7192 Main Street, LLC.
4 Main Street

Town of Monroe
Inland Wetlands and
Watercourses Application

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TOWN OF MONROE
APPLICATION FOR PERMIT
INLAND WETLANDS COMMISSION
7 Fan Hill Road, Monroe, CT 06468
Tel. (203)452-2809

FOR OFFICE USE ONLY:
Application Number _____
File Number: _____
Submittal Date: _____
Application Fee Collected _____
Public Hearing Fee Collected _____
Date of Receipt: _____
Extensions (cumulative ≤ 65 days) _____
_____
Public Hearing Start: _____ End _____
Hearing: Start: _____ End _____
Deliberation: Start: _____ End _____
Approval Date: _____ Denial Date: _____
270 Days Up: _____
Permit Expiration: _____

As the applicant, it is your responsibility to provide the information the Commission needs in order to process your application and make a fair determination of the issues. If you fail to supply the information it may result in delay, a denial of your application or both. We recommend that you read the Inland Wetlands and Watercourses Regulations and that you request a meeting with the Land Use Department prior to submitting your application. There is no charge to the applicant for this meeting.

SECTION A: Information about the property

1. **Location of the Property**:
   Street Address: 4 MAIN STREET
   Assessor's Map Number: 004/037
   Parcel Number: 02
2. **Where is the property deed found in the Monroe Land Records?**
   Volume: 1889 Page: 0009
3. **Is the property located within a public water supply watershed?**
   ☑ No
   ☐ Yes (***If " Yes, " the Applicant must send a copy of this application BY CERTIFIED MAIL ON OR BEFORE THE DATE OF THE APPLICATION to the Aquarion Water Company of Connecticut, 714 Black Rock Road, Easton, CT 06612, and the Commissioner of Public Health, 410 Capitol Avenue, Hartford, CT 06106; See Regulations Section 8.3).***
4. **Is the property located within 500 feet of a town boundary?**
   ☐ No
   ☑ Yes ***(If" Yes ", the applicant must notify the Inland Wetland Agency of the adjacent municipality by certified mail and submit the receipt with this application).***
5. **Is the property subject to an existing conservation easement?**
   ☑ No
   ☐ Yes ***(If" Yes ", the applicant must notify the party holding such restriction by certified mail no later than sixty days prior to the filing of this permit application, or submit a letter from the party holding the restriction verifying that the application is in compliance with the terms of the restriction; see Regulations Section 7.9c & 7.9d).***
6. **Is there a flood plain located on the property?**
   ☐ No
   ☑ Yes ***(If" Yes ", indicate elevation and location of flood plain on the submission plan).***
7. **Please attach a list of the names and mailing addresses of all landowners within 100 feet of the property.**

SECTION B: Information about the applicant

8. **Applicant's name and contact information:**
   Name: 7192 MAIN ST. LLC c/o MITCHELL DeESSO MBR.
   Address: 7182 MAIN STREET
   Telephone: 914-403-8969 Fax: _____ Email: mitch@dsomechanical.com
9. **What is the Applicant's interest in the property?**
   ☑ Owner
   ☐ Option to purchase
   ☐ Other _____

Application No. _____ File No._____

Applicant's representative's name and contact information:

Name: Jason Edwards, LS

Business Name: J. Edwards & Associates LLC

Business Address: 227 Stepney Road, Easton, CT 06612

Telephone: 203-268-4205 Fax: _____ Email: jason@jedwardsassoc.com

10. Engineer's name and contact information:

Name: Larry Edwards, PE

Business Name: J. Edwards & Associates LLC

Business Address: 227 Stepney Road, Easton, CT 06612

Telephone: 203-268-4205 Fax: _____ Email: larry@jedwardsassoc.com

11. Owner's name and contact information:

Name: Same as applicant

Address: _____

Telephone: _____ Fax: _____ Email: _____

Owner's signature_____ (granting permission for submission of application by the applicant)

Please note the following:

If the applicant is not the current owner, this application must include the owner's signature or a written, witnessed consent to submit this application, signed and dated by the owner. Only the applicant and the agent listed on this application will receive copies of official action and correspondence.

SECTION C: Information about the proposed activity

(Please attach additional sheets if necessary)

12. Select one or more of the following types of Application requested:

- ☑ Regulated Activity
- □ Subdivision Report/Referral
- □ Renewal/Extension of Issued Permit Number _____
- □ Including Site Remediation
- □ Map Amendment
- □ Regulation Amendment

13. Describe the proposed activity covered by this application:

Construction of a multi-use building and it's appurtenances.

14. List all activities which take place in regulated areas, including the upland review areas:

Portion of a building, driveway and parking, storm drainage, site grading, portion of a retaining wall, dumpsters, and guard rail.

15. List the total acreage of the following:

Overall project site: 6.68 ac.

Wetlands on the property: 1.39 ac.

Upland review areas on the property: 1.63 ac.

16. List the total area of the regulated areas to be altered:

Wetlands: 0 acres; _____ sq. ft.

Upland review areas (within 100 feet of a wetland or 150 feet of a watercourse): 0.44 acres; 19,134 sq. ft.

Total Regulated area to be altered (a + b above) for determination of fee: 0.44 acres; 19,134 sq. ft.

17. What alternatives to the proposed regulated activity did you consider? Why did you choose the activity proposed in this application as opposed to the alternatives considered? (See Regulations *Section 7.5f)*

There were no alternatives considered. There is no direct wetland impact.

18. List all measures of Low Impact Design/Development that have been incorporated into this application in order to minimize impact to wetlands.

Subsurface stormwater detention system with mechanical treatment device to outfall into existing sediment/water quality basin.

SECTION D: Determination of Application Fee

(See Regulations Section 19)

19. Select type of Application Fee (choose one):

□	Residential Use = $300.00	_____
☑	Commercial Use = $500.00	500
□	Regulation Amendment = $500.00	_____
□	Map Amendment = $150.00	_____
□	Permit Modification = $100.00	_____
□	Renewal/Extension of Issue Permit = $100.00	_____

20. Select the following additional fees that apply for regulated areas proposed to be disturbed:

Square Feet of Disturbed Area:

□	Less than 1,000 square feet = $50.00	_____
□	1,000 to 5,000 square feet = $100.00	_____
☑	More than 5,000 square feet = $100.00 (base amount)	100
	*(Plus $5.00 for every **additional** 5,000 square feet rounded up)*	
	Disturbed Area (Line 17c) (-) 5,000 sq.ft. (÷) 5,000 sq.ft. (x) $5.00 per sq.ft. rounded up...	15

21. Department of Environmental Protection State Surcharge $60.00

22. TOTAL APPLICATION FEE: $675.00

****** Please note the Application Fees/State Fee must be payable to the Town of Monroe. Applicants paying with a personal check must include their driver's license number and telephone number on the check.***

SECTION E: Required support documents

(See Regulations Section 7)

Please indicate (check box) that the following documents have been included with the application:

23. Submit ten (10) copies of the following:

- ☑ Completed Inland Wetlands Application.
- ☑ A description of all filling and/or excavation activities within regulated areas (include estimates of quantity).
- ☑ A Soils Report by a Soil Scientist (include a sketch of flagged wetland areas within said report).
- □ A minimum of two alternative plans/sketches that were considered prior to choosing the proposed plans.
- □ A report from the Monroe Health Department.
- □ A Wetlands Assessment Report.
- ☑ An area plan showing all abutting properties and applicable downstream drainage systems.

24. Submit seven **(7)** reduced copies of the following (all plans must be folded):

- ☑ Reduced copies, **18' x 24'**, of the site plan showing existing and proposed conditions in relation to the wetlands, watercourses and upland review areas. Please include a location map, delineate the 100-foot wetland setback (upland review area) and/or the l50-foot watercourse setback (upland review area) in red, and incorporate an area plan showing all abutting properties and applicable downstream drainage systems. All plans must have a bar scale.

Application No._____ File No._____

25. Submit three **(3)** copies of the following (all plans must be folded):

☑ Full size copies of the site plan, **24' x 36'**, showing existing and proposed conditions in relation to the wetlands, watercourses and upland review areas. Please include a location map, delineate the 100-foot wetland setback (upland review area) and/or the l50-foot watercourse setback (upland review area) in red, and incorporate an area plan showing all abutting properties and applicable downstream drainage systems. All plans must have a bar scale.

26. Submit two (2) copies of the following:

☑ Drainage calculations, if applicable.

27. Submit one (1) copy of the following:

☑ A list of the names and mailing addresses of all abutting property owners.

☑ A completed **D.E.E.P** report form (available at the Inland Wetlands Office or on the Town Website at www.monroect.org/Town Hall Departments/Inland Wetlands/Applications & Forms).

☑ Verification in writing that all wetlands have been flagged and the property address/location is adequately delineated and/or marked at the property.

☑ A completed bond form listing all wetlands related work and protective measures for same (available at the Inland Wetlands Office or on the Town Website at www.monroect.org/Town Hall Departments/Inland Wetlands/Applications & Forms).

PLEASE INCLUDE TEN (10) COPIES OF ANY FUTURE SUPPORTING DOCUMENTATION SUBMITTED TO THE COMMISSION (Plans: 3 Full Size copies - 24' x 36', and 7 Reduced Size copies - 18' x 24'). Plans prepared by engineers, surveyors and architects must be signed and sealed. The Commission may request additional copies of the application or supporting documents at any time.

Title of original submission plan (include author and date) Site Plan, Gateway Commons, 7182 Main Street LLC, 7182 & 7192 Main Street, Trumbull & 4 Main Street, Monroe, CT., Scale:1"=40' by J.Edwards & Associates LLC dated 10-25-22.

The undersigned applicant hereby consents for the owner, in the case where the applicant is not the owner, to necessary and proper access to the above mentioned property by the Inland Wetlands Commissioners, the Inland Wetlands Agent and other appropriate Town staff and/or authorized Town Consultants, at reasonable times, both before and after any permit has been granted or denied by the Commission, for the purpose of evaluating the application, monitoring compliance or correcting any violation of the Inland Wetlands and Watercourses Regulations brought about through actions or inactions of the applicant of permittee.

The undersigned warrants the truth of all statements contained herein and in all supporting documents according to the best of the applicant's knowledge and belief.

The undersigned applicant understands and agrees that the Commission may request additional information and it is the applicant's responsibility to provide this information in a timely fashion and to the Commission's satisfaction. If the information provided is incomplete or inaccurate, in the opinion of the Commission, the Commission may deny the application or request an extension to be granted by the Applicant in order to act within the legal time limits.

Type or Print the Name of the Applicant: MITCHELL DEESSO, MNGING MEMBER

Signature of Applicant: _____ (Member)

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

GIS CODE #: ___ ___ ___ ___ ___ ___ ___ ___ ___
For DEEP Use Only

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:
DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions, only use one code): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
   (print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTION IS OCCURRING (print name): Monroe
   does this project cross municipal boundaries (check one)? yes ☑ no ☐
   if yes, list the other town(s) in which the action is occurring (print name(s)): Trumbull, _____
6. LOCATION (see instructions for information): USGS quad name: _____ or number: 93
   subregional drainage basin number: 7102
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): 7192 MAIN ST. LLC
8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): 7182 & 7192 MAIN STREET, TRUMBULL & 4 MAIN STREET, MONROE
   briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☑ description:
   Construction of a multi-use building and it's appurtenances.
9. ACTIVITY *PURPOSE* CODE (see instructions, only use one code): D
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): 1, 2, 9, 12
11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):
    wetlands: 0 acres open water body: 0 acres stream: 0 linear feet
12. UPLAND AREA ALTERED (must provide acres): 0.44 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0 acres

PART III: To Be Completed By The DEEP

DATE RECEIVED: DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO

100 FEET ADJOINERS LIST

ONE-FIFTEEN MAIN ST MONROE LLC
7182 MAIN ST
TRUMBULL, CT. 06611

SWISS ARMY LAND INC
PO BOX 1212
MONROE, CT. 06468-1212

7182 MAIN ST LLC
7182 MAIN ST
TRUMBULL, CT. 06611

7192 MAIN ST LLC
7182 MAIN ST
TRUMBULL, CT. 06611

VICTORIA DRIVE ASSOCIATES LLC
26 ARROWHEAD DR
MONROE, CT. 06468

1036 MAIN ST LLC
16 CROSS ST
NEW CANAAN, CT. 06840

JMM WETLAND CONSULTING SERVICES, LLC

23 Horseshoe Ridge Road
Newtown, CT 06482

Phone: 203-364-0345
Mobile: 203-994-3428
james@jmmwetland.com
jmmwetland.com

November 11, 2019

Town of Trumbull
Inland Wetlands and Watercourse Commission
5866 Main Street
Trumbull, CT 06611

RE: ***Wetlands Assessment/Impact Analysis***
Proposed Excavation/Filling Permit Application
7180 & 7192 Main Street, Trumbull, Connecticut

JMM Job # 19-2486-MNR-3

Dear Commissioners:

JMM Wetland Consulting Services, LLC (JMM), visited the site at the above-referenced property (i.e., site, study area), on September 6th, 2019, to conduct a soils-based wetland delineation, and a preliminary baseline inventory. An *On-Site Soil Investigation Report*, supporting the wetland delineations is attached to this document.

JMM is providing this Wetlands Assessment/Impact Analysis report to be submitted as part of an application to conduct regulated activities at the site.

In this report, JMM is providing the following:

1. Descriptions of the on-site regulated wetlands and watercourses.
2. A functions and values assessment of the regulated wetlands associated with the site (i.e., A/1A-series, B/1B/2B-series, and C-series wetlands).

3. An analysis of potential indirect impacts upon the regulated resources and upon the functions and values they provide.

1.0 Introduction

The site is located easterly of Main Street (i.e., CT-Route 25), in Trumbull, Connecticut (see Figure 1, attached)[1]. This site is comprised of an existing commercial building, paved parking areas and drives, soil and rock stockpile areas, forested upland areas, and forested, scrub shrub, and shallow marsh wetland areas, which includes a perennial watercourse, namely the Pequonnock River. It is worth noting that open water was observed on-site and within adjacent off-site areas to the east (i.e., man-made pond).

2.0 Description of Regulated Resource Areas

A/1A-Series Wetland

This isolated, man-made depressional wetland is located at the southern property boundary, partially within the Town of Monroe. JMM wetland boundary markers JMM-A1 to JMM-A-8, connected to JMM-1A-1 to JMM-1A-5 (closed loop), demarcate this on-site wetland (see photos 1-2, attached). The wetland is classified predominately as a *palustrine*, *broad-leaved scrub-shrub* wetland (PSS) according the National Wetland Inventory (NWI) Classification system. The dominant hydrologic regime within this shrub swamp is *seasonally saturated/seasonally flooded* (see appended definitions). The wetland's hydro-geomorphic classification (HGM) is predominately *groundwater/surface depression*. Within this wetland area soils are disturbed throughout, and are both poorly drained and very poorly drained.

Typical vegetation observed within the scrub shrub swamp includes such species as willows, tree of heaven, privet, multiflora rose, yellow iris, purple-stemmed aster, purple willow herbs, jewelweed, sticktights, wild mint, pond weeds, arrow-leaved tearthumb, Lianas include Asiatic bittersweet (invasive), and fox grape.

[1] We note that a portion of the overall site is located within the Town of Monroe, CT.

B/1B/2B-Series Wetland

This is the site's larger wetland, located within the eastern and northeastern section of the site. It is contiguous with off-site wetland and watercourse habitats to the east and to the south. JMM wetland boundary markers JMM-B-1 to JMM-B-25, connected to JMM-1B-1 to JMM-1B-14 (open line), demarcate this regulated on-site resource. We note that JMM-2B-1 to 2B-7 (closed loop), demarcate a small upland fill island (i.e., an inclusion) that will be removed and restored to a wetland habitat during the mitigation plan implementation at this site (see photos 3-4). Most of the wetland boundaries associated with this wetland were delineated along abrupt, fill slope.

In its current state this wetland is classified as a combination of several vegetative cover types, including forested, scrub-shrub, and emergent (i.e., shallow marsh). According the National Wetland Inventory (NWI) Classification system, this wetland is classified as a *palustrine*, *broad-leaved, forested* wetland (PFO). However, recent hydrologic changes have resulted in significant die-back of trees, giving way to scrub-shrub and shallow marsh cover types. The dominant hydrologic regimes are *seasonally saturated*, *seasonally flooded*, *semi-permanently flooded*, and *saturated*, and are influenced by this wetland's connection with the Pequonnock River, and its off-site impoundment (i.e., man-made pond). The wetland's hydro-geomorphic classification (HGM) is predominately *surface water slope* and *groundwater slope,* and *groundwater depression*. Soils within this wetland area are both disturbed and undisturbed, and include poorly and very poorly drained soils.

Typical vegetation observed within this regulated area included such species red maple, willows, American elm, green ash, tupelo, silky dogwood, alder, buttonbush, arrowwood viburnum, winterberry holly, common reed, cattail, sticktights, rice-cut grass, goldenrods, tussock sedge, sedges, woolgrass, soft rush, poison ivy, tearthumbs, smartweeds, sensitive fern, skunk cabbage, and clearweed. Lianas included poison ivy and Asiatic bittersweet (invasive).

C-Series Wetland

This wetland is located within the northeastern portion of the site and south of the off-site ditched watercourse and man-made pond. It is contiguous with the same off-site wetland and watercourse habitats as the B/1B-series wetlands. JMM wetland boundary markers JMM-C-1 to JMM-C-10 (open line) demarcate this on-site regulated resource (see photo 5).

As with the B/1B-series, the C-series wetland contains several vegetative cover types, including scrub-shrub, and emergent (i.e., shallow marsh). According the National Wetland Inventory (NWI) Classification system, this wetland is classified as a *palustrine*, *broad-leaved, forested* wetland (PFO). The dominant hydrologic regimes are *seasonally saturated*, *seasonally flooded*. The wetland's hydro-geomorphic classification (HGM) is predominately *surface water slope* and *groundwater slope*. Soils within this wetland area are both disturbed and undisturbed poorly drained soils. This wetland boundary follows along an abrupt fill slope to the property line.

Typical vegetation observed within this regulated area included such species red maple, alder, sticktights, rice-cut grass, goldenrods, sedges, smartweeds, jewelweed, arrow-arum, cattail, iris, purple loosestrife, and clearweed. Lianas included poison ivy, fox grape, and Asiatic bittersweet (invasive).

3.0 Soils of Study Area

The soils within the study area were observed to be both undisturbed and disturbed. The undisturbed soils are derived from glacial till (i.e., unstratified sand, silt, and rock) deposits. For additional detail on the observed wetland and upland soil types see attached *On-Site Soil Investigation Report*.

4.0 Functions/Values Assessment

The assessment of wetland functions and values is based primarily on the US Army Corps of Engineers' (USACE) *Descriptive Approach* (1995), and on best professional judgment. The assessment looks at the A/1A, B/1B/2B and C-series wetlands resources.

A summary of the functions and values assessment can be found in Table 1, below. As can be seen, the A/1A-series wetland offers no principal functions, predominately due its small size, isolation, and disturbed nature (i.e., man-made).

The JMM-B/1B-series and the JMM-C-series offer a number of principal functions and values, that is, these are not only present, but available to at least a moderate-high degree. Other functions and values are present but are not principal, including *production export, floodflow alteration,* and *visual quality/aesthetics*.

We note that the perennial stream, that is, the Pequonnock River, is associated with the JMM-B/1B-series and the JMM-C-series wetlands, positively affecting their functions and values. In fact these on-site wetlands are part of an overall wetland system, locally about 8 to 9-acres in size, which includes the man-made pond.

Table 1: Summary of Wetland/Watercourse Function-Value Assessment

Function/Value	A/1A-Series Wetland	B/1B/2B-Series Wetland	C-Series Wetland
Groundwater Recharge/Discharge	Y	**P**	P
Floodflow Alteration	N	**P**	Y
Sediment/Shoreline Stabilization	N	Y	**P**
Sediment/Toxicant/Pathogen Retention	Y	**P**	**P**
Nutrient Removal/Retention/Transformation	Y	**P**	**P**
Production Export	N	Y	Y
Fish and Aquatic Habitat	N	Y	Y
Wildlife Habitat	Y	**P**	**P**
Endangered Species Habitat	N	N	N
Visual Quality/Aesthetics	N	Y	Y
Educational/Scientific Value	N	Y	Y
Recreation (Passive, Active)	N	N	N
Uniqueness/Heritage	N	N	N

Notes: *P = Principal function; Y = function present; N = function not appreciably present or absent*

5.0 Proposed Activities

Overview

According to the reviewed plans, entitled *Excavation/Filling Permit Application prepared for 5 Victoria Drive, 4, 7180 & 7192 Main Street, Monroe & Trumbull, Connecticut*, prepared by Solli Engineering, and dated September 23rd, 2019, the removal of the existing commercial building and the excavation and filling of the site in preparation for a future development, is proposed.

Direct Wetland Impacts

According to the reviewed site plans one *direct* wetland or watercourse impact of 3,927 square feet is proposed within the A/1A series wetland. This disturbed, man-made, and isolated wetland will be filled and a sedimentation basin constructed in its place. This basin

will be used during the proposed project as a sedimentation settling basin before discharging to the adjacent wetlands.

Indirect Wetland Impacts

Indirect or secondary impacts to a wetland or watercourse can occur as a result of activities outside of wetlands or watercourses. Such impacts can be *short-term* or *long-term*, and are typically associated with erosion and sedimentation, mostly during the construction period, the removal or disturbance of vegetation in upland areas but adjacent to wetlands or watercourses, the alteration of wetland hydrology or the flow regime of a watercourse, and the discharge of degraded surface water or groundwater, which may adversely impact the water quality of the regulated resources.

The potential for any of these indirect impacts to occur at the site as a result of the proposal depends on the regulated resources themselves, their sensitivity, and their ecological and physical characteristics, as well as the proposed mitigation measures that off-set or minimize such impacts. These potential impacts are discussed below.

Erosion and Sedimentation

The potential for soil erosion and subsequent deposition in wetlands or watercourses exists at every construction site that involves soil disturbance. At this site the risk or the potential for adverse impacts from erosion and sedimentation is considered *moderate* to *moderate-high*. The primary reasons for this assessment are as follows: (1) a detailed erosion and sedimentation control plan has been prepared and submitted, which complies with the CT DEEP's 2002 *Connecticut Guidelines for Erosion and Sediment Control*; (2) steep slopes are proposed adjacent to the regulated wetlands (3) diligent monitoring and the siltation basins will protect the regulated areas during construction, and (4) the regulated wetlands proximal to the proposed new slopes are highly disturbed.

Removal of Native Vegetation and Habitat Loss

Habitat loss associated with land clearing is an unavoidable consequence of land development, which has the potential of impacting wetlands and watercourses. At the subject site, an effort has been made to limit any disturbance of woody vegetation to the extent possible, maintaining a sufficient wooded buffer to the both of the site's resources.

Since the majority of the proposed activity is in previously developed and/or disturbed soils with the exception of the proposed filling of the JMM-A/1A-series wetland, minimum tree removal is necessary to conduct the proposed activities.
In our professional opinion the proposed wetland/buffers plantings and mitigation are of sufficient width, quantity, and quality, to protect existing wetland functions and values, as shown in the proposed mitigation/enhancement plans (i.e., Reclamation Plan; 2.61, and Wetland Remediation Plan; 2.62).

Potential Impacts to Wetland Hydrology and Stream Flow

As proposed it is JMM's professional opinion that there will be no impacts to wetland hydrology and stream flow as the interior of the wetland resource will not be impacted for the proposed excavation/filling. For the most part, the hydrology of the contiguous wetlands are supported by the hydrologic regimes of the associated perennial watercourse and man-made pond.

Potential Water Quality Impacts

The plan reviewed by JMM includes, a large sedimentation basin, which is sized to accommodate or exceed the required volume for its contributing catchment area. Two diversion swales with numerous stone check dams will convey the majority of runoff to the aforementioned sedimentation basin. The basin and the swales will be stabilized using appropriate vegetative cover, and be maintained and monitored until such time as full vegetative cover has been achieved, and/or a future phase of development is proposed. In JMM's opinion the proposed controls are more than adequate to ensure that the existing water quality of the receiving surface waters (i.e., wetlands and watercourses) would not be degraded.

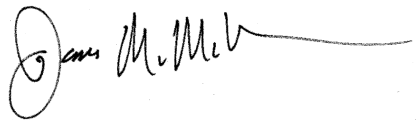
6.0 Conclusion

In conclusion, it is JMM's opinion that as proposed, and with diligent monitoring of erosion and sediment control, particularly adjacent to the B/1B and C-series wetland, the proposal will not have significant adverse short-term (construction) or long-term (water quality/habitat) impacts upon the regulated resources, including the site's perennial stream (i.e., A-series wetland). In the post-construction phase the functions and values associated with the site's regulated resources will continue to be conferred at similar levels as under existing conditions.

Please call us if you have any questions on the above or need further assistance.

Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC

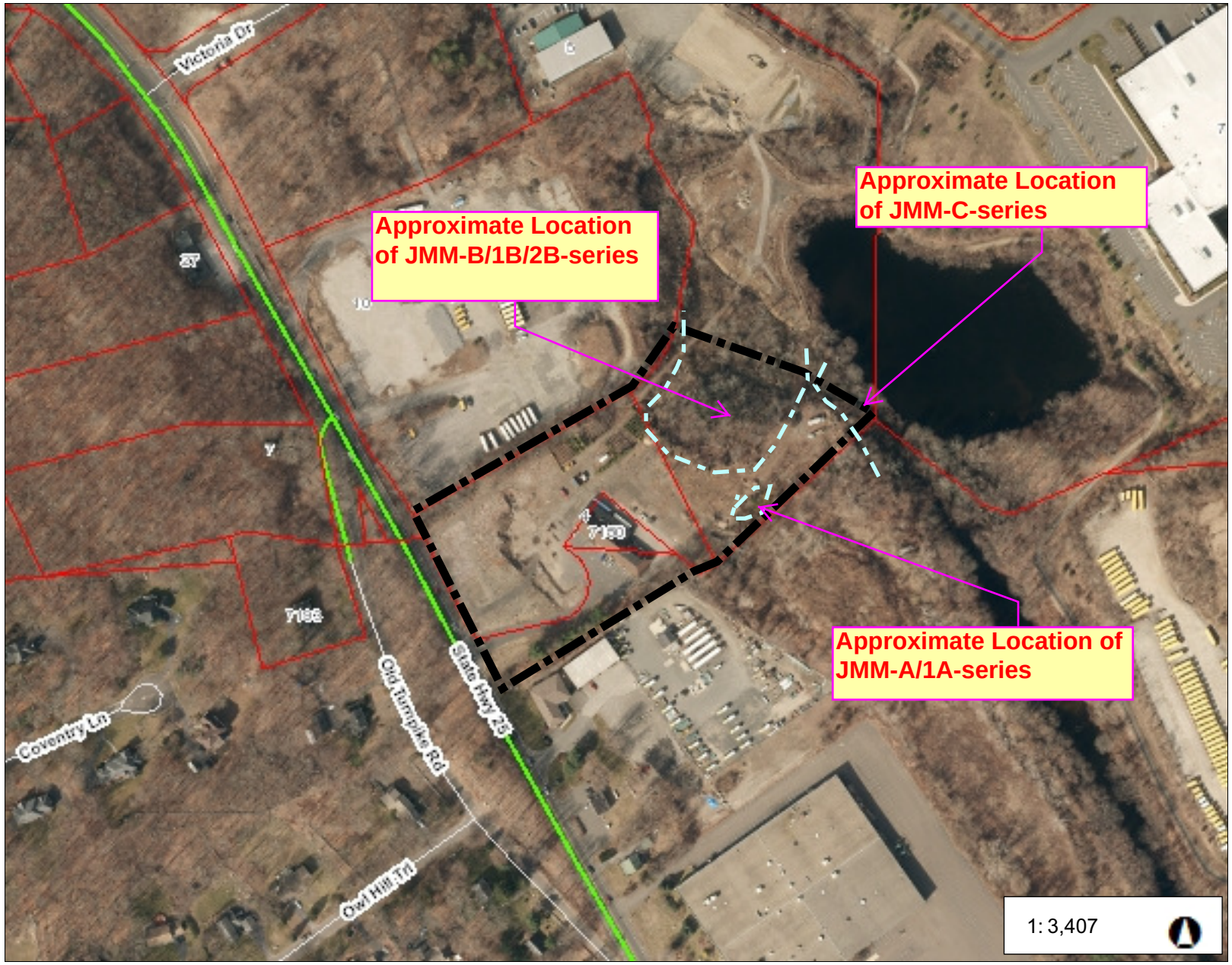


James M. McManus, MS, CPSS
Certified Professional Soil Scientist (No. 15226)

Attachments: Figures 1-2; Photos 1-10, On-Site Soils Report, Wetland Classification Definitions

Town of Monroe

FIGURE 1: 4 & 7182 Main Street, Monroe & Trumbull, CT



Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

567.8 0 283.90 567.8 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

METROCOG
Connecticut Metropolitan Council of Governments

U.S. Fish and Wildlife Service
National Wetlands Inventory

FIG 2: 4, 7180, & 7192 Main Street

October 13, 2019

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Photo 1: View of JMM-A/1A-series along the southern property boundary (JMM photo taken 9/6/19); facing northeasterly

Photo 2: View of JMM-A/1A-series along the southern property boundary (JMM photo taken 9/6/19); facing northeasterly

Photo 3: View of JMM-B/1B-series along the western part of wetland adjacent to fill soils (JMM photo taken 9/6/19); facing southeasterly

Photo 4: View of JMM-B/1B-series wetland (JMM photo taken 9/6/19); facing southeasterly

Photo 5: View of JMM-C-series within the northeastern part of site (JMM photo taken 9/6/19); facing northeasterly

Photo 6: Typical view of fill soils located adjacent to the JMM-B-series (JMM photo taken 9/6/19); facing southeasterly

Photo 7: View of JMM-C-series within the northeastern part of site (JMM photo taken 10/20/19); facing northeasterly

Photo 8: View of JMM-A/1A-series along the southern property boundary (JMM photo taken 10/20/19); facing southeasterly

Photo 9: View of JMM-A/1A-series along the southern property boundary (JMM photo taken 10/20/19); facing southwesterly

Photo 10: View of JMM-B/1B-series wetland (JMM photo taken 10/20/19); facing northeasterly

JMM WETLAND CONSULTING SERVICES, LLC

23 Horseshoe Ridge Road
Newtown, CT 06482
Phone: 203-364-0345

REPORT DATE: September 9, 2019

ON-SITE SOIL INVESTIGATION REPORT

PROJECT NAME & SITE LOCATION:
Project Site
4 & 7182 Main Street
Monroe/Trumbull, Connecticut

JMM Job No.: 19-2486-MNR-3
Field Investigation Date(s): 9/6/19
Field Investigation Method(s):
- ☒ Spade and Auger
- ☐ Backhoe Test Pits
- ☐ Other:

REPORT PREPARED FOR:
Mr. Stephen Santacroce, P.E.
Solli Engineering
501 Main Street, Suite 2A
Monroe, CT 06468

Field Conditions:
Weather: Cloudy, 60's
Soil Moisture: Moist
Snow Depth: N/A
Frost Depth: N/A

Purpose of Investigation:
- ☒ Wetland Delineation/Flagging in Field
- ☐ Wetland Mapping on Sketch Plan or Topographic Plan
- ☐ High Intensity Soil Mapping by Soil Scientist
- ☒ Medium Intensity Soil Mapping from USDA-NRCS Web Soil Survey Maps
- ☐ Other:

Base Map Source: USDA-NRCS Web Soil Survey (attached)

Wetland Boundary Marker Series: JMM-A-1 to JMM-A-8, JMM-1A-1 to JMM-1A-5, JMM-B-1 to JMM-B-25, JMM-1B-1 to JMM-1B-14, JMM-2B-1 to JMM-2B-7, and JMM-C-1 to JMM-C-10

General Site Description/Comments: The site is located east/northeast of Main Street in Monroe and Trumbull, CT. The site is comprised of an existing commercial building, paved parking areas and drives, soil/rock stockpile areas, forested upland areas, and forested, shallow marsh, and scrub/shrub wetland areas, which includes a perennial watercourse (see Figure 1, attached). The soil types were found to be disturbed throughout the upland areas and a mix of undisturbed and disturbed soils within the wetland areas. Any undisturbed soils are derived from alluvial (i.e., stratified sand and silt) deposits. The disturbed "upland type" soils were mapped as the Udorthents-Urban Land (306) mapping complex. The undisturbed "wetland-type" soils were identified as the very poorly drained Saco (108) soil series. Any disturbed wetland soils were mapped as the Aquents (308w) mapping unit. The "regulated areas" associated with the site consist of a perennial watercourse, namely Pequonnock River and its associated mix of wooded swamp, shallow marsh, and scrub/shrub swamp following along an abrupt boundary located in the eastern and northeastern portions of the site (JMM-B/1B/2B/C-series). Additionally, a disturbed man-made isolated wetland with an abrupt boundary is located near the southern property line (JMM-A/1A-series). Typical vegetation observed within the regulated areas included such species as red maple, willows, American elm, silky dogwood, green ash, winterberry, northern arrowwood, skunk cabbage, tussock sedge, arrow-leaved tearthumb, clearweed, cattail, common reed, sensitive fern, Japanese knotweed, Asiatic bittersweet, and poison ivy, to name a few.

ON-SITE SOIL INVESTIGATION REPORT (CONTINUED)

PROJECT NAME & SITE LOCATION: Project Site
4 & 7182 Main Street, Monroe/Trumbull, CT

SOIL MAP UNITS

Wetland Soils

Saco silt loam (108). This series consists of deep, very poorly drained soils formed in coarse-silty, alluvial sediments. The soils are on low flood plains along streams and rivers and are frequently flooded. Saco soils formed in recent alluvium derived mainly from schist, gneiss or granite. Typically, the surface layer is very dark grayish brown mucky silt loam 6 inches thick. The substratum is dark gray and very dark gray silt loam to a depth of 60 inches or more.

Aquents (308w). This soil map unit consists of poorly drained and very poorly drained disturbed land areas. They are most often found on landscapes, which have been subject to prior filling and/or excavation activities. In general, this soil map unit occurs where two or more feet of the original soil surface has been filled over, graded or excavated. The *Aquents* are characterized by a seasonal to prolonged high ground water table and either support or are capable of supporting wetland vegetation. *Aquents* are recently formed soils, which have an aquic moisture regime. An aquic moisture regime is associated with a reducing soil environment that is virtually free of dissolved oxygen because the soil is saturated by groundwater or by water of the capillary fringe. The key feature is the presence of a ground water table at or very near to the soil surface for a period of fourteen days or longer during the growing season.

Upland Soils

Udorthents-Urban Land (306). This soil mapping unit consists of well drained to moderately well drained soils that have been altered by cutting, filling, or grading. The areas either have had two feet or more of the upper part of the original soil removed or have more than two feet of fill material on top of the original soil. *Udorthents-Urban Land* or Made Land soils can be found on any soil parent material but are typically fluvial on glacial till plains and outwash plains and stream terraces.

 DATE: 9/9/19

ON-SITE SOIL INVESTIGATION REPORT (CONTINUED)

PROJECT NAME & SITE LOCATION: Project Site
4 & 7182 Main Street, Monroe/Trumbull, CT

SOIL MAP UNITS

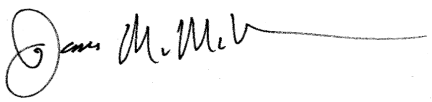
See previous page

Any accompanying soil logs and soil maps, and the on-site soil investigation narrative are in accordance with the taxonomic classification of the National Cooperative Soil Survey of the USDA Natural Resource Conservation Service, and with the Connecticut Soil Legend (DEP Bulletin No.5, 1983). Jurisdictional wetland boundaries were delineated pursuant to the Connecticut General Statutes (CGS Sections 22a-36 to 22a-45), as amended. The site investigation was conducted and/or reviewed by the undersigned Registered Soil Scientist(s) [registered with the Society of Soil Scientists of Southern New England (SSSSNE) in accordance with the standards of the Federal Office of Personnel Management].

All wetland boundary lines established by the undersigned Soil Scientist are subject to change until officially adopted by, local, state, and federal regulatory agencies.

Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC



James M. McManus, MS, CPSS
Certified Professional Soil Scientist
Field Investigator/Reviewer

Soil Map—State of Connecticut
(4 Main Street, Monroe, CT and 7182 Main Street, Trumbull, CT)

Map Scale: 1:4,270 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 18, Dec 6, 2018

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 5, 2016

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
29A	Agawam fine sandy loam, 0 to 3 percent slopes	0.4	0.4%
38C	Hinckley loamy sand, 3 to 15 percent slopes	9.0	10.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	2.7	3.1%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	3.3	3.7%
60D	Canton and Charlton soils, 15 to 25 percent slopes	1.8	2.0%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	3.3	3.7%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	5.7	6.5%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	1.6	1.8%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	4.3	4.9%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	0.3	0.3%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	4.2	4.7%
108	Saco silt loam	4.3	4.9%
302	Dumps	10.1	11.4%
305	Udorthents-Pits complex, gravelly	6.7	7.6%
306	Udorthents-Urban land complex	26.0	29.5%
W	Water	4.6	5.2%
Totals for Area of Interest		**88.1**	**100.0%**

WETLANDS: *The Physical Environment*

COMMON WATER REGIMES OF NORTHEASTERN WETLANDS

Seasonally flooded: Surface water is present for extended periods, especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.

Temporarily flooded: Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season.

Seasonally saturated: The soil is saturated to the surface, especially early in the growing season, but unsaturated conditions prevail by the end of the season in most years. Surface water is absent except for groundwater seepage and overland flow.

Semi-permanently flooded: Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

Permanently flooded: Water covers the land surface throughout the year in all years. Vegetation is composed of obligate hydrophytes.

Saturated: The substratum is saturated to the surface for extended periods during the growing season, but surface water is seldom present. This water regime applies to permanently saturated, non-flooded wetlands such as bogs.

References:

Golet, F. C., A. J. K. Calhoun, W. R. DeRagon, D. J. Lowry and A. J. Gold. 1993. Ecology of Red Maple Swamps in the Glaciated Northeast: A Community Profile. U. S. Dep. Int. Fish Wild. Serv. Biol. Rep. 12, 152 pp.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U. S. Fish Wild. Serv. Biol. Serv. Program FWS-OBS 79/31. 103 pp.

WETLANDS: *The Physical Environment*

WETLAND HYDROGEOMORPHIC CLASSIFICATION

Surface-Water Depression Wetlands: In these wetlands, precipitation and overland flow (surface runoff) collect in a depression where there is little or no groundwater discharge. Water leaves the wetland principally by evaporotranspiration and infiltration (groundwater recharge). The wetland hydrologic system lies above the local or regional groundwater system and is isolated from it by an unsaturated zone; thus, it is said to be "perched." In the glaciated Northeast, surface-water depression wetlands are most likely to form over bedrock or till deposits in topographically elevated areas of landscape; however, they may develop in lowland kettles or ice-block basins that formed in glaciolacustrine or fine-textured glaciofluvial deposits.

Surface-Water Slope Wetlands: These wetlands are located along the edge of stream or lake or on the sloping surface of a floodplain. They may occur on till or stratified drift but are commonly found on alluvium. While precipitation and overland flow also feed these wetlands, the principal source of water is the overflow of the adjacent water body. The sloping surface of the wetland permits water to drain readily back to the lake or river as its stage falls. As was the case with the previous class, the wetland surface usually lies well above the local water table, so groundwater discharge to the wetland is negligible or nonexistent. Groundwater recharge from the wetland is possible, depending on the permeability of underlying surficial deposits.

Groundwater Depression Wetlands: These wetlands occur where a basin intercepts the local groundwater table, so that groundwater discharge as well as precipitation and overland flow feed the wetland. Classic groundwater depression wetlands have no surface drainage leaving the site; however, occasional streamflow out may occur form basin overflow. Groundwater inflow may be continuous or seasonal, depending upon the depth of the basin and the degree of fluctuation of the local water table. During periods when the wetland water level is higher than the local groundwater table (e.g., after major precipitation events in dry season), groundwater recharge may occur. Groundwater may enter the wetland basin from all directions, or it may discharge in one area and recharge in another. In the glaciated Northeast, groundwater depression wetlands are most likely to occur in stratified drift, particularly in coarse-textured glaciofluvial deposits where relatively rapid movement between groundwater and surface water can occur.

Groundwater Slope Wetlands: These wetlands occur where groundwater discharges as springs or seeps at the land surface and drains away as streamflow. Most commonly, these wetlands occur on hillsides over till deposits or at the base of hills where stratified drift and till come into contact. Headwater wetlands are typically groundwater slope wetlands. The local water table slopes toward the wetland surface. Where groundwater flow is continuous, the soil remains saturated. At many sites, however, groundwater inputs cease during late summer or early fall as evaporotranspiration depletes soil moisture in the root zone, in which case the soil is only seasonally saturated. Permanent ponding of water is prevented by the sloping land surface, but water may collect temporarily in isolated depressions. Precipitation and overland flow provide additional water to the wetland on an intermittent basis. Groundwater recharge may occur in the wetland after such events, but amounts are likely to be negligible, especially where wetland soils have formed over dense lodgment till deposits. Where such deposits are present, groundwater slope wetlands may be fed primarily by shallow groundwater systems perched above the regional system.

Reference:

Golet, C.G., A.J.K. Calhoun, W.R. DeRagon, D.J. Lowry, and A.J. Gold. 1993. Ecology of Red Maple Swamps in the Glaciated Northeast: A Community Profile. USFWS. Biological Report No. 12

WETLANDS: *The Plant Community*

WETLAND CLASSES AND SUBCLASSES IN THE GLACIATED NORTHEAST

WETLAND CLASS	WETLAND SUBCLASS
Open Water	(OW-1) Vegetated (OW-2) Floating-leaved (OW-3) Non-vegetated
Deep Marsh	(DM-1) Dead Woody (DM-2) Shrub (DM-3) Sub-shrub (DM-4) Robust (DM-5) Narrow-leaved (DM-6) Broad-leaved
Shallow Marsh	(SM-1) Robust (SM-2) Narrow-leaved (SM-3) Broad-leaved
Meadow	(M-1) Ungrazed (M-2) Grazed
Shrub Swamp	(SS-1) Sapling (SS-2) Bushy (SS-3) Compact (SS-4) Aquatic
Wooded Swamp	(WS-1) Deciduous (WS-2) Evergreen
Bog	(BG-1A) Compact Shrub (BG-1B) Bushy Shrub (BG-2) Wooded (BG-3) Emergent

Note: Subclass (OW-2) has replaced (SM-4)
Seasonally Flooded Class (SF-1 & SF-2) has been removed

Reference:

Golet, F.C., and J.S. Larson. 1974. Classification of freshwater wetlands in the glaciated Northeast. USFWS Resour. Publ. 116. 56 pp.

WETLANDS: *The Physical Environment*

SOIL DRAINAGE CLASSES

Excessively drained: Brightly colored; usually coarse-textured; rapid permeability; very low water-holding capacity; subsoil free of mottles

Somewhat excessively drained: Brightly colored; rather sandy; rapid permeability; low water-holding capacity; subsoil free of mottles

Well drained: Color usually bright yellow, red, or brown; drain excess water readily, but contain sufficient fine material to provide adequate moisture for plant growth; subsoil is free of mottles to a depth of at least 36 inches.

Moderately well drained: Generally any texture, but internal drainage is restricted to some degree; mottles common in the lower part of the subsoil, generally at a depth of 18 to 36 inches; may remain wet and cold later in spring; generally suited for agricultural use.

Somewhat poorly drained: Remain wet for long periods of time due to slow removal of water; generally have a slowly permeable layer within the profile or a high water table; mottles common in the subsoil at a depth of 8 to 18 inches.

Poorly drained: Dark, thick surface horizons commonly; gray colors usually dominate subsoil; water table at or near the surface during a considerable part of the year; mottles frequently found within 8 inches of the soil surface.

Very poorly drained: Generally thick black surface horizons and gray subsoil; saturated by high water table most of the year; usually occur in level or depressed sites and are frequently ponded with water.

Reference:

Wright, W. R., and E. H. Sautter. 1979. Soils of Rhode Island landscapes. R.I. Agric Exp. Station Bull. 429. 42 pp.

J. EDWARDS & ASSOCIATES LLC

October 25, 2022

Mr. Burt Hall
Inland Wetland Commission
7 Fan Hill Road
Monroe, CT 06468

Re: 4 Main Street, Monroe and
7182 & 7192 Main Street, Trumbull.

Dear Burt:

As required in the application form for this Commission, we are verifying in writing that, to the best of our knowledge and belief, the wetlands were flagged on September 6, 2019 and the property address/location is adequately marked at the property.

Very truly yours,

Nicholas D. Clark, P.E

cc: Application
File 716

227 Stepney Road • Easton, CT • 06612 • Phone:203.268.4205 • Fax: 203.268.5604
www.jedwardsassoc.com • www.leassoc.com
Engineering • Surveying • Site Planning

TOWN OF MONROE

Issued: 10-9-07

BOND ESTIMATE FORM (Private Site Development)

☐ PLANNING & ZONING COMMISSION
MEETING DATE _____

APPLICANT: 7192 MAIN ST. LLC
ENGINEER: J.Edwards & Associates LLC
TEL.: 203-268-4205

*APPLICATION NO: _____
*FILE NO: _____
DATE: _____

PROJECT NAME: 4 Main Street

PROJECT LOCATION: 7182 & 7192 Main Street Trumbull and 4 Main Street Monroe

*BOND RECOMMENDATION

NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST	Comments by Town Engr. Unit Price*	Comments by Town Engr. Cost*
1.	Sedimentation and Erosion Control Measures temp sed traps	L.S.	2	1000	2,000		
2.	Silt Fence & Hay Bales & berm	L.F.	1300	3.5	4,550		
3.	Topsoil, Seed, Fertilizing, and Mulching (entire disturbed area)	S.F.	66,650	0.3	20,000		
4.	Landscaping (extent to provide for restoration and aesthetic considerations)	L.S.			2,500		
5.	Grading (for site restoration that will provide safe and stable conditions)	L.S.	1 day	1500/day	1,500		
6.	Other Anti-tracking pads	L.S.	3	500	1,500		
	(+) 10% for Contingencies				3,205		
	* To be filled in by the Town			Total Cost =	35,250	*	

Submitted by: ndc

Approved by: _____

Total costs as determined by the Town Engineer represent adjusted values assuming a Municipal bid arrangement with inflation, noting that the terms of the bond may be in effect for up to 10 or more years (statutory time allowance for performance of requirements).

NOTIFICATION TO ADJOINING MUNICIPALITY

An Inland Wetlands application for this property was submitted to the Town of Trumbull on October 18, 2022.

ENGINEERING REPORT

FOR THE PROPOSED DEVELOPMENT OF

GATEWAY COMMONS

LOCATED AT

7182 MAIN STREET
TRUMBULL, CT
&

4 MAIN STREET
MONROE, CT

PREPARED ON: OCTOBER 14, 2022

PREPARED BY:

J. EDWARDS & ASSOCIATES, LLC
227 STEPNEY ROAD, EASTON CT, 06612

227 Stepney Road • Easton, CT • 06612 • Phone:203.268.4205 • Fax: 203.268.5604
www.jedwardsassoc.com • www.leassoc.com
Engineering • Surveying • Site Planning

TABLE OF CONTENTS

1. PROJECT NARRATIVE AND DRAINAGE REPORT
2. NRCS MAP AND NOAA RAINFALL TABLES
3. HYDROLOGICAL ANALYSIS
4. HYDRAULIC ANALYSIS

INTRODUCTION:

J. Edwards & Associates has prepared this report to demonstrate compliance with local and state engineering guidelines. These guidelines include drainage design, sediment and erosion control and site grading.

PROJECT OVERVIEW:

This site is located on the Monroe and Trumbull town line. In 2019 permits were granted by Monroe and Trumbull for filling and excavation to create a development site. At that time, there were several inland wetland violations, these violations were also remediated as part of the fill project. The final stages of the excavation process are nearing completion. This report is accompanied by plans that include the design of a new mixed-use development and its associated improvements.

WETLAND IMPACT:

The site topography slopes down from main street easterly to a wetland corridor and eventually to an existing pond. The approved fill and excavation plan included construction of a sediment basin and water quality basin. These basins have now been constructed and will be utilized for stormwater retention. Doing this creates a large buffer from the proposed construction area to the wetlands. The current proposal includes no direct wetland impact. The upland review area impact in Trumbull is .02 Acres and the upland review impact in Monroe is 0.34 Acres.

DRAINAGE ANALYSIS:

A Hydrologic analysis was completed using HydroCAD software which implements SCS-T20 methodology to compute runoff volumes. A Hydraulic analysis of the proposed piping was completed using Hydraflow Storm Sewer software. Rainfall intensities and depths were generated from the NOAA web site.

NOAA RAINFALL DEPTHS

EVENT	24 HR. DEPTH
2 YEAR	3.56
5 YEAR	4.62
10 YEAR	5.50
25 YEAR	6.71
50 YEAR	7.61
100 YEAR	8.58

The NRCS soil survey indicates class A, B & C soils on the property. All existing impervious site improvements will be demolished; therefore the existing site hydrology was analyzed as undeveloped land. The area of the parcel is approximately 6.5 acres., roughly 5.9 acres of the site is tributary to this

analysis. This 5.9 acre drainage area is identified as DAEX in our analysis. This area flows easterly across the entire site from main street to the wetlands.

The proposed development consists of a new 25,000 square foot mixed use building and associated parking. The total increase in impervious area is approximately 3.16 acres. A storm drainage network is proposed to collect and pipe all runoff from impervious surfaces. The out flow will be directed to a hydrodynamic separator and then discharged to the existing stormwater basin. A subsurface retention system is also proposed in front of the building to provide additional stormwater retention. The table below includes calculated peak flows at 2, 5, 10, 25, 50 & 100-year storm events. Peak flow from the site is decreased in all events.

Pre and Post Development Summary Table

Design Point	Design Storm	Existing Peak Flow (cfs)	Proposed Peak Flow (cfs)	Change in Peak Flow (cfs)
DP 1 (East of Project Area)	2	4.10	1.16	-2.94
	5	8.01	2.97	-5.04
	10	11.56	7.63	-3.93
	25	16.73	15.15	-1.58
	50	20.79	19.52	-1.27
	100	25.17	23.78	-1.39

A hydraulic analysis of the proposed pipe network was completed. All pipes and structures have been designed to accommodate a 25-year storm event. A summary of the results is provided in the table below. The detailed results are included as appendix C of this report.

HYDRAULIC ANALYSIS SUMMARY

Line No.	Line ID	Flow Rate	Line Size (Rise x Span)	Line Type	Line Length	Invert Elev. Down	Invert Elev. Up	Line Slope	HGL Down	HGL Up
		(cfs)	(in)		(ft)	(ft)	(ft)	(%)	(ft)	(ft)
1	P M2-FE	6.64	24	Cir	120.141	294.00	296.70	2.25	294.80	297.61
2	P M1-M2	6.64	24	Cir	44.347	306.20	306.64	1.00	306.91	307.56
3	P CB1-MH1	6.64	24	Cir	9.909	307.00	307.50	5.05	307.56	308.41
4	P 9-1	3.62	18	Cir	90.003	307.50	308.40	1.00	308.41	309.13
5	P 10-9	3.30	15	Cir	44.239	311.50	314.00	5.65	311.88	314.73
6	P 11-10	3.30	15	Cir	77.570	314.00	319.60	7.22	314.73	320.33
7	P 12-11	3.13	15	Cir	142.969	319.60	321.03	1.00	320.33	321.74
8	P 13-12	2.48	15	Cir	24.122	321.03	321.27	0.99	321.74	321.90
9	P 14-13	1.75	15	Cir	115.559	321.27	322.42	1.00	321.90	322.95
10	P 15-14	0.81	15	Cir	58.532	322.42	323.00	0.99	322.95	323.35
11	P 2-1	1.87	18	Cir	137.619	307.50	311.00	2.54	308.41	311.51
12	P 3-2	1.54	15	Cir	106.399	311.00	319.00	7.52	311.51	319.49
13	P 4-3	6.42	18	Cir	48.871	319.00	320.00	2.05	318.24	320.98
14	P 6-5	1.44	15	Cir	77.175	320.50	321.50	1.30	320.98	321.97

15	P7-6	0.66	15	Cir	107.624	321.25	322.33	1.00	321.97	322.64
16	P 8-5	1.48	15	Cir	120.000	320.50	323.50	2.50	320.98	323.98
17	Pipe - 4-5	0.21	15	Cir	59.228	320.50	321.10	1.01	320.98	321.28

WATER QUALITY:

The state of Connecticut DEEP stormwater guidelines require that the first 1" of runoff be retained on site to provide an improvement in water quality. Below are calculations using the DEEP calculation worksheet. The required volume is 11,503 CF and the design provides 38,642 CF of storage.

TOTAL SITE AREA (A) = **6.5** acres

DRAINAGE AREAS

Drainage Area	Impervious Area	
Subcatchment-1	3.16	
Subcatchment-2		
Subcatchment-3		
Total Impervious	3.16	48.6%

WATER QUALITY VOLUME (WQV) CALCULATION

Design Precipitation (P) =	1	inch
% Impervious Cover (I) =	49	
Volumetric Runoff Coefficient (R) =	0.488	
WQV =	**0.264**	**ac-ft**
	11503	**cu-ft**

4. CONCLUSION

The proposed development will increase the amount of impervious area on the site, resulting in higher peak runoff rates. However, with the installation of the proposed stormwater retention systems, the original flow patterns will be maintained and there will be no increase in peak runoff for the 2, 5, 10, 25, 50 & 100-year storm events. In addition to controlling stormwater peak runoff, the proposed design incorporates stormwater treatment to control pollution and provide groundwater recharge capacity. The implementation of these techniques and the overall site design layout will result in a finished project that will minimize sediment and erosion impacts during construction and will have no adverse impacts to adjoining properties upon completion.

SECTION 2 - SUPPORTING DOCUMENTATION

NOAA Atlas 14, Volume 10, Version 3
Location name: Monroe, Connecticut, USA*
Latitude: 41.2969°, Longitude: -73.2474°
Elevation: 371.18 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_&_aerials

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	**0.363** (0.277-0.464)	**0.425** (0.324-0.544)	**0.526** (0.400-0.676)	**0.610** (0.462-0.787)	**0.726** (0.534-0.968)	**0.813** (0.587-1.10)	**0.904** (0.635-1.26)	**1.00** (0.673-1.43)	**1.15** (0.742-1.67)	**1.26** (0.799-1.87)
10-min	**0.514** (0.392-0.658)	**0.602** (0.459-0.771)	**0.745** (0.567-0.959)	**0.864** (0.654-1.12)	**1.03** (0.756-1.37)	**1.15** (0.831-1.56)	**1.28** (0.900-1.79)	**1.42** (0.954-2.02)	**1.63** (1.05-2.37)	**1.79** (1.13-2.65)
15-min	**0.604** (0.462-0.774)	**0.708** (0.540-0.907)	**0.877** (0.667-1.13)	**1.02** (0.770-1.31)	**1.21** (0.889-1.61)	**1.36** (0.978-1.84)	**1.51** (1.06-2.10)	**1.68** (1.12-2.38)	**1.91** (1.24-2.79)	**2.10** (1.33-3.12)
30-min	**0.840** (0.642-1.08)	**0.984** (0.751-1.26)	**1.22** (0.927-1.57)	**1.41** (1.07-1.83)	**1.68** (1.24-2.24)	**1.89** (1.36-2.55)	**2.10** (1.47-2.91)	**2.32** (1.55-3.29)	**2.62** (1.70-3.82)	**2.86** (1.81-4.23)
60-min	**1.08** (0.822-1.38)	**1.26** (0.961-1.62)	**1.56** (1.19-2.01)	**1.81** (1.37-2.34)	**2.15** (1.58-2.86)	**2.42** (1.74-3.26)	**2.68** (1.87-3.71)	**2.96** (1.98-4.19)	**3.33** (2.15-4.85)	**3.61** (2.29-5.35)
2-hr	**1.39** (1.07-1.77)	**1.64** (1.26-2.09)	**2.05** (1.57-2.61)	**2.38** (1.81-3.05)	**2.84** (2.10-3.77)	**3.19** (2.31-4.30)	**3.56** (2.51-4.92)	**3.95** (2.66-5.57)	**4.52** (2.93-6.54)	**4.97** (3.16-7.31)
3-hr	**1.61** (1.24-2.04)	**1.90** (1.46-2.41)	**2.38** (1.83-3.03)	**2.78** (2.12-3.55)	**3.33** (2.47-4.40)	**3.74** (2.72-5.02)	**4.17** (2.96-5.78)	**4.66** (3.14-6.55)	**5.37** (3.49-7.74)	**5.95** (3.78-8.72)
6-hr	**2.02** (1.57-2.54)	**2.41** (1.87-3.04)	**3.05** (2.36-3.85)	**3.58** (2.75-4.54)	**4.31** (3.22-5.67)	**4.86** (3.56-6.50)	**5.44** (3.89-7.51)	**6.11** (4.13-8.52)	**7.10** (4.63-10.2)	**7.93** (5.06-11.5)
12-hr	**2.48** (1.94-3.10)	**2.99** (2.34-3.75)	**3.83** (2.98-4.81)	**4.53** (3.50-5.70)	**5.48** (4.12-7.17)	**6.20** (4.57-8.25)	**6.96** (5.01-9.57)	**7.85** (5.33-10.9)	**9.18** (6.01-13.1)	**10.3** (6.59-14.9)
24-hr	**2.91** (2.29-3.62)	**3.56** (2.80-4.43)	**4.63** (3.62-5.77)	**5.51** (4.29-6.90)	**6.72** (5.09-8.76)	**7.62** (5.67-10.1)	**8.60** (6.24-11.8)	**9.77** (6.66-13.5)	**11.6** (7.59-16.4)	**13.1** (8.40-18.8)
2-day	**3.28** (2.59-4.05)	**4.07** (3.22-5.03)	**5.37** (4.23-6.65)	**6.45** (5.05-8.02)	**7.94** (6.05-10.3)	**9.02** (6.76-11.9)	**10.2** (7.50-14.0)	**11.7** (8.01-16.1)	**14.1** (9.27-19.8)	**16.2** (10.4-23.0)
3-day	**3.57** (2.83-4.39)	**4.44** (3.52-5.46)	**5.86** (4.63-7.23)	**7.04** (5.53-8.72)	**8.66** (6.63-11.2)	**9.85** (7.41-13.0)	**11.2** (8.23-15.3)	**12.8** (8.78-17.5)	**15.5** (10.2-21.6)	**17.7** (11.4-25.2)
4-day	**3.84** (3.06-4.70)	**4.76** (3.78-5.83)	**6.26** (4.96-7.69)	**7.50** (5.91-9.26)	**9.22** (7.07-11.9)	**10.5** (7.89-13.8)	**11.9** (8.75-16.2)	**13.6** (9.33-18.5)	**16.4** (10.8-22.8)	**18.8** (12.1-26.6)
7-day	**4.61** (3.69-5.61)	**5.61** (4.48-6.84)	**7.25** (5.77-8.86)	**8.61** (6.82-10.6)	**10.5** (8.06-13.4)	**11.9** (8.96-15.5)	**13.4** (9.85-18.0)	**15.2** (10.5-20.6)	**18.0** (12.0-25.0)	**20.5** (13.3-28.9)
10-day	**5.35** (4.30-6.50)	**6.41** (5.14-7.79)	**8.13** (6.50-9.91)	**9.56** (7.60-11.7)	**11.5** (8.89-14.7)	**13.0** (9.82-16.8)	**14.6** (10.7-19.5)	**16.4** (11.4-22.1)	**19.2** (12.8-26.6)	**21.6** (14.0-30.3)
20-day	**7.62** (6.16-9.19)	**8.78** (7.08-10.6)	**10.7** (8.58-12.9)	**12.2** (9.79-14.9)	**14.4** (11.1-18.1)	**16.0** (12.1-20.4)	**17.7** (13.0-23.3)	**19.6** (13.6-26.2)	**22.2** (14.8-30.5)	**24.4** (15.8-33.9)
30-day	**9.48** (7.69-11.4)	**10.7** (8.68-12.9)	**12.7** (10.3-15.3)	**14.4** (11.5-17.4)	**16.7** (12.9-20.8)	**18.4** (13.9-23.3)	**20.2** (14.8-26.2)	**22.1** (15.4-29.3)	**24.6** (16.4-33.5)	**26.5** (17.3-36.8)
45-day	**11.8** (9.58-14.1)	**13.1** (10.6-15.7)	**15.2** (12.3-18.3)	**17.0** (13.7-20.5)	**19.4** (15.1-24.0)	**21.3** (16.1-26.7)	**23.2** (16.9-29.8)	**25.0** (17.5-33.1)	**27.4** (18.4-37.2)	**29.2** (19.0-40.3)
60-day	**13.7** (11.2-16.3)	**15.0** (12.3-17.9)	**17.3** (14.0-20.7)	**19.1** (15.4-23.0)	**21.7** (16.9-26.7)	**23.7** (18.0-29.6)	**25.6** (18.7-32.7)	**27.5** (19.3-36.2)	**29.8** (20.1-40.4)	**31.5** (20.6-43.4)

[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.

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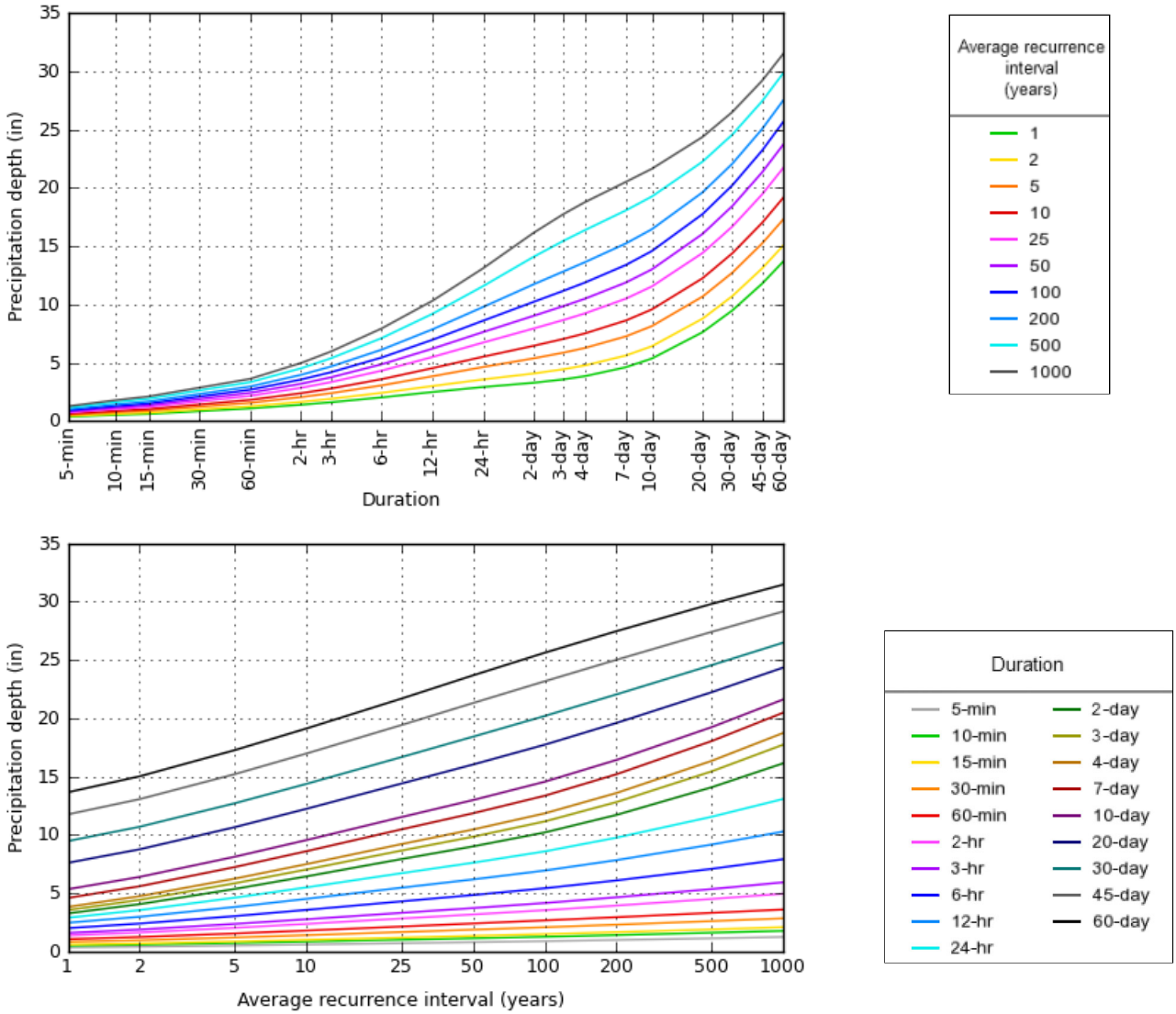
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.2969°, Longitude: -73.2474°



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Mon Oct 17 01:20:54 2022

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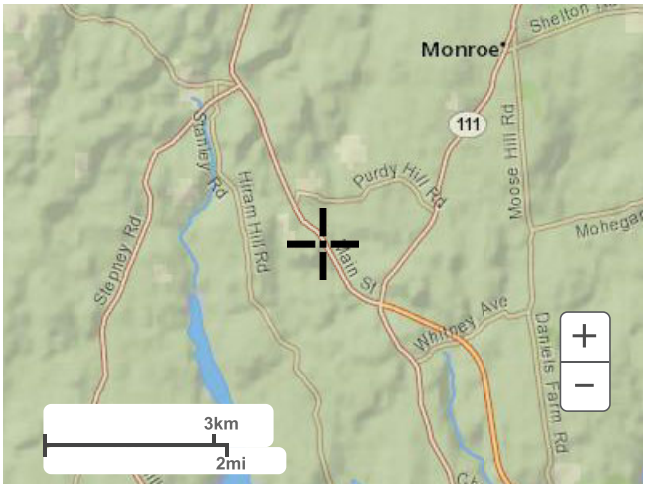
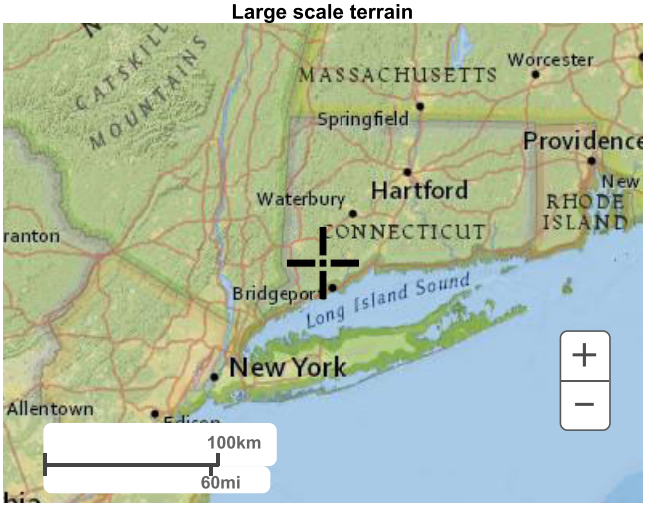
Maps & aerials

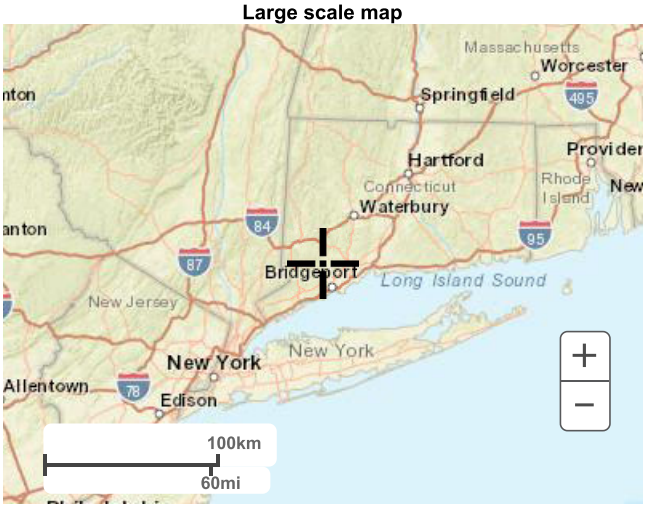
Small scale terrain



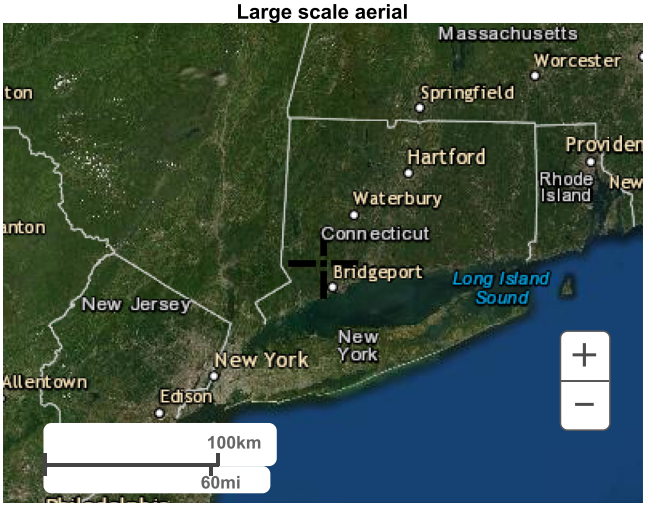
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Soil Map—State of Connecticut
(7182 MAIN STREET)

Map Scale: 1:5,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 22, Sep 12, 2022

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

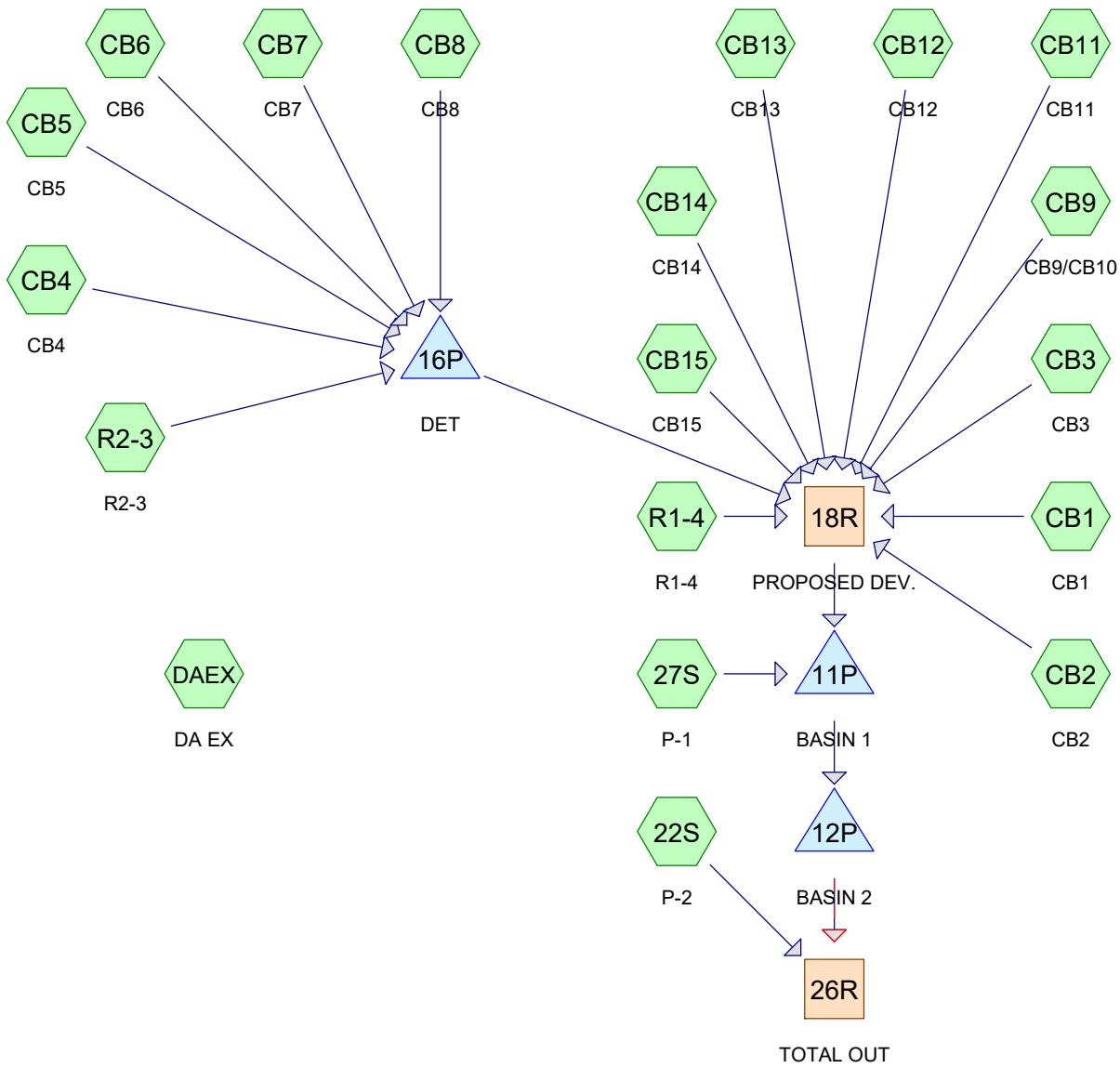
Date(s) aerial images were photographed: Oct 8, 2020—Oct 14, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
29A	Agawam fine sandy loam, 0 to 3 percent slopes	0.0	0.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	13.0	20.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	2.1	3.3%
60D	Canton and Charlton soils, 15 to 25 percent slopes	2.5	3.9%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	0.2	0.4%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	2.0	3.1%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	2.1	3.3%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	0.0	0.0%
108	Saco silt loam	4.3	6.7%
302	Dumps	5.3	8.2%
305	Udorthents-Pits complex, gravelly	6.0	9.3%
306	Udorthents-Urban land complex	20.2	31.4%
308	Udorthents, smoothed	2.7	4.3%
W	Water	3.8	5.9%
Totals for Area of Interest		**64.2**	**100.0%**

SECTION 3 - HYDROLOGIC ANALYSIS



Subcat Reach Pond Link

Routing Diagram for 716-IWCC-101822
Prepared by J. Edwards & Associates, LLC, Printed 10/18/2022

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
20,212	69	50-75% Grass cover, Fair, HSG B (22S)
15,815	61	>75% Grass cover, Good, HSG B (CB12, CB13, CB14, CB15, CB8)
84,071	67	Brush, Poor, HSG B (27S)
109,606	98	Paved parking, HSG A (CB1, CB11, CB12, CB13, CB14, CB15, CB2, CB3, CB4, CB5, CB6, CB7, CB8, CB9)
28,314	98	Unconnected roofs, HSG B (R1-4, R2-3)
257,875	65	Woods/grass comb., Fair, HSG B (DAEX)

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
109,606	HSG A	CB1, CB11, CB12, CB13, CB14, CB15, CB2, CB3, CB4, CB5, CB6, CB7, CB8, CB9
406,287	HSG B	22S, 27S, CB12, CB13, CB14, CB15, CB8, DAEX, R1-4, R2-3
0	HSG C	
0	HSG D	
0	Other	

Summary for Subcatchment 22S: P-2

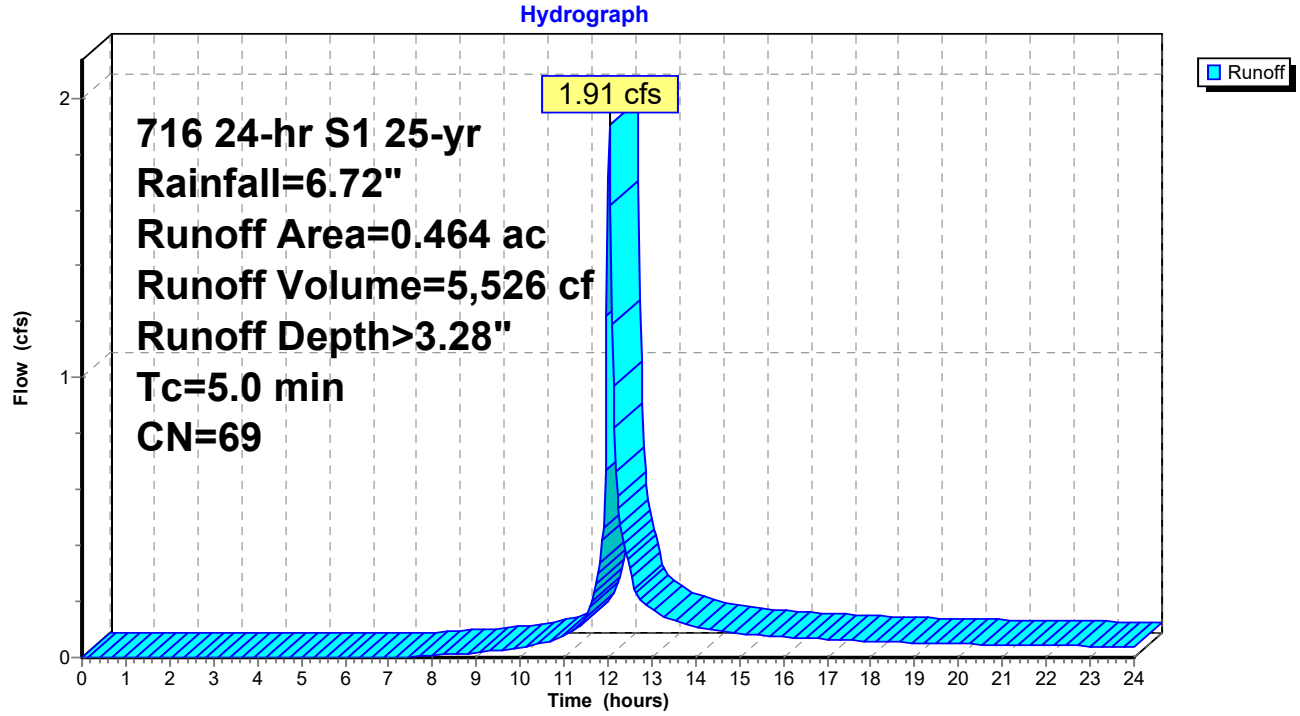
Runoff = 1.91 cfs @ 12.03 hrs, Volume= 5,526 cf, Depth> 3.28"
Routed to Reach 26R : TOTAL OUT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.464	69	50-75% Grass cover, Fair, HSG B
0.464		100.00% Pervious Area

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

Subcatchment 22S: P-2



Summary for Subcatchment 27S: P-1

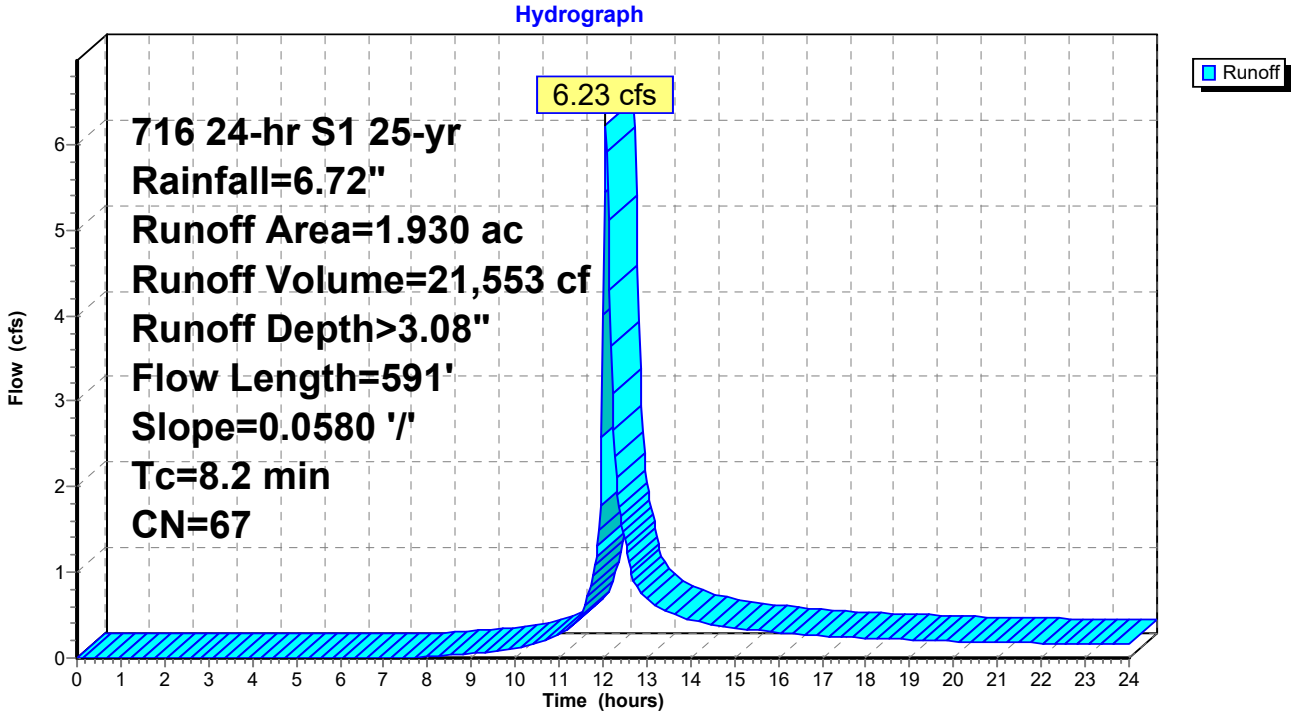
Runoff = 6.23 cfs @ 12.07 hrs, Volume= 21,553 cf, Depth> 3.08"
Routed to Pond 11P : BASIN 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
1.930	67	Brush, Poor, HSG B
1.930		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	591	0.0580	1.20		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps

Subcatchment 27S: P-1



Summary for Subcatchment CB1: CB1

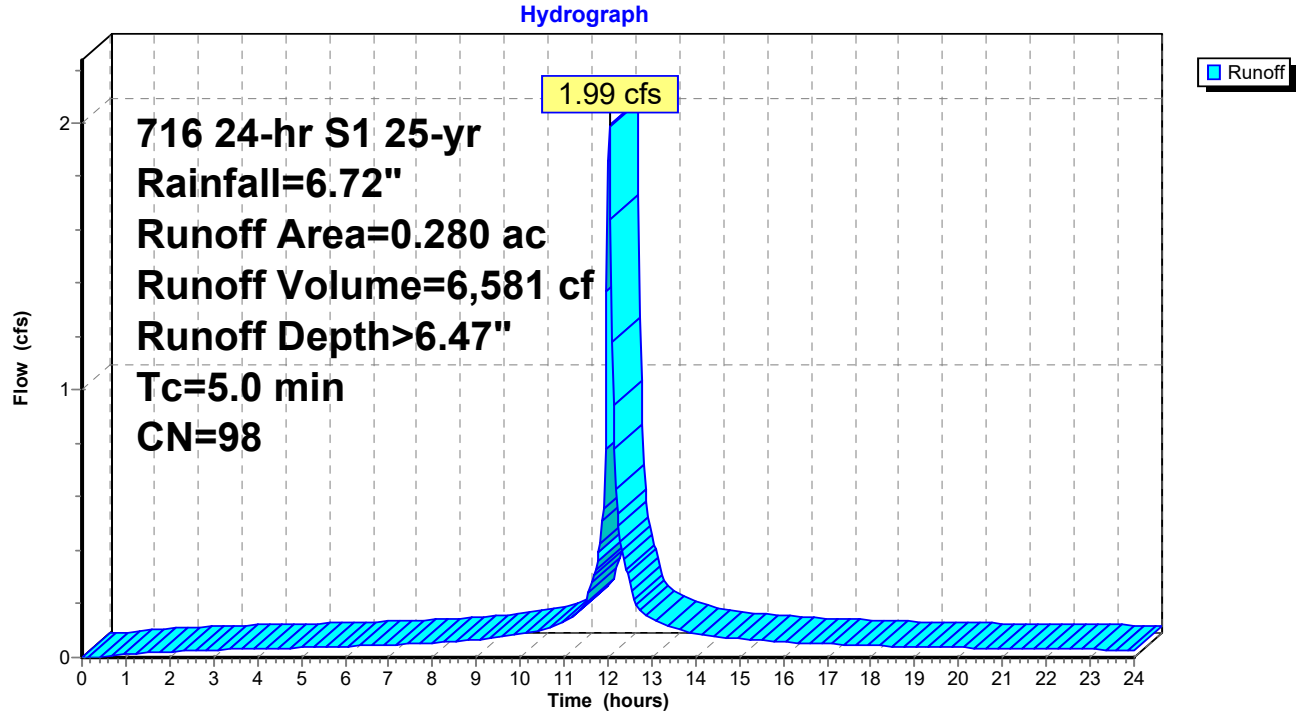
Runoff = 1.99 cfs @ 12.02 hrs, Volume= 6,581 cf, Depth> 6.47"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.280	98	Paved parking, HSG A
0.280		100.00% Impervious Area

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

Subcatchment CB1: CB1



Summary for Subcatchment CB11: CB11

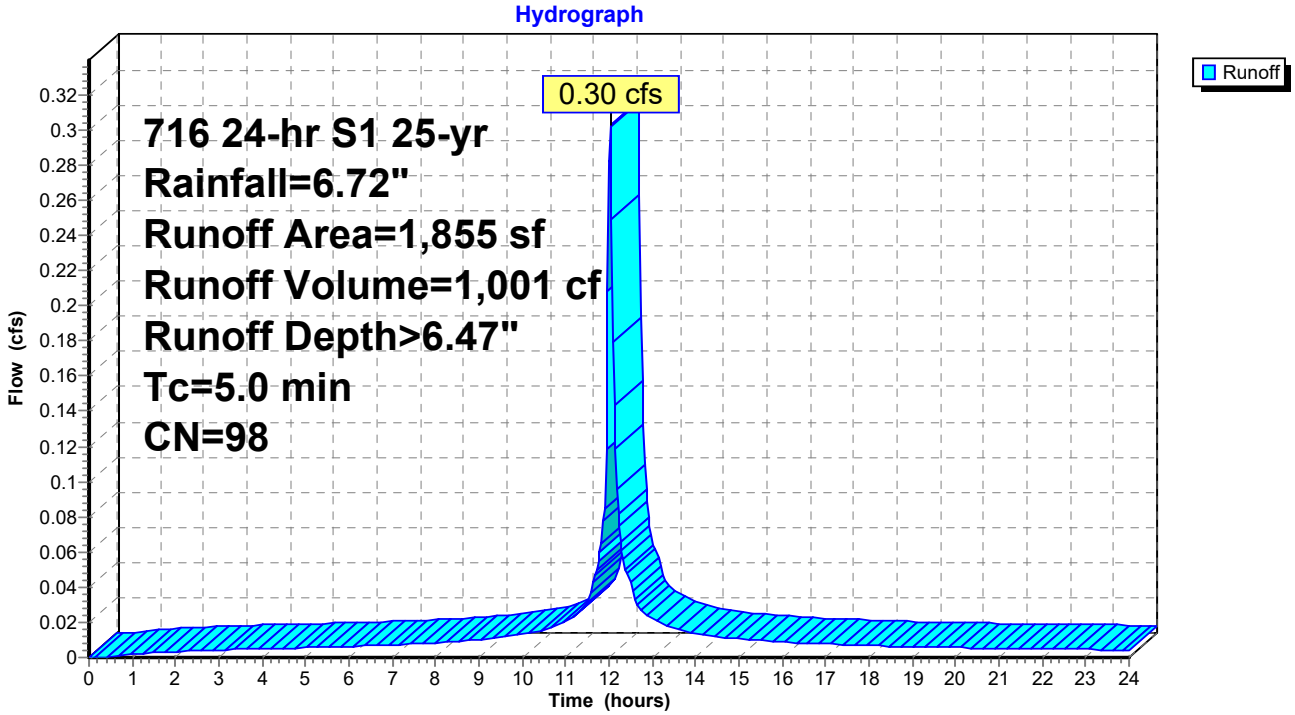
Runoff = 0.30 cfs @ 12.02 hrs, Volume= 1,001 cf, Depth> 6.47"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
1,855	98	Paved parking, HSG A
1,855		100.00% Impervious Area

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

Subcatchment CB11: CB11



Summary for Subcatchment CB12: CB12

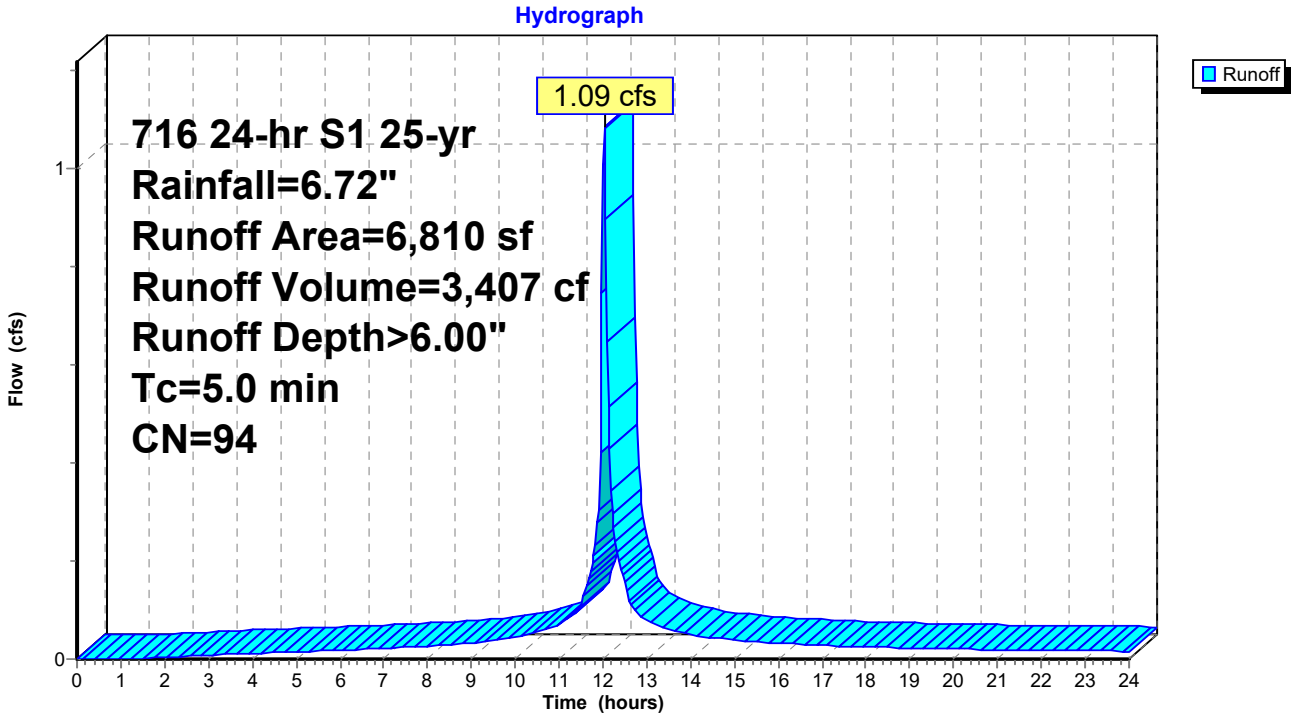
Runoff = 1.09 cfs @ 12.02 hrs, Volume= 3,407 cf, Depth> 6.00"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
6,159	98	Paved parking, HSG A
651	61	>75% Grass cover, Good, HSG B
6,810	94	Weighted Average
651		9.56% Pervious Area
6,159		90.44% Impervious Area

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

Subcatchment CB12: CB12



Summary for Subcatchment CB13: CB13

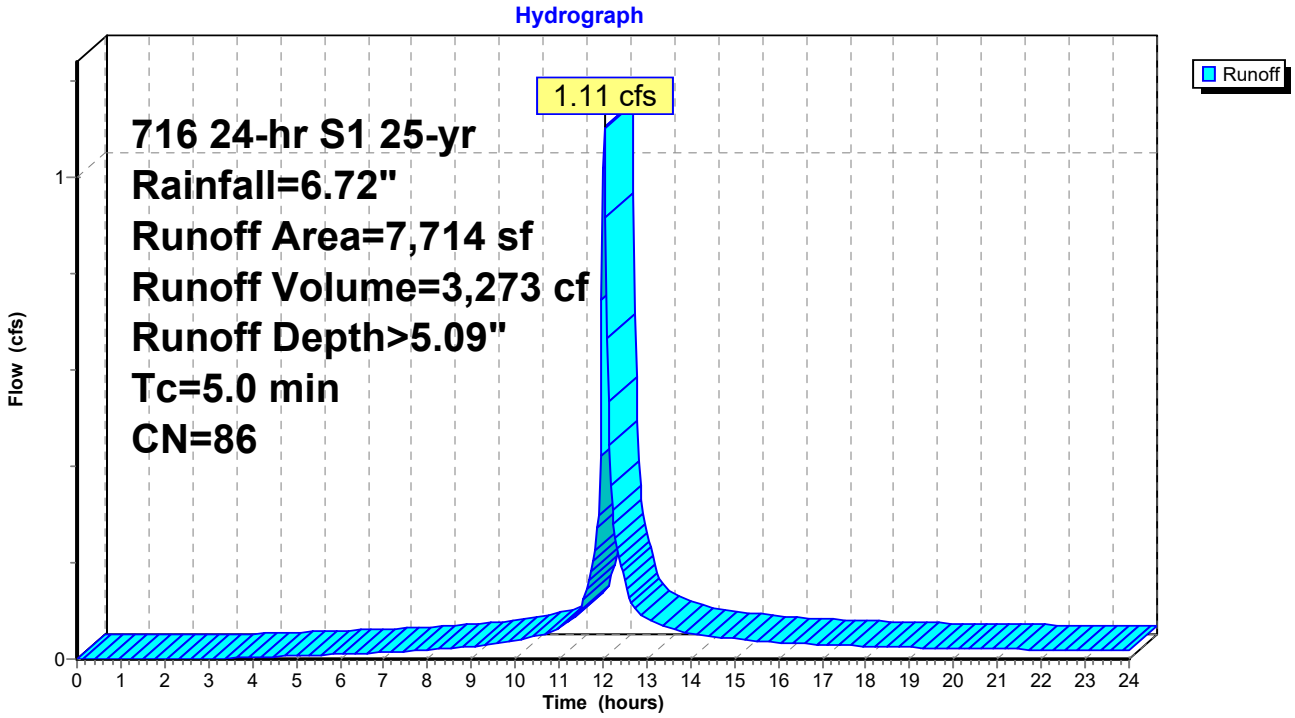
Runoff = 1.11 cfs @ 12.02 hrs, Volume= 3,273 cf, Depth> 5.09"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
5,262	98	Paved parking, HSG A
2,452	61	>75% Grass cover, Good, HSG B
7,714	86	Weighted Average
2,452		31.79% Pervious Area
5,262		68.21% Impervious Area

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

Subcatchment CB13: CB13



Summary for Subcatchment CB14: CB14

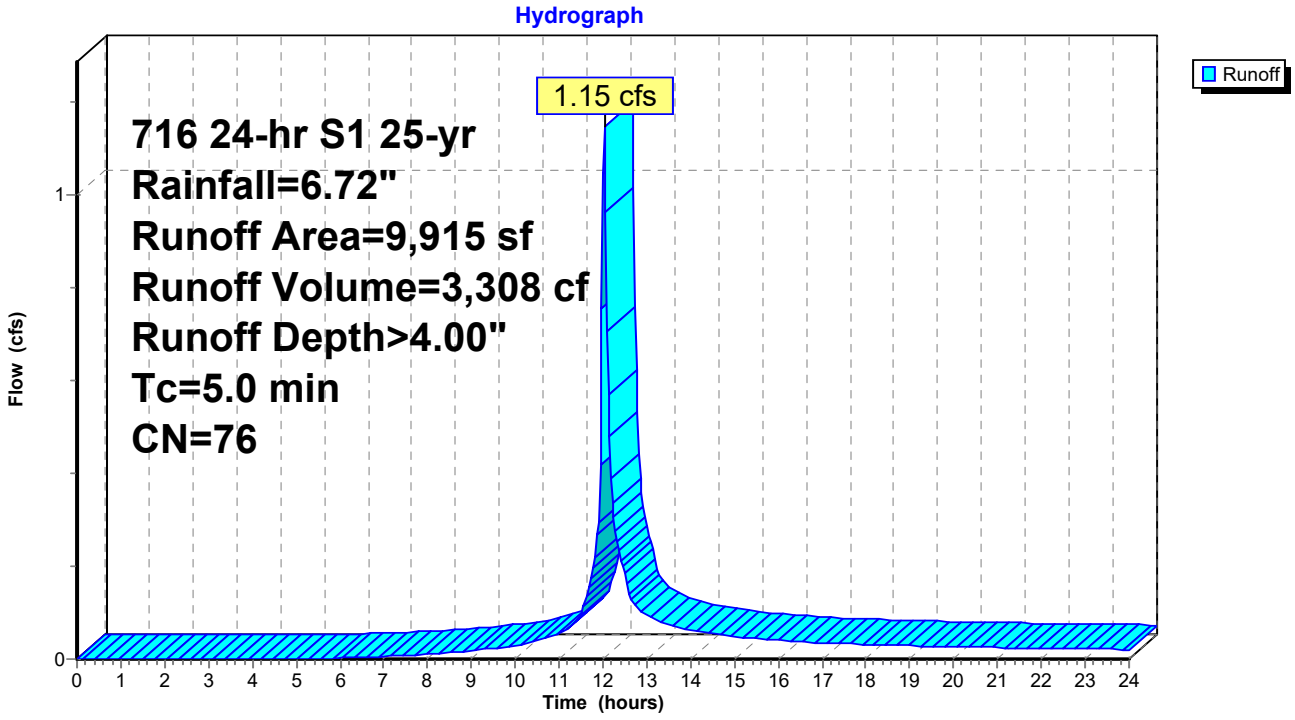
Runoff = 1.15 cfs @ 12.03 hrs, Volume= 3,308 cf, Depth> 4.00"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
4,112	98	Paved parking, HSG A
5,803	61	>75% Grass cover, Good, HSG B
9,915	76	Weighted Average
5,803		58.53% Pervious Area
4,112		41.47% Impervious Area

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

Subcatchment CB14: CB14



Summary for Subcatchment CB15: CB15

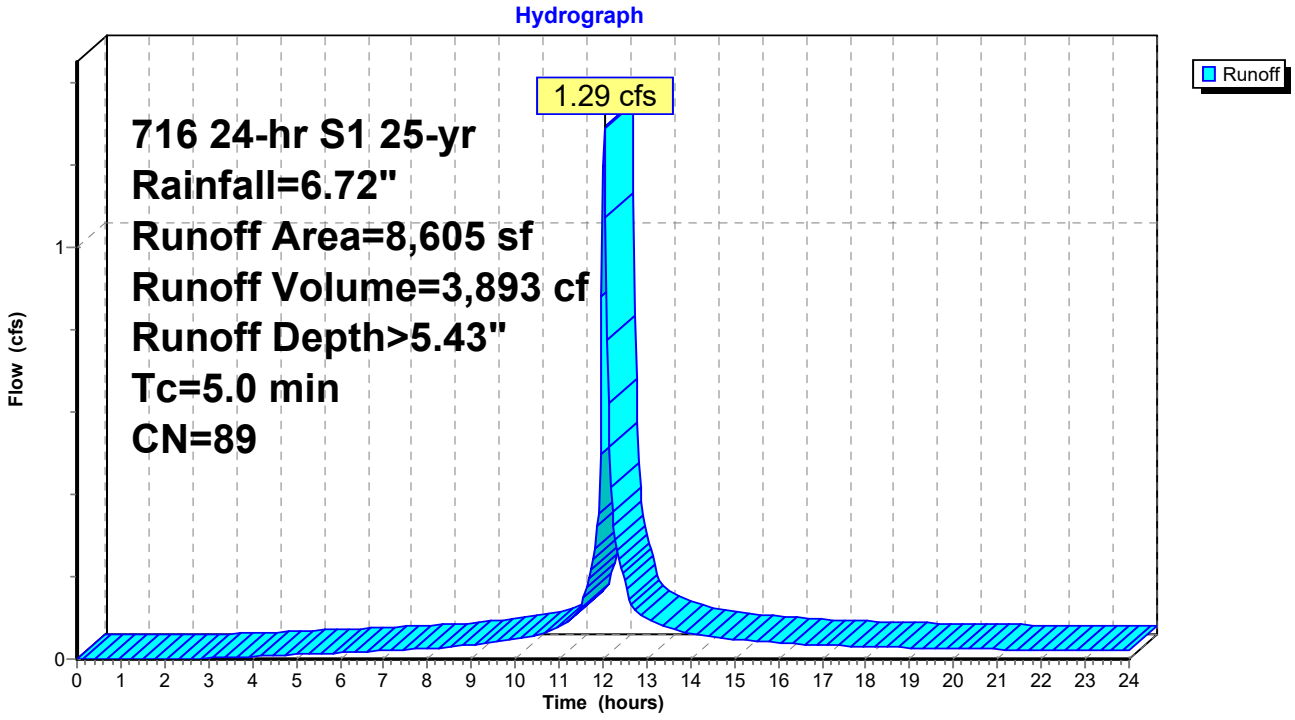
Runoff = 1.29 cfs @ 12.02 hrs, Volume= 3,893 cf, Depth> 5.43"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
6,415	98	Paved parking, HSG A
2,190	61	>75% Grass cover, Good, HSG B
8,605	89	Weighted Average
2,190		25.45% Pervious Area
6,415		74.55% Impervious Area

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

Subcatchment CB15: CB15



Summary for Subcatchment CB2: CB2

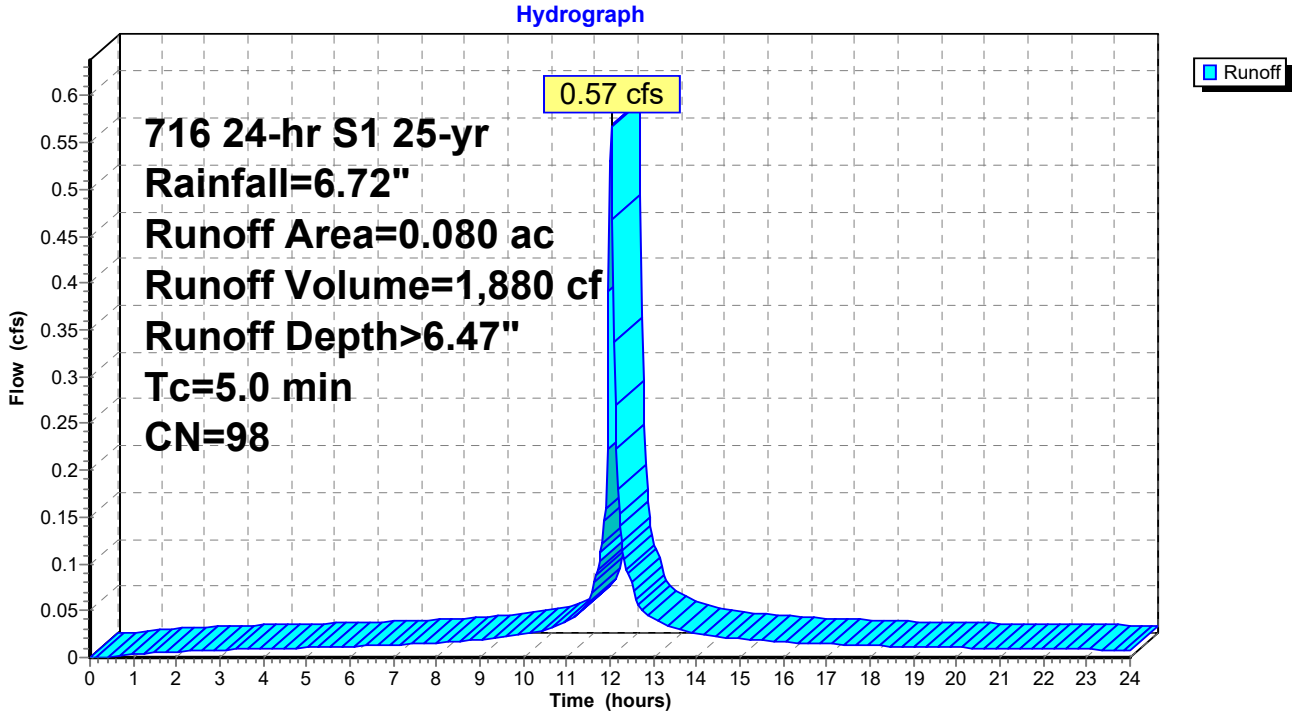
Runoff = 0.57 cfs @ 12.02 hrs, Volume= 1,880 cf, Depth> 6.47"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.080	98	Paved parking, HSG A
0.080		100.00% Impervious Area

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

Subcatchment CB2: CB2



Summary for Subcatchment CB3: CB3

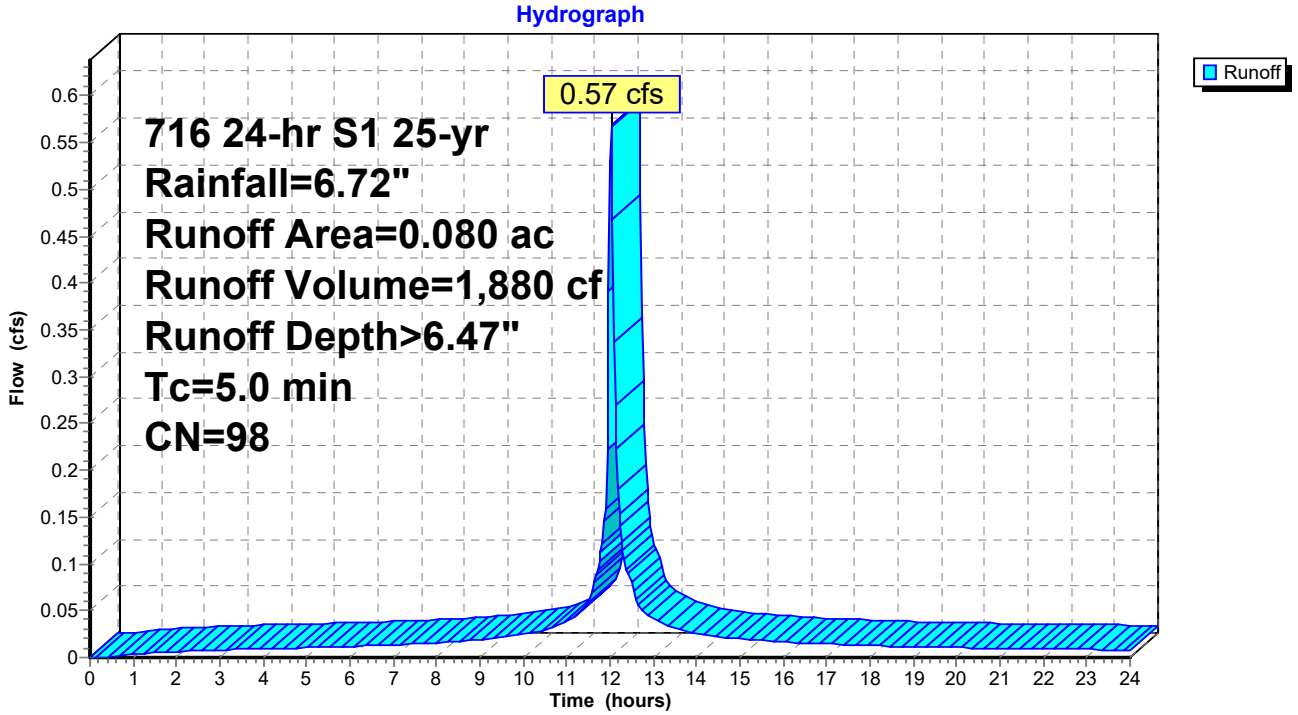
Runoff = 0.57 cfs @ 12.02 hrs, Volume= 1,880 cf, Depth> 6.47"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.080	98	Paved parking, HSG A
0.080		100.00% Impervious Area

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

Subcatchment CB3: CB3



Summary for Subcatchment CB4: CB4

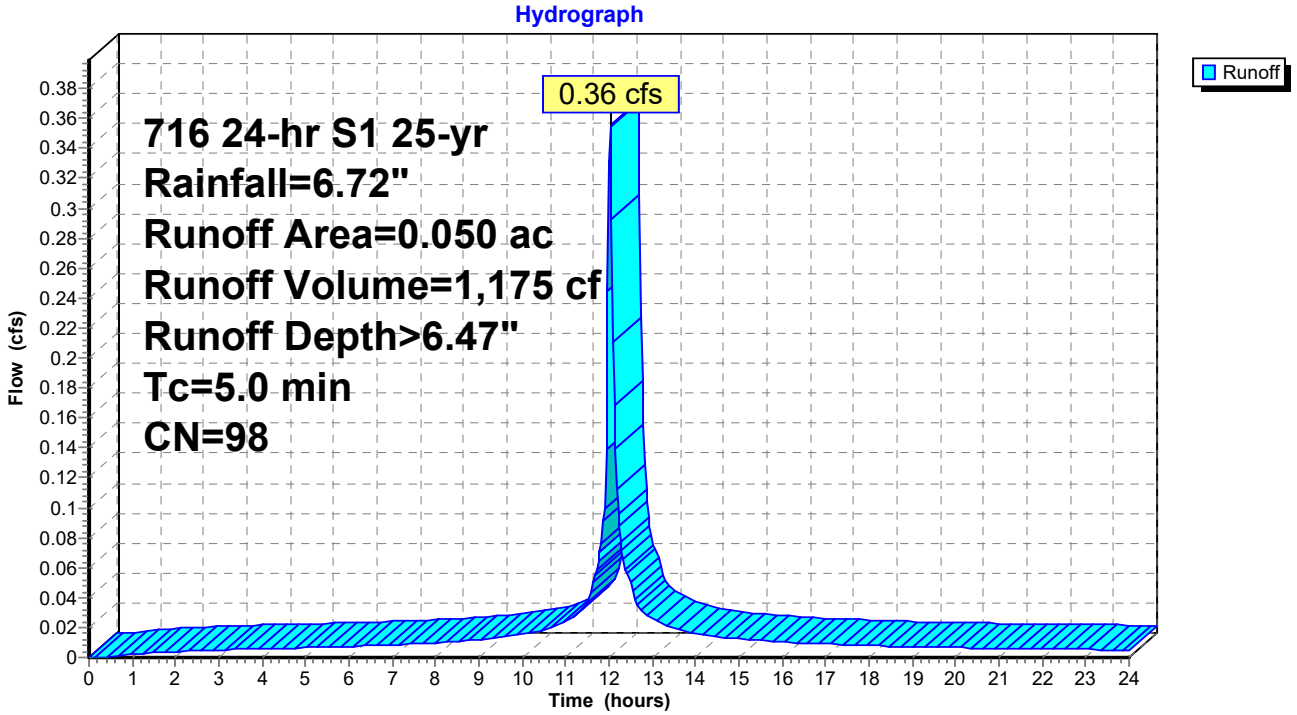
Runoff = 0.36 cfs @ 12.02 hrs, Volume= 1,175 cf, Depth> 6.47"
Routed to Pond 16P : DET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.050	98	Paved parking, HSG A
0.050		100.00% Impervious Area

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

Subcatchment CB4: CB4



Summary for Subcatchment CB5: CB5

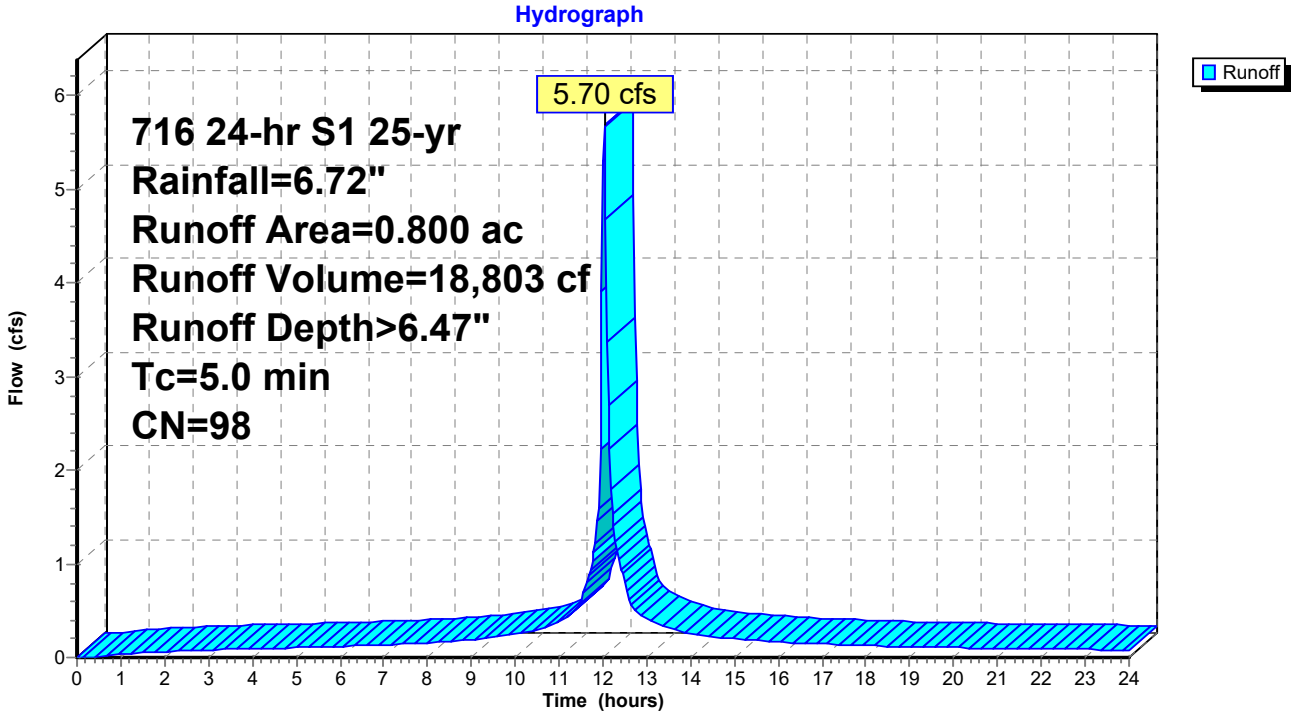
Runoff = 5.70 cfs @ 12.02 hrs, Volume= 18,803 cf, Depth> 6.47"
Routed to Pond 16P : DET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.800	98	Paved parking, HSG A
0.800		100.00% Impervious Area

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

Subcatchment CB5: CB5



Summary for Subcatchment CB6: CB6

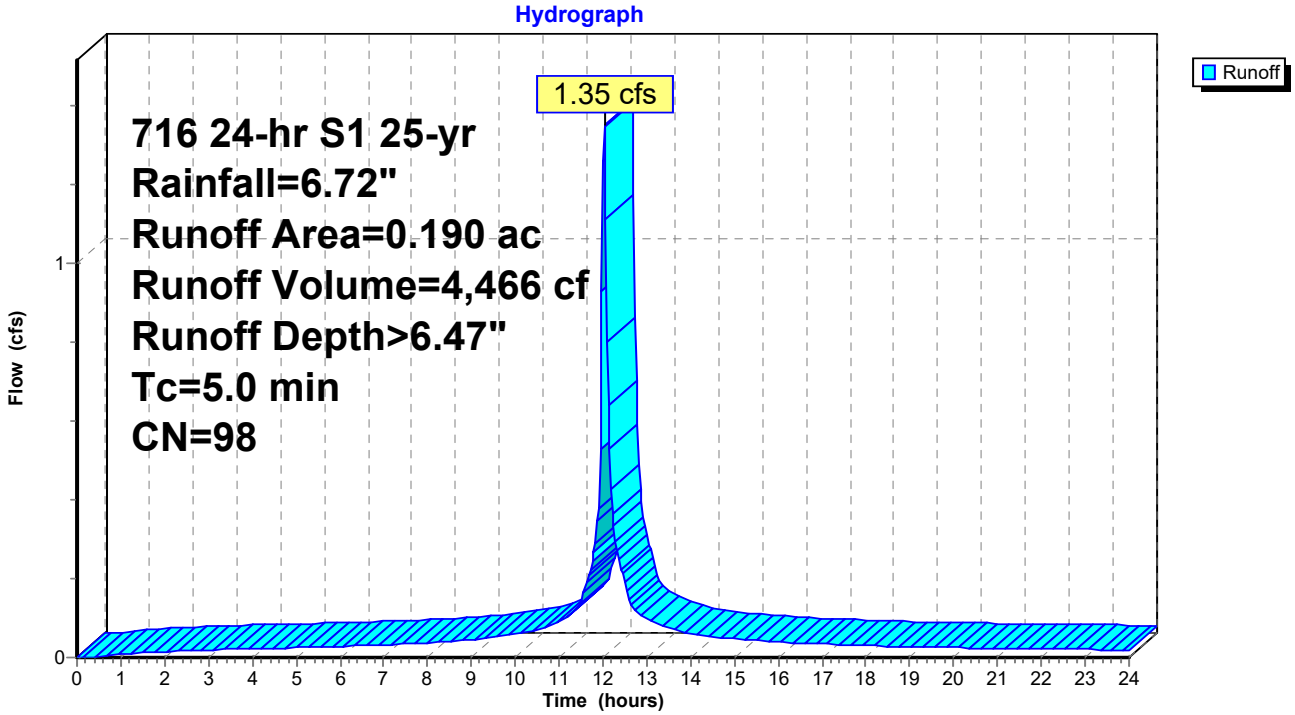
Runoff = 1.35 cfs @ 12.02 hrs, Volume= 4,466 cf, Depth> 6.47"
Routed to Pond 16P : DET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.190	98	Paved parking, HSG A
0.190		100.00% Impervious Area

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

Subcatchment CB6: CB6



Summary for Subcatchment CB7: CB7

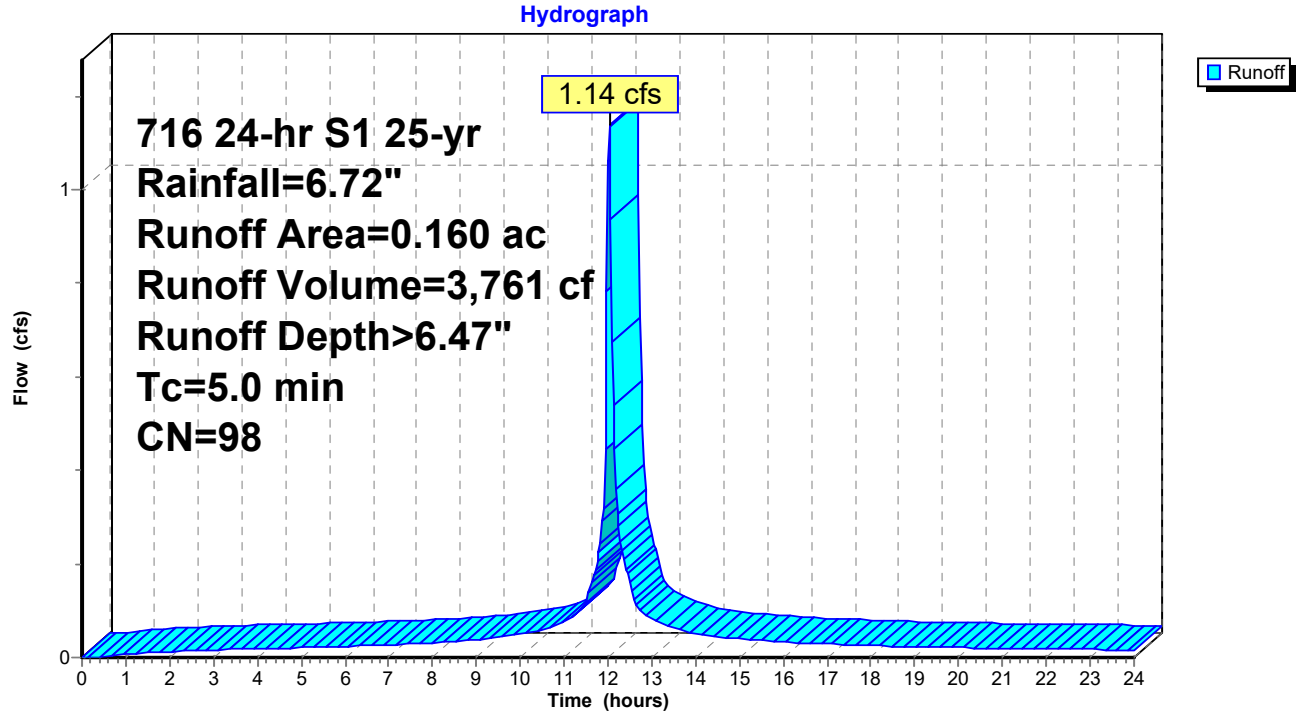
Runoff = 1.14 cfs @ 12.02 hrs, Volume= 3,761 cf, Depth> 6.47"
Routed to Pond 16P : DET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.160	98	Paved parking, HSG A
0.160		100.00% Impervious Area

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

Subcatchment CB7: CB7



Summary for Subcatchment CB8: CB8

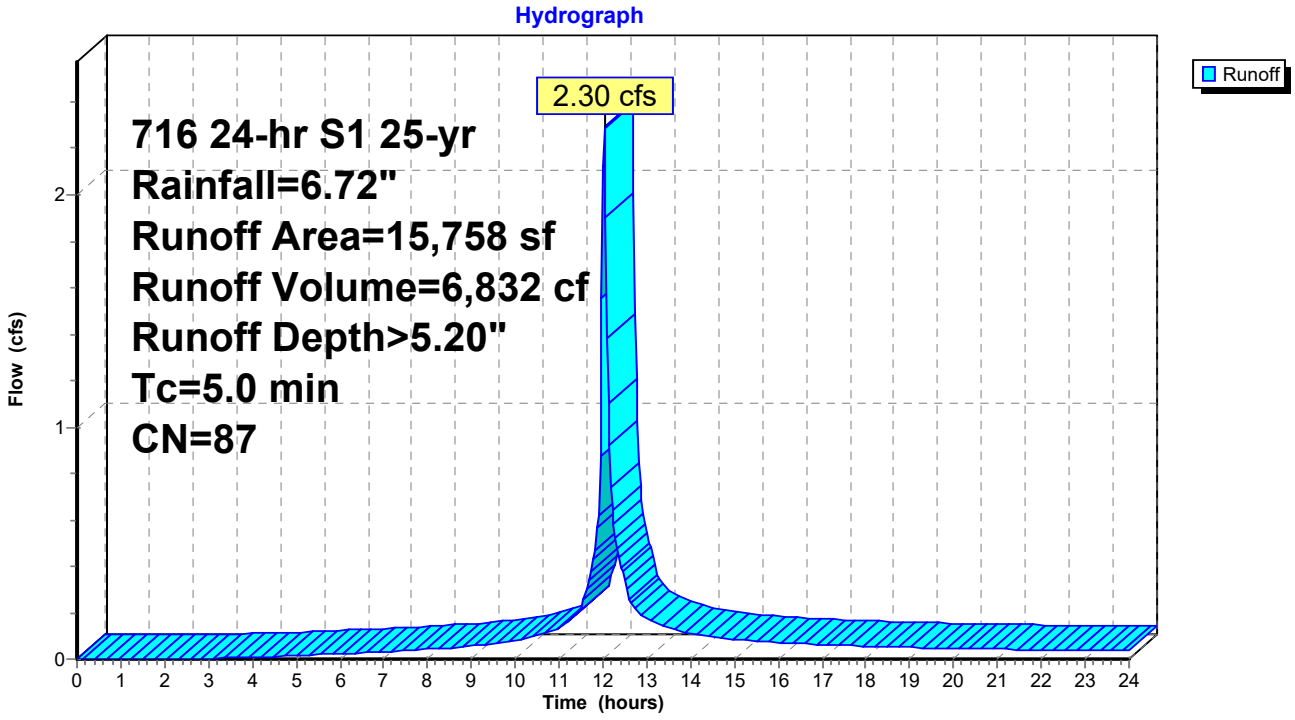
Runoff = 2.30 cfs @ 12.02 hrs, Volume= 6,832 cf, Depth> 5.20"
Routed to Pond 16P : DET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
11,039	98	Paved parking, HSG A
4,719	61	>75% Grass cover, Good, HSG B
15,758	87	Weighted Average
4,719		29.95% Pervious Area
11,039		70.05% Impervious Area

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

Subcatchment CB8: CB8



Summary for Subcatchment CB9: CB9/CB10

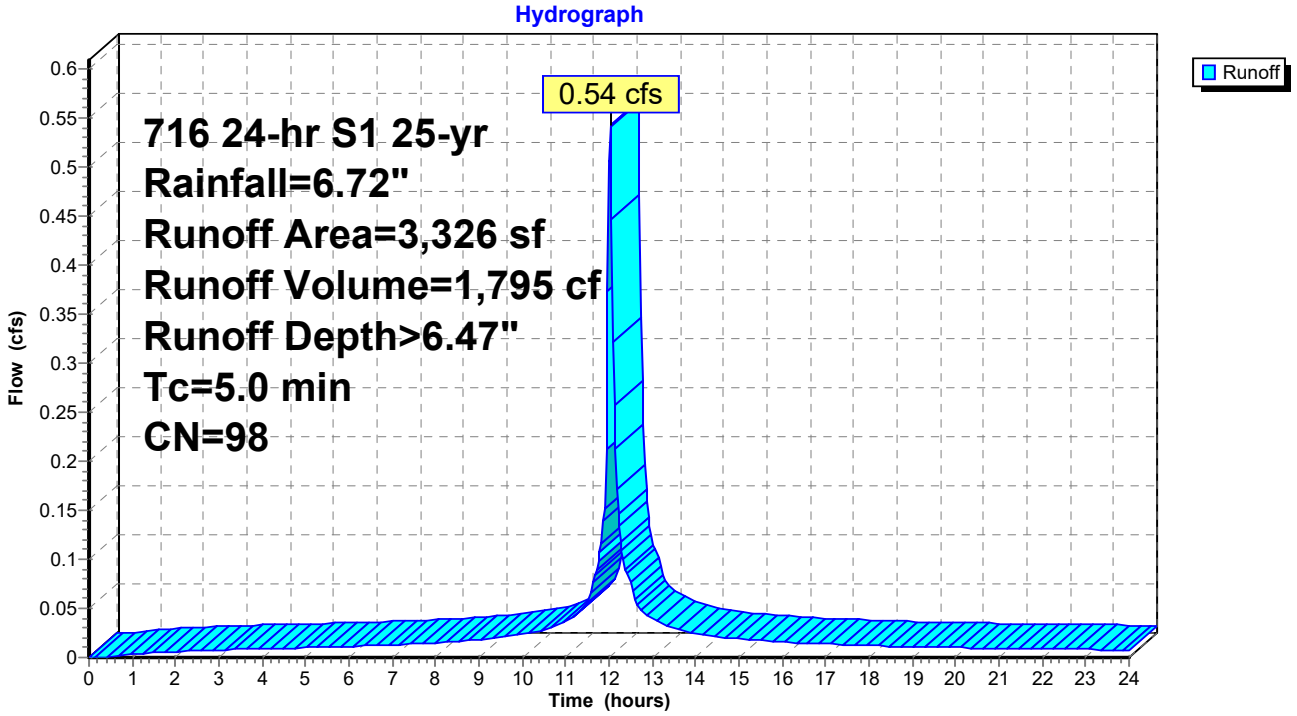
Runoff = 0.54 cfs @ 12.02 hrs, Volume= 1,795 cf, Depth> 6.47"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (sf)	CN	Description
3,326	98	Paved parking, HSG A
3,326		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, 1**

Subcatchment CB9: CB9/CB10



Summary for Subcatchment DAEX: DA EX

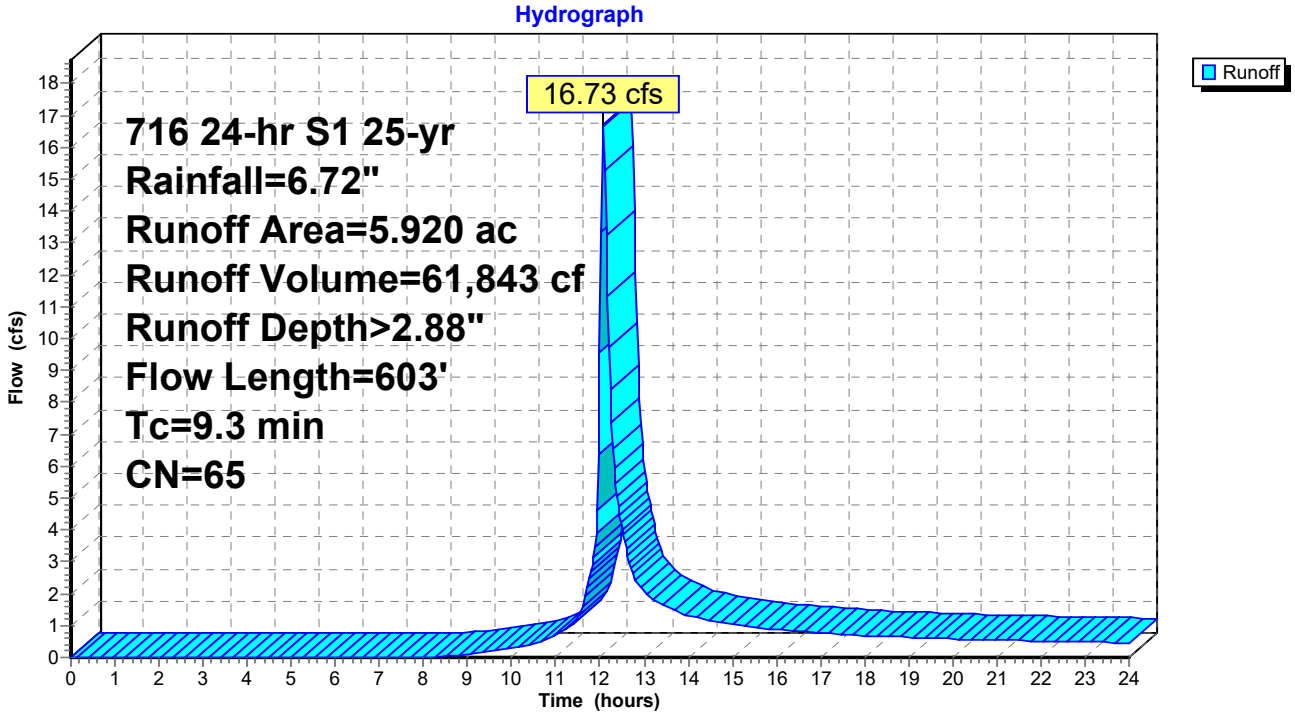
Runoff = 16.73 cfs @ 12.08 hrs, Volume= 61,843 cf, Depth> 2.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
5.920	65	Woods/grass comb., Fair, HSG B
5.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.2	52	0.0760	0.27		**Sheet Flow, AB** Grass: Short n= 0.150 P2= 3.59"
1.0	236	0.0650	4.10		**Shallow Concentrated Flow, BC** Unpaved Kv= 16.1 fps
2.2	257	0.0150	1.97		**Shallow Concentrated Flow, CD** Unpaved Kv= 16.1 fps
2.9	58	0.1200	0.33		**Sheet Flow, DE** Grass: Short n= 0.150 P2= 3.59"
9.3	603	Total			

Subcatchment DAEX: DA EX



Summary for Subcatchment R1-4: R1-4

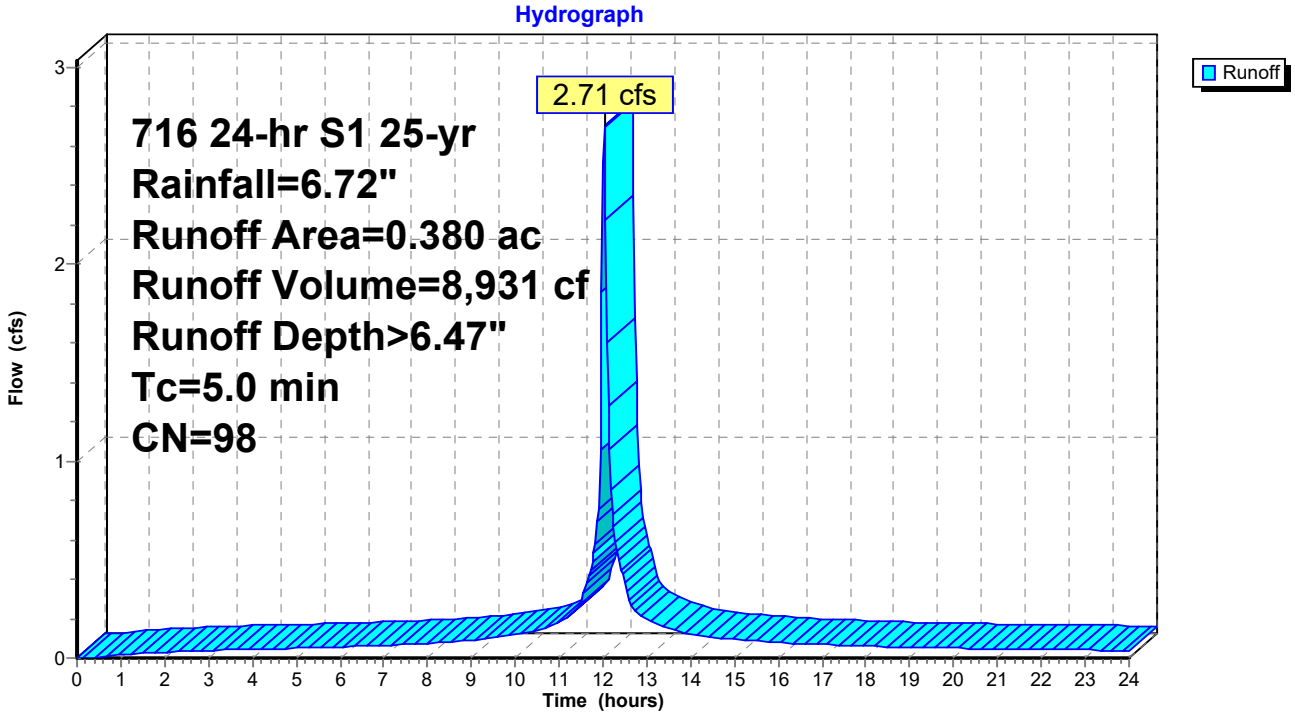
Runoff = 2.71 cfs @ 12.02 hrs, Volume= 8,931 cf, Depth> 6.47"
Routed to Reach 18R : PROPOSED DEV.

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.380	98	Unconnected roofs, HSG B
0.380		100.00% Impervious Area
0.380		100.00% Unconnected

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

Subcatchment R1-4: R1-4



Summary for Subcatchment R2-3: R2-3

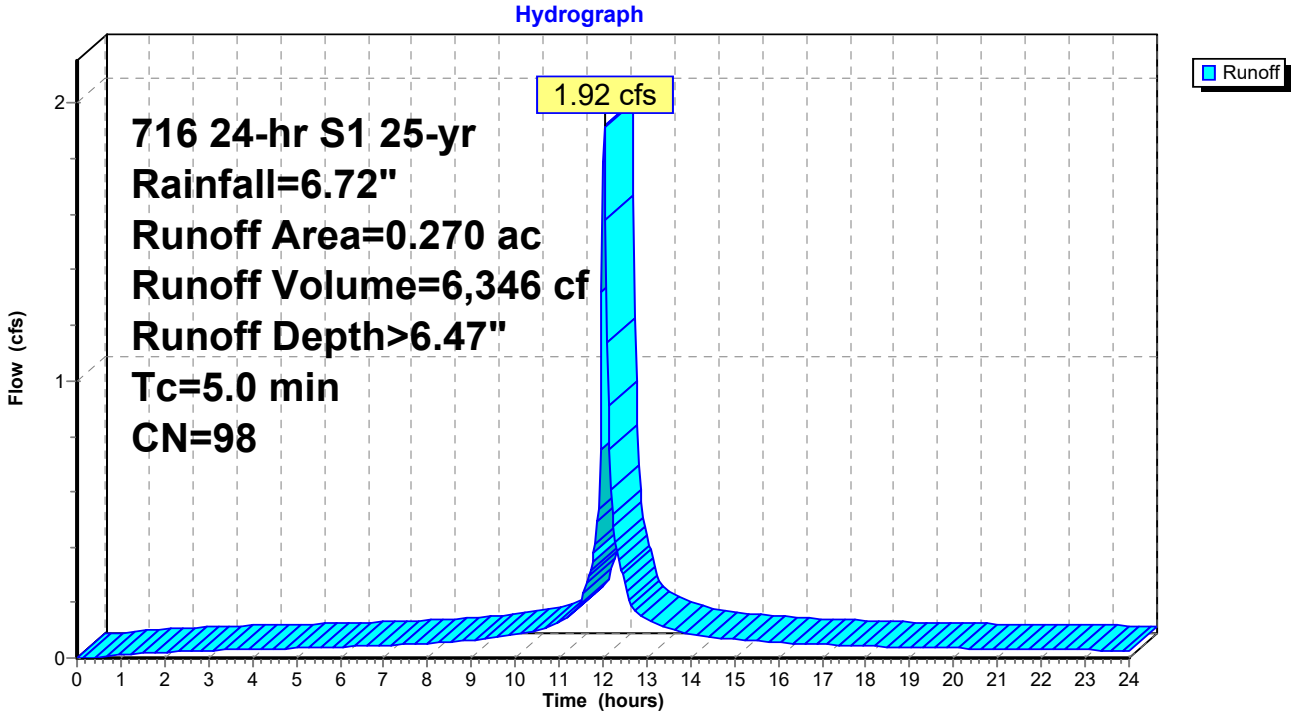
Runoff = 1.92 cfs @ 12.02 hrs, Volume= 6,346 cf, Depth> 6.47"
Routed to Pond 16P : DET

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
716 24-hr S1 25-yr Rainfall=6.72"

Area (ac)	CN	Description
0.270	98	Unconnected roofs, HSG B
0.270		100.00% Impervious Area
0.270		100.00% Unconnected

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

Subcatchment R2-3: R2-3

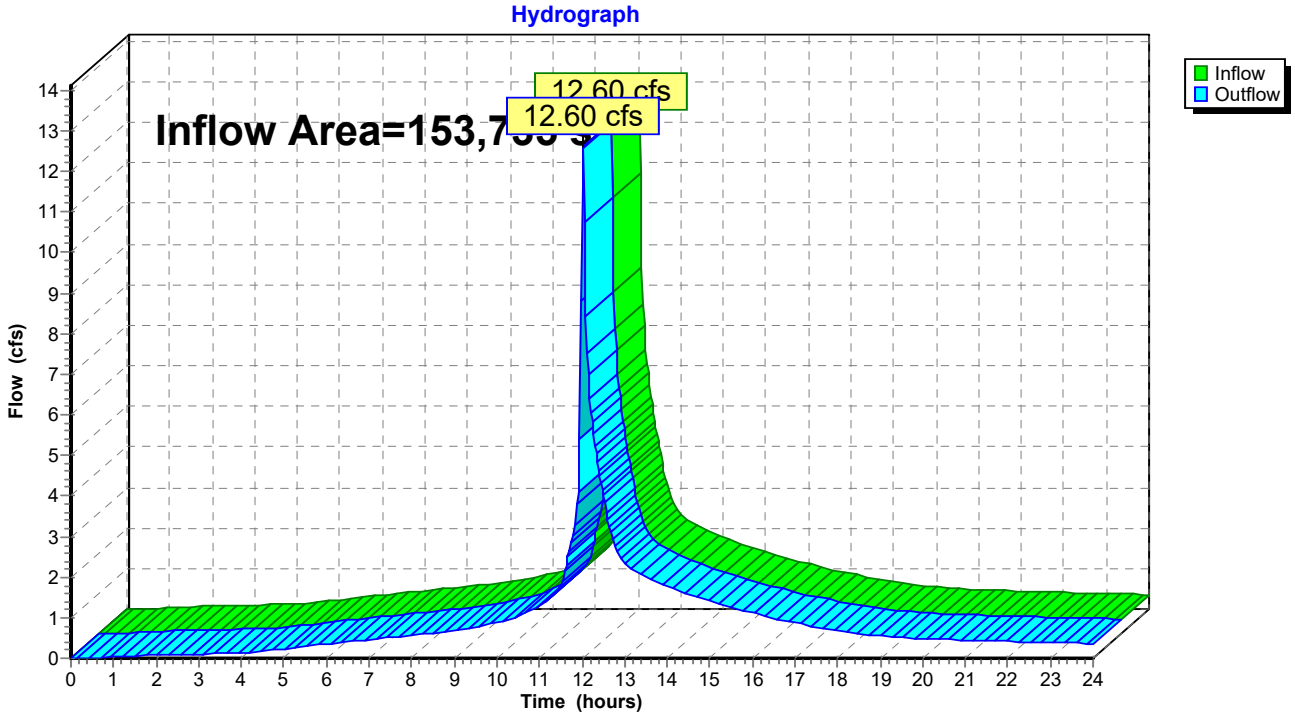


Summary for Reach 18R: PROPOSED DEV.

Inflow Area = 153,735 sf, 89.71% Impervious, Inflow Depth > 5.84" for 25-yr event
Inflow = 12.60 cfs @ 12.02 hrs, Volume= 74,850 cf
Outflow = 12.60 cfs @ 12.02 hrs, Volume= 74,850 cf, Atten= 0%, Lag= 0.0 min
Routed to Pond 11P : BASIN 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs

Reach 18R: PROPOSED DEV.

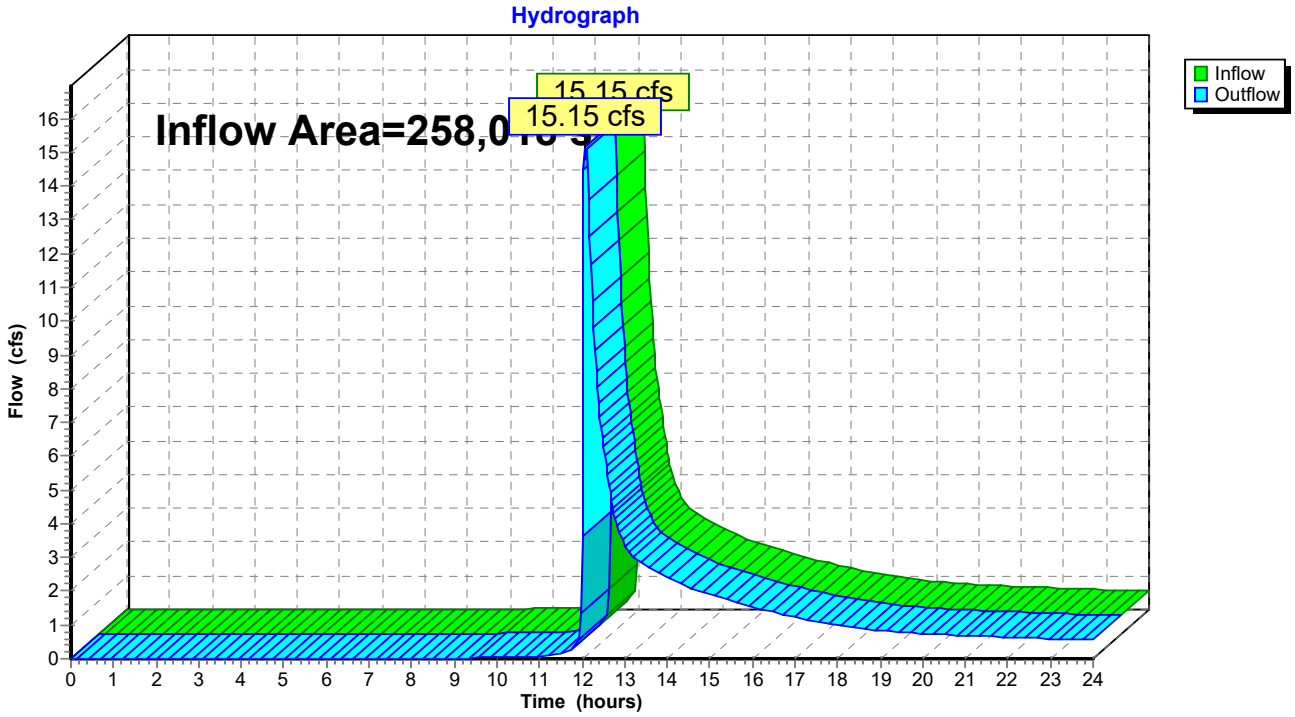


Summary for Reach 26R: TOTAL OUT

Inflow Area = 258,018 sf, 53.45% Impervious, Inflow Depth > 3.55" for 25-yr event
Inflow = 15.15 cfs @ 12.06 hrs, Volume= 76,342 cf
Outflow = 15.15 cfs @ 12.06 hrs, Volume= 76,342 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs

Reach 26R: TOTAL OUT



Summary for Pond 11P: BASIN 1

Inflow Area = 237,806 sf, 58.00% Impervious, Inflow Depth > 4.86" for 25-yr event
Inflow = 18.08 cfs @ 12.04 hrs, Volume= 96,403 cf
Outflow = 14.49 cfs @ 12.10 hrs, Volume= 77,233 cf, Atten= 20%, Lag= 3.6 min
Primary = 14.49 cfs @ 12.10 hrs, Volume= 77,233 cf
Routed to Pond 12P : BASIN 2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
Peak Elev= 294.79' @ 12.10 hrs Surf.Area= 11,374 sf Storage= 22,032 cf

Plug-Flow detention time= 167.2 min calculated for 77,136 cf (80% of inflow)
Center-of-Mass det. time= 76.1 min (895.8 - 819.7)

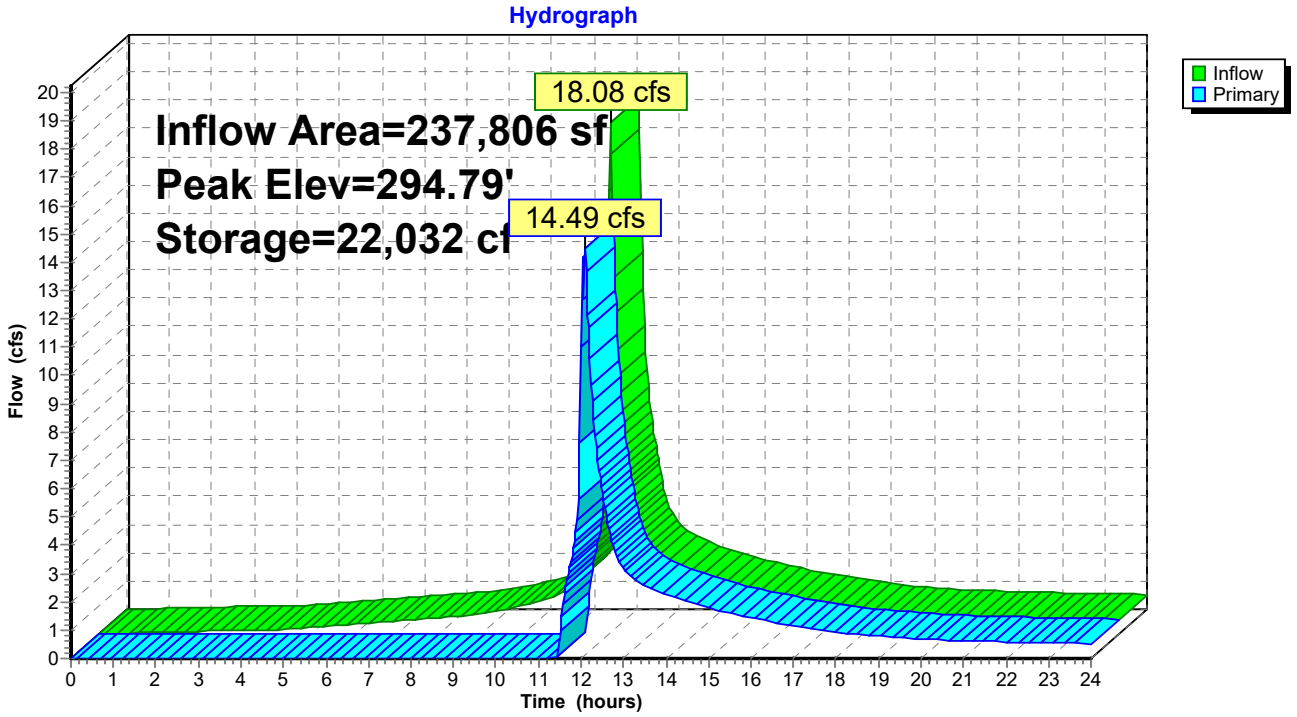
Volume	Invert	Avail.Storage	Storage Description
#1	292.00'	30,590 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
292.00	3,583	0	0
294.00	10,037	13,620	13,620
295.50	12,589	16,970	30,590

Device	Routing	Invert	Outlet Devices
#1	Primary	294.50'	**45.0' long (Profile 26) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 3.06 3.13 3.13

Primary OutFlow Max=14.19 cfs @ 12.10 hrs HW=294.78' TW=294.71' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 14.19 cfs @ 1.11 fps)

Pond 11P: BASIN 1



Stage-Area-Storage for Pond 11P: BASIN 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
292.00	3,583	0
292.05	3,744	183
292.10	3,906	374
292.15	4,067	574
292.20	4,228	781
292.25	4,390	997
292.30	4,551	1,220
292.35	4,712	1,452
292.40	4,874	1,691
292.45	5,035	1,939
292.50	5,197	2,195
292.55	5,358	2,459
292.60	5,519	2,731
292.65	5,681	3,011
292.70	5,842	3,299
292.75	6,003	3,595
292.80	6,165	3,899
292.85	6,326	4,211
292.90	6,487	4,532
292.95	6,649	4,860
293.00	6,810	5,197
293.05	6,971	5,541
293.10	7,133	5,894
293.15	7,294	6,254
293.20	7,455	6,623
293.25	7,617	7,000
293.30	7,778	7,385
293.35	7,939	7,778
293.40	8,101	8,179
293.45	8,262	8,588
293.50	8,424	9,005
293.55	8,585	9,430
293.60	8,746	9,863
293.65	8,908	10,305
293.70	9,069	10,754
293.75	9,230	11,212
293.80	9,392	11,677
293.85	9,553	12,151
293.90	9,714	12,632
293.95	9,876	13,122
294.00	10,037	13,620
294.05	10,122	14,124
294.10	10,207	14,632
294.15	10,292	15,145
294.20	10,377	15,661
294.25	10,462	16,182
294.30	10,547	16,708
294.35	10,632	17,237
294.40	10,718	17,771
294.45	10,803	18,309
294.50	10,888	18,851
294.55	10,973	19,398
294.60	11,058	19,948
294.65	11,143	20,503
294.70	11,228	21,063
294.75	11,313	21,626
294.80	11,398	22,194
294.85	11,483	22,766
294.90	11,568	23,342
294.95	11,653	23,923
295.00	11,738	24,508
295.05	11,823	25,097
295.10	11,908	25,690
295.15	11,994	26,288
295.20	12,079	26,889
295.25	12,164	27,495
295.30	12,249	28,106
295.35	12,334	28,720
295.40	12,419	29,339
295.45	12,504	29,962
295.50	**12,589**	**30,590**

Summary for Pond 12P: BASIN 2

Inflow Area = 237,806 sf, 58.00% Impervious, Inflow Depth > 3.90" for 25-yr event
Inflow = 14.49 cfs @ 12.10 hrs, Volume= 77,233 cf
Outflow = 14.17 cfs @ 12.11 hrs, Volume= 70,817 cf, Atten= 2%, Lag= 1.1 min
Primary = 0.18 cfs @ 12.11 hrs, Volume= 6,989 cf
Routed to Reach 26R : TOTAL OUT
Secondary = 13.99 cfs @ 12.11 hrs, Volume= 63,828 cf
Routed to Reach 26R : TOTAL OUT

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
Peak Elev= 294.71' @ 12.11 hrs Surf.Area= 4,163 sf Storage= 7,199 cf

Plug-Flow detention time= 58.5 min calculated for 70,817 cf (92% of inflow)
Center-of-Mass det. time= 17.9 min (913.7 - 895.8)

Volume	Invert	Avail.Storage	Storage Description
#1	292.00'	8,452 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

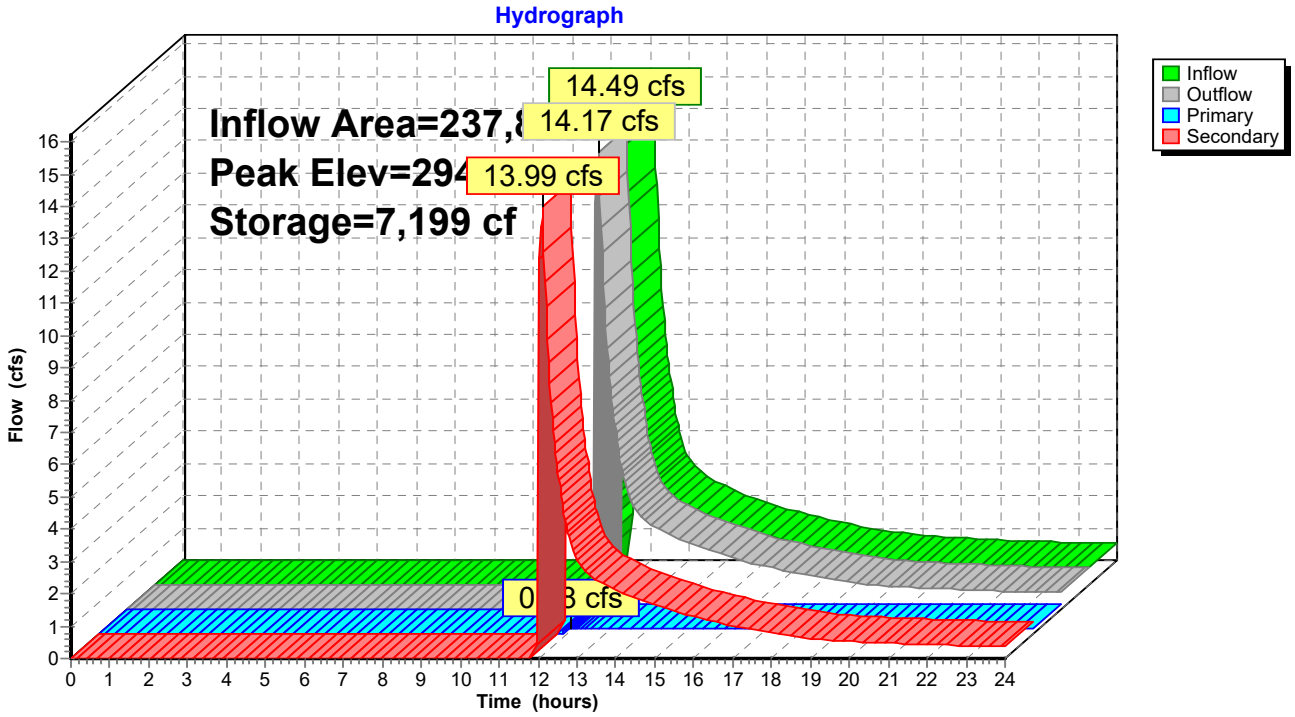
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
292.00	1,268	0	0
293.00	2,401	1,835	1,835
294.00	3,127	2,764	4,599
295.00	4,580	3,854	8,452

Device	Routing	Invert	Outlet Devices
#1	Device 2	293.90'	**2.0" x 3.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	292.00'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Secondary	294.50'	**40.0' long (Profile 9) Broad-Crested Rectangular Weir** Head (feet) 1.97 2.46 2.95 3.94 4.92 Coef. (English) 3.55 3.55 3.57 3.60 3.66

Primary OutFlow Max=0.18 cfs @ 12.11 hrs HW=294.71' TW=0.00' (Dynamic Tailwater)
↑—**2=Orifice/Grate** (Passes 0.18 cfs of 2.59 cfs potential flow)
↑—**1=Orifice/Grate** (Orifice Controls 0.18 cfs @ 4.34 fps)

Secondary OutFlow Max=13.83 cfs @ 12.11 hrs HW=294.71' TW=0.00' (Dynamic Tailwater)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 13.83 cfs @ 1.63 fps)

Pond 12P: BASIN 2



Stage-Area-Storage for Pond 12P: BASIN 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
292.00	1,268	0
292.05	1,325	65
292.10	1,381	132
292.15	1,438	203
292.20	1,495	276
292.25	1,551	352
292.30	1,608	431
292.35	1,665	513
292.40	1,721	598
292.45	1,778	685
292.50	1,835	776
292.55	1,891	869
292.60	1,948	965
292.65	2,004	1,064
292.70	2,061	1,165
292.75	2,118	1,270
292.80	2,174	1,377
292.85	2,231	1,487
292.90	2,288	1,600
292.95	2,344	1,716
293.00	2,401	1,835
293.05	2,437	1,955
293.10	2,474	2,078
293.15	2,510	2,203
293.20	2,546	2,329
293.25	2,583	2,457
293.30	2,619	2,587
293.35	2,655	2,719
293.40	2,691	2,853
293.45	2,728	2,988
293.50	2,764	3,126
293.55	2,800	3,265
293.60	2,837	3,406
293.65	2,873	3,549
293.70	2,909	3,693
293.75	2,946	3,839
293.80	2,982	3,988
293.85	3,018	4,138
293.90	3,054	4,289
293.95	3,091	4,443
294.00	3,127	4,599
294.05	3,200	4,757
294.10	3,272	4,918
294.15	3,345	5,084
294.20	3,418	5,253
294.25	3,490	5,426
294.30	3,563	5,602
294.35	3,636	5,782
294.40	3,708	5,966
294.45	3,781	6,153
294.50	3,854	6,344
294.55	3,926	6,538
294.60	3,999	6,736
294.65	4,071	6,938
294.70	4,144	7,143
294.75	4,217	7,352
294.80	4,289	7,565
294.85	4,362	7,781
294.90	4,435	8,001
294.95	4,507	8,225
295.00	**4,580**	**8,452**

Summary for Pond 16P: DET

Inflow Area = 79,791 sf, 94.09% Impervious, Inflow Depth > 6.22" for 25-yr event
Inflow = 12.77 cfs @ 12.02 hrs, Volume= 41,383 cf
Outflow = 3.00 cfs @ 12.25 hrs, Volume= 38,900 cf, Atten= 76%, Lag= 13.8 min
Primary = 3.00 cfs @ 12.25 hrs, Volume= 38,900 cf
Routed to Reach 18R : PROPOSED DEV.

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
Peak Elev= 320.54' @ 12.25 hrs Surf.Area= 4,659 sf Storage= 12,827 cf

Plug-Flow detention time= 125.1 min calculated for 38,900 cf (94% of inflow)
Center-of-Mass det. time= 88.0 min (840.7 - 752.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	316.75'	7,588 cf	**64.83'W x 71.87'L x 6.75'H Field A** 31,451 cf Overall - 12,480 cf Embedded = 18,971 cf x 40.0% Voids
#2A	317.50'	12,480 cf	**ADS_StormTech MC-4500 b +Cap** x 112 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.02'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 112 Chambers in 7 Rows Cap Storage= 39.5 cf x 2 x 7 rows = 553.0 cf
		20,068 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	317.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	320.00'	**18.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.99 cfs @ 12.25 hrs HW=320.54' TW=0.00' (Dynamic Tailwater)
↑—**1=Orifice/Grate** (Orifice Controls 1.58 cfs @ 8.04 fps)
└—**2=Orifice/Grate** (Orifice Controls 1.42 cfs @ 2.49 fps)

Pond 16P: DET - Chamber Wizard Field A

Chamber Model = ADS_StormTech MC-4500 b +Cap (ADS StormTech® MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.02'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= 39.5 cf x 2 x 7 rows = 553.0 cf

100.0" Wide + 9.0" Spacing = 109.0" C-C Row Spacing

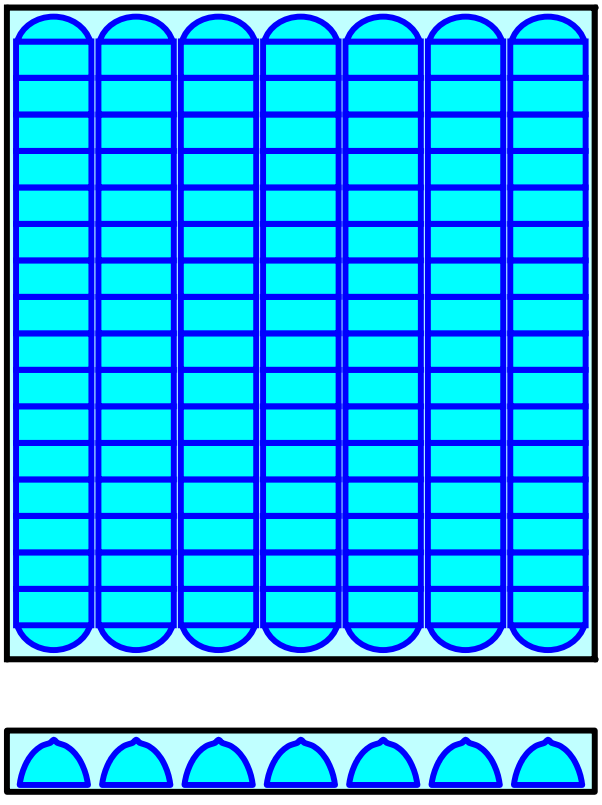
16 Chambers/Row x 4.02' Long +2.73' Cap Length x 2 = 69.87' Row Length +12.0" End Stone x 2 = 71.87' Base Length
7 Rows x 100.0" Wide + 9.0" Spacing x 6 + 12.0" Side Stone x 2 = 64.83' Base Width
9.0" Stone Base + 60.0" Chamber Height + 12.0" Stone Cover = 6.75' Field Height

112 Chambers x 106.5 cf + 39.5 cf Cap Volume x 2 x 7 Rows = 12,479.9 cf Chamber Storage

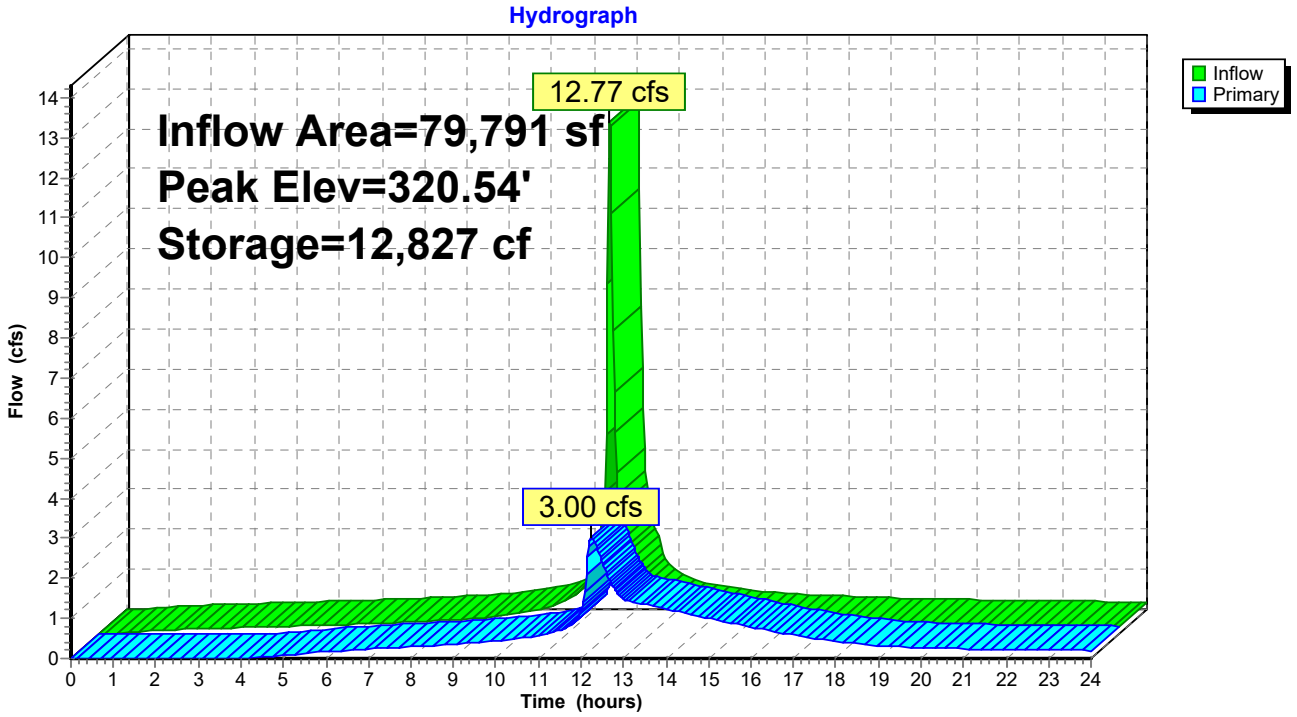
31,450.6 cf Field - 12,479.9 cf Chambers = 18,970.7 cf Stone x 40.0% Voids = 7,588.3 cf Stone Storage

Chamber Storage + Stone Storage = 20,068.2 cf = 0.461 af
Overall Storage Efficiency = 63.8%
Overall System Size = 71.87' x 64.83' x 6.75'

112 Chambers
1,164.8 cy Field
702.6 cy Stone



Pond 16P: DET


Hydrograph
Inflow
Primary
12.77 cfs
3.00 cfs
Inflow Area=79,791 sf
Peak Elev=320.54'
Storage=12,827 cf
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Stage-Area-Storage for Pond 16P: DET

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
316.75	0	319.40	8,774	322.05	17,296
316.80	93	319.45	8,959	322.10	17,406
316.85	186	319.50	9,144	322.15	17,512
316.90	280	319.55	9,329	322.20	17,615
316.95	373	319.60	9,513	322.25	17,716
317.00	466	319.65	9,696	322.30	17,817
317.05	559	319.70	9,878	322.35	17,916
317.10	652	319.75	10,060	322.40	18,014
317.15	745	319.80	10,241	322.45	18,110
317.20	839	319.85	10,422	322.50	18,204
317.25	932	319.90	10,602	322.55	18,298
317.30	1,025	319.95	10,781	322.60	18,391
317.35	1,118	320.00	10,959	322.65	18,484
317.40	1,211	320.05	11,137	322.70	18,577
317.45	1,305	320.10	11,314	322.75	18,670
317.50	1,398	320.15	11,490	322.80	18,764
317.55	1,598	320.20	11,665	322.85	18,857
317.60	1,797	320.25	11,839	322.90	18,950
317.65	1,997	320.30	12,013	322.95	19,043
317.70	2,196	320.35	12,186	323.00	19,136
317.75	2,395	320.40	12,357	323.05	19,230
317.80	2,593	320.45	12,528	323.10	19,323
317.85	2,792	320.50	12,698	323.15	19,416
317.90	2,990	320.55	12,867	323.20	19,509
317.95	3,188	320.60	13,035	323.25	19,602
318.00	3,385	320.65	13,202	323.30	19,695
318.05	3,583	320.70	13,369	323.35	19,789
318.10	3,780	320.75	13,533	323.40	19,882
318.15	3,977	320.80	13,697	323.45	19,975
318.20	4,173	320.85	13,860	323.50	**20,068**
318.25	4,369	320.90	14,022		
318.30	4,565	320.95	14,182		
318.35	4,761	321.00	14,341		
318.40	4,956	321.05	14,499		
318.45	5,151	321.10	14,656		
318.50	5,345	321.15	14,811		
318.55	5,540	321.20	14,965		
318.60	5,733	321.25	15,118		
318.65	5,927	321.30	15,269		
318.70	6,120	321.35	15,418		
318.75	6,312	321.40	15,566		
318.80	6,504	321.45	15,712		
318.85	6,696	321.50	15,857		
318.90	6,888	321.55	16,000		
318.95	7,078	321.60	16,141		
319.00	7,269	321.65	16,280		
319.05	7,459	321.70	16,417		
319.10	7,648	321.75	16,551		
319.15	7,837	321.80	16,684		
319.20	8,026	321.85	16,813		
319.25	8,213	321.90	16,940		
319.30	8,401	321.95	17,063		
319.35	8,587	322.00	17,182		

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	716 24-hr S1	1-yr	Default	24.00	1	2.91	2
2	2-yr	716 24-hr S1	2-yr	Default	24.00	1	3.56	2
3	5-yr	716 24-hr S1	5-yr	Default	24.00	1	4.63	2
4	10-yr	716 24-hr S1	10-yr	Default	24.00	1	5.51	2
5	25-yr	716 24-hr S1	25-yr	Default	24.00	1	6.72	2
6	50-yr	716 24-hr S1	50-yr	Default	24.00	1	7.62	2
7	100-yr	716 24-hr S1	100-yr	Default	24.00	1	8.60	2

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>0.62"
Tc=5.0 min CN=69 Runoff=0.33 cfs 1,046 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>0.54"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=0.91 cfs 3,775 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.98 cfs 2,720 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.15 cfs 414 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>2.26"
Tc=5.0 min CN=94 Runoff=0.50 cfs 1,283 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>1.58"
Tc=5.0 min CN=86 Runoff=0.41 cfs 1,018 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>0.95"
Tc=5.0 min CN=76 Runoff=0.29 cfs 788 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>1.82"
Tc=5.0 min CN=89 Runoff=0.52 cfs 1,303 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.28 cfs 777 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.28 cfs 777 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.18 cfs 486 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=2.81 cfs 7,772 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.67 cfs 1,846 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.56 cfs 1,554 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>1.66"
Tc=5.0 min CN=87 Runoff=0.87 cfs 2,178 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.27 cfs 742 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>0.46"
Flow Length=603' Tc=9.3 min CN=65 Runoff=2.01 cfs 9,958 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=1.34 cfs 3,692 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>2.68"
Tc=5.0 min CN=98 Runoff=0.95 cfs 2,623 cf

Reach 18R: PROPOSED DEV. Inflow=5.79 cfs 27,936 cf
Outflow=5.79 cfs 27,936 cf

Reach 26R: TOTAL OUT Inflow=0.33 cfs 7,423 cf
Outflow=0.33 cfs 7,423 cf

Pond 11P: BASIN 1 Peak Elev=294.54' Storage=19,246 cf Inflow=6.47 cfs 31,711 cf
Outflow=0.95 cfs 12,731 cf

Pond 12P: BASIN 2 Peak Elev=294.51' Storage=6,383 cf Inflow=0.95 cfs 12,731 cf
Primary=0.16 cfs 4,652 cf Secondary=0.14 cfs 1,726 cf Outflow=0.30 cfs 6,378 cf

Pond 16P: DET Peak Elev=318.88' Storage=6,810 cf Inflow=6.04 cfs 16,459 cf
Outflow=1.00 cfs 14,423 cf

Total Runoff Area = 515,893 sf Runoff Volume = 44,751 cf Average Runoff Depth = 1.04"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>0.99"
Tc=5.0 min CN=69 Runoff=0.57 cfs 1,665 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>0.88"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=1.69 cfs 6,172 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=1.16 cfs 3,378 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.18 cfs 514 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>2.89"
Tc=5.0 min CN=94 Runoff=0.60 cfs 1,641 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>2.15"
Tc=5.0 min CN=86 Runoff=0.53 cfs 1,381 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>1.41"
Tc=5.0 min CN=76 Runoff=0.43 cfs 1,162 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>2.41"
Tc=5.0 min CN=89 Runoff=0.66 cfs 1,728 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.33 cfs 965 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.33 cfs 965 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.21 cfs 603 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=3.31 cfs 9,651 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.79 cfs 2,292 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.66 cfs 1,930 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>2.23"
Tc=5.0 min CN=87 Runoff=1.12 cfs 2,933 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=0.32 cfs 921 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>0.78"
Flow Length=603' Tc=9.3 min CN=65 Runoff=4.10 cfs 16,769 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=1.57 cfs 4,584 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>3.32"
Tc=5.0 min CN=98 Runoff=1.12 cfs 3,257 cf

Reach 18R: PROPOSED DEV. Inflow=6.97 cfs 35,780 cf
Outflow=6.97 cfs 35,780 cf

Reach 26R: TOTAL OUT Inflow=1.16 cfs 18,230 cf
Outflow=1.16 cfs 18,230 cf

Pond 11P: BASIN 1 Peak Elev=294.55' Storage=19,447 cf Inflow=8.34 cfs 41,951 cf
Outflow=1.75 cfs 22,934 cf

Pond 12P: BASIN 2 Peak Elev=294.54' Storage=6,483 cf Inflow=1.75 cfs 22,934 cf
Primary=0.16 cfs 5,908 cf Secondary=0.97 cfs 10,658 cf Outflow=1.13 cfs 16,566 cf

Pond 16P: DET Peak Elev=319.18' Storage=7,959 cf Inflow=7.20 cfs 20,667 cf
Outflow=1.13 cfs 18,540 cf

Total Runoff Area = 515,893 sf Runoff Volume = 62,511 cf Average Runoff Depth = 1.45"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>1.69"
Tc=5.0 min CN=69 Runoff=0.99 cfs 2,847 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>1.55"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=3.11 cfs 10,826 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=1.44 cfs 4,462 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.22 cfs 679 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>3.94"
Tc=5.0 min CN=94 Runoff=0.77 cfs 2,236 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>3.12"
Tc=5.0 min CN=86 Runoff=0.73 cfs 2,005 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>2.23"
Tc=5.0 min CN=76 Runoff=0.67 cfs 1,843 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>3.41"
Tc=5.0 min CN=89 Runoff=0.88 cfs 2,449 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.41 cfs 1,275 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.41 cfs 1,275 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.26 cfs 797 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=4.11 cfs 12,748 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.98 cfs 3,028 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.82 cfs 2,550 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>3.22"
Tc=5.0 min CN=87 Runoff=1.52 cfs 4,224 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=0.39 cfs 1,217 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>1.41"
Flow Length=603' Tc=9.3 min CN=65 Runoff=8.01 cfs 30,237 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=1.95 cfs 6,055 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>4.39"
Tc=5.0 min CN=98 Runoff=1.39 cfs 4,302 cf

Reach 18R: PROPOSED DEV. Inflow=8.88 cfs 48,883 cf
Outflow=8.88 cfs 48,883 cf

Reach 26R: TOTAL OUT Inflow=2.97 cfs 37,095 cf
Outflow=2.97 cfs 37,095 cf

Pond 11P: BASIN 1 Peak Elev=294.62' Storage=20,151 cf Inflow=11.53 cfs 59,709 cf
Outflow=5.60 cfs 40,636 cf

Pond 12P: BASIN 2 Peak Elev=294.57' Storage=6,620 cf Inflow=5.60 cfs 40,636 cf
Primary=0.16 cfs 6,630 cf Secondary=2.66 cfs 27,619 cf Outflow=2.83 cfs 34,249 cf

Pond 16P: DET Peak Elev=319.71' Storage=9,914 cf Inflow=9.08 cfs 27,647 cf
Outflow=1.32 cfs 25,389 cf

Total Runoff Area = 515,893 sf Runoff Volume = 95,051 cf Average Runoff Depth = 2.21"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>2.33"
Tc=5.0 min CN=69 Runoff=1.37 cfs 3,928 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>2.16"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=4.39 cfs 15,133 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=1.67 cfs 5,354 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=0.25 cfs 814 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>4.81"
Tc=5.0 min CN=94 Runoff=0.90 cfs 2,728 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>3.94"
Tc=5.0 min CN=86 Runoff=0.89 cfs 2,533 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>2.96"
Tc=5.0 min CN=76 Runoff=0.87 cfs 2,443 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>4.26"
Tc=5.0 min CN=89 Runoff=1.05 cfs 3,053 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=0.48 cfs 1,530 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=0.48 cfs 1,530 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=0.30 cfs 956 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=4.78 cfs 15,297 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=1.14 cfs 3,633 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=0.96 cfs 3,059 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>4.05"
Tc=5.0 min CN=87 Runoff=1.85 cfs 5,312 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=0.46 cfs 1,460 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>1.99"
Flow Length=603' Tc=9.3 min CN=65 Runoff=11.56 cfs 42,860 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=2.27 cfs 7,266 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>5.27"
Tc=5.0 min CN=98 Runoff=1.61 cfs 5,163 cf

Reach 18R: PROPOSED DEV. Inflow=10.45 cfs 59,773 cf
Outflow=10.45 cfs 59,773 cf

Reach 26R: TOTAL OUT Inflow=7.63 cfs 53,319 cf
Outflow=7.63 cfs 53,319 cf

Pond 11P: BASIN 1 Peak Elev=294.70' Storage=21,058 cf Inflow=14.25 cfs 74,906 cf
Outflow=12.27 cfs 55,791 cf

Pond 12P: BASIN 2 Peak Elev=294.63' Storage=6,877 cf Inflow=12.27 cfs 55,791 cf
Primary=0.17 cfs 6,837 cf Secondary=7.03 cfs 42,554 cf Outflow=7.21 cfs 49,391 cf

Pond 16P: DET Peak Elev=320.16' Storage=11,513 cf Inflow=10.64 cfs 33,419 cf
Outflow=1.60 cfs 31,063 cf

Total Runoff Area = 515,893 sf Runoff Volume = 124,051 cf Average Runoff Depth = 2.89"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>3.28"
Tc=5.0 min CN=69 Runoff=1.91 cfs 5,526 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>3.08"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=6.23 cfs 21,553 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=1.99 cfs 6,581 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=0.30 cfs 1,001 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>6.00"
Tc=5.0 min CN=94 Runoff=1.09 cfs 3,407 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>5.09"
Tc=5.0 min CN=86 Runoff=1.11 cfs 3,273 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>4.00"
Tc=5.0 min CN=76 Runoff=1.15 cfs 3,308 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>5.43"
Tc=5.0 min CN=89 Runoff=1.29 cfs 3,893 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=0.57 cfs 1,880 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=0.57 cfs 1,880 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=0.36 cfs 1,175 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=5.70 cfs 18,803 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=1.35 cfs 4,466 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=1.14 cfs 3,761 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>5.20"
Tc=5.0 min CN=87 Runoff=2.30 cfs 6,832 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=0.54 cfs 1,795 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>2.88"
Flow Length=603' Tc=9.3 min CN=65 Runoff=16.73 cfs 61,843 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=2.71 cfs 8,931 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>6.47"
Tc=5.0 min CN=98 Runoff=1.92 cfs 6,346 cf

Reach 18R: PROPOSED DEV. Inflow=12.60 cfs 74,850 cf
Outflow=12.60 cfs 74,850 cf

Reach 26R: TOTAL OUT Inflow=15.15 cfs 76,342 cf
Outflow=15.15 cfs 76,342 cf

Pond 11P: BASIN 1 Peak Elev=294.79' Storage=22,032 cf Inflow=18.08 cfs 96,403 cf
Outflow=14.49 cfs 77,233 cf

Pond 12P: BASIN 2 Peak Elev=294.71' Storage=7,199 cf Inflow=14.49 cfs 77,233 cf
Primary=0.18 cfs 6,989 cf Secondary=13.99 cfs 63,828 cf Outflow=14.17 cfs 70,817 cf

Pond 16P: DET Peak Elev=320.54' Storage=12,827 cf Inflow=12.77 cfs 41,383 cf
Outflow=3.00 cfs 38,900 cf

Total Runoff Area = 515,893 sf Runoff Volume = 166,254 cf Average Runoff Depth = 3.87"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>4.02"
Tc=5.0 min CN=69 Runoff=2.32 cfs 6,775 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>3.80"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=7.67 cfs 26,605 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=2.24 cfs 7,494 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=0.34 cfs 1,140 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>6.90"
Tc=5.0 min CN=94 Runoff=1.22 cfs 3,914 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>5.96"
Tc=5.0 min CN=86 Runoff=1.27 cfs 3,829 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>4.81"
Tc=5.0 min CN=76 Runoff=1.36 cfs 3,972 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>6.31"
Tc=5.0 min CN=89 Runoff=1.47 cfs 4,523 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=0.64 cfs 2,141 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=0.64 cfs 2,141 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=0.40 cfs 1,338 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=6.39 cfs 21,412 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=1.52 cfs 5,085 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=1.28 cfs 4,282 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>6.07"
Tc=5.0 min CN=87 Runoff=2.63 cfs 7,975 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=0.61 cfs 2,044 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>3.58"
Flow Length=603' Tc=9.3 min CN=65 Runoff=20.79 cfs 76,879 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=3.04 cfs 10,171 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>7.37"
Tc=5.0 min CN=98 Runoff=2.16 cfs 7,227 cf

Reach 18R: PROPOSED DEV. Inflow=14.18 cfs 86,119 cf
Outflow=14.18 cfs 86,119 cf

Reach 26R: TOTAL OUT Inflow=19.52 cfs 93,867 cf
Outflow=19.52 cfs 93,867 cf

Pond 11P: BASIN 1 Peak Elev=294.83' Storage=22,567 cf Inflow=21.09 cfs 112,724 cf
Outflow=18.15 cfs 93,518 cf

Pond 12P: BASIN 2 Peak Elev=294.75' Storage=7,355 cf Inflow=18.15 cfs 93,518 cf
Primary=0.19 cfs 7,197 cf Secondary=17.80 cfs 79,895 cf Outflow=17.99 cfs 87,091 cf

Pond 16P: DET Peak Elev=320.80' Storage=13,689 cf Inflow=14.37 cfs 47,320 cf
Outflow=4.55 cfs 44,750 cf

Total Runoff Area = 515,893 sf Runoff Volume = 198,948 cf Average Runoff Depth = 4.63"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 22S: P-2 Runoff Area=0.464 ac 0.00% Impervious Runoff Depth>4.86"
Tc=5.0 min CN=69 Runoff=2.76 cfs 8,181 cf

Subcatchment 27S: P-1 Runoff Area=1.930 ac 0.00% Impervious Runoff Depth>4.61"
Flow Length=591' Slope=0.0580 '/' Tc=8.2 min CN=67 Runoff=9.21 cfs 32,308 cf

Subcatchment CB1: CB1 Runoff Area=0.280 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=2.49 cfs 8,489 cf

Subcatchment CB11: CB11 Runoff Area=1,855 sf 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=0.38 cfs 1,291 cf

Subcatchment CB12: CB12 Runoff Area=6,810 sf 90.44% Impervious Runoff Depth>7.87"
Tc=5.0 min CN=94 Runoff=1.37 cfs 4,467 cf

Subcatchment CB13: CB13 Runoff Area=7,714 sf 68.21% Impervious Runoff Depth>6.91"
Tc=5.0 min CN=86 Runoff=1.44 cfs 4,440 cf

Subcatchment CB14: CB14 Runoff Area=9,915 sf 41.47% Impervious Runoff Depth>5.70"
Tc=5.0 min CN=76 Runoff=1.58 cfs 4,709 cf

Subcatchment CB15: CB15 Runoff Area=8,605 sf 74.55% Impervious Runoff Depth>7.27"
Tc=5.0 min CN=89 Runoff=1.66 cfs 5,212 cf

Subcatchment CB2: CB2 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=0.71 cfs 2,425 cf

Subcatchment CB3: CB3 Runoff Area=0.080 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=0.71 cfs 2,425 cf

Subcatchment CB4: CB4 Runoff Area=0.050 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=0.44 cfs 1,516 cf

Subcatchment CB5: CB5 Runoff Area=0.800 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=7.11 cfs 24,253 cf

Subcatchment CB6: CB6 Runoff Area=0.190 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=1.69 cfs 5,760 cf

Subcatchment CB7: CB7 Runoff Area=0.160 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=1.42 cfs 4,851 cf

Subcatchment CB8: CB8 Runoff Area=15,758 sf 70.05% Impervious Runoff Depth>7.03"
Tc=5.0 min CN=87 Runoff=2.97 cfs 9,227 cf

Subcatchment CB9: CB9/CB10 Runoff Area=3,326 sf 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=0.68 cfs 2,315 cf

Subcatchment DAEX: DA EX Runoff Area=5.920 ac 0.00% Impervious Runoff Depth>4.37"
Flow Length=603' Tc=9.3 min CN=65 Runoff=25.17 cfs 93,925 cf

Subcatchment R1-4: R1-4 Runoff Area=0.380 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=3.38 cfs 11,520 cf

Subcatchment R2-3: R2-3 Runoff Area=0.270 ac 100.00% Impervious Runoff Depth>8.35"
Tc=5.0 min CN=98 Runoff=2.40 cfs 8,185 cf

Reach 18R: PROPOSED DEV. Inflow=16.53 cfs 98,416 cf
Outflow=16.53 cfs 98,416 cf

Reach 26R: TOTAL OUT Inflow=23.78 cfs 113,220 cf
Outflow=23.78 cfs 113,220 cf

Pond 11P: BASIN 1 Peak Elev=294.88' Storage=23,127 cf Inflow=25.21 cfs 130,724 cf
Outflow=22.10 cfs 111,477 cf

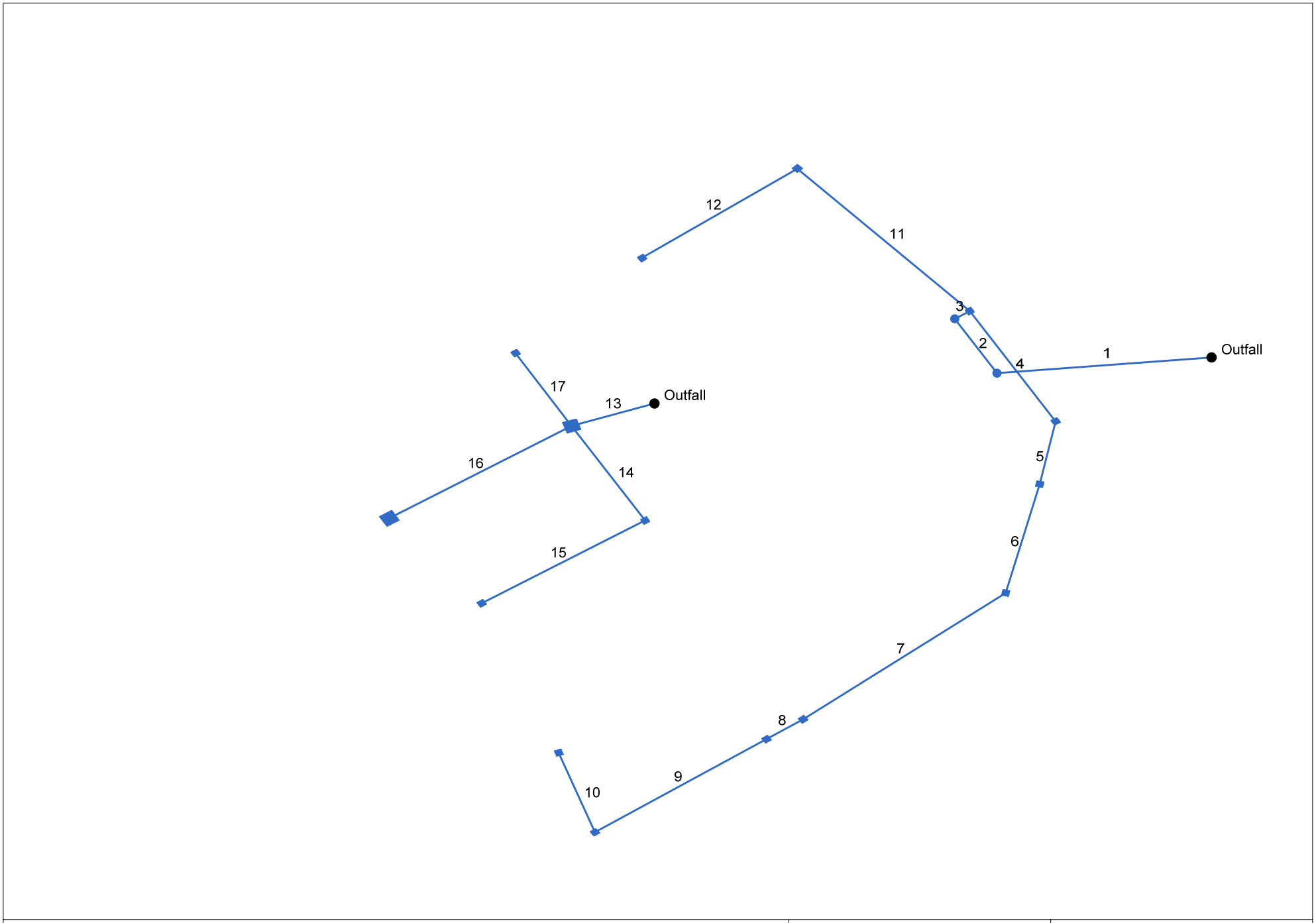
Pond 12P: BASIN 2 Peak Elev=294.79' Storage=7,513 cf Inflow=22.10 cfs 111,477 cf
Primary=0.19 cfs 7,515 cf Secondary=21.92 cfs 97,525 cf Outflow=22.11 cfs 105,039 cf

Pond 16P: DET Peak Elev=321.05' Storage=14,500 cf Inflow=16.03 cfs 53,793 cf
Outflow=6.33 cfs 51,124 cf

Total Runoff Area = 515,893 sf Runoff Volume = 235,499 cf Average Runoff Depth = 5.48"
73.27% Pervious = 377,973 sf 26.73% Impervious = 137,920 sf

SECTION 4 - HYDRAULIC ANALYSIS

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: kf-101822.stm	Number of lines: 17	Date: 10/18/2022

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	120.141	174.810	MH	0.00	0.00	0.00	0.0	294.00	2.25	296.70	24	Cir	0.012	0.91	312.70	P M2-FE
2	1	44.347	63.068	MH	0.00	0.00	0.00	0.0	306.20	1.00	306.64	24	Cir	0.012	1.00	312.99	P M1-M2
3	2	9.909	90.000	Grate	0.00	0.28	0.50	0.9	307.00	5.05	307.50	24	Cir	0.012	2.25	311.43	P CB1-MH1
4	3	90.003	90.000	Grate	0.00	0.08	0.50	0.4	307.50	1.00	308.40	18	Cir	0.012	1.10	315.41	P 9-1
5	4	44.239	43.698	Grate	0.00	0.00	0.00	0.0	311.50	5.65	314.00	15	Cir	0.012	0.50	319.50	P 10-9
6	5	77.570	2.606	Grate	0.00	0.04	0.50	0.2	314.00	7.22	319.60	15	Cir	0.012	1.00	324.66	P 11-10
7	6	142.969	38.139	Grate	0.00	0.16	0.50	0.5	319.60	1.00	321.03	15	Cir	0.012	0.50	325.69	P 12-11
8	7	24.122	3.964	Grate	0.00	0.18	0.50	0.7	321.03	0.99	321.27	15	Cir	0.012	0.50	325.80	P 13-12
9	8	115.559	-0.203	Grate	0.00	0.23	0.50	0.5	321.27	1.00	322.42	15	Cir	0.012	1.50	327.36	P 14-13
10	9	58.532	103.674	Grate	0.00	0.20	0.50	0.9	322.42	0.99	323.00	15	Cir	0.012	1.00	326.50	P 15-14
11	3	137.619	-102.235	Grate	0.00	0.08	0.50	0.3	307.50	2.54	311.00	18	Cir	0.012	1.49	317.64	P 2-1
12	11	106.399	-81.022	Grate	1.54	0.00	0.00	1.0	311.00	7.52	319.00	15	Cir	0.012	1.00	326.03	P 3-2
13	End	48.871	161.519	Grate	0.00	0.80	0.50	1.0	319.00	2.05	320.00	18	Cir	0.012	1.50	324.00	P 4-3
14	13	77.175	-103.679	Grate	0.00	0.19	0.50	0.4	320.50	1.30	321.50	15	Cir	0.012	1.50	326.07	P 6-5
15	14	107.624	90.037	Grate	0.00	0.16	0.50	0.3	321.25	1.00	322.33	15	Cir	0.012	1.00	326.57	P7-6
16	13	120.000	-13.641	Grate	0.00	0.36	0.50	0.9	320.50	2.50	323.50	15	Cir	0.012	1.00	327.00	P 8-5
17	13	59.228	76.638	Grate	0.00	0.05	0.50	0.1	320.50	1.01	321.10	15	Cir	0.012	1.00	325.25	Pipe - 4-5

Project File: kf-101822.stm | Number of lines: 17 | Date: 10/18/2022

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	MH 2	Manhole	312.70	Cir	4.00	4.00	24	Cir	296.70	24	Cir	306.20
2	MH1	Manhole	312.99	Cir	4.00	4.00	24	Cir	306.64	24	Cir	307.00
3	CB 1	Grate	311.43	Rect	4.00	4.00	24	Cir	307.50	18 18	Cir Cir	307.50 307.50
4	CB 9	Grate	315.41	Rect	4.00	4.00	18	Cir	308.40	15	Cir	311.50
5	CB 10	Grate	319.50	Rect	4.00	4.00	15	Cir	314.00	15	Cir	314.00
6	CB 11	Grate	324.66	Rect	4.00	4.00	15	Cir	319.60	15	Cir	319.60
7	CB 12	Grate	325.69	Rect	4.00	4.00	15	Cir	321.03	15	Cir	321.03
8	CB 13	Grate	325.80	Rect	4.00	4.00	15	Cir	321.27	15	Cir	321.27
9	CB 14	Grate	327.36	Rect	4.00	4.00	15	Cir	322.42	15	Cir	322.42
10	CB 15	Grate	326.50	Rect	4.00	4.00	15	Cir	323.00			
11	CB 2	Grate	317.64	Rect	4.00	4.00	18	Cir	311.00	15	Cir	311.00
12	CB 3	Grate	326.03	Rect	4.00	4.00	15	Cir	319.00			
13	CB 5	Grate	324.00	Rect	8.00	8.00	18	Cir	320.00	15 15 15	Cir Cir Cir	320.50 320.50 320.50
14	CB 6	Grate	326.07	Rect	4.00	4.00	15	Cir	321.50	15	Cir	321.25
15	CB 7	Grate	326.57	Rect	4.00	4.00	15	Cir	322.33			
16	CB 8	Grate	327.00	Rect	8.00	8.00	15	Cir	323.50			
17	CB 4	Grate	325.25	Rect	4.00	4.00	15	Cir	321.10			

Project File: kf-101822.stm | Number of Structures: 17 | Run Date: 10/18/2022

Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	P M2-FE	6.94	24	Cir	120.141	294.00	296.70	2.247	294.80	297.63	0.33	297.63	End	Manhole
2	P M1-M2	6.94	24	Cir	44.347	306.20	306.64	1.000	306.93	307.58	0.36	307.58	1	Manhole
3	P CB1-MH1	6.94	24	Cir	9.909	307.00	307.50	5.046	307.58	308.43	0.81	308.43	2	Grate
4	P 9-1	3.83	18	Cir	90.003	307.50	308.40	1.000	308.43	309.15	n/a	309.15 j	3	Grate
5	P 10-9	3.50	15	Cir	44.239	311.50	314.00	5.651	311.89	314.75	n/a	314.75	4	Grate
6	P 11-10	3.50	15	Cir	77.570	314.00	319.60	7.219	314.75	320.35	n/a	320.35	5	Grate
7	P 12-11	3.31	15	Cir	142.969	319.60	321.03	1.000	320.35	321.76	n/a	321.76 j	6	Grate
8	P 13-12	2.63	15	Cir	24.122	321.03	321.27	0.995	321.76	321.92	n/a	321.92 j	7	Grate
9	P 14-13	1.86	15	Cir	115.559	321.27	322.42	0.995	321.92	322.96	n/a	322.96 j	8	Grate
10	P 15-14	0.86	15	Cir	58.532	322.42	323.00	0.991	322.96	323.36	n/a	323.36 j	9	Grate
11	P 2-1	1.89	18	Cir	137.619	307.50	311.00	2.543	308.43	311.52	n/a	311.52 j	3	Grate
12	P 3-2	1.54	15	Cir	106.399	311.00	319.00	7.519	311.52	319.49	n/a	319.49 j	11	Grate
13	P 4-3	6.80	18	Cir	48.871	319.00	320.00	2.046	319.68	321.01	n/a	321.01	End	Grate
14	P 6-5	1.52	15	Cir	77.175	320.50	321.50	1.296	321.01	321.99	n/a	321.99 j	13	Grate
15	P7-6	0.70	15	Cir	107.624	321.25	322.33	1.003	321.99	322.66	n/a	322.66 j	14	Grate
16	P 8-5	1.57	15	Cir	120.000	320.50	323.50	2.500	321.01	324.00	n/a	324.00 j	13	Grate
17	Pipe - 4-5	0.22	15	Cir	59.228	320.50	321.10	1.013	321.01	321.28	n/a	321.28 j	13	Grate

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NOTES: Return period = 25 Yrs. ; j - Line contains hyd. jump.

Inlet Report

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet			Byp Line No
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)	
1	MH 2	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
2	MH1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
3	CB 1	1.22	0.00	1.00	0.22	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.17	5.71	0.10	1.94	0.0	Off
4	CB 9	0.33	0.00	0.33	0.00	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.11	2.64	0.02	0.31	0.0	Off
5	CB 10	0.00	0.00	-nan(ind)	nan(ind)	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.00	0.00	5.00	247.00	0.0	Off
6	CB 11	0.19	0.00	0.19	0.00	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.09	1.81	0.00	0.00	0.0	Off
7	CB 12	0.68	0.00	0.63	0.05	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.14	4.22	0.06	1.15	0.0	Off
8	CB 13	0.77	0.00	0.70	0.08	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.15	4.52	0.07	1.31	0.0	Off
9	CB 14	0.99	0.00	0.85	0.14	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.16	5.15	0.08	1.65	0.0	Off
10	CB 15	0.86	0.00	0.76	0.10	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.16	4.79	0.07	1.45	0.0	Off
11	CB 2	0.35	0.00	0.35	0.00	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.11	2.74	0.02	0.35	0.0	Off
12	CB 3	1.54*	0.00	1.14	0.40	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.013	0.20	7.18	0.13	3.57	0.0	Off
13	CB 5	3.49	0.00	2.14	1.36	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.24	9.13	0.18	6.00	0.0	Off
14	CB 6	0.82	0.00	0.73	0.09	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.15	4.67	0.07	1.38	0.0	Off
15	CB 7	0.70	0.00	0.64	0.06	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.15	4.27	0.06	1.17	0.0	Off
16	CB 8	1.57	0.00	1.21	0.36	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.19	6.43	0.12	2.83	0.0	Off
17	CB 4	0.22	0.00	0.22	0.00	Grate	0.0	0.00	0.00	3.00	2.00	0.010	2.00	0.050	0.020	0.010	0.10	1.93	0.00	0.00	0.0	Off

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NOTES: Inlet N-Values = 0.016; Intensity = 40.41 / (Inlet time + 3.80) ^ 0.70; Return period = 25 Yrs. ; * Indicates Known Q added. All curb inlets are throat.

Hydraulic Grade Line Computations

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)		Invert elev (ft)	HGL elev (ft)	Depth (ft)	Area (sqft)	Vel (ft/s)	Vel head (ft)	EGL elev (ft)	Sf (%)	Ave Sf (%)	Enrgy loss (ft)		
(1)	(in) (2)	(cfs) (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(ft) (12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(K) (23)	(ft) (24)
1	24	6.94	294.00	294.80	0.80	1.17	5.92	0.36	295.16	0.000	120.141	296.70	297.63	0.93**	1.44	4.83	0.36	298.00	0.000	0.000	n/a	0.91	0.33
2	24	6.94	306.20	306.93	0.73*	1.03	6.71	0.36	307.29	0.000	44.347	306.64	307.58	0.93**	1.44	4.83	0.36	307.94	0.000	0.000	n/a	1.00	0.36
3	24	6.94	307.00	307.58	0.58	0.75	9.24	0.36	307.94	0.000	9.909	307.50	308.43	0.93**	1.44	4.83	0.36	308.80	0.000	0.000	n/a	2.25	0.81
4	18	3.83	307.50	308.43	0.93	0.88	3.31	0.29	308.73	0.000	90.003	308.40	309.15 j	0.75**	0.88	4.35	0.29	309.44	0.000	0.000	n/a	1.10	n/a
5	15	3.50	311.50	311.89	0.39*	0.33	10.72	0.32	312.21	0.000	44.239	314.00	314.75	0.75**	0.77	4.52	0.32	315.07	0.000	0.000	n/a	0.50	n/a
6	15	3.50	314.00	314.75	0.75*	0.77	4.52	0.32	315.07	0.000	77.570	319.60	320.35	0.75**	0.77	4.52	0.32	320.67	0.000	0.000	n/a	1.00	n/a
7	15	3.31	319.60	320.35	0.75	0.75	4.28	0.30	320.66	0.000	142.969	321.03	321.76 j	0.73**	0.75	4.43	0.30	322.07	0.000	0.000	n/a	0.50	0.15
8	15	2.63	321.03	321.76	0.73	0.64	3.52	0.26	322.02	0.000	24.122	321.27	321.92 j	0.65**	0.64	4.08	0.26	322.18	0.000	0.000	n/a	0.50	n/a
9	15	1.86	321.27	321.92	0.65	0.51	2.88	0.21	322.13	0.000	115.559	322.42	322.96 j	0.54**	0.51	3.64	0.21	323.17	0.000	0.000	n/a	1.50	0.31
10	15	0.86	322.42	322.96	0.54	0.30	1.69	0.13	323.09	0.000	58.532	323.00	323.36 j	0.36**	0.30	2.91	0.13	323.50	0.000	0.000	n/a	1.00	0.13
11	18	1.89	307.50	308.43	0.93	0.54	1.63	0.19	308.62	0.000	137.619	311.00	311.52 j	0.52**	0.54	3.50	0.19	311.71	0.000	0.000	n/a	1.49	n/a
12	15	1.54	311.00	311.52	0.52	0.45	3.21	0.18	311.70	0.000	106.399	319.00	319.49 j	0.49**	0.45	3.44	0.18	319.68	0.000	0.000	n/a	1.00	0.18
13	18	6.80	319.00	319.68	0.68*	0.77	8.79	0.45	320.13	0.000	48.871	320.00	321.01	1.01**	1.26	5.38	0.45	321.46	0.000	0.000	n/a	1.50	n/a
14	15	1.52	320.50	321.01	0.51	0.44	3.24	0.18	321.19	0.000	77.175	321.50	321.99 j	0.49**	0.44	3.42	0.18	322.17	0.000	0.000	n/a	1.50	0.27
15	15	0.70	321.25	321.99	0.74	0.25	0.93	0.12	322.10	0.000	107.624	322.33	322.66 j	0.33**	0.25	2.74	0.12	322.77	0.000	0.000	n/a	1.00	n/a
16	15	1.57	320.50	321.01	0.51	0.45	3.35	0.19	321.19	0.000	120.000	323.50	324.00 j	0.50**	0.45	3.46	0.19	324.18	0.000	0.000	n/a	1.00	0.19
17	15	0.22	320.50	321.01	0.51	0.11	0.47	0.06	321.07	0.000	59.228	321.10	321.28 j	0.18**	0.11	2.00	0.06	321.34	0.000	0.000	n/a	1.00	n/a

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Notes: * depth assumed; ** Critical depth.; j-Line contains hyd. jump ; c = cir e = ellip b = box

Hydraflow HGL Computation Procedure

General Procedure:

Hydraflow computes the HGL using the Bernoulli energy equation. Manning's equation is used to determine energy losses due to pipe friction. In a standard step, iterative procedure, Hydraflow assumes upstream HGLs until the energy equation balances. If the energy equation cannot balance, supercritical flow exists and critical depth is temporarily assumed at the upstream end. A supercritical flow Profile is then computed using the same procedure in a downstream direction using momentum principles.

Col. 1 The line number being computed. Calculations begin at Line 1 and proceed upstream.

Col. 2 The line size. In the case of non-circular pipes, the line rise is printed above the span.

Col. 3 Total flow rate in the line.

Col. 4 The elevation of the downstream invert.

Col. 5 Elevation of the hydraulic grade line at the downstream end. This is computed as the upstream HGL + Minor loss of this line's downstream line.

Col. 6 The downstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 7 Cross-sectional area of the flow at the downstream end.

Col. 8 The velocity of the flow at the downstream end, (Col. 3 / Col. 7).

Col. 9 Velocity head (Velocity squared / 2g).

Col. 10 The elevation of the energy grade line at the downstream end, HGL + Velocity head, (Col. 5 + Col. 9).

Col. 11 The friction slope at the downstream end (the S or Slope term in Manning's equation).

Col. 12 The line length.

Col. 13 The elevation of the upstream invert.

Col. 14 Elevation of the hydraulic grade line at the upstream end.

Col. 15 The upstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 16 Cross-sectional area of the flow at the upstream end.

Col. 17 The velocity of the flow at the upstream end, (Col. 3 / Col. 16).

Col. 18 Velocity head (Velocity squared / 2g).

Col. 19 The elevation of the energy grade line at the upstream end, HGL + Velocity head, (Col. 14 + Col. 18) .

Col. 20 The friction slope at the upstream end (the S or Slope term in Manning's equation).

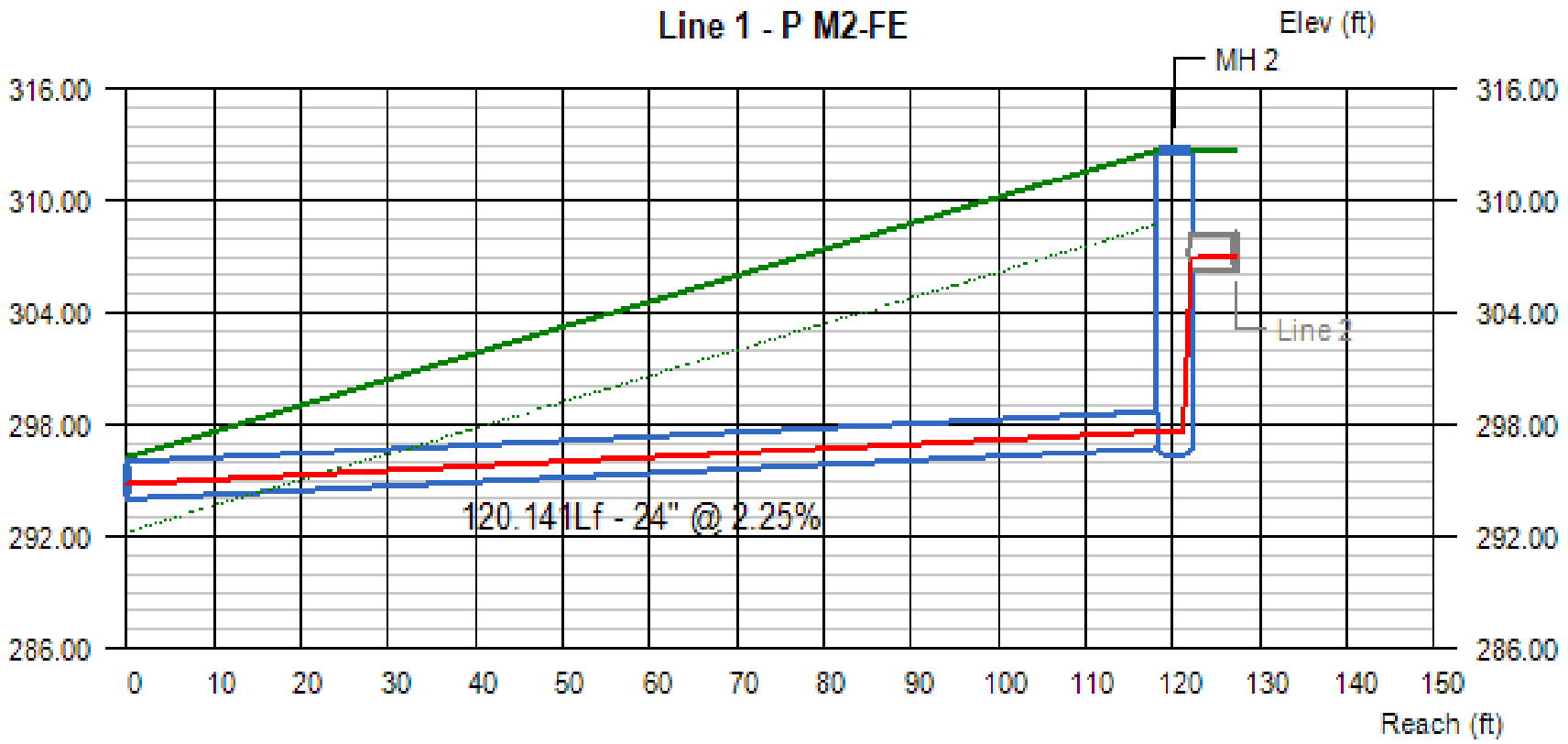
Col. 21 The average of the downstream and upstream friction slopes.

Col. 22 Energy loss. Average Sf/100 x Line Length (Col. 21/100 x Col. 12). Equals (EGL upstream - EGL downstream) +/- tolerance.

Col. 23 The junction loss coefficient (K).

Col. 24 Minor loss. (Col. 23 x Col. 18). Is added to upstream HGL and used as the starting HGL for the next upstream line(s).

Line Profile (Line 1) - P M2-FE



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
1	6.94	294.00	296.70	0.80	0.93	0.93	294.80	297.63	297.63	5.92	4.83	0.24	14.00

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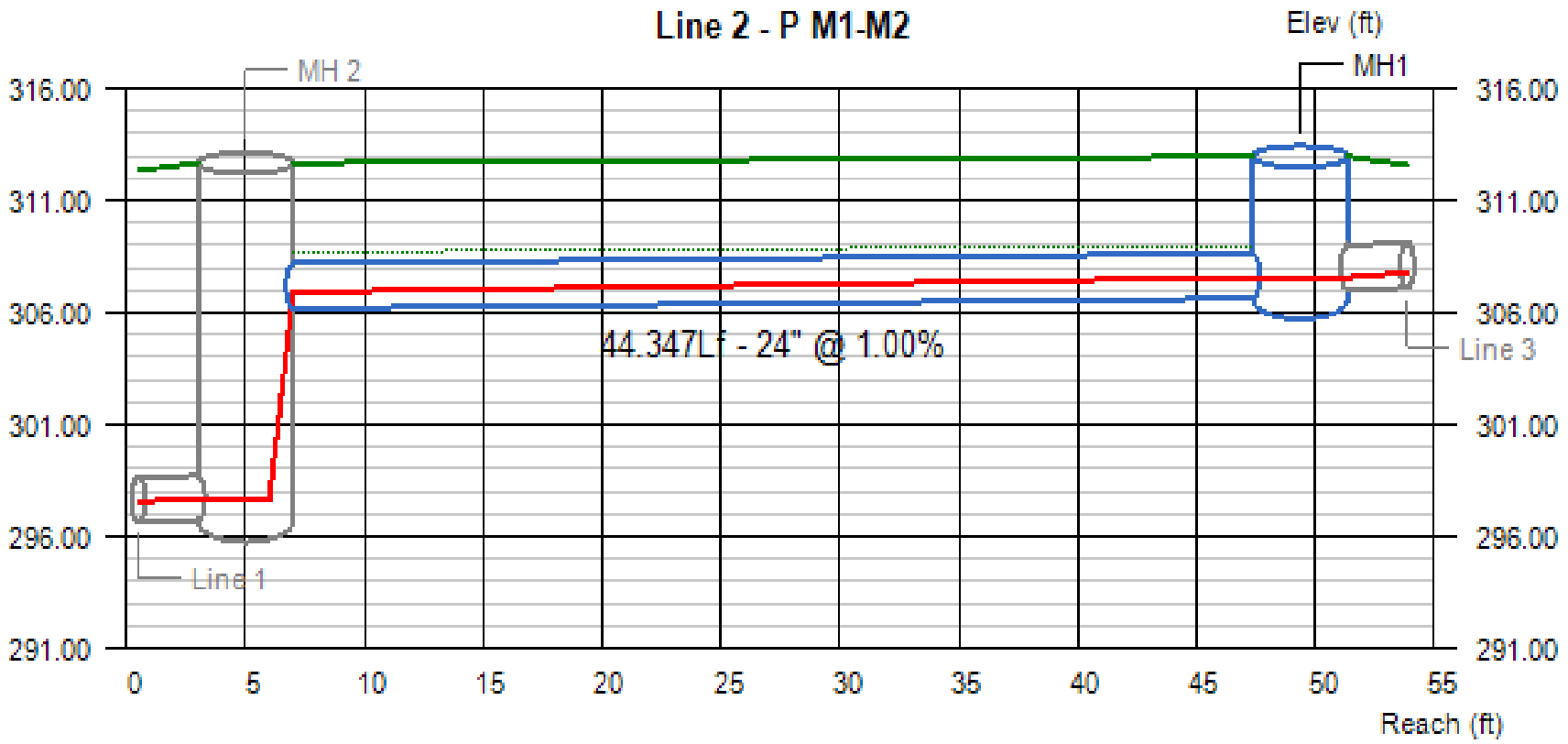
Line Profile (Line 2) - P M1-M2



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
2	6.94	306.20	306.64	0.73	0.93	0.93	306.93	307.58	307.58	6.71	4.83	4.50	4.34

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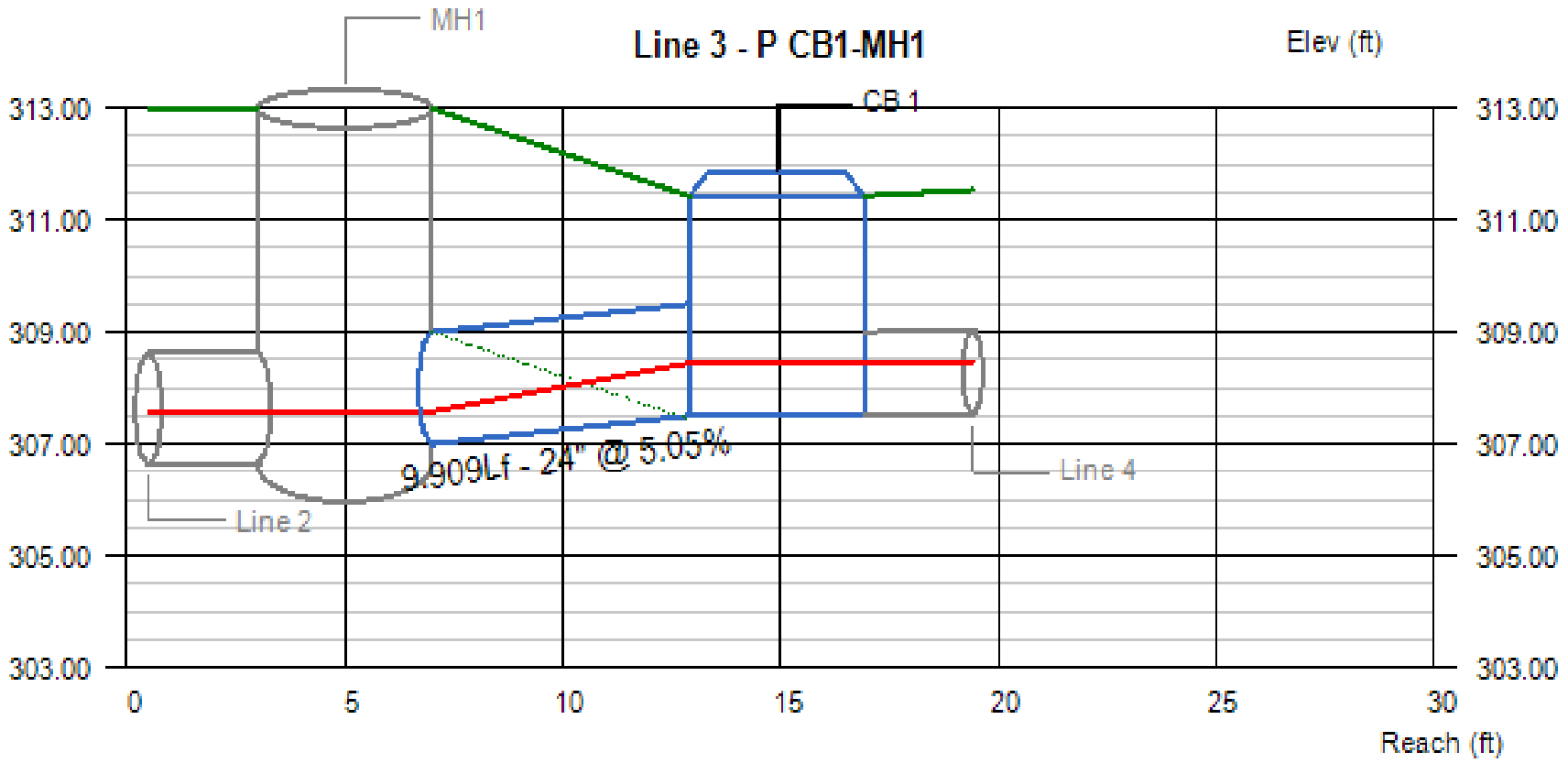
Line Profile (Line 3) - P CB1-MH1



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
3	6.94	307.00	307.50	0.58	0.93	0.93	307.58	308.43	308.43	9.24	4.83	3.99	1.93

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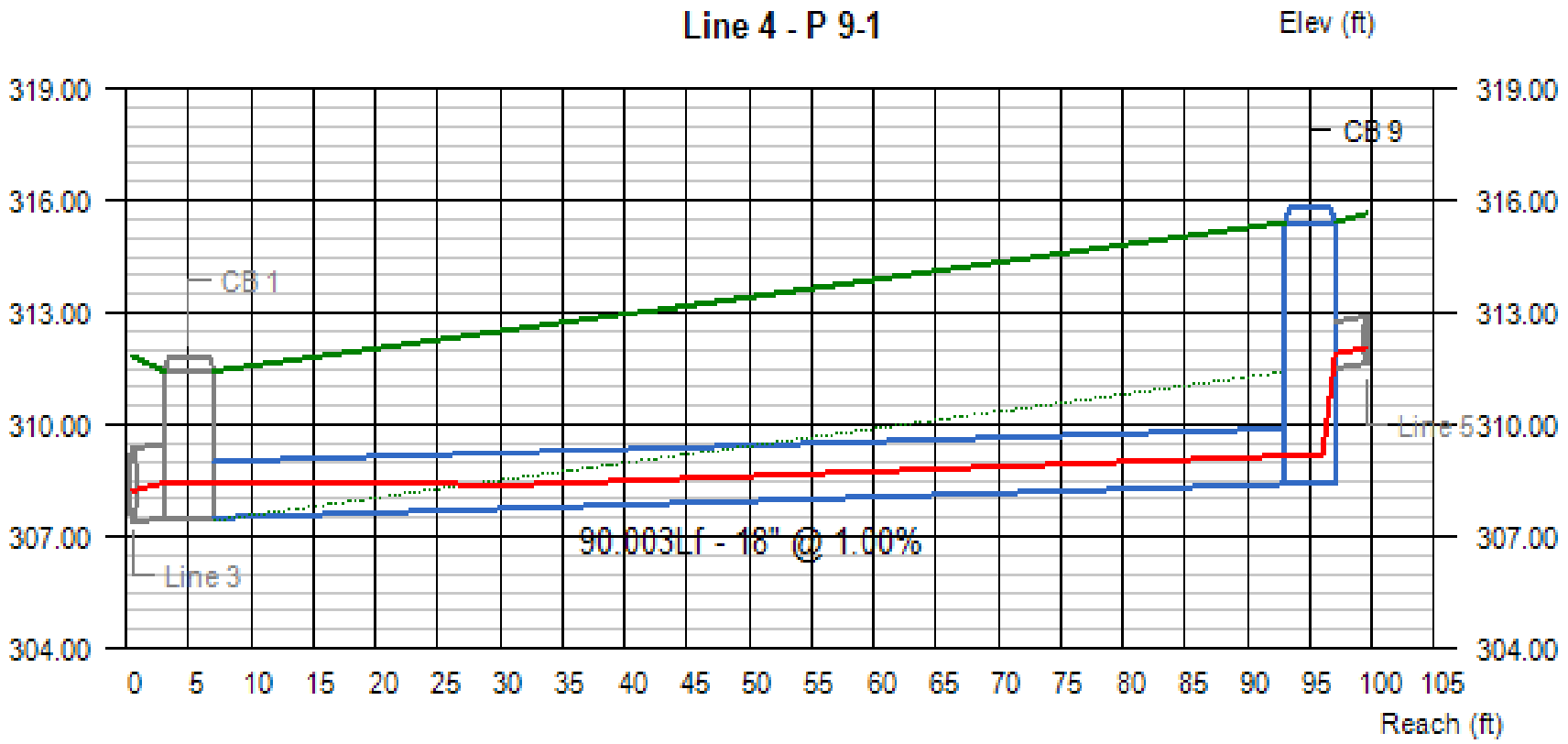
Line Profile (Line 4) - P 9-1



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
4	3.83	307.50	308.40	0.93	0.75	0.75	308.43	309.15 j	309.15	3.31	4.35	2.43	5.51

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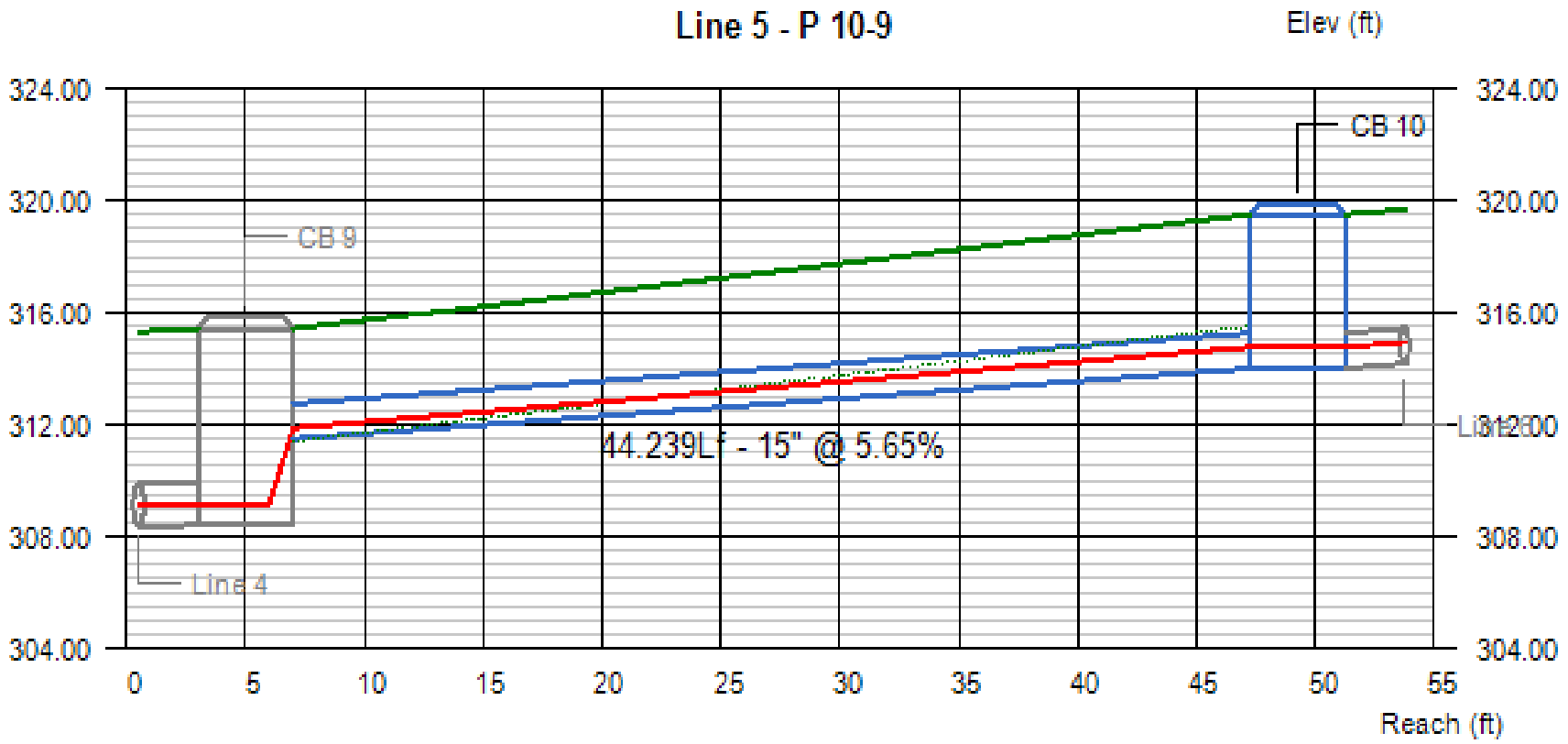
Line Profile (Line 5) - P 10-9



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
5	3.50	311.50	314.00	0.39	0.75	0.75	311.89	314.75	314.75	10.72	4.52	2.66	4.25

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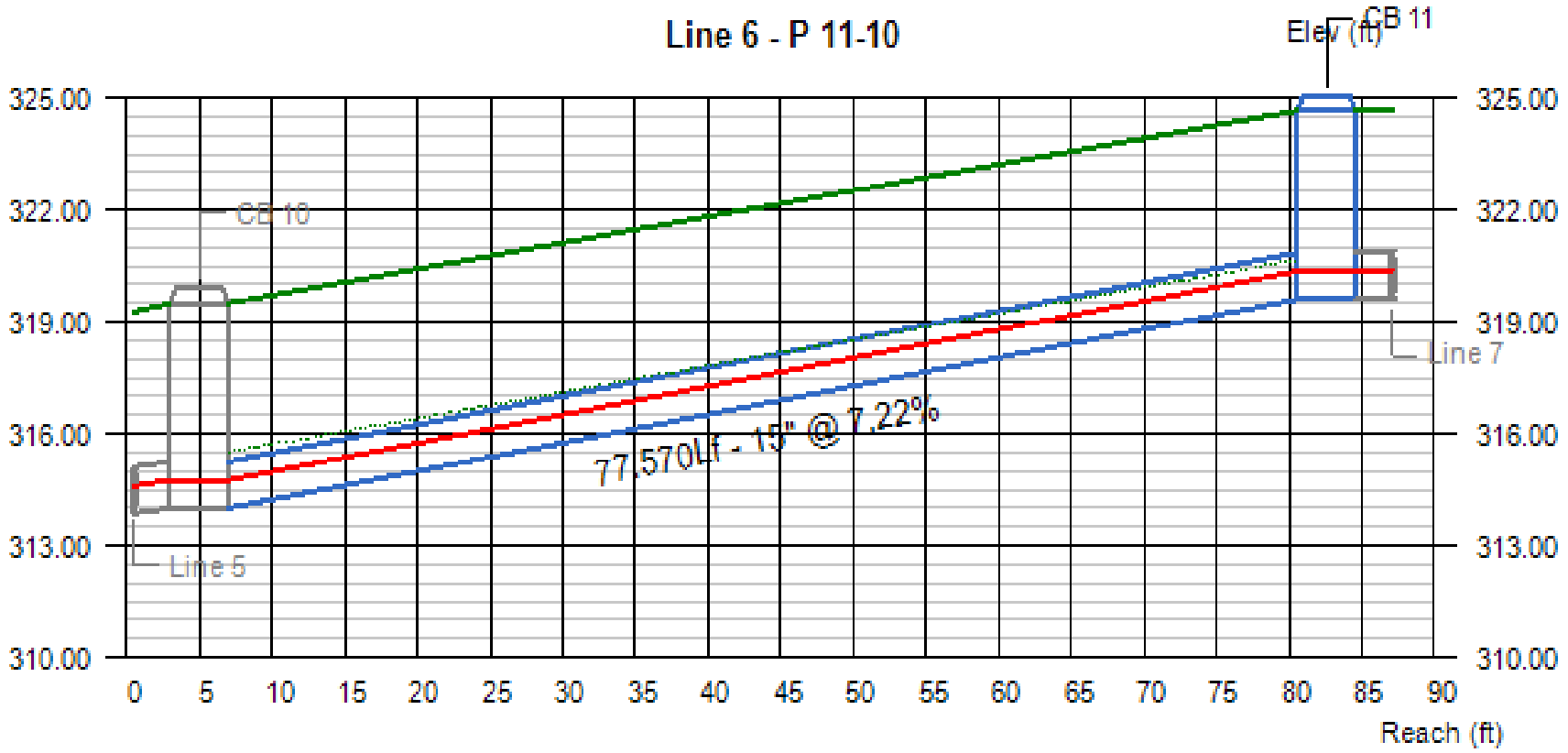
Line Profile (Line 6) - P 11-10



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
6	3.50	314.00	319.60	0.75	0.75	0.75	314.75	320.35	320.35	4.52	4.52	4.25	3.81

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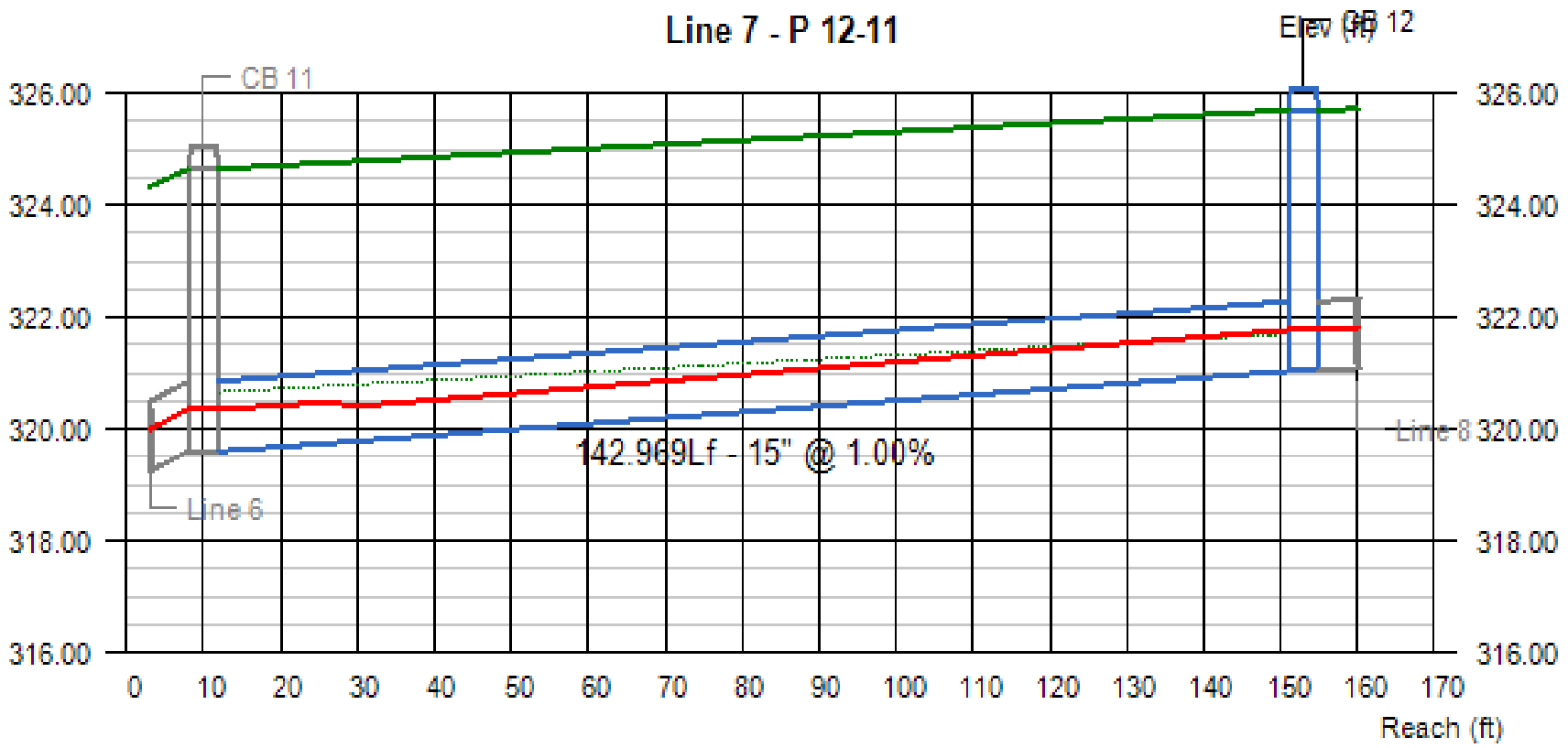
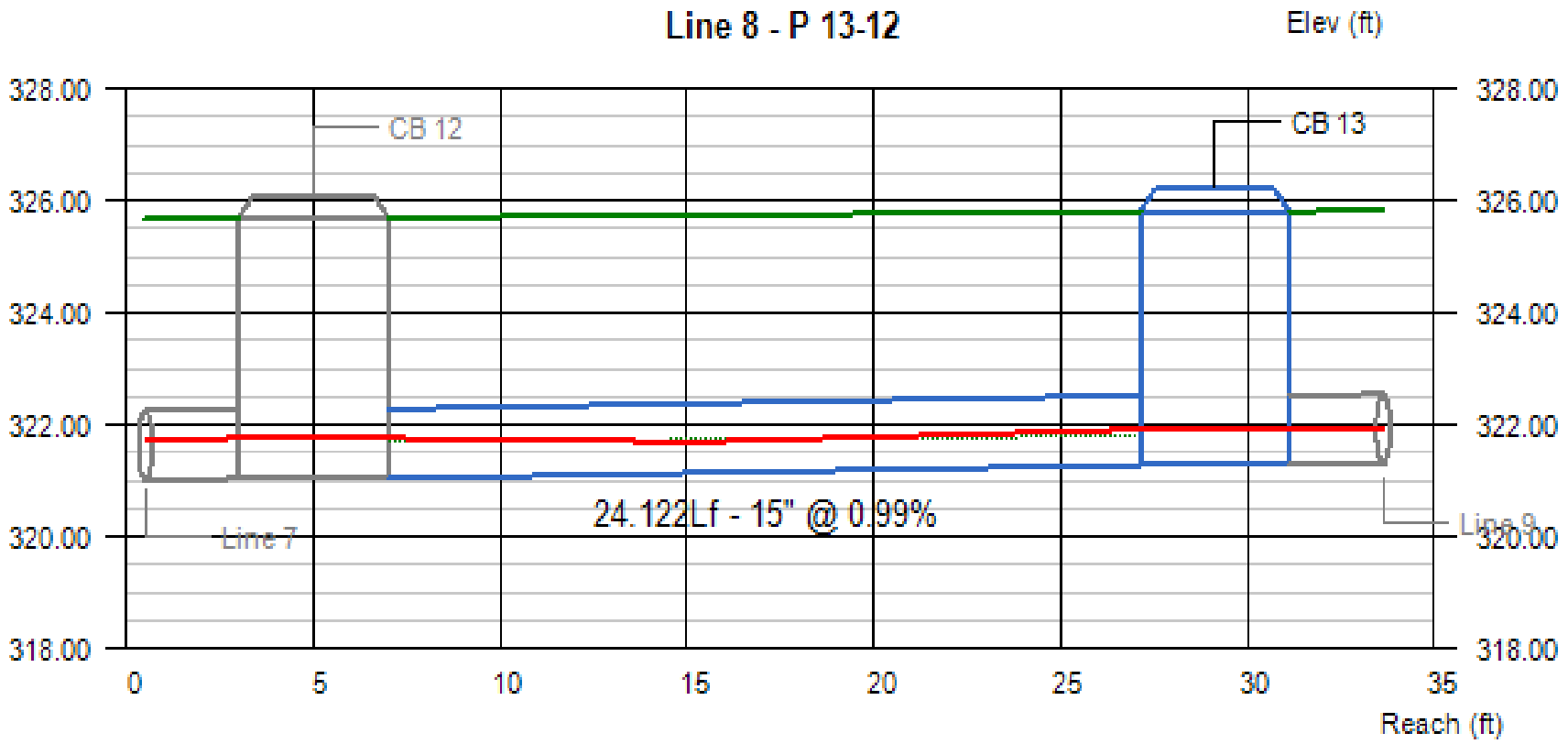
Line Profile (Line 7) - P 12-11



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
7	3.31	319.60	321.03	0.75	0.73	0.73	320.35	321.76 j	321.76	4.28	4.43	3.81	3.41

Project File:	No. Lines: 17	Run Date: 10/18/2022

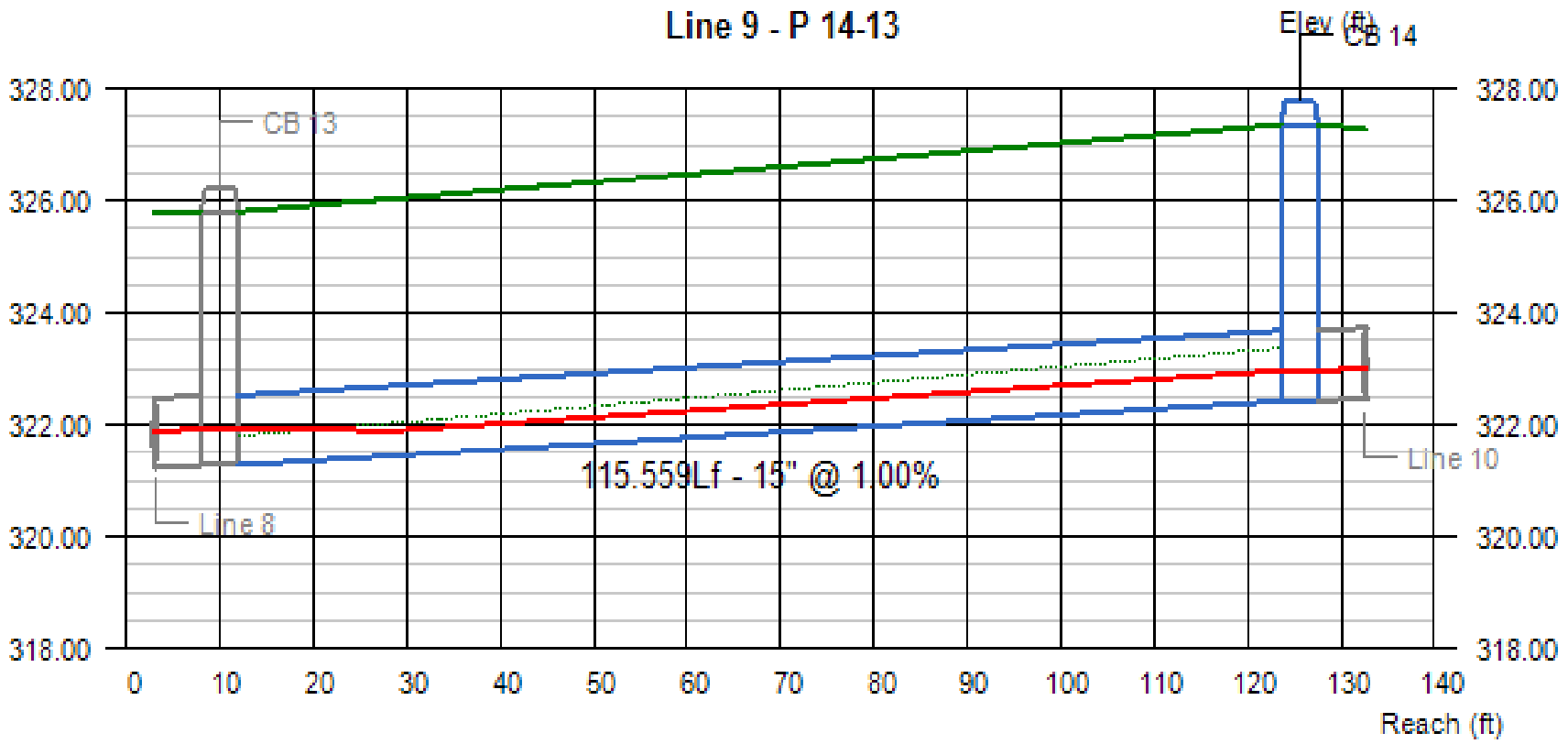
Line Profile (Line 8) - P 13-12



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
8	2.63	321.03	321.27	0.73	0.65	0.65	321.76	321.92 j	321.92	3.52	4.08	3.41	3.28

Project File: | No. Lines: 17 | Run Date: 10/18/2022

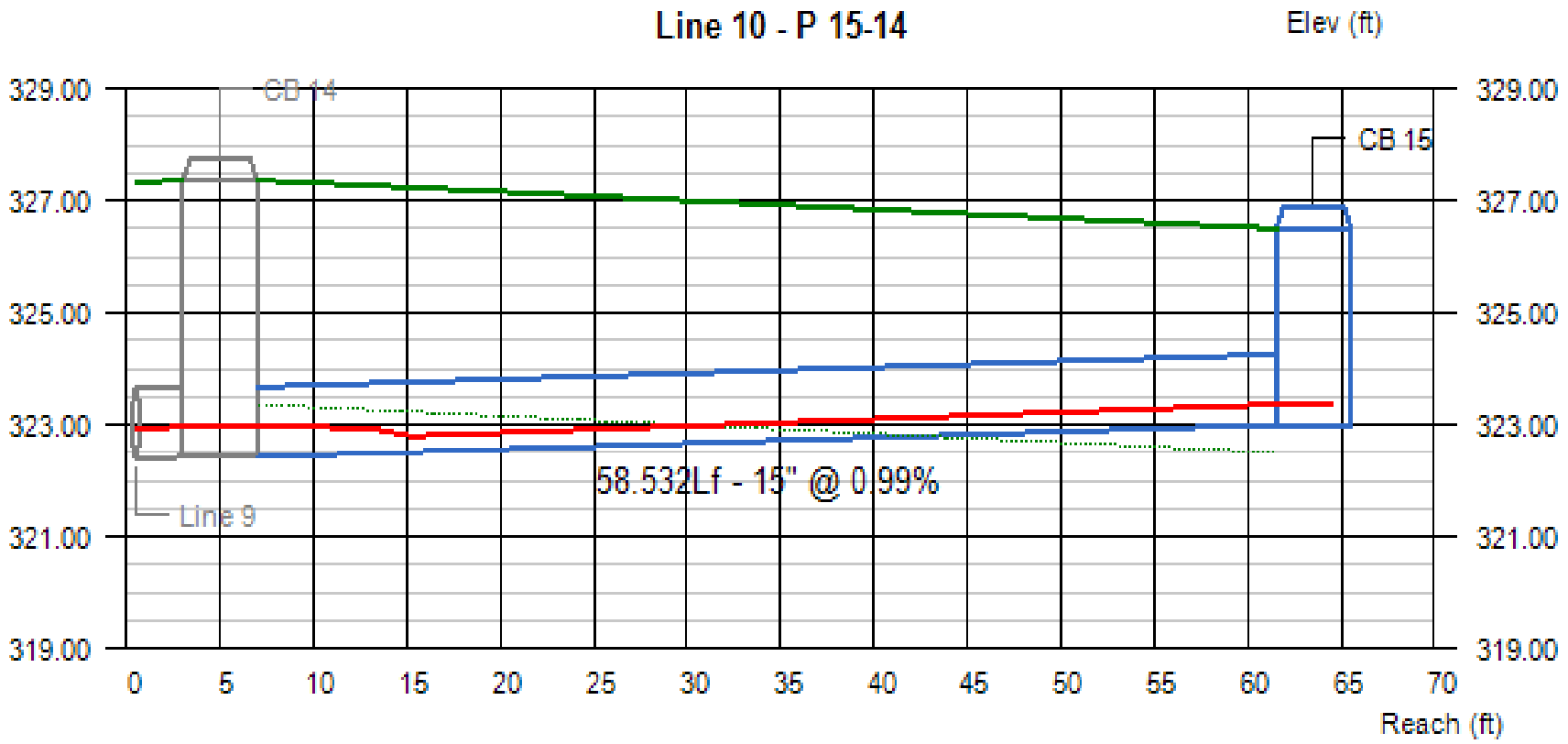
Line Profile (Line 9) - P 14-13



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
9	1.86	321.27	322.42	0.65	0.54	0.54	321.92	322.96 j	322.96	2.88	3.64	3.28	3.69

Project File:	No. Lines: 17	Run Date: 10/18/2022

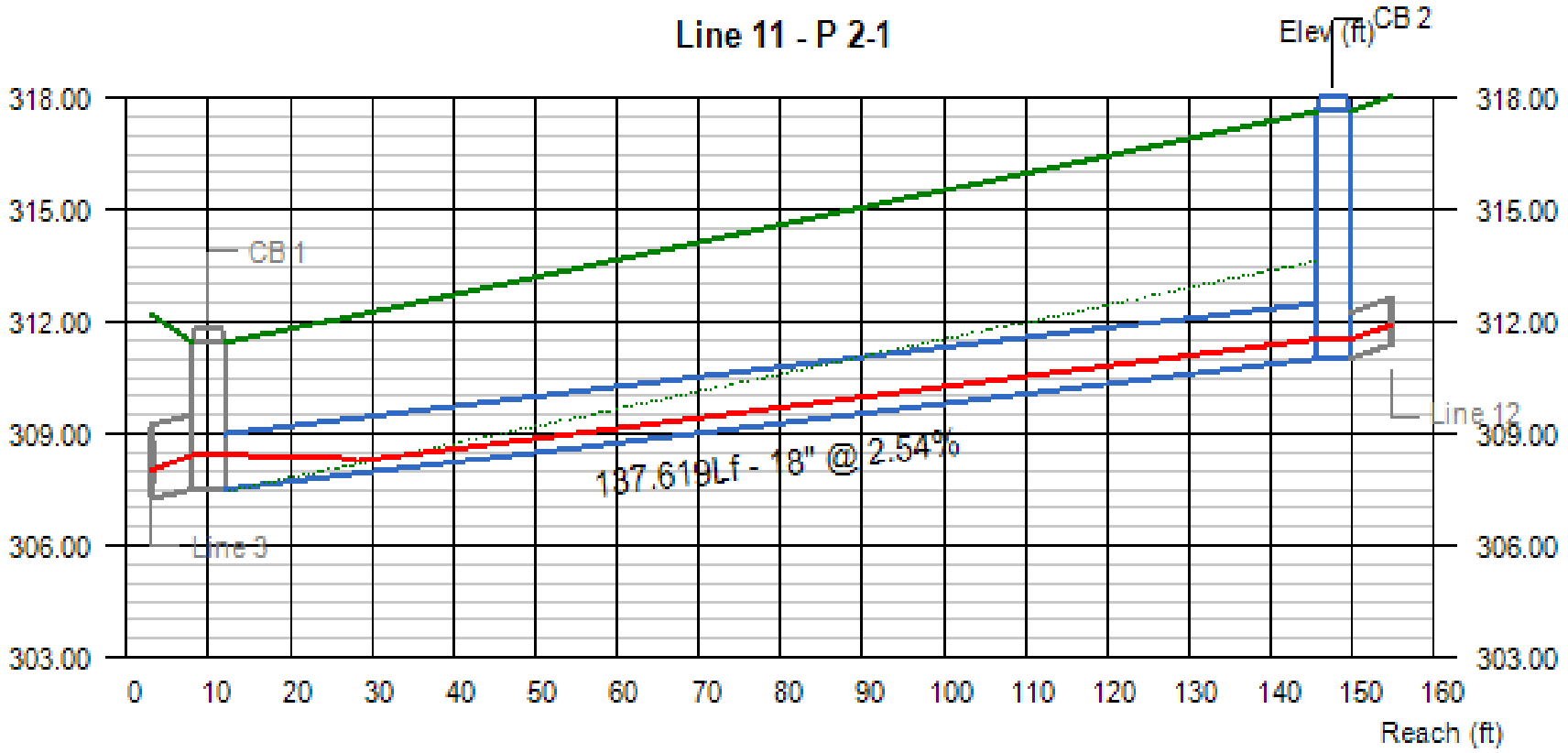
Line Profile (Line 10) - P 15-14



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
10	0.86	322.42	323.00	0.54	0.36	0.36	322.96	323.36 j	323.36	1.69	2.91	3.69	2.25

Project File: | No. Lines: 17 | Run Date: 10/18/2022

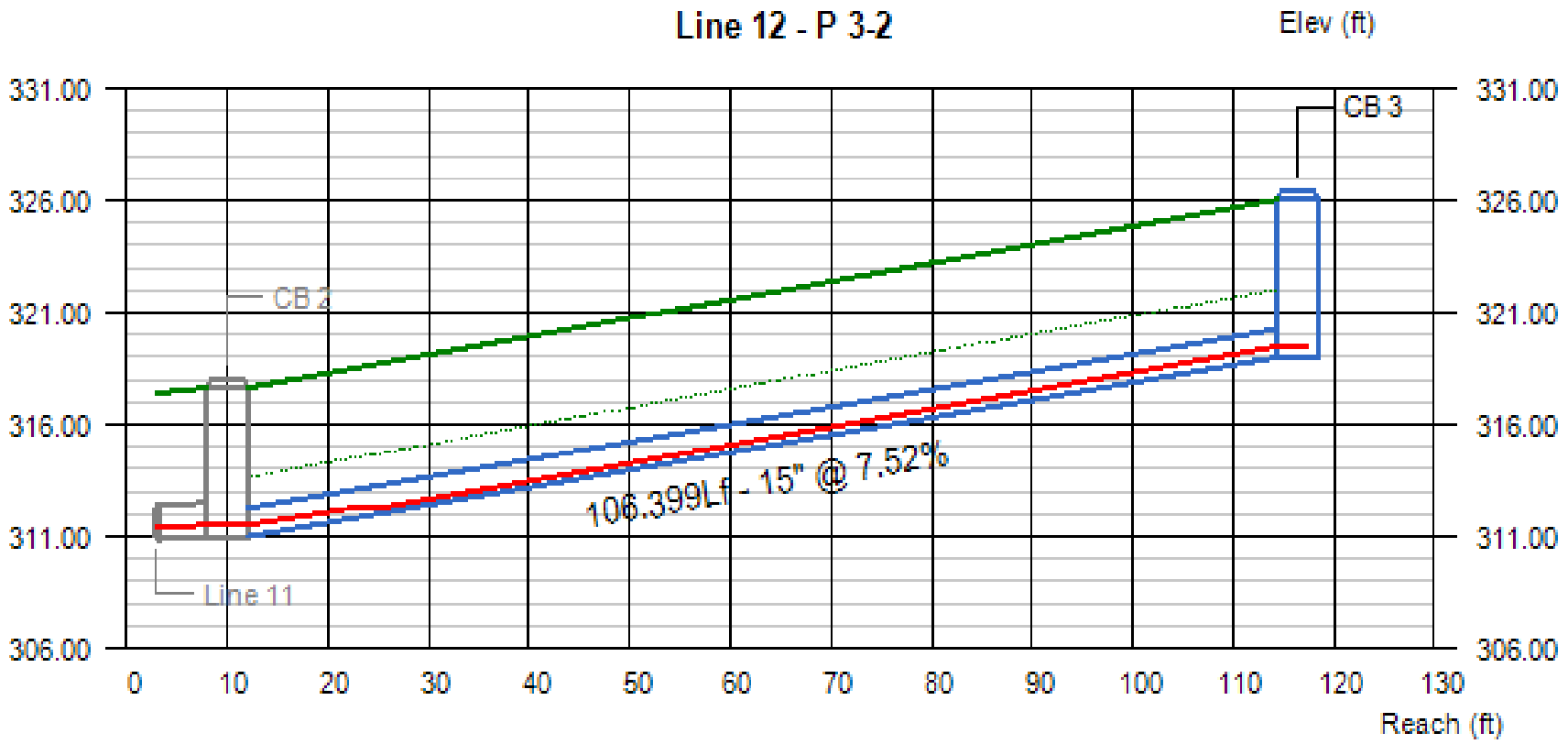
Line Profile (Line 11) - P 2-1



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
11	1.89	307.50	311.00	0.93	0.52	0.52	308.43	311.52 j	311.52	1.63	3.50	2.43	5.14

Project File: | No. Lines: 17 | Run Date: 10/18/2022

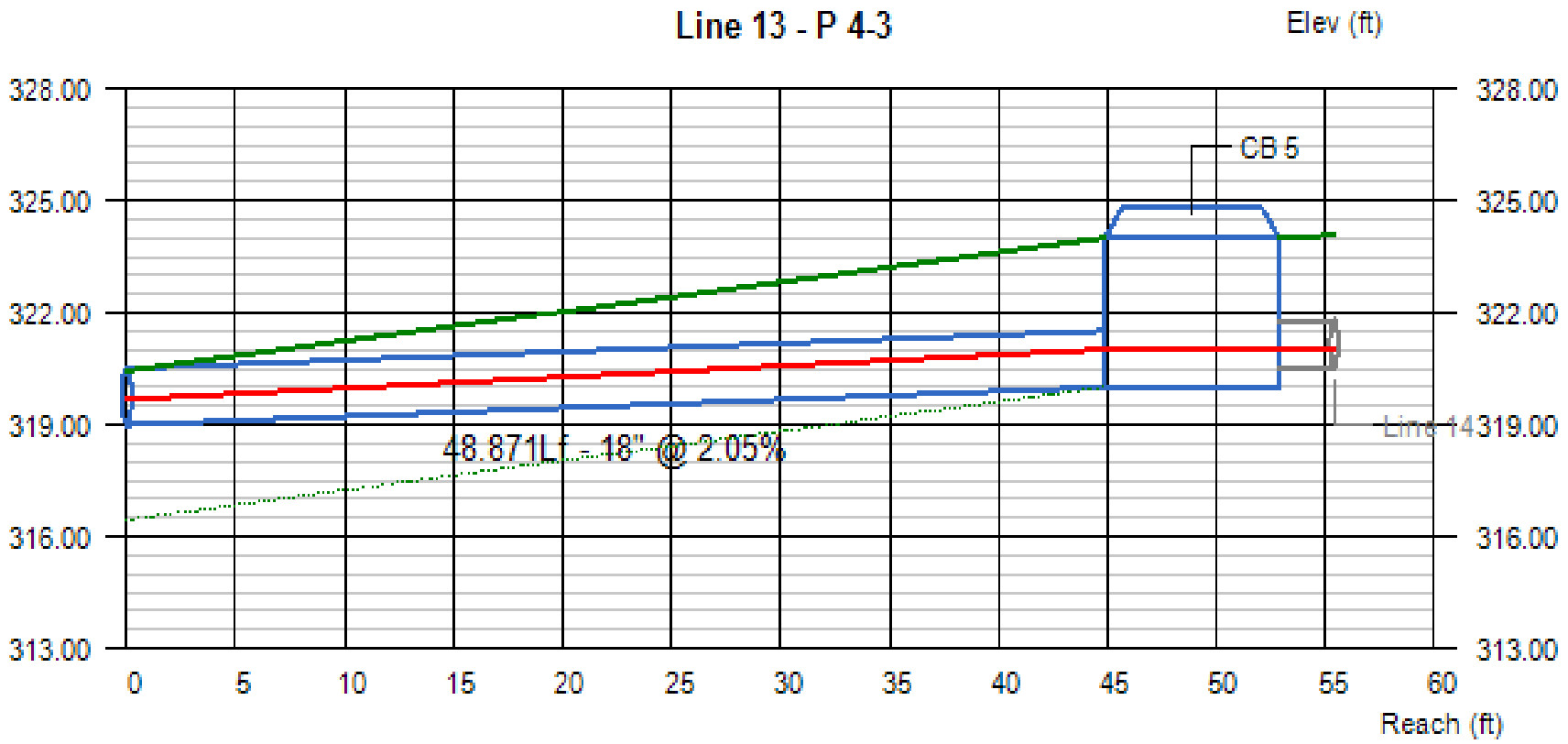
Line Profile (Line 12) - P 3-2



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
12	1.54	311.00	319.00	0.52	0.49	0.49	311.52	319.49 j	319.49	3.21	3.44	5.39	5.78

Project File: | No. Lines: 17 | Run Date: 10/18/2022

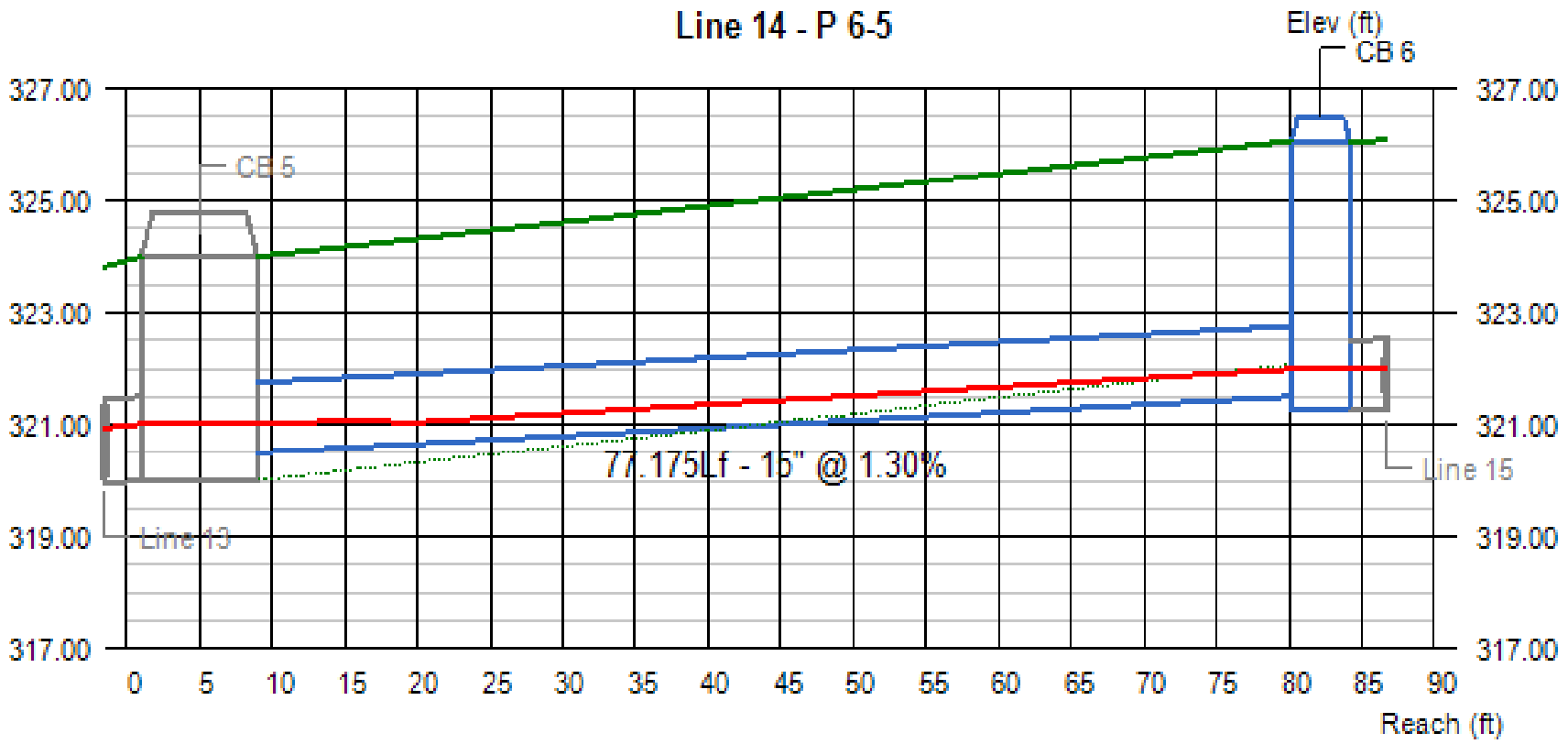
Line Profile (Line 13) - P 4-3



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
13	6.80	319.00	320.00	0.68	1.01	1.01	319.68	321.01	321.01	8.79	5.38	-0.06	2.50

Project File: | No. Lines: 17 | Run Date: 10/18/2022

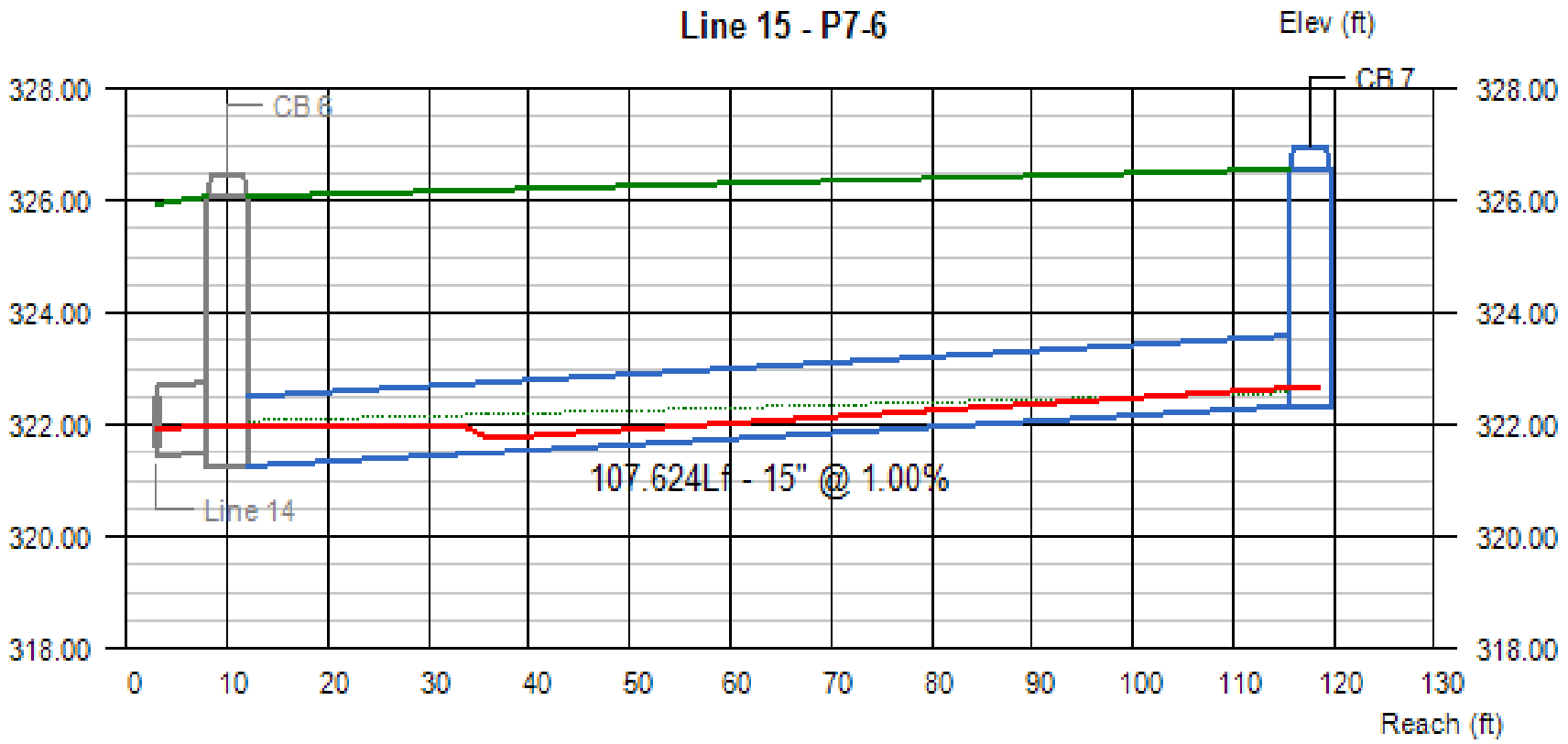
Line Profile (Line 14) - P 6-5



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
14	1.52	320.50	321.50	0.51	0.49	0.49	321.01	321.99 j	321.99	3.24	3.42	2.25	3.32

Project File:	No. Lines: 17	Run Date: 10/18/2022

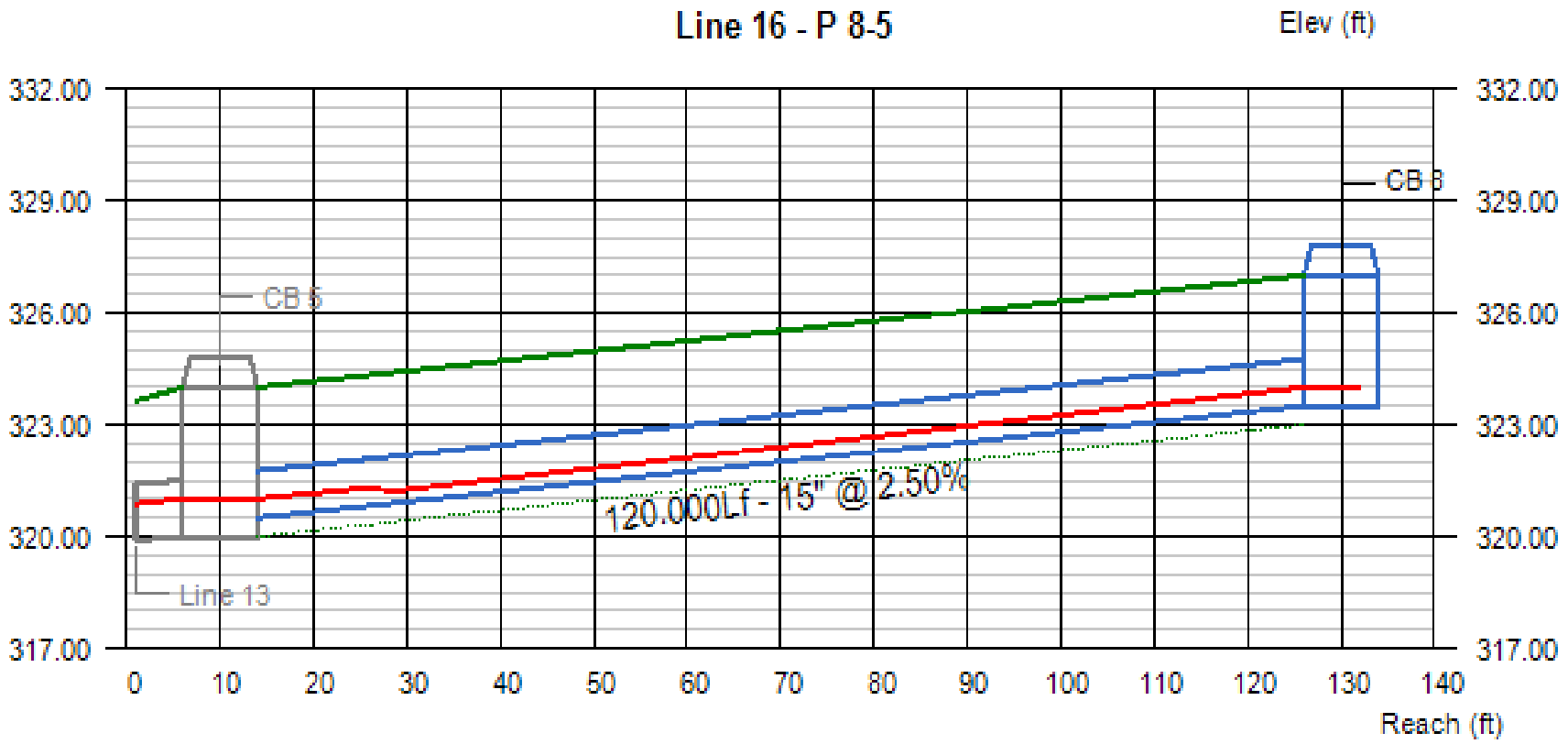
Line Profile (Line 15) - P7-6



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
15	0.70	321.25	322.33	0.74	0.33	0.33	321.99	322.66 j	322.66	0.93	2.74	3.57	2.99

Project File: | No. Lines: 17 | Run Date: 10/18/2022

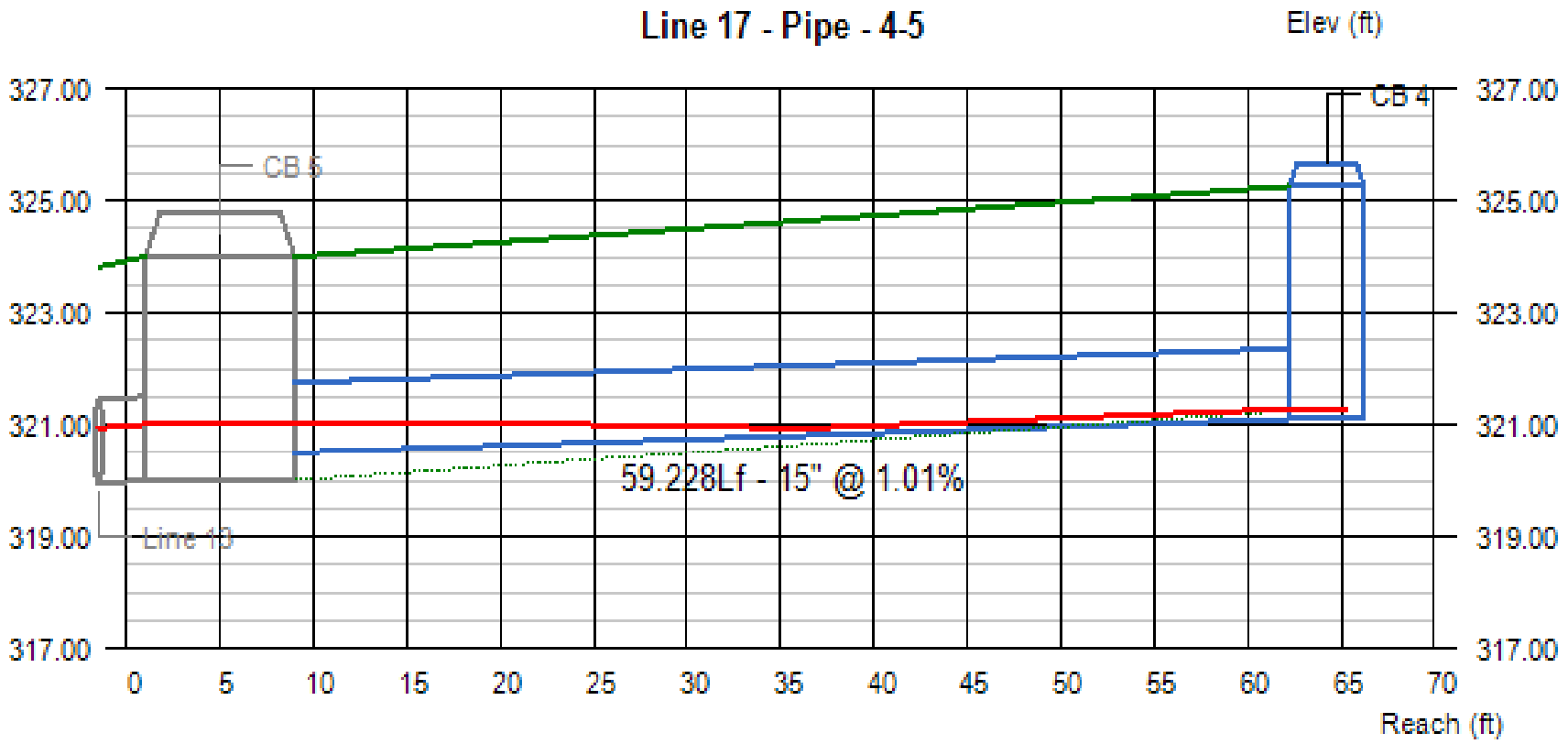
Line Profile (Line 16) - P 8-5



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
16	1.57	320.50	323.50	0.51	0.50	0.50	321.01	324.00 j	324.00	3.35	3.46	2.25	2.25

Project File: | No. Lines: 17 | Run Date: 10/18/2022

Line Profile (Line 17) - Pipe - 4-5



Line #	Q	Invert Elevation		Depth of Flow			Hydraulic Grade Line			Velocity		Cover	
	(cfs)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Hw (ft)	Dn (ft)	Up (ft)	Jnct (ft)	Dn (ft/s)	Up (ft/s)	Dn (ft)	Up (ft)
17	0.22	320.50	321.10	0.51	0.18	0.18	321.01	321.28 j	321.28	0.47	2.00	2.25	2.90

Project File: | No. Lines: 17 | Run Date: 10/18/2022

J. EDWARDS & ASSOCIATES LLC

LETTER OF TRANSMITTAL

TO:	**Town of Monroe, 7 Fan Hill Road, Monroe, CT**	DATE:	10/25/2022

PROPERTY:	**4 Main Street Monroe & 7182, 7192 Main Street Trumbull**

WE TRANSMIT TO YOU HEREWITH:

☑ DRAWINGS	☐ MYLAR	☐ DOCUMENTS	☐ CORRESPONDENCE

SENT VIA:

☐ MAIL	☐ COURIER	☐ PICK-UP	☑ DELIVERED BY US

COPIES	*JOB NO.*	*DATE*	*DESCRIPTION*
10	716	10/25/22	IWWC application
3/7		10/25/22	Title sheet, 1.1-1.2, 2.0-2.4, 4.0- 4.3, 5.0-5.1 (full/reduced)
2		10/14/22	Engineering Report
1	#1031	10/24/22	$ 675.00 fee check
1		10/25/22	CD containing application material

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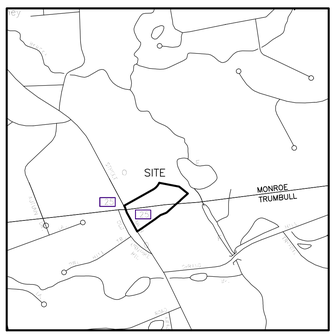
CONNECTICUT



VICINITY MAP
1"=1000'

SHEET LIST

1.0 TITLE SHEET
1.1 EXISTING CONDITIONS SURVEY
1.2 AREA PLAN
2.0–2.1 SITE PLAN & ENLARGEMENT
2.2 SCHEMATIC SITE PLAN
2.3 EROSION CONTROL PLAN
2.4 UNDERGROUND UTILITIES PLAN
4.0–4.3 CONSTRUCTION DETAILS
5.0–5.1 DRAINAGE AREA MAPS

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7182 & 7192 MAIN STREET TRUMBULL
&
4 MAIN STREET MONROE
CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	10–18–22	IWWC (TRUMBULL)
2	10–25–22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: **716**
DRAWN BY: NC/JE
SCALE:

TITLE

TITLE SHEET

SHEET NUMBER

1.0

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\1.0–TITLE (MONROE)

NOTES:

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATION OF CONNECTICUT STATE AGENCIES, SECTION 20-300b-1 THROUGH 20-300b-20, EFFECTIVE OCTOBER 26, 2018, AND THE "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC.
2. THE BOUNDARY DETERMINATION IS BASED UPON THE RESURVEY METHOD.
3. THE SURVEY CONFORMS TO HORIZONTAL CLASS A-2 ACCURACY STANDARDS. VERTICAL DATA CONFORMS TO CLASS HE SURVEY CONFORMS TO HORIZONTAL CLASS A-2 ACCURACY STANDARDS. VERTICAL DATA CONFORMS TO CLASS V-2 STANDARDS. TOPOGRAPHIC DATA CONFORMS TO CLASS T-2 STANDARDS. CONTOURS AND ELEVATIONS REFER TO NAVD 88 DATUM.
4. BEARINGS AND COORDINATES ARE DERIVED FROM THE CONNECTICUT GEODETIC SURVEY (CTGS) VIA GPS TECHNOLOGY AND CONVENTIONAL SURVEY METHODS.
5. THIS IS A DATA ACCUMULATION PLAN. THE PURPOSE OF WHICH IS TO DEPICT THE POSITION OF BOUNDARIES WITH RESPECT TO PERTINENT STRUCTURES & OTHER ITEMS.
6. PROPERTIES (4 MAIN ST., MONROE & 7192 MAIN ST. TRUMBULL) ARE ALSO KNOWN AS TOWN OF MONROE TAX LOTS 37.2 AND A PORTION OF 37.4 ON ASSESSORS MAP 4 AND TOWN OF TRUMBULL TAX LOT 30 ON ASSESSORS MAP C1.
7. PROPERTY (7182 MAIN ST., TRUMBULL) IS ALSO KNOWN AS TOWN OF TRUMBULL TAX LOT 29 ON ASSESSORS MAP C1.
8. TOTAL AREA = 290,719.44 SQ.FT. OR 6.674 ACRES IN MONROE = 174,762.72 SQ.FT. OR 4.012 ACRES. IN MONROE = 174,762.72 SQ.FT. OR 4.012 ACRES. IN TRUMBULL = 115,959.72 SQ.FT. OR 2.662 ACRES. IN TRUMBULL = 115,959.72 SQ.FT. OR 2.662 ACRES.
9. PROPERTY (4 MAIN ST., MONROE & 7192 MAIN ST. TRUMBULL) LIES IN MONROE ZONING DISTRICTS B-1 & I-1 AND TRUMBULL ZONING DISTRICT I-L2.
10. . PROPERTY (7182 MAIN ST., TRUMBULL) LIES IN TRUMBULL ZONING DISTRICT I-L2.
11. A PORTION OF THE (4 MAIN ST., MONROE & 7192 MAIN ST. TRUMBULL) PARCEL LIES WITHIN FLOOD ZONE AE (NO 4 MAIN ST., MONROE & 7192 MAIN ST. TRUMBULL) PARCEL LIES WITHIN FLOOD ZONE AE (NO PARCEL LIES WITHIN FLOOD ZONE AE (NO ELEV.), FLOODWAY ZONE AE (WITH CROSS SECTION) AND 0.2% ANNUAL CHANCE FLOOD HAZARD ZONE X (NO ELEV.) AS SHOWN ON FEMA FIRM MAP 09001C0286F, EFFECTIVE DATE 6/18/2010.
12. THE (7182 MAIN ST., TRUMBULL) PROPERTY DOES NOT LIE WITHIN A FLOOD HAZARD ZONE AS DETERMINED BY FEMA.
13. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND OTHER THAN DEPICTED THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND OTHER THAN DEPICTED HEREON, IF ANY, IS UNKNOWN.
14. WETLANDS DELINEATED BY JMM WETLAND CONSULTING SERVICES, LLC, INC. ON SEPTEMBER 6, 2019. FLAGS WERE LOCATED VIA CONVENTIONAL SURVEY METHODS. .
15. MAP REFERENCE:

A.) PLAN ENTITLED: "BOUNDARY MAP OF PROPERTY LOCATED ON BRIDGEPORT - NEWTOWN TPK. (RTE. 25) MONROE/TRUMBULL, CONNECTICUT, PREPARD FOR N & S DEVELOPMENT CO., LTD." SCALE: 1"=40'. DATED: AUGUST 3, 1981. PREPARED BY J & D KASPER & ASSOCIATES. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 1629. 15.

B. PLAN ENTITLED: "SITE PLAN OF PROPERTY LOCATED ON THE BRIDGEPORT-NEWTOWN TURNPIKE (RTE. 25) MONROE/TRUMBULL, CONNECTICUT PREPARED FOR CHARLES POLATESEK.", SCALE: 1"=40'. DATED: FEB. 9, 1982. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 1739 AND IN THE TOWN OF TRUMBULL CLERK'S OFFICE AS MAP 2306. 15.

C. PLAN ENTITLED: "BOUNDARY MAP OF PROPERTY OWNED BY THE BRIDGEPORT CHILDREN'S CAMP INC. MONROE/TRUMBULL, CONNECTICUT.", SCALE: 1"=100'. DATED: MARCH 10, 1982, REVISED: 12-29-82. PREPARED BY J&D KASPER & ASSOCIATES. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 1630. 15.

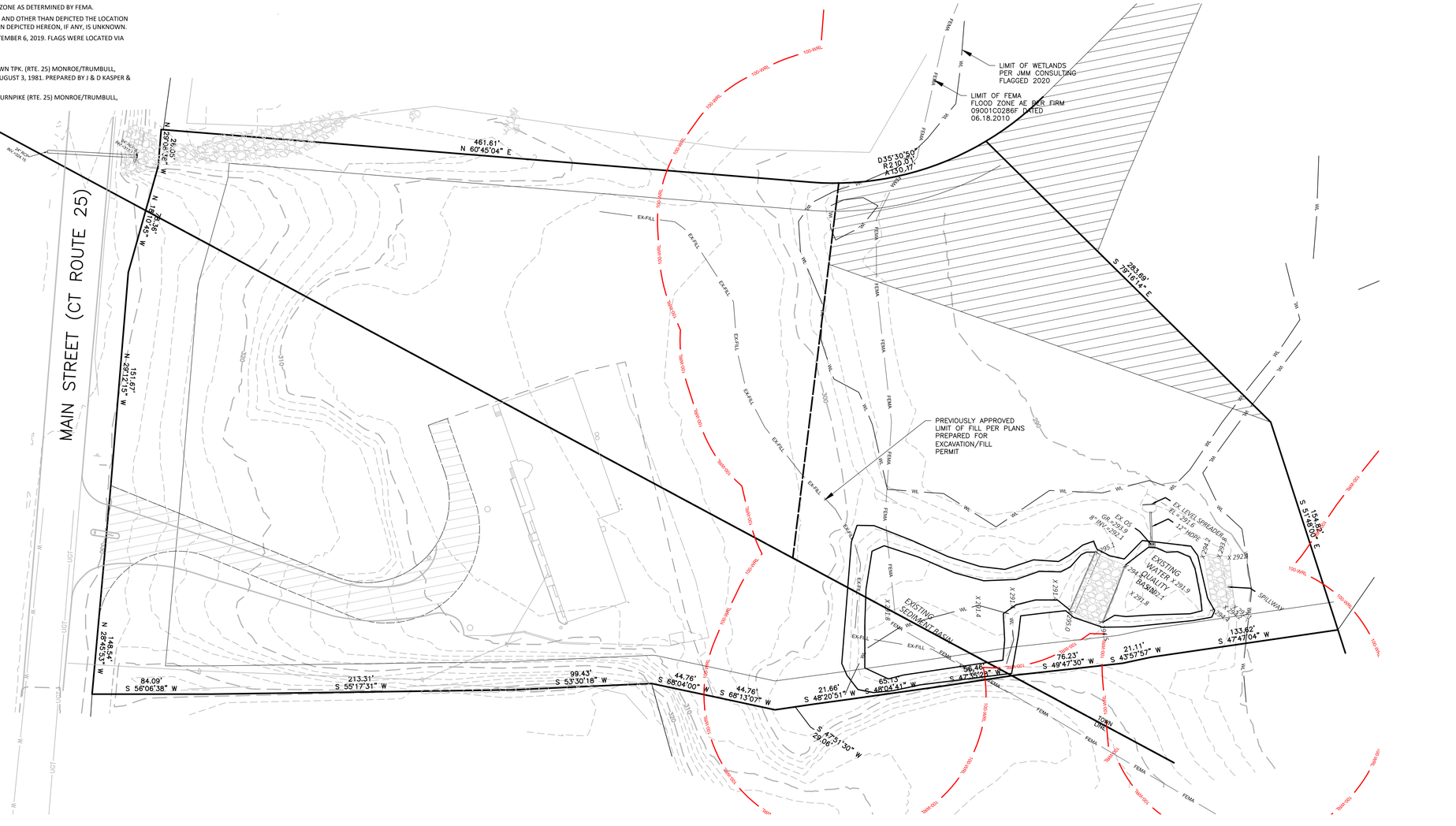
D. PLAN ENTITLED: "BOUNDARY SURVEY PREPARED FOR AMERICAN TRADING REAL ESTATE PROPERTIES INCORPORATED. MAIN STREET (ROUTE 25), MONROE/TRUMBULL, CT." SCALE: 1"=100'. DATED: 8/30/88. REVISED THRU: 5/3/91. PREPARED BY CODESPOTI & ASSOCIATES. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 2189. 15.

E. PLAN ENTITLED: "DATA ACCUMULATION PLAN, DEPICTING A LOT LINE REVISION FOR #38, #42, #44 MAIN STREET (CT RT. #25), MONROE/TRUMBULL, CONNECTICUT PREPARED FOR KINBALL LAND HOLDINGS, LLC.", SCALE: 1"=100'. DATED: 4/02/03, REVISED: 5/22/03. PREPARED BY SPATH-BJORKLUND ASSOCIATES, INC. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 2800A. 12.

F. PLAN ENTITLED "CONNECTICUT STATE HIGHWAY DEPARTMENT, RIGHT OF WAY MAP, TOWN OF MONROE, BRIDGEPORT-NEWTOWN ROAD FROM THE TRUMBULL TOWN LINE NORTHERLY ABOUT 6,800 FEET. ROUTE No. 25, No. 693-B, Sht. 1 OF 3", SCALE: 1" = 40', DATED: MARCH 9, 1939.

G. "PROPERTY SURVEY OF 4 MAINS STREET MONROE & 7180 & 7192 MAIN STREET, TRUMBULL, CONNECTICTU" REVISED TO 12/23/2020. PREPARED BY ACCURATE LAND SURVEYING.

H. RECORD MAP 3529.



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- EXISTING SANITARY
- PROPOSED SANITARY
- SANITARY LATERALS
- FORCE MAIN
- FOOTING DRAIN
- ROOF DRAIN
- WATER SERVICE
- GAS LINE
- CLEAN OUT TO GRADE
- INLAND WETLANDS WITH FLAG #
- WETLAND REVIEW LIMIT
- OBSERVATION HOLE
- PERCOLATION TEST
- GRADE TO DRAIN
- SYNTHETIC FILTER BARRIER
- WATER BREAK
- LIMIT OF DISTURBANCE
- FOUNDATION ENVELOPE
- BUILDING SETBACK LINE
- DRAINAGE EASEMENT
- GRADING EASEMENT
- SLOPE RIGHTS
- CONSERVATION EASEMENT
- MAINTENANCE EASEMENT

40 0 40 80

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STATE OF CONNECTICUT — JASON EDWARDS — LICENSED LAND SURVEYOR

GATEWAY COMMONS

7182 MAIN STREET, LLC
7182 & 7192 MAIN STREET TRUMBULL
&
4 MAIN STREET MONROE
CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	10–18–22	IWWC (TRUMBULL)
2	10–25–22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: 1"=40'

TITLE

EXISTING CONDITIONS SURVEY

SHEET NUMBER

1.1

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\1.1-S-0 40 SCALE

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2	10-25-22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: 1"=100'

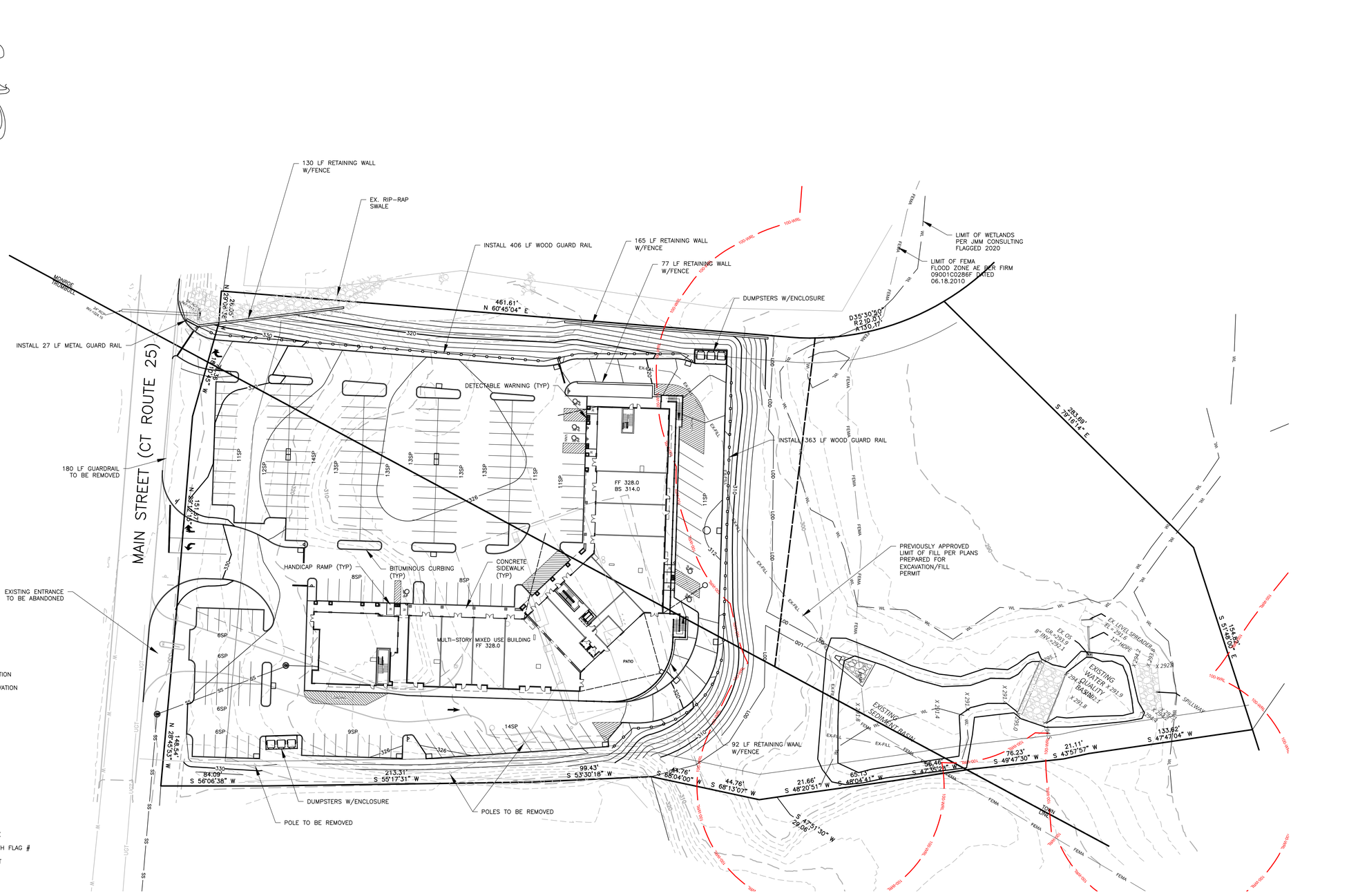
TITLE

AREA PLAN

SHEET NUMBER

1.2

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\1.2-AREA PLAN (MONROE)



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- 520.2 EXISTING SPOT ELEVATION
- 520.2 PROPOSED SPOT ELEVATION
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- EXISTING SANITARY
- PROPOSED SANITARY
- SS SANITARY LATERALS
- FM FORCE MAIN
- FD FOOTING DRAIN
- RD ROOF DRAIN
- W WATER SERVICE
- G GAS LINE
- COTG CLEAN OUT TO GRADE
- WL-27 INLAND WETLANDS WITH FLAG #
- 100-WRL WETLAND REVIEW LIMIT
- OBSERVATION HOLE
- PERCOLATION TEST
- GTD GRADE TO DRAIN
- SF SYNTHETIC FILTER BARRIER
- WATER BREAK
- LOD LIMIT OF DISTURBANCE
- FE FOUNDATION ENVELOPE
- BUILDING SETBACK LINE
- DE DRAINAGE EASEMENT
- GE GRADING EASEMENT
- SR SLOPE RIGHTS
- CE CONSERVATION EASEMENT
- ME MAINTENANCE EASEMENT

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4 MAIN STREET MONROE
CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	10-18-22	IWWC (TRUMBULL)
2	10-25-22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: 1"=40'

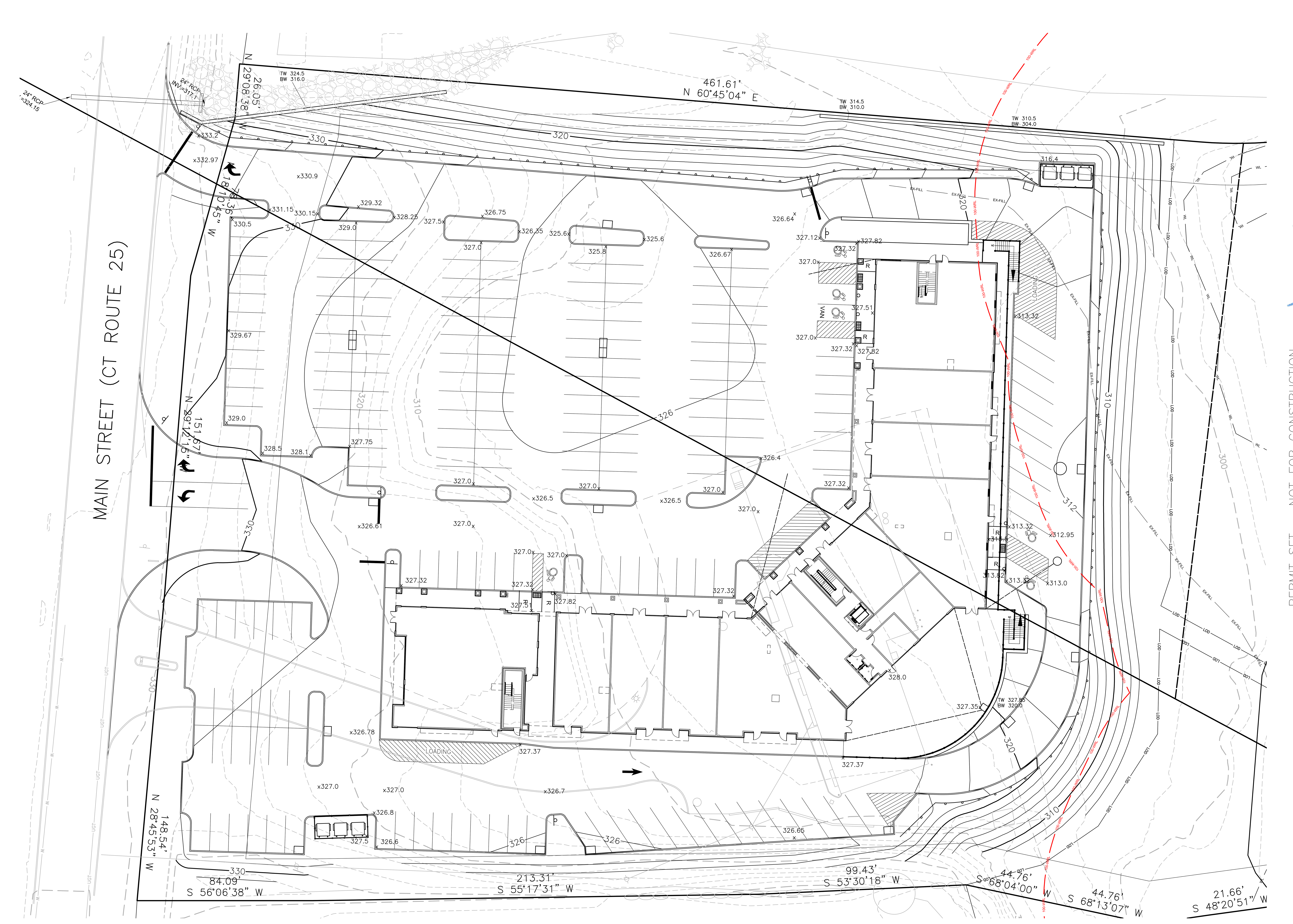
TITLE

SITE PLAN

SHEET NUMBER

2.0

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\2.0-S-1 40 SCALE



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CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	10-18-22	IWWC (TRUMBULL)
2	10-25-22	IWWC (MONROE)

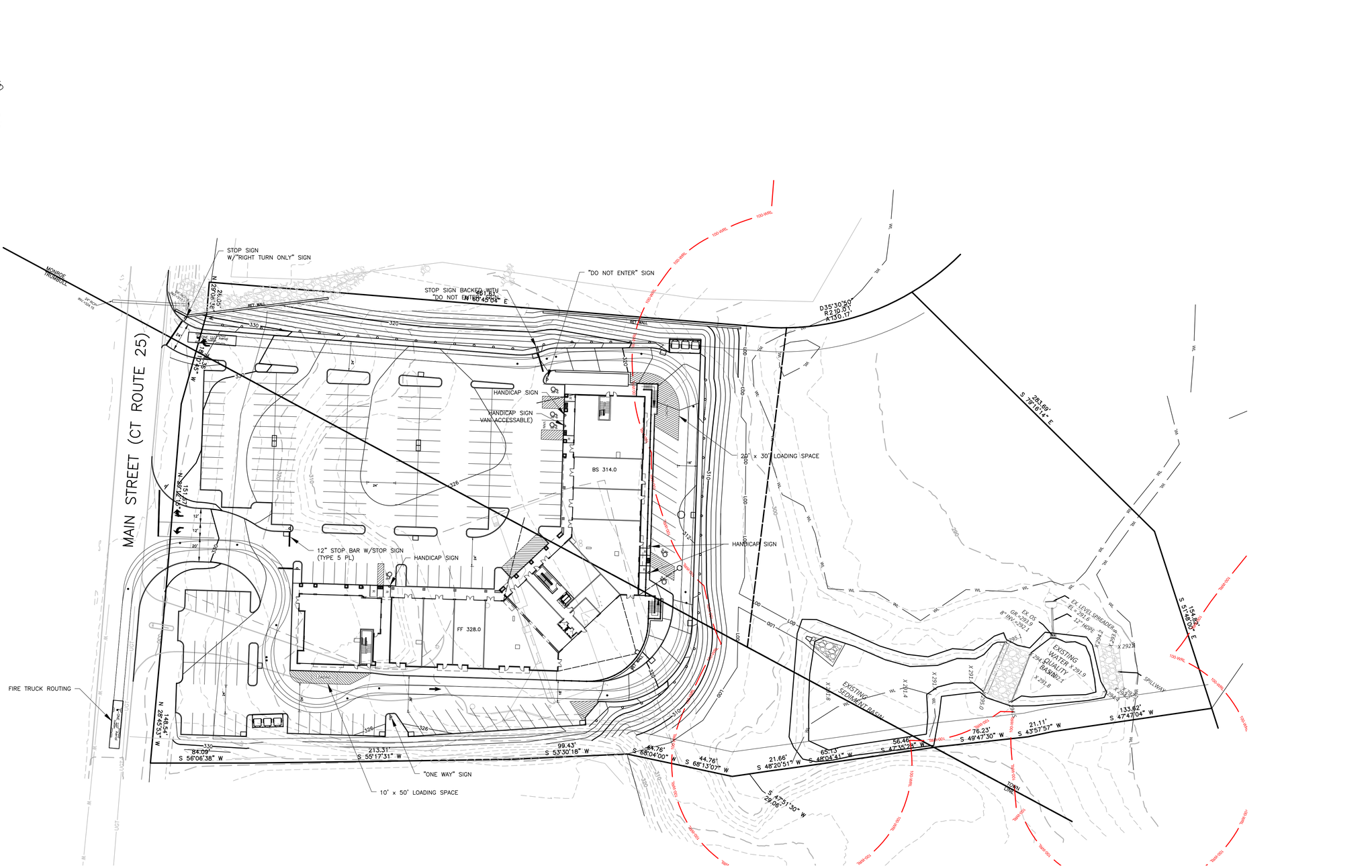
DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: 1"=20'

TITLE

SITE PLAN ENLARGEMENT

SHEET NUMBER

2.0



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ENGINEERING • SURVEYING • SITE PLANNING

227 Stepney Road Easton, CT 06612
Phone:203.268.4205 Fax: 203.268.5604
www.jedwardsassoc.com

GATEWAY COMMONS

7182 MAIN STREET, LLC
7182 & 7192 MAIN STREET TRUMBULL
&
4 MAIN STREET MONROE
CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	10-18-22	IWWC (TRUMBULL)
2	10-25-22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: 1"=40'

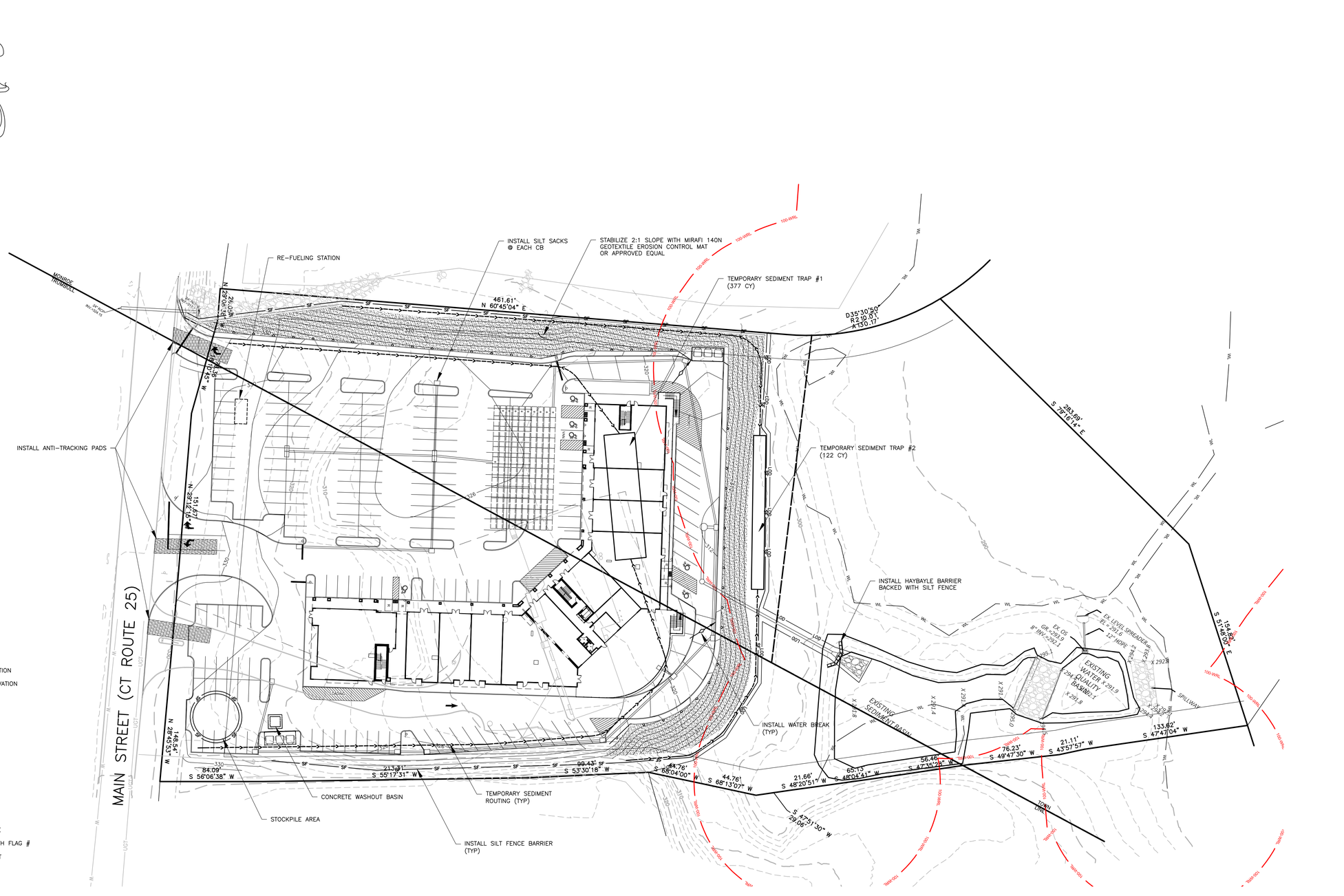
TITLE

SCHEMATIC SITE PLAN

SHEET NUMBER

2.2

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\2.2-S-2



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- 520.2 EXISTING SPOT ELEVATION
- 520.2 x PROPOSED SPOT ELEVATION
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- EXISTING SANITARY
- PROPOSED SANITARY
- SS SANITARY LATERALS
- FM FORCE MAIN
- FD FOOTING DRAIN
- RD ROOF DRAIN
- W WATER SERVICE
- G GAS LINE
- COTG CLEAN OUT TO GRADE
- INLAND WETLANDS WITH FLAG #
- 100-WRL WETLAND REVIEW LIMIT
- OBSERVATION HOLE
- PERCOLATION TEST
- GTD GRADE TO DRAIN
- SF SYNTHETIC FILTER BARRIER
- WATER BREAK
- LOD LIMIT OF DISTURBANCE
- FE FOUNDATION ENVELOPE
- BUILDING SETBACK LINE
- DE DRAINAGE EASEMENT
- GE GRADING EASEMENT
- SR SLOPE RIGHTS
- CE CONSERVATION EASEMENT
- ME MAINTENANCE EASEMENT

40 0 40 80

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STATE OF CONNECTICUT — JAMES N. EDWARDS — No. 10937 — LICENSED PROFESSIONAL ENGINEER

STATE OF CONNECTICUT — JASON EDWARDS — LICENSED LAND SURVEYOR

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EROSION CONTROL PLAN

SHEET NUMBER

2.3

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\2.3-E-1

DRAINAGE STRUCTURES

ALL CB's ARE TYPE C UNLESS NOTED OTHERWISE

CB1 TF 311.40 18" INV IN 307.5 24" INV OUT 307.0	CB2 TF 317.25 INV 311.0	CB3 TF 326.10 18" INV IN 317.0 6" INV IN 317.0 18" INV OUT 317.0	CB4 TF 325.25 INV 321.1	CB5* TF 324.0 15" INV'S IN 320.25 18" INV OUT 320.0
CB6 TF 326.0 INV 321.25	CB7 TF 326.23 INV 322.33	CB8* TF 327.0 INV 323.5	CB9** TF 315.3 15" INV IN 311.5 18" INV OUT 308.4	CB10 TF 319.5 12" INV 314.25 15" INV'S 314.0
CB11 TF 324.70 INV 319.6	CB12 TF 325.66 INV 321.03	CB13 TF 325.75 INV 321.27	CB14 TF 326.5 INV 322.42	CB15 TF 326.5 INV 323.0
AD1 TF 327.35 INV 314.39	MH1 TF 311.99 INV 306.5	MH2 TF 312.7 INV IN 306.06 INV OUT 296.7	FE INV 294.0	

* TYPE CL DOUBLE GRATE
** TYPE CL
*** STORMWATER TREATMENT UNIT

DRAINAGE PIPES

ALL PIPES ARE HDPE UNLESS NOTED OTHERWISE. PIPE LENGTHS ARE FROM CL TO CL OF STRUCTURES

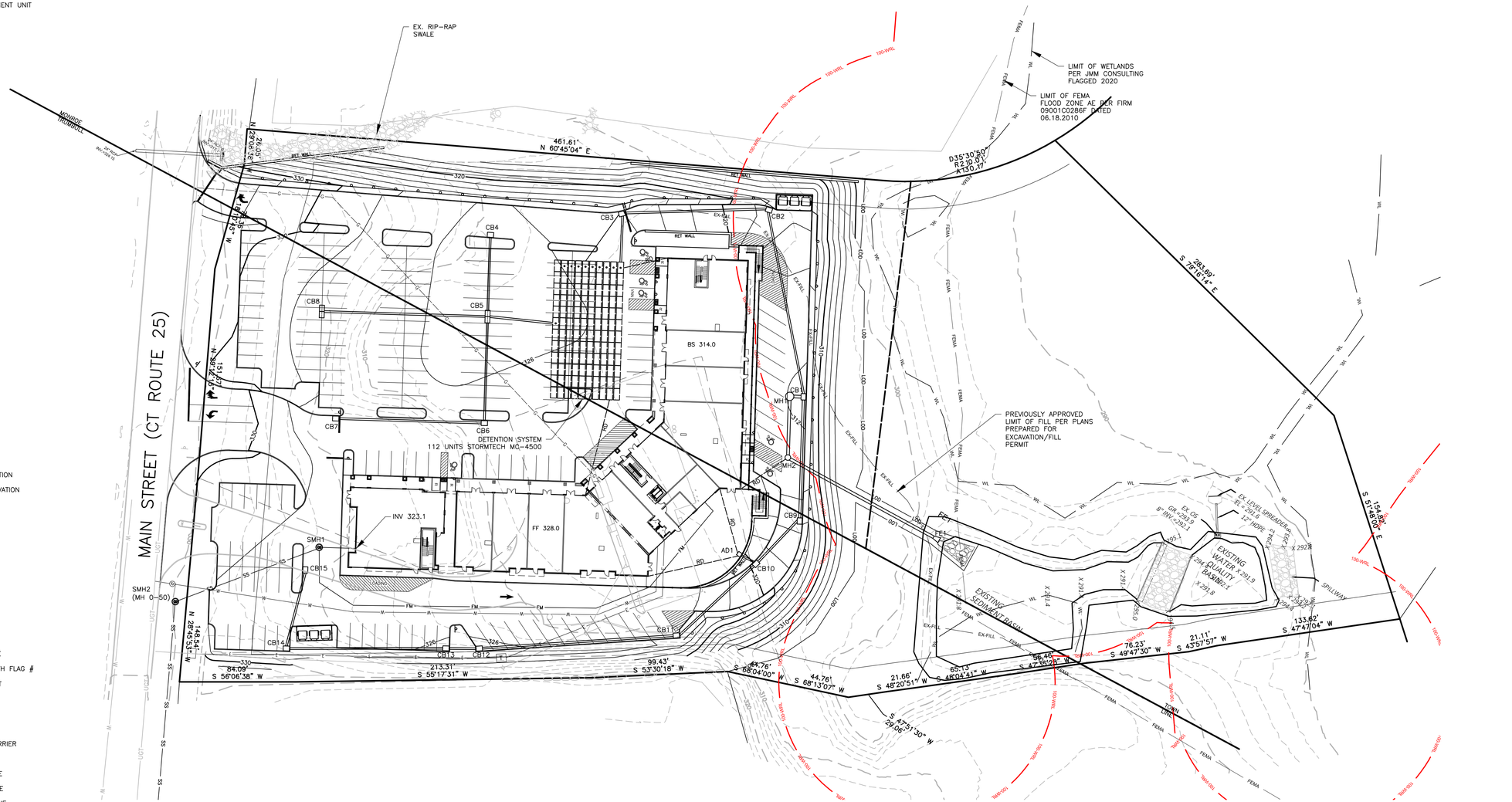
FROM FE1 TO MH2 SIZE: 24" SLOPE: 2.25% LENGTH: 120 LF	FROM MH2 TO MH1 SIZE: 24" SLOPE: 1.0% LENGTH: 44 LF	FROM MH1 TO CB1 SIZE: 24" SLOPE: 5.0% LENGTH: 10 LF	FROM CB1 TO CB2 SIZE: 18" SLOPE: 2.54% LENGTH: 138 LF	FROM CB2 TO CB3 SIZE: 18" SLOPE: 5.66% LENGTH: 106 LF
FROM CB3 TO DET SYS SIZE: 18" SLOPE: 8.57% LENGTH: 35 LF	FROM CB3 TO DET SYS SIZE: 6" SLOPE: 2.32% LENGTH: 43 LF	FROM DET SYS TO CB5 SIZE: 18" SLOPE: 2.05% LENGTH: 49 LF	FROM CB5 TO CB6 SIZE: 15" SLOPE: 1.3% LENGTH: 77 LF	FROM CB6 TO CB7 SIZE: 15" SLOPE: 1.0% LENGTH: 108 LF
FROM CB5 TO CB8 SIZE: 15" SLOPE: 2.71% LENGTH: 120 LF	FROM CB5 TO CB4 SIZE: 15" SLOPE: 1.44% LENGTH: 59 LF	FROM CB1 TO CB9 SIZE: 18" SLOPE: 1.0% LENGTH: 90 LF	FROM CB9 TO CB10 SIZE: 15" SLOPE: 5.68% LENGTH: 44 LF	FROM CB10 TO CB11 SIZE: 15" SLOPE: 7.18% LENGTH: 78 LF
FROM CB11 TO CB12 SIZE: 15" SLOPE: 1.0% LENGTH: 143 LF	FROM CB12 TO CB13 SIZE: 15" SLOPE: 1.0% LENGTH: 24 LF	FROM CB13 TO CB14 SIZE: 15" SLOPE: 1.0% LENGTH: 116 LF	FROM CB14 TO CB15 SIZE: 15" SLOPE: 0.99% LENGTH: 59 LF	FROM CB10 TO AD1 SIZE: 12" SLOPE: 1.0% LENGTH: 14 LF

SANITARY STRUCTURES

SMH1 TF 327.22 INV 322.66	SMH2 TF 330.0 INV 322.0

SANITARY PIPES

FROM SMH2 TO SMH1 SIZE: 8" PVC SLOPE: 0.6% LENGTH: 111 LF	FROM SMH2 TO BLDG SIZE: 8" PVC SLOPE: 2.0% LENGTH: 22 LF



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UNDERGROUND UTILITIES PLAN

SHEET NUMBER

2.4

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\2.4-U-1

GENERAL NOTES

1. The proposed improvements indicated on these plans are shown as one of many possible layouts. Any variation from these plans is to be approved by a professional engineer.
2. Topography and existing features are based on a survey titled: Existing Conditions Survey, Gateway Commons, 7182 and 7192 Main Street, Trumbull & 4 Main Street, Monroe, Prepared for 7182 Main Street LLC by J.Edwards & Associates, LLC, Scale;1"=40', dated 10-06-22.
3. Owner:
   7182 Main Street LLC.
   7182 Main Street
   Trumbull, CT 06611
4. Total area of site is 6.674 acres
5. Total area of on-site wetlands is 1.39 acres (Trumbull).
6. Inland wetlands delineated on September 6, 2019 by JMM Wetland Consulting Services.
7. Reference is made to a document titled: Engineering Report For The Proposed Development of Gateway Commons, Located at 7182 Main Street, Trumbull, CT & 4 Main Street, Monroe, CT. Prepared on: October 14, 2022, Prepared by: J.Edwards & Associates, LLC. 227 Stepney Road, Easton, CT 06612.
8. The building will be served with public water and sewer.
9. The location of underground utilities, if any, is unknown. Call Before-You-Dig 1-800-922-4455.
10. It is the contractor's responsibility to verify all on-site and off-site field conditions and establish that no changes have occurred since the issuance of this plan. The design engineer is to be notified of any field conditions which conflict with this plan.
11. All construction methods, materials and system installations are to conform to Town of Trumbull Standards and Town of Monroe Standards and/or CT DOT Standard Specification for Roads, Bridges and Incidental Construction Form 818, 2020 as amended.
12. Proposed utilities are to be underground.
13. No debris and stumps to be buried on site.
14. Approximately 3.95 acres will be disturbed for the improvements indicated on the plans.
15. Retaining walls, if any, are to be designed by a structural engineer.
16. All roadway drainage construction shall be overseen by an independent Professional Engineer licensed in the State of Connecticut to certify that the installation is in accordance with the design documents. Video inspection of all drainage pipes must be submitted to Town prior to final sign off for Certificate of Occupancy.
17. Sanitary sewer mains, laterals and manholes must be pressure tested and videoed prior to acceptance. All final construction plans and specs shall be submitted to the Trumbull Engineering Department for review.
18. Water hydrant locations are approved by the Town Fire Marshall.
19. Proposed sewer connections are approved by Town of Trumbull WPCA.
20. A certification letter and Mylar as-built plans will be required by Town upon project completion.

24. The contractor shall submit shop drawings for all drainage, detention, and sewer structures to design engineer for his approval prior to installation.

EROSION CONTROL AND STORM WATER POLLUTION CONTROL PLAN

Erosion and sediment control measures will be constructed in accordance with the Town of Trumbull Standards and 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, Dep Bulletin 34.

1. The Storm water Pollution Control Plan shall include all erosion and sedimentation control shown on the approved maps and detail sheets. These controls are assumed to be the minimum required, and the contractor may be required to install additional measures as site conditions and weather warrant.
2. All erosion and sediment control devices will be installed prior to the start of clearing and grubbing operations and excavation work. All the devices will be maintained as specified in this document until the disturbed earth has been paved or vegetated, at which time the devices will be removed.
3. All construction methods, materials and system installations are to conform to all applicable local and state regulations.
4. Grading to be according to all applicable regulations and normal standards of good practice.
5. Land disturbance will be kept to a minimum. Restabilization will be scheduled as soon as practicable.
6. Stockpiles of topsoil and common fill shall be located outside regulated areas where possible. They should be surrounded with silt fence and temporarily stabilized by seeding with a 50-50 mix of annual and perennial rye grass at the rate of one pound per 1,000 square feet of surface area shall be employed between March 15 and June 15 or August 1 and October 1. Mulch with straw or hay at the rate of 70 to 90 pounds per 1,000 square feet until stabilized.
7. All contral measures will be maintained in effective condition throughout the construction period until the area is stabilized.
8. Maintenance of the erosion controls shall consist of inspection at the start of each work day with special attention afforded following storm events. Noted deficiencies shall be corrected immediately. Accumulated sediment shall be removed from the erosion control device and dispersed temporarily on the upland portion of the disturbed area. Additional seeding or mulching shall be employed as required.
9. The contractor is to inspect the site daily during construction to insure the integrity of the erosion controls.
10. A site monitor shall be required to inspect all soil erosion controls after every rain event and or at least once per week.
11. The contractor is to have available at all times extra silt fence, hay bale mulch, grass seed and riprap to implement additional erosion control measures not foreseen in this plan.
12. Prior to closing the site down for winter, if required, the contractor shall schedule a meeting with the project engineer to review site conditions and make recommendations to minimize erosion during the winter. The meeting is to be held no later than October 1,of any given year.
13. Accumulated sediment is to be disposed of in an area approved by the design engineer.
14. Catch basins shall be protected with silt sacks, haybales, and/or silt fence during construction until all disturbed areas are stabilized.
15. Water breaks, silt fence, haybales and other measures are to be maintained until drainage is complete and site is stabilized with vegetated cover.
16. Stabilization practices may include silt fences, temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation and other vegetative and non-structural measures as identified in the Guidelines. Where construction activities have permanently ceased or have temporarily been suspended for more than seven days or when final grades are reached in any portion of the site, stabilization practices shall be implemented within three days. Areas which remain disturbed but inactive for at least thirty days shall receive temporary seeding and/or mulching in accordance with the Guidelines. Areas that will remain disturbed beyond the planting season, shall receive long-term, non-vegetative stabilization sufficient to protect the site through the winter.
17. Structural practices include but are not limited to earth dikes (diversions), drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, outlet protection, reinforced soil retained systems, gabions and temporary or permanent sediment basins and chambers.
18. Disturbance will be limited to 1 acre at any one time. Overland drainage from uphill sources will be diverted around the disturbed portions of the site until those disturbed areas have been stabilized. If more than 1 acre is to be disturbed at one time, sediment basins must be provided. These sediment basins shall have a storage capacity of 134 cubic yards per acre of tributary area.
19. All contractors and subcontractors working on site will ensure that no litter, debris, building material or similar material is discharged to the inland wetlands.
20. Contractors will implement techniques to control the generation of dust.
21. All post construction storm water structures will be cleaned of construction sediment and any remaining silt fence shall be removed.

Mitch DeEsso phone 914-403-8969 is assigned the responsibility for implementing this Storm water Pollution Control Plan during the construction. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan. If the land is transferred, the Planning and Zoning office shall be notified and a copy of the Storm water Pollution Control Plan shall be conveyed to the new owners. It shall become the responsibility of the new owners to implement the Storm water Pollution Control Plan for the site as outlined in this Storm water Pollution Control Plan.

CONSTRUCTION SEQUENCE

1. Install erosion control fencing and anti-tracking pads for equipment to access the State road system.
2. Excavate all stumps located in the structural area and remove to a disposal site or stockpile area to be chipped. No stumps are to be buried on site. Stumps are to be disposed of in accordance with current State law.
3. Construct temporary sediment trap #1. As fill is placed to raise the site, it may become necessary to adjust the location of the sediment trap.
4. Install temporary sediment trap #2.
5. Construct perimeter retaining walls
6. Rough grade site and construct interior roadway system.
7. Construct building foundations.
8. Install drainage pipes and structures for the interior roadway beginning at the basin and proceeding upstream. Install other underground utilities.
9. Place silt sacks in new catch basins.
13. Place, grade and compact the processed aggregate in the roadway base.
14. Commence building construction.
16. Install first course of bituminous concrete.
17. Install curbing.
18. Apply stabilization measures to remaining disturbed areas in accordance with the Stormwater Quality Management Plan (topsoil, seeding, sodding, mulching, etc.)
19. Inspect and clean drainage system as needed.
20. Install the final course of bituminous concrete pavement.
21. Temporary sediment traps will have the accumulated sediment removed and the permanent basins excavated to 6" below final grade. Install basin underdrains and final berms for the permanent detention basins to be micro graded. Place topsoil and planting and seeding shall follow.
22. Install planting materials.
23. After site is stabilized in accordance with the applicable Stormwater Quality Management Plan measures, remove temporary erosion and sediment controls.

SITE MAINTENANCE PLAN

This Site Maintenance Plan and Schedule highlights the maintenance procedures for the development. However, this does not preclude the maintenance personnel's responsibility to perform maintenance procedures properly, add other procedures as necessary and conduct maintenance in accordance with current state laws and regulations.

After construction is completed, the owner will be assigned the responsibility for implementing this Site Maintenance Plan. This responsibility includes the inspection and maintenance of control measures and informing parties engaged in activities on the site of the requirements and objectives of the plan. When the land is transferred to the Homeowners Association, this Site Maintenance Plan shall be conveyed to the Association. It shall become the responsibility of the new owners to implement the Plan. The Plan, as with any land use approval, shall run with the land.

Roadway and Parking Areas

The roadway and parking areas shall be swept with a mechanical sweeper or broom at least twice a year. One cleaning will be in the fall after the leaves are off the trees. The second will be in the spring after the last snow fall. Use of high velocity blowers is not recommended as they often "defeat the basic purpose of sweeping in an environmentally sound manner."

The sweepings shall be collected and removed from the site. The disposal method shall be determined by the personnel conducting the sweeping and shall comply with all applicable laws. In no case shall the sweepings or fall cleanup materials be allowed to enter the Storm Water Detention Basins.

Pavement markings, directional arrows and stop bars shall be inspected annually. All pavement markings and directional signs shall be replaced as necessary to insure they are clear, visible and reflective to maintain safe traffic flow.

Paved surfaces shall be crack sealed on a yearly basis and inspected for "Pot Holes". Required patching shall be done on a yearly basis every spring. Paved surfaces should be replaced every 20 years, or as site conditions warrant.

Catch Basins

The catch basins shall be cleaned twice per year. The cleaning shall be in the late fall after leaves have fallen and before snowfall. The second cleaning shall be in springtime after snow melt to remove accumulated debris and sand from the catch basin sumps. In no case, shall the sediment level exceed 50% of the sump volume of the catch basins.

A vactor truck may be used to clean the catch basins. Disposal of liquids and solids contained in the vactor truck requires specific disposal protocol and discharge permits. Operators shall be aware of the regulations. Decanted water from the catch basins may not be returned to the catch basin.

Infiltration Galleries

The detention galleries shall be inspected annually. If sediment and/or debris is observed at the inlet to the gallery system, it shall be removed.

Stormwater Treatment Unit

Unit shall be maintained in same manner as catch basins noted above.

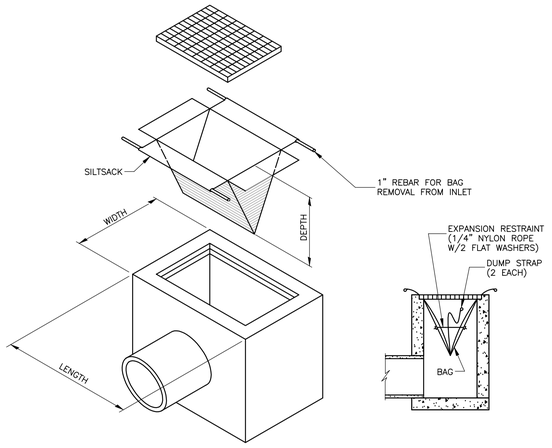
Sediment Basin

The outlet control structure shall be inspected annually in the fall to evaluate plant sustainability, water levels, slope stability and overall operation. The inlet riprap apron, spillways, and level spreader shall also be inspected and any debris removed that will inhibit their operation.

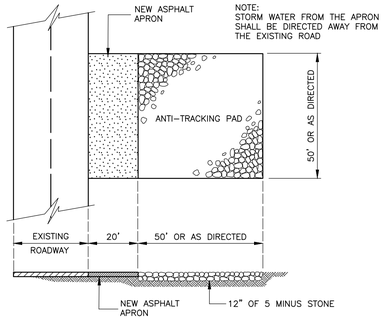
During the first two growing seasons after the initial seeding of the basin and its surrounding upland meadow, reseeding bare and thinly vegetated areas with the specified seed mixture. The dead plant material should be removed from these areas. Any maintenance of the areas should be conduced outside of vegetative growing and wildlife seasons.

No fertilizer shall be applied to the basin or the upland review area.

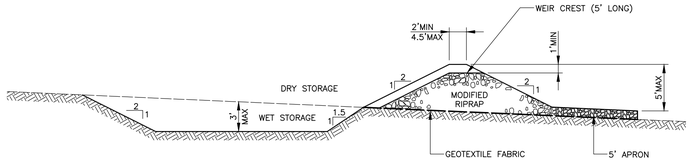
Provide deer/wildlife netting over mitigation plantings to control wildlife feeding on new plantings.



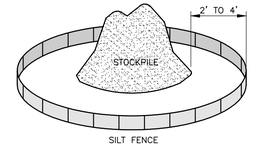
SEDIMENT CONTROL AT INLET



ANTI-TRACKING PAD

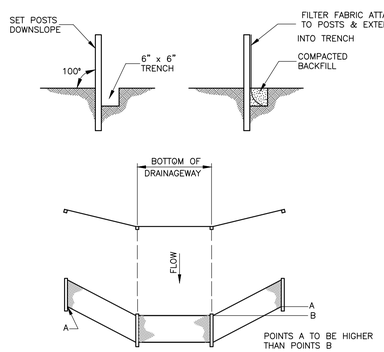


TEMPORARY SEDIMENT TRAP

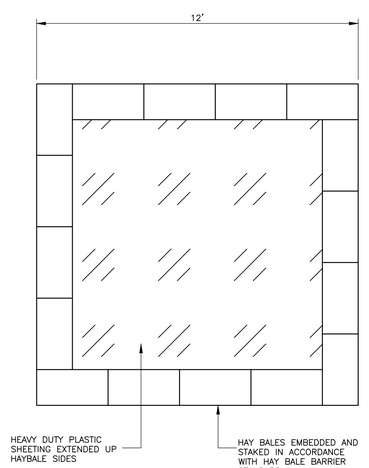


APPLY MIXTURE OF PERRENIAL RYEGRASS, ANNUAL RYEGRASS AND WINTER RYE AT A RATE OF 10 LBS PER 1000 SF

STOCKPILE STABILIZATION



SYNTHETIC FILTER BARRIER



CONCRETE WASHOUT BASIN

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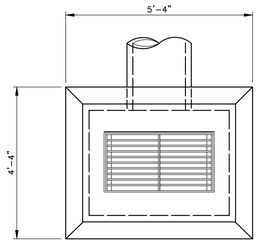
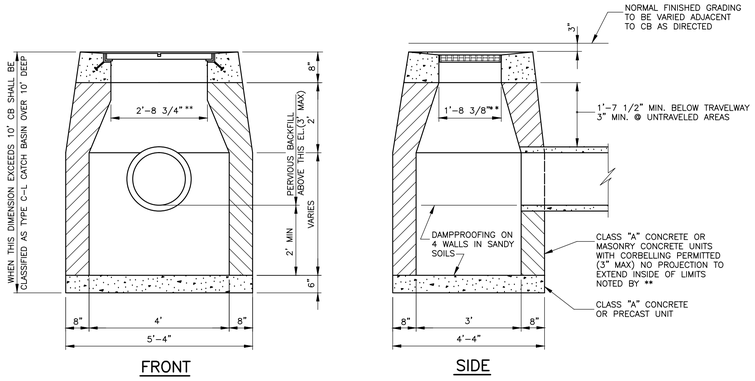


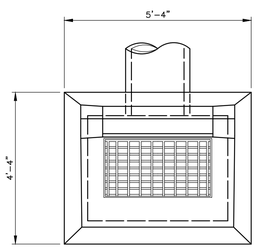
PLAN

NOTE:
WHERE PRECAST CONCRETE UNITS ARE USED FOR THE SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE PIPE OUTLETTING FROM THE CATCH BASIN



FRONT SIDE

TYPE "C-L" CATCH BASIN



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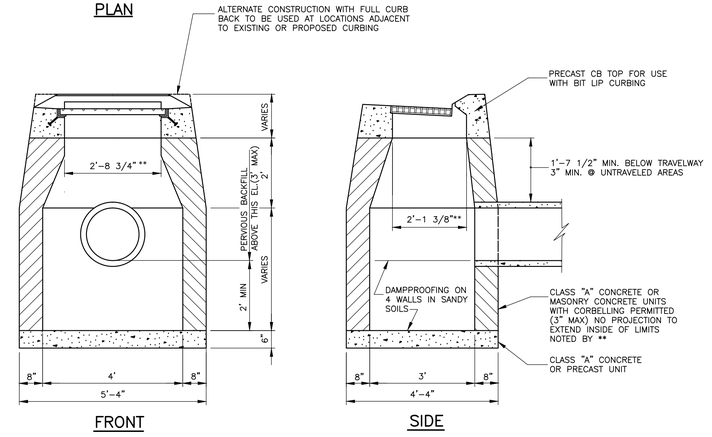
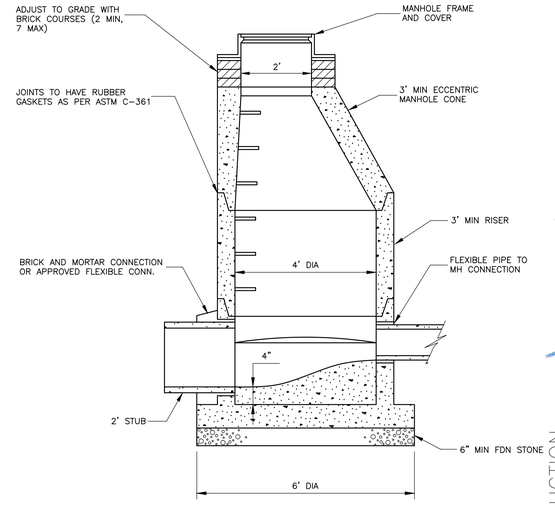
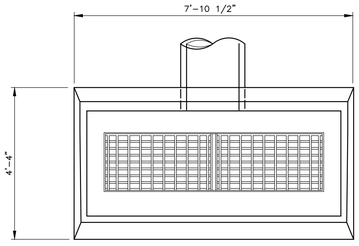


FRONT SIDE

TYPE "C" CATCH BASIN



48" PRECAST CONCRETE MANHOLE



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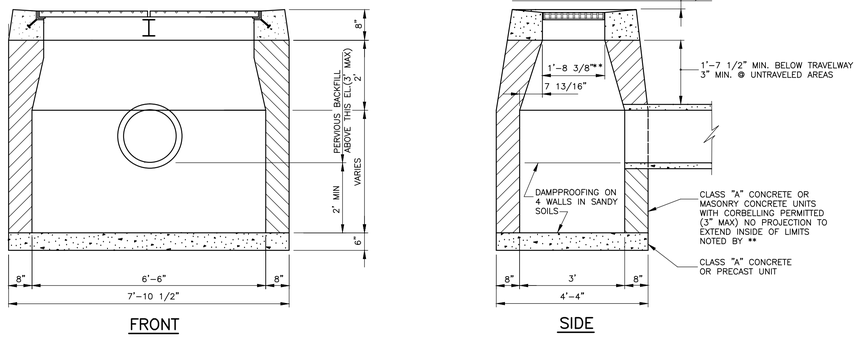
NOTE:
WHERE PRECAST CONCRETE UNITS ARE USED FOR THE SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE PIPE OUTLETTING FROM THE CATCH BASIN

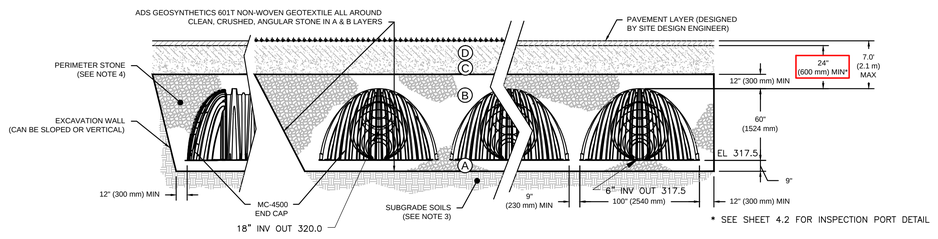


FRONT SIDE

TYPE "C-L" CATCH BASIN - DOUBLE GRATE

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 24" (600 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[4] A-1, A-2-4, A-3 OR AASHTO M43[3] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[3] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[3] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [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 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. 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.
4. 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.



DETENTION GALLERIES
STORMTECH MC-4500 CHAMBER SYSTEM W/H20 LOADING

PERMIT SET - NOT FOR CONSTRUCTION

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GATEWAY COMMONS
7182 MAIN STREET, LLC
7182 & 7192 MAIN STREET TRUMBULL
&
4 MAIN STREET MONROE
CONNECTICUT

REVISIONS

#	DATE	DESCRIPTION
1	10-18-22	IWWC (TRUMBULL)
2	10-25-22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: N.T.S

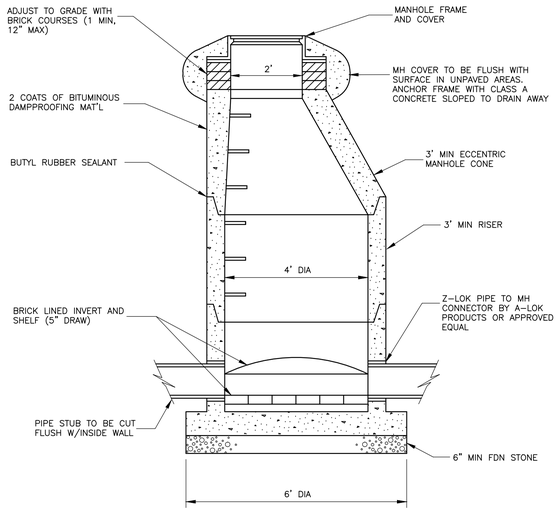
TITLE

DETAILS

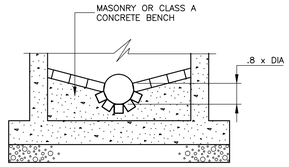
SHEET NUMBER

4.1

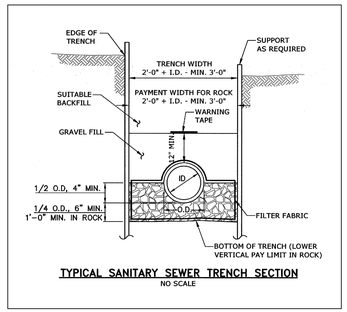
K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\4.1-D-2



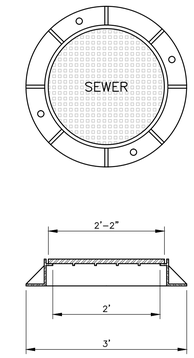
SANITARY MANHOLE



SECTION

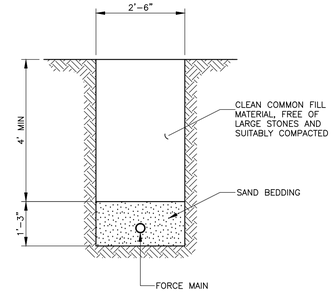


TYPICAL SANITARY SEWER TRENCH SECTION
NO SCALE

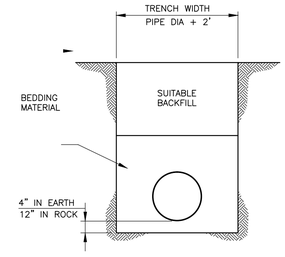


STANDARD FRAME AND COVER

FRAME AND COVER BY LEBARON FOUNDRY COMPANY
#LA268-300 OR APPROVED EQUAL

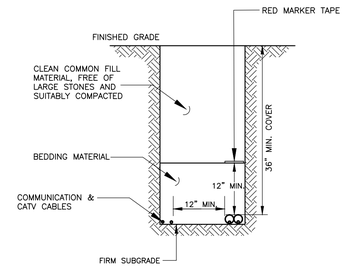


FORCE MAIN TRENCH



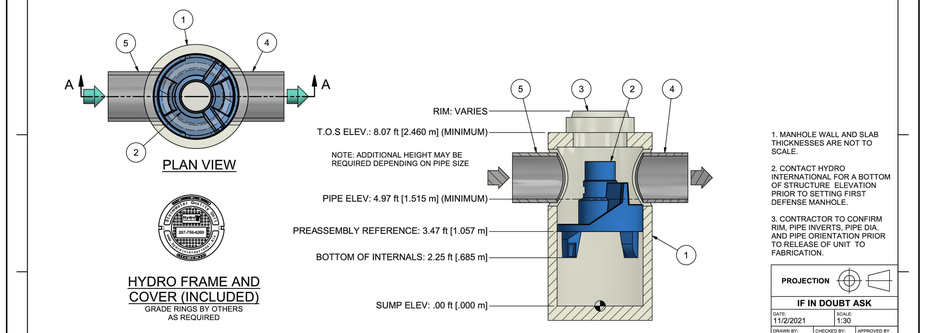
BEDDING MATERIAL TO BE SAND OR SANDY SOIL WHICH PASSES A 3/8" SIEVE WITH NOT MORE THAN 10% PASSING A #200 SIEVE. WHEN GROUND WATER IS ENCOUNTERED, THE ENGINEER MAY ALLOW 3/4" STONE CONFORMING TO CT DOT FORM 818 ARTICLE M.01.01 TO BE USED INSTEAD.

DRAINAGE PIPE TRENCH



BEDDING MATERIAL TO BE SAND OR SANDY SOIL WHICH PASSES A 3/8" SIEVE WITH NOT MORE THAN 10% PASSING A #200 SIEVE. WHEN GROUND WATER IS ENCOUNTERED, THE ENGINEER MAY ALLOW 3/4" STONE CONFORMING TO CT DOT FORM 818 ARTICLE M.01.01 TO BE USED INSTEAD. WHERE ROCK OR LEDGE IS ENCOUNTERED, THE MINIMUM CONDUIT COVER MAY BE REDUCED TO 24".

ELECTRIC TRENCH



1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

PROJECTION

IF IN DOUBT ASK

DATE: 11/2/2021 | SCALE: 1:30
DRAWN BY: ER | CHECKED BY: MRJ | APPROVED BY:
TITLE: 4-ft DIAMETER FIRST DEFENSE GENERAL ARRANGEMENT

Hydro International
hydro-int.com
HYDRO INTERNATIONAL
WEIGHT: | MATERIAL:
STOCK NUMBER:
DRAWING NO.: FD GA-4
SHEET SIZE: B | SHEET: 1 OF 1 | Rev: *

PRODUCT SPECIFICATION:

1. Peak Hydraulic Flow: 18.0 cfs (510 l/s)
2. Min Sediment Storage Capacity: 0.7 cu. yd. (0.5 cu. m.)
3. Maximum Inlet/Outlet Pipe Diameters: 24 in. (600 mm)
4. The Treatment System Shall Use An Induced Vortex To Separate Pollutants From Stormwater Runoff.
5. For More Product Information Including Regulatory Acceptances, Please Visit https://hydro-int.com/en/products/first-defense

GENERAL NOTES:

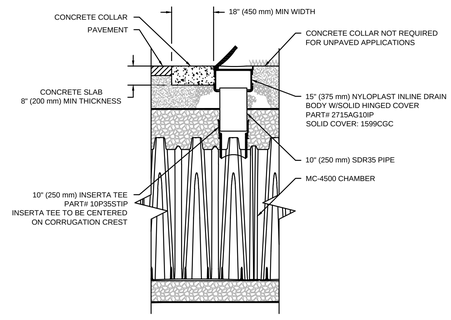
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 24".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

PARTS LIST

ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	48	1200	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	24 (MAX)	600 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	24 (MAX)	600 (MAX)	INLET PIPE (BY OTHERS)

STORMWATER TREATMENT UNIT

W/H20 LOADING



MC-4500 10" (250 mm) INSPECTION PORT DETAIL
NTS

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7182 MAIN STREET, LLC
7182 & 7192 MAIN STREET TRUMBULL
&
4 MAIN STREET MONROE
CONNECTICUT

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2	10-25-22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: N.T.S

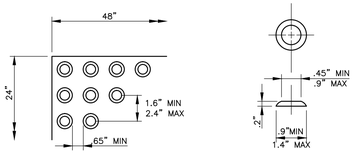
TITLE

DETAILS

SHEET NUMBER

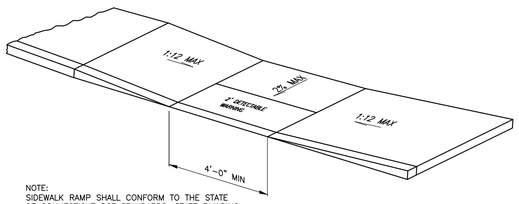
4.2

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\4.2-D-3



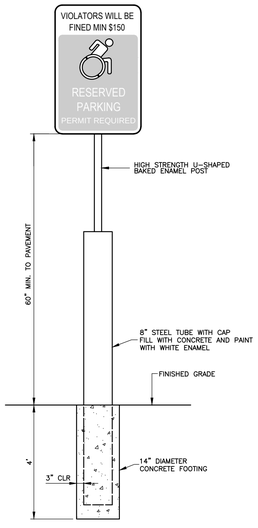
DETECTABLE WARNING

DOME DETAIL



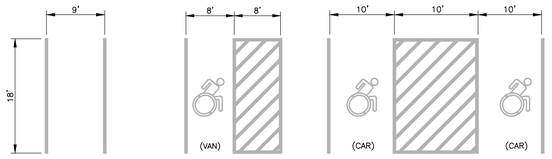
NOTE:
SIDEWALK RAMP SHALL CONFORM TO THE STATE OF CONNECTICUT DOT STANDARDS, STATE BUILDING CODE AND ADA REQUIREMENTS

SIDEWALK RAMP



PARKING BOLLARD

HANDICAP SIGN

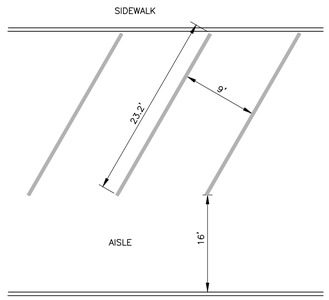


GUEST

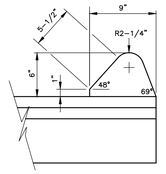
HANDICAP

PARKING SPACES

NOTE:
HANDICAP PARKING SPACES SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION

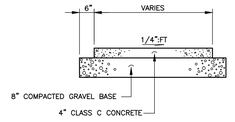


60° PARKING

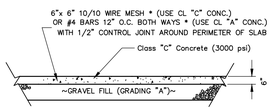


6" BITUMINOUS CONCRETE LIP CURBING

SOURCE: CONNECTICUT DEPARTMENT OF TRANSPORTATION

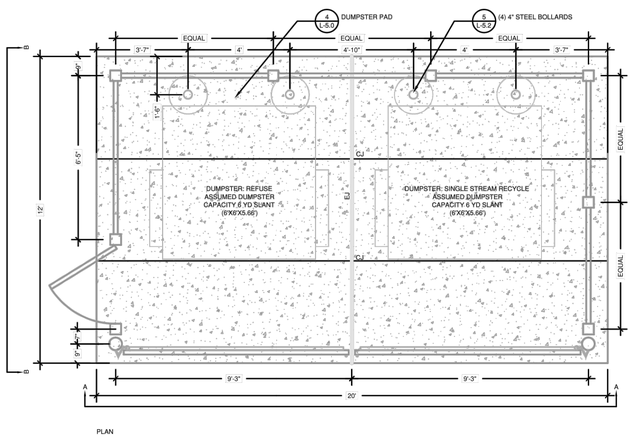


CONCRETE SIDEWALK

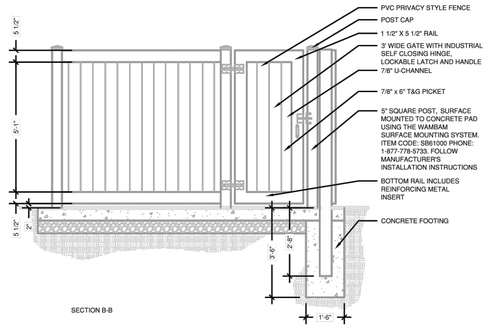


HEAVY DUTY CONCRETE PAD

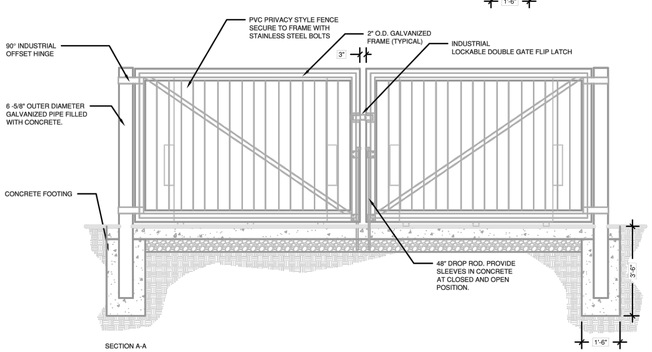
(DUMPSTER)



PLAN

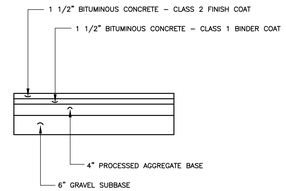


SECTION B-B

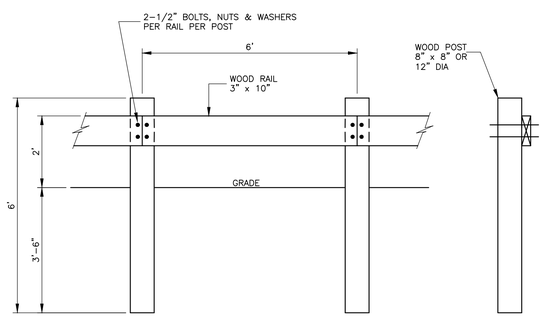


SECTION A-A

DUMPSTER ENCLOSURE



PAVEMENT SECTION–ONSITE



ELEVATION

SECTION

WOOD GUARD RAIL

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2	10-25-22	IWWC (MONROE)

DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: 716
DRAWN BY: NC/JE
SCALE: N.T.S

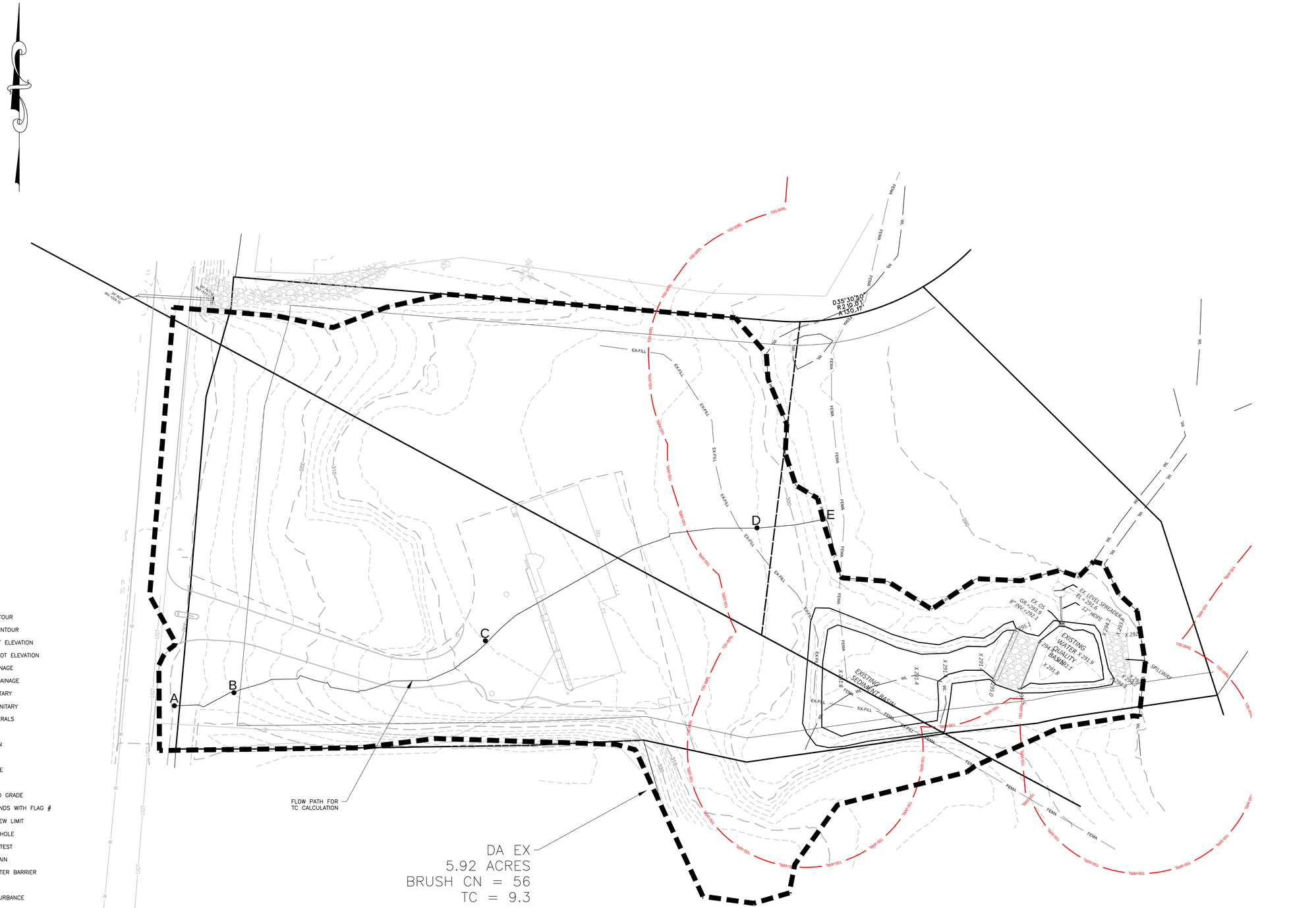
TITLE

DETAILS

SHEET NUMBER

4.3

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\4.3-D-4



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- 520.2 PROPOSED SPOT ELEVATION
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- EXISTING SANITARY
- PROPOSED SANITARY
- SS SANITARY LATERALS
- FM FORCE MAIN
- FD FOOTING DRAIN
- RD ROOF DRAIN
- W WATER SERVICE
- G GAS LINE
- COTG CLEAN OUT TO GRADE
- WL-# INLAND WETLANDS WITH FLAG #
- 100-WRL WETLAND REVIEW LIMIT
- OBSERVATION HOLE
- PERCOLATION TEST
- GTD GRADE TO DRAIN
- SF SYNTHETIC FILTER BARRIER
- WATER BREAK
- LOD LIMIT OF DISTURBANCE
- FE FOUNDATION ENVELOPE
- BUILDING SETBACK LINE
- DE DRAINAGE EASEMENT
- GE GRADING EASEMENT
- SR SLOPE RIGHTS
- CE CONSERVATION EASEMENT
- ME MAINTENANCE EASEMENT

40 0 40 80

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DATE: 10-06-22
PROJECT #: 716
DRAWING FILE: *716*
DRAWN BY: NC/JE
SCALE: 1"=40'

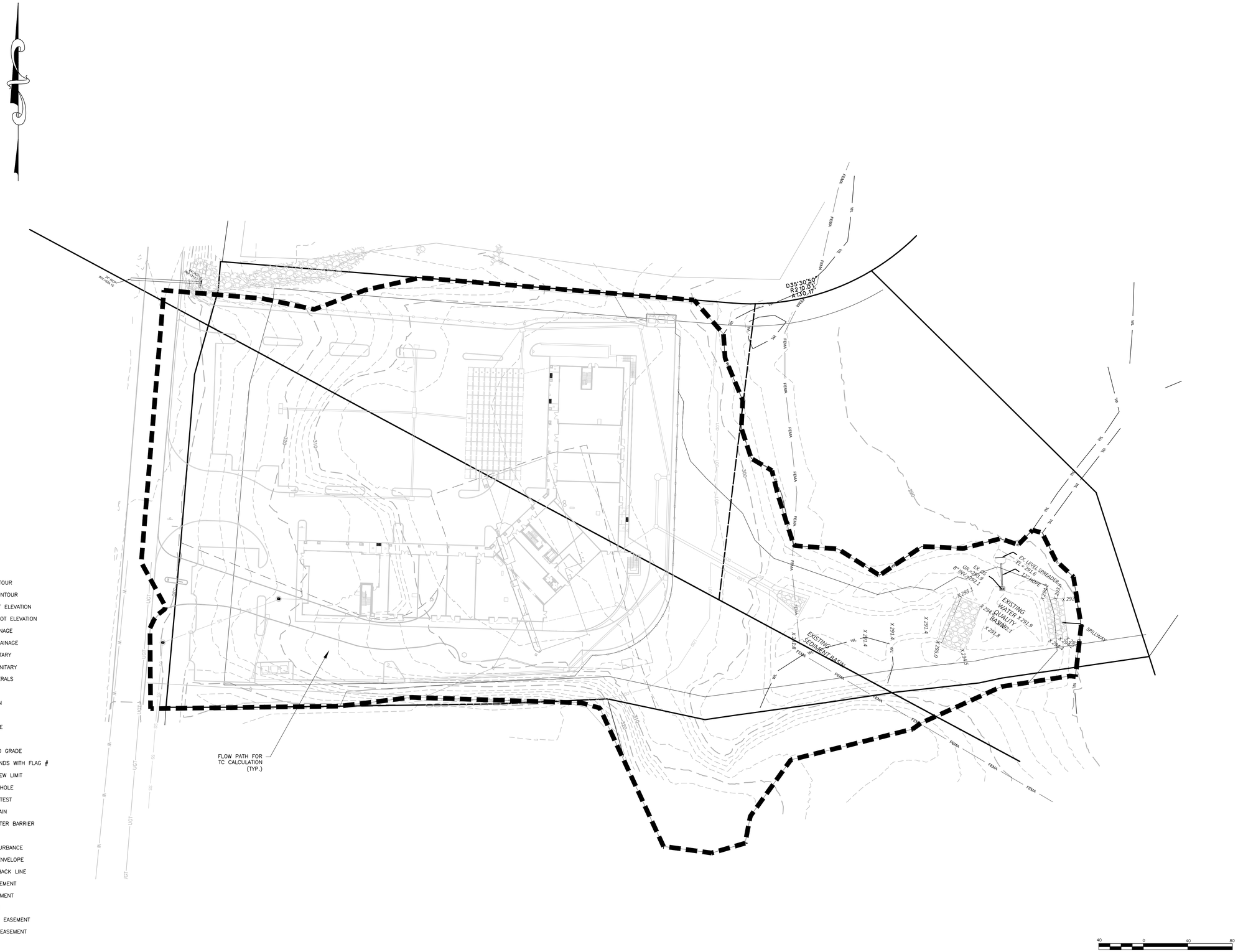
TITLE

DRAINAGE AREA MAP (EXISTING)

SHEET NUMBER

5.0

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\5.0-DA-1



LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- 520.2 EXISTING SPOT ELEVATION
- 520.2 PROPOSED SPOT ELEVATION
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- EXISTING SANITARY
- PROPOSED SANITARY
- SS SANITARY LATERALS
- FM FORCE MAIN
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- W WATER SERVICE
- G GAS LINE
- COTG CLEAN OUT TO GRADE
- WL-27 INLAND WETLANDS WITH FLAG #
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STATE OF CONNECTICUT — JASON EDWARDS — LICENSED LAND SURVEYOR

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DRAWN BY: NC/JE
SCALE: 1"=40'

TITLE

DRAINAGE AREA MAP (PROPOSED)

SHEET NUMBER

5.1

K:\PROJECTS\716 MITCHELL DEESSO\DRAWINGS\5.1-DA-2