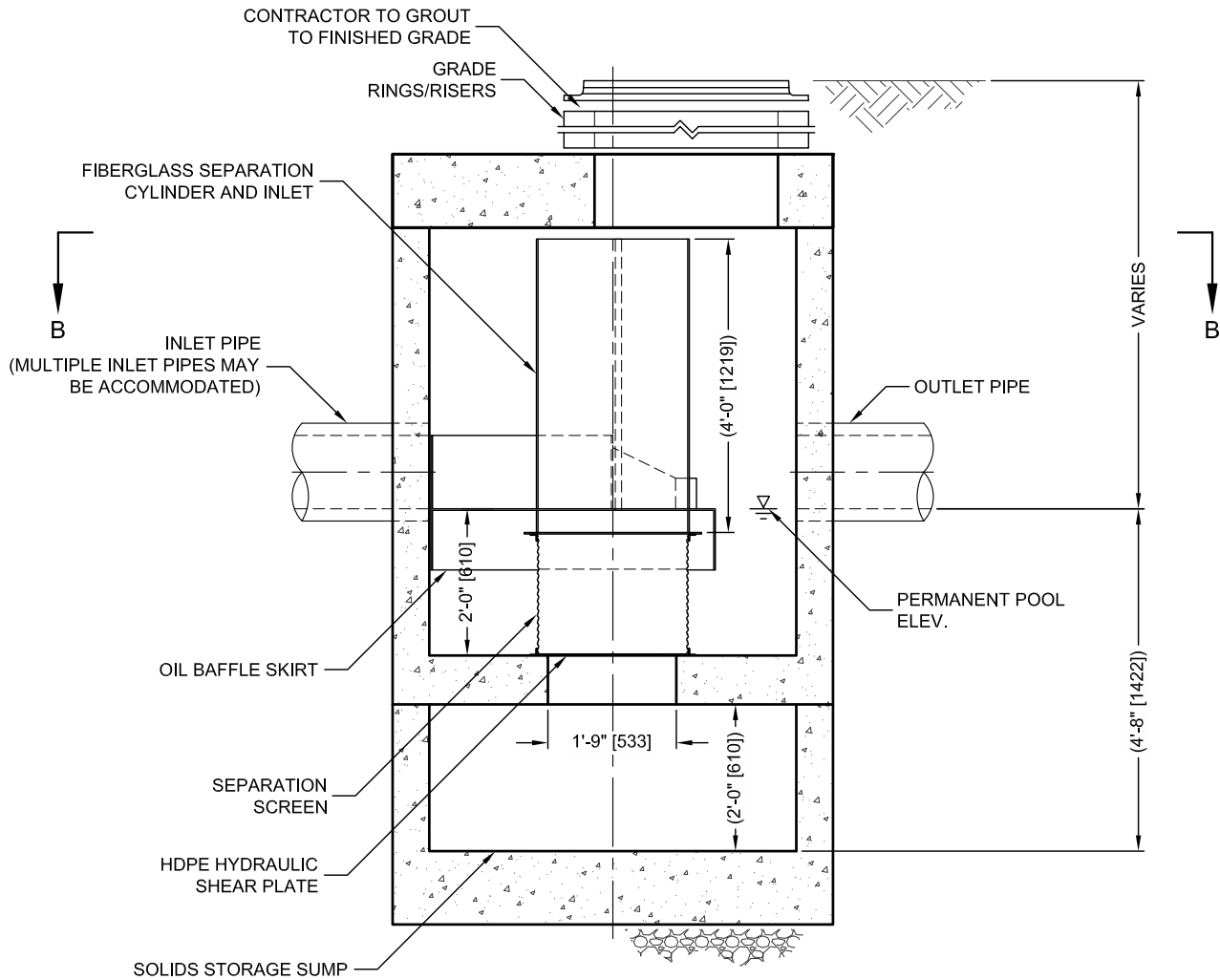
Unit peak discharge in csm/in (q_u)	=	675
Area in square miles (A)	=	0.000
Runoff Depth in inches (Q)	=	0.619

$$WQF = q_u \cdot A \cdot Q = 0.053 \text{ cfs}$$

C:\USERS\SCHLACHER\DESKTOP\CDS DETAILS 180 MICRON SIZING\ACAD\CDS2015-5-C-DTL.DWG 5/19/2014 5:18 PM



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



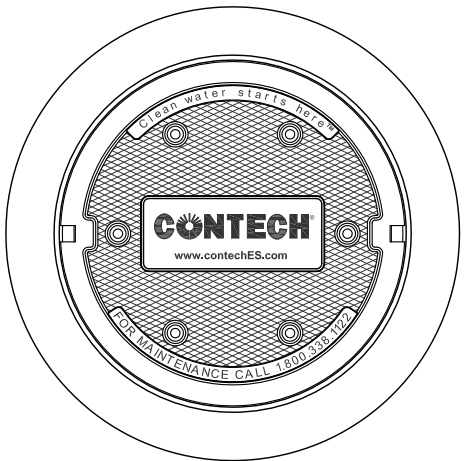
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,768,846; 6,841,720; 6,911,585; 6,981,762. RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-5-C DESIGN NOTES

THE STANDARD CDS2015-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
- SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID				
WATER QUALITY FLOW RATE (CFS OR L/s)				*
PEAK FLOW RATE (CFS OR L/s)				*
RETURN PERIOD OF PEAK FLOW (YRS)				*
SCREEN APERTURE (2400 OR 4700)				*
PIPE DATA:	I.E.	MATERIAL	DIAMETER	
INLET PIPE 1	*	*	*	
INLET PIPE 2	*	*	*	
OUTLET PIPE	*	*	*	
RIM ELEVATION				*
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT	
		*	*	
NOTES/SPECIAL REQUIREMENTS:				
* PER ENGINEER OF RECORD				

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
- FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
- PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH
ENGINEERED SOLUTIONS LLC

www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-5-C
INLINE CDS
STANDARD DETAIL

CDS® Inspection and Maintenance Guide



Maintenance

The CDS system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit. For example, unstable soils or heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (e.g. spring and fall) however more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment washdown areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

The visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet and separation screen. The inspection should also quantify the accumulation of hydrocarbons, trash, and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided.

Access to the CDS unit is typically achieved through two manhole access covers. One opening allows for inspection and cleanout of the separation chamber (cylinder and screen) and isolated sump. The other allows for inspection and cleanout of sediment captured and retained outside the screen. For deep units, a single manhole access point would allow both sump cleanout and access outside the screen.

The CDS system should be cleaned when the level of sediment has reached 75% of capacity in the isolated sump or when an appreciable level of hydrocarbons and trash has accumulated. If absorbent material is used, it should be replaced when significant discoloration has occurred. Performance will not be impacted until 100% of the sump capacity is exceeded however it is recommended that the system be cleaned prior to that for easier removal of sediment. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Particles at the top of the pile typically offer less resistance to the end of the rod than consolidated particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine whether the height of the sediment pile off the bottom of the sump floor exceeds 75% of the total height of isolated sump.

Cleaning

Cleaning of a CDS system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole covers and insert the vacuum hose into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The area outside the screen should also be cleaned out if pollutant build-up exists in this area.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill should be cleaned out immediately. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. The screen should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and also to ensure that proper safety precautions have been followed. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the CDS system should be done in accordance with local regulations. In many jurisdictions, disposal of the sediments may be handled in the same manner as the disposal of sediments removed from catch basins or deep sump manholes.



CDS Model	Diameter		Distance from Water Surface to Top of Sediment Pile		Sediment Storage Capacity	
	ft	m	ft	m	y ³	m ³
CDS1515	3	0.9	3.0	0.9	0.5	0.4
CDS2015	4	1.2	3.0	0.9	0.9	0.7
CDS2015	5	1.3	3.0	0.9	1.3	1.0
CDS2020	5	1.3	3.5	1.1	1.3	1.0
CDS2025	5	1.3	4.0	1.2	1.3	1.0
CDS3020	6	1.8	4.0	1.2	2.1	1.6
CDS3025	6	1.8	4.0	1.2	2.1	1.6
CDS3030	6	1.8	4.6	1.4	2.1	1.6
CDS3035	6	1.8	5.0	1.5	2.1	1.6
CDS4030	8	2.4	4.6	1.4	5.6	4.3
CDS4040	8	2.4	5.7	1.7	5.6	4.3
CDS4045	8	2.4	6.2	1.9	5.6	4.3
CDS5640	10	3.0	6.3	1.9	8.7	6.7
CDS5653	10	3.0	7.7	2.3	8.7	6.7
CDS5668	10	3.0	9.3	2.8	8.7	6.7
CDS5678	10	3.0	10.3	3.1	8.7	6.7

Table 1: CDS Maintenance Indicators and Sediment Storage Capacities



Support

- Drawings and specifications are available at www.contechstormwater.com.
- Site-specific design support is available from our engineers.

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The product(s) described may be protected by one or more of the following US patents: 5,322,629; 5,624,576; 5,707,527; 5,759,415; 5,788,848; 5,985,157; 6,027,639; 6,350,374; 6,406,218; 6,641,720; 6,511,595; 6,649,048; 6,991,114; 6,998,038; 7,186,058; 7,296,692; 7,297,266; 7,517,450 related foreign patents or other patents pending.

CDS Inspection & Maintenance Log

CDS Model: _____ Location: _____

[illegible]

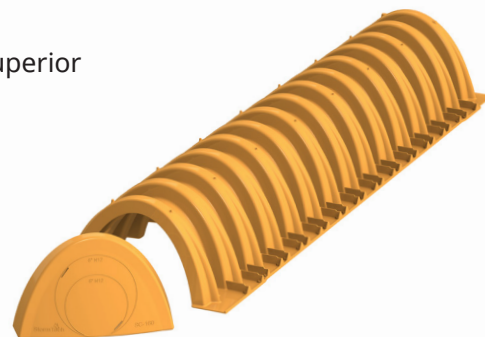
1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement from the manhole opening to the top of the sediment pile and the other from the manhole opening to the water surface. If the difference between these measurements is less than the values listed in table 1 the system should be cleaned out. **Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.**
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.

StormTech® SC-160LP Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for commercial and municipal applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.

The SC-160LP chamber was developed for infiltration and detention in shallow cover applications

- Only 14" (350 mm) required from top of chamber to bottom of pavement
- Only 12" (300 mm) tall



Nominal Chamber Specifications (not to scale)

Size (L x W x H)

85.4" x 25" x 12"
2170 mm x 635 mm x 305 mm

Chamber Storage

6.85 ft³ (0.19 m³)

Min. Installed Storage*

15.0 ft³ (0.42 m³)

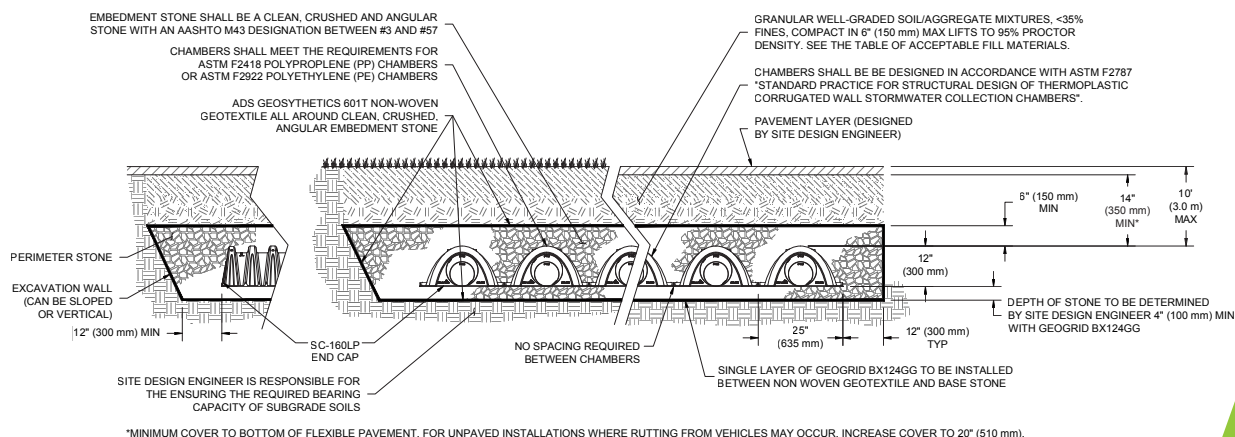
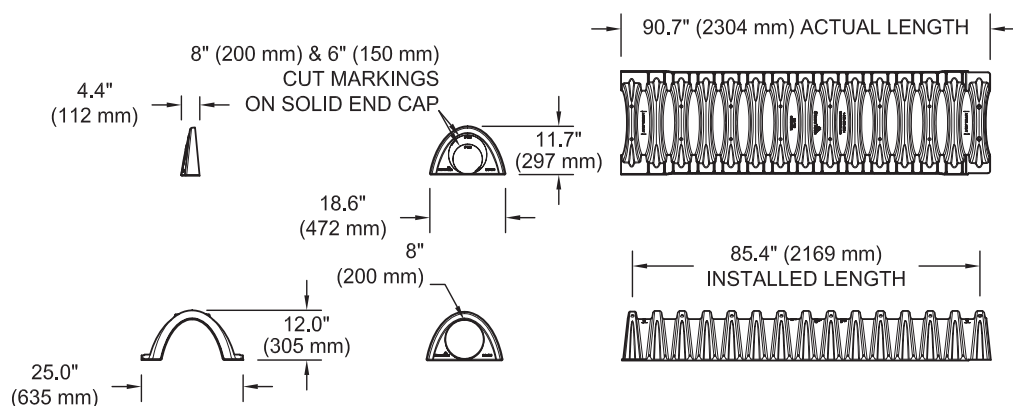
Weight

24.0 lbs (10.9 kg)

Shipping

132 chambers/pallet
144 end caps/pallet
12 pallets/truck

*Assumes 6" (150 mm) stone above, 4" (100 mm) below and stone between chambers with 40% stone porosity.



StormTech SC-160LP Specifications

Cumulative Storage Volumes Per Chamber

Assumes 40% Stone Porosity. Calculations are Based Upon a 4" (100 mm) Stone Base Under Chambers.

Depth of Water in System Inches (mm)	Cumulative Chamber Storage ft ³ (m ³)	Total System Cumulative Storage ft ³ (m ³)
22 (559)	6.85 (0.194)	14.98 (0.424)
21 (533)	6.85 (0.194)	14.49 (0.410)
20 (508)	6.85 (0.194)	14.00 (0.396)
19 (483)	6.85 (0.194)	13.50 (0.382)
18 (457)	6.85 (0.194)	13.01 (0.368)
17 (432)	6.85 (0.194)	12.51 (0.354)
16 (406)	6.85 (0.194)	12.02 (0.340)
15 (381)	6.80 (0.193)	11.49 (0.325)
14 (356)	6.67 (0.189)	10.92 (0.309)
13 (330)	6.38 (0.181)	10.25 (0.290)
12 (305)	5.94 (0.168)	9.49 (0.269)
11 (279)	5.40 (0.153)	8.67 (0.246)
10 (254)	4.78 (0.135)	7.81 (0.221)
9 (229)	4.10 (0.116)	6.91 (0.196)
8 (203)	3.36 (0.095)	5.97 (0.169)
7 (178)	2.58 (0.073)	5.01 (0.142)
6 (152)	1.76 (0.050)	4.02 (0.114)
5 (127)	0.89 (0.025)	3.01 (0.085)
4 (102)	0 (0)	1.98 (0.056)
3 (76)	0 (0)	1.48 (0.042)
2 (51)	0 (0)	0.99 (0.028)
1 (25)	0 (0)	0.49 (0.014)

Note: Add 0.49 ft³ (0.014 m³) of storage for each additional inch (25 mm) of stone foundation.

Amount of Stone Per Chamber

English Tons (yds ³)	Stone Foundation Depth		
	4"	6"	8"
SC-160LP	1.1 (0.8)	1.2 (0.9)	1.3 (0.9)
Metric Kilograms (m ³)	100 mm	150 mm	200 mm
SC-160LP	652 (0.7)	1074 (0.8)	1197 (0.8)

Note: Assumes 6" (150 mm) of stone above and only embedment stone between chambers.

Volume Excavation Per Chamber yd³ (m³)

	Stone Foundation Depth		
	4 (100)	8 (200)	12 (300)
SC-160LP	1.4 (1.1)	1.6 (1.2)	1.8 (1.3)

Note: Assumes no row separation and 14" (350 mm) of cover. The volume of excavation will vary as depth of cover increases.

ADS StormTech products, manufactured in accordance with ASTM F2418 or ASTM F2922, comply with all requirements in the Build America, Buy America (BABA) Act.

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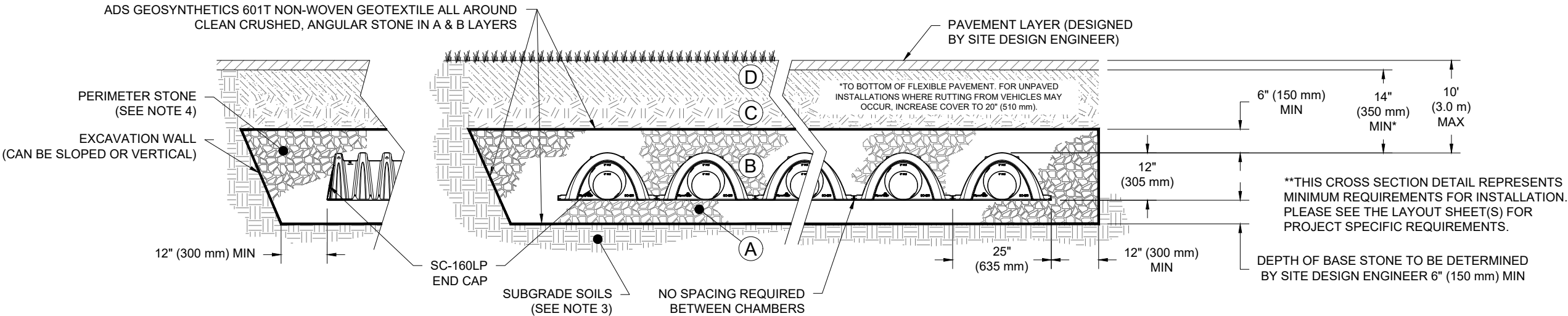
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ACCEPTABLE FILL MATERIALS: STORMTECH SC-160LP CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 14" (355 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ⁵	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE ⁵	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
 - WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 1.5"
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

SC-160LP

STANDARD CROSS SECTION

DATE: 12/21/23

DRAWN: SLS

CHECKED: SLS

PROJECT #:

DESCRIPTION

DATE

DRWN

CHKD

4640 TRUEMAN BLVD
HILLIARD, OH 43026

StormTech®
Chamber System

888-892-2694 | WWW.STORMTECH.COM

1

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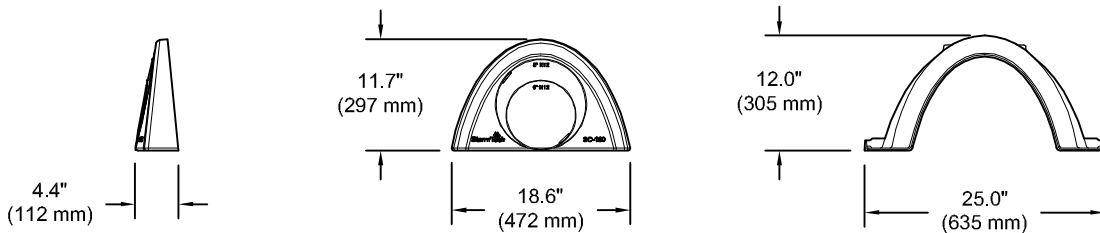
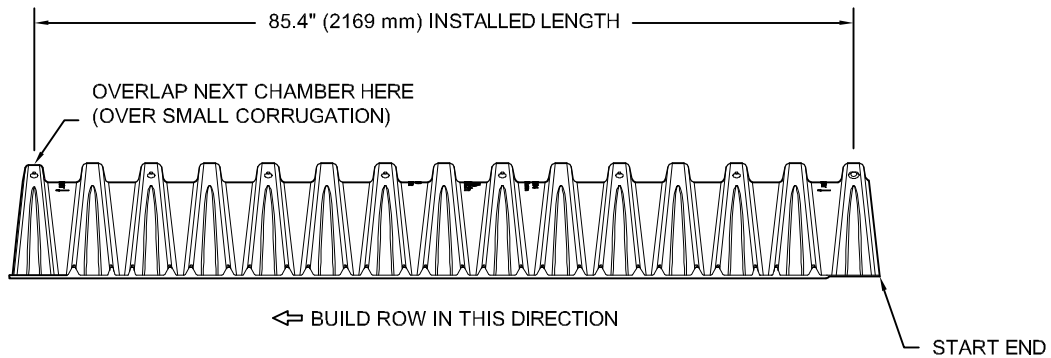
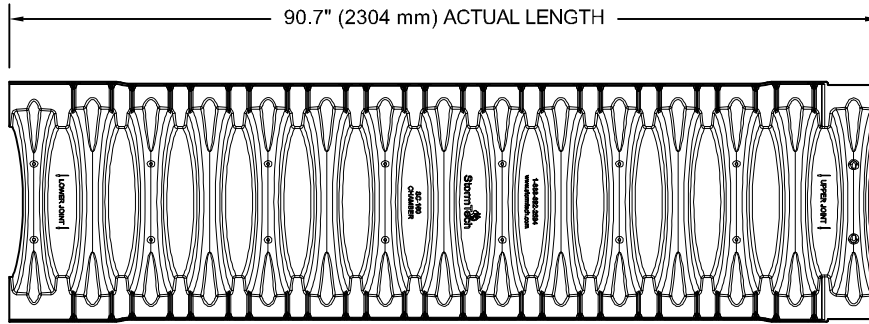
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SC-160LP TECHNICAL SPECIFICATION

NTS



NOMINAL CHAMBER SPECIFICATIONS

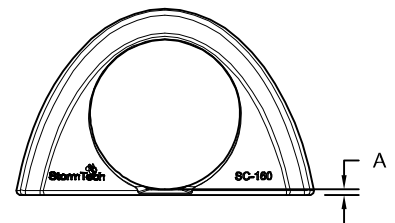
SIZE (W X H X INSTALLED LENGTH)	25.0" X 12.0" X 85.4"	(635 mm X 305 mm X 2169 mm)
CHAMBER STORAGE	6.85 CUBIC FEET	(0.19 m ³)
MINIMUM INSTALLED STORAGE*	16.0 CUBIC FEET	(0.45 m ³)
WEIGHT	24.0 lbs.	(10.9 kg)

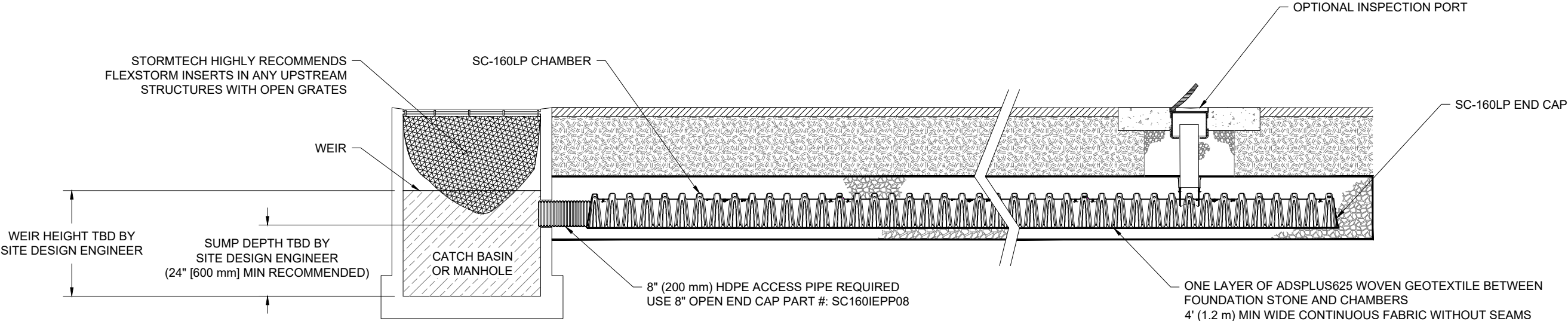
*ASSUMES 6" (152 mm) ABOVE, 6" (152 mm) BELOW, AND STONE BETWEEN CHAMBERS WITH 40% STONE POROSITY.

PART #	STUB	A
SC160IEPP	6" (150 mm)	0.66" (16 mm)
	8" (200 mm)	0.80" (20 mm)
SC160IEPP08	8" (200 mm)	0.96" (24 mm)

ALL STUBS ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

NOTE: ALL DIMENSIONS ARE NOMINAL





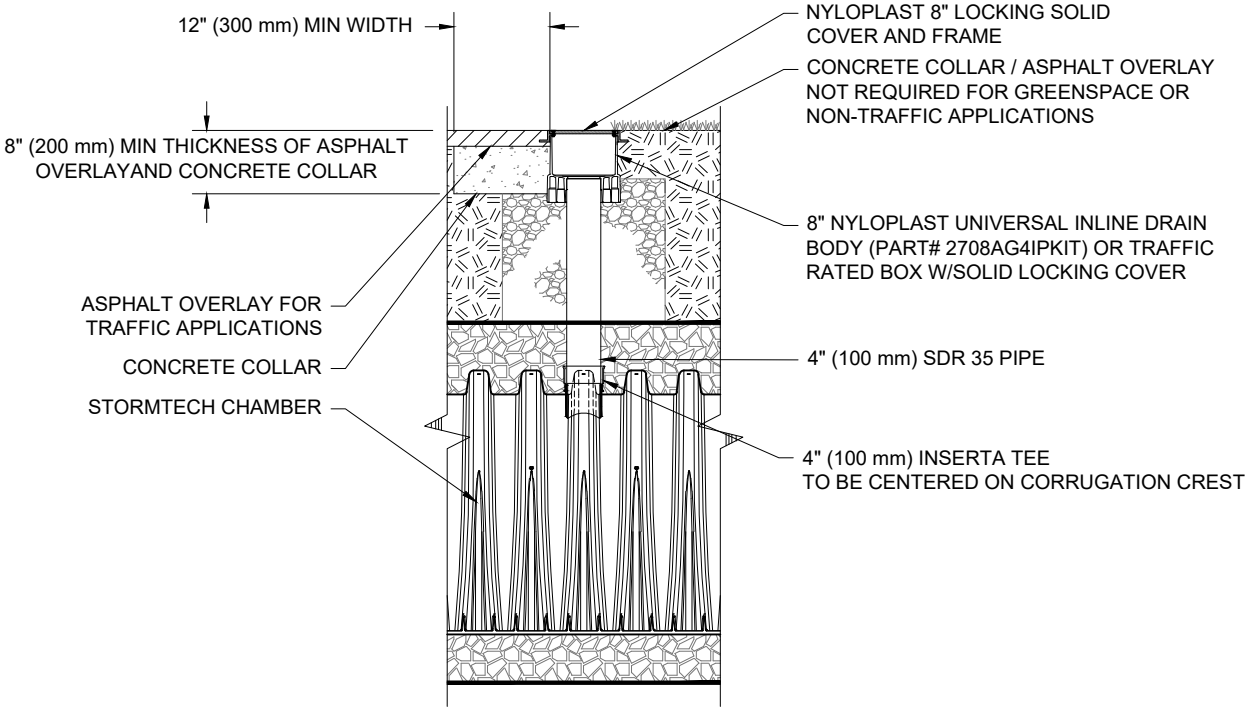
SC-160LP ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR PLUS ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



4" PVC INSPECTION PORT DETAIL
(SC SERIES CHAMBER)
NTS

SC-160LP		ISOLATOR ROW PLUS DETAILS	
		DATE: 8/5/24	DRAWN: CJD
		PROJECT #: ----	CHECKED: CJD
			DESCRIPTION
			DRWN CHKD
			DATE
StormTech® Chamber System		888-992-2694 WWW.STORMTECH.COM	
4640 TRUEMAN BLVD HILLIARD, OH 43026			
ADS			
1		SHEET OF 1	

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Isolator[®] Row Plus

O&M Manual



The Isolator® Row Plus

Introduction

An important component of any Stormwater Pollution Prevention Plan is inspection and maintenance. The StormTech Isolator Row Plus is a technique to inexpensively enhance Total Suspended Solids (TSS), Total Phosphorus (TP), Total Petroleum Hydrocarbons (TPH) and Total Nitrogen (TN) removal with easy access for inspection and maintenance.

The Isolator Row Plus

The Isolator Row Plus is a row of StormTech chambers, either SC-160, SC-310, SC-310-3, SC-740, DC-780, SC-800, MC-3500, MC-4500 or MC-7200 models, are lined with filter fabric and connected to a closely located manhole for easy access. The fabric lined chambers provide for sediment settling and filtration as stormwater rises in the Isolator Row Plus and passes through the filter fabric. The open bottom chambers allow stormwater to flow vertically out of the chambers. Sediments are captured in the Isolator Row Plus protecting the adjacent stone and chambers storage areas from sediment accumulation.

ADS Isolator Row and Plus fabric are placed between the stone and the Isolator Row Plus chambers. The woven geotextile provides a media for stormwater filtration, a durable surface for maintenance, prevents scour of the underlying stone and remains intact during high pressure jetting.

The Isolator Row Plus is designed to capture the “first flush” runoff and offers the versatility to be sized on a volume basis or a flow-rate basis. An upstream manhole provides access to the Isolator Row Plus and includes a high/low concept such that stormwater flow rates or volumes that exceed the capacity of the Isolator Row Plus bypass through a manifold to the other chambers. This is achieved with an elevated bypass manifold or a high-flow weir. This creates a differential between the Isolator Row Plus row of chambers and the manifold to the rest of the system, thus allowing for settlement time in the Isolator Row Plus. After Stormwater flows through the Isolator Row Plus and into the rest of the chamber system it is either exfiltrated into the soils below or passed at a controlled rate through an outlet manifold and outlet control structure.

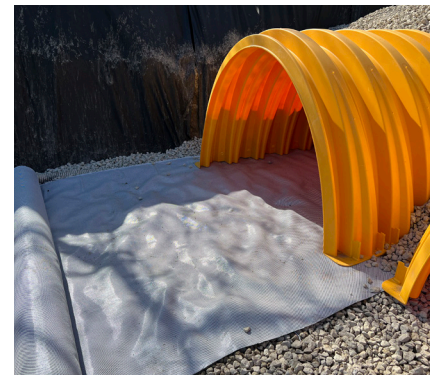
The Isolator Row Plus Flamp™ is a flared end ramp apparatus attached to the inlet pipe on the inside of the chamber end cap. The FLAMP provides a smooth transition from pipe invert to fabric bottom. It is configured to improve chamber function performance by enhancing outflow of solid debris that would otherwise collect at the chamber's end, or more difficult to remove and require confined space entry into the chamber area. It also serves to improve the fluid and solid flow into the access pipe during maintenance and cleaning and to guide cleaning and inspection equipment back into the inlet pipe when complete.

The Isolator Row Plus may be part of a treatment train system. The treatment train design and pretreatment device selection by the design engineer is often driven by regulatory requirements. Whether pretreatment is used or not, StormTech recommend using the Isolator Row Plus to minimize maintenance requirements and maintenance costs.

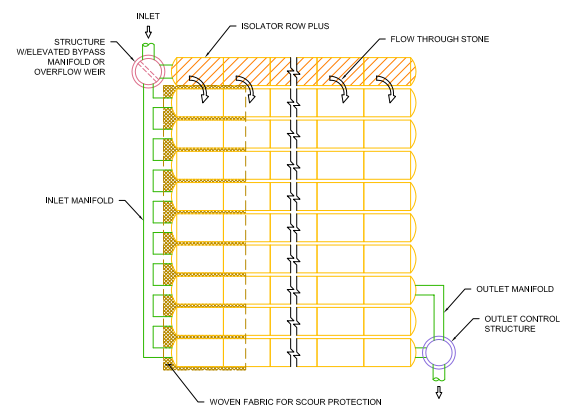
Note: See the StormTech Design Manual for detailed information on designing inlets for a StormTech system, including the Isolator Row Plus.



Looking down the Isolator Row Plus from the manhole opening, ADS Plus Fabric is shown between the chamber and stone base.



StormTech Isolator Row Plus with Overflow Structure (not to scale)



Isolator Row Plus Inspection/Maintenance

Inspection

The frequency of inspection and maintenance varies by location. A routine inspection schedule needs to be established for each individual location based upon site specific variables. The type of land use (i.e. industrial, commercial, residential), anticipated pollutant load, percent imperviousness, climate, etc. all play a critical role in determining the actual frequency of inspection and maintenance practices.

At a minimum, StormTech recommends annual inspections. Initially, the Isolator Row Plus should be inspected every 6 months for the first year of operation. For subsequent years, the inspection should be adjusted based upon previous observation of sediment deposition.

The Isolator Row Plus incorporates a combination of standard manhole(s) and strategically located inspection ports (as needed). The inspection ports allow for easy access to the system from the surface, eliminating the need to perform a confined space entry for inspection purposes.

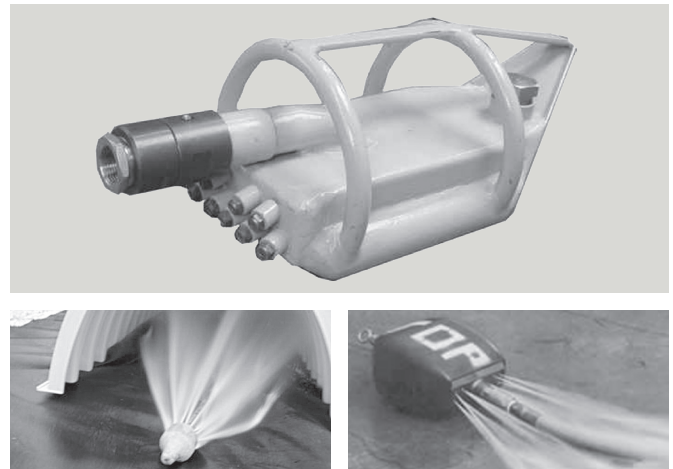
If upon visual inspection it is found that sediment has accumulated, a stadia rod should be inserted to determine the depth of sediment. When the average depth of sediment exceeds 3" (75 mm) throughout the length of the Isolator Row Plus, clean-out should be performed.

Maintenance

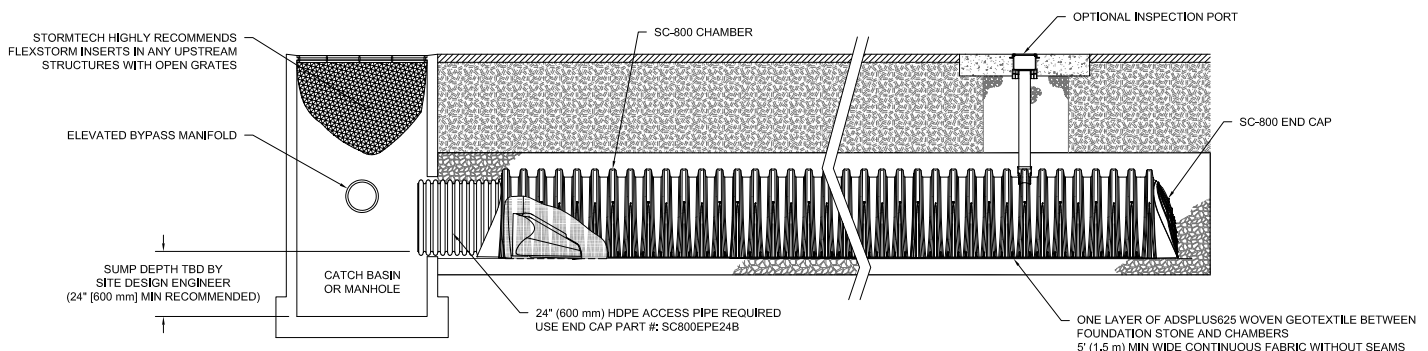
The Isolator Row Plus was designed to reduce the cost of periodic maintenance. By "isolating" sediments to just one row, costs are dramatically reduced by eliminating the need to clean out each row of the entire storage bed. If inspection indicates the potential need for maintenance, access is provided

via a manhole(s) located on the end(s) of the row for cleanout. If entry into the manhole is required, please follow local and OSHA rules for a confined space entry.

Maintenance is accomplished with the JetVac process. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row Plus while scouring and suspending sediments. As the nozzle is retrieved, the captured pollutants are flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/JetVac combination vehicles. Selection of an appropriate JetVac nozzle will improve maintenance efficiency. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" are best. StormTech recommends a maximum nozzle pressure of 2000 psi be utilized during cleaning. JetVac reels can vary in length. For ease of maintenance, ADS recommends Isolator Row Plus lengths up to 200' (61 m). **The JetVac process shall only be performed on StormTech Isolator Row Plus that have ADS Plus Fabric (as specified by StormTech) over their angular base stone.**



StormTech Isolator Row Plus (not to scale)



Isolator Row Plus Step By Step Maintenance Procedures

Step 1

Inspect Isolator Row Plus for sediment.

- A) Inspection ports (if present)
 - i. Remove lid from floor box frame
 - ii. Remove cap from inspection riser
 - iii. Using a flashlight and stadia rod, measure depth of sediment and record results on maintenance log.
 - iv. If sediment is at or above 3 inch depth, proceed to Step 2. If not, proceed to Step 3.
- B) All Isolator Row Plus
 - i. Remove cover from manhole at upstream end of Isolator Row Plus
 - ii. Using a flashlight, inspect down Isolator Row Plus through outlet pipe
 - 1. Mirrors on poles or cameras may be used to avoid a confined space entry
 - 2. Follow OSHA regulations for confined space entry if entering manhole
 - iii. If sediment is at or above the lower row of sidewall holes (approximately 3 inches), proceed to Step 2. If not, proceed to Step 3.

Step 2

Clean out Isolator Row Plus using the JetVac process.

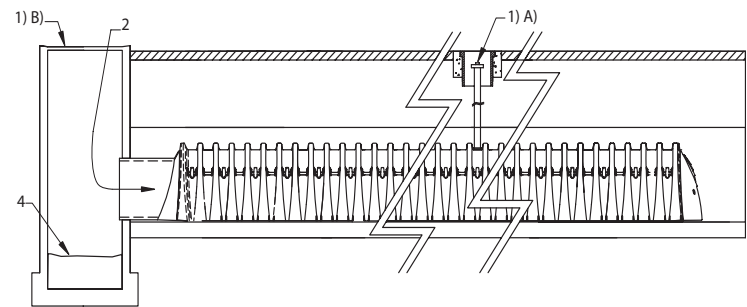
- A) A fixed floor cleaning nozzle with rear facing nozzle spread of 45 inches or more is preferable
- B) Apply multiple passes of JetVac until backflush water is clean
- C) Vacuum manhole sump as required

Step 3

Replace all caps, lids and covers, record observations and actions.

Step 4

Inspect & clean catch basins and manholes upstream of the StormTech system.



Sample Maintenance Log

Date	Stadia Rod Readings		Sedi- ment Depth (1)-(2)	Observations/Actions	Inspector
	Fixed point to chamber bottom (1)	Fixed point to top of sediment (2)			
3/15/11	6.3 ft	none		New installation. Fixed point is CI frame at grade	DJM
9/24/11		6.2	0.1 ft	Some grit felt	SM
6/20/13		5.8	0.5 ft	Mucky feel, debris visible in manhole and in Isolator Row Plus, maintenance due	NV
7/7/13	6.3 ft		0	System jetted and vacuumed	DJM

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StormTech® Installation Guide

SC-160LP



StormTech
Installation Video

Required Materials and Equipment List

- Acceptable fill materials per Table 1
- ADS Plus and non-woven geotextile fabrics
- StormTech solid end caps and pre-cored end caps
- StormTech chambers
- StormTech manifolds and fittings

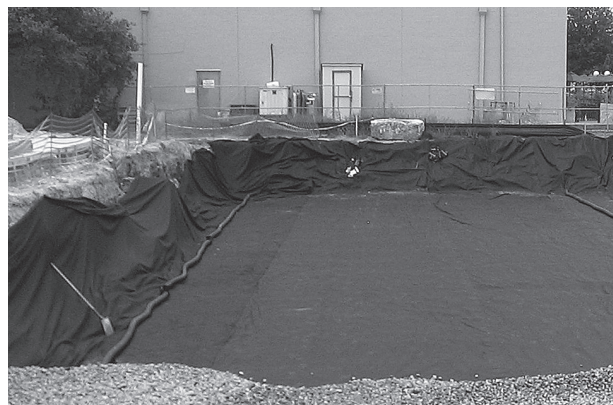
Important Notes:

- A. This installation guide provides the minimum requirements for proper installation of chambers. Non-adherence to this guide may result in damage to chambers during installation. Replacement of damaged chambers during or after backfilling is costly and very time consuming. It is recommended that all installers are familiar with this guide, and that the contractor inspects the chambers for distortion, damage and joint integrity as work progresses.
- B. Care should be taken in the handling of chambers and end caps. Avoid dropping, prying or excessive force on chambers during removal from pallet and initial placement.

Requirements for System Installation



Excavate bed and prepare subgrade per engineer's plans.

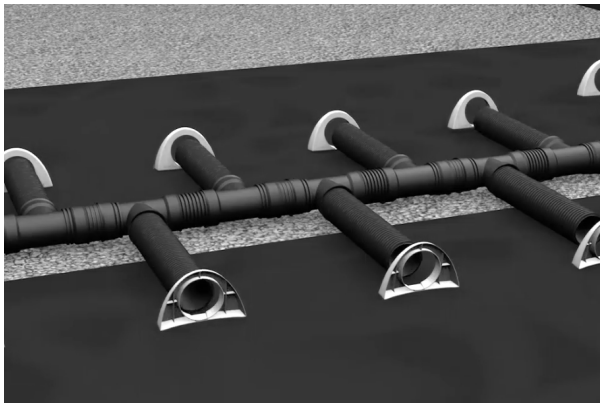


Place non-woven geotextile over prepared soils and up excavation walls. Install underdrains if required.

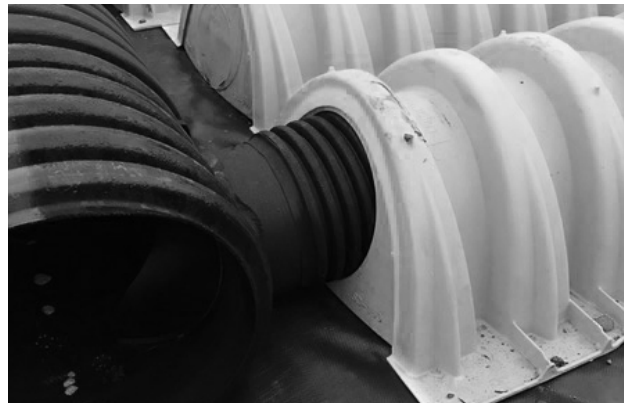


Place clean, crushed, angular stone foundation 6" (150 mm) or 4" (100 mm) with a single layer of Geogrid BX124GG. See plans for foundation stone design. Compact to achieve a flat surface.

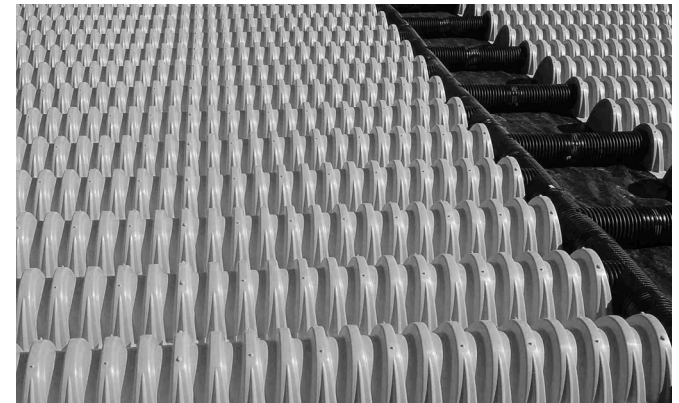
Manifold, Scour Fabric and Chamber Assembly



Install manifolds and lay out ADS Plus fabric at inlet rows [min. 12.5 ft (3.8 m)] at each inlet end cap. Place a continuous piece (no seams, single layer) along entire length of Isolator® Plus Row(s).



Align the first chamber and end cap of each row with inlet pipes. Contractor may choose to postpone stone placement around end chambers and leave ends of rows open for easy inspection of chambers during the backfill process.



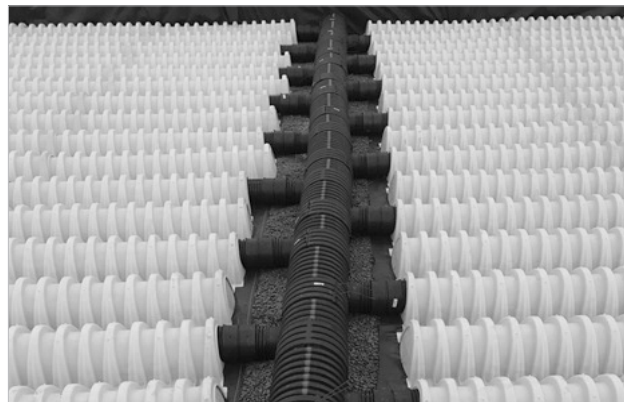
Continue installing chambers by overlapping chamber end corrugations. Chamber joints are labeled “Lower Joint – Overlap Here” and “Build this direction – Upper Joint” Be sure that the chamber placement does not exceed the reach of the construction equipment used to place the stone. No spacing is required between chambers.

Attaching the End Caps



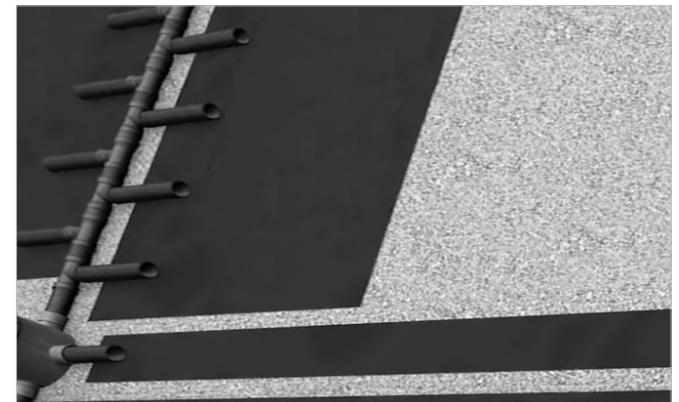
Lift the end of the chamber a few inches off the ground. With the curved face of the end cap facing outward, place the end cap into the chamber's end corrugation.

Prefabricated End Caps



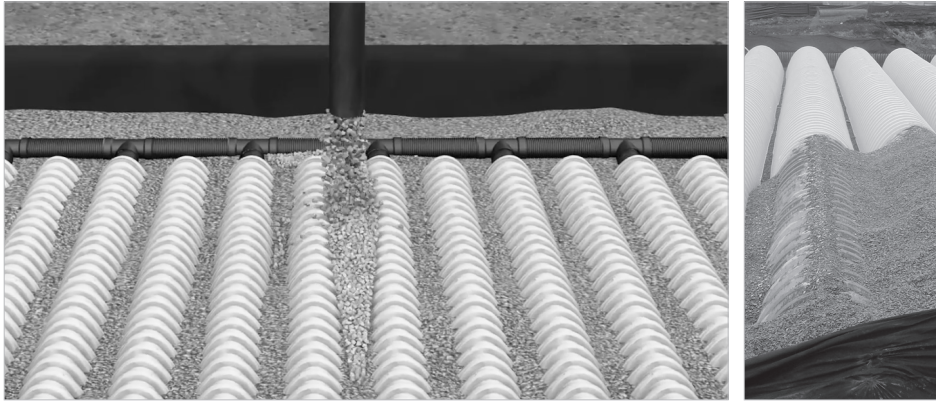
SC-160LP end caps can accept 8" (200mm) or 6" (150mm) manifold inlets. End caps can be ordered as an 8" (200mm) open hole or can be cored in the field.

Isolator Row Plus

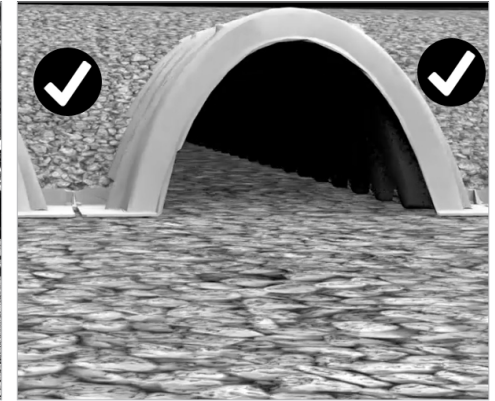


Place one continuous layers of ADS Plus fabric between the foundation stone and the Isolator Row Plus chambers, making sure the fabric lays flat and extends the entire width of the chamber feet.

Initial Anchoring of Chambers – Embedment Stone

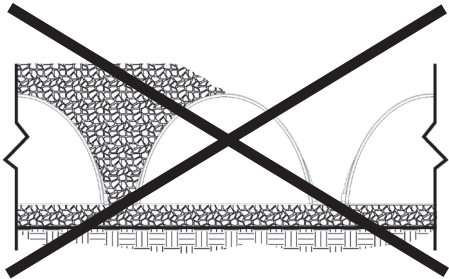


Initial embedment shall be spotted along the centerline of the chamber evenly anchoring the lower portion of the chamber. This is best accomplished with a stone conveyor or excavator reaching along the row.

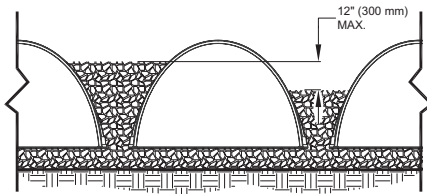


Care should be taken when backfilling not to damage the chambers. Please refer to the allowable construction vehicle loads on page 6.

Backfill of Chambers – Embedment Stone

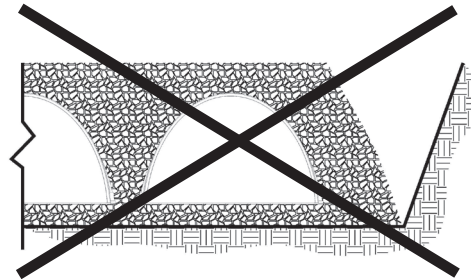


Uneven Backfill

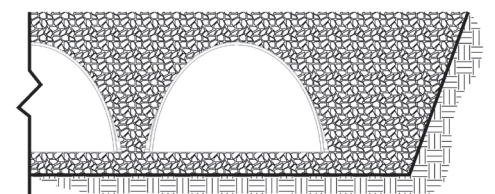


Even Backfill

Backfill chambers evenly. Stone column height should never differ by more than 12" (300 mm) between adjacent chamber rows or between chamber rows and perimeter.



Perimeter Not Backfilled



Perimeter Fully Backfilled

Perimeter stone must be brought up evenly with chamber rows. Perimeter must be fully backfilled, with stone extended horizontally to the excavation wall.

Backfill - Embedment Stone & Cover Stone



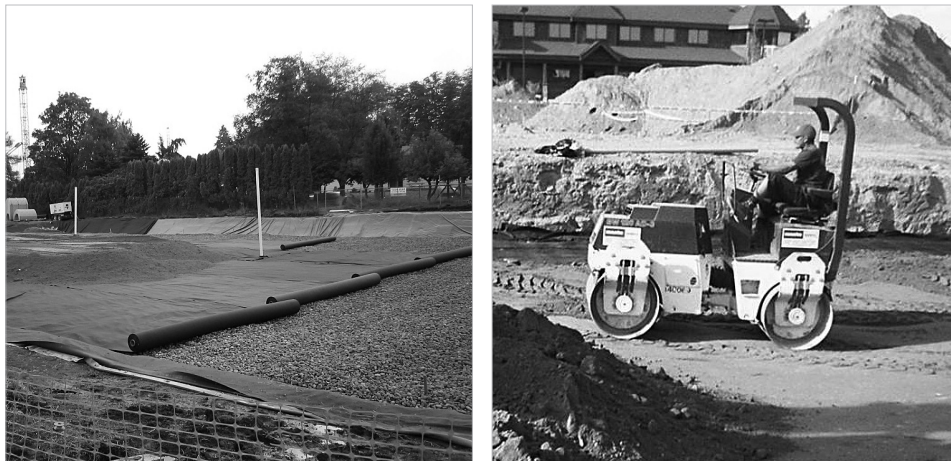
Continue evenly backfilling between rows and around perimeter until embedment stone reaches tops of chambers. Perimeter stone must extend horizontally to the excavation wall for both straight or sloped sidewalls.

Final Backfill of Chambers – Fill Material



Small dozers and skid loaders may be used to finish grading stone backfill in accordance with ground pressure limits in Table 2. They must push material parallel to rows only. Never push perpendicular to rows. StormTech recommends that the contractor inspect chambers before placing final backfill. Any chambers damaged by construction shall be removed and replaced.

Final Backfill of Chambers – Fill Material



Install non-woven geotextile over stone. Geotextile must overlap 24" (600 mm) min. where edges meet. Compact each lift of backfill as specified in the site design engineer's drawings. Roller to travel parallel with rows.

StormTech Isolator Row Plus Detail

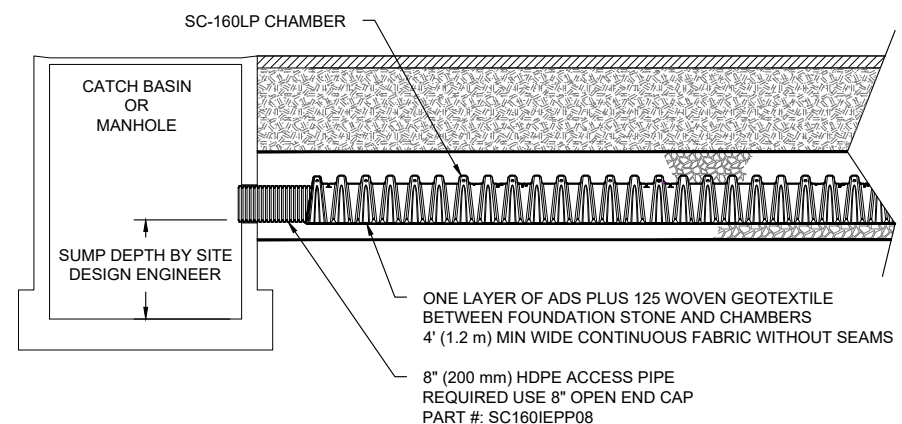


Table 1- Acceptable Fill Materials

Material Location	Description	AASHTO M43 Designation ¹	Compaction/Density Requirement
D Final Fill: Fill Material for layer 'D' starts from the top of the 'C' layer to the bottom of flexible pavement or unpaved finished grade above. Note that the pavement subbase may be part of the 'D' layer.	Any soil/rock materials, native soils or per engineer's plans. Check plans for pavement subgrade requirements.	N/A	Prepare per site design engineer's plans. Paved installations may have stringent material and preparation requirements.
C Initial Fill: Fill Material for layer 'C' starts from the top of the embedment stone ('B' layer) to 18" (450 mm) above the top of the chamber. Note that pavement subbase may be part of the 'C' layer.	Granular well-graded soil/aggregate mixtures, <35% fines or processed aggregate. Most pavement subbase materials can be used in lieu of this layer.	AASHTO M45 A-1, A-2-4, A-3 or AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	Begin compaction after min. 12" (300 mm) of material over the chambers is reached. Compact additional layers in 6" (150 mm) max. lifts to a min. 95% Proctor density for well-graded material and 95% relative density for processed aggregate materials. Roller gross vehicle weight not to exceed 12,000 lbs (53 kN). Dynamic force not to exceed 20,000 lbs (89 kN)
B Embedment Stone: Embedment Stone surrounding chambers from the foundation stone to the 'C' layer above.	Clean, crushed, angular stone or recycled concrete ⁴	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	No compaction required.
A Foundation Stone: Foundation Stone below the chambers from the subgrade up to the foot (bottom) of the chamber.	Clean, crushed, angular stone or recycled concrete ⁴	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	Place and compact in 6" (150 mm) lifts using two full coverages with a vibratory compactor. ^{2,3}

Please Note:

1. The listed AASHTO designations are for gradations only. The stone must also be clean, crushed, angular. For example, a specification for #4 stone would state: "clean, crushed, angular no. 4 (AASHTO M43) stone".
2. StormTech compaction requirements are met for 'A' location materials when placed and compacted in 6" (150 mm) (max) lifts using two full coverages with a vibratory compactor.
3. Where infiltration surfaces may be comprised by compaction, for standard installations and standard design load conditions, a flat surface may be achieved by raking or dragging without compaction equipment. For special load designs, contact StormTech for compaction requirements.
4. Where recycled concrete aggregate is used in layers 'A' or 'B' the material should also meet the acceptable criteria outlined in ADS Technical Note 6.20 "Recycled Concrete Structural Backfill".

Figure 2 - Fill Material Locations

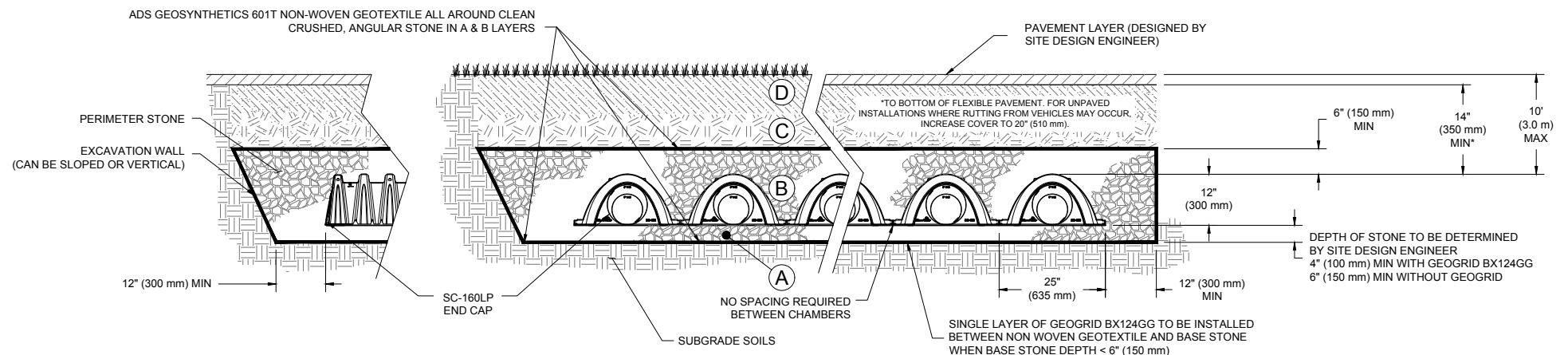
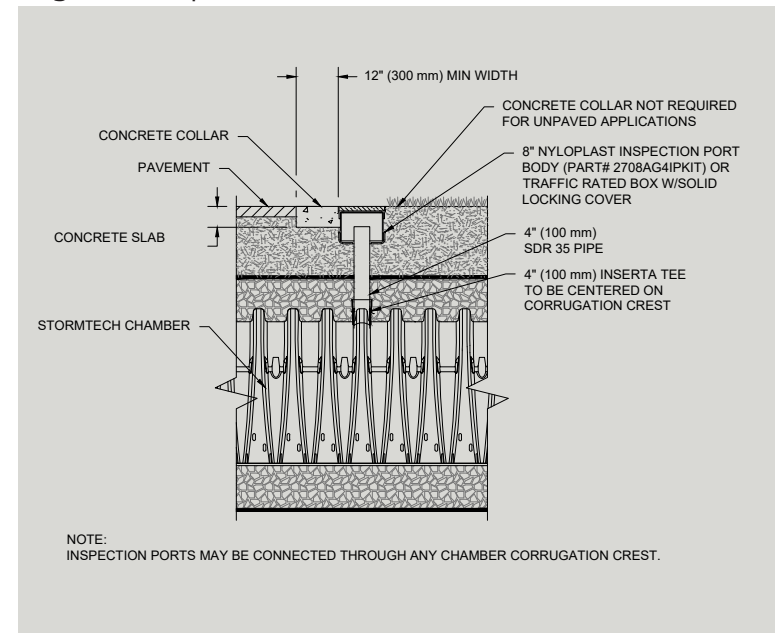


Figure 1- Inspection Port Detail



Notes:

1. 36" (900 mm) of stabilized cover materials over the chambers is recommended during the construction phase if general construction activities, such as full dump truck travel and dumping, are to occur over the bed.
2. During paving operations, dump truck axle loads on 14" (350 mm) of cover may be necessary. Precautions should be taken to avoid rutting of the road base layer, to ensure that compaction requirements have been met, and that a minimum of 14" (350 mm) of cover exists over the chambers. Contact StormTech for additional guidance on allowable axle loads during paving.
3. Ground pressure for track dozers is the vehicle operating weight divided by total ground contact area for both tracks. Excavators will exert higher ground pressures based on loaded bucket weight and boom extension.
4. Mini-excavators (< 8,000lbs/3,628 kg) can be used with at least 12" (300 mm) of stone over the chambers and are limited by the maximum ground pressures in Table 2 based on a full bucket at maximum boom extension.
5. Storage of materials such as construction materials, equipment, spoils, etc. should not be located over the StormTech system. The use of equipment over the StormTech system not covered in Table 2 (ex. soil mixing equipment, cranes, etc) is limited. Please contact StormTech for more information.
6. Allowable track loads based on vehicle travel only. Excavators shall not operate on chamber beds until the total backfill reaches 3 feet (900 mm) over the entire bed.

Table 2 - Maximum Allowable Construction Vehicle Loads⁶

Material Location	Fill Depth over Chambers in. (mm)	Maximum Allowable Wheel Loads		Maximum Allowable Track Loads ⁶		Maximum Allowable Roller Loads
		Max Axle Load for Trucks lbs (kN)	Max Wheel Load for Loaders lbs (kN)	Track Width in. (mm)	Max Ground Pressure psf (kPa)	Max Drum Weight or Dynamic Force lbs (kN)
Ⓐ Final Fill Material	36" (900) Compacted	32,000 (142)	16,000 (71)	12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	3880 (186) 2640 (126) 2040 (97) 1690 (81) 1470 (70)	38,000 (169)
Ⓒ Initial Fill Material	24" (600) Compacted	32,000 (142)	16,000 (71)	12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	2690 (128) 1880 (90) 1490 (71) 1280 (61) 1150 (55)	20,000 (89)
				12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	2390 (114) 1700 (81) 1370 (65) 1190 (57) 1080 (51)	20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN)
				12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	2110 (101) 1510 (72) 1250 (59) 1100 (52) 1020 (48)	20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN)
				12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	1540 (74) 1190 (57) 1010 (48) 910 (43) 840 (40)	20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN)
				12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	1070 (51) 900 (43) 800 (38) 760 (36) 720 (34)	NOT ALLOWED
	18" (450)	32,000 (142)	16,000 (71)	12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	2110 (101) 1510 (72) 1250 (59) 1100 (52) 1020 (48)	20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN)
Ⓑ Embedment Stone	12" (300)	16,000 (71)	NOT ALLOWED	12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	1540 (74) 1190 (57) 1010 (48) 910 (43) 840 (40)	20,000 (89) Roller gross vehicle weight not to exceed 12,000 lbs. (53 kN)
	6" (150)	8,000 (35)	NOT ALLOWED	12" (305) 18" (457) 24" (610) 30" (762) 36" (914)	1070 (51) 900 (43) 800 (38) 760 (36) 720 (34)	NOT ALLOWED

Table 3 - Placement Methods and Descriptions

Material Location	Placement Methods/ Restrictions	Wheel Load Restrictions	Track Load Restrictions	Roller Load Restrictions
		See Table 2 for Maximum Construction Loads		
Ⓐ Final Fill Material	A variety of placement methods may be used. All construction loads must not exceed the maximum limits in Table 2.	36" (900 mm) minimum cover required for dump trucks to dump over chambers.	Dozers to push parallel to rows until 36" (900mm) compacted cover is reached. ⁴	Roller travel parallel to rows only until 36" (900 mm) compacted cover is reached.
Ⓒ Initial Fill Material	Excavator positioned off bed recommended. Small excavator allowed over chambers. Small dozer allowed.	Asphalt can be dumped into paver when compacted pavement subbase reaches 18" (450 mm) above top of chambers.	Small LGP track dozers & skid loaders allowed to grade cover stone with at least 6" (150 mm) stone under tracks at all times. Equipment must push parallel to rows at all times.	Use dynamic force of roller only after compacted fill depth reaches 12" (300 mm) over chambers. Roller travel parallel to chamber rows only.
Ⓑ Embedment Stone	No equipment allowed on bare chambers. Use excavator or stone conveyor positioned off bed or on foundation stone to evenly fill around all chambers to at least the top of chambers.	No wheel loads allowed. Material must be placed outside the limits of the chamber bed.	No tracked equipment is allowed on chambers until a min. 6" (150 mm) cover stone is in place.	No rollers allowed.
Ⓐ Foundation Stone	No StormTech restrictions. Contractor responsible for any conditions or requirements by others relative to subgrade bearing capacity, dewatering or protection of subgrade.			

StormTech® Standard Limited Warranty

STANDARD LIMITED WARRANTY OF STORMTECH LLC ("STORMTECH"): PRODUCTS

- (A) This Limited Warranty applies solely to the StormTech chambers and end plates manufactured by StormTech and sold to the original purchaser (the "Purchaser"). The chambers and end plates are collectively referred to as the "Products."
- (B) The structural integrity of the Products, when installed strictly in accordance with StormTech's written installation instructions at the time of installation, are warranted to the Purchaser against defective materials and workmanship for one (1) year from the date of purchase. Should a defect appear in the Limited Warranty period, the Purchaser shall provide StormTech with written notice of the alleged defect at StormTech's corporate headquarters within ten (10) days of the discovery of the defect. The notice shall describe the alleged defect in reasonable detail. StormTech agrees to supply replacements for those Products determined by StormTech to be defective and covered by this Limited Warranty. The supply of replacement products is the sole remedy of the Purchaser for breaches of this Limited Warranty. StormTech's liability specifically excludes the cost of removal and/or installation of the Products.
- (C) THIS LIMITED WARRANTY IS EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE PRODUCTS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.
- (D) This Limited Warranty only applies to the Products when the Products are installed in a single layer. UNDER NO CIRCUMSTANCES, SHALL THE PRODUCTS BE INSTALLED IN A MULTI-LAYER CONFIGURATION.
- (E) No representative of StormTech has the authority to change this Limited Warranty in any manner or to extend this Limited Warranty. This Limited Warranty does not apply to any person other than to the Purchaser.
- (F) Under no circumstances shall StormTech be liable to the Purchaser or to any third party for product liability claims; claims arising from the design, shipment, or installation of the Products, or the cost of other goods or services related to the purchase and installation of the Products. For this Limited Warranty to apply, the Products must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and StormTech's written installation instructions.
- (G) THE LIMITED WARRANTY DOES NOT EXTEND TO INCIDENTAL, CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES. STORMTECH SHALL NOT BE LIABLE FOR PENALTIES OR LIQUIDATED DAMAGES, INCLUDING LOSS OF PRODUCTION AND PROFITS; LABOR AND MATERIALS; OVERHEAD COSTS; OR OTHER LOSS OR EXPENSE INCURRED BY THE PURCHASER OR ANY THIRD PARTY. SPECIFICALLY EXCLUDED FROM LIMITED WARRANTY COVERAGE ARE DAMAGE TO THE PRODUCTS ARISING FROM ORDINARY WEAR AND TEAR; ALTERATION, ACCIDENT, MISUSE, ABUSE OR NEGLECT; THE PRODUCTS BEING SUBJECTED TO VEHICLE TRAFFIC OR OTHER CONDITIONS WHICH ARE NOT PERMITTED BY STORMTECH'S WRITTEN SPECIFICATIONS OR INSTALLATION INSTRUCTIONS; FAILURE TO MAINTAIN THE MINIMUM GROUND COVERS SET FORTH IN THE INSTALLATION INSTRUCTIONS; THE PLACEMENT OF IMPROPER MATERIALS INTO THE PRODUCTS; FAILURE OF THE PRODUCTS DUE TO IMPROPER SITING OR IMPROPER SIZING; OR ANY OTHER EVENT NOT CAUSED BY STORMTECH. A PRODUCT ALSO IS EXCLUDED FROM LIMITED WARRANTY COVERAGE IF SUCH PRODUCT IS USED IN A PROJECT OR SYSTEM IN WHICH ANY GEOTEXTILE PRODUCTS OTHER THAN THOSE PROVIDED BY ADVANCED DRAINAGE SYSTEMS ARE USED. THIS LIMITED WARRANTY REPRESENTS STORMTECH'S SOLE LIABILITY TO THE PURCHASER FOR CLAIMS RELATED TO THE PRODUCTS, WHETHER THE CLAIM IS BASED UPON CONTRACT, TORT, OR OTHER LEGAL THEORY.





Drainage



Filtration



Separation

ADS 0601T/O NONWOVEN GEOTEXTILE SPECIFICATION

Scope

This specification describes ADS 0601T/O nonwoven geotextile.

Filter Fabric Requirements

ADS 0601T/O is an orange nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. ADS 0601T/O is inert to biological degradation and resists naturally encountered chemicals, alkali and acids. ADS 0601T/O conforms to the physical property values listed below:

Filter Fabric Properties

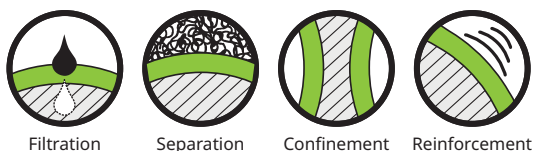
Property	Test Method	Unit	Typical Value ¹ MD	Typical Value ¹ CD
Grab Tensile Strength	ASTM D4632	lbs (N)	175 (779)	175 (779)
Grab Tensile Elongation	ASTM D4632	%	75	75
Trapezoid Tear Strength	ASTM D4533	lbs (N)	85 (378)	85 (378)
CBR Puncture Strength	ASTM D6241	lbs (N)	480 (2136)	480 (2136)
Permittivity	ASTM D4491	sec ⁻¹	1.5	1.5
Flow Rate	ASTM D4491	gal/min/ft ² (l/min/m ²)	105 (4278)	105 (4278)
UV Resistance (at 500 hours) ¹	ASTM D4355	% strength retained	80	80

Physical Properties

Property	Test Method	Unit	Typical Value ²
Weight	ASTM D5161	oz/yd ² (g/m ²)	6.5 (220)
Thickness	ASTM D5199	mils (mm)	65 (1.7)
Roll Dimensions (W x L)	-	ft (m)	15 x 300 (4.5 x 91)
Roll Area	-	yd ² (m ²)	500 (418)
Estimated Roll Weight	-	lb (kg)	220 (100)

¹ Modified, Minimum Test Value

² ASTM D4439 Standard Terminology for Geosynthetics: typical value, *n-for geosynthetics*, the mean value calculated from documented manufacturing quality control test results for a defined population obtained from one test method associated with on specific property.



ADS PLUS-US WOVEN GEOTEXTILE SPECIFICATION

For use with StormTech® Isolator® Row Plus

Scope

This specification describes ADS Plus woven geotextile.

ADS Plus woven geotextile fabrics are woven polypropylene materials offering optimum performance when used in stabilization applications. Produced from first quality raw materials, they provide the perfect balance of strength and separation in styles capable of functioning exceptionally well in a wide range of performance requirements.

Filter Fabric Properties

Property ¹	Test Method	Unit	M.A.R.V. (Minimum Average Roll Value) ²
Weight	ASTM D5261	oz/yd ² (g/m ²)	8.0 (271.25)
Grab Tensile Strength	ASTM D4632	lbs (kN)	325 (1.45)
Grab Elongation	ASTM D4632	%	15
Trapezoidal Tear Strength	ASTM D4533	lbs (kN)	125 (0.89)
CBR Puncture Resistance	ASTM D6241	lbs (kN)	1,124 (5.0)

1. The property values listed above are subject to change without notice.

2. Minimum Average Roll Values (MARV) is calculated as the average minus two standard deviations. Statistically, it yields approximately 97.5% degree of confidence that any samples taken from quality assurance testing will meet or exceed the values described above.

Dimensions

ADS Plus shall be delivered to the jobsite in roll form with each roll individually identified and nominally measuring 12.5' (3.8 m) width x 360' (110 m) length for Plus125 and 6.25' (1.9 m) width x 360' (110 m) length for Plus625.

Build America, Buy America (BABA)

ADS Plus-US complies with the requirements in the Build America, Buy America (BABA) Act.

Thermoplastic Liners For StormTech® Detention Systems



StormTech Versatility

StormTech chambers offer the versatility to be designed as open bottom detention systems, retention systems or watertight detention systems. Although the vast majority of StormTech systems are unlined detention systems, by incorporating a continuous membrane liner, StormTech chambers can be effectively used for separation applications.

Maximize infiltration area with StormTech retention systems

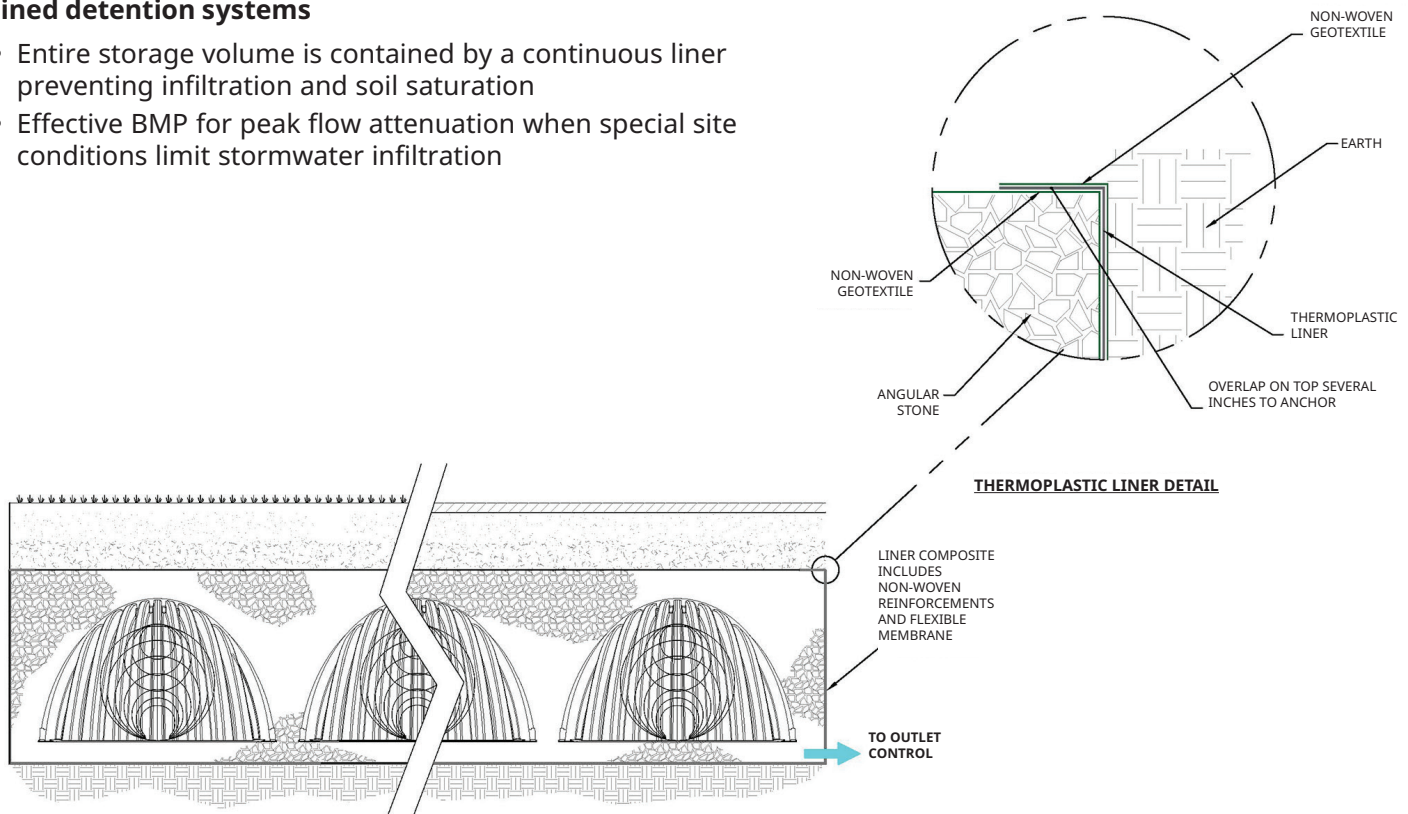
- Entire storage volume infiltrates - there is no outlet pipe
- Very effective BMP (Best Management Practice) for ground water recharge

Design safety factor added with StormTech open bottom detention systems

- Primary discharge is conveyed to an outlet control structure (OCS)
- The infiltration component may range from being a significant component to being a minimal component
- Enables retention/detention combination where a water quality volume can be infiltrated and peak flows can be attenuated by the use of detention

Controlled discharges with StormTech lined detention systems

- Entire storage volume is contained by a continuous liner preventing infiltration and soil saturation
- Effective BMP for peak flow attenuation when special site conditions limit stormwater infiltration



Benefits of StormTech detention systems

- Offers all the advantages of a closed system, while utilizing the full storage capacity of the excavation
- System integrity is based on a continuous thermoplastic membrane
- Can be used to reduce separation distance to groundwater
- Protects ground water quality from pollutant sources found in stormwater runoff
- The combined volume of the chambers and stone voids results in a cost-competitive detention system

Design of StormTech systems

The key components of a lined chamber system design are membrane integrity and control of maximum water surface elevation.

Membrane liner integrity

Membrane integrity is achieved by selecting an appropriate liner material and seaming techniques, by providing protection against puncture and limiting buoyant forces.

Several membrane materials are suitable for buried liners. The most cost-effective materials are polyvinyl chloride (PVC) and linear low density polyethylene (LLDPE). Both offer the chemical stability to resist contaminants normally found in storm water and offer the flexibility to resist puncturing when properly installed. The minimum recommended thickness for both materials is 30 mil. For applications where aggressive contaminants are expected, contact a membrane supplier for material selection advice.

Many membrane liners are pre-fabricated to eliminate or minimize the need for field seaming. However, for applications larger than 20,000 sq. ft. for PVC and 26,000 sq. ft. for LLDPE, field seaming may be required. PVC seams can be easily solvent cemented in the field. LLDPE, however, cannot be solvent welded and requires either thermal welding by a specialty crew or taping. Taped seams are completed in the field using 4-inch (100 mm) wide, single-sided moldable sealant equal to Titus Tapecoat Moldable Sealant.

Pipe “boots” are used to seal pipe penetrations through the liner. Boots can either be pre-fabricated or field fabricated. The boot is then solvent cemented, heat welded or taped to the liner. A pipe clamp is normally used to seal the boot around the pipe.

Puncture protection is provided by installing a non-woven fabric reinforcement on each side of the membrane. An 8-ounce (ADS 0801 or equal) nonwoven geotextile (see detail on page 1) should be used for both sides of a PVC membrane. The reinforcement thickness should be increased to 12-ounce (ADS 1201 or equal) for the stone/chamber side of LLDPE membranes. A sand cushion may be substituted for the solid side reinforcement where cost effective. Where there is a potential for buoyant forces the engineer would need to design an underdrain system to relieve buoyant pressure. ADS does not recommend installing a lined chamber system in which the feet of the chambers are below the high water table elevation.



The membrane's flexibility is apparent by visible wrinkling. Flexibility enables the liner to conform to irregularities in the excavation and resist puncture.

Control of Maximum Water Surface Elevation

The watertight membrane for StormTech chamber systems does not cover the top of the bed. An outlet control structure or upstream high flow bypass is designed such that the maximum water surface elevation in the bed is below the top of the liner. This is a typical design approach for detention basins and easily accomplished with a high water weir. The crest elevation of the weir should be set to pass the peak design flow at the maximum water surface elevation to reach the top of the liner. In designing a high-flow bypass system for lined detention systems, the design should consider adding freeboard allowance to the height of the liner.

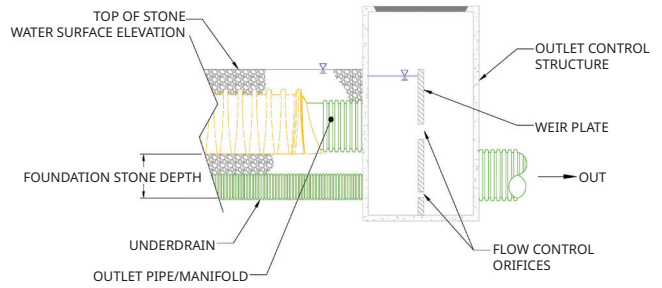
Installation of detention systems

Note: Contact the liner fabricator for more detailed installation recommendations.

1. Prepare the excavation by removing loose rocks and protrusions
2. Roll excavation with steel wheeled roller to knock down remaining minor protrusions
3. Prepare anchor trench around perimeter at top of side wall
4. Lay non-woven "soil side" reinforcement in excavation and into anchor trench
5. Lay prefabricated membrane liner over soil side reinforcement and into anchor trench
6. Lay non-woven "water side" reinforcement over membrane and into anchor trench
7. Place bedding stone over reinforcement to required depth based on geotech and storage criteria and compact
8. Determine location for pipe penetrations and seal pipe boots to liner and clamp pipe boots to pipe
9. Install chambers and aggregate backfill in accordance with StormTech installation instructions

(Note: In most cases, liners can be installed by the drainage contractor or a specialty liner installer. Contact StormTech for liner fabricators and installers.)

Please refer to the StormTech Design Manual for a complete explanation of the StormTech Limited Warranty.



Non-woven fabric is placed over PVC liner before placing angular bedding stone.



Angular stone backfill is placed around chambers.

adspipe.com

800-821-6710

APPENDIX F

**10 Norden Place
Norwalk, Connecticut**

Stormwater Maintenance and Inspection Plan

January 13, 2025

Party Responsible for Maintenance:

Director of Operations, currently:

This plan is recorded at:

The initial inspection will be made during an intense rainfall to check the adequacy of the yard drains, catch basins, roof leaders, piping, hydrodynamic separator, detention system, and system outlet.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, yard drains, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand and debris from catch basins as necessary and dispose of legally.

Hydrodynamic Separator: The Contech CDS units (hydrodynamic separator) will be skimmed and oil and scum removed. In a separate operation, silt, sand and sediment will be removed. Once the structure is cleaned of debris, the chamber will be refilled with clean water to prevent wash through of debris and oil during next storm event.

Underground Detention: The underground infiltration system will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control structure will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

Clean out the isolator row using the Jetvac process. Apply multiple passes of the Jetvac until backflush water is clean. Vacuum inlet and outlet structure as required.

Pavement: Paved areas shall be swept periodically by the Owner to clean trash and other debris. The Owner will sweep paved areas on its property in the spring to remove winter accumulations of road sand.

Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

Drainage Structures Inspection

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand and debris from catch basins as necessary and dispose of legally.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Underground Detention

The underground Detention system shall be inspected annually and will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control structure will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Pavement Inspection

Perform a visual inspection of paved areas four times per year with one inspection after the last snowfall, but no later than April 1. Sweep accumulated sediment and debris from the paved areas. Clean paved areas as necessary during the remainder of the year.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments



February 13, 2025
via electronic mail

City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851
Attn: Ms. Galen Wells
Chairman

**RE: Auto Collective Fairfield
Proposed Automotive Storage Facility
10 Norden Place
City of Norwalk
Fairfield County, CT 06855
TPD Project No. AUCO 00001**

Dear Ms. Wells:

Traffic Planning and Design, Inc. (TPD) has prepared this **Traffic Letter Report** in support of Auto Collective Fairfield's application to occupy a portion of an existing warehouse building located at an existing office park along northbound Norden Place, in Norwalk, Connecticut, as shown in the attached **Figure 1**.

The property is situated along northbound Norden Place, with two driveways providing site access. It is located just north of the Metro-North Railroad, which serves the Grand Central and New Haven lines.

**Existing
Condition**

The site features a 635,428-square-foot building designated as a Major Traffic Generator (MTG) by the Connecticut Department of Transportation (CTDOT) Office of the State Traffic Administration (OSTA). It was previously approved by the City of Norwalk for a mix of uses, including 64,545 square feet of school space, 329,755 square feet of manufacturing space, and 241,128 square feet of office space.

Norden Place, a local road under the jurisdiction of the City of Norwalk, has a posted speed limit of 30 mph. Along the site frontage, the road features one through lane in each direction and a southbound left-turn lane. Sidewalks line both sides of the road, and shoulders are present intermittently.

A portion of the lower level's manufacturing space was most recently approved for redevelopment into a 113,500-square-foot Transportation Maintenance Terminal for the Metropolitan Transportation Authority (MTA). The MTA and Courville Nursery were included in the #2024-14 SPR application. Tighe & Bond's February 2024 Traffic Impact Analysis concluded that the project will not significantly impact traffic in the

**Prior Traffic
Analysis**

area. Specifically, the report concluded: ***"The majority of the intersections and intersection approaches operate acceptably at LOS D or better and/or at Background LOS with limited increase in average delay per vehicle."***

The MTA project is scheduled for completion and occupancy in 2025.

TPD analyzed data from UCONN's Connecticut Crash Data Repository to investigate the reported crash history near the development site. The data indicated that there were no reported vehicular crashes along the site frontage on Norden Place during the five-year study period. This was consistent with Tighe & Bond's February 2024 Traffic Impact Analysis.

Collision History

Auto Collective Fairfield proposes to occupy entirely within the existing building, occupying approximately 137,000 gross square feet. The majority of the space – 84,600+/- square feet – would be dedicated to storage of vehicles in a rack system. In the proposed square footage, about 420 vehicles could be accommodated. The Applicants propose about 20,800+/- square feet of event space which the club could host events such as Formula One watch parties, movie and other screenings, and hold member and member-sponsored gatherings. Typically, these events would be on weekends. About 26,450+/- square feet would be dedicated to the car club itself for members' use along with 5,370+/- square feet set aside for a more intimate members' lounge which can be reserved by members for board meetings and small gatherings.

Proposed Condition

Specifically, 137,220 square feet of the building that was previously approved for manufacturing space would be renovated for the luxury automotive storage facility. There would be no modifications to the site access. The club spaces are exclusively for Auto Collective Fairfield members, and the event space is limited to member-sponsored gatherings. Event bookings to member-sponsored gatherings would be scheduled outside of peak commuter travel hours, to minimize any potential traffic impacts on the adjacent roadway network.

Traffic engineers commonly use the Institute of Transportation Engineers (ITE) data to estimate the number of trips a proposed development will generate. This resource is widely recognized because it compiles trip generation data from a variety of land uses, such as retail stores, offices, schools, and residential developments. These rates are derived from studies of similar land uses across North America and provide a solid foundation for traffic projections.

Trip Generation

However, there are scenarios where ITE trip generation may not fully capture the specific characteristics of a proposed development or site. In these cases, a site-specific traffic survey of a comparable, existing site is often conducted.

The ITE does not provide trip generation for this specific type of land use. Therefore, traffic projections for the proposed redevelopment have been developed based on data collected at North American Motor Car, which is located in Danbury, Connecticut. Since North American Motor Car operates in a similar manner to the proposed development, offering amenities such as a cigar room, event space, and a full-service bar, it serves as a relevant and comparable site for estimating trip generation.

Specifically, data was collected while Danbury and Norwalk public schools were in session during the following times and dates:

- Tuesday November 19, 2024 from 7:00 am to 7:00 pm
- Friday, November 15, 2024 from 4:00 pm to 7:00 pm
- Saturday, November 16, 2024 from 11:00 am to 7:00 pm

Table 1 summarizes the observed peak hour traffic volumes recorded at the study site, at each of the peak periods observed.

Table 1
Observed Trip Generation Comparison

Peak Hour	Existing 59,250 SF Auto Storage Facility		
	Enter	Exit	Total
Weekday Morning	18	2	20
Weekday Midday	6	12	18
Weekday Evening	1	16	17
Friday Evening	4	9	13
Saturday Midday	0	2	2
Saturday Evening	1	1	2

Based on the observed data, TPD calculated the trip rates per 1,000 square feet of gross floor area, consistent with ITE criteria, along with the entering and exiting percentages for these trips, as summarized in **Table 2** below.

Table 2
Observed Trip Generation Rates

Peak Hour	Trip Rate (per 1,000 SF)	Trip Distribution	
		Enter	Exit
Weekday Morning	0.34	90%	10%
Weekday Midday	0.30	33%	67%
Weekday Evening	0.29	6%	94%
Friday Evening	0.22	31%	69%
Saturday Midday	0.03	0%	100%
Saturday Evening	0.03	50%	50%

As shown in the table above, the maximum trip rate per 1,000 square feet occurs during the weekday morning peak hour, resulting in 20 trips to the study site.

By then applying this rate to the approximately 137,220 square foot proposed motor vehicle storage facility in the subject application, we can determine an estimate for trips that would be generated by the proposed development. The new trips are detailed in **Table 3** below.

Table 3
Proposed Trip Generation

Peak Hour	Proposed 137,220 SF Auto Storage Facility		
	Enter	Exit	Total
Weekday Morning	42	5	47
Weekday Midday	14	28	42
Weekday Evening	2	38	40
Friday Evening	10	21	31
Saturday Midday	0	5	5
Saturday Evening	3	3	5

As shown above, the proposed development would generate a maximum of 47 trips, based on the observed trip rate, which would occur during the weekday morning peak hour.

The study site has a smaller footprint and employs three-level car stackers for vehicle storage, whereas the proposed site will be larger and will use only two-level car stackers. Additionally, the study site includes vehicle sales, which the proposed site does not. For these reasons it is assumed that the projected trip generation represents a conservative estimate of typical peak hour traffic.

As the proposed portion of the building was previously approved for manufacturing space, traffic projections for the approved use have been prepared utilizing data published by the Institute of Transportation Engineers (ITE) in the 11th Edition of **Trip Generation**, 2021. Specifically, trip generation projections for the 137,220 square foot space were prepared utilizing ITE Land Use Code 140: **"Manufacturing."** **Table 4** below shows the projected trip generation for the warehouse space, assuming reoccupation under the approved use based on square footage, compared to the proposed automotive storage facility.

Table 4
Approved vs Proposed Trip Generation Comparison

Peak Hour	Approved 137,220 SF Manufacturing			Proposed 137,220 SF Auto Storage Facility			Difference		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Weekday Morning	71	22	93	42	5	47	- 29	- 17	- 46
Weekday Midday	48	67	115	14	28	42	- 34	- 39	- 73
Weekday Evening	31	71	102	2	38	40	- 29	- 33	- 62
Friday Evening	31	71	102	10	21	31	- 21	- 50	- 71
Saturday Midday	13	12	25	0	5	5	- 13	- 7	- 20
Saturday Evening	-	-	-	3	3	5	-	-	-

As shown in the table above, the proposed use is expected to be less intensive compared to the previously approved manufacturing use. Therefore, further analysis is not warranted, and additional analysis would not be required for this development.

Summary

In conclusion, the proposed auto storage facility is expected to generate less traffic volume than the previously approved use for this site. As such, the proposed project will not have a significant negative impact on-site circulation or on traffic flows on the adjacent public roadways.

Please do not hesitate to contact the undersigned with any questions or comments you may have.

Sincerely,

Traffic Planning and Design, INC
Conn. Professional Engineering Corp. No. 0002363

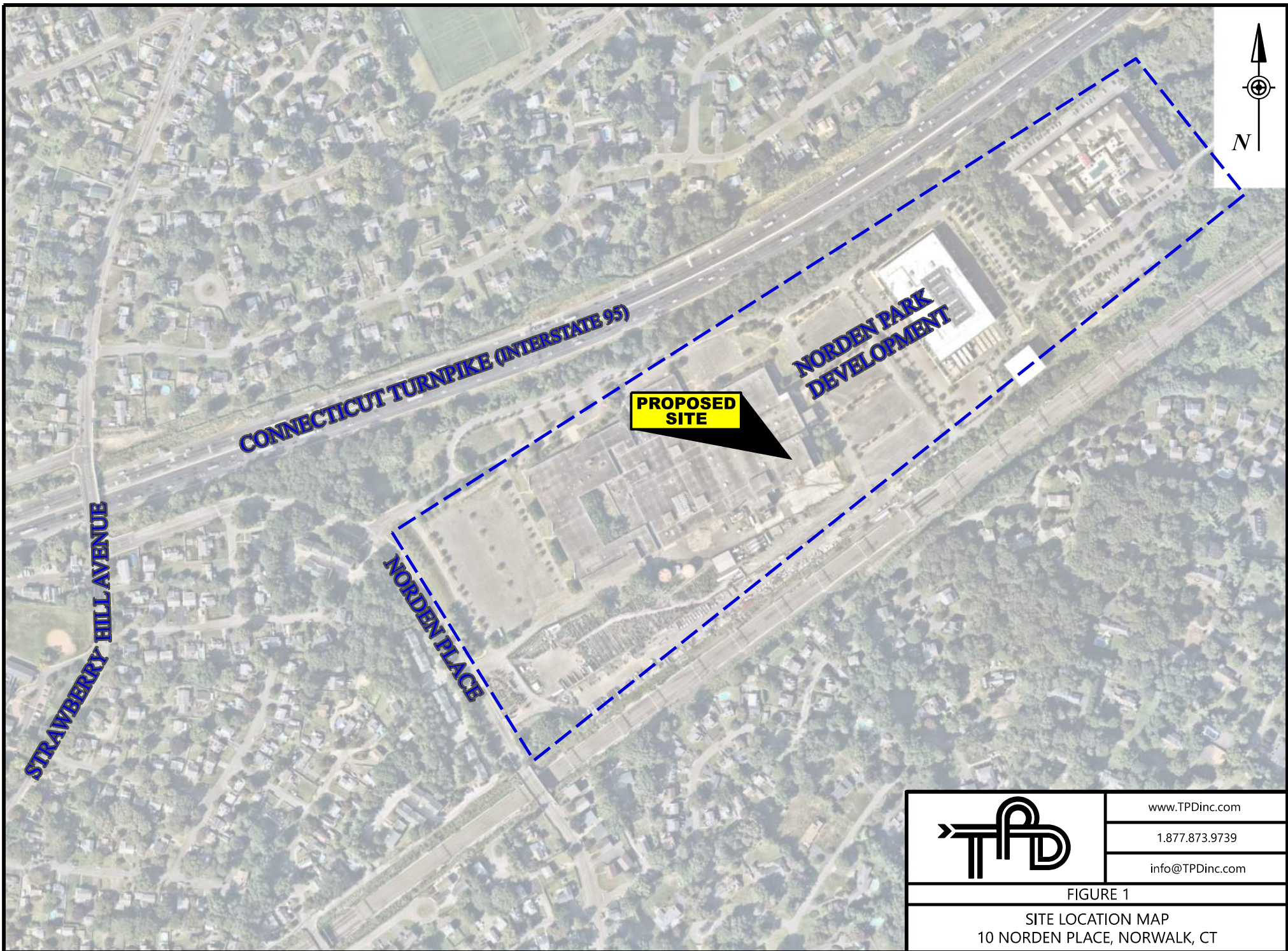


ETHAN B. SCHUKOSKE, P.E., PTOE
Professional Engineer
Conn. License No. 34486
eschukoske@TPDinc.com



NICOLE SILVESTRO, E.I.T.
Sr. Transportation Planning Specialist
nsilvestro@TPDinc.com

cc Liz Suchy, Carmody Torrance Sandak & Hennessey LLP





B | Turning Movement Counts at Study Site



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Eastern Driveway & Miry Brook Rd
Site Code:
Start Date: 11/15/2024
Page No: 1

Turning Movement Data

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	162	0	0	162	0	0	74	0	74	0	0	1	0	1	237
4:15 PM	0	163	0	0	163	0	2	63	0	65	0	1	1	0	2	230
4:30 PM	0	134	0	0	134	0	0	52	0	52	0	0	5	0	5	191
4:45 PM	0	128	0	0	128	0	0	74	0	74	0	0	0	0	0	202
Hourly Total	0	587	0	0	587	0	2	263	0	265	0	1	7	0	8	860
5:00 PM	0	135	0	0	135	0	0	68	0	68	0	2	7	0	9	212
5:15 PM	0	99	0	0	99	0	0	67	0	67	0	1	0	0	1	167
5:30 PM	0	115	0	0	115	0	0	57	0	57	0	0	1	0	1	173
5:45 PM	0	91	0	0	91	0	0	58	0	58	0	0	0	0	0	149
Hourly Total	0	440	0	0	440	0	0	250	0	250	0	3	8	0	11	701
6:00 PM	0	51	0	0	51	0	0	50	0	50	0	0	0	0	0	101
6:15 PM	0	50	0	0	50	0	0	29	0	29	0	0	0	0	0	79
6:30 PM	0	31	0	0	31	0	0	25	0	25	0	0	0	0	0	56
6:45 PM	0	34	0	0	34	0	0	39	0	39	0	0	0	0	0	73
Hourly Total	0	166	0	0	166	0	0	143	0	143	0	0	0	0	0	309
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	35	0	0	35	0	0	42	0	42	0	0	0	0	0	77
11:15 AM	0	37	0	0	37	0	0	34	0	34	0	0	0	0	0	71
11:30 AM	0	33	0	0	33	0	0	29	0	29	0	0	0	0	0	62
11:45 AM	0	36	0	0	36	0	0	57	0	57	0	0	0	0	0	93
Hourly Total	0	141	0	0	141	0	0	162	0	162	0	0	0	0	0	303
12:00 PM	0	55	0	0	55	0	0	50	0	50	0	0	1	0	1	106
12:15 PM	0	47	0	0	47	0	0	49	0	49	0	0	0	0	0	96
12:30 PM	0	46	0	0	46	0	0	55	0	55	0	0	0	0	0	101
12:45 PM	0	40	0	0	40	0	0	37	0	37	0	0	0	0	0	77
Hourly Total	0	188	0	0	188	0	0	191	0	191	0	0	1	0	1	380
1:00 PM	0	42	0	0	42	0	1	44	0	45	0	0	0	0	0	87
1:15 PM	0	43	0	0	43	0	0	39	0	39	0	0	0	0	0	82
1:30 PM	0	40	0	0	40	0	0	50	0	50	0	0	0	0	0	90
1:45 PM	0	41	0	0	41	0	0	51	0	51	0	0	0	0	0	92
Hourly Total	0	166	0	0	166	0	1	184	0	185	0	0	0	0	0	351
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	52	0	0	52	0	0	41	0	41	0	0	0	0	0	93
4:15 PM	0	38	0	0	38	0	1	47	0	48	0	0	0	0	0	86
4:30 PM	0	42	0	0	42	0	0	44	0	44	0	0	0	0	0	86
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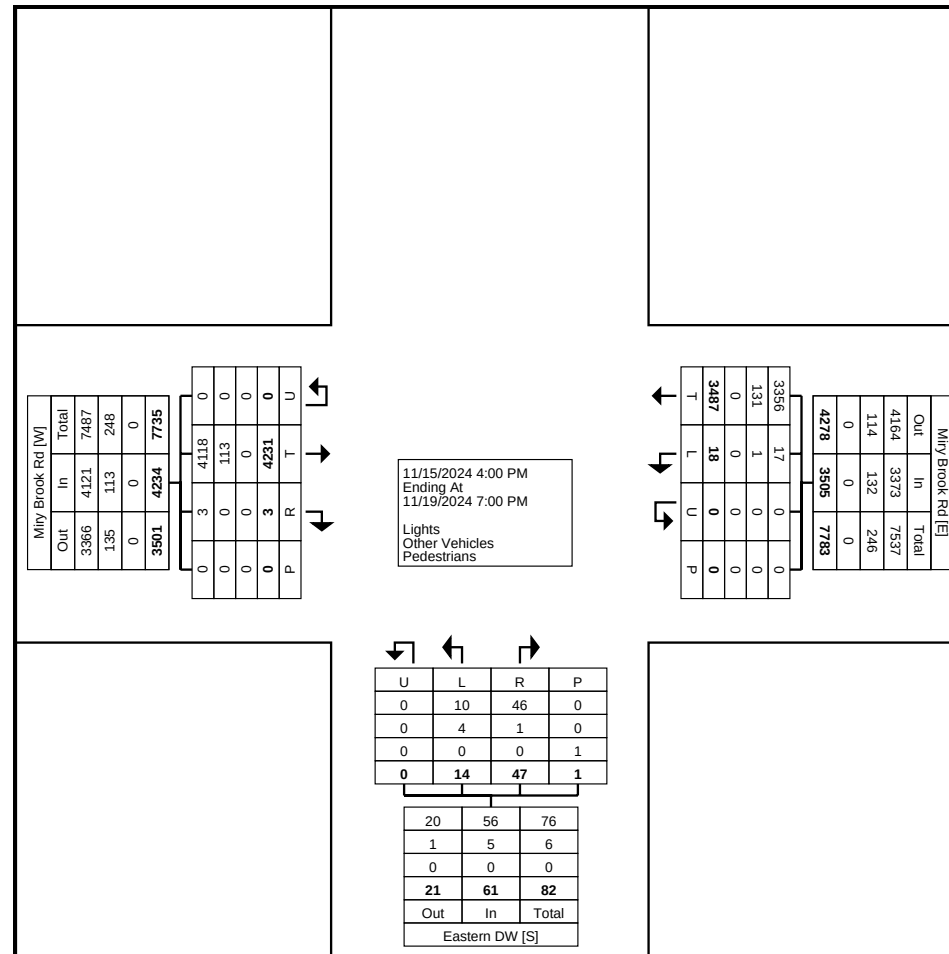
Hourly Total	0	171	0	0	171	0	1	180	0	181	0	0	1	0	1	353
5:00 PM	0	31	0	0	31	0	0	32	0	32	0	0	0	0	0	63
5:15 PM	0	40	0	0	40	0	0	33	0	33	0	0	0	0	0	73
5:30 PM	0	23	1	0	24	0	0	41	0	41	0	0	0	0	0	65
5:45 PM	0	33	0	0	33	0	0	35	0	35	0	0	0	0	0	68
Hourly Total	0	127	1	0	128	0	0	141	0	141	0	0	0	0	0	269
6:00 PM	0	38	0	0	38	0	0	24	0	24	0	0	0	0	0	62
6:15 PM	0	26	0	0	26	0	0	22	0	22	0	0	0	0	0	48
6:30 PM	0	26	0	0	26	0	0	30	0	30	0	1	0	0	1	57
6:45 PM	0	19	0	0	19	0	0	26	0	26	0	1	0	0	1	46
Hourly Total	0	109	0	0	109	0	0	102	0	102	0	2	0	0	2	213
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	0	50	0	0	50	0	0	53	0	53	0	0	0	0	0	103
7:15 AM	0	50	0	0	50	0	0	62	0	62	0	0	0	0	0	112
7:30 AM	0	51	0	0	51	0	0	77	0	77	0	0	0	0	0	128
7:45 AM	0	63	0	0	63	0	0	106	0	106	0	0	0	0	0	169
Hourly Total	0	214	0	0	214	0	0	298	0	298	0	0	0	0	0	512
8:00 AM	0	61	0	0	61	0	0	93	0	93	0	1	0	0	1	155
8:15 AM	0	42	1	0	43	0	2	84	0	86	0	0	0	0	0	129
8:30 AM	0	58	0	0	58	0	4	99	0	103	0	0	0	0	0	161
8:45 AM	0	68	0	0	68	0	2	102	0	104	0	0	1	0	1	173
Hourly Total	0	229	1	0	230	0	8	378	0	386	0	1	1	0	2	618
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	41	0	0	41	0	0	34	0	34	0	0	1	0	1	76
11:15 AM	0	37	0	0	37	0	2	42	0	44	0	0	2	0	2	83
11:30 AM	0	57	0	0	57	0	0	49	0	49	0	0	0	0	0	106
11:45 AM	0	50	0	0	50	0	1	37	0	38	0	0	0	0	0	88
Hourly Total	0	185	0	0	185	0	3	162	0	165	0	0	3	0	3	353
12:00 PM	0	39	0	0	39	0	1	43	0	44	0	0	1	0	1	84
12:15 PM	0	38	0	0	38	0	0	34	0	34	0	0	0	0	0	72
12:30 PM	0	46	0	0	46	0	0	45	0	45	0	1	4	1	5	96
12:45 PM	0	51	0	0	51	0	0	67	0	67	0	2	2	0	4	122
Hourly Total	0	174	0	0	174	0	1	189	0	190	0	3	7	1	10	374
1:00 PM	0	38	0	0	38	0	0	51	0	51	0	0	2	0	2	91
1:15 PM	0	53	0	0	53	0	0	54	0	54	0	0	0	0	0	107
1:30 PM	0	47	0	0	47	0	1	39	0	40	0	0	0	0	0	87
1:45 PM	0	41	0	0	41	0	1	60	0	61	0	0	1	0	1	103
Hourly Total	0	179	0	0	179	0	2	204	0	206	0	0	3	0	3	388
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	120	0	0	120	0	0	67	0	67	0	2	1	0	3	190
4:15 PM	0	98	0	0	98	0	0	65	0	65	0	0	1	0	1	164
4:30 PM	0	110	0	0	110	0	0	50	0	50	0	0	1	0	1	161
4:45 PM	0	94	0	0	94	0	0	66	0	66	0	0	0	0	0	160
Hourly Total	0	422	0	0	422	0	0	248	0	248	0	2	3	0	5	675
5:00 PM	0	139	1	0	140	0	0	64	0	64	0	2	11	0	13	217
5:15 PM	0	118	0	0	118	0	0	69	0	69	0	0	1	0	1	188
5:30 PM	0	139	0	0	139	0	0	49	0	49	0	0	1	0	1	189
5:45 PM	0	128	0	0	128	0	0	33	0	33	0	0	0	0	0	161
Hourly Total	0	524	1	0	525	0	0	215	0	215	0	2	13	0	15	755
6:00 PM	0	68	0	0	68	0	0	59	0	59	0	0	0	0	0	127
6:15 PM	0	75	0	0	75	0	0	36	0	36	0	0	0	0	0	111
6:30 PM	0	39	0	0	39	0	0	46	0	46	0	0	0	0	0	85

6:45 PM	0	27	0	0	27	0	0	36	0	36	0	0	0	0	0	63
Hourly Total	0	209	0	0	209	0	0	177	0	177	0	0	0	0	0	386
Grand Total	0	4231	3	0	4234	0	18	3487	0	3505	0	14	47	1	61	7800
Approach %	0.0	99.9	0.1	-	-	0.0	0.5	99.5	-	-	0.0	23.0	77.0	-	-	-
Total %	0.0	54.2	0.0	-	54.3	0.0	0.2	44.7	-	44.9	0.0	0.2	0.6	-	0.8	-
Lights	0	4118	3	-	4121	0	17	3356	-	3373	0	10	46	-	56	7550
% Lights	-	97.3	100.0	-	97.3	-	94.4	96.2	-	96.2	-	71.4	97.9	-	91.8	96.8
Other Vehicles	0	113	0	-	113	0	1	131	-	132	0	4	1	-	5	250
% Other Vehicles	-	2.7	0.0	-	2.7	-	5.6	3.8	-	3.8	-	28.6	2.1	-	8.2	3.2
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Suite 650
Pottstown, Pennsylvania, United States 19464
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Turning Movement Data Plot



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Count Name: Eastern Driveway & Miry Brook Rd
Site Code:
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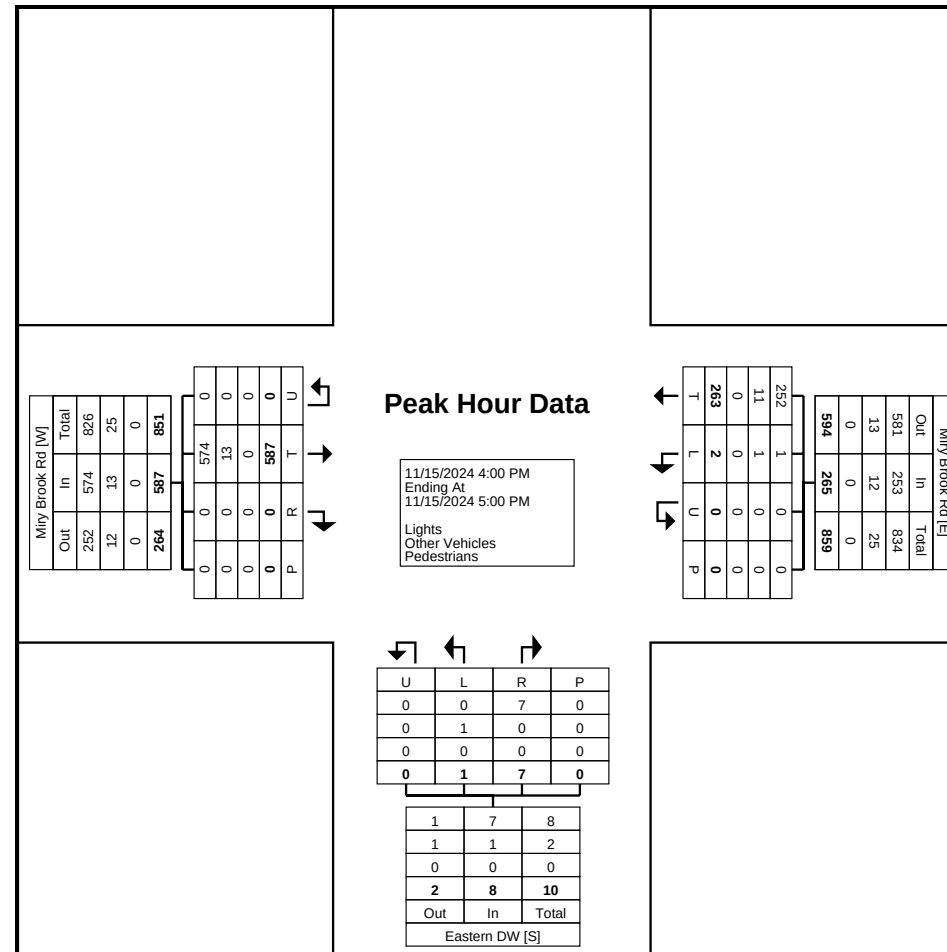
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	162	0	0	162	0	0	74	0	74	0	0	1	0	1	237
4:15 PM	0	163	0	0	163	0	2	63	0	65	0	1	1	0	2	230
4:30 PM	0	134	0	0	134	0	0	52	0	52	0	0	5	0	5	191
4:45 PM	0	128	0	0	128	0	0	74	0	74	0	0	0	0	0	202
Total	0	587	0	0	587	0	2	263	0	265	0	1	7	0	8	860
Approach %	0.0	100.0	0.0	-	-	0.0	0.8	99.2	-	-	0.0	12.5	87.5	-	-	-
Total %	0.0	68.3	0.0	-	68.3	0.0	0.2	30.6	-	30.8	0.0	0.1	0.8	-	0.9	-
PHF	0.000	0.900	0.000	-	0.900	0.000	0.250	0.889	-	0.895	0.000	0.250	0.350	-	0.400	0.907
Lights	0	574	0	-	574	0	1	252	-	253	0	0	7	-	7	834
% Lights	-	97.8	-	-	97.8	-	50.0	95.8	-	95.5	-	0.0	100.0	-	87.5	97.0
Other Vehicles	0	13	0	-	13	0	1	11	-	12	0	1	0	-	1	26
% Other Vehicles	-	2.2	-	-	2.2	-	50.0	4.2	-	4.5	-	100.0	0.0	-	12.5	3.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (4:00 PM)



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Count Name: Eastern Driveway & Miry Brook Rd
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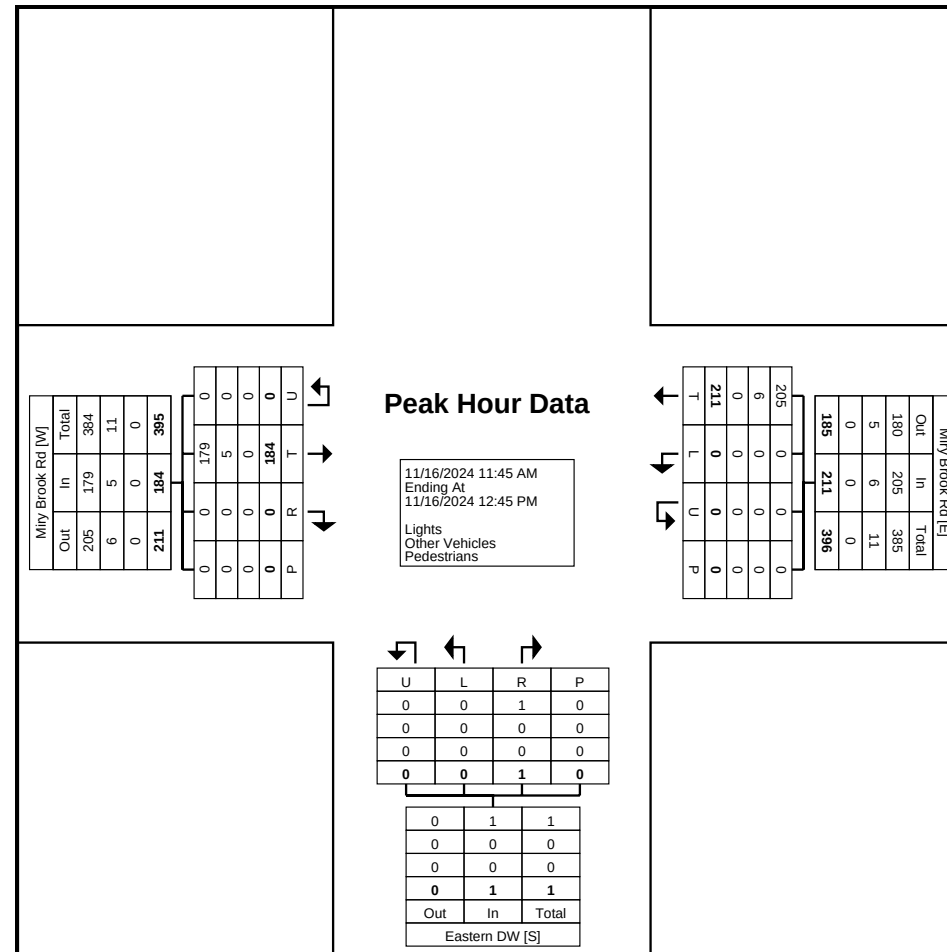
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
11:45 AM	0	36	0	0	36	0	0	57	0	57	0	0	0	0	0	93
12:00 PM	0	55	0	0	55	0	0	50	0	50	0	0	1	0	1	106
12:15 PM	0	47	0	0	47	0	0	49	0	49	0	0	0	0	0	96
12:30 PM	0	46	0	0	46	0	0	55	0	55	0	0	0	0	0	101
Total	0	184	0	0	184	0	0	211	0	211	0	0	1	0	1	396
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	46.5	0.0	-	46.5	0.0	0.0	53.3	-	53.3	0.0	0.0	0.3	-	0.3	-
PHF	0.000	0.836	0.000	-	0.836	0.000	0.000	0.925	-	0.925	0.000	0.000	0.250	-	0.250	0.934
Lights	0	179	0	-	179	0	0	205	-	205	0	0	1	-	1	385
% Lights	-	97.3	-	-	97.3	-	-	97.2	-	97.2	-	-	100.0	-	100.0	97.2
Other Vehicles	0	5	0	-	5	0	0	6	-	6	0	0	0	-	0	11
% Other Vehicles	-	2.7	-	-	2.7	-	-	2.8	-	2.8	-	-	0.0	-	0.0	2.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (11:45 AM)



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Count Name: Eastern Driveway & Miry Brook Rd
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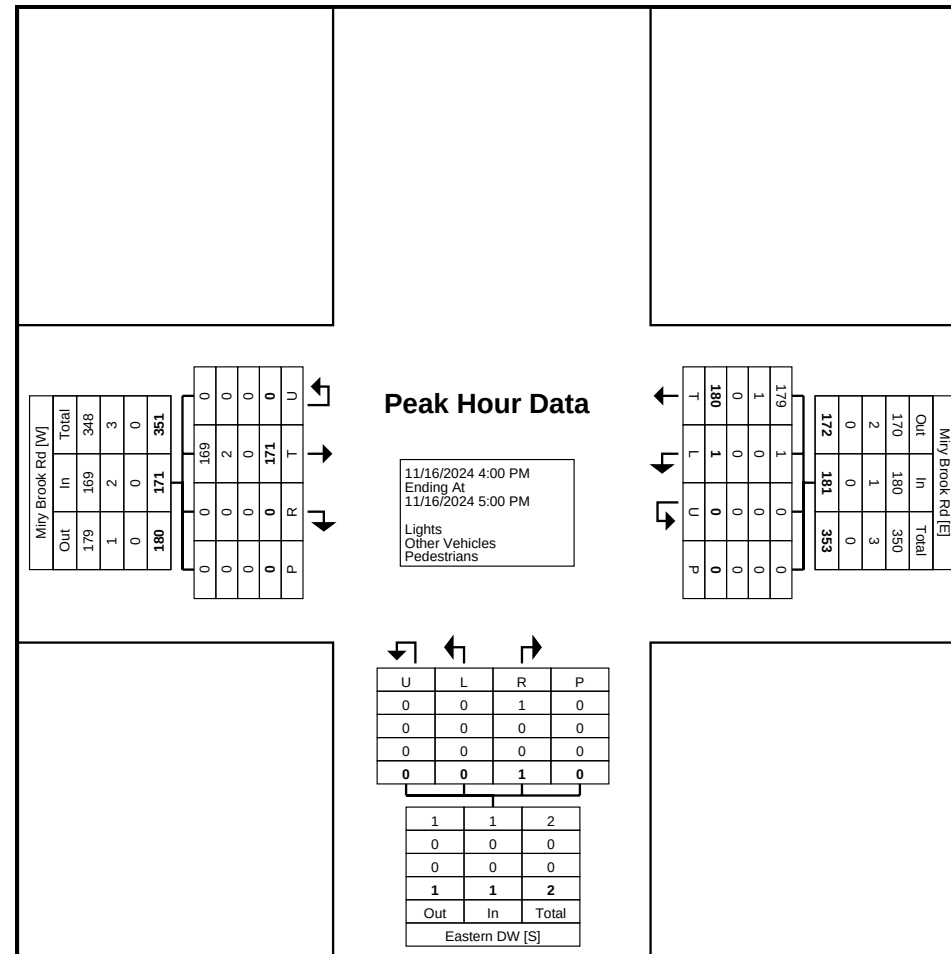
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	52	0	0	52	0	0	41	0	41	0	0	0	0	0	93
4:15 PM	0	38	0	0	38	0	1	47	0	48	0	0	0	0	0	86
4:30 PM	0	42	0	0	42	0	0	44	0	44	0	0	0	0	0	86
4:45 PM	0	39	0	0	39	0	0	48	0	48	0	0	1	0	1	88
Total	0	171	0	0	171	0	1	180	0	181	0	0	1	0	1	353
Approach %	0.0	100.0	0.0	-	-	0.0	0.6	99.4	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	48.4	0.0	-	48.4	0.0	0.3	51.0	-	51.3	0.0	0.0	0.3	-	0.3	-
PHF	0.000	0.822	0.000	-	0.822	0.000	0.250	0.938	-	0.943	0.000	0.000	0.250	-	0.250	0.949
Lights	0	169	0	-	169	0	1	179	-	180	0	0	1	-	1	350
% Lights	-	98.8	-	-	98.8	-	100.0	99.4	-	99.4	-	-	100.0	-	100.0	99.2
Other Vehicles	0	2	0	-	2	0	0	1	-	1	0	0	0	-	0	3
% Other Vehicles	-	1.2	-	-	1.2	-	0.0	0.6	-	0.6	-	-	0.0	-	0.0	0.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (4:00 PM)



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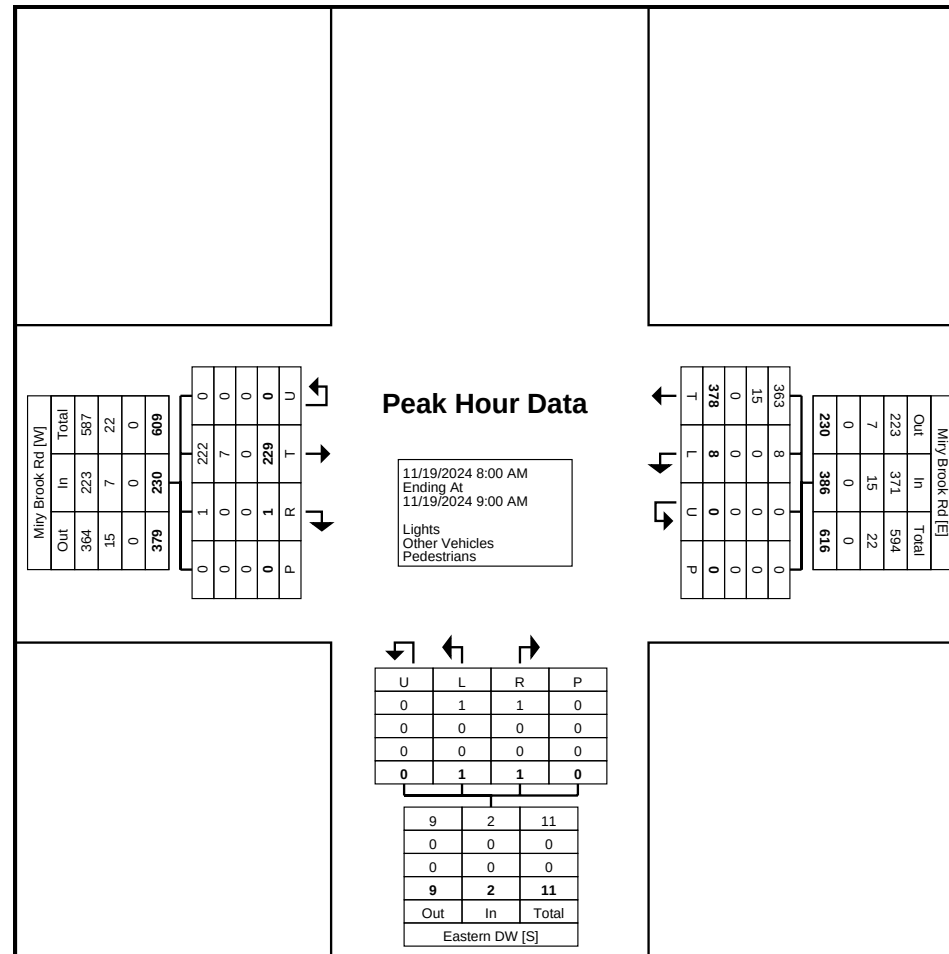
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
8:00 AM	0	61	0	0	61	0	0	93	0	93	0	1	0	0	1	155
8:15 AM	0	42	1	0	43	0	2	84	0	86	0	0	0	0	0	129
8:30 AM	0	58	0	0	58	0	4	99	0	103	0	0	0	0	0	161
8:45 AM	0	68	0	0	68	0	2	102	0	104	0	0	1	0	1	173
Total	0	229	1	0	230	0	8	378	0	386	0	1	1	0	2	618
Approach %	0.0	99.6	0.4	-	-	0.0	2.1	97.9	-	-	0.0	50.0	50.0	-	-	-
Total %	0.0	37.1	0.2	-	37.2	0.0	1.3	61.2	-	62.5	0.0	0.2	0.2	-	0.3	-
PHF	0.000	0.842	0.250	-	0.846	0.000	0.500	0.926	-	0.928	0.000	0.250	0.250	-	0.500	0.893
Lights	0	222	1	-	223	0	8	363	-	371	0	1	1	-	2	596
% Lights	-	96.9	100.0	-	97.0	-	100.0	96.0	-	96.1	-	100.0	100.0	-	100.0	96.4
Other Vehicles	0	7	0	-	7	0	0	15	-	15	0	0	0	-	0	22
% Other Vehicles	-	3.1	0.0	-	3.0	-	0.0	4.0	-	3.9	-	0.0	0.0	-	0.0	3.6
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (8:00 AM)



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Count Name: Eastern Driveway & Miry Brook Rd
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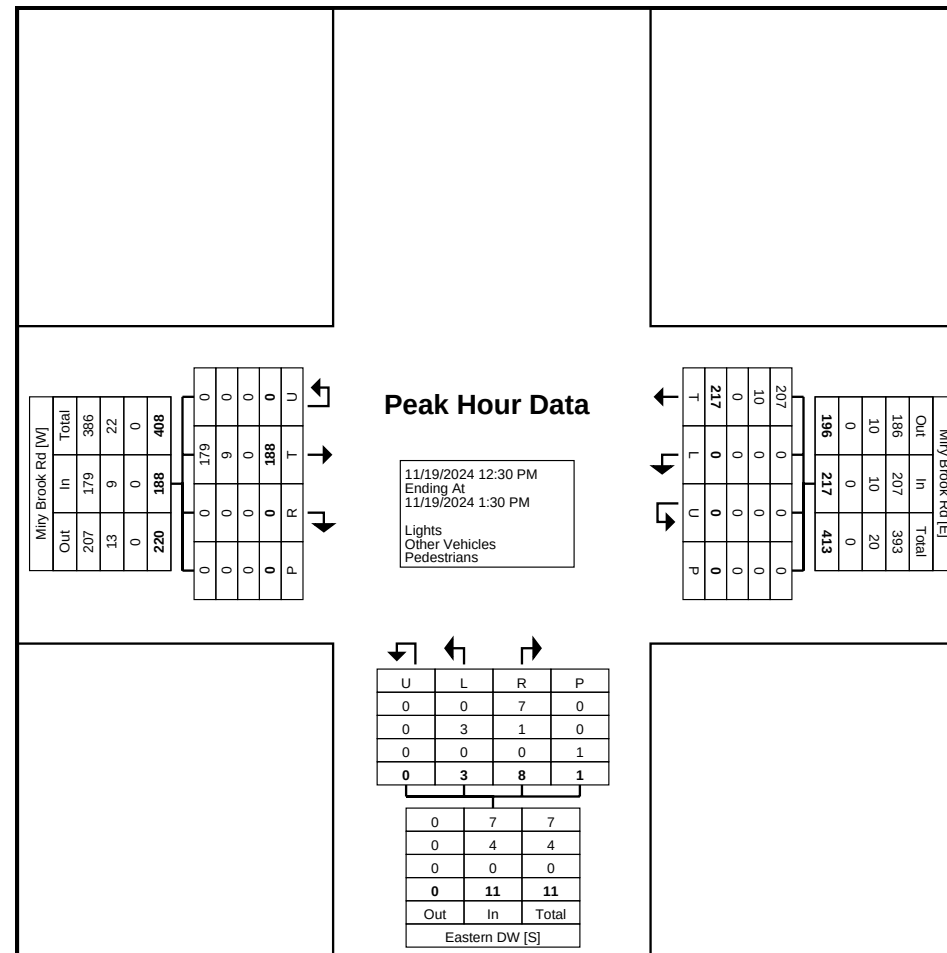
Turning Movement Peak Hour Data (12:30 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
12:30 PM	0	46	0	0	46	0	0	45	0	45	0	1	4	1	5	96
12:45 PM	0	51	0	0	51	0	0	67	0	67	0	2	2	0	4	122
1:00 PM	0	38	0	0	38	0	0	51	0	51	0	0	2	0	2	91
1:15 PM	0	53	0	0	53	0	0	54	0	54	0	0	0	0	0	107
Total	0	188	0	0	188	0	0	217	0	217	0	3	8	1	11	416
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	27.3	72.7	-	-	-
Total %	0.0	45.2	0.0	-	45.2	0.0	0.0	52.2	-	52.2	0.0	0.7	1.9	-	2.6	-
PHF	0.000	0.887	0.000	-	0.887	0.000	0.000	0.810	-	0.810	0.000	0.375	0.500	-	0.550	0.852
Lights	0	179	0	-	179	0	0	207	-	207	0	0	7	-	7	393
% Lights	-	95.2	-	-	95.2	-	-	95.4	-	95.4	-	0.0	87.5	-	63.6	94.5
Other Vehicles	0	9	0	-	9	0	0	10	-	10	0	3	1	-	4	23
% Other Vehicles	-	4.8	-	-	4.8	-	-	4.6	-	4.6	-	100.0	12.5	-	36.4	5.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data Plot (12:30 PM)



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Count Name: Eastern Driveway & Miry Brook Rd
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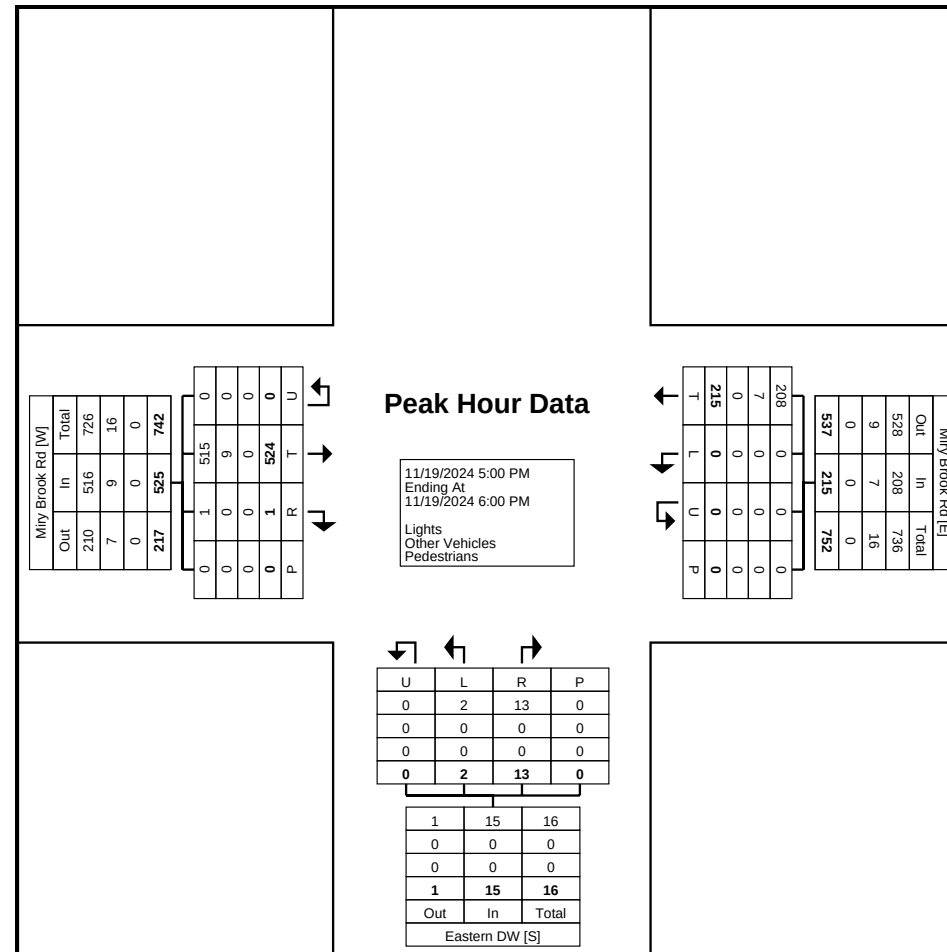
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
5:00 PM	0	139	1	0	140	0	0	64	0	64	0	2	11	0	13	217
5:15 PM	0	118	0	0	118	0	0	69	0	69	0	0	1	0	1	188
5:30 PM	0	139	0	0	139	0	0	49	0	49	0	0	1	0	1	189
5:45 PM	0	128	0	0	128	0	0	33	0	33	0	0	0	0	0	161
Total	0	524	1	0	525	0	0	215	0	215	0	2	13	0	15	755
Approach %	0.0	99.8	0.2	-	-	0.0	0.0	100.0	-	-	0.0	13.3	86.7	-	-	-
Total %	0.0	69.4	0.1	-	69.5	0.0	0.0	28.5	-	28.5	0.0	0.3	1.7	-	2.0	-
PHF	0.000	0.942	0.250	-	0.938	0.000	0.000	0.779	-	0.779	0.000	0.250	0.295	-	0.288	0.870
Lights	0	515	1	-	516	0	0	208	-	208	0	2	13	-	15	739
% Lights	-	98.3	100.0	-	98.3	-	-	96.7	-	96.7	-	100.0	100.0	-	100.0	97.9
Other Vehicles	0	9	0	-	9	0	0	7	-	7	0	0	0	-	0	16
% Other Vehicles	-	1.7	0.0	-	1.7	-	-	3.3	-	3.3	-	0.0	0.0	-	0.0	2.1
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (5:00 PM)



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Count Name: Western Driveway & Miry Brook Rd
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Turning Movement Data

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	158	0	0	158	0	0	73	0	73	0	0	0	0	0	231
4:15 PM	0	164	0	0	164	0	0	60	0	60	0	0	1	0	1	225
4:30 PM	0	133	0	0	133	0	0	51	0	51	0	0	0	0	0	184
4:45 PM	0	127	0	0	127	0	0	71	0	71	0	0	0	0	0	198
Hourly Total	0	582	0	0	582	0	0	255	0	255	0	0	1	0	1	838
5:00 PM	0	128	0	0	128	0	0	66	0	66	0	0	1	0	1	195
5:15 PM	0	93	0	0	93	0	0	62	0	62	0	0	1	0	1	156
5:30 PM	0	111	1	0	112	0	0	56	0	56	0	0	0	0	0	168
5:45 PM	0	89	0	0	89	0	0	57	0	57	0	0	0	0	0	146
Hourly Total	0	421	1	0	422	0	0	241	0	241	0	0	2	0	2	665
6:00 PM	0	52	0	0	52	0	0	48	0	48	0	0	0	0	0	100
6:15 PM	0	47	0	0	47	0	0	29	0	29	0	0	0	0	0	76
6:30 PM	0	30	0	0	30	0	0	24	0	24	0	0	0	0	0	54
6:45 PM	0	34	0	0	34	0	0	40	0	40	0	0	0	0	0	74
Hourly Total	0	163	0	0	163	0	0	141	0	141	0	0	0	0	0	304
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	36	0	0	36	0	0	42	0	42	0	0	0	0	0	78
11:15 AM	0	35	0	0	35	0	0	34	0	34	0	0	0	0	0	69
11:30 AM	0	33	0	0	33	0	0	29	0	29	0	0	0	0	0	62
11:45 AM	0	37	0	0	37	0	0	57	0	57	0	0	0	0	0	94
Hourly Total	0	141	0	0	141	0	0	162	0	162	0	0	0	0	0	303
12:00 PM	0	53	0	0	53	0	0	49	0	49	0	0	0	0	0	102
12:15 PM	0	48	0	0	48	0	0	51	0	51	0	0	0	0	0	99
12:30 PM	0	46	0	0	46	0	0	57	0	57	0	0	0	0	0	103
12:45 PM	0	40	0	0	40	0	0	37	0	37	0	0	0	0	0	77
Hourly Total	0	187	0	0	187	0	0	194	0	194	0	0	0	0	0	381
1:00 PM	0	42	0	0	42	0	0	45	0	45	0	1	0	0	1	88
1:15 PM	0	43	0	0	43	0	0	39	0	39	0	0	0	0	0	82
1:30 PM	0	40	0	0	40	0	0	50	0	50	0	0	0	0	0	90
1:45 PM	0	41	0	0	41	0	0	50	0	50	0	0	0	0	0	91
Hourly Total	0	166	0	0	166	0	0	184	0	184	0	1	0	0	1	351
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	50	0	0	50	0	0	40	0	40	0	0	0	0	0	90
4:15 PM	0	38	0	0	38	0	0	46	0	46	0	1	0	0	1	85
4:30 PM	0	37	0	0	37	0	0	46	0	46	0	0	0	0	0	83
4:45 PM	0	39	1	0	40	0	0	45	0	45	0	0	0	0	0	85

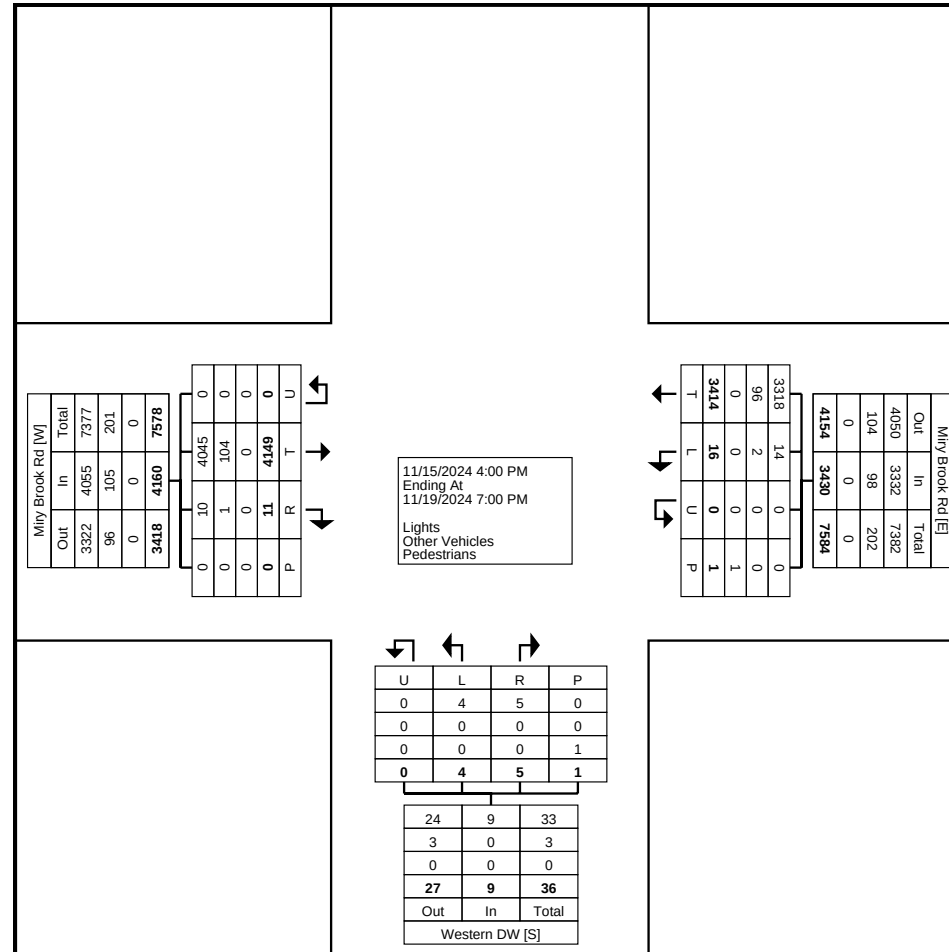
Hourly Total	0	164	1	0	165	0	0	177	0	177	0	1	0	0	1	343
5:00 PM	0	33	0	0	33	0	0	31	0	31	0	0	0	0	0	64
5:15 PM	0	37	0	0	37	0	0	33	0	33	0	0	0	0	0	70
5:30 PM	0	26	0	0	26	0	0	43	0	43	0	0	0	0	0	69
5:45 PM	0	32	0	0	32	0	0	37	0	37	0	0	1	0	1	70
Hourly Total	0	128	0	0	128	0	0	144	0	144	0	0	1	0	1	273
6:00 PM	0	41	0	0	41	0	0	22	0	22	0	0	0	0	0	63
6:15 PM	0	22	0	0	22	0	0	22	0	22	0	0	0	0	0	44
6:30 PM	0	27	0	0	27	0	1	32	0	33	0	0	0	0	0	60
6:45 PM	0	18	0	0	18	0	1	24	0	25	0	0	0	0	0	43
Hourly Total	0	108	0	0	108	0	2	100	0	102	0	0	0	0	0	210
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	0	49	0	0	49	0	0	47	0	47	0	0	0	0	0	96
7:15 AM	0	49	0	0	49	0	1	60	0	61	0	0	0	0	0	110
7:30 AM	0	50	0	0	50	0	0	76	0	76	0	0	0	0	0	126
7:45 AM	0	59	0	0	59	0	0	102	0	102	0	0	0	0	0	161
Hourly Total	0	207	0	0	207	0	1	285	0	286	0	0	0	0	0	493
8:00 AM	0	59	1	0	60	0	3	83	0	86	0	0	0	0	0	146
8:15 AM	0	43	1	0	44	0	1	82	0	83	0	0	0	0	0	127
8:30 AM	0	57	0	0	57	0	2	93	0	95	0	0	0	0	0	152
8:45 AM	0	65	0	0	65	0	1	94	0	95	0	0	0	0	0	160
Hourly Total	0	224	2	0	226	0	7	352	0	359	0	0	0	0	0	585
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	40	1	0	41	0	0	35	0	35	0	0	0	0	0	76
11:15 AM	0	37	0	0	37	0	0	42	0	42	0	0	0	0	0	79
11:30 AM	0	55	0	0	55	0	0	48	0	48	0	0	0	0	0	103
11:45 AM	0	51	0	0	51	0	1	36	0	37	0	0	0	0	0	88
Hourly Total	0	183	1	0	184	0	1	161	0	162	0	0	0	0	0	346
12:00 PM	0	38	0	0	38	0	0	45	0	45	0	0	0	0	0	83
12:15 PM	0	39	0	0	39	0	0	35	0	35	0	0	0	0	0	74
12:30 PM	0	46	2	0	48	0	0	46	1	46	0	1	0	0	1	95
12:45 PM	0	51	1	0	52	0	2	70	0	72	0	0	0	0	0	124
Hourly Total	0	174	3	0	177	0	2	196	1	198	0	1	0	0	1	376
1:00 PM	0	37	1	0	38	0	0	50	0	50	0	0	0	0	0	88
1:15 PM	0	52	0	0	52	0	0	54	0	54	0	0	0	0	0	106
1:30 PM	0	47	0	0	47	0	0	39	0	39	0	0	0	1	0	86
1:45 PM	0	41	1	0	42	0	1	59	0	60	0	0	0	0	0	102
Hourly Total	0	177	2	0	179	0	1	202	0	203	0	0	0	1	0	382
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	116	1	0	117	0	1	67	0	68	0	1	0	0	1	186
4:15 PM	0	96	0	0	96	0	0	60	0	60	0	0	0	0	0	156
4:30 PM	0	108	0	0	108	0	1	48	0	49	0	0	0	0	0	157
4:45 PM	0	86	0	0	86	0	0	62	0	62	0	0	0	0	0	148
Hourly Total	0	406	1	0	407	0	2	237	0	239	0	1	0	0	1	647
5:00 PM	0	135	0	0	135	0	0	63	0	63	0	0	0	0	0	198
5:15 PM	0	112	0	0	112	0	0	65	0	65	0	0	0	0	0	177
5:30 PM	0	139	0	0	139	0	0	46	0	46	0	0	1	0	1	186
5:45 PM	0	133	0	0	133	0	0	33	0	33	0	0	0	0	0	166
Hourly Total	0	519	0	0	519	0	0	207	0	207	0	0	1	0	1	727
6:00 PM	0	65	0	0	65	0	0	57	0	57	0	0	0	0	0	122
6:15 PM	0	69	0	0	69	0	0	37	0	37	0	0	0	0	0	106
6:30 PM	0	38	0	0	38	0	0	46	0	46	0	0	0	0	0	84

6:45 PM	0	27	0	0	27	0	0	36	0	36	0	0	0	0	0	63
Hourly Total	0	199	0	0	199	0	0	176	0	176	0	0	0	0	0	375
Grand Total	0	4149	11	0	4160	0	16	3414	1	3430	0	4	5	1	9	7599
Approach %	0.0	99.7	0.3	-	-	0.0	0.5	99.5	-	-	0.0	44.4	55.6	-	-	-
Total %	0.0	54.6	0.1	-	54.7	0.0	0.2	44.9	-	45.1	0.0	0.1	0.1	-	0.1	-
Lights	0	4045	10	-	4055	0	14	3318	-	3332	0	4	5	-	9	7396
% Lights	-	97.5	90.9	-	97.5	-	87.5	97.2	-	97.1	-	100.0	100.0	-	100.0	97.3
Other Vehicles	0	104	1	-	105	0	2	96	-	98	0	0	0	-	0	203
% Other Vehicles	-	2.5	9.1	-	2.5	-	12.5	2.8	-	2.9	-	0.0	0.0	-	0.0	2.7
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

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Turning Movement Data Plot



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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Western Driveway & Miry Brook Rd
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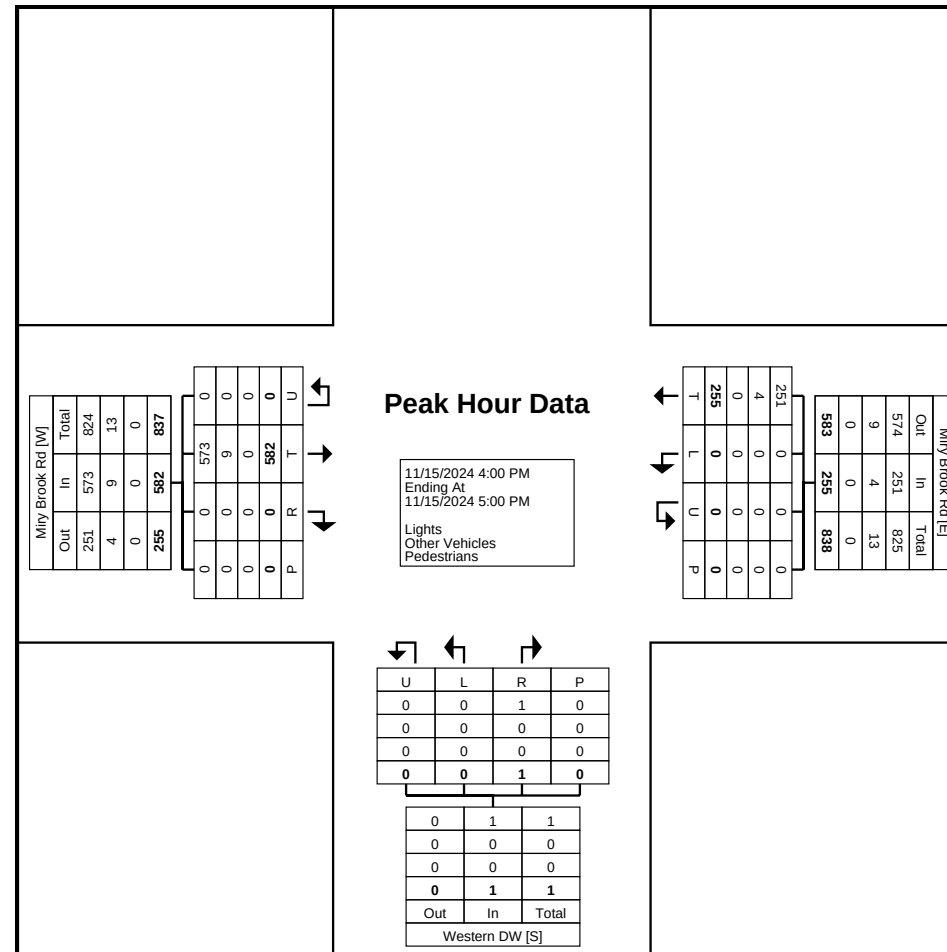
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	158	0	0	158	0	0	73	0	73	0	0	0	0	0	231
4:15 PM	0	164	0	0	164	0	0	60	0	60	0	0	1	0	1	225
4:30 PM	0	133	0	0	133	0	0	51	0	51	0	0	0	0	0	184
4:45 PM	0	127	0	0	127	0	0	71	0	71	0	0	0	0	0	198
Total	0	582	0	0	582	0	0	255	0	255	0	0	1	0	1	838
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	69.5	0.0	-	69.5	0.0	0.0	30.4	-	30.4	0.0	0.0	0.1	-	0.1	-
PHF	0.000	0.887	0.000	-	0.887	0.000	0.000	0.873	-	0.873	0.000	0.000	0.250	-	0.250	0.907
Lights	0	573	0	-	573	0	0	251	-	251	0	0	1	-	1	825
% Lights	-	98.5	-	-	98.5	-	-	98.4	-	98.4	-	-	100.0	-	100.0	98.4
Other Vehicles	0	9	0	-	9	0	0	4	-	4	0	0	0	-	0	13
% Other Vehicles	-	1.5	-	-	1.5	-	-	1.6	-	1.6	-	-	0.0	-	0.0	1.6
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2500 East High Street
Suite 650
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610.326.3100 tcooney@trafficpd.com

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Turning Movement Peak Hour Data Plot (4:00 PM)



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 2500 East High Street
 Suite 650
 Pottstown, Pennsylvania, United States 19464
 610.326.3100 tcooney@trafficpd.com

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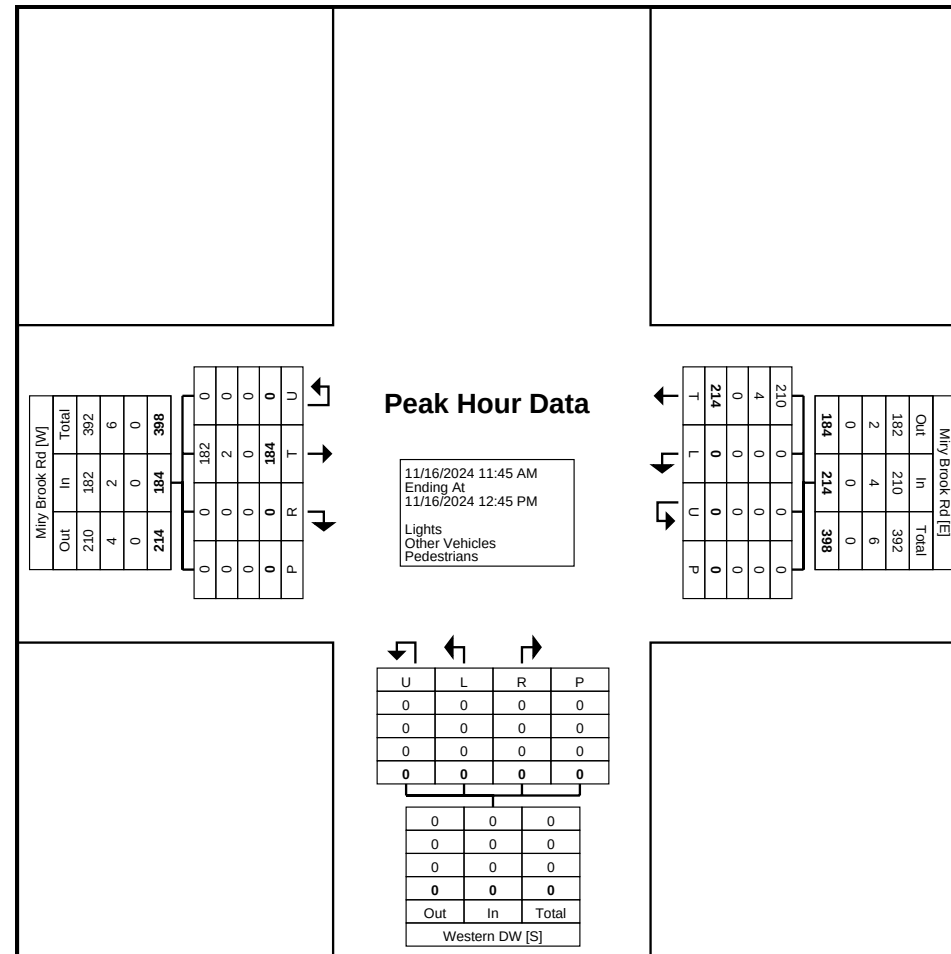
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
11:45 AM	0	37	0	0	37	0	0	57	0	57	0	0	0	0	0	94
12:00 PM	0	53	0	0	53	0	0	49	0	49	0	0	0	0	0	102
12:15 PM	0	48	0	0	48	0	0	51	0	51	0	0	0	0	0	99
12:30 PM	0	46	0	0	46	0	0	57	0	57	0	0	0	0	0	103
Total	0	184	0	0	184	0	0	214	0	214	0	0	0	0	0	398
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	46.2	0.0	-	46.2	0.0	0.0	53.8	-	53.8	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.868	0.000	-	0.868	0.000	0.000	0.939	-	0.939	0.000	0.000	0.000	-	0.000	0.966
Lights	0	182	0	-	182	0	0	210	-	210	0	0	0	-	0	392
% Lights	-	98.9	-	-	98.9	-	-	98.1	-	98.1	-	-	-	-	-	98.5
Other Vehicles	0	2	0	-	2	0	0	4	-	4	0	0	0	-	0	6
% Other Vehicles	-	1.1	-	-	1.1	-	-	1.9	-	1.9	-	-	-	-	-	1.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2500 East High Street
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610.326.3100 tcooney@trafficpd.com

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Turning Movement Peak Hour Data Plot (11:45 AM)



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Count Name: Western Driveway & Miry Brook Rd
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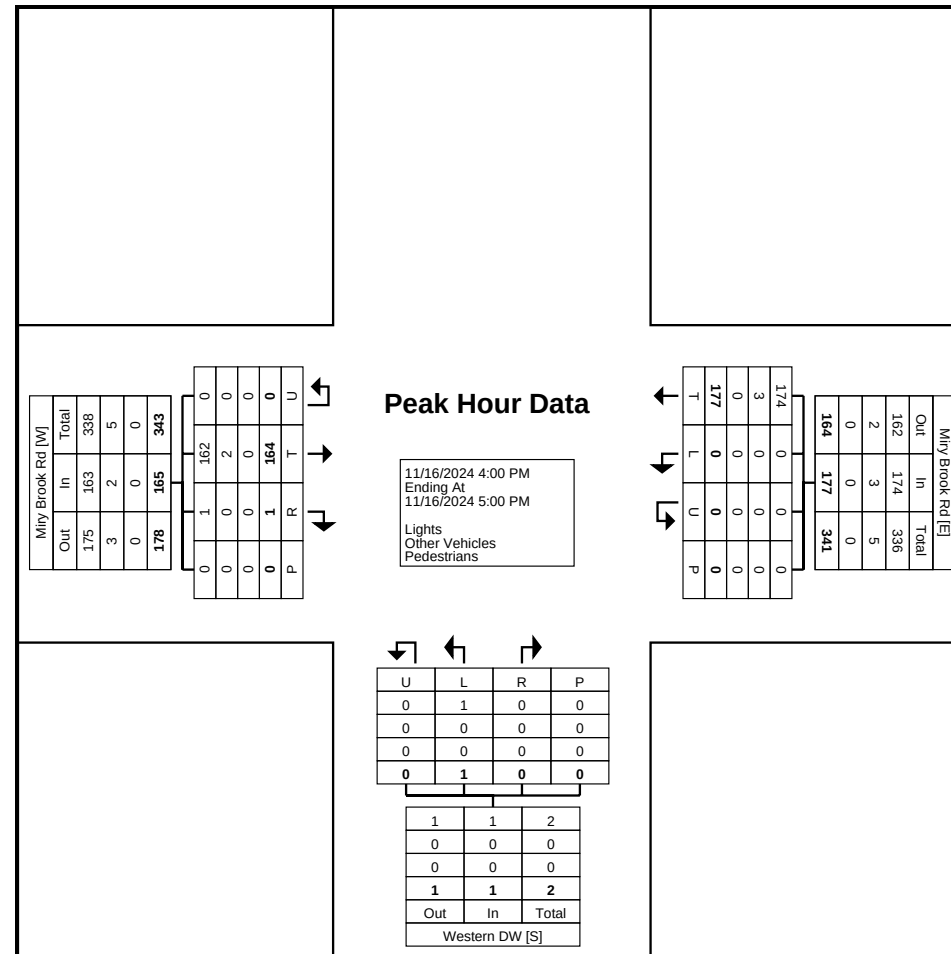
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	50	0	0	50	0	0	40	0	40	0	0	0	0	0	90
4:15 PM	0	38	0	0	38	0	0	46	0	46	0	1	0	0	1	85
4:30 PM	0	37	0	0	37	0	0	46	0	46	0	0	0	0	0	83
4:45 PM	0	39	1	0	40	0	0	45	0	45	0	0	0	0	0	85
Total	0	164	1	0	165	0	0	177	0	177	0	1	0	0	1	343
Approach %	0.0	99.4	0.6	-	-	0.0	0.0	100.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	47.8	0.3	-	48.1	0.0	0.0	51.6	-	51.6	0.0	0.3	0.0	-	0.3	-
PHF	0.000	0.820	0.250	-	0.825	0.000	0.000	0.962	-	0.962	0.000	0.250	0.000	-	0.250	0.953
Lights	0	162	1	-	163	0	0	174	-	174	0	1	0	-	1	338
% Lights	-	98.8	100.0	-	98.8	-	-	98.3	-	98.3	-	100.0	-	-	100.0	98.5
Other Vehicles	0	2	0	-	2	0	0	3	-	3	0	0	0	-	0	5
% Other Vehicles	-	1.2	0.0	-	1.2	-	-	1.7	-	1.7	-	0.0	-	-	0.0	1.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
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Turning Movement Peak Hour Data Plot (4:00 PM)



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Count Name: Western Driveway & Miry Brook Rd
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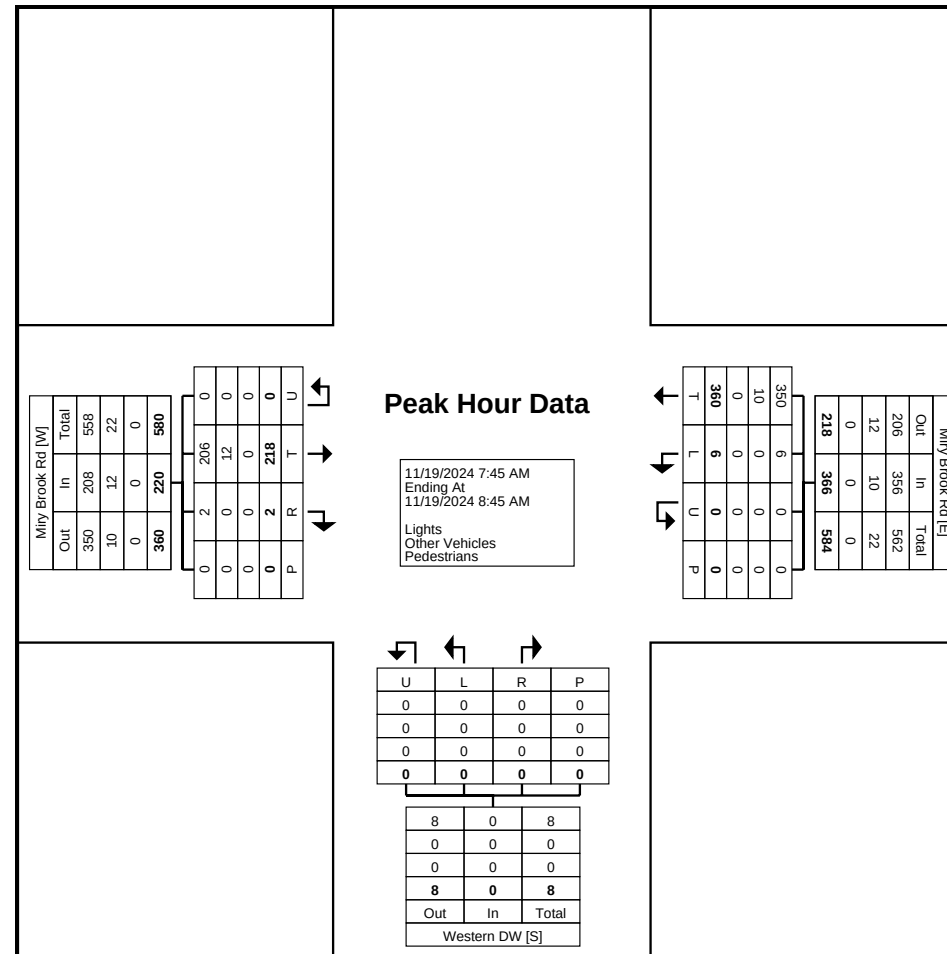
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:45 AM	0	59	0	0	59	0	0	102	0	102	0	0	0	0	0	161
8:00 AM	0	59	1	0	60	0	3	83	0	86	0	0	0	0	0	146
8:15 AM	0	43	1	0	44	0	1	82	0	83	0	0	0	0	0	127
8:30 AM	0	57	0	0	57	0	2	93	0	95	0	0	0	0	0	152
Total	0	218	2	0	220	0	6	360	0	366	0	0	0	0	0	586
Approach %	0.0	99.1	0.9	-	-	0.0	1.6	98.4	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	37.2	0.3	-	37.5	0.0	1.0	61.4	-	62.5	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.924	0.500	-	0.917	0.000	0.500	0.882	-	0.897	0.000	0.000	0.000	-	0.000	0.910
Lights	0	206	2	-	208	0	6	350	-	356	0	0	0	-	0	564
% Lights	-	94.5	100.0	-	94.5	-	100.0	97.2	-	97.3	-	-	-	-	-	96.2
Other Vehicles	0	12	0	-	12	0	0	10	-	10	0	0	0	-	0	22
% Other Vehicles	-	5.5	0.0	-	5.5	-	0.0	2.8	-	2.7	-	-	-	-	-	3.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (7:45 AM)



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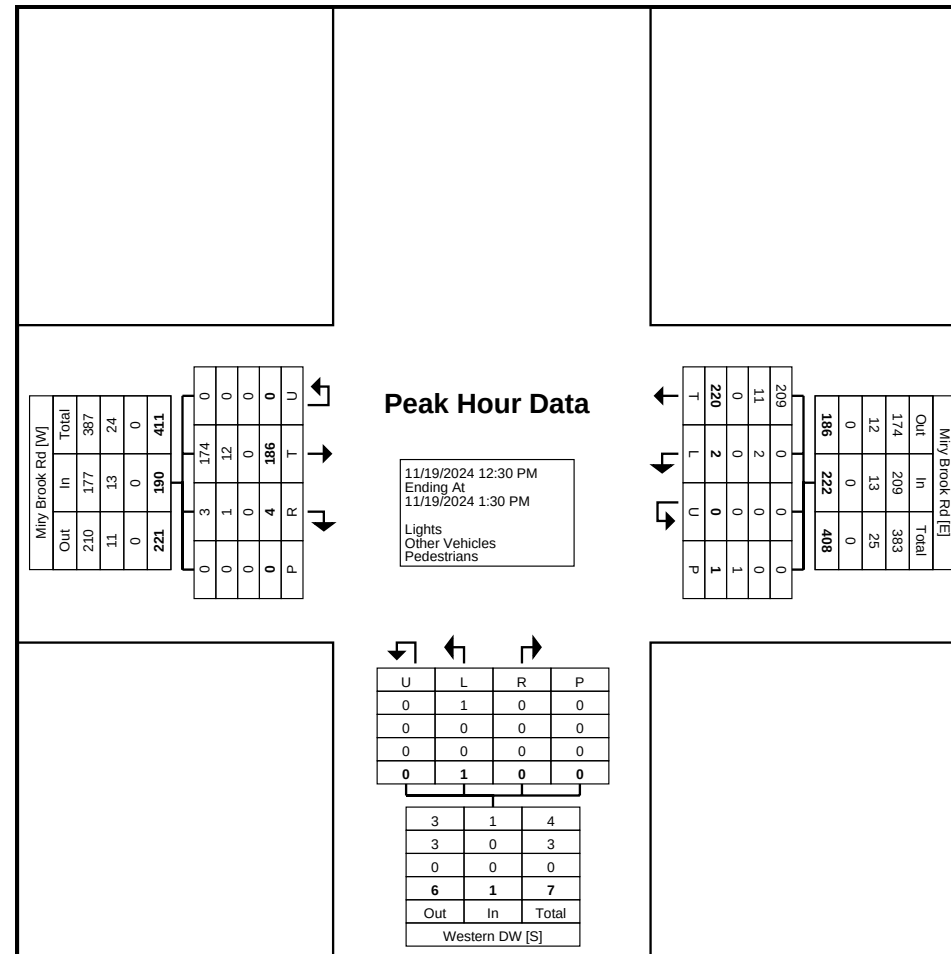
Turning Movement Peak Hour Data (12:30 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
12:30 PM	0	46	2	0	48	0	0	46	1	46	0	1	0	0	1	95
12:45 PM	0	51	1	0	52	0	2	70	0	72	0	0	0	0	0	124
1:00 PM	0	37	1	0	38	0	0	50	0	50	0	0	0	0	0	88
1:15 PM	0	52	0	0	52	0	0	54	0	54	0	0	0	0	0	106
Total	0	186	4	0	190	0	2	220	1	222	0	1	0	0	1	413
Approach %	0.0	97.9	2.1	-	-	0.0	0.9	99.1	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	45.0	1.0	-	46.0	0.0	0.5	53.3	-	53.8	0.0	0.2	0.0	-	0.2	-
PHF	0.000	0.894	0.500	-	0.913	0.000	0.250	0.786	-	0.771	0.000	0.250	0.000	-	0.250	0.833
Lights	0	174	3	-	177	0	0	209	-	209	0	1	0	-	1	387
% Lights	-	93.5	75.0	-	93.2	-	0.0	95.0	-	94.1	-	100.0	-	-	100.0	93.7
Other Vehicles	0	12	1	-	13	0	2	11	-	13	0	0	0	-	0	26
% Other Vehicles	-	6.5	25.0	-	6.8	-	100.0	5.0	-	5.9	-	0.0	-	-	0.0	6.3
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (12:30 PM)



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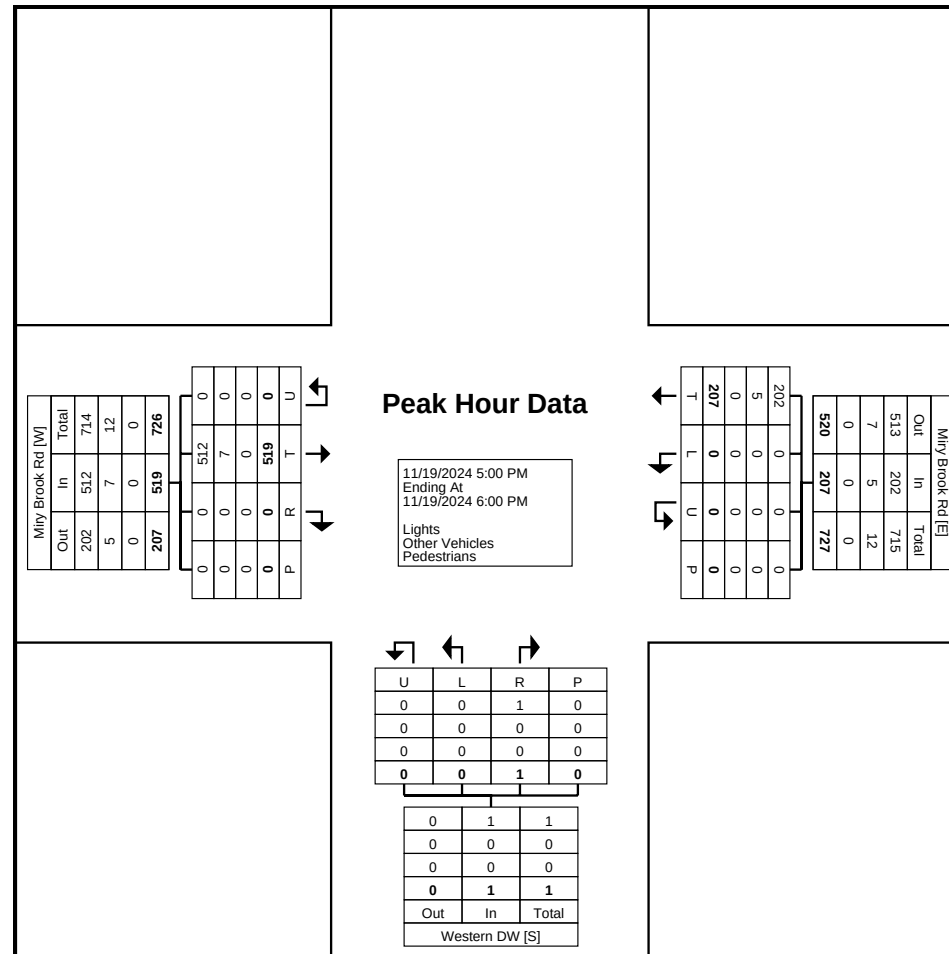
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
5:00 PM	0	135	0	0	135	0	0	63	0	63	0	0	0	0	0	198
5:15 PM	0	112	0	0	112	0	0	65	0	65	0	0	0	0	0	177
5:30 PM	0	139	0	0	139	0	0	46	0	46	0	0	1	0	1	186
5:45 PM	0	133	0	0	133	0	0	33	0	33	0	0	0	0	0	166
Total	0	519	0	0	519	0	0	207	0	207	0	0	1	0	1	727
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	71.4	0.0	-	71.4	0.0	0.0	28.5	-	28.5	0.0	0.0	0.1	-	0.1	-
PHF	0.000	0.933	0.000	-	0.933	0.000	0.000	0.796	-	0.796	0.000	0.000	0.250	-	0.250	0.918
Lights	0	512	0	-	512	0	0	202	-	202	0	0	1	-	1	715
% Lights	-	98.7	-	-	98.7	-	-	97.6	-	97.6	-	-	100.0	-	100.0	98.3
Other Vehicles	0	7	0	-	7	0	0	5	-	5	0	0	0	-	0	12
% Other Vehicles	-	1.3	-	-	1.3	-	-	2.4	-	2.4	-	-	0.0	-	0.0	1.7
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Western Driveway & Miry Brook Rd
Rd
Site Code:
Start Date: 11/15/2024
Page No: 16



Turning Movement Peak Hour Data Plot (5:00 PM)

Land Use: 140

Manufacturing

Description

A manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, a manufacturing facility typically has an office and may provide space for warehouse, research, and associated functions. General light industrial (Land Use 110) and industrial park (Land Use 130) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Minnesota, Missouri, New Jersey, New York, Oregon, Pennsylvania, South Dakota, Texas, Vermont, Washington, and West Virginia.

Source Numbers

177, 179, 184, 241, 357, 384, 418, 443, 583, 598, 611, 728, 747, 875, 879, 940, 969, 1067, 1068, 1082

Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 48

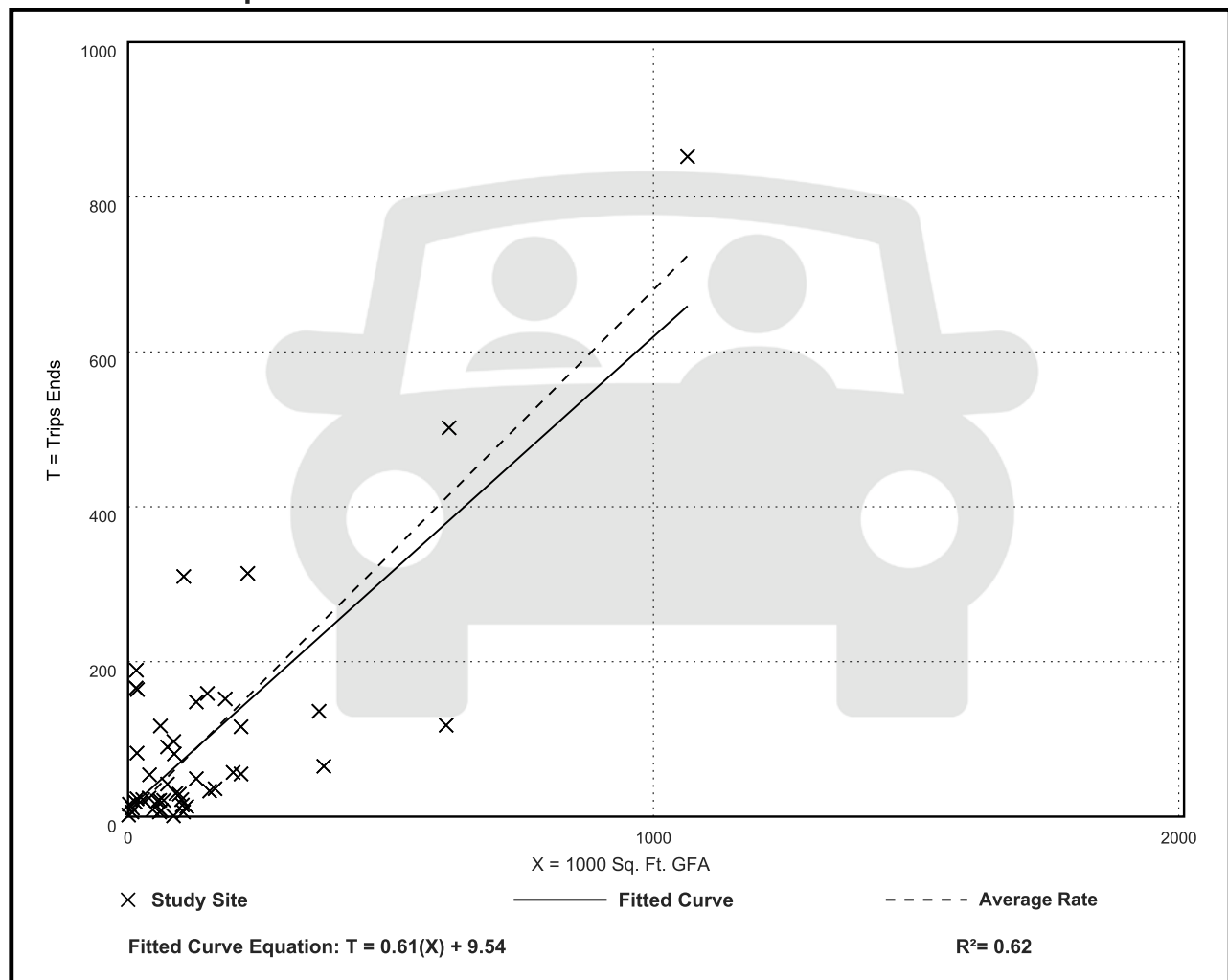
Avg. 1000 Sq. Ft. GFA: 138

Directional Distribution: 76% entering, 24% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.68	0.01 - 11.93	1.03

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 62

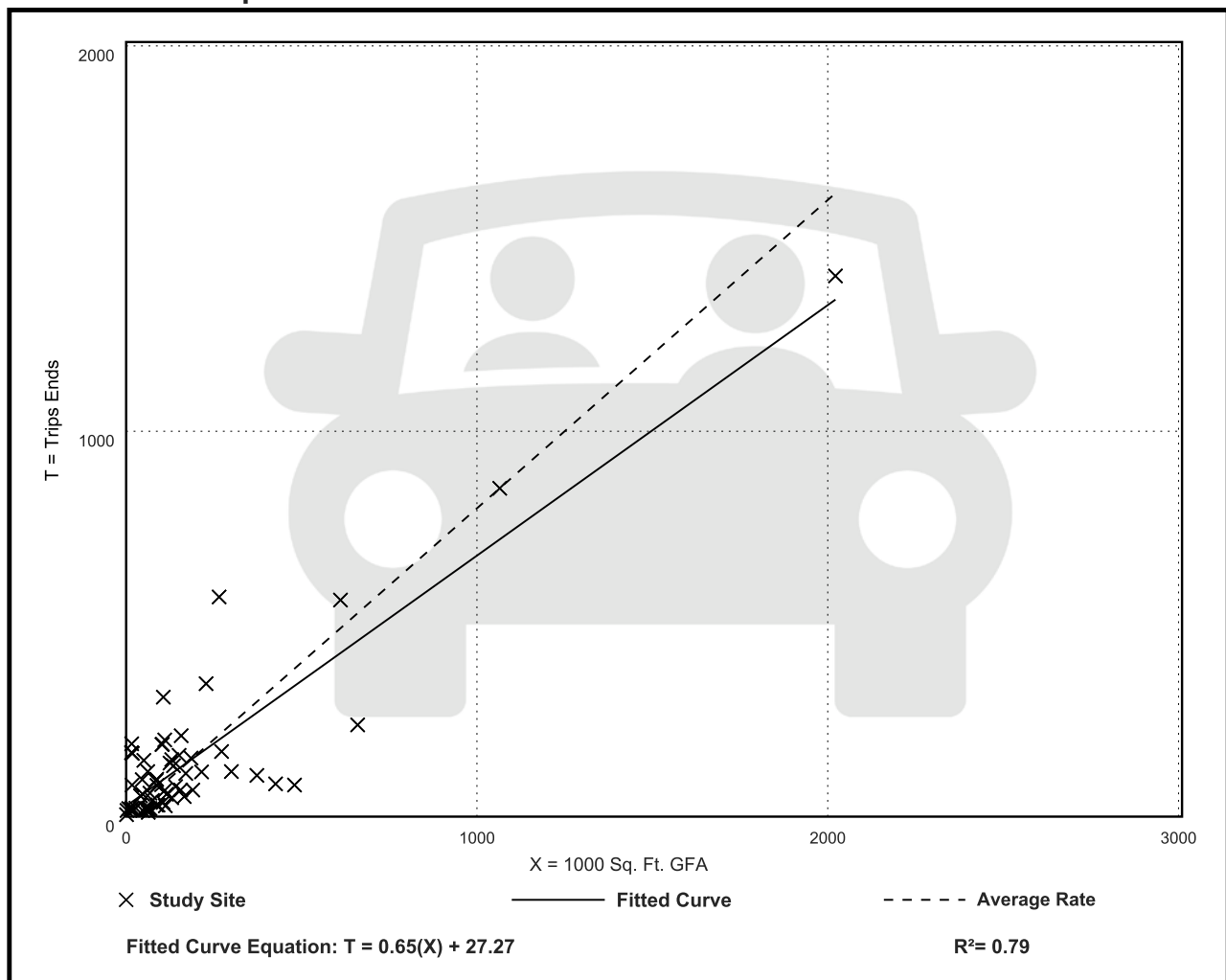
Avg. 1000 Sq. Ft. GFA: 178

Directional Distribution: 73% entering, 27% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.80	0.17 - 11.93	0.87

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 55

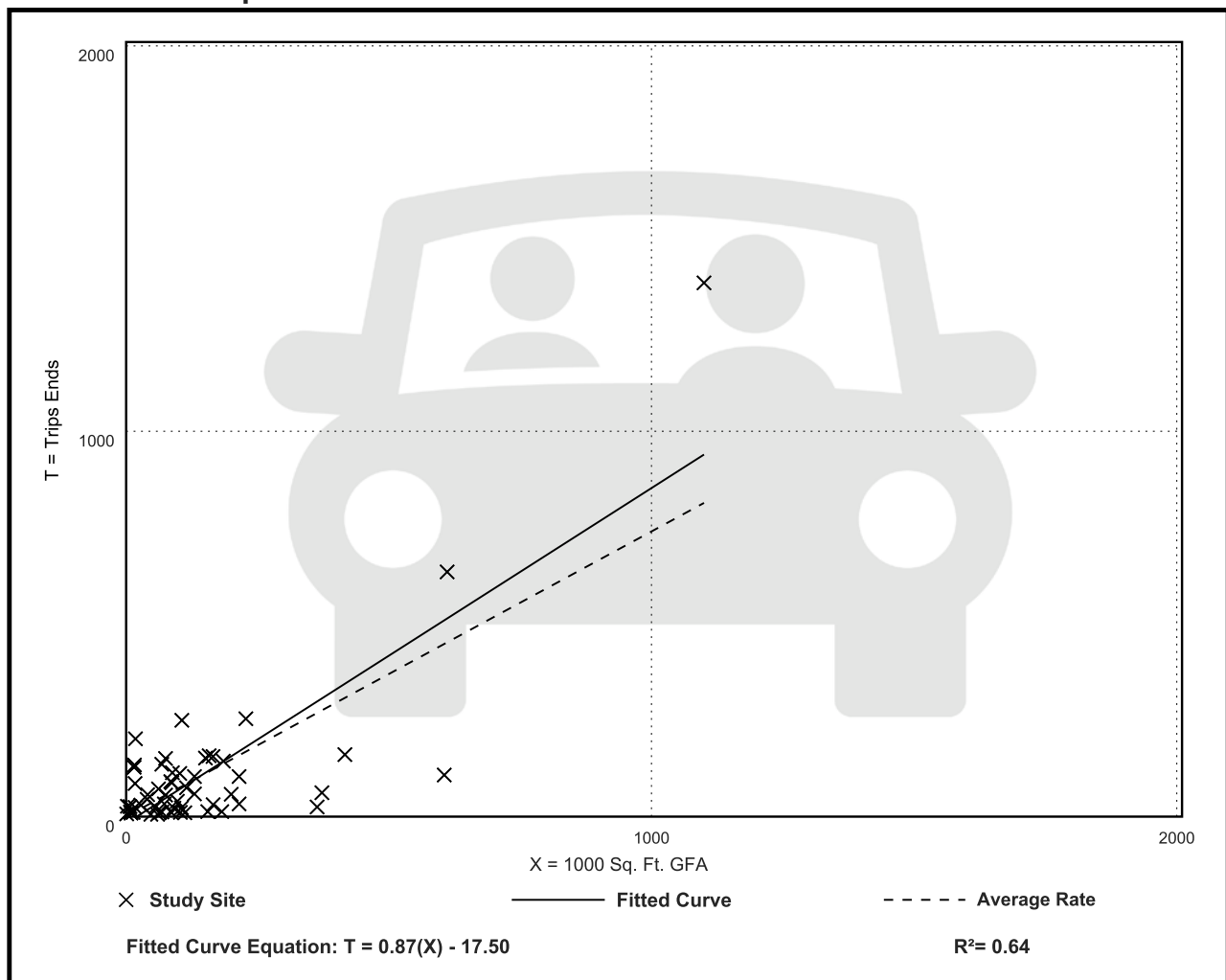
Avg. 1000 Sq. Ft. GFA: 142

Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.74	0.07 - 11.37	0.93

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

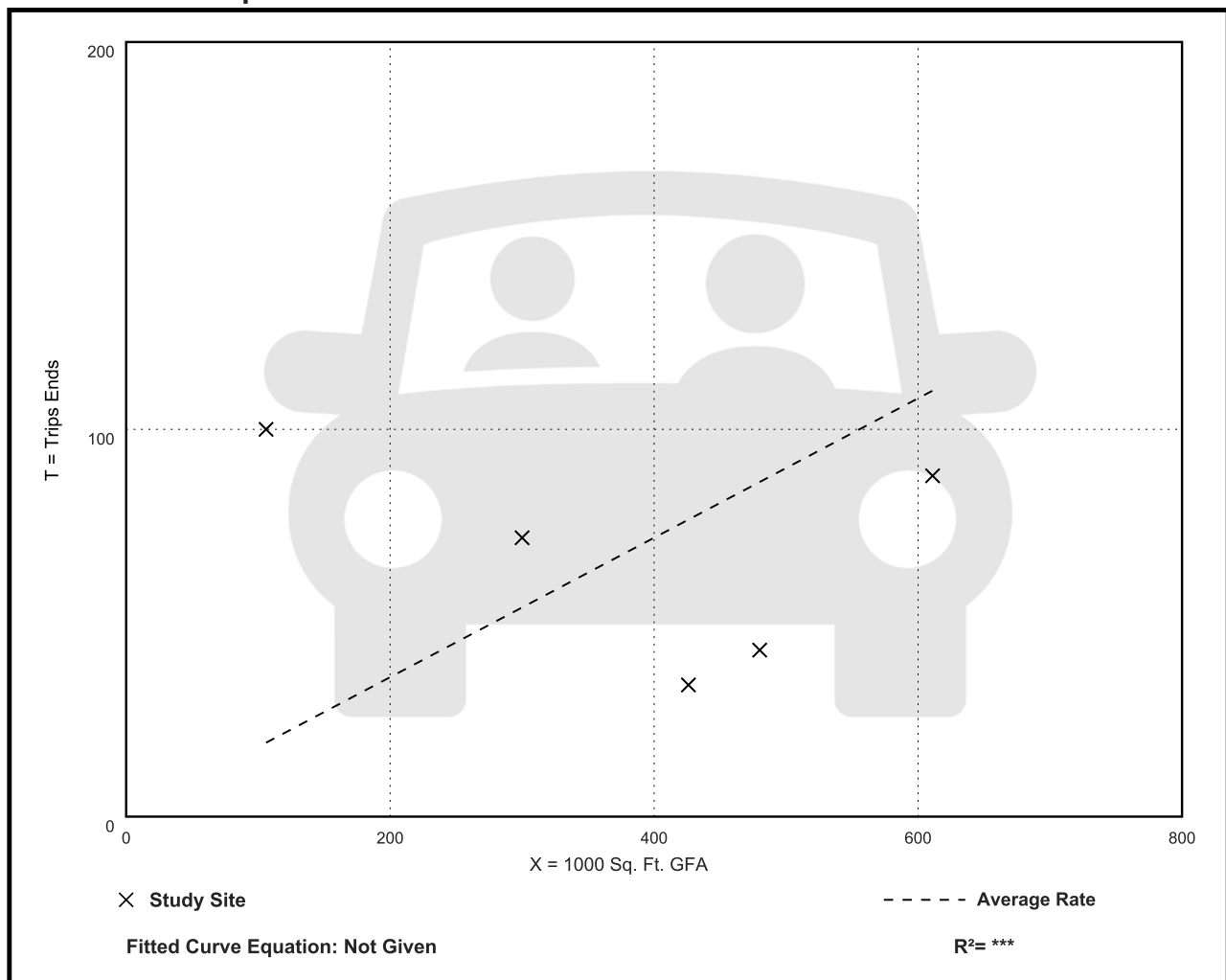
Avg. 1000 Sq. Ft. GFA: 385

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.94	0.22

Data Plot and Equation





April 10, 2025
via electronic mail

City of Norwalk
Planning & Zoning Commission
125 East Avenue
Norwalk, CT 06851
Attn: Ms. Galen Wells
Chairman

**RE: Auto Collective Fairfield
Proposed Automotive Storage Facility
10 Norden Place
City of Norwalk
Fairfield County, CT 06855
TPD Project No. AUCO 00001**

Dear Ms. Wells:

Traffic Planning and Design, Inc. (TPD) has prepared this **Traffic Letter Report** in support of Auto Collective Fairfield's application to occupy a portion of an existing warehouse building located at an existing office park along northbound Norden Place, in Norwalk, Connecticut, as shown in the attached **Figure 1**.

The property is situated along northbound Norden Place, with two driveways providing site access. It is located just north of the Metro-North Railroad, which serves the Grand Central and New Haven lines.

**Existing
Condition**

The site features a 635,428-square-foot building designated as a Major Traffic Generator (MTG) by the Connecticut Department of Transportation (CTDOT) Office of the State Traffic Administration (OSTA). It was previously approved by the City of Norwalk for a mix of uses, including 64,545 square feet of school space, 329,755 square feet of manufacturing space, and 241,128 square feet of office space.

Norden Place, a local road under the jurisdiction of the City of Norwalk, has a posted speed limit of 30 mph. Along the site frontage, the road features one through lane in each direction and a southbound left-turn lane. Sidewalks line both sides of the road, and shoulders are present intermittently.

A portion of the lower level's manufacturing space was most recently approved for redevelopment into a 113,500-square-foot Transportation Maintenance Terminal for the Metropolitan Transportation Authority (MTA). The MTA and Courville Nursery were included in the #2024-14 SPR application. Tighe & Bond's February 2024 Traffic Impact Analysis concluded that the project will not significantly impact traffic in the

**Prior Traffic
Analysis**

area. Specifically, the report concluded: ***"The majority of the intersections and intersection approaches operate acceptably at LOS D or better and/or at Background LOS with limited increase in average delay per vehicle."***

The MTA project is scheduled for completion and occupancy in 2025.

TPD analyzed data from UCONN's Connecticut Crash Data Repository to investigate the reported crash history near the development site. The data indicated that there were no reported vehicular crashes along the site frontage on Norden Place during the five-year study period. This was consistent with Tighe & Bond's February 2024 Traffic Impact Analysis.

Collision History

Auto Collective Fairfield proposes to occupy entirely within the existing building, occupying approximately 137,000 gross square feet. The majority of the space – 84,600+/- square feet – would be dedicated to storage of vehicles in a rack system. In the proposed square footage, about 420 vehicles could be accommodated. The Applicants propose about 20,800+/- square feet of event space which the club could host events such as Formula One watch parties, movie and other screenings, and hold member and member-sponsored gatherings. Typically, these events would be on weekends. About 26,450+/- square feet would be dedicated to the car club itself for members' use along with 5,370+/- square feet set aside for a more intimate members' lounge which can be reserved by members for board meetings and small gatherings.

Proposed Condition

Specifically, 137,220 square feet of the building that was previously approved for manufacturing space would be renovated for the luxury automotive storage facility. There would be no modifications to the site access. The club spaces are exclusively for Auto Collective Fairfield members, and the event space is limited to member-sponsored gatherings. Event bookings to member-sponsored gatherings would be scheduled outside of peak commuter travel hours, to minimize any potential traffic impacts on the adjacent roadway network.

Traffic engineers commonly use the Institute of Transportation Engineers (ITE) data to estimate the number of trips a proposed development will generate. This resource is widely recognized because it compiles trip generation data from a variety of land uses, such as retail stores, offices, schools, and residential developments. These rates are derived from studies of similar land uses across North America and provide a solid foundation for traffic projections.

Trip Generation

However, there are scenarios where ITE trip generation may not fully capture the specific characteristics of a proposed development or site. In these cases, a site-specific traffic survey of a comparable, existing site is often conducted.

The ITE does not provide trip generation for this specific type of land use. Therefore, traffic projections for the proposed redevelopment have been developed based on data collected at North American Motor Car, which is located in Danbury, Connecticut. Since North American Motor Car operates in a similar manner to the proposed development, offering amenities such as a cigar room, event space, and a full-service bar, it serves as a relevant and comparable site for estimating trip generation.

Specifically, data was collected while Danbury and Norwalk public schools were in session during the following times and dates:

- Tuesday November 19, 2024 from 7:00 am to 7:00 pm
- Friday, November 15, 2024 from 4:00 pm to 7:00 pm
- Saturday, November 16, 2024 from 11:00 am to 7:00 pm

Table 1 summarizes the observed peak hour traffic volumes recorded at the study site, at each of the peak periods observed.

Table 1
Observed Trip Generation Comparison

Peak Hour	Existing 59,250 SF Auto Storage Facility		
	Enter	Exit	Total
Weekday Morning	18	2	20
Weekday Midday	6	12	18
Weekday Evening	1	16	17
Friday Evening	4	9	13
Saturday Midday	0	2	2
Saturday Evening	1	1	2

Based on the observed data, TPD calculated the trip rates per 1,000 square feet of gross floor area, consistent with ITE criteria, along with the entering and exiting percentages for these trips, as summarized in **Table 2** below.

Table 2
Observed Trip Generation Rates

Peak Hour	Trip Rate (per 1,000 SF)	Trip Distribution	
		Enter	Exit
Weekday Morning	0.34	90%	10%
Weekday Midday	0.30	33%	67%
Weekday Evening	0.29	6%	94%
Friday Evening	0.22	31%	69%
Saturday Midday	0.03	0%	100%
Saturday Evening	0.03	50%	50%

As shown in the table above, the maximum trip rate per 1,000 square feet occurs during the weekday morning peak hour, resulting in 20 trips to the study site.

By then applying this rate to the approximately 137,220 square foot proposed motor vehicle storage facility in the subject application, we can determine an estimate for trips that would be generated by the proposed development. The new trips are detailed in **Table 3** below.

Table 3
Proposed Trip Generation

Peak Hour	Proposed 137,220 SF Auto Storage Facility		
	Enter	Exit	Total
Weekday Morning	42	5	47
Weekday Midday	14	28	42
Weekday Evening	2	38	40
Friday Evening	10	21	31
Saturday Midday	0	5	5
Saturday Evening	3	3	5

As shown above, the proposed development would generate a maximum of 47 trips, based on the observed trip rate, which would occur during the weekday morning peak hour.

The study site has a smaller footprint and employs three-level car stackers for vehicle storage, whereas the proposed site will be larger and will use only two-level car stackers. Additionally, the study site includes vehicle sales, which the proposed site does not. For these reasons it is assumed that the projected trip generation represents a conservative estimate of typical peak hour traffic.

As the proposed portion of the building was previously approved for manufacturing space, traffic projections for the approved use have been prepared utilizing data published by the Institute of Transportation Engineers (ITE) in the 11th Edition of **Trip Generation**, 2021. Specifically, trip generation projections for the 137,220 square foot space were prepared utilizing ITE Land Use Code 140: **"Manufacturing."** **Table 4** below shows the projected trip generation for the warehouse space, assuming reoccupation under the approved use based on square footage, compared to the proposed automotive storage facility.

Table 4
Approved vs Proposed Trip Generation Comparison

Peak Hour	Approved 137,220 SF Manufacturing			Proposed 137,220 SF Auto Storage Facility			Difference		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Weekday Morning	71	22	93	42	5	47	- 29	- 17	- 46
Weekday Midday	48	67	115	14	28	42	- 34	- 39	- 73
Weekday Evening	31	71	102	2	38	40	- 29	- 33	- 62
Friday Evening	31	71	102	10	21	31	- 21	- 50	- 71
Saturday Midday	13	12	25	0	5	5	- 13	- 7	- 20
Saturday Evening	-	-	-	3	3	5	-	-	-

As shown in the table above, the proposed use is expected to be less intensive compared to the previously approved manufacturing use. Therefore, further analysis is not warranted, and additional analysis would not be required for this development.

Although the site is anticipated to generate less traffic than the previously approved use, a portion of the building will be designated for member-sponsored events. While these events are generally expected to have limited attendance, the operators have agreed to **cap the attendance at a maximum of 300 people** per event to manage potential traffic and parking impacts.

TPD evaluated the potential trip generation for the member-sponsored events using a schedule of typical events in the month of July, provided by Auto Collective of Fairfield County. The event schedule is appended.

ITE does not provide trip generation rates for event venues. However, the CTDOT Office of Traffic Administration (OSTA) recommends a Vehicle Occupancy Rate (VOR) of 2.5 persons per vehicle should be used for trip generation for event venues. With this in consideration, TPD calculated the number of vehicle arrivals for each of the events in the July 2025 schedule, including an event with maximum attendance. Correspondence with OSTA is also appended.

Table 5
Event Trip Generation

Event	Auto Collective of Fairfield County July Schedule			
	Date	Peak Arrival	Expected Attendance	Vehicle Arrivals
July 4th BBQ Lunch	Friday, April 4, 2025	11:30am-12:30pm	150	60
F1 British Grand Prix - Practice	Friday, April 4, 2025	6:30pm-7:30pm	20	8
F1 British Grand Prix - Qualifying	Saturday, April 5, 2025	11:30am-12:30pm	40	16
F1 British Grand Prix Race	Sunday, July 6, 2025	11:30am-12:30pm	60	24
Dinner and movie night -Top Gun	Wednesday, July 9, 2025	5:30pm-6:30pm	30	12
Dinner and movie night - F1 Movie	Friday, July 11, 2025	11:30am-12:30pm	75	30
Member's kids' event	Saturday, July 12, 2025	6:30pm-7:30pm	100	40
Member sponsored event	Sunday, July 13, 2025	11:30am-12:30pm	300	120
STEM Racing practice training	Tuesday, July 15, 2025	12:30pm-1:30pm	20	8
60th birthday party dinner	Thursday, July 17, 2025	5:30pm-6:30pm	50	20
Breakfast meetup	Friday, July 18, 2025	7:30am-8:30am	20	8
British car enthusiasts showcase	Saturday, July 19, 2025	11:30am-12:30pm	50	20
BBQ lunch for members	Sunday, July 20, 2025	11:30am-12:30pm	80	32
Kids movie night	Tuesday, July 22, 2025	4:30pm-5:30pm	20	8
F1 simulator competition	Thursday, July 24, 2025	6:30pm-7:30pm	40	16
F1 Spa Belgian Grand Prix Practice	Friday, July 25, 2025	6:30pm-7:30pm	20	8
F1 Spa Belgian Grand Prix Practice	Saturday, July 26, 2025	11:30am-12:30pm	40	16
F1 Spa Belgium Grand Prix Race	Sunday, July 27, 2025	11:30am-12:30pm	60	24
Maximum			300	120
Average			65	26
85th Percentile			89	36

The data indicates that the events at the facility would result in an **average entering trip rate of 26 vehicles per event**. There would only be 1 event in the month that would exceed 100 arrival trips, which would be scheduled during off-peak hours on a Sunday.

Summary

In conclusion, the proposed auto storage facility is expected to generate less traffic volume than the previously approved use for this site. As such, the proposed project will not have a significant negative impact on-site circulation or on traffic flows on the adjacent public roadways.

Please do not hesitate to contact the undersigned with any questions or comments you may have.

Sincerely,

Traffic Planning and Design, Inc.
Conn. Professional Engineering Corp. No. 0002363



ETHAN B. SCHUKOSKE, P.E., PTOE
Professional Engineer
Conn. License No. 34486
eschukoske@TPDinc.com



NICOLE SILVESTRO, E.I.T.
Sr. Transportation Planning Specialist
nsilvestro@TPDinc.com

cc Liz Suchy, Carmody Torrance Sandak & Hennessey LLP





B | Turning Movement Counts at Study Site



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Eastern Driveway & Miry Brook Rd
Site Code:
Start Date: 11/15/2024
Page No: 1

Turning Movement Data

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	162	0	0	162	0	0	74	0	74	0	0	1	0	1	237
4:15 PM	0	163	0	0	163	0	2	63	0	65	0	1	1	0	2	230
4:30 PM	0	134	0	0	134	0	0	52	0	52	0	0	5	0	5	191
4:45 PM	0	128	0	0	128	0	0	74	0	74	0	0	0	0	0	202
Hourly Total	0	587	0	0	587	0	2	263	0	265	0	1	7	0	8	860
5:00 PM	0	135	0	0	135	0	0	68	0	68	0	2	7	0	9	212
5:15 PM	0	99	0	0	99	0	0	67	0	67	0	1	0	0	1	167
5:30 PM	0	115	0	0	115	0	0	57	0	57	0	0	1	0	1	173
5:45 PM	0	91	0	0	91	0	0	58	0	58	0	0	0	0	0	149
Hourly Total	0	440	0	0	440	0	0	250	0	250	0	3	8	0	11	701
6:00 PM	0	51	0	0	51	0	0	50	0	50	0	0	0	0	0	101
6:15 PM	0	50	0	0	50	0	0	29	0	29	0	0	0	0	0	79
6:30 PM	0	31	0	0	31	0	0	25	0	25	0	0	0	0	0	56
6:45 PM	0	34	0	0	34	0	0	39	0	39	0	0	0	0	0	73
Hourly Total	0	166	0	0	166	0	0	143	0	143	0	0	0	0	0	309
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	35	0	0	35	0	0	42	0	42	0	0	0	0	0	77
11:15 AM	0	37	0	0	37	0	0	34	0	34	0	0	0	0	0	71
11:30 AM	0	33	0	0	33	0	0	29	0	29	0	0	0	0	0	62
11:45 AM	0	36	0	0	36	0	0	57	0	57	0	0	0	0	0	93
Hourly Total	0	141	0	0	141	0	0	162	0	162	0	0	0	0	0	303
12:00 PM	0	55	0	0	55	0	0	50	0	50	0	0	1	0	1	106
12:15 PM	0	47	0	0	47	0	0	49	0	49	0	0	0	0	0	96
12:30 PM	0	46	0	0	46	0	0	55	0	55	0	0	0	0	0	101
12:45 PM	0	40	0	0	40	0	0	37	0	37	0	0	0	0	0	77
Hourly Total	0	188	0	0	188	0	0	191	0	191	0	0	1	0	1	380
1:00 PM	0	42	0	0	42	0	1	44	0	45	0	0	0	0	0	87
1:15 PM	0	43	0	0	43	0	0	39	0	39	0	0	0	0	0	82
1:30 PM	0	40	0	0	40	0	0	50	0	50	0	0	0	0	0	90
1:45 PM	0	41	0	0	41	0	0	51	0	51	0	0	0	0	0	92
Hourly Total	0	166	0	0	166	0	1	184	0	185	0	0	0	0	0	351
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	52	0	0	52	0	0	41	0	41	0	0	0	0	0	93
4:15 PM	0	38	0	0	38	0	1	47	0	48	0	0	0	0	0	86
4:30 PM	0	42	0	0	42	0	0	44	0	44	0	0	0	0	0	86
4:45 PM	0	39	0	0	39	0	0	48	0	48	0	0	1	0	1	88

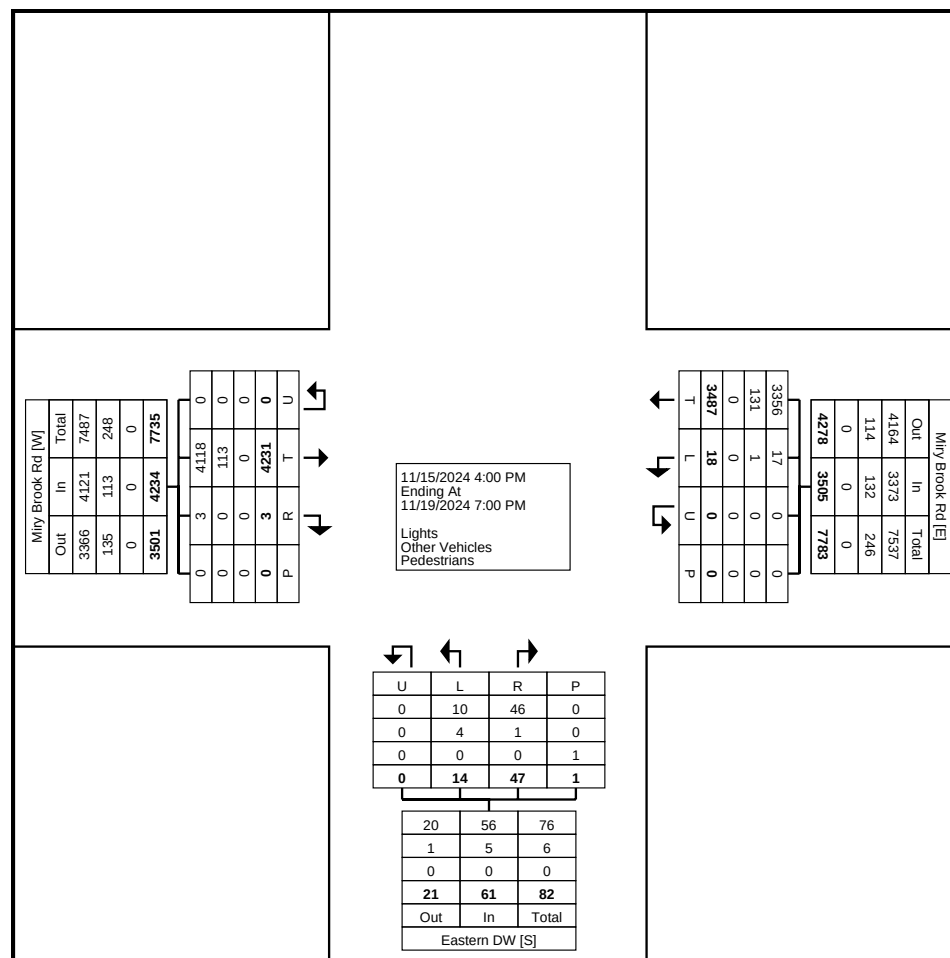
Hourly Total	0	171	0	0	171	0	1	180	0	181	0	0	1	0	1	353
5:00 PM	0	31	0	0	31	0	0	32	0	32	0	0	0	0	0	63
5:15 PM	0	40	0	0	40	0	0	33	0	33	0	0	0	0	0	73
5:30 PM	0	23	1	0	24	0	0	41	0	41	0	0	0	0	0	65
5:45 PM	0	33	0	0	33	0	0	35	0	35	0	0	0	0	0	68
Hourly Total	0	127	1	0	128	0	0	141	0	141	0	0	0	0	0	269
6:00 PM	0	38	0	0	38	0	0	24	0	24	0	0	0	0	0	62
6:15 PM	0	26	0	0	26	0	0	22	0	22	0	0	0	0	0	48
6:30 PM	0	26	0	0	26	0	0	30	0	30	0	1	0	0	1	57
6:45 PM	0	19	0	0	19	0	0	26	0	26	0	1	0	0	1	46
Hourly Total	0	109	0	0	109	0	0	102	0	102	0	2	0	0	2	213
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	0	50	0	0	50	0	0	53	0	53	0	0	0	0	0	103
7:15 AM	0	50	0	0	50	0	0	62	0	62	0	0	0	0	0	112
7:30 AM	0	51	0	0	51	0	0	77	0	77	0	0	0	0	0	128
7:45 AM	0	63	0	0	63	0	0	106	0	106	0	0	0	0	0	169
Hourly Total	0	214	0	0	214	0	0	298	0	298	0	0	0	0	0	512
8:00 AM	0	61	0	0	61	0	0	93	0	93	0	1	0	0	1	155
8:15 AM	0	42	1	0	43	0	2	84	0	86	0	0	0	0	0	129
8:30 AM	0	58	0	0	58	0	4	99	0	103	0	0	0	0	0	161
8:45 AM	0	68	0	0	68	0	2	102	0	104	0	0	1	0	1	173
Hourly Total	0	229	1	0	230	0	8	378	0	386	0	1	1	0	2	618
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	41	0	0	41	0	0	34	0	34	0	0	1	0	1	76
11:15 AM	0	37	0	0	37	0	2	42	0	44	0	0	2	0	2	83
11:30 AM	0	57	0	0	57	0	0	49	0	49	0	0	0	0	0	106
11:45 AM	0	50	0	0	50	0	1	37	0	38	0	0	0	0	0	88
Hourly Total	0	185	0	0	185	0	3	162	0	165	0	0	3	0	3	353
12:00 PM	0	39	0	0	39	0	1	43	0	44	0	0	1	0	1	84
12:15 PM	0	38	0	0	38	0	0	34	0	34	0	0	0	0	0	72
12:30 PM	0	46	0	0	46	0	0	45	0	45	0	1	4	1	5	96
12:45 PM	0	51	0	0	51	0	0	67	0	67	0	2	2	0	4	122
Hourly Total	0	174	0	0	174	0	1	189	0	190	0	3	7	1	10	374
1:00 PM	0	38	0	0	38	0	0	51	0	51	0	0	2	0	2	91
1:15 PM	0	53	0	0	53	0	0	54	0	54	0	0	0	0	0	107
1:30 PM	0	47	0	0	47	0	1	39	0	40	0	0	0	0	0	87
1:45 PM	0	41	0	0	41	0	1	60	0	61	0	0	1	0	1	103
Hourly Total	0	179	0	0	179	0	2	204	0	206	0	0	3	0	3	388
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	120	0	0	120	0	0	67	0	67	0	2	1	0	3	190
4:15 PM	0	98	0	0	98	0	0	65	0	65	0	0	1	0	1	164
4:30 PM	0	110	0	0	110	0	0	50	0	50	0	0	1	0	1	161
4:45 PM	0	94	0	0	94	0	0	66	0	66	0	0	0	0	0	160
Hourly Total	0	422	0	0	422	0	0	248	0	248	0	2	3	0	5	675
5:00 PM	0	139	1	0	140	0	0	64	0	64	0	2	11	0	13	217
5:15 PM	0	118	0	0	118	0	0	69	0	69	0	0	1	0	1	188
5:30 PM	0	139	0	0	139	0	0	49	0	49	0	0	1	0	1	189
5:45 PM	0	128	0	0	128	0	0	33	0	33	0	0	0	0	0	161
Hourly Total	0	524	1	0	525	0	0	215	0	215	0	2	13	0	15	755
6:00 PM	0	68	0	0	68	0	0	59	0	59	0	0	0	0	0	127
6:15 PM	0	75	0	0	75	0	0	36	0	36	0	0	0	0	0	111
6:30 PM	0	39	0	0	39	0	0	46	0	46	0	0	0	0	0	85

6:45 PM	0	27	0	0	27	0	0	36	0	36	0	0	0	0	0	63
Hourly Total	0	209	0	0	209	0	0	177	0	177	0	0	0	0	0	386
Grand Total	0	4231	3	0	4234	0	18	3487	0	3505	0	14	47	1	61	7800
Approach %	0.0	99.9	0.1	-	-	0.0	0.5	99.5	-	-	0.0	23.0	77.0	-	-	-
Total %	0.0	54.2	0.0	-	54.3	0.0	0.2	44.7	-	44.9	0.0	0.2	0.6	-	0.8	-
Lights	0	4118	3	-	4121	0	17	3356	-	3373	0	10	46	-	56	7550
% Lights	-	97.3	100.0	-	97.3	-	94.4	96.2	-	96.2	-	71.4	97.9	-	91.8	96.8
Other Vehicles	0	113	0	-	113	0	1	131	-	132	0	4	1	-	5	250
% Other Vehicles	-	2.7	0.0	-	2.7	-	5.6	3.8	-	3.8	-	28.6	2.1	-	8.2	3.2
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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2500 East High Street
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Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

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Turning Movement Data Plot



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Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Eastern Driveway & Miry Brook Rd
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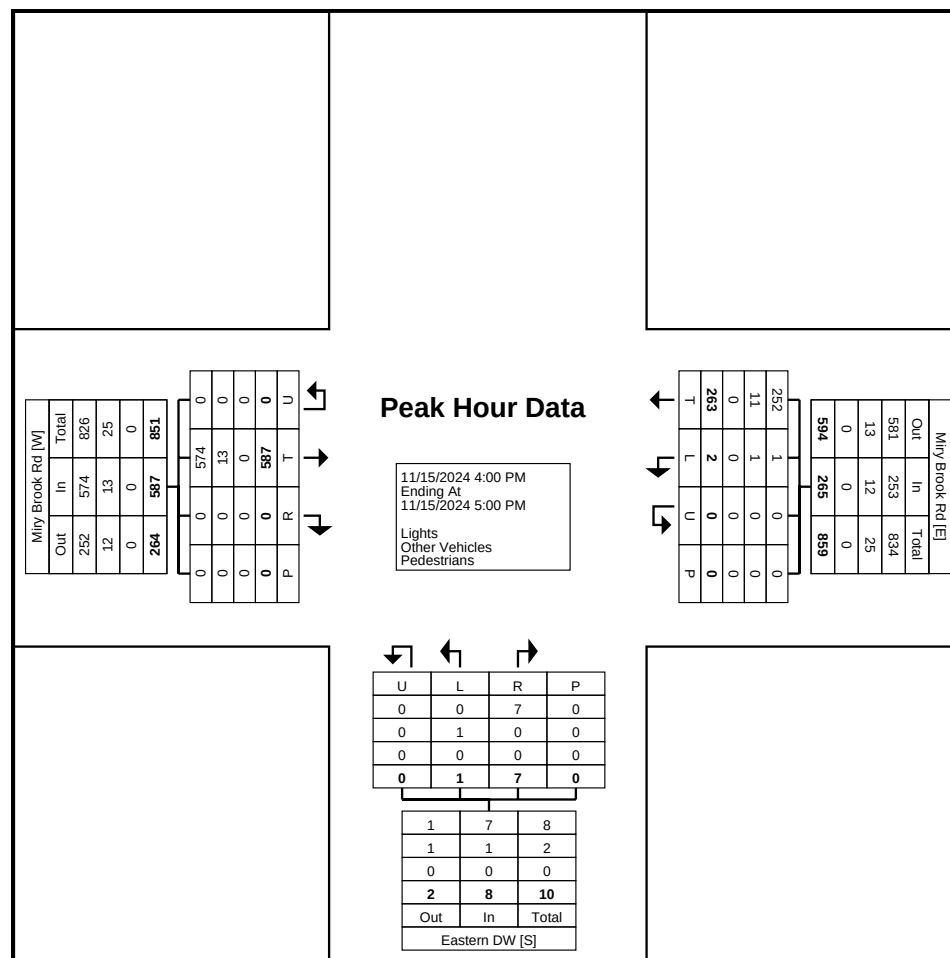
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	162	0	0	162	0	0	74	0	74	0	0	1	0	1	237
4:15 PM	0	163	0	0	163	0	2	63	0	65	0	1	1	0	2	230
4:30 PM	0	134	0	0	134	0	0	52	0	52	0	0	5	0	5	191
4:45 PM	0	128	0	0	128	0	0	74	0	74	0	0	0	0	0	202
Total	0	587	0	0	587	0	2	263	0	265	0	1	7	0	8	860
Approach %	0.0	100.0	0.0	-	-	0.0	0.8	99.2	-	-	0.0	12.5	87.5	-	-	-
Total %	0.0	68.3	0.0	-	68.3	0.0	0.2	30.6	-	30.8	0.0	0.1	0.8	-	0.9	-
PHF	0.000	0.900	0.000	-	0.900	0.000	0.250	0.889	-	0.895	0.000	0.250	0.350	-	0.400	0.907
Lights	0	574	0	-	574	0	1	252	-	253	0	0	7	-	7	834
% Lights	-	97.8	-	-	97.8	-	50.0	95.8	-	95.5	-	0.0	100.0	-	87.5	97.0
Other Vehicles	0	13	0	-	13	0	1	11	-	12	0	1	0	-	1	26
% Other Vehicles	-	2.2	-	-	2.2	-	50.0	4.2	-	4.5	-	100.0	0.0	-	12.5	3.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (4:00 PM)



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Count Name: Eastern Driveway & Miry Brook Rd
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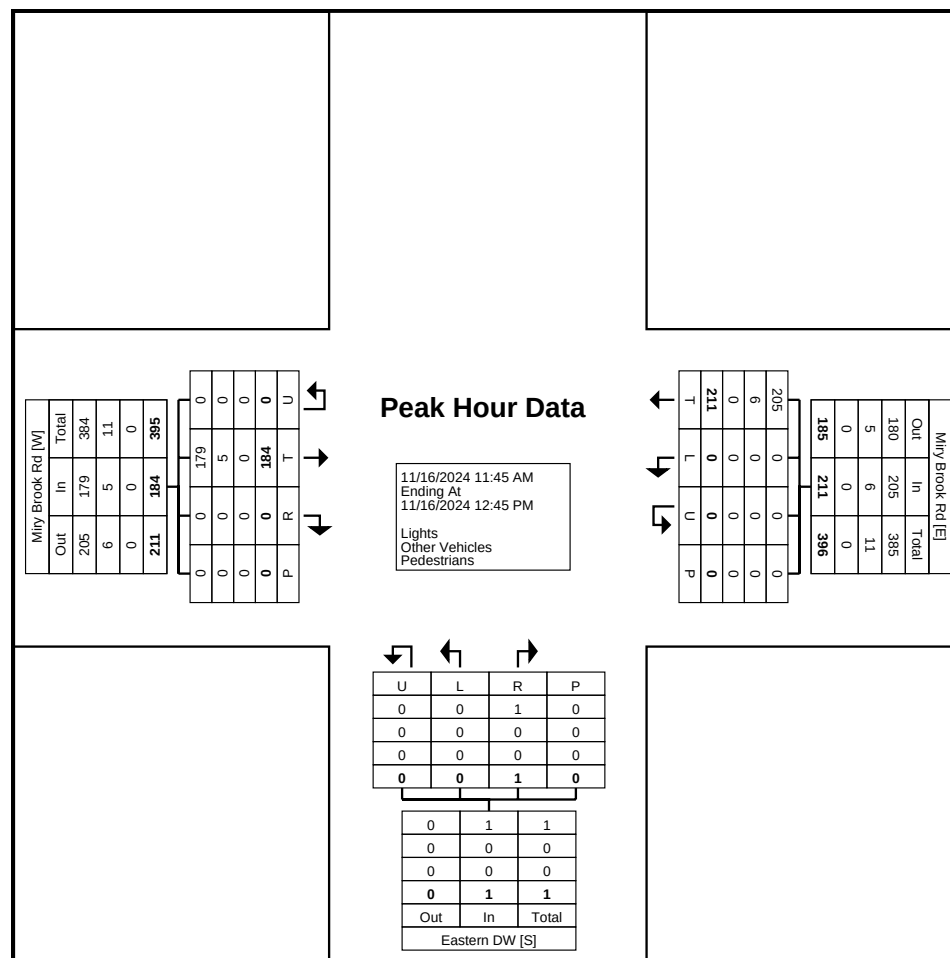
Turning Movement Peak Hour Data (11:45 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
11:45 AM	0	36	0	0	36	0	0	57	0	57	0	0	0	0	0	93
12:00 PM	0	55	0	0	55	0	0	50	0	50	0	0	1	0	1	106
12:15 PM	0	47	0	0	47	0	0	49	0	49	0	0	0	0	0	96
12:30 PM	0	46	0	0	46	0	0	55	0	55	0	0	0	0	0	101
Total	0	184	0	0	184	0	0	211	0	211	0	0	1	0	1	396
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	46.5	0.0	-	46.5	0.0	0.0	53.3	-	53.3	0.0	0.0	0.3	-	0.3	-
PHF	0.000	0.836	0.000	-	0.836	0.000	0.000	0.925	-	0.925	0.000	0.000	0.250	-	0.250	0.934
Lights	0	179	0	-	179	0	0	205	-	205	0	0	1	-	1	385
% Lights	-	97.3	-	-	97.3	-	-	97.2	-	97.2	-	-	100.0	-	100.0	97.2
Other Vehicles	0	5	0	-	5	0	0	6	-	6	0	0	0	-	0	11
% Other Vehicles	-	2.7	-	-	2.7	-	-	2.8	-	2.8	-	-	0.0	-	0.0	2.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (11:45 AM)



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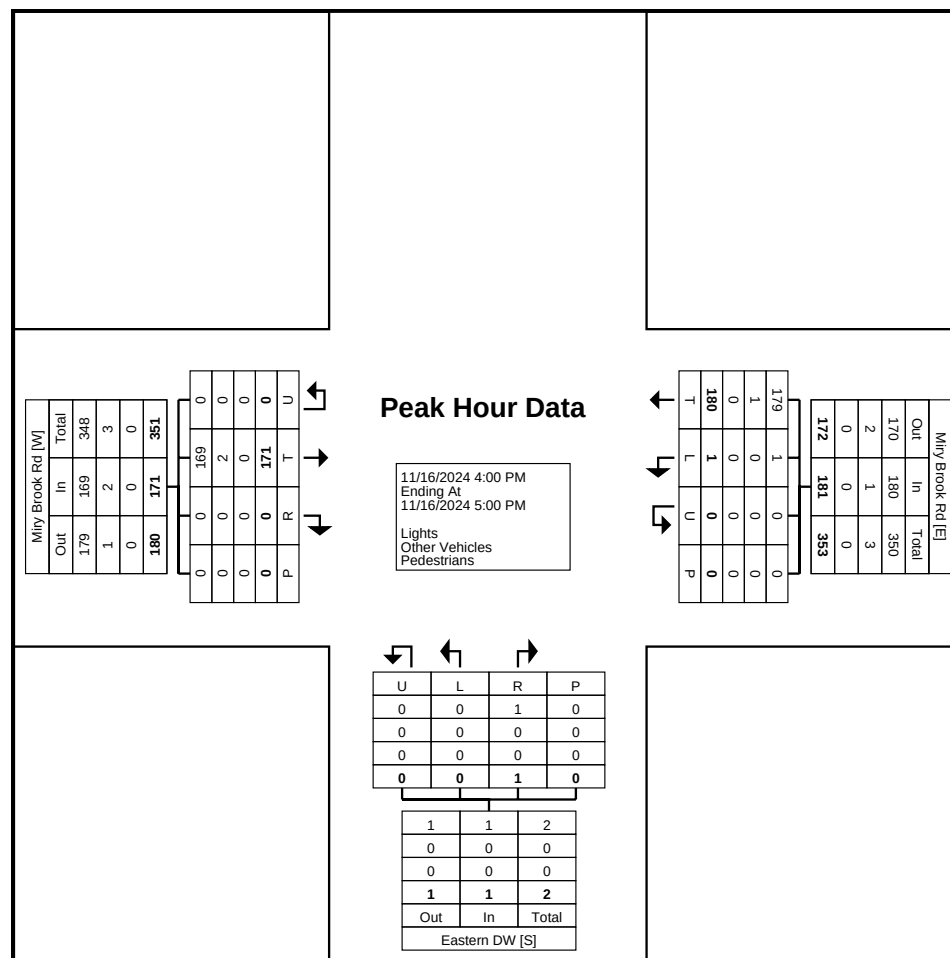
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	52	0	0	52	0	0	41	0	41	0	0	0	0	0	93
4:15 PM	0	38	0	0	38	0	1	47	0	48	0	0	0	0	0	86
4:30 PM	0	42	0	0	42	0	0	44	0	44	0	0	0	0	0	86
4:45 PM	0	39	0	0	39	0	0	48	0	48	0	0	1	0	1	88
Total	0	171	0	0	171	0	1	180	0	181	0	0	1	0	1	353
Approach %	0.0	100.0	0.0	-	-	0.0	0.6	99.4	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	48.4	0.0	-	48.4	0.0	0.3	51.0	-	51.3	0.0	0.0	0.3	-	0.3	-
PHF	0.000	0.822	0.000	-	0.822	0.000	0.250	0.938	-	0.943	0.000	0.000	0.250	-	0.250	0.949
Lights	0	169	0	-	169	0	1	179	-	180	0	0	1	-	1	350
% Lights	-	98.8	-	-	98.8	-	100.0	99.4	-	99.4	-	-	100.0	-	100.0	99.2
Other Vehicles	0	2	0	-	2	0	0	1	-	1	0	0	0	-	0	3
% Other Vehicles	-	1.2	-	-	1.2	-	0.0	0.6	-	0.6	-	-	0.0	-	0.0	0.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (4:00 PM)



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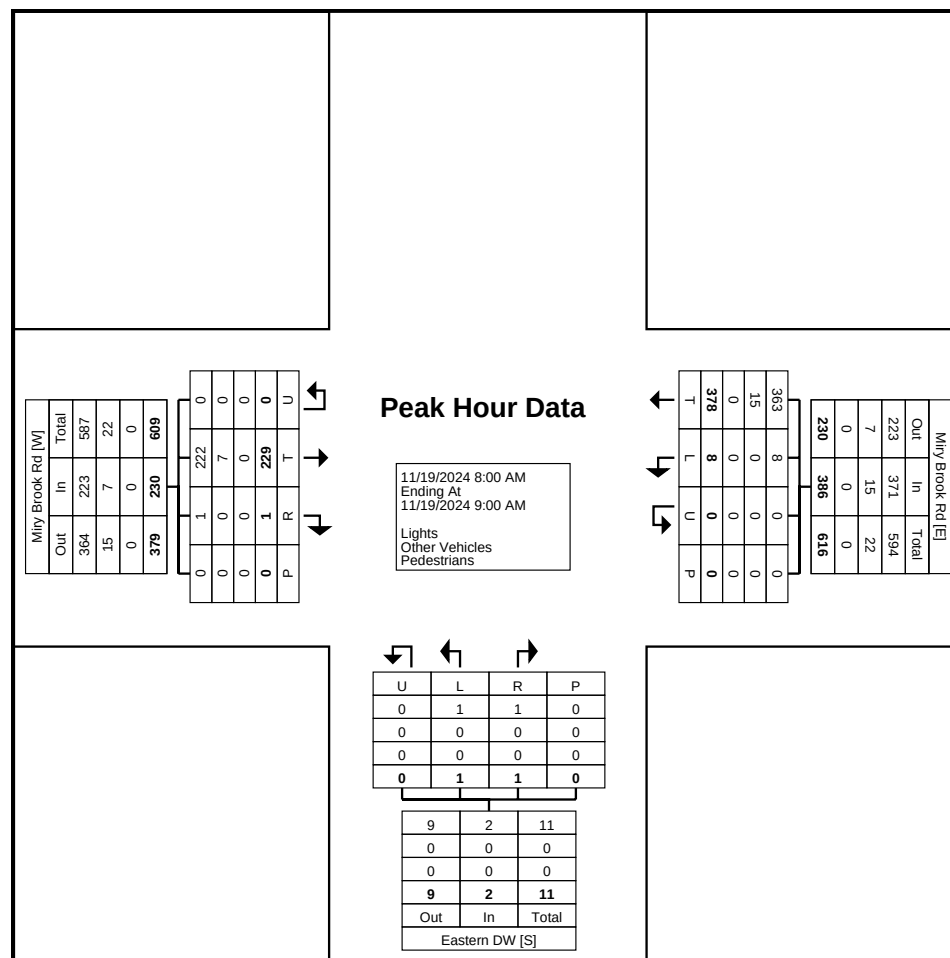
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
8:00 AM	0	61	0	0	61	0	0	93	0	93	0	1	0	0	1	155
8:15 AM	0	42	1	0	43	0	2	84	0	86	0	0	0	0	0	129
8:30 AM	0	58	0	0	58	0	4	99	0	103	0	0	0	0	0	161
8:45 AM	0	68	0	0	68	0	2	102	0	104	0	0	1	0	1	173
Total	0	229	1	0	230	0	8	378	0	386	0	1	1	0	2	618
Approach %	0.0	99.6	0.4	-	-	0.0	2.1	97.9	-	-	0.0	50.0	50.0	-	-	-
Total %	0.0	37.1	0.2	-	37.2	0.0	1.3	61.2	-	62.5	0.0	0.2	0.2	-	0.3	-
PHF	0.000	0.842	0.250	-	0.846	0.000	0.500	0.926	-	0.928	0.000	0.250	0.250	-	0.500	0.893
Lights	0	222	1	-	223	0	8	363	-	371	0	1	1	-	2	596
% Lights	-	96.9	100.0	-	97.0	-	100.0	96.0	-	96.1	-	100.0	100.0	-	100.0	96.4
Other Vehicles	0	7	0	-	7	0	0	15	-	15	0	0	0	-	0	22
% Other Vehicles	-	3.1	0.0	-	3.0	-	0.0	4.0	-	3.9	-	0.0	0.0	-	0.0	3.6
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (8:00 AM)



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Count Name: Eastern Driveway & Miry Brook Rd
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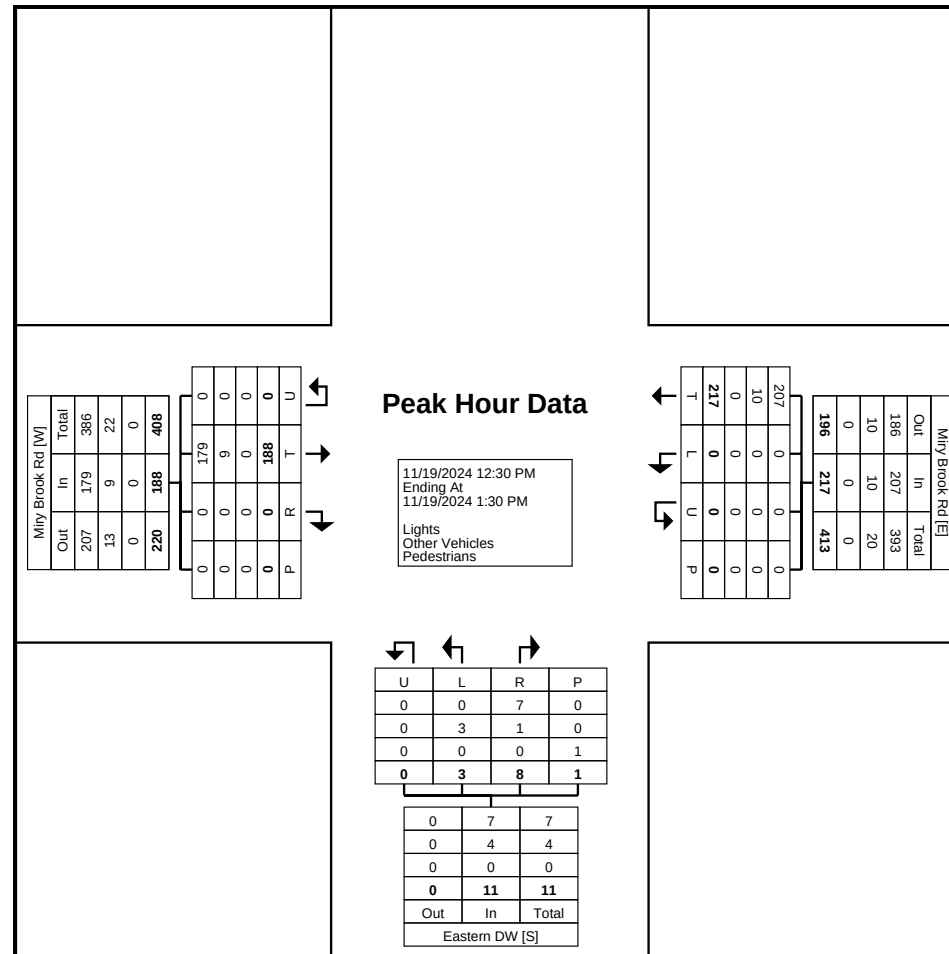
Turning Movement Peak Hour Data (12:30 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
12:30 PM	0	46	0	0	46	0	0	45	0	45	0	1	4	1	5	96
12:45 PM	0	51	0	0	51	0	0	67	0	67	0	2	2	0	4	122
1:00 PM	0	38	0	0	38	0	0	51	0	51	0	0	2	0	2	91
1:15 PM	0	53	0	0	53	0	0	54	0	54	0	0	0	0	0	107
Total	0	188	0	0	188	0	0	217	0	217	0	3	8	1	11	416
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	27.3	72.7	-	-	-
Total %	0.0	45.2	0.0	-	45.2	0.0	0.0	52.2	-	52.2	0.0	0.7	1.9	-	2.6	-
PHF	0.000	0.887	0.000	-	0.887	0.000	0.000	0.810	-	0.810	0.000	0.375	0.500	-	0.550	0.852
Lights	0	179	0	-	179	0	0	207	-	207	0	0	7	-	7	393
% Lights	-	95.2	-	-	95.2	-	-	95.4	-	95.4	-	0.0	87.5	-	63.6	94.5
Other Vehicles	0	9	0	-	9	0	0	10	-	10	0	3	1	-	4	23
% Other Vehicles	-	4.8	-	-	4.8	-	-	4.6	-	4.6	-	100.0	12.5	-	36.4	5.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data Plot (12:30 PM)



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Count Name: Eastern Driveway & Miry Brook Rd
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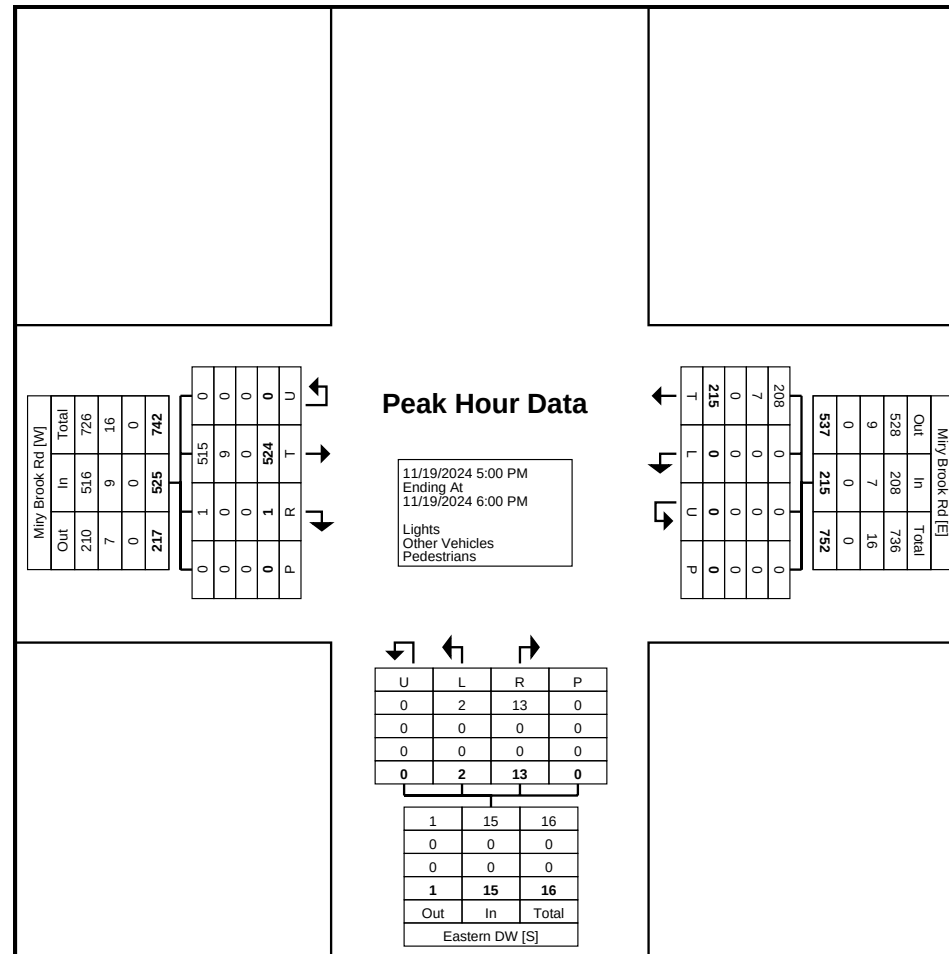
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Eastern DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
5:00 PM	0	139	1	0	140	0	0	64	0	64	0	2	11	0	13	217
5:15 PM	0	118	0	0	118	0	0	69	0	69	0	0	1	0	1	188
5:30 PM	0	139	0	0	139	0	0	49	0	49	0	0	1	0	1	189
5:45 PM	0	128	0	0	128	0	0	33	0	33	0	0	0	0	0	161
Total	0	524	1	0	525	0	0	215	0	215	0	2	13	0	15	755
Approach %	0.0	99.8	0.2	-	-	0.0	0.0	100.0	-	-	0.0	13.3	86.7	-	-	-
Total %	0.0	69.4	0.1	-	69.5	0.0	0.0	28.5	-	28.5	0.0	0.3	1.7	-	2.0	-
PHF	0.000	0.942	0.250	-	0.938	0.000	0.000	0.779	-	0.779	0.000	0.250	0.295	-	0.288	0.870
Lights	0	515	1	-	516	0	0	208	-	208	0	2	13	-	15	739
% Lights	-	98.3	100.0	-	98.3	-	-	96.7	-	96.7	-	100.0	100.0	-	100.0	97.9
Other Vehicles	0	9	0	-	9	0	0	7	-	7	0	0	0	-	0	16
% Other Vehicles	-	1.7	0.0	-	1.7	-	-	3.3	-	3.3	-	0.0	0.0	-	0.0	2.1
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Turning Movement Peak Hour Data Plot (5:00 PM)



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Count Name: Western Driveway & Miry Brook Rd
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Turning Movement Data

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	158	0	0	158	0	0	73	0	73	0	0	0	0	0	231
4:15 PM	0	164	0	0	164	0	0	60	0	60	0	0	1	0	1	225
4:30 PM	0	133	0	0	133	0	0	51	0	51	0	0	0	0	0	184
4:45 PM	0	127	0	0	127	0	0	71	0	71	0	0	0	0	0	198
Hourly Total	0	582	0	0	582	0	0	255	0	255	0	0	1	0	1	838
5:00 PM	0	128	0	0	128	0	0	66	0	66	0	0	1	0	1	195
5:15 PM	0	93	0	0	93	0	0	62	0	62	0	0	1	0	1	156
5:30 PM	0	111	1	0	112	0	0	56	0	56	0	0	0	0	0	168
5:45 PM	0	89	0	0	89	0	0	57	0	57	0	0	0	0	0	146
Hourly Total	0	421	1	0	422	0	0	241	0	241	0	0	2	0	2	665
6:00 PM	0	52	0	0	52	0	0	48	0	48	0	0	0	0	0	100
6:15 PM	0	47	0	0	47	0	0	29	0	29	0	0	0	0	0	76
6:30 PM	0	30	0	0	30	0	0	24	0	24	0	0	0	0	0	54
6:45 PM	0	34	0	0	34	0	0	40	0	40	0	0	0	0	0	74
Hourly Total	0	163	0	0	163	0	0	141	0	141	0	0	0	0	0	304
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	36	0	0	36	0	0	42	0	42	0	0	0	0	0	78
11:15 AM	0	35	0	0	35	0	0	34	0	34	0	0	0	0	0	69
11:30 AM	0	33	0	0	33	0	0	29	0	29	0	0	0	0	0	62
11:45 AM	0	37	0	0	37	0	0	57	0	57	0	0	0	0	0	94
Hourly Total	0	141	0	0	141	0	0	162	0	162	0	0	0	0	0	303
12:00 PM	0	53	0	0	53	0	0	49	0	49	0	0	0	0	0	102
12:15 PM	0	48	0	0	48	0	0	51	0	51	0	0	0	0	0	99
12:30 PM	0	46	0	0	46	0	0	57	0	57	0	0	0	0	0	103
12:45 PM	0	40	0	0	40	0	0	37	0	37	0	0	0	0	0	77
Hourly Total	0	187	0	0	187	0	0	194	0	194	0	0	0	0	0	381
1:00 PM	0	42	0	0	42	0	0	45	0	45	0	1	0	0	1	88
1:15 PM	0	43	0	0	43	0	0	39	0	39	0	0	0	0	0	82
1:30 PM	0	40	0	0	40	0	0	50	0	50	0	0	0	0	0	90
1:45 PM	0	41	0	0	41	0	0	50	0	50	0	0	0	0	0	91
Hourly Total	0	166	0	0	166	0	0	184	0	184	0	1	0	0	1	351
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	50	0	0	50	0	0	40	0	40	0	0	0	0	0	90
4:15 PM	0	38	0	0	38	0	0	46	0	46	0	1	0	0	1	85
4:30 PM	0	37	0	0	37	0	0	46	0	46	0	0	0	0	0	83
4:45 PM	0	39	1	0	40	0	0	45	0	45	0	0	0	0	0	85

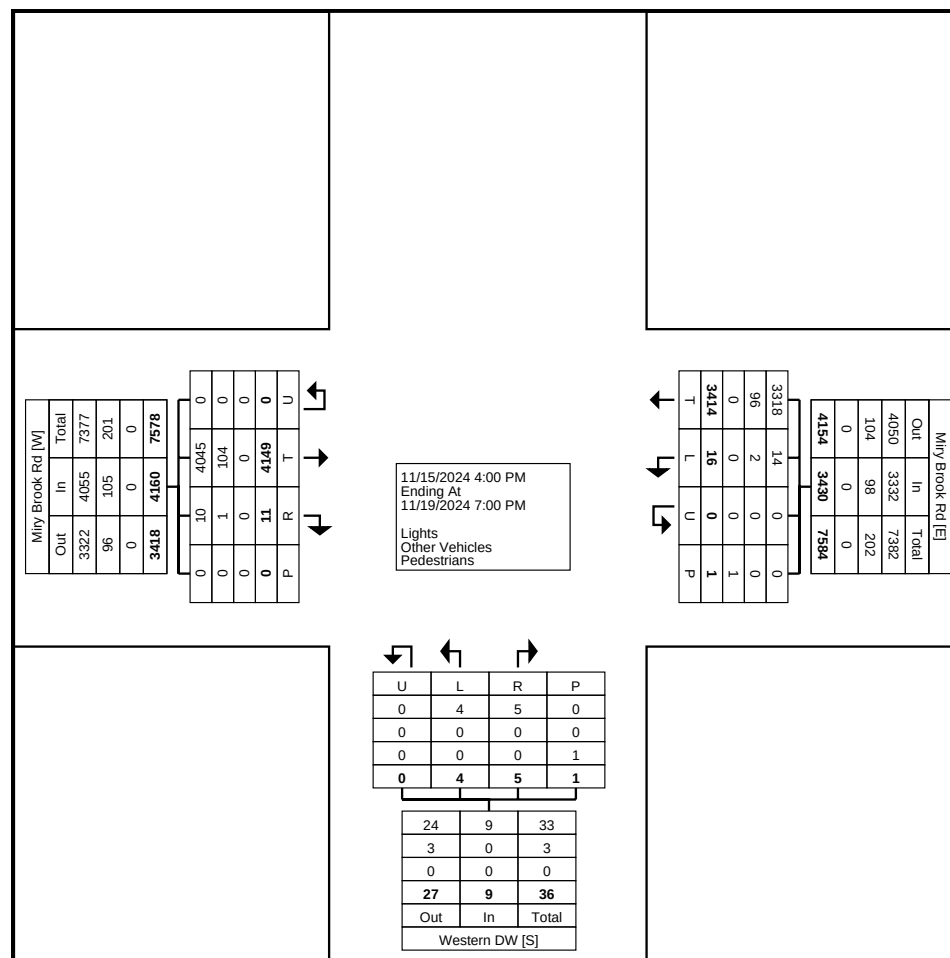
Hourly Total	0	164	1	0	165	0	0	177	0	177	0	1	0	0	1	343
5:00 PM	0	33	0	0	33	0	0	31	0	31	0	0	0	0	0	64
5:15 PM	0	37	0	0	37	0	0	33	0	33	0	0	0	0	0	70
5:30 PM	0	26	0	0	26	0	0	43	0	43	0	0	0	0	0	69
5:45 PM	0	32	0	0	32	0	0	37	0	37	0	0	1	0	1	70
Hourly Total	0	128	0	0	128	0	0	144	0	144	0	0	1	0	1	273
6:00 PM	0	41	0	0	41	0	0	22	0	22	0	0	0	0	0	63
6:15 PM	0	22	0	0	22	0	0	22	0	22	0	0	0	0	0	44
6:30 PM	0	27	0	0	27	0	1	32	0	33	0	0	0	0	0	60
6:45 PM	0	18	0	0	18	0	1	24	0	25	0	0	0	0	0	43
Hourly Total	0	108	0	0	108	0	2	100	0	102	0	0	0	0	0	210
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	0	49	0	0	49	0	0	47	0	47	0	0	0	0	0	96
7:15 AM	0	49	0	0	49	0	1	60	0	61	0	0	0	0	0	110
7:30 AM	0	50	0	0	50	0	0	76	0	76	0	0	0	0	0	126
7:45 AM	0	59	0	0	59	0	0	102	0	102	0	0	0	0	0	161
Hourly Total	0	207	0	0	207	0	1	285	0	286	0	0	0	0	0	493
8:00 AM	0	59	1	0	60	0	3	83	0	86	0	0	0	0	0	146
8:15 AM	0	43	1	0	44	0	1	82	0	83	0	0	0	0	0	127
8:30 AM	0	57	0	0	57	0	2	93	0	95	0	0	0	0	0	152
8:45 AM	0	65	0	0	65	0	1	94	0	95	0	0	0	0	0	160
Hourly Total	0	224	2	0	226	0	7	352	0	359	0	0	0	0	0	585
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	0	40	1	0	41	0	0	35	0	35	0	0	0	0	0	76
11:15 AM	0	37	0	0	37	0	0	42	0	42	0	0	0	0	0	79
11:30 AM	0	55	0	0	55	0	0	48	0	48	0	0	0	0	0	103
11:45 AM	0	51	0	0	51	0	1	36	0	37	0	0	0	0	0	88
Hourly Total	0	183	1	0	184	0	1	161	0	162	0	0	0	0	0	346
12:00 PM	0	38	0	0	38	0	0	45	0	45	0	0	0	0	0	83
12:15 PM	0	39	0	0	39	0	0	35	0	35	0	0	0	0	0	74
12:30 PM	0	46	2	0	48	0	0	46	1	46	0	1	0	0	1	95
12:45 PM	0	51	1	0	52	0	2	70	0	72	0	0	0	0	0	124
Hourly Total	0	174	3	0	177	0	2	196	1	198	0	1	0	0	1	376
1:00 PM	0	37	1	0	38	0	0	50	0	50	0	0	0	0	0	88
1:15 PM	0	52	0	0	52	0	0	54	0	54	0	0	0	0	0	106
1:30 PM	0	47	0	0	47	0	0	39	0	39	0	0	0	1	0	86
1:45 PM	0	41	1	0	42	0	1	59	0	60	0	0	0	0	0	102
Hourly Total	0	177	2	0	179	0	1	202	0	203	0	0	0	1	0	382
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	116	1	0	117	0	1	67	0	68	0	1	0	0	1	186
4:15 PM	0	96	0	0	96	0	0	60	0	60	0	0	0	0	0	156
4:30 PM	0	108	0	0	108	0	1	48	0	49	0	0	0	0	0	157
4:45 PM	0	86	0	0	86	0	0	62	0	62	0	0	0	0	0	148
Hourly Total	0	406	1	0	407	0	2	237	0	239	0	1	0	0	1	647
5:00 PM	0	135	0	0	135	0	0	63	0	63	0	0	0	0	0	198
5:15 PM	0	112	0	0	112	0	0	65	0	65	0	0	0	0	0	177
5:30 PM	0	139	0	0	139	0	0	46	0	46	0	0	1	0	1	186
5:45 PM	0	133	0	0	133	0	0	33	0	33	0	0	0	0	0	166
Hourly Total	0	519	0	0	519	0	0	207	0	207	0	0	1	0	1	727
6:00 PM	0	65	0	0	65	0	0	57	0	57	0	0	0	0	0	122
6:15 PM	0	69	0	0	69	0	0	37	0	37	0	0	0	0	0	106
6:30 PM	0	38	0	0	38	0	0	46	0	46	0	0	0	0	0	84

6:45 PM	0	27	0	0	27	0	0	36	0	36	0	0	0	0	0	63
Hourly Total	0	199	0	0	199	0	0	176	0	176	0	0	0	0	0	375
Grand Total	0	4149	11	0	4160	0	16	3414	1	3430	0	4	5	1	9	7599
Approach %	0.0	99.7	0.3	-	-	0.0	0.5	99.5	-	-	0.0	44.4	55.6	-	-	-
Total %	0.0	54.6	0.1	-	54.7	0.0	0.2	44.9	-	45.1	0.0	0.1	0.1	-	0.1	-
Lights	0	4045	10	-	4055	0	14	3318	-	3332	0	4	5	-	9	7396
% Lights	-	97.5	90.9	-	97.5	-	87.5	97.2	-	97.1	-	100.0	100.0	-	100.0	97.3
Other Vehicles	0	104	1	-	105	0	2	96	-	98	0	0	0	-	0	203
% Other Vehicles	-	2.5	9.1	-	2.5	-	12.5	2.8	-	2.9	-	0.0	0.0	-	0.0	2.7
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

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Turning Movement Data Plot



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 2500 East High Street
 Suite 650
 Pottstown, Pennsylvania, United States 19464
 610.326.3100 tcooney@trafficpd.com

Count Name: Western Driveway & Miry Brook Rd
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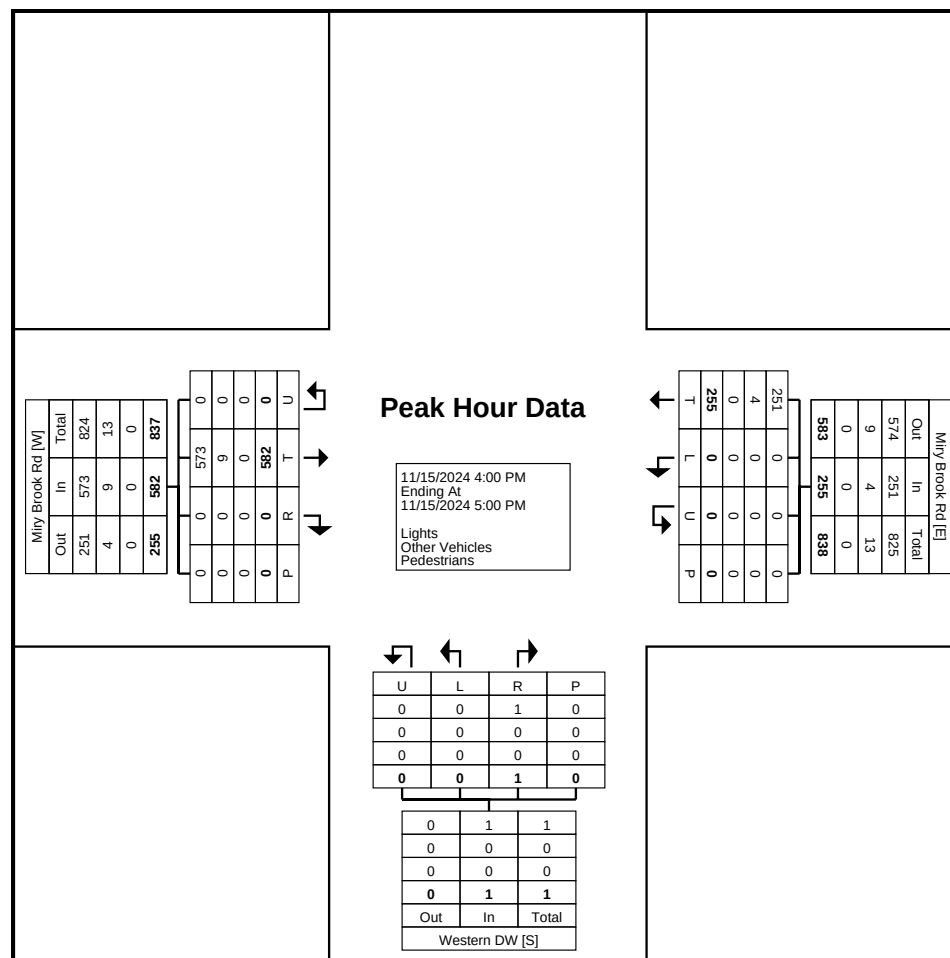
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	158	0	0	158	0	0	73	0	73	0	0	0	0	0	231
4:15 PM	0	164	0	0	164	0	0	60	0	60	0	0	1	0	1	225
4:30 PM	0	133	0	0	133	0	0	51	0	51	0	0	0	0	0	184
4:45 PM	0	127	0	0	127	0	0	71	0	71	0	0	0	0	0	198
Total	0	582	0	0	582	0	0	255	0	255	0	0	1	0	1	838
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	69.5	0.0	-	69.5	0.0	0.0	30.4	-	30.4	0.0	0.0	0.1	-	0.1	-
PHF	0.000	0.887	0.000	-	0.887	0.000	0.000	0.873	-	0.873	0.000	0.000	0.250	-	0.250	0.907
Lights	0	573	0	-	573	0	0	251	-	251	0	0	1	-	1	825
% Lights	-	98.5	-	-	98.5	-	-	98.4	-	98.4	-	-	100.0	-	100.0	98.4
Other Vehicles	0	9	0	-	9	0	0	4	-	4	0	0	0	-	0	13
% Other Vehicles	-	1.5	-	-	1.5	-	-	1.6	-	1.6	-	-	0.0	-	0.0	1.6
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

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Turning Movement Peak Hour Data Plot (4:00 PM)



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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Western Driveway & Miry Brook Rd
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Turning Movement Peak Hour Data (11:45 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
11:45 AM	0	37	0	0	37	0	0	57	0	57	0	0	0	0	0	94
12:00 PM	0	53	0	0	53	0	0	49	0	49	0	0	0	0	0	102
12:15 PM	0	48	0	0	48	0	0	51	0	51	0	0	0	0	0	99
12:30 PM	0	46	0	0	46	0	0	57	0	57	0	0	0	0	0	103
Total	0	184	0	0	184	0	0	214	0	214	0	0	0	0	0	398
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	46.2	0.0	-	46.2	0.0	0.0	53.8	-	53.8	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.868	0.000	-	0.868	0.000	0.000	0.939	-	0.939	0.000	0.000	0.000	-	0.000	0.966
Lights	0	182	0	-	182	0	0	210	-	210	0	0	0	-	0	392
% Lights	-	98.9	-	-	98.9	-	-	98.1	-	98.1	-	-	-	-	-	98.5
Other Vehicles	0	2	0	-	2	0	0	4	-	4	0	0	0	-	0	6
% Other Vehicles	-	1.1	-	-	1.1	-	-	1.9	-	1.9	-	-	-	-	-	1.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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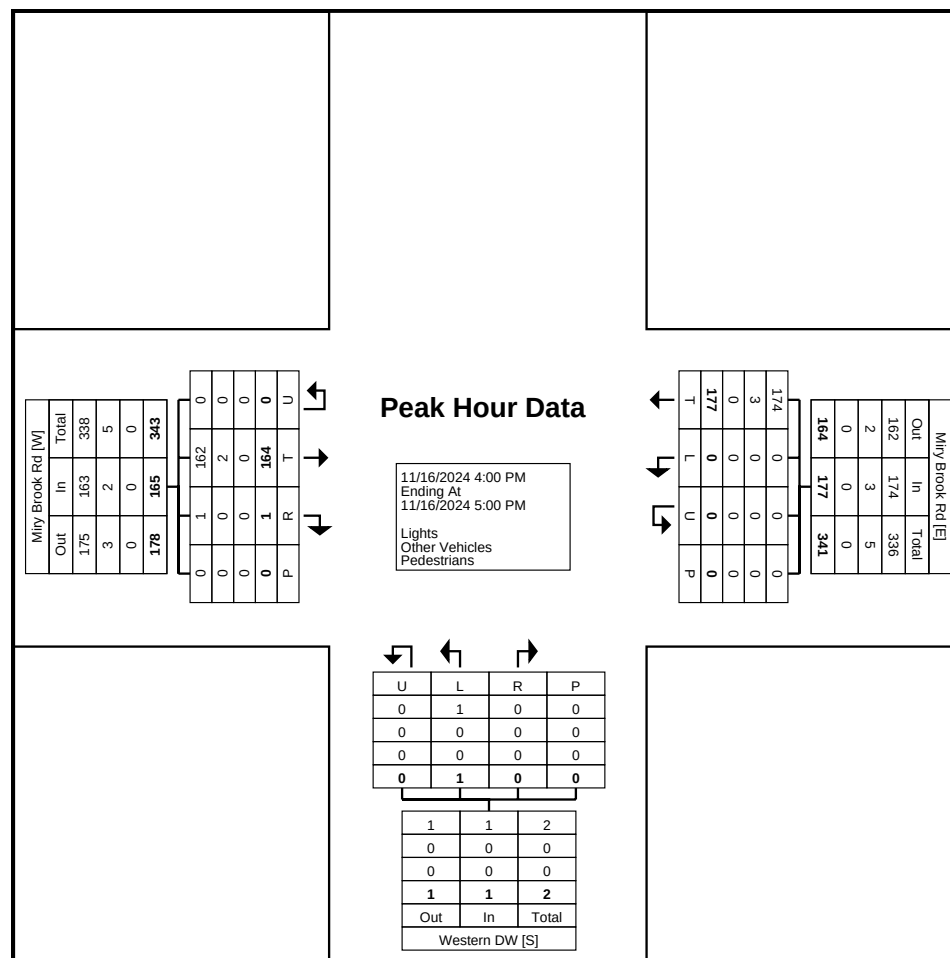
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
4:00 PM	0	50	0	0	50	0	0	40	0	40	0	0	0	0	0	90
4:15 PM	0	38	0	0	38	0	0	46	0	46	0	1	0	0	1	85
4:30 PM	0	37	0	0	37	0	0	46	0	46	0	0	0	0	0	83
4:45 PM	0	39	1	0	40	0	0	45	0	45	0	0	0	0	0	85
Total	0	164	1	0	165	0	0	177	0	177	0	1	0	0	1	343
Approach %	0.0	99.4	0.6	-	-	0.0	0.0	100.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	47.8	0.3	-	48.1	0.0	0.0	51.6	-	51.6	0.0	0.3	0.0	-	0.3	-
PHF	0.000	0.820	0.250	-	0.825	0.000	0.000	0.962	-	0.962	0.000	0.250	0.000	-	0.250	0.953
Lights	0	162	1	-	163	0	0	174	-	174	0	1	0	-	1	338
% Lights	-	98.8	100.0	-	98.8	-	-	98.3	-	98.3	-	100.0	-	-	100.0	98.5
Other Vehicles	0	2	0	-	2	0	0	3	-	3	0	0	0	-	0	5
% Other Vehicles	-	1.2	0.0	-	1.2	-	-	1.7	-	1.7	-	0.0	-	-	0.0	1.5
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

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Turning Movement Peak Hour Data Plot (4:00 PM)



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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

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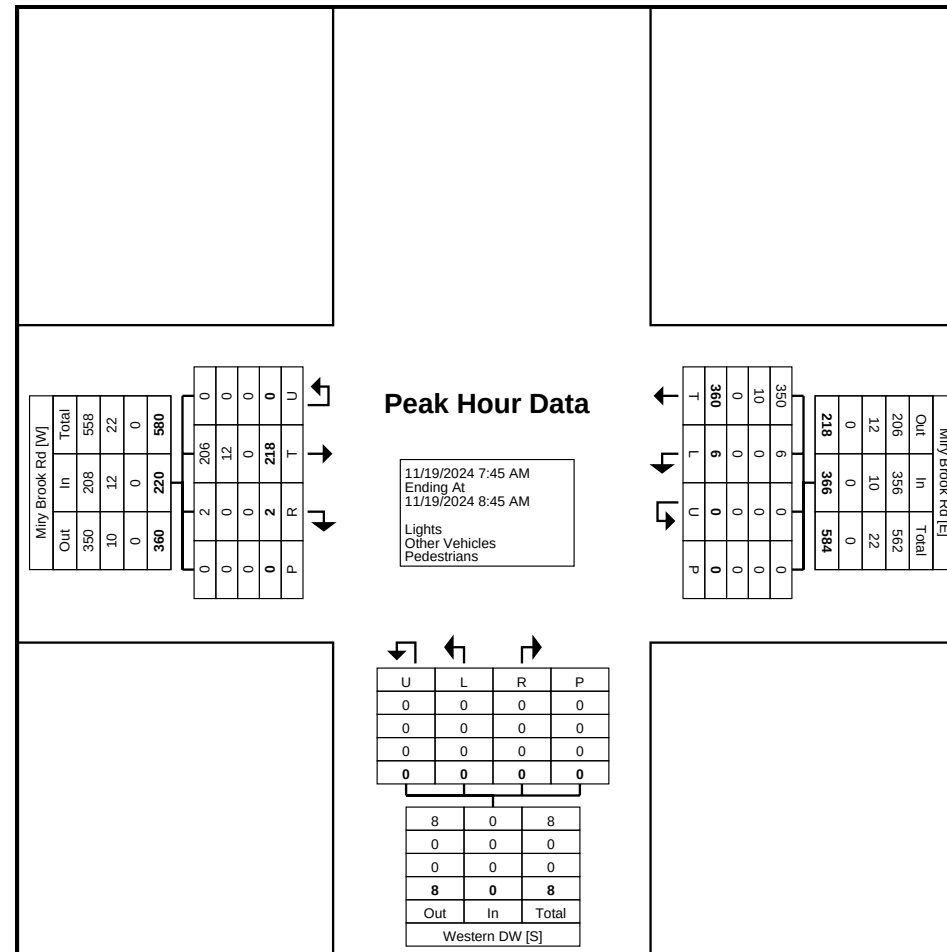
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:45 AM	0	59	0	0	59	0	0	102	0	102	0	0	0	0	0	161
8:00 AM	0	59	1	0	60	0	3	83	0	86	0	0	0	0	0	146
8:15 AM	0	43	1	0	44	0	1	82	0	83	0	0	0	0	0	127
8:30 AM	0	57	0	0	57	0	2	93	0	95	0	0	0	0	0	152
Total	0	218	2	0	220	0	6	360	0	366	0	0	0	0	0	586
Approach %	0.0	99.1	0.9	-	-	0.0	1.6	98.4	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	37.2	0.3	-	37.5	0.0	1.0	61.4	-	62.5	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.924	0.500	-	0.917	0.000	0.500	0.882	-	0.897	0.000	0.000	0.000	-	0.000	0.910
Lights	0	206	2	-	208	0	6	350	-	356	0	0	0	-	0	564
% Lights	-	94.5	100.0	-	94.5	-	100.0	97.2	-	97.3	-	-	-	-	-	96.2
Other Vehicles	0	12	0	-	12	0	0	10	-	10	0	0	0	-	0	22
% Other Vehicles	-	5.5	0.0	-	5.5	-	0.0	2.8	-	2.7	-	-	-	-	-	3.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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2500 East High Street
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610.326.3100 tcooney@trafficpd.com

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Turning Movement Peak Hour Data Plot (7:45 AM)



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610.326.3100 tcooney@trafficpd.com

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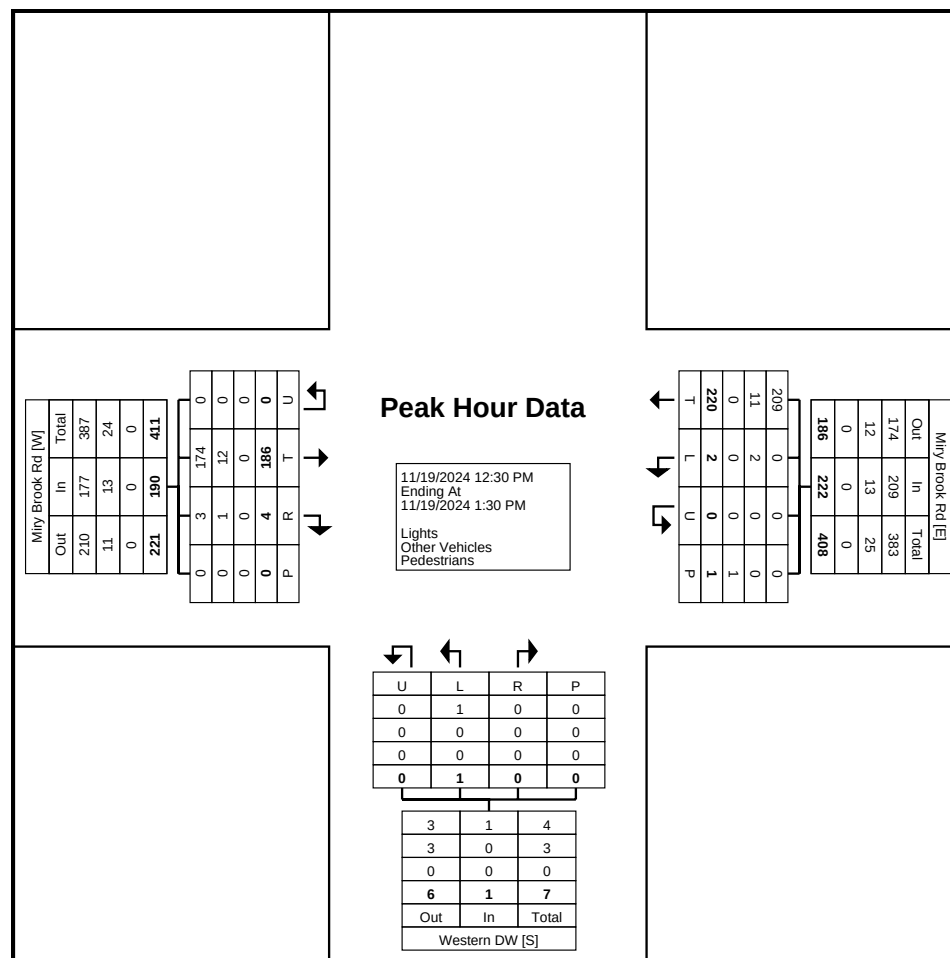
Turning Movement Peak Hour Data (12:30 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
12:30 PM	0	46	2	0	48	0	0	46	1	46	0	1	0	0	1	95
12:45 PM	0	51	1	0	52	0	2	70	0	72	0	0	0	0	0	124
1:00 PM	0	37	1	0	38	0	0	50	0	50	0	0	0	0	0	88
1:15 PM	0	52	0	0	52	0	0	54	0	54	0	0	0	0	0	106
Total	0	186	4	0	190	0	2	220	1	222	0	1	0	0	1	413
Approach %	0.0	97.9	2.1	-	-	0.0	0.9	99.1	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	45.0	1.0	-	46.0	0.0	0.5	53.3	-	53.8	0.0	0.2	0.0	-	0.2	-
PHF	0.000	0.894	0.500	-	0.913	0.000	0.250	0.786	-	0.771	0.000	0.250	0.000	-	0.250	0.833
Lights	0	174	3	-	177	0	0	209	-	209	0	1	0	-	1	387
% Lights	-	93.5	75.0	-	93.2	-	0.0	95.0	-	94.1	-	100.0	-	-	100.0	93.7
Other Vehicles	0	12	1	-	13	0	2	11	-	13	0	0	0	-	0	26
% Other Vehicles	-	6.5	25.0	-	6.8	-	100.0	5.0	-	5.9	-	0.0	-	-	0.0	6.3
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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2500 East High Street
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610.326.3100 tcooney@trafficpd.com

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Turning Movement Peak Hour Data Plot (12:30 PM)



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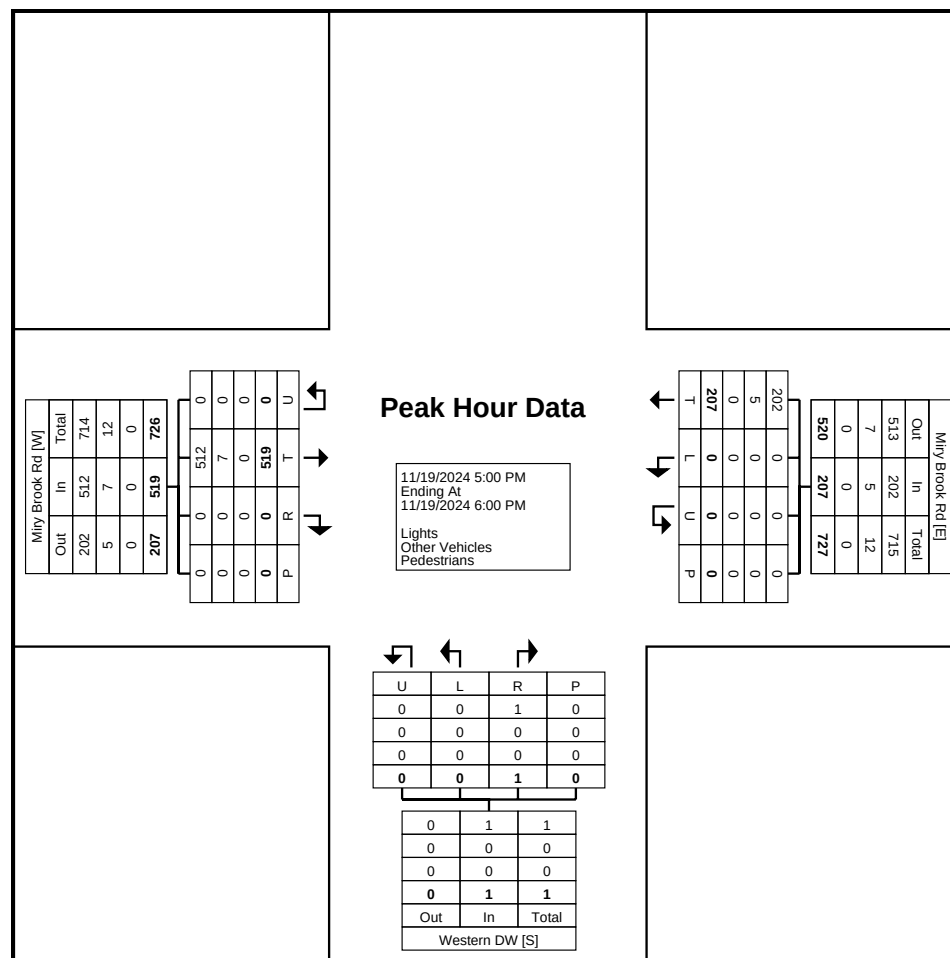
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Miry Brook Rd Eastbound					Miry Brook Rd Westbound					Western DW Northbound					Int. Total
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
5:00 PM	0	135	0	0	135	0	0	63	0	63	0	0	0	0	0	198
5:15 PM	0	112	0	0	112	0	0	65	0	65	0	0	0	0	0	177
5:30 PM	0	139	0	0	139	0	0	46	0	46	0	0	1	0	1	186
5:45 PM	0	133	0	0	133	0	0	33	0	33	0	0	0	0	0	166
Total	0	519	0	0	519	0	0	207	0	207	0	0	1	0	1	727
Approach %	0.0	100.0	0.0	-	-	0.0	0.0	100.0	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	71.4	0.0	-	71.4	0.0	0.0	28.5	-	28.5	0.0	0.0	0.1	-	0.1	-
PHF	0.000	0.933	0.000	-	0.933	0.000	0.000	0.796	-	0.796	0.000	0.000	0.250	-	0.250	0.918
Lights	0	512	0	-	512	0	0	202	-	202	0	0	1	-	1	715
% Lights	-	98.7	-	-	98.7	-	-	97.6	-	97.6	-	-	100.0	-	100.0	98.3
Other Vehicles	0	7	0	-	7	0	0	5	-	5	0	0	0	-	0	12
% Other Vehicles	-	1.3	-	-	1.3	-	-	2.4	-	2.4	-	-	0.0	-	0.0	1.7
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 tcooney@trafficpd.com

Count Name: Western Driveway & Miry Brook Rd
Rd
Site Code:
Start Date: 11/15/2024
Page No: 16



Turning Movement Peak Hour Data Plot (5:00 PM)

Land Use: 140

Manufacturing

Description

A manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, a manufacturing facility typically has an office and may provide space for warehouse, research, and associated functions. General light industrial (Land Use 110) and industrial park (Land Use 130) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Minnesota, Missouri, New Jersey, New York, Oregon, Pennsylvania, South Dakota, Texas, Vermont, Washington, and West Virginia.

Source Numbers

177, 179, 184, 241, 357, 384, 418, 443, 583, 598, 611, 728, 747, 875, 879, 940, 969, 1067, 1068, 1082

Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 48

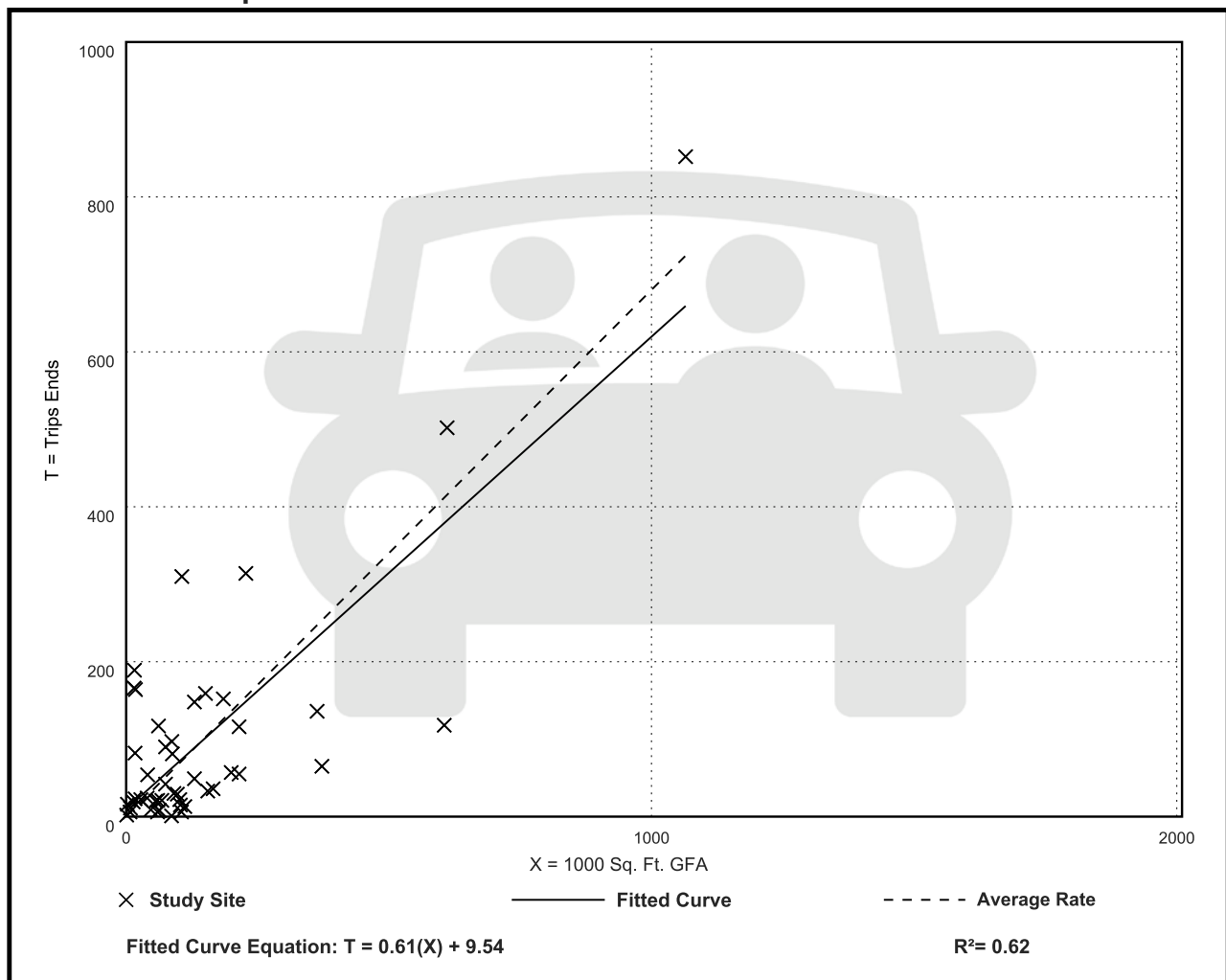
Avg. 1000 Sq. Ft. GFA: 138

Directional Distribution: 76% entering, 24% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.68	0.01 - 11.93	1.03

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 62

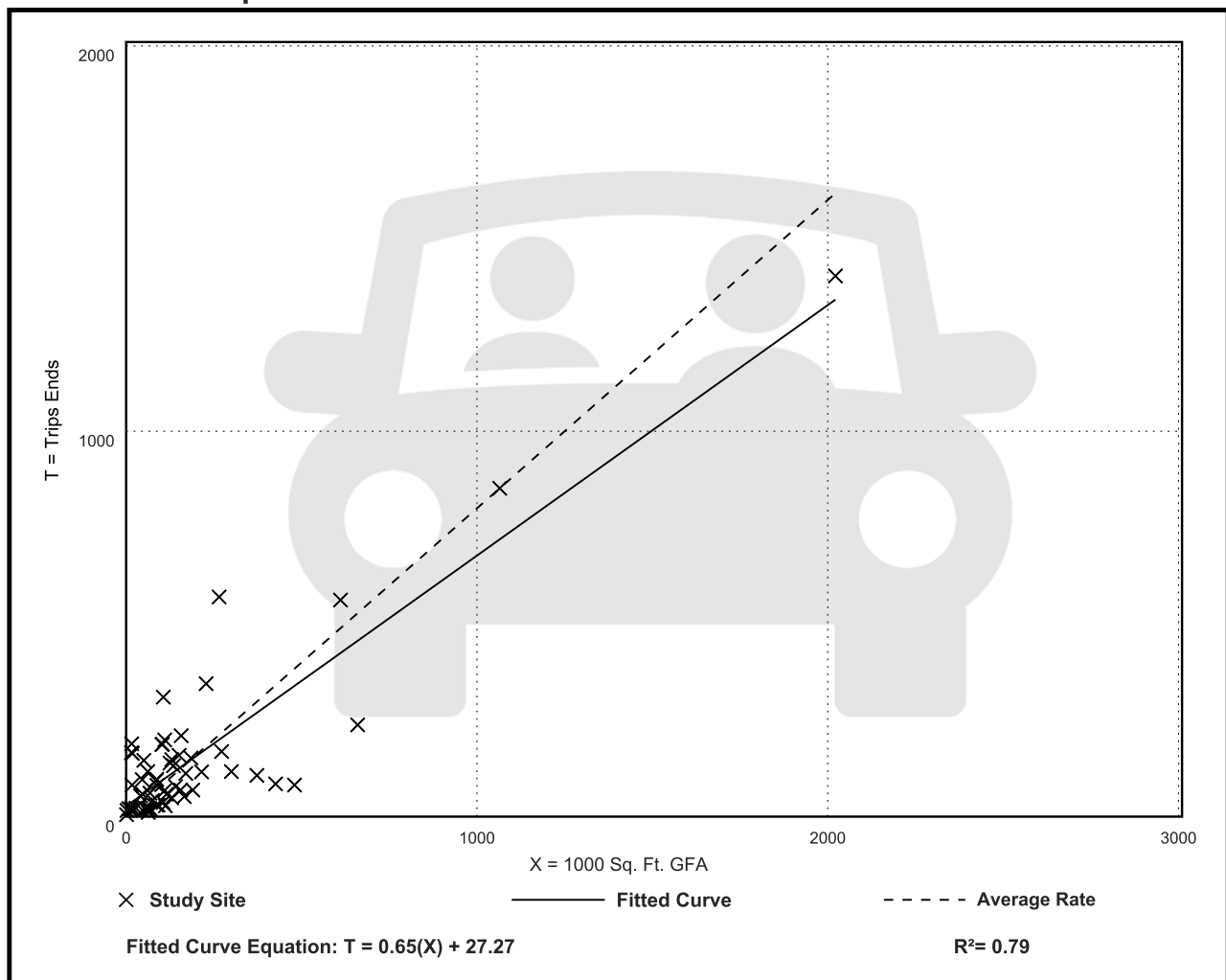
Avg. 1000 Sq. Ft. GFA: 178

Directional Distribution: 73% entering, 27% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.80	0.17 - 11.93	0.87

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 55

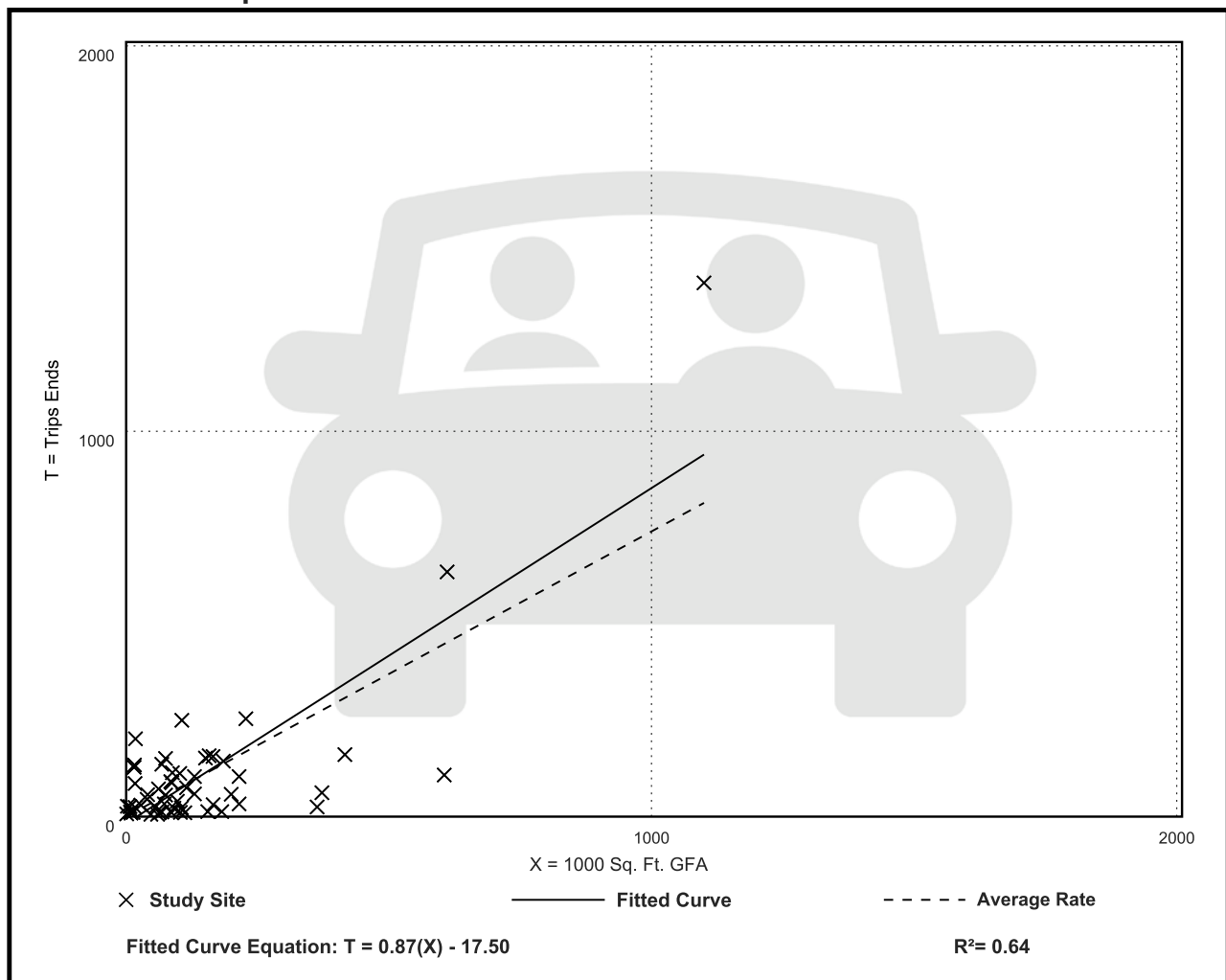
Avg. 1000 Sq. Ft. GFA: 142

Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.74	0.07 - 11.37	0.93

Data Plot and Equation



Manufacturing (140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

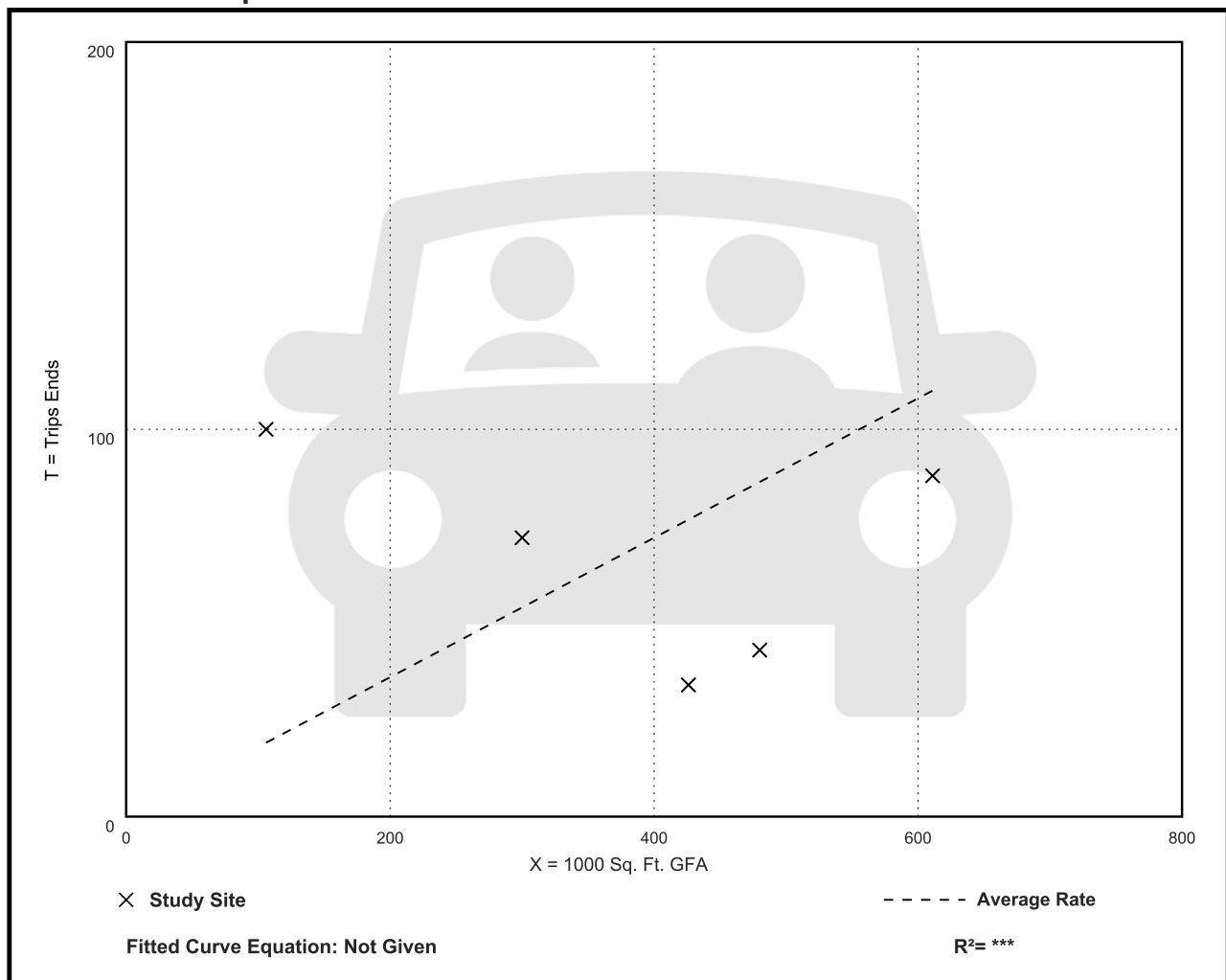
Avg. 1000 Sq. Ft. GFA: 385

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.94	0.22

Data Plot and Equation



D | Proposed Auto Collective July 2025 Schedule

AUTO COLLECTIVE

FAIRFIELD COUNTY

Proposed schedule of events at the Auto Collective for July 2025.

Tuesday, July 1, 2025

Wednesday, July 2, 2025

Thursday, July 3, 2025

Friday, July 4, 2025

- July 4th BBQ Lunch and kids movie day with RC car races
 - 150 members & guests
 - 12noon to 3pm
- Dinner and viewing of F1 British Grand Prix Practice
 - 20 members & guests
 - 7pm to 10pm

Saturday, July 5, 2025

- Lunch and viewing of F1 British Grand Prix Qualifying
 - 40 members & guests
 - 12pm to 2pm

Sunday, July 6, 2025

- Brunch and viewing of F1 British Grand Prix Race
 - 60 members & guests
 - 12pm to 4pm

Monday, July 7, 2025

Tuesday, July 8, 2025

Wednesday, July 9, 2025

- Dinner and movie night for members, Top Gun. Load up an F-14 on our simulator
 - 30 members and guests
 - 6pm to 9pm

Thursday, July 10, 2025

Friday, July 11, 2025

- Dinner and member event viewing of new F1 Movie
 - 75 members and guests
 - 7pm to 10pm

Saturday, July 12, 2025

- Member's kids' event, slot car races and lunch
 - 50 members and 50 kids
 - 12pm to 5pm

Sunday, July 13, 2025

- Member sponsored event – wedding anniversary party
 - 300 guests of member
 - 2pm to 6pm

Monday, July 14, 2025

Tuesday, July 15, 2025

- STEM Racing practice training event for local student teams
 - 20 students and guests
 - 1pm to 4pm

Wednesday, July 16, 2025

Thursday, July 17, 2025

AUTO COLLECTIVE

FAIRFIELD COUNTY

- Member's 60th birthday party dinner
 - 50 guests of member
 - 6pm to 10pm

Friday, July 18, 2025

- Breakfast meetup before driving up to Berkshires for weekend trip
 - 20 members and guests
 - 8am to 10am

Saturday, July 19, 2025

- British car enthusiasts showcase and fish and chips truck indoors
 - 50 members and guests
 - 12 to 4pm

Sunday, July 20, 2025

- BBQ lunch for members and viewing of Czech MotoGP Race
 - 80 members and guests
 - 12pm to 3pm

Monday, July 21, 2025

Tuesday, July 22, 2025

- Members' kid movie night and pizza party, Cars
 - 20 kids
 - 5pm to 8pm

Wednesday, July 23, 2025

Thursday, July 24, 2025

- Members' F1 simulator competition of Spa Belgium Grand Prix and dinner
 - 40 members and guests
 - 7pm to 10pm

Friday, July 25, 2025

- Dinner and viewing of F1 Spa Belgian Grand Prix Practice
 - 20 members & guests
 - 7pm to 10pm

Saturday, July 26, 2025

- Lunch and viewing of F1 Spa Belgian Grand Prix Practice
 - 40 members & guests
 - 12pm to 2pm

Sunday, July 27, 2025

- Brunch and viewing of F1 Spa Belgium Grand Prix Race
 - 60 members & guests
 - 12pm to 4pm

Monday, July 28, 2025

Tuesday, July 29, 2025

Wednesday, July 30, 2025

Thursday, July 31, 2025

Schukoske, Ethan

From: Sojka, Gary J <Gary.Sojka@ct.gov>
Sent: Monday, March 31, 2025 7:21 AM
To: Schukoske, Ethan
Subject: RE: Event Venue Trip Generation

Hi Ethan,

We usually recommend using a 2.5 VOR for those types of venues and this would be acceptable in your case.

Let me know if you have additional questions.

GARY SOJKA

Transportation Supervising Planner

Connecticut Department of Transportation

Policy and Planning

Phone: 860-594-2025

Gary.Sojka@ct.gov



From: Schukoske, Ethan <eschukoske@tpdinc.com>

Sent: Sunday, March 30, 2025 9:10 PM

To: Sojka, Gary J <Gary.Sojka@ct.gov>

Subject: Event Venue Trip Generation

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good evening Gary,

Does OSTA use a standard trip rate for an event venue? I am specifically looking at a private car club which would generally have little traffic. However, they will have an event space and plan to cap attendance of any private events at 300-400 people. ITE does not have any trip rates for this or anything similar. I believe the NJDOT has an established trip rate for a wedding venue, which would operate in a similar manner I would think.

My only other thought was to assume a max attendance (400) and use a vehicle occupancy rate of 2-2.5 persons per vehicles. Which I think is reasonable for an event.

Do you have a recommendation?

Ethan Schukoske, P.E., PTOE, *Senior Project Manager*



O: 631.738.1919 | D: 631.580.6877 | TPDinc.com

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CITY OF NORWALK
Transportation Mobility & Parking
P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP
From: Benjamin Yeung, P.E., Senior Traffic Engineer – Norwalk TMP
Date: March 10, 2025
Subject: **10 Norden Place – Proposed Luxury Car Storage Facility & Club – Site Plan & Traffic Study – TMP Preliminary Review**

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a preliminary review of the following documents related to the Zoning Text Amendment and Special Permit Application for the proposed luxury car storage facility and club at 10 Norden Place:

- Norwalk Center, LLC and The Auto Collective, 10 Norden Place, Norwalk, CT, Application for Special Permit – Narrative, prepared by Carmody Torrance Sandak & Hennessey LLP
- Traffic Letter Report for “Auto Collective Fairfield, Proposed Automotive Storage Facility, 10 Norden Place, City of Norwalk, Fairfield County, CT 06855”, prepared by Traffic Planning and Design, Inc. (TPD), dated February 13, 2025;
- Architectural and Civil Site Plans for “The Auto Collective, Warehouse and Storage Facility, 10 Norden Place, Norwalk, CT 06855”, prepared by Kenneth Boroson Architects, in collaboration with Tighe & Bond, dated February 19, 2025

Based on review of the aforementioned documents, Norwalk TMP has the following questions/concerns:

Traffic Study:

1. The proposed facility contains a roughly 20,800 square foot event space. Page 2 of the Traffic Letter Report describes that “the club could host events such as Formula One watch parties, movie and other screenings, and hold member and member-sponsored gatherings.” A space of this size could hold well over 1,000 people, depending on the interior layout.
 - a. What would the typical and maximum expected attendance for club events be?

- b. In addition, would the club plan on holding large events that may draw the general public, such as car shows, either within the facility, or utilizing the parking lot surrounding the facility?

There are no comments on the site plans at this time. Please note this review is based on all documents submitted to date. TMP reserves the right to comment on forthcoming revised/updated traffic studies or site plans.

Sincerely,



Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

Cc: DPW Permits
James Travers, Director – TMP
Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP
Nathan Fankhanel, E.I.T., Junior Engineer – TMP
Vanessa Valadares, P.E., Chief of Department of Public Works
Wilber Giron, P.E., Permit Engineer – Department of Public Works
Christine Cardascia, E.I.T., Junior Engineer – Department of Public Works
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Land Use Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
William Ireland, Chief Building Official – Building and Code Enforcement
Leo Guerrero, Assistant Building Official – Building and Code Enforcement
Peter Kelly, Assistant Building Official – Building and Code Enforcement
Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA
Christopher Cavaliere, Junior Engineer – WPCA
Alexis Cherichetti, Senior Environmental Officer – Conservation Office



April 10, 2025
via electronic mail

City of Norwalk
Transportation Mobility & Parking
125 East Avenue
Norwalk, CT 06851
Attn: Mr. Benjamin Yeung, PE
Senior Traffic Engineer

**RE: TMP Preliminary Review
Auto Collective Fairfield
Proposed Motor Club
10 Norden Place
City of Norwalk
Fairfield County, CT 06855
ATDE Project No. AUCO 00001**

Dear Mr. Yeung:

Traffic Planning and Design, Inc (TPD) is in receipt of the Department's March 10, 2025, review letter associated with the above-referenced project. Attached is an updated Traffic Letter Report for review. IN addition, each of the Department comments are restated below, with our responses following in **bold** typeface.

Traffic Study

1. The proposed facility contains a roughly 20,800 square foot event space. Page 2 of the Traffic Letter Report describes that "the club could host events such as Formula One watch parties, movie and other screenings, and hold member and member-sponsored gatherings." A space of this size could hold well over 1, 000 people, depending on the interior layout.

- a) What would the typical and maximum expected attendance for club events be?

Member-sponsored events capped at 300 attendees. TPD assessed potential trip generation for these events using a July 2025 event schedule provided by Auto Collective of Fairfield County. An average of 65 members per event was calculated, inclusive of 1 maximum attended event.

Since ITE does not offer rates for event venues, TPD used the CTDOT OSTA-recommended vehicle occupancy rate of 2.5 persons per vehicle to estimate vehicle arrivals, including for the largest event. The data

indicates that the events at the facility would result in an average entering trip rate of 26 vehicles per event.

- b) In addition, would the club plan on holding large events that may draw the general public, such as car shows, either within the facility, or utilizing the parking lot surrounding the facility?

Only member-sponsored events are proposed.

Should you require any additional information or have any questions/comments concerning this application, please do not hesitate to contact our office.

Sincerely,

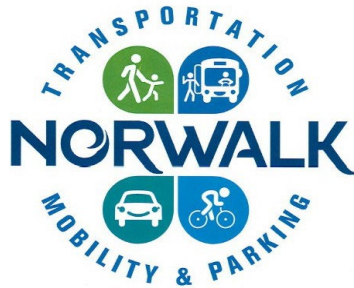
Traffic Planning and Design, Inc
Conn. Professional Engineering Corp. No. 0002363


ETHAN B. SCHUKOSKE, P.E., PTOE
Senior Project Manager
eschukoske@TPDinc.com


NICOLE SILVESTRO, E.I.T.
Sr. Transportation Planning Specialist
nsilvestro@TPDinc.com

encl

cc Liz Suchy, Carmody Torrance Sandak & Hennessey LLP



CITY OF NORWALK
Transportation Mobility & Parking

P: 203-854-7335
Norwalk City Hall
125 East Avenue, PO Box 5125
Norwalk, CT 06856-5125

Sent via email to: esuchy@carmodylaw.com

To: Elizabeth A.B. Suchy, Esq. – Carmody Torrance Sandak & Hennessey LLP

From: Benjamin Yeung, P.E., Senior Traffic Engineer – Norwalk TMP

Date: May 1, 2025

Subject: 10 Norden Place – Proposed Luxury Car Storage Facility & Club – Site Plan & Traffic Study – TMP Sign Off

The City of Norwalk Transportation, Mobility, and Parking (TMP) Department has completed a substantive review of the following documents related to the Zoning Text Amendment and Special Permit Application for the proposed luxury car storage facility and club at 10 Norden Place:

- Norwalk Center, LLC and The Auto Collective, 10 Norden Place, Norwalk, CT, Application for Special Permit – Narrative, prepared by Carmody Torrance Sandak & Hennessey LLP
- Traffic Letter Report for “Auto Collective Fairfield, Proposed Automotive Storage Facility, 10 Norden Place, City of Norwalk, Fairfield County, CT 06855”, prepared by Traffic Planning and Design, Inc. (TPD), revised/dated April 10, 2025;
- Architectural and Civil Site Plans for “The Auto Collective, Warehouse and Storage Facility, 10 Norden Place, Norwalk, CT 06855”, prepared by Kenneth Boroson Architects, in collaboration with Tighe & Bond, dated February 19, 2025

The aforementioned documents are in compliance with the current City Standards in relation to transportation, mobility, and parking. TMP takes no exception to the project moving forward.

This letter signifies final departmental sign-off from TMP. Should you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Benjamin Yeung".

Benjamin Yeung, P.E., Senior Traffic Engineer – TMP

Cc: DPW Permits

James Travers, Director – TMP

Garrett Bolella, P.E., PTOE, RSP1, Assistant Director – TMP

Nathan Fankhanel, E.I.T., Junior Engineer – TMP

Vanessa Valadares, P.E., Chief of Department of Public Works

Wilber Giron, P.E., Permit Engineer – Department of Public Works

Christine Cardascia, PE, Assistant Engineer – Department of Public Works

Steven Kleppin, Director – Planning and Zoning

Bryan Baker, Principal Planner – Planning and Zoning

Michelle Andrzejewski, Land Use Planner – Planning and Zoning

Amelia Williams, Land Use Planner – Planning and Zoning

William Ireland, Chief Building Official – Building and Code Enforcement

Leo Guerrero, Assistant Building Official – Building and Code Enforcement

Peter Kelly, Assistant Building Official – Building and Code Enforcement

Ralph Kolb, P.E., Sr. Environmental Engineer – WPCA

Christopher Cavaliere, Junior Engineer – WPCA

Alexis Cherichetti, Senior Environmental Officer – Conservation Office

From: Pjmaldo2001

Sent: Wednesday, April 9, 2025 1:55 PM

To: Auto Collective

Subject: Auto Club

To who it may concern ,

I am a car person . I live in East Norwalk and would be thrilled to see a this type of business in our area . I think it will be very well kept and attract a very nice clients . Compared to A very large landscape supplier next door !

Please feel free to reach out if needed . I look forward to seeing it happen .

Kindest Regards,

Patricio E Maldonado

7 Braybourne dr

Norwalk ,Ct 06855

203-554-5861

Wwww.pjmaldo2001@yahoo.com

From: Craig Golding <cgolding27@hotmail.com>

Sent: Tuesday, April 8, 2025 6:51 PM

To: Auto Collective <hello@fairfield.auto>

Subject: On your side

Wishing you luck with the project I am a retired construction superintendent living down the street in the apartments. If you need a part-time worker, I may consider that, but I'd love to see your facility finished.

Sent from my iPhone

RE: 10 Norden Place project proposal

Good afternoon.

We met last Thursday on site with the owner and discussed the concerns of the FMO.

He did ensure me that if approved, all life safety systems required would be mostly new and code compliant.

Based on our meeting and information presented, we have no issues with the proposed project moving forward at this time.

Thank you

Kirk McDonald

Assistant Fire Marshal

City of Norwalk

Fire Department

121 Connecticut Ave.

Norwalk, CT 06854

203-854-0249

From: Brian L. McCann <bmcann@zslawct.com>

Sent: Wednesday, April 2, 2025 4:12 PM

To: Elizabeth A.B. Suchy <ESuchy@carmodylaw.com>; skleppin@norwalkct.gov

Cc: Eleanor M Militana (emilitana@firstdistrictwater.org) <emilitana@firstdistrictwater.org>

Subject: [EXTERNAL] RE: 10 Norden Place

Attorney Suchy,

This is to inform you that my client, the First District Water Department (“FDWD”), has reviewed your referral dated February 25, 2025 (from the Norwalk Center, LLC and The Auto Collective) regarding applications for zoning text amendment and a special permit for a proposed car club (“Proposal”). The FDWD does not have any substantive comments or criticisms of the Proposal. However, we do wish to inform you that the property owner has liens on the property for unpaid water bills (see attached). Please be advised that the FDWD requires that unpaid water bills or liens be satisfied prior to approving connections for new service or accounts on a property.

Thank you for the opportunity to comment. Good luck with your application.

Regards,

Brian

Brian L. McCann

Attorney At Law

Zabel Schellenberg, PLLC

36 Old Tavern Road

Unit 622

Orange, CT 06477

www.zslawct.com

Firm Tel: 203.864.4511

Cell: 203.767.7367



CITY OF NORWALK
Wilber Giron, P.E.
Permit Engineer /
Department of Engineering
125 East Avenue
Norwalk, CT 06851
Office: (203) 854-7801
Permits: (203) 854-4161
www.norwalkct.gov
wgiron@norwalkct.gov
dpwpermits@norwalkct.gov

March 24, 2025

Sent via email to: esuchy@carmodylaw.com

Elizabeth A.B. Suchy
Carmody Torrance Sandak & Hennessey LLP

RE: 10 Norden Pl (District 3, Block 17, Lot 40)
Proposed Improvements for Transportation Maintenance Facility
Department of Engineering's Plan Review Comments

Dear Ms. Suchy:

The Department of Engineering has reviewed the supportive documents associated with the proposed development at the above-referenced property. The focus of our review has been to confirm the documents provided are in in conformance with the standards set forth in the City of Norwalk (City) Department of Public Works (DPW) Roadway Standards, and Standard Specifications, as amended and supplemented, Drainage Manual, as amended and supplemented, Standard Detailed Drawings, as amended and supplemented, and other applicable design standards.

The following documents were provided and included in our review:

- Civil Drawings titled "The Auto Collective," dated 02/19/2025, prepared by Tighe & Bond
- Engineering Report prepared for 10 Norden Place, Norwalk, CT, dated 02/19/2025, prepared by Tighe & Bond

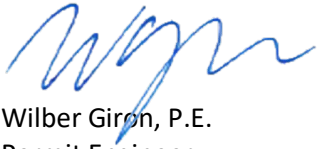
The following are the Department of Engineering's review comments highlighting sections that will require revision or additional information prior to our departmental sign-off:

1. The Engineering Report states the proposed improvements will result in a slight increase of volumetric runoff to the existing Railroad Culvert #1. The drainage design shall be revised to confirm the proposed improvements will result in zero increase of stormwater runoff from the site.
2. Any existing trees that are to be removed within the City's right-of-way that are 8 inches or greater in caliper, will require a tree removal permit and must be posted by the City's Tree Warden at least 10 days in advance, in accordance with the City Code Chapter 112.
 - a. City trees to be removed shall be replaced in accordance with City Code Chapter 112-10C.
3. The property owner is responsible for confirming with each City department if approval is required prior to the commencement of work.

Please note this is a preliminary review of the submitted documents. Additional comments may be forthcoming once the requested information is received.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'W. Giron', is positioned above the printed name.

Wilber Giron, P.E.
Permit Engineer

Cc: DPW Permits
James Meehan, P.E., Principal Engineer – Department of Engineering
Christine Cardascia, P.E., Assistant Civil Engineer – Department of Engineering
Ralph Kolb, P.E., Sr. Environmental Engineer – Water Pollution Control Authority
Garrett Bolella, P.E., Assistant Director – Transportation, Mobility and Parking
Benjamin Yeung, P.E., Senior Traffic Engineer – Transportation, Mobility and Parking
Nathan Fankhanel, Junior Engineer – Transportation, Mobility and Parking
Steven Kleppin, Director – Planning and Zoning
Bryan Baker, Principal Planner – Planning and Zoning
Michelle Andrzejewski, Senior Planner – Planning and Zoning
Amelia Williams, Land Use Planner – Planning and Zoning
Alexis Cherichetti, Senior Environmental Officer – Conservation

March 20, 2025

Memorandum

To: Elizabeth A.B. Suchy, Carmody, Torrance, Sandak, and Hennessey
From: Bryan Baker, AICP, Principal Planner
Re: #2025-15 R/SP – Norwalk Center, LLC & The Auto Collective – 10 Norden Place (District 3, Block 17, Lot 40) – Zoning regulation text amendment application to amend Article 4 and Article 9 to create a “Car Club” use within the SD-LI zoning district and special permit application for a +/- 137,000sf Car Club within an existing building

Dear Attorney Suchy,

Please accept this letter as a preliminary review of the application listed above.

- A. As noted within the text amendment narrative, it is the intention of the applicant to host occasional events within the +/- 20,800sf of event space for parties, movies and other screenings, and member and member-sponsored gatherings. It could therefore be presumed that there is the potential for such gatherings to also have Live Music, as defined within the Zoning Regulations. If that is the case, Staff recommends that the text amendment application be modified to include a revision to Section 4.3.9.G.4.bc to include Car Club as a use that Live Music can be accessory to. See below for suggested text:

Bc. Live Music shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Live Music is permitted as an Accessory Use to Restaurant, Brew Pub/Distillery, Retail (except in Residential zones), **Car Club** and Waterfront Club Uses, subject to documentation verifying that the Live Music will comply with the City of Norwalk Noise Ordinance Control Ordinance, as amended.
- B. Please provide additional information on an estimation on the number of private events that could be expected annually, including approximate number of guests/attendees, hours that the events would occur, and general concept of operations for such events (outdoor staging areas, food service, etc.).
- C. Please provide additional information on an approximate minimum square footage of land and/or building needed to facilitate such a use. The special permit process does provide additional considerations to be made by the Planning & Zoning Commission, but some sort of minimum land area or building size requirement may be reasonable to limit the total number of properties where such a use is feasible.
- D. Regarding traffic, please provide additional information on anticipated traffic impacts when events occur.
- E. Please provide additional details on potential accessory uses that may happen with the Car Club use, such as car washing/detailing services, school related training/learning, etc. It would be preferable to capture as many accessory uses as possible within the proposed text amendment to provide clarity for the applicant, residents, and staff for future permitting.

Additional comments and questions may arise as Staff continues to review the application. Please do not hesitate to contact me if you have any questions.

Sincerely,

Bryan Baker

Bryan Baker, AICP
Principal Planner
City of Norwalk
125 East Avenue
Norwalk, CT 06851
203-854-7705
bbaker@norwalkct.gov

April 21, 2025

Memorandum

To: Planning & Zoning Commission – Galen Wells, Chairwoman
From: Bryan Baker, AICP, Principal Planner
Re: #2025-15 R/SP – Norwalk Center, LLC & The Auto Collective – 10 Norden Place (District 3, Block 17, Lot 40) – Zoning regulation text amendment application to amend Article 4 and Article 9 to create a “Car Club” use within the SD-LI zoning district and special permit application for a +/- 137,000sf Car Club within an existing building

Commissioners,

Staff recommends that the zoning text amendment application as proposed by the applicant be modified to include the following language:

1. Modify Section 4.3.9.G Uses Permitted with Limitations, to include the following revision:

Bc. Live Music shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Live Music is permitted as an Accessory Use to Restaurant, Brew Pub/Distillery, Retail (except in Residential zones), **Car Club** and Waterfront Club Uses, subject to documentation verifying that the Live Music will comply with the City of Norwalk Noise Ordinance Control Ordinance, as amended.

Based on the information provided by the applicant, it is anticipated that some of the events that are held within the building will have some sort of live music. Within the SD-LI zone, which 10 Norden Place is in, Live Music is permitted with limitations, however, the existing list of uses that Live Music can be accessory to does not include “Car Club,” because Car Club does not currently exist as a use within the regulations. Therefore, the limitations for Live Music should be revised to include “Car Club,” which will require that documentation be submitted verifying that the Live Music will comply with the city’s noise ordinance. Because the proposed “Car Club,” use will only be permitted within the SD-LI zone and by special permit, additional restrictions can be imposed by the Commission, but it is important to first state within the regulations that Live Music is a permissible accessory use.

2. Modify the applicant’s proposed amendment to Table 4.3.12.B-1 Vehicular Parking Requirements, to the following:

Principal Use	Minimum Number of Parking Spaces Available to Lot Per Unit of Measure
Storage of motor vehicles Car Club	1 space per 5,000sf of usable floor plus 1 space per employee; accessory event, lounge and club space – 1 space per 500sf of usable floor area

Staff has proposed application #2025-08 R which is a text amendment application that includes the removal of the “Indoor & outdoor storage of passenger motor vehicles,” and “Motor Vehicle Storage” principal uses. Therefore, it is Staff’s preference and recommendation to revise the applicant’s proposed language to instead directly have their proposed parking calculation be linked to the proposed “Car Club,” use. This recommendation is minor and does not affect the substance of the proposed application.

Sincerely,

Bryan Baker

Bryan Baker, AICP
Principal Planner
City of Norwalk
125 East Avenue
Norwalk, CT 06851
203-854-7705
bbaker@norwalkct.gov

May 2, 2025

Memorandum

To: Planning & Zoning Commission – Galen Wells, Chairwoman
From: Bryan Baker, AICP, Principal Planner
Re: #2025-15 R/SP – Norwalk Center, LLC & The Auto Collective – 10 Norden Place (District 3, Block 17, Lot 40) – Zoning regulation text amendment application to amend Article 4 and Article 9 to create a “Car Club” use within the SD-LI zoning district and special permit application for a +/- 137,000sf Car Club within an existing building

Commissioners,

The applicant has submitted a zoning regulation text amendment application to create a “Car Club” use, definition and minimum parking requirement as well as a special permit application for a Car Club to occupy approximately 137,220 square feet of space within an existing building located at 10 Norden Place. Of the 137,220 square feet, 84,600 square feet will be dedicated to vehicle storage, 20,800 square feet will be dedicated to “event space” and 31,820 square feet will be dedicated to a combination of “club space” and “platinum lounge” space. It is presumed that the 20,800 square feet of “event space” will be used for “member and member-sponsored gatherings,” and the 31,820 square feet of “club space” and “platinum lounge space” will only be used by members of the Car Club. Per correspondence with the applicant, they have stated that the member and member-sponsored gatherings will be limited in capacity to a maximum of 300 people.

The applicant has provided the following definition for the “Car Club” use:

Car Club: a membership-based organization where classic, vintage, and other passenger motor vehicles are stored and displayed inside a building including on racks, along with accessory space for members and member-sponsored events along with members’ lounge and club space which may include the service of food and alcohol. Outdoor storage of and repairs to vehicles shall be prohibited.

Staff has no concerns with the definition as proposed.

The applicant has provided a revision to the Use Table (Table 4.3.9.A) to add Car Club which would only be permitted by Special Permit within the SD-LI zone, in all other zones the use would not be permitted.

Staff has reviewed the Industrial Zones Study that was completed in 2021 and has found that the Car Club use is generally consistent with the study and therefore the Plan of Conservation and Development.

The applicant has proposed a minimum parking requirement as follows:

Storage of motor vehicles – 1 space per 5,000sf of usable floor plus 1 space per employee; accessory event, lounge and club space – 1 space per 500sf of usable floor area

Overall, the parking calculation suggested by the applicant is relatively the same to other similar uses listed within the zoning regulations such as Auditorium, Community Center, or other Place of Assembly and Performing Arts Theater (minimum parking requirements for each listed below). Staff does, however, recommend that the Commission revise the proposed minimum parking requirement to the following:

Car Club - 1 space per 5,000sf of usable floor plus 1 space per employee; accessory event, lounge and club space – 1 space per 500sf of usable floor area

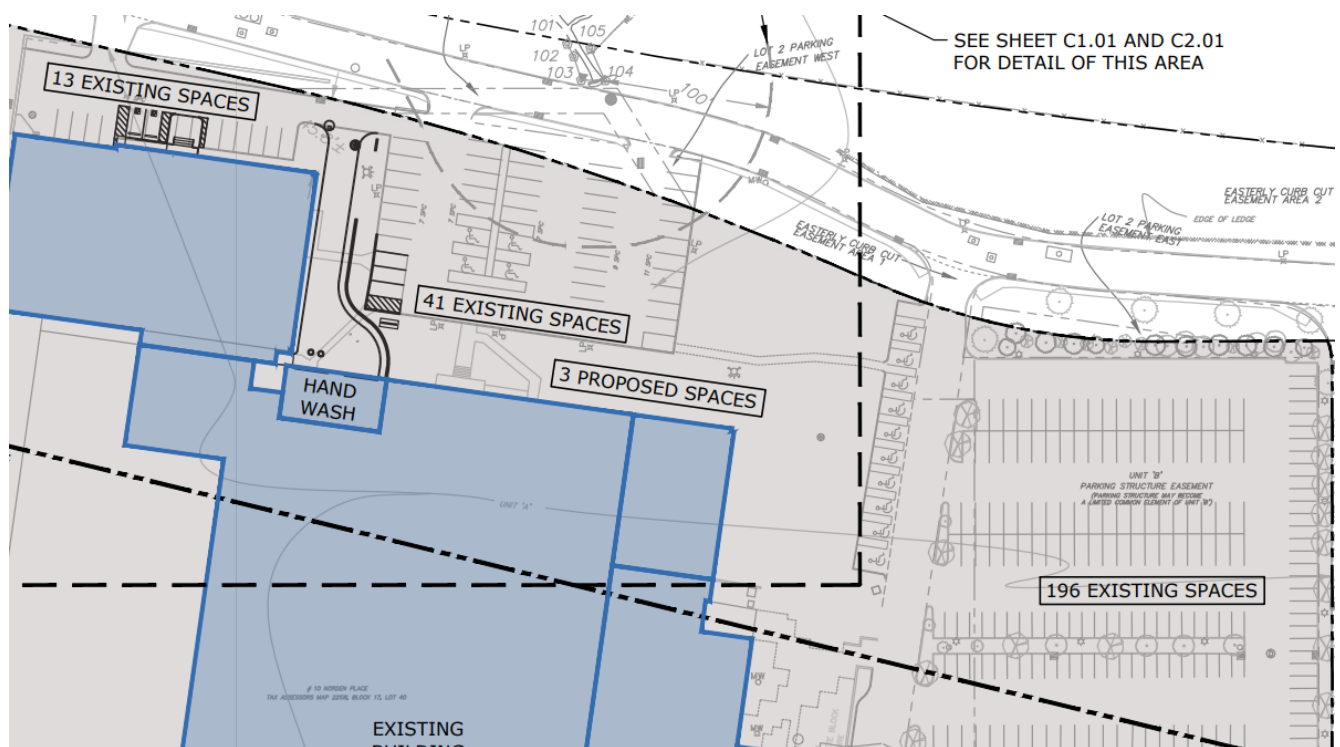
The purpose of Staff's revision would be to provide a more direct link between the Car Club use and the parking requirements for the use.

Auditorium, Community Center, or other Place of Assembly	1 per 5 permanent seats, based on the maximum seating capacity or 1 per 500 square feet where fixed seating is not provided
--	---

Performing arts theater	1 per 5 permanent seats, or 1 per each 40 square feet of seating area where fixed seating is not provided
-------------------------	---

Existing parking requirements for similar uses

Regarding the overall parking capacity on the site, the site plans indicate that there are a total of 1,149 parking spaces that exist at 10 Norden Place, inclusive of the front building (Unit A) and the rear building/data center (Unit B). Per the applicant's proposed parking calculation, a total of 122 parking spaces are required and provided. It appears that there are additional parking spaces available in proximity to the portion of the building where the Car Club will be located, totaling approximately 253 parking spaces potentially available. Staff recommends that the applicant more clearly delineate which parking spaces will be provided for the Car Club use.



Parking spaces in proximity to the Car Club

Staff also recommends that the site plans be updated to reflect recent revisions to the site due to the following:

1. Discrepancy between this application (#2025-15 R/SP) and the MTA's transportation maintenance terminal application's (#2024-14 SPR) existing parking space count within the parking lot separating Unit A and Unit B.

2. Removing the spaces that existed along the now subdivided portion of the property that is occupied by Courville Nurseries from the total parking count. Note that there is also a discrepancy between the number of spaces shown on this portion of the site plan from application #2024-14 SPR.

With the revisions, the potential change in the total amount of parking spaces available for the Car Club could decrease from 253 to 239 parking spaces and the overall number of parking spaces on 10 Norden Place could decrease from 1,149 to 882 parking spaces. This would leave at least 436 parking spaces available to any future tenants of the property.

Staff also recommends making an additional amendment to the regulations, specifically to Section 4.3.9.G Uses Permitted with Limitations, to revise the limitations associated with Live Music to the following:

bc. Live Music shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Live Music is permitted as an Accessory Use to Restaurant, Brew Pub/Distillery, Retail (except in Residential zones), **Car Club** and Waterfront Club Uses, subject to documentation verifying that the Live Music will comply with the City of Norwalk Noise Ordinance Control Ordinance, as amended.

This recommendation is based on the presumption that some of the events that the Car Club will host are likely to have live music, and therefore the regulations must expressly allow such accessory use for Car Clubs.

Overall, the proposed Car Club provides a use of lesser intensity than other uses permitted within the SD-LI zone and occupies a significant portion of a building that has largely been vacant for several years. The largest times of traffic generation will occur during the occasional 300-person events that happen at off-peak hours in comparison to other uses such as residential and commercial/office.

Please find draft resolutions below.

Draft resolution to approve the zoning regulation text amendment as revised by Staff:

THEREFORE BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #2025-15 R – Norwalk Center, LLC & The Auto Collective – 10 Norden Place (District 3, Block 17, Lot 40) – Zoning regulation text amendment application to amend Article 4 and Article 9 to create a “Car Club” use within the SD-LI zoning district be **APPROVED** with the following modifications:

1. That the proposed revision to Table 4.3.12.B-1 shall be revised to the following:

Storage of motor vehicles Car Club	1 space per 5,000sf of usable floor area plus 1 space per employee; accessory event, lounge and club space – 1 space per 500sf of usable floor area
--	---

2. That Section 4.3.9.G Uses Permitted with Limitations shall be revised to include the following:

bc. Live Music shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Live Music is permitted as an Accessory Use to Restaurant, Brew Pub/Distillery, Retail (except in Residential zones), **Car Club** and Waterfront Club Uses, subject to documentation verifying that the Live Music will comply with the City of Norwalk Noise Ordinance Control Ordinance, as amended.

BE IT FURTHER RESOLVED that the Planning & Zoning Commission has found that the proposed text amendment is consistent with the following portions of the Plan of Conservation and Development:

1. That “Norwalk has a diversified economy with a larger business tax base and more high-quality, good jobs for residents,” through the strategy to “create a multi-faceted strategy to support entrepreneurs, startups, and tourism, as well as regional target industries, to grow new and existing businesses,” and the strategy to, “study industrial zoning and update zoning and land use regulations to allow and encourage a wider set of uses in targeted industrial zones, focused on market opportunities in warehouse/logistics, brewing/distilling, artist/artisan uses, and other light industrial uses that do not have detrimental externalities on nearby areas;” and
2. That “the user-friendly zoning ordinance is consistent with the future land use map and achievement of the vision and goals of the POCD,” through the strategy to, “modernize the zoning ordinance and the development approval process to achieve the goals of the POCD,” and the action to, “implement the recommendations of the Industrial Zones Study and the Norwalk Industrial Waterfront Land Use Plan;” and

BE IT FURTHER RESOLVED that the effective date of this approval shall be May 16, 2025.

Draft resolution to approve the Special Permit application:

THEREFORE BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #2025-15 SP – Norwalk Center, LLC & The Auto Collective – 10 Norden Place (District 3, Block 17, Lot 40) – Special Permit application for a +/- 137,000sf Car Club within an existing building be **APPROVED** with the following conditions:

1. That the site shall be developed in accordance with the following plans:
 - a. Per site plans entitled “The Auto Collective,” dated February 19, 2025, prepared by Tighe & Bond; and
 - b. Per architectural plans entitled “The Auto Collective,” dated February 19, 2025, and revised to March 24, 2025, prepared by Kenneth Boroson Architects; and
2. That the portion of the building designated for member-sponsored events shall have a maximum attendance capacity of 300 people per event; and
3. That there shall be no revving of engines or racing of motor vehicles on the property by the tenant, members, guests, or attendees of any events held on the property that are associated with the Car Club; and
4. That any events held out-of-doors shall be subject to Chapter 88 Public Gatherings and Special Events of the City of Norwalk’s Ordinances; and
5. That the applicant shall submit an updated site plan that delineates the parking areas associated with each tenant of the building prior to the issuance of a zoning permit; and
6. That any changes to the approved plans shall be submitted to the Planning & Zoning Staff for review and approval prior to implementation, and if any proposed changes are determined to be substantive, Staff shall refer the changes to the Commission for their review and approval prior to implementation; and
7. That any and all conditions required by the Norwalk Health Department are applicable to this approval; and
8. That any and all conditions required by the Norwalk Water Pollution Control Authority are applicable to this approval; and
9. That any and all conditions required by the Norwalk Public Works Department are applicable to this approval; and

10. That any and all conditions required by the Norwalk Transportation, Mobility, and Parking Department are applicable to this approval; and
11. That any and all conditions required by the Norwalk Fire Marshal are applicable to this approval; and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Zoning Regulations; and

BE IT FURTHER RESOLVED that the effective date of this approval shall be May 17, 2025.

Sincerely,

Bryan Baker

Bryan Baker, AICP
Principal Planner
City of Norwalk
125 East Avenue
Norwalk, CT 06851
203-854-7705
bbaker@norwalkct.gov

March 17, 2025

VIA E-MAIL AND HAND DELIVERY

Bryan Baker
Principal Planner
Planning & Zoning Department
City of Norwalk
125 East Avenue, Room 129
Norwalk, CT 06856
BBaker@NorwalkCT.gov

**RE: Glazer Group, LLC
Zoning Amendment & Special Permit Applications
1E River Road, Norwalk, CT (5-44-18-BARN)**

Dear Mr. Baker:

Our firm represents Glazer Group, LLC (the “Applicant”), the owner of certain property known as 1E River Road in Norwalk, commonly known as “The Barn” within the Graybarns on the Silvermine River development project (“Graybarns”). The Barn is part of a collection of structures situated on approximately three (3) acres of property in the CD-1L and Silvermine Tavern Village District Overlay (“O-STVD”) zones. In 2014, the Planning & Zoning Commission (the “Commission”) approved a series of applications, including a text amendment to the Silvermine Tavern Village District Overlay Zone and Special Permit #16-13SP (the “2014 Approval”). These approvals facilitated the rehabilitation of the existing buildings and the construction of several new structures on the Graybarns property, including The Barn. Today, Graybarns consists of The Mercantile (a marketplace and neighborhood café), The Tavern (a farm-to-table, destination fine dining experience), The Inn (an Inn featuring six luxurious suites), and, as is relevant here, The Barn. Throughout the materials submitted in support of the Applicant’s 2014 applications, the Barn was described as a “Community Barn” that would accommodate “private parties, weddings or community events,” and the Barn has been used consistently with this description since its inception.

Notwithstanding the 2014 Approval, questions have been raised regarding the permitted use of The Barn. As detailed in the enclosed materials, the Applicant now seeks Zoning Amendment and Special Permit approval to continue to use The Barn as event space with and without live music.

Enclosed please find three (3) copies of the following materials in connection with the Application:

- Letter of Authority from the Applicant;
- Application for Zoning Amendments and the following schedules:
 - Schedule A – Proposed Zoning Amendments;
 - Schedule B – Zoning Amendment Narrative; and
 - Schedule C – Zone Affected by Zoning Amendment – STVD (Including All Properties within 500' of IE River Road);
- Application for Special Permit Approval and the following schedules:
 - Schedule A – Special Permit Project Narrative;
 - Schedule B – Statement of Findings;
 - Schedule C – Property Description; and
 - Schedule D – Aerial Map of Property;
- Survey prepared by William W. Seymour & Associates, P.C., dated May 13, 2015, titled “Property Survey schedule C to Declaration of Silvermine Village, a Condominium Community, 1 River Road, prepared for Glazer Group, LLC;”
- Noise Study prepared by Acoustic Distinctions, dated March 10, 2025, titled “Noise Code Compliance Study Report;”
- Valet Parking Plan and Parking Compliance Chart prepared by the Applicant, dated February 6, 2014¹, and revised to March 17, 2025;
- Copy of the 2014 Approval and related materials;
- Copies of the following articles:
 - “Silvermine Tavern, since 1929,” *Norwalk Hour*, February 8, 2007;
 - Reilly, Greg, “Restored and modernized — GrayBarns replaces Silvermine Tavern,” *New Canaan Advertiser*, September 30, 2017; and
 - Diamond, Annie, “A Visit to GrayBarns in Silvermine, Connecticut,” *Most Lovely Things*, November 16, 2017;
- Exhibit comparing changes to appraised values of surrounding properties;
- Proposed Conditions of Approval, dated March 17, 2025; and
- Written Confirmation of Tax Status.

Electronic copies of these materials were also transmitted today. I look forward to presenting these materials to the Planning & Zoning Commission at its next available meeting. Thank you for your time and attention regarding this matter.

Sincerely,



Lisa L. Feinberg

Enclosures.

¹The Valet Parking Plan dated 2/6/2014 was approved in connection with the 2014 Approval on February 19, 2014. The current revision incorporates the increased capacity of the restaurant and use of the barn as Event Space.

March 14, 2025

Steven Kleppin
Planning & Zoning Director
City of Norwalk
125 East Avenue
Norwalk, CT 06851

**Re: Letter of Authority – Text Change & Special Permit Applications
1E River Road, Norwalk (the “Property”)**

Dear Mr. Kleppin:

Glazer Group, LLC is the owner of the above-captioned Property. Please consider this letter as written confirmation that the undersigned has authorized the attorneys of Carmody Torrance Sandak & Hennessey, LLP, with offices located at 1055 Washington Boulevard, Stamford, Connecticut 06901, to file the enclosed land use applications with the City of Norwalk on ownership’s behalf in connection with the Property. Thank you for your acknowledgement of said authority.

Sincerely,

Glazer Group, LLC


Andy Glazer (Mar 17, 2025 13:26 EDT)
By: Andrew J. Glazer, President

**PLANNING & ZONING COMMISSION
125 EAST AVENUE
P.O. BOX 5125
NORWALK, CONNECTICUT 06856-5125**

Revised October 12, 2022

REQUIREMENTS FOR SUBMISSION OF ZONING AMENDMENT APPLICATION

APPLICATION INFORMATION (3 HARD COPIES AND A DIGITAL COPY OF ALL REQUIRED DOCUMENTS)

1. **Fee: \$1,060.00 application fee** - Payment of this application fee must be made by **credit or debit card *only***; cash and checks are not accepted. (Fee includes \$60 for State of Connecticut land use processing fee).

Application fees to be paid upon filing.

2. Applicant's name and address

Glazer Group, LLC
c/o Agent: Lisa Feinberg
Carmody Torrance Sandak & Hennessey, LLP
1055 Washington Boulevard, 4th Floor
Stamford, CT 06901

3. Street address of applicant's property affected by proposed amendment and district, block and lot number. Applications for amendments which are accompanied by a site plan, special permit or zone change shall list all adjoining property owners and all property owners directly across the street from the subject property.

1E River Road (5-44-18-BARN)

193 Perry Avenue (5-43-16)¹

4. Provide the text of the proposed amendment, including appropriate article, section and paragraph references, and a written narrative with reasons for the requested change in the zoning regulations and the effect upon other similarly zoned areas of the city, if such change were approved.

See enclosed Application Schedules, titled:

- Schedule A – Proposed Zoning Amendments; and

¹The properties located at 192 Perry Avenue (5-39-18) and 194 Perry Avenue (5-39-19-TAV, WEB, ADD, TOW, DAL, HUT, & HAM) are owned by related parties.

- Schedule B – Zoning Amendment Narrative.

5. Provide a zoning history of the property and its adjacent area, beginning in 1929, and the current Plan of Development category for the property.

See enclosed Schedule B for zoning history.

6. Provide dates of any previous zoning amendments or map changes, special exceptions, and/or variances requested for same property or portion thereof, including the file name and number and a copy of any variance(s) requested and granted.

See enclosed Schedule B for zoning history.

7. Provide maps of area in the vicinity of applicant's property and all other properties within 500' radius (1" = 100') showing

- a. Current zoning of all property

See enclosed schedule C, titled "Zone Affected by Zoning Amendment – STVD (Including All Properties within 500' of 1E River Road)."

- b. All other property within 500' radius owned by applicant

See enclosed schedule C, titled "Zone Affected by Zoning Amendment – STVD (Including All Properties within 500' of 1E River Road)."

- c. All properties that will become non-conforming uses as a result of requested change.

No properties will become non-conforming as a result of the requested change.

8. Provide a map of the city showing all zones affected by the zoning amendment including a calculation of the areas involved.

See enclosed schedule C, titled "Zone Affected by Zoning Amendment – STVD (Including All Properties within 500' of 1E River Road)."

9. **PUBLIC ACT NO. 95-320** requires that approval of building applications be withheld when taxes are delinquent for a property. Please stop at the Tax Collector's Office (Room 105) to get written confirmation of your tax status before submitting an application for zoning approval. Copies of the form are available in the Planning & Zoning and Tax Collector's Office.

See enclosed form titled "Assessor's Parcel Verification & Tax Clearance Form."

10. **Notice Requirements:**

If the amendment is accompanied by a site plan or special permit application, the applicant shall notify by certified mail, return receipt requested at least ten (10) days prior to the public hearing, the owners of land which abut or are directly across the street from the area affected by the amendment or site plan. The names of the owners shall be taken from the latest Tax Assessor records. When a condominium is located within, across the street, or abuts the subject proposal notification may be sent to the condominium association in lieu of the individual unit owners. Evidence of certified mailings shall be submitted by the applicant on or before the public hearing date. (See attached sample notification form.)

The Applicant will mail notices to all abutting property owners at least ten (10) days prior to the public hearing on the Application.

11. **Traffic & Drainage Reports:** Applications which will have a significant impact upon drainage or traffic conditions shall include the following information, computed on the basis of any of the uses the zoning would allow, calculated on the maximum development potential of the site, and upon the contemplated development, if any:

A. **Drainage:** (prepared by registered professional engineer)

N/A

B. **Traffic** (prepared by professional traffic engineer)

N/A

When, in the opinion of the Planning & Zoning Commission, a proposed zoning amendment/site plan will have little or no significant impact on drainage or traffic conditions, the requirement for such information may be waived upon written request by the applicant.

Schedule A
Proposed Zoning Amendments
Glazer Group
March 17, 2025

*Amend the Norwalk Zoning Regulations to clarify permitted accessory uses in the Silvermine Tavern Village District Overlay (O-STVD). Additions are indicated with a **red and bold font**.*

Section 3.3.3.B.4.d

d. **Silvermine Tavern Village District Overlay (O-STVD)**. It is the purpose of this District to ensure that the unique Character of this District is maintained and to provide for the existing Uses, Buildings, and Structures to be maintained, including Inns, Restaurants, country stores and other compatible Uses which will meet existing and future needs within the district; **including meetings, recreational activities, community gatherings/events, special events**, cluster housing and related Accessory Uses which complement the village district Character of the site. The provisions of this District are intended to preserve and enhance the Character of the Silvermine Tavern Village District by encouraging the preservation of existing Buildings of unique historical and architectural value and assuring that any new Buildings, Structures, and Uses will be in keeping with the established Character of the area. **It is recognized that approved buildings, structures and uses within an approved Silvermine Tavern Village District site plan may operate separately or collectively.** The District is also intended to preserve public access to and along the waterfront including visual access, which shall be retained or provided as part of all new Development.

Section 4.3.1-A Silvermine Tavern Village District Overlay (O-STVD)

3. In addition to the clustered Single-Family Dwellings permitted by-right with limitations, a new barn Structure up to a maximum of two thousand (2,000) square feet that will replace an existing barn Structure to be removed; and additions to existing Structures, up to a maximum gross floor area of one thousand (1,000) square feet total for all existing Buildings. Such work on Additions shall be allowed only if required by codes and ordinances of the City or ordered by any City official charged with protecting the health, safety, and public welfare. The new barn Structure shall be permitted subject to the following criteria:

- a. The front Facade of such Structure(s) shall be located no closer than fifteen (15) feet and no more than twenty-five (25) feet from the Frontage Line with entry doors facing the street, and shall not exceed fifty (50) feet in depth; and
- b. The length of the new Structure shall occupy a minimum of fifty (50) feet at the Front Setback line; and
- c. The new Structure shall be a maximum of thirty-five (35) in Height and
- d. All required Parking shall be adequately screened with a fifteen (15) foot landscaped Buffer strip along the street, with no Garage openings directly facing the street.
- e. Porches and a valet Parking booth shall be permitted and are exempt from the above limits on Lot width and gross Floor Area.
- f. Following Special Permit approval, the barn Structure may be used for Event Space, separately or collectively with other buildings, structures and uses within an approved Silvermine Tavern Village District site plan.**

Schedule A
Proposed Zoning Amendments
Glazer Group
March 17, 2025

Table 4.3.9.A

Principle Use	CD-1L
Event Space	SPU*

***Permitted by Special Permit in Silvermine Tavern Village District Overlay**

Table 4.3.9.D

Accessory Use	CD-1L
Live Music	NP*

***Permitted by Right with Limitation in Silvermine Tavern Village District Overlay**

Section 4.3.9.G.4.bc

bc. Live Music shall be permitted in accordance with the applicable Use Table, subject to the following: (1) Live Music is permitted as an Accessory Use to Restaurant, Brew Pub/Distillery, Retail (except in the Residential zones), **Silvermine Tavern Village District Overlay Uses** and Waterfront Club Uses, subject to documentation verifying that the Live Music will comply with the City of Norwalk Noise Control Ordinance, as amended.

Schedule B Zoning Amendment Narrative

Glazer Group, LLC is the owner of certain property known as 1E River Road in Norwalk, commonly known as “The Barn” within the Graybarns on the Silvermine River development (“**Graybarns**”). In operation since 2017, Graybarns consists of The Mercantile (a marketplace and neighborhood café), The Tavern (a farm-to-table, destination fine dining experience), The Inn (an Inn featuring six luxurious suites), and The Barn, which has been used to host a wide range of private and community events, including numerous weddings since its inception.

This unique collection of meticulously restored and reconstructed buildings is situated on approximately three (3) acres of property in the CD-1L and Silvermine Tavern Village District Overlay zones (“**O-STVD**”). The Graybarns property originally consisted of a series of industrial uses but was converted to a restaurant and inn, known as the Silvermine Tavern & Inn, in 1929. Collectively, the Silvermine Tavern complex included the inn, a mill building and guest house, a country store and various barns and accessory structures. Silvermine Tavern & Inn ceased operations in 2009 and the buildings fell into a state of disrepair. In 2014, the Zoning Commission approved a series of applications to permit and facilitate the restoration of these historic buildings, including a text amendment to the Silvermine Tavern Village District and Special Permit #16-13SP. The text amendment was drafted for the sole purpose of permitting the proposed uses, and the special permit provided the framework for the Owner to actually construct this vision. Throughout the materials submitted in support of the Owner’s 2014 applications, the Barn was described as a “Community Barn” that would accommodate “private parties, weddings or community events,” and the Barn has been used consistently with this description ever since.

The enclosed text amendment seeks to clarify permitted principle and accessory uses in the Silvermine Tavern Village District Overlay (O-STVD). Specifically, the proposed changes incorporate language that clearly permits the Barn to be used for Event Space, following special permit approval, and live music in the O-STVD as an accessory use to the other permitted principal uses in the zone.

These amendments also further several goals and policies in Norwalk’s 2019-2029 Plan of Conservation and Development. Graybarns is located in the Silvermine Center Historic District along the Silvermine River. Events are a vital component of the Graybarns operations and help support the ongoing maintenance of the historic buildings on the site, access to the site’s natural resources and the character of the Silvermine neighborhood as a whole.¹ These events, hosted on the historic Graybarns campus, “attract local and regional visitors” and support “business growth and entrepreneurship” in Norwalk.² Moreover, these events provide employment opportunities for Norwalk residents, as approximately 40 percent of Graybarns’ 80 employees live in the City. Businesses such as Graybarns are part of a “diversified economy” and “allow many Norwalk residents to work where they live[.]”³ Without the ability to host events, the success of Graybarns, and the continued preservation of its historic structures, is in jeopardy.

The following POCD policies and goals are specifically supported by the continued success of the Graybarns operation:

- ***Seek to retain, grow and attract a wide range of businesses to increase Norwalk’s competitiveness and the **Grand List**.***⁴

¹ Graybarns is considered an asset for the Silvermine neighborhood. See POCD, page 348.

²POCD page 40.

³Id.

⁴Id.

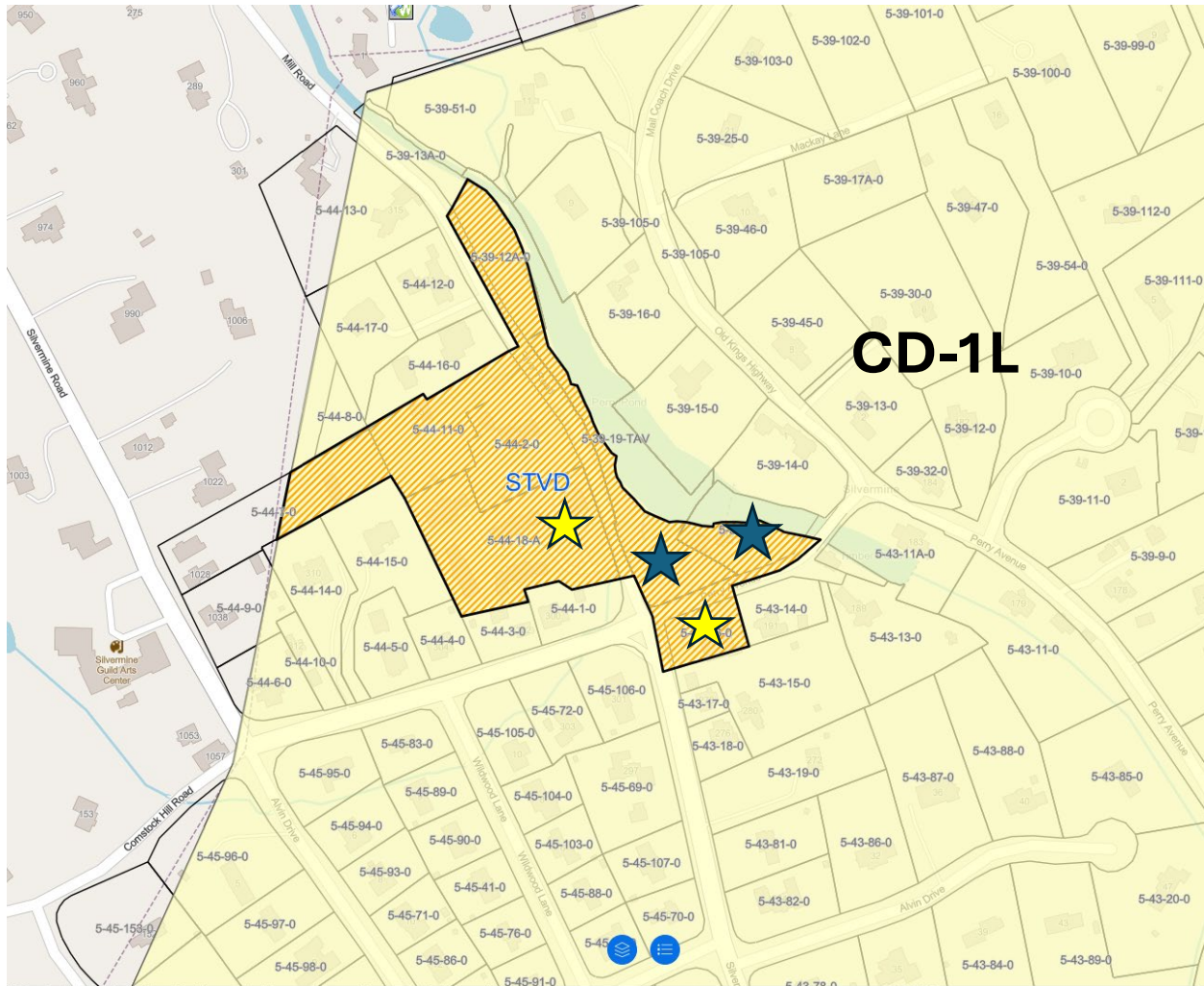
- *Develop a cohesive tourism strategy by **optimizing Norwalk's historic, cultural and historic resources**, coastal location, unique waterfront areas, Norwalk River and other natural assets for enhanced set of recreation, tourism, economic and transportation uses.*⁵
- *Norwalk protects its most important historic resources and **encourages adaptive reuse of historic sites** to maintain and enrich the City's character.*⁶
- ***Revise zoning** and development **regulations to promote preservation** and adaptive reuse of historic structures.*⁷
- ***Protect** natural and environmental resources and **overall neighborhood character** for development in suburban areas of Norwalk.*⁸

⁵ POCD, page 56.

⁶ POCD, page 96.

⁷ POCD, page 109.

Schedule C
Zone Affected by Zoning Amendment – STVD
(Including All Properties within 500' of 1E River Road)



*Yellow stars indicate properties owned by Glazer Group, LLC.

**Blue stars indicate properties owned by related parties.

Calculation of Areas Involved	
1 River Road (Units A, B, C, D, E)	1.66 acres
3 River Road	0.87 acres
5 River Road	1.00 acre
192 Perry Avenue	0.68 acres
193 Perry Avenue	0.33 acres
194 Perry Avenue	1.79 acres
1032 Silvermine Road	1.07 acres
TOTAL:	7.40 acres



Special Permit Application

City of Norwalk Planning & Zoning Commission

Phone: 203-854-7780

www.norwalkct.gov

Date Received:

Per Section 8.4.8 of the Norwalk Zoning Regulations, Special Permits are for Uses, Buildings, or Structures that are considered to be generally appropriate in the applicable District, but because of their potential for impacts with Adjacent Uses, Buildings, or Structures, require individual review for specific locations.

1. Address of Subject Property(s):

1E River Road, Norwalk, CT

2. District: 5 **Block:** 44 **Lot(s):** 18-Barn **3. Zone:** CD-1L **Overlay/Village District:** O-STVD

4. Historic Structure(s): ☒ No ☐ Yes **5. Flood Hazard Zone:** ☒ No ☐ Yes, Flood Zone(s) _____

6. Coastal Area Management Zone: ☒ No ☐ Yes If yes, include application for Coastal Site Plan Review or specify Section allowing exemption: _____

7. Existing Use of Property:

Barn that accommodates private parties, weddings, and community events in connection with the use of the tavern and inn on the property at 194 Perry Avenue.

8. Proposed Use of Property as Identified per Table 4.3.9.A: Building, Lot & Building Site Principal Uses:

The Applicant requests Special Permit approval to continue the use of the Barn as event space with and without live music.

Applicant Information

Applicant Name: Glazer Group, LLC

Billing Address: c/o Agent: 1055 Washington Boulevard, 4th Floor, Stamford, CT 06901

Phone Number: c/o Agent: (203) 252-2677 Email: c/o Agent: LFeinberg@carmodylaw.com

Signature: _____

Property Owner Information and Authorization

Owner of Record: Glazer Group, LLC

Billing Address: c/o Agent: 1055 Washington Boulevard, 4th Floor, Stamford, CT 06901

Phone Number: c/o Agent: (203) 252-2677 Email: c/o Agent: LFeinberg@carmodylaw.com

Signature: _____

**By signing, the property owner confirms that the Applicant has been authorized to apply for Planning & Zoning approval, and attests that all information provided is true and accurate.*

Schedule A Special Permit Project Narrative

BACKGROUND

Glazer Group, LLC (collectively, the “**Applicant**” or “**Owner**”) is the owner of certain property known as 1E River Road in Norwalk, commonly known as “The Barn” within the Graybarns on the Silvermine River development project (“**Graybarns**”). This unique collection of meticulously restored and reconstructed buildings is situated on approximately three (3) acres of property in the CD-1L and Silvermine Tavern Village District Overlay zones (“**O-STVD**”). The Graybarns property originally consisted of a series of industrial uses but was converted to a restaurant and inn, known as the Silvermine Tavern & Inn, in 1929. Collectively, the Silvermine Tavern complex included the inn, a mill building and guest house, a country store and various barns and accessory structures. Silvermine Tavern & Inn ceased operations in 2009 and the buildings fell into a state of disrepair.

In 2014, the Owner purchased the complex with the vision of creating a village center within the Silvermine neighborhood. In furtherance of this objective, the Owner obtained land use approvals to rehabilitate the Silvermine Tavern & Inn, convert the existing mill building to a single-family home, construct four (4) cluster homes, restore and revitalize the retail building with three (3) apartments above and reconstruct a “Community Barn”. All of this work has since been completed and Graybarns has been successfully operating since 2017.

The Owner’s efforts over the last decade have resulted in the transformation of these historic buildings and the revitalization of the beautiful Silvermine district. Today, Graybarns consists of The Mercantile (a marketplace and neighborhood café), The Tavern (a farm-to-table, destination fine dining experience), The Inn (an Inn featuring six luxurious suites), and, as is relevant here, The Barn, which has been used to host a wide range of private and community events, including numerous weddings since its inception. All of these buildings were preserved, restored and/or created with the purpose and intent to ensure the unique character of the Silvermine neighborhood would be honored and maintained.

2014 APPROVALS

In 2014, the Zoning Commission approved a series of applications to permit and facilitate the restoration of these historic buildings, including a text amendment to the Silvermine Tavern Village District and Special Permit #16-13SP (the “**2014 Approval**”). The text amendment was drafted for the sole purpose of permitting the proposed uses,¹ and the special permit provided the framework for the Owner to actually construct this vision. Throughout the materials submitted in support of the Owner’s 2014 applications, the Barn was described as a “Community Barn” that would accommodate “private parties, weddings or community events,” and the Barn has been used consistently with this description ever since. A copy of relevant materials from the 2014 Approval as well as articles from 2017 confirming the use of the Barn for events are included herewith.

¹Article 4, Silvermine Tavern Village District Overlay, Subsection 4.c specifically refers to special events.
{S7615200;2}

2024 Planning & Zoning Commission Request

Notwithstanding the 2014 Approval, questions were raised regarding the permitted use of the Barn and staff asked the Owner to submit applications to clarify any ambiguity. In November 2024, the Owner appeared before the Planning & Zoning Commission (the “**Commission**”) requesting confirmation that the 2014 Approval permitted the Barn to be used for events. At the time, staff believed the zoning permit for the Barn restricted its use to storage. This perceived inconsistency between the 2014 Approval documents and the zoning permit created some uncertainty with members of the Commission. A copy of the minutes from this meeting are included herewith for reference.

However, following the meeting, staff confirmed the zoning permit described the permitted use as “a barn constructed as part of the Silvermine Tavern Village District approved plan (see #16-13SP)” – treating the Barn as a component of the greater Silvermine Tavern Village District redevelopment plan. The application requesting the zoning permit described the Barn in the same way. A copy of the zoning permit application and issued zoning permit are also included.

Based on this new information, and pursuant to Section 8.3.2.B.10 of the Norwalk Zoning Regulations, the Applicant requested another informal audience with the Commission to seek confirmation that the Barn was approved for use for events. However, staff felt the record remained unclear and determined that a formal application would be required.² Thus, the Applicant has submitted this Special Permit request.³

THE BARN USE

Graybarns is a mixed-use campus consisting of multiple interconnected uses. Although Graybarns consists of multiple lots, separated by streets, development is considered holistically on the property. The approved building area, site coverage and open space is based on the total lot area, not an individual parcel. Use of the buildings functions in much the same way - folks may eat at the Tavern, shop at the Mercantile and spend the weekend at the Inn. Or a group may reserve the Inn, the Tavern and the Barn for an exclusive weekend event. Alternatively, the Barn may be reserved independently for a community gathering such as a concert, yoga class or farmers market.

This symbiotic relationship also serves to reduce the intensity of the commercial uses on the Graybarns campus. During a typical Friday or Saturday evening, without an exclusive event,

²Staff noted that the building permit related to the construction of the specific barn structure described the Barn as a “utility structure.” The Building Code describes this as a miscellaneous group category and states: “*buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this [Building] code commensurate with the fire and life hazard incidental to their occupancy.*” It is the Applicant’s understanding that this Building Code section is a “catch all” for accessory structures without specific occupancy requirements and simply requires the structures to be constructed in a manner that is safe for the intended occupancy. From a Building Code perspective, as long as the Barn is properly designed, equipped and maintained in accordance with Building Code requirements, it can be used to support events. The Applicant submits that the fact that the building permit classified the Barn as a utility structure should have no bearing on the use approved by zoning. Rather, zoning should dictate the use of the Barn and the building permit should ensure it is constructed accordingly. If modifications are required to bring the Barn into compliance with the Building Code, the Owner will happily make them.

³The Applicant continues to maintain that the Barn was approved for use for events in connection with the 2014 Approval and have submitted the Special Permit Application with a full reservation of their rights related to same.

Graybarns typically seats approximately 180 guests over the course of the night (2 1/2 turns). However, when Graybarns hosts an exclusive event, the Tavern is closed to the public and events typically range from 80- 85 guests - fewer than half of the guests welcomed on a typical weekend night. In all instances, the number of people hosted on the Graybarns campus is limited by the septic system capacity of 97 people at a time.

The Barn was always a component of the Graybarns plan, and for good reason. Events, such as weddings, are a vital revenue source for the complex, and the ability to continue hosting such events is essential to the financial viability of Graybarns and, in turn, the continued vitality of the district. Quite simply the inability to host events in the Barn puts in peril the continued financial stability of the entire Graybarns project.

Thus, the Applicant requests Special Permit approval⁴ to continue to use the Barn as event space with and without live music.

⁴This Special Permit application relates only to the Barn. All other uses approved in connection with Special Permit approval #16-13SP remain vested.

Schedule B Statement of Findings

A. Special Permit Requirements

In accordance with Section 8.4.8.G of the Norwalk Zoning Regulations, the Applicant submits that the following requirements have been satisfied:

1. *A Special Permits may be granted provided the Planning and Zoning Commission finds that the request conforms to the following requirements:*
 - a. *If the Special permit is for a Use, the proposed Use must be listed as a Special Permit Use for the applicable District and conforms to all applicable standards listed in Section 4.3.9.F, for the proposed Use;*

Today, the Norwalk Zoning Regulations do not include “events” within the list of permitted principal or accessory uses. The Applicant assumes this is because events have always been considered customary and incidental to other uses such as restaurants or hotels.⁵ One would be hard pressed to find a restaurant or hotel that did not host events with and without live music. Notably, a “Neighborhood Clubhouse” is also permitted as-of-right in the CD-1L zone which would permit events hosted by members of a neighborhood association.⁶ Notwithstanding this history and precedent, however, the Applicant has submitted a companion application for a Text Change to permit the Barn to continue to be used for event space by Special Permit and to host live music in the O-STVD, including The Tavern, The Inn, The Mercantile and The Barn.

- b. *The proposed Use, Building, or Structure must be so designed, located, and proposed to be operated that the public health, safety, and welfare will be protected;*

After seven (7) years, Graybarns has become part of the fabric of the Silvermine neighborhood, and the Barn is an important component of the Graybarns success. Reconstructed from reclaimed wood salvaged from an antique barn in upstate New York and modernized to serve as a gathering space, the Barn simultaneously looks like it has been on the site for 200 years and also stepped off the pages of Architectural Digest. This beautiful structure is a visual asset to the Silvermine neighborhood and serves a vital purpose for the Graybarns operation. As a neighbor themselves, the Owners are sensitive to the residential neighbors and consistently strive to ensure the public health, safety and welfare are properly protected. In fact, the Applicant submits that the introduction of Graybarns to the neighborhood has resulted in increased property values and overall enhanced appeal for the Silvermine neighborhood as a whole. This contention is verified

⁵A “hotel” is defined in the Norwalk Zoning Regulations as “a Business that offers to Transients, on a daily or weekly basis for compensation, sleeping accommodations accessible from interior hallways, whether or not such Business also includes dining facilities and **event spaces**.” (emphasis added).

⁶A “Neighborhood Clubhouse” is defined in the Norwalk Zoning Regulations as “a non-profit Use permitted in a residential District that is owned, controlled and used by a neighborhood association for meetings, events and recreational activities of its members.

in the Property Value Comparison Exhibit prepared by the Applicant and submitted herewith.

- c. *The proposed Use, Building, or Structure must not adversely affect other property in the area in which it is located;*

The Barn structure was constructed on the Graybarns property in 2017 and has been used in connection with Graybarns operations since that time. Thus, the neighborhood has actual experience with the requested Special Permit use, and an overwhelming number of direct and proximate neighbors support the continued operation. Moreover, the Applicant has also submitted a noise study confirming maximum decibel limits to ensure use of the Barn for events will comply with the Norwalk Noise Ordinance. Lastly, the Applicant has submitted a list of suggested conditions of approval to further regulate use of the Barn and ensure it will not adversely affect other property in the area.

- d. *The proposed Use, Building, or Structure must conform to all applicable provisions of these Regulations for the District in which it is to be located.*

The Silvermine Tavern Village District Overlay (O-STVD) was created to “ensure that the unique Character of this District is maintained and to provide for the existing Uses, Buildings and Structures to be maintained, including Inns, Restaurants, country stores and **other compatible uses** which will meet existing and future needs within the district.”⁷ Moreover, any use of buildings in existence at the time the new regulations were adopted in February 2024, were considered conforming with the requirements of the O-STVD.⁸ Notably, all GrayBarns uses, including events at the Barn, have existed since 2007. Both the O-STVD and its predecessor regulation, the Silvermine Tavern Village District, were specifically created to accommodate the uses on the Graybarns campus today, and continuing to provide events and live music in the Barn is paramount to the success of the Graybarns campus as a whole.

- e. *The proposed Use, Building, or Structure must be in harmony with the general purpose and intent of these Regulations;*

Large events were hosted on the Graybarns property long before it was Graybarns. In an article from The Hour in 2007, former owner of Silvermine Tavern and Inn, Frank Whitman Jr., noted “with a seating capacity of 200, 11 rooms for overnight accommodations, and a mill pond as a backdrop, the tavern [was] a popular place for weddings and other large parties.” When the Owners completed the renovation of Graybarns, they did not create additional uses, rather, they effectively reduced the intensity of these longstanding existing uses by cutting the capacity of the restaurant by more than half and shrinking the number of rooms at the Inn to six (6). Thus, the Applicant submits that the continued use of the Barn as event space with live music is consistent with the

⁷Section 3.3.3.B.4.d (emphasis added).

⁸See CD-1L, Table 4.3.1-A, Silvermine Tavern Village District Overlay (O-STVD).

historic use of the property and in harmony with the general purpose and intent of the Regulations.

- f. Except for Buildings designated as historic under a Local, State or National inventory, any proposed Building containing a Footprint of 5,000 square feet or more or a Floor Area of 20,000 square feet or more, shall*

The existing Barn structure contains a footprint of 1,500 square feet making this section inapplicable.

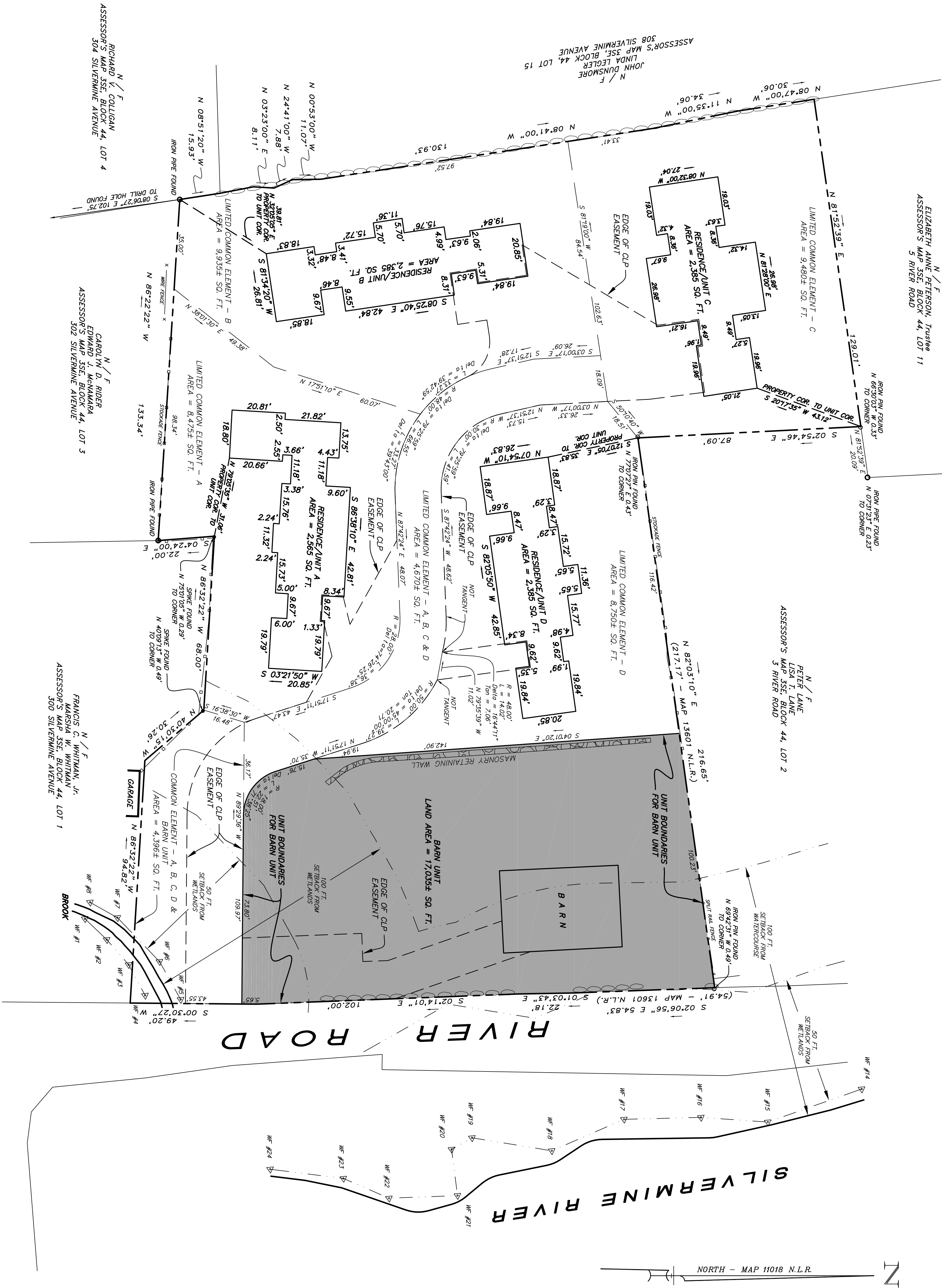
Schedule C
Property Description

1E RIVER ROAD, NORWALK:

All that certain piece, parcel or tract of land known as “The Barn” and shown and delineated as “BARN UNIT LAND AREA = 17,035± SQ. FT.” on a certain map titled, “PROPERTY SURVEY SCHEDULE C TO DECLARATION OF SILVERMINE VILLAGE, A CONDOMINIUM COMMUNITY 1 RIVER ROAD PREPARED FOR GLAZER GROUP, LLC NORWALK, CONNECTICUT,” dated May 13, 2015, which map was recorded in the Office of the Town Clerk of the Town of Norwalk on June 10, 2015 as Map No. 13696.

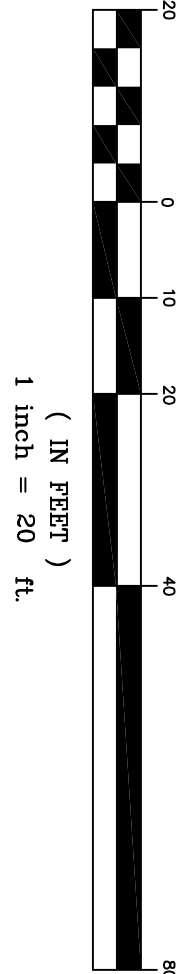
Schedule D Aerial Map of Property





THIS PLAN IS NEITHER A SUBDIVISION NOR A RESUBDIVISION UNDER THE TERMS OF CHAPTER 8-18 OF THE CONNECTICUT GENERAL STATUTES AS AMENDED.

TOTAL AREA = 72,461± SQ. FT.
OR 1.6634± ACRES



TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON, AND CONTAINS THE INFORMATION REQUIRED BY SECTION 47-228(b) OF THE CONN. GEN. STAT. ACT OF THE STATE OF CONNECTICUT (C.G.S. SEC. 47-228(b)), AS AMENDED, AND NOT OTHERWISE DEPICTED ON THE PLANS.

Mark S. Labow CT PLS #15564

PROPERTY SURVEY
SCHEDULE C TO DECLARATION OF
SILVERMINE VILLAGE, A CONDOMINIUM COMMUNITY
1 RIVER ROAD
PREPARED FOR
GLAZER GROUP, LLC
NORWALK, CONNECTICUT
MAY 13, 2015

WILLIAM W. SEYMOUR & ASSOCIATES, P.C.
LAND SURVEYORS & LAND USE CONSULTANTS
170 NOROTON AVENUE ~ 203-655-3331 ~ DAREN, CONN. ©

THIS SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-309B-1 THROUGH 20-309B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED FOR USE BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. THE SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH THE STANDARDS OF THE PERMETER PROPERTY BOUNDARY LINES AND AN ORIGINAL SURVEY OF THE UNIT BOUNDARIES, COMMON ELEMENTS AND LIMITED COMMON ELEMENTS EACH CONFORMING TO HORIZONTAL ACCURACY CLASS "A - 2" AND IS INTENDED TO BE USED FOR CONVEYANCING, MORTGAGING OR TITLE INSURANCE PURPOSES AND DECLARATION OF A COMMON INTEREST COMMUNITY.

THIS SURVEY WAS PREPARED FOR A SPECIFIC PURPOSE. ANY USE OTHER THAN FOR THAT WHICH WAS INTENDED IS A MISUSE OF THIS INFORMATION AND REMOVS THE PREPARER'S DECLARATION RULE AND 100.

UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS MAP REMOVS THE PREPARER'S DECLARATION RULE AND 100.

DISTANCES NOTED +/- FROM BUILDINGS TO PROPERTY LINES ARE FOR REFERENCE PURPOSES ONLY AND ARE NOT TO BE USED TO ESTABLISH PROPERTY BOUNDARIES. UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS, IF ANY, ARE NOT DEPICTED HEREON.

ALL BOUNDARY MONUMENTATION FOUND OR SET HAS BEEN DEPICTED HEREON.

PROPERTY IS LOCATED IN THE SILVERMINE TAVERN WILDALE DISTRICT/ZONE.

REFER TO REVISED PARCEL F, MAP 13601 OF THE NORWALK LAND RECORDS.

REFER TO A WARRANTY DEED RECORDED IN BK. 7976, PG. 203 OF THE NORWALK LAND RECORDS.

REFER TO AN EASEMENT TO THE CONNECTICUT LIGHT AND POWER CO. RECORDED IN BK. 8136, PG. 75 AND DEPICTED ON MAP 1869 EACH FILED ON THE NORWALK LAND RECORDS.

REFER TO MAPS 4361, 7964, 1107, 1109, 1221, 1220, 1228 & 1202 OF THE NORWALK LAND RECORDS.

REFER TO UNRECORDED MAPS TITLED AS FOLLOWS: "MAP OF PROPERTY PREPARED FOR THE 10 WHILMAN COMPANY NORWALK, CONNECTICUT DATED JUNE 19, 2012, LAST REVISED OCTOBER 19, 2012, LAST REVISED AUGUST 19, 2013, AND "MAP OF PROPERTY PREPARED FOR THE WHILMAN COMPANY 194 PERRY AVENUE NORWALK, CT DATED 10/24/13, LAST REVISED 11/11/13, EACH PREPARED BY DENNIS A. DEBUS, LAND SURVEYORS, NORWALK, CT.

REFER TO ZONING AMENDMENT RESOLUTION #6-18P AND SPECIAL PERMIT RESOLUTION #16-15P APPROVED FEBRUARY 19, 2014, EFFECTIVE FEBRUARY 28, 2014.

REFER TO A SET OF PLANS TITLED "SITE IMPROVEMENT PLANS FOR RESIDENCES, INN & TAVERN 194 PERRY AVENUE NORWALK, CT DATED NOVEMBER 20, 2013 AS REVISED TO JANUARY 31, 2014 AND PREPARED BY LANDTECH CIVIL AND STRUCTURAL ENGINEERS AND ECKSTROM DESIGN ASSOCIATES, LLC AND RELATED ARCHITECTURAL DRAWINGS FOR NEW BARN AND CLUSTER HOMES BY EDWARD DELANEY.

INLAND WETLANDS & WATERCOURSES WERE TRANSFERRED FROM ABOVE REFERENCED MAPS AND PLANS.

PROPERTY APPEARS ON THE FEDERAL EMERGENCY AGENCY - FLOOD INSURANCE RATE MAP - 100-00-0126E, IN THE 100 YEAR FLOOD ZONE. THE FLOOD ZONE 100 AND 100 IS DEPICTED AS THE COASTAL FLOOD ZONE. THIS INFORMATION IS PROVIDED FOR REFERENCE PURPOSES ONLY AND DOES NOT NECESSARILY REPRESENT THE ACTUAL POTENTIAL FOR FLOOD DAMAGE TO IMPROVEMENTS NOW LOCATED ON OR TO BE LOCATED ON THIS PROPERTY IN THE FUTURE.

PROPERTY LIES OUTSIDE THE COASTAL AREA MANAGEMENT BOUNDARY AND ANY LEVEL "X" MAPPING ADOPTED PROTECTION AREA.

CERTAIN IMPROVEMENTS WHICH MAY BE BUILT BY THE DECLARANT AS PART OF ITS SPECIAL DECLARANT RIGHTS AS RESERVED IN ARTICLE VII OF THE DECLARATION, IN ADDITION TO THE IMPROVEMENTS WHICH ARE REQUIRED BY THE DECLARATION, MAY BE BUILT ON THE PAYMENT AND CUBES, STREET LIGHTING, RETAINING WALLS, DRAINAGE SYSTEMS, GRADING, PIPES, DUCTS, CABLES, UTILITY WAS, INFRASTRUCTURE AND ACCESSORY OR RELATED STRUCTURES, FENCES AND IMPROVEMENTS WHICH ARE REQUIRED BY APPROPRIATE REGULATORY AGENCIES OR WHICH MAY BE BUILT BY THE DECLARANT TO ENHANCE THE COMMUNITY AT THE DISCRETION OF THE DECLARANT.

IMPROVEMENTS NEED NOT BE BUILT IN ANY PARTICULAR ORDER OR AT ANY PARTICULAR LOCATION WITHIN THE PROPERTY AND WILL HAVE DIMENSIONS CONSISTENT WITH THEIR PURPOSE.

REFER TO THE DECLARATION FOR RESERVATIONS AND LIMITATIONS OF THESE SPECIAL DECLARANT RIGHTS.

LEGEND

- PERMETER PROPERTY LINE
- UNIT BOUNDARY LINE
- COMMON ELEMENT/LIMITED COMMON ELEMENT
- CLIP EASEMENT AREA
- WETLAND/WETLAND SETBACK



Noise Code Compliance Study Report

Date: 03.10.2025

To: Daniel Glazer
Andrew Glazer

Subject: Noise Code Compliance Study

Project: Graybarns - 1 River Road, Norwalk, CT

From: Mark Wilcox, Seth Lunick

AD Project #: 2025107

Pages: 5 + attachments

Background

Glazer Group LLC is the owner of an existing property located at 1 River Road which is part of Graybarns on the Silvermine River ("Graybarns"). Graybarns consists of several properties including The Tavern, The Inn, The Mercantile, and The Barn. The Barn is used for events and has historically hosted gatherings which include live music, including amplified music.

This study will be submitted in connection with applications to the City of Norwalk Planning & Zoning Commission related to Live Music at Graybarns and documents the sound isolation provided by the Barn and Tavern to adjacent properties, and the resulting sound levels that are expected. These sound levels are then compared to the requirements presented in the Norwalk Noise Control Ordinance. When necessary, we have suggested source sound level limits to ensure compliance.

Summary

By adhering to the sound level limits provided herein, noise levels from the Barn will remain within the limits of the Norwalk Noise Control Ordinance. We recommend that the North Barn doors remain closed during amplified events, as this is the most stringent adjacency per the code requirements. Approximate maximum music source levels have been provided later in this report. Sound levels within the Barn of up to approximately 90 dBA during the Day and 80dBA at Night are acceptable while maintaining compliance with the noise ordinance. Compliance can be ensured with the installation of a simple sound level meter or sound system with a compressor (sound limiter) conforming to the performance standard outlined within the ordinance.

Music performance within the Tavern is not expected to be audible at adjacent properties. Loud music reproduction in the space (approximately 85dBA) during testing was barely audible at adjacent properties over ambient noise levels and falls well-within the limits of the Norwalk Noise Control Ordinance.



Testing Procedure

A site visit was made during the day on February 10, 2025, to assess the maximum noise levels that can be produced within the Barn and Tavern while meeting the Norwalk Noise Control Ordinance. Conditions were clear, with moderate wind.

All measurements were taken with B&K 2270 and 2250 Type II sound level meters which were laboratory calibrated on July 12th, 2024, and field calibrated on site prior to the start of measurements. Calibration was also taken after the testing was completed to confirm the meter's calibration remained valid throughout the measurement period. A wind screen was placed over the microphone of each sound level meter as per the manufacturer's instructions. Wind speed measurements were taken at the sound measurement location using a BTMETER model BT-100 anemometer. The wind speed did not exceed 12 miles per hour during testing.

A sound source, consisting of a pair of powered loudspeakers (QSC Model K8.2), was used to play pink noise at locations within both the Barn and the Tavern. Pink noise is a type of sound signal where each octave carries equal energy, resulting in a balanced distribution across frequencies. This characteristic makes it useful for sound isolation testing, as it closely resembles the frequency distribution of sounds found in nature and music. The sound source was located at the North side of the Barn interior, located 10' from the North wall, and facing south. Within the Tavern, the sound source was located at the center of the South most dining room, approximately 10' from the windows and facing South. Noise levels were measured in various locations at adjacent property lines. With the Barn source, various configurations of barn door openings were tested. With the Tavern source, all windows and doors were closed.

Music was also played at a similar overall volume level to provide a subjective assessment of the audibility of dynamic audio content at all measurement locations.

Noise Codes

The following are sections of the Norwalk Noise Control Ordinance that are relevant to this project:

§ 68-5. Sound Level Limits

- (3) Commercial establishments serving alcohol or food, or presenting live or recorded musical performances.
 - (a) Notwithstanding any other provisions of this chapter, commercial establishments such as bars, restaurants, cabarets, or performance venues shall conform to the following standards:
 - [1] There shall be no sound-production device on the exterior of the establishment or inside the establishment at a distance of less than 10 feet to an open door or window towards which it is oriented, without a permit.
 - [2] Sound-production devices in commercial establishments shall not exceed any of the permissible sound level limits set forth in Table 3, below:



Table 3

Maximum Permissible Sound Level Limits Commercial Establishment Sound-Production Devices

Facility Location	Time of Day	Sound Level Limit dB(A)		
		At a Distance of 10 Feet from Facility ¹	Property Line of Affected Person	Inside Residence of Affected Person
Washington Street Development District (WSDD)	Day ²	75	65	50
	Night	65	55	35 with WSDD
				Plainly audible in Any Other Zone
Any other commercial district	Day	70	60	40
	Night	60	50	Plainly audible

- 1) Exterior of the building or the property line, whichever is further from the source.

The relevant section of the code is the last section detailing the sound level limits that can be produced by a commercial establishment. The sound level limits at the property line of a residential building are 60 dBA during the day and 50 dBA during the night. The other important part of this noise code to note is that no sound-production devices are allowed outside of the building or within ten feet of an open door or window (without a permit).

Results

We have included markups attached to the end of this report that show the measured sound pressure levels on-site at different locations with pink noise playing at 94 dBA in the Barn (measured from 10ft away from the speakers – the “source location”). These levels can be used to extrapolate the maximum sound levels that can be produced within the limits of the noise ordinance. There are residences on the North, South, and West sides of The Barn with the closest being the property to the North.

At a source sound level of approximately 94dBA in the Barn, pink noise sound levels at all receivers' locations were audible and measurable outdoors above ambient levels in all door configurations. Music was also audible. As discussed below, limiting the source sound level to 90dBA during the day and 80dBA at night will ensure compliance with the noise ordinance.

For the Tavern sound source, with pink noise playing at 95 dBA in the Tavern, pink noise levels at all receiver locations to the East were inaudible or barely audible. At the nearest receiver location to the West, noise was audible and measurable but within the limits of the noise ordinance. Music was either in audible



or barely audible in some locations and only at bass frequencies. We note that in many locations, the main source of noise is the adjacent river and waterfall flow.

Recommendations

Barn

Below is a table stating the approximate maximum sound pressure level that can be generated by a sound reinforcement system inside the Barn, as measured 10' in front of the sound system, without exceeding the limits in the noise ordinance. This assumes a source location that is similar in location within the space to the system used during testing. Operating sounds levels during events may be confirmed during events through the use of a calibrated sound level meter, capable of reporting overall dBA sound pressure levels and conforming with ANSI S1.4-1984 as per section 68-3 of the Norwalk Noise Ordinance. Alternatively, a sound system with a compressor (sound limiter) can be installed.

This table shows the maximum level for each door configuration (Open or Closed) during the Day and Night. These are the maximum levels that can be made while adhering to the Norwalk Noise Control Ordinance.

Note that the Norwalk Noise Control Ordinance defines "Night" as the following hours:

- From 8:00 p.m. to 7:00 a.m., Sunday evening to Friday morning
- From 8:00 p.m. to 8:00 a.m., Friday evening to Saturday morning
- From 8:00 p.m. to 9:00 a.m., Friday evening to Sunday morning.

Door Condition	Day	Night
All Doors Closed	90 dBA	80 dBA
East Door Open	88 dBA	78 dBA
South Doors Open	90 dBA	80 dBA
East and South Doors Open	90 dBA	80 dBA
North Door Open	82 dBA	72 dBA

Table 1 – Maximum Sound Pressure Level (Measured 10ft In Front of Loudspeakers)

We recommend keeping the North doors closed during all amplified activities in the Barn. The North door of the Barn faces the closest property line and therefore controls the maximum sound level that can be produced. Combinations of the South and East doors being open produce similar results in terms of maximum achievable sound level. Live music is expected within the space and will comply with the maximum noise levels in the table above.

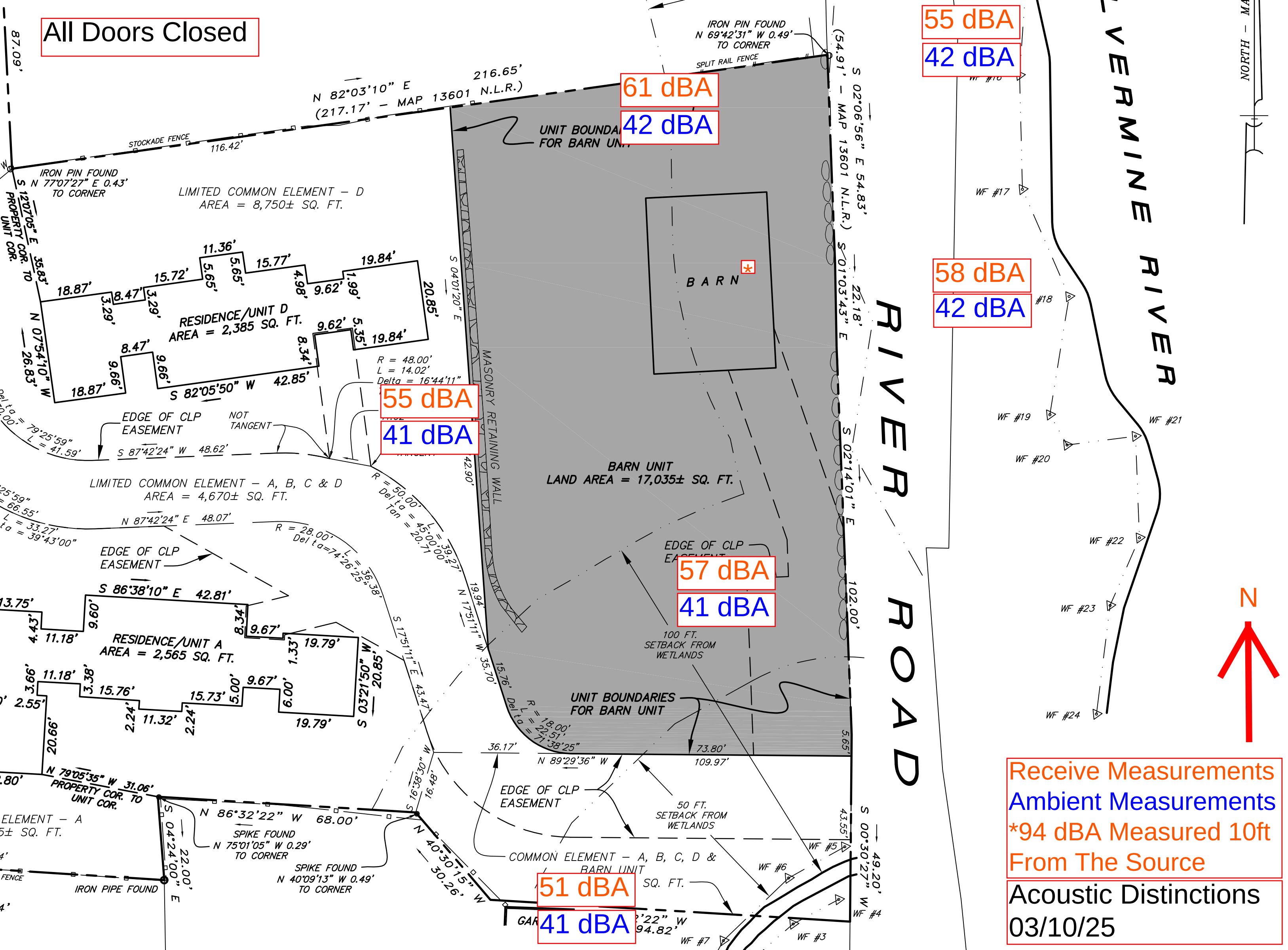
Tavern

The primary source of noise surrounding the Tavern is the adjacent river and waterfall flow which produces ambient noise which was consistent with or exceeded the pink noise from the speakers. Music measured at 85 dBA from 10' in front of the speakers played within the Tavern was inaudible or barely audible at most receiver locations. At the location to the West, sound levels were measurable, but within the limits of the Norwalk Noise Control Ordinance. The music levels in the space should be kept below 95 dBA at night or 105 dBA during the day. This applies to live and recorded music being played within The Tavern.

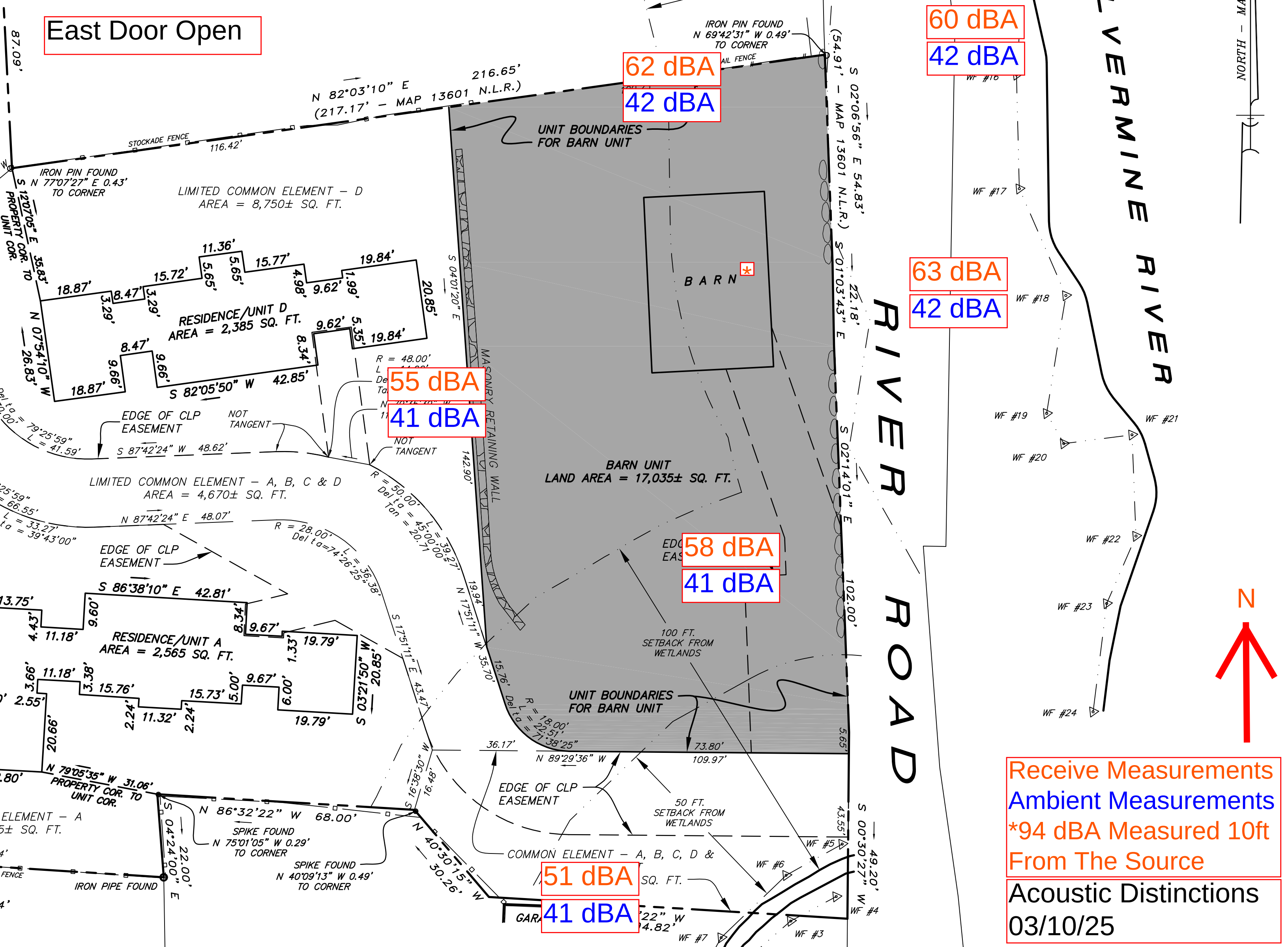


End of Report

All Doors Closed

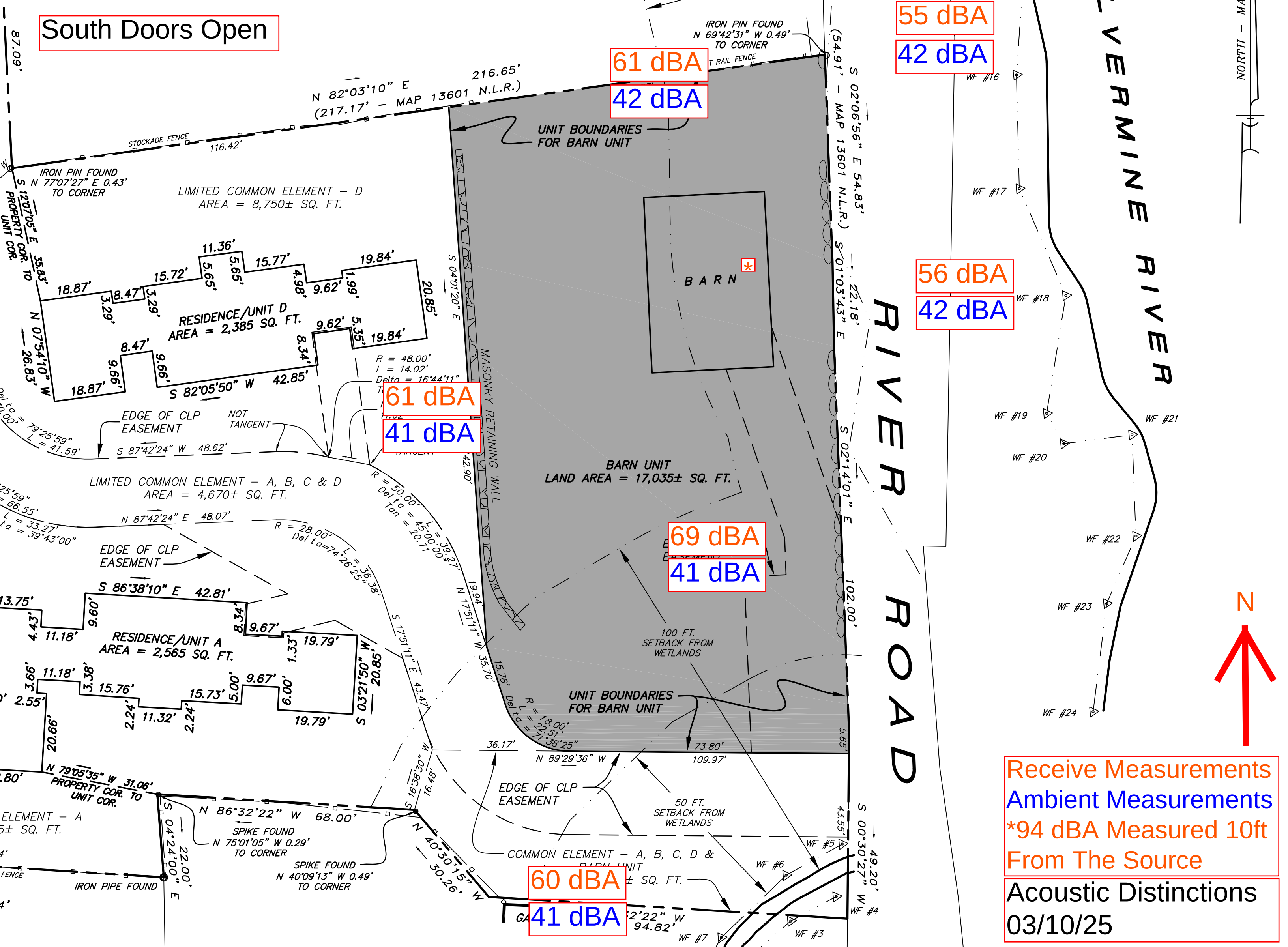


East Door Open



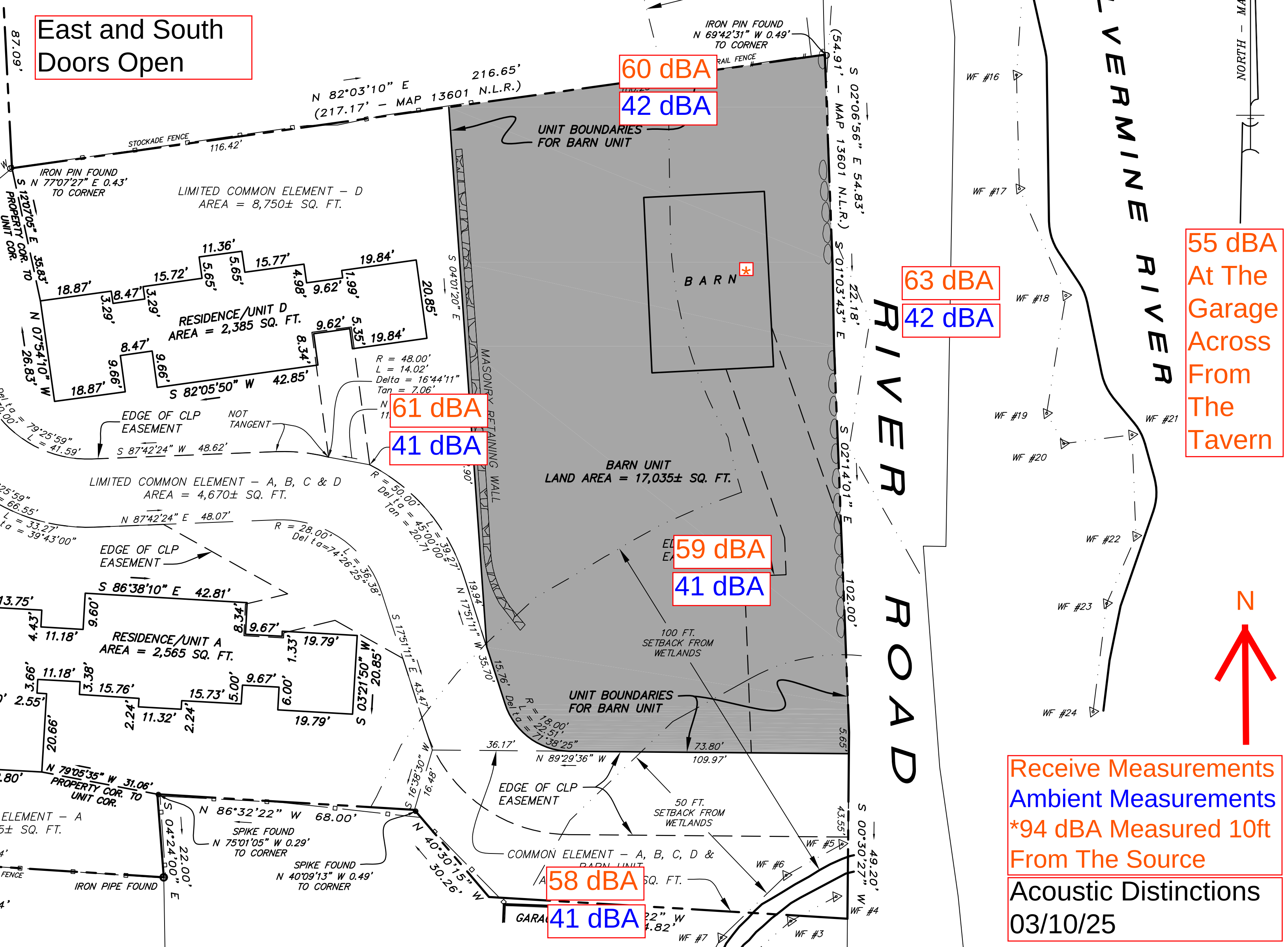
Receive Measurements
Ambient Measurements
*94 dBA Measured 10ft
From The Source
Acoustic Distinctions
03/10/25

South Doors Open



Receive Measurements
Ambient Measurements
*94 dBA Measured 10ft
From The Source
Acoustic Distinctions
03/10/25

East and South
Doors Open

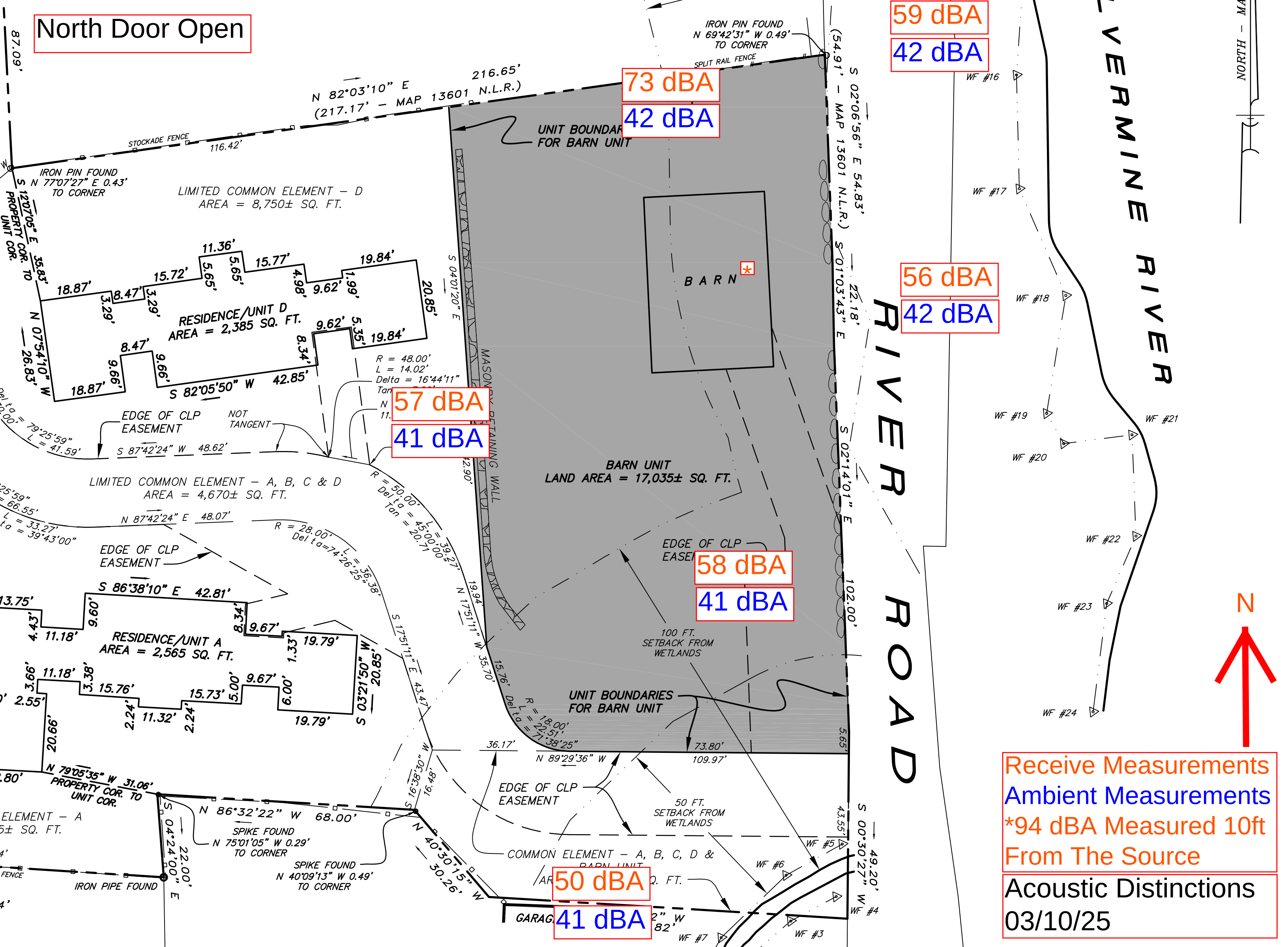


55 dBA
At The
Garage
Across
From
The
Tavern



Receive Measurements
Ambient Measurements
*94 dBA Measured 10ft
From The Source
Acoustic Distinctions
03/10/25

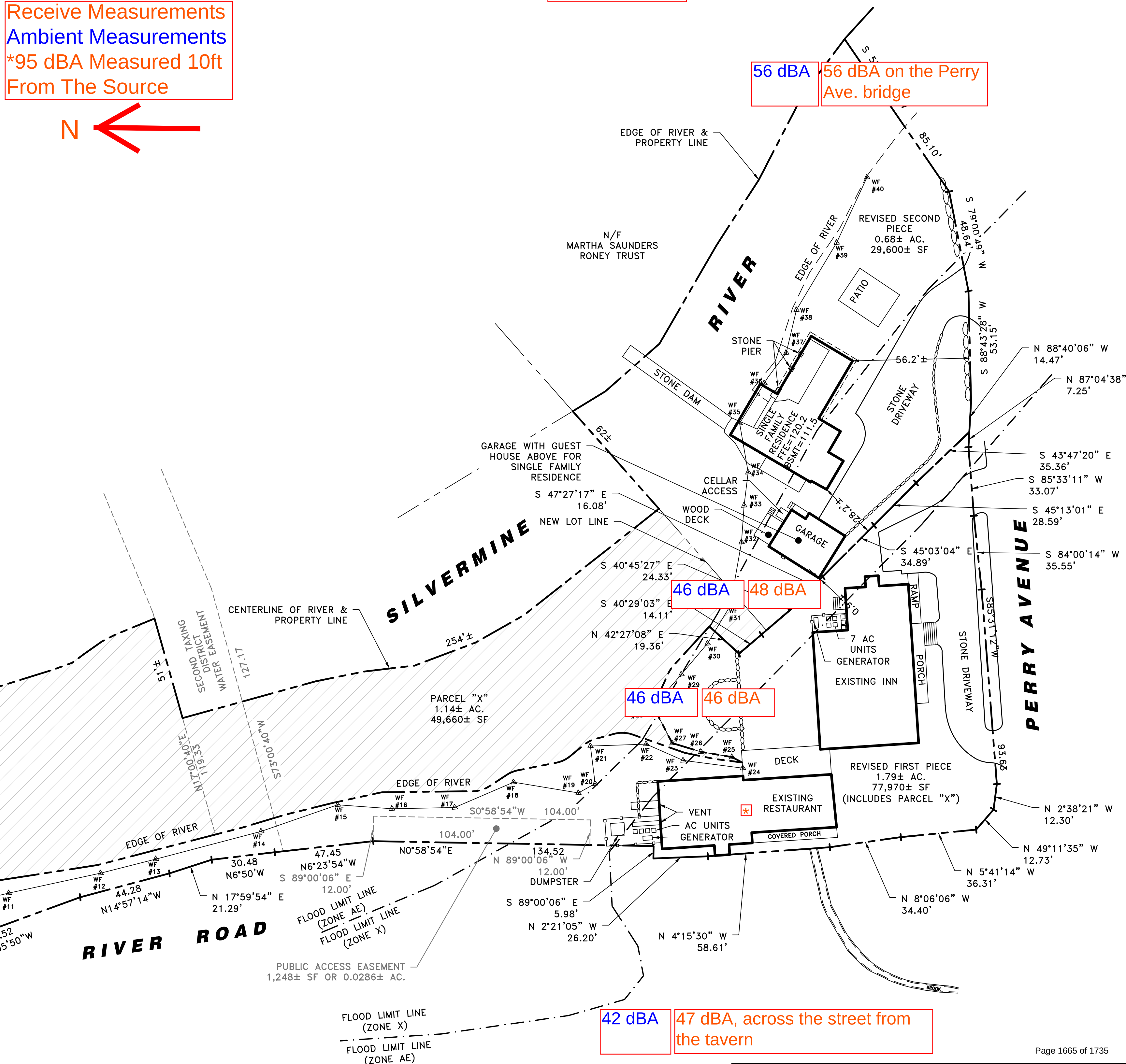
North Door Open



Receive Measurements
Ambient Measurements
*94 dBA Measured 10ft
From The Source
Acoustic Distinctions
03/10/25

43 dBA
Measured at Old
Kings Highway

N ←



To: City of Norwalk Planning & Zoning Commission

From: Glazer Group, LLC

Subject: Parking Compliance Chart & Valet Parking Plan

Date: 2/6/2014¹, Revised 3/17/2025

Cc: Steven Kleppin

GrayBarns Parking		
Use	Standard	Required
Tavern	1 space/45 SF	Approved Active Floor Area: 1,410 SF (97 seats) 32 spaces ²
Barn	1 space per 500 SF or Usable Floor Area ³	Usable Floor Area: 1,500 SF 3 spaces
Required Parking Subtotal		41 spaces
Required Parking with 25% Valet Credit		31 spaces
Total Valet Provided		65 spaces ⁴

¹ The Valet Parking Plan dated 2/6/2014 was approved in connection with Zoning Commission Appl. #16-13SP on 2/19/2014. The current revision incorporates the increased capacity of the restaurant and use of the barn as Event Space.

² At the time the Tavern was approved in 2014, parking for a "Restaurant" use was based on "Active Floor Area". The current parking standard for a "Restaurant" use is 1 space per 100 SF of "Usable Floor Area". If Usable Floor Area is utilized, the Tavern consists of 2,820 SF which would generate a parking requirement of 29 spaces.

³ This is the standard used for a "Place of Assembly". If the "Restaurant" parking standard were applied, the space would generate a parking requirement of 15 spaces and a collective parking requirement of 36 spaces (with the valet credit), well within the limit of the approved valet parking plan.

⁴ Pursuant to Special Permit approval #16-13SP, the Inn required 6 parking spaces and the Mercantile requires 10 parking spaces. All of these parking spaces are provided proximate to each establishment. However, when vacant, these spaces are also available for use by the valet operation. Although not required, offsite parking spaces are also available for staff at 1037 Silvermine Road in New Canaan.

Valet Parking Operation

The valet parking option was incorporated into the Silvermine Tavern Village District, and later in the O-STVD, with the understanding that future uses would need additional capacity to operate the businesses intended to occupy the existing historic buildings that previously housed Silvermine Tavern & Inn. The Tavern and Barn both utilize the valet parking option during all hours of operation and can accommodate a capacity of 65 vehicles, as approved with Special Permit #16-13SP.

Hours of operation include Tuesday through Sunday with lunch service only available Friday, Saturday and Sunday. Valet attendants, employed by Graybarns, park vehicles in accordance with the approved plan. Drop-off occurs in front of the Tavern and attendants park the vehicles in the parking lot adjacent to the Barn. This drop-off area is the same location that Silvermine Tavern used for deliveries and which continues to be use for deliveries today.

Although use of the Barn is generally linked with use of the Tavern, the Barn square footage has now been specifically incorporated into the required parking for the GrayBarns site. The additional seating capacity of the Tavern has also been included.⁵ Otherwise, the valet parking plan has remained largely the same as approved in 2014.

As noted in 2014, in addition to regular hours of operation, any events taking place in the Tavern and/or Barn such as private parties, weddings or community events, also utilize the Valet Parking Plan to ensure that all vehicles are parked in designated parking areas, as opposed to on any adjacent street.

⁵ No new Floor Area has been added.

NORWALK ZONING COMMISSION
CITY HALL - 125 EAST AVENUE
NORWALK, CONNECTICUT

CERTIFICATE OF SPECIAL PERMIT

Special Permit Number #16-13SP

Town Clerk's Number To be filed on NLR

I, Joseph Santo, Chair, Norwalk Zoning Commission, do hereby certify that a meeting of the Zoning Commission was held on February 19, 2014 on the following application:

#16-13SP – A. Glazer – 192, 193 & 194 Perry Avenue/1 River Road

Rehabilitate Silvermine Tavern buildings, convert existing mill to single family residence with guest house, construct 2,000 sq. ft. barn and 4 units cluster housing, maximum of 19,600 sq. ft. for all new structures, add 3 multifamily dwellings or 4 inn rooms to existing retail building and related site improvements including public access along the Silvermine River

PROPERTY OWNER: Glazer Group, LLC (formerly The Whitman Company)

PROPERTY ADDRESS: 192, 193 & 194 Perry Avenue/1 River Road
(District 5, Block 44, Lot 18; Block 39, Lots 18 & 19 & Block 43, Lot 16)

In determination of the above matter, the Zoning Commission adopted the following resolution:

RESOLUTION

BE IT RESOLVED that Village District and Special Permit application #16-13SP – A. Glazer – 192, 193 & 194 Perry Avenue/1 River Road - Rehabilitate Silvermine Tavern buildings, convert existing mill to single family residence with guest house, construct 2,000 sq. ft. barn and 4 units cluster housing, add 3 multifamily dwellings or 4 inn rooms to existing retail building and related site improvements including public access along the Silvermine River as on a set of plans entitled "Site Improvement Plans for Residences, Inn & Tavern 194 Perry Avenue, Norwalk CT." dated November 20, 2013 as revised to January 31, 2014 by Landtech Civil and Structural Engineers and Eckerson Design Associates LLC and related architectural drawings for new barn and cluster homes by Edward Clemente be **approved**, subject to the following conditions:

1. That the public access improvements along the waterfront, as shown on a plan dated revised to January 31, 2014 be made a part of this approval and that such work be complete prior to the issuance of a Certificate of Zoning Compliance; and
2. That a public access easement be filed on the Norwalk Land Records to permanently protect the public access area and that such easement be made a part of this approval; and
3. That the valet parking plan dated February 6, 2014 be implemented as needed and made a part of this approval; and
4. That notice of this action in the form of a Village District site plan and certificate of special permit be filed on the Norwalk Land Records prior to the issuance of a zoning permit; and
5. That final plans for the rehabilitation of each of the existing buildings (including the tavern, inn, country store and mill buildings) be submitted for staff review prior to the start of construction; and
6. That a revised soil and erosion control plan, showing silt sacks at all existing and proposed catch basins, designating a stockpile area and providing a schedule for construction, be submitted for staff review and approval prior to the start of any construction or site work; and
7. That a licensed Connecticut engineer certify that the development as constructed complies with all relevant Federal flood regulations (Mill Building) and that such certification be submitted prior to the issuance of a final Certificate of Zoning Compliance; and
8. That any graffiti on the site, now or in the future, be immediately removed; and
9. That any modifications to the approved plans be submitted to the Zoning Commission for review and that all CEAC signoffs be submitted prior to the start of construction; and
10. That a surety (in an amount to be determined by staff) be submitted to guarantee the installation of required improvements and that a Connecticut licensed engineer certify that the required improvements were installed to City standards; and

BE IT FURTHER RESOLVED that the reason for this action is that this application complies with the Connecticut

#16-13SP - Certificate of Special Permit

General Statutes Section 8-2j Village Districts and with applicable village district review standards; and

BE IT FURTHER RESOLVED that this application complies Section 118-531 Silvermine Tavern Village District, as amended, and with the applicable sections of the Building Zone Regulations for the City of Norwalk.

BE IT FURTHER RESOLVED that the effective date of this action be February 28, 2014.

EXECUTED AT NORWALK, CT. THIS _____ DAY OF _____, 2014.

Joseph Santo, Chair

LEGAL NOTICE

At a meeting of the Norwalk Zoning Commission held on Wednesday, February 19, 2014, the following action was taken:

APPROVED THE FOLLOWING AMENDMENTS TO THE BUILDING ZONE REGULATIONS, EFFECTIVE FEBRUARY 28, 2014:

#6-13R – A. Glazer – Amendments to revise Section 118-531 Silvermine Tavern Village District to allow single family residences and related amendments as shown on a certain document entitled “#6-13R – A. Glazer – Proposed amendments to Article 50 to revise Section 118-531 Silvermine Tavern Village District to increase to 19,600 sq. ft. for new structures, allow single family residences & related amendments” and dated January 9, 2014. The adopted amendments will revise the Silvermine Tavern Village District to increase the amount of new structures permitted to 19,600 square feet including a new 2,000 sq. ft. barn building and up to 4 units of cluster housing each a maximum of 4,400 sq. ft. in size including a 1,150 sq. ft basement, allow up to 3 multifamily dwellings or 4 inn rooms in an existing retail building, allow accessory uses and structures commonly associated with residential uses such as decks and sheds and related amendments.

APPROVED THE FOLLOWING APPLICATION WITH CONDITIONS, EFFECTIVE FEBRUARY 28, 2014

#16-13SP – A. Glazer – 192, 193 & 194 Perry Avenue/1 River Road - Rehabilitate Silvermine Tavern buildings, convert existing mill buildings to single family residence with guest house, construct new 2,000 sq. ft barn, add 4 units cluster housing each a maximum of 4,400 sq. ft. in size with a 1,150 sq. ft basement, add up to 3 multifamily dwellings or 4 inn rooms to existing retail building, reconfigure existing parking lots to accommodate valet parking, add new parking and drop off area, create a public access walkway along river and related site improvements (District 5, Block 44, Lot 18; Block 39, Lots 18 and 19 & Block 43, Lot 16)

Copies of all applications are on file at the office of the Zoning Commission, 125 East Avenue, Norwalk, CT. A complete copy of the adopted amendment is available for review at the Planning & Zoning office. A copy of the adopted amendment to the Building Zone Regulations is also posted at the Town Clerk’s office at the same address.

DATED THIS TWENTY-SEVENTH DAY OF FEBRUARY, 2014.

JOSEPH SANTO, CHAIR

JILL A. JACOBSON, SECRETARY

**Publish ONCE in The Hour
THURSDAY, FEBRUARY 27, 2014**

Project Narrative

The Silvermine

A. Introduction

This report has been prepared as part of the permitting process for the construction of Silvermine. The Silvermine is the site of the historic Silvermine Tavern. The nearly 3 acres site is located in the Silvermine section of Norwalk, along the Silvermine River. The property consists of the Tavern and Inn buildings at the intersection of Perry and Silvermine Avenue, the Mill Houses to the east along the river, a retail store with rooms above in the building on the southeast corner of the intersection of Perry and Silvermine. Across the River Road from the Tavern is a large graveled parking lot that served the Tavern and Inn at the center of the lot is barn which is in disrepair.

B. Proposal

The property is located within the Silvermine Tavern Village District.

The proposal for the site is a mixture of restoration, renovation and new. The mill houses and the retail and residential building at the corner Perry and Silvermine will receive extensive interior renovations; the exteriors will be restored to their former condition. A portion of the building that connects the Inn and the Tavern that consists of building and wooden deck that overhang the banks of the Silvermine River and the watercourse from the west will be removed. A new smaller wooden deck will be cantilevered (no structure/piers to the ground) to the rear of the new Tavern. The Inn will be renovated to create 6 rooms/suites the exteriors will be restored. In the Tavern building the owners will create a 60 person Tavern/restaurant. The Tavern and the Inn will continue to be served by the existing onsite sewage disposal system and public water.

The new is at the graveled parking lot that once accommodated the much larger restaurant and event space in the Tavern building. Within that approximately 1.7 acres of graveled parking lot that has become a "dumping" ground the owners are proposing to create the "Village". The Village will consist of 4 single family dwellings approximately 2,800 s.f. nestled into the site. The approximately 320' long drive will meander through the site from River Road. The new homes will be served by onsite sewage disposal systems and public water supply. Then new village will include extensive landscaping throughout the residential areas and extend to the area along the easterly side of River Road. In that particularly area the owners will create a public access area and will selectively prune the existing vegetation and enhance the embankment with indigenous plants that through filtration will improve the quality of the roadway runoff currently draining unrestricted to the Silvermine River. The easterly portion of the former parking lot and along River Road will now be a greatly reduced pervious surfaced parking area to serve the new Tavern and Inn. Within that same area and also along River Road the new owners are proposing to construct a post and beam "Community" Barn that will be part of the new Silvermine. The intent is to offer the barn for community events throughout the year.

#16-13 SF ^{FL} Valet Parking ^{NO} Plan Silvermine Tavern

GLAZER GROUP

TO: NORWALK ZONING COMMISSION
FROM: ANDY GLAZER
SUBJECT: VALET PARKING PLAN
DATE: 2/6/2014
CC: MIKE GREENE

RECEIVED
FEB 05 2014
CITY OF NORWALK
PLANNING & ZONING

Restaurant Parking

Proposed Active Floor Area = 1,260 SF (60 seats)
Required Parking = 28 spaces, with valet credit (25%) 21 spaces
Provided Parking = 24 spaces
Valet Parking Capacity = 65 spaces

The parking lot for the new restaurant at the Silvermine project is designed as required for the active square footage of the restaurant. This plan has 24 spaces as drawn in conformance with parking space and backup area as proscribed by Norwalk Zoning regulations. For the most part this lot will serve as adequate parking capacity for the new restaurant of 60 seats.

On busier days which would include all Thursdays thru Sundays we would have in place a valet parking plan that could handle a capacity of 65 cars. We would have in place attendants who would park cars in the manner shown on the accompanying plan. The valet parking plan was incorporated into the Silvermine Village District with the understanding that a future use would need the capacity to operate business's that would occupy the existing or renovated buildings that once housed the restaurant.

The plan has a drop off area where guests would enter the restaurant and leave their cars to be parked by attendants.

In addition to restaurant regular service any events that would take place in the barn such as private parties, weddings or community events the valet parking plan would be in place to insure that all cars would be parked in the designated parking area as opposed to on any adjacent street.

The upper village area will be separated from the parking area by a retaining wall and plantings to insure privacy and screening.

Valet Attendant Hours

Thursday – Sunday 5pm – 11pm

All Special Events in barn and or Restaurant

Inn Parking - Parking for the Inn will be both in front of the Inn and in the parking lot. Guests will pull up to the Inn front door and will unload and then proceed to park in the lot or park in the designated space in front of the Inn. When the valets are on duty as specified above they will move cars from the Inn spaces to the parking lot in concert with parking for the restaurant.

**CITY OF NORWALK
ZONING COMMISSION
February 19, 2014**

PRESENT: Emily Wilson, acting as Chair; Jill Jacobson; Michael Mushak; Nathan Sumpter; Jim White; Nora King

STAFF: Michael Wrinn; Dori Wilson

OTHERS: Andy Glazer; Lee Grant; Christine Names; Mary Howetzein; Leslie Ash; Frank Whitman; Peter Viterreto; Pete Romano; Atty David Waters; Victor Marenschuck; Michael Galante; Atty Frank Murphy

I. CALL TO ORDER

Emily Wilson called the meeting to order at 7:33 p.m.

II. ROLL CALL

Mr. Wrinn called the roll.

III. PUBLIC HEARINGS

Before the public hearings began, Emily Wilson discussed the procedures.

a. #6-13R – A. Glazer –Proposed amendments to Silvermine Tavern Village District to increase to 19,600 sf. for new structures and to allow single family residences and cluster housing, b. #16-13SP – A. Glazer – 192, 193 & 194 Perry Ave/1 River Rd - Rehabilitate Silvermine Tavern buildings, convert existing mill buildings to single family residence with guest house, construct new barn, add 4 units cluster housing, reconfigure existing parking lot & add valet parking

Emily Wilson opened the public hearing by stating that the public hearing for one of the applications would be used as the public hearing for the other application. Mr. Glazer, representing the Silvermine Tavern, began the presentation. He discussed the history of the property as well as the process of how he became involved with the project. Mr. Wrinn passed hand-outs to the commissioners. He described how the new houses would be arranged. Next, he talked about the barn, which recently lost its roof under the weight of the snow. He then described the new restaurant which would be smaller than previous iterations of the restaurant. The main part of it would be an inn. There would also be a store, an event barn and the mill house. There may also be other rooms at the top of the store. He then discussed the parking especially for those that want to fish in the nearby river. They would encourage them to park in their parking lot. He also discussed the driveway in front of the inn. Neighbors had concerns about how that would look and whether it would be in keeping with the character of the inn. He then discussed the crosswalk from the store to the inn which would be at the points where there were steps at both. There was also a discussion about the village district report completed by the consultants, BFJ Planning. Mr. Glazer said that there had been meetings with the community. Most were pleased that the tavern would be open again.

Although Ms. King was pleased with the project, she had concerns about the safety of pedestrians. Ms. King also had a question about the single family residences. Mr. Mushak had questions about the consultant's report regarding the crosswalks on River Road and truck deliveries. Mr. Glazer responded to their questions and briefly discussed the proposed text amendment.

Ms. Wilson asked if there was anyone from the public who wished to speak on the matter.

Lee Grant, 99 Comstock Hill Avenue, said that she worked to help nominate the Silvermine

Center to the National Historic Registry. She said that the Silvermine Tavern was the center of the district which was important to not only Norwalk, but Wilton and New Canaan as well. She said that she appreciated the discussions with Mr. Glazer as well as with the Planning and Zoning Department staff. She asked that most of the buildings remain as preserved buildings with the only new buildings being the new single family homes and the barn. She also questioned the amount of parking that there would be for the new tavern and inn. She had safety concerns.

Christine Names, 223 Silvermine Avenue, President of the Norwalk Association of Silvermine Homeowners ("NASH"), thanked the commissioners as well as Andy Glazer. She discussed a recent meeting of NASH at which most of the members voted against the proposed new driveway in front of the inn.

Mary Howetzein, 11 Muscot Ridge Road, spoke in support of the application.

Leslie Ash, Executive Director of the Silvermine Art Center, spoke in support of the application. Although not a resident of Silvermine, she said that they have been pleased with what Mr. Glazer has proposed and looked forward to working with them.

Frank Whitman, owner of the Silvermine Tavern, spoke in support of the application. He believed this project would work for the property. Mr. Mushak asked about the valet parking. Mr. Whitman said that the inn did have valet parking many years ago.

Peter Viterreto, 119 Comstock Hill Road, was concerned about the drop-off at the tavern. He thought they should try to find another solution. Mr. Mushak discussed with Mr. Viterreto possible alternatives.

Mr. Glazer began his rebuttal by discussing the parking. He said that he had operated another restaurant with less parking than this one and that the valet parking had worked very well. He said they would have to manage the restaurant so that it could accommodate the number of patrons that could be parked. He said that they would be building a model and would continue to work on the design of the inn driveway to ensure that vehicles would be screened.

Peter Romano, of Landtech, the civil engineer on the project, continued the rebuttal by showing the commissioners a cross section of the grade on the driveway in front of the inn. He discussed how they would change the grade and the vegetation. Mr. Mushak made some suggestions as to how they might be able to change the grade. Mr. Glazer indicated that since the single family residences would be built first, they still had more time to address the parking issues. Mr. Sumpter discussed the type of lighting and the need to manage the valet parking. Ms. King discussed methods of connecting the tavern and the inn. Mr. Glazer responded and said that he will continue to respond to the community and encourage their involvement as the project moves forward.

Emily Wilson closed the public hearing. Mr. Mushak announced to the public that the commissioners would vote on the application after the second public hearing.

c. #7-13R – Merritt River Partners, LLC –Proposed amendments to Section 118-760 Commercial Planned Residential Development (PRD) regulations to reduce lot size, increase FAR, building area & density & related changes and d. #17-13SP – Merritt River Partners, LLC – 1 Glover Ave – 5 story, 132 unit Commercial Planned Residential Development (PRD)

Emily Wilson opened the public hearing. David Waters, General Counsel for Building and Land Technology and Merritt River Partners, the applicant, began the presentation. He then handed over the certified, return receipts for the mailing of the legal notice for the public hearing. He also requested that since there were two applications, that the public hearing for one of the applications be adopted for the second application.

Atty. Waters discussed the history of the Commercial Planned Residential Development

BFJ Planning

MEMORANDUM

To: Dorothy S. Wilson, Senior Planner, City of Norwalk

From: Frank Fish, FAICP and Michael Keane, AICP

Re: Silvermine Tavern Village District Application

Date: February 11, 2014

RECEIVED

FEB 18 2014

CITY OF NORWALK
PLANNING & ZONING

Introduction

BFJ Planning is in receipt of an application to amend the Silvermine Tavern Village District regulation and a special permit application to rehabilitate existing structures, build four (4) new cluster housing units and a new barn and to reconfigure parking at the Silvermine site located at 194 Perry Avenue and River Road.

The project site is located within the Silvermine Tavern Village District. The purpose of the Silvermine Tavern Village District is to ensure that the unique character of this district is maintained for future generations in accordance with Connecticut General Statutes, Section 8-2j Village Districts and to provide compatible uses which will meet existing and future needs within the district. The provisions of this zone are intended to preserve and enhance the character of the Silvermine Tavern Village assuring that any new structures and uses uphold the established character of the area.

Project Description

The subject property is approximately three (3) acres and is located in the Silvermine section of Norwalk, along the Silvermine River. The property consists of the Tavern and Inn buildings at the intersection of Perry and Silvermine Avenues; the Mill Houses to the east along the River; and a retail store with rooms above in the building on the southeast corner of the intersection of Perry and Silvermine Avenues. Across River Road from the Tavern is a gravel parking lot that served the Inn and Tavern, and a barn in disrepair.

The proposal for the site is a mixture of restoration, renovation and new construction. The Mill Houses and the retail and residential building at the corner of Perry and Silvermine will receive extensive interior renovations; the exteriors will be restored to their former condition. The Inn will be renovated to create six (6) rooms/suites; the exteriors will be restored. The Tavern will be renovated to create a 60 person tavern/restaurant. The Tavern and the Inn will continue to be served by the existing on-site sewage disposal system and public water.

New construction is proposed at the approximately 1.7-acre gravel parking lot across River Road, where the



BFJ Planning

MEMORANDUM

Date: February 11, 2014
Silvermine Tavern Village Review

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applicant proposes to construct a new residential "Village" that will consist of four (4) single-family cluster housing units. The new homes will be served by onsite sewage disposal systems and public water supply. The easterly portion of the parking lot along River Road will be a reduced pervious surfaced parking area serving the new Tavern and Inn, as well as a newly constructed post and beam "Community Barn" to be used for community events.

Proposal Review

BFJ has reviewed the proposed additions in terms of overall site layout and design; landscaping; and building design and scale to ensure consistency with the local architectural motif and the unique elements of the Silvermine Tavern Village District. Based on our review of the most recent Elevation and Site Plan Drawings, we believe the proposed project is generally consistent with Silvermine Tavern Village District regulations. However, we encourage the City of Norwalk to consider the following comments during its review of the application.

Overall Site Plan and Layout

1. Please provide a separate existing conditions map that clearly displays all natural and manmade features defining the project site.
2. The Layout and Utility Plan (Dwg. C-2.0) dated 10/29/13 proposes a 15-foot wide vehicle entrance to the Inn (west of the Inn, closest to the Silvermine and Perry Avenue intersection) and a 12-foot wide vehicle exit (east of the Inn). As an alternative, we recommend that the proposed 12-foot wide exit become a 15-foot wide entrance and that the proposed 15-foot wide entrance be used as the exit. This alternative entrance-exit configuration will prevent potential traffic conflicts at the intersection of Perry and Silvermine resulting from vehicles entering the driveway near the intersection. What is more, widening the entrance from 12 to 15 feet will provide the right-of-way necessary for vehicles turning left off of Perry on to the Inn property. See Figure 1 attached.
3. Dwg C-2.0 proposes four (4) angular parking bays situated adjacent to the Inn. However, the Overall Site Plan (Dwg. SP) dated 11/26/13 displays three (3) non-angular parking spaces. These perpendicular spaces appear to function better. Please confirm if this is the current proposed parking configuration.
4. The Overall Site Plan (Dwg. SP) proposes two pedestrian crosswalks on River Road between the proposed restaurant and the proposed barn and parking lot. As an alternative, one pedestrian crosswalk should be considered, as this has been proven to be safer for the pedestrian. We recommend eliminating the crosswalk connecting the Barn patio and the restaurant and maintaining the crosswalk between the parking lot and the restaurant. This pedestrian crosswalk should be clearly demarcated with proper signage/stripping.



J Planning

MEMORANDUM

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Date: February 11, 2014
Silvermine Tavern Village Review

5. It is unclear where delivery trucks servicing the restaurant will park. Should the pedestrian crosswalk between the Barn patio and restaurant be eliminated, we recommend that the area along the eastern side of River Road – currently proposed for a pedestrian walkway – be used as a layby for delivery trucks. This will reduce potential traffic congestion on River Road resulting from trucks servicing the restaurant.
6. Currently, the proposed parking lot on River Road contains 24, 8 ½ foot-wide parking spaces. As an alternative, we recommend 9-foot wide parking spaces, given that this parking lot will serve the Inn and Restaurant and therefore will experience high turn-over of vehicles entering and leaving. Usually 8 ½ foot-wide spaces can accommodate and office use when employees park once or twice for the day. They are not appropriate for restaurant/retail uses, particularly in a relatively affluent suburban area where larger vehicles such as SUVs are common. Figure 2 (attached) shows an alternative parking plan with 25, 9-foot-wide spaces. As shown, one additional parking space is gained by shifting the 22-foot wide accessway from River Road south toward the property line. A 10-foot wide buffer between the accessway and property line is provided.
7. It is unclear whether or not the number of spaces provided in the proposed parking lot will be sufficient to accommodate both the Restaurant and the Community Barn. Explanation should be given as to when the Community Barn will be available for events and how the parking will be managed during times when the Restaurant is open.
8. As shown on Dwg. C-2.0, a parking area containing 8, 8 ½-foot-wide parking spaces is proposed for the existing retail store. Currently, there is one 18-foot-wide driveway serving the parking area—from Silvermine Avenue. Figure 1 (attached) shows an alternative parking plan with 8, 9-foot-wide parking spaces and an additional 18-foot-wide driveway connecting to Perry Avenue. Also provided is a 5-foot-wide access aisle for the handicapped space. This alternative will allow for better parking area access and circulation.
9. As shown on the Valet Parking Plan (V-1), the bank of parking spaces located between the retaining wall and the maneuvering aisle contains two rows of spaces that are situated parallel to the maneuvering aisle (14 spaces total). It is unclear how the six parallel spaces situated parallel along the retaining wall will function in terms of getting vehicles into and out of the spaces. As an alternative, consideration should be given to redesigning this parking bank so that all spaces assume a tandem configuration and are perpendicular to the maneuvering aisle.
10. According to the Site Improvement Plan (C-2.0) and Valet Parking Plan (V-1), there are surface parking spaces proposed for an area where an underground 9,000 gallon septic tank and 3,000 gallon grease trap are currently located. The applicant should provide verification that parking vehicles above these apparatus is permitted.

Date: February 11, 2014
Silvermine Tavern Village Review

11. Please provide a description of the surface that is proposed for the land area along the eastern edge (between the parking lot and Mill River Road) and the western edge (between the parking lot and the retaining wall) of the proposed parking lot where vehicles will be parked during valet parking times. It is understood from the Site Plan (C-2.0) that the parking lot itself will have a chip stone surface; however, it is unclear what the proposed surface for these adjoining areas will be. We presume that it will be a lawn or grass area. However, such an area needs to be designed with supporting infrastructure to hold vehicles.
12. It is recommended that the residential access road is demarcated as such, either through signage or unique surfacing. This will help deter non-resident drivers from entering or parking on this road.
13. The hand-draw renderings appear inconsistent with the Overall Site Plan (Dwg. SP); the Layout Plan (Dwg. C-2.0) and the Landscape Plan (Dwg. L-1.0). Specifically, the details of the proposed Barn patio are unclear. The renderings show a stone wall and trees along lining the patio's eastern edge along River Road; however, the Site Plan and Landscape Plans do not show the stone wall.
14. Please provide Elevation Drawings for the proposed Community Barn, along with the proposed exterior materials palette.
15. The purpose of the proposed Rain Garden is unclear given that an adequate storm water drainage system will be provided.
16. We understand from the City that the Department of Public Works might have some concerns about potential gravel runoff from the parking areas onto the street. We defer to any forthcoming assessments from DPW on this matter.
17. Please provide a description of the retaining wall proposed for the western edge of the parking lot in terms of scale and design.
18. Please provide a detailed lighting plan for the subject properties.
19. Please provide a signage plan for the subject properties.

Landscaping Plan

20. Please provide both an Existing Conditions and Proposed Landscaping Plan that specifically identifies which trees are to be removed and which are to be preserved.

BEJ Planning

MEMORANDUM

Date: February 11, 2014
Silvermine Tavern Village Review

Page 5 of 6

21. It is recommended that, in lieu of the English Boxwoods proposed along Perry and Silvermine Avenues, the applicant install additional Green Mountain Sugar Maples. It is also recommended that, in lieu of the Bradford Pears proposed along River Road and the new residential accessway, the applicant install Green Mountain Sugar Maples. Bradford Pears are generally considered more appropriate to an urban environment, while Sugar Maples are more consistent with the overall natural character of the Silvermine Village District.

Single-Family Homes

22. The Site Improvement Plan for the proposed residential homes (C-2.1) is inconsistent with the Elevation Drawings for House Nos. 1, 3 and 4. Specifically, the Site Plan shows the dormers to be located in the front of the home, facing the street, whereas the Elevation drawing shows the dormers to be located in the rear (see House No. 1: Rear Elevation).
23. Consideration should be given to locating House No. 2 at the southern portion of the property, given that this is the single unique home among the four proposed designs.
24. Consideration should be given to removing the doorway shutters proposed for the front entryway on House No. 2. They do not appear to add to the design of the entryway and they do not appear to be compatible with the French Doors.
25. Consideration should be given to replacing the house light over the front entryway on House No. 2 with a model that differs from that over the garage doors. This would add more of a sense of importance to the entryway.
26. Please provide a description of the proposed veneer lining the foundation of House No. 2 in terms of material and color choice.
27. Please show where the lattice and baluster is proposed to be incorporated.
28. Please provide a description of the proposed front entryway steps and rear patio for House Nos. 1 and 2 in terms of materials and color choice.
29. The raised patios shown on the House No. 1 and 2 Elevation Drawings are not show on the Site Plan (C-2.1). Please revise for consistency.
30. Please provide a description of the proposed Split Rail and 6' High Board Fencing in terms of materials and color choice.

Date: February 11, 2014
Silvermine Tavern Village Review

Page 6 of 6

31. Please provide Elevation drawings and a materials board for the detached structure located in the rear of each of the homes.
32. Consideration should be given to replacing the white cedar proposed for the exterior siding with Alaskan cedar; white cedar will darken over time, whereas Alaskan cedar will maintain its original color.

Summary

Our general comments above can be categorized under parking, landscape and design. Overall, the proposed project is a considerable improvement to the area and we believe it upholds the spirit of the Silvermine Tavern Village District.

Our access and parking comments can be accommodated with minor changes and our design comments largely concern design details. The most important element that should receive some focus by a landscape architect is a full landscape plan based upon an actual analysis of existing vegetative conditions and the surrounding area. This is the element that could use further thought.

APPLICATION FOR ZONING APPROVAL AND ZONING COMPLIANCE

(This application shall be accompanied by three (3) plot plans and three (3) sets of architectural plans showing existing buildings and proposed construction.)

Date September 30, 2014 FEE \$110⁰⁰/100¹¹³⁸ ^{check #}

Proposed Use Constructed ~~new~~ 32' x 46' Barn as part of Silvermine Tavern Village District approved plan (see #16-13SP) and in accordance w/ approved regulations (see #6-13R); not to exceed 2,000 sq ft in size or 35' in height to top of peaked roof and setback a min. of 15' from front property line (not to exceed 25' setback) / 50' in length of

Project Location 1 RIVER ROAD (1E) ZIP 06850

Owner/Lessee Glazer Group Tel. (203) 846-1902

Address 189 Rowayton Ave Norwalk ZIP 06852

Applicant Silvermine Tel. (203) 858-0601

Address above ZIP Andy's cell

Builder same as above Tel. _____

Address _____ ZIP _____

Architect 1252 Saratoga Hwy / Heritage Restorations Tel. (254) 829-1170

Address 257 Fort Givaham Rd Via CO TEXAS ZIP 76705

Zone Silvermine District Tavern Village ZONING INFORMATION AND APPROVALS B. 33 Lots 184/19
Map Page 3SE District 5 Block 44 Lot _____
B. 43 Lot 16

Coastal Area No Flood Zone _____

P&Z Comm. (CAM, SP, SPR, SUBD) A-#16-13 SP Silvermine Tavern Village District
192, 193, 194 Perry Ave / 1 River Rd Appett 2/28/14

Non-Conformities / ZBA Variances _____ Conservation _____

Notes _____ Sign-off or Permit _____

* FOUNDATION AS BUILT REQUIRED prior to superstructure **REQUIRED**

Application is also being made for Zoning Certificate of Compliance. Upon completion of this project, the undersigned shall notify the Zoning Inspector so that a final inspection can be made. I hereby certify that all of the statements herein contained are true and correct.

* Tax form required
* Bldg permit required
Applicant X

Approved _____ Date 10/3/14

CERTIFICATION OF ZONING COMPLIANCE
THIS CERTIFICATE IS FOR ZONING ONLY

BOND:
PASSBOOK:
CHECK#:
AMOUNT:
BANK:

FINAL ZONING: X

CONDITIONAL:

OWNER'S NAME: Glazer Group

JOB LOCATION: 1 River Rd. 1E ZONE: Silvermine Tavern Village District

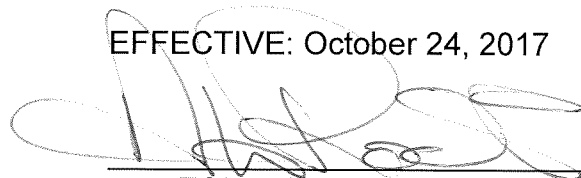
TAX MAP PLATE: 3SE DISTRICT: 5 BLOCK: 39, 43, 44 LOT: 16, 18 & 19

PROJECT:

A barn (32' x 46') has been constructed as part of the Silvermine Tavern Village District approved plan (see #16-13SP).

THIS WILL CERTIFY COMPLETION OF THIS PROJECT IN COMPLIANCE WITH ZONING REGULATIONS.

EFFECTIVE: October 24, 2017


ZONING INSPECTOR

N.B. OCCUPANCY OF THIS BUILDING IS NOT PERMITTED UNTIL A CONSTRUCTION CERTIFICATE OF OCCUPANCY IS ISSUED BY THE BUILDING INSPECTOR.

CITY OF NORWALK

BUILDING PERMIT APPLICATION

For Office Use Only

District: 5 Block: 44 Lot: 18 Unit: Inspector Initial: JDBuilding Permit No.: B14-0980Use Group: UConstruction Classification: IV.BAddress of Work: 1 RIVER RD UNIT 1EBuilding Owner's Name: GLAZER GROUPPhone: Address: P.O. 266City/Town: Norwalk CTZip: 06853

Lessee Information (if applicable):

Contractor: GLAZER GROUPContact: Address: P.O. Box 266City: Nw/kState: CTZip: 06853Phone (office & cell): 203-858-0809Signature: Registration No: Expiration Date: C.B.Y.D. No.: Applicant: Andy GlazerPhone: 858-0809Address: P.O. Box 266City: Nw/kState: CTZip: 06853Signature: Tax Form: 5/6/14WPCA: -Health: CT 12/1/13Workers Comp: ☒ or Aff. ☐Zoning: 10-3-14Fire Marshall: -DPW/State: -Conservation: N/AWork Description: SUPER STRUCTURE FOR 32'x46' POLE BARNAS UTILITY STRUCTURE FOR SITUATING TOWN VILLAGEDISTRICT - SEPARATE USEEstimated Cost of Construction: \$100,000Permit Fee: \$1600CO Fee: \$50CT Education Tax: \$26Work W/O Permit Fee: \$-Total: \$1676Payment Type: Cash/Check Number 1151Trades Included: ☒ Yes or NoSewer: Yes or ☒ No

Subcontractor permits required:

☒ Electric☐ Service☐ H.V.A.C.☐ Heating☐ Air Conditioning☐ Plumbing☐ Fuel Tank☐ Alarm☐ Sprinkler☐ Hood & Duct

I, THE UNDERSIGNED, hereby affirm and attest that I am familiar with the requirements and provisions of the BUILDING CODE of the STATE of CONNECTICUT and the Ordinances of the CITY of NORWALK as they apply to the work described above, and I agree to satisfy those requirements in every portion of that work, and to give the applicable local and state requirements precedence over other written specifications, drawings and instructions. I further agree to cooperate with and assist the Officials of the CITY of NORWALK in their inspections of this work; and in the enforcement of applicable local and state codes and regulations. I hereby certify that I am the Owner or Authorized Agent of the Owner of the Property herein described, and that I have the necessary legal right and authority to proceed with the work herein outlined, and that the information I have given is true and correct, and that the cost estimate is accurate to the best of my knowledge. I authorize the CITY of NORWALK to properly dispose of all residential construction plans two years after issuance of the Certificate of Occupancy unless written request is submitted to the Building Department within that time.

Applicant Signature: Date: 10/21/14Print Applicant Name: Building Official Signature: Date: 10-21-14

OCCUPANCY CLASSIFICATION AND USE

Photo engravings
Resilient flooring
Self-service storage facility (mini-storage)
Silks
Soaps
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstery and mattresses
Wax candles

311.2.1 Aircraft hangars. Aircraft hangars used for storage or repair shall comply with Section 412.3.

311.2.2 Motor vehicle repair garages. Motor vehicle repair garages shall comply with Section 406.8.

311.3 Low-hazard storage, Group S-2. Storage Group S-2 occupancies include, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic *trim*, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of the following:

Asbestos
Beverages up to and including 16-percent alcohol
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and *trim*
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Public parking garages, open or enclosed

Porcelain and pottery
Stoves
Talc and soapstones
Washers and dryers

311.3.1 Public parking garages. Public parking garages shall comply with Section 406.4 and the additional requirements of Section 406.5 for *open parking garages* or Section 406.6 for enclosed parking garages.

SECTION 312 UTILITY AND MISCELLANEOUS GROUP U

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings

Aircraft hangars, accessory to a one- or two-family residence (see Section 412.4)

Barns

Carports

Communication equipment structures with a *gross floor area* of less than 1,500 square feet (139 m²)

Fences more than 7 feet (2134 mm) in height

Grain silos, accessory to a residential occupancy

Livestock shelters

Private garages

Retaining walls

Sheds

Stables

Tanks

Towers

312.1.1 Greenhouses. Greenhouses not classified as another occupancy shall be classified as Use Group U.

312.2 Private garages and carports. Private garages and carports shall comply with Section 406.3.

312.3 Residential aircraft hangars. Aircraft hangars accessory to a one- or two-family residence shall comply with Section 412.4.

Silvermine Tavern, since 1929

By Feb 8, 2007

NORWALK -- Stepping into the Silvermine Tavern is like stepping into a bygone era.

THE HOUR

Antiques surround you. The furniture is vintage, as are the decorations that grace the mantels above the multiple fireplaces. Ancestor paintings stare back at you from every wall. Wood is everywhere, including the floors you walk on. Contemporary designers need not apply.

Watch your step as you go from room to room. The main building -- the Silvermine Tavern is actually comprised of five buildings -- is a fusion of the old Tavern and Gatehouse, now connected internally by stairwells.

Close your eyes and listen to those wooden floors creak. If the windows are open, you can hear the rush of the small waterfall. The sound belies the tranquil pond setting you look at through the windows. Perhaps a swan or two add that much more charm to the setting.

The aroma of French toast, pancakes and the Tavern's famous honey buns fills the air and fits right in with the country atmosphere. You just know warm New England maple syrup is on the table to accompany the aforementioned goodies.

Yes, the Silvermine Tavern is history. Just how far back this history goes depends on your perspective. In one sense the history dates back more than 200 years when farmers settled along the Silvermine River. In another sense, this history goes back to 1929 when antiquarian J. Kenneth Byard bought the property and operated it as a tavern and inn, as it does to this day.

In yet another sense, the history goes back to 1955 when Frank Whitman Sr. purchased the Silvermine Tavern. His son, Frank Whitman Jr., is the current owner and innkeeper.

Those dates aside, the history of the property is filled with colorful characters and lively tales. There were the early settlers hoping to get rich prospecting for silver (from which the name Silvermine River comes), a water-powered mill used for turning wood, a Country

Store that served as the town meeting place, a still used during Prohibition, an explosion caused by an intoxicated owner eager for a Fourth of July celebration, and the untimely death of another owner who was trying to repair the dam after a destructive flood.

The old inn has seen a lot in its 200 years.

Whitman Jr. remembers a pleasant history at the tavern. He was about five years old when he and his family visited for the first time. Frank Sr. operated a hotel in Grove City, Penn., at the time and the family was en route to Boston.

"My father liked it so much he asked the owners if they were interested in selling it," Frank Jr. recalled. "I was very little at the time, but I remember staying here -- but just barely."

Weeks after the Whitmans purchased the tavern, the Flood of 1955 devastated much of Norwalk. The Silvermine Tavern was not physically damaged by the floodwaters, but the economic ramifications of the flood rippled throughout the region.

"He got off to a rough start," Frank Jr. said of his father.

For years Frank Sr. managed both the Silvermine Tavern and the hotel in Grove City, traveling to Pennsylvania every few weeks.

Frank Jr. officially started working at the Silvermine Tavern in 1973 as dining room manager. In reality, he got his start much early.

"When I was a kid I'd stand on a box and help roll dough and do other simple tasks," he said. "I remember getting a few scoops of ice cream. It was one of the perks of being in the family."

Frank Jr. considered other lines of work, but eventually decided the opportunity to own and run the Silvermine Tavern was too great to pass up.

"Silvermine has a great history and a sense of community," he said. "It's a pretty place."

As a working tavern, the property has always mirrored the success of the tremendous arts community in Silvermine. It is also a draw for many famous personalities, including movie stars.

Many a bride has felt like a movie star on the picture-perfect grounds of the Silvermine Tavern. With a seating capacity of 200, 11 rooms for overnight accommodations, and a mill pond as a backdrop, the tavern is a popular place for weddings and other large parties.

"One advantage this place has, which is unique to Norwalk, is the space to do those types of things," Frank Whitman Jr. said.

Earlier this month the tavern was the site of Ralph Bloom's surprise 65th birthday party. Bloom is the city's historian. He saw the tavern for the first time a few years after Frank Sr. bought it. Bloom was a child and was involved with the nearby Silvermine Arts Guild.

"The inside hasn't changed much," Bloom said. "The buildings haven't changed much either. I was used to the pink shutters, but they painted them. I think it's a very popular place because it doesn't change much and it's laid back."

Bloom did point out that the antique collection currently at the Silvermine Tavern is "miniscule compared to what used to hang on the walls."

That extensive antique collection was the doing of Byard, who bought the property in 1929 and changed the name from The Old Red Mill to the current Silvermine Tavern. He offered food and overnight accommodations, but also took advantage of the venue to sell antiques.

Most of the antiques that remain are left over from Byard's collection.

The tavern no longer sells antiques, but the business model is similar to what it was when Byard owned it. It has food, spirits, lodging and a gift shop, which is located across the street in a separate house.

"You do adapt gradually," Frank Jr. said. "It's an evolutionary kind of change. It used to be a very seasonal business. The summer business would easily double the winter business. The curve has evened out now."

The Tavern also adapted by offering several regular features such as live jazz every weekend, the ever-popular Sunday Brunch, and monthly Wine Dinners.

Different jazz artists are featured each Friday and Saturday night. The tavern also features Dixieland jazz every Thursday. (A schedule is available at www.SilvermineTavern.com)

The Wine Dinners include a five-course meal with eight themed wines. Special overnight rates are available during the Wine Dinner nights as well. The next one -- A Taste of Italy -- is scheduled for Sunday, Feb. 11.

But what has always drawn crowds to the Silvermine Tavern remains the same.

"It's the New England ambiance and Colonial feel. All that's a draw," Frank Jr. said. "It's a clear expression of the New England ideal."

Feb 8, 2007

Restored and modernized — GrayBarns replaces Silvermine Tavern

New Canaan Advertiser

By Greg Reilly

Sep 30, 2017

The old Silvermine Tavern is now GrayBarns on the Silvermine River.

Just a few hundred yards from the New Canaan's borders on Mill Road and Silvermine Road, the old, large country inn has been recreated into two smaller properties — Inn at GrayBarns and Tavern at GrayBarns. They opened in early September.

The old inn had 12 guest rooms; the new inn has six king suites — bedrooms, full baths and living area. The old restaurant had 250 seats; the new tavern 100 seats. The footprint of the buildings has been reduced 30% — “back to the original core,” says owner Andy Glazer of The Glazer Group.

Both structures have been completely restored with traditional crafting and design and modernized with contemporary amenities and fixtures — a truly modern antique. Visible posts and beams and wide board oak floors tie the interior to the natural, local environment.

Glazer said that he fortified the structure from support trusses to new roof, and completely replaced the plumbing and electrical systems. “It is built to last a very long time,” he said.

Unlike many historic New England taverns and inns that feature dark-stained wood, GrayBarns has been designed with light colors, a lot of white and natural light coming through the many windows, some with original panes.

‘Less is more’

Another reduction from the structure of the old establishment was the removal of the large open deck from behind the buildings, which opened up views of the Silvermine River, Guthrie Pond and neighboring historic homes. It has also opened up the ground above the pond for smaller sitting areas and a garden for the chef's use.

“With reduced capacity the guests will be able to enjoy the historic environment anew,” said Glazer in a news release.

In his vision, “Less is more,” he told the Advertiser.

One addition to the property is a large gray, non-winterized barn, reclaimed from upstate, which is available for private events. The old country store across the street from the front

of the inn is being restored to offer amenities for guests of the inn. In late September suite rates varied from \$500 to \$650 per night.

The Glazer Group is comprised of Glazer, his wife Marsha Glazer and his daughter Nikki Glazer. The three have worked side by side on everything from site plans and landscaping to furniture design and sourcing, and they remain active as operators. They have hired James Gersten to helm the operation and Ben Freemole as executive chef.

History

The GrayBarns buildings have a history going back to the early 1800s when the property was a stagecoach stop and a small textile factory with mill. It later became a village meeting place and an artist outpost. During the Prohibition of the 1920s it was a speakeasy and then it gained acclaim as a classic country inn — a landmark of the Silvermine Historic District — from the 1960s until 2009.

From that point the property was closed for six years as various operators and developers considered the risks and rewards from investing in an old structure that was in decay. Glazer, a home builder who has experience operating restaurants, won approval from the City of Norwalk in 2015 to construct four houses across the street from the old tavern as part of a plan that would afford him the ability to restore the beloved tavern and bring it back to life. Two years later the four homes are constructed, sold and occupied, and the old Tavern is open as the new GrayBarns.

Advertisement

Article continues below this ad

The historic buildings “could have been scraped,” Glazer said, but he is proud of his historic preservation. Norwalk is happy to have the landmarks restored and fortified, and customers from the past are coming back, he said.

Restaurant

Glazer said the Tavern is a American restaurant with fresh ingredients with an adjacent bar. It is not a bar with a restaurant, he said.

Asked about the well-documented difficulty of profiting in the restaurant business, Glazer said, “I know the restaurant business; I know everybody in the restaurant business.” He owned a nightclub at age 22, he said and was part owner Barcelona in Greenwich and Rowayton Seafood.

“We are sophisticated enough to know the business, and smart enough to know what people want in Connecticut,” he said.

As of late September the Tavern at GrayBarns was open for dinner Tuesday through Saturday. Brunch was tentatively scheduled to start in October; lunches in November.

A New Canaan resident from the Mariomi Road area drove by GrayBarns as the Advertiser was taking exterior photographs. After he heard about the restored antique with modern features, he exclaimed, "That is exactly what we wanted!"

Sep 30, 2017

Greg Reilly

November 16, 2017

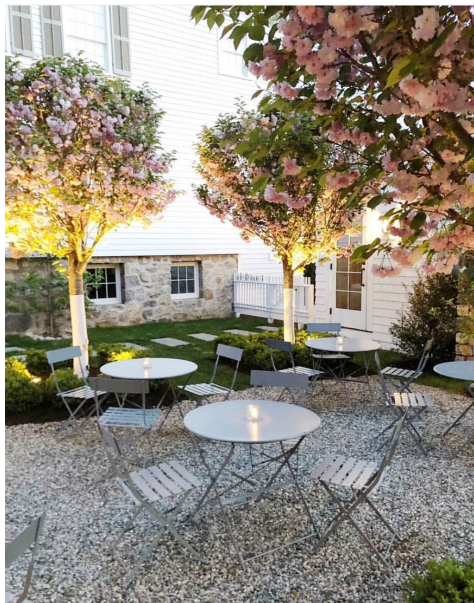
[2 Comments](#)

<https://mostlovelythings.com/graybarns-new-canaan-silvermine/>

A Visit to GrayBarns in Silvermine, Connecticut



GrayBarns in Norwalk, Connecticut



Garden Seating at GrayBarns when the cherry trees are in bloom.



GrayBarns in May

[GrayBarns](#) was once known as the Silvermine Inn and Tavern. It's located in the [Silvermine area](#), which is at the edge of New Canaan, Wilton, and Norwalk. It has a long history as a meeting place for local artists dating back to the early 1900s. The Silvermine Inn was owned and operated by the same family until 2009. It closed for a few years and was purchased by [Marcia and Andy Glazer](#). It re-opened a few months ago and I don't even know where to begin. [GrayBarns](#) is a small group of homes, an events barn and the GrayBarns Inn and [Tavern](#). Soon there will be a mercantile which will be part shop and part coffee bar.



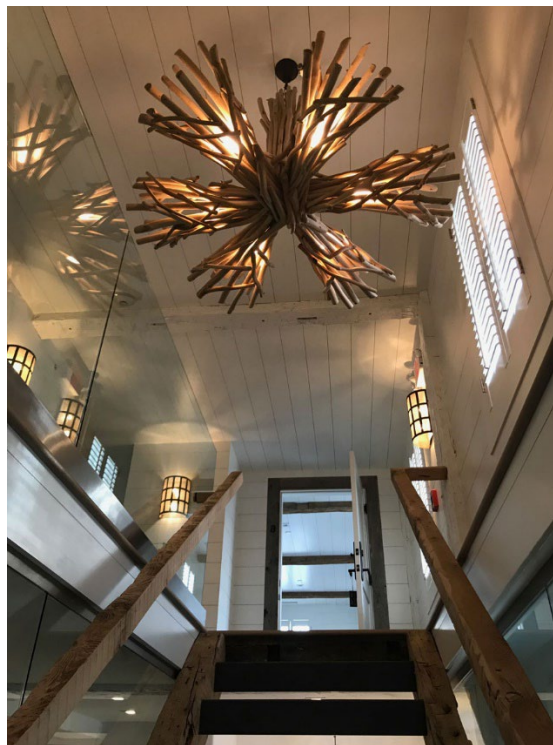
GrayBarns in the Fall





When we first moved back to New Canaan after three years in California, I remember driving by the old Silvermine Inn, and I heard it had closed. But the old Mill House adjacent to the inn had been beautifully restored. It wasn't until I saw the article in CTG&C that I realized it was the owners/developers of the Inn. The Glazers wanted to live on site so that they could oversee the project and make the hundreds of decisions that it takes to create such a beautiful place.

The Lobby at GrayBarns



Last Friday I saw on their Instagram that they would be hosting a Pop Up Bakery in the Barn so I made certain to stop by just as they opened. There was a line out the door, but I had the chance to chat with owner/designer Marsha Glazer and she gave us a little tour of the Inn and Tavern. Marsha's approach to designing GrayBarns was to save what could be saved and improve every area even if that meant relocating stairways and moving walls.

The Barn at GrayBarns



GrayBarns has six beautiful guest rooms. Each is a king suite with a living area and separate bedroom. Much of the furniture was made on-site for a particular space. Marsha explained that the need for a little extra seating in one room resulted in using leftover fabric to create little poofs along side a custom coffee table. Each room has a wet bar constructed of barn wood. A [Smeg tea kettle](#) and [Nespresso](#) along with every other item you might need to make your self as comfortable as home has been well planned out for your visit.

A Guest Room at GrayBarns



Every detail has been considered for comfort and design. The old fashioned alarm clock sits next to a more modern convenience from [Rejuvenation](#), an [extension cord with USB](#).



The lobby, the restaurant, and each guest room includes gorgeous lighting, planked white or barn wood walls, and luxurious upholstered furniture in crisp white slipcovers or rich dark velvets. A few antiques, books, fresh flowers, artwork over painted white brick fireplaces fill each space in just the perfect way. Every detail is well thought out about

how and why it functions. In the restaurant, Marsha explained that they knew they wanted a large table that served purpose in the dining room. They ended up using wood they had salvaged and created a custom one-of-a-kind piece that suits their needs perfectly. Wood slats were added under the table to create wine glass holders. On top a large piece of marble holds huge buckets to hold the wine. The small ceramic numbers keeps track of the wine by table.



The Tavern



The Silvermine Inn is the perfect get away from New York City. Located just 49 miles from [Grand Central Terminal](#), a little over an hour by car or take [Metro North to New](#)

[Canaan](#) which is about an hour and then travel 10 minutes by taxi to GrayBarns. Once you arrive, you will probably not want to leave, but should you decide to venture out, the Town of New Canaan is only 3.5 miles away and has shops, galleries, a movie theatre and restaurants. You may want to check out [Grace Farms](#) (We wrote about Grace Farms [here](#)) and [The Glass House](#) while you are in the area. But if your only stop is GrayBarns, you'll have a wonderful experience. It's truly a masterpiece.

Property Value Comparison Exhibit

Graybarns	Pre-Construction Taxes (2014)	2023 Taxes	Increase
192 Perry Avenue (5-39-18-0) (Former Mill Building)	\$11,602.08 (based on appraisal of \$670,757)	\$26,449.52 (based on appraisal of \$1,885,850)	127.97%
193 Perry Avenue (5-43-16-0) (Mercantile)	\$8,456.00 (based on appraisal of \$488,871)	\$16,113.94 (based on appraisal of \$685,310)	90.56%
194 Perry Avenue ¹ (5-39-19-0) (Inn & Tavern)	\$21,657.82 (based on appraisal of \$1,252,114)	\$61,982.20 (based on appraisal of \$3,788,010)	186.19%
1 River Road ² (5-44-18-0)	\$12,223.30 (based on appraisal of \$706,671)	\$126,548.78 (based on appraisal of \$8,213,170)	935.31%
Neighboring Property Address	Pre-Construction Appraisal (2013 reval)	2023 Appraisal	Increase
1 OLD KINGS HWY (5-39-14-0)	\$567,557	\$2,675,500	371.41%
3 OLD KINGS HWY (5-39-15-0)	\$404,540	\$1,562,900	286.34%
7 OLD KINGS HWY (5-39-16-0)	\$642,629	\$828,050	28.85%
11 OLD KINGS HWY (5-39-51-0)	\$845,571	\$1,228,330	45.27%
9 OLD KINGS HWY (5-39-95-0)	\$598,157	\$769,820	28.70%
191 PERRY AVE (5-43-14-0)	\$547,329	\$775,000	41.60%
300 SILVERMINE AVE (5-44-1-0)	\$607,157	\$748,000	23.20%
5 RIVER RD (5-44-11-0)	\$470,057	\$526,930	12.10%
315 MILL ROAD (5-44-13-0)	\$887,157	\$1,379,050	55.45%
7 RIVER RD (5-44-16-0)	\$1,355,686	\$1,697,400	25.21%
3 RIVER RD (5-44-2-0)	\$715,457	\$914,720	27.85%
301 SILVERMINE AVE (5-45-106-0)	\$473,271	\$568,510	20.12%
302 SILVERMINE AVE (5-44-3-0)	\$424,814	\$571,460	34.52%

¹In 2014, 194 Perry Avenue was one (1) tax lot. Today, seven (7) tax lots comprise 194 Perry Avenue. The 2023 totals are based on the sum of the taxes and appraised values of these lots.

²In 2014, 1 River Road was one (1) tax lot. Today, five (5) tax lots comprise 1 River Road. The 2023 totals are based on the sum of the taxes and appraised values of these lots.

304 SILVERMINE AVE (5-44-4-0)	\$618,214	\$823,990	33.29%
306 SILVERMINE AVE (5-44-5-0)	\$720,514	\$922,940	28.09%
308 SILVERMINE AVE (5-44-15-0)	\$965,714	\$1,311,630	35.82%



*Yellow stars indicate properties occupied by Graybarns.

Draft Conditions

Glazer Group

March 17, 2025

1. The Barn may be used as Event Space, separately or collectively with other buildings, structures and uses within the approved Silvermine Tavern Village District site plan, for meetings, recreational activities, community gatherings/events and special events, including but not limited to weddings, showers and other celebrations.
2. In no event shall occupancy of the Barn cause occupancy of the Tavern and/or Barn to exceed ninety-seven (97) people at any time.
3. At no time can the capacity of the Barn exceed what is permitted by either the Health Department or Fire Marshall's office.
4. The Barn shall not be used as additional restaurant seating.
5. The existing solid fencing located along the northern property line shall be continued east for the remainder of the northern property line and large evergreen trees shall be planted on the property in front of the fence. Valet parking is permitted in the building setback behind the landscape buffer.
6. The applicant shall comply with the approved Valet Parking Plan dated February 6, 2014 as revised March 17, 2025. Adequate staff shall be employed to ensure that cars are parked safely, and that the adjacent road network can operate without interruption.
7. All Live Music shall end no later than 8:00 p.m. Sunday through Thursday or by 10 p.m. Friday & Saturday.
8. Live Music is limited to inside only and shall comply with the Norwalk Noise Ordinance.
9. The northern doors of the Barn shall remain closed during hours of operation. The sound system shall include a compressor installed to ensure compliance with the Norwalk Noise Ordinance.
10. Prior to occupancy of the Barn, the applicant shall satisfy all requirements of all applicable City agencies, including, but not limited to:
 - a. All requirements of the Fire Marshal.
 - b. All requirements of the Health Department.
 - c. ADA compliance with the Building Code.
11. Any verified and documented violation of this approval shall be reported to the Commission, who shall determine the appropriate action, in accordance with Article 8.5 of the Zoning Regulations.

CITY OF NORWALK

ASSESSOR'S PARCEL VERIFICATION & TAX CLEARANCE FORM

To verify payment of taxes, please bring the form to the tax collector's office.

Ownership and Mailing Address:

GLAZER GROUP LLC
192 PERRY AVE APT 1
NORWALK CT 06850 - 1110

Property Location: 1 RIVER RD BARN

District: 5N

Map/Block/Lot: 5 44 18 BARN

Map/Block/Lot (subdivided lot/new lot):

Unique ID: 5-44-18-BARN

DFD

Assessor/Representative

3/13/2025

Date Signed

OFFICE OF THE TAX COLLECTOR

The Real Estate taxes for the property identified on this form have been paid to date and in accordance with Connecticut General Statute 7-148 (c) (2) (B). A building permit may be issued for this property.

CNBH

Tax Collector/Representative

3/13/2025

Date Signed

Norwalk Planning & Zoning Commission

125 East Avenue
Norwalk, Connecticut

May 2, 2025

Memorandum

To: Planning & Zoning Commission – Galen Wells, Chair

From: Bryan Baker, AICP, Principal Planner

Re: #2025-08 R – Planning & Zoning Commission – Zoning Regulation Text Amendment to Articles 4, 6, 8 and 9 regarding changes to the flood hazard zone regulations for buffer areas and construction methodology for residential flood compliance; maximum building heights for the SD-LI and SD-HI zones; rear setbacks for the SD-MC zone; Frontage requirements for Watercourse Lots; requiring a site plan review application for changes in use that exceed a certain size; how Trade or Vocational Schools are permitted; changes to Indoor & outdoor storage of passenger motor vehicles, Motor Vehicle Storage, Warehouse and Warehousing uses; Workforce Housing incentives and income buffers; clarification on mailings required for public notice; amending the definitions of Story, Lowest Floor and Motor Vehicle Body Shop and adding definitions of Unfinished Area and Finished (Habitable) Area

Commissioners,

Staff has proposed the following text amendments for your consideration as part of ongoing discussions with other Staff members on issues that they have been running into with implementation of the new zoning regulations. Based on these discussions, Staff is requesting that items #1 and 11 be tabled at this time and that item #5 be slightly modified from what had been proposed (modification noted below). A draft resolution has been provided at the end of the document.

Sincerely,

Bryan Baker, AICP
Principal Planner
City of Norwalk
125 East Avenue
Norwalk, Connecticut 06851
203-854-7705
bbaker@norwalkct.gov

1. ***NOTE: THIS PROPOSED CHANGE HAS BEEN REQUESTED TO BE TABLED BY STAFF*** Modify Section 6.9.5.C.1 which applies to construction within the Special Flood Hazard Zone to include the following amendments:

- a. Residential Construction.

All new Construction, Substantial Improvements, and repair to Structures that have sustained Substantial Damage which are Residential Structures shall have the bottom of the **Lowest Floor** lowest floor, including ~~Basement~~, elevated two (2) feet above the Base Flood Elevation (BFE). Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated two (2.0) feet above the BFE. **Any level below the Lowest Floor shall be Unfinished Area.**

- c. Fully Enclosed Areas Below the Base Flood Elevation **Plus Two (2) Feet** of Elevated Buildings.

All new Construction, Substantial Improvements, or repair to Structures that have sustained Substantial Damage that include fully enclosed areas formed by a foundation and other exterior Walls shall have the ~~lowest floor~~ **Lowest Floor** elevated to two (2) feet above the Base Flood Elevation (BFE). The elevated Building shall be designed to preclude finished living space **as Unfinished Area** below the ~~lowest floor~~ **Lowest Floor** and be designed to allow for the entry and exit of Flood waters to automatically equalize hydrostatic flood forces on exterior walls (wet flood-proofing), **except where dry flood-proofing is allowed per Section 6.9.5.C.1.b.** Designs for complying with this requirement must either be certified by a registered professional engineer or architect, **within the State of Connecticut**, as meeting the requirements of ASCE 24 Section 2.6.2.2., or meet the following minimum criteria listed in Sections (1)-(8) below:

- (5) The area ~~cannot~~ **shall not** be used as finished living space **Finished (Habitable) Area and shall be an Unfinished Area.** Use of the enclosed area shall be the minimum necessary and shall only be used for the parking of vehicles, Building access or limited storage. Access to the enclosed area shall **not exceed** be the minimum necessary to allow for the parking of vehicles (Garage door) or limited storage of maintenance equipment used in the connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The enclosed area shall not be used for human habitation;
- (6) All interior Walls, floor, and ceiling materials located below two (2) feet above the BFE shall be **in accordance with the definition of Unfinished Area** unfinished and flood damage-resistant in accordance with FEMA Technical Bulletin 2, Flood Damage-Resistant Requirements.

2. Modify Section 6.9.5.D.1 which applies to construction within the Special Flood Hazard Zone to include the following amendments:

- 1) All new Construction, Substantial Improvement and repair to Structures that have sustained Substantial Damage shall be located at least **fifteen (15)** ~~twenty-five (25)~~ feet landward of the **Coastal Jurisdiction Line** reach of the mean high tide, **except for the following:**
- a. Existing Residences being raised to comply with Section 6.9.5.C.1 **provided that there is no increase in Massing.**
 - b. Interior renovations to a Principal Building.
 - c. Pools, provided that they are at least ten (10) feet landward of the Coastal Jurisdiction Line.
 - d. Docks.
 - e. Public access requirements as required within these Regulations.
 - f. Civic Districts.
 - g. Water-dependent Uses and Marine & Vessel Uses within Table 4.3.9.A

3. Modify a portion of Table 4.3.1-L and M (SD-LI and SD-HI) to the following:

(SD-LI)

Ceiling Height	
Principal Building	1) Shall May not exceed 15 ft. from finished floor to finished floor, except that the first floor must be a minimum of 20 ft., not to exceed 30 ft. 2) When Abutting a residential Zoning District, each Story beginning with the third floor shall be setback at least ten (10) feet from the Story below. 3) A Special Permit shall be required for Structure(s) with a Total Height exceeding 65 ft.

(SD-HI)

Ceiling Height	
Principal Building	1) Shall not exceed 15 ft. from finished floor to finished floor, except that the first floor must be a minimum of 20 ft. min. ground floor, not to exceed 40 ft. 2) When Abutting a residential Zoning District, each Story beginning with the third floor shall be setback at least ten (10) feet from the Story below. 3) A Special Permit shall be required for Structure(s) with a Total Height exceeding 65 ft. and/or for a Structure(s) with a first floor height exceeding 30 ft.

4. Modify a portion of Table 4.3.1-N (SD-MC) to the following:

Setbacks	
Principal Building	
Front Setback, Principal Frontage	5 ft. min
Front Setback, Secondary Frontage	5 ft. min
Side Setback, per Side	5 ft. min
Rear Setback	25 ft. from the coastal jurisdiction line mean high water, which area must be dedicated for public Use and water quality Improvements; except that the Rear Setback may be reduced by the Planning and Zoning Commission where the proposed Use preserves and enhances water-dependent uses or where the reuse of existing Building and Structures is considered to be consistent with the purposes of the District.

Setbacks	
Accessory Building	
Front Setback, Principal Frontage	25 ft. min
Front Setback, Secondary Frontage	25 ft. min
Side Setback, per Side	5 ft. min
Rear Setback	25 ft. from the coastal jurisdiction line mean high water, which area must be dedicated for public Use and water quality Improvements; except that the Rear Setback may be reduced by the Planning and Zoning Commission where the proposed Use preserves and enhances water-dependent uses or where the reuse of existing Building and Structures is considered to be consistent with the purposes of the District.

5. *Modify Section 4.3.3.D Watercourse Lots/Building Sites to the following:*

Within all Districts **the CD-3, CD-3W, CD-4, and CD-4W, and SD-MG** and the Civic District, each Lot or Building Site that abuts both a Street or Internal Drive, and a Watercourse **and are a Residential (except for Single-Family Detached Dwelling, Two-Family Detached Dwelling, or Townhouse), Lodging, Office, Commercial, Civic, and/or Institutional Use(s) as listed within Table 4.3.9.A must provide a Private Frontage Type along each Frontage in accordance with Section 4.3.7.** ~~have Frontage along both, and the Frontage regulations shall apply to both Frontages.~~ **Maximum Setbacks from the Frontage along the Watercourse shall not apply. The minimum Frontage buildout shall not be required to exceed 40% along the Frontage adjacent to the Watercourse.**

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6. *Modify Section 4.3.9.C. Uses to the following:*

1. In addition to the Use standards in Table 4.3.9.A (Building & Lot Principal Uses) and Table 4.3.9.D (Building, Lot & Building Site Accessory Uses):
 - a. Any proposed Building with a Footprint of five thousand (5,000) square feet or more or a gross Floor Area of twenty thousand (20,000) square feet or more shall be subject to Section 8.4.5, Site Plan Review, unless a Special Permit is required in which case the Building is subject to Section 8.4.8, Special Permits.
 - b. **Any change in Use with a gross Floor Area of twenty thousand (20,000) square feet or more shall be subject to Section 8.4.5, Site Plan Review, unless a Special Permit is required in which case the Use is subject to Section 8.4.8, Special Permits.**

7. Modify Table 4.3.9.A Building, Lot & Building Site Principal Uses to include the following:

Principal Use	CD -1L	CD -1M	CD -1S	CD -2	CD-3	CD-3W	CD-3C	CD-4	CD-4W	SD -H	SD -IC	SD-LI	SD-HI	SD -MC	C V
Trade or Vocational School	NP	NP	NP	NP	SPU ± PL	SPU ± PL	SPU ± PL	SPU ± PL	SPU ± PL	SP U PL	NP	SPU ± PL	SPU ± PL	NP SP U	N P P L

cl. Trade or Vocational Schools shall be permitted in accordance with the applicable Use Table, subject to the following:

- (1) Training or educational programs shall be certified by the State of Connecticut, ~~subject to the following requirements:~~
 - a. ~~Shall have a minimum lot size of fifteen thousand (15,000) square feet;~~
- (2) Use of a ~~technical school~~ **Trade or Vocational School** shall be limited to members of trade or profession enrolled in apprenticeship and upgrading programs as defined in **Chapter 557, Part Ia, Section 31-22m to 31-22q of** the Connecticut General Statutes ~~Annotated Title 31, Section 31-51a to 31-51e, as amended.~~
- (3) ~~Shall require approval of a Special Permit pursuant to Section 8.4.8.~~

8. *Modify Table 4.3.9.A Building, Lot & Building Site Principal Uses and Table 4.3.9.D Building, Lot & Building Site Accessory Uses to include the following:*

TABLE 4.3.9.A BUILDING, LOT & BUILDING SITE PRINCIPAL USES															
Principal Use	CD -1L	CD -1M	CD -1S	CD -2	CD -3	CD -3W	CD -3C	CD -4	CD -4W	SD -H	SD -IC	SD-LI	SD-HI	SD -M C	C V
Indoor & outdoor storage of passenger motor vehicles	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SPU ±	NP	NP	NP
Motor Vehicle Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SPU	SP	NP	NP
Warehouse	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	PL	PL	NP	NP

TABLE 4.3.9.D BUILDING, LOT & BUILDING SITE ACCESSORY USES															
Accessory Use	CD -1L	CD -1M	CD -1S	CD -2	CD -3	CD -3W	CD -3C	CD -4	CD -4W	SD -H	SD -IC	SD-LI	SD-HI	SD -M C	C V
Warehousing	NP	NP	NP	NP	PL	PL	PL	PL	PL	NP	NP	PL	PL	PL	PL

cn. **Warehouse shall be permitted in accordance with the applicable Use Table, subject to the following:**

- A Site Plan Review, pursuant to Section 8.4.5, shall be required in accordance with Section 4.3.9.C and/or when on a Lot or Building Site that abuts a residential Zoning District..**
- A Special Permit, pursuant to Section 8.4.8, shall be required for a Warehouse Use and/or Structure that exceeds twenty thousand (20,000) square feet in gross Floor Area.**
- Motor Vehicle Storage is Permitted within a Warehouse, provided that:**
 - There is no on-site motor vehicle repair which requires a K-7 license from the Connecticut Department of Motor Vehicles.**
 - There is no retail or wholesale sales of motor vehicles or motor vehicle parts.**

co. **Warehousing shall be permitted in accordance with the applicable Use Table, subject to the following:**

- Warehousing shall only be Accessory to the following Use(s):**

- a. Cannabis Delivery Service; Cannabis Food & Beverage Mfg.; Cannabis Transporter; Manufacturing & Processing, Boutique; Manufacturing & Processing, Light; Brew Pub/Distillery; Boat-Building facility; Boat repair and service facility; Commercial fishing facility; Finfish and shellfish processing plant; Harbor/Port Facility; Marina; Ship Chandlery; Shipyard; Research and Development Facility; Municipal Utility Plant or Storage Yard; Warehouse
3. A Site Plan Review, pursuant to Section 8.4.5, shall be required **in accordance with Section 4.3.9.C** and/or when on a Lot or Building Site that abuts a residential Zoning District.

DRAFT

9. *Modify Section 6.12.4 Regulations for Workforce Housing to include the following:*

14. If a Workforce Household within a designated Workforce Housing Unit realizes an increase in income, such that they exceed 80% state median income based on family size, the occupant of the Workforce Housing Unit may remain within that Dwelling Unit upon annual recertification, so long as their income does not equal or exceed 90% state median income; provided that at least 12% of the City's total Dwelling Units are (1) assisted housing, (2) currently financed by Connecticut Housing Finance Authority mortgages, or (3) subject to binding recorded deeds containing covenants or restrictions which require that such dwelling units be sold or rented at, or below, prices which will preserve the units as housing for which persons and families pay thirty per cent or less of income, where such income is less than or equal to 80% state median income.
15. In addition to the requirements in Articles 6.12.4.1 and 6.12.4.2, any Zoning Permit for the Construction of multifamily or mixed-use Developments containing ten (10) or more Dwelling Units may increase the maximum allowed Density by five (5%) percent, rounded up to the nearest whole number, provided that:
 - a. the annual income for the Families in the additional units is between 80 – 90% of state median income, and
 - b. the additional units are deed-restricted in perpetuity and occupied by Families whose annual income is between 80 – 90% of state median income, and
 - c. the additional units are subject to the same annual reporting requirements as Workforce Units as required within the Affordability Plan.
 - d. provided that at least 12% of the City's total Dwelling Units are (1) assisted housing, (2) currently financed by Connecticut Housing Finance Authority mortgages, or (3) subject to binding recorded deeds containing covenants or restrictions which require that such dwelling units be sold or rented at, or below, prices which will preserve the units as
 - e. housing for which persons and families pay thirty per cent or less of income, where such income is less than or equal to 80% state median income.
 - f. provided that at least 12% of City's total Dwelling Units meet or exceed the criteria in Connecticut General Statute, 8-30g(k), as amended.

10. *Modify Section 8.4.4.D.6 to include the following:*

6. For mailed notice, in addition to other requirements that may be required for the specific procedure, the following shall be required:
 - a. All letters shall be sent by the Applicant using ~~certified~~ U.S.**P.S.** Mail, with a Certificate of Mailing-**Firm**.

DRAFT

11. *NOTE: THIS PROPOSED CHANGE HAS BEEN REQUESTED TO BE TABLED BY STAFF* Modify

Section 9.3 Defined Terms, to include the following:

Unfinished Area: An enclosed area that is used only for the parking of vehicles, building access or storage purposes and that does not meet the definition of a Finished (Habitable) Area. Drywall used for fire protection is permitted in Unfinished Areas.

Finished (Habitable) Area: An enclosed area having more than ~~twenty (20)~~ linear feet two hundred (200) square feet of finished interior walls (paneling, etc.) or used for any purpose other than solely for parking of vehicles, building access or storage.

Story: a level within a Building, being that portion between the surface of any floor and the surface of the floor next above it; if there is no floor above it, then the space between the floor and ceiling next above it; unless that space is a Half Story. The number of Stories shall be measured from the Finished Grade along the Principal Frontage of a Structure and/or Building.

- (1) A Basement is a Story when the ceiling height is more than three (3) feet above the Finished grade measured along the Principal Frontage of the Structure and/or Building; except that, within the Special Flood Hazard Area, the lowest level is not a Story provided that:
 - a. It is ~~uninhabitable space~~ **Unfinished Area** and can only be used for Parking or storage; and
 - b. More than 50% of the floor ~~-to-ceiling~~ height is below the Base Flood Elevation.
- (2) For Structures on pilings within the Special Flood Hazard Area, the area between the ground and the floor next above it shall not count as a Story, provided that more than 50% of the Existing Grade is below the Base Flood Elevation.

Lowest Floor: the lowest floor of the lowest enclosed area (including Basement); except **within a Special Flood Hazard Area**, an unfinished **Unfinished Area** or flood resistant enclosure usable solely for parking of vehicles, building access or storage, in an area other than a basement area is not considered a Building's lowest floor.

12. *Modify Article 9, Definitions, to include the following:*

Motor Vehicle Body Shop: premises or a portion of a premises used for the adjustment, painting, replacement of parts, or body repair of Motor Vehicles, **including incidental storage for fewer than sixty (60) days of Motor Vehicles that are being adjusted, painted, parts replaced, or body repaired.**

DRAFT

THEREFORE, BE IT RESOLVED by the Norwalk Planning & Zoning Commission that application #2025-08 R – Planning & Zoning Commission – Zoning Regulation Text Amendment to Articles 4, 6, 8 and 9 regarding changes to the flood hazard zone regulations for buffer areas and construction methodology for residential flood compliance; maximum building heights for the SD-LI and SD-HI zones; rear setbacks for the SD-MC zone; Frontage requirements for Watercourse Lots; requiring a site plan review application for changes in use that exceed a certain size; how Trade or Vocational Schools are permitted; changes to Indoor & outdoor storage of passenger motor vehicles, Motor Vehicle Storage, Warehouse and Warehousing uses; Workforce Housing incentives and income buffers; clarification on mailings required for public notice; amending the definitions of Story, Lowest Floor and Motor Vehicle Body Shop and adding definitions of Unfinished Area and Finished (Habitable) Area be **APPROVED** with the following amendments:

1. That items #1 and #11 within the memo provided by Planning & Zoning Staff dated May 2, 2025, are not included in this approval; and
2. That item #5 has been revised to the following:

Within all Districts **the CD-3, CD-3W, CD-4, and CD-4W, and SD-MC** and the Civic District, each Lot or Building Site that abuts both a Street or Internal Drive, and a Watercourse **and are a Residential (except for Single-Family Detached Dwelling, Two-Family Detached Dwelling, or Townhouse), Lodging, Office, Commercial, Civic, and/or Institutional Use(s) as listed within Table 4.3.9.A must provide a Private Frontage Type along each Frontage in accordance with Section 4.3.7.** ~~have Frontage along both, and the Frontage regulations shall apply to both Frontages.~~ **Maximum Setbacks from the Frontage along the Watercourse shall not apply. The minimum Frontage buildout shall not be required to exceed 40% along the Frontage adjacent to the Watercourse.**

BE IT FURTHER RESOLVED that the reason for these actions is to implement the following goals, policies, strategies, and actions of the Norwalk Plan of Conservation and Development:

1. Chapter 10, Goal 1: “Norwalk has a comprehensive and balanced transportation system, with safety and multimodal accessibility the top priority of citywide transportation planning.”
 - a. Policy: “Support Complete Streets policies and multimodal level of service analysis to improve streets for all users and varying abilities.”
 - i. Strategy B: “Provide roads that serve the needs of Norwalk residents and commerce, and that facilitate safe and convenient access to transit, bicycle facilities, and pedestrian facilities.”
 1. Action i: “Make land use decisions that support walking, bicycling, and public transit use.”
2. Chapter 11, Goal 1: “Norwalk’s infrastructure and public facilities are resource-efficient, well-maintained, cost-effective, sustainable, and resilient.”
 - a. Policy: “City government actions are guided by sustainability principles.”

- i. Action xii: “Use green infrastructure and Best Management Practices to manage stormwater on City property.”
 - b. Policy: “Promote green infrastructure strategies to improve environmental quality and sustainability.”
- 3. Chapter 12, Goal 1: “General guidelines guide land use decision making.”
 - a. Policy: “Promote urban design guidelines for walkability for development in urbanized parts of Norwalk.”
 - b. Policy: “Implement transit-oriented design (TOD) guidelines promoting density, walkability, and mix of uses for development near transit stations (rail and high-frequency bus).
- 4. Chapter 12, Goal 2: “Neighborhood and corridor activity centers have urban design standards that promote walkability.”
 - a. Policy: “Support mixed-use redevelopment along commercial corridors.”
- 5. Chapter 12, Goal 3: “The user-friendly zoning ordinance is consistent with the future land use map and achievement of the vision and goals of the POCD.”
 - a. Policy: “Support revision of the zoning ordinance to promote desired development and design patterns.”
 - b. Policy: “Support permit streamlining for projects with desired characteristics.”
 - i. Strategy A: “Modernize the zoning ordinance and the development approval process to achieve the goals of the POCD.”
 - 1. Action i: “Rewrite the zoning ordinance to reflect contemporary best practices in administration and user-friendliness and to be consistent with the POCD.”

BE IT FURTHER RESOLVED that the effective date of this action shall be May 16, 2025.

CITY OF NORWALK
PLANNING & ZONING COMMISSION MINUTES
April 9, 2025

PRESENT: Chapin Bryce Acting Chair; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Tammy Langalis; Richard Roina; Darius Williams

STAFF: Steve Kleppin

OTHERS: Attorney Lisa Feinberg

I. CALL TO ORDER

Mr. Bryce called the meeting to order at 6:35 p.m.

II. ROLL CALL

Mr. Kleppin called the roll.

III. SITE VISIT

A. #2025-23 R/SP - Glazer Group, LLC - 1E River Road (5-44-18-BARN)
- Proposed zoning regulation text amendment to Article 4 regarding the CD-1L zone and the Silvermine Tavern District Overlay zone to permit specific commercial uses in conjunction with a special permit application to allow for meetings, recreational activities, community gatherings/events, and special events within an existing historic structure - SITE VISIT (1 River Rd.)

Mr. Kleppin reviewed the purpose of meeting, which was to:

- orientate the Commissioners regarding the location of the barn and tavern,
- indicate where neighboring properties are, including the neighbors who have expressed opposition, to date
- how cars valet service is handled and cars parked
- how patrons access the barn and the tavern during events
- how food service is handled
- existing vegetation and screening

Mr. Kleppin walked the Commissioner's through the operational items outlined above. The Commission walked around the barn area as well as the interior of the barn.

Mr. Kleppin recommended considering what the impacts might be from an event in the barn, if the doors were open, if there was amplified music, hours of operation, etc.

The Commission sought clarification/confirmation on several items, which Mr. Kleppin indicated he would forward to the applicant to address:

1. What the white tanks at the rear of the barn were for?
2. Was the driveway north of the barn always there?
3. What is the ADA accessible route from the tavern to the barn?

IX. ADJOURNMENT

Ms. Langlais made a Motion to Adjourn.

Mr. Williams seconded.

Chapin Bryce; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Tammy Langalis; Darius Williams; Richard Roina approved.

No one opposed.

No one abstained.

The meeting was adjourned at 6:48 p.m.

Respectfully submitted,

Steven Kleppin, AICP
Planning & Zoning Director

CITY OF NORWALK
PLANNING & ZONING COMMISSION MINUTES
April 16, 2025

PRESENT: Galen Wells, Chair; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Tammy Langalis; Nick Kantor; Richard Roina (left the meeting at 7 pm); Darius Williams

STAFF: Steve Kleppin; Bryan Baker

OTHERS: Gennaro Grimaldi; Jim Travers; Ben Cherner; Atty Liz Suchy; Atty Adam Blank; Seelan Pather; Mark Ochman

I. CALL TO ORDER

Ms. Wells called the meeting to order at 6:15 p.m. It should be noted that this meeting was held on Zoom.com with participants calling in, separately, as well as in the Common Council Chamber, 125 East Avenue, Norwalk, CT.

II. ROLL CALL

Mr. Kleppin called the roll.

III. PUBLIC HEARINGS

A. #2025-24 SUB - Gennaro Grimaldi - 107 Wolfpit Avenue (District 5, Block 16, Lot 22) - Subdivision application to create a total of two building lots - Public hearing, report & recommended action

Ms. Wells opened the public hearing.

Gennaro Grimaldi began the presentation with a brief background of his history working for the city. He said that he had wanted to subdivide the property so that he could sell the home where he was born 92 years ago. Mr. Kleppin said that it was a straightforward subdivision application. He said that there is a dwelling on a portion of the lot and that there could be another structure on the other property. He noted what requirements that the commission could impose before a zoning permit is obtained. He noted that they will need permits from the Department of Public Works (DPW).

Ms. Wells explained how the members of the public could make comments during this public hearing. There were no members of the public, either in the chamber or online, that spoke on this matter.

**** MR. ROINA MOVED: THEREFORE, BE IT RESOLVED** that application #2025-24 SUB – Gennaro Grimaldi – 2-Lot Resubdivision – 107 Wolfpit Ave. (5-16-22) in CD-1M zone be **APPROVED** subject to the following conditions:

1. Per the Re-Subdivision Map, dated 2.18.25, prepared by LandTech; and
2. The final subdivision survey be filed on the Norwalk Land Records prior to the issuance of a Zoning Permit; and
3. That all department sign-offs are obtained prior to issuance of any Building Permit; and
4. That a financial guarantee, in an amount determined by Staff, be submitted to guarantee the installation of all erosion and sedimentation controls prior to issuance of a Zoning Permit; and
5. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and
6. That any additional needed soil sedimentation and erosion controls be installed at the direction of the Staff; and
7. Add a condition that “That a Connecticut licensed engineer submit an engineering certificate that all required drainage and utility improvements were properly installed prior to issuance of a certificate of zoning compliance; and”
8. Prior to obtaining a Zoning Permit, a planting plan shall be submitted that complies with the street tree requirements of the subdivision regulations (per §3.38) along Starlight Drive.

BE IT FURTHER RESOLVED that this proposal complies with all applicable subdivision and use policies; and

BE IT FURTHER RESOLVED that the effective date of this approval shall be April 28th, 2025.

At this point the commissioners reviewed the resolution but there were no comments.

Mr. Kantor seconded.

**Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron;
Tammy Langalis; Nick Kantor; Richard Roina; Darius Williams approved.**

No one opposed.

No one abstained.

IV. PRELIMINARY REVIEWS AND REVIEW AND ACTION ON APPLICATIONS

A. #2025-32 8-24 Referral - City of Norwalk - 24 Monroe Street and 1 State Street - Lease agreement of +/- 1,300sf of commercial space to Tacos Please LLC - Report & recommended action

Jim Travers, Director Transportation, Mobility and Parking, began the presentation by explaining that the Planning & Zoning Commission would be reviewing a lease for the Taco Please, who owned a food truck and would now like lease space at the SoNo Train Station, which was previously leased by LobsterCraft. It would be a 5 year lease and is approved by the Parking Authority, but also needs Planning & Zoning Commission approval.

There was a discussion about how the space was advertised. Mr. Travers said that there was a property manager who handled the lease for this spot.

**** MR. SCHULMAN MOVED: THEREFORE, BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2025-32 8-24 Referral – City of Norwalk – 24 Monroe Street and 1 State Street – Lease agreement of +/- 1,300sf of commercial space to Tacos Please LLC be **APPROVED**.

BE IT FURTHER RESOLVED that the reasons for this action are to implement the following Plan of Conservation and Development goals, policies and actions:

1. To “Continue to strengthen Norwalk’s urban core with a mix of uses to attract residents, visitors, and businesses,” and
2. To “Continue implementation of transit-oriented development (TOD) and a range of mixed-use opportunities for sustainable live/work/play communities in the city,” and

BE IT FURTHER RESOLVED that notice of this action be forwarded to the Common Council.

Ms. Jordan-Byron seconded.

**Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron;
Tammy Langalis; Nick Kantor; Richard Roina; Darius Williams approved.**

Planning & Zoning Commission - Minutes

April 16, 2025

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No one opposed.
No one abstained.

B. #2025-14 CAM - Benjamin Cherner - 5 Outer Road (District 5, Block 84, Lot 158) - Coastal site plan review to demolish existing house and in-ground pool and construct a new, flood compliant, single-family detached dwelling - Report & recommended action

Ms. Wells asked who was representing the applicant. Ben Cherner, the owner of the property and architect, began by explaining the project. He said that the house would be demolished and a smaller house would replace it. The pool would be removed. At this point, they reviewed the site plan.

Mr. Cherner said it would be half of the size of the existing structure. They would use renewable materials and would leave existing native plantings as well as replant native vegetation. He said that he liked the new zoning codes. There was a review of the proposed elevation plans for the new home. There would be no garage or enclosed entry. Mr. Cherner said that it had been reviewed by the Village Creek Architectural Review Board. All the neighbors had been notified about the application.

Ms. Lenkowsky was seated for this application as well as the entire meeting to vote on other applications.

**** MR. WILLIAMS MOVED: THEREFORE BE IT RESOLVED** that application #2025 - 14 CAM – Benjamin Cherner – 5 Outer Road – Demolish an existing house and in-ground pool and construct a new single family residence to be flood compliant be **APPROVED** subject to the following conditions:

1. That the building and site be developed in accordance with the following plans:

a. Per site development plan dated 1/3/2025 and revised 4/4/2025 prepared by McChord Engineering Associated, Inc., Wilton, CT

b. Per architectural plans dated 2/5/2025 and revised 3/15/2025 prepared by Cherner Design LLC, Norwalk, CT

c. Per landscape plan dated 2/5/2025 and revised 3/27/2025 prepared by Cherner Design LLC, Norwalk, CT

2. That all department sign-offs are obtained prior to issuance of any Zoning Permit; and

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3. That a permit is obtained from the Department of Public Works regarding City storm-water management requirements; and
4. That all required soil sedimentation and erosion controls are in place prior to the start of any construction; and
5. That any additional needed soil sedimentation and erosion controls be installed at the direction of Staff; and
6. That any changes to the plans be reviewed by Staff prior to implementation; and
7. That the proposed engineered site plan be revised to include a zoning chart, including separate building coverage and impervious surface coverage calculations, prior to the issuance of a zoning permit; and
8. That any utilities comply with setbacks; and
9. That flood certifications be submitted prior to issuance of a zoning permit and prior to obtaining a Certificate of Zoning Compliance (COZC), prepared by a CT licensed engineer or architect; and
10. That flood compliance be achieved and demonstrated with a FEMA elevation certificate prior to COZC; and
11. That pervious gravel be used for the driveway and walkways; and
12. That stormwater and discharge be treated on site; and
13. That all plantings be implemented prior to COZC; and
14. That all plantings be maintained, and any dead plantings must be replaced in accordance with the approved planting plan; and
15. That no changes to the seawall are permitted without City review and DEEP approval; and
16. Nothing in this permit shall obviate the requirements for the applicant to obtain any other assents, permits or licenses required by law or regulation by the City of Norwalk, State of Connecticut, or the Government of the United States, including any approval required by the Connecticut Department of Environmental Protection and U.S. Army Corps of Engineers- obtaining such assents, permits or licenses is the sole responsibility of the applicant; and

BE IT FURTHER RESOLVED that this proposal complies with all applicable coastal resource and use policies and with all applicable sections of the Zoning Regulations for the City of Norwalk; and

BE IT FURTHER RESOLVED that the preceding conditions and modifications of this application are integral to the Commission's approval because, if not for those conditions and modifications, the Commission would have denied this application.

BE IT FURTHER RESOLVED that the effective date of this approval shall be April 25th, 2025.

You must obtain a zoning approval and a building permit prior to any work on the site.

Mr. Kantor seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Tammy Langalis; Nick Kantor; Richard Roina; Darius Williams approved.

No one opposed.

No one abstained.

C. #2023-11 SP/MV - Thomas J. Telesco - 151 Main Street (District 1, Block 87, Lot 1) - One-year extension of time request for approved special permit for motor vehicle repairer use - Report & recommended action

Since there seemed that no one was available for this application, the commissioners moved to the next item.

D. #2025-28 CAM - 94 East Ave, LLC - 94 East Avenue (District 1, Block 56, Lot 2) - Coastal site plan review for a change of use from +/- 5,200sf of office to six dwelling units for a total of 11 dwelling units within the existing building - Preliminary review and approval of village district architectural peer review

Atty Liz Suchy began the presentation with an introduction of the project team. She then oriented the property for the commissioners. She described the current property which had a recent addition in 2012. The plan would be to convert some of the office space to residential units. She further described the changes as well as discussing the number of parking spaces.

There was a discussion about the city's third party architectural review.

**** MR. SCHULMAN MOVED THAT THE PLANNING & ZONING COMMISSION APPOINT A REVIEW ARCHITECT FOR THIS APPLICATION.**

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Mr. Williams seconded.

There was a discussion about the difference in value between an office building and a residential building since this was the second application.

Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Tammy Langalis; Nick Kantor; Richard Roina; Darius Williams approved.
No one opposed.
No one abstained.

There was a discussion as to whether there would be a public hearing for this application. Atty Suchy did not think it was necessary for several reasons, including that the work was interior.

**** MR. ROINA MADE A MOTION THAT A PUBLIC HEARING WOULD NOT BE NECESSARY FOR THIS APPLICATION.**

Mr. Williams seconded.
Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Nick Kantor; Richard Roina approved.
No one opposed.
Tammy Langalis and Darius Williams abstained.

E. #2025-31 SP/CAM - Milan Pribelsky - 65 Van Zant Street and 28 Rowan Street (District 3 Block 34, Lots 13 and 16) - Special permit and coastal site plan review application(s) for the construction of a 3.5-story, 22-dwelling unit, mixed-use building - Approval of usage of third-party architectural peer review

Mr. Baker said that they were requesting the commission to approve the use of a 3rd party peer review. The staff had requested a quote from D'Carlo and Doll.

**** MR. ROINA MADE A MOTION THAT THE PLANNING & ZONING COMMISSION APPOINT A THIRD PARTY REVIEW ARCHITECT FOR THIS APPLICATION.**

Mr. Kleppin said that the commission could review the plans as well because the review could take 6-8 weeks. At this point, the commission was shown the plans, as well as an aerial view of the property.

Mr. Williams seconded.
Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Nick Kantor; Richard Roina; Tammy Langalis; Darius Williams approved.
No one opposed.

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No one abstained.

F. #2025-27 SP - TVG Partners - 595 Westport Avenue (District 5, Block 17, Lot 8) - Special permit for change of use from +/- 85,400sf portion of existing building from manufacturing to self-storage facility - Preliminary review

Atty Blank began the presentation with an introduction of the project team. He then oriented the commission as to the location of the property on an aerial map and described the same. He showed them current pictures of the site. It was not clear what the use would be but part of it would be self-storage. There would be minor changes to the exterior. The storage use would be less intense than the previous use. He said that they would come back for a public hearing.

There was a discussion about other uses of the building. Atty Blank said that there was a restriction about allowing more residential uses. There was also a discussion about the ownership of the building.

G. #2024-65 SPR/CAM - Hyde Park Properties, LLC - 71 Water Street and 25 Elizabeth Street (District 2, Block 44, Lots 14 and 13) - Coastal site plan review application for the construction of a six-story, 32-dwelling unit, mixed-use building - Report & recommended action

Atty Blank began the presentation with an introduction of the project team. He said that they had received sign-offs from some departments as well as comments from others. The project had been approved by the Redevelopment Agency and had been referred to the architectural peer review firm. He discussed the parking and parking garage. There would be a 3 level fitness area, and rooftop amenities. The building would be made of glass. There would be much better drainage on the site. He said that a green roof would no longer be a part of the project. He also noted that the traffic engineer would speak that evening about the project. He said that they would agree to providing a signage plan. There would be changes to the building for pedestrian handicap access on Elizabeth Street. He showed them renderings of the exterior of the buildings. He also noted that the mechanicals would have to be raised higher due to the zoning regulations, but expected this to be addressed as a condition of approval.

Seelan Pather said that there are no offices in the building besides the owner, Klaar Windows and Doors.

There was a discussion about the flooding on Water Street. Atty Blank said that Transportation, Mobility and Parking (TMP) may change the direction of Elizabeth Street but was not sure of it at this point.

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Mark Ochman, the engineer on the project, continued the presentation by describing the existing parcel with the building and asphalt parking lot. He then described the proposed building which would contain residential and retail space. He explained how they would follow the DPW's drainage manual.

There was a discussion about water flooding into the garage. Mr. Ochman said that there was a solution for that so it would not.

Mr. Pather, the architect for the project, continued the presentation by addressing further the concerns about flooding on Water Street. He compared this project to another project that his firm had completed on Water Street. He reminded them that the zoning regulations had increased the elevations in the flood zone since that project had been completed. He showed them renderings of what the building would look like. He then said that there was a factory aesthetic in South Norwalk. He described the elements used in the facade. There would be balconies on the building. He also noted that one of the main elements of the project would be glass since the owner of the building owned a high quality glass company. He described some public space that was being created. They would use high quality materials. He showed them the interior designs of the buildings for the different floors.

There was a discussion about where the affordable housing units would be located. Mr. Pather said that there would be 3 1 bedroom units.

There was a discussion about this being Norwalk's first fully glazed residential building. Mr. Kleppin said that was the most he could recall. There was also a discussion about the parking which would be open parking to share with retail during the day.

Eric Raines, the landscape architect for the project, continued the presentation. He described the plant materials and the seating opportunities. He also described the planters which would tolerate salt spray.

Steve Cipolla, the traffic engineer, continued the presentation with a description of the traffic study and how it was conducted. From the study, he described the additional vehicles that would be added from this project.

Frank Fish, BFJ Planning, continued the presentation by discussing the memo that they had submitted in January. There had been comments which the applicant had responded to. He said that there were additional comments which the applicant would respond to. He said that subject to the 4 additional comments, they would recommend this project.

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There was a discussion about the number of workforce housing units. Atty Blank said that they would work with staff if changes were necessary.

**** MR. WILLIAMS MOVED: THEREFORE, BE IT RESOLVED** by the Norwalk Planning & Zoning Commission that application #2024-65 SPR/CAM – Hyde Park Properties, LLC – 71 Water Street and 25 Elizabeth Street (District 2, Block 44, Lots 14 and 13) – Coastal site plan review application for the construction of a six-story, 32-dwelling unit, mixed-use building be **APPROVED** subject to the following conditions:

1. That the site shall be developed in accordance with the following plans, and as further modified per these conditions of approval:

a. Per the site plans entitled “Site Development Plan,” prepared by Ochman Associates, Inc., dated 11/29/2024; and

b. Per the architectural drawings entitled “71 Water Street,” prepared by Beinfield Architecture, dated 3/31/2025 and revised to 4/8/2025; and

a. Provided that the applicant shall provide documentation to the Planning & Zoning Commission’s Staff (Staff), that the building construction complies with Section 8.4.5.N.2.g of the Norwalk Zoning Regulations, prior to the issuance of a zoning permit; and

b. That all mechanical equipment shall be elevated to two feet above the base flood elevation; and

c. Per the landscaping plans entitled “Water Street,” prepared by Eric Rains Landscape Architecture, LLC, dated 12/5/2024; and

3. That all utilities servicing the site shall be installed underground; and

4. That any changes to the approved plans, including change of use, shall be submitted to the Commission’s Staff (Staff) for review and approval prior to implementation. If any proposed changes are determined to be substantive, Staff shall refer the changes to the Commission for their review and approval prior to implementation; and

5. That the applicant shall provide details on compliance with Section 6.11.2 Solar Energy and Natural Drainage prior to the issuance of a zoning permit; and

6. That the applicant shall submit a final Workforce Housing Affordability Plan, subject to Staff approval, prior to the issuance of a zoning permit; and

7. That an approved Workforce Housing Affordability Plan shall be filed on the Norwalk Land Records prior to the issuance of a Certificate of Zoning Compliance for the residential portion of the building(s); and

8. That should any building façade material become damaged and/or deteriorated, the applicant and any future owner(s) shall repair the damaged and/or deteriorated façade within thirty (30) days upon receiving notice from the City; and

9. That any pruning of trees within the city right-of-way shall be done in coordination with the City of Norwalk's Tree Warden; and

10. That any and all conditions required by Norwalk Health Department are applicable to this approval; and

11. That any and all conditions required by Norwalk WPCA are applicable to this approval; and

12. That any and all conditions required by Norwalk DPW are applicable to this approval; and

13. That any and all conditions required by Norwalk TMP are applicable to this approval; and

14. That any and all conditions required by the Norwalk Fire Marshal are applicable to this approval; and

15. That a surety shall be submitted, in an amount determined by Staff, to guarantee the installation of the required erosion and sediment controls prior to the issuance of a zoning permit; and

16. That all erosion and sediment controls shall be installed and maintained prior to the start of any construction or site work, shall be maintained throughout all construction and site work, and that additional controls be installed at the direction of Staff; and

17. That a Connecticut licensed engineer shall certify that all required improvements, including any required off-site improvements, were installed to City standards prior to the issuance of a Certificate of Zoning Compliance; and

18. That a surety shall be submitted, in an amount determined by the applicant and verified by Staff, to guarantee the completion and maintenance of the site plan and any and all modifications to the plan and all work as required as a condition of approval prior to the issuance of a Certificate of Zoning Compliance; and

BE IT FURTHER RESOLVED that this application complies with all applicable sections of the Norwalk Zoning Regulations; and

BE IT FURTHER RESOLVED that the effective date of this action shall be April 25, 2025.

Mr. Kantor seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Nick Kantor; Tammy Langalis; Darius Williams approved.

No one opposed.

Jacquen Jordan-Byron abstained.

V. ACCEPTANCE OF MINUTES

A. Regular Meeting: April 2, 2025

**** MS. LANGALIS MOVED to approve the April 2, 2025 minutes.**

Mr. Williams seconded.

Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron; Nick Kantor; Tammy Langalis; Darius Williams approved.

No one opposed.

No one abstained.

VI. COMMENTS OF DIRECTOR

Mr. Kleppin said that the next meeting will be in 3 weeks, which would be a long meeting. He also noted that he would do a walk through of the Gray Barns with Ana Tabachneck, Ms. Wells and Mr. Kantor.

VII. COMMENTS OF COMMISSIONERS

Mr. Kantor asked about city email addresses. Mr. Kleppin said he would follow up.

Ms. Langalis said that there would be a community event at Manresa Island on May 8. She asked whether the commissioners should attend. Atty Sapienza, one of the city's counsel suggested that they could attend but not to opine on the project.

VIII. ADJOURNMENT

Ms. Jordan-Byron made a Motion to Adjourn.

Mr. Williams seconded.

**Galen Wells; Diana Lenkowsky; Louis Schulman; Jacquen Jordan-Byron;
Nick Kantor; Tammy Langalis; Darius Williams approved.**

No one opposed.

No one abstained.

The meeting was adjourned at 8:13 p.m.

Respectfully submitted,

Diana Palmentiero